Project name:
V82-1.65MW
1-Speed
690V 50Hz
Standard, Tropical,
Tropical -20°C
& Arctic
MK V

Project no:
Electrical Diagrams

1	**5001178 NMCS Documentation Standard** BoM no.: None
2	**934702 Plant Outline** BoM no.: None
3	**934703 Single Line Diagram** BoM no.: None
4	**6016281 Emergency Line Diagram** BoM no.: None
5	**6012514 Main Panel +AT1** BoM no.: 765455
6	**934704 Control Panel +AT2** BoM no.: 765456
7	**Control Panel +AT2 Arctic** BoM no.: 765457
8	**Communication Options for Control Panel +AT2** Modem: 60019676 CSL110: 60092032
9	**Communication Options for Control Panel +AT2** Ethernet Single Mode: 60105817 Ethernet Multi Mode: 60105816
10	**6011999 PFC Panel +AT3, No Load** BoM no.: 765458
11	**6012008 PFC Panel +AT3, Full Load add on** BoM no.: 765459
12	**6015882 PFC Panel +AT3, add on to 1000 kVAr** BoM no.: 60108814
13	**961648 UPS Panel 3kVA 230V 50/60Hz** BoM no.: 765191 Back-up Kit for UPS Item no.: 765217
14	**6013202 Junction Box +AT6** BoM no.: 60097529
15	**0003-2029 Top Panel +AN1** BoM no.: 765219
16	**6010125 Operation Box +AN2** BoM no.: 60112234
17	**934706 Motor Box +AN4** BoM no.: 60109799
18	**6016280 Transformer Box +AN6, Arctic Option** BoM no.: 097930
19	**934707 Junction Box +AN11** BoM no.: 60108019
20	**6015816 Junction Box +AN12** BoM no.: 60108020
21	**6015817 Junction Box +AN13** BoM no.: 60108021
22	**6015818 Junction Box +AN14** BoM no.: 60108022
23	**6012661 Nacelle Heater 2x10 kW** BoM no.: 60019632
24	**6015908 Hub Computer Panel +AK4 CEE** Mat. no.: 60110471
25	**Hub Computer Panel +AK4 AUS** Mat. no.: 60110472
26	**6010129 Hub Hatch Override Pendant** BoM no.: 60104917
27	**6010130 Control Pendant** BoM no.: 60019483
28	**1000827 Table of Tightening Torques** BoM no.: None
29	**6016777 Nacelle Crane CPL** BoM no.: 60113008
30	**934391 Condition Monitoring System** BoM no.: None
31	

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Turbine Type

Main Overview Electrical Diagrams

V82-1.65MW
1-Speed
690V 50Hz
Standard, Tropical, Tropical-20 deg. C & Arctic
MK V

Rev.	Date	Uploaded	Designed/ Changed by	Approved	History
00	2007-07-16	INI	FLT	FLT	Update of the panels in the VPM module for 50Hz is needed.
01	2009-03-10	INI	BIVA/PRO	FLT	Hub comp. panel +AK4, changes of internal wires. UPS panel back-up kit added. Update in general.
02	2009-05-20	INI	FLT	HABRO	New top panel, power supply to grease pump changed

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Drawings involved:

Document No.:	Text:	Version Date:	Version No.:
5001178	Documentation Standard	2003-10-13	01
934702	Plant Outline	2007-06-28	00
934703	Single Line Diagram	2007-06-28	00
6016281	Emergency Line Diagram	2005-10-26	01
6012514	Main Panel +AT1	2006-12-13	08
934704	Control Panel +AT2	2007-06-28	00
6011999	PFC Panel +AT3 No Load	2006-10-25	04
6012008	PFC Panel +AT3 add on for Full Load	2006-10-26	05
6015882	PFC Panel +AT3, 1000kWAr	2006-10-26	01
961648	UPS Panel 3kVA 230V 50/60Hz	2007-01-23	00
10000023	Operation Instruction f. UPS Panel	2004-02-10	01
6013202	Junction Box +AT6	2004-10-04	01
0003-2029	Top Panel +AN1	2009-05-19	00
6010125	Operation Box +AN2	2007-12-13	04
934706	Motor Box +AN4	2007-06-28	00
6016280	Transformer Box +AN6	2005-05-11	00
934707	Junction Box +AN11	2007-12-19	01
6015816	Junction Box +AN12	2007-12-14	04
6015817	Junction Box +AN13	2005-02-21	01
6015818	Junction Box +AN14	2005-05-18	02
6012661	Arctic Nacelle Heater	2005-06-02	02
6015908	Hub Computer Panel +AK4	2008-12-17	05
6010129	Hub Hatch Override Pendant	2007-03-22	07
6010130	Control Pendant	2005-05-03	03
1000827	Table of Tightening Torques	2006-04-19	04
6016777	Nacelle Crane CPL	2007-05-22	01
934391	Condition Monitoring System	2006-06-21	00

Parts lists involved (if they are found necessary to have in the book)

Document No.:	Text:	Version Date:	Version No.:
765455	Main Panel +AT1	2009-02-04	01
765456	Control Panel +AT2	2008-10-09	01
765457	Control Panel +AT2 Arctic	2008-10-09	01
60017352	Kit for Modem 600mm Panel	2007-11-12	06
60092032	Kit for CSL110, 600mm Panel	2006-06-29	04
60105817	Moxa-SM, Eth Kit w. Man. w. N-Port, WTG	2006-08-22	04
60105816	Moxa-MM, Eth.Kit w. Man. w. N-Port, WTG	2006-08-22	04
765458	PFC Panel +AT3 No Load	2009-02-04	01
765459	PFC Panel +AT3 add on for Full Load	2008-01-03	01
60016660	PFC Module 50kVAr	2007-08-16	05
60108815	PFC Panel +AT3, 1000kVAr	2005-07-06	02
765191	UPS Panel 3kVA 230V 50/60Hz	2009-02-27	04
60097265	Junction Box +AT6	2005-03-10	03
765219	Top Panel +AN1	2009-05-19	00
60112234	Operation Box +AN2	2007-04-18	03
60109799	Motor Box +AN4	2007-04-18	04
097930	Transformer Box +AN6	2008-01-21	02
60108019	Junction Box +AN11	2007-04-18	03
60108020	Junction Box +AN12	2007-04-19	03
60108021	Junction Box +AN13	2007-04-19	04
60108022	Junction Box +AN14	2007-04-03	03
60016183	Arctic Nacelle Heater	2006-11-17	02
60110471	Hub Computer Panel +AK4 CEE	2008-12-17	05
60110472	Hub Computer Panel +AK4 AUS	2008-12-17	03
60112243	Hub Hatch Override Pendant	2007-04-03	06
60015995	Control Pendant	2007-05-11	06
60113008	Nacelle Crane CPL	2007-06-26	00

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Documentation standard

Panel system:

The Panel is built according to EN 60204-1, 2 edition (Safety of machinery. Electrical equipment of machines. General requirements)

EN 60439-1 Low-voltage switchgear and control gear assemblies - Part 1: Type-tested and partially type-tested assemblies.

Colour code for internal Wires

Identification of conductors in panels, has been carried out with reference to below definition:

Definition:

The identification is done by means of colour and numbering of the conductors according to EN 60204-1.
The terminal number to which it is connected mark the wire. This means that the wire will not wear the same number in both ends.

Example:

If a component is marked with F1 and have a terminal no. 2, then will the wire, which is mounted in this terminal, be marked with F1.2.
The above definition meets the demands for enabling identification of each conductor at each terminal.

In the table shown below, the two terms "Power Circuit" and "Control Circuit" are to be destinguished.

By "Power Circuits" is meant all wires connected to a control voltage transformer or a Switch Mode Power Supply. On the secondary side of a voltage transformer and a Switch Mode Power Supply, both of which are used for control voltage, the wires going from the secondary outputs to the first protection or terminal are defined as power circuits. Apart from these, all other wires are control circuits. For an illustration of this, please see appendix 1.

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In conclusion, the following wire colours have been utilized:

Power Circuit:

AC	Neutral conductor	Light Blue (Ral 5012)
	Phase conductor	Black
PE	Protective conductor	Green / Yellow

DC	+	Black
	-	Black
PE	Protective conductor	Green / Yellow

Control Circuits:

AC	Phase conductor	Red
	Control conductor	Violet
	Neutral conductor	Light blue

DC	Phase conductor	Dark Blue (Ral 5010)
	Control conductor	White
	Neutral conductor	Rosa (Ral 3015)

PE	Protective conductor	Green / Yellow
Any Cabling which remain live with isolator off		Orange

The colour codes of the conductors in the Diagrams are in accordance with the IEC 757 norm. Please refer to the table below:

Black	BK	Rosa	RA
Brown	BN	Gold	GD
Red	RD	Cyan	TQ
Orange	OG	Silver	SR
Yellow (UL)	YE	Green/Yellow	GNYE
Green (UL)	GN	Beige	BE
Light Blue	LB	Grey	GY
Dark Blue	DB	White	WH
Violet	VT		

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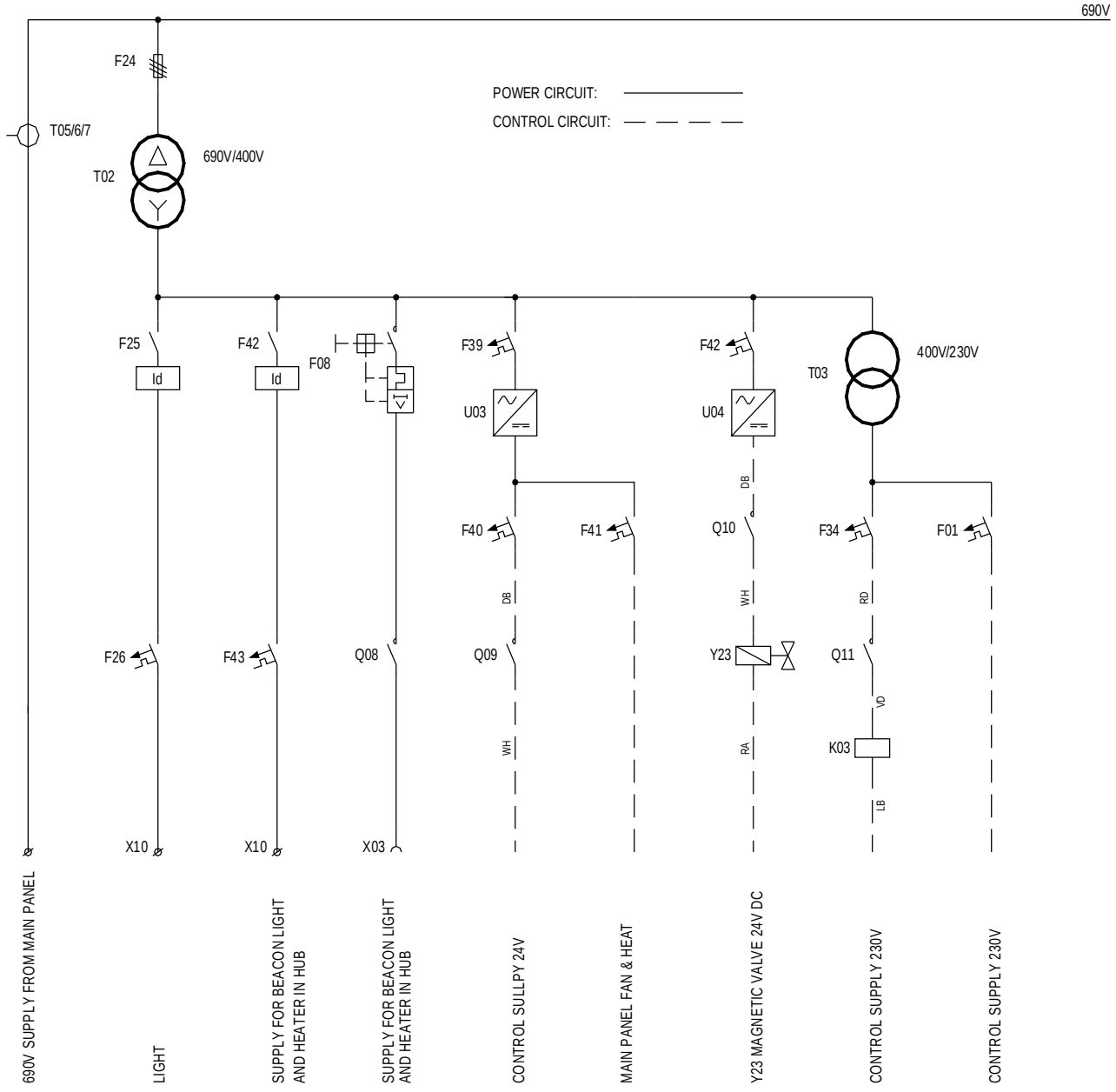
Appendix 1.



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Change Info

Item no.	***Item text:***
None	**Plant Outline, V82-1.65MW 1-Speed 690V 50Hz MK5**

Active revision *for production*

Drawing no.: 934702

Version	Date	Init./App.	Description of change since last revision
00	2007-06-28	INI/FLT	First version

BoM no.: None

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	Write the change.

Old revisions *for service*

Drawing no.: xxxxxx

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	Write the change.

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1	2	3	4	5	6	7	8	9	10	11	12	13

PAGE	CONTENT	DATE	REVISION
001	Table of Contents	070628	0
030	Plant Outline	070628	-
031	Plant Outline	070628	-
040	Plant Outline in Nacelle	070628	-
041	+AN1 Plant Outline	070628	-
042	+AN4 Plant Outline	070628	-
043	+AN11 Plant Outline	070628	-
044	+AN12 Plant Outline	070628	-
045	+AN13 Plant Outline	070628	-
046	+AN14 Plant Outline	070628	-
050	+AK4 Plant Outline	070628	-
060	Light and Service Sockets	070628	-

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	Date	Initials	Function	Table of Contents		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. 0	Drawing no. 934702	Cont. sheet 030	Sheet 001

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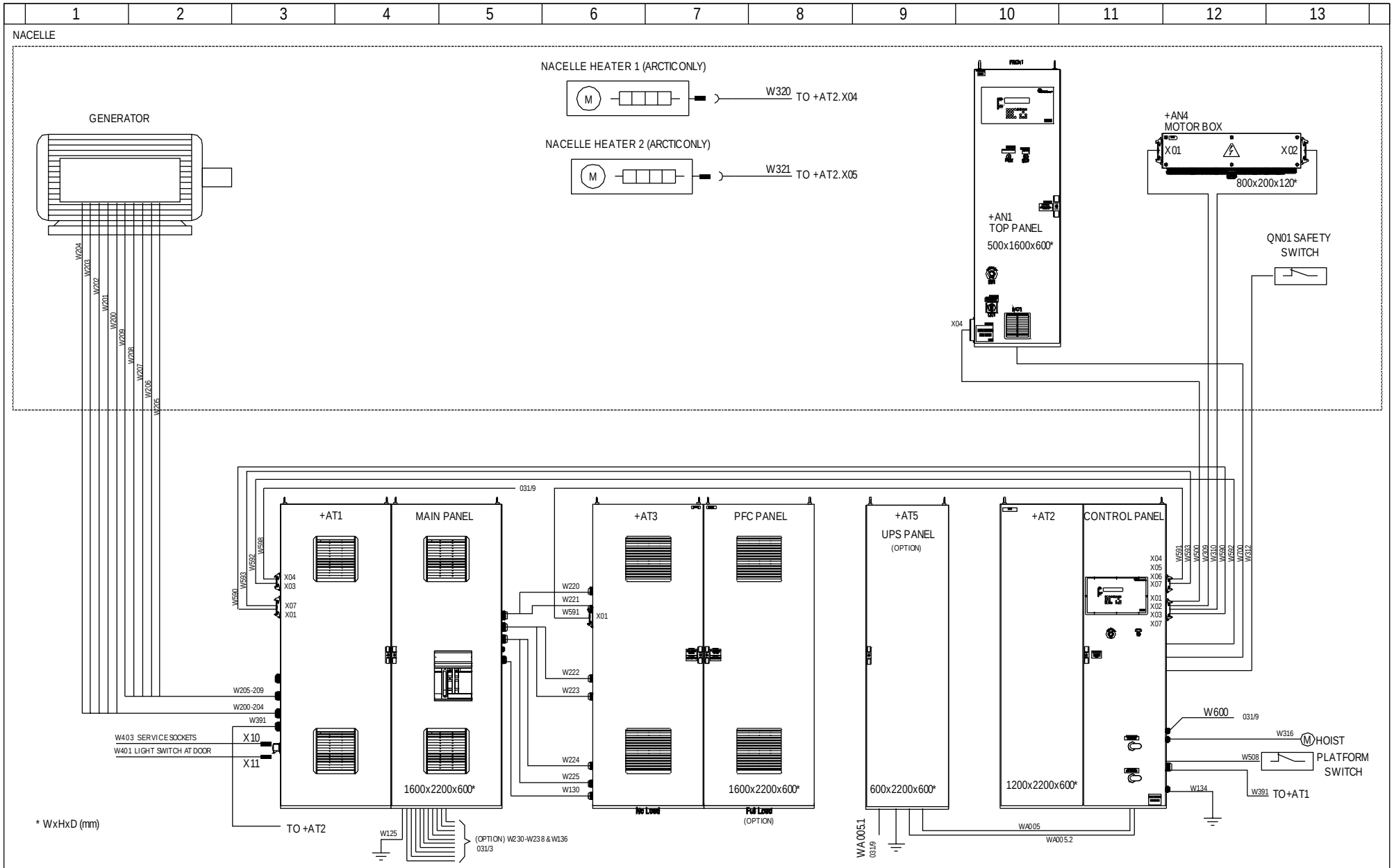

	Date	Initials	Function	Plant Outline		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934702	Cont. sheet 031	Sheet 030

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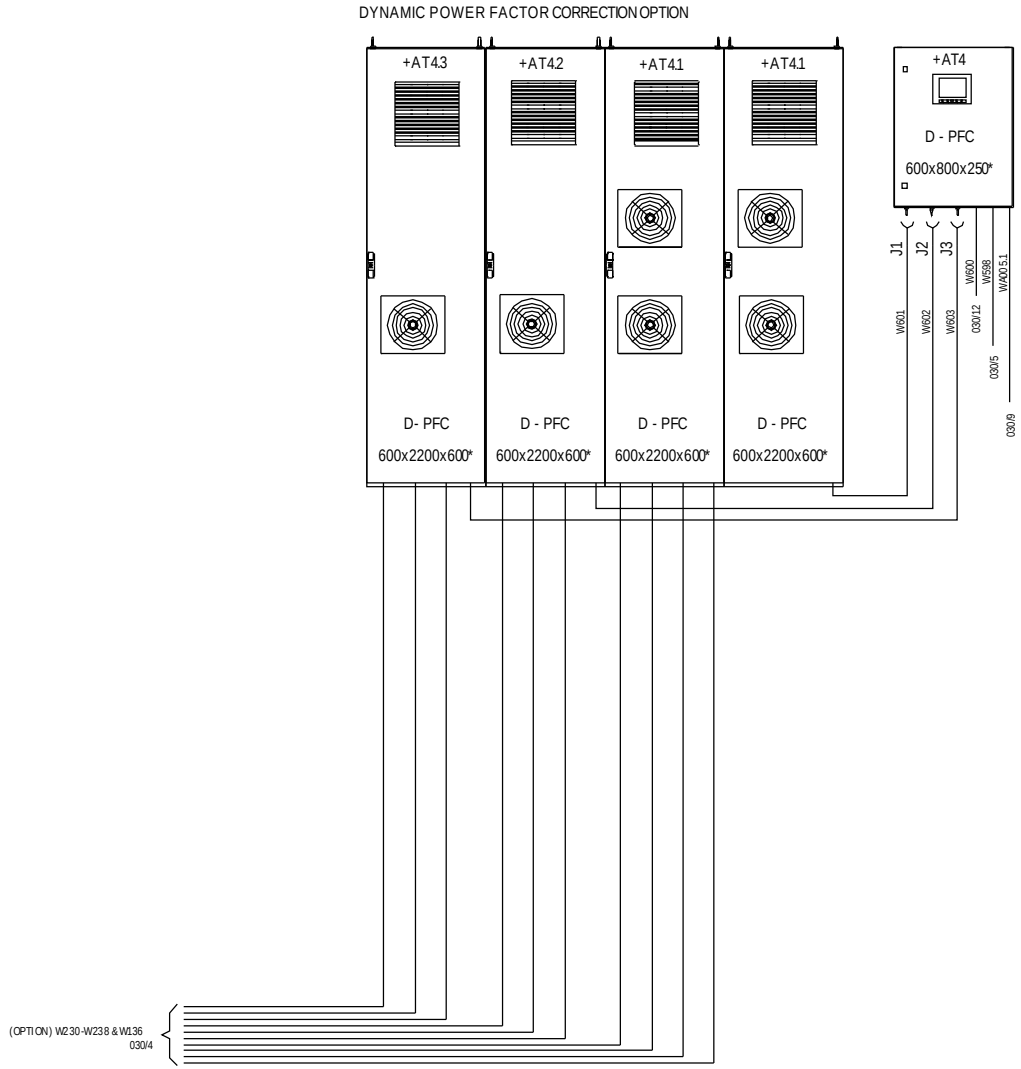

	Date	Initials		
Designed	070628	FLT	Function	Plant Outline
Approved	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz
Revised	070628	INI	Comments	
			Customer	Vestas Wind Systems A/S
			Rev. -	Drawing no. 934702
			Cont. sheet 040	Sheet 031

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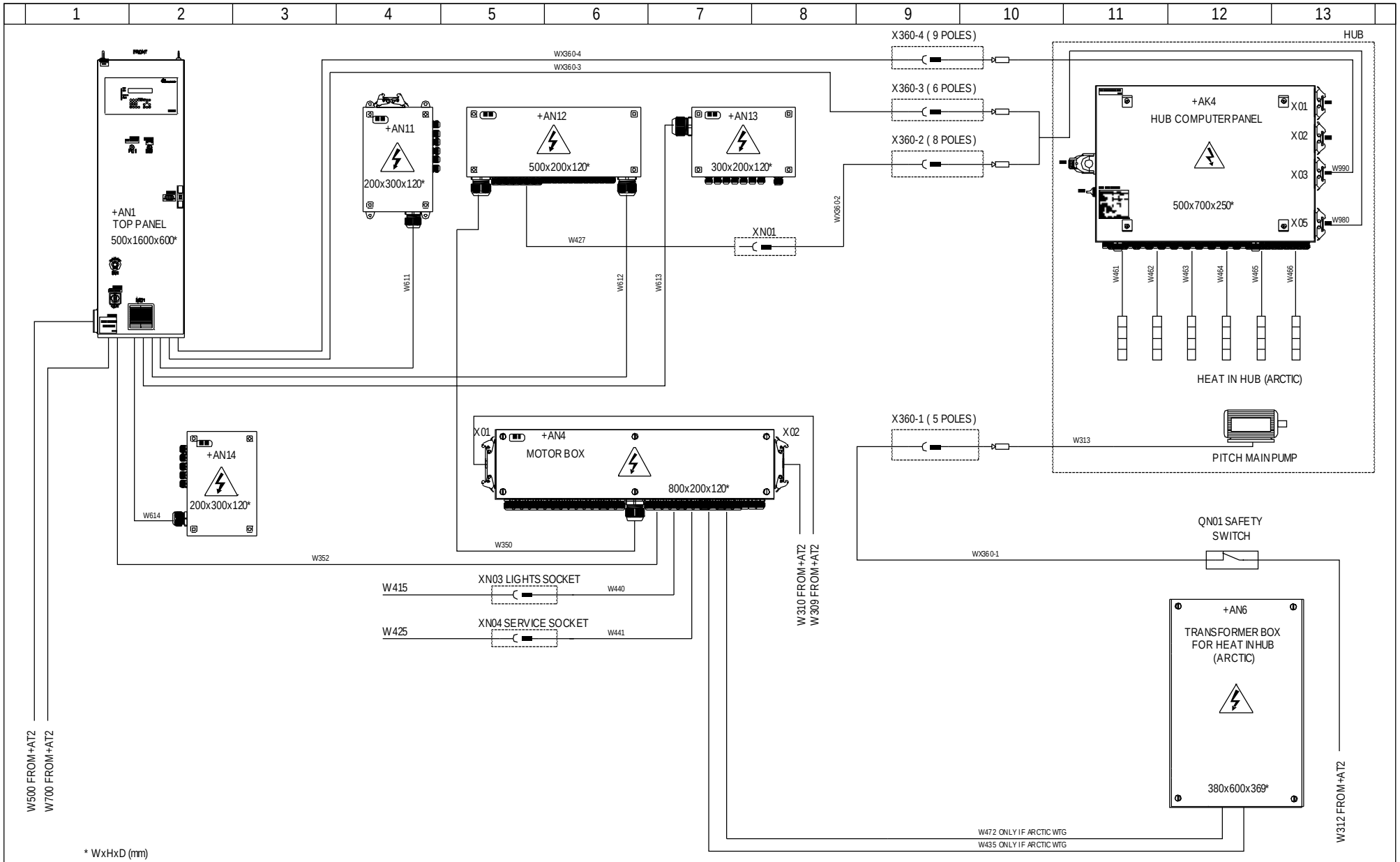

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	Date	Initials	Function	Plant Outline in Nacelle		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934702	Cont. sheet 041	Sheet 040

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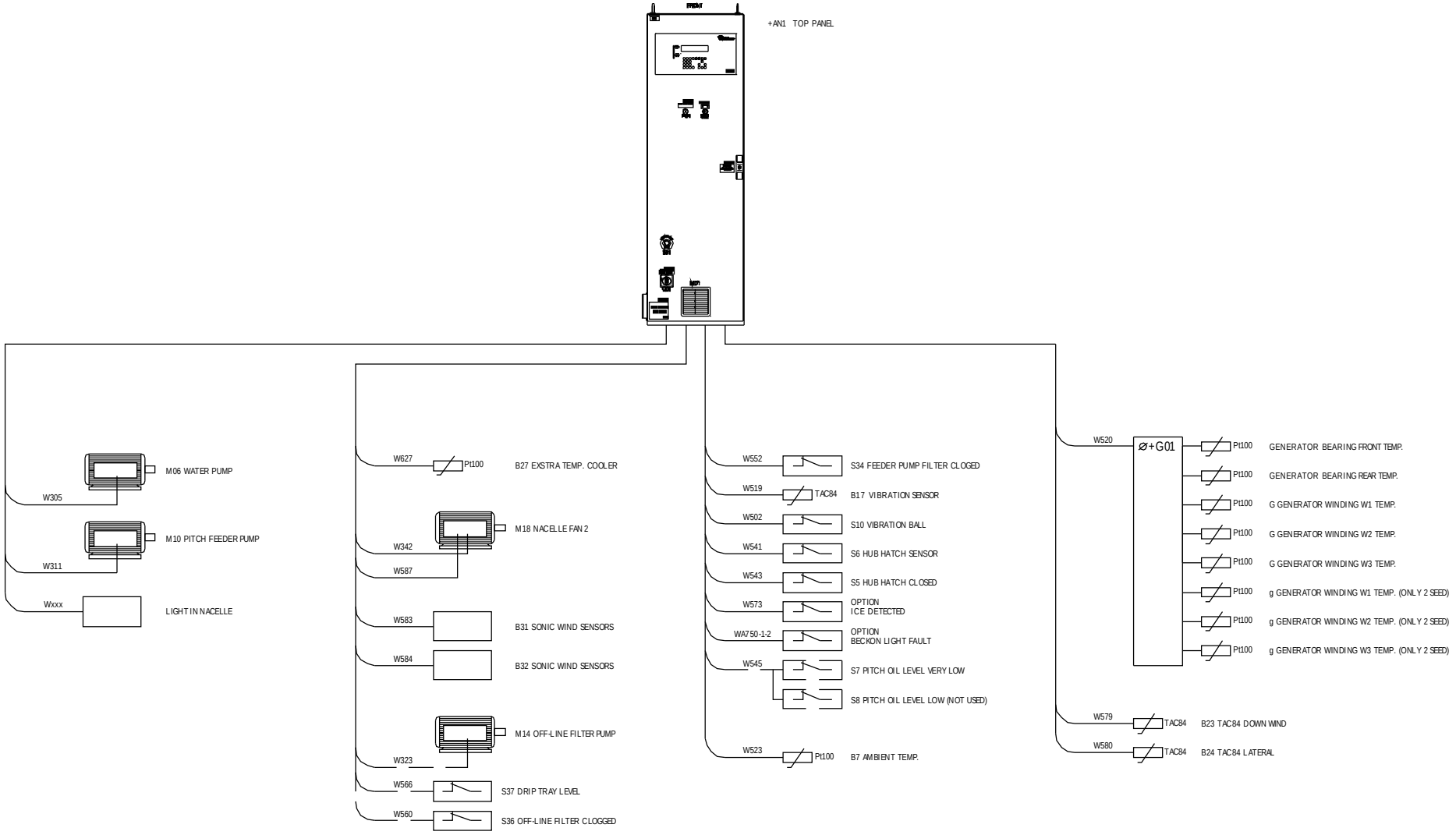

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	Date	Initials	Function	+AN1 Plant Outline		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934702	Cont. sheet 042	Sheet 041

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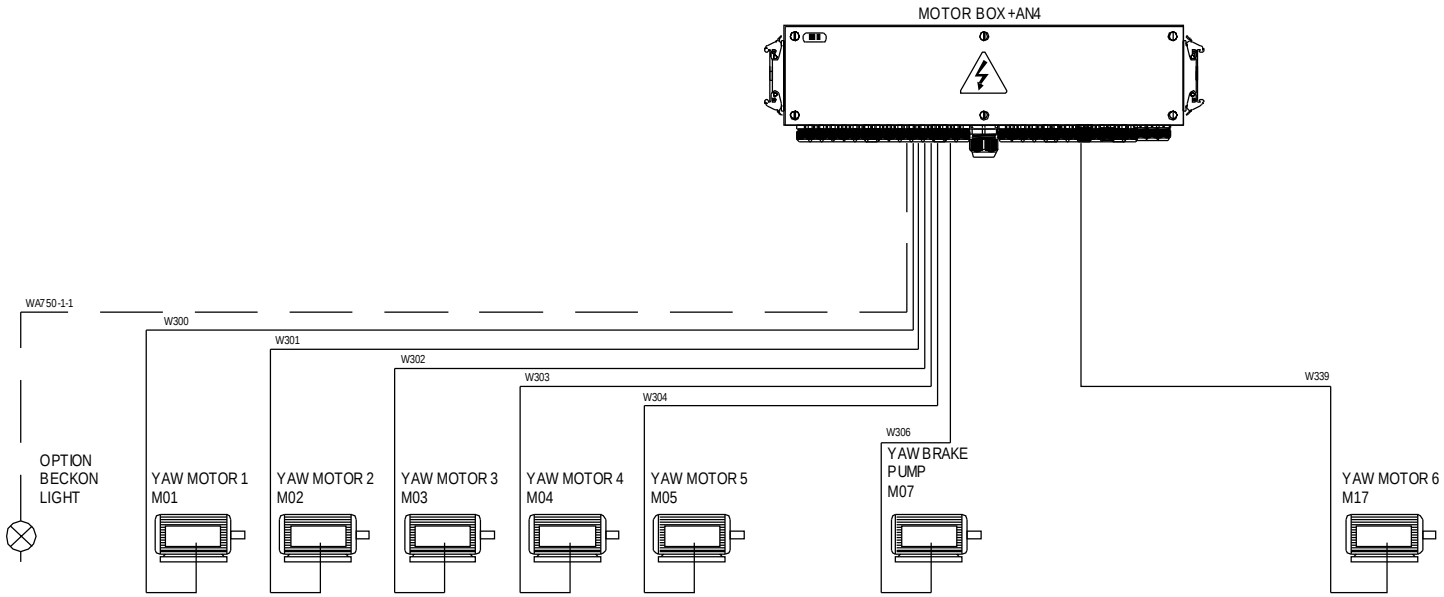

	Date	Initials	Function	+AN4 Plant Outline		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934702	Cont. sheet 043	Sheet 042

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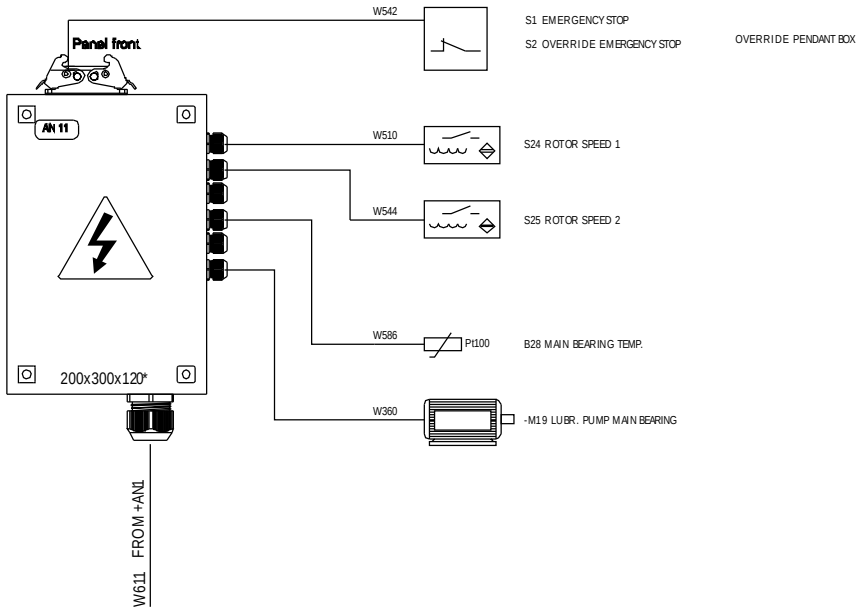

	Date	Initials		
Designed	070628	FLT	Function	+AN11 Plant Outline
Approved	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz
Revised	070628	INI	Comments	
			Customer	Vestas Wind Systems A/S
			Rev. -	Drawing no. 934702
			Cont. sheet 044	Sheet 043

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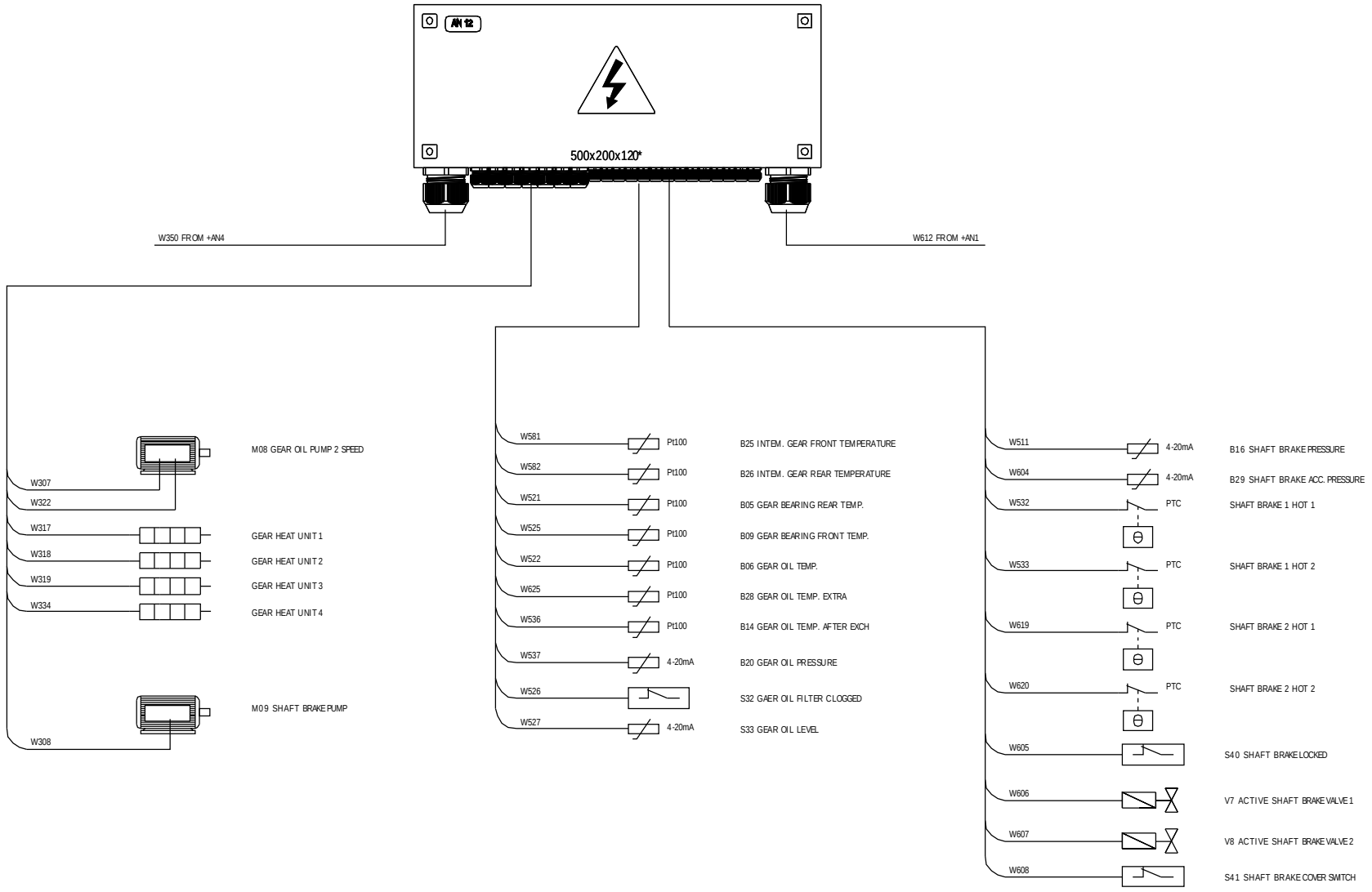

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	Date	Initials	Function	+AN12 Plant Outline		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934702	Cont. sheet 045	Sheet 044

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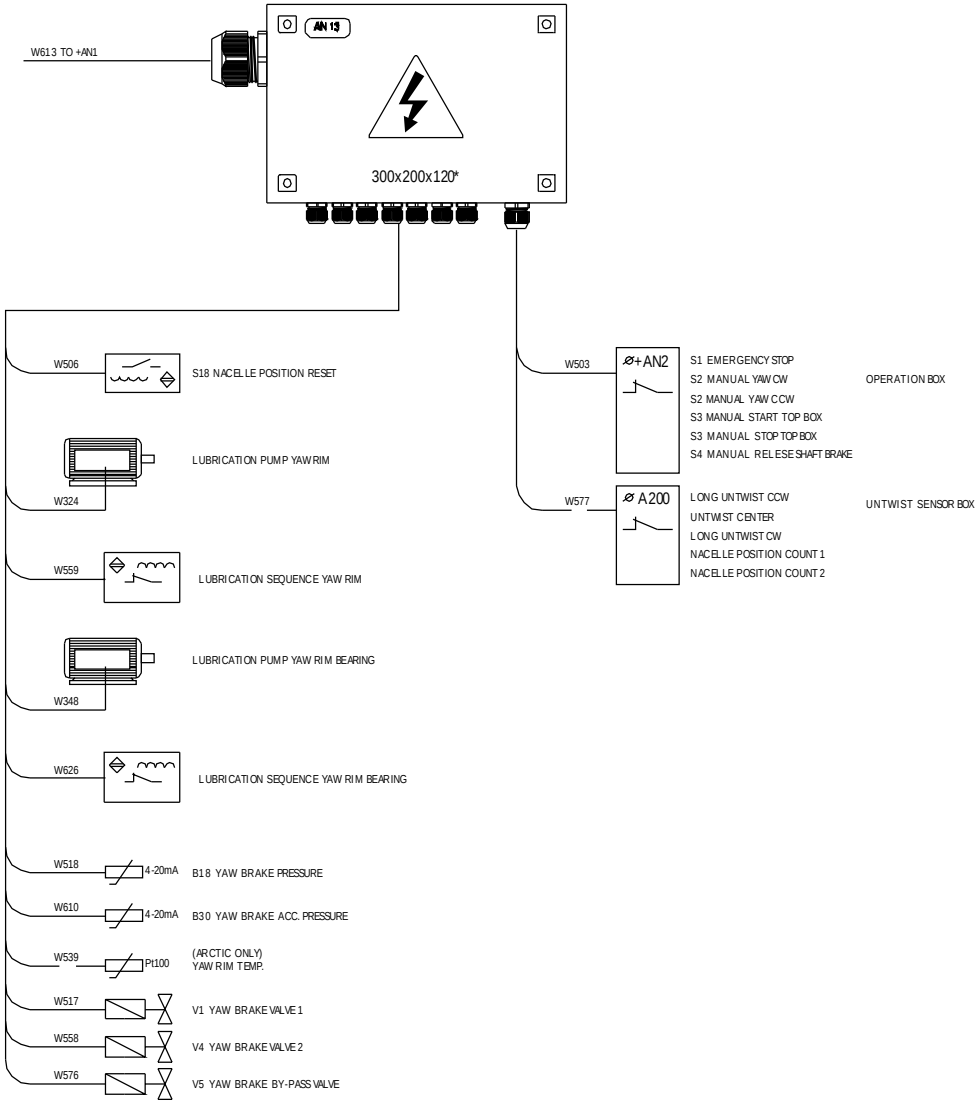

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	Date	Initials	Function	+AN13 Plant Outline		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934702	Cont. sheet 046	Sheet 045

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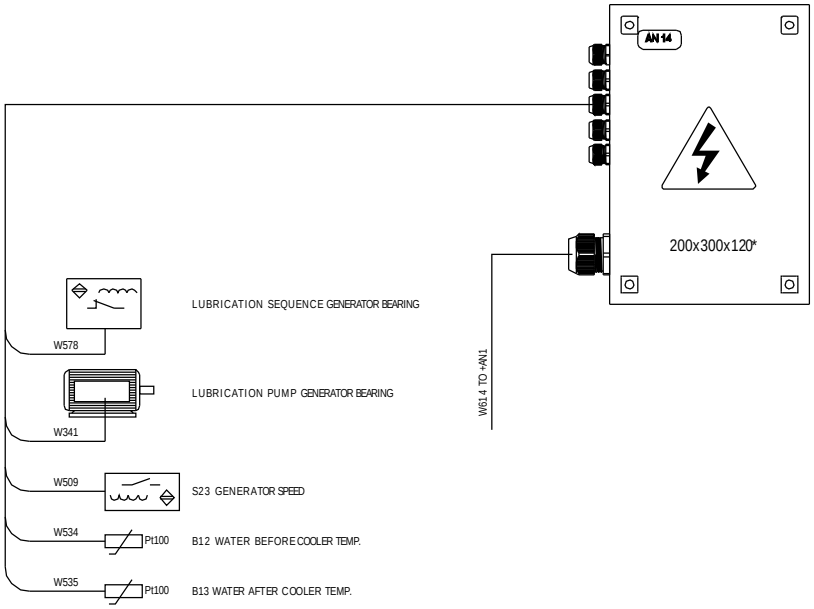

	Date	Initials	Function	+AN14 Plant Outline		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934702	Cont. sheet 050	Sheet 046

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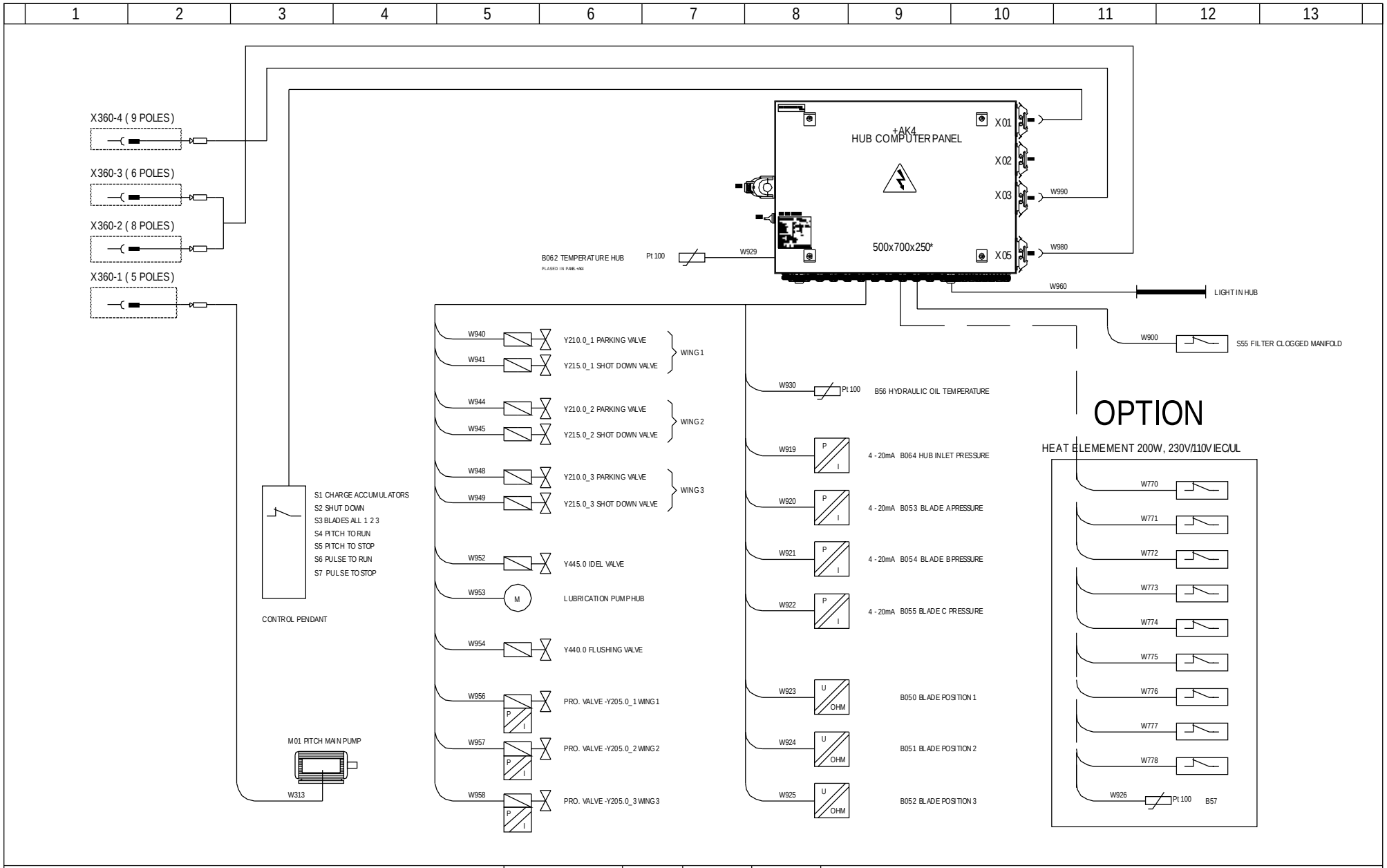

	Date	Initials	Function	+AK4 Plant Outline		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934702	Cont. sheet 060	Sheet 050

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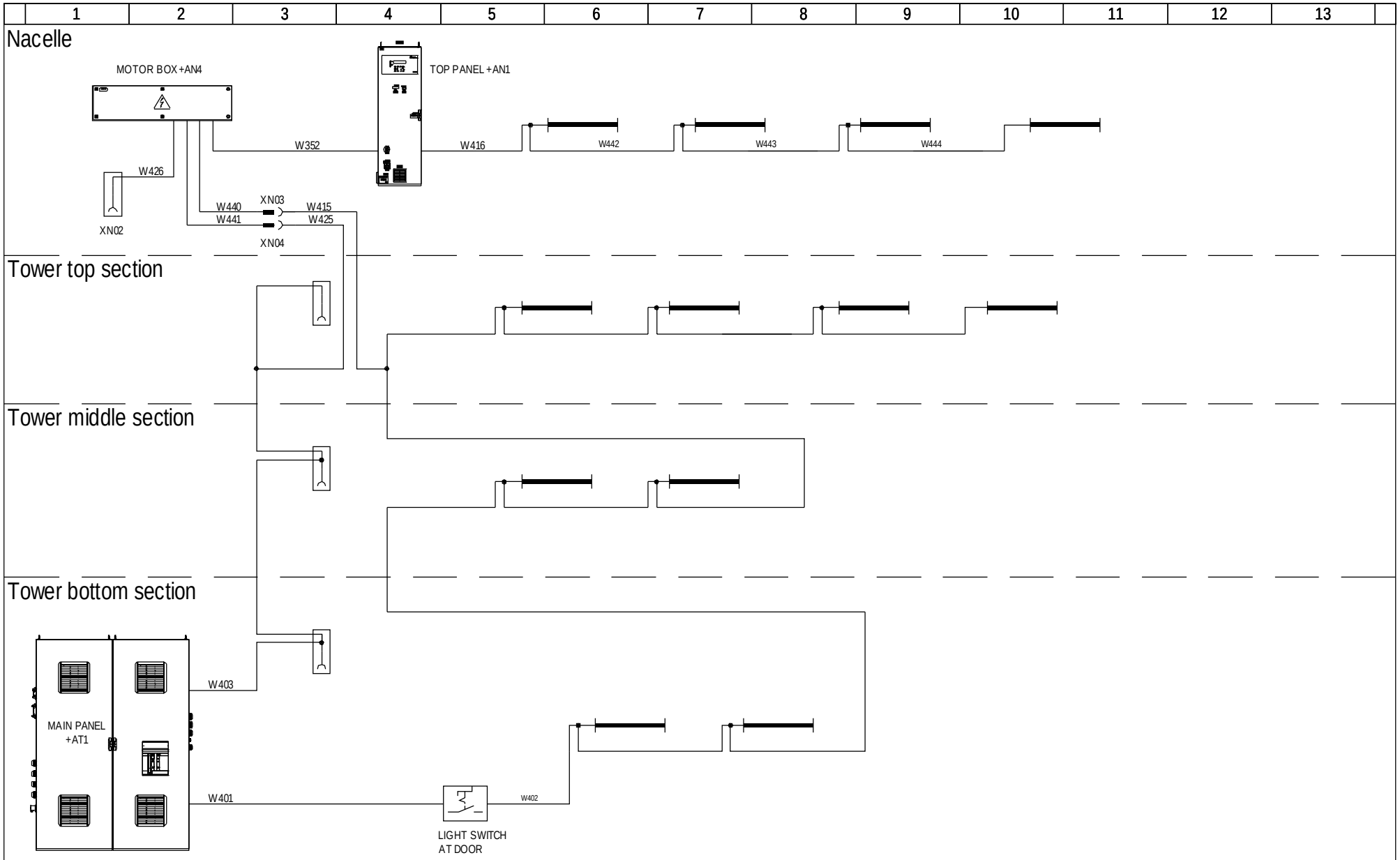

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	Date	Initials	Function	Light and Service Sockets		
Designed	070628	FLT	Project title	Plant Outline V82-1.65MW 1 Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934702	Cont. sheet -	Sheet 060

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Change Info

Item no.	***Item text:***
None	**Single Line Diagram, V82-1.65MW 1-Speed 690V 50Hz MK5**

Active revision for production

Drawing no.: 934703

Version	Date	Init./App.	Description of change since last revision
00	2007-06-28	INI/FLT	First version

BoM no.: None

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	Write the change.

Old revisions for service

Drawing no.: xxxxxx

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	Write the change.

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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

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PAGE	CONTENT	DATE	REVISION
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010	IGC System option	070628	-
011	Main Panel +AT1	070628	-
012	Power Factor Correction N	070628	-
013	Power Factor Correction A	070628	-
014	Control Panel +AT2	070628	-
015	Control Panel +AT2	070628	-
016	Control Panel +AT2	070628	-
017	Control Panel +AT2	070628	-
018	Control Panel +AT2	070628	-
019	Top Panel +AN1	070628	-
020	Top Panel +AN1	070628	-
021	DYN PFC Panel +AT4 Option	070628	-
022	UPS Panel +AT5 Option	070628	-

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	Date	Initials	Function	Table of Contents		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. 0	Drawing no. 934703	Cont. sheet 010	Sheet 001

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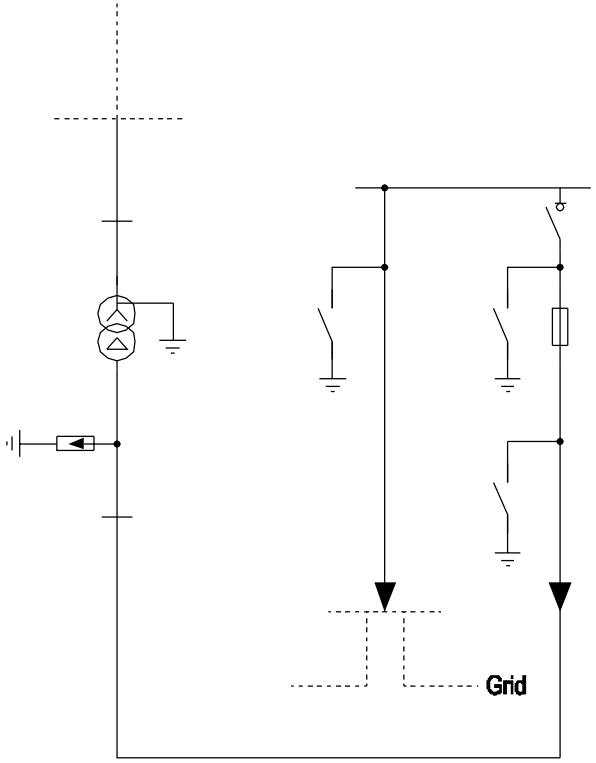
WTG

CONNECTION TO MAIN PANEL



Diagram

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	IGC System option	
		Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz	
		Approved	070628	FLT	Comments	Customer: Vestas Wind Systems A/S	
		Revised	070628	INI	Rev. -	Drawing no. 934703	Cont. sheet 011 / Sheet 010

14-12-06 10:14

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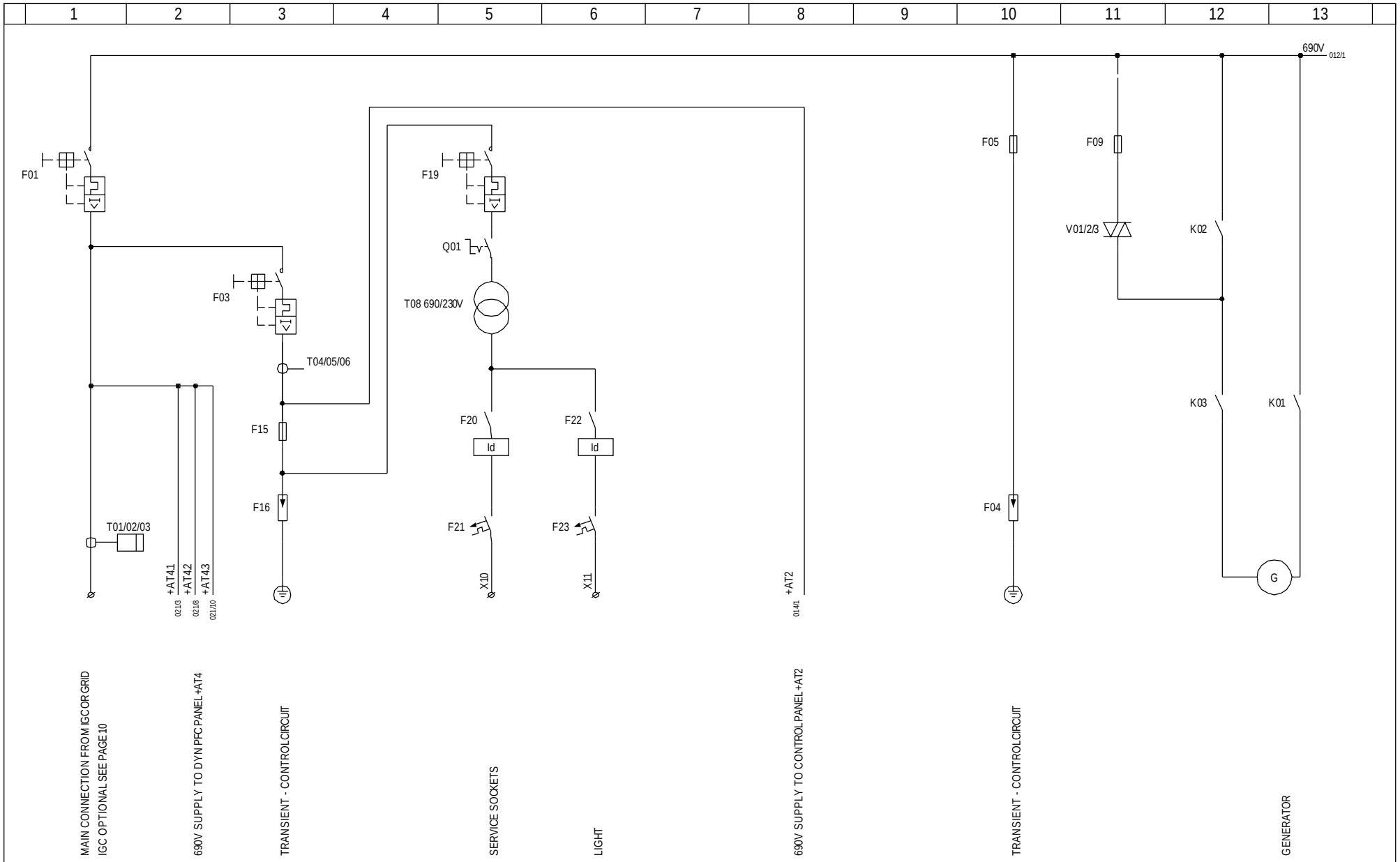

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	Date	Initials		
Designed	070628	FLT	Function	Main Panel +AT1
Approved	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz
Revised	070628	INI	Comments	
			Customer	Vestas Wind Systems A/S
			Rev. -	Drawing no. 934703
			Cont. sheet 012	Sheet 011

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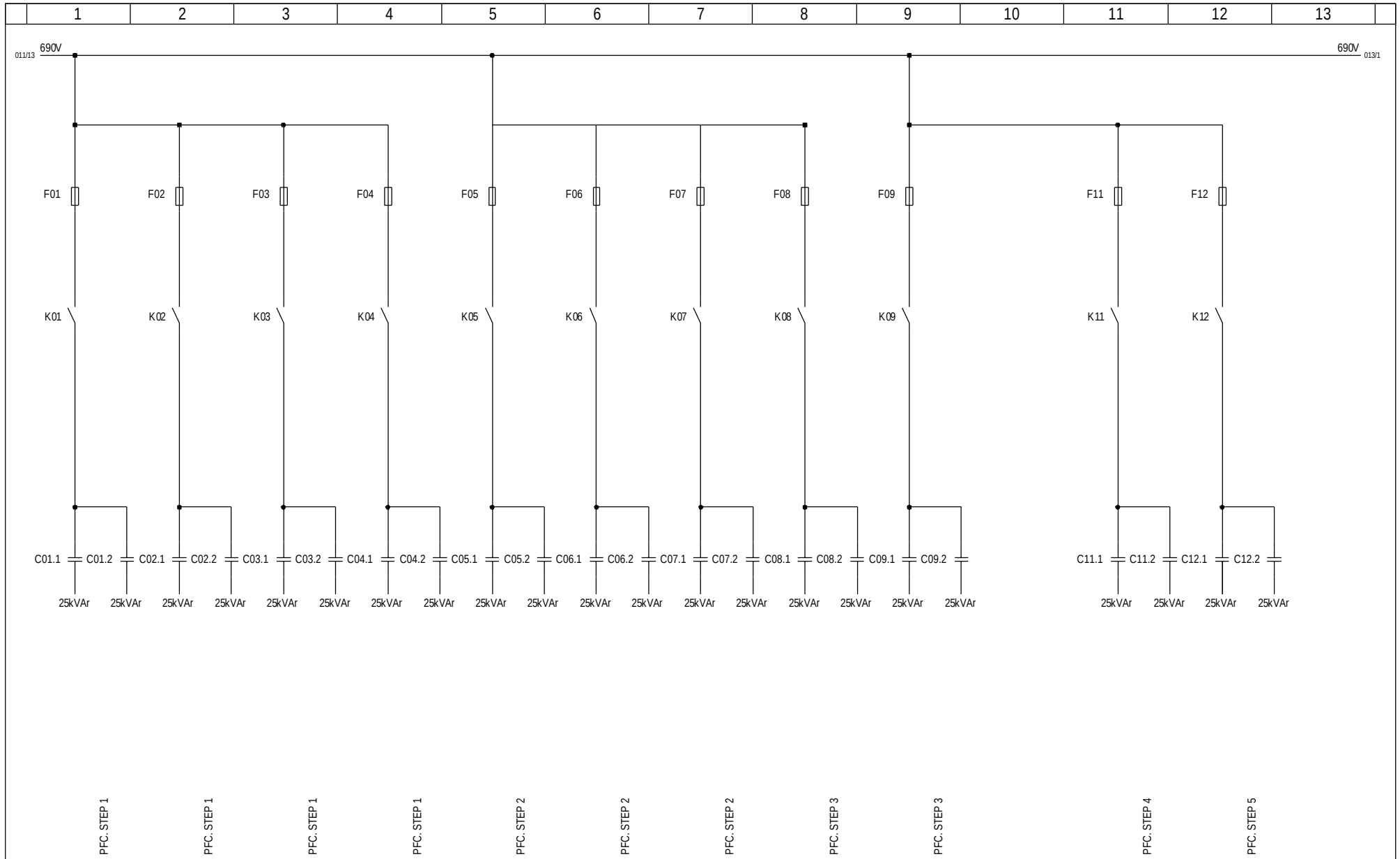

	Date	Initials	Function	Power Factor Correction NL +AT3		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934703	Cont. sheet 013	Sheet 012

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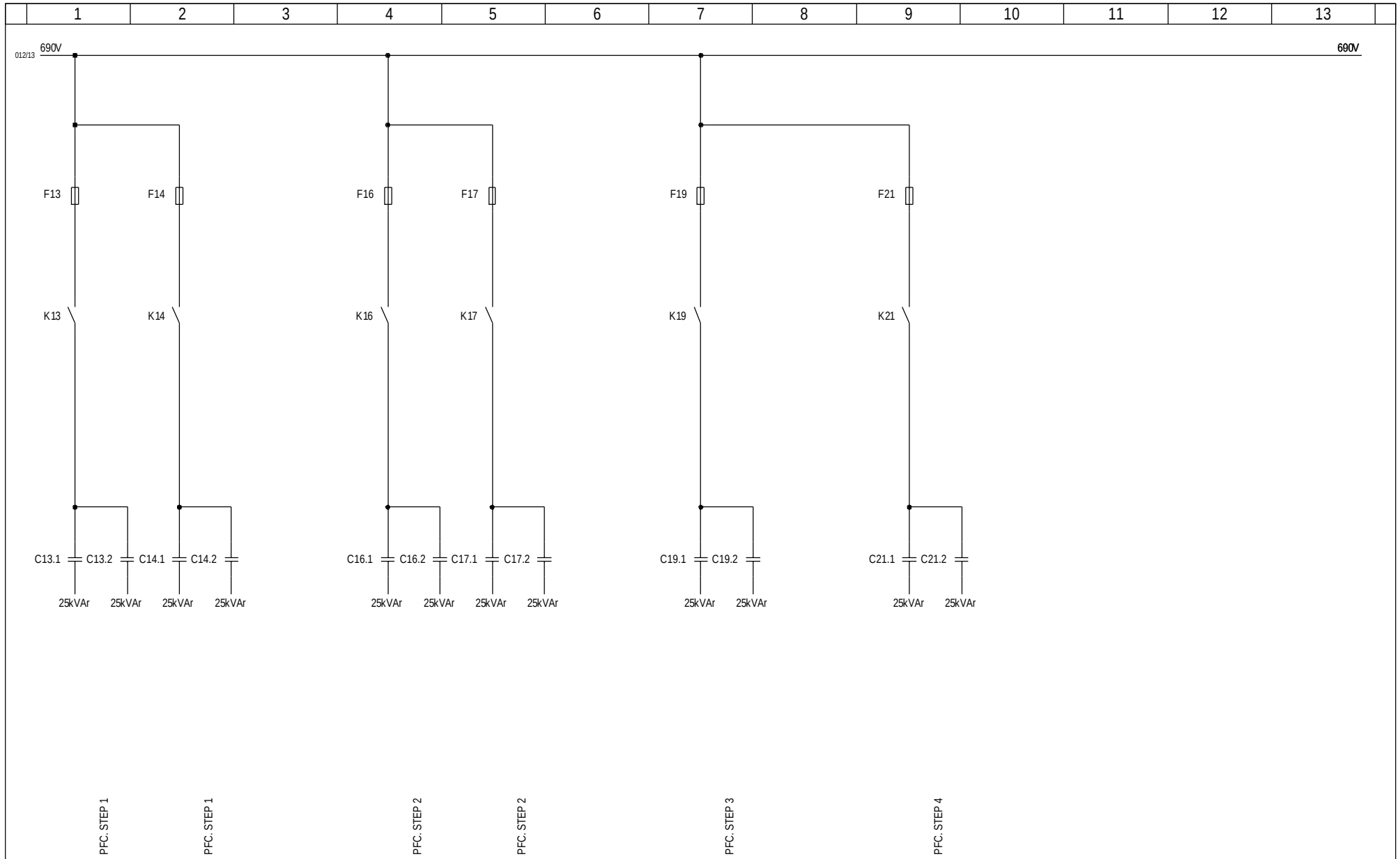

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	Date	Initials	Function	Power Factor Correction Add on for FL +AT3		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934703	Cont. sheet 014	Sheet 013

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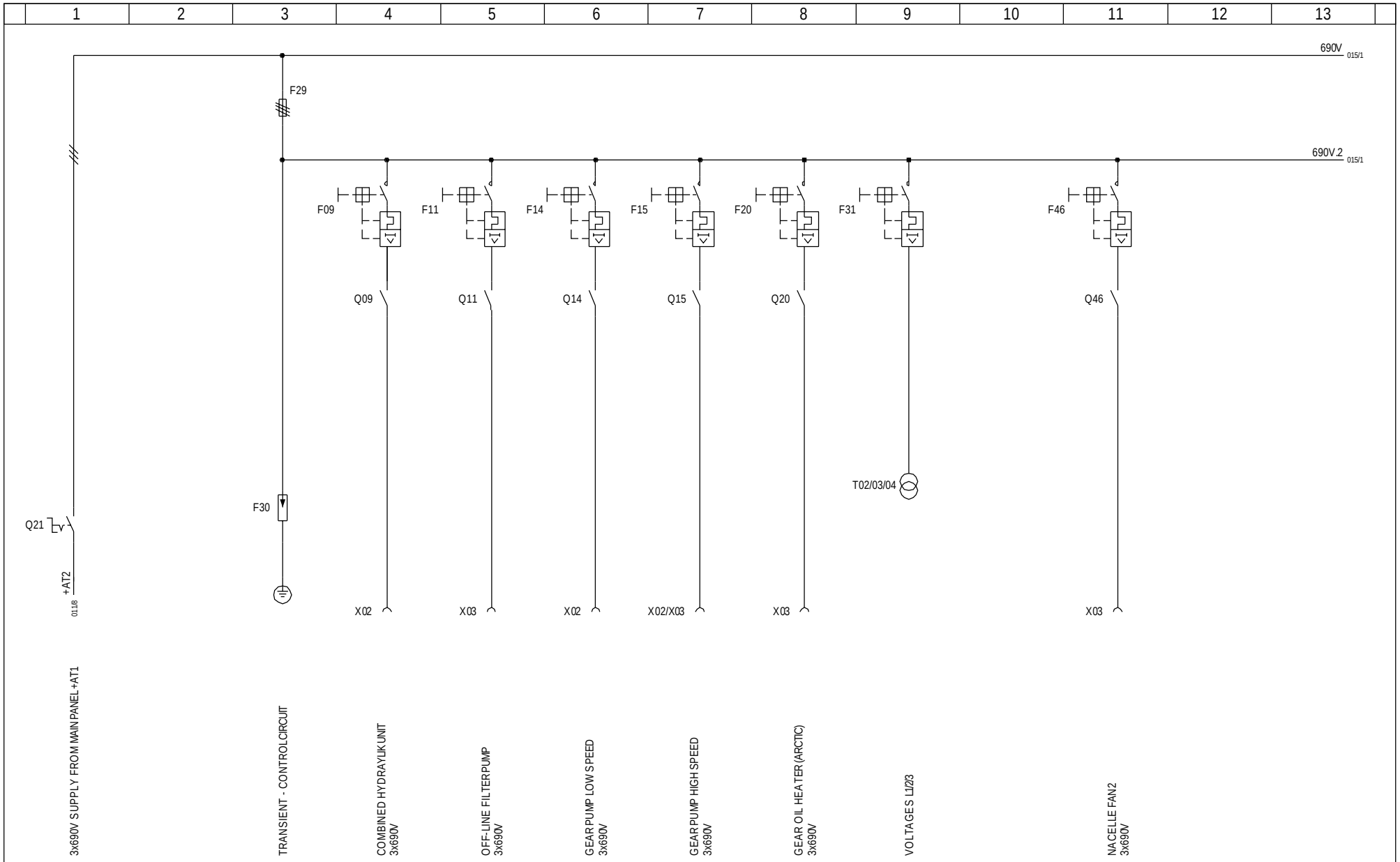

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	Date	Initials	Function	Control Panel +AT2		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934703	Cont. sheet 015	Sheet 014

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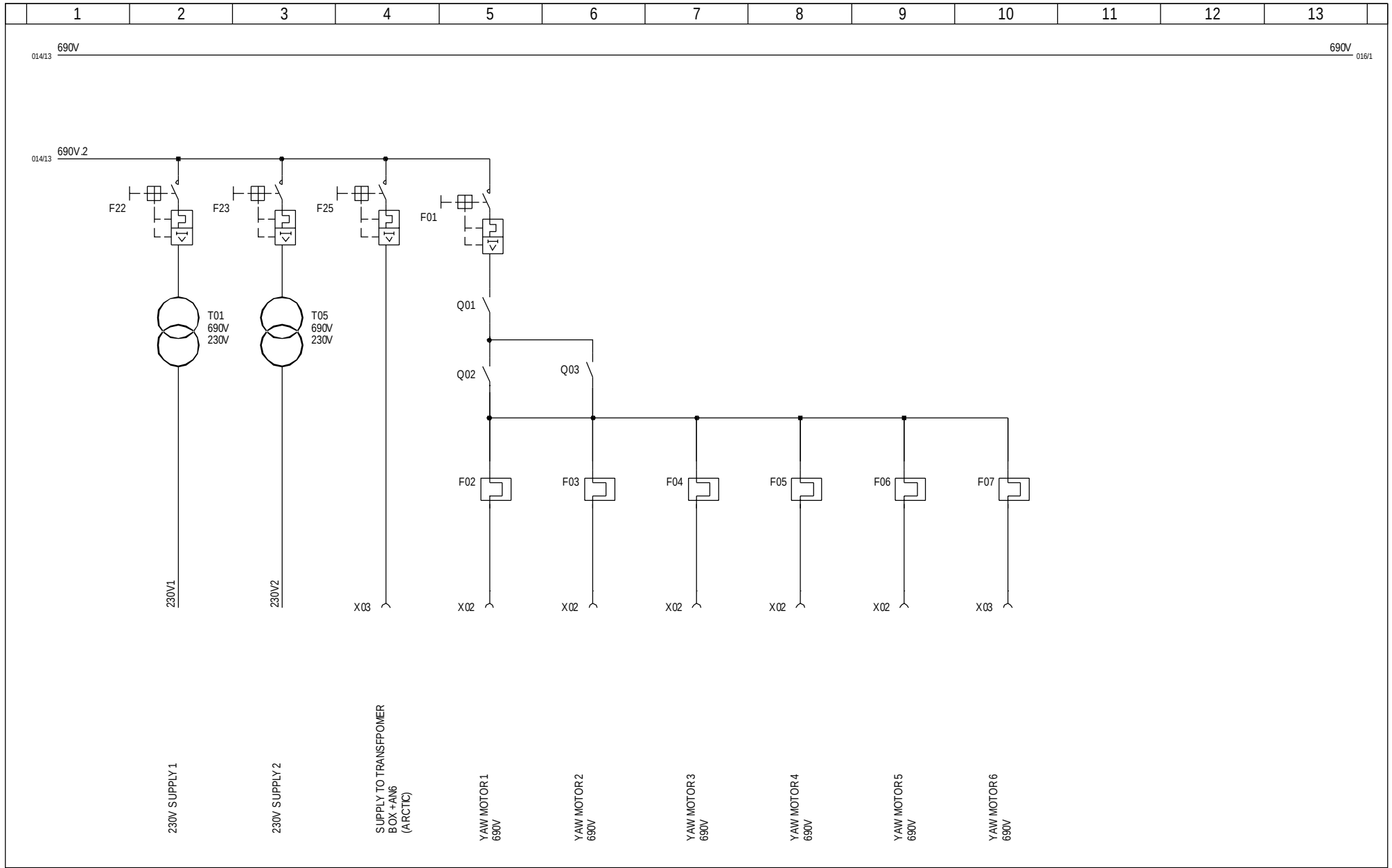

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	Date	Initials	Function	Control Panel +AT2		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934703	Cont. sheet 016	Sheet 015

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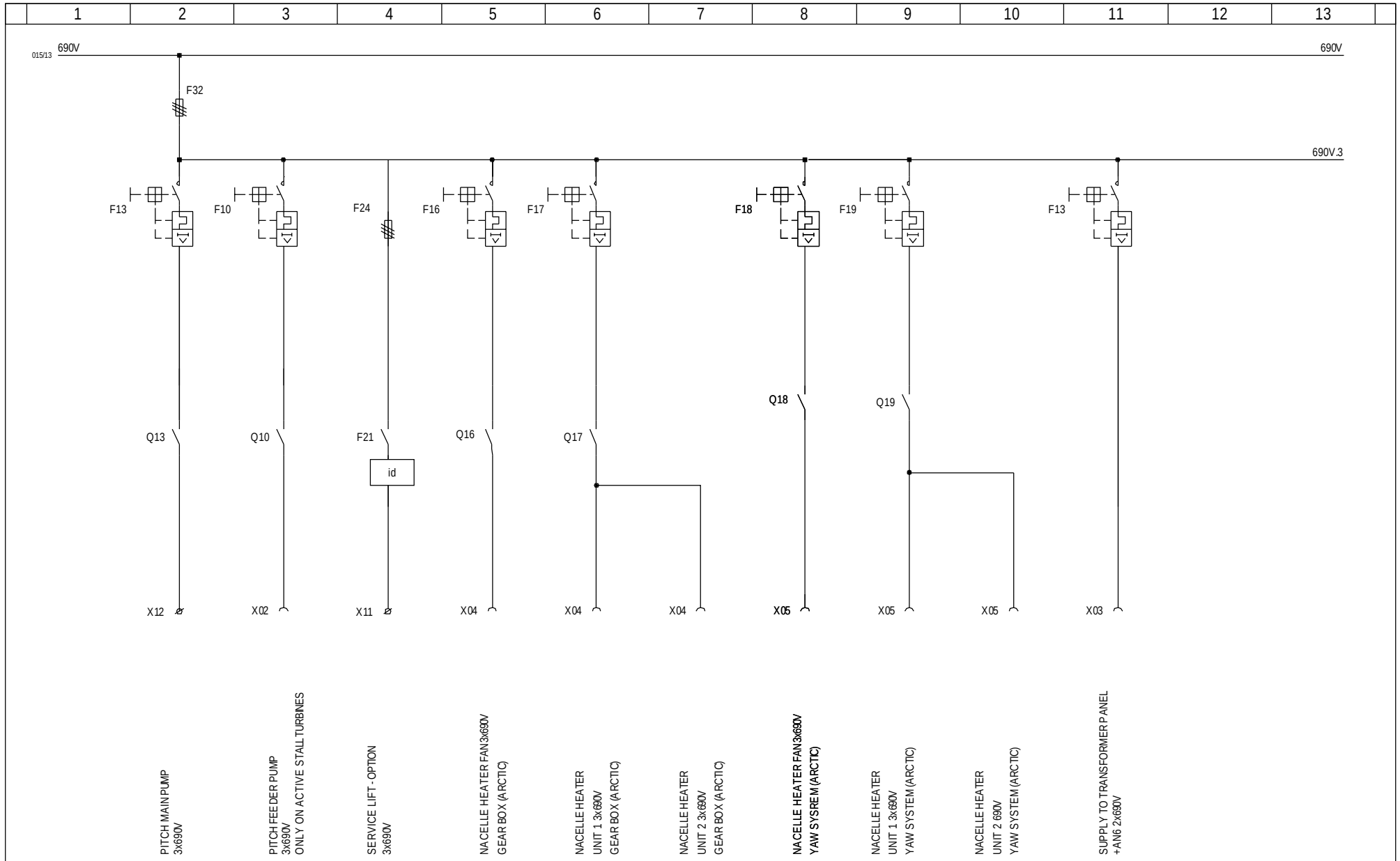

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	Date	Initials		
Designed	070628	FLT	Function: Control Panel +AT2	
Approved	070628	FLT	Project title: Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz	
Revised	070628	INI	Comments	Customer: Vestas Wind Systems A/S
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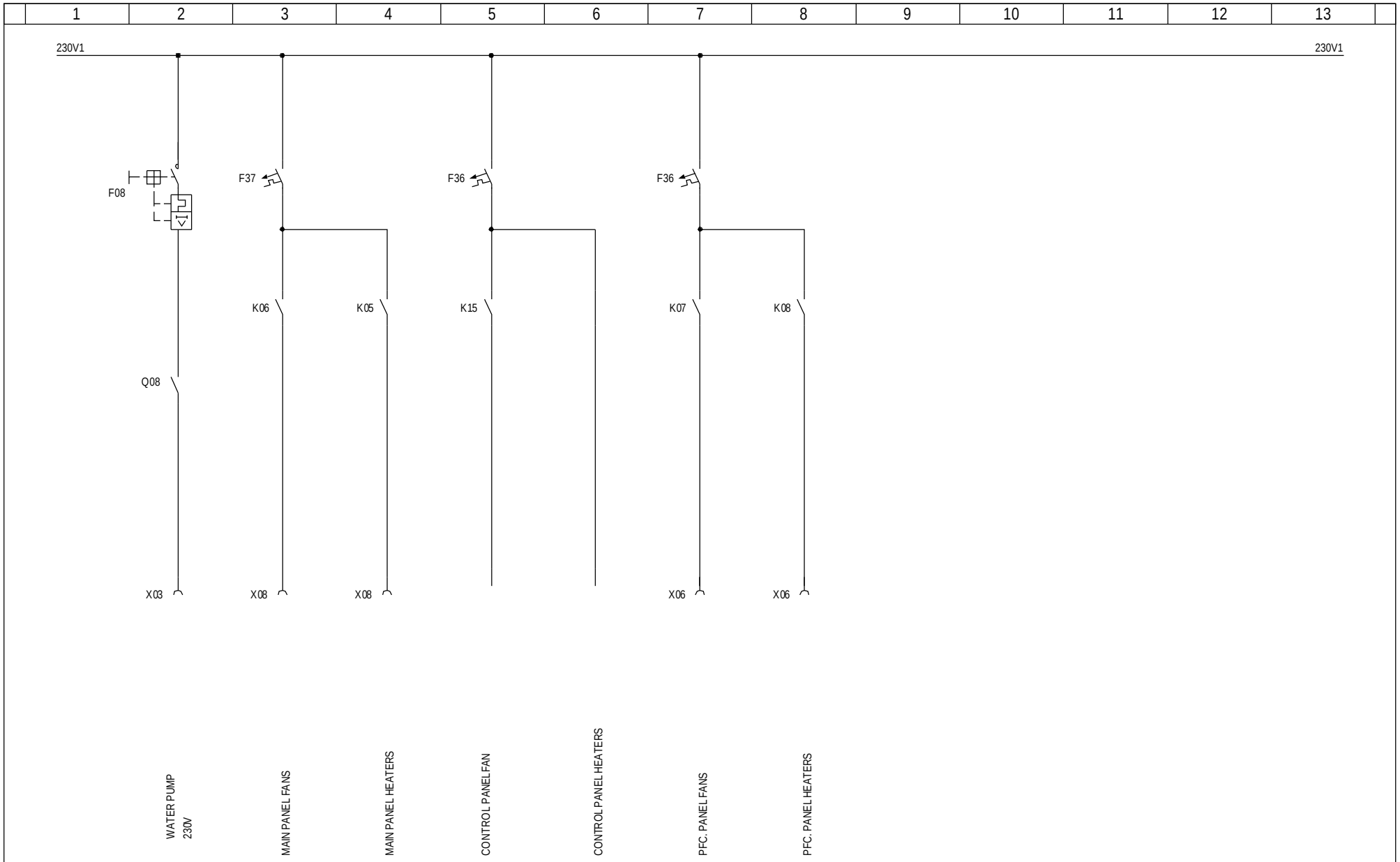

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	Date	Initials	Function	Control Panel +AT2		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934703	Cont. sheet 018	Sheet 017

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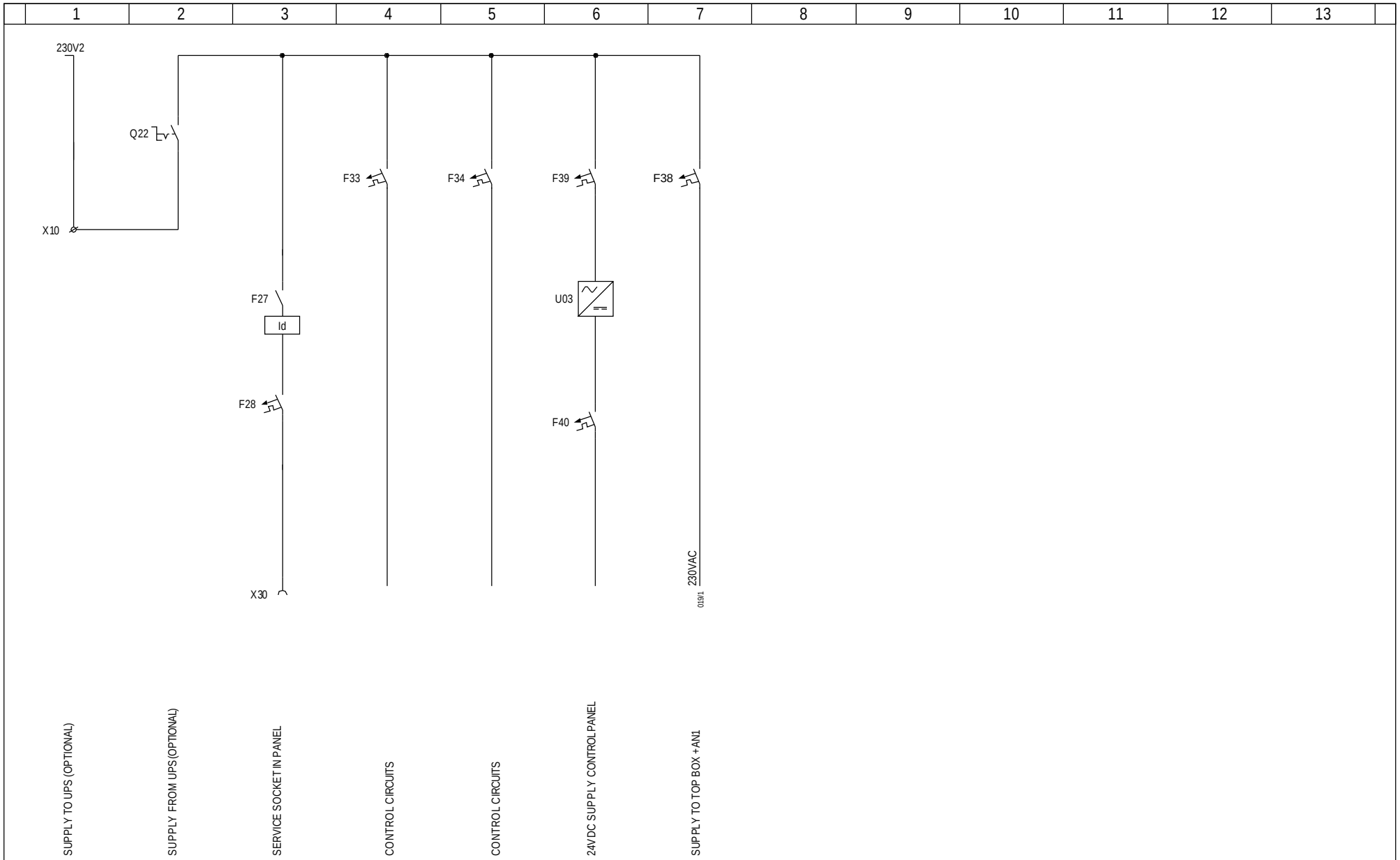

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	Date	Initials	Function	Control Panel +AT2		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
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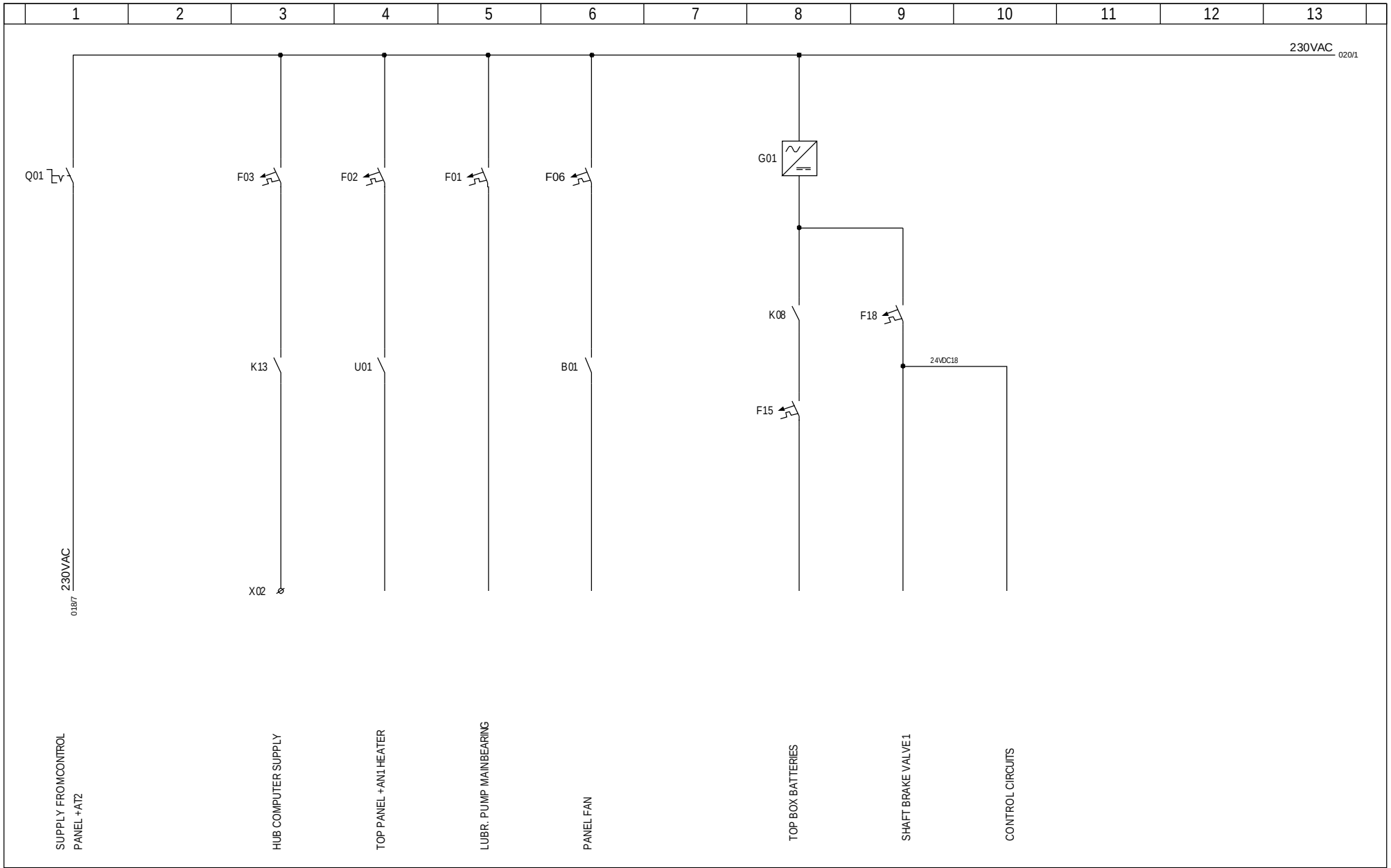

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	Date	Initials	Function	Top Panel +AN1		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934703	Cont. sheet 020	Sheet 019

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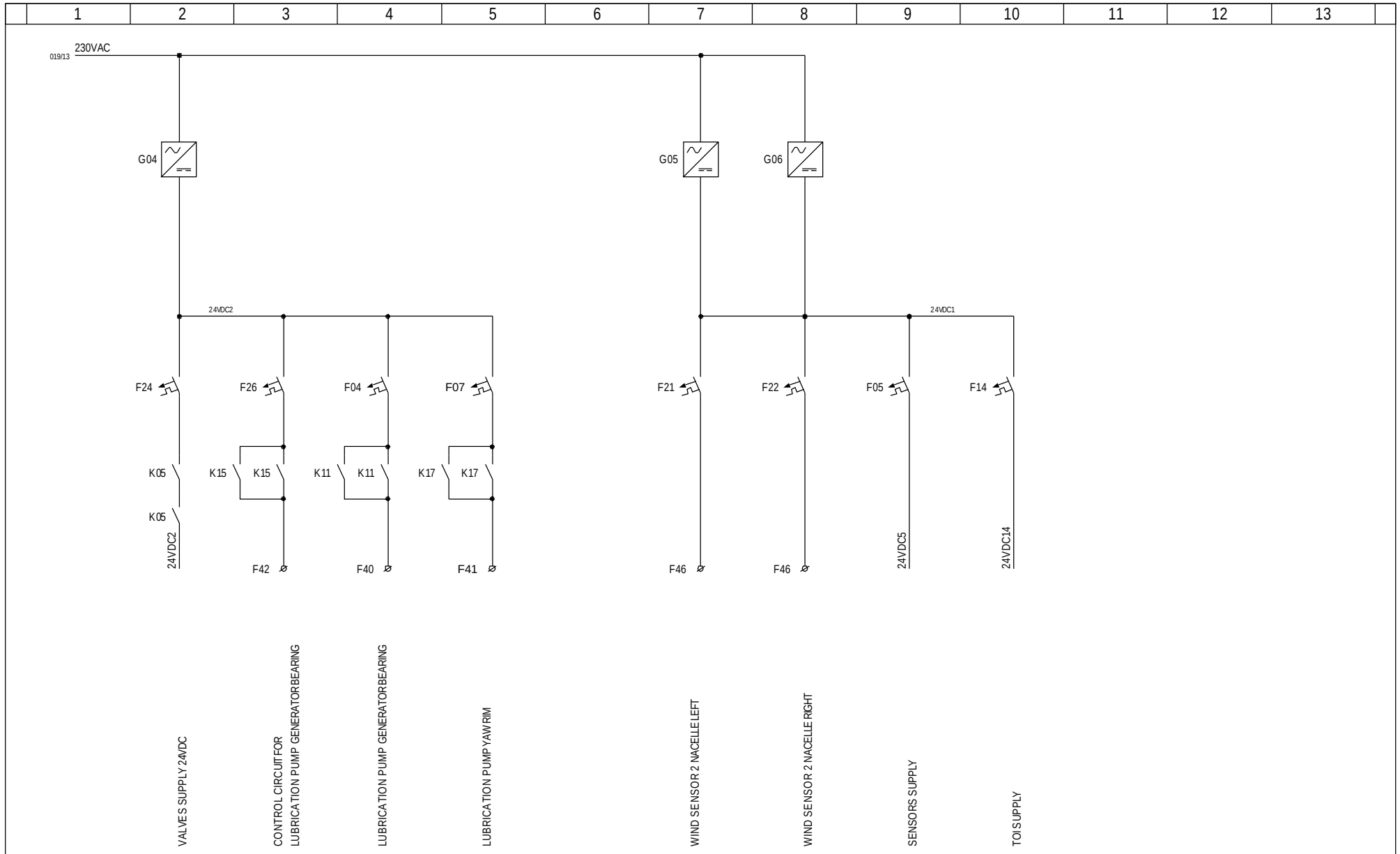

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	Date	Initials	Function	Top Panel +AN1		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
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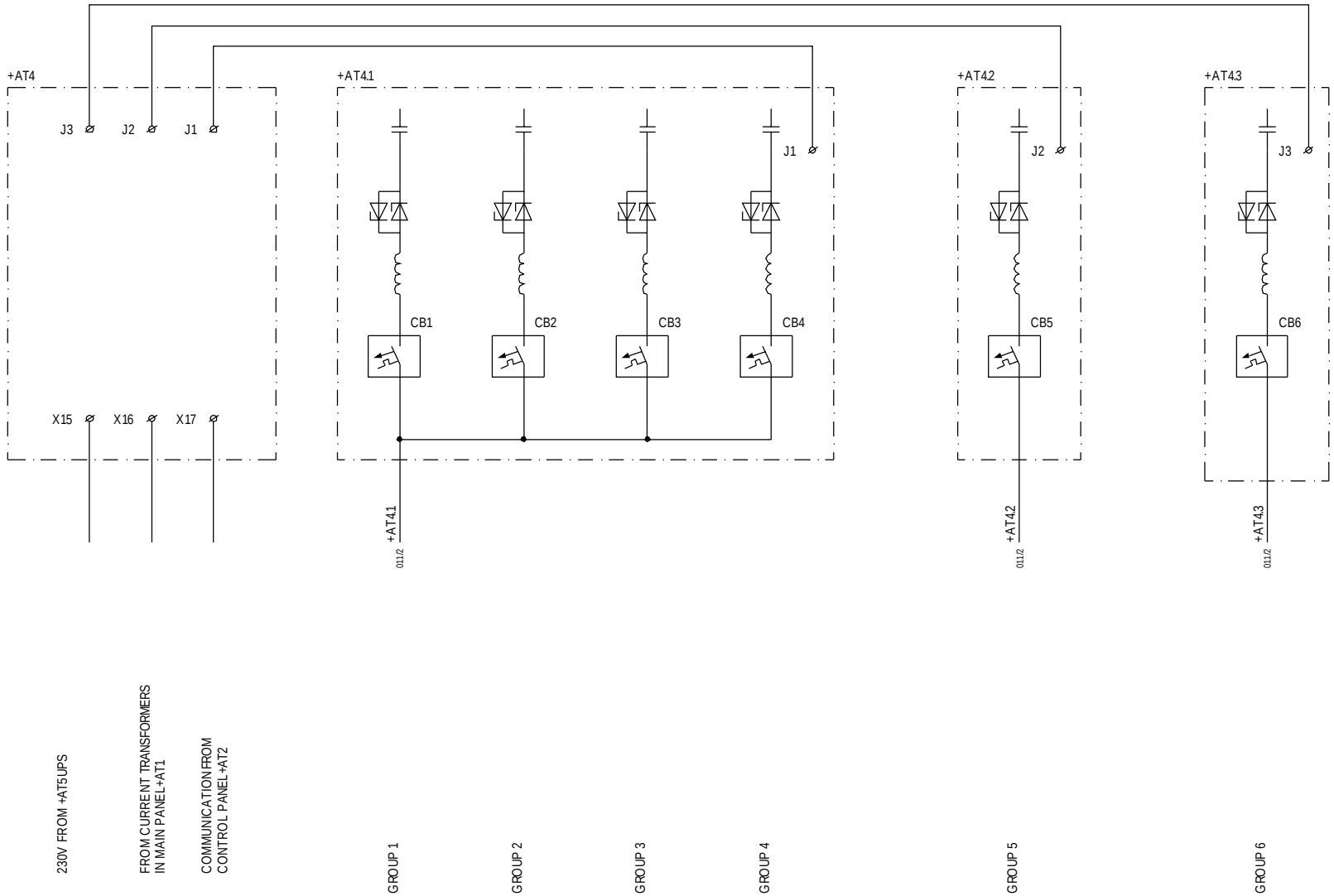

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Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934703	Cont. sheet 022	Sheet 021

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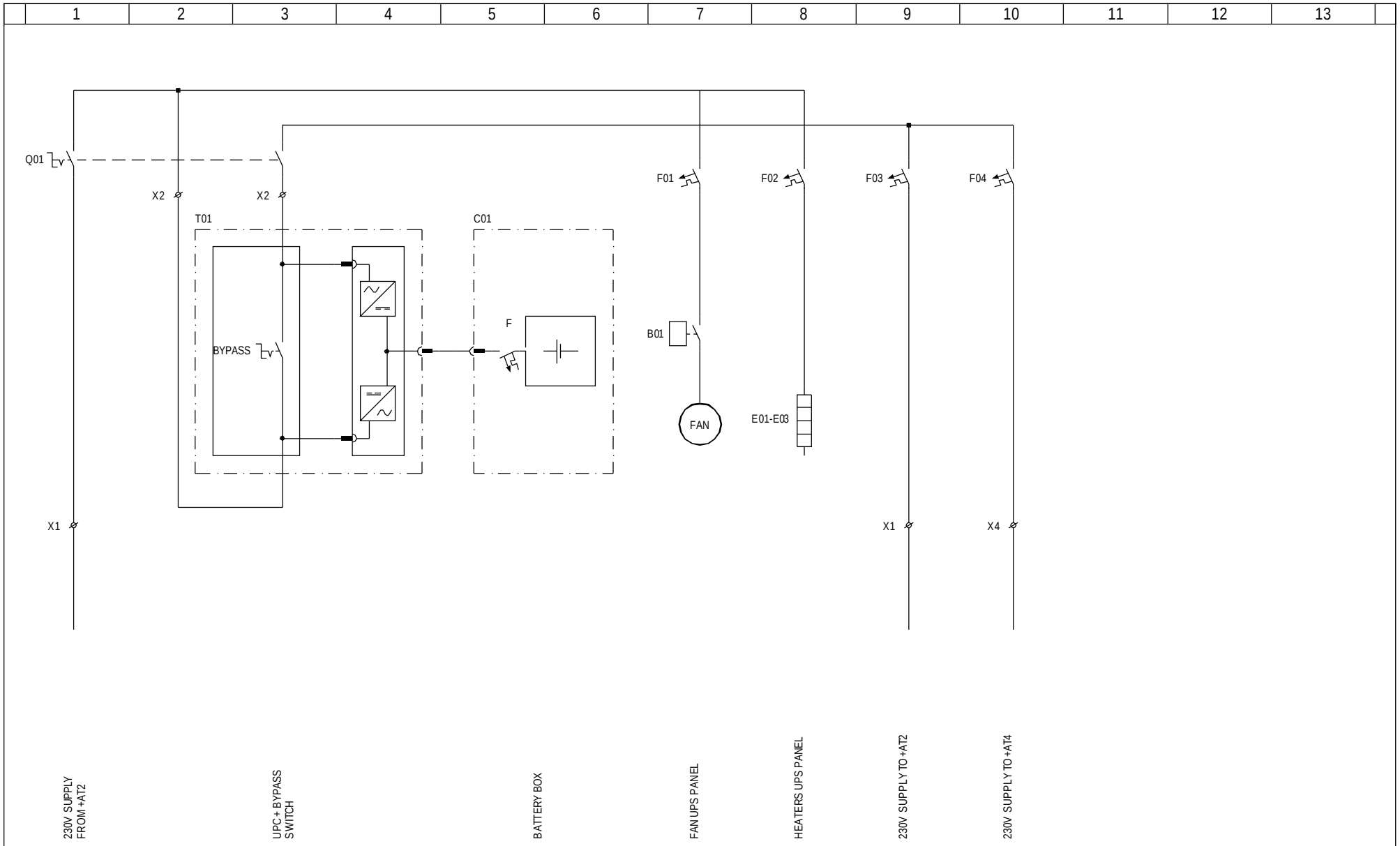

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	Date	Initials	Function	UPS Panel +AT5 Option		
Designed	070628	FLT	Project title	Single Line Diagram, V82-1.65MW 1Speed MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934703	Cont. sheet -	Sheet 022

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Change Info

Item no.	***Item text:***
None	**Emergency Line Diagram, V82-1.65MW 690V 50Hz MRK III**

Active revision *for production*

Drawing no.: 6016281

Version	Date	Init./App.	Description of change since last revision
01	26.10.2005	INI/FLT	All Pages: References updated. Page 101: U03 terminals no. 1 and 3 correctly placed. S7 corrected to S10. S10 terminals no. 21 and 22 correctly placed. Page 104: Text “Hub Hatch Override Pendant” correctly placed. Page 107: Text “Emergency Stop” added to core 634.

LST no.: None *Material BOM no.: None*

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xxx/	Write the change

Old revisions *for service*

Drawing no.: 6016281

Version	Date	Init./App.	Description of change since last revision
00	11.05.2005	FLT/FLT	First version

LST no.: xxxxxxxx *Material BOM no.: xxxxxxxx*

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xxx/	Write the change

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100	+AT2 Safety stop relay	050511	-
101	+AT2 Safety stop relay	051026	-
102	+AT2 Safety stop relay	050511	-
103	+AN1 Emergency stop relay	050511	-
104	+AN1 Emergency stop relay	051026	-
105	+AT2 TOI Inputs Emergency	050511	-
106	+AN1 TOI Inputs Emergency	050511	-
107	+AN1 TOI In/outputs Activ	051026	-

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	Date	Initials	Function	Table of contents		
Designed	050511	FLT	Project title	Emergency Line, V82 - 1,65MW IEC 690V 50Hz MRK III		
Approved	051026	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	051026	INI	Rev. 01	Drawing no. 6016281	Cont. sheet 100	Sheet 001

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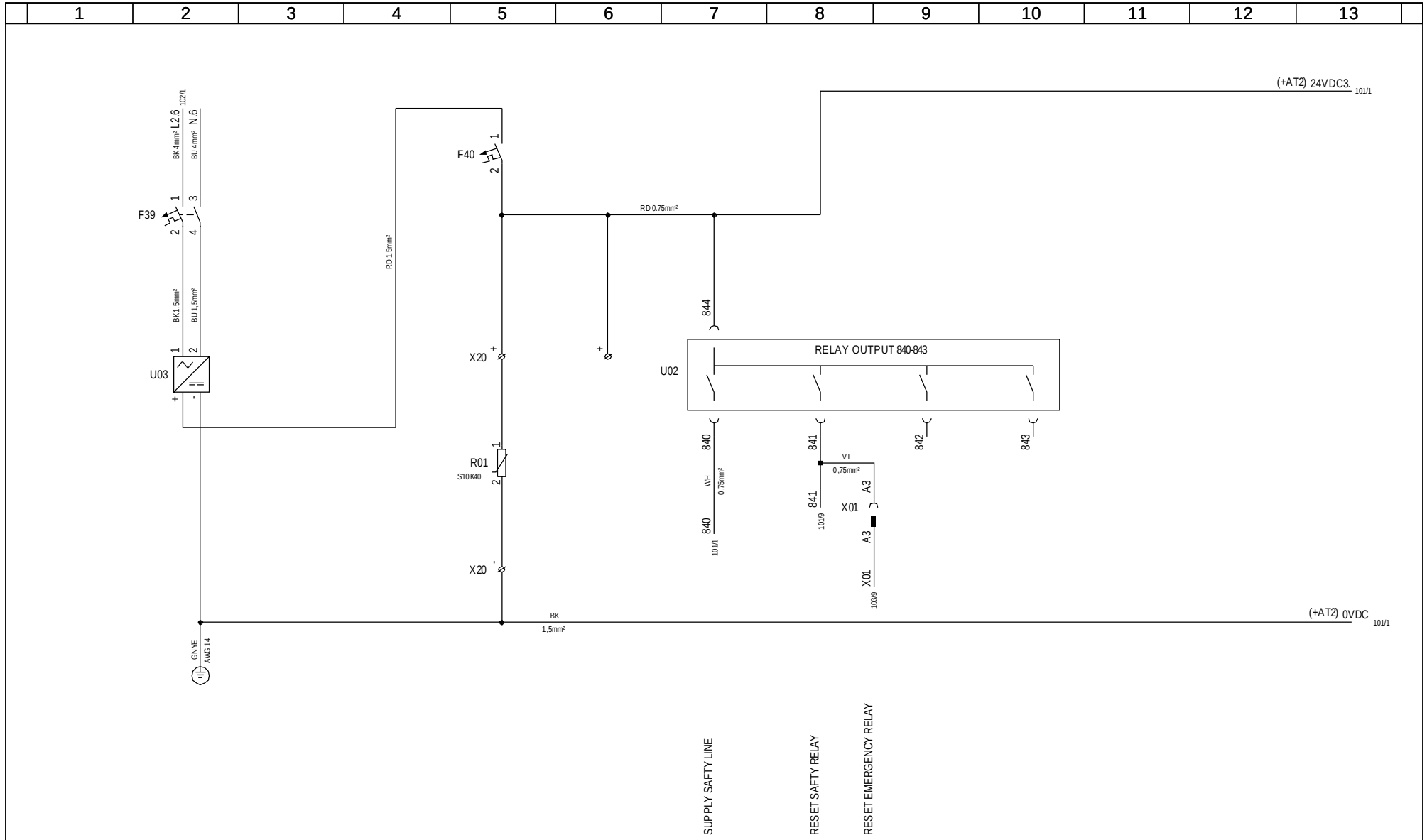
27-10-05 08:24



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Designed	050511	FLT	Project title	Emergency Line, V82 - 1,65MW IEC 690V 50Hz MRK III			
Approved			Comments			Customer	Vestas Wind Systems A/S
Revised	050511	FLT	Rev. -	Drawing no. 6016281		Cont. sheet 101	Sheet 100

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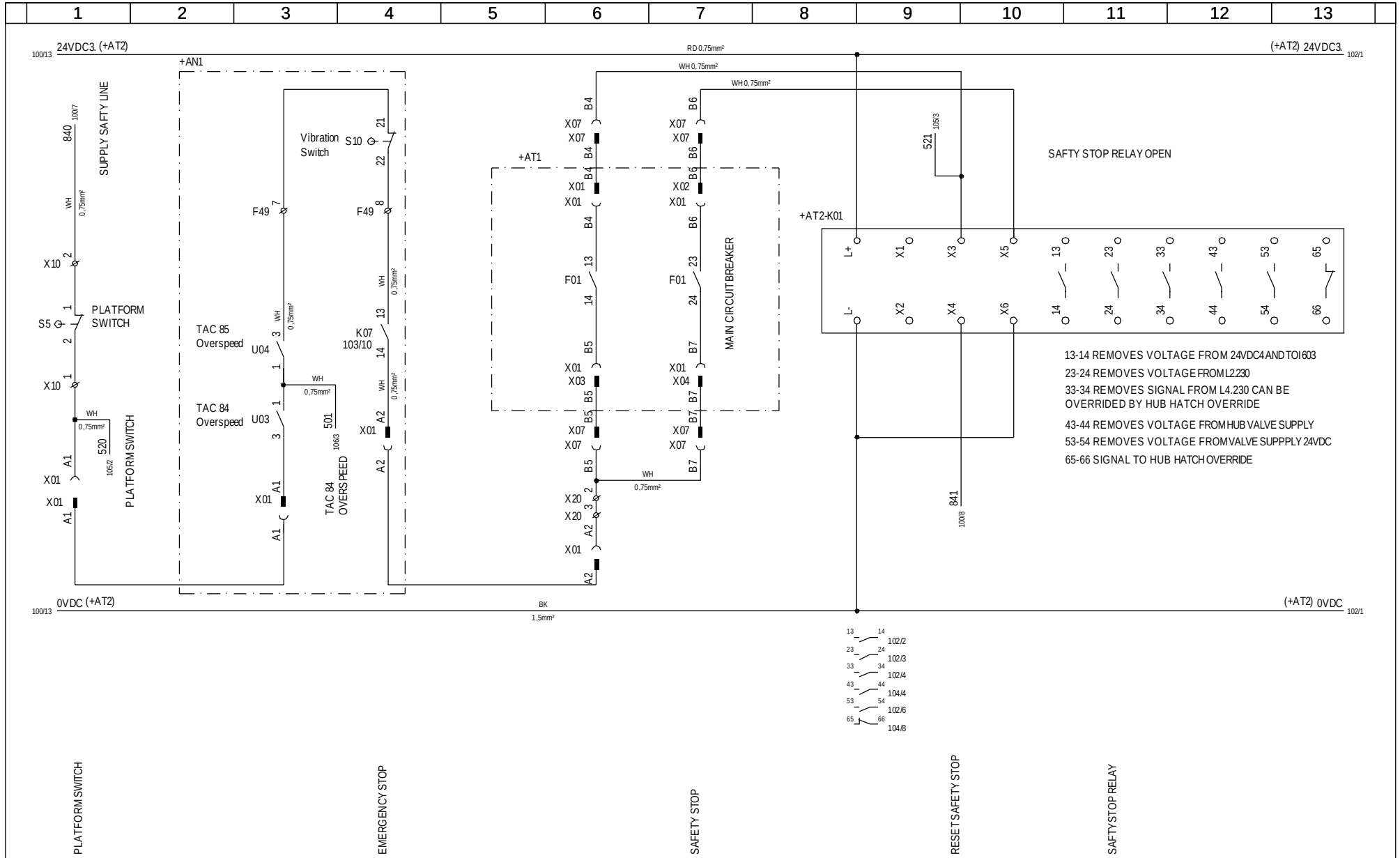

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Designed	050511	FLT	Project title	Emergency Line, V82 - 1,65MW IEC 690V 50Hz MRK III		
Approved	051026	FLT	Comments		Customer	Vestas Wind Systems A/S
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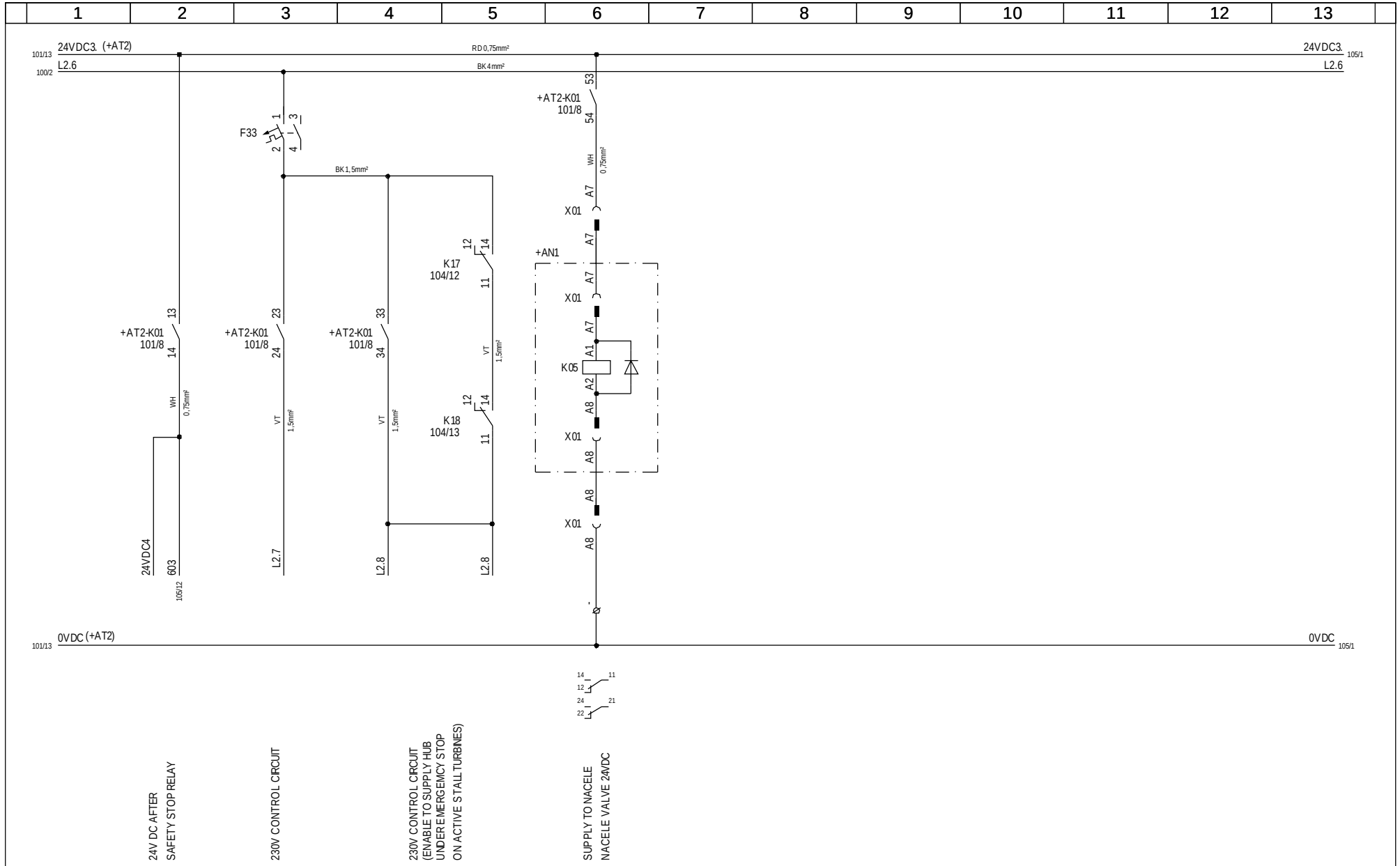
27-10-05 08:24



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	Date	Initials	Function	+AT2 Safety stop relay		
Designed	050511	FLT	Project title	Emergency Line, V82 - 1,65MW IEC 690V 50Hz MRK III		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050511	FLT	Rev. -	Drawing no. 6016281	Cont. sheet 103	Sheet 102

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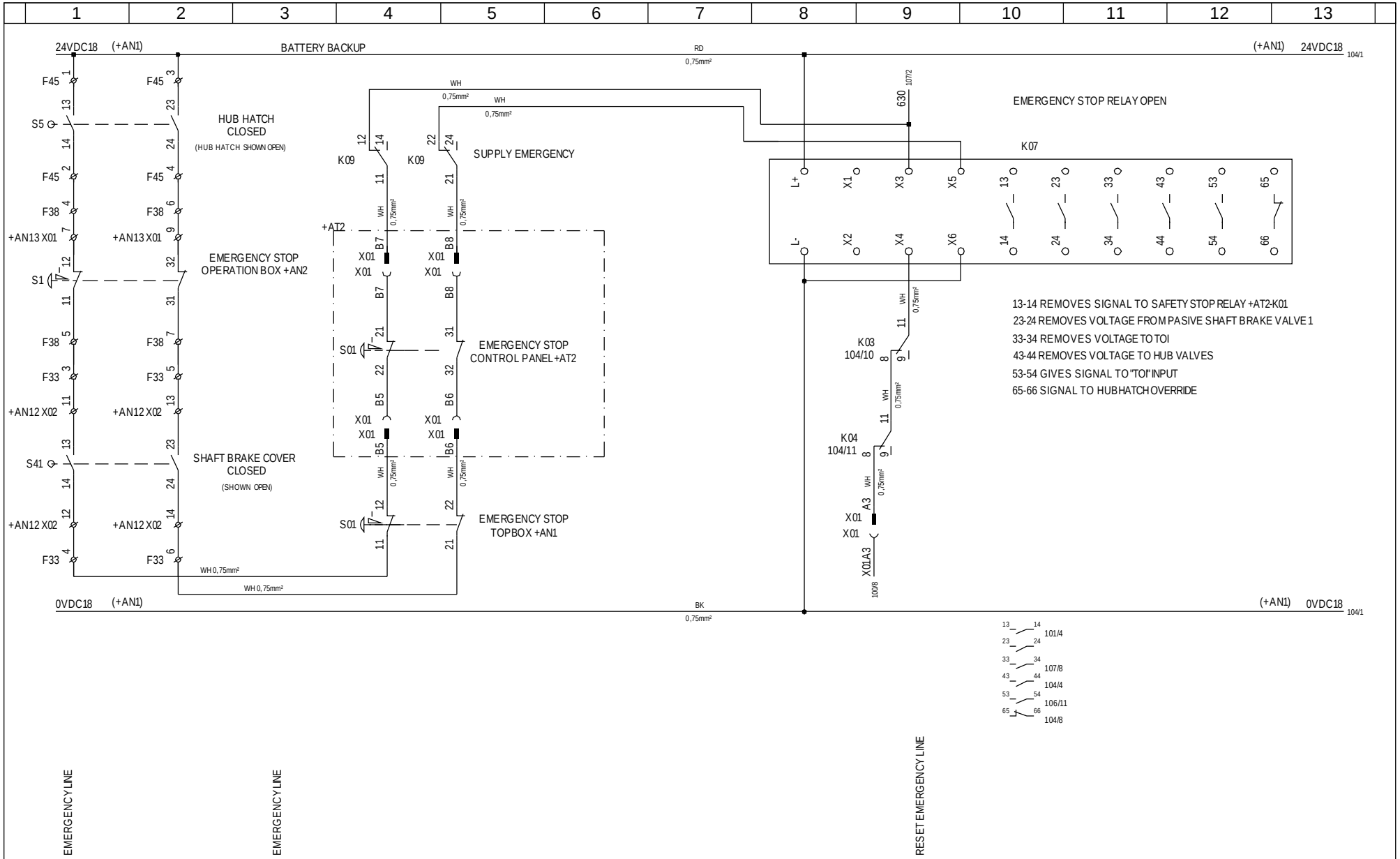

	Date	Initials	Function	+AN1 Emergency stop relay		
Designed	050511	FLT	Project title	Emergency Line, V82 - 1,65MW IEC 690V 50Hz MRK III		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050511	FLT	Rev. -	Drawing no. 6016281	Cont. sheet 104	Sheet 103

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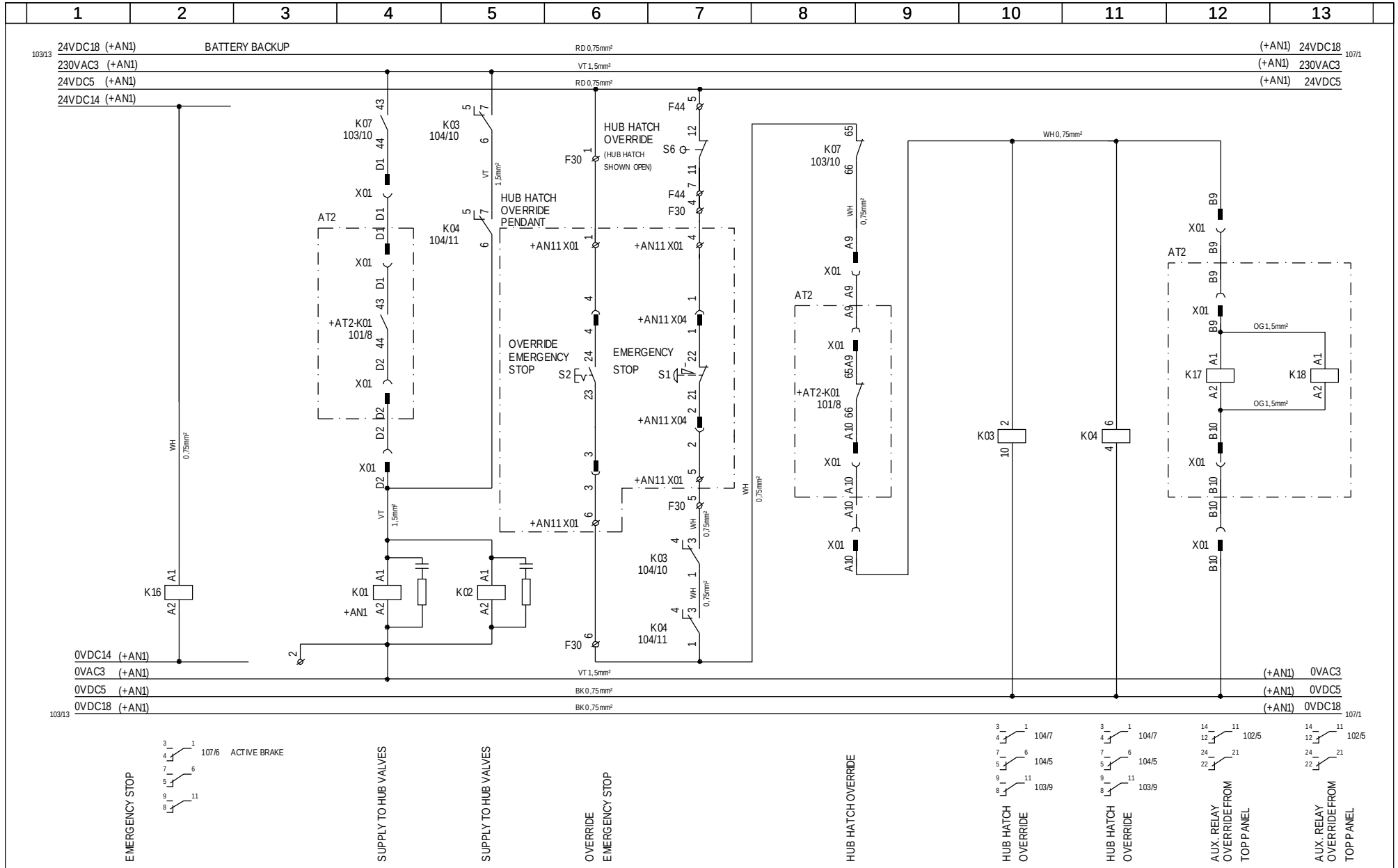

27-10-05

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	Date	Initials	Function	+AN1 Emergency stop relay		
Designed	050511	FLT	Project title	Emergency Line, V82 - 1,65MW IEC 690V 50Hz MRK III		
Approved	051026	FLT	Comments		Customer	Vestas Wind Systems A/S
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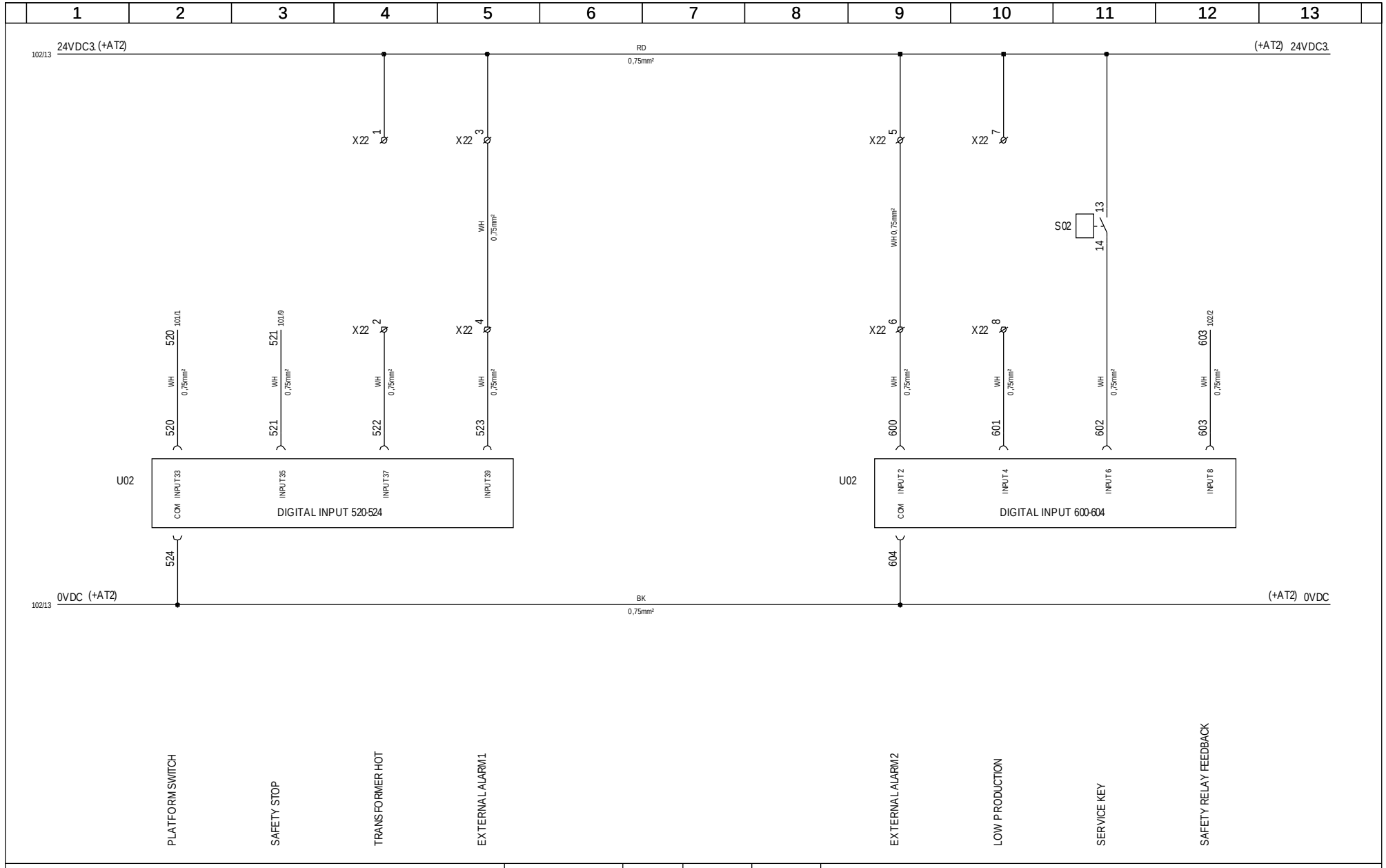

27-10-05
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	Date	Initials	Function	+AT2 TOI Inputs Emergency stop relay		
Designed	050511	FLT	Project title	Emergency Line, V82 - 1,65MW IEC 690V 50Hz MRK III		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050511	FLT	Rev. -	Drawing no. 6016281	Cont. sheet 106	Sheet 105

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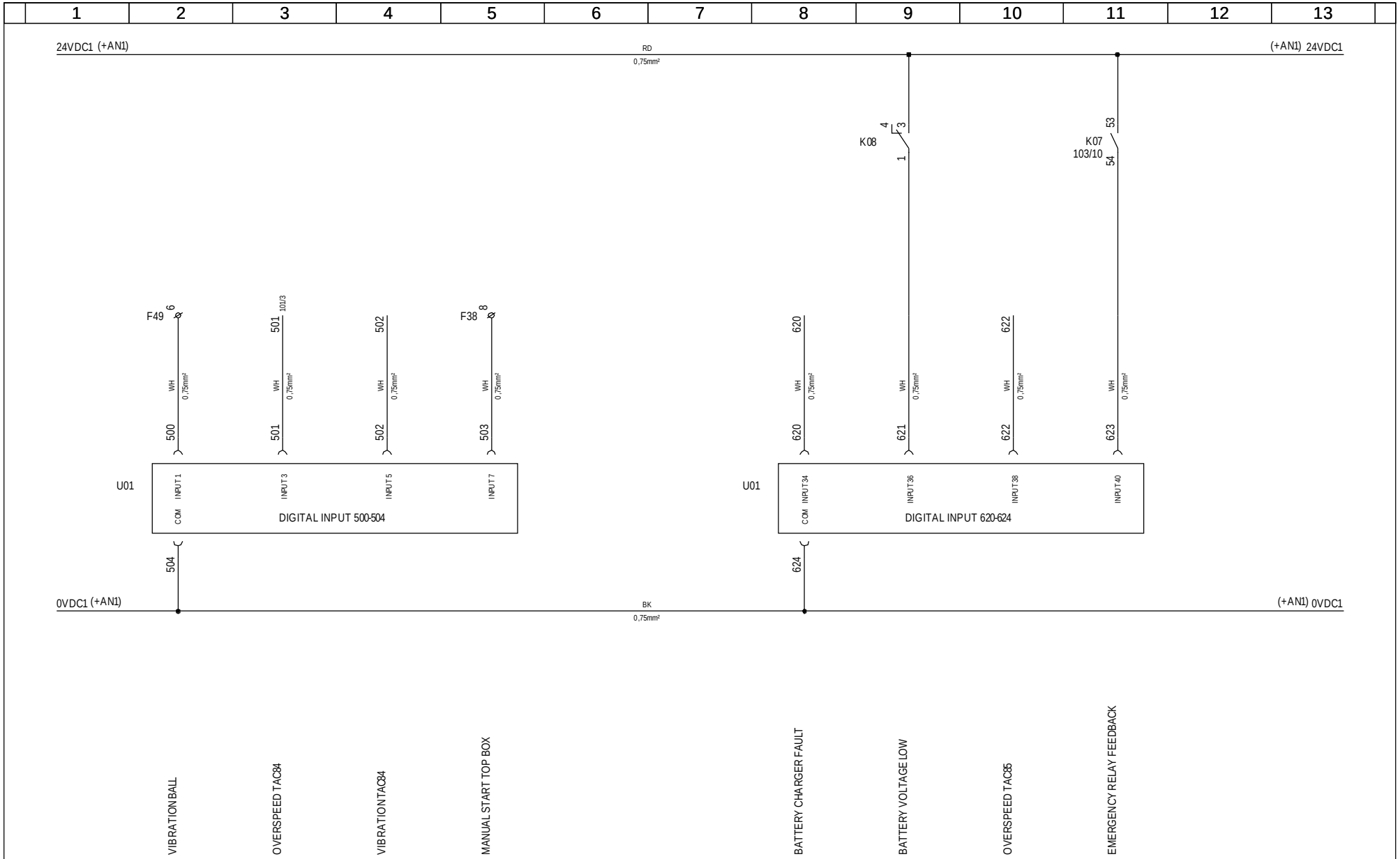

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	Date	Initials	Function	+AN1 TOI Inputs Emergency stop relay		
Designed	050511	FLT	Project title	Emergency Line, V82 - 1,65MW IEC 690V 50Hz MRK III		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050511	FLT	Rev. -	Drawing no. 6016281	Cont. sheet 107	Sheet 106

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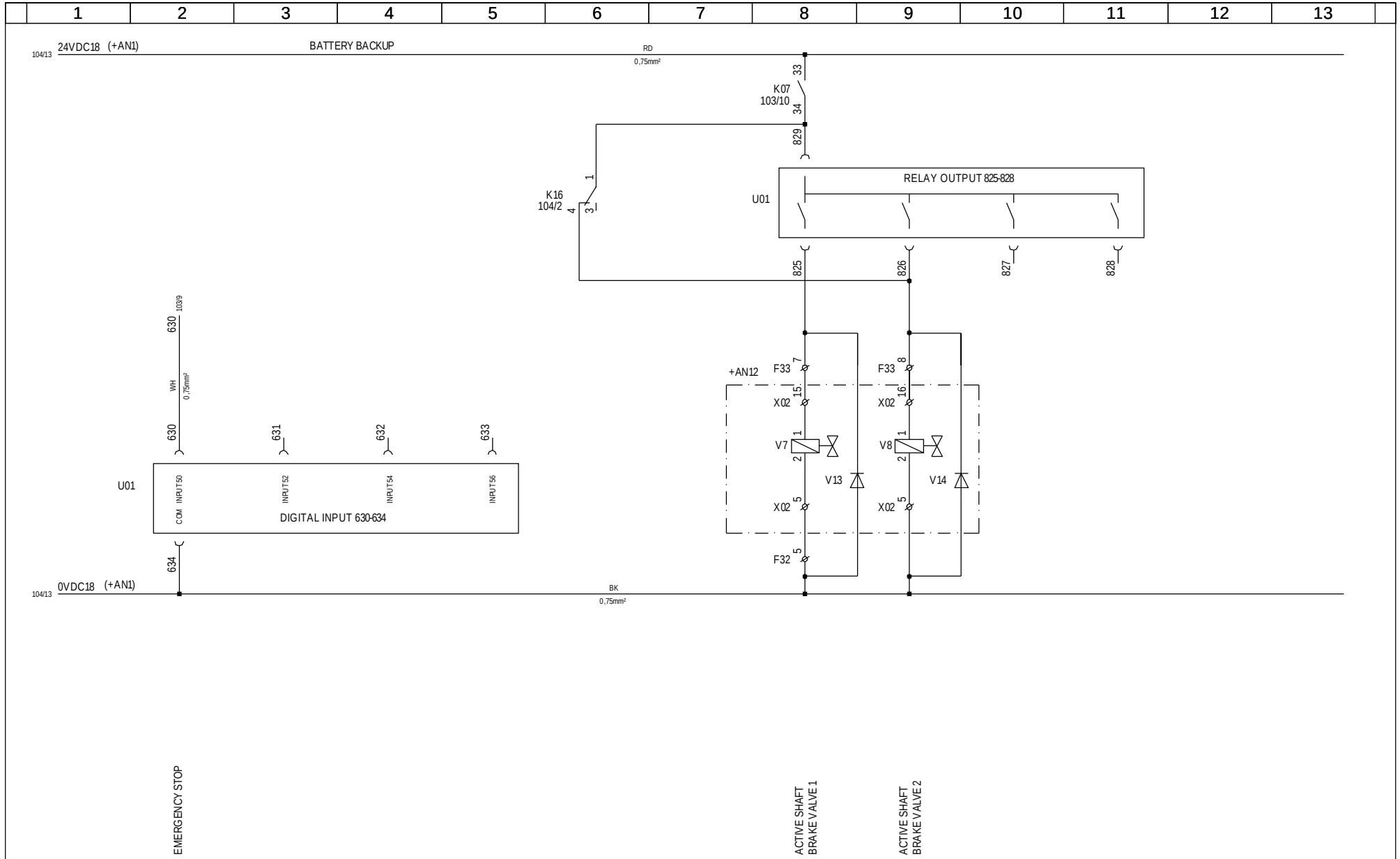

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	Date	Initials	Function	+AN1 TOI In/outputs Active Brake Emergency stop relay		
Designed	050511	FLT	Project title	Emergency Line, V82 - 1,65MW IEC 690V 50Hz MRK III		
Approved	051026	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	051026	INI	Rev. -	Drawing no. 6016281	Cont. sheet -	Sheet 107

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Change Info

Item no.	***Item text:***
765455	**Main Panel +AT1, V82-1.65MW 1-Speed 690V 50Hz MK5**

Active revision for production

Drawing no.: 6012514

Version	Date	Init./App.	Description of change since last revision
08	2006-12-13	INI/SLB	Changed with ECO 219510_ Grid++ and PCS Converter OPTION removed. Page 031: T04, T05 & T06 Current transformers removed. T07 Power converter removed. F17 Fuse removed. Page 040: X07.C5 Text changed to “Spare for power consumption”. Page 043: W598 connection between +AT1 and PCS converter removed. Page 100: Text “OR=BA+1S1 if present” removed Page 102: T04, T05, T06, T07, F07 & F17 with connections removed. Page 200: Connections L2.230 and L2.N removed.

BoM no.: 765455 — *Document no.: 0000-1231*

Version	Date	Init./App.	Description of change since last revision
01	2009-02-04	INI/FLT	Changed with ECO 228199, 228836, 228988, 229786, 30842, 230701 Replaced: 60004316 with 093693 CONTACTOR EH1200 240/50HZ Removed: 098429 SUPPORT RAIL MAIN PANEL V82 (50Hz) 10 units removed Replaced: 098334 with 098304 CABINET TS8 1 DOOR W/W Replaced: 60000674 with 195126 PROTC SA DG S 600 FM 600VAC Replaced: 60004316 with 093693 CONTACTOR EH1200 240/50HZ Removed: 60014668 EXHAUST FILT, 60014655 FAN 1-PH, 60014608 FAN 1-PH Added: 092048 OUTLET FILTER, 60110934 FAN 230V

Old revisions for service

Drawing no.: 6012514

Version	Date	Init./App.	Description of change since last revision
07	2006-10-24	INI/FLT	Changed with ECO 217924 + 217924 Implementation of CMS & revised label. Page 030: Panel Front Layout updated with revised labels. Page 039: New page with following text added. ” Use copper conductors only for external wires and cables. Use 60°C cables for currents less than 100Amps and 75°C cables for higher currents”.
06	2006-06-21	INI/FLT	All pages, project title updated. Page 030: Panel Front Layout updated with two new warning labels 118934.
05	2005-01-24	SLB/SLBP	Implementation of PCS Converter Page 001 Updated Page 031: Marking for cable connection 2L1, 2L2 and 2L3 added. Page 043: Connection for X04, W598 and PCS Converter =BA+1S1 added. Page 100: Text to terminals 2L1, 2L2 and 2L3 added. Text changed “TO +AT4 OR =BA+1S1 IF PRESENT”.
04	2004-11-15	INI/CHO	All pages updated with Vestas logo. Page 040: W590 cable ID changed from 37AWG18 to 37G1 mm². Page 100: Text “+AT5 if present” corrected to “ to +AT4 if present”. Page 104: Terminals U, V and W added. Cable color added.
03	2004-07-14	INI/CHO	Page 001: Updated Page 100: F01 text grid + settings added, std. settings updated. Page 202: E01 and E02 settings changed from 10°c to 60°C.
02	2004-03-15	CHO/CHO	Page 001: Updated Page 040: Texts updated Page 044: X11 terminals corrected Page 102: X11 terminals corrected
01	2003-10-25	ATM/ATM	First version

BoM no.: 765455 — *Document no.: 0000-1231*

Version	Date	Init./App.	Description of change since last revision
00	2007-07-05	INI/FLT	First version

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1	2	3	4	5	6	7	8	9	10	11	12	13

PAGE	CONTENT	DATE	REVISION
001	Table of Contents	061213	08
030	Panel Front View	061024	-
031	Panel outline	061213	-
032	Terminals X02, X05, X08,	060621	-
039	Cable Connections	061024	-
040	External connections X01	061213	-
041	External connections X07	061213	-
042	External connections trig	060621	-
043	External connections X04	061213	-
044	External connetions light	060621	-
100	Main CB	061213	-
101	AUX Supply	061213	-
102	AUX Supply	060621	-
103	Thyristor connections	060621	-
104	Generator connections	060621	-
200	Internal connections	061213	-
201	Internal connections	060621	-
202	Internal connections	060621	-

13-12-06
16:10

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	Date	Initials	Function	Table of Contents		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	061213	SLB	Comments		Customer	Vestas Wind Systems A/S
Revised	061213	INI	Rev. 08	Drawing no. 6012514	Cont. sheet 030	Sheet 001

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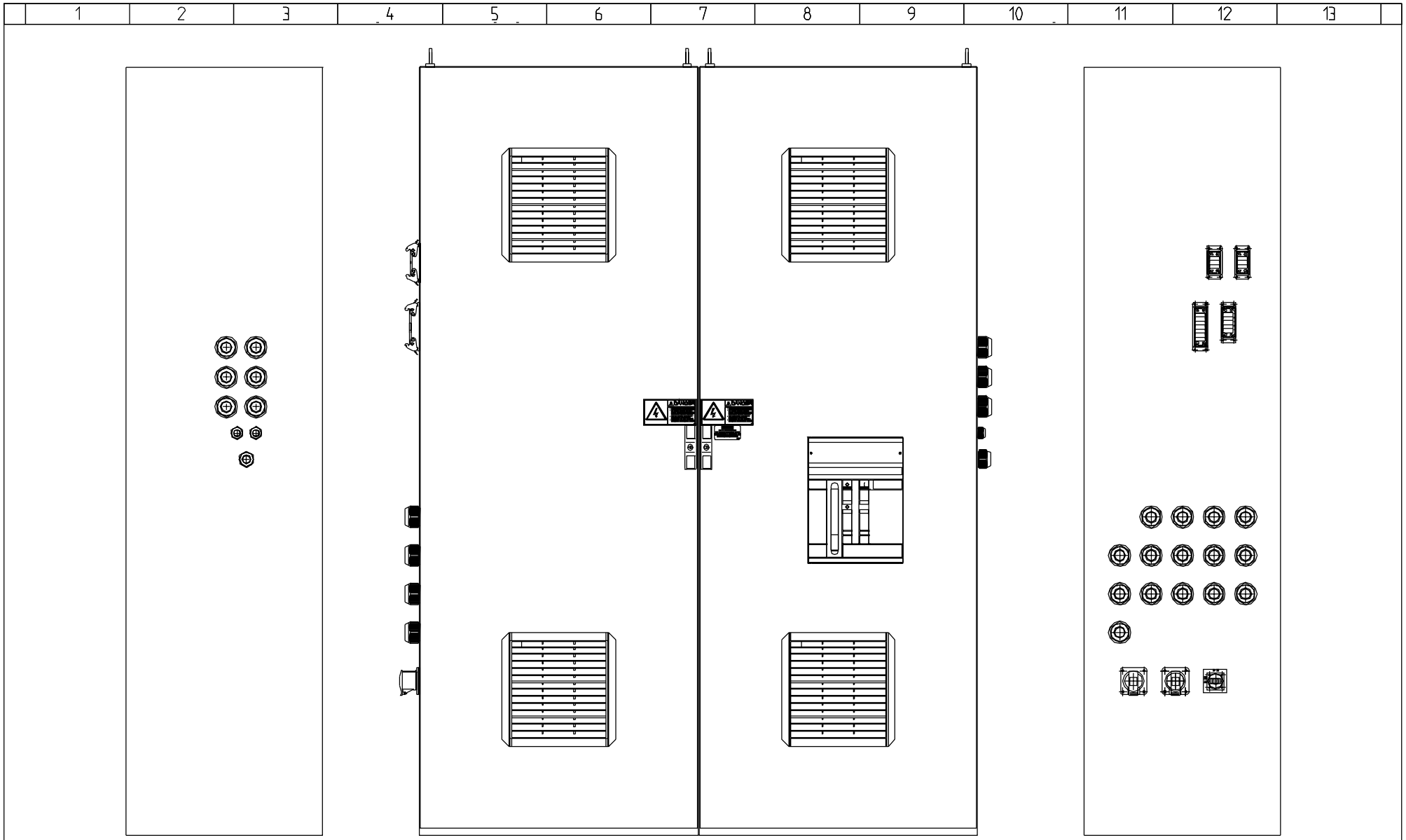

1600*2200*600mm (W*H*D)
Weight 830Kg

13-12-06
16:10

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	Date	Initials	Function	Panel Front View		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	061024	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	061024	INI	Rev. -	Drawing no. 6012514	Cont. sheet 031	Sheet 030

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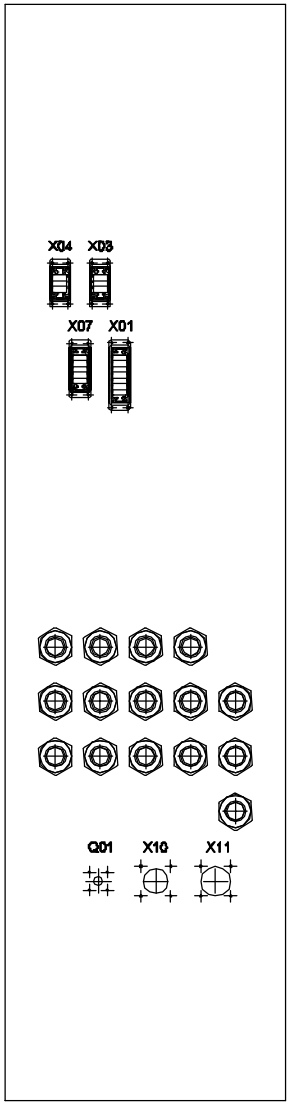
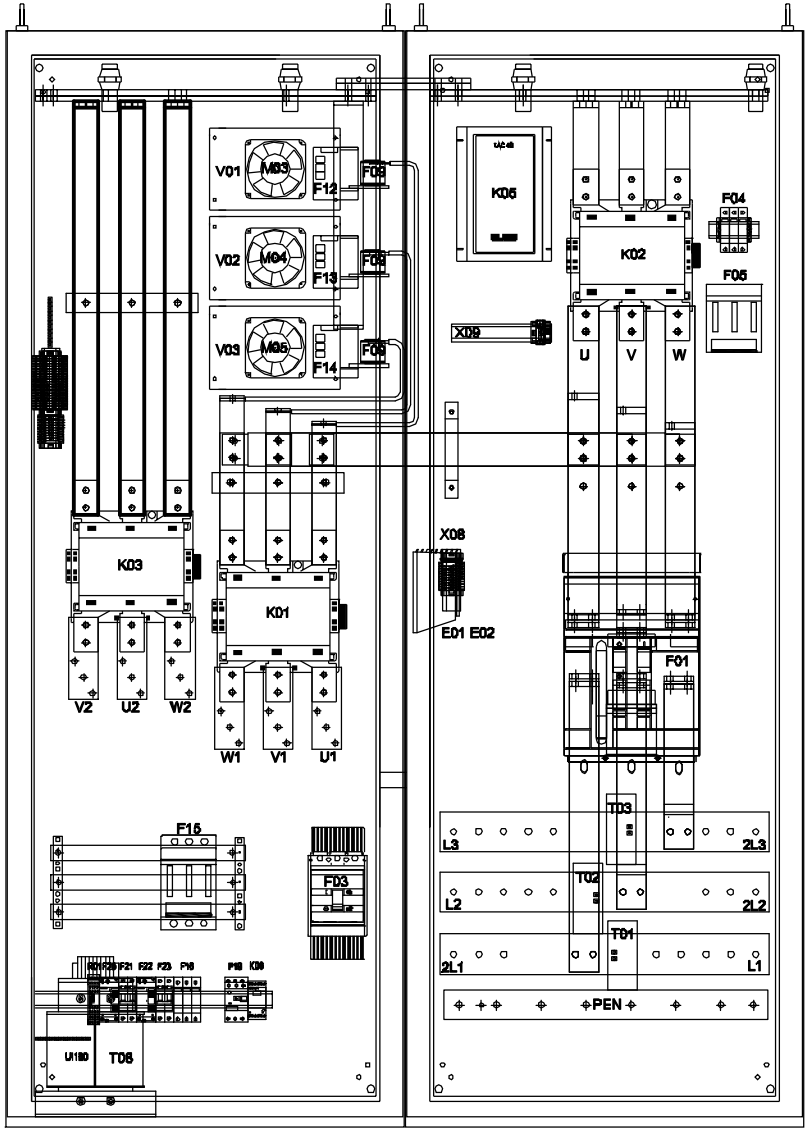
Inside view of left side panel





Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel outline
		Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III
		Approved	061213	SLB	Comments	Customer: Vestas Wind Systems A/S
		Revised	061213	INI	Rev. -	Drawing no. 6012514 / Cont. sheet 032 / Sheet 031

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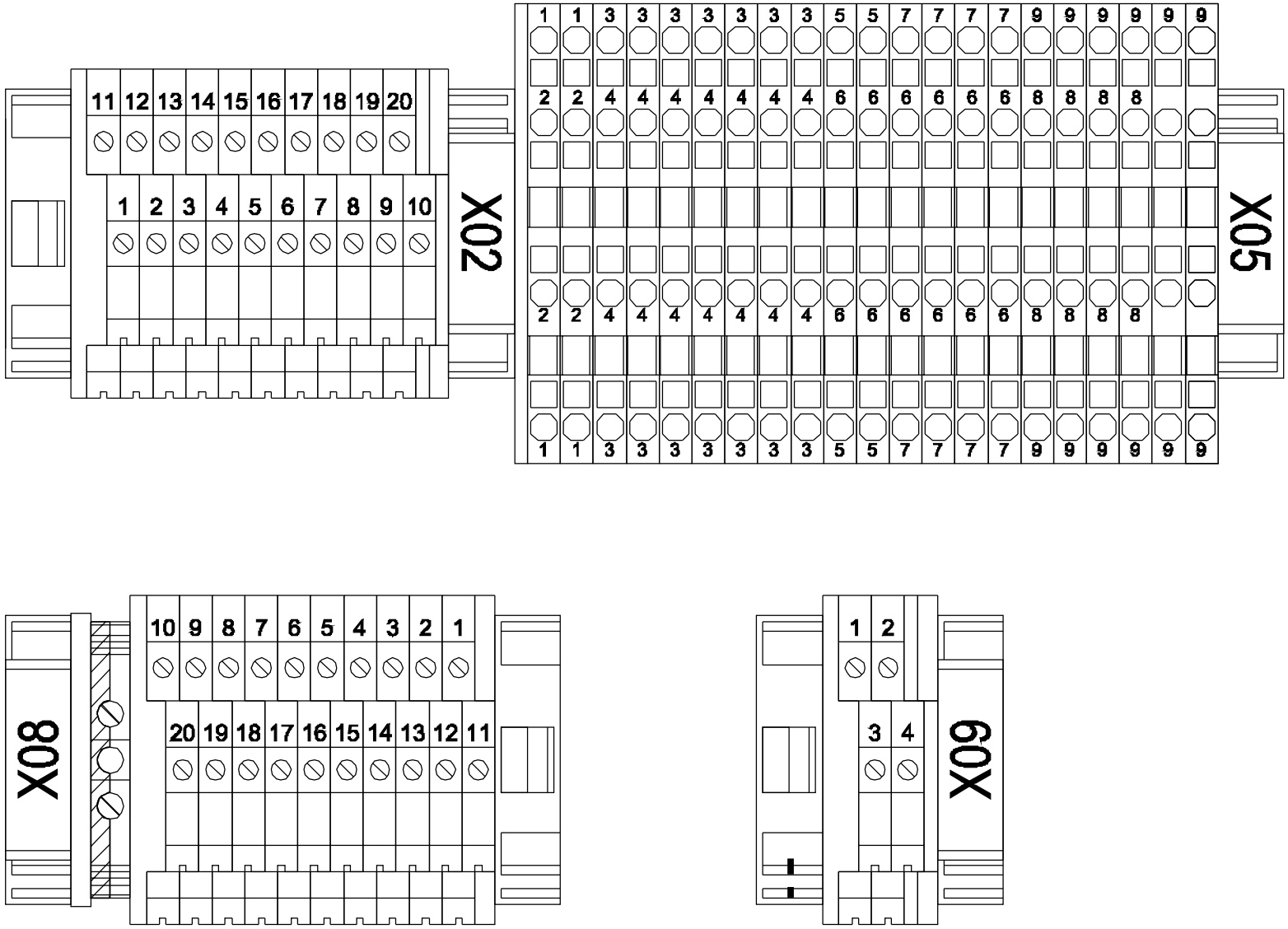

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Terminals X02, X05, X08, X09
		Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III
		Approved	060621	FLT	Comments	Customer: Vestas Wind Systems A/S
		Revised	060621	INI	Rev. -	Drawing no. 6012514
					Cont. sheet 039	Sheet 032

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USE COPPER CONDUCTORS ONLY FOR EXTERNAL WIRES AND CABLES.

USE 60°C CABLES FOR CURRENTS LESS THAN 100Amps AND 75°C CABLES FOR HIGHER CURRENTS.

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	Date	Initials	Function	Cable Connections		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	061024	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	061024	INI	Rev. -	Drawing no. 6012514	Cont. sheet 040	Sheet 039

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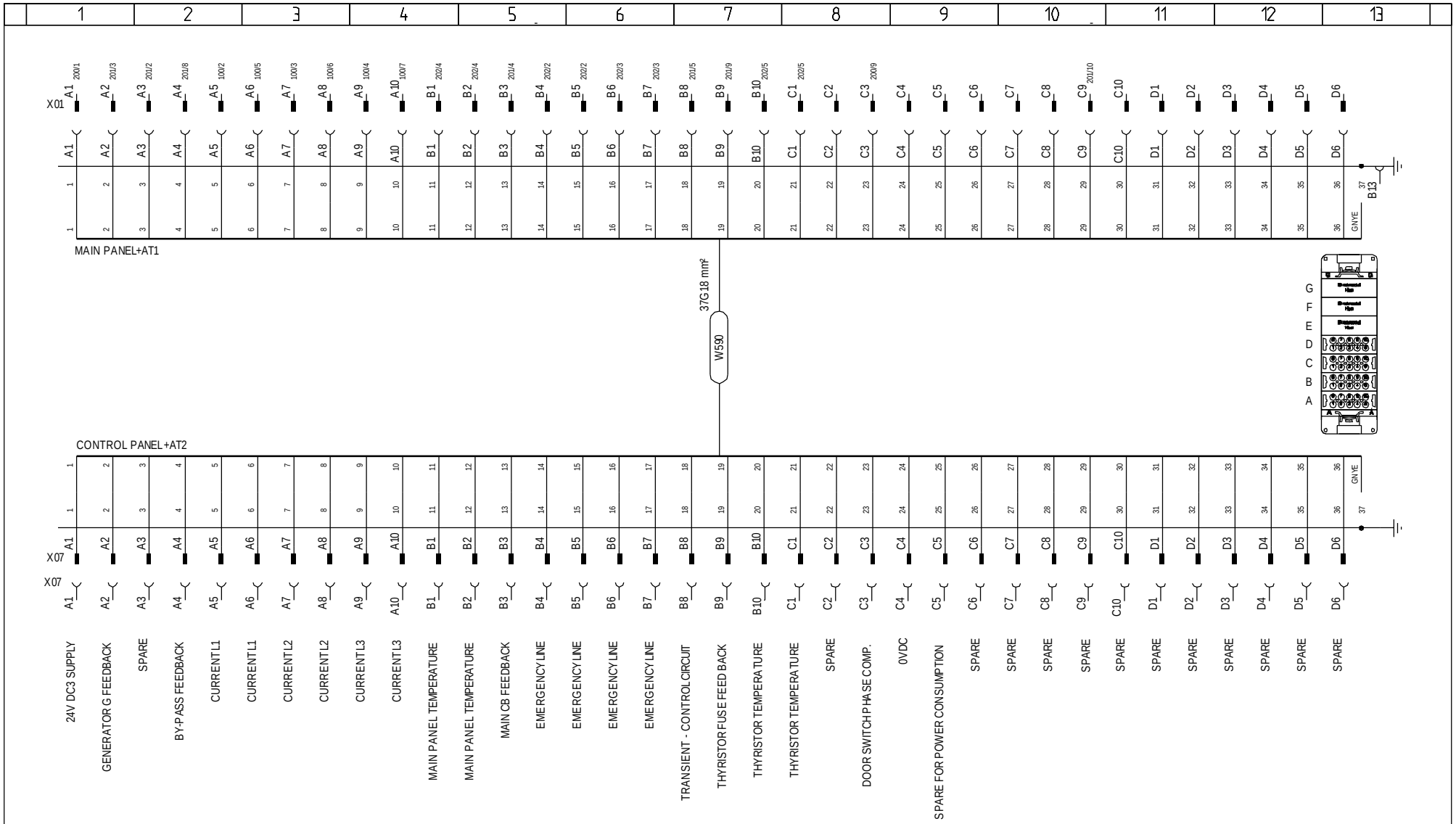

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function: External connections X01
		Designed	031025	CHO	Project title: Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III
		Approved	061213	SLB	Comments / Customer: Vestas Wind Systems A/S
		Revised	061213	INI	Rev.: - / Drawing no.: 6012514 / Cont. sheet: 041 / Sheet: 040

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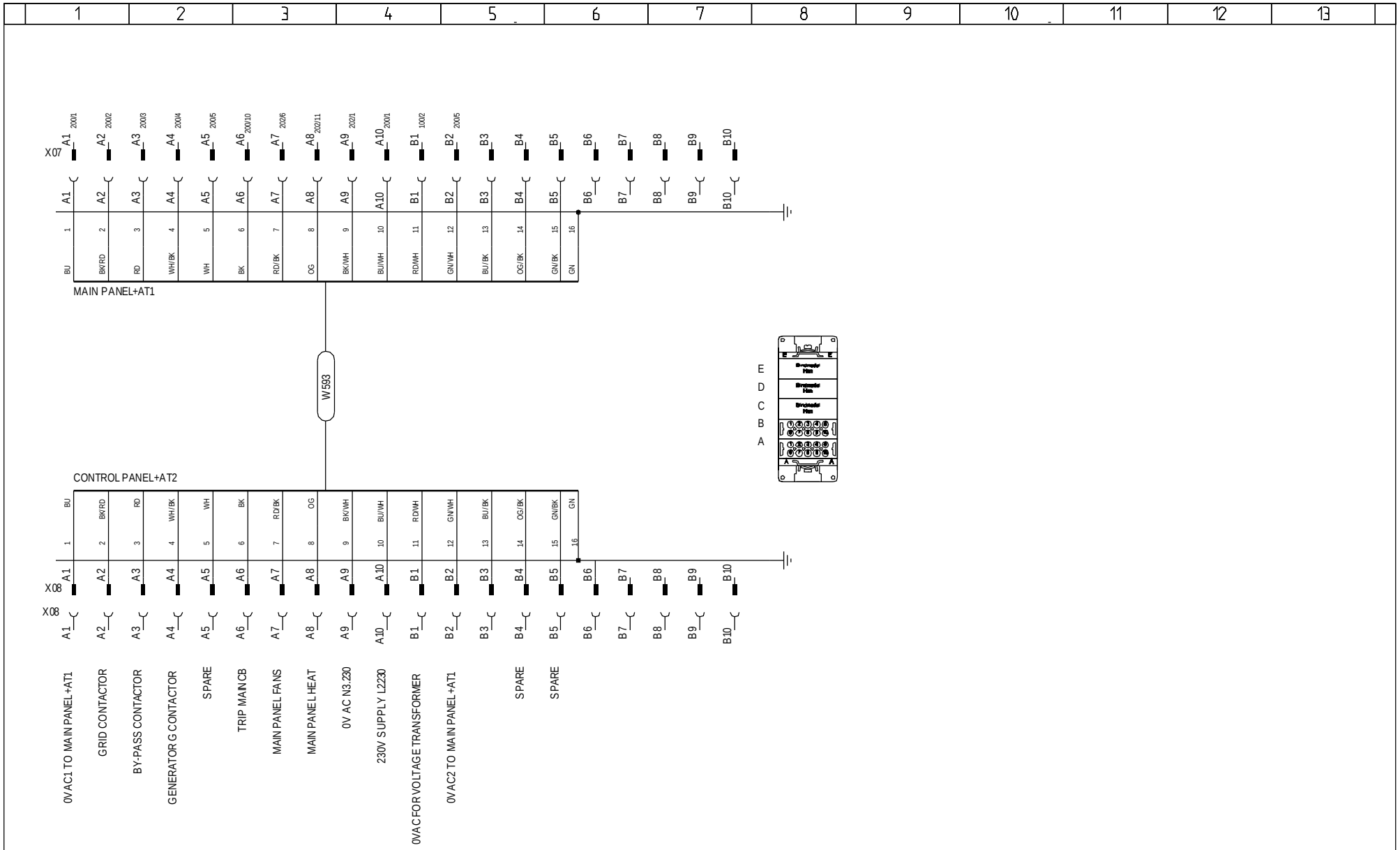

	Date	Initials	Function	External connections X07		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	061213	SLB	Comments		Customer	Vestas Wind Systems A/S
Revised	061213	INI	Rev. -	Drawing no. 6012514	Cont. sheet 042	Sheet 041

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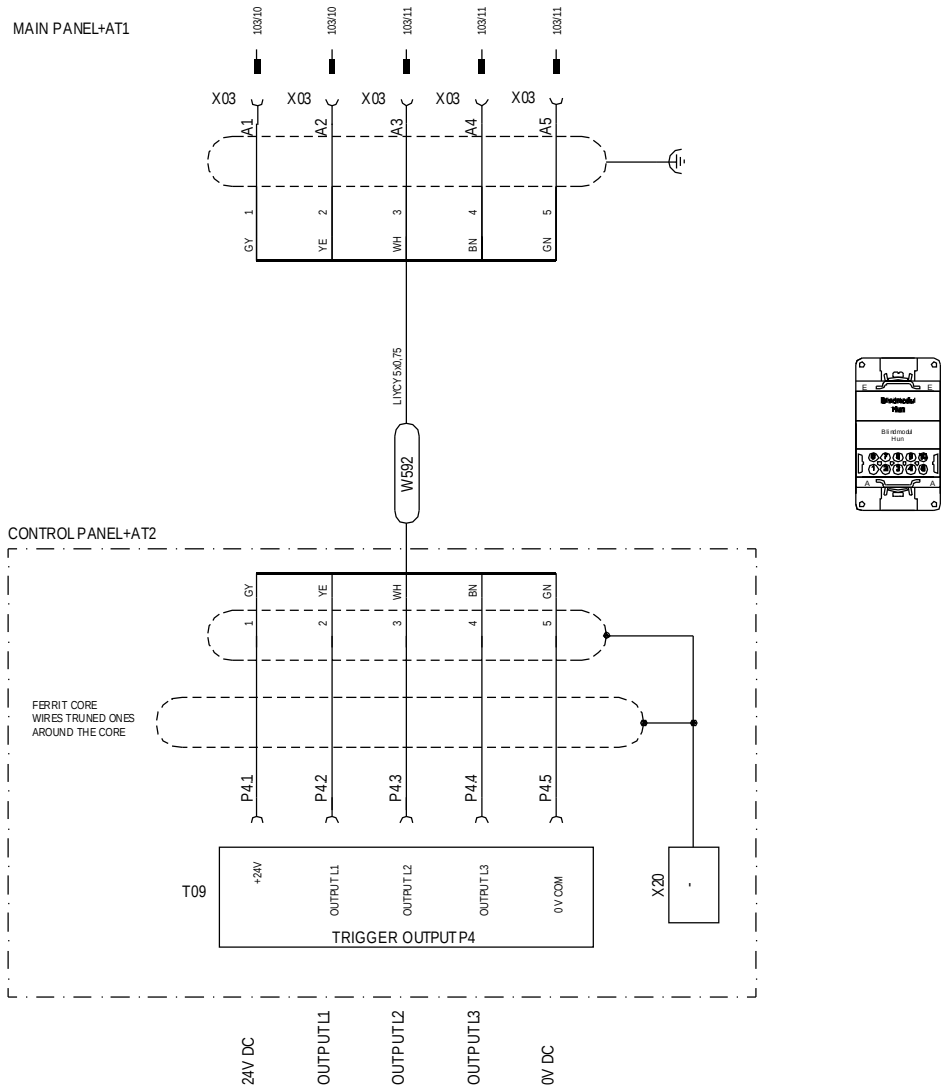

	Date	Initials	Function	External connections trigger		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	060621	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	060621	INI	Rev. -	Drawing no. 6012514	Cont. sheet 043	Sheet 042

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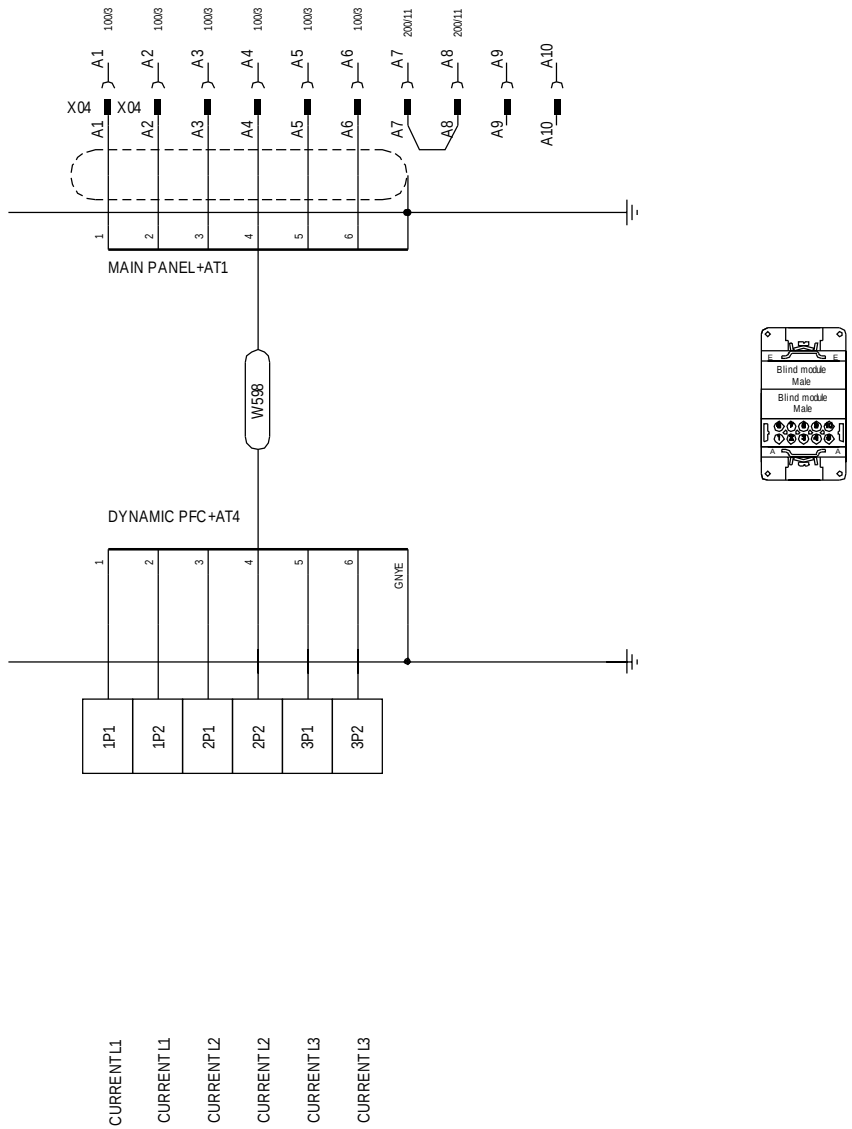

	Date	Initials	Function	External connections X04		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	061213	SLB	Comments		Customer	Vestas Wind Systems A/S
Revised	061213	INI	Rev. -	Drawing no. 6012514	Cont. sheet 044	Sheet 043

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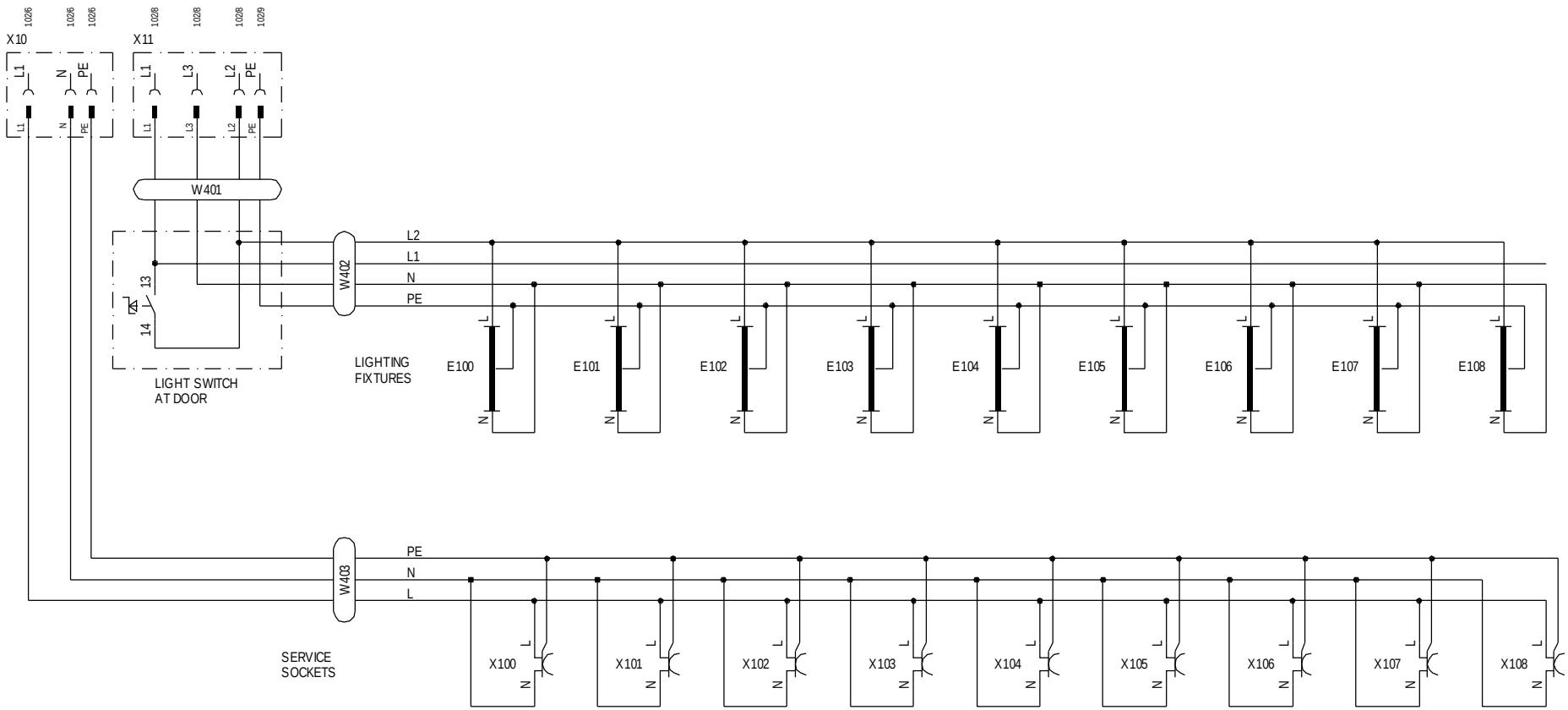

	Date	Initials	Function	External connetions light and service sockets		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	060621	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	060621	INI	Rev. -	Drawing no. 6012514	Cont. sheet 100	Sheet 044

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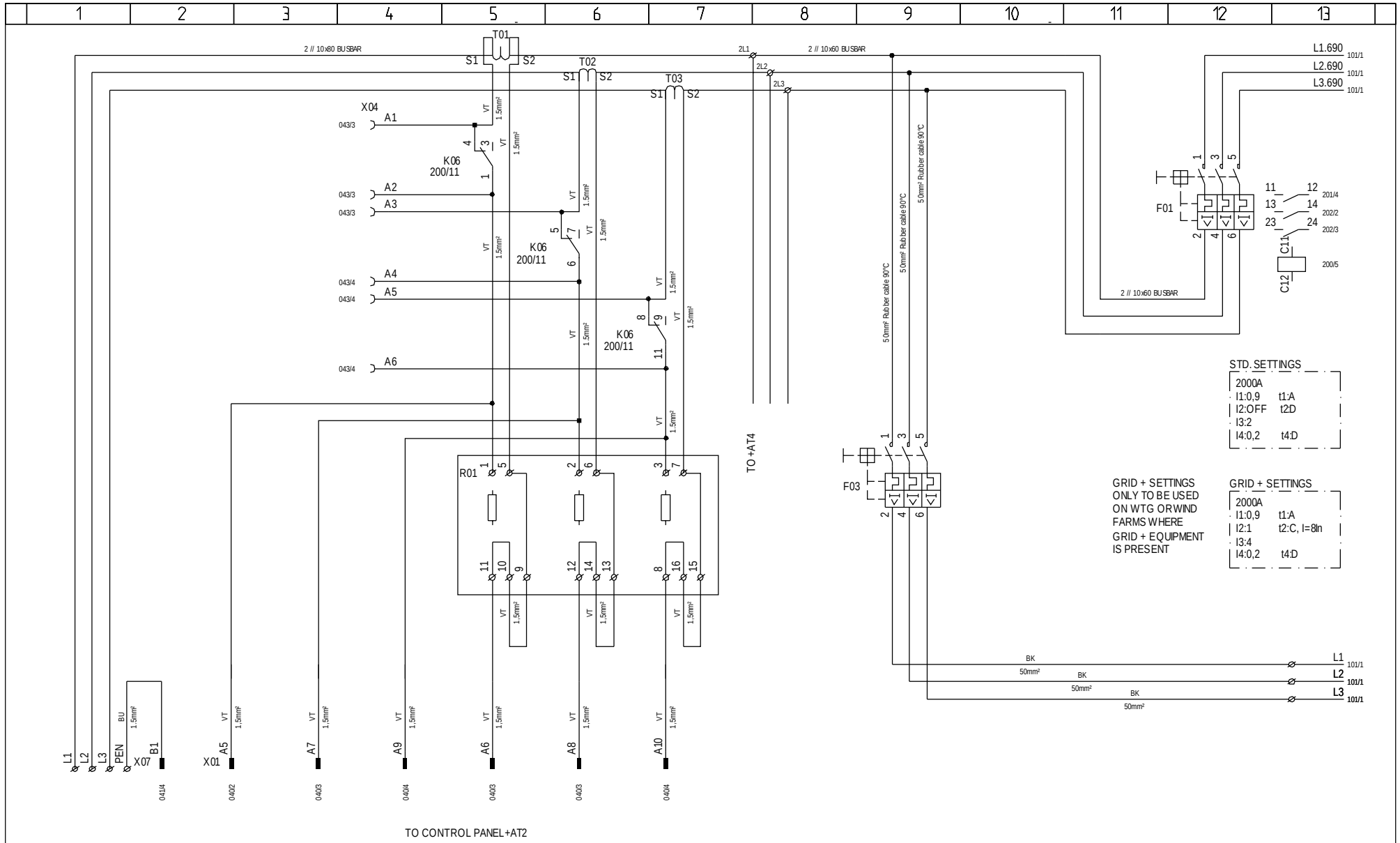

	Date	Initials	Function	Main CB		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	061213	SLB	Comments		Customer	Vestas Wind Systems A/S
Revised	061213	INI	Rev. -	Drawing no. 6012514	Cont. sheet 101	Sheet 100

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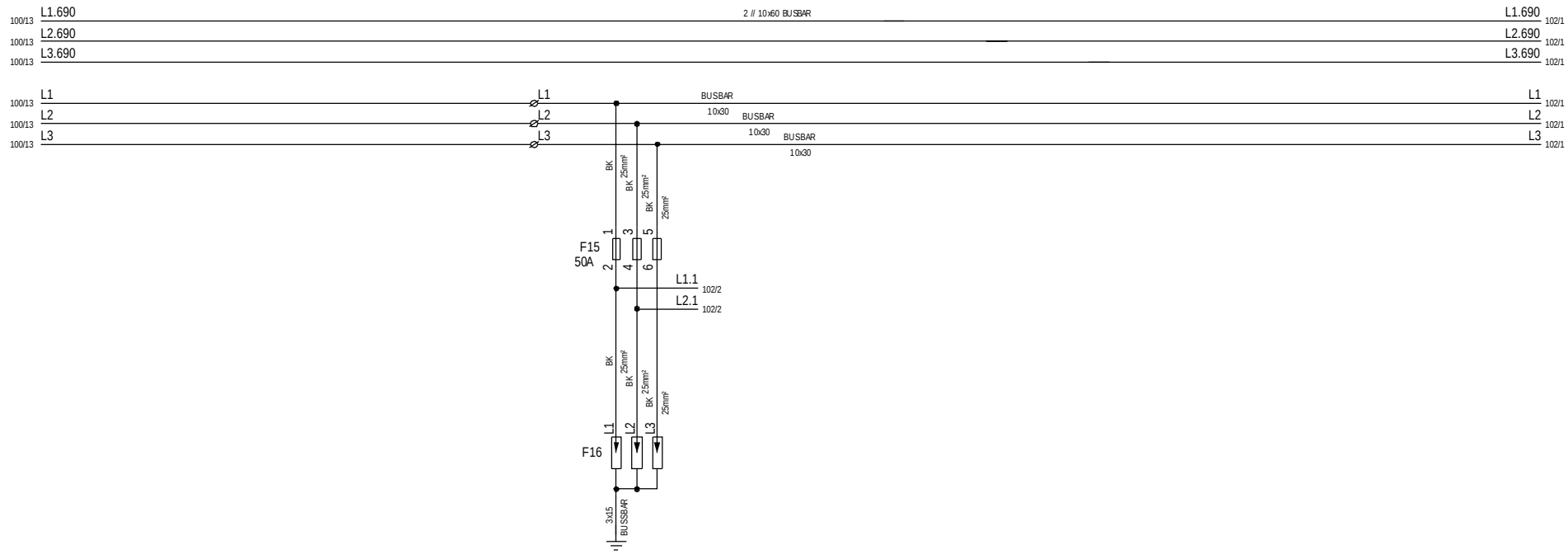

	Date	Initials	Function	AUX Supply		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	061213	SLB	Comments		Customer	Vestas Wind Systems A/S
Revised	061213	INI	Rev. -	Drawing no. 6012514	Cont. sheet 102	Sheet 101

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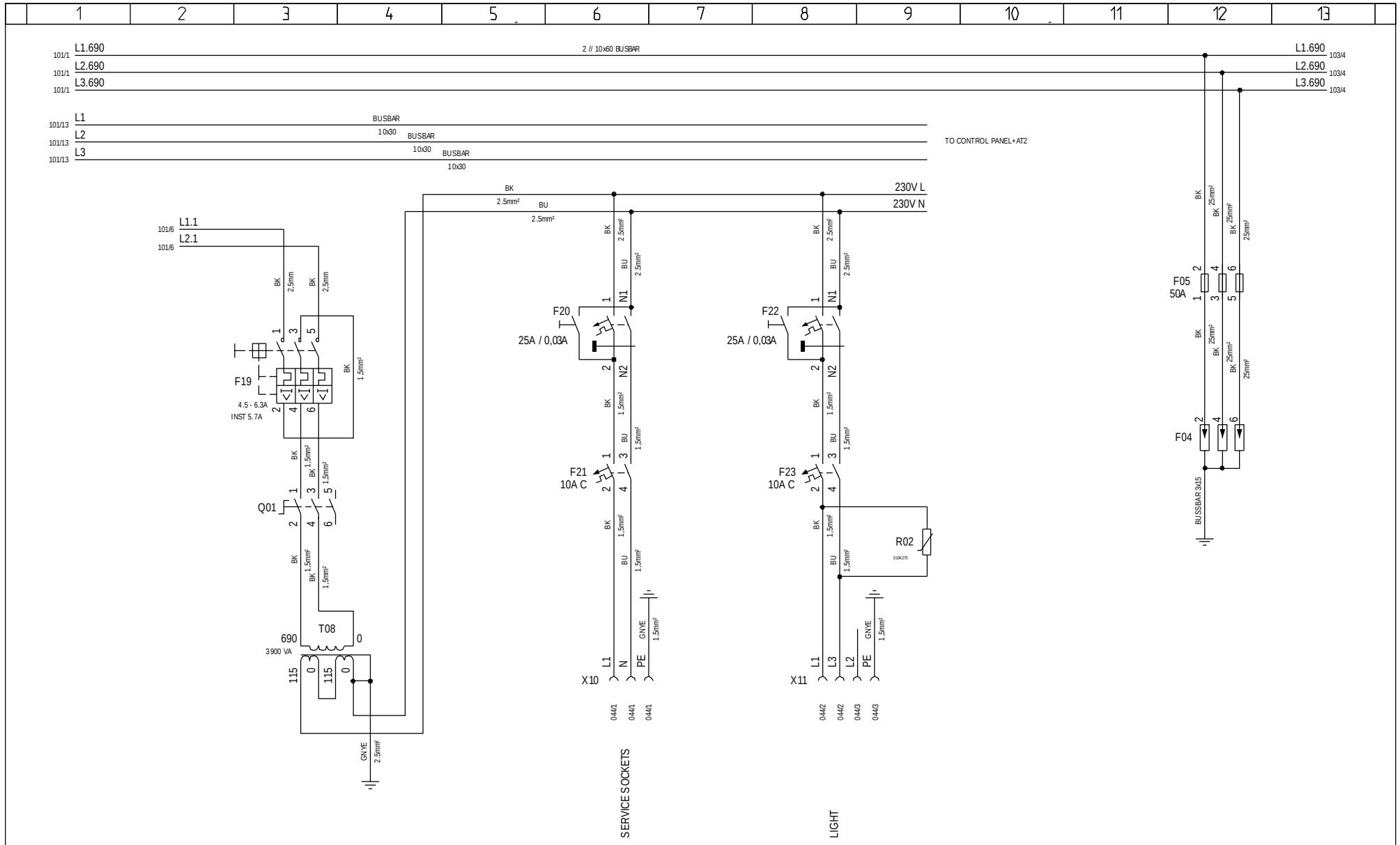

	Date	Initials	Function	AUX Supply		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	060621	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	060621	INI	Rev. -	Drawing no. 6012514	Cont. sheet 103	Sheet 102

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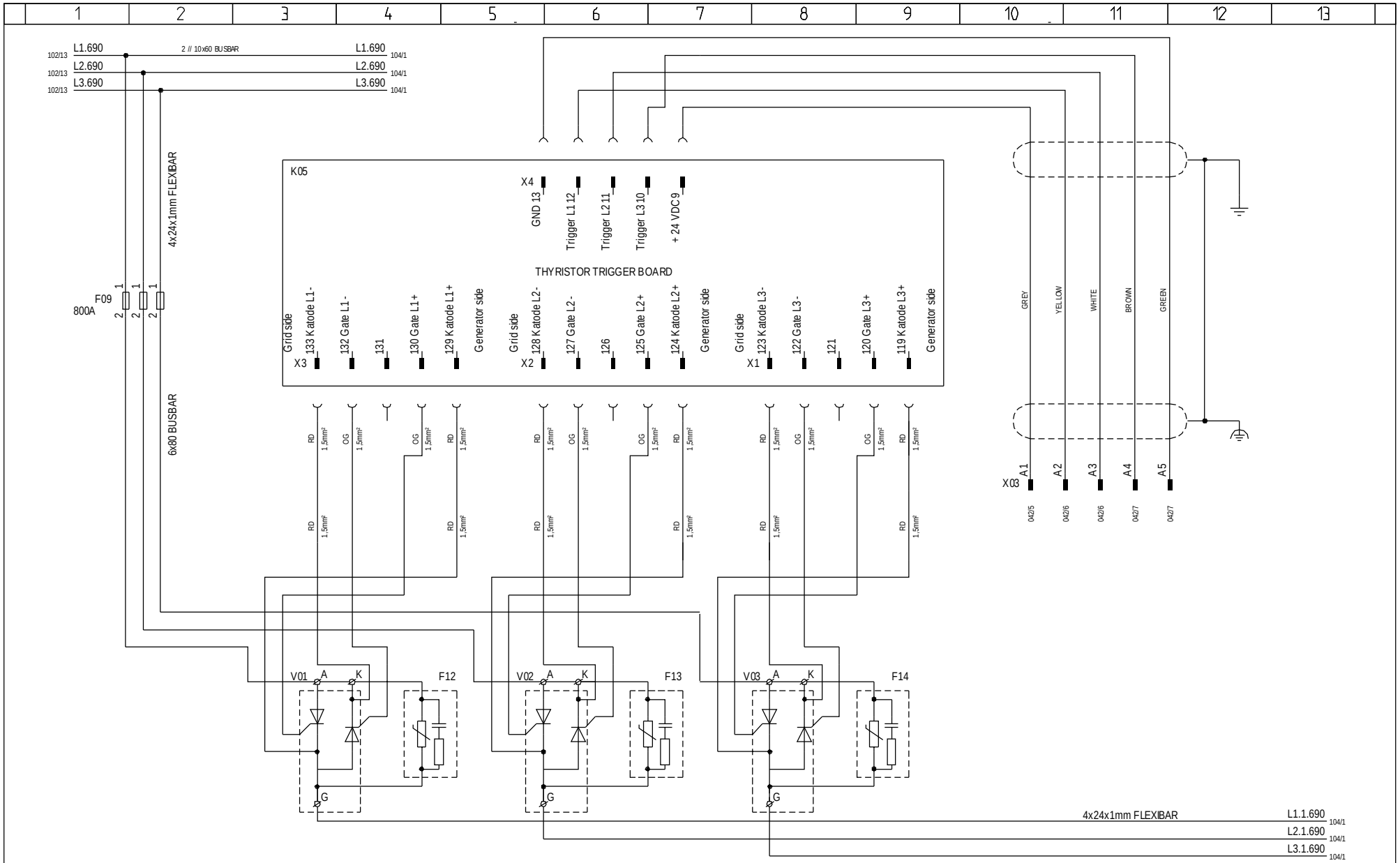

	Date	Initials	Function	Thyristor connections		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	060621	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	060621	INI	Rev. -	Drawing no. 6012514	Cont. sheet 104	Sheet 103

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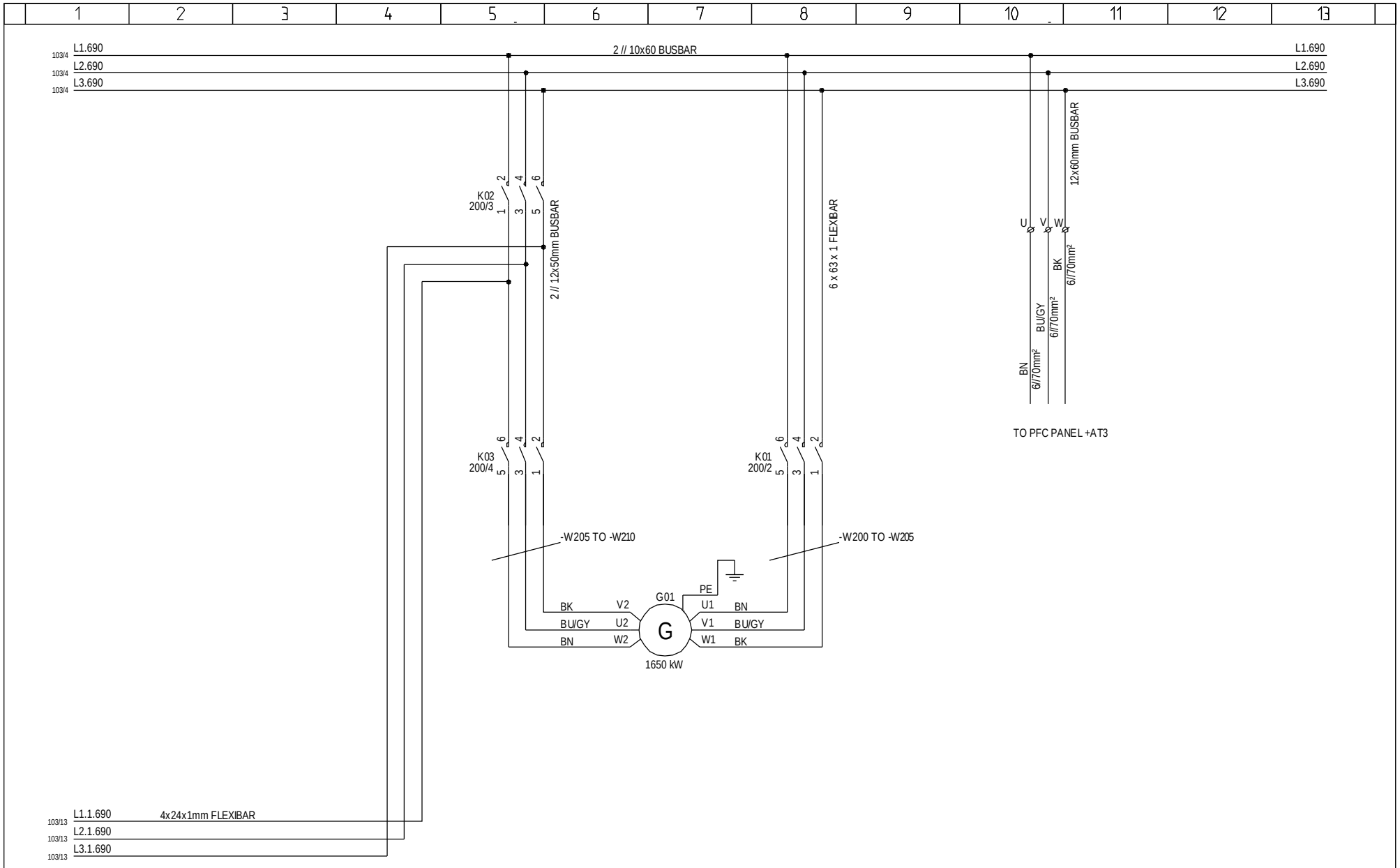

	Date	Initials	Function	Generator connections		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	060621	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	060621	INI	Rev. -	Drawing no. 6012514	Cont. sheet 200	Sheet 104

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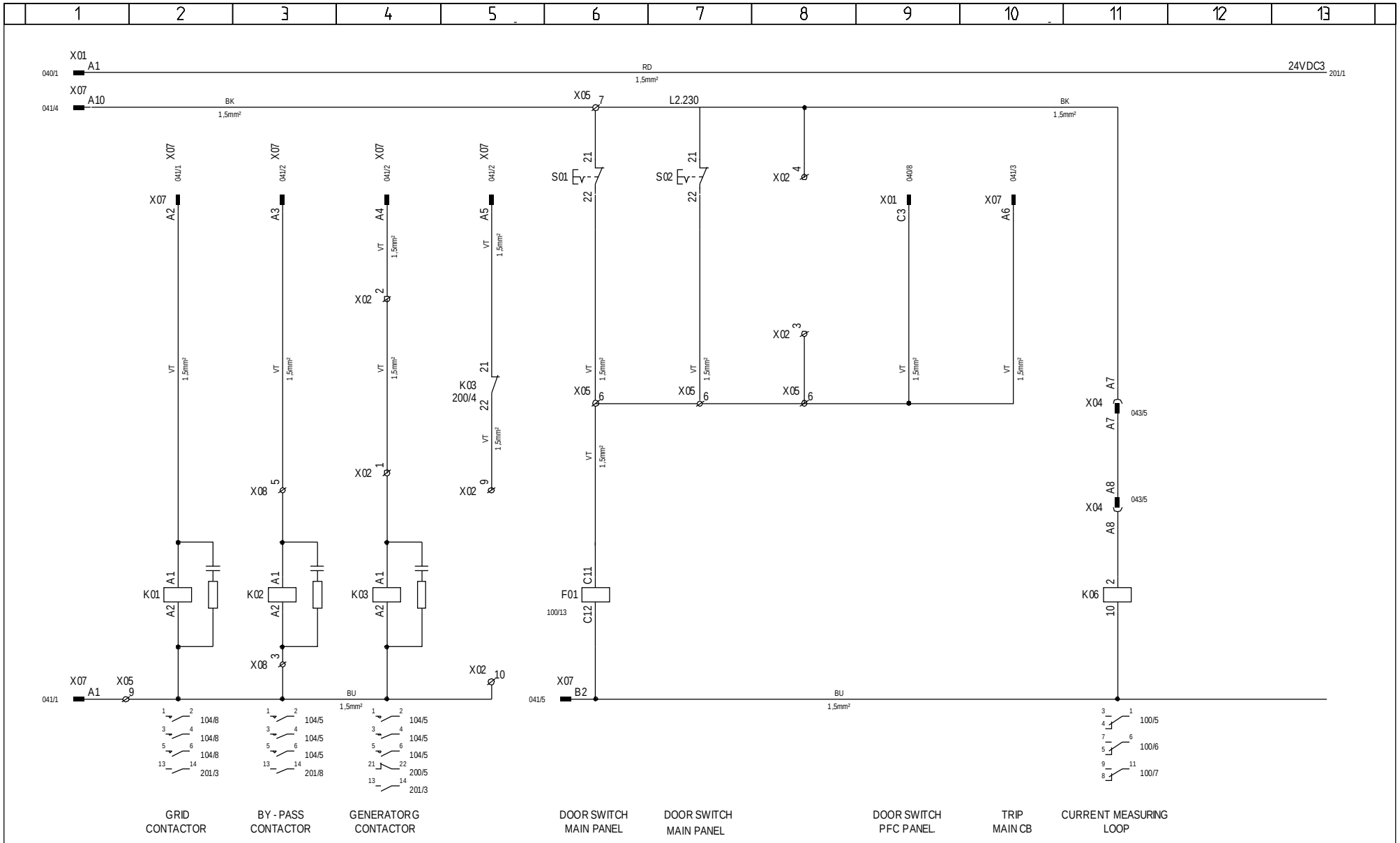

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	Date	Initials	Function	Internal connections		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	061213	SLB	Comments		Customer	Vestas Wind Systems A/S
Revised	061213	INI	Rev. -	Drawing no. 6012514	Cont. sheet 201	Sheet 200

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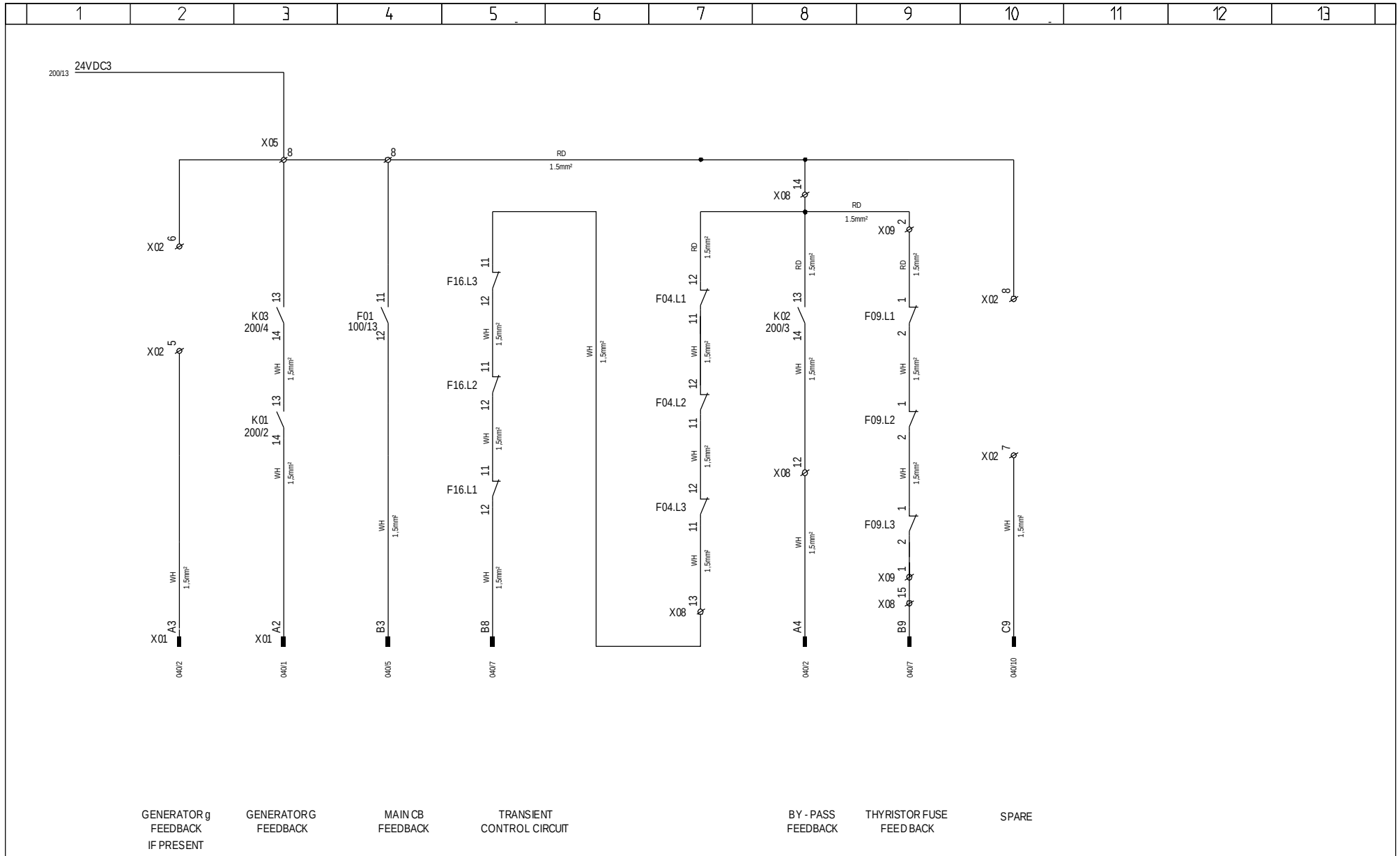

	Date	Initials	Function	Internal connections		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	060621	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	060621	INI	Rev. -	Drawing no. 6012514	Cont. sheet 202	Sheet 201

Vestas

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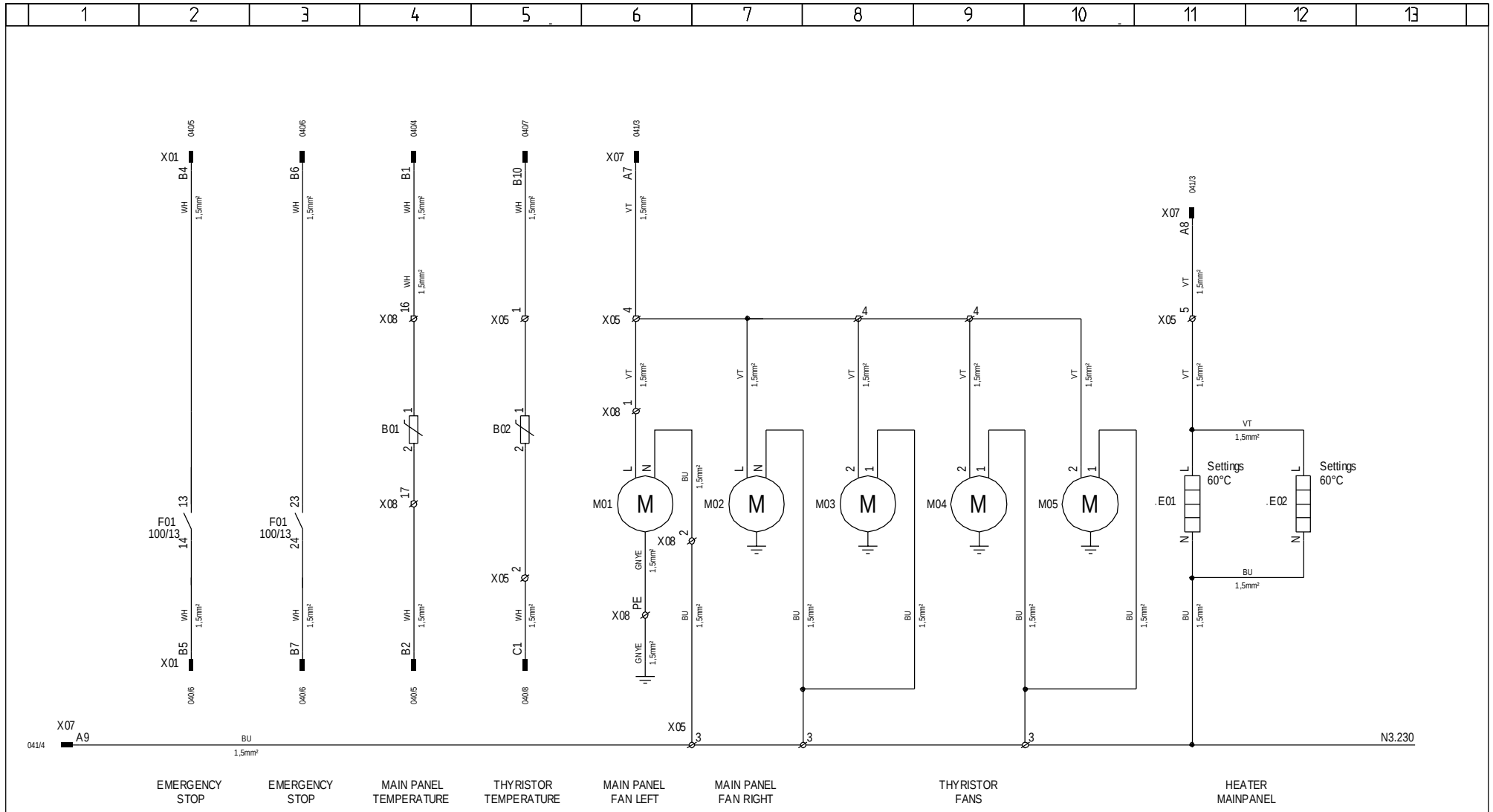

	Date	Initials	Function	Internal connections		
Designed	031025	CHO	Project title	Main Panel +AT1, V82-1.65MW 1-Speed, MK II & MK III		
Approved	060621	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	060621	INI	Rev. -	Drawing no. 6012514	Cont. sheet -	Sheet 202

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16:10

765455 MAIN PANEL AT1 V82 690V 50Hz

Component	Description	Qty per	Stk UM	Position Number
D1001226	Cable conduit, Din rail & eart	0,000	EA	
D1001276	Work instructions for producti	0,000	EA	
D6012514	MAIN PANEL +AT1, PS/AS 30t 50	0,000	EA	
D6012771	Cable conduit, Din rail & eart	0,000	EA	
092279	FAN AXIAL 230V 97m3 120x120mm	3,000	EA	
098429	SUPPORT RAIL MAIN PANEL V82	2,000	EA	
118934	LABEL ELECTRICAL WARNING UNIV.	2,000	EA	
153146	HEX SCR. M 8X 16 8.8 GZN	16,000	EA	
158880	SCR TORX CSK FH M8X20 8.8 TZN	8,000	EA	
191329	STRIP 5.2MM HZ 1-10	2,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60002429	LABEL "70 NM"	4,000	EA	
60002430	LABEL "48 NM"	5,000	EA	
60002569	LABEL "MAIN PANEL + AT1"	1,000	EA	
60006043	SIGN F TERMINAL ZB-5LGS 11-20	2,000	EA	
60006809	STICKER "N" 14MM	0,030	EA	
60006810	STICKER "P" 14MM	0,030	EA	
60006811	STICKER "E" 14MM	0,030	EA	
60006812	STICKER "U" 14MM	0,100	EA	
60006813	STICKER "V" 14MM	0,100	EA	
60006814	STICKER "W" 14MM	0,100	EA	
60006815	STICKER "L1" 14MM	0,060	EA	
60006816	STICKER "L2" 14MM	0,060	EA	
60006817	STICKER "L3" 14MM	0,060	EA	
60006819	STICKER "EARTH" 14mm	0,500	EA	
60006822	STICKER "LYN" 25MM	0,300	EA	
60006823	STICKER "LYN" 50MM	0,300	EA	
60006824	STICKER "LIGHTNING" 100MM	0,300	EA	
60006826	STICKER "1" 14MM	0,100	EA	
60006827	STICKER "2" 14MM	0,100	EA	
60007164	TRAFO CURRENT 2000/1A 25VA	3,000	EA	
60007201	EARTH BAR 01130 9x6.5x1000MM	0,230	M	
60007240	BUSBAR HOLDER 12x5-10x30MM	2,000	EA	
60007283	BUSBAR COVER 78 393 12-30x10MM	0,350	M	
60007320	BUSBAR FLEX SPACER	4,000	EA	
60007322	BUSBAR FLEX SPACER 40-63MM	1,250	EA	
60007332	BUSBAR ISOLATOR 10x40MM	18,000	EA	
60007333	BUSBAR ISOLATOR 10x50MM	9,000	EA	
60007334	BUSBAR ISOLATOR 10x60MM	3,000	EA	
60007437	BRAIDED SLEEVE 10-17mm BK	0,900	M	
60007458	CABLE TIE 140x2.5mm WH	120,000	EA	
60007459	CABLE TIE WHITE 200x2.5mm	20,000	EA	
60007461	CABLE TIE 200x2.5mm BK	3,000	EA	
60007465	CABLE TIE 368x4.8mm BK	7,000	EA	
60007468	CABLE TIE BLACK 550X8,0MM	8,000	EA	
60007472	CABLE TIE HOLDER 20 x 20mm	18,000	EA	
60007632	CABLE GLAND M32 BRASS BMBC-04	2,000	EA	
60007633	CABLE GLAND M40 BRASS BMBC-05	1,000	EA	
60007635	CABLE GLAND M63 BRASS BMBC-07	51,000	EA	
60007641	LOCKNUT M32 BRASS BMBL-05	2,000	EA	
60007642	LOCKNUT M40 BRASS BMBL-06	1,000	EA	
60007644	LOCKNUT M63 BRASS BMBL-08	51,000	EA	
60007829	WIRE TIN 16 150MM Ø8 IEC/UL	2,000	EA	
60007834	WIRE TIN 35 200MM Ø10 IEC/UL	2,000	EA	
60009578	SCREW ISO 7045 M 3 x 8 - FZB	10,000	EA	
60009580	SCREW ISO 7045 M4X10-FZB-H	17,000	EA	
60009600	SCREW ISO 7045 M 4 X 16 - 4.8	32,000	EA	
60009604	SCREW ISO 7045 M 5 X 10 - 4.8	8,000	EA	
60009606	SCR CRS PH M5x20 4.8 FZB	4,000	EA	
60009610	SCR CRS PH M6x14 4.8 FZB	25,000	EA	
60009620	SCR M5x16 FZB	24,000	EA	
60009639	SCR HEX SET M8x20 8.8 FZB	6,000	EA	
60009646	SCREW ISO 4017 M8x25 - 8.8 FZB	6,000	EA	
60009647	SCR HEX SET M8x30 8.8 FZB	1,000	EA	
60009670	SCR HEX SET M10x16 8.8 FZB	23,000	EA	
60009670	SCR HEX SET M10x16 8.8 FZB	4,000	EA	
60009671	SCR HEX SET M10x20 8.8 FZB	19,000	EA	
60009673	SCR HEX SET M10x25 8.8 FZB	38,000	EA	
60009676	SCRW ISO 4017 M10x30-8.8	16,000	EA	
60009678	SCR HEX SET M10x35 8.8 FZB	30,000	EA	
60009679	SCR HEX SET M10x40 8.8 FZB	24,000	EA	

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60009688	SCR HEX SET M10x45 8.8 FZB	8,000	EA
60009689	SCR HEX SET M10x50 8.8 FZB	52,000	EA
60009690	SCR HEX SET M10x55 8.8 FZB	3,000	EA
60009691	SCR HEX SET M10x60 8.8 FZB	6,000	EA
60009692	SCR HEX SET M10X65 8.8 FZB	9,000	EA
60009693	SCR HEX SET M10X70 8.8 FZB	24,000	EA
60009701	SCR HEX SET M12x35 8.8 FZB	6,000	EA
60009710	SCR HEX SET M12x70 8.8 FZB	40,000	EA
60009712	SCR HEX SET M12x80 8.8 FZB	6,000	EA
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	80,000	EA
60009752	SCR M4.8x19 FZB	3,000	EA
60009763	SCR SKT STOP M10x30 14H	6,000	EA
60009773	SCR M4x8 FZB	3,000	EA
60009787	WASHER M4 140HV FZB	4,000	EA
60009795	WASHER SPR 6 FZG	22,000	EA
60009803	WASHER SPR 8 FZG	13,000	EA
60009809	WASHER SPR 10 FZG	75,000	EA
60009817	WASHER SPR 13 FZG	28,000	EA
60009838	LOCK WASHER DIN 6798 A4 - FZB	41,000	EA
60009839	WASHER LOCK 5 FZB	12,000	EA
60009840	LOCK WASHER DIN 6798 A 6 FZB	2,000	EA
60009841	WASHER LOCK 8 FZB	20,000	EA
60009842	LOCK WASHER DIN 6798A 10 - FZB	41,000	EA
60009861	NUT ISO 4032 M 4 - 6 - FZB	37,000	EA
60009864	NUT HEX FLANGE M5 8 FZB	12,000	EA
60009873	NUT ISO 4032 M 8 - 8 - FZB	9,000	EA
60009879	NUT HEX M10 8	203,000	EA
60009883	NUT HEX M12 8 FZB	54,000	EA
60009895	NUT LIFTING EYE M10 FZB	4,000	EA
60010316	BASE PL CLAMP TS8 WA4547276	2,000	EA
60010570	COVER BAYING TS 8800.460 600mm	1,000	EA
60010699	CONDENSATION PROT DRY BAG 500G	4,000	EA
60011516	CABLE CLIP 8-1 W 1 LUG	1,000	EA
60012609	WIRING DOOR EARTH	1,000	EA
60012619	WIRING TRIGB 30T	1,000	EA
60013412	ANGLE BRACKET 2x10x25MM	4,000	EA
60013660	ANGLE BRA 1 F COVER NM80 +AT1	1,000	EA
60013661	ANGLE BRA 2 F COVER NM80 +AT1	1,000	EA
60013662	ANGLE BRA BOTTOM F COVER NM80	2,000	EA
60013733	ANGLE SUPPORT 440MM F ISOLATOR	4,000	EA
60013827	BRA 5x40x511mm ISOLATOR	1,000	EA
60013828	BRA 5x40x472mm ISOLATOR	1,000	EA
60013829	COVER ALU-ZINC 2x540x870mm	1,000	EA
60013836	COVER PVC 4x700x277mm	1,000	EA
60013839	BRA 5x40x471mm ISOLATOR	1,000	EA
60013855	BAND STEEL 3x20mm TS8 800x2200	4,000	EA
60013865	COVER PVC NM64/82 30t	1,000	EA
60013866	COVER PVC NM64/82 30t	1,000	EA
60013867	COVER PVC NM64/82 30t	1,000	EA
60013868	COVER PVC NM64/82 30t	1,000	EA
60013869	COVER PVC NM64/82 30t	1,000	EA
60013901	COVER PVC AUX SUPPLY IEC	1,000	EA
60014614	PROTECTIVE SCREEN 120*120MM ME	1,000	EA
60091480	CABLE ENTRY PLATE	1,000	EA
60094022	BRA F GRID CONNECTION	6,000	EA
60096851	TORX SCREW 2486.500 5.5X13MM	57,000	EA
60096911	COMBINATION ANGLE 4540.000	2,000	EA
60096912	BAYING BRA 4582.500	1,000	EA
60096927	SUPPORT STRIP 4697.000 740mm	1,000	EA
60096968	PUNCH SECTION 8612.060 INNER	10,000	EA
60096970	PUNCH SECTION 8612.160 OUTER	1,000	EA
60096972	PUNCH SECTION 8612.180 OUTER	6,000	EA
60096979	ATTACHMENT MOUNT PLATE TS	4,000	EA
60096993	ANGULAR BAYING BRA TS 8800.430	4,000	EA
60096995	QUICK FIT BAYING CLAMP TS	6,000	EA
60097543	BOLT HEX M12x120 A4 70	2,000	EA
60097571	LABEL TYPE SIGN I/III +AT1.	1,000	EA
60097609	WIRING X07 MAIN IEC I/III	1,000	EA
60097620	WIRING X01 MAIN IEC I/III	1,000	EA
60097623	WIRING 24VDC3 MAIN IEC I/III	1,000	EA
60097624	WIRING R01&X04 MAIN IEC I/III	1,000	EA
60097626	WIRING 230VAC MAIN IEC I/III	1,000	EA
60097627	WIRING F03&F15 MAIN IEC I/III	1,000	EA
60097628	WIRING F04&F05 MAIN IEC I/III	1,000	EA
60097630	WIRING X08 MAIN IEC I/III	1,000	EA

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60097635	WIRING M03-05 MAIN IEC I/III	1,000	EA	
60097644	WIRING T07 MAIN IEC I/III	1,000	EA	
60097645	WIRING T08 MAIN IEC I/III	1,000	EA	
60097646	WIRING X10&X11 MAIN IEC I/III	1,000	EA	
60097649	Cable -X03 MAIN NM72/82 IEC I/	1,000	EA	
60097742	COVER PVC BUSBAR AUX SUPPLY	1,000	EA	
60097749	MOUNT PLATE TS8 W/W	1,000	EA	
60097750	MOUNT PLATE TS8 W/W	1,000	EA	
60097880	LABEL +AT1 NM72/82 IEC I/III	0,150	EA	
60097909	WIRING F03 MAIN IEC I/III	1,000	EA	
60097910	SIGN GRID CONNECTION	2,000	EA	
60102296	CU BUSBAR KIT 1 MAIN PAN	1,000	EA	
60102315	CU BUSBAR KIT 2 MAIN PAN	1,000	EA	
60102316	FLEXIBAR KIT 3 MAIN PAN	1,000	EA	
60104151	CABLE CONDUIT DIN RAIL MAIN	1,000	EA	
60007481	CABLE RACK TK 5-7	1,000	EA	B01
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B01
60007481	CABLE RACK TK 5-7	1,000	EA	B02
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B02
60014729	HEATER FAN CR0 27 475/550W UL	2,000	EA	E01-E02
60091912	END STOP WAGO 249-117 10MM	4,000	EA	E01-E02
60013841	BRA 5x25x376mm BUSBAR HOLDER	1,000	EA	FLEXIBAR
60005750	ACB E2B 2000A PR111P LSIG 3P	1,000	EA	F01
60013843	FITTINGS UNIVERSAL E-CB	1,000	EA	F01
60005670	MCCB S3X 160A R160 3P	1,000	EA	F03
60096022	TERMINAL COVER S3-S4 3P IP20	1,000	EA	F03
195126	PROTC SA DG S 600 FM 600VAC	3,000	EA	F04
60000675	BUSBAR 3 OVPS	1,000	EA	F04
60007399	HEAT SHRINK 12.7mm 3:1 GNYE	0,030	M	F04
60091912	END STOP WAGO 249-117 10MM	2,000	EA	F04
60005079	FUSE SWITCH NH00 33199 160A	1,000	EA	F05
60005097	FUSE 690V 50A NH00 GL/GG	3,000	EA	F05
60005355	FUSE SEMI 660V 800A PSC IEC/UL	3,000	EA	F09
60005358	AUX CONT MS3V FUSE SIZE 30-33	3,000	EA	F09
51706501	RC UNIT 2T459 THYR 690V 0.33uF	1,000	EA	F12
51706501	RC UNIT 2T459 THYR 690V 0.33uF	1,000	EA	F13
51706501	RC UNIT 2T459 THYR 690V 0.33uF	1,000	EA	F14
60005071	FUSE SWITCH NH00 33198 3P	1,000	EA	F15
60005097	FUSE 690V 50A NH00 GL/GG	3,000	EA	F15
195126	PROTC SA DG S 600 FM 600VAC	3,000	EA	F16
60000675	BUSBAR 3 OVPS	1,000	EA	F16
60007399	HEAT SHRINK 12.7mm 3:1 GNYE	0,030	M	F16
60004712	CB 3RV1421-1GA10 4.5-6.3A	1,000	EA	F19
60005759	RCCB 5SM1312-6 25A 2P	2,000	EA	F20,F22
60005160	MCB 5SX2210-7 10.0A C 2P	2,000	EA	F21,F23
093693	CONTACTOR EH1200 240/50HZ	1,000	EA	K01
60007833	WIRE TIN 35 100MM Ø10 IEC/UL	3,000	EA	K01-03
60100566	WIRING RC UNIT 250V EH CONT	3,000	EA	K01-03
093693	CONTACTOR EH1200 240/50HZ	1,000	EA	K02
093693	CONTACTOR EH1200 240/50HZ	1,000	EA	K03
51700901	TRIGGER BOARD TAC 40 690V	1,000	EA	K05
60004535	RELAY MT326230 10A 230V 3P	1,000	EA	K06
60005026	SOCKET MT 78740 11-POLED	1,000	EA	K06
60005028	FASTENING BRACKET F RELAY 3P	1,000	EA	K06
098333	CABINET TS8 1 DOOR W/W	1,000	EA	Left
092048	VENTI. OUTLET FILTER 3326.207	2,000	EA	M01/02
60110934	FAN 230V 500M3/H 323X323X125MM	2,000	EA	M01/02
60013649	PLATE ALU F FAN 8844	3,000	EA	M03/04/05
60014614	PROTECTIVE SCREEN 120*120MM ME	3,000	EA	M03/04/05
60002561	LABEL "Q01"	1,000	EA	Q01
60005768	LOAD BREAK SWITCH OT25ET3 3-PO	1,000	EA	Q01
60005774	HANDLE OHB 2RJ BK	1,000	EA	Q01
60005776	SWI COVER OTS32T3 3P	2,000	EA	Q01
098304	CABINET TS8 1 DOOR W/W	1,000	EA	Right
51700501	RESISTOR SHUNT 3x2.5 OHM	1,000	EA	R01
60091912	END STOP WAGO 249-117 10MM	1,000	EA	R01
60000608	VDR SIOV-S10K275 275V	1,000	EA	R02
60010456	DOOR-OPERATED SWITCH	2,000	EA	S01-S02
60101986	TRAFO 600-690/2x115V	1,000	EA	T08
60001041	THYR MODULE 2T699N22TOF-K0	3,000	EA	V01/02/03
60002503	LABEL "-X01"	1,000	EA	X01
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X01
60001899	CONN MSTB F 10 LEADED	2,000	EA	X02
60006036	CONN TERM UKK3-MSTB-5.08-2 F 1	10,000	EA	X02
60006038	SPACER PLATE DG-UKK3-MSTB-5.08	1,000	EA	X02

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60006039	SPACER PLATE DP-UKK3-MSTB-5.08	1,000	EA	X02
60006040	SEPARATION PLATE LEFT	1,000	EA	X02
60006621	LABEL TERMINAL 1-10 5.08 MM	0,300	EA	X02
60006622	LABEL TERMINAL 11-20 5.08 MM	0,200	EA	X02
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X02
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X02
60002505	LABEL "-X03"	1,000	EA	X03
60006566	HOUSING 42P BULKHEAD	1,000	EA	X03
60002506	LABEL "-X04"	1,000	EA	X04
60006566	HOUSING 42P BULKHEAD	1,000	EA	X04
60006071	TERMINAL WAGO 870-501 2-LEV.0,	21,000	EA	X05
60006083	END SECTION 870-518 2-LEVEL GR	1,000	EA	X05
60006086	PUSH-IN JUMPER BAR 870-402 2-P	5,000	EA	X05
60006088	PUSH-IN JUMPER BAR 870-404 4-P	6,000	EA	X05
60006089	PUSH-IN JUMPER BAR 870-405	2,000	EA	X05
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X05
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X05
60097874	MARK WAGO +AT1 PANEL NM72/82	1,000	EA	X05
60002509	LABEL "-X07"	1,000	EA	X07
60006571	HOUSING 32P BULKHEAD	1,000	EA	X07
60001899	CONN MSTB F 10 LEADED	2,000	EA	X08
60005984	TERMINAL GROUND M4/6P	1,000	EA	X08
60005998	END SEC FEM6 GY 118368.16	1,000	EA	X08
60006036	CONN TERM UKK3-MSTB-5.08-2 F 1	10,000	EA	X08
60006038	SPACER PLATE DG-UKK3-MSTB-5.08	1,000	EA	X08
60006039	SPACER PLATE DP-UKK3-MSTB-5.08	1,000	EA	X08
60006040	SEPARATION PLATE LEFT	1,000	EA	X08
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X08
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X08
191329	STRIP 5.2MM HZ 1-10	1,000	EA	X09
60001853	CONN MSTB F 2 LEADED	1,000	EA	X09
60006036	CONN TERM UKK3-MSTB-5.08-2 F 1	2,000	EA	X09
60006038	SPACER PLATE DG-UKK3-MSTB-5.08	1,000	EA	X09
60006039	SPACER PLATE DP-UKK3-MSTB-5.08	1,000	EA	X09
60006040	SEPARATION PLATE LEFT	1,000	EA	X09
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X09
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X09
60002564	LABEL "X10"	1,000	EA	X10
60011436	SKT 216RU6 2P+E 250V 16A CEE	1,000	EA	X10
60002565	LABEL "X11"	1,000	EA	X11
60011441	3P+PE 200-250V 16A 316RU9	1,000	EA	X11

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Change Info

Item no.	***Item text:***
765456	**Control Panel +AT2, V82-1.65MW 690V 50Hz MK5**

Active revision for production

Drawing no.: 934704

Version	Date	Init./App.	Description of change since last revision
00	2007-06-28	INI/FLT	First version

BoM no.: 765456 *Document no.: 0000-1232*

Version	Date	Init./App.	Description of change since last revision
01	2008-10-09	INI/FLT	Changed with ECO 225713, 228836, 228988, 229786, 230842 Replaced: 60000717 with 188451 PS ADC 5183R-4 5A-27,4V Removed: 098430 SUPPORT RAIL CONTROL PANEL V82- 2 units removed Replaced: 098334 with 098304 CABINET TS8 1 DOOR W/W Replaced: 60000674 with 195126 PROTC SA DG S 600 FM 600VAC Removed: 60014668 EXHAUST FILT, 60014655 FAN 1-PH, 60014608 FAN 1-PH Added: 092048 OUTLET FILTER, 60110934 FAN 230V

Old revisions for service

Drawing no.: xxxxxx

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	Write the change here.

BoM no.: 765456 *Document no.: 0000-1232*

Version	Date	Init./App.	Description of change since last revision
00	2007-07-02	INI/FLT	First version

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002	Table of Contents	070628	0
003	Table of Contents	070628	0
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032	Spare	070628	-
033	Panel outline doors and s	070628	-
034	Terminal row X10, X22.	070628	-
035	Terminal row X11, X12, B0	070628	-
036	Terminal row X13, X20	070628	-
037	Terminal rows for Options	070628	-
039	Cable Connections	070628	-
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111	690V circuits nacelle hea	070628	-
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	Date	Initials	Function	Table of Contents		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. 0	Drawing no. 934704	Cont. sheet 002	Sheet 001

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304	TOI Output 830 - 838	070628	-
305	TOI Output 840 - 843	070628	-
400	TAC Input P1.1 - P1.16	070628	-
401	TAC Input P2.1-7 and P5.1	070628	-
402	TAC Input P6.1 - P6.7	070628	-
403	TOI Input 100 - 204	070628	-
404	TOI Input 300 - 319	070628	-
405	TOI Input 400 - 419	070628	-
406	TOI Input 500 - 508	070628	-
407	TOI Input 510 - 518	070628	-
408	TOI Input 520 - 528	070628	-
409	TOI Input 530 - 538	070628	-
410	TOI Input 600 - 608	070628	-
411	TOI Input 610 - 618	070628	-
412	TOI Input 620 - 628	070628	-
413	TOI Input 630 - 638	070628	-
414	TOI Input 700 - 709	070628	-
415	TOI Input 710 - 723	070628	-
416	TOI Input 725 - 738	070628	-
417	TOI Input 740 - 748	070628	-
450	TAC outline	070628	-
451	TAC communication outline	070628	-
460	TOI outline output	070628	-
461	TOI outline input	070628	-
462	TOI outline input	070628	-
500	Fibre optic communication	070628	-
501	External RS232 comm. to e	070628	-
502	RS232 comm. to OP-panel	070628	-
503	RS485 comm. to hub	070628	-
504	RS485 comm. to +AT1 Top P	070628	-
505	RS485 comm. to +AT4	070628	-
506	External RS232 Comm. to M	070628	-
507	External RS232 Comm. to C	070628	-

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	Date	Initials	Function	Table of Contents		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. 0	Drawing no. 934704	Cont. sheet 003	Sheet 002

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PAGE	CONTENT	DATE	REVISION
508	External RS232 Comm. to E	070628	-
509	CMS - OPTION	070628	-

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	Date	Initials
Designed	070628	FLT
Approved	070628	FLT
Revised	070628	INI

Function: Table of Contents

Project title: Control Panel +AT2 V82-1.65MW MK5 50Hz

Comments

Customer: Vestas Wind Systems A/S

Rev. 0 | Drawing no. 934704 | Cont. sheet 030 | Sheet 003

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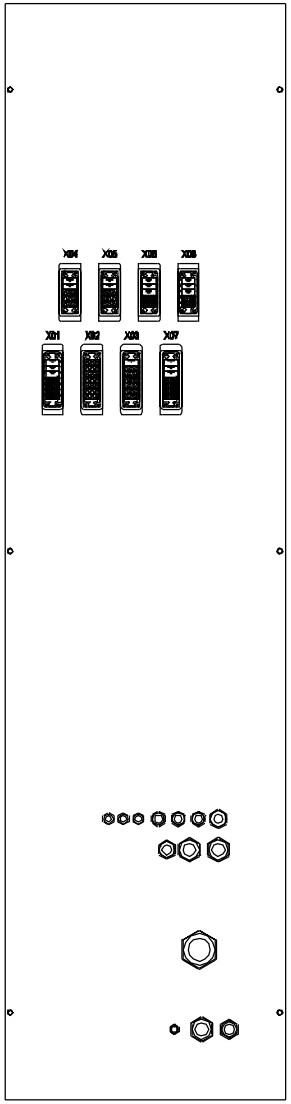
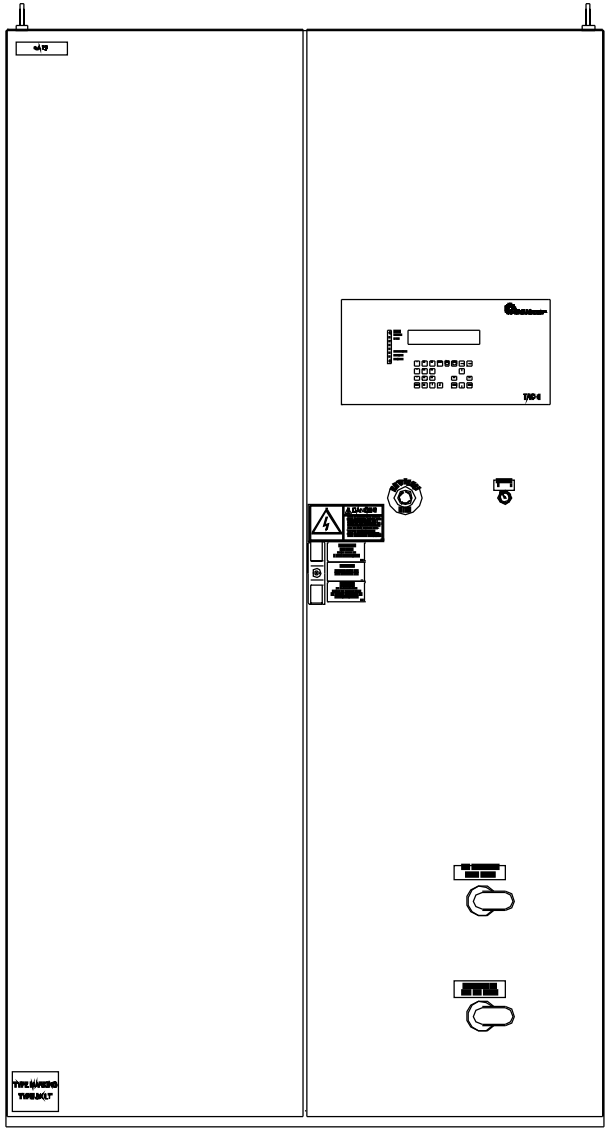
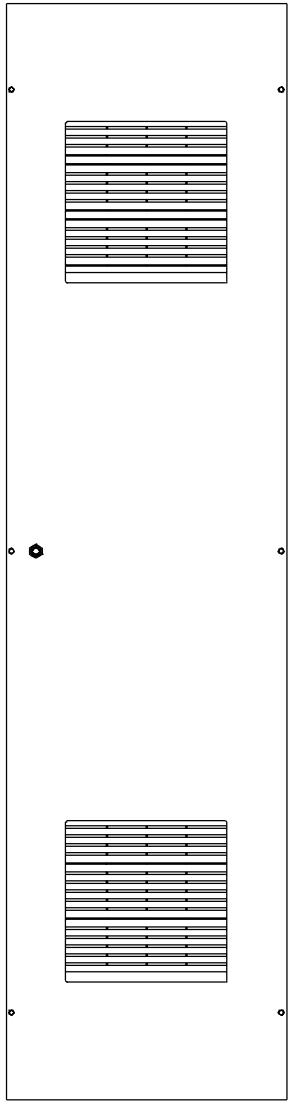
RIGHT-HAND SIDE





LEFT-HAND SIDE



1200*2200*600 (W*H*D)
Weight 425Kg

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel front layout	
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments		Customer: Vestas Wind Systems A/S
		Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 031 / Sheet 030

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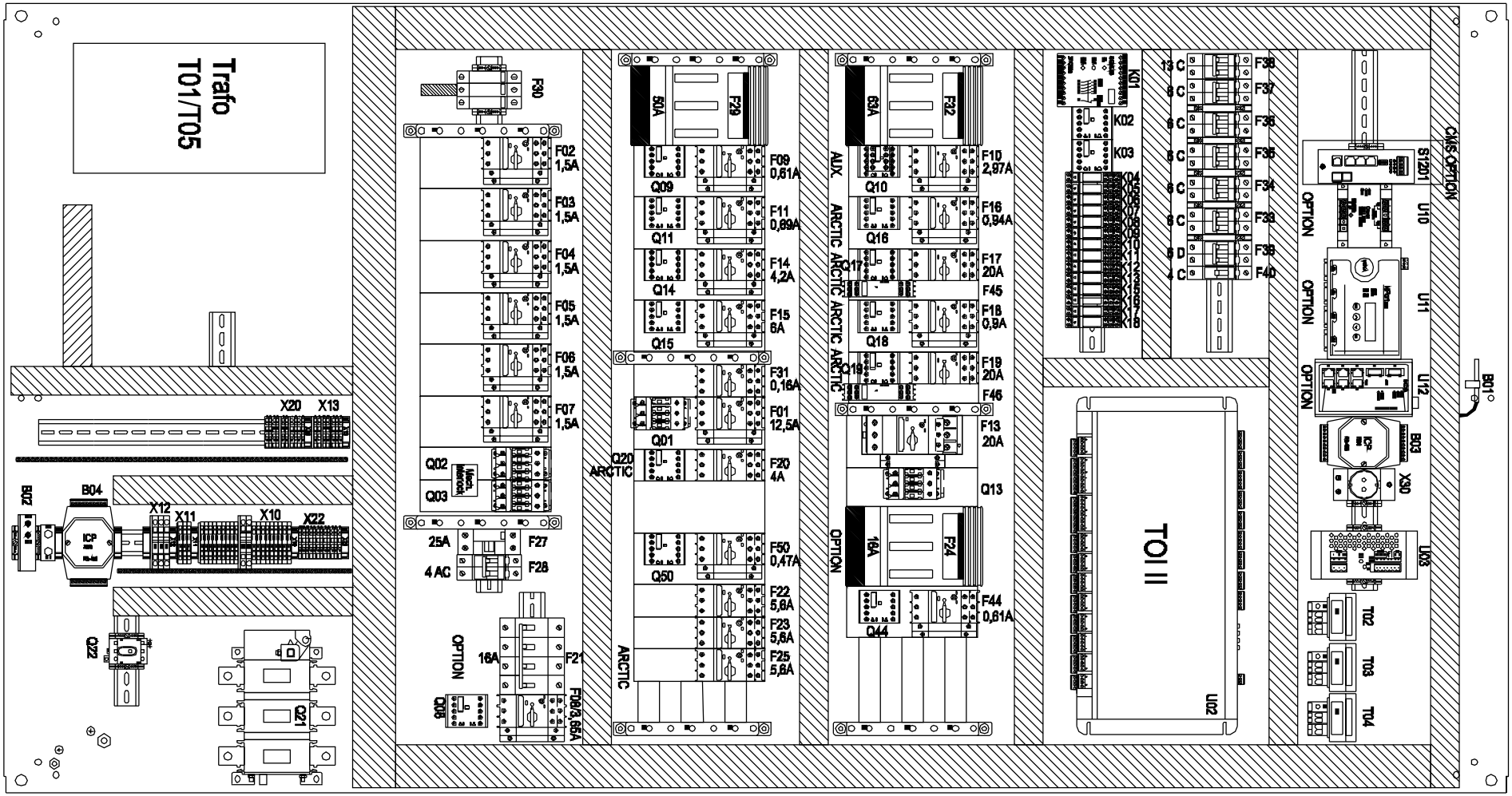

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel Outline	
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments	Customer: Vestas Wind Systems A/S	
		Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 032 / Sheet 031

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Vestas

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	Date	Initials	Function	Spare		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 033	Sheet 032

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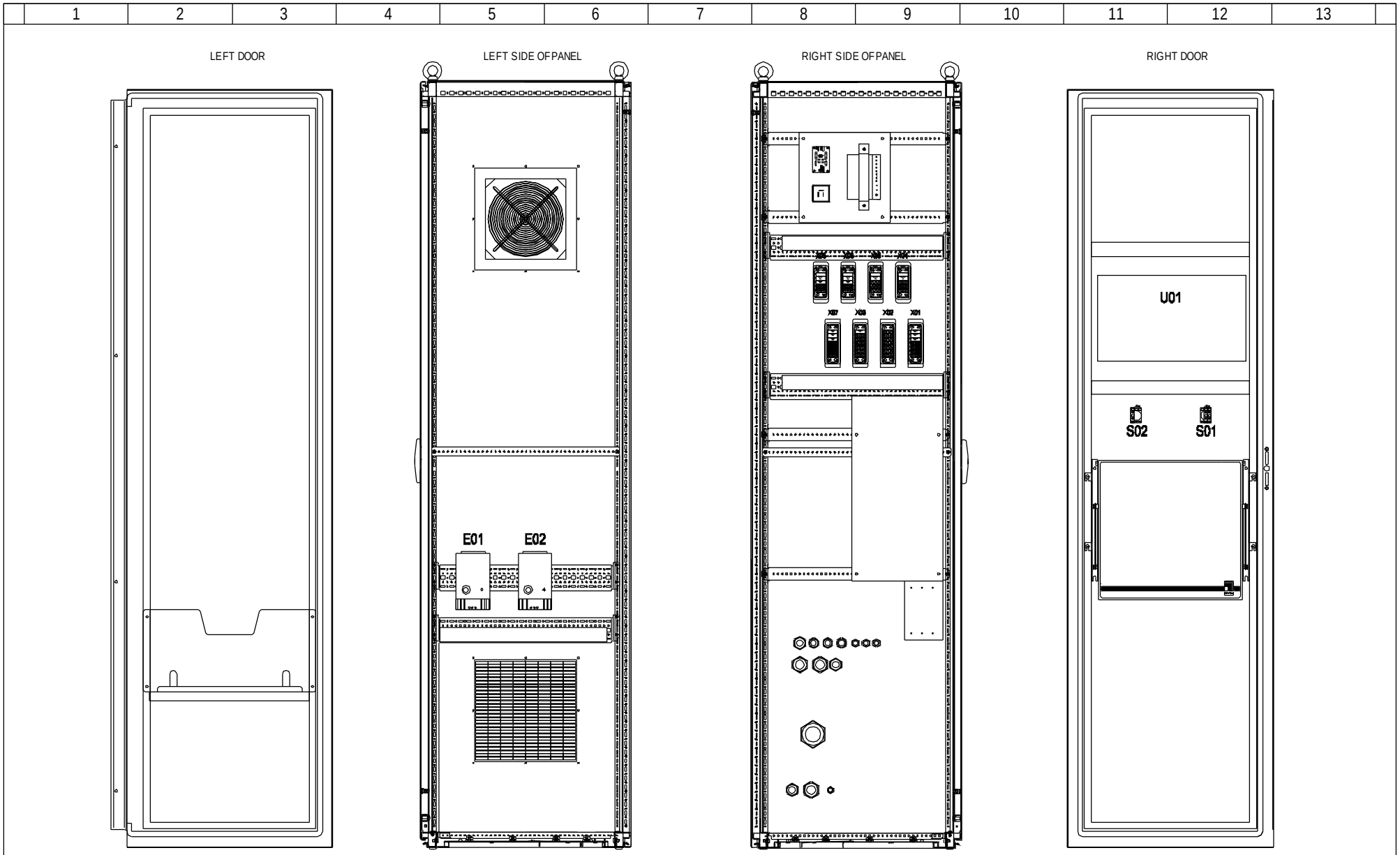

Vestas

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	Date	Initials	Function	Panel outline doors and sides		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 034	Sheet 033

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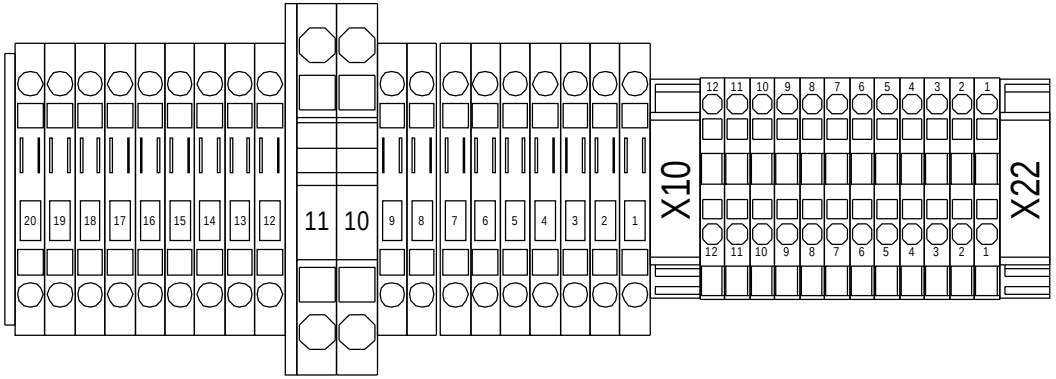

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Terminal row X10, X22.	
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments	Customer: Vestas Wind Systems A/S	
		Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 035 / Sheet 034

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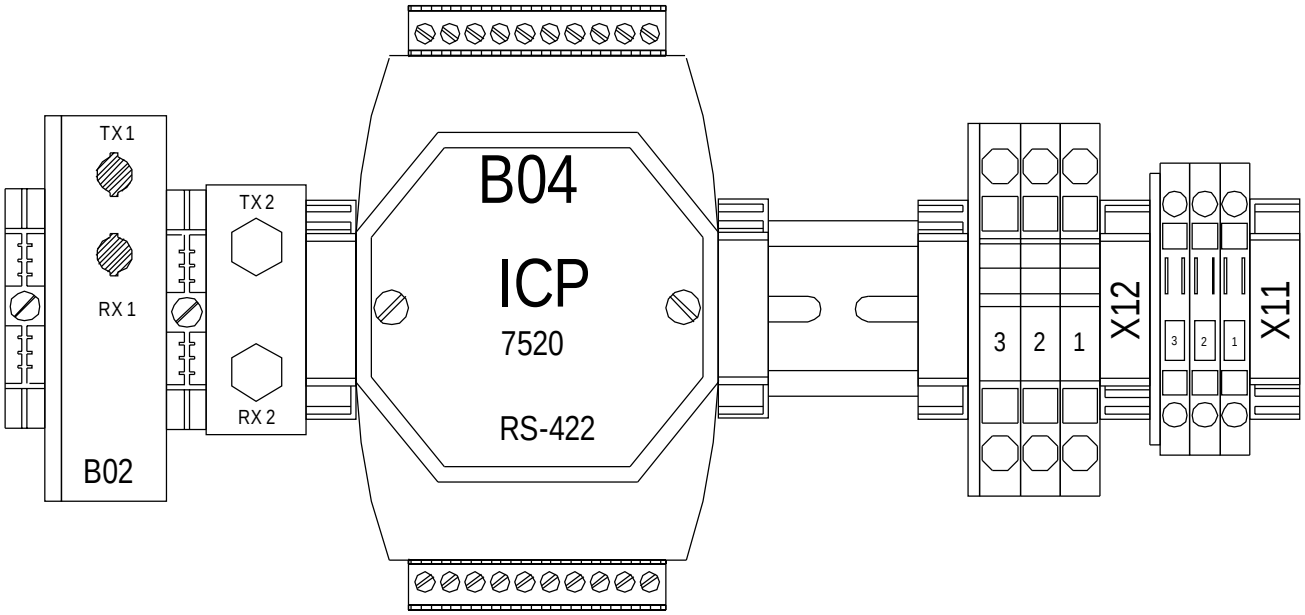

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Terminal row X11, X12, B02, B04	
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments	Customer: Vestas Wind Systems A/S	
		Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 036 / Sheet 035

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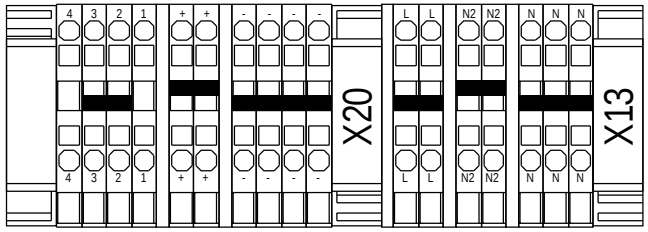
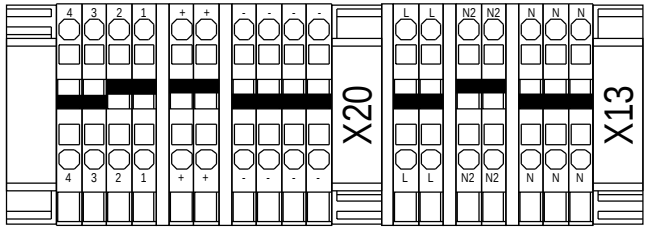


NM72/NM82



NM64

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Terminal row X13, X20
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz
		Approved	070628	FLT	Comments	Customer: Vestas Wind Systems A/S
		Revised	070628	INI	Rev. -	Drawing no. 934704 / Cont. sheet 037 / Sheet 036

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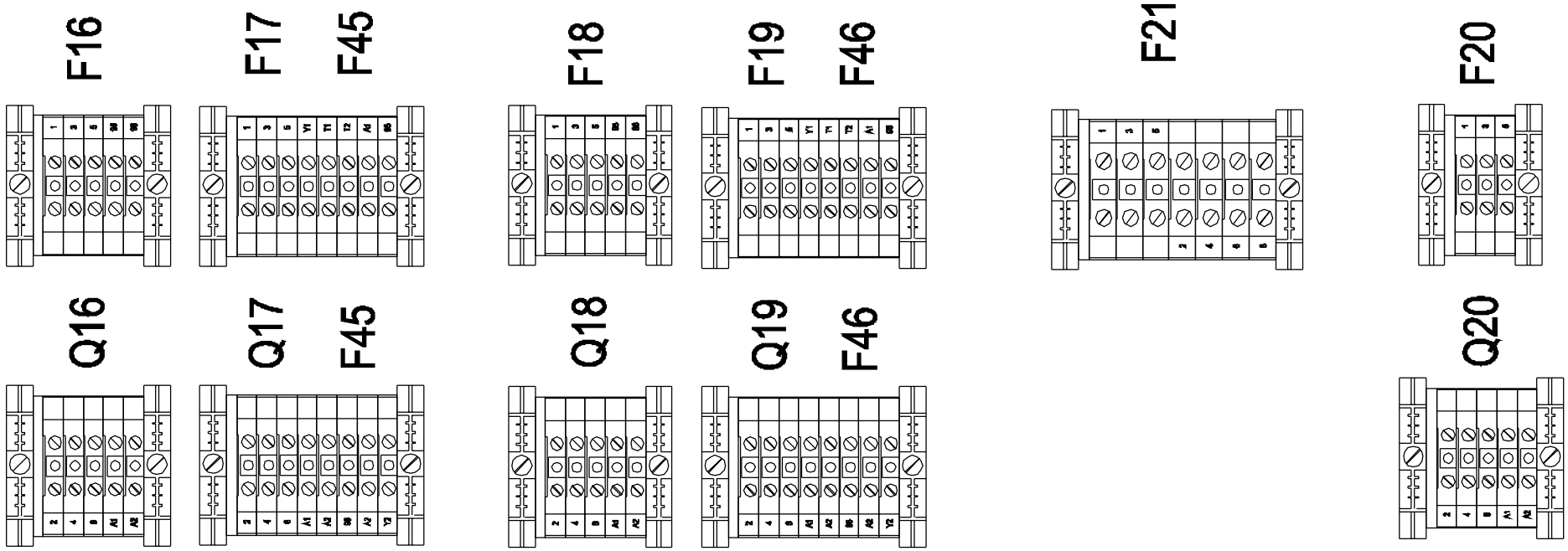

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Terminal rows for Options
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz
		Approved	070628	FLT	Comments	Customer: Vestas Wind Systems A/S
		Revised	070628	INI	Rev. -	Drawing no. 934704 / Cont. sheet 039 / Sheet 037

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USE COPPER CONDUCTORS ONLY FOR EXTERNAL WIRES AND CABLES.

USE 60°C CABLES FOR CURRENTS LESS THAN 100Amps AND 75°C CABLES FOR HIGHER CURRENTS.

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	Date	Initials	Function	Cable Connections		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 040	Sheet 039

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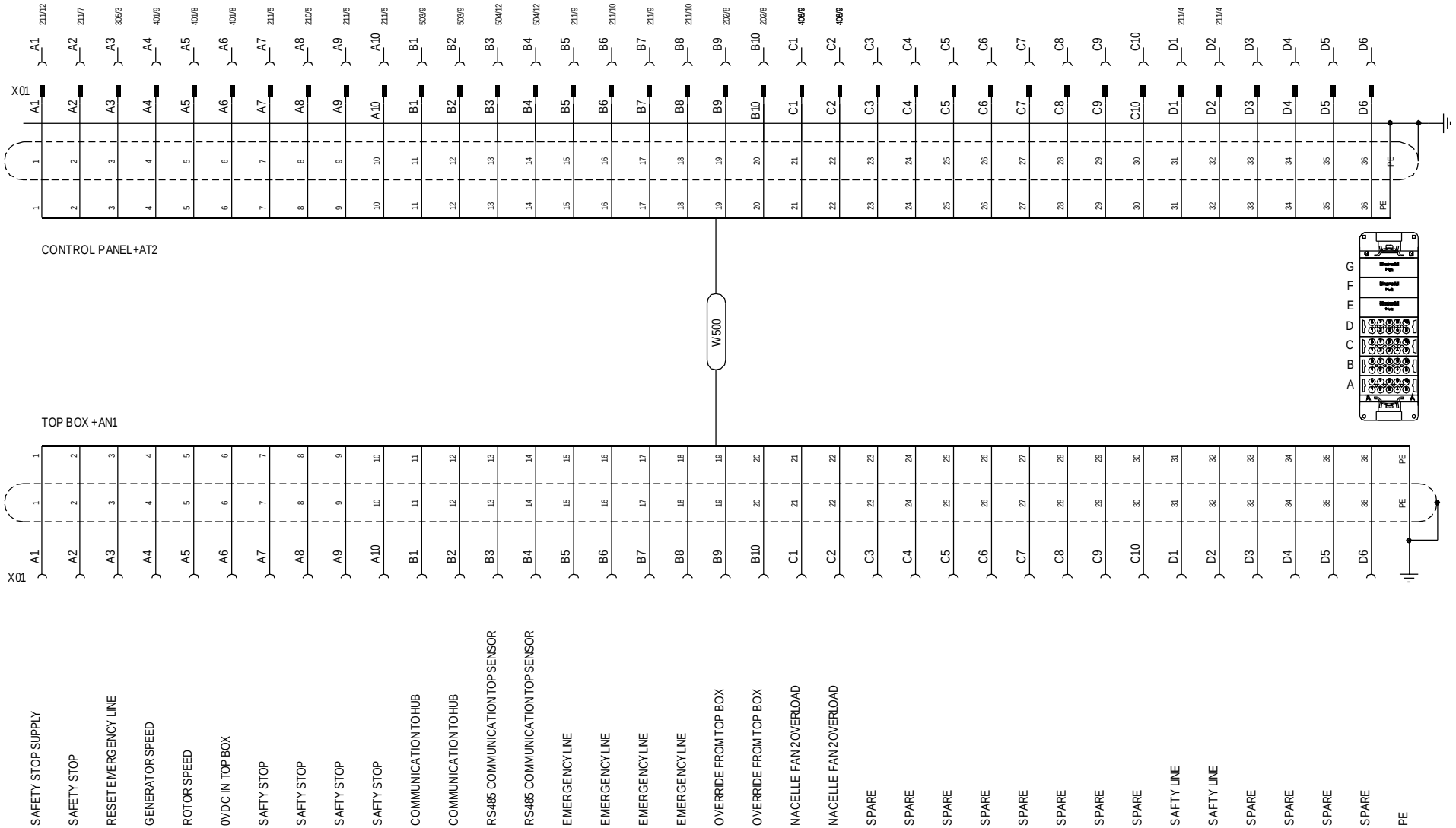

Vestas

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	Date	Initials	Function	External connection X01 to top box AN1		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 041	Sheet 040

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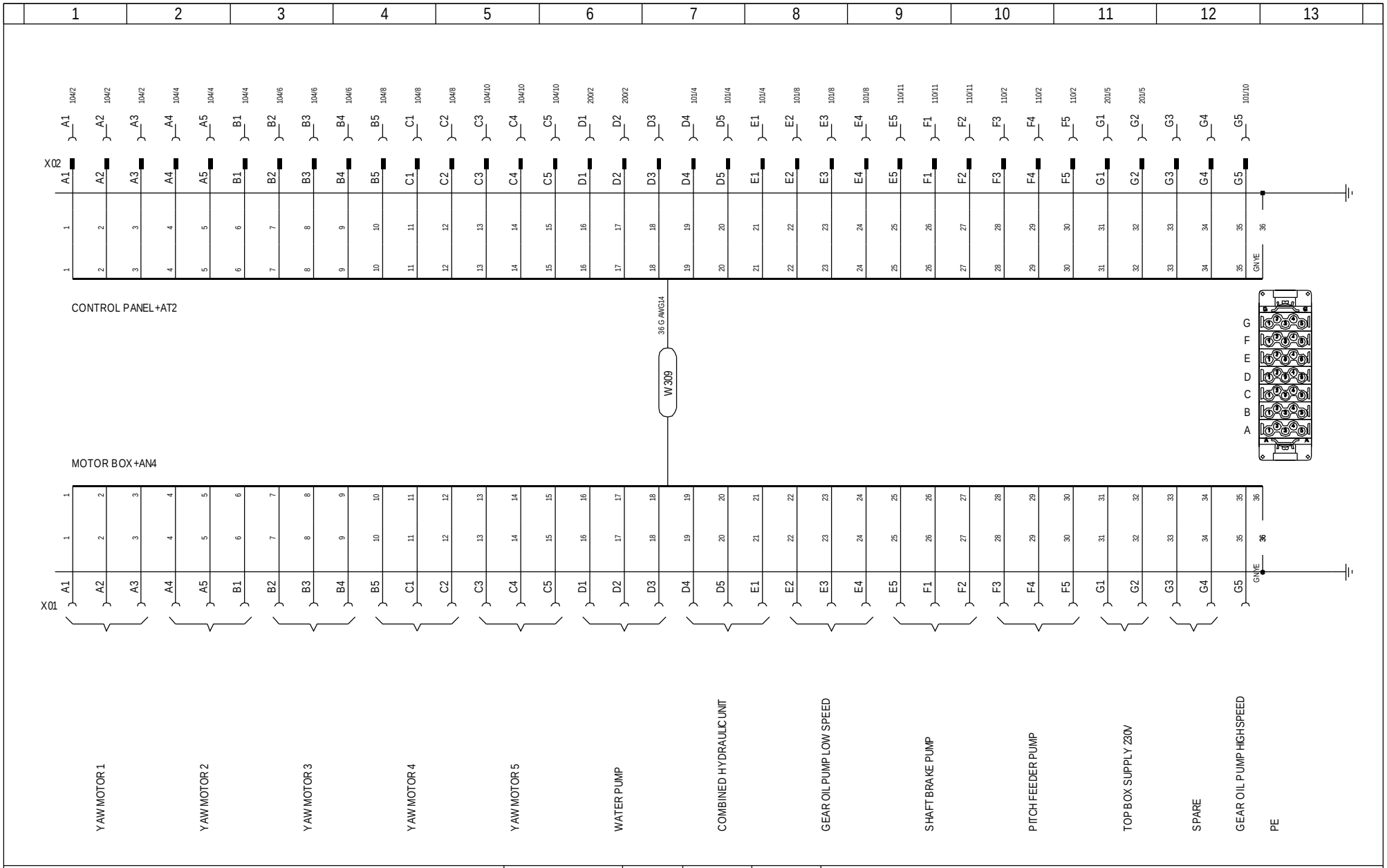

Vestas

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	Date	Initials	Function	External connection X02 to motor box AN4		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 042	Sheet 041

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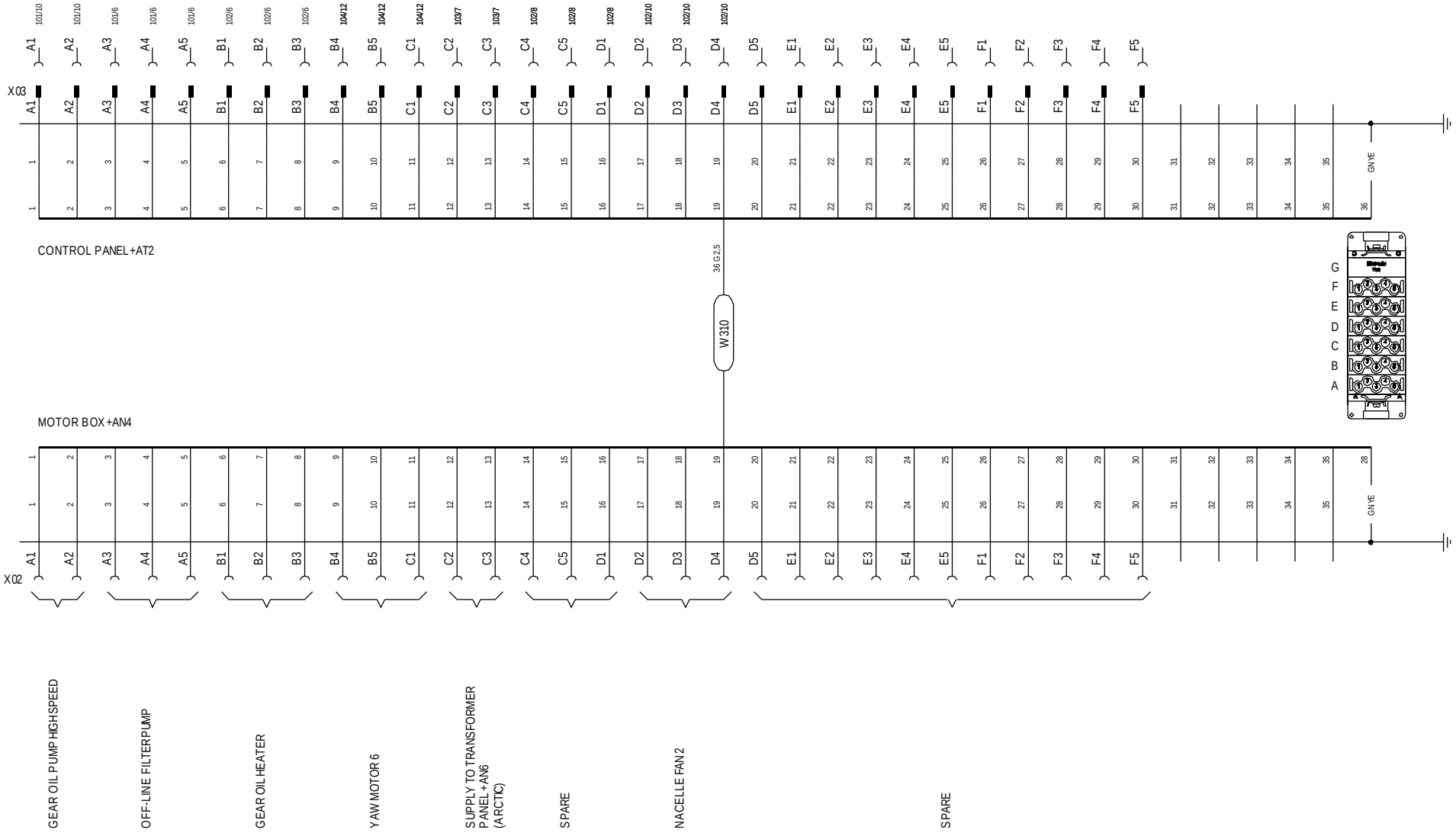

	Date	Initials	Function	External connection X03 to motor box AN4		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 043	Sheet 042

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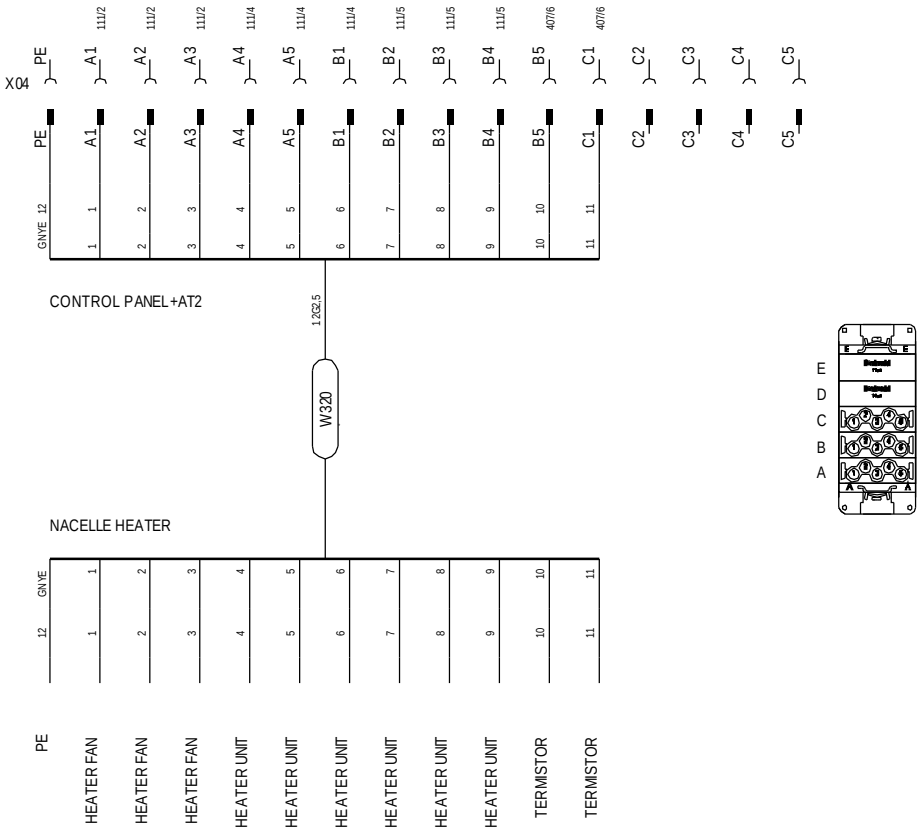

	Date	Initials	Function	External connection X04 to nacelle heater 1			
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz			
Approved	070628	FLT	Comments			Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704		Cont. sheet 044	Sheet 043

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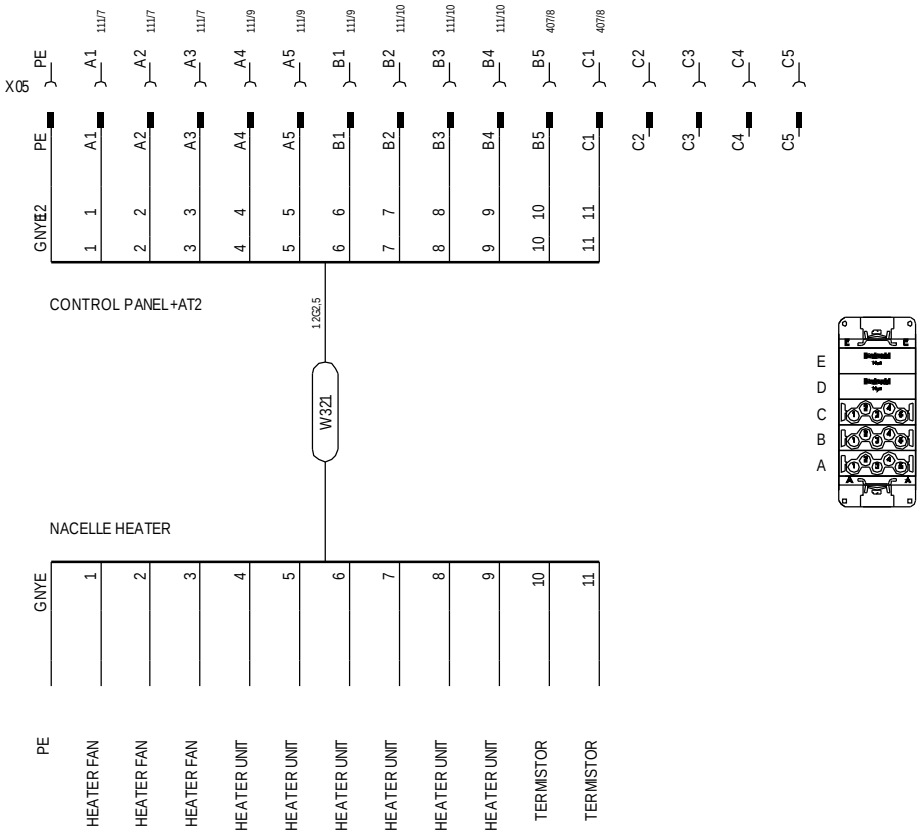

	Date	Initials	Function	External connection X05 to nacelle heater 2		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 045	Sheet 044

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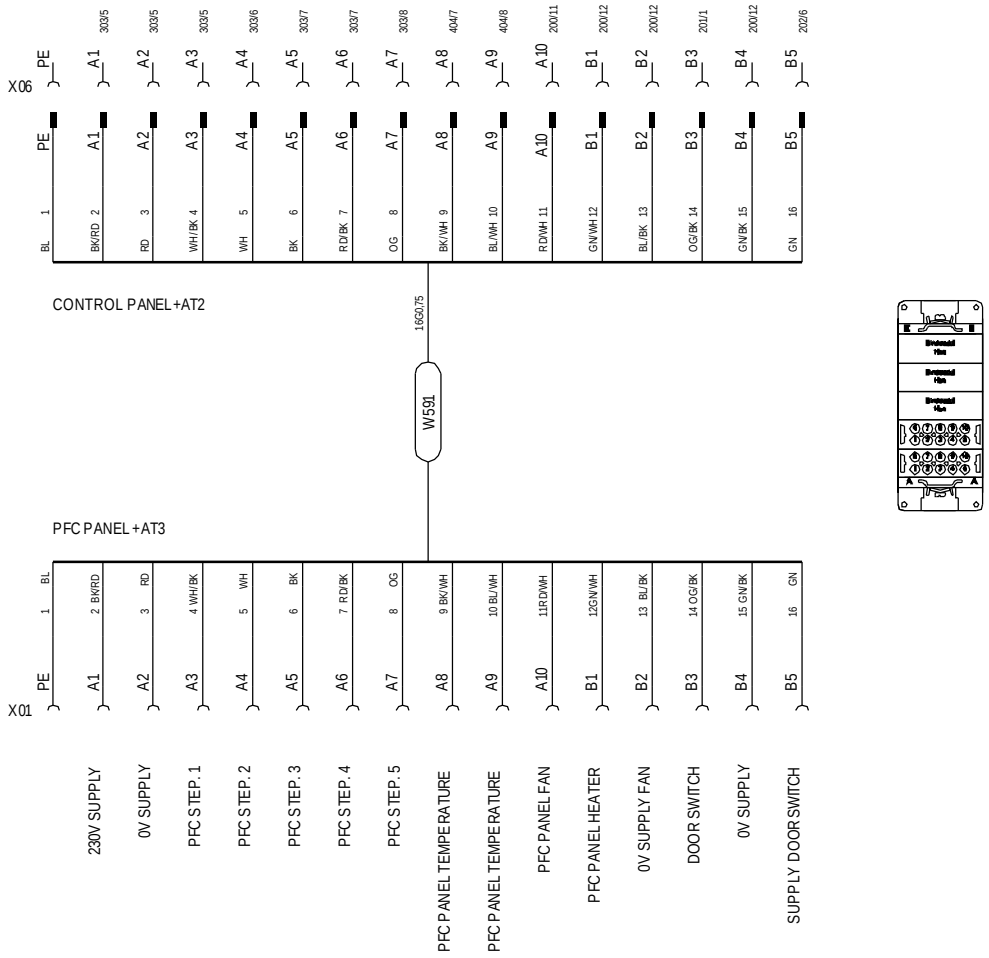

Vestas

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	Date	Initials	Function	External connection X06 to PFC panel AT3		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 046	Sheet 045

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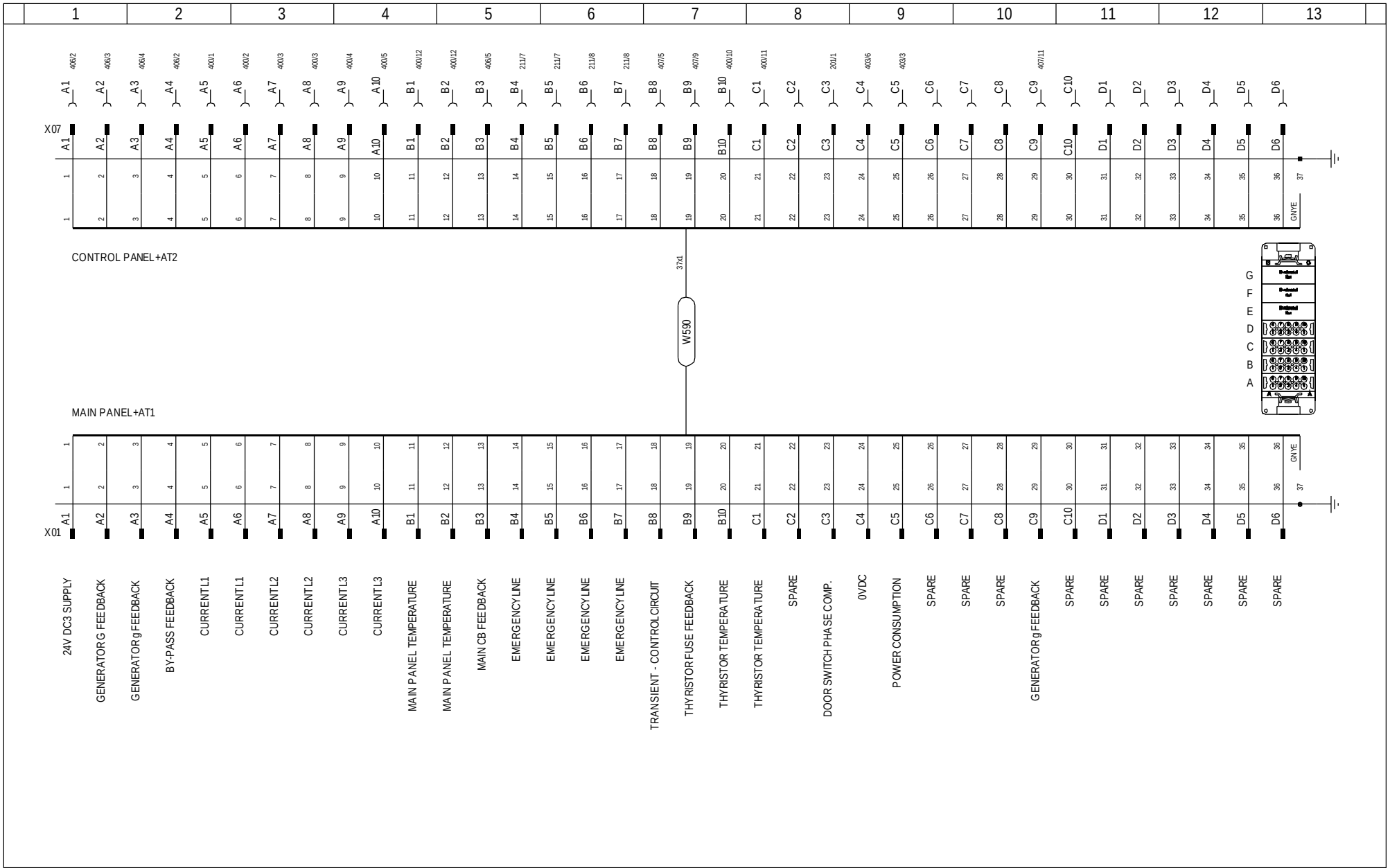

	Date	Initials	Function	External connection X07 to main panel AT1		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 047	Sheet 046

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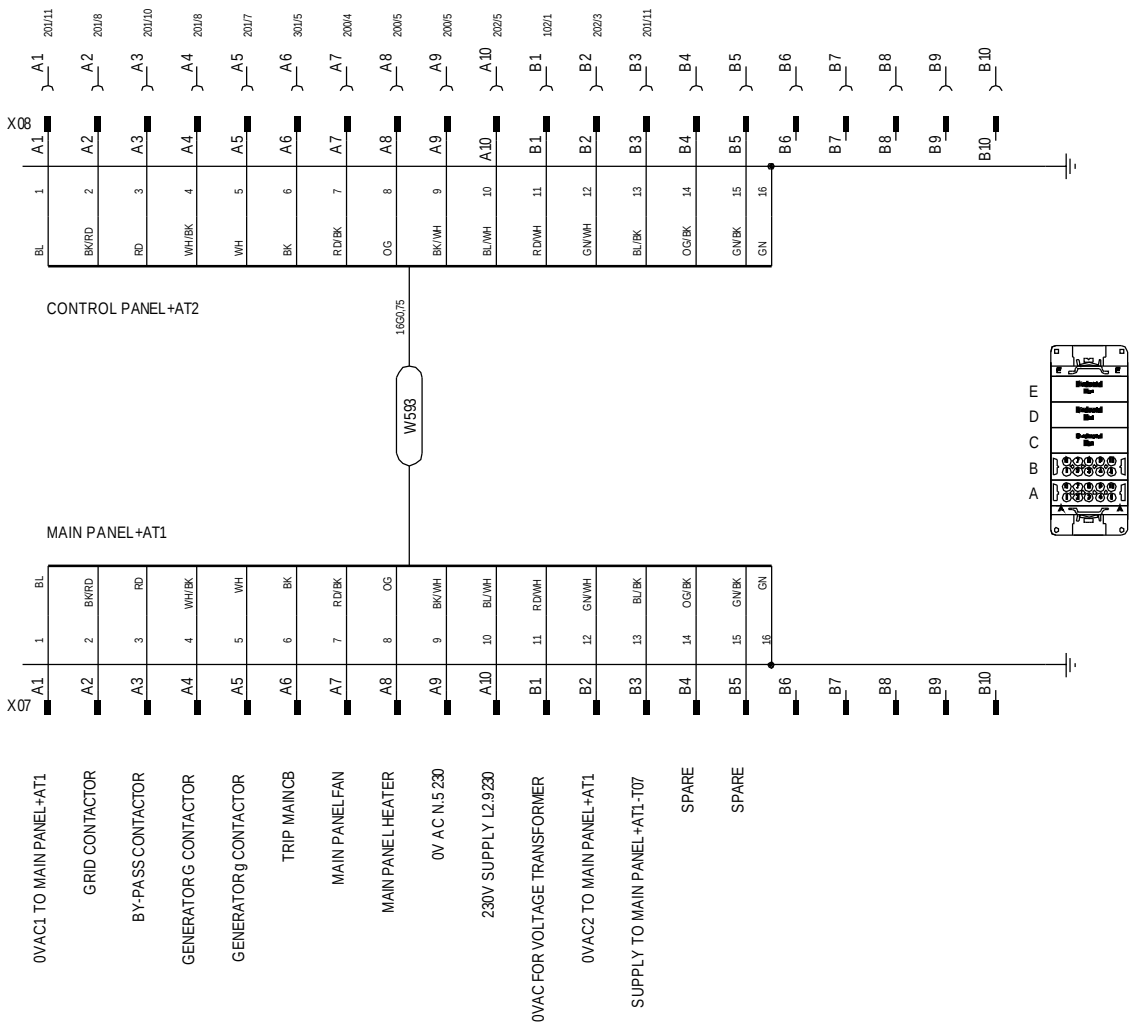

Vestas

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	Date	Initials	Function	External connection X08 to main panel AT1		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 048	Sheet 047

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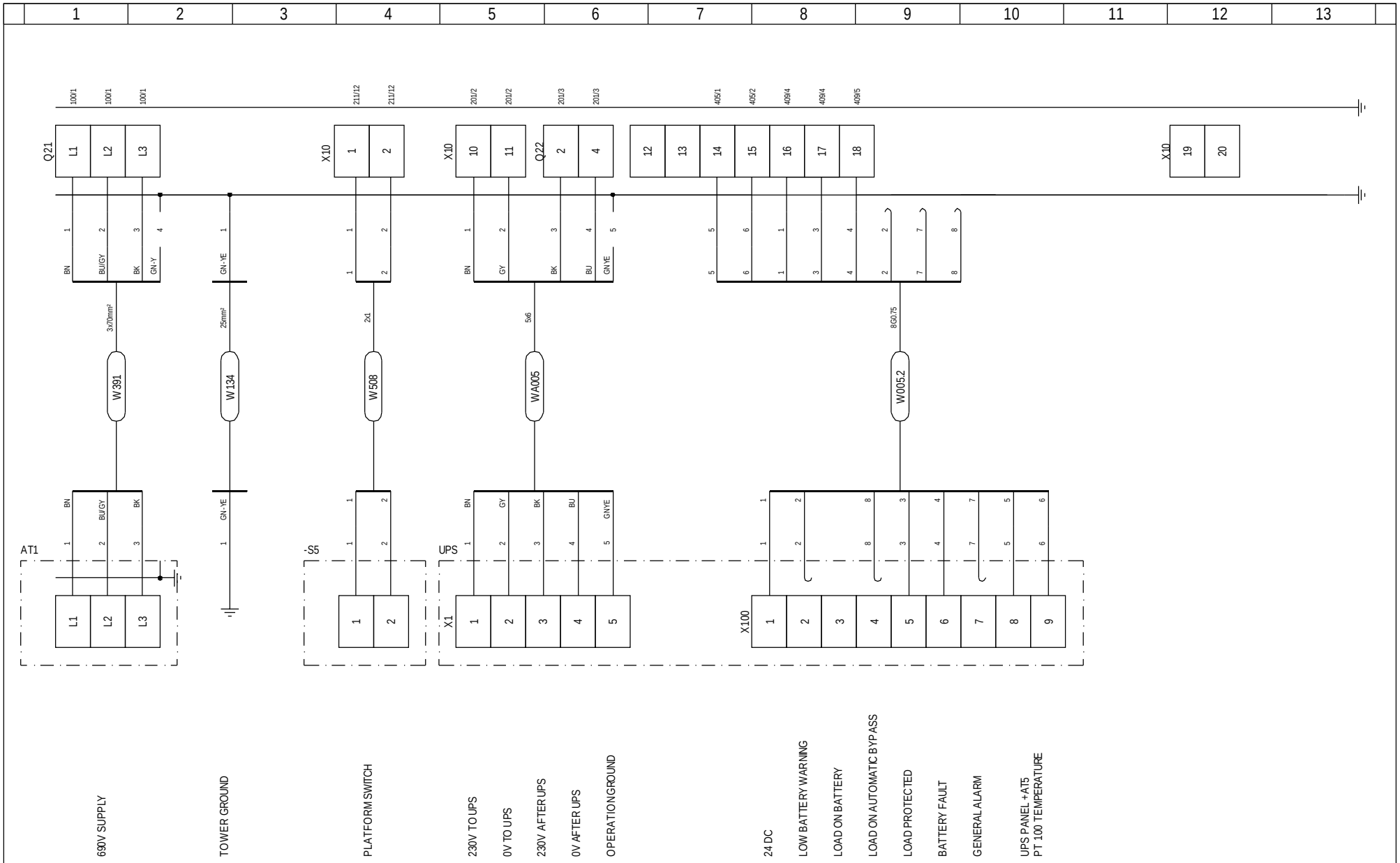

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	Date	Initials	Function	External connection X10		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 049	Sheet 048

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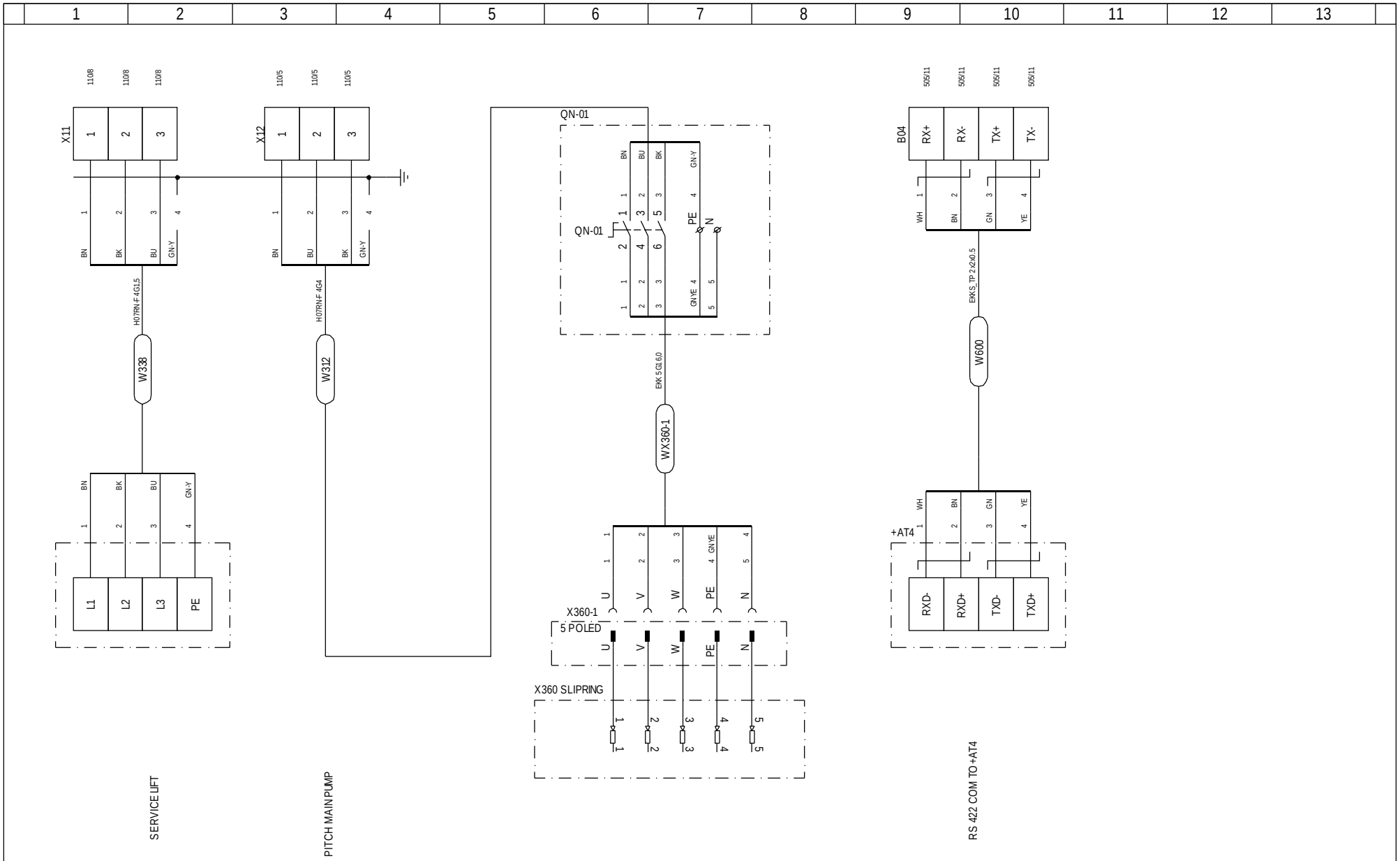

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.	Date	Initials	Function	External connection X11 X12 B04	
		Designed 070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved 070628	FLT	Comments	Customer	Vestas Wind Systems A/S
		Revised 070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 050 / Sheet 049

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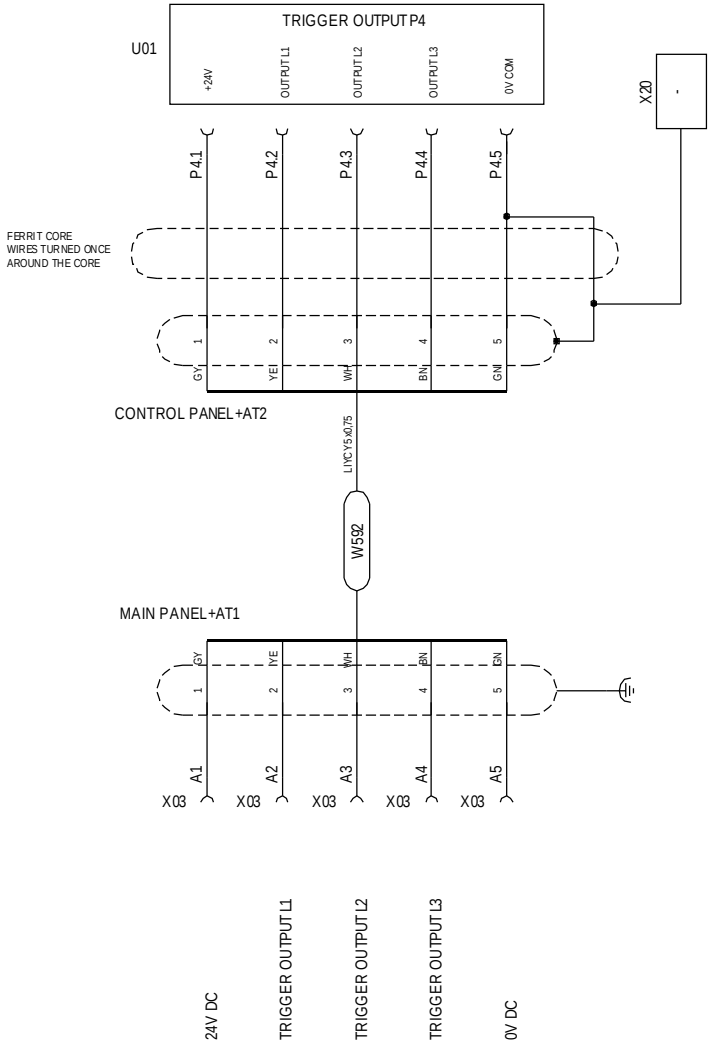

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.	Date / Initials	Function	External connection for trigger cable to AT1	
		Designed 070628 FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved 070628 FLT	Comments	Customer	Vestas Wind Systems A/S
		Revised 070628 INI	Rev. -	Drawing no. 934704	Cont. sheet 100 / Sheet 050

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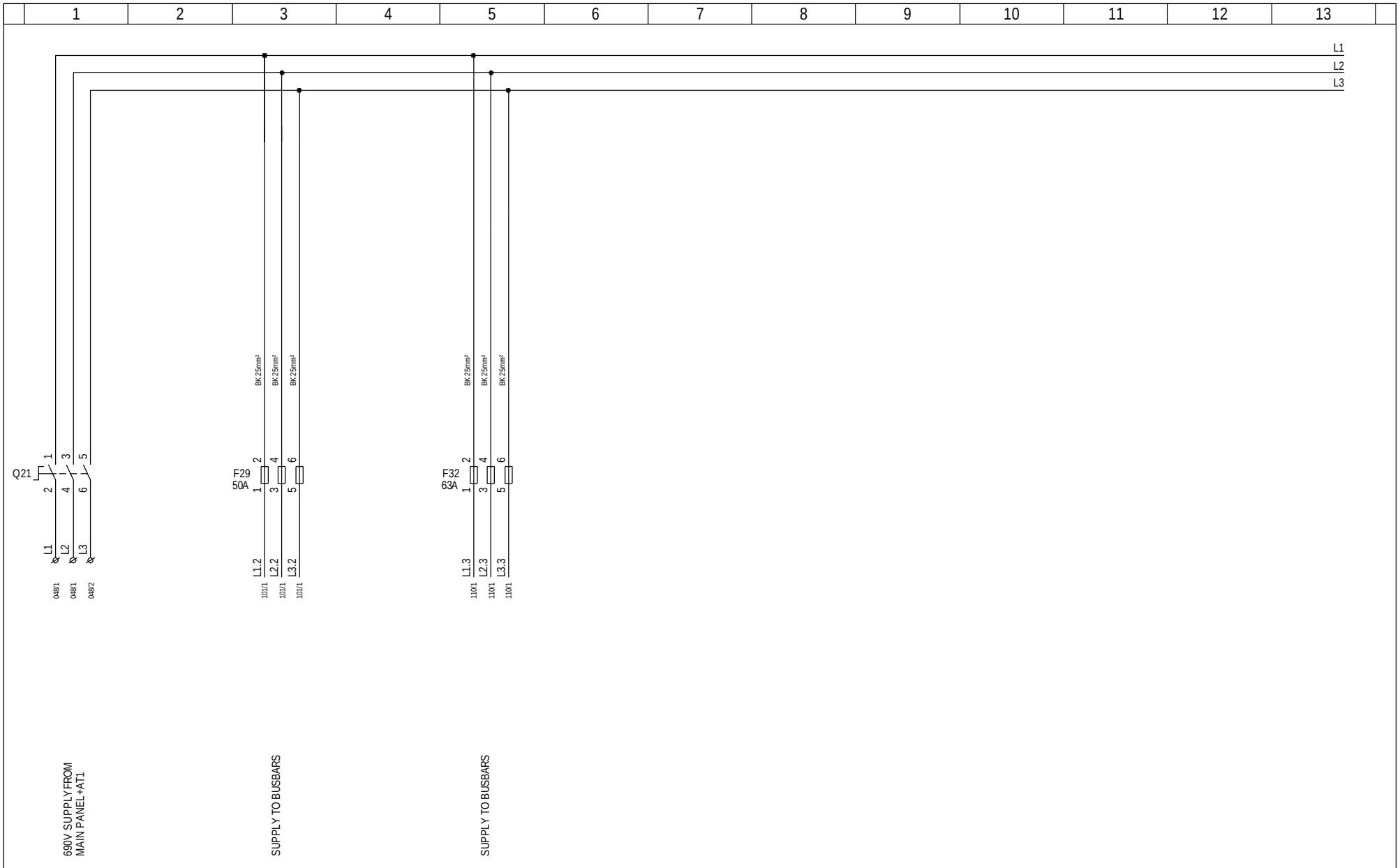

Vestas

Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.

	Date	Initials	Function	690V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
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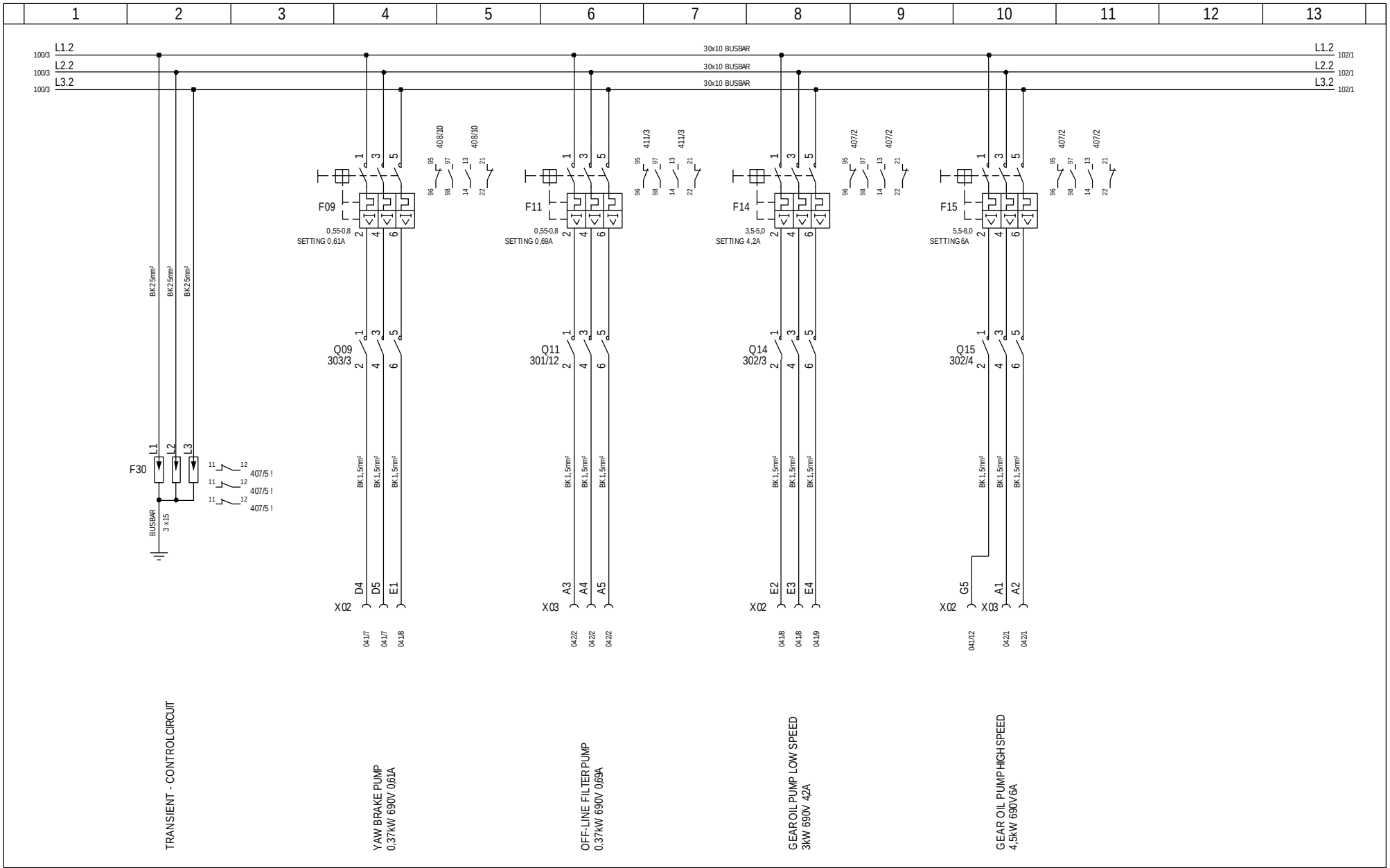

Vestas

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	Date	Initials	Function	690V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 102	Sheet 101

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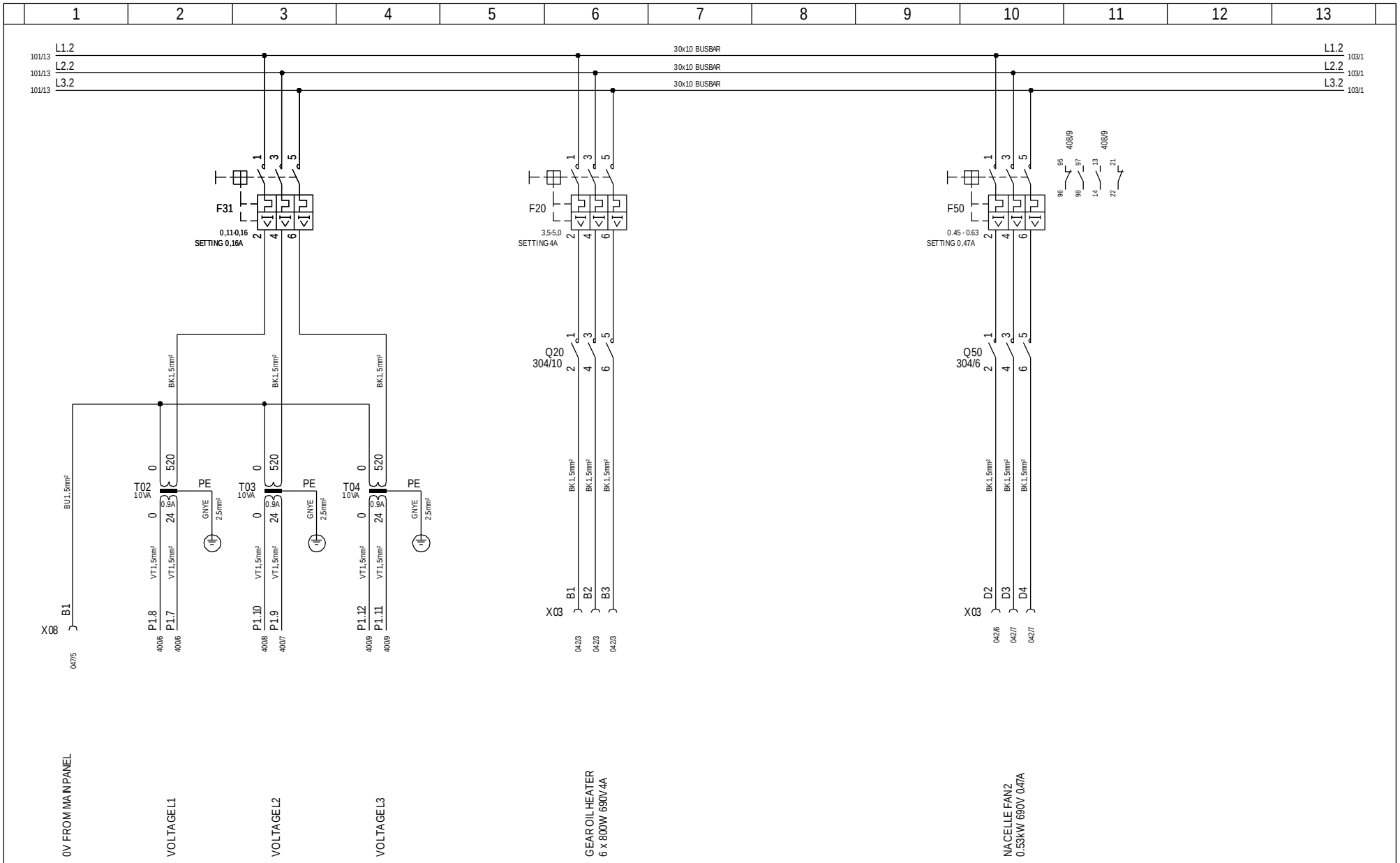
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	690V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 103	Sheet 102

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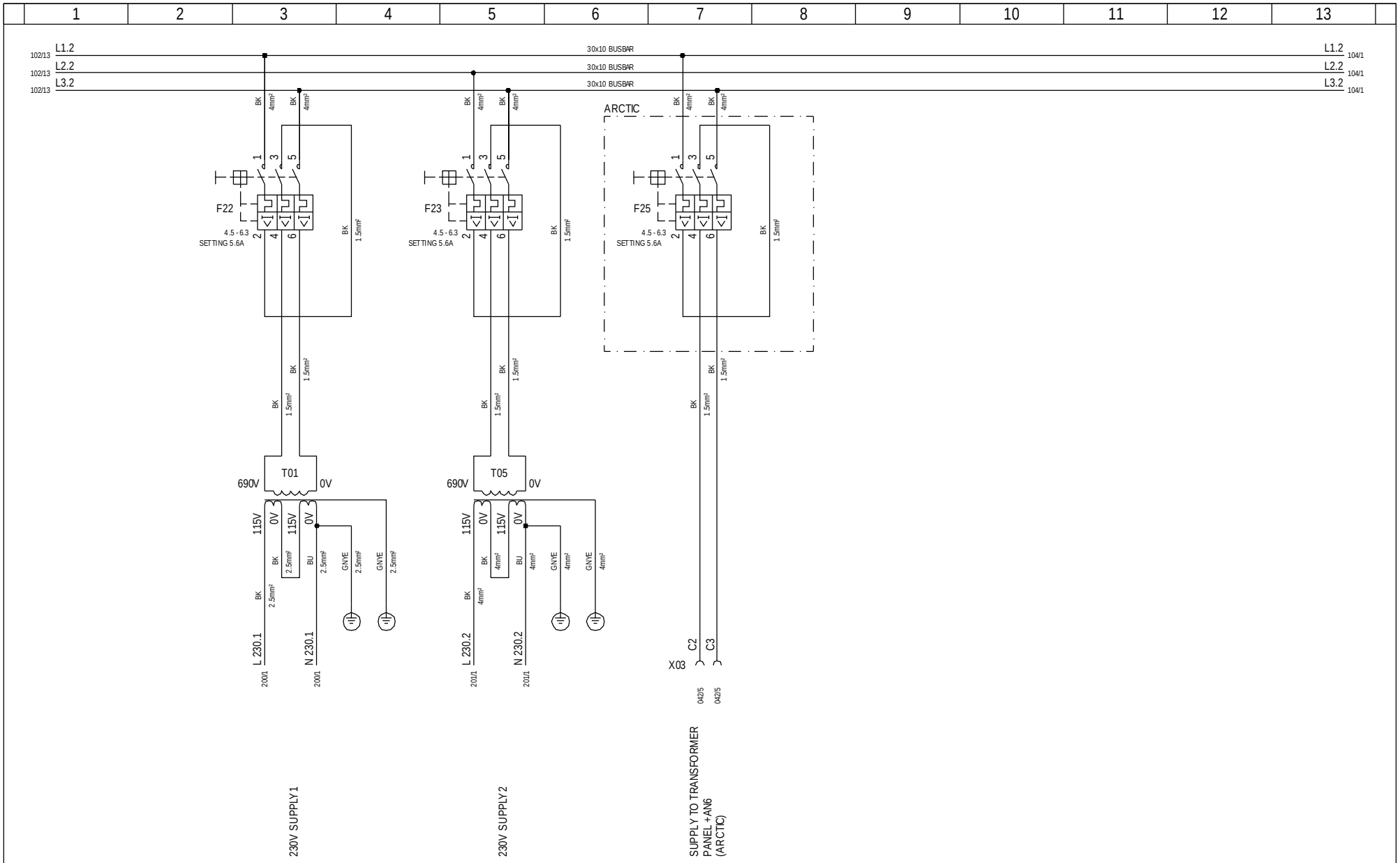
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	690V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 104	Sheet 103

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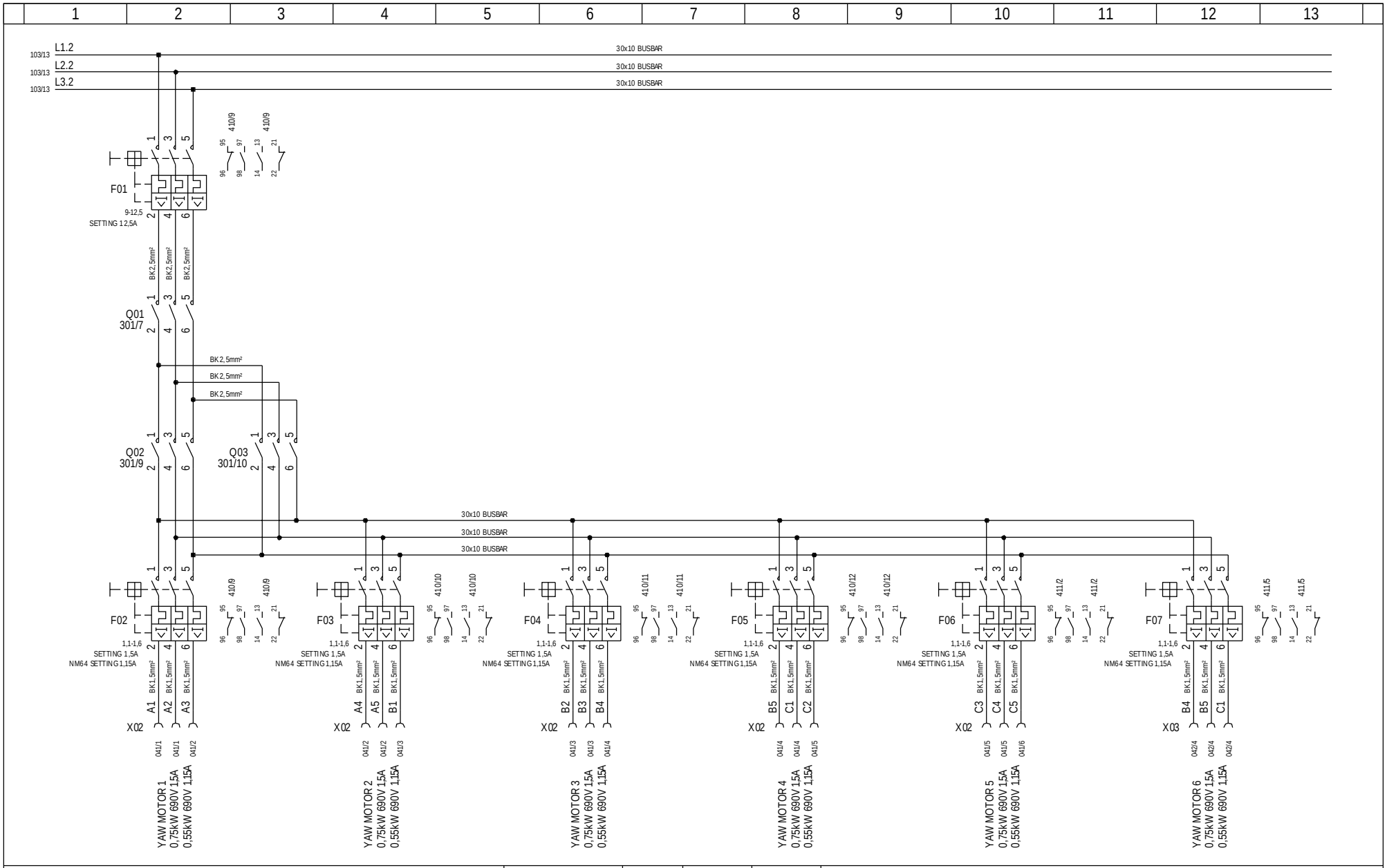
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



	Date	Initials	Function	690V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 110	Sheet 104

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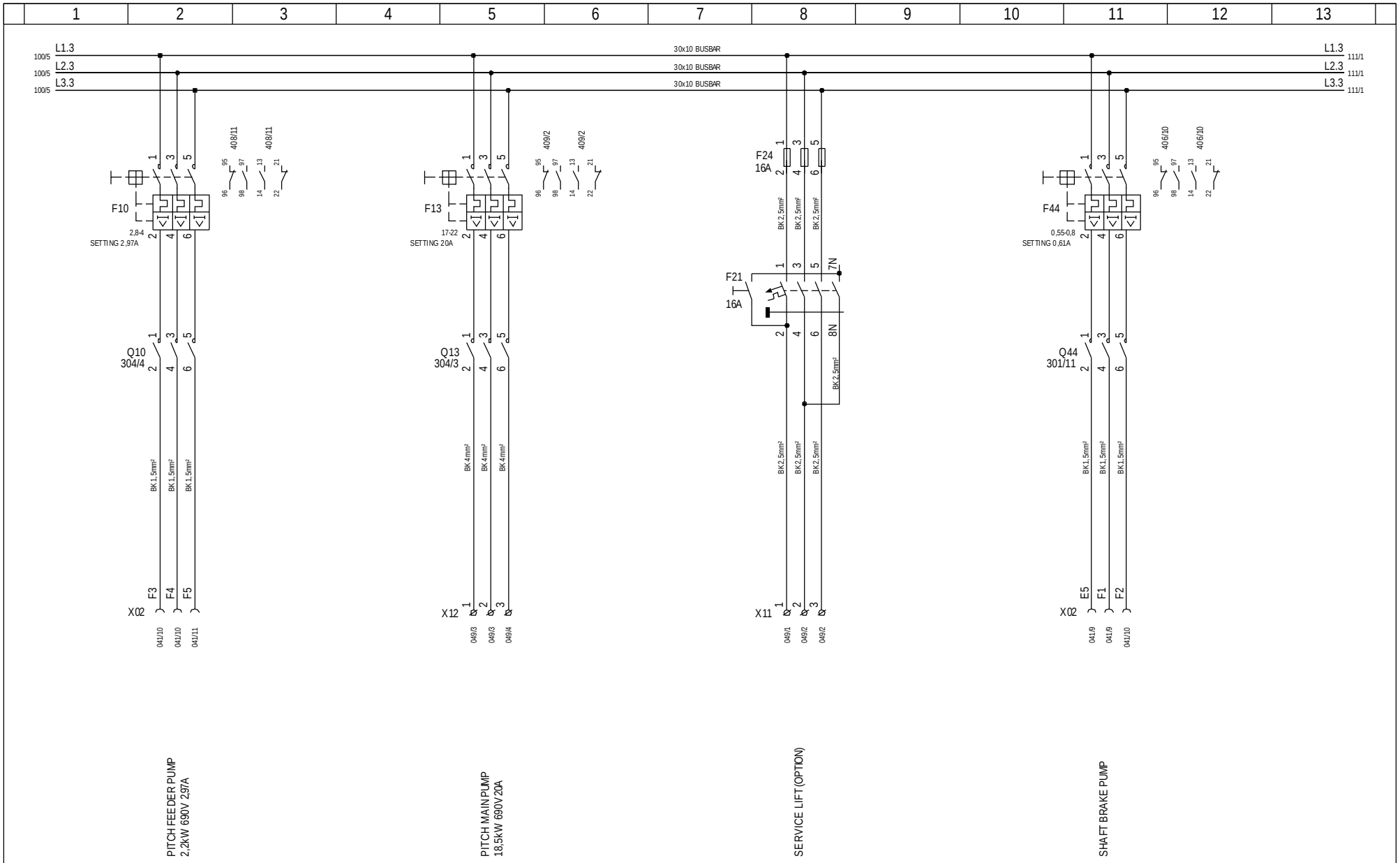
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



	Date	Initials	Function	690V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 111	Sheet 110

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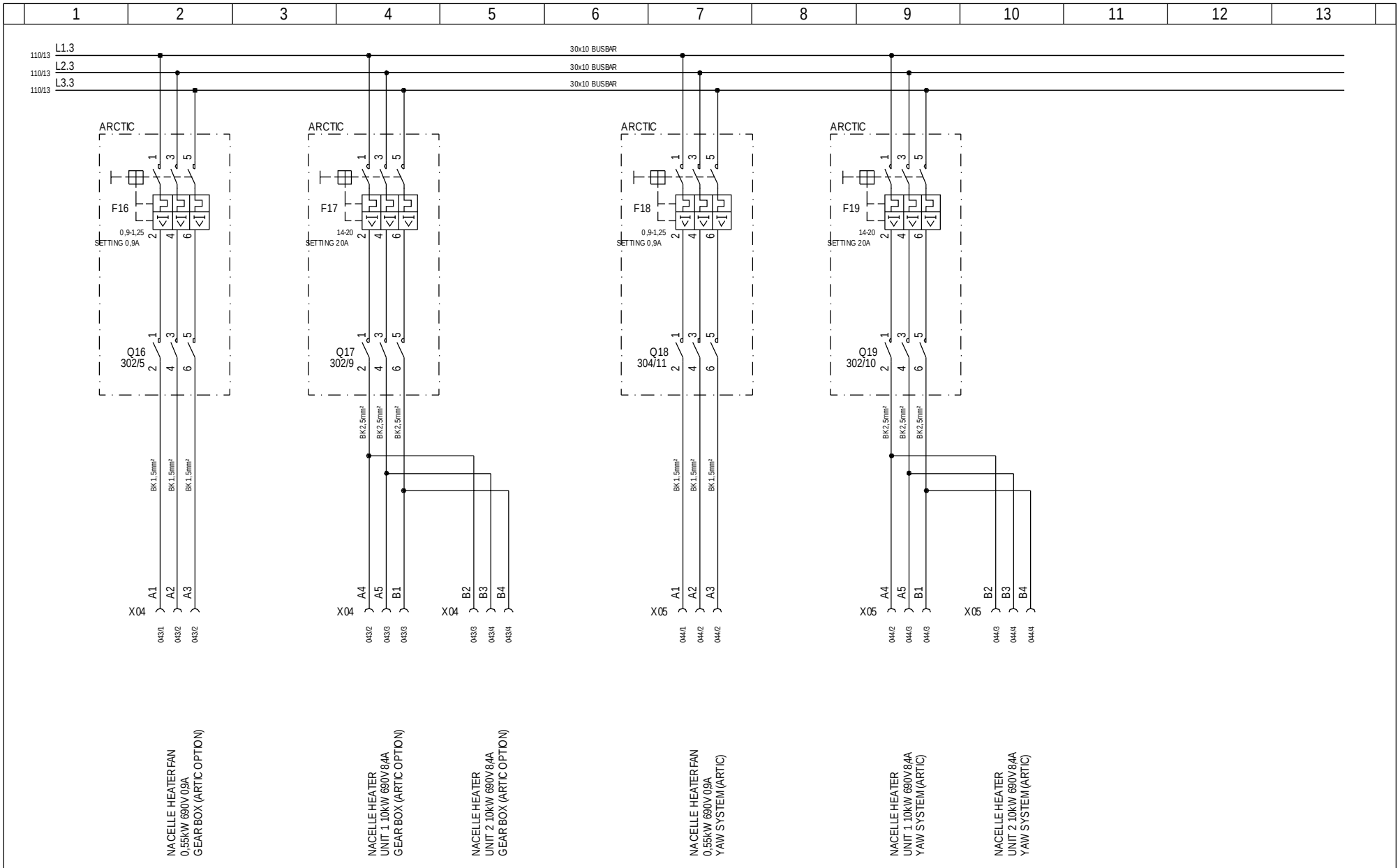
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	690V circuits nacelle heaters (arctic)		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 200	Sheet 111

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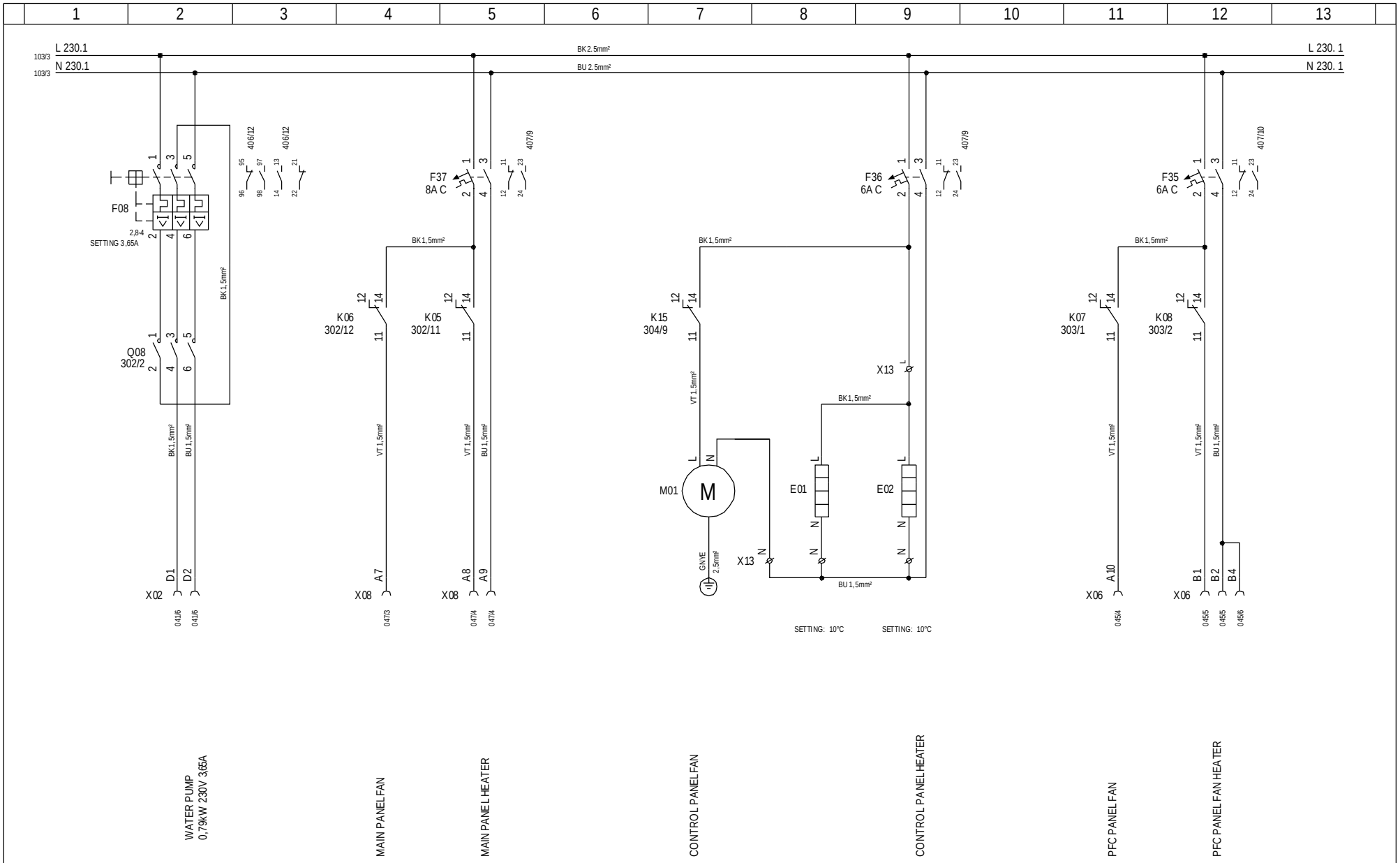
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



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	Date	Initials	Function	230V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 201	Sheet 200

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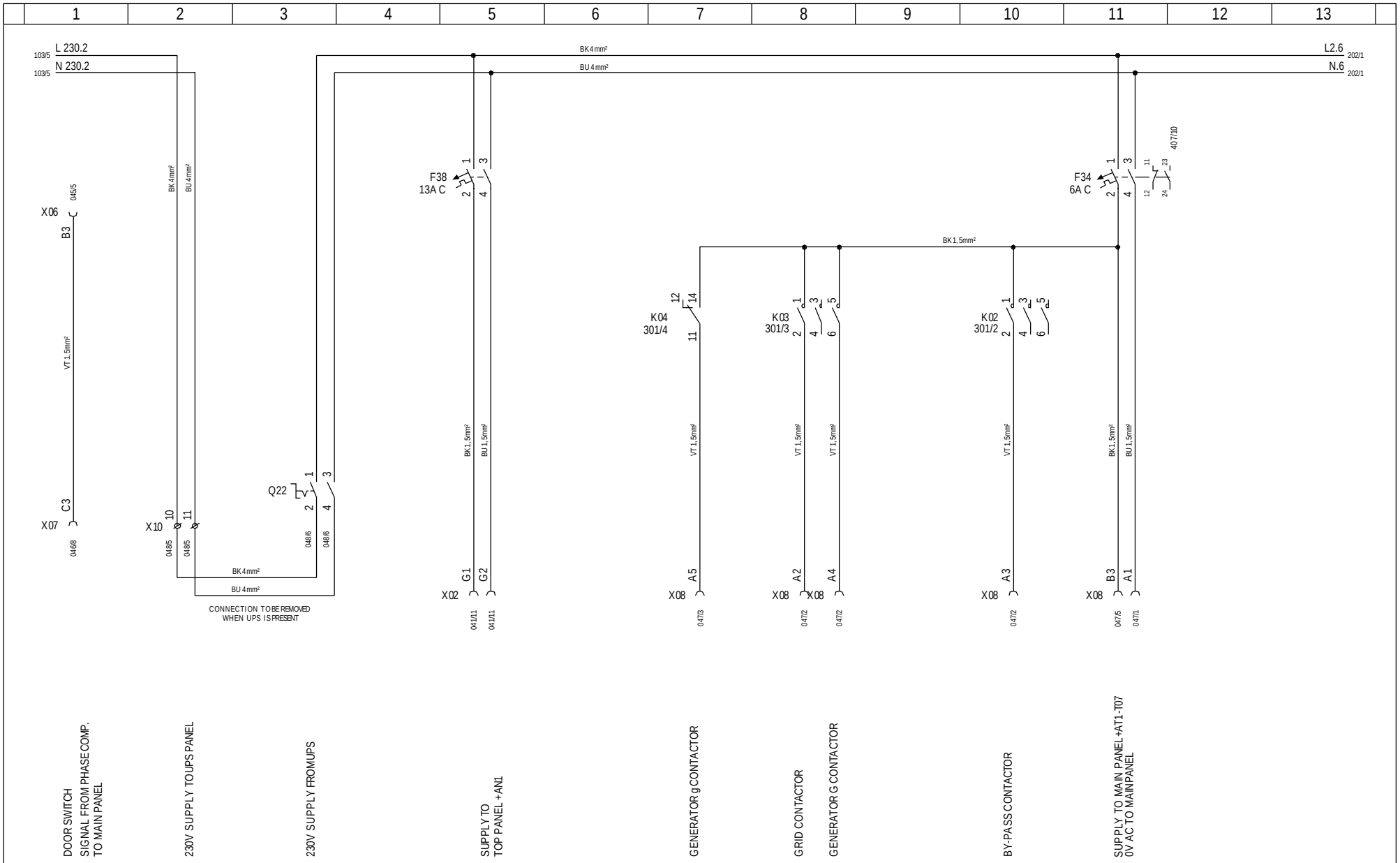
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	230V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 202	Sheet 201

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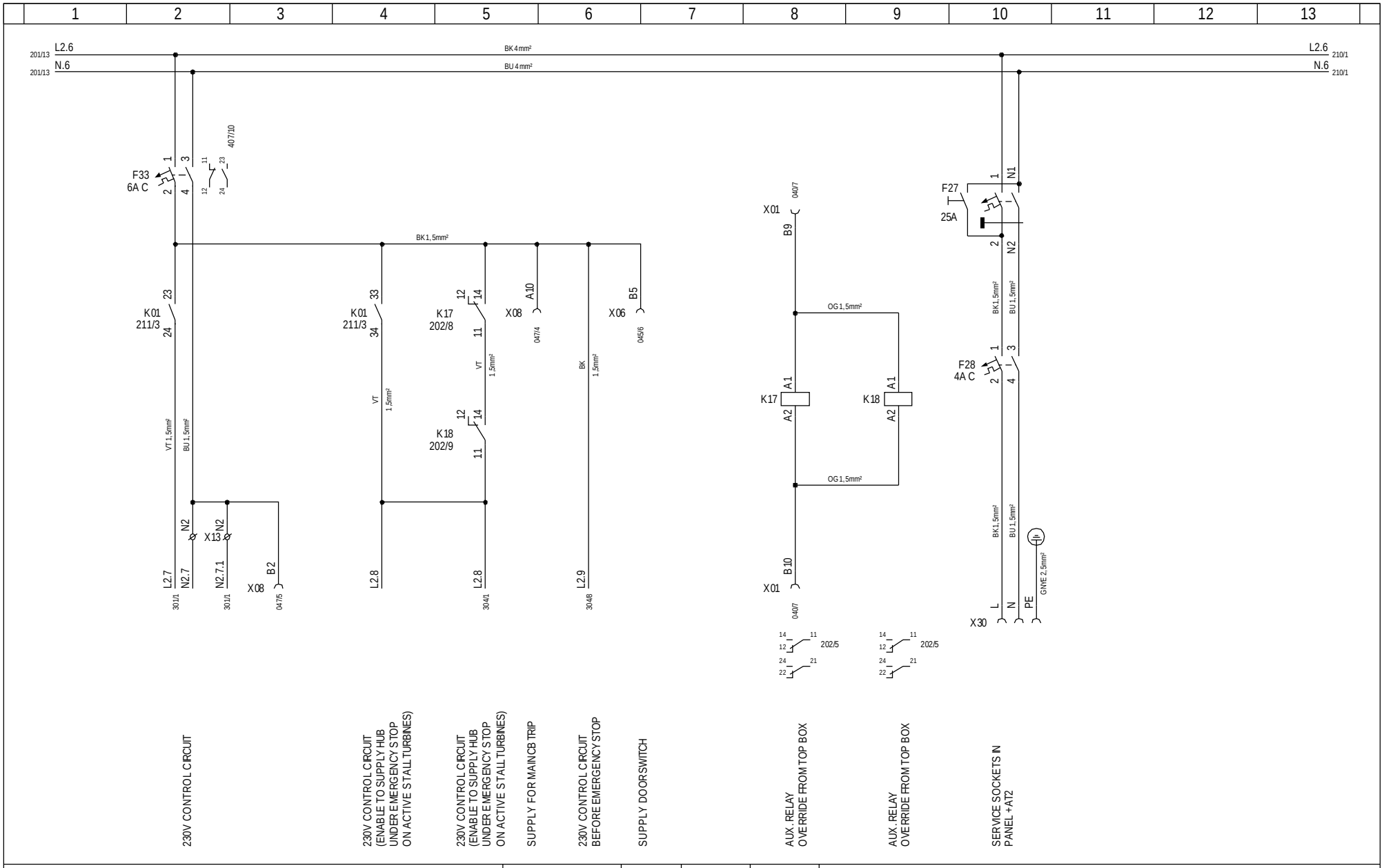
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	230V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 210	Sheet 202

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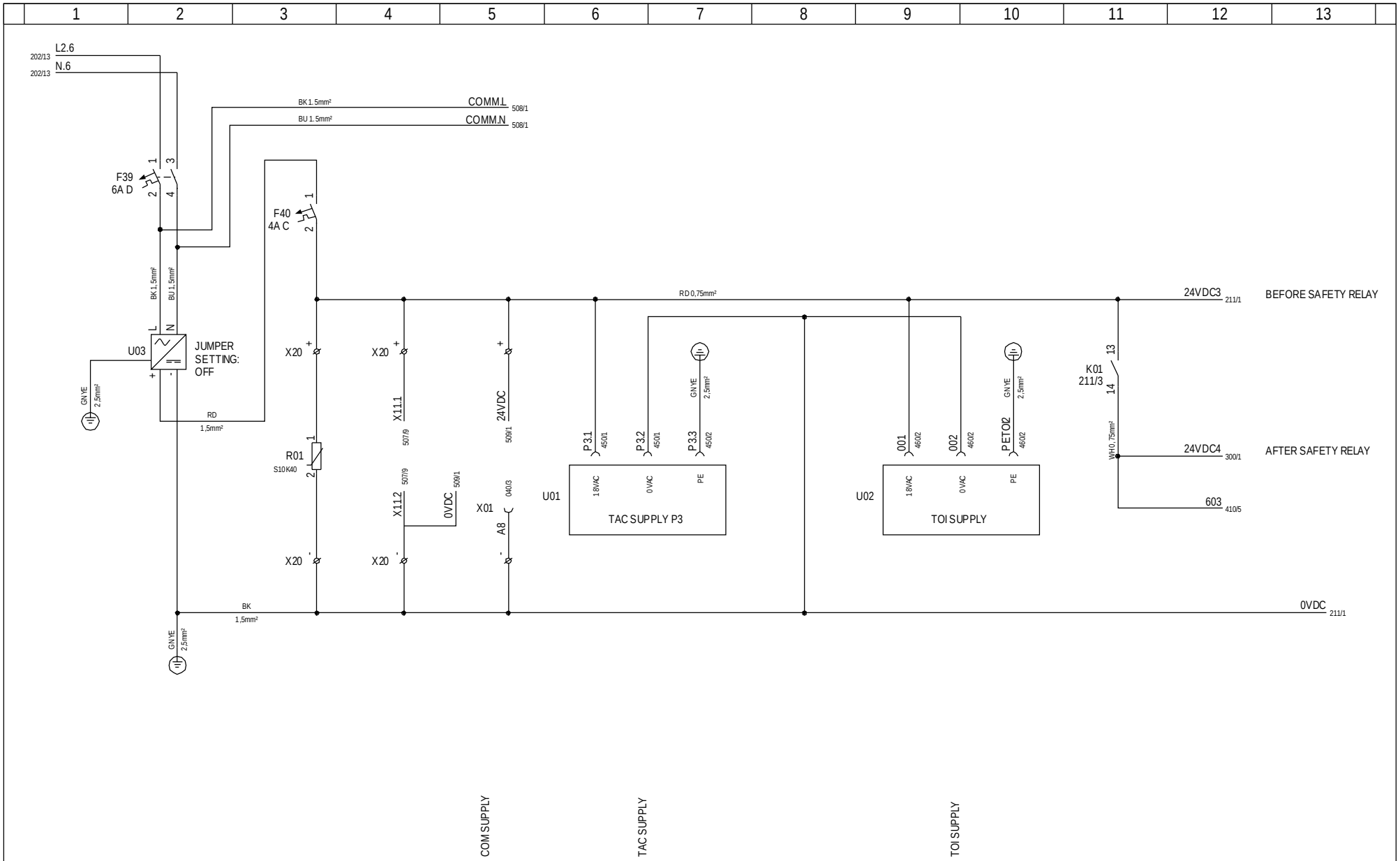
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



	Date	Initials	Function	230V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 211	Sheet 210

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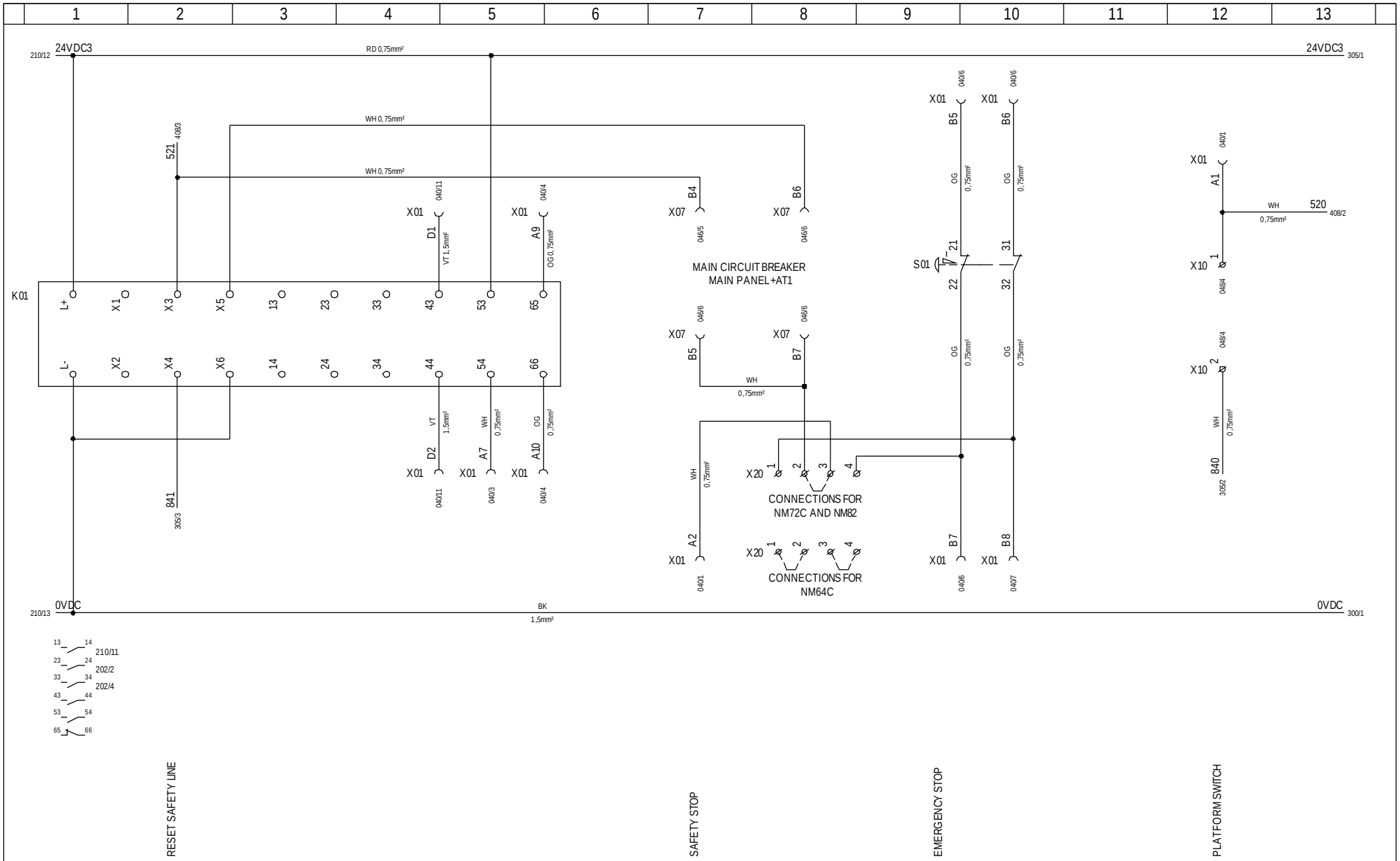

Vestas

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	Date	Initials	Function	230V circuits		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
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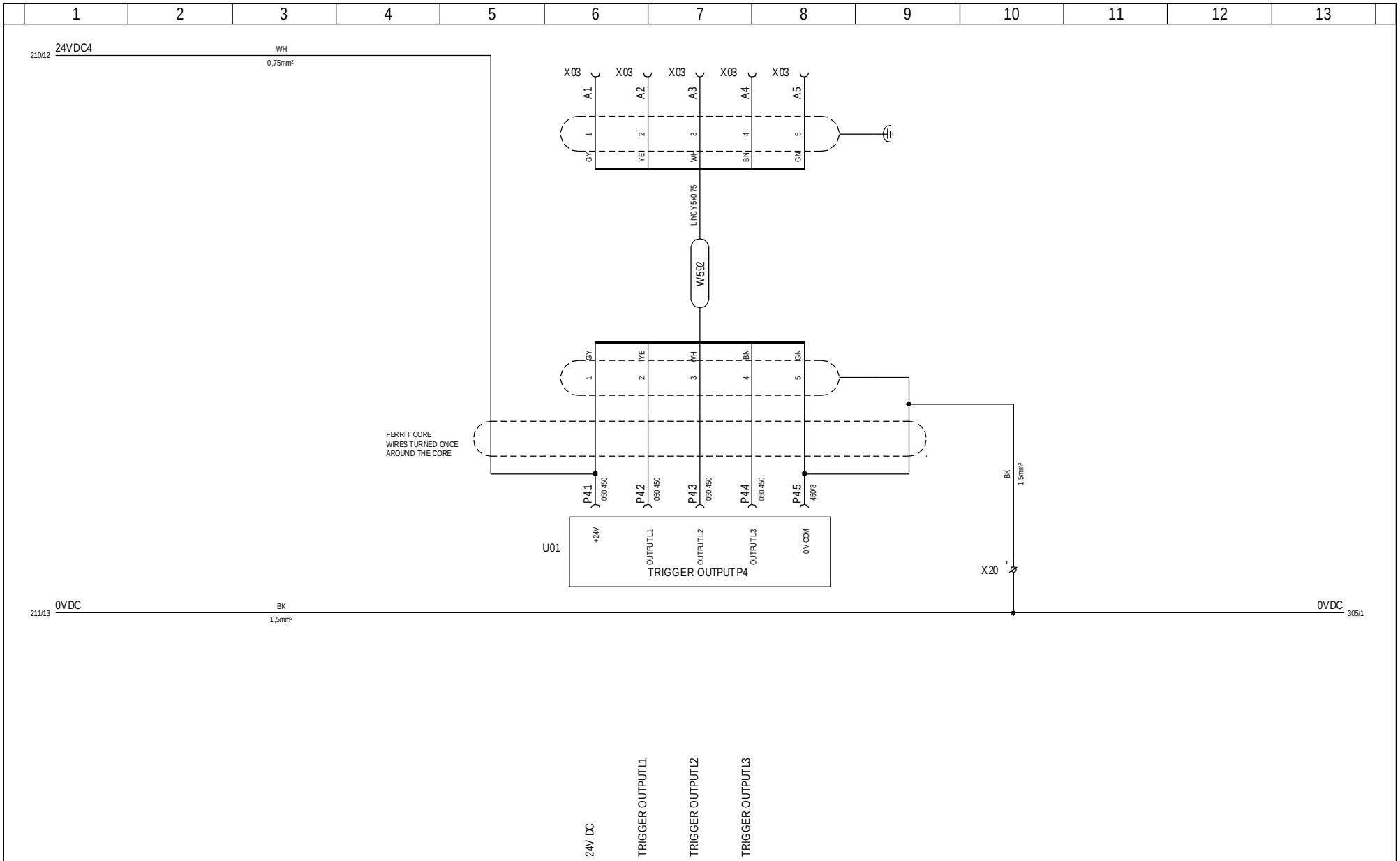
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



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	Date	Initials	Function	TAC Output P4.1 - P4.5 trigger cable		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 301	Sheet 300

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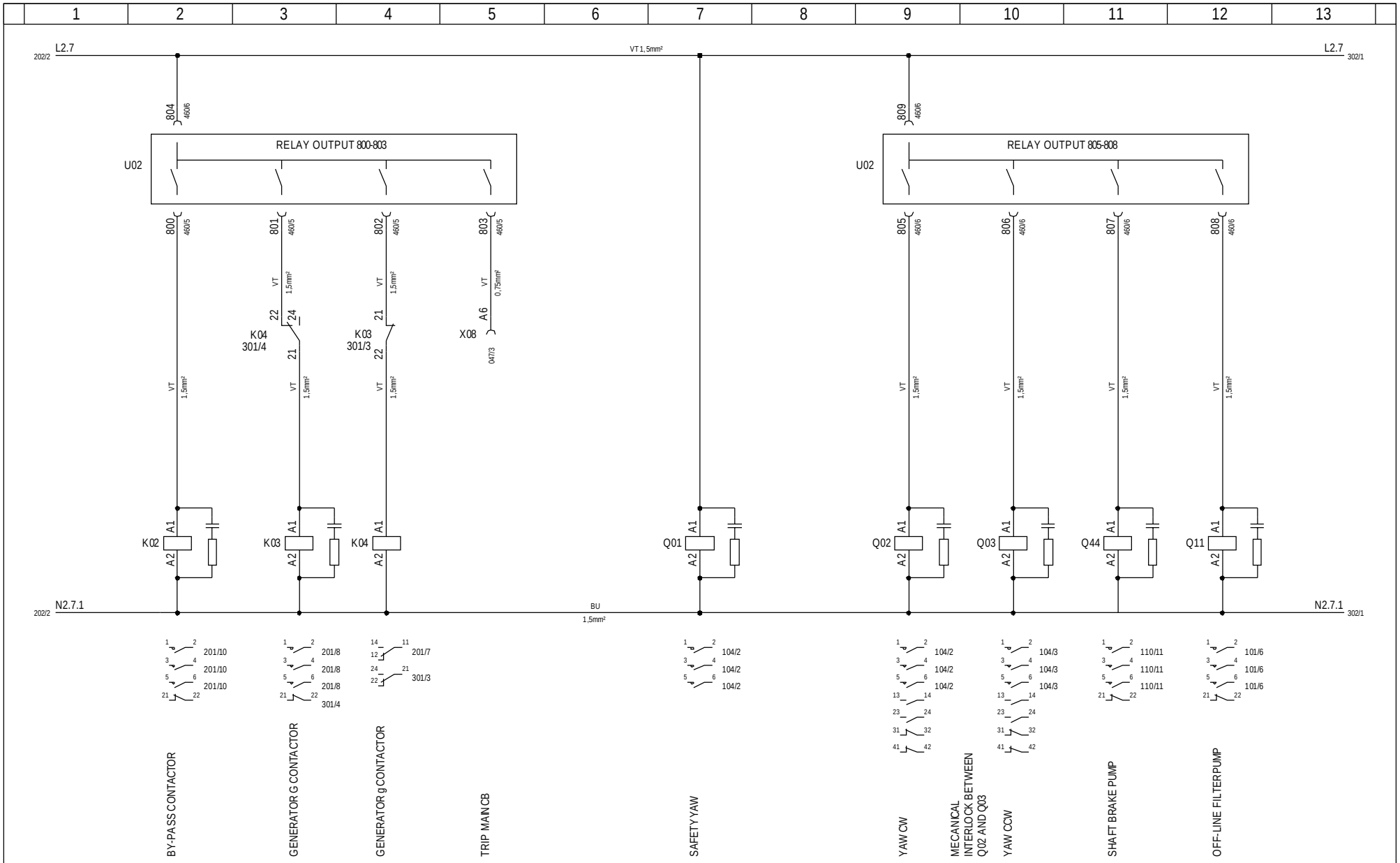
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TOI Output 800 - 808		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 302	Sheet 301

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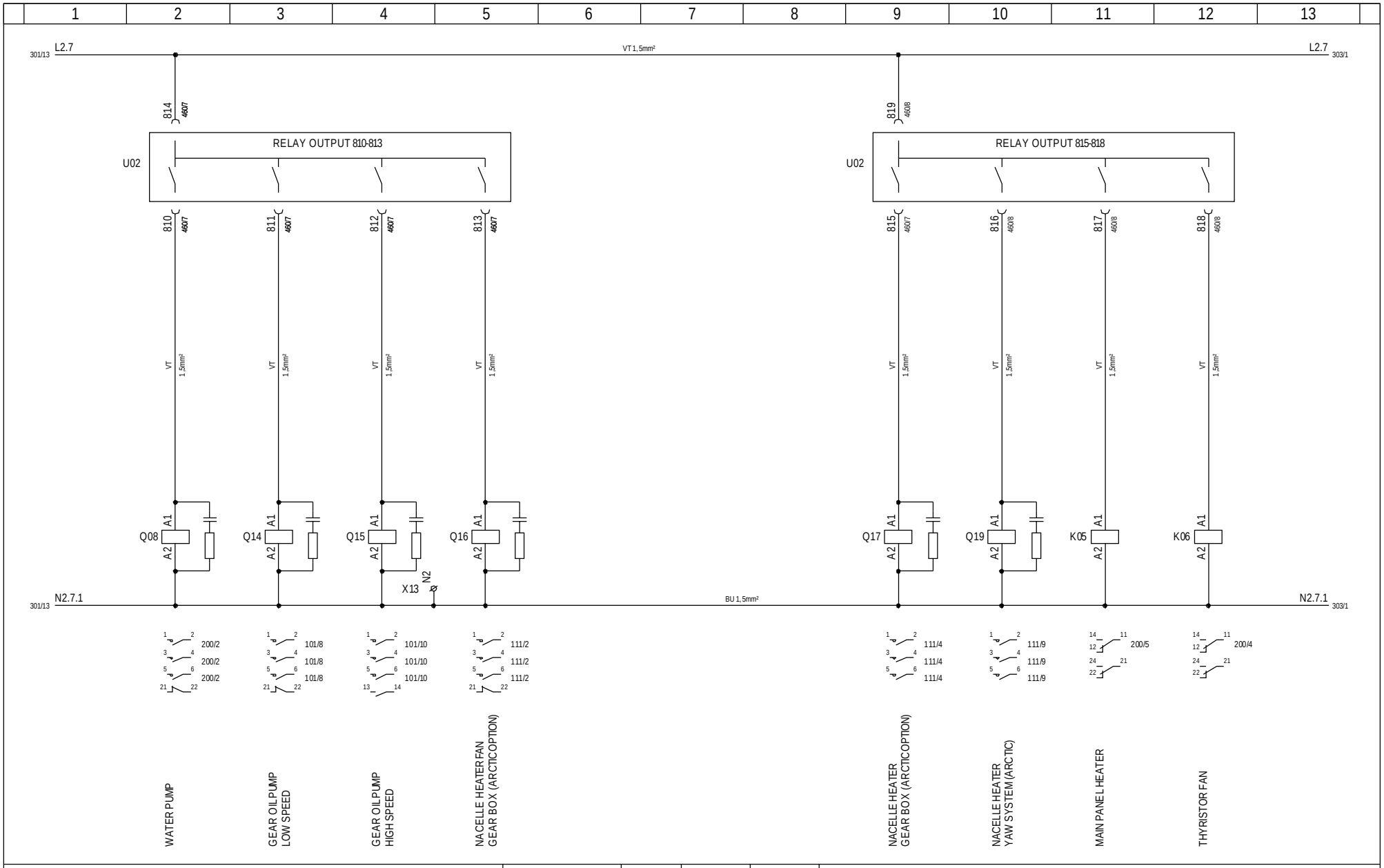
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TOI Output 810 - 818		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 303	Sheet 302

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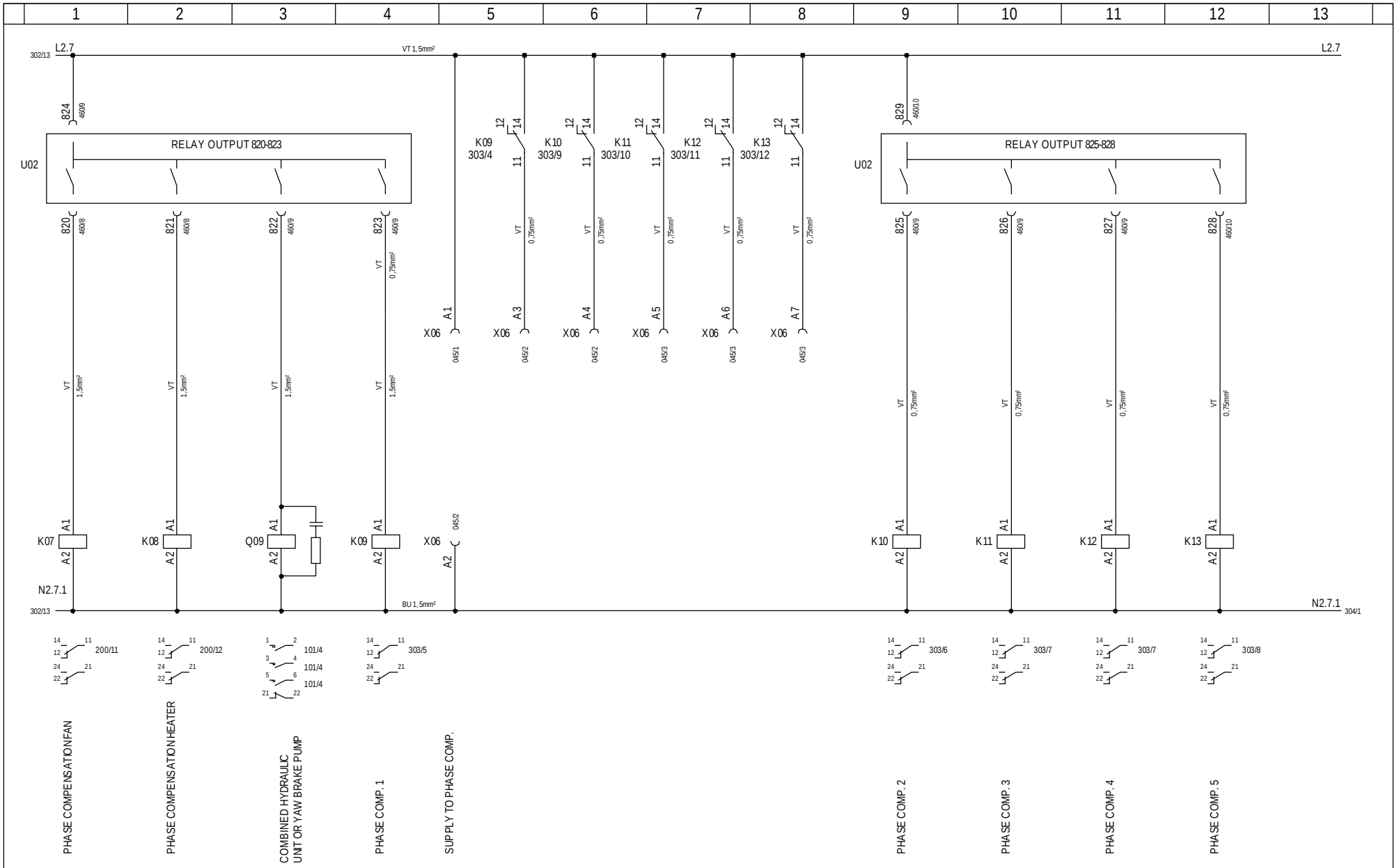
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TOI Output 820 - 828		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 304	Sheet 303

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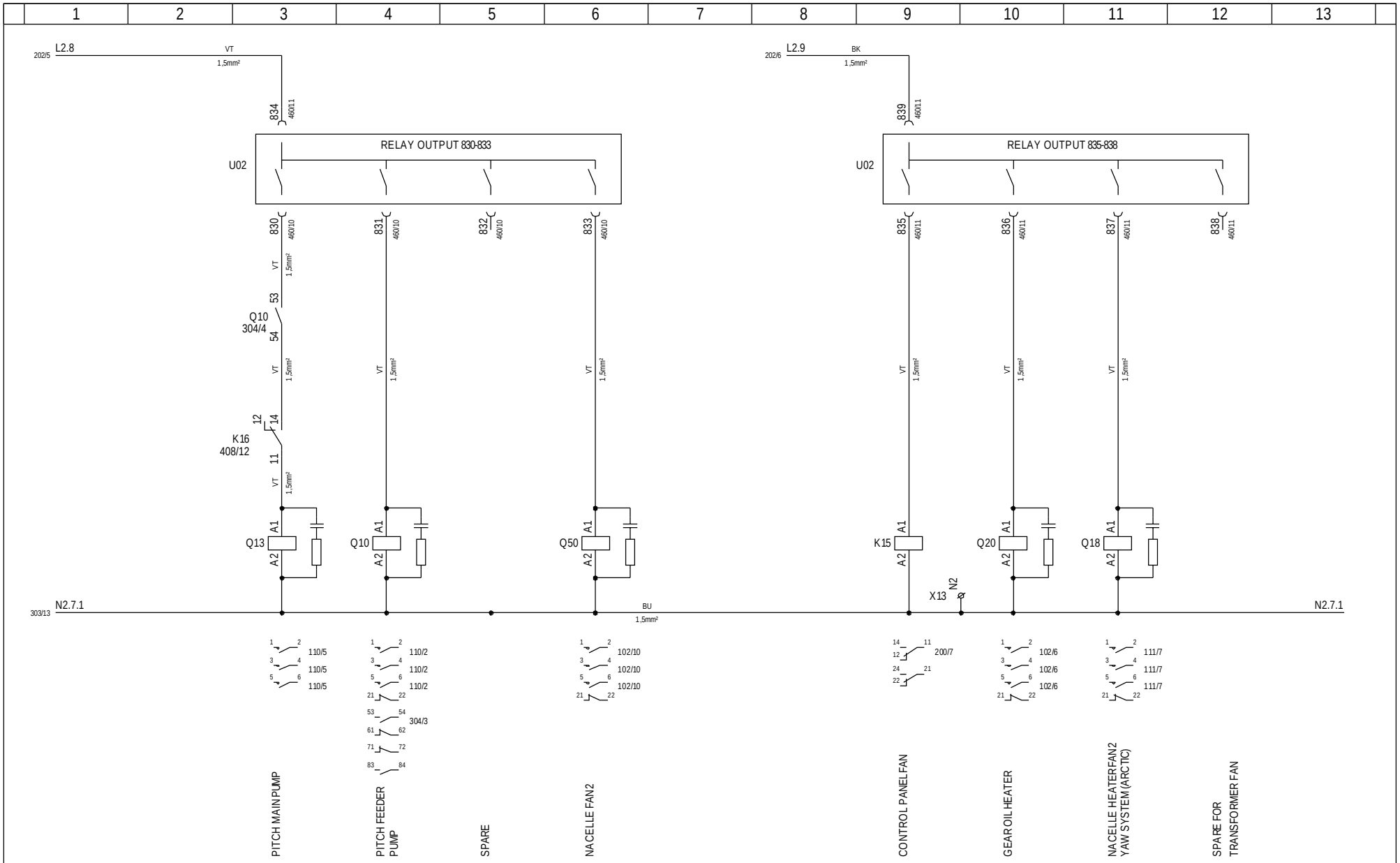
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TOI Output 830 - 838		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 305	Sheet 304

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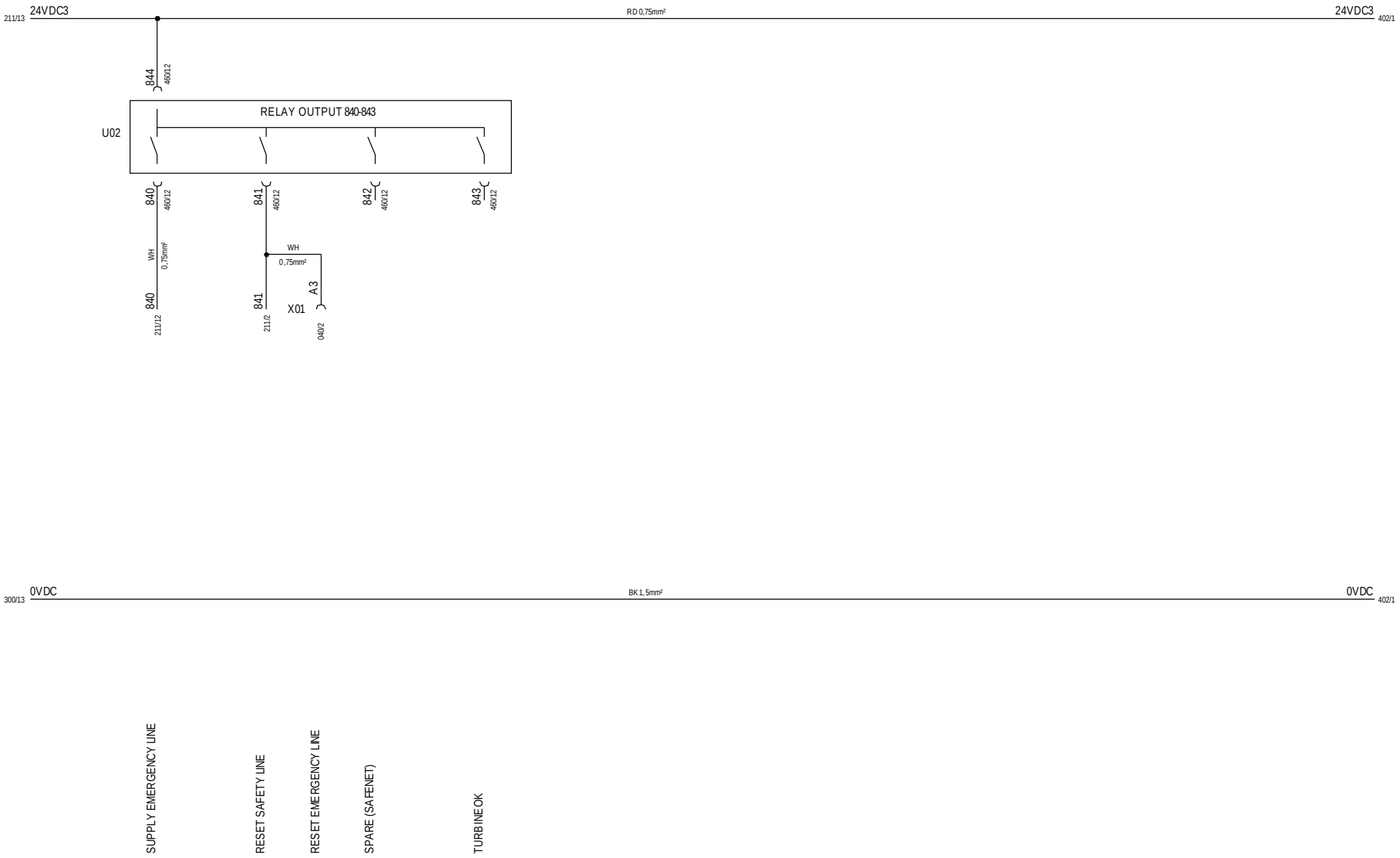
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TOI Output 840 - 843		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 400	Sheet 305

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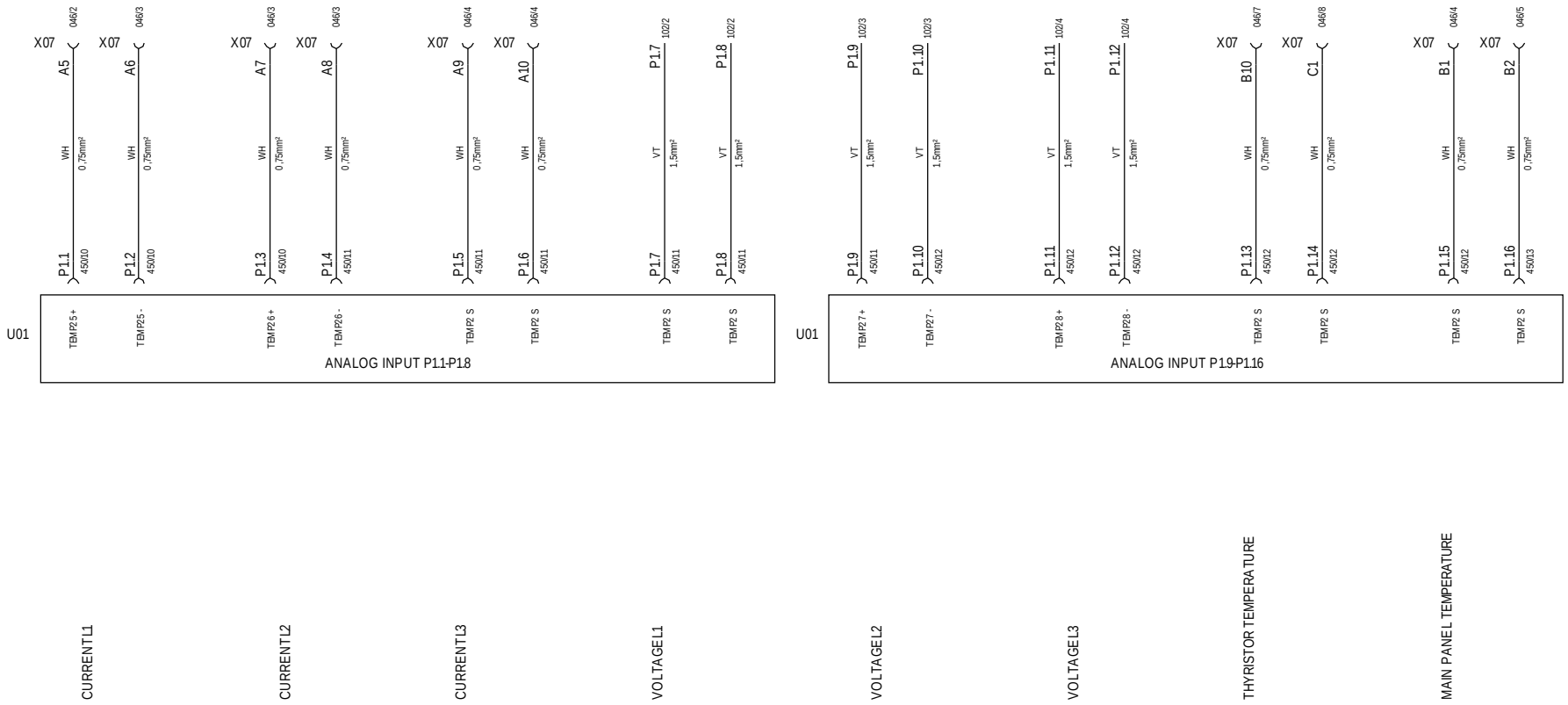
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TAC Input P1.1 - P1.16		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 401	Sheet 400

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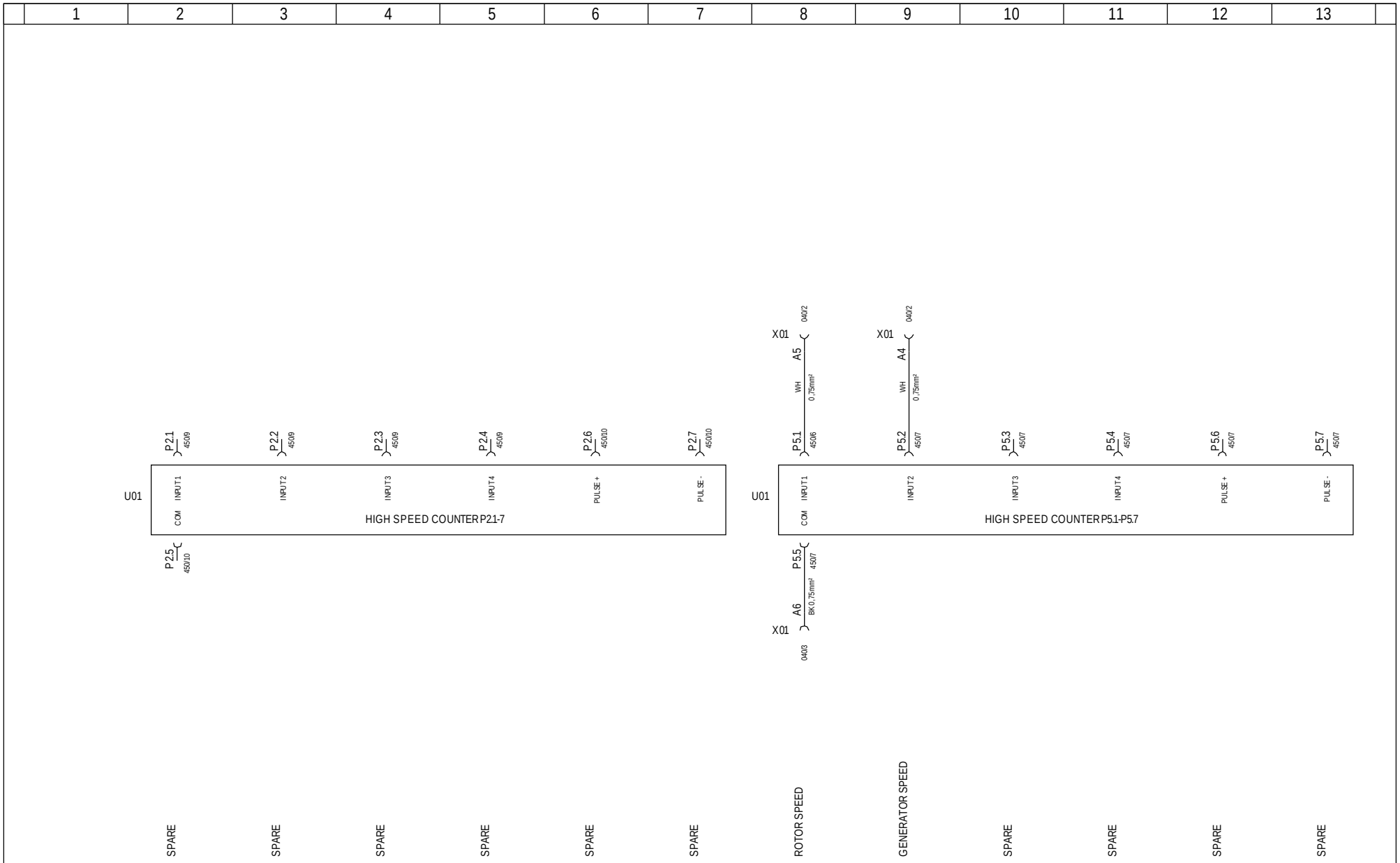
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TAC Input P2.1-7 and P5.1-7		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 402	Sheet 401

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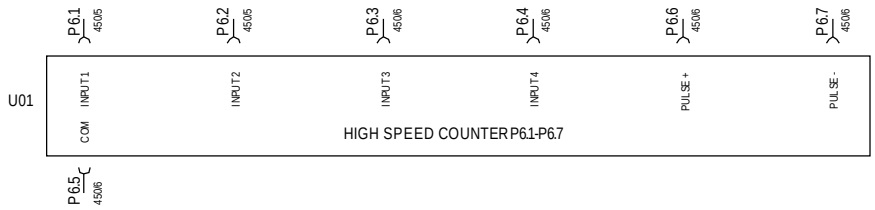
1	2	3	4	5	6	7	8	9	10	11	12	13

305/13 24VDC3 — RD 0,75mm² — 24VDC3 403/1



305/13 0VDC — BK 1,5mm² — 0VDC 403/1

SPARE SPARE SPARE SPARE SPARE SPARE

Vestas

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	Date	Initials	Function	TAC Input P6.1 - P6.7		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 403	Sheet 402

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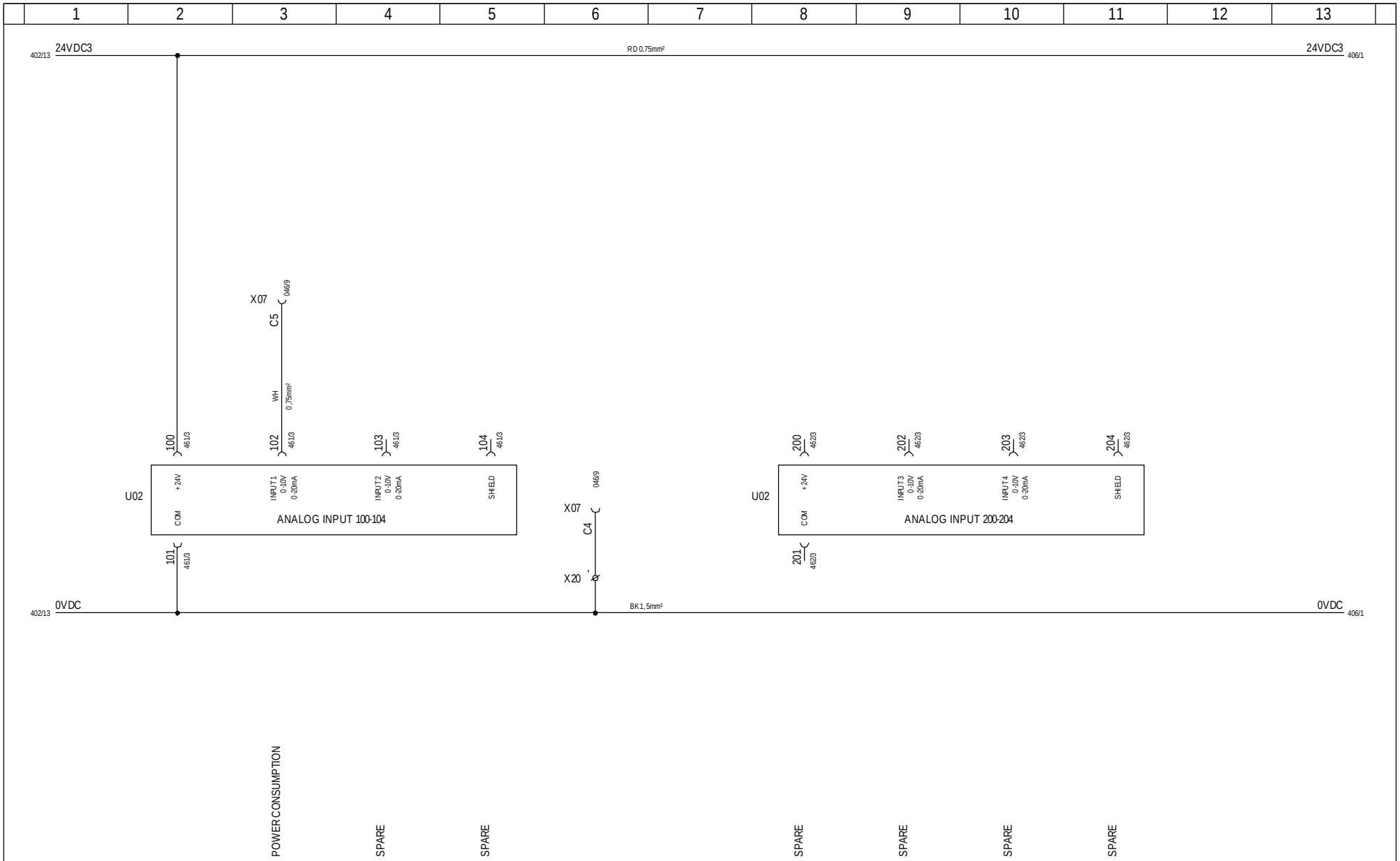
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TOI Input 100 - 204		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 404	Sheet 403

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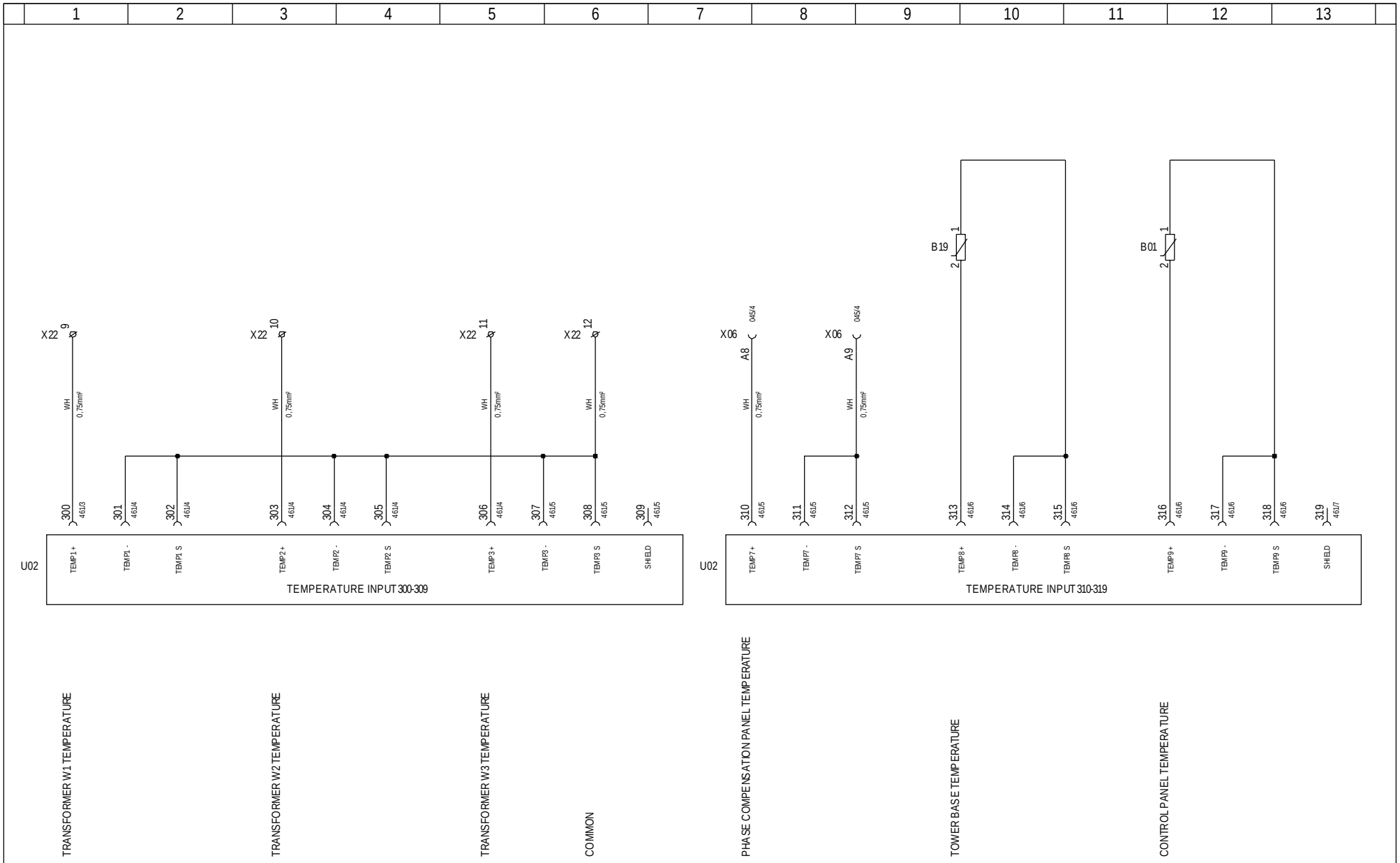
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TOI Input 300 - 319		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 405	Sheet 404

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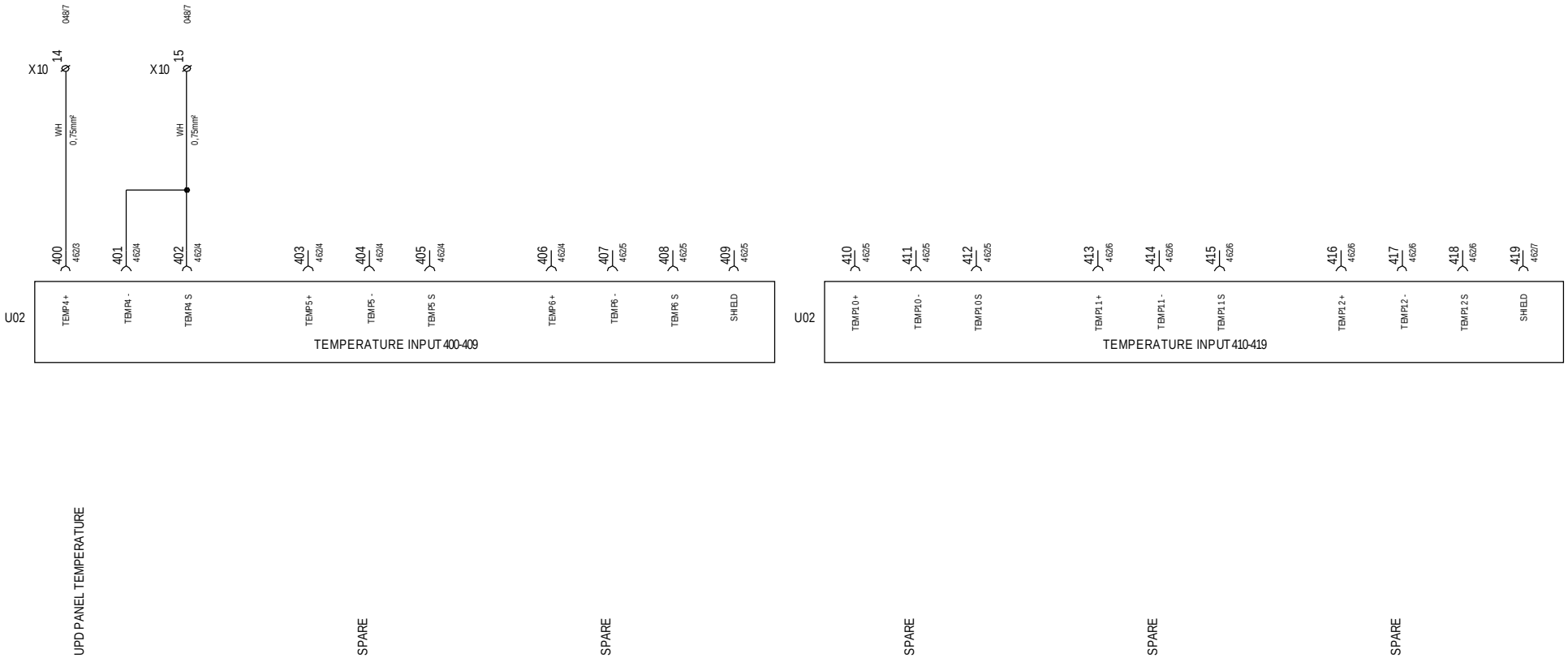
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TOI Input 400 - 419		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 406	Sheet 405

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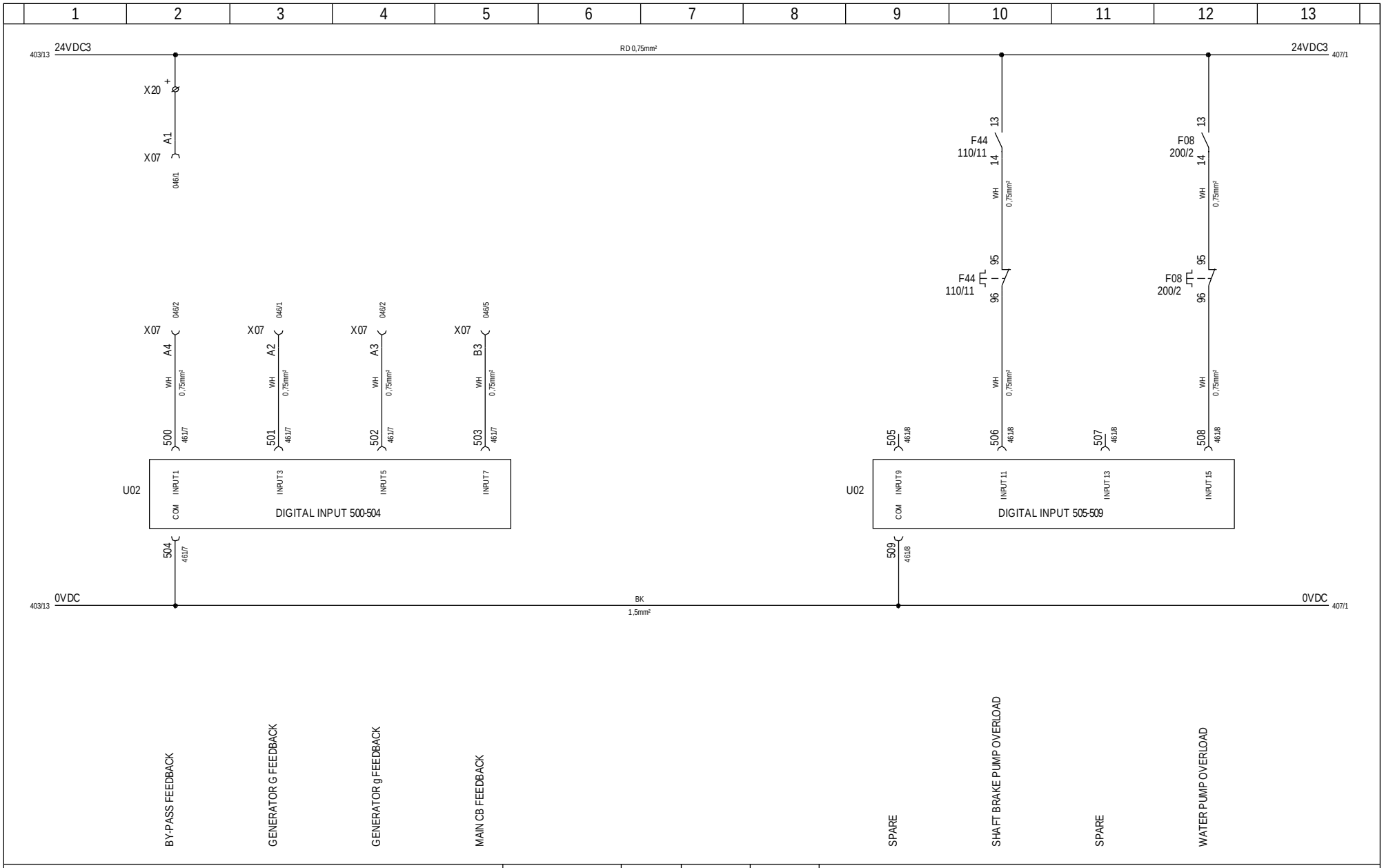

Vestas

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	Date	Initials	Function	TOI Input 500 - 508		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 407	Sheet 406

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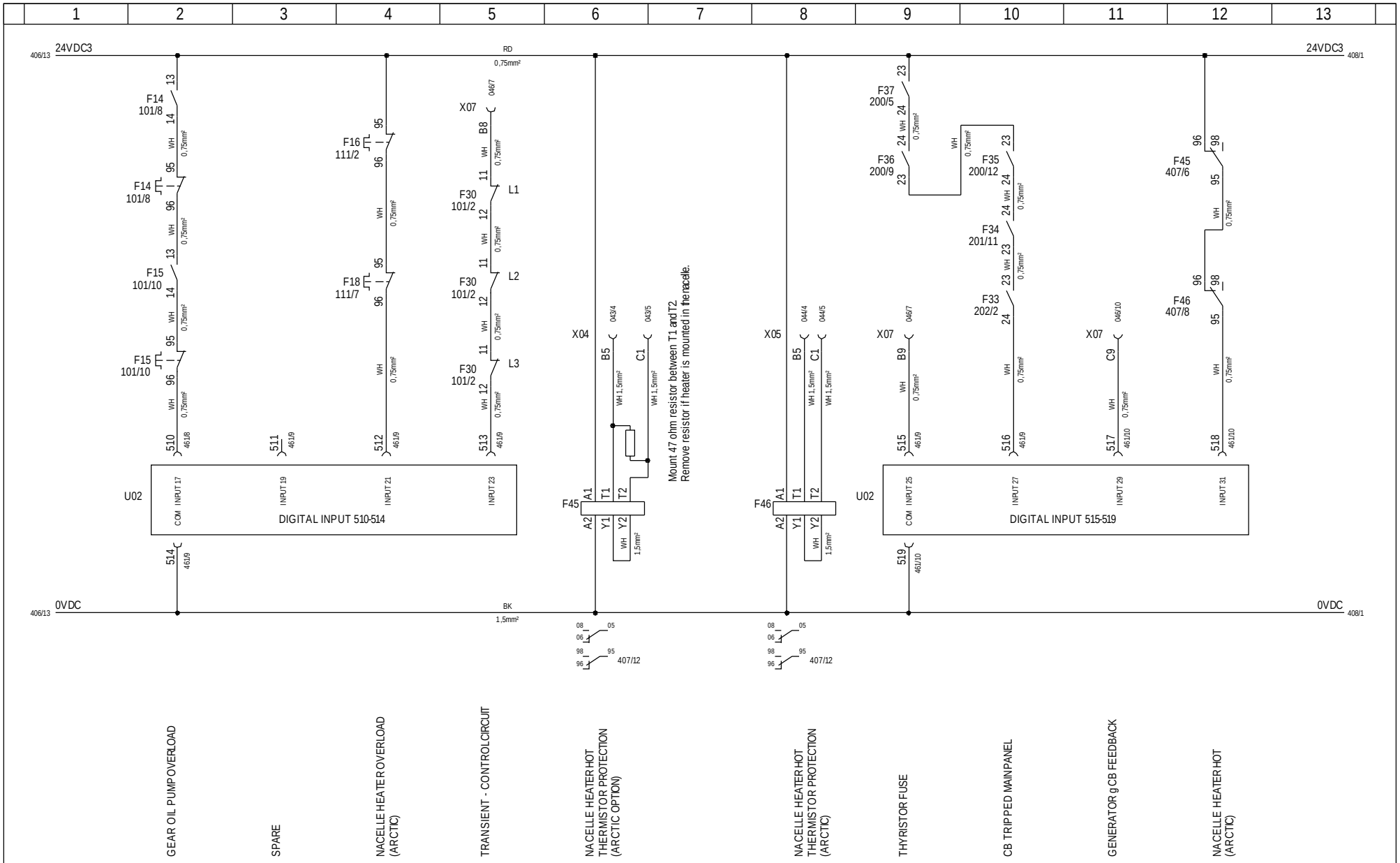

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	Date	Initials	Function	TOI Input 510 - 518		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 408	Sheet 407

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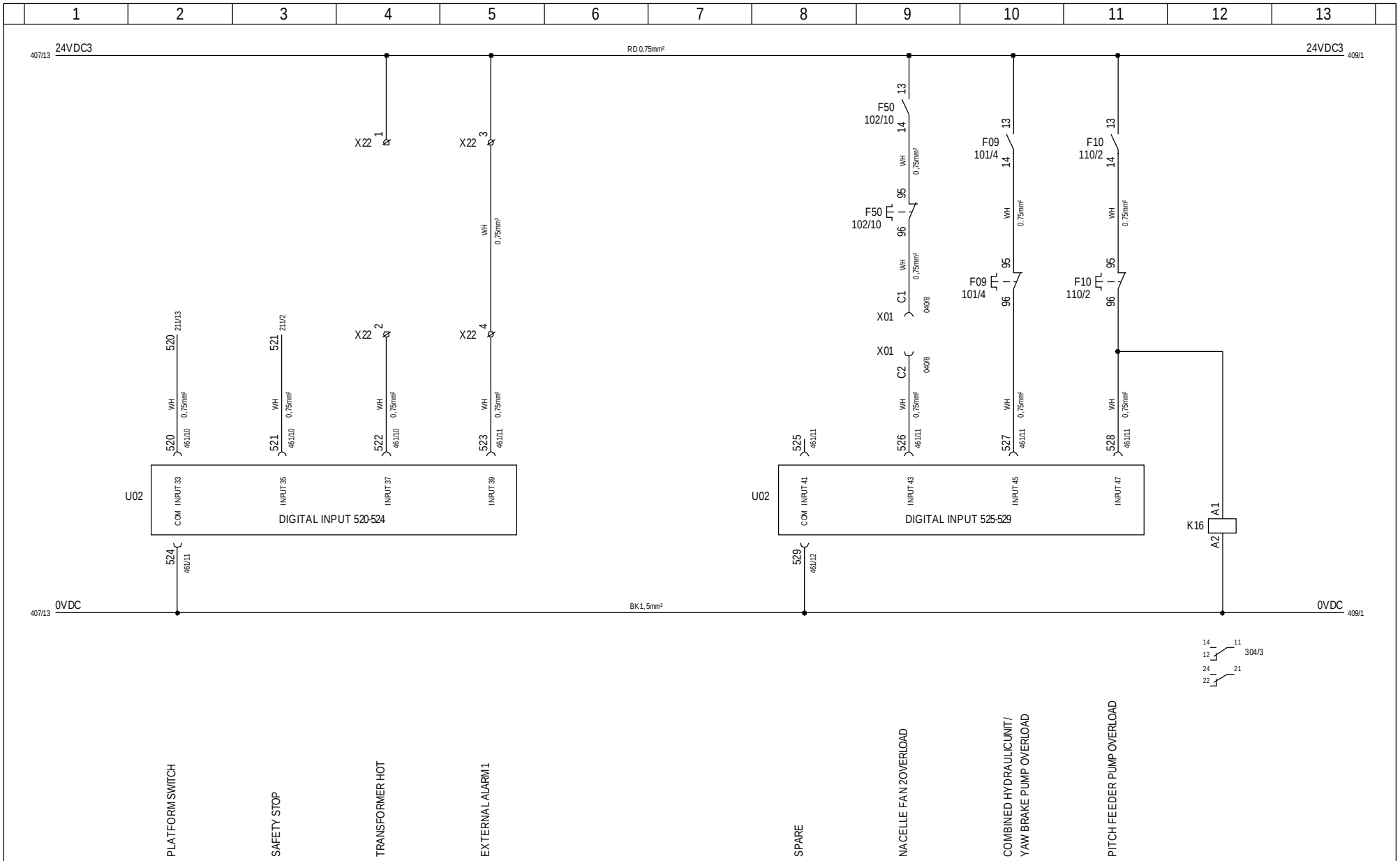

Vestas

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	Date	Initials	Function	TOI Input 520 - 528		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 409	Sheet 408

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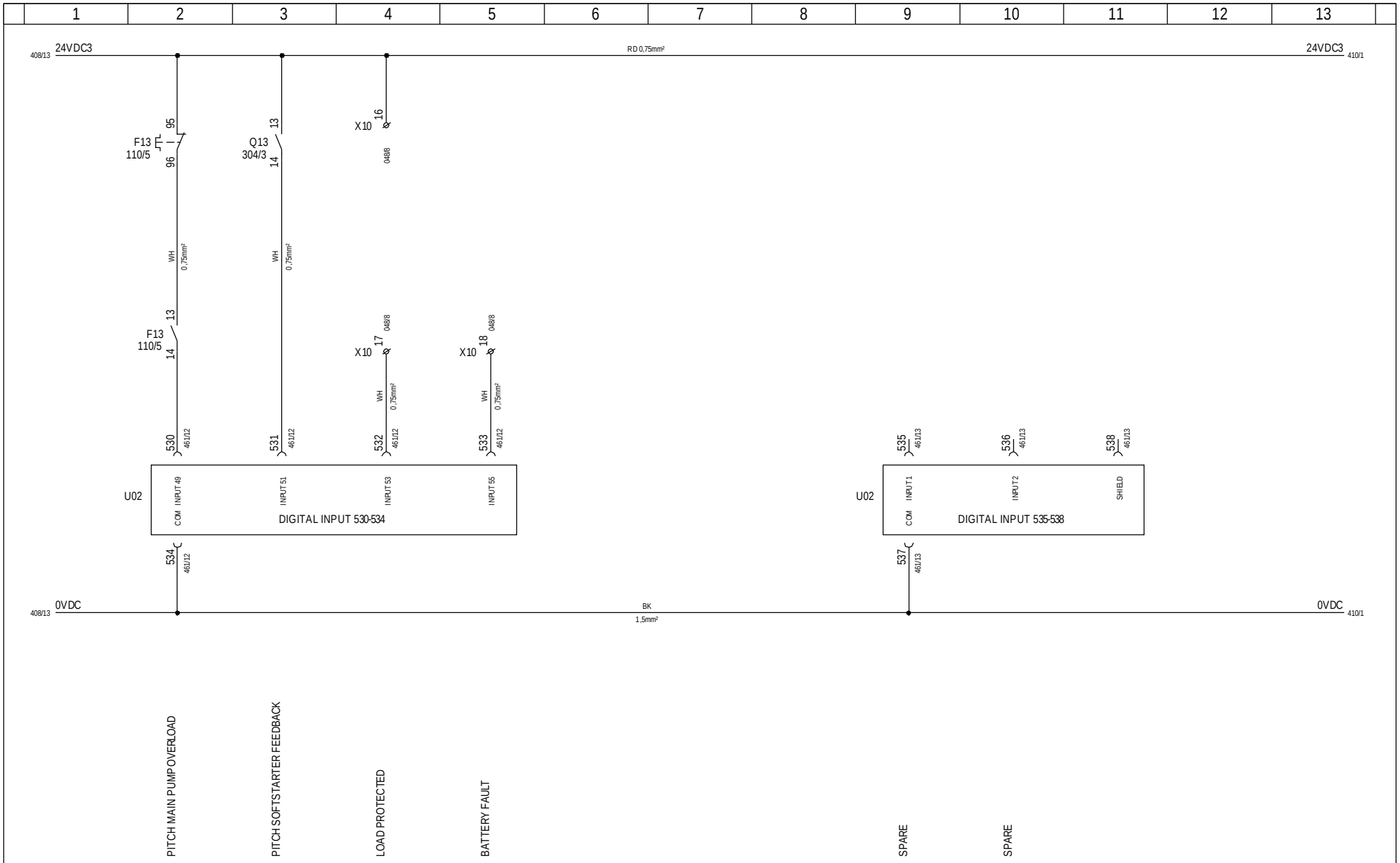
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	TOI Input 530 - 538		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 410	Sheet 409

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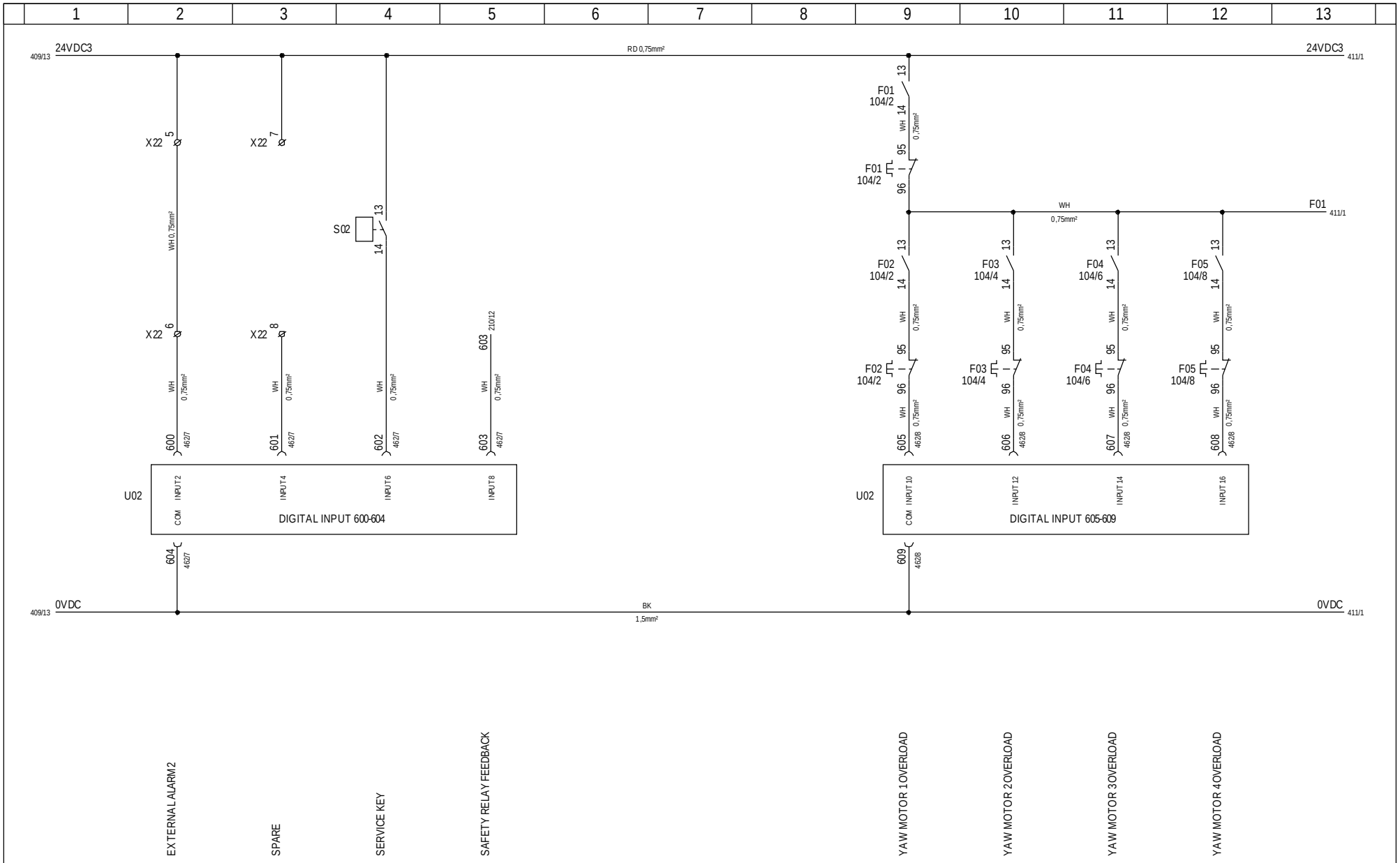

Vestas

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	Date	Initials	Function	TOI Input 600 - 608		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 411	Sheet 410

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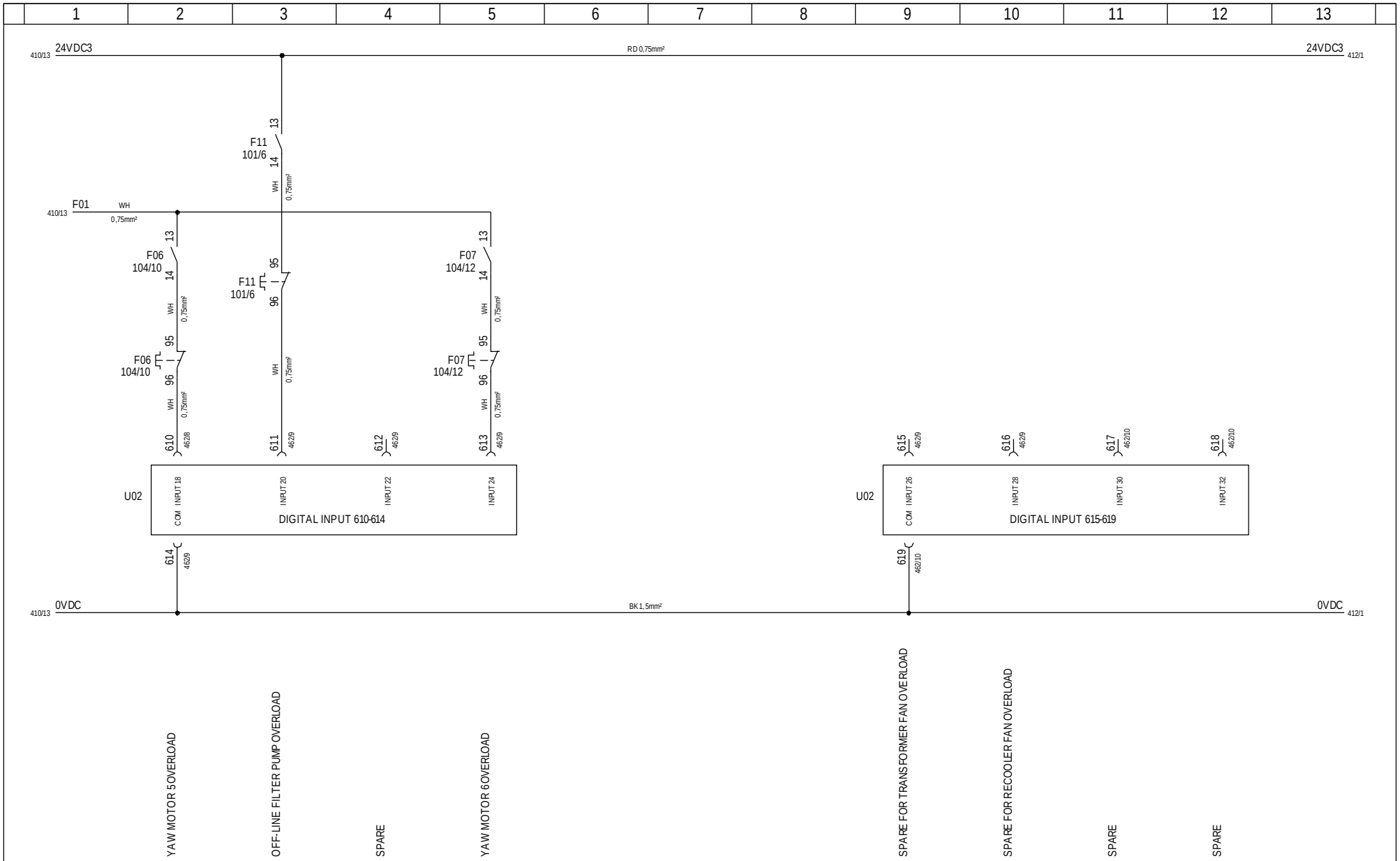

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	Date	Initials	Function	TOI Input 610 - 618		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
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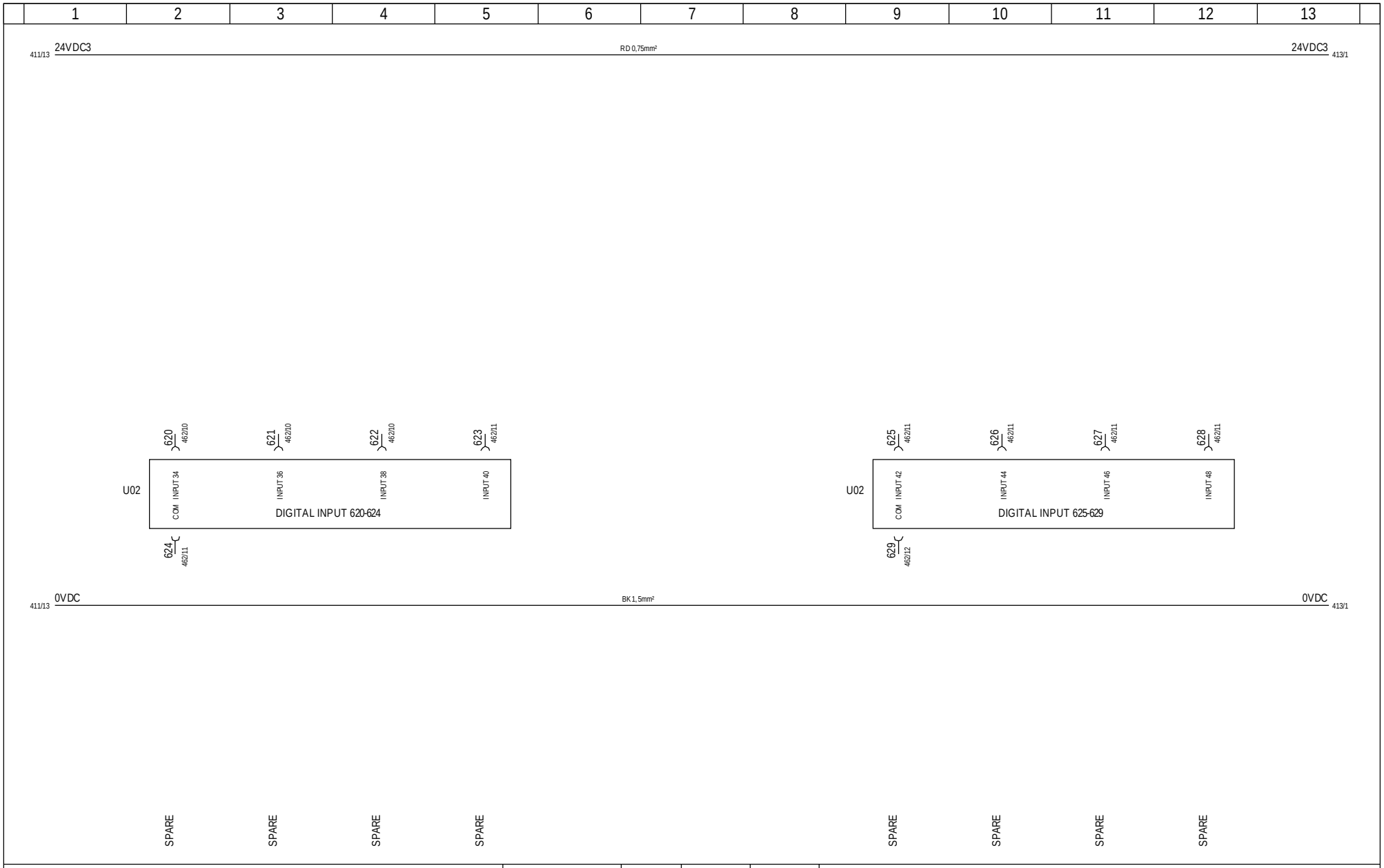

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	Date	Initials	Function	TOI Input 620 - 628		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 413	Sheet 412

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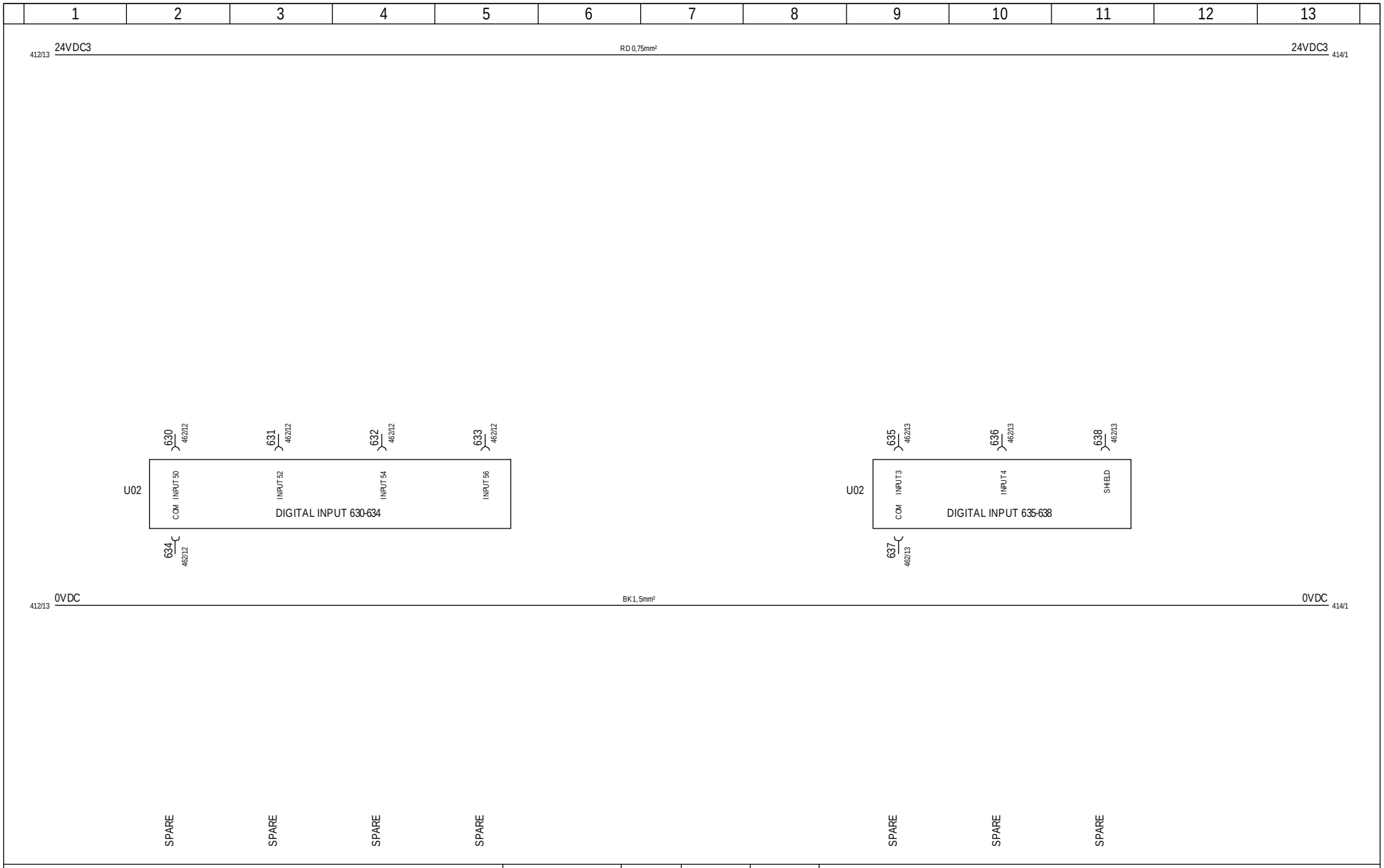

Vestas

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	Date	Initials	Function	TOI Input 630 - 638		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 414	Sheet 413

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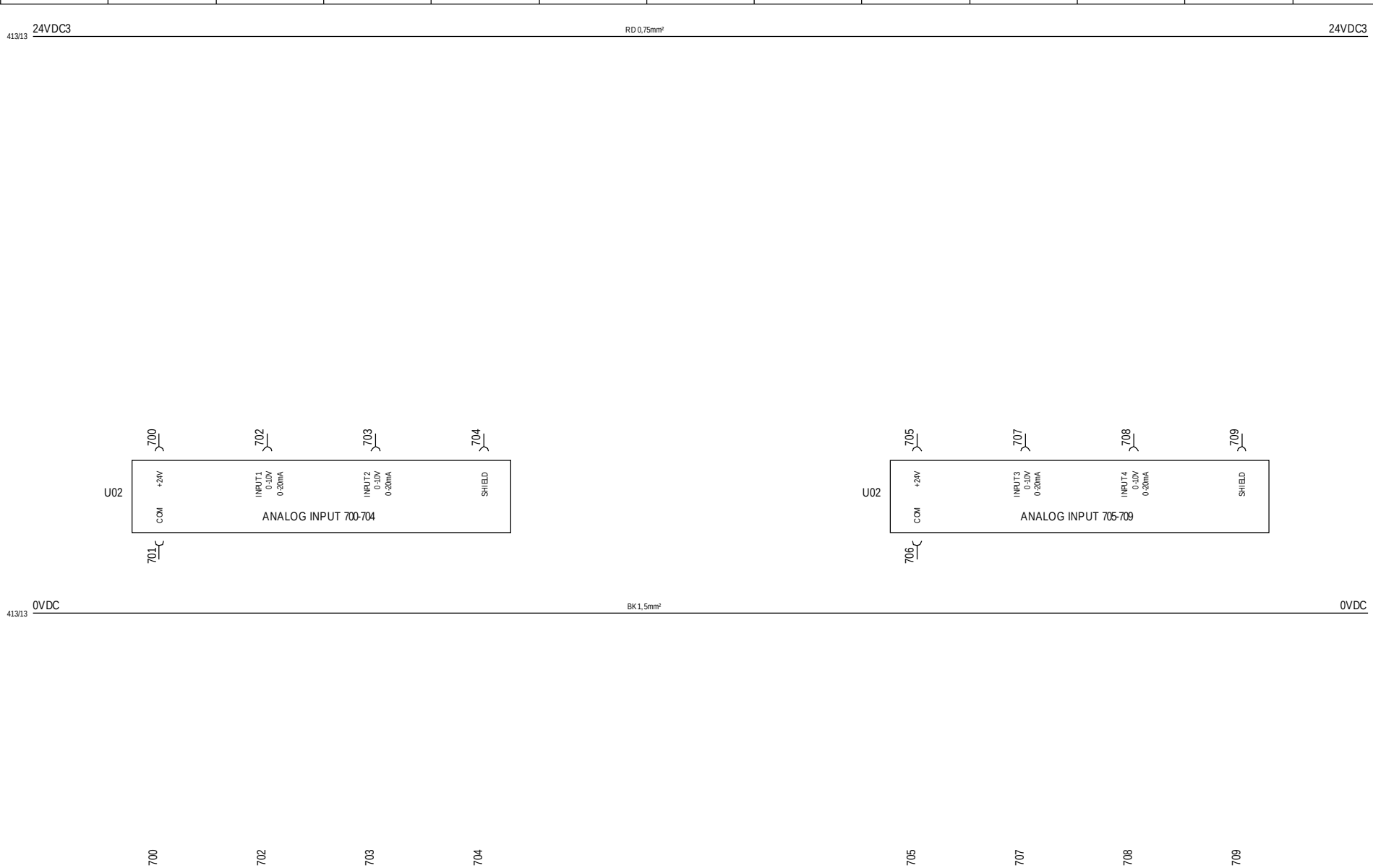

Vestas

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	Date	Initials	Function	TOI Input 700 - 709		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 415	Sheet 414

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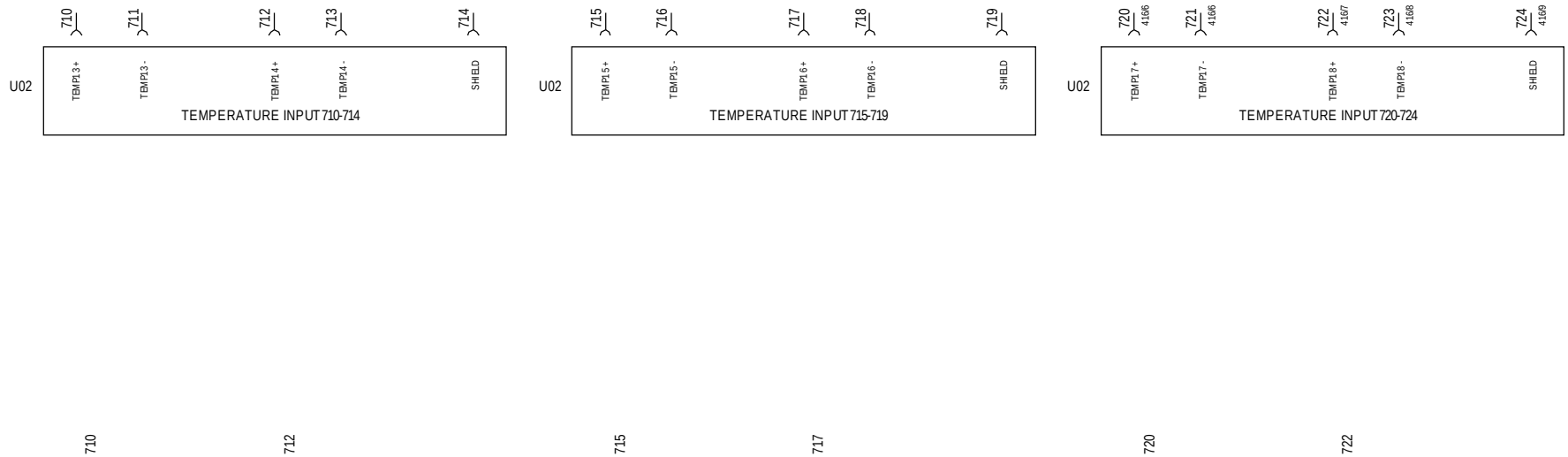

Vestas

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	Date	Initials	Function	TOI Input 710 - 723		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 416	Sheet 415

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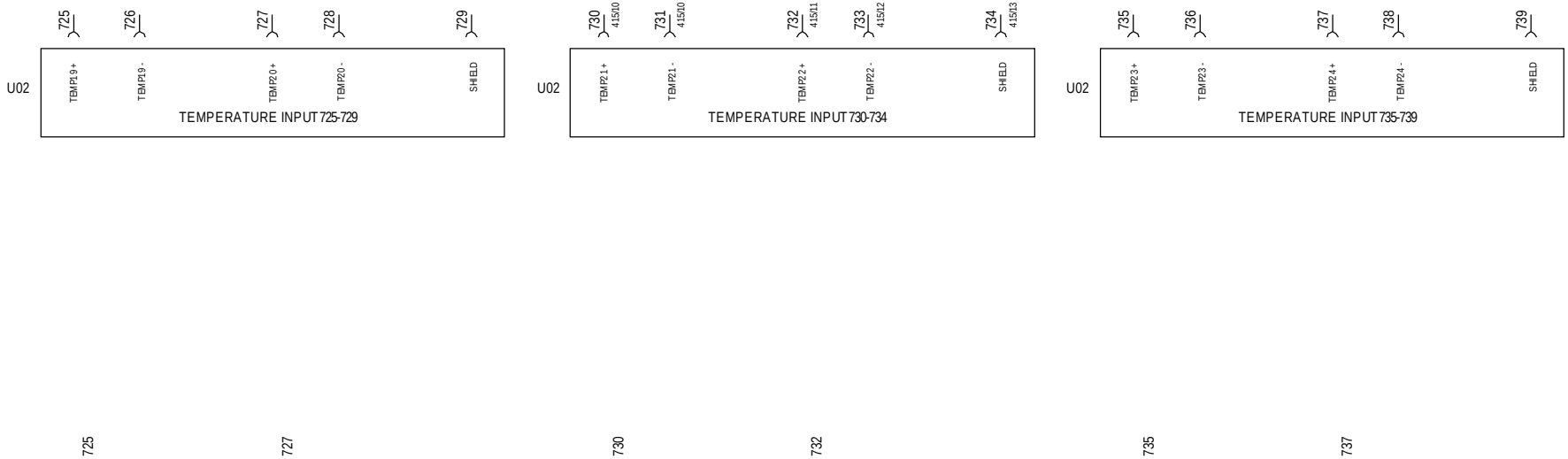
1	2	3	4	5	6	7	8	9	10	11	12	13



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	Date	Initials	Function	TOI Input 725 - 738		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 417	Sheet 416

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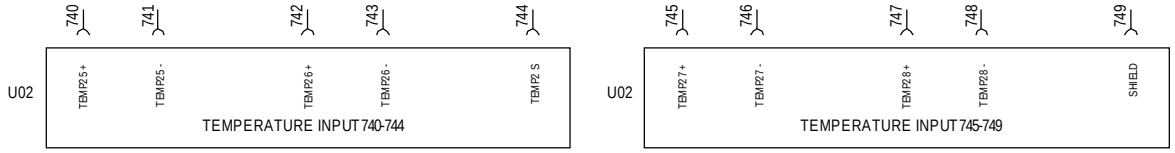

740 742 745 747

Vestas

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	Date	Initials	Function	TOI Input 740 - 748		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 450	Sheet 417

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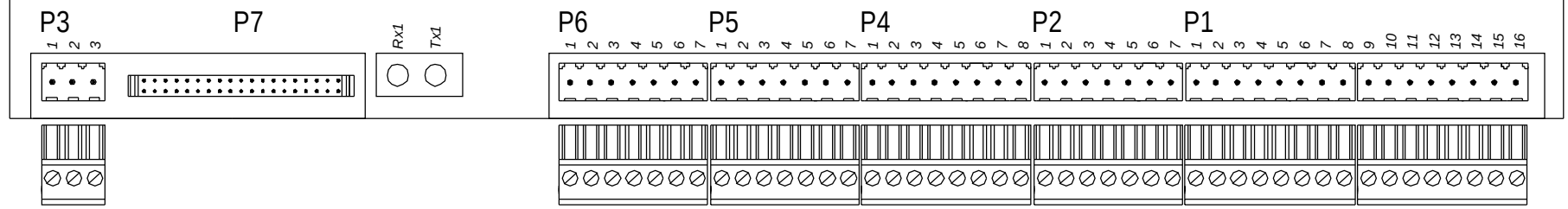
TAC II INTERFACE



PAGE		
210/6	SUPPLY	
210/7	SUPPLY	
210/7	PE	
500/2	COMMUNICATION TO TOI	
500/3	COMMUNICATION TO TOI	
402/2	SPARE	
402/3	SPARE	
402/4	SPARE	
402/5	SPARE	
402/2	SPARE	
402/6	SPARE	
402/7	SPARE	
401/8	ROTOR SPEED	
401/9	GENERATOR SPEED	
401/10	SPARE	
401/11	SPARE	
401/8	0V FROM TOPBOX	
401/12	SPARE	
401/13	SPARE	
300/6	24V DC	
300/7	TRIGGER OUTPUT L1	
300/7	TRIGGER OUTPUT L2	
300/8	TRIGGER OUTPUT L3	
300/8	0V	
401/2	SPARE	
401/3	SPARE	
401/4	SPARE	
401/5	SPARE	
401/2	SPARE	
401/6	SPARE	
401/7	SPARE	
400/2	CURRENT L1	
400/2	CURRENT L1	
400/3	CURRENT L2	
400/4	CURRENT L2	
400/5	CURRENT L3	
400/5	CURRENT L3	
400/6	VOLTAGE L1	
400/7	VOLTAGE L1	
400/8	VOLTAGE L2	
400/8	VOLTAGE L2	
400/9	VOLTAGE L3	
400/10	VOLTAGE L3	
400/11	THYRISTOR TEMPERATURE	
400/11	THYRISTOR TEMPERATURE	
400/12	MAIN PANEL TEMPERATURE	
400/13	MAIN PANEL TEMPERATURE	

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	Date	Initials	Function	TAC outline		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
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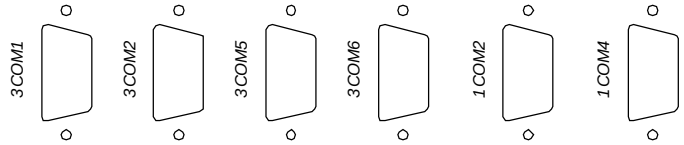
1	2	3	4	5	6	7	8	9	10	11	12	13

TAC II INTERFACE



PAGE		
501/2	3COM1	COMMUNICATION TO MODEM
	3COM2	SPARE
502/2	3COM5	COMMUNICATION TO OP-PANEL
505/2	3COM6	RS422 COMMUNICATION TO +AT4
503/2	1COM2	COMMUNICATION TO HUB (NOT NM64C)
504/2	1COM4	RS485 COMMUNICATION TO TOP BOX

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	Date	Initials	Function	TAC communication outline		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 460	Sheet 451

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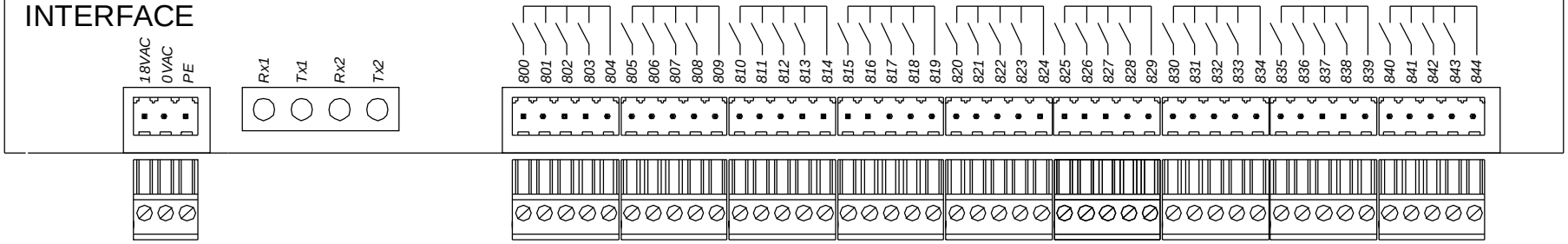
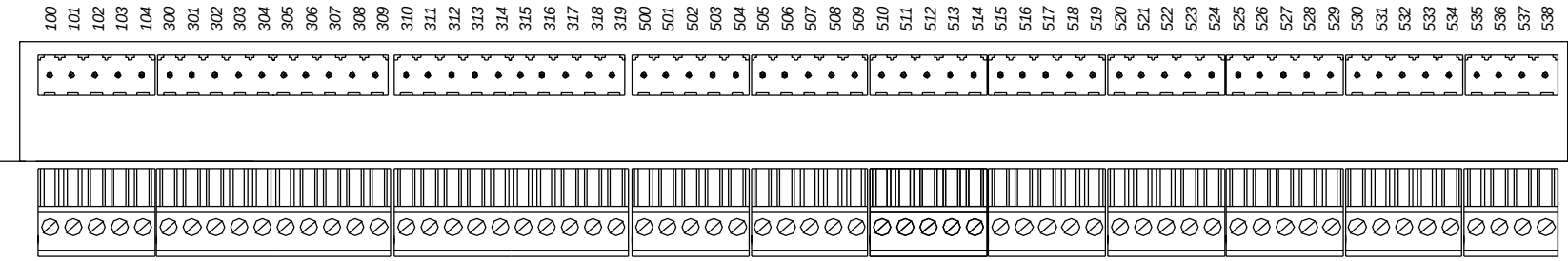
TOI 2 OUTPUT INTERFACE



| | | |

TOI 2 INPUT INTERFACE



	PAGE	
100	403/2	24V DC
101	403/2	0V DC
102	403/3	POWER CONSUMPTION
103	403/4	SPARE
104	403/5	SHIELD
300	404/1	TRANSFORMER W1 TEMPERATURE
301	404/2	TRANSFORMER W1 TEMPERATURE
302	404/2	TRANSFORMER W1 TEMPERATURE
303	404/3	TRANSFORMER W2 TEMPERATURE
304	404/4	TRANSFORMER W2 TEMPERATURE
305	404/4	TRANSFORMER W2 TEMPERATURE
306	404/5	TRANSFORMER W3 TEMPERATURE
307	404/6	TRANSFORMER W3 TEMPERATURE
308	404/6	TRANSFORMER W3 TEMPERATURE
309	404/7	SHIELD
310	404/8	PHASE COMPENSATION PANEL TEMPERATURE
311	404/8	PHASE COMPENSATION PANEL TEMPERATURE
312	404/9	PHASE COMPENSATION PANEL TEMPERATURE
313	404/10	TOWER BASE TEMPERATURE
314	404/10	TOWER BASE TEMPERATURE
315	404/11	TOWER BASE TEMPERATURE
316	404/12	CONTROL PANEL TEMPERATURE
317	404/12	CONTROL PANEL TEMPERATURE
318	404/13	CONTROL PANEL TEMPERATURE
319	404/13	SHIELD
500	406/2	BY-PASS FEEDBACK
501	406/3	GENERATOR G FEEDBACK
502	406/4	GENERATOR g FEEDBACK
503	406/5	MAIN CB FEEDBACK
504	406/2	0V DC
505	406/9	SPARE
506	406/10	SHAFT BRAKE PUMP OVERLOAD
507	406/11	SPARE
508	406/12	WATER PUMP OVERLOAD
509	406/9	0V DC
510	407/2	GEAR OIL PUMP OVERLOAD
511	407/3	SPARE
512	407/4	NACELLE HEATER OVERLOAD
513	407/5	TRANSIENT - CONTROL CIRCUIT
514	407/2	0V DC
515	407/9	THYRISTOR FUSE
516	407/10	CB TRIPPED MAINPANEL
517	407/11	GENERATOR g CB FEEDBACK
518	407/12	NACELLE HEATER HOT
519	407/9	0V DC
520	408/2	PLATFORM SWITCH
521	408/3	SAFETY STOP
522	408/4	TRANSFORMER HOT
523	408/5	EXTERNAL ALARM 1
524	408/2	0V DC
525	408/8	SPARE
526	408/9	NACELLE FAN 2 OVERLOAD
527	408/10	COMBINED HYDRALIC UNIT / YAW BRAKE PUMP OVERLOAD
528	408/11	PITCH FEEDER PUMP OVERLOAD
529	408/8	0V DC
530	409/2	PITCH MAIN PUMP OVERLOAD
531	409/3	PITCH SOFTSTARTER FEEDBACK
532	409/4	LOAD PROTECTED
533	409/5	BATTERY FAULT
534	409/2	0V DC
535	409/9	SPARE
536	409/10	SPARE
537	409/9	SPARE
538	409/11	0V DC

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	Date	Initials	Function	TOI outline input		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 462	Sheet 461

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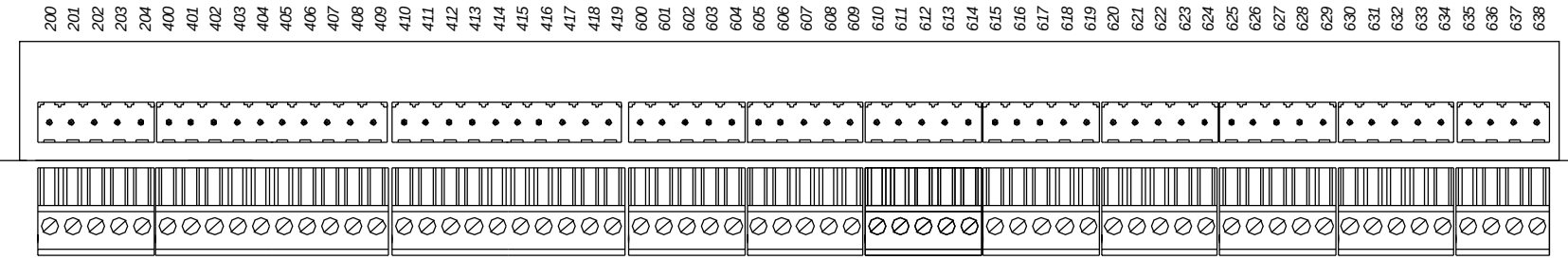
TOI 2 INPUT INTERFACE



200	PAGE	24VDC
201	403/8	0VDC
202	403/8	SPARE
203	403/9	SPARE
204	403/10	SHIELD
400	403/11	UPS PANEL +AT5 PT 100TEMPERATURE
401	405/1	UPS PANEL +AT5 PT 100TEMPERATURE
402	405/2	UPS PANEL +AT5 PT 100TEMPERATURE
403	405/2	SPARE
404	405/3	SPARE
405	405/4	SPARE
406	405/4	SPARE
407	405/5	SPARE
408	405/6	SPARE
409	405/6	SHIELD
410	405/7	SPARE
411	405/8	SPARE
412	405/8	SPARE
413	405/9	SPARE
414	405/10	SPARE
415	405/10	SPARE
416	405/11	SPARE
417	405/12	SPARE
418	405/12	SPARE
419	405/13	SHIELD
600	405/13	EXTERNAL ALARM 2
601	410/2	LOW PRODUCTION
602	410/3	SERVICE KEY
603	410/4	SAFETY RELAY FEEDBACK
604	410/5	0VDC
605	410/2	YAW MOTOR 1 OVERLOAD
606	410/9	YAW MOTOR 2 OVERLOAD
607	410/10	YAW MOTOR 3 OVERLOAD
608	410/11	YAW MOTOR 4 OVERLOAD
609	410/12	0VDC
610	410/9	YAW MOTOR 5 OVERLOAD
611	411/2	OFF-LINE FILTER PUMP OVERLOAD
612	411/3	SPARE
613	411/4	YAW MOTOR 6 OVERLOAD
614	411/5	0VDC
615	411/2	SPARE FOR TRANSFORMER FAN OVERLOAD
616	411/9	SPARE FOR RECOOLER FAN OVERLOAD
617	411/10	SPARE
618	411/11	SPARE
619	411/12	0VDC
620	411/9	SPARE
621	412/2	SPARE
622	412/3	SPARE
623	412/4	SPARE
624	412/5	0VDC
625	412/2	SPARE
626	412/9	SPARE
627	412/10	SPARE
628	412/11	0VDC
629	412/12	SPARE
630	412/9	SPARE
631	413/2	SPARE
632	413/3	SPARE
633	413/4	SPARE
634	413/5	0VDC
635	413/2	SPARE
636	413/9	SPARE
637	413/10	SPARE
638	413/9	SPARE
	413/11	

Vestas

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	Date	Initials	Function	TOI outline input		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 500	Sheet 462

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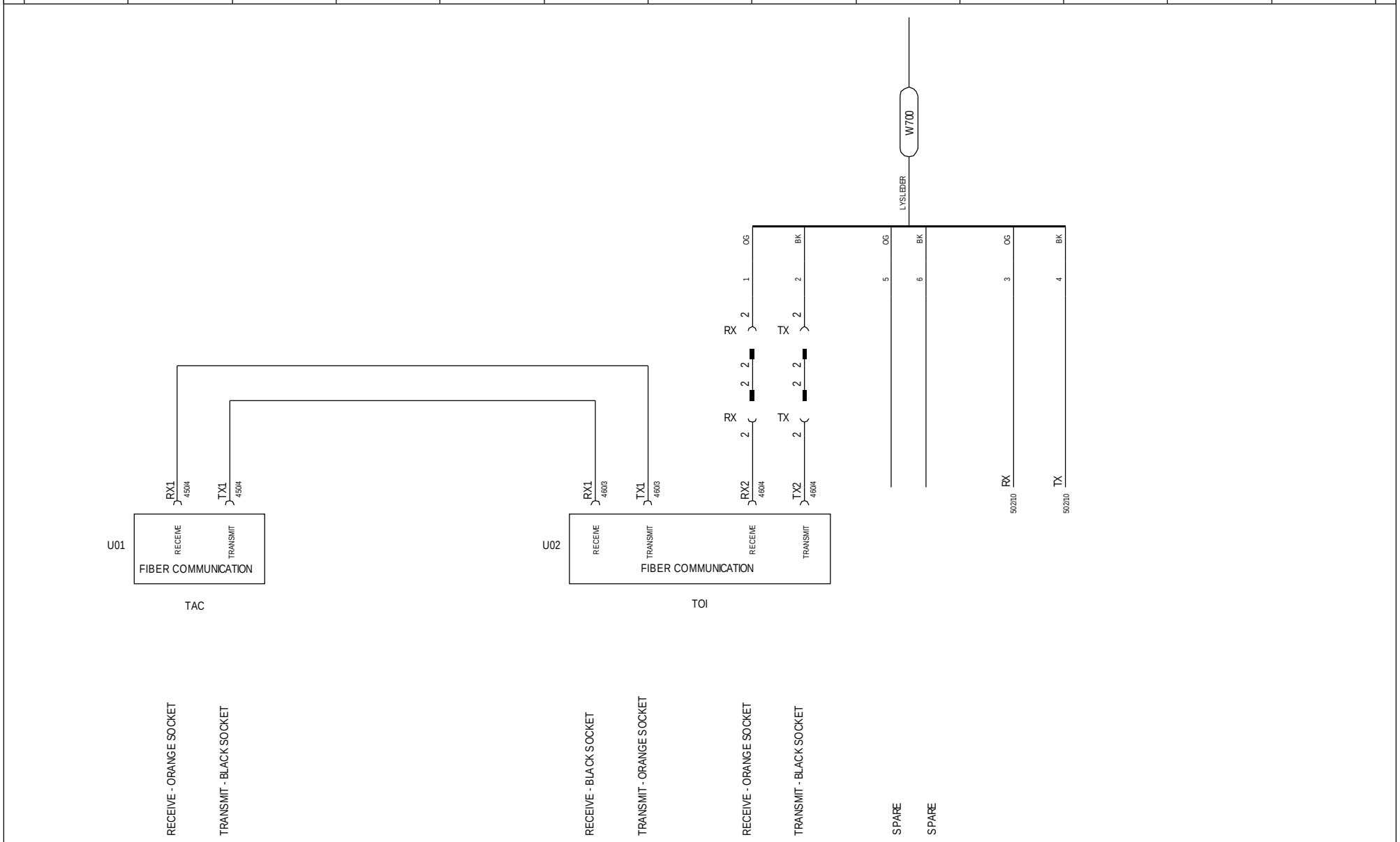

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	Date	Initials	Function	Fibre optic communication		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
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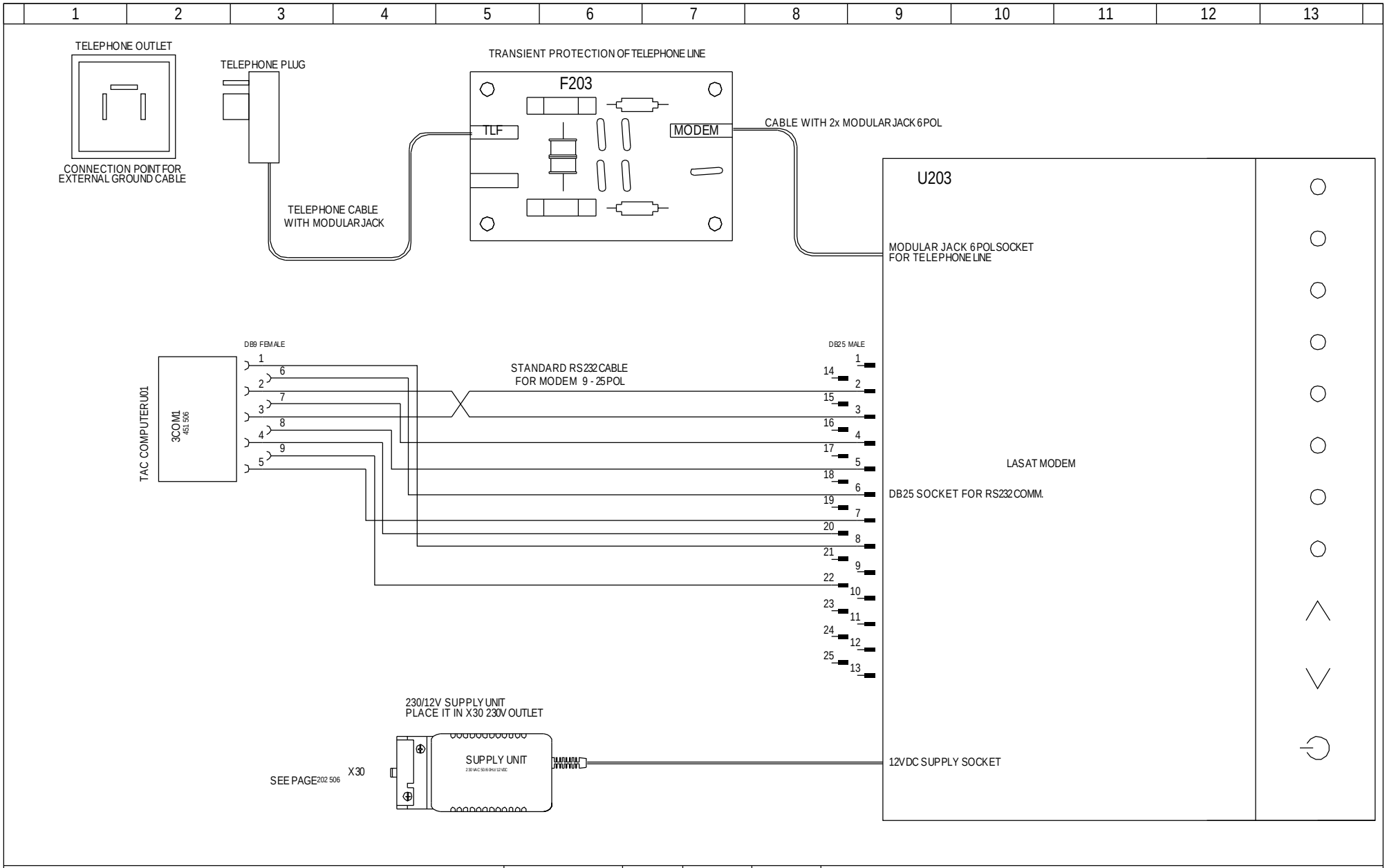

	Date	Initials	Function	External RS232 comm. to external modem		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 502	Sheet 501

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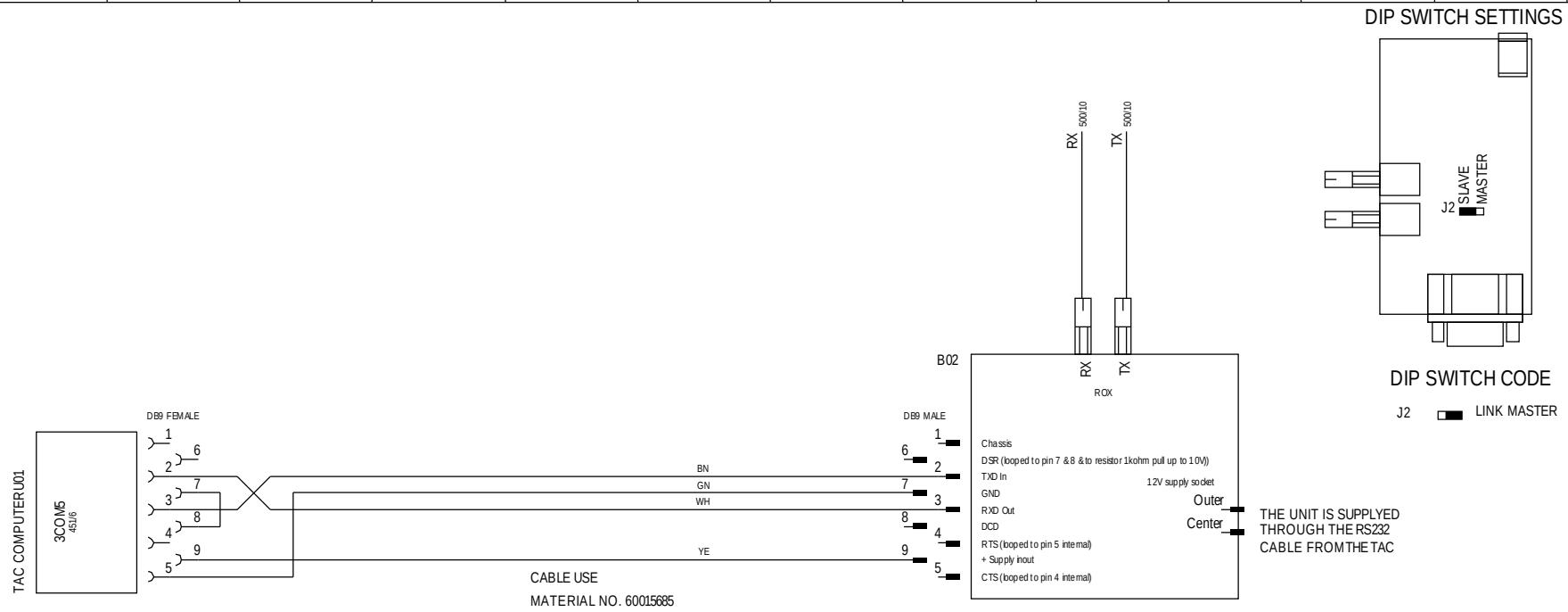

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	RS232 comm. to OP-panel	
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments		Customer: Vestas Wind Systems A/S
		Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 503 / Sheet 502

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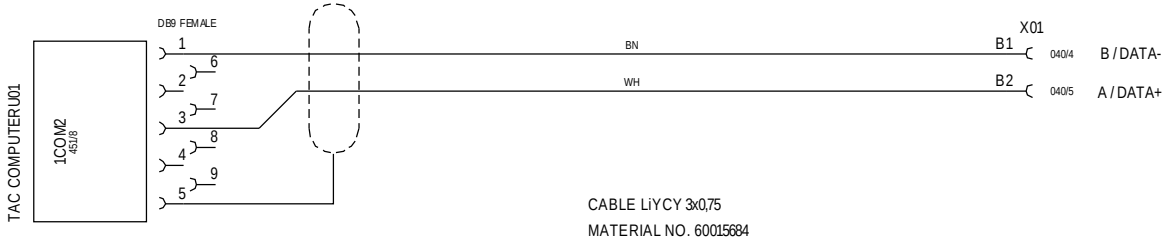

	Date	Initials	Function	RS485 comm. to hub		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 504	Sheet 503

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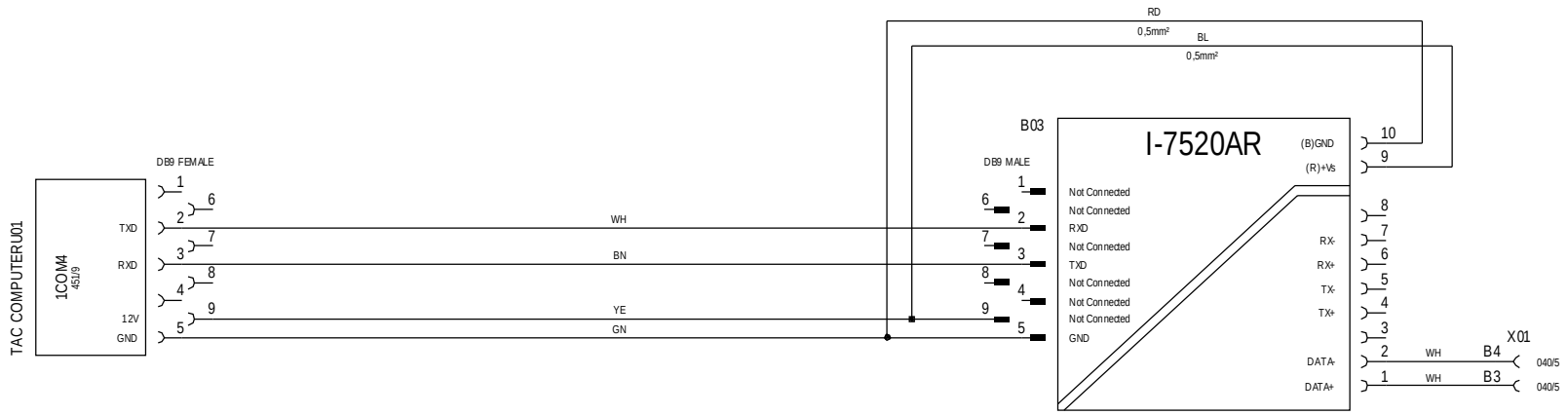

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	RS485 comm. to +AT1 Top Panel	
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments	Customer	Vestas Wind Systems A/S
		Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 505 / Sheet 504

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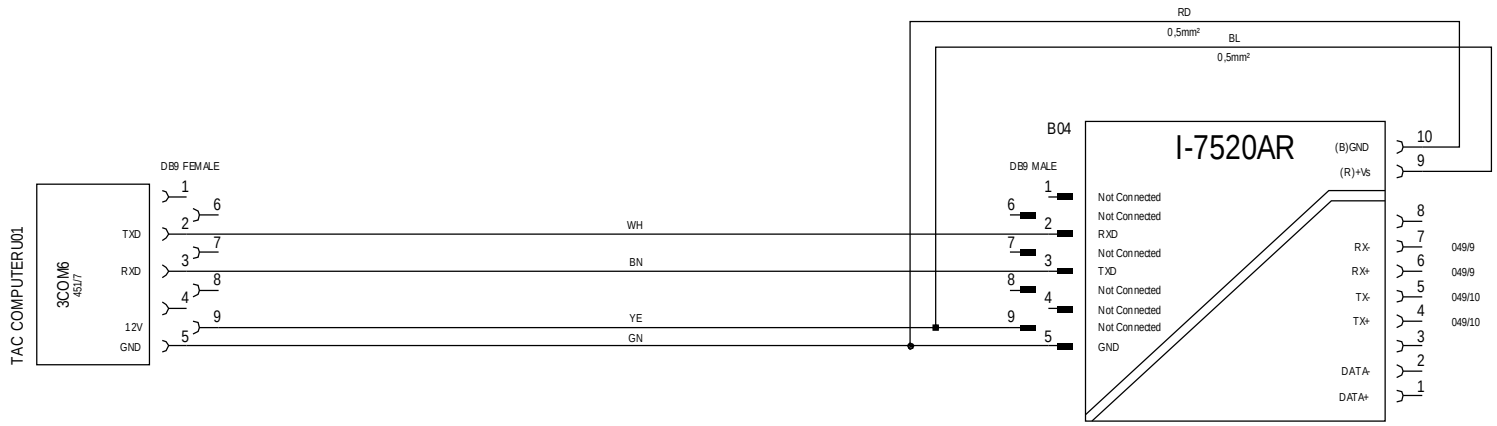

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	RS485 comm. to +AT4	
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments	Customer	Vestas Wind Systems A/S
		Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 506 / Sheet 505

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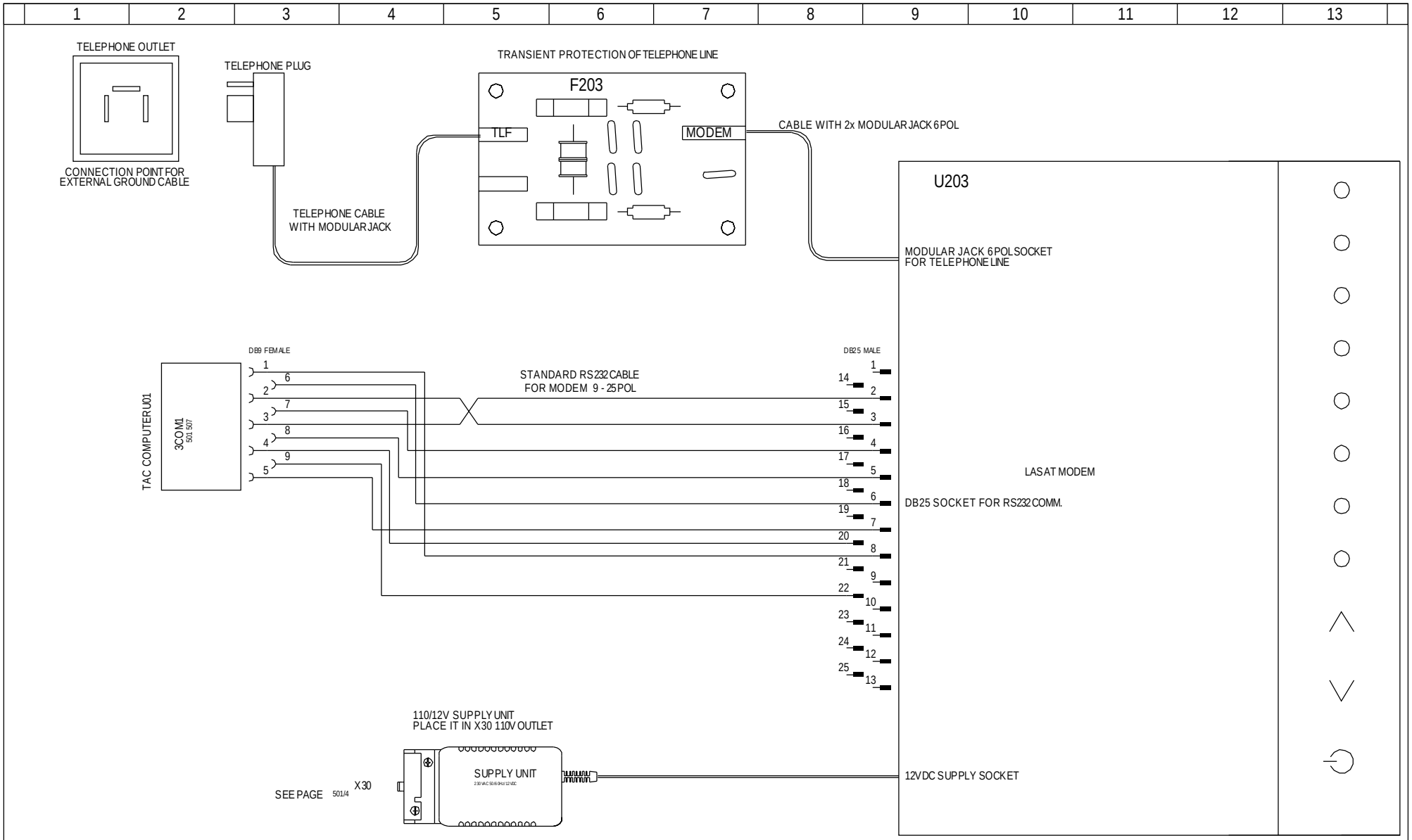

Vestas

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	Date	Initials	Function	External RS232 Comm. to Modem		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 507	Sheet 506

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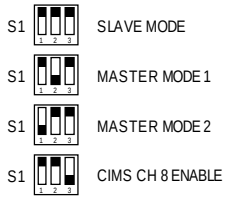
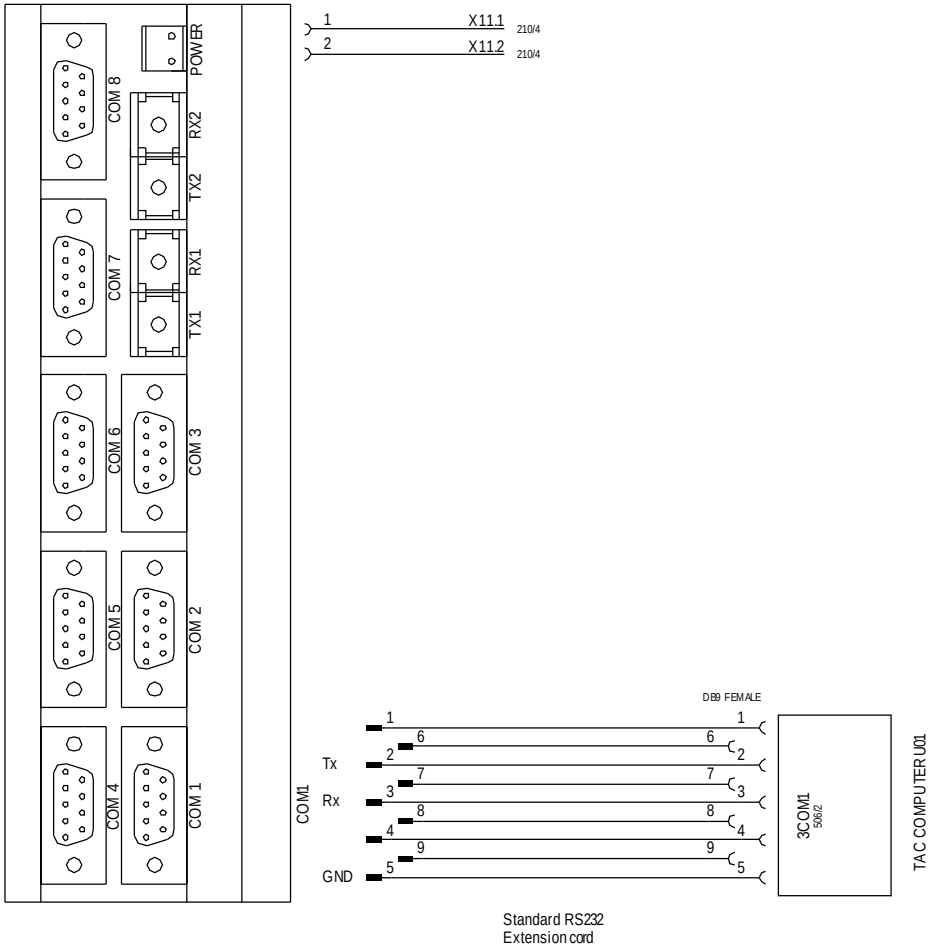
1	2	3	4	5	6	7	8	9	10	11	12	13

DIP SWITCH CODE





	Date	Initials	Function	External RS232 Comm. to CSL 110		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 508	Sheet 507

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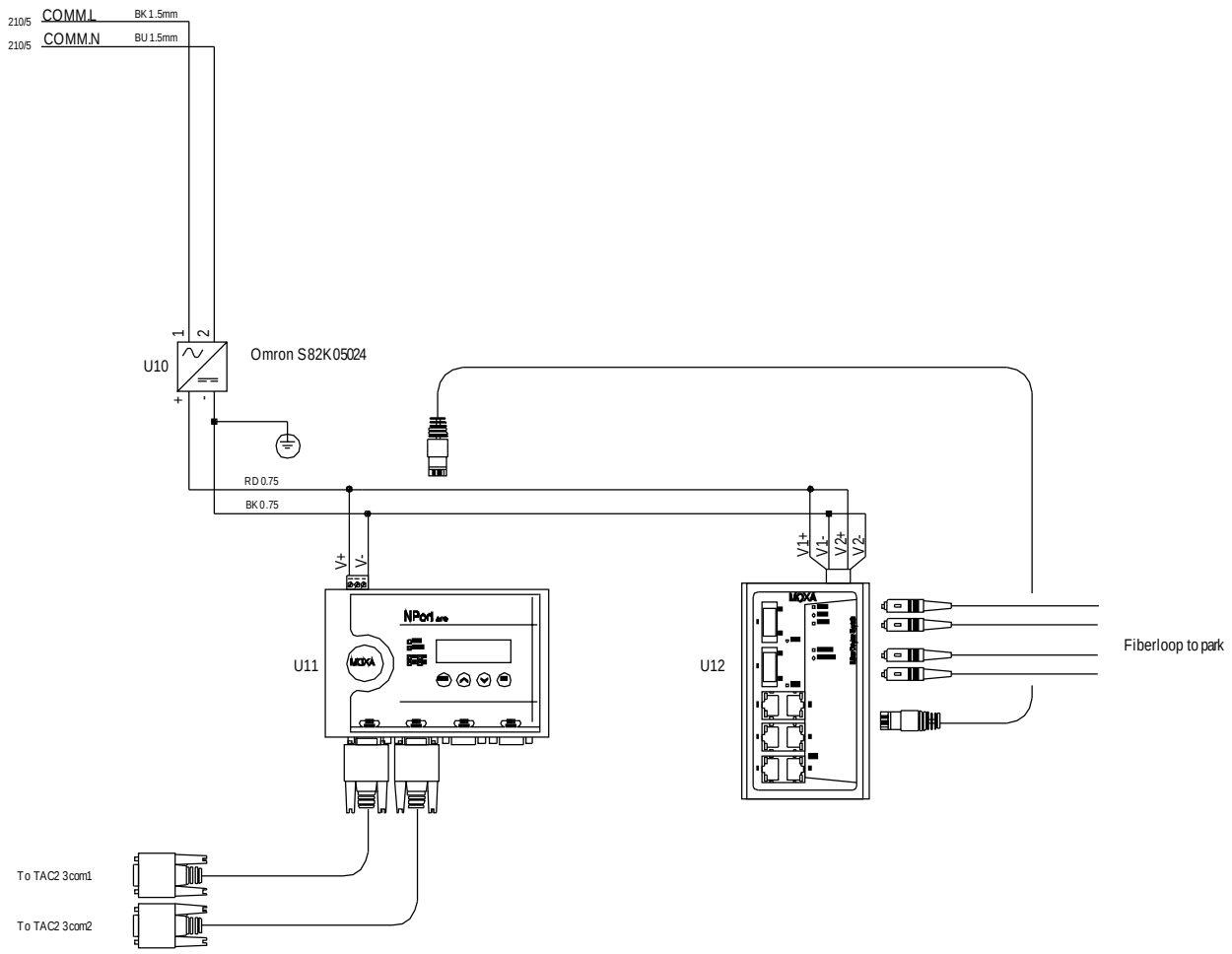

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	External RS232 Comm. to Ethernet	
		Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments		Customer: Vestas Wind Systems A/S
		Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet 509 / Sheet 508

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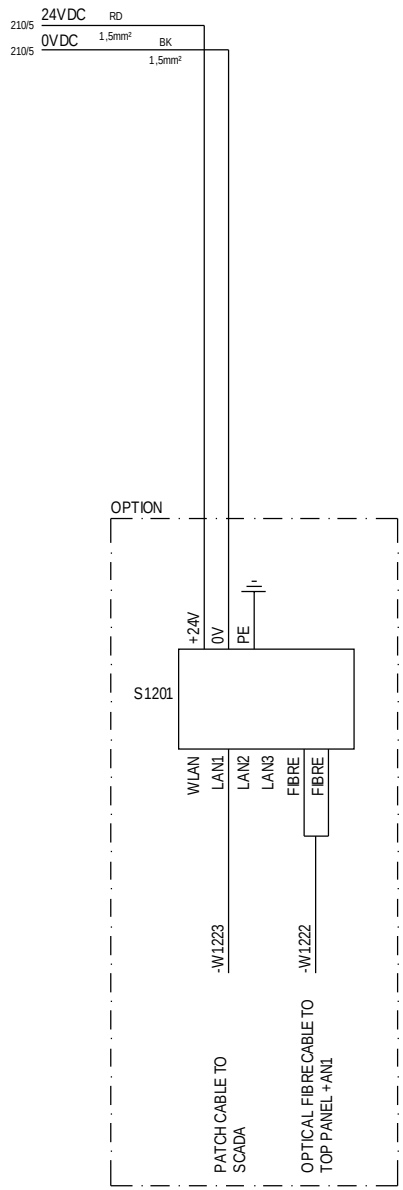

	Date	Initials	Function	CMS - OPTION		
Designed	070628	FLT	Project title	Control Panel +AT2 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934704	Cont. sheet -	Sheet 509

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765456 CONTROL PAN +AT2 V82 50Hz

Component	Description	Qty per	Stk UM	Position Number
098305	CABINET TS8 2 DOOR W/W	1,000	EA	
098431	SUPPORT RAIL CONTROL PANEL V82	2,000	EA	
118934	LABEL ELECTRICAL WARNING UNIV.	1,000	EA	
158880	SCR TORX CSK FH M8X20 8.8 TZN	4,000	EA	
60001957	CONN BLA F 8 LEADED	1,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60002421	LABEL "SERVICE 0 1"	1,000	EA	
60002572	LABEL "COMPUTER PANEL +AT2"	1,000	EA	
60002670	LABEL	2,000	EA	
60006335	CRP TERM 0.5 8MM INS SINGLE	8,000	EA	
60007240	BUSBAR HOLDER 12x5-10x30MM	8,000	EA	
60007242	END COVER BUSBAR HOLDER	6,000	EA	
60007258	BUSBAR ADP 45MM 25A TERM	7,000	EA	
60007259	BUSBAR ADP 72MM 32A WIRE	20,000	EA	
60007283	BUSBAR COVER 78 393 12-30x10MM	0,600	M	
60007388	HEAT SHRINK 19mm 2:1 BK	2,300	M	
60007399	HEAT SHRINK 12.7mm 3:1 GNYE	0,030	M	
60007420	WIRE HOSE BLACK 20mm	0,410	M	
60007421	HOSE WIRE 25mm BK	0,410	M	
60007437	BRAIDED SLEEVE 10-17mm BK	1,630	M	
60007458	CABLE TIE 140x2.5mm WH	150,000	EA	
60007459	CABLE TIE WHITE 200x2.5mm	15,000	EA	
60007465	CABLE TIE 368x4.8mm BK	4,000	EA	
60007468	CABLE TIE BLACK 550X8,0MM	4,000	EA	
60007470	CABLE TIE 762x9mm WH	2,000	EA	
60007481	CABLE RACK TK 5-7	1,000	EA	
60007629	CABLE GLAND M16 BRASS BMBC-01	2,000	EA	
60007630	CABLE GLAND M20 BRASS BMBC-02	7,000	EA	
60007631	CABLE GLAND M25 BRASS BMBC-03	4,000	EA	
60007632	CABLE GLAND M32 BRASS BMBC-04	3,000	EA	
60007633	CABLE GLAND M40 BRASS BMBC-05	3,000	EA	
60007635	CABLE GLAND M63 BRASS BMBC-07	1,000	EA	
60007638	LOCKNUT M16 BRASS BMBL-02	2,000	EA	
60007639	LOCKNUT M20 BRASS BMBL-03	7,000	EA	
60007640	LOCKNUT M25 BRASS BMBL-04	4,000	EA	
60007641	LOCKNUT M32 BRASS BMBL-05	3,000	EA	
60007642	LOCKNUT M40 BRASS BMBL-06	3,000	EA	
60007644	LOCKNUT M63 BRASS BMBL-08	1,000	EA	
60007735	WIRE H05V-K 0.75 WH IEC	4,020	M	
60007757	WIRE H07V-K 1.5 BK IEC	2,030	M	
60007829	WIRE TIN 16 150MM Ø8 IEC/UL	1,000	EA	
60009600	SCREW ISO 7045 M 4 X 16 - 4.8	38,000	EA	
60010453	WIRING PLAN POC STEEL	1,000	EA	
60010481	UTILITY LECTERN 4638.600	1,000	EA	
60012624	WIRING YAW MOTOR +AT2	1,000	EA	
60013412	ANGLE BRACKET 2x10x25MM	6,000	EA	
60013704	CABLE ENTRY PLATE CPU PANEL30t	1,000	EA	
60015684	CABLE SIF-TAC-II RS485	1,000	EA	
60092974	LABEL	1,000	EA	
60094265	CABLE ENTRY RIGHT CPU PAN UL	1,000	EA	
60094860	MARKER CARD WAGO NOS 1-10	0,300	EA	
60094872	MARKER CARD WAGO NOS 11-20	0,100	EA	
60095579	LABEL " CAUTION! RISK OF. "	1,000	EA	
60096851	TORX SCREW 2486.500 5.5X13MM	26,000	EA	
60096875	CAPTIVE NUT 4165.000 M8	11,000	EA	
60096970	PUNCH SECTION 8612.160 OUTER	5,000	EA	
60096979	ATTACHMENT MOUNT PLATE TS	2,000	EA	
60097575	LABEL TYPE SIGN +AT2 PS/AS	1,000	EA	
60098043	MARK WAGO 1 +AT2 PS/AS WMB	1,000	EA	
60098050	PB PS/AS 30T (1650) IEC	1,000	EA	
60098112	BUSBAR ADAPTOR 60MM 80A 54MM	1,000	EA	
60098349	WIRING F31,F25 +AT2 IEC I/III	1,000	EA	
60098356	WIRING 0VDC +AT2 IEC I/III	1,000	EA	
60098359	WIRING 230VAC +AT2 IEC I/III	1,000	EA	
60098360	WIRING EARTH +AT2 IEC I/III	1,000	EA	
60098361	WIRING T01,T05 +AT2 IEC I/III	1,000	EA	
60098362	WIRING U02.300 +AT2 IEC I/III	1,000	EA	
60098364	WIRING U02.600 +AT2 IEC I/III	1,000	EA	
60098366	WIRING U02.800 +AT2 IEC I/III	1,000	EA	
60098367	WIRING U02.500 +AT2 IEC I/III	1,000	EA	
60098368	WIRING X03 +AT2 IEC I/III	1,000	EA	

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60098369	WIRING X04 +AT2 IEC I/III	1,000	EA	
60098370	WIRING X05 +AT2 IEC I/III	1,000	EA	
60098371	WIRING X08 +AT2 IEC I/III	1,000	EA	
60098372	WIRING X07 +AT2 IEC I/III	1,000	EA	
60098373	WIRING 24VDC3 +AT2 IEC I/III	1,000	EA	
60098374	WIRING 690VAC +AT2 IEC I/III	1,000	EA	
60098375	WIRING X01 +AT2 IEC I/III	1,000	EA	
60098376	WIRING X02 +AT2 IEC I/III	1,000	EA	
60099010	LABEL TYPE SIGN CTRL PANEL	1,000	EA	
60099030	MOUNT PLATE TS8 W/W	1,000	EA	
60099169	WIRING X06 +AT2 IEC I/III	1,000	EA	
60099174	WIRING 24V CIRC+AT2 IEC I/III	1,000	EA	
60102318	CU BUSBAR KIT 5 CONTROL PAN	1,000	EA	
60102523	DIN RAIL F BUSBAR ADAPTOR 72MM	4,000	EA	
60103218	LABEL SERVICE KEY ON PANELS	1,000	EA	
60104150	CABLE CONDUIT DIN RAIL CTRL	1,000	EA	
60006484	CONN MODULE BLIND FEMALE	2,000	EA	-W592
60006565	HOUSING 3-MODULES TOP ENTRY	1,000	EA	-W592
60007657	REDUCTION ADAPTOR PG21-PG16	1,000	EA	-W592
60007676	CABLE GLAND PG16 EMC BRASS	1,000	EA	-W592
60098140	CABLE W592 FOR PS/AS 30T	1,000	EA	-W592
60098976	FRAME F 3 MOD FEM.2+PE	1,000	EA	-W592
60099095	CONN ADAPTER F STAMP F 10	1,000	EA	-W592
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B01
51700301	ST-ROX RS232/50A CONVERTER	1,000	EA	B02
60006058	END STOP 105900 TERMS WEW35/1	1,000	EA	B02
60007767	WIRE H07V-K 1.5 BU IEC S300	2,030	M	B02
60009605	SCR CRS PH M5x12 4.8 FZB	4,000	EA	B02
60013722	PLATE ALU 2x76x76MM F ST-ROX	1,000	EA	B02
60015685	CABLE ROX-TAC-II RS232 3M	1,000	EA	B02
60009606	SCR CRS PH M5x20 4.8 FZB	16,000	EA	B03
60091912	END STOP WAGO 249-117 10MM	1,000	EA	B03
60099303	RS232/485/22 CONV I-7520AR ICP	1,000	EA	B03
60099963	CABLE RS232 TAC-2/ICP-7520	1,000	EA	B03
60009610	SCR CRS PH M6x14 4.8 FZB	1,000	EA	B04
60091912	END STOP WAGO 249-117 10MM	2,000	EA	B04
60099303	RS232/485/22 CONV I-7520AR ICP	1,000	EA	B04 EON
60099963	CABLE RS232 TAC-2/ICP-7520	1,000	EA	B04 EON
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B19
60014729	HEATER FAN CR0 27 475/550W UL	1,000	EA	E01
60009578	SCREW ISO 7045 M 3 x 8 - FZB	27,000	EA	E02
60014729	HEATER FAN CR0 27 475/550W UL	1,000	EA	E02
60004755	CB 3RV1121-1KA10 9.0-12.5A	1,000	EA	F01
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F01
60004797	LINK MODULE 3RA1921-1AA00	1,000	EA	F01
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F02
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F02
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F03
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F03
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F04
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F04
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F05
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F05
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F06
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F06
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F07
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F07
60004750	CB 3RV1121-1EA10 2.8-4.0A	1,000	EA	F08
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F08
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F08
60004743	CB 3RV1121-0HA10 0.55-0.8A	1,000	EA	F09
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F09
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F09
60004750	CB 3RV1121-1EA10 2.8-4.0A	1,000	EA	F10
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F10
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F10
60004743	CB 3RV1121-0HA10 0.55-0.8A	1,000	EA	F11
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F11
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F11
60004762	CB 3RV1131-4DA10 18.0-25.0A	1,000	EA	F13
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F13
60004751	CB 3RV1121-1FA10 3.5-5.0A	1,000	EA	F14
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F14
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F14
60004753	CB 3RV1121-1HA10 5.5-8.0A	1,000	EA	F15

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60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F15
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F15
153146	HEX SCR. M 8X 16 8.8 GZN	5,000	EA	F16
60005983	TERMINAL STD M4/6	5,000	EA	F16
60005998	END SEC FEM6 GY 118368.16	1,000	EA	F16
60010316	BASE PL CLAMP TS8 WA4547276	1,000	EA	F16
60091912	END STOP WAGO 249-117 10MM	2,000	EA	F16
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	F16
60014160	MARK CARD RC610 NACELLE	1,000	EA	F16-F19
60005983	TERMINAL STD M4/6	8,000	EA	F17
60005998	END SEC FEM6 GY 118368.16	2,000	EA	F17
60009639	SCR HEX SET M8x20 8.8 FZB	1,000	EA	F17
60091912	END STOP WAGO 249-117 10MM	2,000	EA	F17
60091915	END STOP LABEL HOLDER WAGO 249	2,000	EA	F17
60005983	TERMINAL STD M4/6	5,000	EA	F18
60005998	END SEC FEM6 GY 118368.16	1,000	EA	F18
60009646	SCREW ISO 4017 M8x25 - 8.8 FZB	14,000	EA	F18
60091912	END STOP WAGO 249-117 10MM	2,000	EA	F18
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	F18
60005983	TERMINAL STD M4/6	8,000	EA	F19
60005998	END SEC FEM6 GY 118368.16	2,000	EA	F19
60009670	SCR HEX SET M10x16 8.8 FZB	2,000	EA	F19
60010699	CONDENSATION PROT DRY BAG 500G	4,000	EA	F19
60091912	END STOP WAGO 249-117 10MM	2,000	EA	F19
60091915	END STOP LABEL HOLDER WAGO 249	2,000	EA	F19
60004663	CB 3RV1021-1FA10 3.5-5.0A	1,000	EA	F20
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F20
60005996	TERMINAL STD M6/8 GY 115118.11	7,000	EA	F21
60005998	END SEC FEM6 GY 118368.16	1,000	EA	F21
60009673	SCR HEX SET M10x25 8.8 FZB	1,000	EA	F21
60014161	MARK CARD RC610 SERVICE LIFT	0,200	EA	F21
60091912	END STOP WAGO 249-117 10MM	2,000	EA	F21
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	F21
60008824	CABLE PATCH DUPLEX MM 62.5/125	2,000	EA	F21, M01
60004712	CB 3RV1421-1GA10 4.5-6.3A	1,000	EA	F22
60004712	CB 3RV1421-1GA10 4.5-6.3A	1,000	EA	F23
60005071	FUSE SWITCH NH00 33198 3P	1,000	EA	F24
60005092	FUSE 690V 16A NH00 GL/GG	3,000	EA	F24
60005983	TERMINAL STD M4/6	6,000	EA	F25
60005998	END SEC FEM6 GY 118368.16	2,000	EA	F25
60009747	SCR CRS FH ST2.9x9.5 FZB	2,000	EA	F25
60091912	END STOP WAGO 249-117 10MM	4,000	EA	F25
60091915	END STOP LABEL HOLDER WAGO 249	2,000	EA	F25
60005759	RCCB 5SM1312-6 25A 2P	1,000	EA	F27
60005154	MCB 5SX2204-7 4.0A C 2P	1,000	EA	F28
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	95,000	EA	F28
60091912	END STOP WAGO 249-117 10MM	1,000	EA	F28
60005071	FUSE SWITCH NH00 33198 3P	1,000	EA	F29
60005097	FUSE 690V 50A NH00 GL/GG	3,000	EA	F29
195126	PROTC SA DG S 600 FM 600VAC	3,000	EA	F30
60000675	BUSBAR 3 OVPS	1,000	EA	F30
60004648	CB 3RV1021-0AA10 0.11-0.16A	1,000	EA	F31
60005071	FUSE SWITCH NH00 33198 3P	1,000	EA	F32
60005098	FUSE 690V 63A NH00 GL/GG	3,000	EA	F32
60005157	MCB 5SX2206-7 6.0A C 2P	1,000	EA	F33
60005193	AUX CONTACT 5SX9100	1,000	EA	F33
60005157	MCB 5SX2206-7 6.0A C 2P	1,000	EA	F34
60005193	AUX CONTACT 5SX9100	1,000	EA	F34
60005157	MCB 5SX2206-7 6.0A C 2P	1,000	EA	F35
60005193	AUX CONTACT 5SX9100	1,000	EA	F35
60005157	MCB 5SX2206-7 6.0A C 2P	1,000	EA	F36
60005193	AUX CONTACT 5SX9100	1,000	EA	F36
60005159	MCB 5SX2208-7 8.0A C 2P	1,000	EA	F37
60005193	AUX CONTACT 5SX9100	1,000	EA	F37
60005162	MCB 5SX2213-7 13.0A C 2P	1,000	EA	F38
60005158	MCB 5SX2206-8 6.0A D 2P	1,000	EA	F39
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F40
60004743	CB 3RV1121-0HA10 0.55-0.8A	1,000	EA	F44
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F44
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F44
60004745	CB 3RV1121-0KA10 0.9-1.25A	1,000	EA	F49
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F49
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F49
60004742	CB 3RV1121-0GA10 0.45-0.63A	1,000	EA	F50
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F50

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60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F50
60004996	RELAY EMER 3TK2806OBB4 400V	1,000	EA	K01
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	K02
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	K02
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	K03
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	K03
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K04
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K04
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K04
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K04
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K05
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K05
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K05
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K05
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K06
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K06
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K06
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K06
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K07
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K07
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K07
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K07
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K08
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K08
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K08
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K08
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K09
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K09
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K09
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K09
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K10
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K10
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K10
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K10
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K11
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K11
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K11
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K11
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K12
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K12
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K12
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K12
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K13
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K13
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K13
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K13
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K15
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K15
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K15
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K15
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K16
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K16
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K16
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K16
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K17
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K17
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K17
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K17
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K18
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K18
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K18
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K18
092048	VENTI. OUTLET FILTER 3326.207	1,000	EA	M01
60110934	FAN 230V 500M3/H 323X323X125MM	1,000	EA	M01
60004407	CONT 3RT1026-1AP00 230V 50Hz	1,000	EA	Q01
60004451	RCUNIT 3RT19261CD00 127-240VAC	1,000	EA	Q01
60004407	CONT 3RT1026-1AP00 230V 50Hz	1,000	EA	Q02
60004451	RCUNIT 3RT19261CD00 127-240VAC	1,000	EA	Q02
60004439	MECH INTERLOCK SIRIUS 3R	1,000	EA	Q02/Q03
60004407	CONT 3RT1026-1AP00 230V 50Hz	1,000	EA	Q03
60004451	RCUNIT 3RT19261CD00 127-240VAC	1,000	EA	Q03
60096011	REVERSING ASSEMBLIES 3RA19232A	1,000	EA	Q03
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q08
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q08
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q09

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60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q09
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q10
60004433	AUX CONTACT 3RH1911-1FA22	1,000	EA	Q10
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q10
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q11
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q11
60004413	CONT 3RT10341AL20 230V 50/60Hz	1,000	EA	Q13
60004444	AUX CONTACT 3RH1921-1FA22	1,000	EA	Q13
60004456	RCUNIT 3RT19361CD00 127-240VAC	1,000	EA	Q13
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q14
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q14
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q15
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q15
60005983	TERMINAL STD M4/6	5,000	EA	Q16
60005998	END SEC FEM6 GY 118368.16	1,000	EA	Q16
60091912	END STOP WAGO 249-117 10MM	2,000	EA	Q16
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	Q16
60005983	TERMINAL STD M4/6	8,000	EA	Q17
60005998	END SEC FEM6 GY 118368.16	2,000	EA	Q17
60009792	WASHER SPR 5 FZG	4,000	EA	Q17
60091912	END STOP WAGO 249-117 10MM	2,000	EA	Q17
60091915	END STOP LABEL HOLDER WAGO 249	2,000	EA	Q17
60005983	TERMINAL STD M4/6	5,000	EA	Q18
60005998	END SEC FEM6 GY 118368.16	1,000	EA	Q18
60009795	WASHER SPR 6 FZG	1,000	EA	Q18
60091912	END STOP WAGO 249-117 10MM	2,000	EA	Q18
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	Q18
60005983	TERMINAL STD M4/6	8,000	EA	Q19
60005998	END SEC FEM6 GY 118368.16	2,000	EA	Q19
60009803	WASHER SPR 8 FZG	14,000	EA	Q19
60091912	END STOP WAGO 249-117 10MM	2,000	EA	Q19
60091915	END STOP LABEL HOLDER WAGO 249	2,000	EA	Q19
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q20
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q20
60002430	LABEL "48 NM"	1,000	EA	Q21
60002431	LABEL "24 NM"	1,000	EA	Q21
60005608	SWI LB 160A 3P OETL200K3	1,000	EA	Q21
60005614	SHAFT OETL ZA86 8x500mm	1,000	EA	Q21
60006815	STICKER "L1" 14MM	0,032	EA	Q21
60006816	STICKER "L2" 14MM	0,032	EA	Q21
60006817	STICKER "L3" 14MM	0,032	EA	Q21
60006819	STICKER "EARTH" 14mm	0,300	EA	Q21
60093008	LABEL"Q21 MAIN DISC FOR MAIN"	1,000	EA	Q21
60095653	TERMINAL SHROUD OETLZX 128	3,000	EA	Q21
60005604	SWI SWDIS 32A 4P OT32E4	1,000	EA	Q22
60005612	ROTARY HANDLE OHB65J6	1,000	EA	Q22
60005617	SHAFT OXP5X400 400mm	0,750	EA	Q22
60005622	SHAFT EXTENSION OESA ZX167	1,000	EA	Q22
60009809	WASHER SPR 10 FZG	1,000	EA	Q22
60091912	END STOP WAGO 249-117 10MM	2,000	EA	Q22
60093009	LABEL"Q22 DISC FOR 230V UPS"	1,000	EA	Q22
60094268	ALU BRA SHAFT MAIN SWITCH CPU	1,000	EA	Q22
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q44
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q44
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q49
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q49
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q50
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q50
60006058	END STOP 105900 TERMS WEW35/1	1,000	EA	RX/TX
60008794	FIBRE PLUG ST-COUPLER AMP 05-5	2,000	EA	RX/TX
60013723	ANGLE ALU 2x50x80MM F 2xST	1,000	EA	RX/TX
60005824	MUSHROOM BUTTON ISAF616510R100	1,000	EA	S01
60005846	CONTACT ELEMENT SK616 001-B 1N	2,000	EA	S01
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S01
60005871	SIGN SK615546-2 "EMERGENCY STO	1,000	EA	S01
60005836	SELECT SWITCH ISFA616280R100 2	1,000	EA	S02
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	S02
60101986	TRAFO 600-690/2x115V	1,000	EA	T01
60006925	TRAFO VOLT 520/24VAC 30VA	1,000	EA	T02
60006925	TRAFO VOLT 520/24VAC 30VA	1,000	EA	T03
60006925	TRAFO VOLT 520/24VAC 30VA	1,000	EA	T04
60101986	TRAFO 600-690/2x115V	1,000	EA	T05
51707301	TAC-II/F NEGM NM1500C/72/82	1,000	EA	U01
60001918	CONN BLA F 3 LEADED	1,000	EA	U01
60001950	CONN BLA F 7 LEADED	3,000	EA	U01

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51701501	TOI-II INTERF NM1500 TOWER	1,000	EA	U02
60001918	CONN BLA F 3 LEADED	1,000	EA	U02
60001927	CONN BLA F 4 LEADED	2,000	EA	U02
60001934	CONN BLA F 5 LEADED	6,000	EA	U02
60001965	CONN BLA F 10 LEADED	2,000	EA	U02
188451	PS ADC 5183R-4 5A-27,4V	1,000	EA	U03
60009838	LOCK WASHER DIN 6798 A4 - FZB	50,000	EA	U03
60091912	END STOP WAGO 249-117 10MM	2,000	EA	U03
60000604	VDR SIOV-S10K40 40V	1,000	EA	V01
60002503	LABEL "-X01"	1,000	EA	X01
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X01
60002504	LABEL "-X02"	1,000	EA	X02
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X02
60002505	LABEL "-X03"	1,000	EA	X03
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X03
60002506	LABEL "-X04"	1,000	EA	X04
60006336	CRP TERM 0.75 8MM INS SINGLE	2,000	EA	X04
60006571	HOUSING 32P BULKHEAD	1,000	EA	X04
60002507	LABEL "-X05"	1,000	EA	X05
60006354	CRP TERM TW 0.75 8MM INS	1,000	EA	X05
60006571	HOUSING 32P BULKHEAD	1,000	EA	X05
60002508	LABEL "-X06"	1,000	EA	X06
60006571	HOUSING 32P BULKHEAD	1,000	EA	X06
60002509	LABEL "-X07"	1,000	EA	X07
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X07
60002525	LABEL "-X08"	1,000	EA	X08
60006571	HOUSING 32P BULKHEAD	1,000	EA	X08
60006073	TERMINAL WAGO 0.2-6.0MM2	2,000	EA	X10
60006085	END SEC 282-325 1-LEVEL GY	1,000	EA	X10
60009841	WASHER LOCK 8 FZB	12,000	EA	X10
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X10
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X10
60096685	TERMINAL WAGO1-LEV 0.08-4.0MM2	18,000	EA	X10
60097064	END SEC 281-328 GY	1,000	EA	X10
60009842	LOCK WASHER DIN 6798A 10 - FZB	3,000	EA	X11
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X11
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X11
60096685	TERMINAL WAGO1-LEV 0.08-4.0MM2	3,000	EA	X11
60097064	END SEC 281-328 GY	1,000	EA	X11
60006073	TERMINAL WAGO 0.2-6.0MM2	3,000	EA	X12
60006085	END SEC 282-325 1-LEVEL GY	1,000	EA	X12
60009861	NUT ISO 4032 M 4 - 6 - FZB	46,000	EA	X12
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X12
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X12
60006075	TERMINAL WAGO 0.08-2.5MM2	7,000	EA	X13
60006080	END SEC 870-933 1-LEVEL GY	3,000	EA	X13
60006086	PUSH-IN JUMPER BAR 870-402 2-P	2,000	EA	X13
60006087	PUSH-IN JUMPER BAR 870-403	1,000	EA	X13
60009873	NUT ISO 4032 M 8 - 8 - FZB	7,000	EA	X13
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X13
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X13
60006075	TERMINAL WAGO 0.08-2.5MM2	10,000	EA	X20
60006080	END SEC 870-933 1-LEVEL GY	3,000	EA	X20
60006086	PUSH-IN JUMPER BAR 870-402 2-P	3,000	EA	X20
60006088	PUSH-IN JUMPER BAR 870-404 4-P	1,000	EA	X20
60009879	NUT HEX M10 8	1,000	EA	X20
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X20
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X20
60006075	TERMINAL WAGO 0.08-2.5MM2	12,000	EA	X22
60009895	NUT LIFTING EYE M10 FZB	2,000	EA	X22
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X22
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X22
60009839	WASHER LOCK 5 FZB	16,000	EA	X30
60011324	SKT ABB E1175 DIN RAIL 16A	1,000	EA	X30
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X30

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Change Info

Item no.	***Item text:***
765457	**Control Panel +AT2 Arctic, V82-1.65MW 690V 50Hz MK5**

Active revision for production

Drawing no.: None

Version	**Date**	**Init./App.**	**Description of change since last revision**
xx	yyyy-mm-dd	xxx/xxx	Write the change here.

BoM no.: 765457 *Document no.: 0000-1233*

Version	**Date**	**Init./App.**	**Description of change since last revision**
01	2008-10-09	INI/FLT	Changed with ECO 225713, 228836, 228988, 229786, 230842. Replaced: 60000717 with 188451 PS ADC 5183R-4 5A-27,4V. Removed: 2 x 098430 SUPPORT RAIL CONTROL PANEL V82 (50Hz). Replaced: 098335 with 098305 CABINET TS8 2 DOOR W/W. Replaced: 60000674 with 195126 PROTC SA DG S 600 FM 600VAC. Removed: 60014668 EXHAUST FILT, 60014655 FAN 1-PHASE 230V. Added: 092048 OUTLET FILTER, 60110934 FAN 230V.

Old revisions for service

BoM no.: 765457 *Document no.: 0000-1233*

Version	**Date**	**Init./App.**	**Description of change since last revision**
00	2007-07-02	INI/FLT	First version

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765457 CONTROL PAN +AT2 V82 50Hz ARCT

Component	Description	Qty per	Stk UM	Position Number
098305	CABINET TS8 2 DOOR W/W	1,000	EA	
098431	SUPPORT RAIL CONTROL PANEL V82	2,000	EA	
118934	LABEL ELECTRICAL WARNING UNIV.	1,000	EA	
158880	SCR TORX CSK FH M8X20 8.8 TZN	4,000	EA	
60001957	CONN BLA F 8 LEADED	1,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60002421	LABEL "SERVICE 0 1"	1,000	EA	
60002572	LABEL "COMPUTER PANEL +AT2"	1,000	EA	
60002670	LABEL	2,000	EA	
60006335	CRP TERM 0.5 8MM INS SINGLE	8,000	EA	
60007240	BUSBAR HOLDER 12x5-10x30MM	8,000	EA	
60007242	END COVER BUSBAR HOLDER	6,000	EA	
60007258	BUSBAR ADP 45MM 25A TERM	7,000	EA	
60007259	BUSBAR ADP 72MM 32A WIRE	20,000	EA	
60007283	BUSBAR COVER 78 393 12-30x10MM	0,600	M	
60007388	HEAT SHRINK 19mm 2:1 BK	2,300	M	
60007399	HEAT SHRINK 12.7mm 3:1 GNYE	0,030	M	
60007420	WIRE HOSE BLACK 20mm	0,410	M	
60007421	HOSE WIRE 25mm BK	0,410	M	
60007437	BRAIDED SLEEVE 10-17mm BK	1,630	M	
60007458	CABLE TIE 140x2.5mm WH	150,000	EA	
60007459	CABLE TIE WHITE 200x2.5mm	15,000	EA	
60007465	CABLE TIE 368x4.8mm BK	4,000	EA	
60007468	CABLE TIE BLACK 550X8,0MM	4,000	EA	
60007470	CABLE TIE 762x9mm WH	2,000	EA	
60007481	CABLE RACK TK 5-7	1,000	EA	
60007629	CABLE GLAND M16 BRASS BMBC-01	2,000	EA	
60007630	CABLE GLAND M20 BRASS BMBC-02	7,000	EA	
60007631	CABLE GLAND M25 BRASS BMBC-03	4,000	EA	
60007632	CABLE GLAND M32 BRASS BMBC-04	3,000	EA	
60007633	CABLE GLAND M40 BRASS BMBC-05	3,000	EA	
60007635	CABLE GLAND M63 BRASS BMBC-07	1,000	EA	
60007638	LOCKNUT M16 BRASS BMBL-02	2,000	EA	
60007639	LOCKNUT M20 BRASS BMBL-03	7,000	EA	
60007640	LOCKNUT M25 BRASS BMBL-04	4,000	EA	
60007641	LOCKNUT M32 BRASS BMBL-05	3,000	EA	
60007642	LOCKNUT M40 BRASS BMBL-06	3,000	EA	
60007644	LOCKNUT M63 BRASS BMBL-08	1,000	EA	
60007735	WIRE H05V-K 0.75 WH IEC	4,020	M	
60007757	WIRE H07V-K 1.5 BK IEC	2,030	M	
60007829	WIRE TIN 16 150MM Ø8 IEC/UL	1,000	EA	
60009600	SCREW ISO 7045 M 4 X 16 - 4.8	38,000	EA	
60009792	WASHER SPR 5 FZG	4,000	EA	
60009795	WASHER SPR 6 FZG	1,000	EA	
60009803	WASHER SPR 8 FZG	14,000	EA	
60010316	BASE PL CLAMP TS8 WA4547276	1,000	EA	
60010453	WIRING PLAN POC STEEL	1,000	EA	
60010481	UTILITY LECTERN 4638.600	1,000	EA	
60010699	CONDENSATION PROT DRY BAG 500G	4,000	EA	
60012624	WIRING YAW MOTOR +AT2	1,000	EA	
60013412	ANGLE BRACKET 2x10x25MM	6,000	EA	
60013704	CABLE ENTRY PLATE CPU PANEL30t	1,000	EA	
60015684	CABLE SIF-TAC-II RS485	1,000	EA	
60092974	LABEL	1,000	EA	
60094265	CABLE ENTRY RIGHT CPU PAN UL	1,000	EA	
60094860	MARKER CARD WAGO NOS 1-10	0,300	EA	
60094872	MARKER CARD WAGO NOS 11-20	0,100	EA	
60095579	LABEL " CAUTION! RISK OF. "	1,000	EA	
60096851	TORX SCREW 2486.500 5.5X13MM	26,000	EA	
60096875	CAPTIVE NUT 4165.000 M8	11,000	EA	
60096970	PUNCH SECTION 8612.160 OUTER	5,000	EA	
60096979	ATTACHMENT MOUNT PLATE TS	2,000	EA	
60097575	LABEL TYPE SIGN +AT2 PS/AS	1,000	EA	
60098043	MARK WAGO 1 +AT2 PS/AS WMB	1,000	EA	
60098050	PB PS/AS 30T (1650) IEC	1,000	EA	
60098112	BUSBAR ADAPTOR 60MM 80A 54MM	1,000	EA	
60098349	WIRING F31,F25 +AT2 IEC I/III	1,000	EA	
60098356	WIRING 0VDC +AT2 IEC I/III	1,000	EA	
60098359	WIRING 230VAC +AT2 IEC I/III	1,000	EA	
60098360	WIRING EARTH +AT2 IEC I/III	1,000	EA	
60098361	WIRING T01,T05 +AT2 IEC I/III	1,000	EA	

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60098362	WIRING U02.300 +AT2 IEC I/III	1,000	EA	
60098364	WIRING U02.600 +AT2 IEC I/III	1,000	EA	
60098366	WIRING U02.800 +AT2 IEC I/III	1,000	EA	
60098367	WIRING U02.500 +AT2 IEC I/III	1,000	EA	
60098368	WIRING X03 +AT2 IEC I/III	1,000	EA	
60098369	WIRING X04 +AT2 IEC I/III	1,000	EA	
60098370	WIRING X05 +AT2 IEC I/III	1,000	EA	
60098371	WIRING X08 +AT2 IEC I/III	1,000	EA	
60098372	WIRING X07 +AT2 IEC I/III	1,000	EA	
60098373	WIRING 24VDC3 +AT2 IEC I/III	1,000	EA	
60098374	WIRING 690VAC +AT2 IEC I/III	1,000	EA	
60098375	WIRING X01 +AT2 IEC I/III	1,000	EA	
60098376	WIRING X02 +AT2 IEC I/III	1,000	EA	
60099010	LABEL TYPE SIGN CTRL PANEL	1,000	EA	
60099030	MOUNT PLATE TS8 W/W	1,000	EA	
60099169	WIRING X06 +AT2 IEC I/III	1,000	EA	
60099174	WIRING 24V CIRC+AT2 IEC I/III	1,000	EA	
60102318	CU BUSBAR KIT 5 CONTROL PAN	1,000	EA	
60102523	DIN RAIL F BUSBAR ADAPTOR 72MM	4,000	EA	
60103218	LABEL SERVICE KEY ON PANELS	1,000	EA	
60104150	CABLE CONDUIT DIN RAIL CTRL	1,000	EA	
60006484	CONN MODULE BLIND FEMALE	2,000	EA	-W592
60006565	HOUSING 3-MODULES TOP ENTRY	1,000	EA	-W592
60007657	REDUCTION ADAPTOR PG21-PG16	1,000	EA	-W592
60007676	CABLE GLAND PG16 EMC BRASS	1,000	EA	-W592
60098140	CABLE W592 FOR PS/AS 30T	1,000	EA	-W592
60098976	FRAME F 3 MOD FEM.2+PE	1,000	EA	-W592
60099095	CONN ADAPTER F STAMP F 10	1,000	EA	-W592
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B01
51700301	ST-ROX RS232/50A CONVERTER	1,000	EA	B02
60006058	END STOP 105900 TERMS WEW35/1	1,000	EA	B02
60007767	WIRE H07V-K 1.5 BU IEC S300	2,030	M	B02
60009605	SCR CRS PH M5x12 4.8 FZB	4,000	EA	B02
60013722	PLATE ALU 2x76x76MM F ST-ROX	1,000	EA	B02
60015685	CABLE ROX-TAC-II RS232 3M	1,000	EA	B02
60009606	SCR CRS PH M5x20 4.8 FZB	16,000	EA	B03
60091912	END STOP WAGO 249-117 10MM	1,000	EA	B03
60099303	RS232/485/22 CONV I-7520AR ICP	1,000	EA	B03
60099963	CABLE RS232 TAC-2/ICP-7520	1,000	EA	B03
60009610	SCR CRS PH M6x14 4.8 FZB	1,000	EA	B04
60091912	END STOP WAGO 249-117 10MM	2,000	EA	B04
60099303	RS232/485/22 CONV I-7520AR ICP	1,000	EA	B04 EON
60099963	CABLE RS232 TAC-2/ICP-7520	1,000	EA	B04 EON
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B19
60014729	HEATER FAN CR0 27 475/550W UL	1,000	EA	E01
60009578	SCREW ISO 7045 M 3 x 8 - FZB	27,000	EA	E02
60014729	HEATER FAN CR0 27 475/550W UL	1,000	EA	E02
60004755	CB 3RV1121-1KA10 9.0-12.5A	1,000	EA	F01
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F01
60004797	LINK MODULE 3RA1921-1AA00	1,000	EA	F01
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F02
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F02
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F03
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F03
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F04
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F04
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F05
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F05
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F06
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F06
60004746	CB 3RV1121-1AA10 1.1-1.6A	1,000	EA	F07
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F07
60004750	CB 3RV1121-1EA10 2.8-4.0A	1,000	EA	F08
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F08
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F08
60004743	CB 3RV1121-0HA10 0.55-0.8A	1,000	EA	F09
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F09
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F09
60004750	CB 3RV1121-1EA10 2.8-4.0A	1,000	EA	F10
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F10
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F10
60004743	CB 3RV1121-0HA10 0.55-0.8A	1,000	EA	F11
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F11
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F11
60004762	CB 3RV1131-4DA10 18.0-25.0A	1,000	EA	F13

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60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F13
60004751	CB 3RV1121-1FA10 3.5-5.0A	1,000	EA	F14
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F14
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F14
60004753	CB 3RV1121-1HA10 5.5-8.0A	1,000	EA	F15
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F15
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F15
60004745	CB 3RV1121-0KA10 0.9-1.25A	2,000	EA	F16/F18
60004796	LINK MODULE 3RA1921-1DA00	2,000	EA	F16/F18
60004747	CB 3RV1121-1BA10 1.4-2.0A	2,000	EA	F17/F19
60004797	LINK MODULE 3RA1921-1AA00	2,000	EA	F17/F19
60004663	CB 3RV1021-1FA10 3.5-5.0A	1,000	EA	F20
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F20
60005996	TERMINAL STD M6/8 GY 115118.11	7,000	EA	F21
60005998	END SEC FEM6 GY 118368.16	1,000	EA	F21
60009673	SCR HEX SET M10x25 8.8 FZB	1,000	EA	F21
60014161	MARK CARD RC610 SERVICE LIFT	0,200	EA	F21
60091912	END STOP WAGO 249-117 10MM	2,000	EA	F21
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	F21
60008824	CABLE PATCH DUPLEX MM 62.5/125	2,000	EA	F21, M01
60004712	CB 3RV1421-1GA10 4.5-6.3A	1,000	EA	F22
60004712	CB 3RV1421-1GA10 4.5-6.3A	1,000	EA	F23
60005071	FUSE SWITCH NH00 33198 3P	1,000	EA	F24
60005092	FUSE 690V 16A NH00 GL/GG	3,000	EA	F24
60004712	CB 3RV1421-1GA10 4.5-6.3A	1,000	EA	F25
60005759	RCCB 5SM1312-6 25A 2P	1,000	EA	F27
60005154	MCB 5SX2204-7 4.0A C 2P	1,000	EA	F28
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	95,000	EA	F28
60091912	END STOP WAGO 249-117 10MM	1,000	EA	F28
60005071	FUSE SWITCH NH00 33198 3P	1,000	EA	F29
60005097	FUSE 690V 50A NH00 GL/GG	3,000	EA	F29
195126	PROTC SA DG S 600 FM 600VAC	3,000	EA	F30
60000675	BUSBAR 3 OVPS	1,000	EA	F30
60004648	CB 3RV1021-0AA10 0.11-0.16A	1,000	EA	F31
60005071	FUSE SWITCH NH00 33198 3P	1,000	EA	F32
60005098	FUSE 690V 63A NH00 GL/GG	3,000	EA	F32
60005157	MCB 5SX2206-7 6.0A C 2P	1,000	EA	F33
60005193	AUX CONTACT 5SX9100	1,000	EA	F33
60005157	MCB 5SX2206-7 6.0A C 2P	1,000	EA	F34
60005193	AUX CONTACT 5SX9100	1,000	EA	F34
60005157	MCB 5SX2206-7 6.0A C 2P	1,000	EA	F35
60005193	AUX CONTACT 5SX9100	1,000	EA	F35
60005157	MCB 5SX2206-7 6.0A C 2P	1,000	EA	F36
60005193	AUX CONTACT 5SX9100	1,000	EA	F36
60005159	MCB 5SX2208-7 8.0A C 2P	1,000	EA	F37
60005193	AUX CONTACT 5SX9100	1,000	EA	F37
60005162	MCB 5SX2213-7 13.0A C 2P	1,000	EA	F38
60005158	MCB 5SX2206-8 6.0A D 2P	1,000	EA	F39
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F40
60004743	CB 3RV1121-0HA10 0.55-0.8A	1,000	EA	F44
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F44
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F44
60005001	RELAY TRMI 3RN10131BWO1 24V	2,000	EA	F45/F46
60004745	CB 3RV1121-0KA10 0.9-1.25A	1,000	EA	F49
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F49
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F49
60004742	CB 3RV1121-0GA10 0.45-0.63A	1,000	EA	F50
60004778	AUX CONTACT 3RV1901-1E	1,000	EA	F50
60004796	LINK MODULE 3RA1921-1DA00	1,000	EA	F50
60004996	RELAY EMER 3TK2806OBB4 400V	1,000	EA	K01
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	K02
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	K02
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	K03
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	K03
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K04
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K04
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K04
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K04
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K05
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K05
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K05
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K05
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K06
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K06
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K06

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60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K06
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K07
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K07
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K07
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K07
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K08
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K08
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K08
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K08
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K09
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K09
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K09
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K09
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K10
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K10
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K10
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K10
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K11
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K11
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K11
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K11
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K12
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K12
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K12
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K12
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K13
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K13
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K13
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K13
60004512	RELAY RT424730 8A 230V 2P	1,000	EA	K15
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K15
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K15
60004519	DIODE MODULE RPMG0730 110-230V	1,000	EA	K15
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K16
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K16
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K16
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K16
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K17
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K17
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K17
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K17
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K18
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K18
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K18
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K18
092048	VENTI. OUTLET FILTER 3326.207	1,000	EA	M01
60110934	FAN 230V 500M3/H 323X323X125MM	1,000	EA	M01
60004407	CONT 3RT1026-1AP00 230V 50Hz	1,000	EA	Q01
60004451	RCUNIT 3RT19261CD00 127-240VAC	1,000	EA	Q01
60004407	CONT 3RT1026-1AP00 230V 50Hz	1,000	EA	Q02
60004451	RCUNIT 3RT19261CD00 127-240VAC	1,000	EA	Q02
60004439	MECH INTERLOCK SIRIUS 3R	1,000	EA	Q02/Q03
60004407	CONT 3RT1026-1AP00 230V 50Hz	1,000	EA	Q03
60004451	RCUNIT 3RT19261CD00 127-240VAC	1,000	EA	Q03
60096011	REVERSING ASSEMBLIES 3RA19232A	1,000	EA	Q03
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q08
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q08
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q09
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q09
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q10
60004433	AUX CONTACT 3RH1911-1FA22	1,000	EA	Q10
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q10
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q11
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q11
60004413	CONT 3RT10341AL20 230V 50/60Hz	1,000	EA	Q13
60004444	AUX CONTACT 3RH1921-1FA22	1,000	EA	Q13
60004456	RCUNIT 3RT19361CD00 127-240VAC	1,000	EA	Q13
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q14
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q14
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q15
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q15
60004394	CONT 3RT10161AP02 230V 50/60Hz	2,000	EA	Q16/Q18
60004450	RCUNIT 3RT19161CD00 127-240VAC	2,000	EA	Q16/Q18
60004407	CONT 3RT1026-1AP00 230V 50Hz	2,000	EA	Q17/Q19
60004451	RCUNIT 3RT19261CD00 127-240VAC	2,000	EA	Q17/Q19

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60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q20
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q20
60002430	LABEL "48 NM"	1,000	EA	Q21
60002431	LABEL "24 NM"	1,000	EA	Q21
60005608	SWI LB 160A 3P OETL200K3	1,000	EA	Q21
60005614	SHAFT OETL ZA86 8x500mm	1,000	EA	Q21
60006815	STICKER "L1" 14MM	0,032	EA	Q21
60006816	STICKER "L2" 14MM	0,032	EA	Q21
60006817	STICKER "L3" 14MM	0,032	EA	Q21
60006819	STICKER "EARTH" 14mm	0,300	EA	Q21
60093008	LABEL"Q21 MAIN DISC FOR MAIN"	1,000	EA	Q21
60095653	TERMINAL SHROUD OETLZX 128	3,000	EA	Q21
60005604	SWI SWDIS 32A 4P OT32E4	1,000	EA	Q22
60005612	ROTARY HANDLE OHB65J6	1,000	EA	Q22
60005617	SHAFT OXP5X400 400mm	0,750	EA	Q22
60005622	SHAFT EXTENSION OESA ZX167	1,000	EA	Q22
60009809	WASHER SPR 10 FZG	1,000	EA	Q22
60091912	END STOP WAGO 249-117 10MM	2,000	EA	Q22
60093009	LABEL"Q22 DISC FOR 230V UPS"	1,000	EA	Q22
60094268	ALU BRA SHAFT MAIN SWITCH CPU	1,000	EA	Q22
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q44
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q44
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q49
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q49
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	Q50
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	Q50
60006058	END STOP 105900 TERMS WEW35/1	1,000	EA	RX/TX
60008794	FIBRE PLUG ST-COUPLER AMP 05-5	2,000	EA	RX/TX
60013723	ANGLE ALU 2x50x80MM F 2xST	1,000	EA	RX/TX
60005824	MUSHROOM BUTTON ISAF616510R100	1,000	EA	S01
60005846	CONTACT ELEMENT SK616 001-B 1N	2,000	EA	S01
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S01
60005871	SIGN SK615546-2 "EMERGENCY STO	1,000	EA	S01
60005836	SELECT SWITCH ISFA616280R100 2	1,000	EA	S02
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	S02
60101986	TRAFO 600-690/2x115V	1,000	EA	T01
60006925	TRAFO VOLT 520/24VAC 30VA	1,000	EA	T02
60006925	TRAFO VOLT 520/24VAC 30VA	1,000	EA	T03
60006925	TRAFO VOLT 520/24VAC 30VA	1,000	EA	T04
60101986	TRAFO 600-690/2x115V	1,000	EA	T05
51707301	TAC-II/F NEGM NM1500C/72/82	1,000	EA	U01
60001918	CONN BLA F 3 LEADED	1,000	EA	U01
60001950	CONN BLA F 7 LEADED	3,000	EA	U01
51701501	TOI-II INTERF NM1500 TOWER	1,000	EA	U02
60001918	CONN BLA F 3 LEADED	1,000	EA	U02
60001927	CONN BLA F 4 LEADED	2,000	EA	U02
60001934	CONN BLA F 5 LEADED	6,000	EA	U02
60001965	CONN BLA F 10 LEADED	2,000	EA	U02
188451	PS ADC 5183R-4 5A-27,4V	1,000	EA	U03
60009838	LOCK WASHER DIN 6798 A4 - FZB	50,000	EA	U03
60091912	END STOP WAGO 249-117 10MM	2,000	EA	U03
60000604	VDR SIOV-S10K40 40V	1,000	EA	V01
60002503	LABEL "-X01"	1,000	EA	X01
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X01
60002504	LABEL "-X02"	1,000	EA	X02
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X02
60002505	LABEL "-X03"	1,000	EA	X03
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X03
60002506	LABEL "-X04"	1,000	EA	X04
60006336	CRP TERM 0.75 8MM INS SINGLE	2,000	EA	X04
60006571	HOUSING 32P BULKHEAD	1,000	EA	X04
60002507	LABEL "-X05"	1,000	EA	X05
60006354	CRP TERM TW 0.75 8MM INS	1,000	EA	X05
60006571	HOUSING 32P BULKHEAD	1,000	EA	X05
60002508	LABEL "-X06"	1,000	EA	X06
60006571	HOUSING 32P BULKHEAD	1,000	EA	X06
60002509	LABEL "-X07"	1,000	EA	X07
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X07
60002525	LABEL "-X08"	1,000	EA	X08
60006571	HOUSING 32P BULKHEAD	1,000	EA	X08
60006073	TERMINAL WAGO 0.2-6.0MM2	2,000	EA	X10
60006085	END SEC 282-325 1-LEVEL GY	1,000	EA	X10
60009841	WASHER LOCK 8 FZB	12,000	EA	X10
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X10
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X10

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60096685	TERMINAL WAGO1-LEV 0.08-4.0MM2	18,000	EA	X10
60097064	END SEC 281-328 GY	1,000	EA	X10
60009842	LOCK WASHER DIN 6798A 10 - FZB	3,000	EA	X11
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X11
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X11
60096685	TERMINAL WAGO1-LEV 0.08-4.0MM2	3,000	EA	X11
60097064	END SEC 281-328 GY	1,000	EA	X11
60006073	TERMINAL WAGO 0.2-6.0MM2	3,000	EA	X12
60006085	END SEC 282-325 1-LEVEL GY	1,000	EA	X12
60009861	NUT ISO 4032 M 4 - 6 - FZB	46,000	EA	X12
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X12
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X12
60006075	TERMINAL WAGO 0.08-2.5MM2	7,000	EA	X13
60006080	END SEC 870-933 1-LEVEL GY	3,000	EA	X13
60006086	PUSH-IN JUMPER BAR 870-402 2-P	2,000	EA	X13
60006087	PUSH-IN JUMPER BAR 870-403	1,000	EA	X13
60009873	NUT ISO 4032 M 8 - 8 - FZB	7,000	EA	X13
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X13
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X13
60006075	TERMINAL WAGO 0.08-2.5MM2	10,000	EA	X20
60006080	END SEC 870-933 1-LEVEL GY	3,000	EA	X20
60006086	PUSH-IN JUMPER BAR 870-402 2-P	3,000	EA	X20
60006088	PUSH-IN JUMPER BAR 870-404 4-P	1,000	EA	X20
60009879	NUT HEX M10 8	1,000	EA	X20
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X20
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X20
60006075	TERMINAL WAGO 0.08-2.5MM2	12,000	EA	X22
60009895	NUT LIFTING EYE M10 FZB	2,000	EA	X22
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X22
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X22
60009839	WASHER LOCK 5 FZB	16,000	EA	X30
60011324	SKT ABB E1175 DIN RAIL 16A	1,000	EA	X30
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X30

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Change Info

Item no.	***Item text:***
60019676	**Kit for Modem 600mm Panel**
60019755	**Comm. for CPU Modem NM92/2750 IEC**

Active revision for production

Drawing number: None

Version	**Date**	**Init./App.**	**Description of change since last revision**
xx	dd.mm.yyyy	xxx	Write the change

BoM no.: 60017352 *Document no.: 21000012*

Version	**Date**	**Init./App.**	**Description of change since last revision**
06	11.10.2007	MEKNU/BIVA	Changed with ECO 229864_Introduction of new type of modem. 60014805 MODEM Zyxel Omni repl. w. 181097 MODEM INSYS 56K SMALL INT 2.0

Old revisions for service

Drawing number: None

Version	**Date**	**Init./App.**	**Description of change since last revision**
xx	yymmdd	xxx	Write the change

BoM no.: 60017352 *Document no.: 21000012*

Version	**Date**	**Init./App.**	**Description of change since last revision**
05	07.09.2004	INI/INI	Version 04 was printed with level 2, it shall just bee in level 1. Therefore material no 60013685, 60015210 and 100050 are removed.
04	07.09.2004	ABJ/	All used mat. no. w. Lasat modem changed. Mat. no. 60015719 modem, discontinued. Material numbers 60015719, 60013682, 60009627 and 60009795 removed. Material numbers 60014805, 60106136, 60106137 60009589 and 60009578 added.
03	16.12.2003	ATM/ATM	Base unit changed from pack to pc.
02	30.10.2003	INI / FLT	Description text changed.
01	26.08.2002	FLT/ FLT	First version in SAP no. system

Earlier Drawings and Part Lists no Longer Active for Serial Production

Change Info: 00020861

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60017352 COM F CPU 30T ANALOG MODEM

Component	Description	Qty per	Stk UM	Position Number
D21000012	BOM 60017352, KIT for MODEM, 6	0,000	EA	
D22000026	CI, KIT for MODEM 600mm PANEL	0,000	EA	
181097	MODEM INSYS 56K SMALL INT 2.0	1,000	EA	
51710901	TRANSIENT PROT PHONE CONN	1,000	EA	-F5
60009578	SCR CRS PH M3x8 FZB	4,000	EA	
60009578	SCR CRS PH M3x8 FZB	2,000	EA	
60009580	SCREW ISO 7045 M4X10-FZB-H	2,000	EA	
60009589	SCR ISO7046 M 6 X 20 4.8 FZB Z	2,000	EA	
60009793	WASHER ISO 7092 6 - FZB	4,000	EA	
60009837	WASHER LOCK 3 FZB	4,000	EA	
60009933	SPACER IN/OUT Ø5.5MM 3x15MM	4,000	EA	
60009939	SPACER IN/OUT Ø10MM 6x10MM	4,000	EA	
60011417	BASE BOX 503D5610 FUGA 1m GREY	1,000	EA	
60011418	FRAME 500D5810 FUGA 50 1m GREY	1,000	EA	
60011419	TELEPHONE OUTLET MD82B	1,000	EA	
60013684	PLATE ALU W RAL 7032 MOD	1,000	EA	
60014787	TELEPHONE CABLE RJ11/RJ11 2M	1,000	EA	
60096978	PUNCHED RAIL 8612.260	2,000	EA	
60106136	BRA F EXT ZYXELMOD	1,000	EA	
60106137	BRA SUPPORT F EXT ZYXEL MOD	1,000	EA	

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Change Info

Item no.	***Item text:***
60092032	**Kit for CSL110, 600mm Panel**

Active revision *for production*

Drawing no.: xxxxxxx

Revision	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd		Write the change

BoM no.: 60092032 *Document no.: 21000020*

Revision	Date	Init./App.	Description of change since last revision
04	2006-06-29	SHL/FLT	Changed with ECO 214388 Mapics implementation, Controls DK, Århus Replaced: 60015721 with 51700701 CSL-10 FIBRE MODULE 2xMM

Old revisions *for service*

Drawing no.: xxxxxxx

Revision	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx	Write the change

BoM no.: 60092032 *Document no.: 21000020*

Revision	Valid from	Init./App.	Description of change since last revision
03	2006-05-23	SHL/FLT	Changed with ECO 212505_Mapics implementation, controls DK Århus
02	2003-09-17	ABJ /	Punched rail & fiber plug added.
01	2003-06-20	ABJ /	First version

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60092032 CSL110 MM SERIAL COM WTG-KIT

Component	Description	Qty per	Stk UM	Position Number
51700701	CSL-110 FIBRE MODULE 2xMM	1,000	EA	
60002649	LABEL	1,000	EA	
60007476	FLAT CABLE CLIP W ADHES FOOT	18,000	EA	
60007482	CABLE RACK TK 10-14	6,000	EA	
60008795	FIBRE PLUG SC-COUPLER DUP AMP	1,000	EA	
60009578	SCREW ISO 7045 M 3 x 8 - FZB	3,000	EA	
60009580	SCREW ISO 7045 M4X10-FZB-H	6,000	EA	
60009580	SCREW ISO 7045 M4X10-FZB-H	6,000	EA	
60009609	SCREW M 6 X 10 - 4.8 FZB Z	4,000	EA	
60009747	SCR CRS FH ST2.9x9.5 FZB	18,000	EA	
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	2,000	EA	
60009793	WASHER ISO 7092 6 - FZB	8,000	EA	
60009944	SPACER IN/OUT Ø10MM 6x20MM	4,000	EA	
60009946	SPACER IN/OUT Ø10MM 6x40MM	4,000	EA	
60012766	DIN RAIL W HOLES 180x7x35mm	1,000	EA	
60013679	FIBRE PLATE COVER FSWING FRAME	1,000	EA	
60013681	BRA F 2 SC/SC DUPLEX COUPLERS	1,000	EA	
60014784	RS232 CABLE EXTEN 9-9-POLED 3M	1,000	EA	
60092988	FIBRE PLATE PAINTED F. CSL/ROX	1,000	EA	
60096978	PUNCHED RAIL 8612.260	2,000	EA	

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Change Info

Item no.	***Item text:***
60105817	**Moxa-Single Mode, Ethernet Kit w. Man. w. N-Port, WTG**

Active revision for production

Drawing no.: None

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xx/xx	Writhe the change.

LST no.: 21000168 *Material BOM no.: 60105817*

Version	Date	Init./App.	Description of change since last revision
05	24.04.2007	MEKNU/BIVA	Changed with ECO 224070 Replacement of MOXA switches Replacement: 60093640 repl. by 092688 MOXA ETHE SWI EDS-408A-SS-SC-T

Old revisions for service

Drawing no.: None

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xx/xx	Writhe the change.

LST no.: 21000168 *Material BOM no.: 60105817*

Version	Date	Init./App.	Description of change since last revision
04	22.08.2006	INI/FLT	Changed with ECO 216036 Position numbers U10, U11 and U12 added.
03	02.06.2005	ABJ/	60002649_THERMO."CAUTION! Fibre optic cable..." 1 pc. added.
02	02.12.2004	ABJ/	60005006 POWER SUPPLY S82K-05024 110-230/24 added
01	05.08.2004	ABJ/	First version

Part List no Longer Active for Serial Production

Change Info: 22000239

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Document no.: 21000168
Version: 05
Date: 20/12/2007
Init: Inge Nielsen

60105817 MOXA-SM ETHE KIT

Component	Description	Qty per	Stk UM	Position Number
60099723	FIBER ENCL 6 GROUND CABELS	1,000	EA	
60099724	COVER FIBER ENCL 6 GROUND CAB	1,000	EA	
60009946	SPACER IN/OUT Ø10MM 6x40MM	4,000	EA	
60009793	WASHER ISO 7092 6 - FZB	4,000	EA	
60096978	PUNCHED RAIL 8612.260	2,000	EA	
60009609	SCREW M 6 X 10 - 4.8 FZB Z	4,000	EA	
60009793	WASHER ISO 7092 6 - FZB	4,000	EA	
60099727	FIBRE NETWORK SADDLE	8,000	EA	
60099729	FIBRE SUPPORT F NETWORK SADDLE	2,000	EA	
60009580	SCREW ISO 7045 M4X10-FZB-H	2,000	EA	
60099730	FIBRE MICRO WIRE SADDLE	8,000	EA	
60007478	CABLE HOLDER F/3 MTP3H-E6	2,000	EA	
60009579	SCR CRS PH M3x10 FZB	8,000	EA	
60007462	CABLE TIE BLACK 203X4.6	6,000	EA	
60008819	CABLE PATCH DUPLEX 9/125A	2,000	EA	
60008795	FIBRE PLUG SC-COUPLER DUP AMP	3,000	EA	
60013681	BRA F 2 SC/SC DUPLEX COUPLERS	1,000	EA	
60009579	SCR CRS PH M3x10 FZB	3,000	EA	
60009505	SCR SLOT CH M2.5x10 4.8 FZB	4,000	EA	
60014837	ETHE CABLE STRAIGHT 3M	1,000	EA	
60105815	RS232 CABLE PC-PC 9/9 POLE	2,000	EA	
60105940	WIREKIT F ETHERNET COMM F 30T	1,000	EA	
60002649	LABEL	1,000	EA	
60005006	PWR SUP S82K-05024 110-230/24	1,000	EA	U10
60097629	MOXA N-PORT 5410-4 100Mb	1,000	EA	U11
60097631	DIN RAIL BRA MOXA MODUL DK-35A	1,000	EA	U11
092688	MOXA ETHE SWI EDS-408A-SS-SC-T	1,000	EA	U12

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Change Info

Item no.	***Item text:***
60105816	**Moxa-Multi Mode, Ethernet Kit w. Man. w. N-Port, WTG**

Active revision *for production*

Drawing number: None

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xx/xx	Writhe the change.

LST no.: 21000167 *Material BOM no.: 60105816*

Version	Date	Init./App.	Description of change since last revision
04	28.08.2007	MEKNU/BIVA	Changed with ECO 224070 & 227978 Replacement: 1 x 60093639 repl by 1 x 092687 MOXA ETHE SWI EDS-408A-MM-SC-T Added: 1 x 60002649 THERM. “CAUTION! Fibre optic.

Old revisions *for service*

Drawing number: None

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xx/xx	Writhe the change.

LST no.: 21000167 *Material BOM no.: 60105816*

Version	Date	Init./App.	Description of change since last revision
03	22.08.2006	INI/FLT	Changed with ECO 216036 Position numbers U10, U11 and U12 added.
02	02.12.2004	ABJ/	60005006 POWER SUPPLY S82K-05024 110-230/24 added
01	05.08.2004	ABJ/	First version

Part List no Longer Active for Serial Production

Change Info: 22000239

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Document no.: 21000167
Version: 04
Date: 20/12/2007
Init: Inge Nielsen

60105816 MOXA-MM ETHE KIT

Component	Description	Qty per	Stk UM	Position Number
60007462	CABLE TIE BLACK 203X4.6	6,000	EA	
60007478	CABLE HOLDER F/3 MTP3H-E6	2,000	EA	
60008795	FIBRE PLUG SC-COUPLER DUP AMP	3,000	EA	
60008820	CABLE PATCH DUPLEX 50/125A	2,000	EA	
60009505	SCR SLOT CH M2.5x10 4.8 FZB	4,000	EA	
60009579	SCR CRS PH M3x10 FZB	11,000	EA	
60009580	SCREW ISO 7045 M4X10-FZB-H	2,000	EA	
60009609	SCREW M 6 X 10 - 4.8 FZB Z	4,000	EA	
60009793	WASHER ISO 7092 6 - FZB	8,000	EA	
60009946	SPACER IN/OUT Ø10MM 6x40MM	4,000	EA	
60013681	BRA F 2 SC/SC DUPLEX COUPLERS	1,000	EA	
60014837	ETHE CABLE STRAIGHT 3M	1,000	EA	
60096978	PUNCHED RAIL 8612.260	2,000	EA	
60099723	FIBER ENCL 6 GROUND CABELS	1,000	EA	
60099724	COVER FIBER ENCL 6 GROUND CAB	1,000	EA	
60099727	FIBRE NETWORK SADDLE	8,000	EA	
60099729	FIBRE SUPPORT F NETWORK SADDLE	2,000	EA	
60099730	FIBRE MICRO WIRE SADDLE	8,000	EA	
60105815	RS232 CABLE PC-PC 9/9 POLE	2,000	EA	
60105940	WIREKIT F ETHERNET COMM F 30T	1,000	EA	
60002649	LABEL	1,000	EA	
60005006	PWR SUP S82K-05024 110-230/24	1,000	EA	U10
60097629	MOXA N-PORT 5410-4 100Mb	1,000	EA	U11
60097631	DIN RAIL BRA MOXA MODUL DK-35A	1,000	EA	U11
092687	MOXA ETHE SWI EDS-408A-MM-SC-T	1,000	EA	U12

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Change Info

Item no.	***Item text:***
765458	**PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz**

Active revision *for production*

Drawing no.: 6011999

Version	Date	Init./App.	Description of change since last revision
04	2006-10-25	INI/FLT	Changed with ECO 217924_Implementation of CMS & warning label Page 030: Updated with 118934 label, electrical warning universal. Page 039: New page with following text added. " Use copper conductors only for external wires and cables. Use 60°C cables for currents less than 100Amps and 75°C cables for higher currents".

BoM no.: 765458 — *Document no.: 0000-1234*

Version	Date	Init./App.	Description of change since last revision
01	2009-02-04	INI/FLT	Changed with ECO 228988, 230842. Replaced: 098336 with 098306 CABINET TS8 1 DOOR W/W. Removed: 60014668 EXHAUST FILT, 60014655 FAN 1-PHASE 230V. Added: 092048 OUTLET FILTER, 60110934 FAN 230V.

BoM no.: 60016660 — *Doc. no.: 21000080 PFC Module 50kVAr 690V*

Version	Date	Init./App.	Description of change since last revision
05	2007-08-16	INI/FLT	Changed with ECO 227151. Added: 2 x 60009605 SCREW ISO 7045, 6 x 60009605 SCREW ISO 7045 6 x 60009792 SPRING WASHER, 6 x 60009803 SPRING WASHER, 2 x 60009839 LOCK WASHER DIN 6798 A 5 – FZ. Removed: 8 x 60009530 SCREW ISO 7045 M 5 x 12 - 4.8.

Old revisions *for service*

Drawing no.: 6011999

Version	Date	Init./App.	Description of change since last revision
03	2004-11-15	INI/CHO	All pages updated with Vestas logo. Page 100, 101 and 102: Cable color changed from BU to BU/GY.
02	2004-06-11	INI/CHO	Page 001: Updated. Page 202: E01 settings changed.
01	2003-09-15	CHO/CHO	First version

BoM no.: 765458 — *Document no.: 0000-1234*

Version	Date	Init./App.	Description of change since last revision
00	2007-07-02	INI/FLT	First version

BoM no.: 60016660 — *Doc. no.: 21000080 PFC Module 50kVAr 690V*

Version	Date	Init./App.	Description of change since last revision
04	2006-08-23	INI/FLT	Changed with ECO 214516_ Added 60009530 x 8 pc. SCR CRS PH M5x12 4.8 FZB Added 60009617 x 2 pc. SCR M4x16 4.8 FZB Added 60007458 x 4 pc. CABLE TIE 140x2.5mm WH.
03	2004-03-22	FLT/FLT	Material 60012530 update of wiring for PFC module
02	2003-10-02	CHO/CHO	Capacitor contact added.
01	2002-05-13	CHO/CHO	First version in SAP no. system.

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PAGE	CONTENT	DATE	REVISION
001	Table of Contents	061025	04
030	Panel Front	061025	–
031	Panel Outline	041115	–
032	Terminal Rows	041115	–
039	Cable Connections	061025	–
040	Terminal X01	041115	–
100	Main Curcuits Step 1	041115	–
101	Main Curcuits Step 2	041115	–
102	Main Curcuits Step 3 – 5	041115	–
200	Relays	041115	–
201	Relays	041115	–
202	Ventilation / Heating	041115	–

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	Date	Initials
Designed	030915	CHO
Approved	061025	FLT
Revised	061025	INI

Function: Table of Contents

Project title: PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz

Comments:

Customer: Vestas Wind Systems A/S

Rev. 04 | Drawing no. 6011999 | Cont. sheet 030 | Sheet 001

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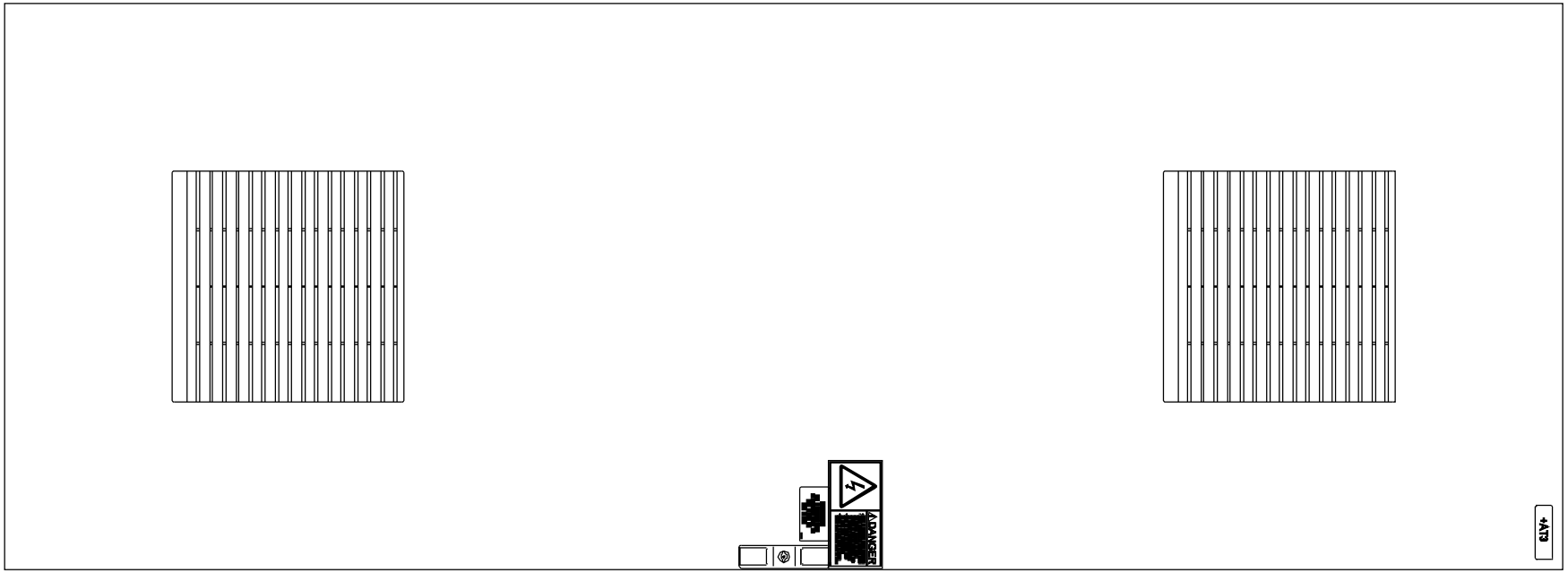
26-10-06 10:53



Panel Dimension: 800 x 2200 x 600 mm (WxHxD)
Panel Weight: 285kg.

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	Date	Initials	Function	Panel Front		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved	061025	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	061025	INI	Rev. -	Drawing no. 6011999	Cont. sheet 031	Sheet 030

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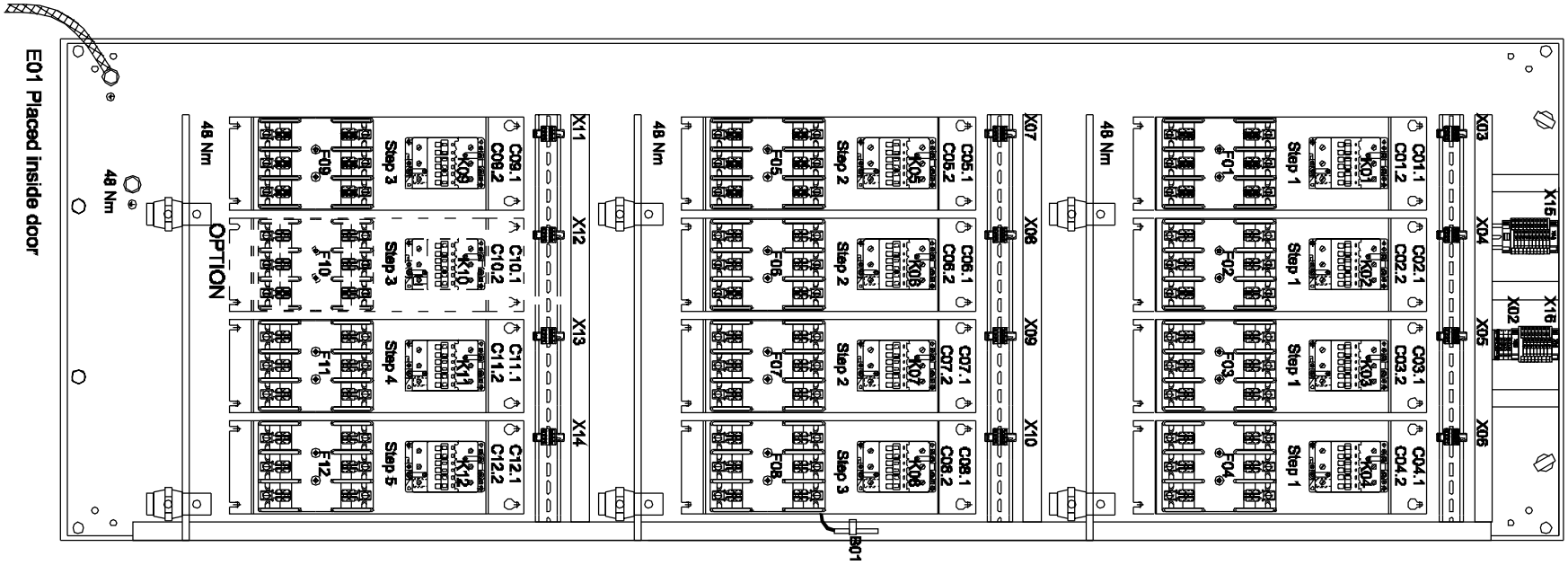

	Date	Initials	Function	Panel Outline		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041115	INI	Rev. -	Drawing no. 6011999	Cont. sheet 032	Sheet 031

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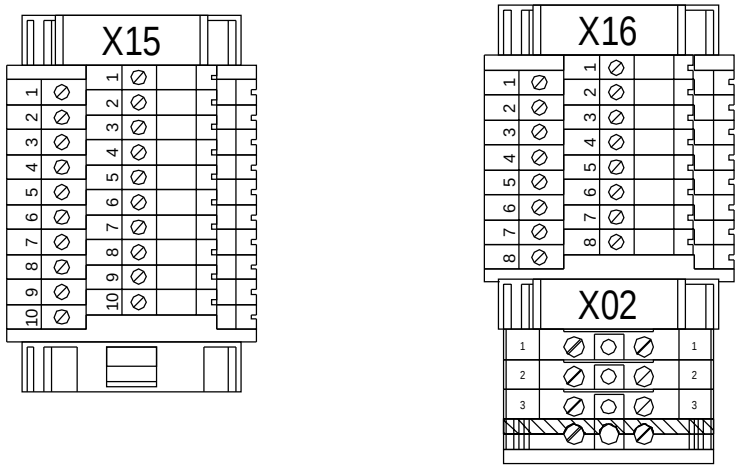

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Terminal Rows	
		Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz	
		Approved			Comments	Customer	Vestas Wind Systems A/S
		Revised	041115	INI	Rev. -	Drawing no. 6011999	Cont. sheet 039 / Sheet 032

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1	2	3	4	5	6	7	8	9	10	11	12	13

USE COPPER CONDUCTORS ONLY FOR EXTERNAL WIRES AND CABLES.

USE 60°C CABLES FOR CURRENTS LESS THAN 100Amps AND 75°C CABLES FOR HIGHER CURRENTS.

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	Date	Initials	Function	Cable Connections		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved	061025	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	061025	INI	Rev. -	Drawing no. 6011999	Cont. sheet 040	Sheet 039

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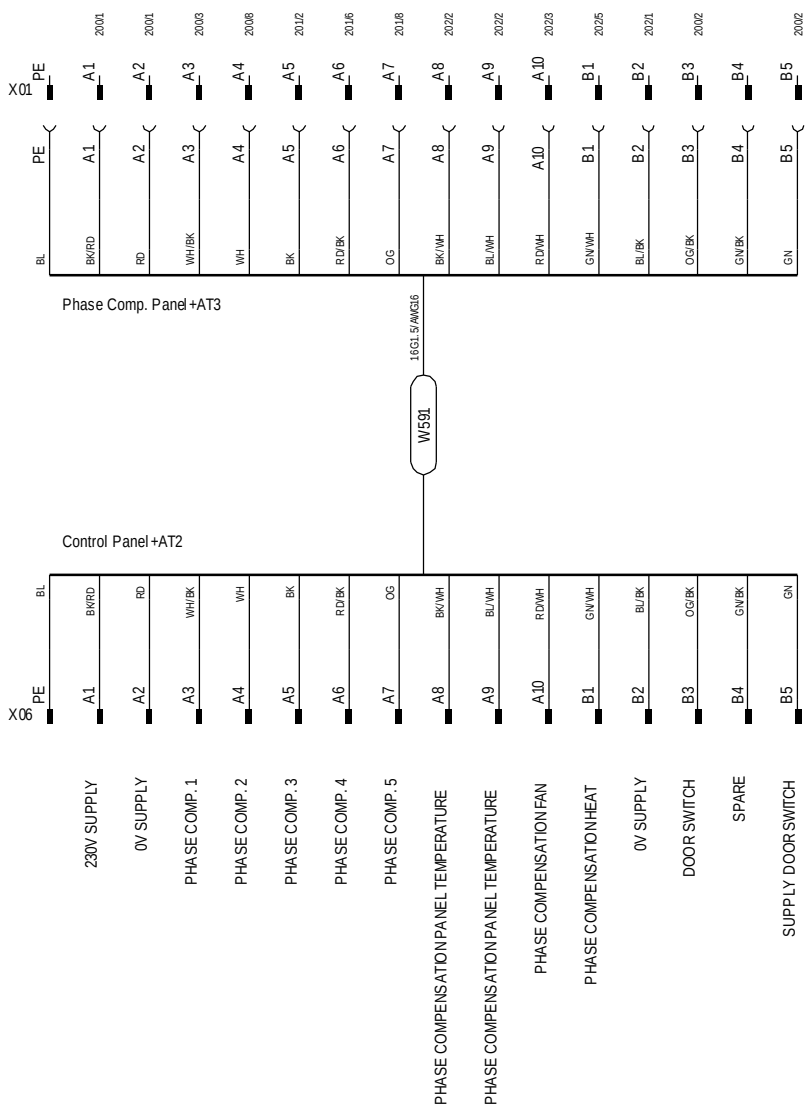

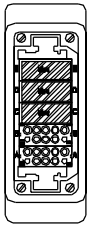

	Date	Initials	Function	Terminal X01		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041115	INI	Rev. -	Drawing no. 6011999	Cont. sheet 100	Sheet 040

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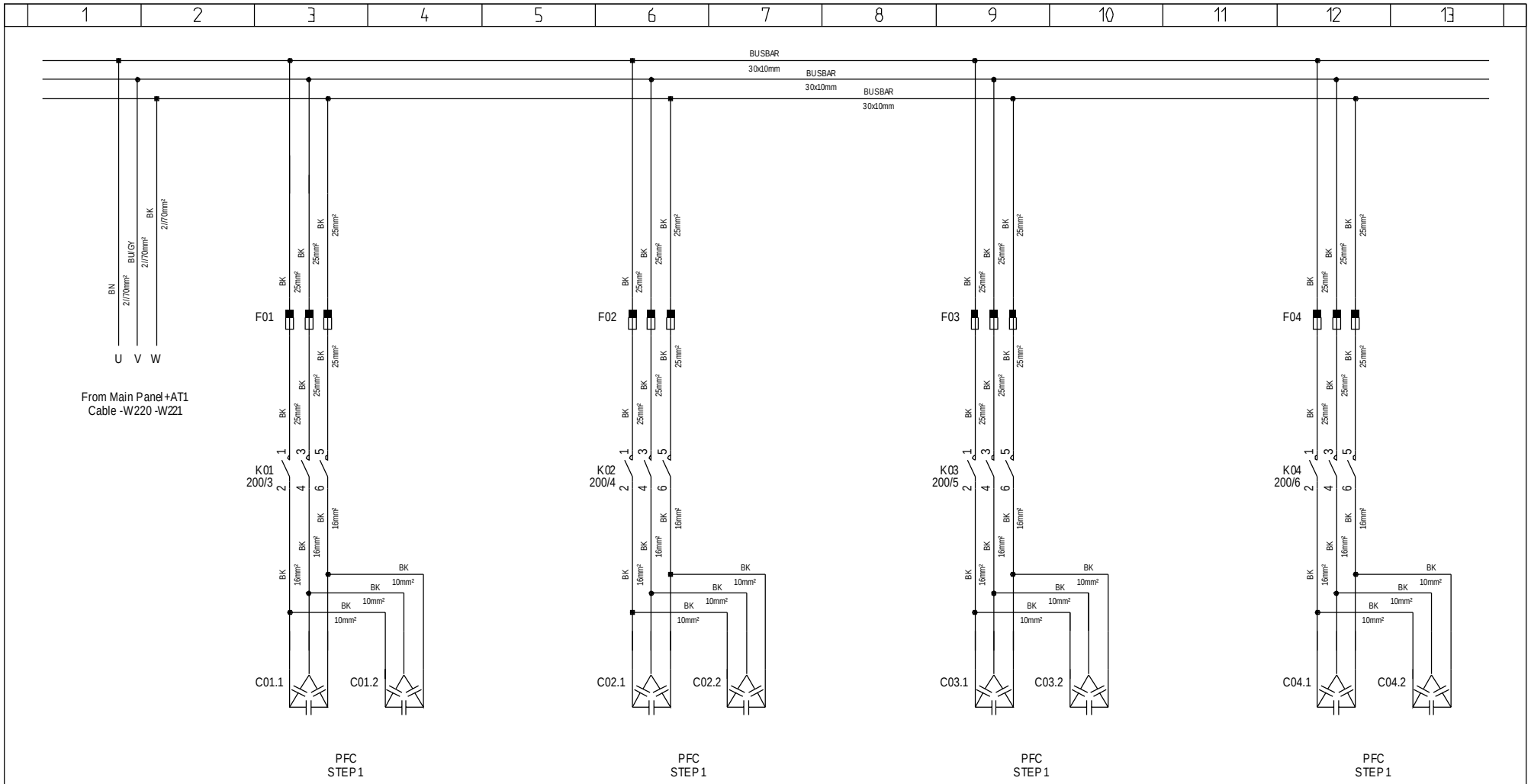

	Date	Initials	Function	Main Curcuits Step 1		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041115	INI	Rev. -	Drawing no. 6011999	Cont. sheet 101	Sheet 100

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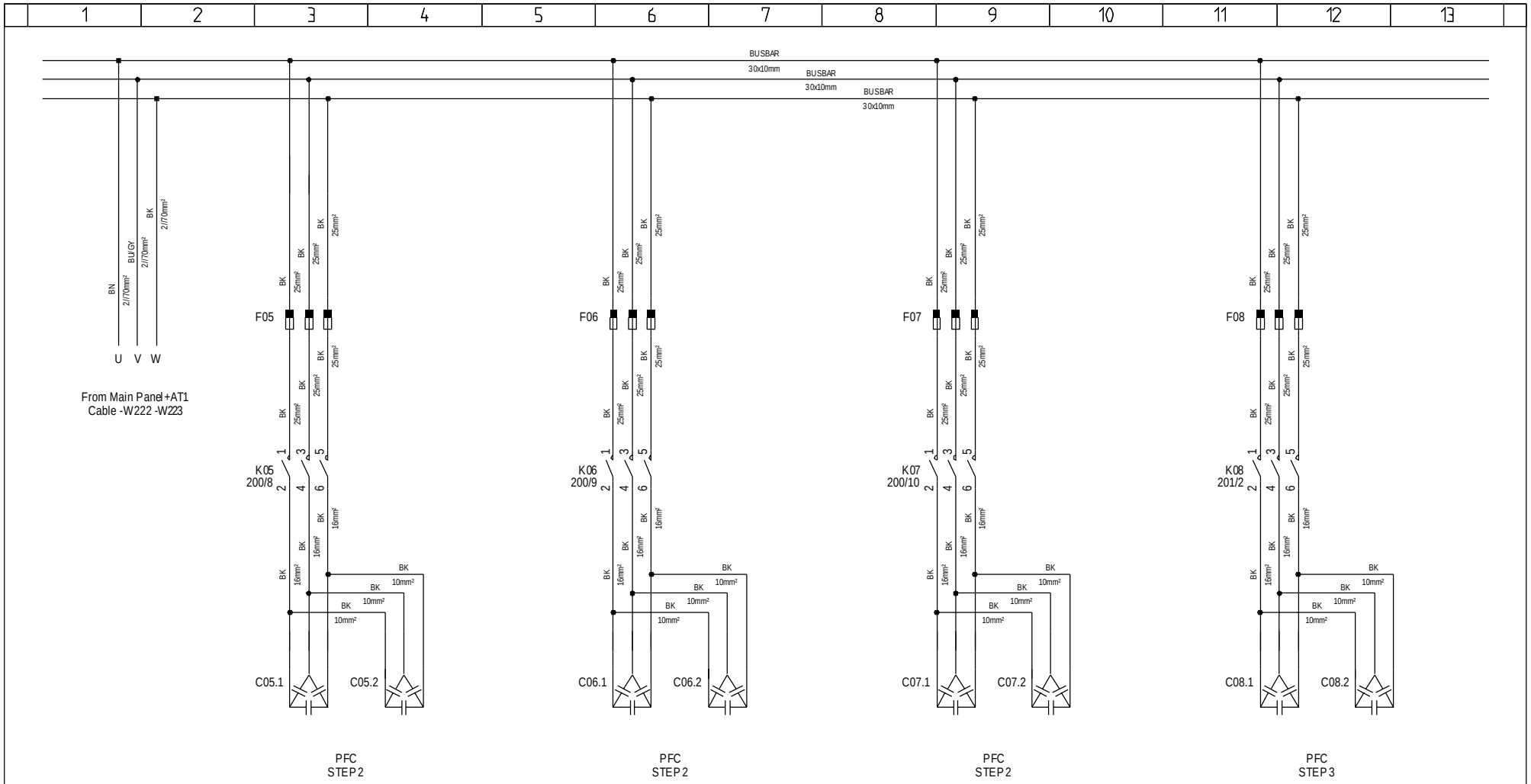

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	Date	Initials	Function	Main Curcuits Step 2		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041115	INI	Rev. -	Drawing no. 6011999	Cont. sheet 102	Sheet 101

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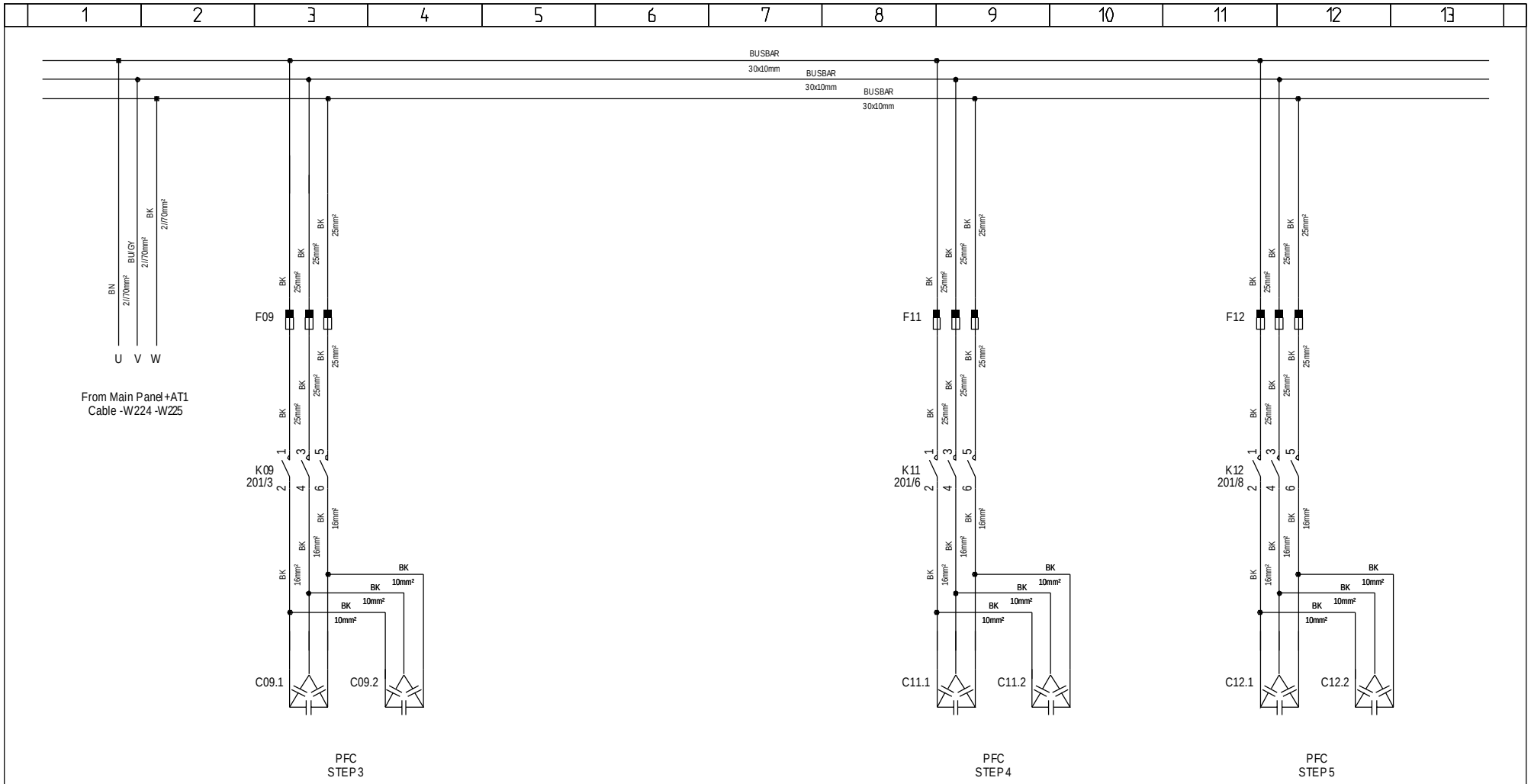

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	Date	Initials	Function	Main Curcuits Step 3 - 5		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041115	INI	Rev. -	Drawing no. 6011999	Cont. sheet 200	Sheet 102

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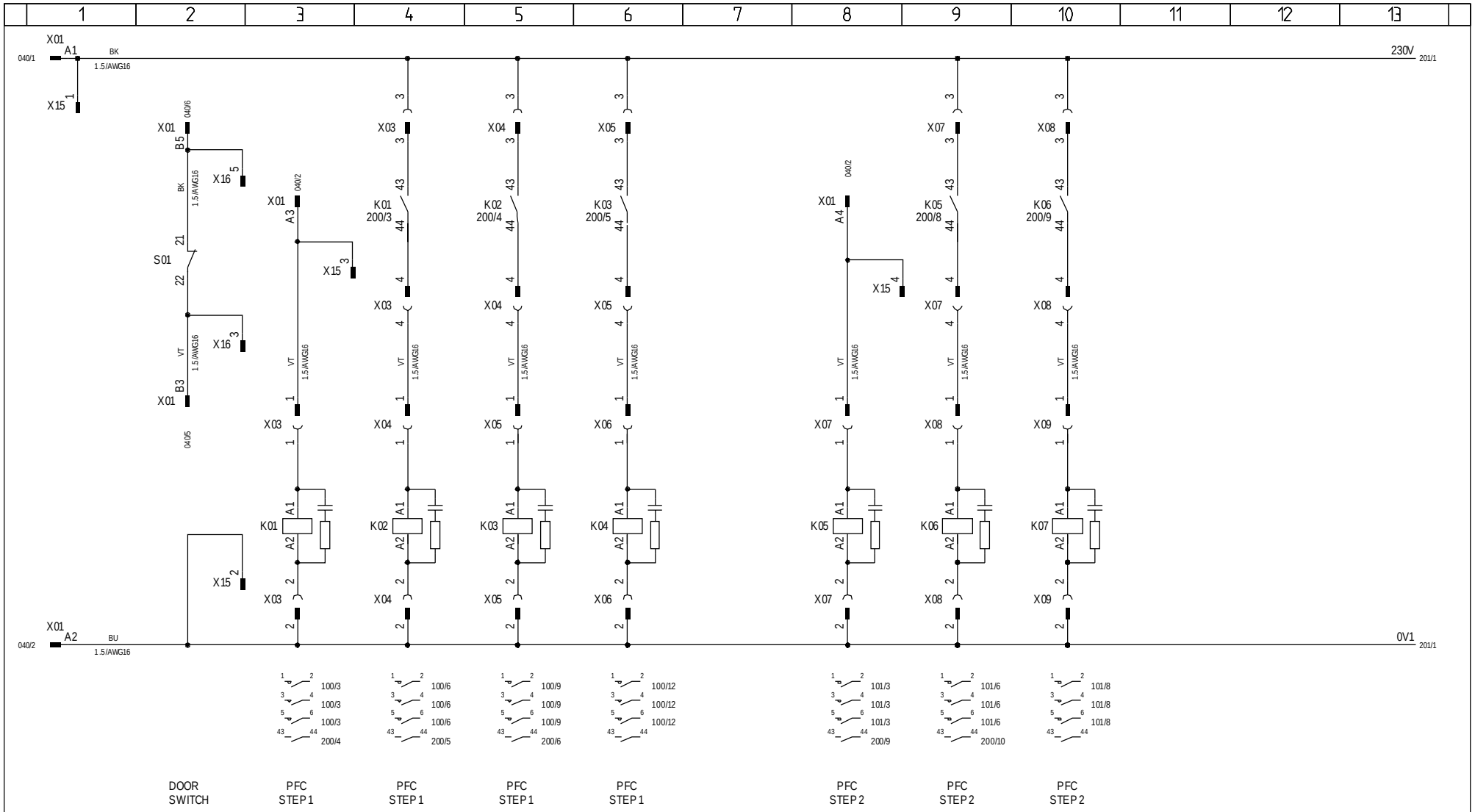

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	Date	Initials	Function	Relays		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041115	INI	Rev. -	Drawing no. 6011999	Cont. sheet 201	Sheet 200

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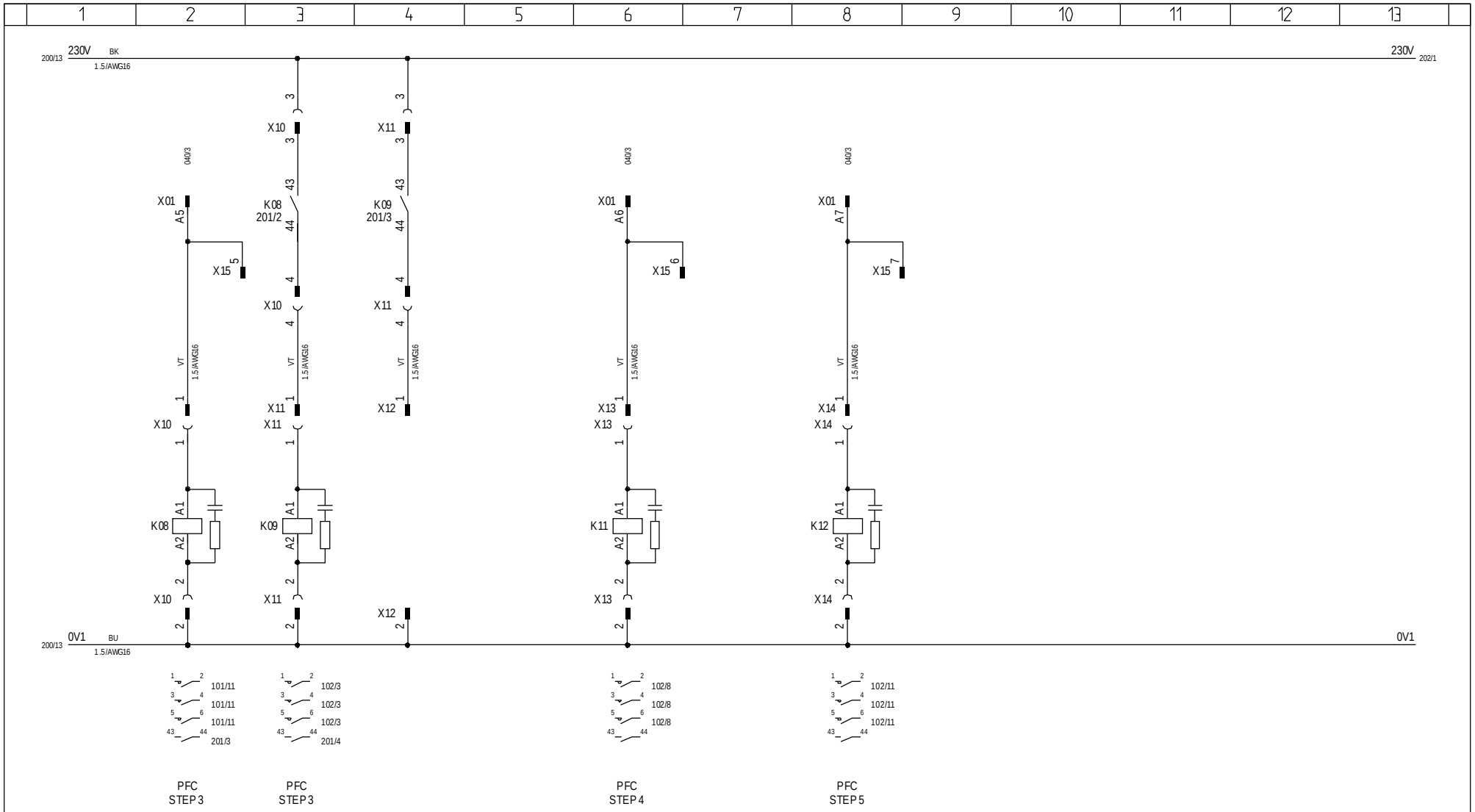
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



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	Date	Initials	Function	Relays		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041115	INI	Rev. -	Drawing no. 6011999	Cont. sheet 202	Sheet 201

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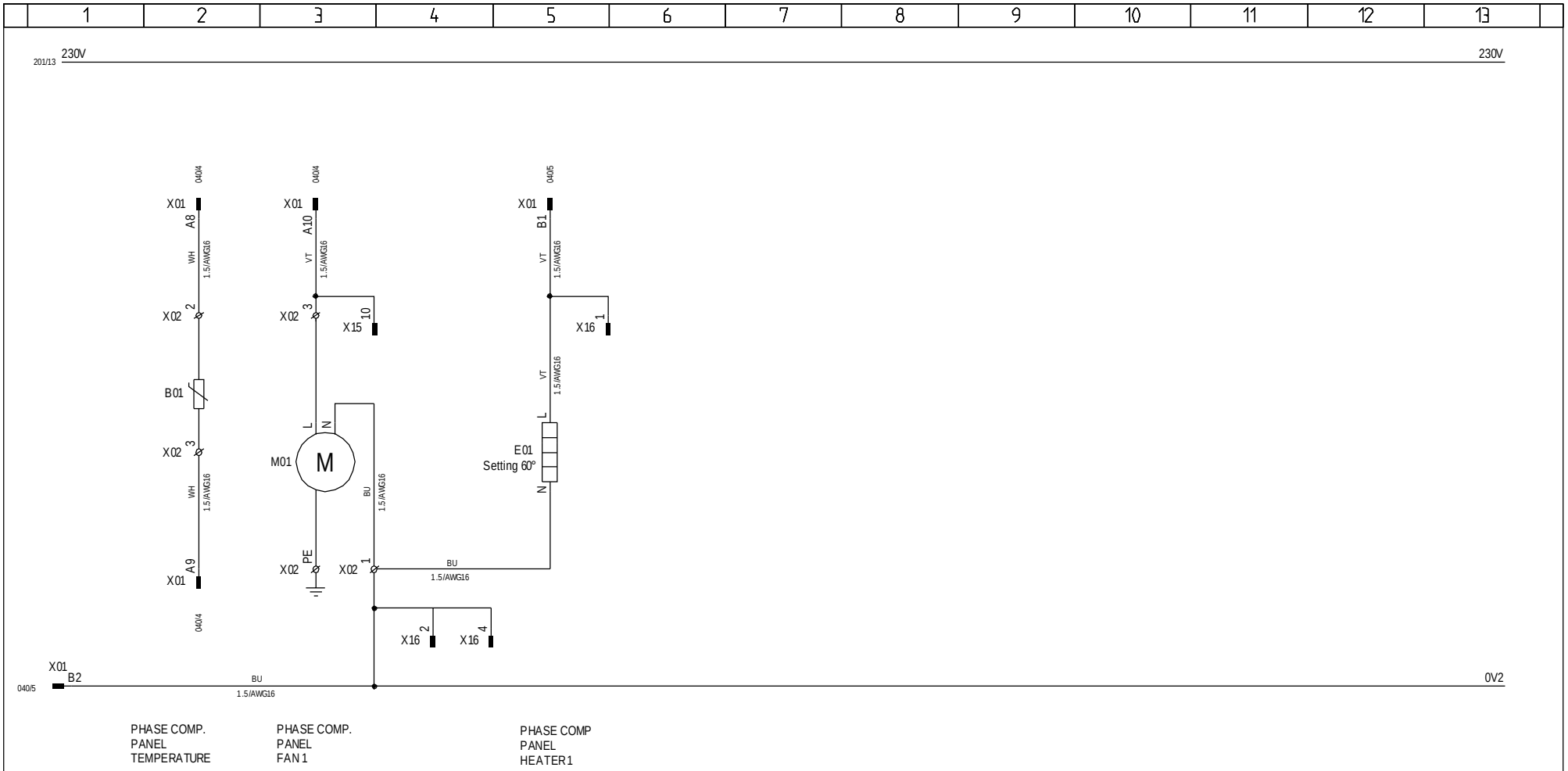
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



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	Date	Initials	Function	Ventilation / Heating		
Designed	030915	CHO	Project title	PFC Panel +AT3 No Load, V82-1.65MW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041115	INI	Rev. -	Drawing no. 6011999	Cont. sheet -	Sheet 202

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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

Document no.: 0000-1234
Version: 01
Date: 06/03/2009
Init: Inge Nielsen

765458 PFC PANEL +AT3 NL V82 50Hz

Component	Description	Qty per	Stk UM	Position Number
D1001294	instructions for production of	0,000	EA	
D1001296	instructions for production +A	0,000	EA	
D6011999	PFC PANEL +AT3 NM72/82 IECI/II	0,000	EA	
098306	CABINET TS8 1 DOOR W/W	1,000	EA	
118934	LABEL ELECTRICAL WARNING UNIV.	1,000	EA	
191329	STRIP 5.2MM HZ 1-10	2,000	EA	
60001870	CONN UMSTBVK F/M 4 LEADED	12,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60002430	LABEL "48 NM"	4,000	EA	
60002503	LABEL "-X01"	1,000	EA	
60002576	LABEL "+AT3"	1,000	EA	
60002667	LABEL CAUTION Risk of el shock	1,000	EA	
60005983	TERMINAL STD M4/6	3,000	EA	
60005984	TERMINAL GROUND M4/6P	1,000	EA	
60005998	END SEC FEM6 GY 118368.16	1,000	EA	
60006036	CONN TERM UKK3-MSTB-5.08-2 F 1	18,000	EA	
60006038	SPACER PLATE DG-UKK3-MSTB-5.08	2,000	EA	
60006039	SPACER PLATE DP-UKK3-MSTB-5.08	2,000	EA	
60006040	SEPARATION PLATE LEFT	2,000	EA	
60006571	HOUSING 32P BULKHEAD	1,000	EA	
60006621	LABEL TERMINAL 1-10 5.08 MM	1,000	EA	
60007330	BUSBAR ISOLATOR 8x40MM	18,000	EA	
60007458	CABLE TIE 140x2.5mm WH	41,000	EA	
60007459	CABLE TIE WHITE 200x2.5mm	9,000	EA	
60007465	CABLE TIE 368x4.8mm BK	3,000	EA	
60007468	CABLE TIE BLACK 550X8,0MM	2,000	EA	
60007472	CABLE TIE HOLDER 20 x 20mm	5,000	EA	
60007481	CABLE RACK TK 5-7	1,000	EA	
60007633	CABLE GLAND M40 BRASS BMBC-05	1,000	EA	
60007635	CABLE GLAND M63 BRASS BMBC-07	6,000	EA	
60007642	LOCKNUT M40 BRASS BMBL-06	1,000	EA	
60007644	LOCKNUT M63 BRASS BMBL-08	6,000	EA	
60007829	WIRE TIN 16 150MM Ø8 IEC/UL	1,000	EA	
60009578	SCREW ISO 7045 M 3 x 8 - FZB	1,000	EA	
60009600	SCREW ISO 7045 M 4 X 16 - 4.8	4,000	EA	
60009620	SCR M5x16 FZB	48,000	EA	
60009639	SCR HEX SET M8x20 8.8 FZB	41,000	EA	
60009670	SCR HEX SET M10x16 8.8 FZB	12,000	EA	
60009673	SCR HEX SET M10x25 8.8 FZB	2,000	EA	
60009676	SCRW ISO 4017 M10x30-8.8	48,000	EA	
60009688	SCR HEX SET M10x45 8.8 FZB	9,000	EA	
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	54,000	EA	
60009803	WASHER SPR 8 FZG	37,000	EA	
60009809	WASHER SPR 10 FZG	114,000	EA	
60009838	LOCK WASHER DIN 6798 A4 - FZB	4,000	EA	
60009841	WASHER LOCK 8 FZB	1,000	EA	
60009842	LOCK WASHER DIN 6798A 10 - FZB	16,000	EA	
60009861	NUT ISO 4032 M 4 - 6 - FZB	4,000	EA	
60009873	NUT ISO 4032 M 8 - 8 - FZB	1,000	EA	
60009879	NUT HEX M10 8	59,000	EA	
60009895	NUT LIFTING EYE M10 FZB	2,000	EA	
60010316	BASE PL CLAMP TS8 WA4547276	1,000	EA	
60010593	MOUNT PLATE TS8 W/W	1,000	EA	
60010699	CONDENSATION PROT DRY BAG 500G	2,000	EA	
60013713	FTGS F BUSBAR HOLDER	6,000	EA	
60013925	PFC MODULE 50KVAR 690V	11,000	EA	
60091902	END STOP WAGO 249-116 6MM TS35	4,000	EA	
60091915	END STOP LABEL HOLDER WAGO 249	3,000	EA	
60096851	TORX SCREW 2486.500 5.5X13MM	12,000	EA	
60096979	ATTACHMENT MOUNT PLATE TS	2,000	EA	
60097503	WIRING PFC NL IEC I/III	1,000	EA	
60097576	LABEL TYPE SIGN +AT3 NL 50 HZ	1,000	EA	
60098494	LABEL TYPE SIGN +AT3 NL	1,000	EA	
60102317	CU BUSBAR KIT 4 PFC PAN	1,000	EA	
60104152	CABLE CONDUIT DIN RAIL PFC PAN	1,000	EA	
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B01
60007437	BRAIDED SLEEVE 10-17mm BK	2,080	M	E01
60014729	HEATER FAN CR0 27 475/550W UL	1,000	EA	E01
092048	VENTI. OUTLET FILTER 3326.207	1,000	EA	M01
60007437	BRAIDED SLEEVE 10-17mm BK	1,720	M	M01
60110934	FAN 230V 500M3/H 323X323X125MM	1,000	EA	M01

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60014138	MARK CARD RC610 NOS 1-10	0,400	EA	SH=10
60014148	MARK CARD RC610 GROUND	0,020	EA	SH=10
60006812	STICKER "U" 14MM	0,100	EA	SH=32
60006813	STICKER "V" 14MM	0,100	EA	SH=32
60006814	STICKER "W" 14MM	0,100	EA	SH=32
60006819	STICKER "EARTH" 14mm	0,150	EA	SH=54
60007437	BRAIDED SLEEVE 10-17mm BK	0,850	M	S01
60010456	DOOR-OPERATED SWITCH	1,000	EA	S01
60007420	WIRE HOSE BLACK 20mm	0,280	M	X01

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60016660 PFC MODULE 50kvar 690V

Component	Description	Qty per	Stk UM	Position Number
D21000080	BOM 60016660 PFC MODULE 50kvar	0,000	EA	
D22000167	CI PFC +AT3 NM1500 690V 50Hz N	0,000	EA	
D22000168	CI PFC +AT3 NM1500 690V 50Hz F	0,000	EA	
D22000182	PFC PANEL +AT3 NO LOAD, NM72IE	0,000	EA	
D22000183	PFC PANEL +AT3 FULL LOAD, V82-	0,000	EA	
D22000235	CI, PFC PANEL +AT3 1.5MW N.L.	0,000	EA	
D22000236	CI, PFC PANEL +AT3 1.5MW ADD O	0,000	EA	
D6000933	Phase Comp. Modul 50kVAr 690V	0,000	EA	
D6011999	PFC PANEL +AT3 NM72/82 IECI/II	0,000	EA	
D6012008	PFC PANEL +AT3 NM72/82 IECI/II	0,000	EA	
D6013071	PFC PANEL +AT3 NM1500 690V 50H	0,000	EA	
D6013072	PFC PANEL +AT3 NM1500 690V 50H	0,000	EA	
60000931	CAP 25kVAr 690V 50Hz VISHAY	2,000	EA	
60002597	LABEL	1,000	EA	
60005074	FUSE SWITCH NH00 3NP40700 160A	1,000	EA	
60005100	FUSE NH00 GL/GG 100A 690V	3,000	EA	
60007458	CABLE TIE 140x2.5mm WH	4,000	EA	
60007471	CABLE TIE 5x150mm with PLUG	2,000	EA	
60009605	SCR CRS PH M5x12 4.8 FZB	2,000	EA	
60009605	SCR CRS PH M5x12 4.8 FZB	6,000	EA	
60009617	SCREW HFC 9046 M 4 x 16 - 4.8	2,000	EA	
60009792	WASHER SPR 5 FZG	6,000	EA	
60009803	WASHER SPR 8 FZG	6,000	EA	
60009839	WASHER LOCK 5 FZB	2,000	EA	
60009974	TOP CLAMP FOR CAP 25kVAr	2,000	EA	
60012530	WIRING BRID PFC MODULE UL	3,000	EA	
60012598	WIRING IEC PFC MODULE	1,000	EA	
60013647	BRA F CAP 2x25kvar	1,000	EA	
60096832	CONT K350K10230 W/RC-UNIT 230V	1,000	EA	

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Change Info

Item no.	***Item text:***
765459	**PFC Panel +AT3 Full Load add on, V82-1.65MW 690V 50Hz**

Active revision for production

Drawing no.: 6012008

Version	Date	Init./App.	Description of change since last revision
05	2006-10-26	INI/FLT	Changed with ECO 217924_Implementation of CMS & warning label Page 030: Updated with 118934 label, electrical warning universal. Page 039: New page with following text added. " Use copper conductors only for external wires and cables. Use 60°C cables for currents less than 100Amps and 75°C cables for higher currents".

BoM no.: 765459 — *Document no.: 0000-1235*

Version	Date	Init./App.	Description of change since last revision
01	2008-01-03	INI/FLT	Changed with ECO 228988, 230842. Replaced: 098337 with 098307 CABINET TS8 1 DOOR W/W. Removed: 60014668 EXHAUST FILT, 60014655 FAN 1-PHASE 230V. Added: 092048 OUTLET FILTER, 60110934 FAN 230V.

BoM no.: 60016660 — *Doc. no.: 21000080 PFC Module 50kVAr 690V*

Version	Date	Init./App.	Description of change since last revision
05	2007-08-16	INI/FLT	Changed with ECO 227151. Added: 2 x 60009605 SCREW ISO 7045, 6 x 60009605 SCREW ISO 7045 6 x 60009792 SPRING WASHER, 6 x 60009803 SPRING WASHER, 2 x 60009839 LOCK WASHER DIN 6798 A 5 – FZ. Removed: 8 x 60009530 SCREW ISO 7045 M 5 x 12 - 4.8

Old revisions for service

Drawing no.: 6012008

Version	Date	Init./App.	Description of change since last revision
04	2005-06-02	INI/FLT	All pages updated with Vestas logo
03	2004-06-15	INI/CHO	Page 001: Updated Page 201: E02 settings changed.
02	2004-03-16	CHO/CHO	Page 001: Updated Page 101: Components no. and PFC step no. corrected. References updated. Page 200: References updated.
01	2003-09-21	CHO/CHO	First version

BoM no.: 765459 — *Document no.: 0000-1235*

Version	Date	Init./App.	Description of change since last revision
00	2007-07-03	INI/FLT	First version

BoM no.: 60016660 — *Doc. no.: 21000080 PFC Module 50kVAr 690V*

Version	Date	Init./App.	Description of change since last revision
04	2006-08-23	INI/FLT	Changed with ECO 214516_ Added 60009530 x 8 pc. SCR CRS PH M5x12 4.8 FZB Added 60009617 x 2 pc. SCR M4x16 4.8 FZB Added 60007458 x 4 pc. CABLE TIE 140x2.5mm WH.
03	2004-03-22	FLT/FLT	Material 60012530 update of wiring for PFC module
02	2003-10-02	CHO/CHO	Capacitor contact added.
01	2002-05-13	CHO/CHO	First version in SAP no. system.

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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

PAGE	CONTENT	DATE	REVISION
001	Table of Contents	061026	05
030	Panel Front	061026	–
031	Panel Outline	050602	–
032	Terminal Rows	050602	–
039	Cable Connections	061026	–
040	Terminal X15 – X16	050602	–
100	Main Circuits step 1–2	050602	–
101	Main Circuits step 3–5	050602	–
102	Main Circuits step 3–4	050602	–
200	Control Circuits	050602	–
201	Ventilation / Heating	050602	–

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	Date	Initials
Designed	030921	CHO
Approved	061026	FLT
Revised	061026	INI

Function: Table of Contents

Project title: PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz

Comments

Customer: Vestas Wind Systems A/S

Rev. 05 | Drawing no. 6012008 | Cont. sheet 030 | Sheet 001

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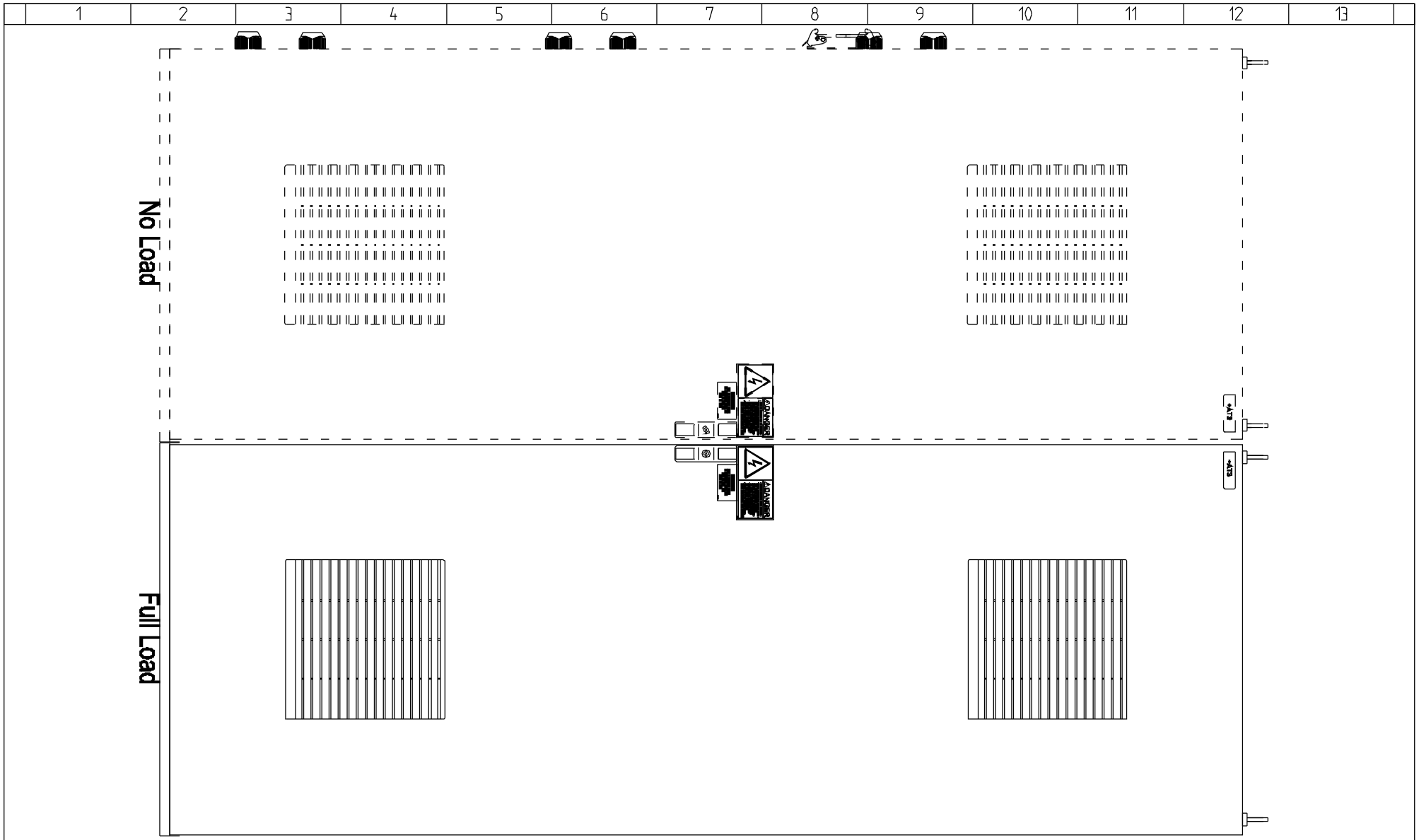
26-10-06 13:21



Panel Dimension: 1600 x 2200 x 600 mm (WxHxD)
Panel Weight: 513kg.

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13:21

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	Date	Initials	Function	Panel Front		
Designed	030921	CHO	Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz		
Approved	061026	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	061026	INI	Rev. -	Drawing no. 6012008	Cont. sheet 031	Sheet 030

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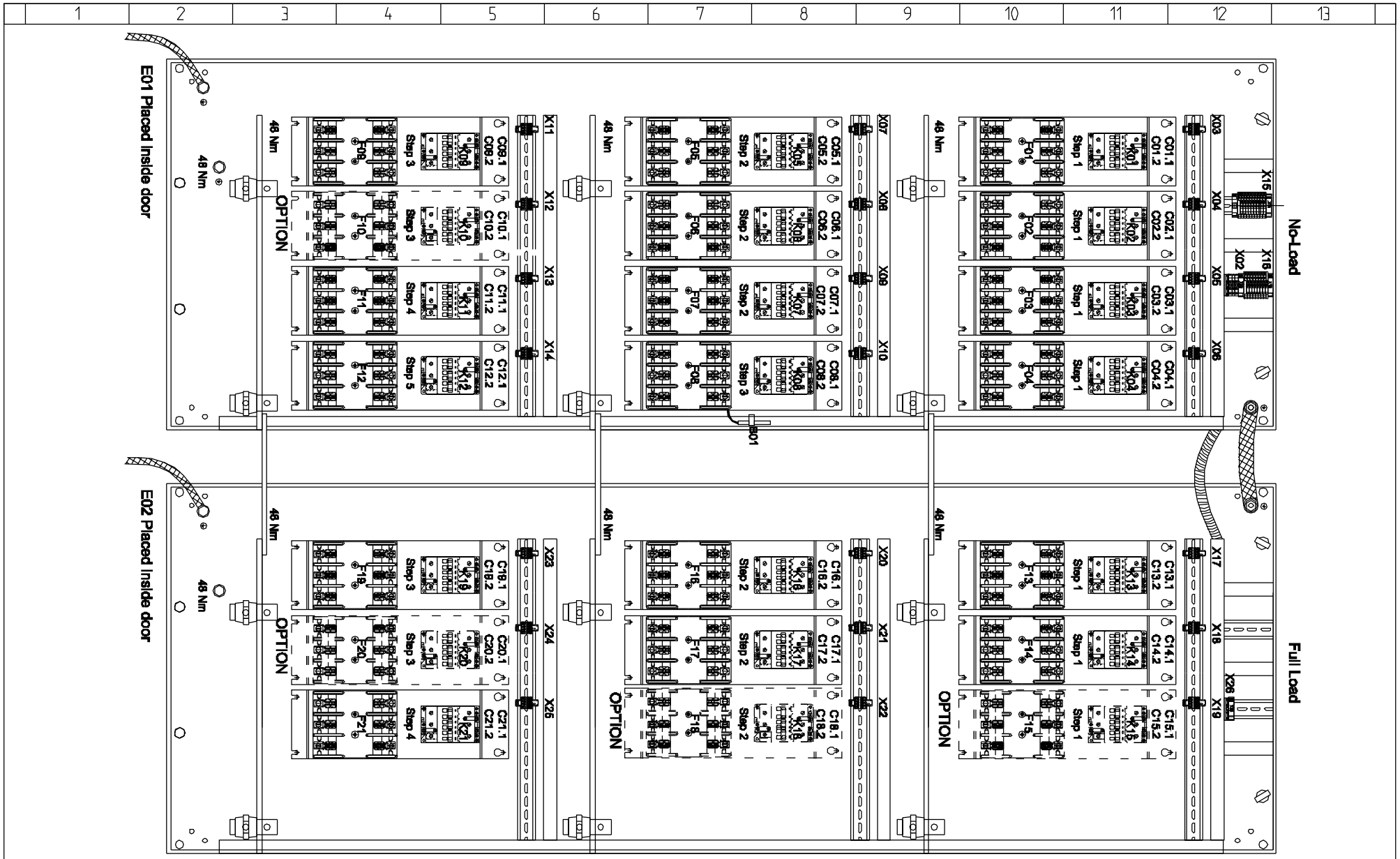

	Date	Initials	Function	Panel Outline		
Designed	030921	CHO	Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. -	Drawing no. 6012008	Cont. sheet 032	Sheet 031

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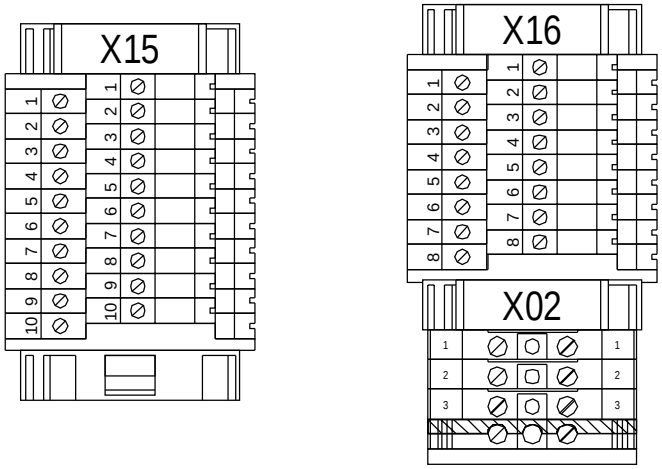
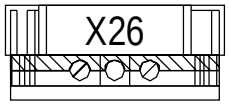


Terminal Rows X15, X16 and X02 are placed in No Load Panel



Terminal Row X26 is placed in Full Load Panel

	Date	Initials	Function	Terminal Rows		
Designed	030921	CHO	Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. -	Drawing no. 6012008	Cont. sheet 039	Sheet 032

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USE COPPER CONDUCTORS ONLY FOR EXTERNAL WIRES AND CABLES.

USE 60°C CABLES FOR CURRENTS LESS THAN 100Amps AND 75°C CABLES FOR HIGHER CURRENTS.

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	Date	Initials	Function	Cable Connections		
Designed	030921	CHO	Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz		
Approved	061026	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	061026	INI	Rev. -	Drawing no. 6012008	Cont. sheet 040	Sheet 039

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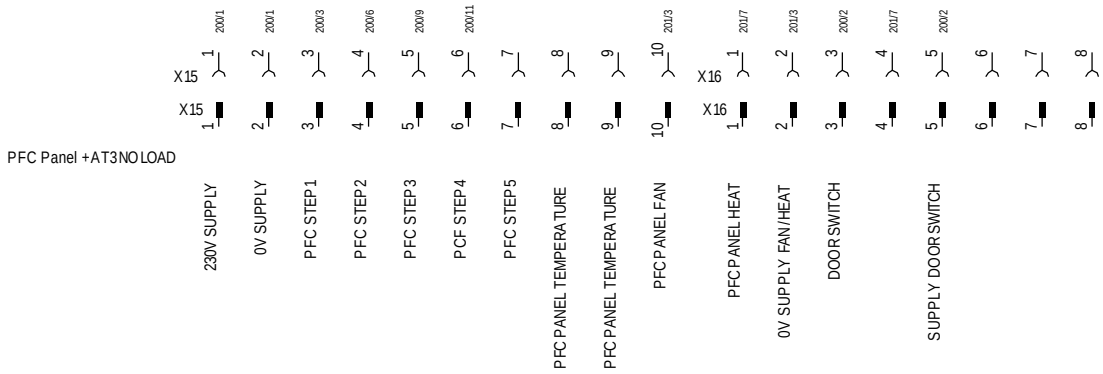

	Date	Initials	Function	Terminal X15 - X16		
Designed	030921	CHO	Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. -	Drawing no. 6012008	Cont. sheet 100	Sheet 040

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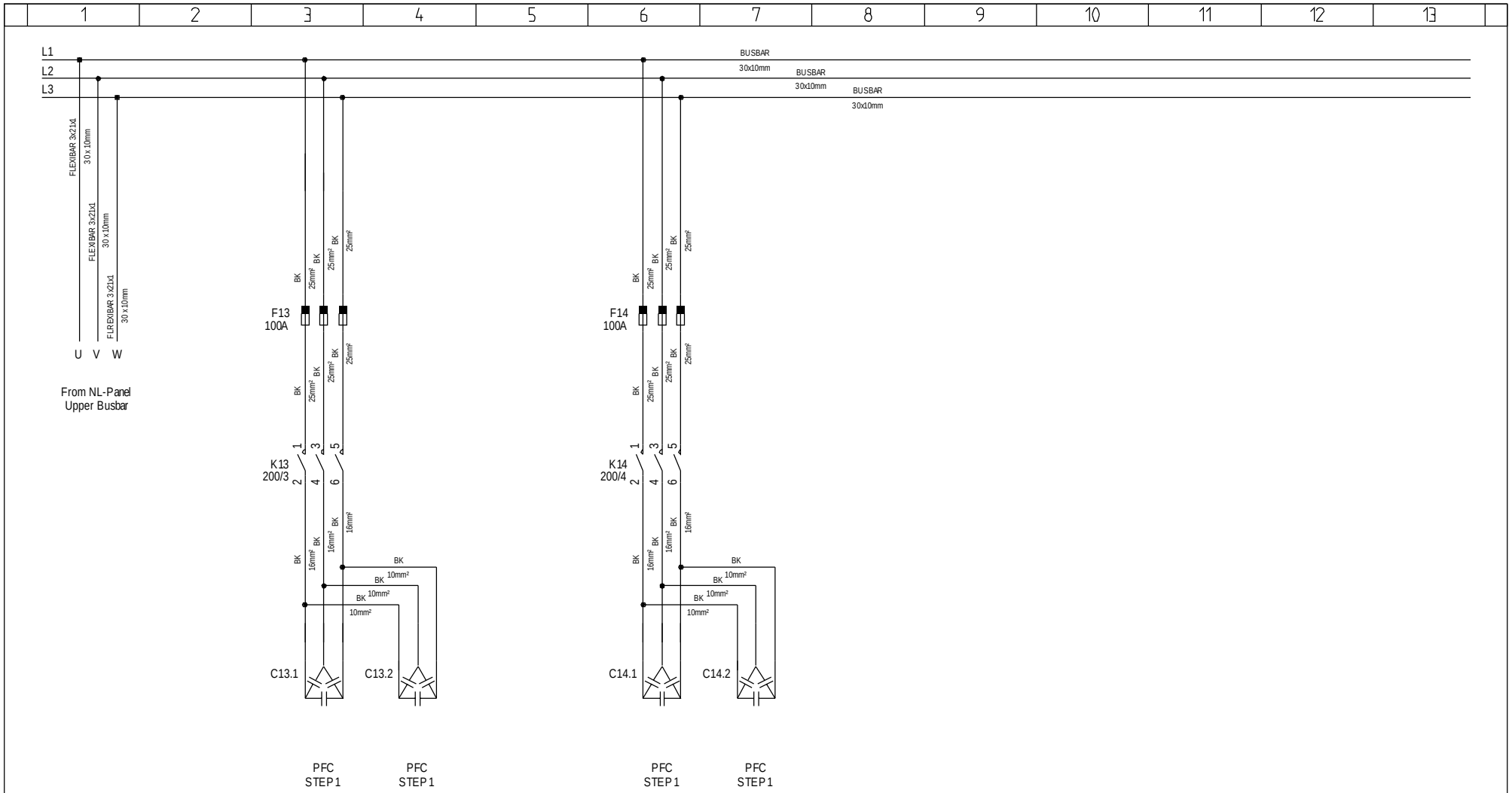

	Date	Initials	Function	Main Circuits step 1-2		
Designed	030921	CHO	Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. -	Drawing no. 6012008	Cont. sheet 101	Sheet 100

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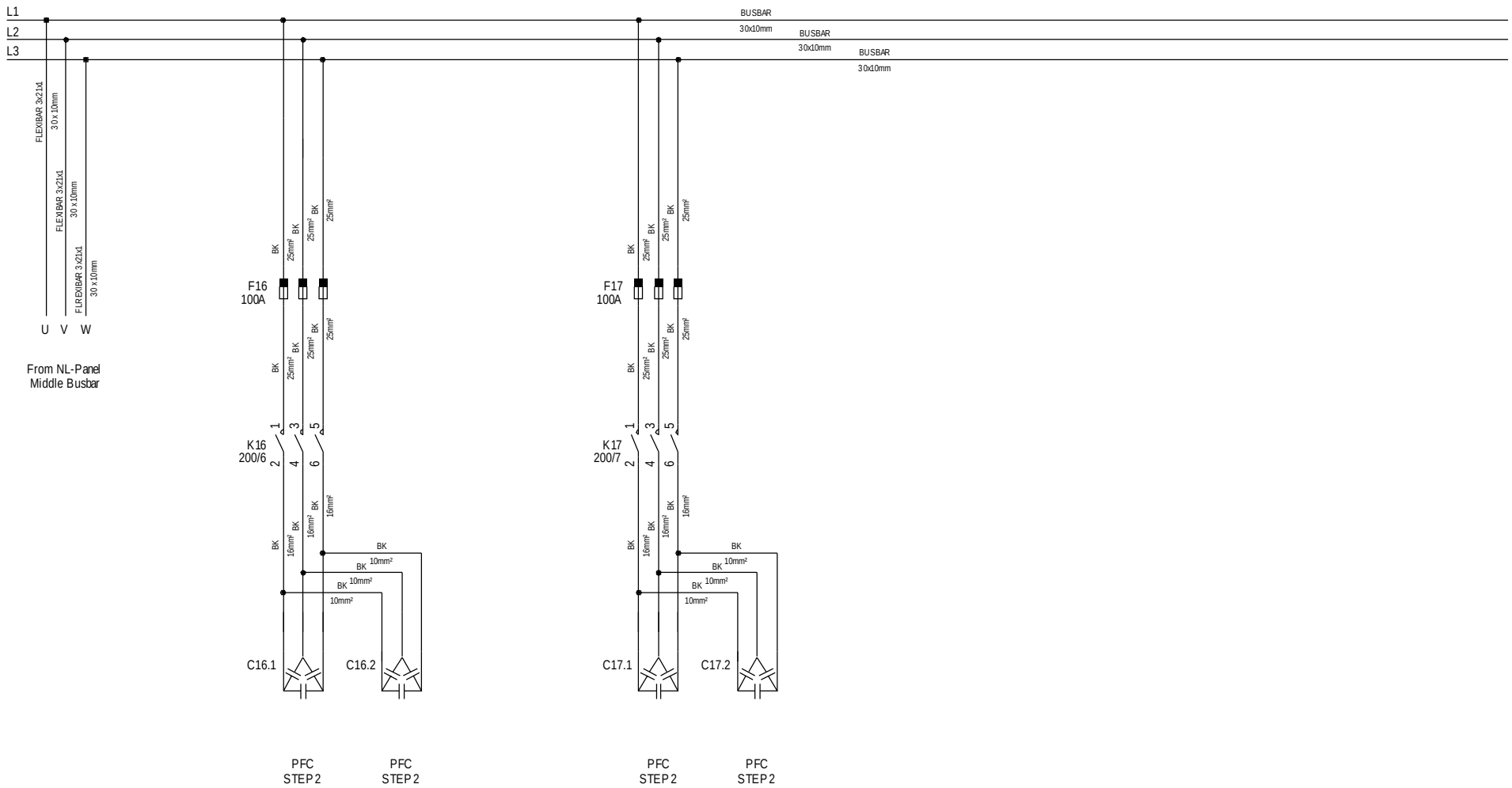

	Date	Initials	Function	Main Circuits step 3-5		
Designed	030921	CHO	Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. -	Drawing no. 6012008	Cont. sheet 102	Sheet 101

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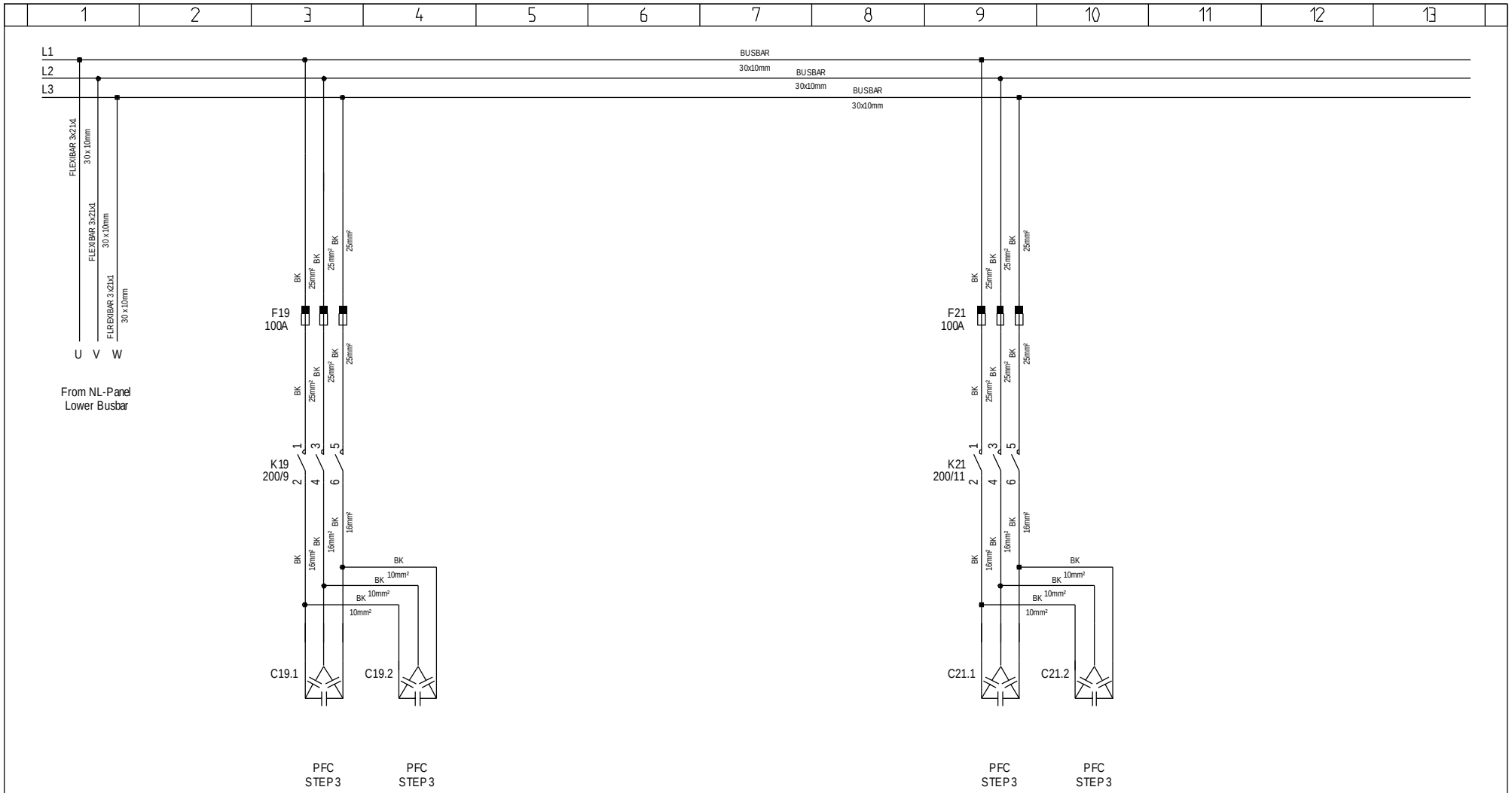

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	Date	Initials	Function	Main Circuits step 3-4		
Designed	030921	CHO	Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. -	Drawing no. 6012008	Cont. sheet 200	Sheet 102

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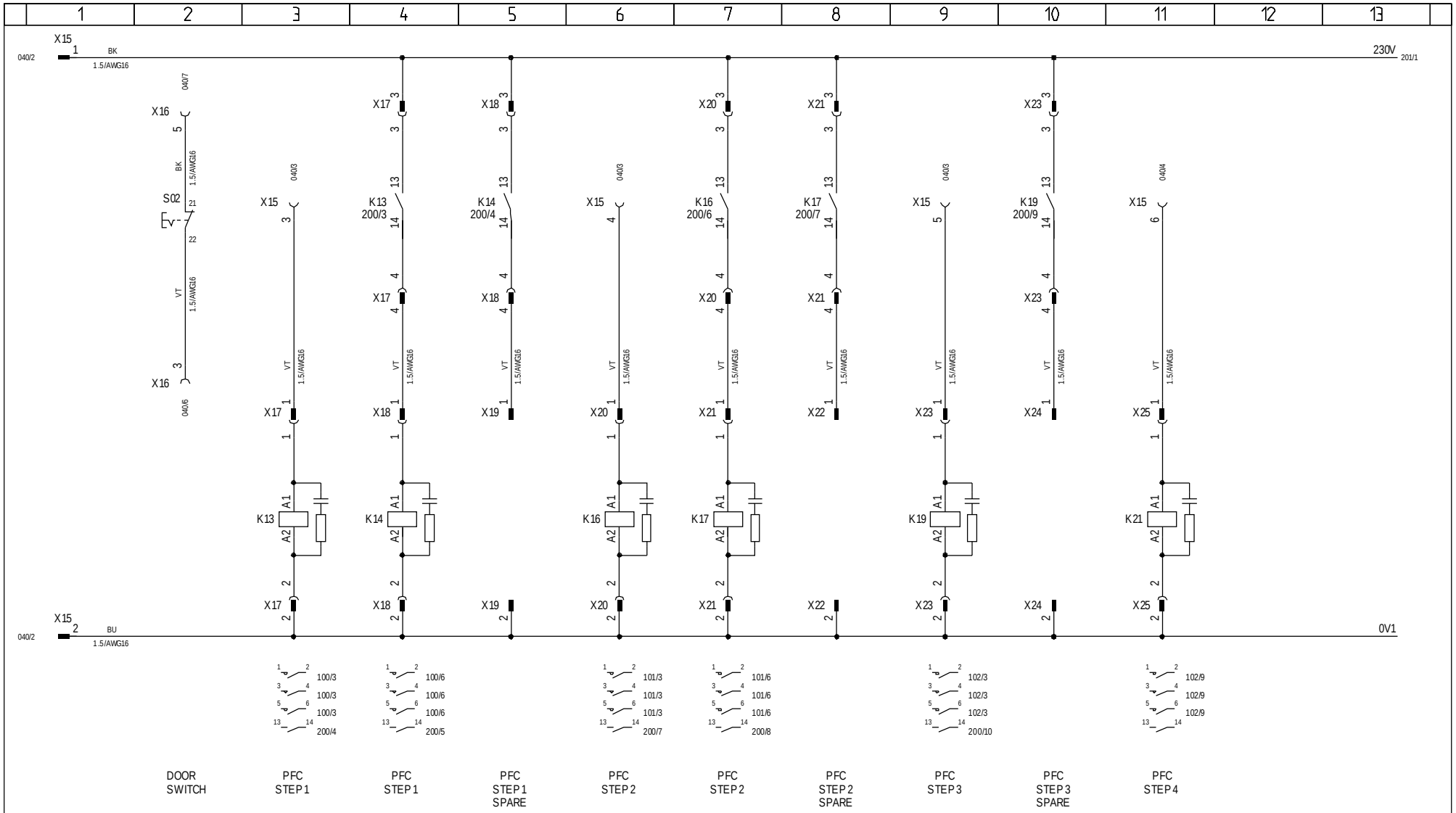

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	Date	Initials	Function	Control Circuits		
Designed	030921	CHO	Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. -	Drawing no. 6012008	Cont. sheet 201	Sheet 200

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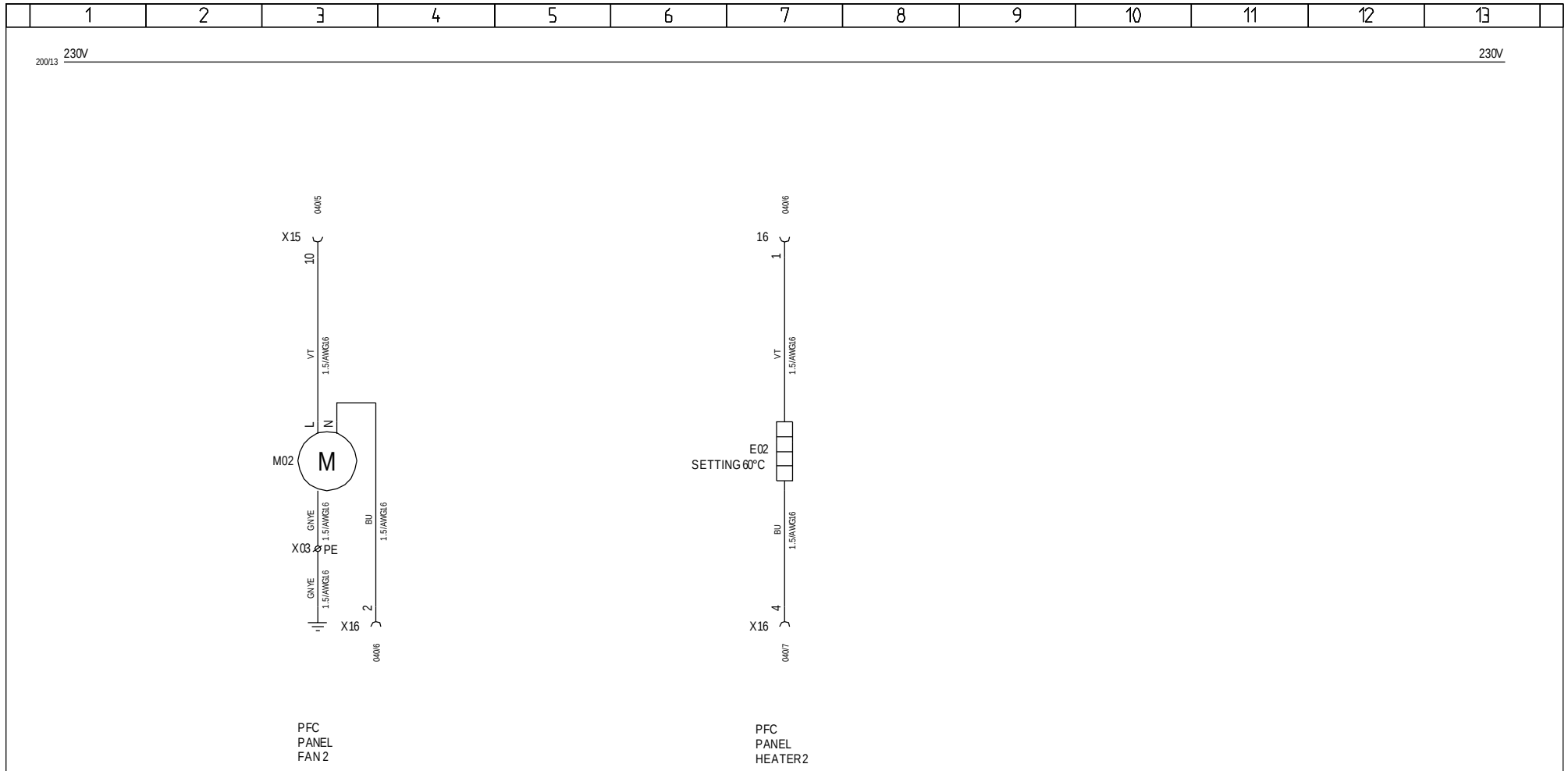

	Date	Initials		
Designed	030921	CHO	Function	Ventilation / Heating
Approved			Project title	PFC Panel +AT3 Full Load, V82-1.65MW & NM72-82/1650 690V 50Hz
Revised	050602	INI	Comments	
			Customer	Vestas Wind Systems A/S
			Rev. -	Drawing no. 6012008
			Cont. sheet -	Sheet 201

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Document no.: 0000-1235
Version: 01
Date: 06/03/2009
Init: Inge Nielsen

765459 PFC PANEL +AT3 FL ADD ON 50Hz

Component	Description	Qty per	Stk UM	Position Number
D1001296	instructions for production +A	0,000	EA	
D1001702	Mounting Instruction f. Compen	0,000	EA	
118934	LABEL ELECTRICAL WARNING UNIV.	1,000	EA	
60001870	CONN UMSTBVK F/M 4 LEADED	9,000	EA	
60002430	LABEL "48 NM"	3,000	EA	
60002576	LABEL "+AT3"	1,000	EA	
60002667	LABEL CAUTION Risk of el shock	1,000	EA	
60005984	TERMINAL GROUND M4/6P	1,000	EA	
60005998	END SEC FEM6 GY 118368.16	1,000	EA	
60006621	LABEL TERMINAL 1-10 5.08 MM	1,000	EA	
60006819	STICKER "EARTH" 14mm	0,140	EA	
60007182	DIN RAIL PP0735H 7x35MM	2,520	M	
60007330	BUSBAR ISOLATOR 8x40MM	18,000	EA	
098307	CABINET TS8 1 DOOR W/W	1,000	EA	
D6012008	PFC PANEL +AT3 NM72/82 IECI/II	0,000	EA	
60104152	CABLE CONDUIT DIN RAIL PFC PAN	1,000	EA	
60102322	CU BUSBAR KIT 8 PFC FULL LOAD	1,000	EA	
60007458	CABLE TIE 140x2.5mm WH	33,000	EA	
60007459	CABLE TIE WHITE 200x2.5mm	3,000	EA	
60007465	CABLE TIE 368x4.8mm BK	3,000	EA	
60007468	CABLE TIE BLACK 550X8,0MM	2,000	EA	
60098493	LABEL TYPE SIGN +AT3 FL	1,000	EA	
60007829	WIRE TIN 16 150MM Ø8 IEC/UL	1,000	EA	
60007838	WIRE TIN 50 200MM Ø10 IEC/UL	1,000	EA	
60009620	SCR M5x16 FZB	48,000	EA	
60009639	SCR HEX SET M8x20 8.8 FZB	43,000	EA	
60009670	SCR HEX SET M10x16 8.8 FZB	14,000	EA	
60097577	LABEL TYPE SIGN +AT3 FL 50 HZ	1,000	EA	
60009676	SCRW ISO 4017 M10x30-8.8	57,000	EA	
60097504	WIRING PFC FL IEC I/III	1,000	EA	
60009803	WASHER SPR 8 FZG	37,000	EA	
60009809	WASHER SPR 10 FZG	116,000	EA	
60009841	WASHER LOCK 8 FZB	1,000	EA	
60009842	LOCK WASHER DIN 6798A 10 - FZB	16,000	EA	
60009873	NUT ISO 4032 M 8 - 8 - FZB	1,000	EA	
60009879	NUT HEX M10 8	59,000	EA	
60009895	NUT LIFTING EYE M10 FZB	2,000	EA	
60010316	BASE PL CLAMP TS8 WA4547276	1,000	EA	
60096995	QUICK FIT BAYING CLAMP TS	6,000	EA	
60010570	COVER BAYING TS 8800.460 600mm	1,000	EA	
60010593	MOUNT PLATE TS8 W/W	1,000	EA	
60010699	CONDENSATION PROT DRY BAG 500G	2,000	EA	
60013713	FTGS F BUSBAR HOLDER	6,000	EA	
60013925	PFC MODULE 50KVAR 690V	6,000	EA	
60014138	MARK CARD RC610 NOS 1-10	0,400	EA	
60014148	MARK CARD RC610 GROUND	0,020	EA	
60096993	ANGULAR BAYING BRA TS 8800.430	4,000	EA	
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	
60096851	TORX SCREW 2486.500 5.5X13MM	12,000	EA	
60096912	BAYING BRA 4582.500	2,000	EA	
60096978	PUNCHED RAIL 8612.260	1,000	EA	
60096979	ATTACHMENT MOUNT PLATE TS	2,000	EA	
60014729	HEATER FAN CR0 27 475/550W UL	1,000	EA	E02
60007437	BRAIDED SLEEVE 10-17mm BK	1,450	M	E02
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	54,000	EA	E02
60007437	BRAIDED SLEEVE 10-17mm BK	1,250	M	M02
60009673	SCR HEX SET M10x25 8.8 FZB	2,000	EA	M02
60110934	FAN 230V 500M3/H 323X323X125MM	1,000	EA	M02
092048	VENTI. OUTLET FILTER 3326.207	1,000	EA	M02
60010456	DOOR-OPERATED SWITCH	1,000	EA	S02
60007472	CABLE TIE HOLDER 20 x 20mm	5,000	EA	S02
60007437	BRAIDED SLEEVE 10-17mm BK	0,850	M	S02
60007420	WIRE HOSE BLACK 20mm	0,280	M	X15-X16

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60016660 PFC MODULE 50kvar 690V

Component	Description	Qty per	Stk UM	Position Number
D21000080	BOM 60016660 PFC MODULE 50kvar	0,000	EA	
D22000167	CI PFC +AT3 NM1500 690V 50Hz N	0,000	EA	
D22000168	CI PFC +AT3 NM1500 690V 50Hz F	0,000	EA	
D22000182	PFC PANEL +AT3 NO LOAD, NM72IE	0,000	EA	
D22000183	PFC PANEL +AT3 FULL LOAD, V82-	0,000	EA	
D22000235	CI, PFC PANEL +AT3 1.5MW N.L.	0,000	EA	
D22000236	CI, PFC PANEL +AT3 1.5MW ADD O	0,000	EA	
D6000933	Phase Comp. Modul 50kVAr 690V	0,000	EA	
D6011999	PFC PANEL +AT3 NM72/82 IECI/II	0,000	EA	
D6012008	PFC PANEL +AT3 NM72/82 IECI/II	0,000	EA	
D6013071	PFC PANEL +AT3 NM1500 690V 50H	0,000	EA	
D6013072	PFC PANEL +AT3 NM1500 690V 50H	0,000	EA	
60000931	CAP 25kVAr 690V 50Hz VISHAY	2,000	EA	
60002597	LABEL	1,000	EA	
60005074	FUSE SWITCH NH00 3NP40700 160A	1,000	EA	
60005100	FUSE NH00 GL/GG 100A 690V	3,000	EA	
60007458	CABLE TIE 140x2.5mm WH	4,000	EA	
60007471	CABLE TIE 5x150mm with PLUG	2,000	EA	
60009605	SCR CRS PH M5x12 4.8 FZB	2,000	EA	
60009605	SCR CRS PH M5x12 4.8 FZB	6,000	EA	
60009617	SCREW HFC 9046 M 4 x 16 - 4.8	2,000	EA	
60009792	WASHER SPR 5 FZG	6,000	EA	
60009803	WASHER SPR 8 FZG	6,000	EA	
60009839	WASHER LOCK 5 FZB	2,000	EA	
60009974	TOP CLAMP FOR CAP 25kVAr	2,000	EA	
60012530	WIRING BRID PFC MODULE UL	3,000	EA	
60012598	WIRING IEC PFC MODULE	1,000	EA	
60013647	BRA F CAP 2x25kvar	1,000	EA	
60096832	CONT K350K10230 W/RC-UNIT 230V	1,000	EA	

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Change Info

Item no.	***Item text:***
60108814	**PFC Panel +AT3, 1000kVAr NM72/1650 & V82-1.65MW 50Hz**

Active revision *for production*

Drawing no.: 6015882

Version	Date	Init./App.	Description of change since last revision
01	26.10.2006	INI/FLT	Changed with 217924_Implementation of warning label. Page 030: Updated with 118934 label, electrical warning universal.

LST no.: 21000196 *Material BOM no.: 60108815*

Version	Date	Init./App.	Description of change since last revision
02	06.07.2005	INI/SLB	Upgrade to 1000 kVAr and Filter Surveillance Kit in +AT3 360111495_Upgrade Kit Label 60007630_M20 Cable Gland and 60007639_M20 Locknut added.

Old revisions *for service*

Drawing no.: 6015882

Version	Date	Init./App.	Description of change since last revision
00	11.01.2005	SLB/SLB	First version

LST no.: 21000196 *Material BOM no.: 60108815*

Version	Date	Init./App.	Description of change since last revision
01	11.02.2005	MILJE+INI/SLB	First version

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PAGE	CONTENT	DATE	REVISION
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031	Panel Outline	050111	–
032	Terminal Rows	050111	–
040	Terminal X15 – X16	050111	–
100	Main Circuits step 1	050111	–
101	Main Circuits step 2	050111	–
102	Main Circuits step 3 – 4	050111	–
200	Control Circuits	050111	–
201	Ventilation / Heating	050111	

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	Date	Initials
Designed	050111	SLB
Approved	061026	FLT
Revised	061026	INI

Function: Table of Contents

Project title: PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW

Comments:

Customer: Vestas Wind Systems A/S

Rev. 01 | Drawing no. 6015882 | Cont. sheet 030 | Sheet 001

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26-10-06 14:46

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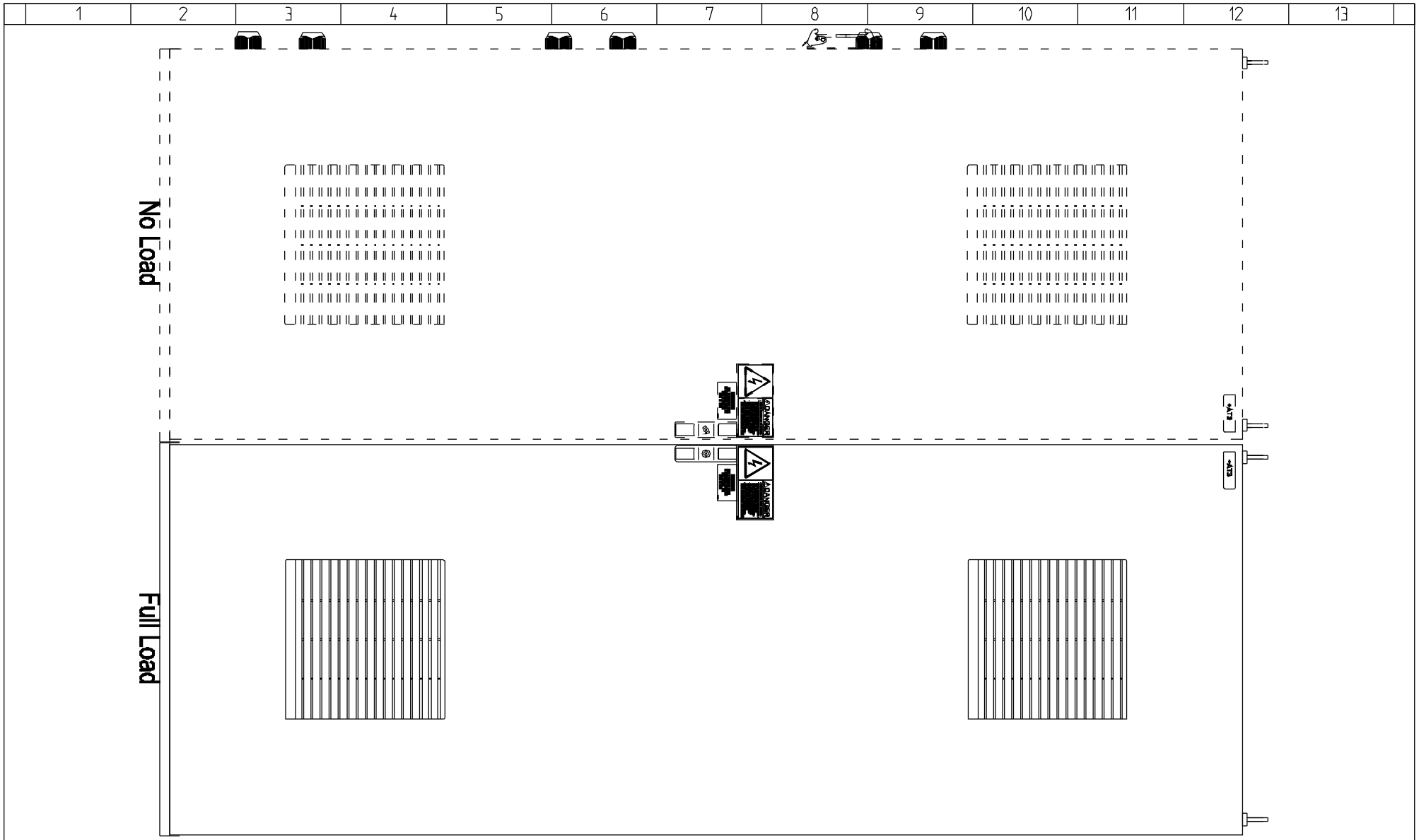

Panel Dimension: 1600 x 2200 x 600 mm(WxHxD)
Panel Weight: 517kg.

26-10-06
14:46

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	Date	Initials	Function	Panel Front		
Designed	050111	SLB	Project title	PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW		
Approved	061026	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	061026	INI	Rev. -	Drawing no. 6015882	Cont. sheet 031	Sheet 030

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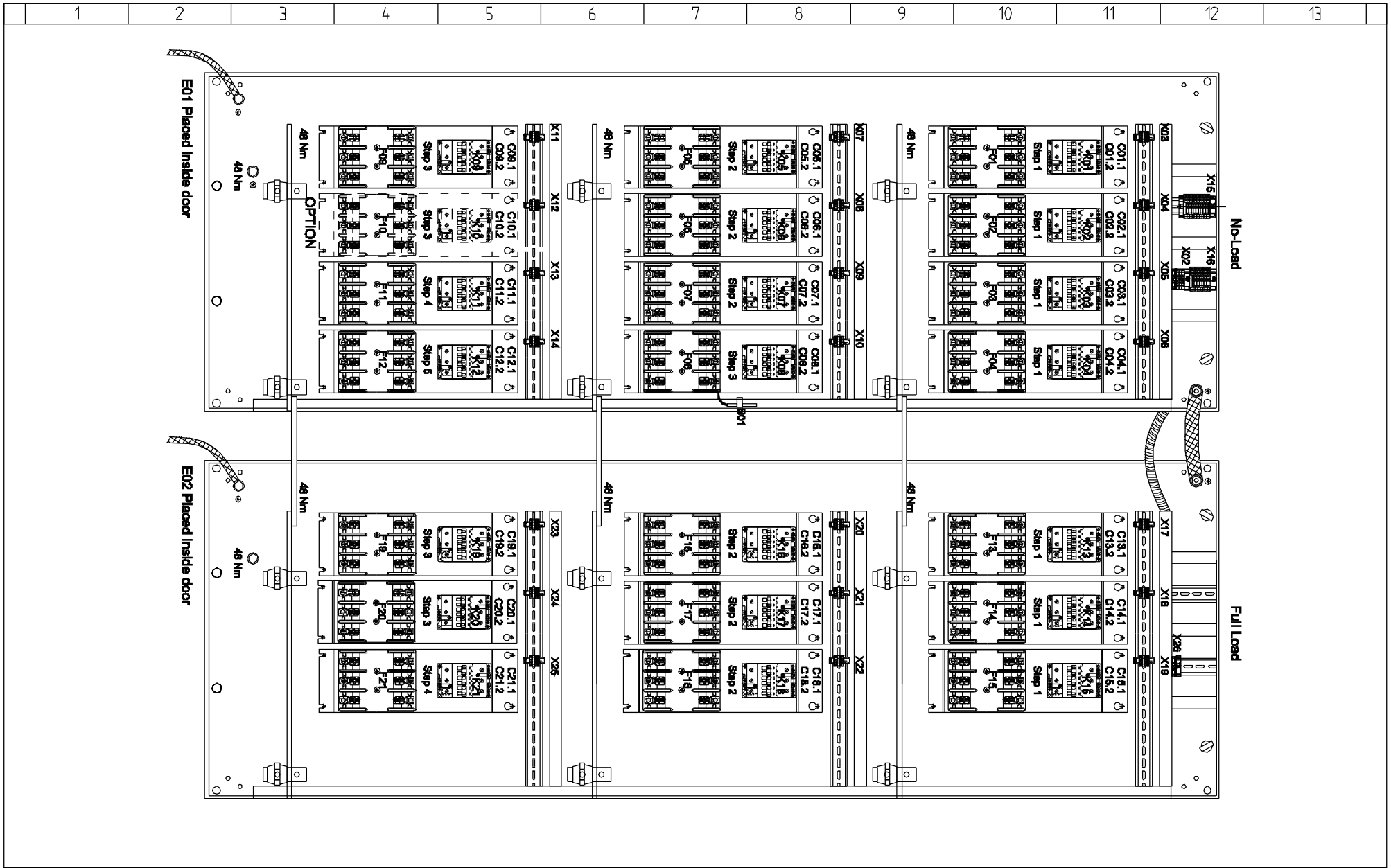

	Date	Initials	Function	Panel Outline		
Designed	050111	SLB	Project title	PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050111	SLB	Rev. -	Drawing no. 6015882	Cont. sheet 032	Sheet 031

Vestas

26-10-06
14:46

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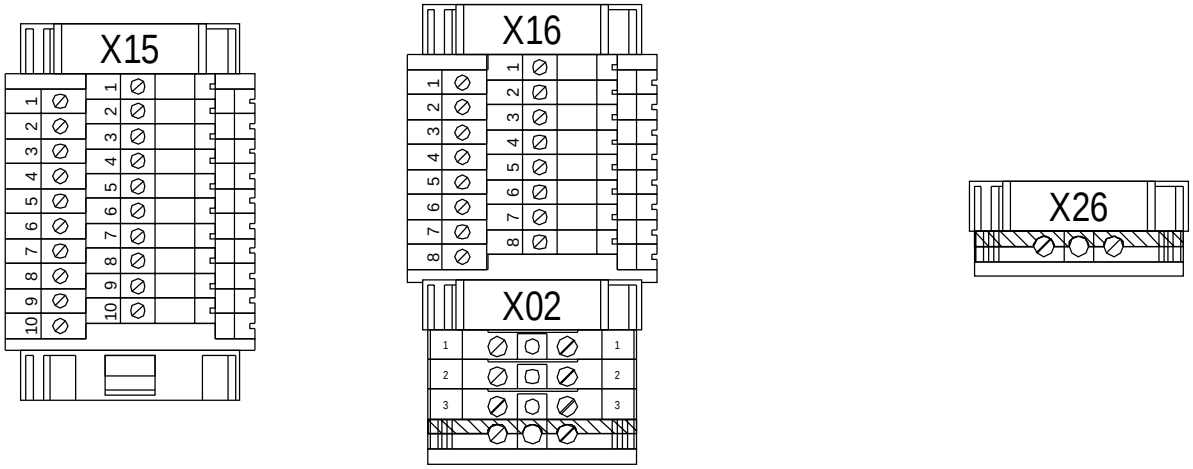

Terminal Rows X15, X16 and X02 are placed in No Load Panel

Terminal Row X26 is placed in Full Load Panel

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function: Terminal Rows
		Designed	050111	SLB	Project title: PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW
		Approved			Comments / Customer: Vestas Wind Systems A/S
		Revised	050111	SLB	Rev.: - / Drawing no.: 6015882 / Cont. sheet: 040 / Sheet: 032

26-10-06 14:46

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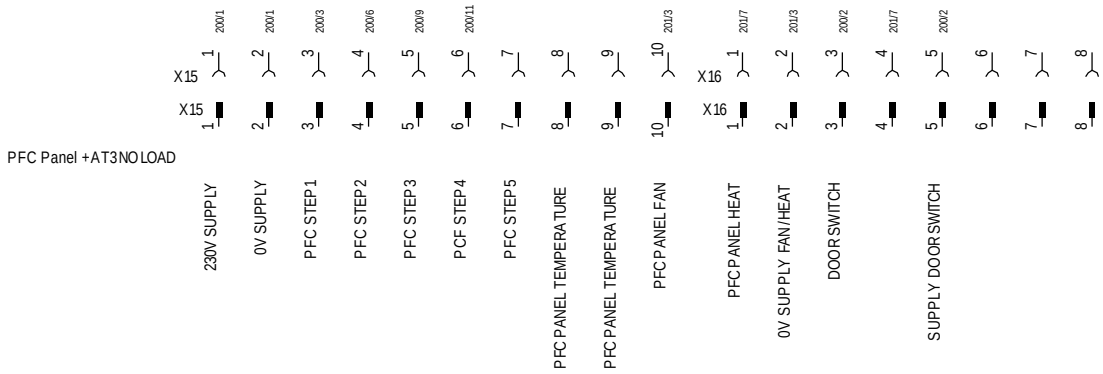

	Date	Initials	Function	Terminal X15 - X16		
Designed	050111	SLB	Project title	PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050111	SLB	Rev. -	Drawing no. 6015882	Cont. sheet 100	Sheet 040

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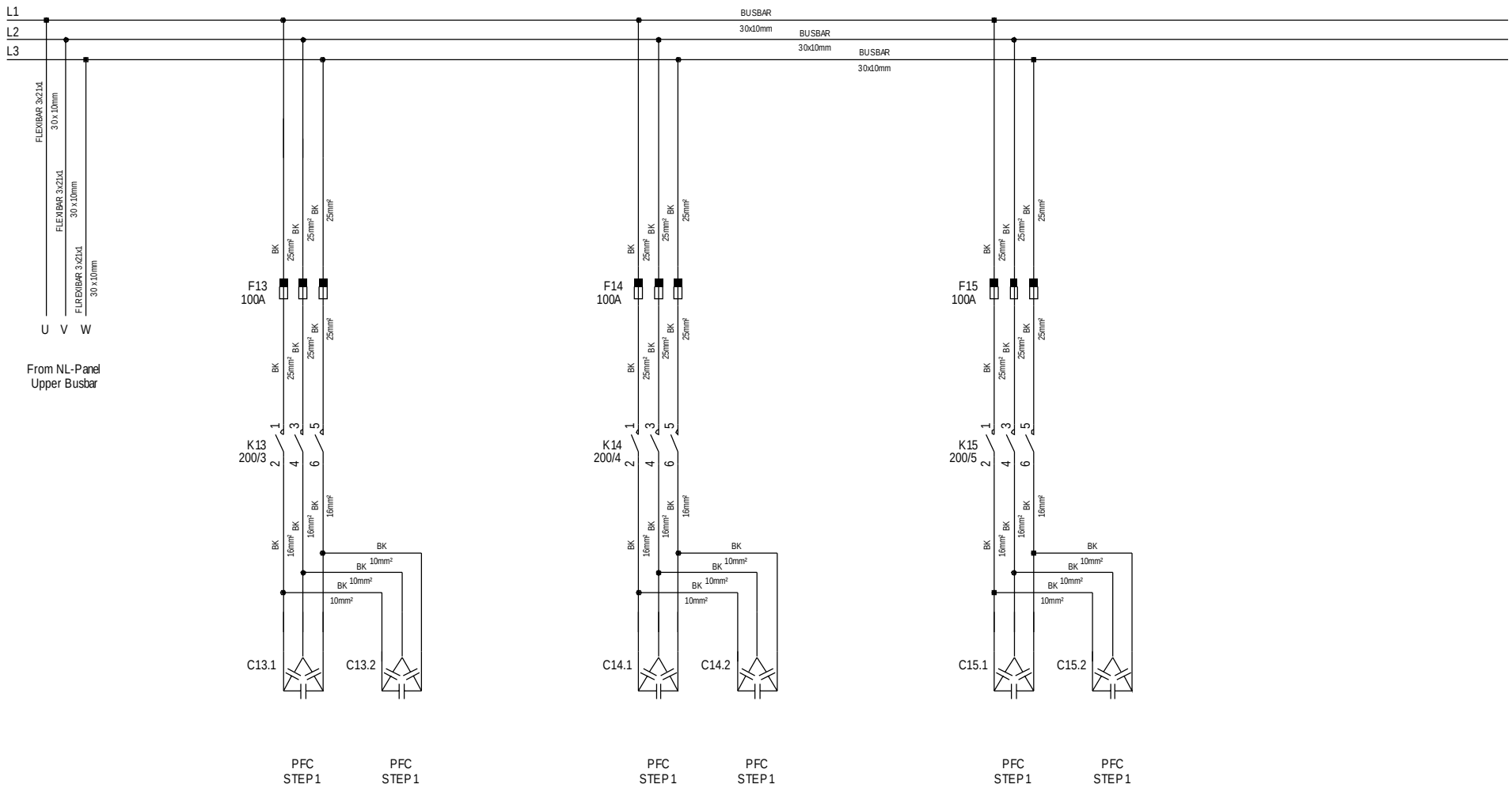

	Date	Initials	Function	Main Circuits step 1		
Designed	050111	SLB	Project title	PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050111	SLB	Rev. -	Drawing no. 6015882	Cont. sheet 101	Sheet 100

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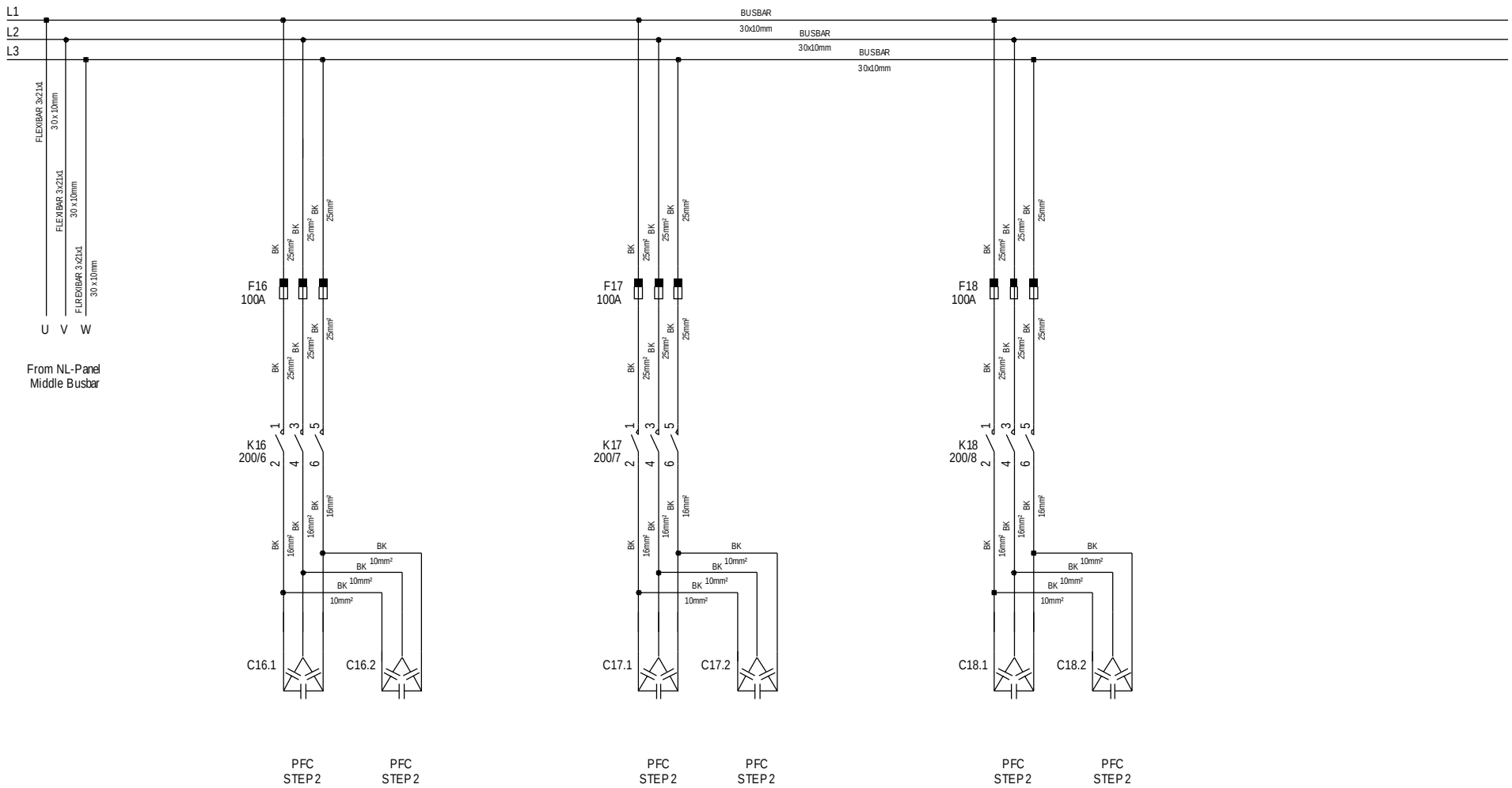

	Date	Initials	Function	Main Circuits step 2		
Designed	050111	SLB	Project title	PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050111	SLB	Rev. -	Drawing no. 6015882	Cont. sheet 102	Sheet 101

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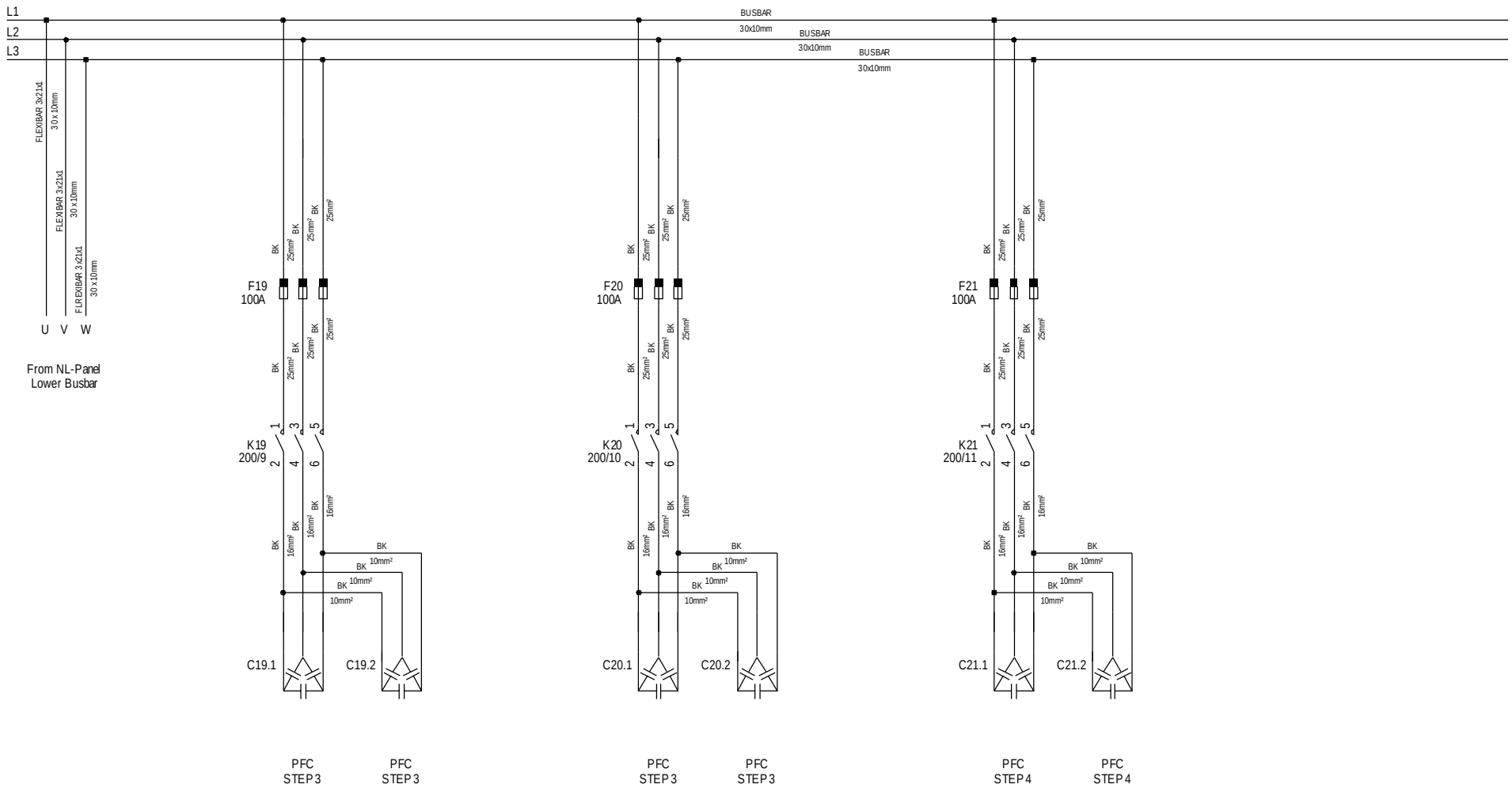

	Date	Initials	Function	Main Circuits step 3 - 4		
Designed	050111	SLB	Project title	PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050111	SLB	Rev. -	Drawing no. 6015882	Cont. sheet 200	Sheet 102

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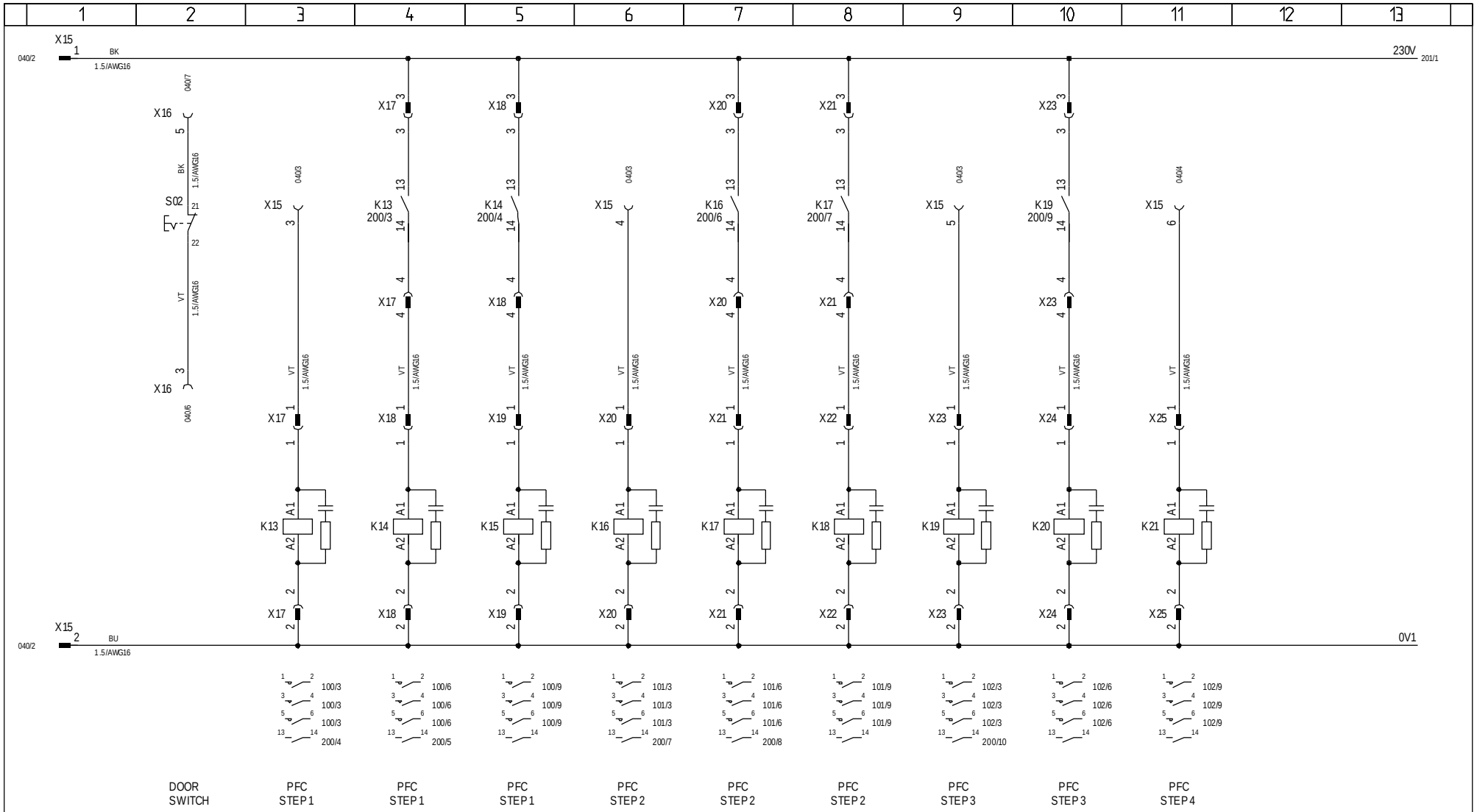

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	Date	Initials	Function	Control Circuits		
Designed	050111	SLB	Project title	PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050111	SLB	Rev. -	Drawing no. 6015882	Cont. sheet 201	Sheet 200

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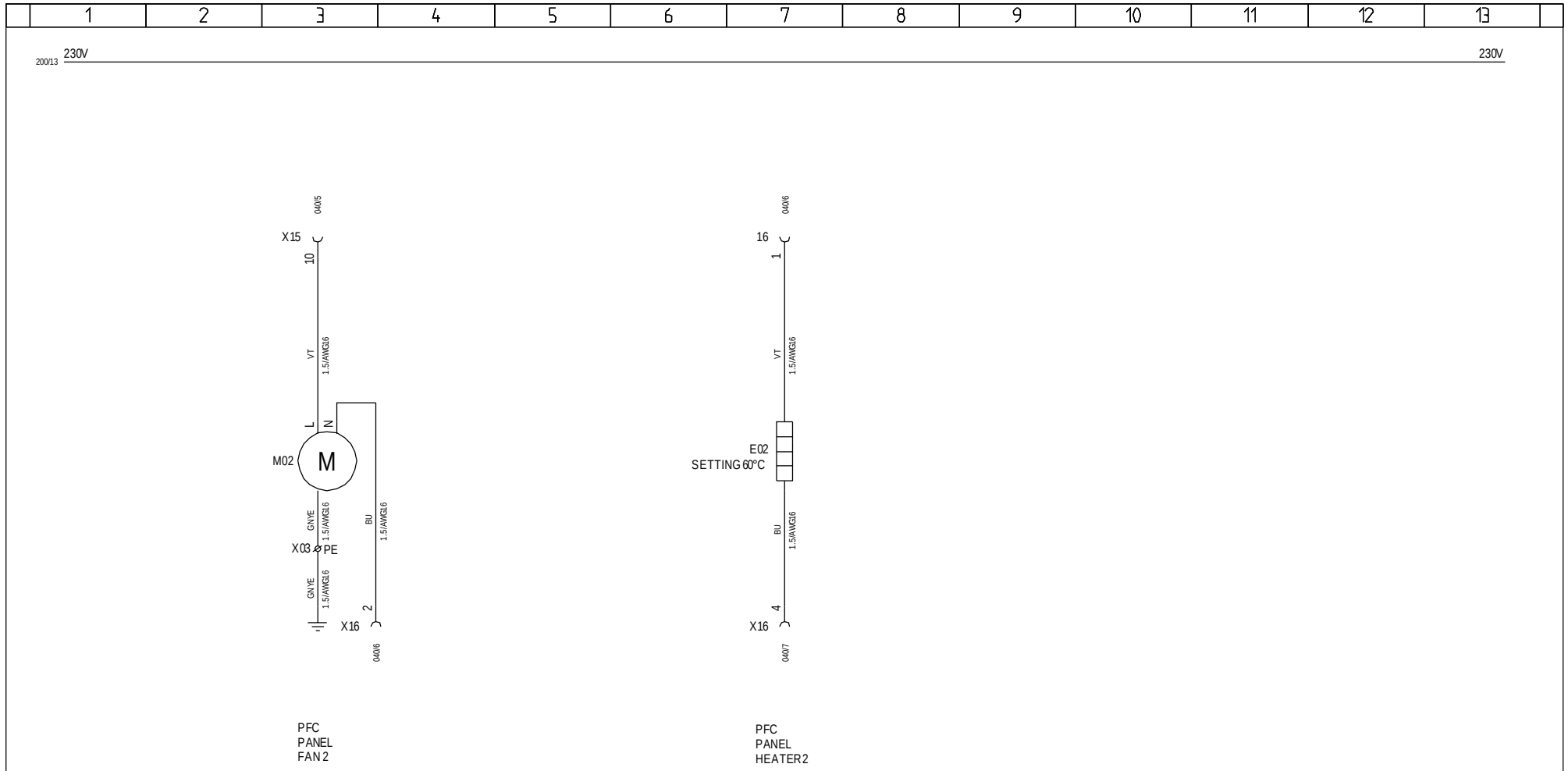

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	Date	Initials	Function	Ventilation / Heating		
Designed	050111	SLB	Project title	PFC Panel +AT3 1000kWAr, NM72/1650 - V82-1.65KW		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050111	SLB	Rev.	Drawing no. 6015882	Cont. sheet -	Sheet 201

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LST: 21000196
Version: 02

Material 60108815
Description PFC KITSET 150kVAr ADDON NM72/V82 50 Hz

Lev	Obj	Object description	Quantity	Un	SortStrng
1	60016660	PFC MODULE 50kvar 690V	3	PC	1
1	60002815	Label "Type sign f. NM82/1500C"	1	PC	LABEL
1	60098493	LASER LABEL +AT3 FL NM72 IEC I & NM82	1	PC	LABEL
1	60111495	UPGRADE KIT LABEL for +AT3 1000 kVAr	1	PC	LABEL
1	60007630	CABLE GLAND BMBC-02 M20 BRASS	1	PC	1
1	60007639	LOCKNUT BMBL-03 M20 BRASS	1	PC	1

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Change Info

Item no.	***Item text:***
765191	**UPS Panel 3kVA 230V 50/60Hz**

Active revision *for production*

Drawing no.: 961648

Version	Date	Init./App.	Description of change since last revision
0	2007-01-23	FLT/FLT	Implemented with ECO 221264 - First version

BoM no.: 765191 *Document no.: 21000231*

Version	Date	Init./App.	Description of change since last revision
04	2009-02-27	INI/FLT	Changed with ECO 247548, 250675 Removed: 1 x 098310 SIDE PAN TS8 W/W, 1 x 098329 ENCL TS8 LEFT HAND. Added: 1 x 098364 UPS ENCL W LEFT SIDE PANEL. Added: 1 x 60010316 BASE PLATE CLAMP for MOUNTING

Operation Instruction: 10000023

Version	Date	Init./App.	Description of change since last revision
02	2007-01-09	INI/BIVA	Changed with ECO 232839_Updated with new Vestas logo

Old revisions *for service*

Drawing no.: xxxxxx

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xxx/	Write the change.

BoM no.: 765191 *Document no.: 21000231*

Version	Date	Init./App.	Description of change since last revision
03	2007-11-27	INI+RUBUC/BIVA	Changed with ECO 228098, 228836 & 231946 Added: 1 x 60111564 CABLE ENTRY PLATE ALU ZINC Replacement: 8 x 60009586 repl by 8 x 60009587 SCREW ISO 7046 M 4x10 - 4.8 & 1 x 60002343 LASER LABEL repl by 1 x 118588 LABEL UL 508A
02	2007-04-02	INI/FLT	Changed with ECO223428_Prototype 60009795_SPRING WASHER DIN 6796 6 - FZ _4 pcs. Removed 60009610_SCREW ISO 7045 M 6 x 14 - 4.8_4 pcs. Removed 60038149 Screw ISO replaced by 60009610 SCREW ISO 7045 M 6 x 14 - 4.8_44 pcs.
01	2007-02-21	FLT+INI/FLT	Implemented with ECO 221744 + ECO 221579 - First version

Operation Instruction: 10000023

Version	Date	Init./App.	Description of change since last revision
01	2004-02-10	SLB/SLB	First version

Earlier Drawings and BOM no Longer Active for Serial Production

Change Info: 22000108

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E-mail: vestas@vestas.com • Web: www.vestas.com

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=UPS	2	Circuit diagrams	Info page	23-01-2007
=UPS	5	Circuit diagrams	Panel Front Layout	23-01-2007
=UPS	6	Circuit diagrams	Mounting Plate Outline	23-01-2007
=UPS	7	Circuit diagrams	Layout DIN-rail	23-01-2007
=UPS	10	Circuit diagrams	Installation Diagram	23-01-2007
=UPS	12	Circuit diagrams	Singel line diagram	23-01-2007
=UPS	14	Circuit diagrams	Incomming supply	23-01-2007
=UPS	15	Circuit diagrams	Climate Control	23-01-2007
=UPS	16	Circuit diagrams	Battery recharge	23-01-2007
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=UPS	20	Circuit diagrams	Supply after UPS	23-01-2007
=UPS	21	Circuit diagrams	Alarm signals	23-01-2007
=UPS	1	List of Documents	Table of Contents	25-01-2007

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Vestas V82 Windturbine CE/ UL/	Table of Contents	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 1
		Plot time: 08:20:53	Date: 25-01-2007	Function.: =UPS	Location.: +AT5	No. of page: 1	Next page:

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CODE FOR DESIGNATION OF COLOURS

BK: BLACK
BN: BROWN
RD: RED
OG: ORANGE
YE: YELLOW
GN: GREEN
BU: BLUE (or LIGHT BLUE)
VT: VIOLET (PURPLE)
GY: GREY (SLATE)
WH: WHITE
PK: PINK
GD: GOLD
TQ: TURQUISE
SR: SILVER
GNYE: GREEN-AND-YELLOW or ⏚
SH: SHIELD OR ⏚

VESTAS TERM:

*1: BLACK WIRE AT BROWN
*2: BLACK WIRE AT BLUE

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Vestas V82 Windturbine CE/ UL/	Info page	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 2
		Plot time: 08:20:53	Date: 09-11-2004	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/5

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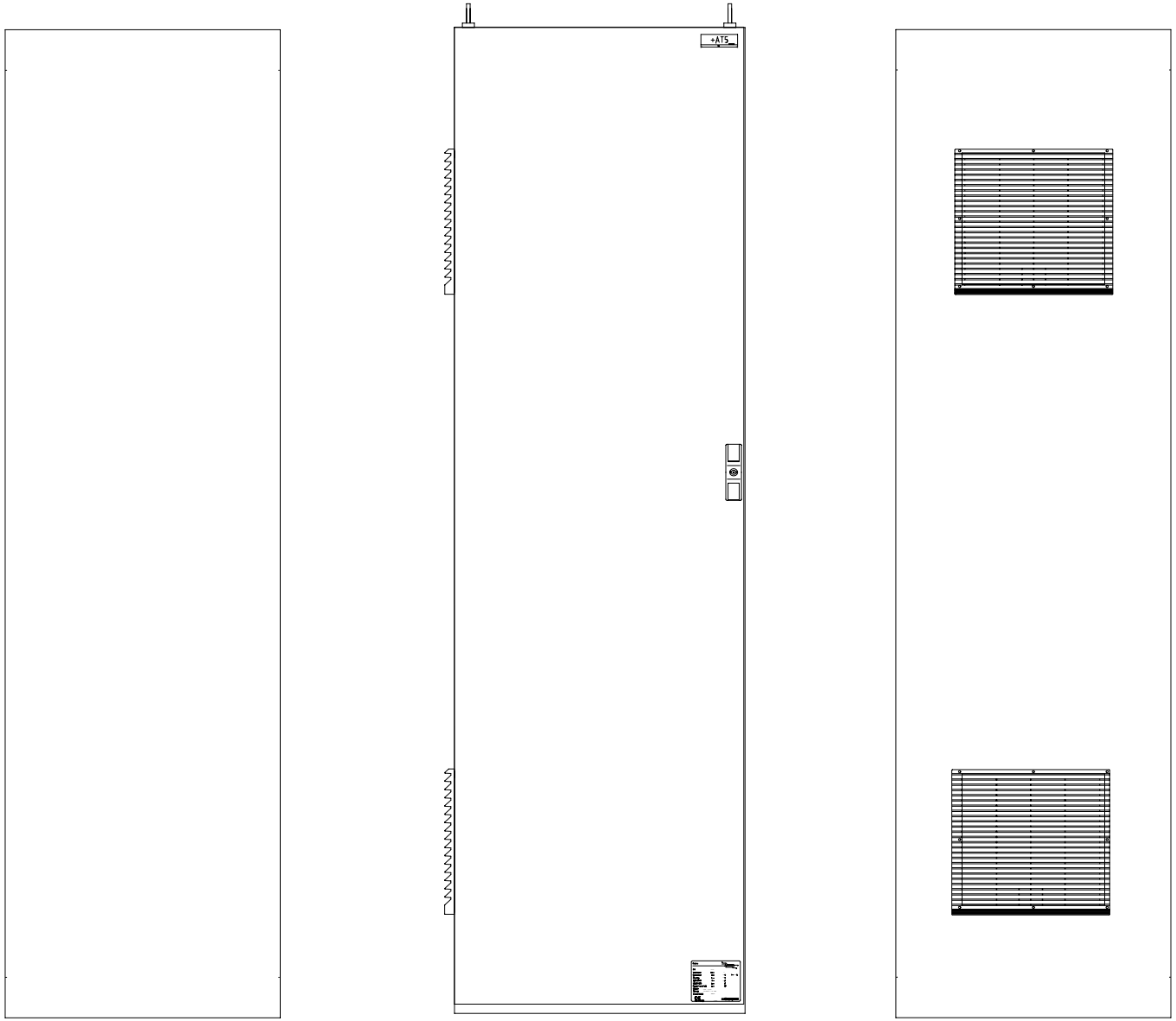

Front outline right side

Front outline

Front outline Left side

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Vestas V82 Windturbine CE/ UL/	Panel Front Layout	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 5
		Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/6

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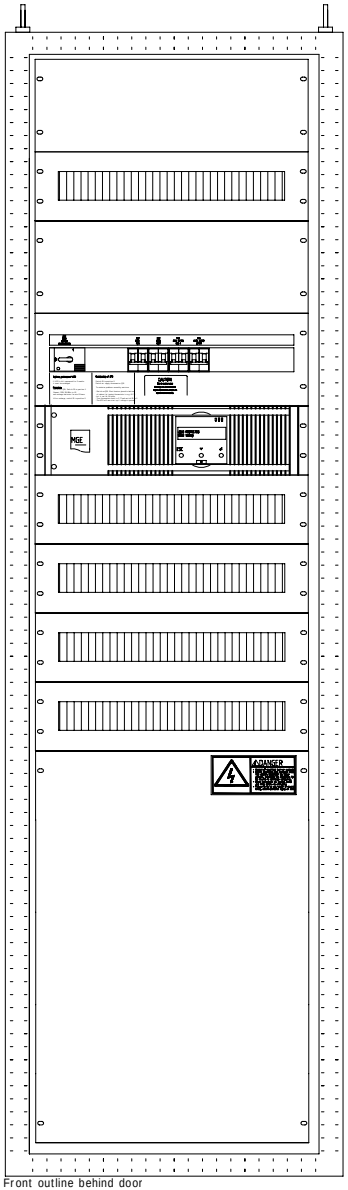
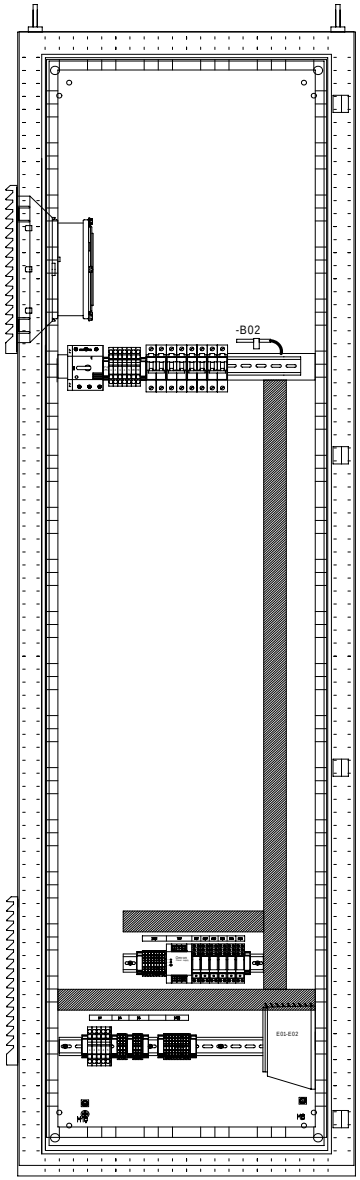


Front outline behind door



Front behind blanking plates

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Vestas V82 Windturbine CE/ UL/	Mounting Plate Outline	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 6
		Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/7

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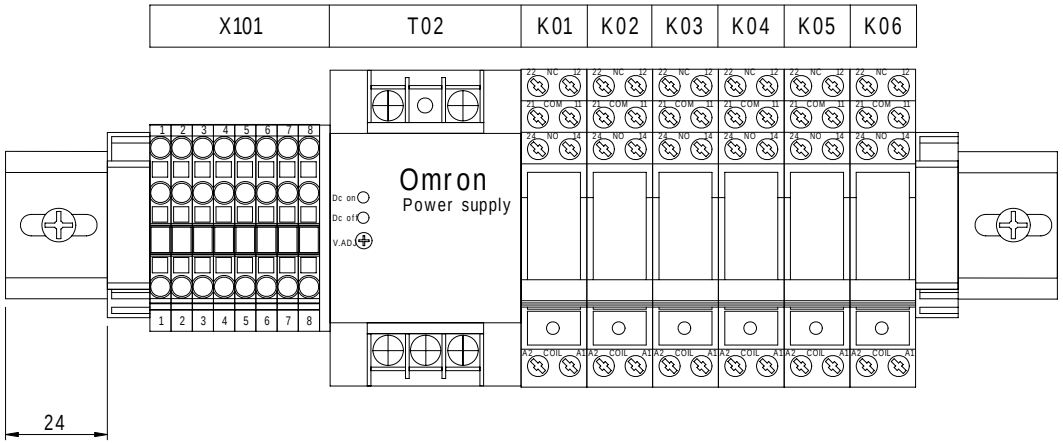

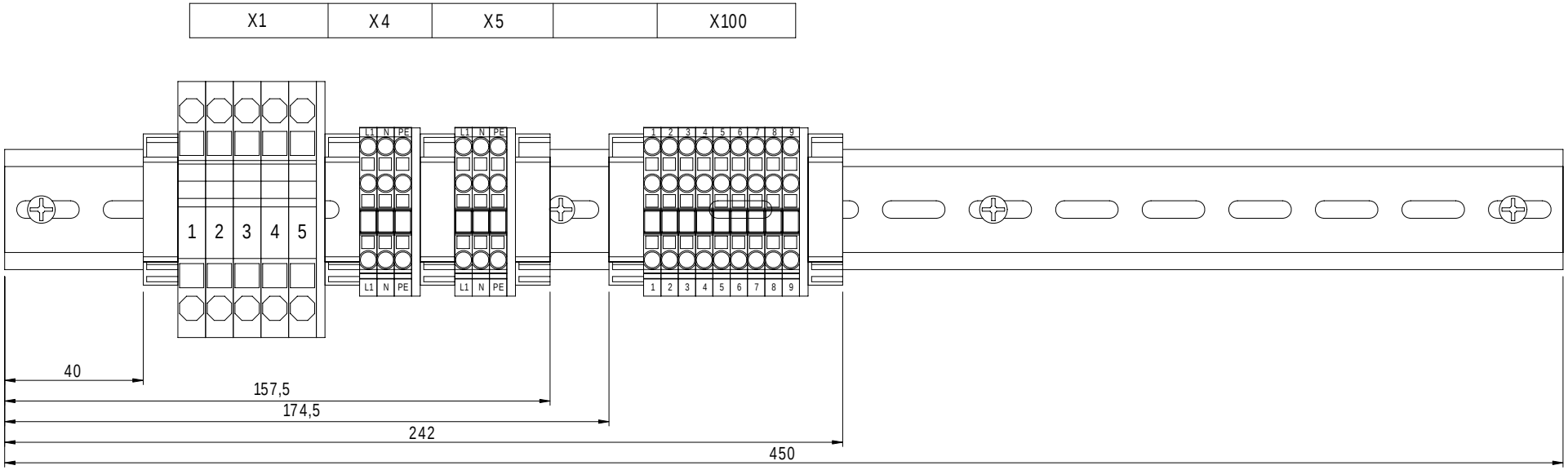

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Vestas V82 Windturbine CE/ UL/	Layout DIN-rail	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 7
		Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/10

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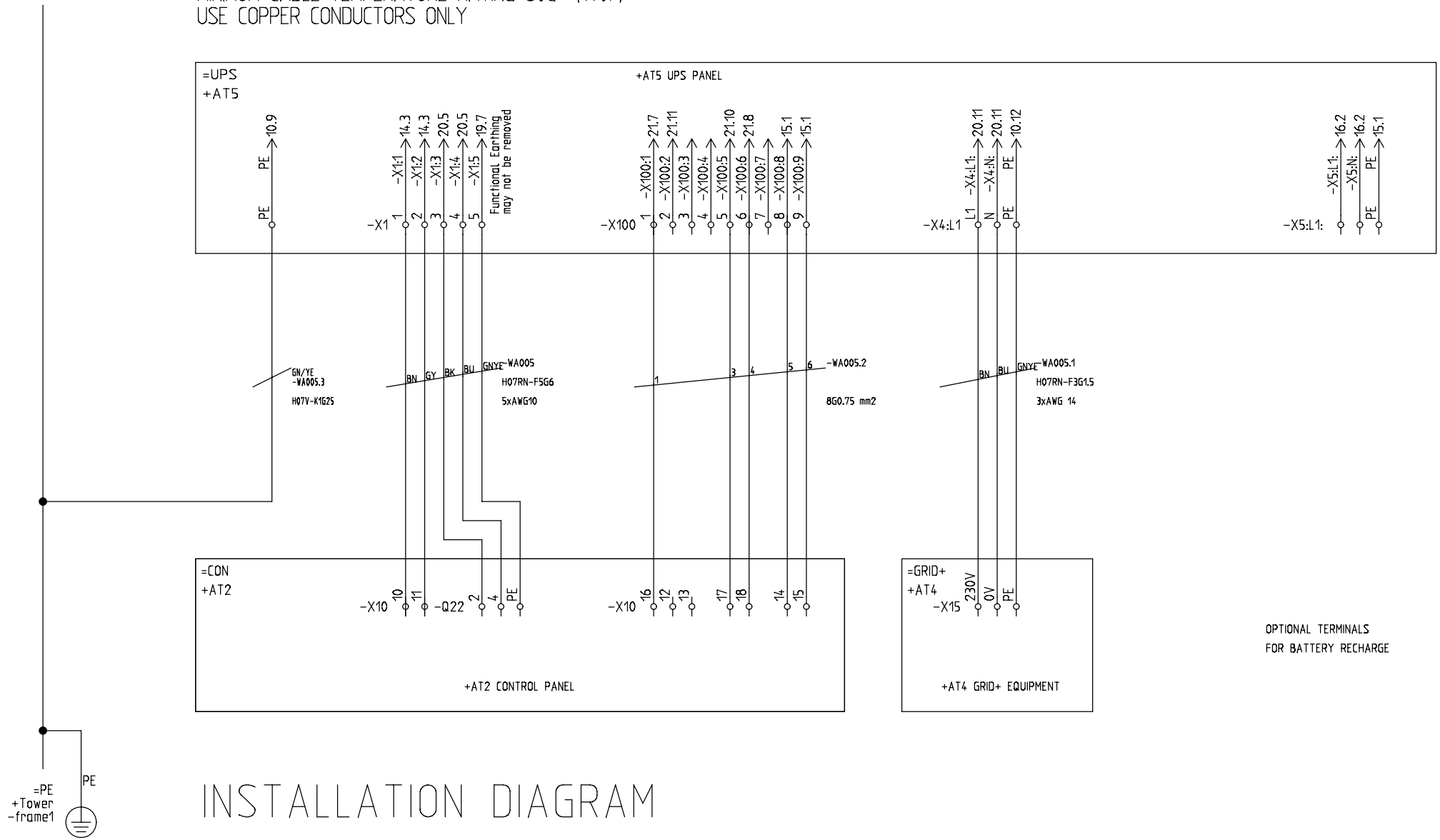
MINIMUM CABLE TEMPERATURE RATING 60C° (140F)
USE COPPER CONDUCTORS ONLY



INSTALLATION DIAGRAM

Vestas Wind Systems A/S Alsvej 21 8900 Randers Denmark Tel.: +45 97 30 00 00 Fax: +45 97 30 00 01	Vestas V82 Windturbine CE/ UL/	Installation Diagram	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 10
			Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/12

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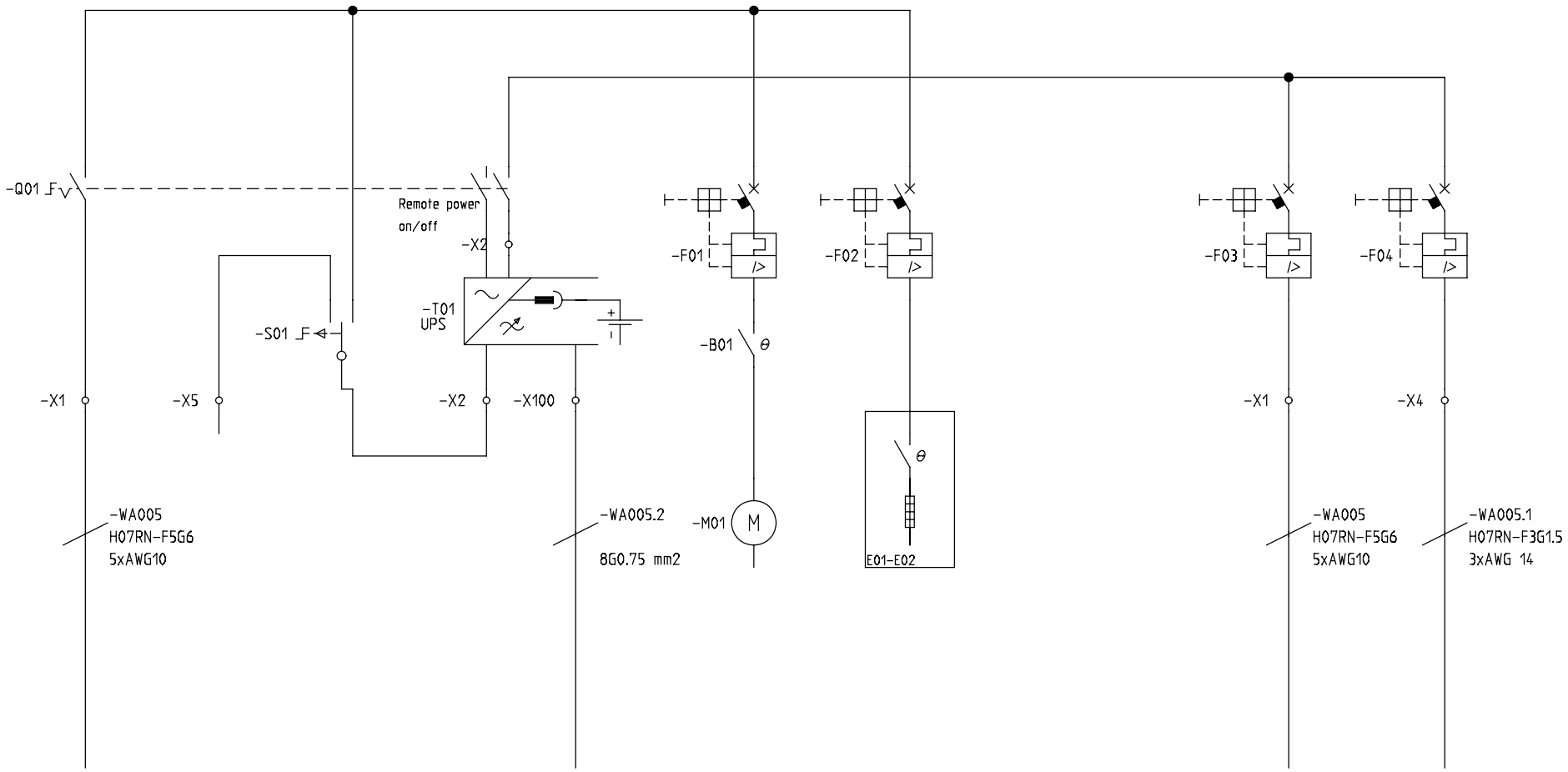

INCOMMING SUPPLY FROM +AT2

TERMINAL FOR BATTERY RECHARGING

UPS UNIT

ALARM SIGNALS

EXCHANGEABLE BATTERY

COOLING FAN IN ASSEMBLY

HEATING ELEMENTS IN ASSEMBLY

230V UPS SUPPLY TO +AT2

230V UPS SUPPLY TO GRID + EQUIPMENT

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Vestas V82 Windturbine CE/ UL/	Singel line diagram	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 12
		Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/14

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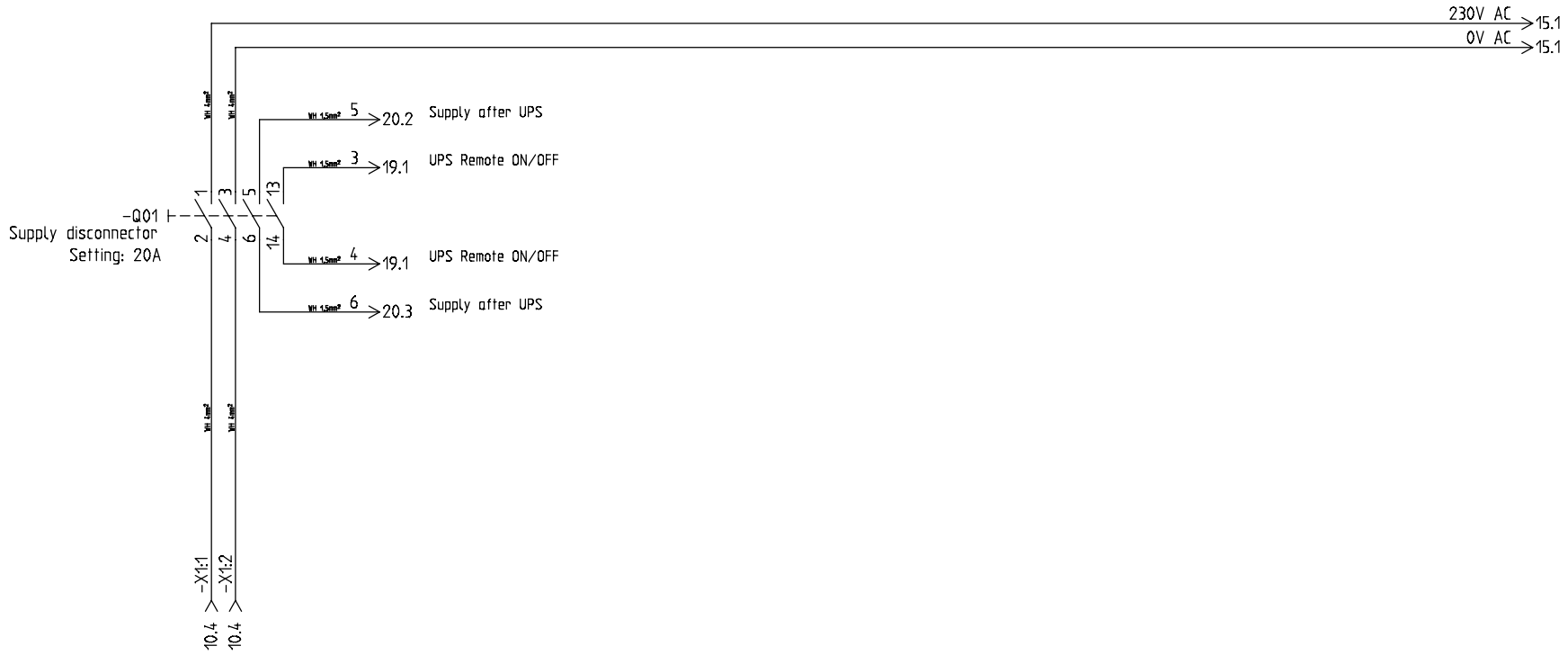

Vestas Wind Systems A/S Alsvej 21 8900 Randers Denmark Tel.: +45 97 30 00 00 Fax: +45 97 30 00 01	Vestas V82 Windturbine CE/ UL/	Incomming supply	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 14
			Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/15

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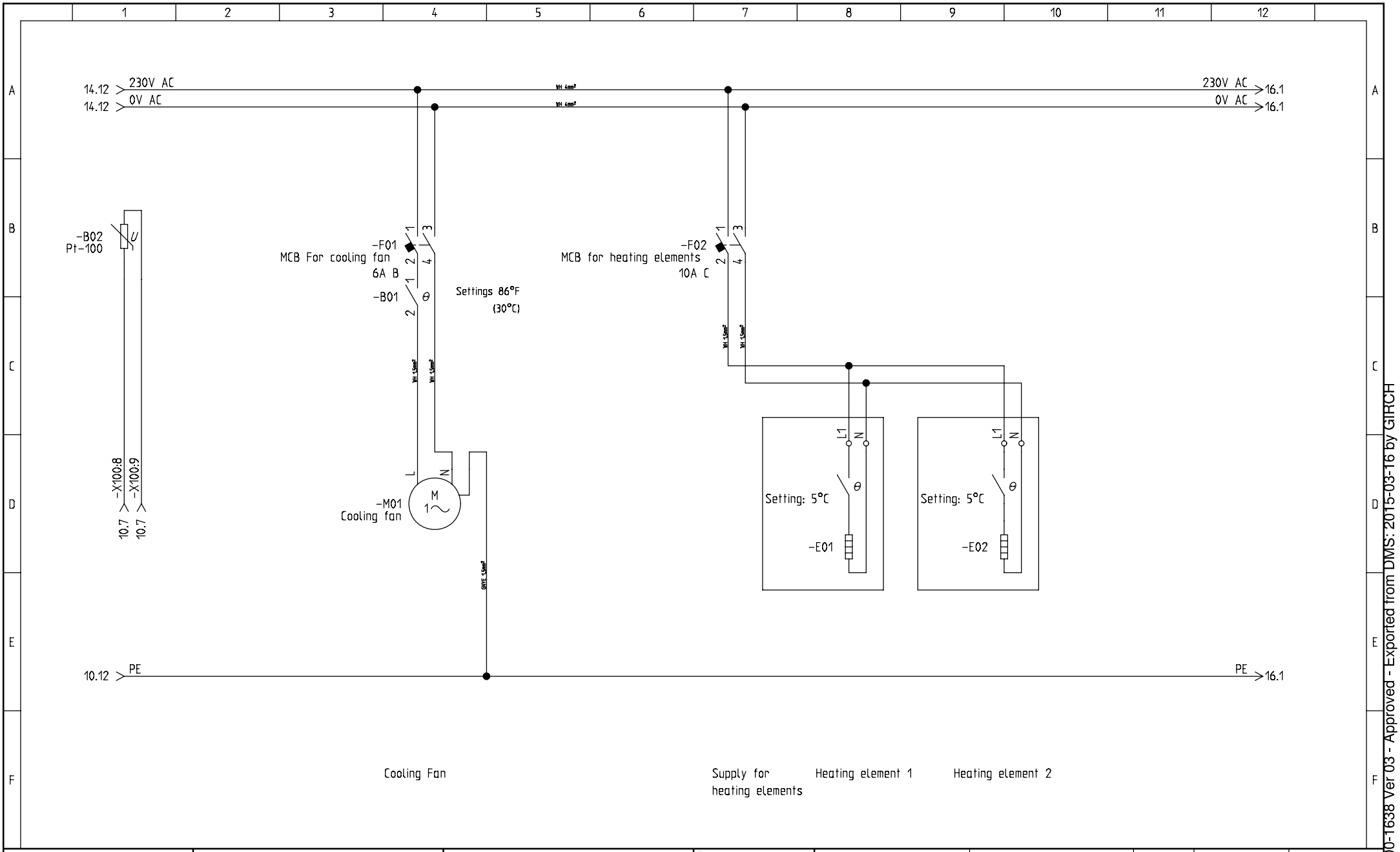

Vestas Wind Systems A/S Alsvej 21 8900 Randers Denmark Tel.: +45 97 30 00 00 Fax: +45 97 30 00 01	Vestas V82 Windturbine CE/ UL/	Climate Control	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 15
			Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/16

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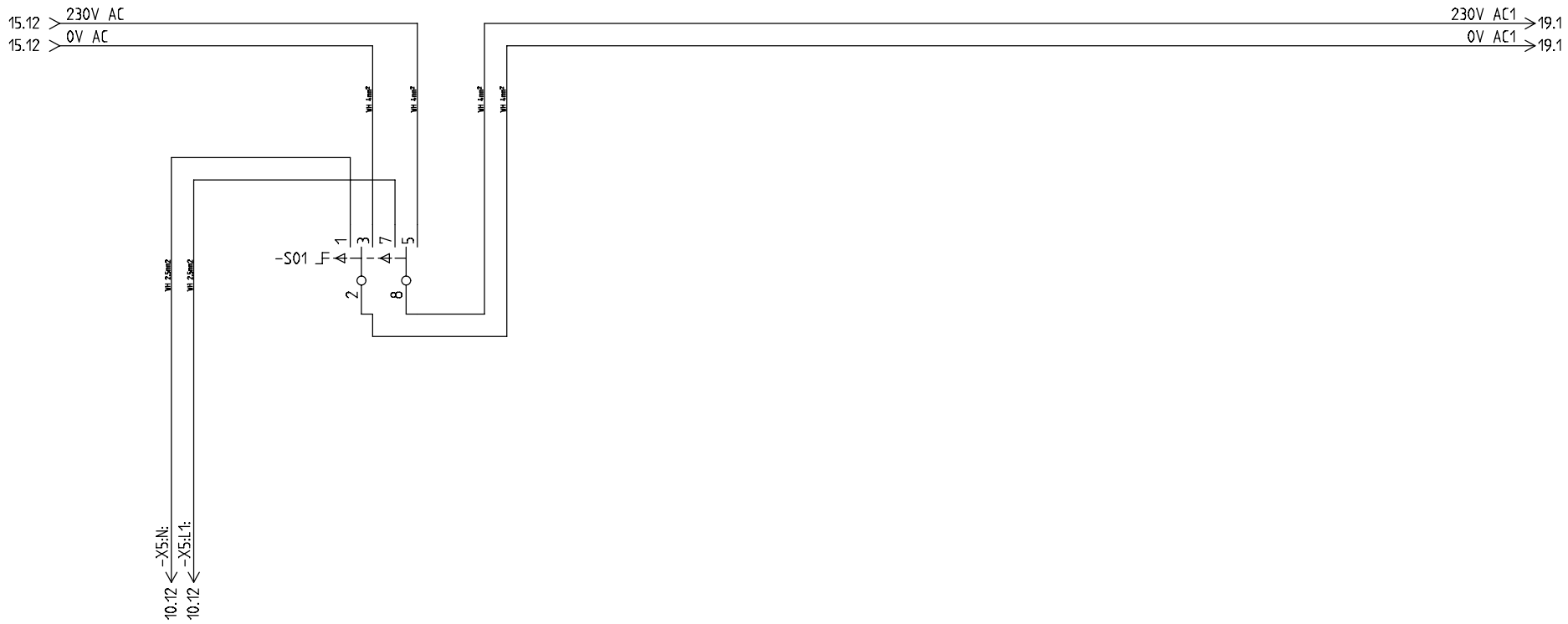

Terminal for supply of Battery recharge

Battery recharge Switch

Vestas Wind Systems A/S Alsvej 21 8900 Randers Denmark Tel.: +45 97 30 00 00 Fax: +45 97 30 00 01	Vestas V82 Windturbine CE/ UL/	Battery recharge	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 16
			Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/19

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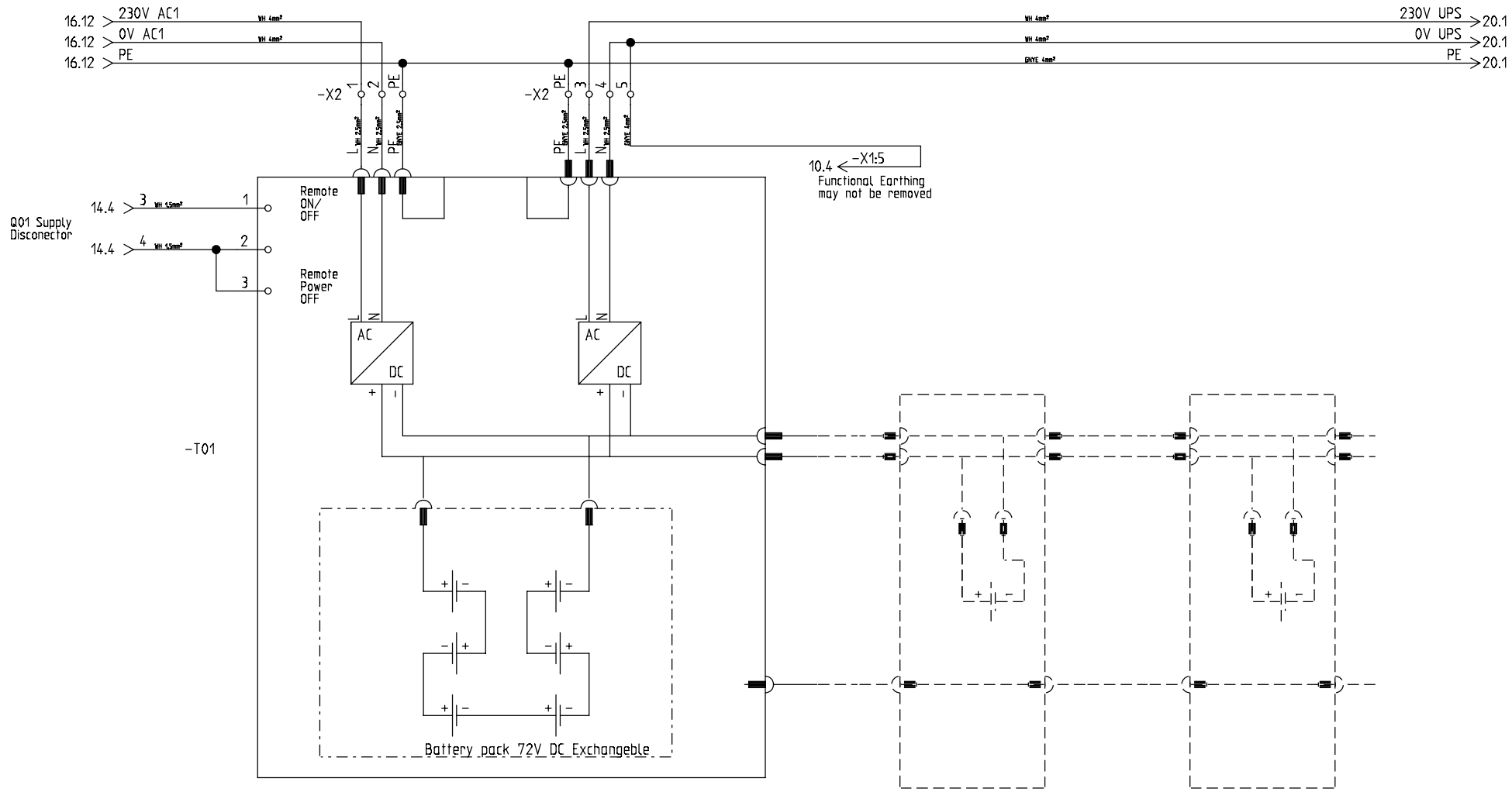

3 kVA UPS Pulsar M
For opperation instruction see document

Optional battery pack 72V DC
For extended back up time

Option for uptil
4 extension packs

Vestas Wind Systems A/S Alsvej 21 8900 Randers Denmark Tel.: +45 97 30 00 00 Fax: +45 97 30 00 01	Vestas V82 Windturbine CE/ UL/	UPS system	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 19
			Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/20

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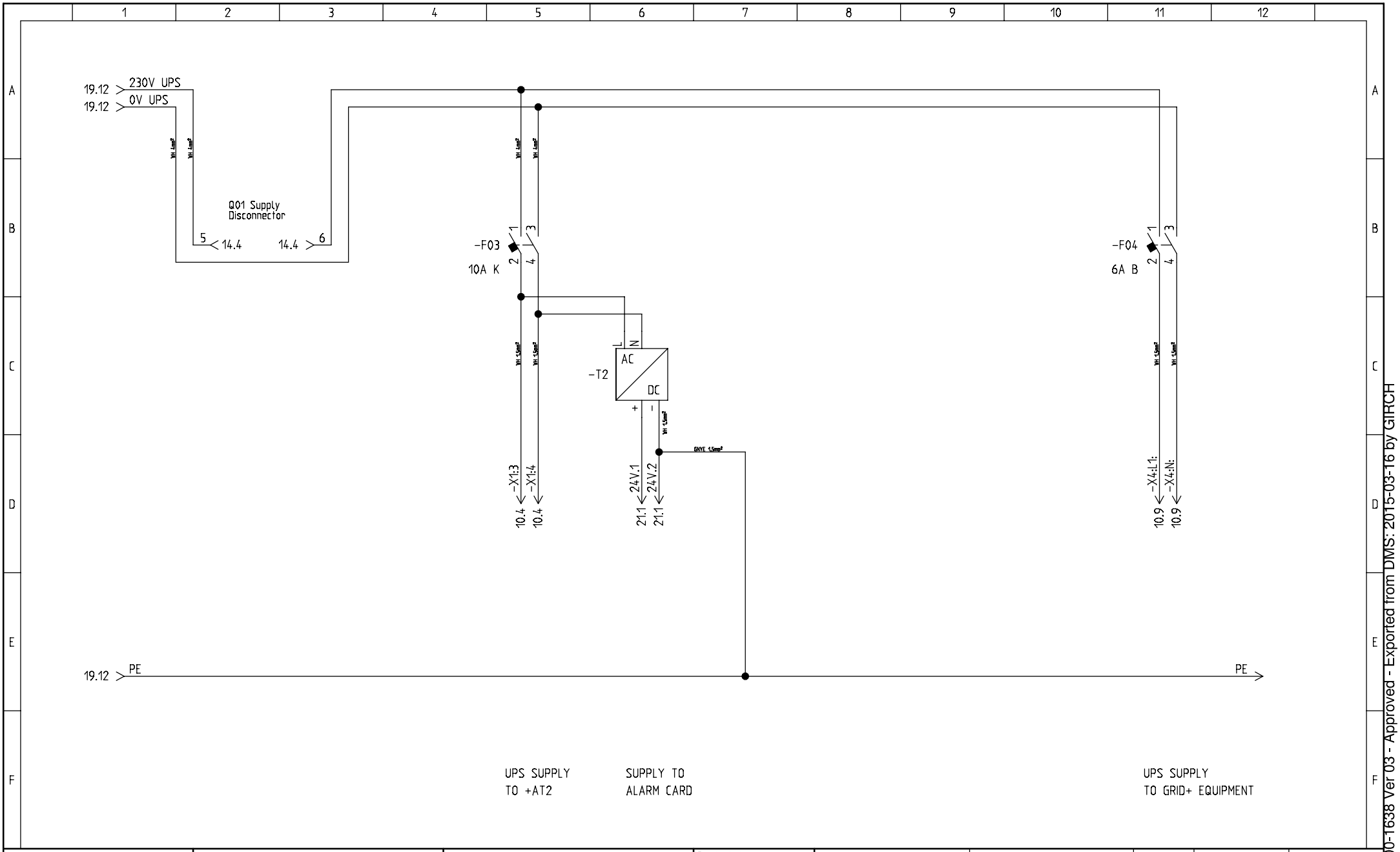

Vestas Wind Systems A/S
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Vestas V82 Windturbine CE/ UL/	Supply after UPS	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 20
		Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page: =UPS/21

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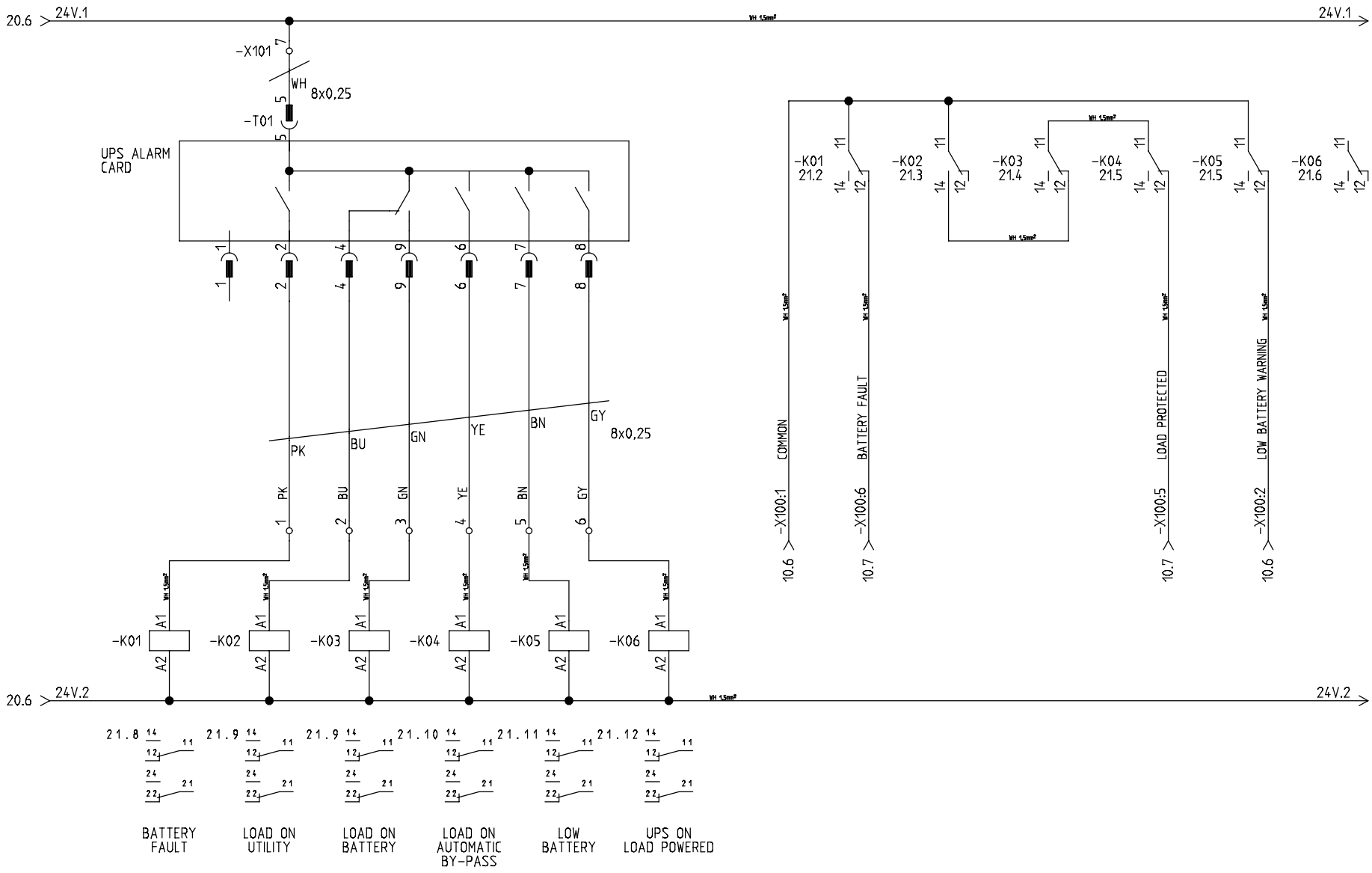

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Vestas V82 Windturbine CE/ UL/	Alarm signals	Plot date: 31-01-2007	Proj. no.: UPS V82	Draw. no.: 961648	Init.: FLT	Rev.: 0	Page: 21
		Plot time: 08:20:53	Date: 23-01-2007	Function.: =UPS	Location.: +AT5	Proj. pages: 13	Next page:

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765191 UPS PANEL 3kVA 230V 50/60Hz

Component	Description	Qty per	Stk UM	Position Number
113975	BLIND COVER GREY	1,000	EA	
118588	LABEL UL 508A ENCLOSED ICP	1,000	EA	
118671	MARK WAGO +AT5 UPS PANEL	1,000	EA	
118934	LABEL ELECTRICAL WARNING UNIV.	1,000	EA	
119023	LABEL TYPE SIGN UPS PANEL 3kVA	1,000	EA	
119024	LABEL "UPS COMMISONING"	1,000	EA	
119025	LABEL "UPS RECHARGE"	1,000	EA	
119026	LABEL 25X432MM ROW 1.1 AT5 UPS	1,000	EA	
119027	WARNING LABEL HEAVY EQUIPMENT	1,000	EA	
119028	LABEL FOR TERMINAL ROW	1,000	EA	
119029	LABEL FOR DIN-RAIL	1,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60002619	LABEL "UPS PANEL +AT5"	1,000	EA	
60002670	LABEL	1,000	EA	
60006819	STICKER "EARTH" 14mm	5,000	EA	
60007458	CABLE TIE 140x2.5mm WH	20,000	EA	
60007630	CABLE GLAND M20 BRASS BMBC-02	3,000	EA	
60007633	CABLE GLAND M40 BRASS BMBC-05	1,000	EA	
60007639	LOCKNUT M20 BRASS BMBL-03	3,000	EA	
60007642	LOCKNUT M40 BRASS BMBL-06	1,000	EA	
60007829	WIRE TIN 16 150MM Ø8 IEC/UL	1,000	EA	
60009587	SCR CRS UH M4x10 4.8 FZB	8,000	EA	
60009605	SCR CRS PH M5x12 4.8 FZB	8,000	EA	
60009610	SCR CRS PH M6x14 4.8 FZB	44,000	EA	
60009639	SCR HEX SET M8x20 8.8 FZB	1,000	EA	
60009670	SCR HEX SET M10x16 8.8 FZB	2,000	EA	
60009673	SCR HEX SET M10x25 8.8 FZB	1,000	EA	
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	25,000	EA	
60009803	WASHER SPR 8 FZG	1,000	EA	
60009809	WASHER SPR 10 FZG	1,000	EA	
60009839	WASHER LOCK 5 FZB	8,000	EA	
60009841	WASHER LOCK 8 FZB	1,000	EA	
60009842	LOCK WASHER DIN 6798A 10 - FZB	1,000	EA	
60009842	LOCK WASHER DIN 6798A 10 - FZB	2,000	EA	
60009853	WASHER 21100016 6MM	44,000	EA	
60009873	NUT ISO 4032 M 8 - 8 - FZB	1,000	EA	
60009879	NUT HEX M10 8	1,000	EA	
60009895	NUT LIFTING EYE M10 FZB	2,000	EA	
60009900	NUT CLIP FOR 19" RACK M6	44,000	EA	
60010316	BASE PL CLAMP TS8 WA4547276	1,000	EA	
60010699	CONDENSATION PROT DRY BAG 500G	1,000	EA	
60013820	PROFILE ALU 19" SWING FRAME	1,000	EA	
60013894	BLOCK ALU F DIN-RAIL 19"	2,000	EA	
60024050	LOCKTITE 401 GLUE 20g	0,000	EA	
60095579	LABEL " CAUTION! RISK OF. "	1,000	EA	
60096851	TORX SCREW 2486.500 5.5X13MM	4,000	EA	
60096851	TORX SCREW 2486.500 5.5X13MM	4,000	EA	
60096851	TORX SCREW 2486.500 5.5X13MM	37,000	EA	
60096871	THREADED BLOCK PS4163.000 8MM	1,000	EA	
60096938	SLIDE RAIL 7492.500 HEAVY DUTY	6,000	EA	
60096957	CORNER BRA 7827.220 TS8 2200mm	4,000	EA	
60096968	PUNCH SECTION 8612.060 INNER	8,000	EA	
60096970	PUNCH SECTION 8612.160 OUTER	1,000	EA	
60100577	WIRING +AT5 UPS PANEL 25MM2	1,000	EA	
60111564	CABLE ENTRY PLATE ALU ZINC	1,000	EA	
765191/100	WIRESET FOR 765191	1,000	EA	
765191/101	WIRESET FOR 765191	1,000	EA	
765191/200	WIRING DUCT NO 1 FOR 765191	1,000	EA	
765191/201	WIRING DUCT NO 2 FOR 765191	1,000	EA	
765191/202	WIRING DUCT NO 3 FOR 765191	1,000	EA	
765191/203	WIRING DUCT NO 4 FOR 765191	1,000	EA	
765191/204	WIRING DUCT NO 5 FOR 765191	1,000	EA	
765191/205	WIRING DUCT NO 6 FOR 765191	1,000	EA	
765191/300	LID WIRING DUCT NO 1 765191	1,000	EA	
765191/301	LID WIRING DUCT NO 2 765191	1,000	EA	
765191/302	LID WIRING DUCT NO 3 765191	1,000	EA	
765191/303	LID WIRING DUCT NO 4 765191	1,000	EA	
765191/304	LID WIRING DUCT NO 5 765191	1,000	EA	
765191/305	LID WIRING DUCT NO 6 765191	1,000	EA	
765191/400	DIN-RAIL NO 1 FOR 765191	1,000	EA	
765191/401	DIN-RAIL NO 2 FOR 765191	1,000	EA	

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765191/402	DIN-RAIL NO 3 FOR 765191	1,000	EA	
765191/403	DIN-RAIL NO 4 FOR 765191	1,000	EA	
765191/404	DIN-RAIL NO 5 FOR 765191	1,000	EA	
938902	WIRING UPS V82 3kVA 230V 50/60	0,000	EA	
961648	UPS V82 CIRCUIT DIAGRAMS	0,000	EA	
119031	LABEL B01	1,000	EA	B01
60009289	THERMOSTAT COOL 140 -30 F UL	1,000	EA	B01
119032	LABEL B02	1,000	EA	B02
60007481	CABLE RACK TK 5-7	1,000	EA	B02
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B02
60009578	SCREW ISO 7045 M 3 x 8 - FZB	1,000	EA	B02
119033	LABEL E01	1,000	EA	E01
60014729	HEATER FAN CR0 27 475/550W UL	2,000	EA	E01-E02
119034	LABEL E02	1,000	EA	E02
184965	AUTOMAT.FUSE S202-B 6	1,000	EA	F01
189757	MCB S202C10A 10A C 2P	1,000	EA	F02
185037	MCB S202 K10 10.0A	1,000	EA	F03
184965	AUTOMAT.FUSE S202-B 6	1,000	EA	F04
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K01
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K01
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K01
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K01
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K02
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K02
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K02
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K02
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K03
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K03
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K03
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K03
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K04
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K04
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K04
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K04
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K05
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K05
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K05
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K05
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K06
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K06
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K06
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K06
098435	MOUNT PLATE TS8 W/W	1,000	EA	MOUNT
60096979	ATTACHMENT MOUNT PLATE TS	2,000	EA	MOUNT
092048	VENTI. OUTLET FILTER 3326.207	1,000	EA	M01
119030	LABEL M01	1,000	EA	M01
60110934	FAN 230V 500M3/H 323X323X125MM	1,000	EA	M01
098309	SIDE PAN TS8 562X2197MM 7035	1,000	EA	PANEL
098310	SIDE PAN TS8 562x2197mm W.WORK	1,000	EA	PANEL
098329	ENCL TS8 8626.500 LEFT HANDED	1,000	EA	PANEL
098364	UPS ENCL W LEFT SIDE PANEL	1,000	EA	PANEL
098432	BLIND PLATE 19" 4U FOR FUSES	1,000	EA	PANEL
098433	FRT COVER 19" 17U RAL7012	1,000	EA	PANEL
098434	BLIND PLATE 19" 3U ENCL VENTED	5,000	EA	PANEL
60013862	FRT COVER 19" 4U RAL 7012	2,000	EA	PANEL
093498	AUX CONTACT HK-11 SIDEMOUNTED	1,000	EA	Q01
188256	CIRCUIT-BREAK MS325 16-20A	1,000	EA	Q01
60091912	END STOP WAGO 249-117 10MM	1,000	EA	Q01
185038	CH. OVER E221-4/2 16A/250V 2-P	1,000	EA	S01
60091912	END STOP WAGO 249-117 10MM	1,000	EA	S01
098436	MOUNT BRACKET F. PULSAR M LEFT	1,000	EA	T01
098437	MOUNT BRACKET F. PULSAR M RIGH	1,000	EA	T01
186414	MGE UPS PULSAR M 3000VA	1,000	EA	T01
186415	RELAY CARD FOR PULSAR M	1,000	EA	T01
60005005	POWER SUPPLY S82K-01524 110-23	1,000	EA	T02
60006073	TERMINAL WAGO 0.2-6.0MM2	5,000	EA	X1
60006085	END SEC 282-325 1-LEVEL GY	1,000	EA	X1
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X1
60006075	TERMINAL WAGO 0.08-2.5MM2	9,000	EA	X100
60006080	END SEC 870-933 1-LEVEL GY	1,000	EA	X100
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X100
60006075	TERMINAL WAGO 0.08-2.5MM2	8,000	EA	X101
60006080	END SEC 870-933 1-LEVEL GY	1,000	EA	X101
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X101
60006073	TERMINAL WAGO 0.2-6.0MM2	5,000	EA	X2

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60006074	TERMINAL WAGO 0.2-6.0MM2	2,000	EA	X2
60006085	END SEC 282-325 1-LEVEL GY	1,000	EA	X2
60006091	PUSH-IN JUMPER BAR 282-402	1,000	EA	X2
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X2
60006075	TERMINAL WAGO 0.08-2.5MM2	1,000	EA	X4
60006076	TERMINAL WAGO 0.08-2.5MM2, BU	1,000	EA	X4
60006077	TERMINAL WAGO 0.08-2.5MM2	1,000	EA	X4
60006080	END SEC 870-933 1-LEVEL GY	1,000	EA	X4
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X4
60006075	TERMINAL WAGO 0.08-2.5MM2	1,000	EA	X5
60006076	TERMINAL WAGO 0.08-2.5MM2, BU	1,000	EA	X5
60006077	TERMINAL WAGO 0.08-2.5MM2	1,000	EA	X5
60006080	END SEC 870-933 1-LEVEL GY	1,000	EA	X5
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X5

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Operating Instructions for UPS Panel 4,5 kVA

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CONTENT

1. SAFETY RULES: 3

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3. UPS SEEN FROM BACK: 4

4. INSTALLATION: 5

5. START-UP: 5

6. DIAGNOSTICS: 6

7. MAINTENANCE: 7

8. REPLACEMENT OF THE ELECTRONIC MODULE: 8

9. REPLACEMENT OF THE BATTERY MODULE: 9

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Operating Instructions **STANDBYE SUPPLY SYSTEM, UPS**

UPS Procedure

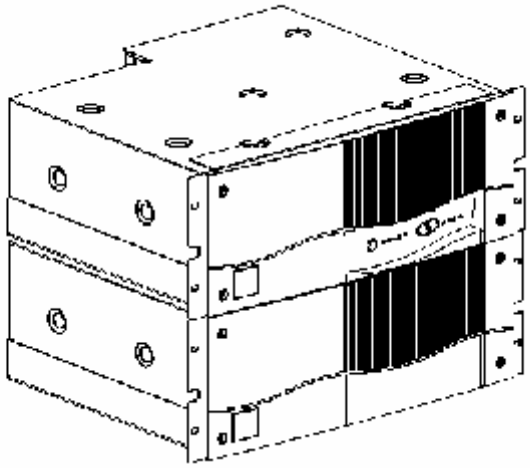
1. Safety rules:

1.1. Safety of persons

A UPS has its own internal power source (the battery). Consequently, the output terminals may be energized even if the UPS is disconnected from the AC-power source !!!!.

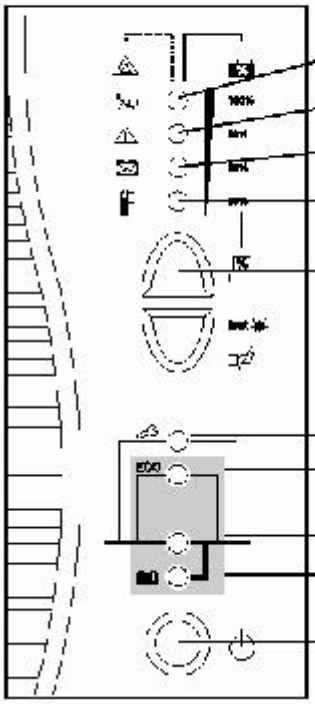
2. UPS seen from front:

4,5 and 6 kVA rack models:



	Dimensions in mm (H x W x D)
Electronic module	177 (4U) x 483 x 462
Battery module	177 (4U) x 483 x 462

	Weight in kg
Electronic module	18
Battery module	51



If LED´s flashing	normal indicated value	value indicated if bottom 15 is pressed
Alarms	**% battery remaining**	**% load**
11 UPS overload	100%	100%
12 electronics fault	80%	80%
13 battery fault	50%	50%
14 ambient temp. > 40°C	20%	20%

15 hold down to display percent load.

16 lamp test or buzzer OFF.

17 operation on manual bypass.

18 operation in ECO mode.

19 operation in ON-LINE mode.

20 operation on battery power.

21 ON/OFF

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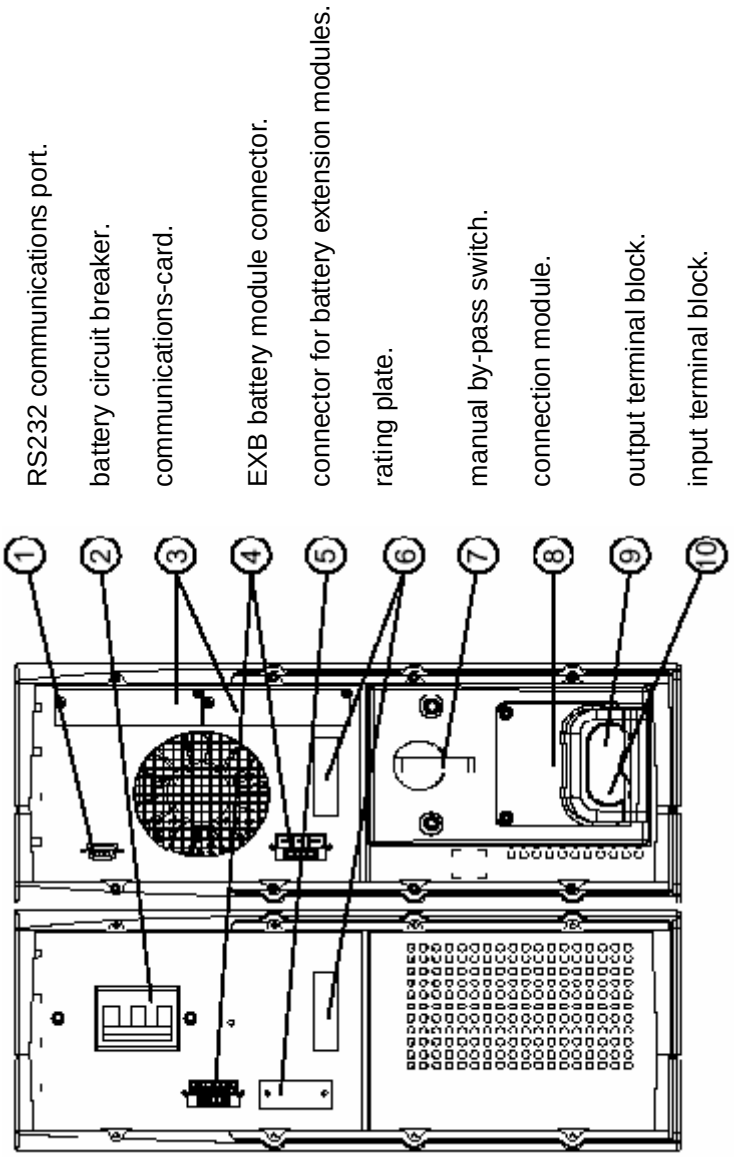
3. UPS seen from back:



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4. Installation:

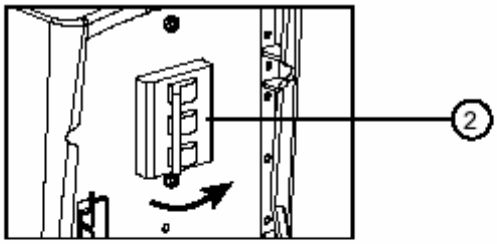
Before carrying out any connections, check upstream protection in panel +AT2 is (OFF).
Connect outgoing cables in panel +AT2 and +AT5 (UPS Panel)

5. Start-up:

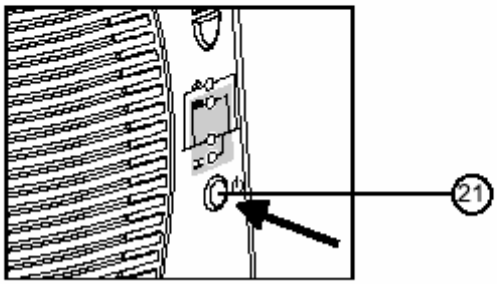
Switch off supply disconnector Q01
and control fuse F05.
Turn on supply from +AT2 upstream device.

To minimize problems caused by moisture:

-Switch on Q01. Start heaters placed in bottom
of cabinet by turning thermostate to e.g. 40 °C.
-Let it run for 24 hours.
Check that voltage on –X1 terminal 1 and 2 is 230 VAC
-Turn thermostate back to 0 °C and switch on F05.



1. Insure battery circuit breaker(s) is ON. (2)
(placed on back of battery module)



2. Press the ON / OFF button (21).

The buzzer beeps three times.
After 30 seconds the UPS is fully operational.
and LED 19 goes ON.

If LED 19 or 20, not goes ON,
or if LED 11, 12, 13 or 14 flash, there is a fault

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6. Diagnostics:

Generally if a fault is detected switch off Q1 wait 30 sec. then switch on again.

Step	UPS status	Check list
1	**UPS starting up:** Connect UPS to mains Switch battery circuit breaker to **ON** Push N°21 **ON** button. **Leds status in normal running:** Leds *11* to *14* (battery charge) may be **ON** If it's not the case, go to step **2**. Led 19 should be **ON**, if not see check list	Check mains voltage presence Check mains connection Check Battery circuit breaker position and battery connection Keep the UPS connected to the mains 8H Check the starting procedure in the user manual
2	If led ***11*** is blinking and buzzer is beeping: UPS has detected an overload. If it's not the case, go to step **3**	Try to remove some load from the UPS Check the type of load (PC, automation device, motor etc.)
3	If led ***12*** is blinking and buzzer is beeping : UPS has detected an internal fault. The load may or may not be provided anymore. If it's not the case, go to step **4**	Turn the bypass switch to manual position
4	If led *13* is blinking and buzzer is beeping : UPS has detected a battery fault. If it's not the case, go to step **5**	Keep the UPS connected to the mains 8H
5	If led *14* is blinking,: UPS has detected a temperature fault. If it's not the case, go to step **6**	The room temperature is over 40°C Check the clearance behind the fan and in front of the UPS Check the fan is running
6	If led ***20*** is lit solid : UPS is running on batteries If it's not the case,go to step **7**	Check mains voltage presence Check mains connection
7	If led **18** is **ON** : the load is provided directly by the mains. If it's not the case, go to step **8**.	Check leds *11*, *12*, *13* and *14* to know which fault transferred the UPS to automatic bypass Check the LCD mode is not personnalised Check the bypass rotary switch is not in its intermediate position
8	If led **17** is **ON**: UPS is running on manual bypass.	Check if UPS is really in bypass position and why
9	The UPS does not transfer the load on battery when mains is not present anymore.	Check the manual by-pass position is in **NORMAL** Follow step 4

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7. Maintenance:

Troubleshooting requiring NEG Micon after-sales support

Indication	Signification	Correction
LED 12 flashes and the buzzer beeps.	UPS electronics have detected a UPS fault. There are two possibilities: • the equipment connected to the UPS continues to be supplied, but directly from the AC-power source (via the automatic bypass (LED 18 ON); • the connected equipment is no longer supplied. ? The equipment connected to the UPS is no longer protected.	Follow the UPS replacement procedure
LED 13 flashes.	A battery fault was detected during the battery test.	Make sure that the battery circuit breaker(s) is closed.If that is the case, call the after-sales support because the battery is not OK,and needs replacement

Maintenance of battery when not in operation:

If the UPS remain de-energised for a long period, The batteries must be charged for 24 hours once every 3-month. Thus avoiding possible irreversible damage.

Be sure that all MCB are disconnected in the panel
Connect 230 VAC 10A to terminal X1 L to terminal 1 and N to terminal 2 PE to terminal PE
Turn on supply disconnecter Q01 and turn on 230 VAC from supply.
Turn on UPS se page 3 position 21

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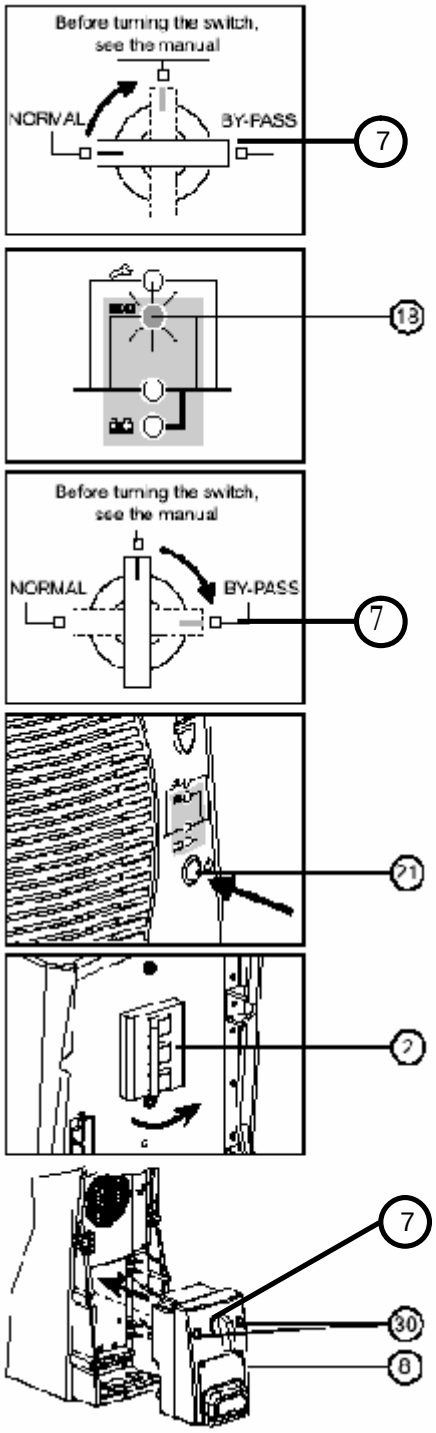
8. Replacement of the electronic module:



Disconnecting the connection module:

1. Turn the manual bypass switch (7) from the NORMAL to the intermediate position.
2. Check that LED (18) is ON before continuing to the BYPASS position.

If LED (18) is not ON, do not switch to the BYPASS position and call the after-sales support department.

3. Turn the manual bypass switch (7) from the intermediate position to the BYPASS position.

The connected equipment is supplied by the AC-power source, via the manual bypass.

4. Shut down the UPS by pressing button (21) (return to the OFF position).
5. Switch the battery circuit breaker(s) (2) to the OFF position.
6. Remove the two fixing screws (30) to free the connection module (8).
7. Remove the connection cable(s) from the battery module(s).

The UPS can be replaced. The connected equipment is supplied by the AC-power source.

Reconnecting the connection module:

1. Secure the connection module (8) using the two screws (30).
3. Reconnect the connection cable(s) to the battery module(s).
3. Switch the battery circuit breaker(s) (2) to the ON position.

Check that UPS personalization settings still correspond to the equipment to be supplied (see section 3.5).

4. Start the UPS by pressing button (21).
5. Check that LED (18) is ON before turning the manual bypass switch (7) to the intermediate position.

If LED (18) is not ON, do not switch to the intermediate position and call the after-sales support department.

6. Turn the manual bypass switch (7) from the BYPASS position to the intermediate position and check that LED (18) is ON.
7. Turn the manual bypass switch (7) from the intermediate position to the NORMAL position.

The connected equipment is again protected by the UPS.

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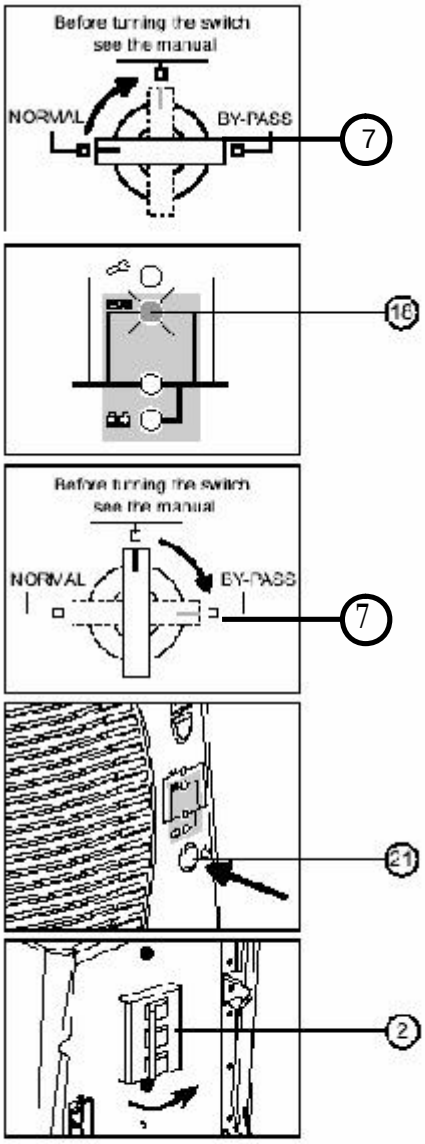
9. Replacement of the battery module:



1. Turn the manual bypass switch (7) from the NORMAL to the intermediate position. placed on back of electronic module
2. Check that LED (18) is ON before continuing to the BYPASS position.

If LED (18) is not ON, do not switch to the BYPASS position and call the after-sales support department.

3. Turn the manual bypass switch (7) from the intermediate position to the BYPASS position.

The connected equipment is supplied by the AC-power source, via the manual bypass.

4. Shut down the UPS by pressing button (21) (return to the OFF position).
5. Switch the battery circuit breaker(s) (2) to the OFF position.
6. Remove the connection cable(S) from battery module(S)

The battery can now be replaced. The connected equipment is supplied by the AC-power source.

CAUTION!!! the battery box is very heavy 51 kg

Reconnecting the battery module:

7. Reconnect the connection cable(s) to the battery module(s).
8. Switch the battery circuit breaker(s) (2) to the ON position.

9. Start the UPS by pressing button (21).
10. Check that LED (18) is ON before turning the manual bypass switch (7) to the intermediate position.

If LED (18) is not ON, do not switch to the intermediate position and call the after-sales support department.

11. Turn the manual bypass switch (7) from the BYPASS position to the intermediate position and check that LED (18) is ON.
12. Turn the manual bypass switch (7) from the intermediate position to the NORMAL position.

The connected equipment is again protected by the UPS.

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Change Info

Item no.	***Item text:***
765217	**Back-Up Kit for 765191 UPS Panel 3kVA 230V 50/60Hz**

Active revision for production

Drawing no.: xxxx-xxxx

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	Write the change

BoM no.: 765217 *Document no.: 0001-9951*

Version	Date	Init./App.	Description of change since last revision
00	2008-09-19	INI/SLB	Created with ECO 246426

Old revisions for service

Drawing no.: xxxx-xxxx

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	First version

BoM no.: xxxxxx *Document no.: xxxx-xxxx*

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	First version

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Document no.: 0001-9951
Version: 00
Date: 24/11/2008
Init: Inge Nielsen

765217 BACK-UP KIT FOR UPS 765191 V82

Component	Description	Qty per	Stk UM	Position Number
098436	MOUNT BRACKET F. PULSAR M LEFT	1,000	EA	
098437	MOUNT BRACKET F. PULSAR M RIGH	1,000	EA	
188419	EXTRA BATTERY PACK F. PULSAR M	1,000	EA	
60009586	SCR CRS UH M4x8 4.8 FZB	8,000	EA	
60096938	SLIDE RAIL 7492.500 HEAVY DUTY	2,000	EA	

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Change Info

Item no.	***Item text:***
60097529	**Junction Box +AT6, V82-1.65MW & NM72/1650KW 1-Speed 690V 50Hz**

Active revision for production

Drawing no.: 6013202

Version	Date	Init./App.	Description of change since last revision
01	04.10.2004	BOBN/BOBN	First version

LST no.: 21000096 *Material BOM no.: 60097265*

Version	Date	Init./App.	Description of change since last revision
03	10.03.2005	PNN/	60009842 changed from 2 to 1 pc. 60009809 changed from 84 to 85 pc. 60009638 changed from 8 to 12 pc. 60009803 changed from 20 to 24 pc. 60009761 added.

Old revisions for service

Drawing no.: xxxxxxx

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xxx/	Write the change

LST no.: 21000096 *Material BOM no.: 60097265*

Version	Date	Init./App.	Description of change since last revision
02	30.09.2004	LBO+BOBN/BOBN	60009676 changed to 60034943, there have been two different no. on same item. 2 pc 60009761 screw ISO 4766 M8x35-22H added.
01	28.01.2004	FOM/FOM	First version

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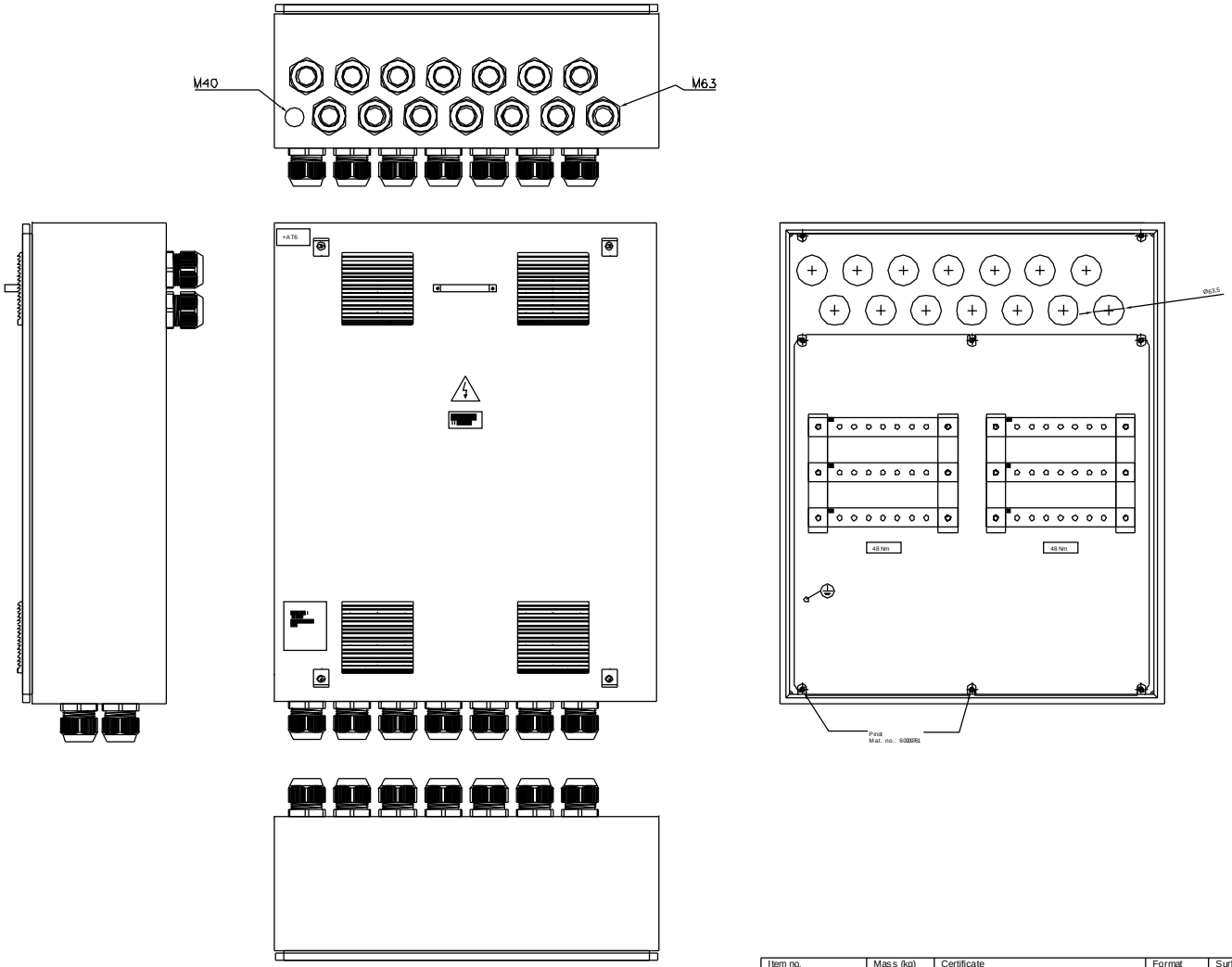

Item no.	Mass (kg)	Certificate	Format	Surface treatment	Revised by	Created date	Created by
60097265	50	-	A3	-		041004	BOBN
Material			Scale	Change no.	PDM rev.	Approved date	Approved by
-			1:10	500000004672			

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Proj. ISO-E
AutoCAD

Item
Assembling Drawing Complet
Junction Box +AT6 IEC

Status	Replaces	Drawing no.	Rev.
Production	-	6013202	01

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LST: 21000096
Version: 03

Material 60097265
Description Junction box +AT6 NM1650 IEC

Lev	Obj	Object description	Quantity	Un	SortStrng
1	60007330	ISOLATOR 15850201 8x40 for BUSBAR	12	PC	2.3+2.4
1	60013734	SUPPORT 383mm for 3xISOLATOR	4	PC	2.3
1	60007635	CABLE GLAND BMBC-07 M63 BRASS	28	PC	1.2
1	60007644	LOCKNUT BMBL-08 M63 BRASS	28	PC	1.2
1	60010369	CABINET AE 800x1000x300mm 1 DOOR w. WORK	1	PC	1.1
1	60010452	HANDEL for COMPONENT SHELVES	1	PC	1.7
1	60091253	Mounting plate +AT6 1650kW UL /IEC	1	PC	2.1
1	60091258	Copper Busbar 10x40x310mm	6	PC	2.5
1	60034943	Screw ISO 4017 M10 x 30 - 8.8 - FZB	1	PC	2.1
1	60009678	SCREW ISO 4017 M10 x 35 - 8.8 - FZB	42	PC	2.6
1	60009842	LOCK WASHER DIN 6798 A 10 - FZB	1	PC	2.1
1	60009879	NUT ISO 4032 M10 - 8	43	PC	2.5+2.11
1	60009809	SPRING WASHER DIN 6796 10 - FZG	85	PC	2.6+2.11
1	60009639	SCREW ISO 4017 M 8 x 20 - 8.8 - FZB	16	PC	2.1+2.5
1	60009638	SCREW ISO 4017 M 8 x 16 - 8.8 - FZB	12	PC	2.1+2.3
1	60009803	SPRING WASHER DIN 6796 8 - FZG	24	PC	2.3 - 2.5
1	60009841	LOCK WASHER DIN 6798 A 8 - FZB	8	PC	2.1
1	60009873	NUT ISO 4032 M 8 - 8 - FZB	4	PC	2.4
1	60020594	Cable W135 1x95mm² 1m, from junction box	1	PC	2.11
1	60002430	THERMOLABEL "48 Nm"	3	PC	2.7
1	60002679	THERMOLABEL "WARNING! 3 x 690V"	1	PC	1.7
1	60006819	STICKER "JORD" 14mm	1,000	SH	2.11
1	60014044	LABELS +AT6 1650/900 BOX f. copper bar	1	PC	2.7
1	60002527	THERMOLABEL "+AT6"	1	PC	1.7
1	60006824	STICKER "LYN" 100mm	1	PC	1.7
1	60024084	FOAM POLYESTER 1800x300x30mm GREY	1	PC	1.5
1	60014619	FILTER PAD PFA2.000FM-500g 150x150mm	4	PC	1.7
1	60097270	Type sign f. +AT6 72-82/1650 IEC	1	PC	1.7
1	60097275	CABLE SHOE KIT for NM82C/1650 IEC	1	PC	
1	60009761	SCREW ISO 4766 M 8 x 35 - 22H	2	PC	
1	60109546	Sticker general use VESTAS TOWERS	1	PC	1.6

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Change Info

Item no.	***Item text:***
765219	**Top Panel +AN1, V82-1.65MW 50/60Hz**

Active revision *for production*

Drawing no.: 0003-2029

Version	Date	Init./App.	Description of change since last revision
00	2009-05-19	INI/FLT	First version

BoM no.: 765219 *Document no.: 0004-2379*

Version	Date	Init./App.	Description of change since last revision
00	2009-05-19	INI/FLT	First version

Old revisions *for service*

Drawing no.: xxxx-xxxx

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	Write the change here.

BoM no.: xxxxxx *Document no.: xxxxxx*

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	Write the change here.

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031	Outline Front	090519	-
032	Outline Rear	090519	-
033	Outline terminal rows	090519	-
034	Panel Bottom Layout	090519	-
039	Cable Connections	090519	-
040	Socket to X01 connections	090519	-
041	Conections to +AN11 Trans	090519	-
042	Connections to +AN12 Gear	090519	-
043	Connections to +AN12 Gear	090519	-
044	External Connections	090519	-
045	Connections to +AN13 Yaw	090519	-
046	Connections to +AN14 Gene	090519	-
047	Connections to Slipring	090519	-
048	Externel Connections	090519	-
049	External connections Wind	090519	-
050	External Connections Gene	090519	-
051	External connections	090519	-
060	Connections to motor box	090519	-
061	External motor Connection	090519	-
062	External motor Connection	090519	-
080	Connections f. Sliprings	090519	-
200	Supply	090519	-
201	Sypply to Hub	090519	-
202	Battery Back up Supply	090519	-
203	24V Valve / Motor Supply	090519	-
204	24V Sensor supply	090519	-
205	Sensor Supply	090519	-
206	Relays	090519	-
207	Vibration / Overspeed TAC	090519	-
208	Over Speed TAC 85	090519	-
209	TAC 84 Down wind	090519	-
210	TAC 84 Lateral	090519	-
211	Emergency relay	090519	-

19-05-09
15:44

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	Date	Initials	Function	Table of Contents		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. 00	Drawing no. 0003-2029	Cont. sheet 002	Sheet 001

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212	Emergency relay	090519	-
213	Hub Hatch override	090519	-
214	Wind Sensores	090519	-
215	Ice Detector (Option)	090519	-
299	Transit connections	090519	-
300	Output 800-809	090519	-
301	Output 810-818	090519	-
302	Output 820-828	090519	-
303	Output 830-838	090519	-
304	Output 840-844	090519	-
400	Input 500-508	090519	-
401	Input 510-518	090519	-
402	Input 520-528	090519	-
403	Input 530-603	090519	-
404	Input 604-613	090519	-
405	Input 615-623	090519	-
406	Input 625-634	090519	-
407	Input 300-319	090519	-
408	Input 400-418	090519	-
409	Input 710-723	090519	-
410	Input 725-738	090519	-
411	Input 740-749	090519	-
412	Input 100-203	090519	-
413	Input 700-708	090519	-
414	Input 535-638	090519	-
415	TOI Supply	090519	-
450	TOI Outline Output	090519	-
451	TOI Outline Output ext.	090519	-
452	TOI Outline Input	090519	-
453	TOI Outline Input	090519	-
454	TOI Outline input ext.	090519	-
500	Communication	090519	-
501	CMS - Option	090519	-

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	Date	Initials	Function	Table of Contents		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. 00	Drawing no. 0003-2029	Cont. sheet 030	Sheet 002

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19-05-09 15:44

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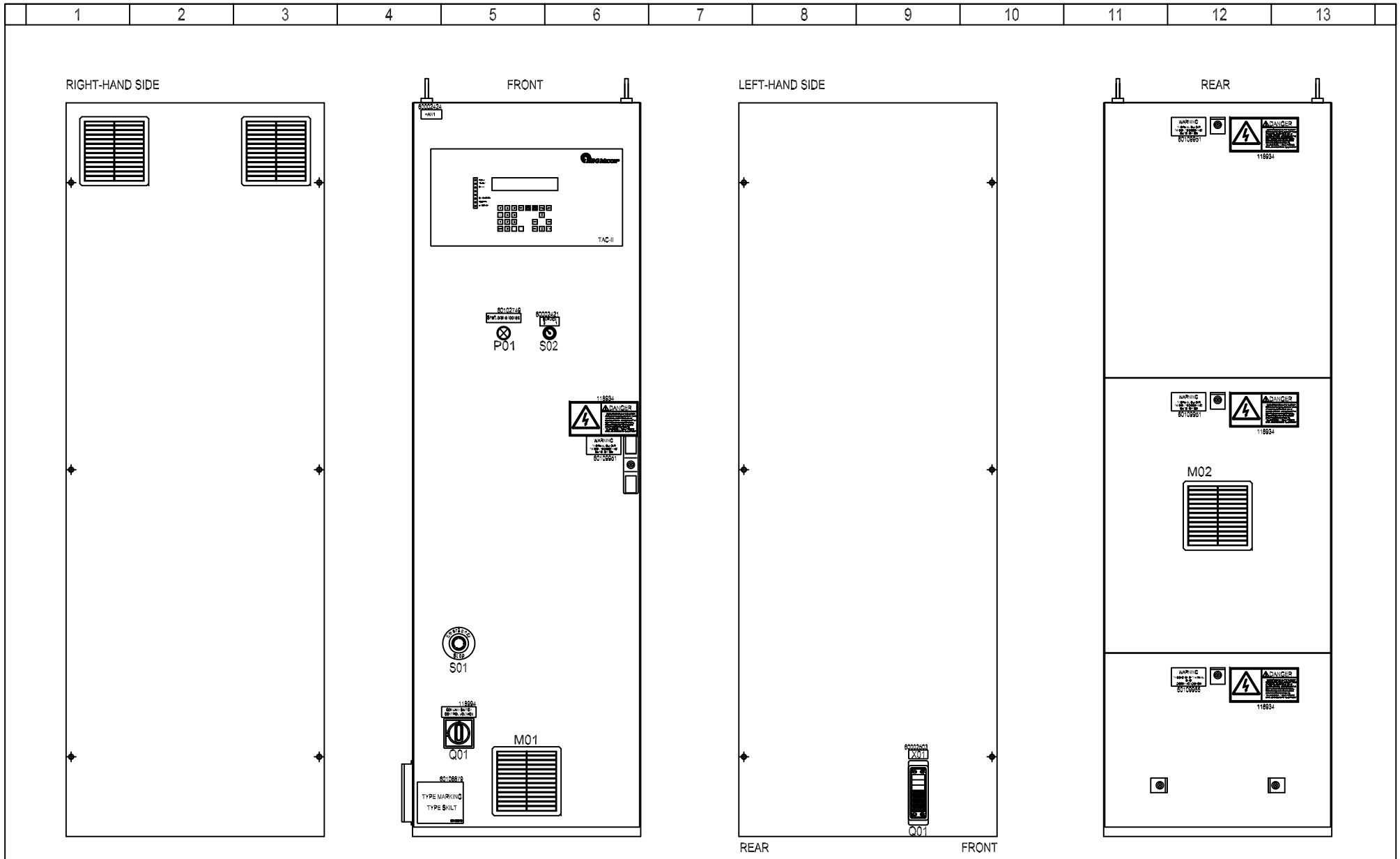

	Date	Initials	Function	Panel Front		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 031	Sheet 030

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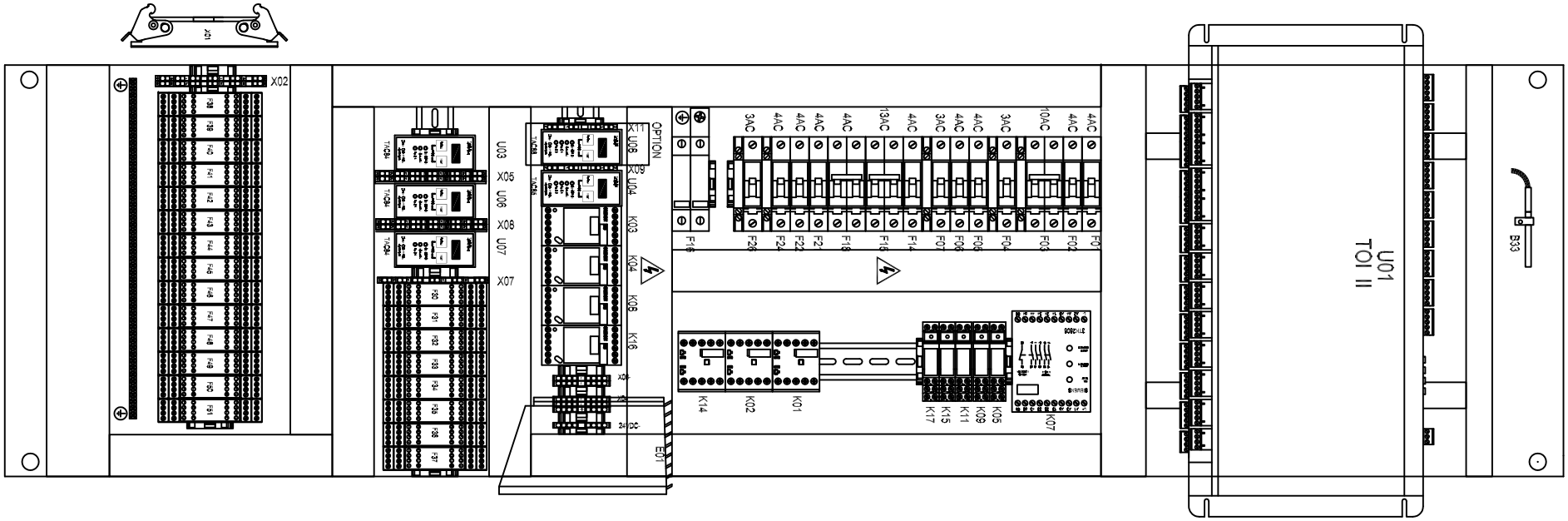

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Outline Front	
		Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz	
		Approved	090519	FLT	Comments	-	Customer: Vestas Wind Systems A/S
		Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 032 / Sheet 031

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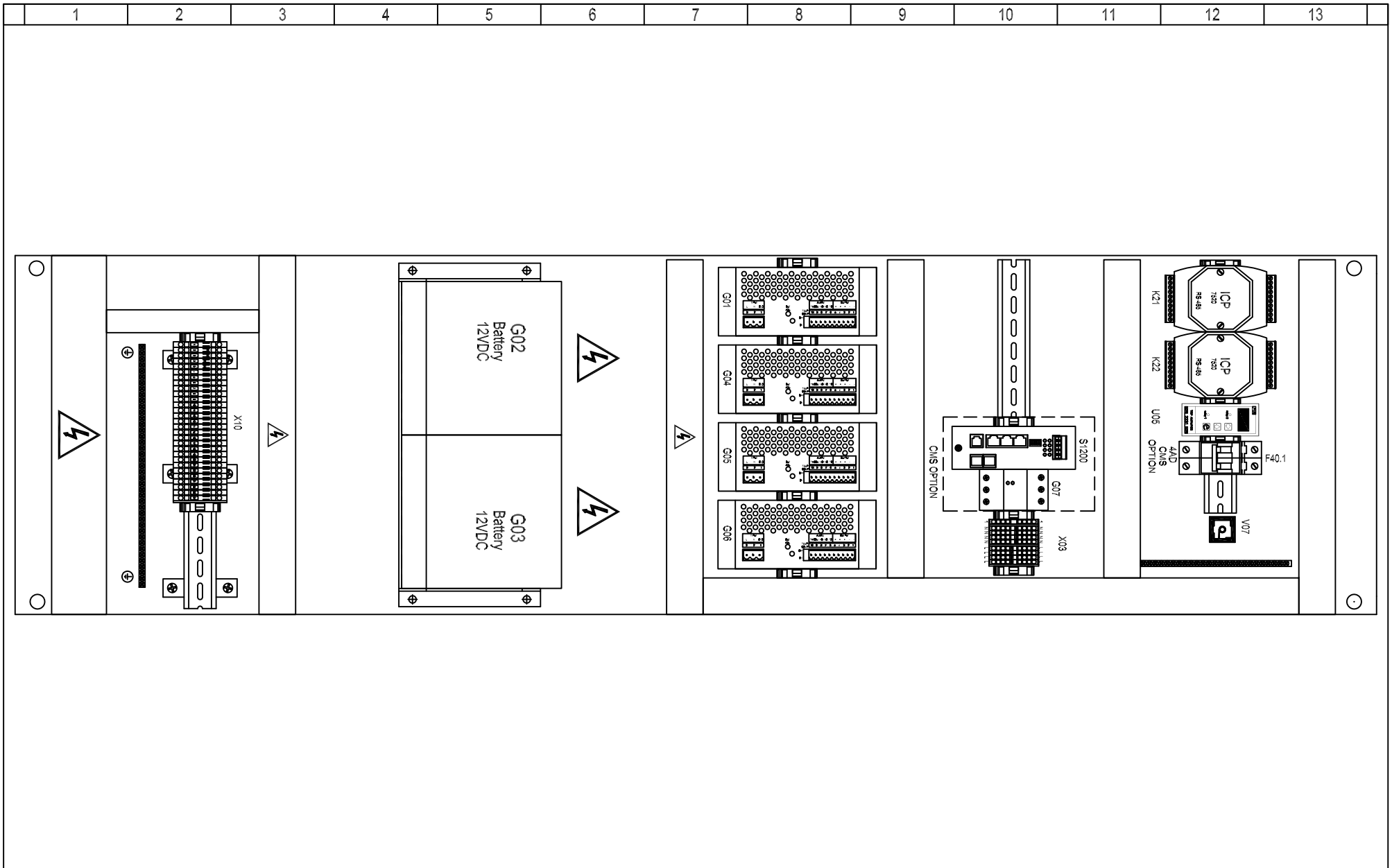

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	Date	Initials	Function	Outline Rear		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 033	Sheet 032

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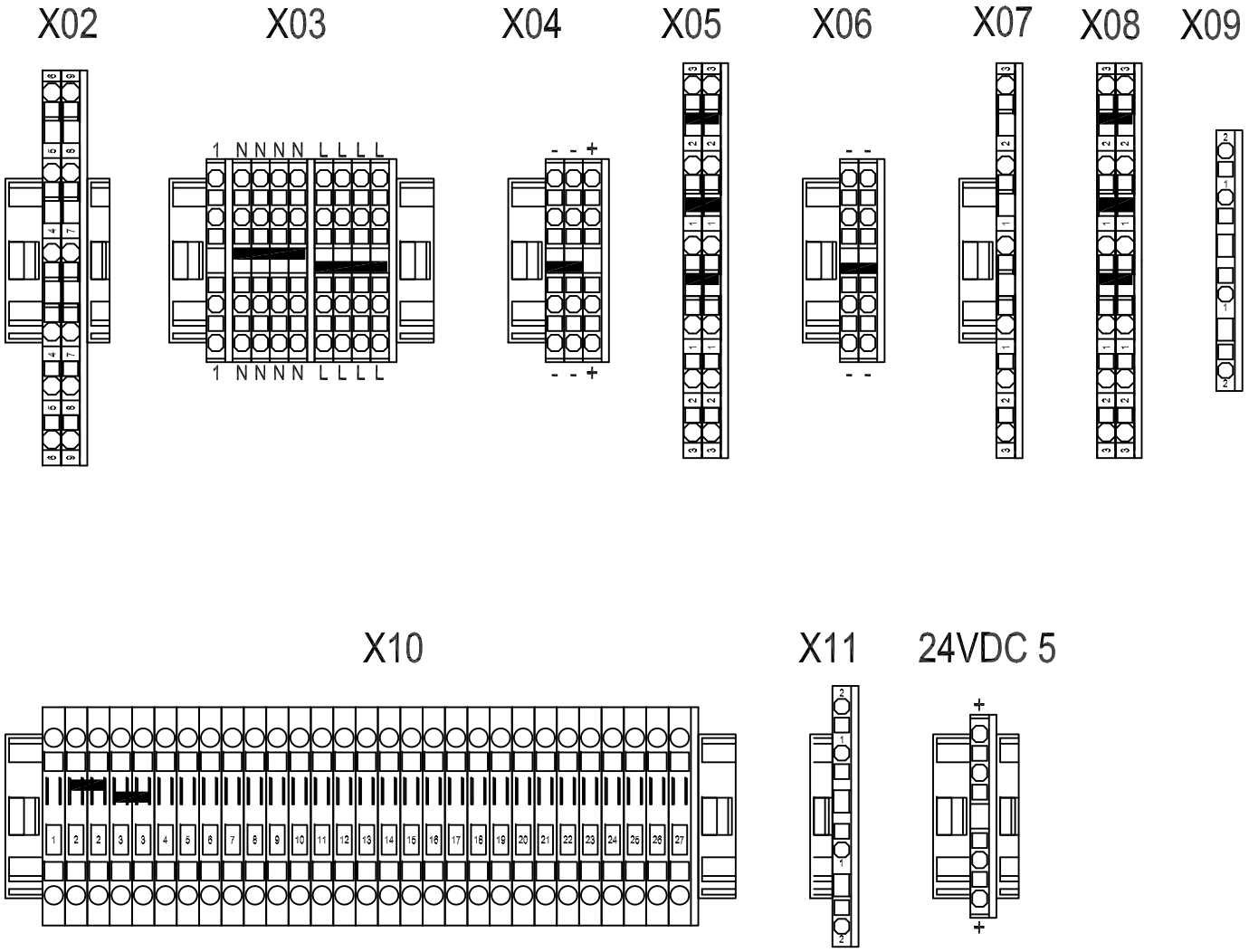

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Outline terminal rows	
		Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz	
		Approved	090519	FLT	Comments	-	Customer: Vestas Wind Systems A/S
		Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 034 / Sheet 033

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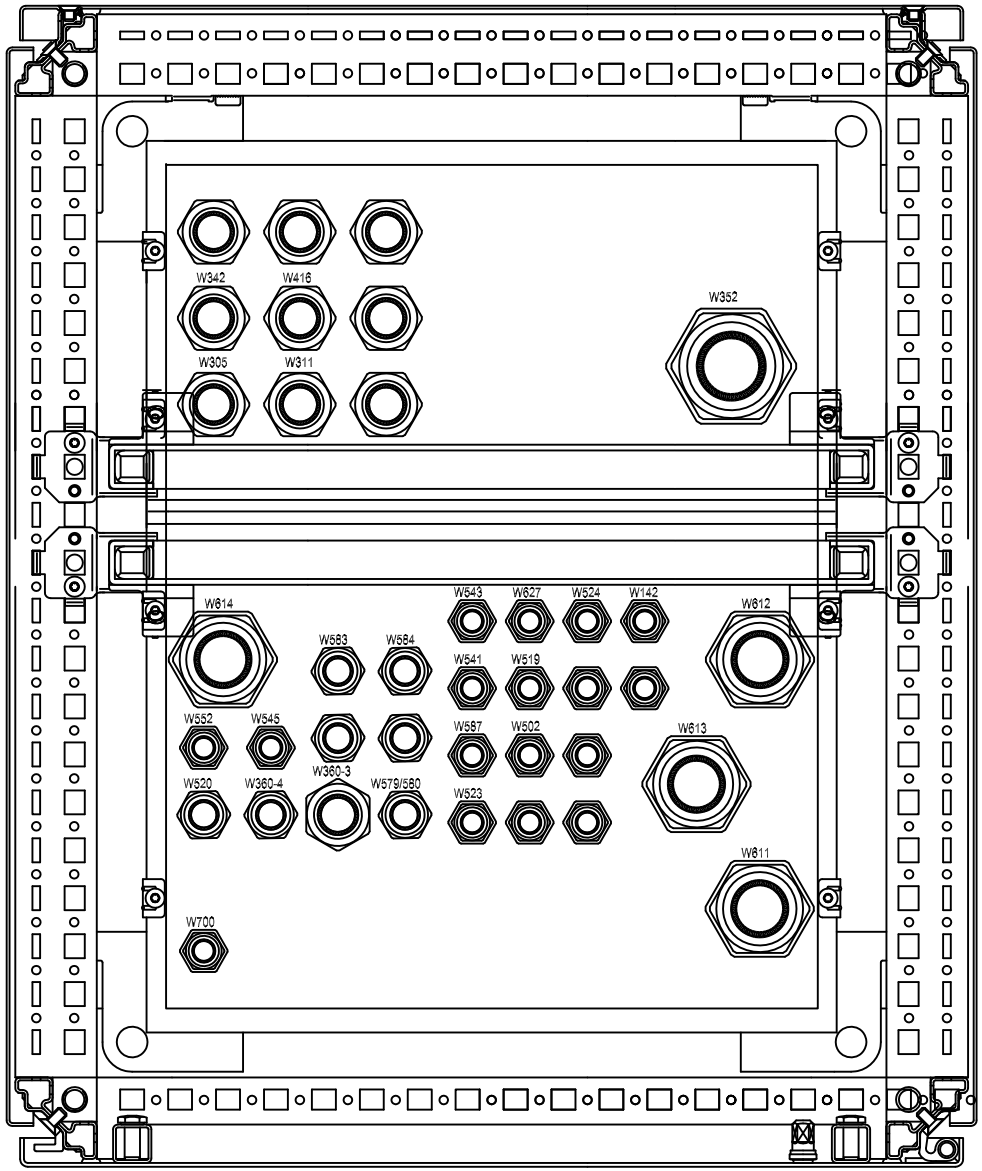

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		Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz
		Approved	090519	FLT	Comments	-
		Revised	090519	INI	Rev.	-
					Drawing no.	0003-2029
					Customer	Vestas Wind Systems A/S
					Cont. sheet	039
					Sheet	034

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USE COPPER CONDUCTORS ONLY FOR EXTERNAL WIRES AND CABLES.

USE 60°C CABLES FOR CURRENTS LESS THAN 100Amps AND 75°C CABLES FOR HIGHER CURRENTS.

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	Date	Initials	Function	Cable Connections		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 040	Sheet 039

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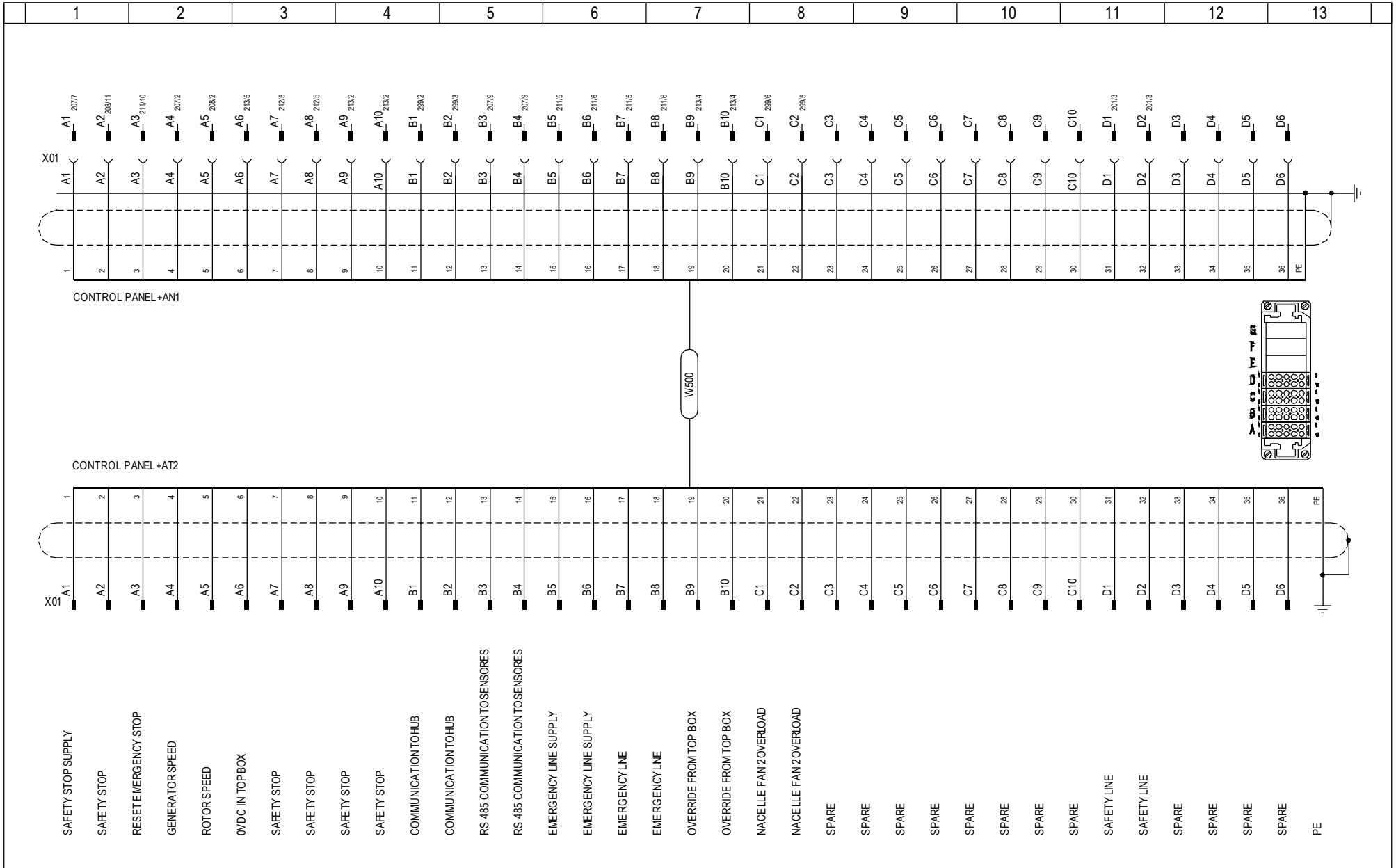

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	Date	Initials	Function	Socket to X01 connections to +AT2		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 041	Sheet 040

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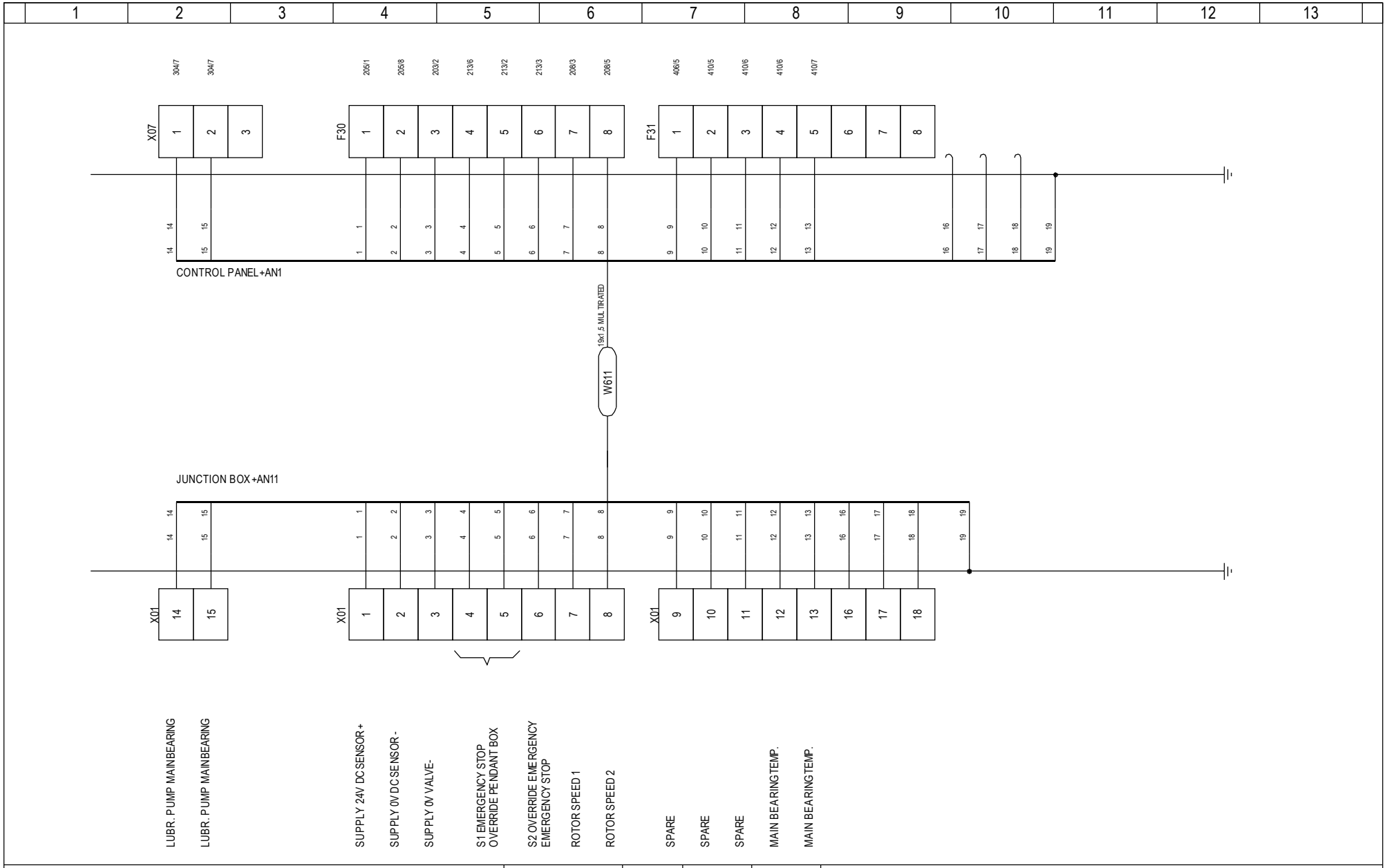

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	Date	Initials	Function	Conections to +AN11 Transmission Front		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 042	Sheet 041

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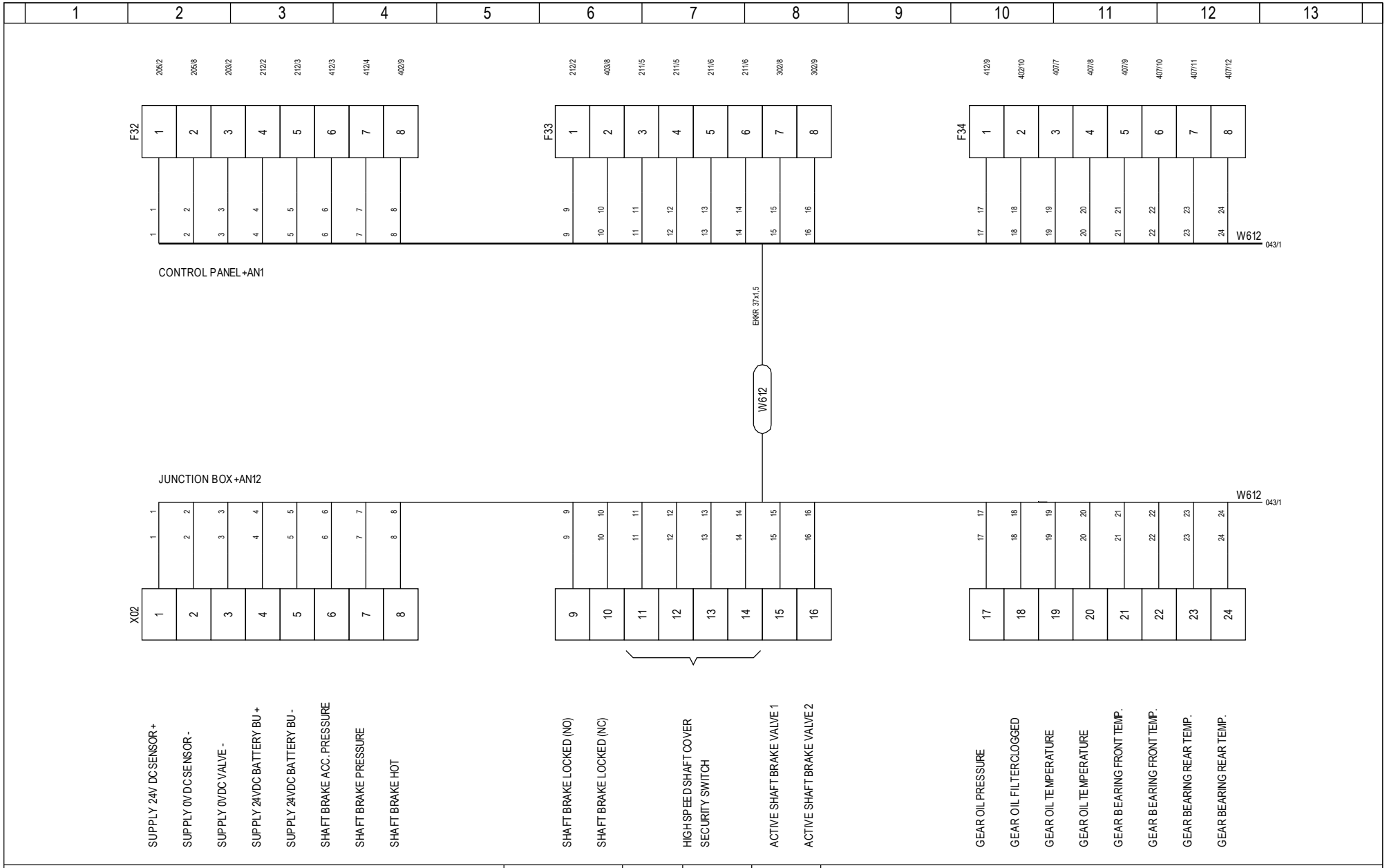

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	Date	Initials	Function	Connections to +AN12 Gear box		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 043	Sheet 042

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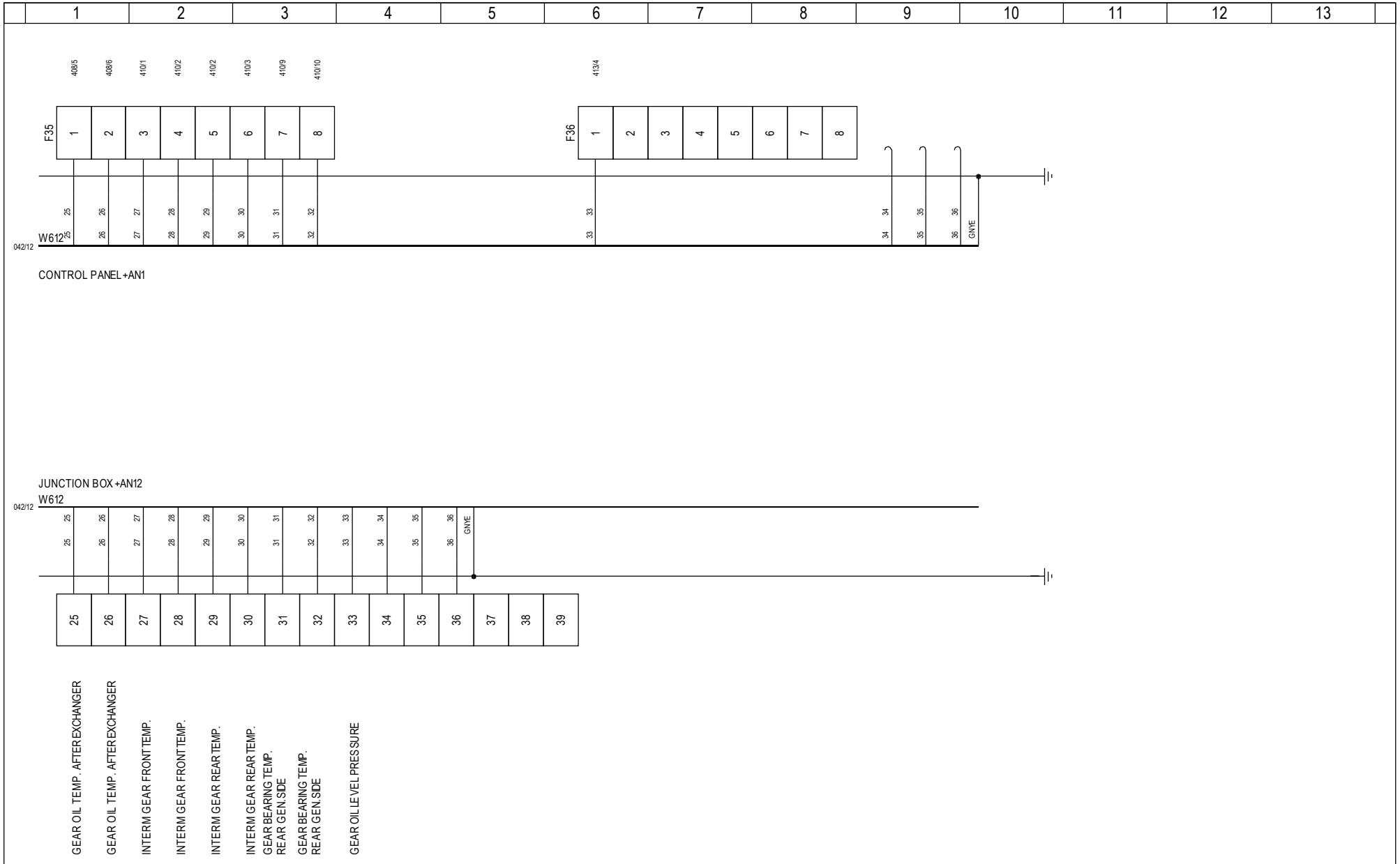

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	Date	Initials	Function	Connections to +AN12 Gear box		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 044	Sheet 043

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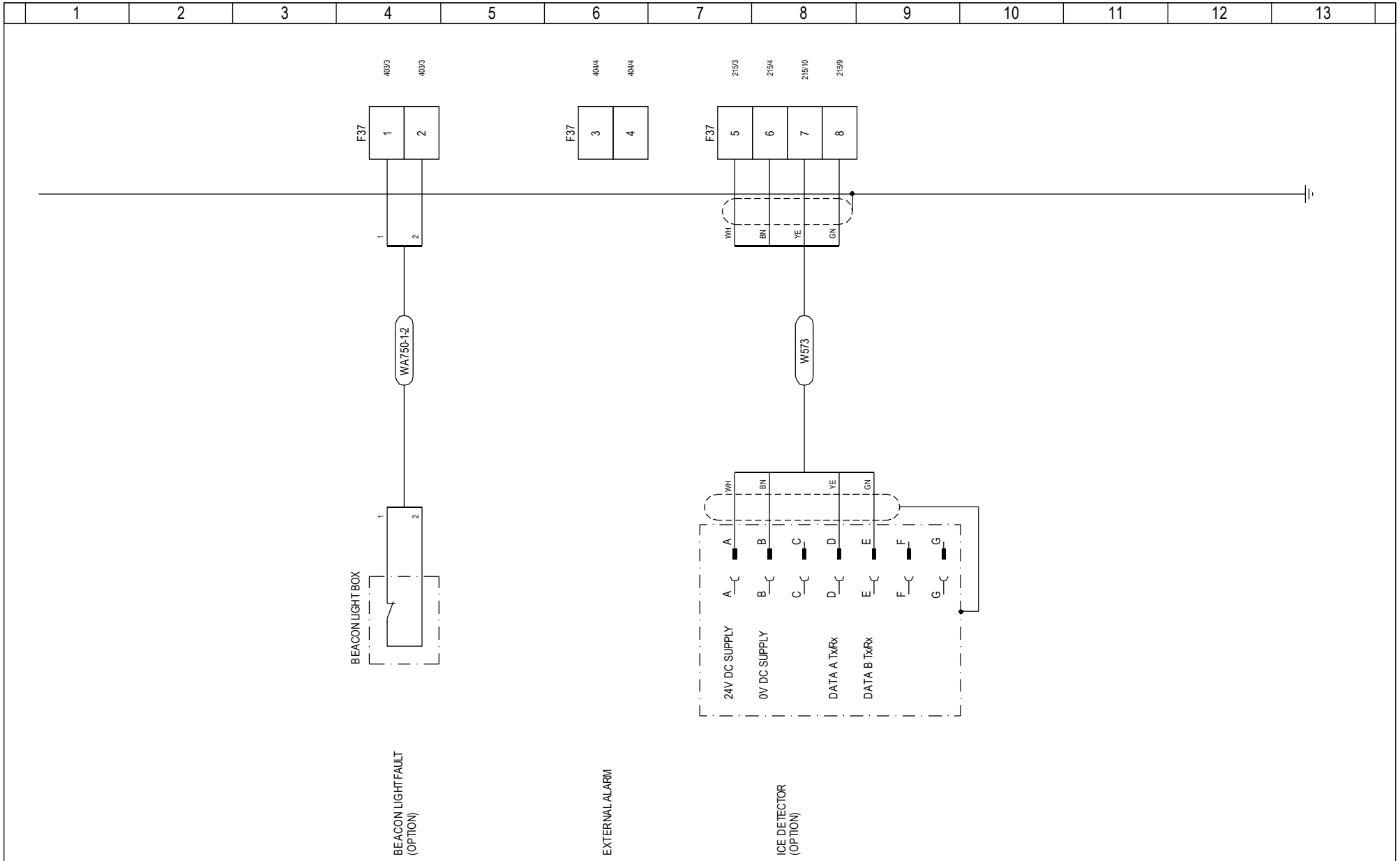

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	Date	Initials	Function	External Connections		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 045	Sheet 044

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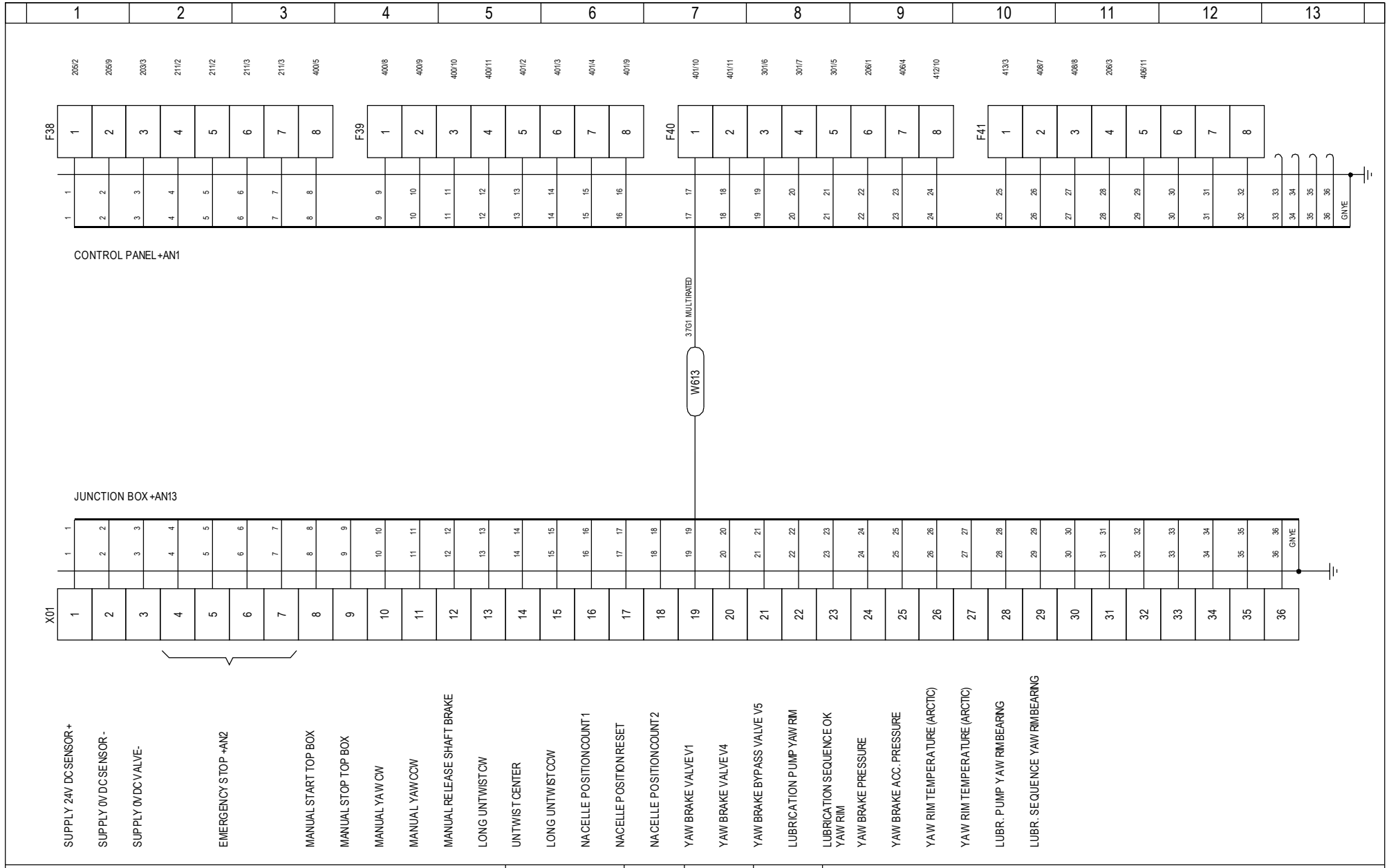

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	Date	Initials	Function	Connections to +AN13 Yaw box		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 046	Sheet 045

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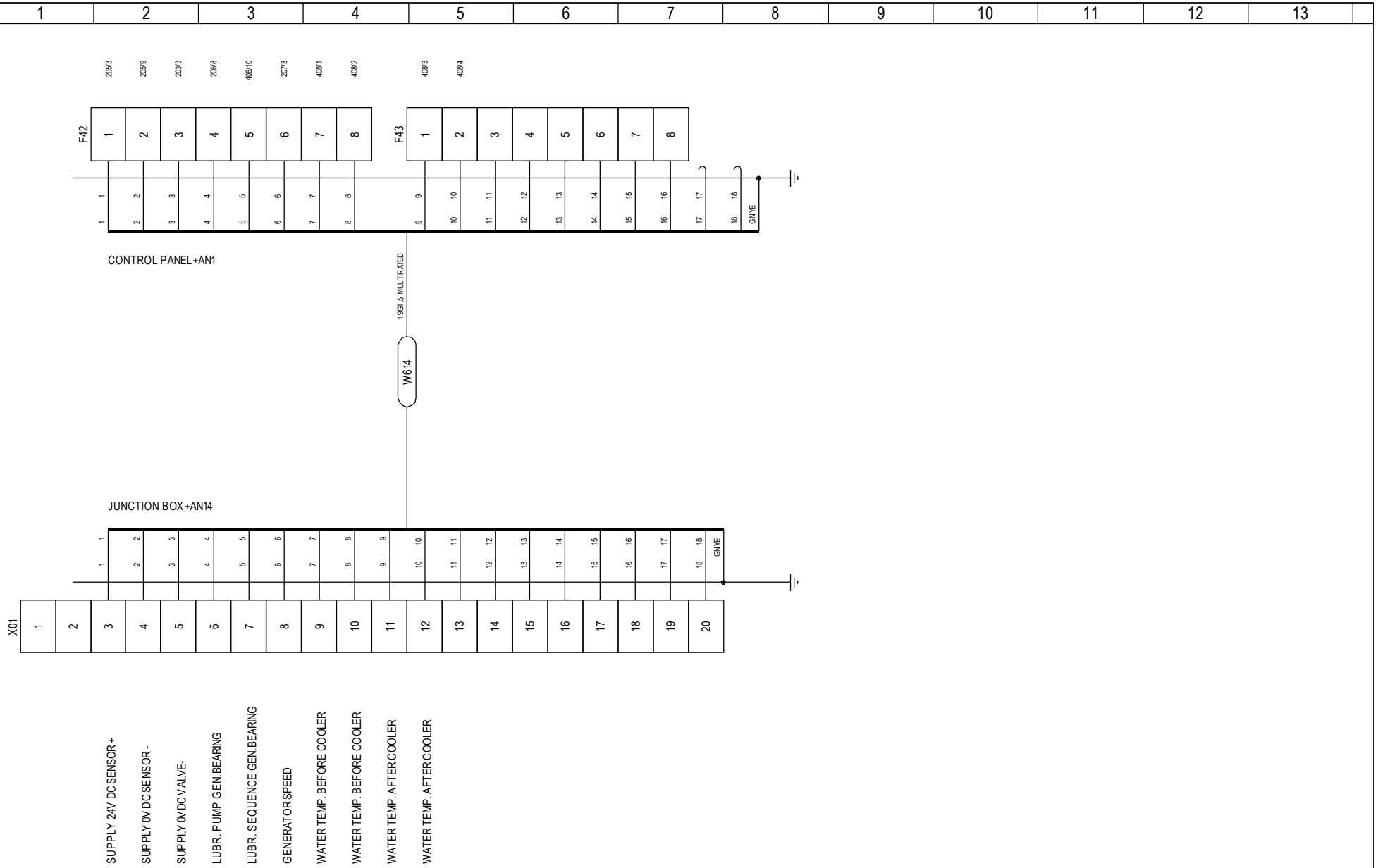

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	Date	Initials	Function	Connections to +AN14 Generator box		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 047	Sheet 046

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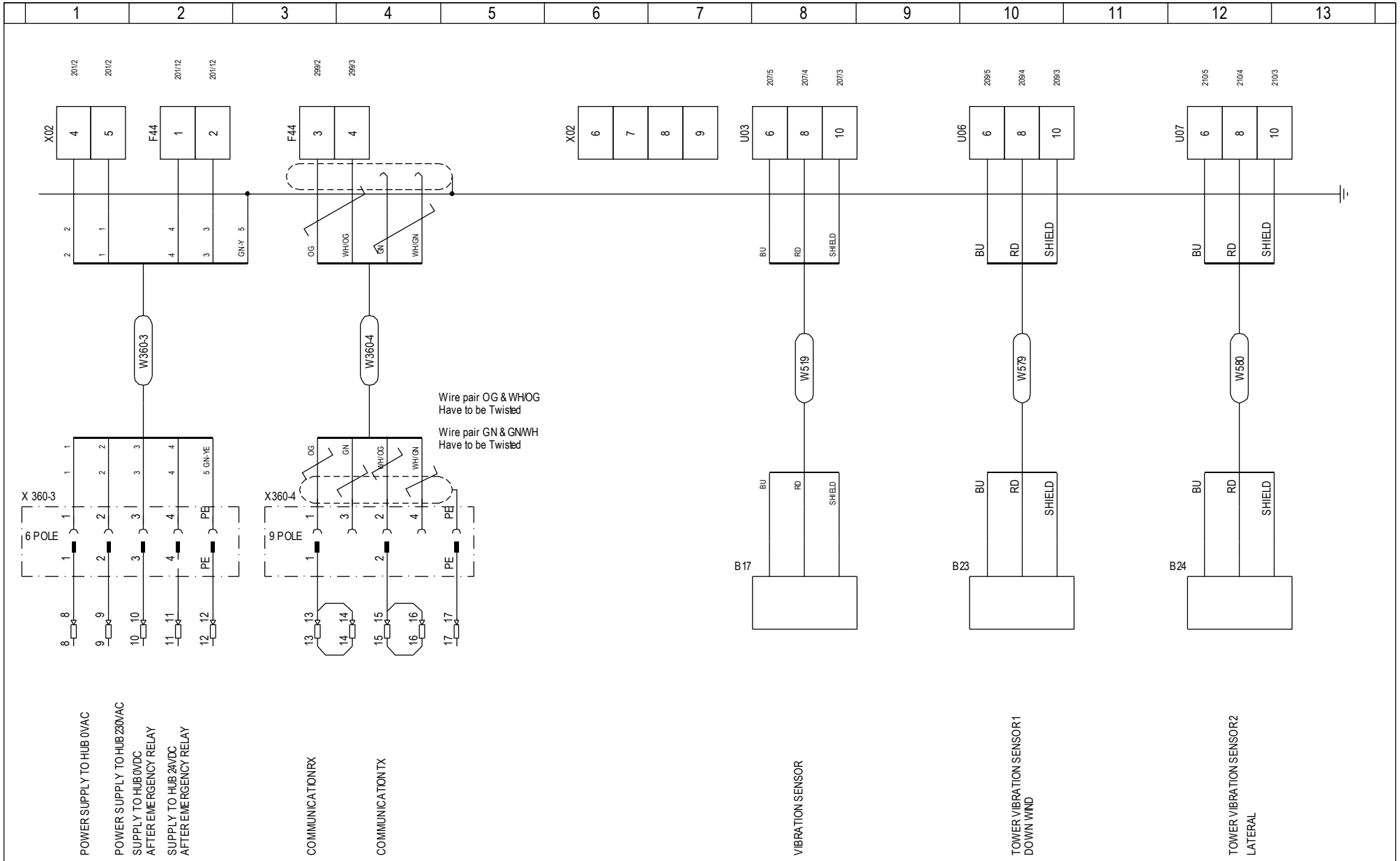

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	Date	Initials	Function	Connections to Slipring		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 048	Sheet 047

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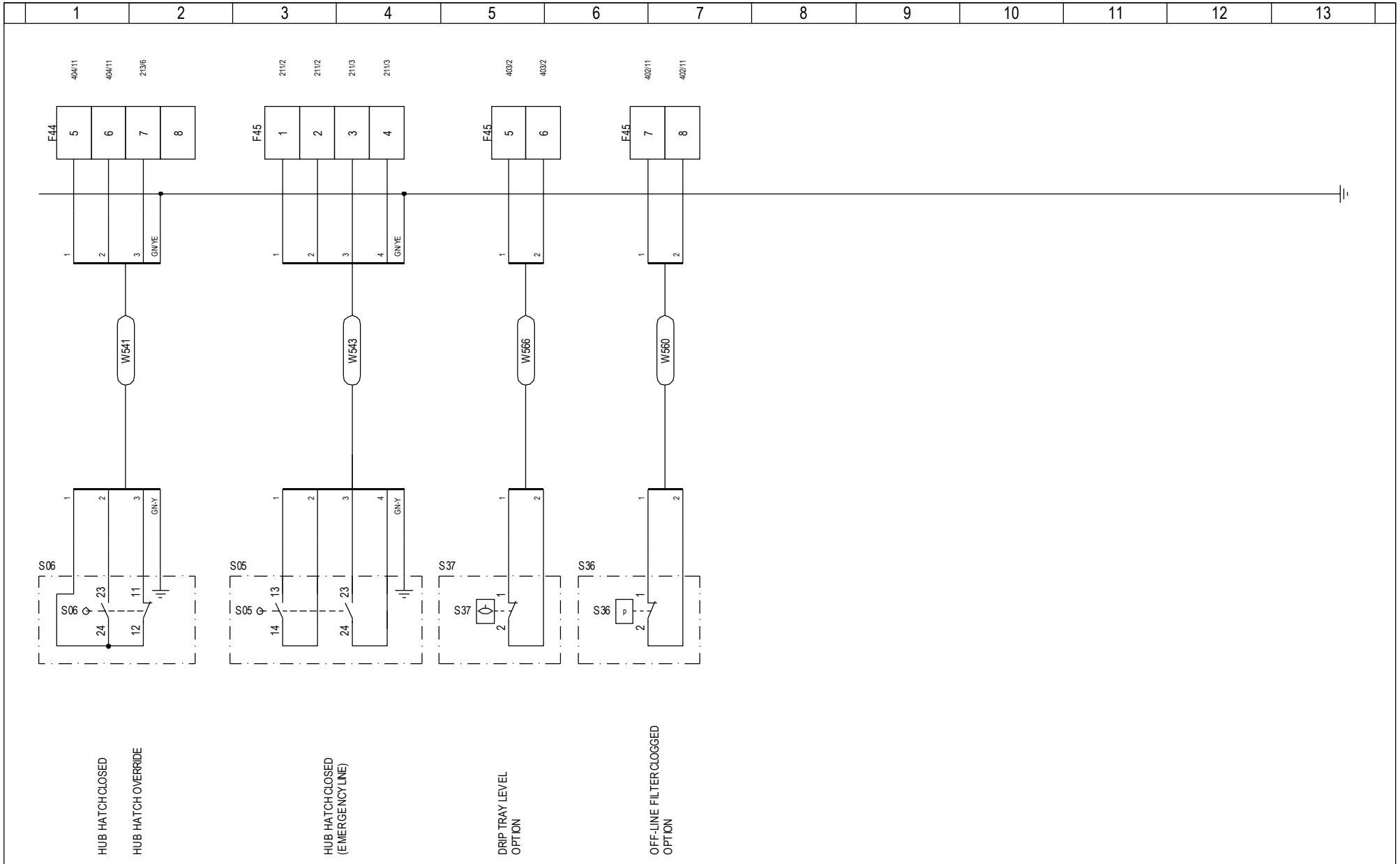

	Date	Initials	Function	Externel Connections		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 049	Sheet 048

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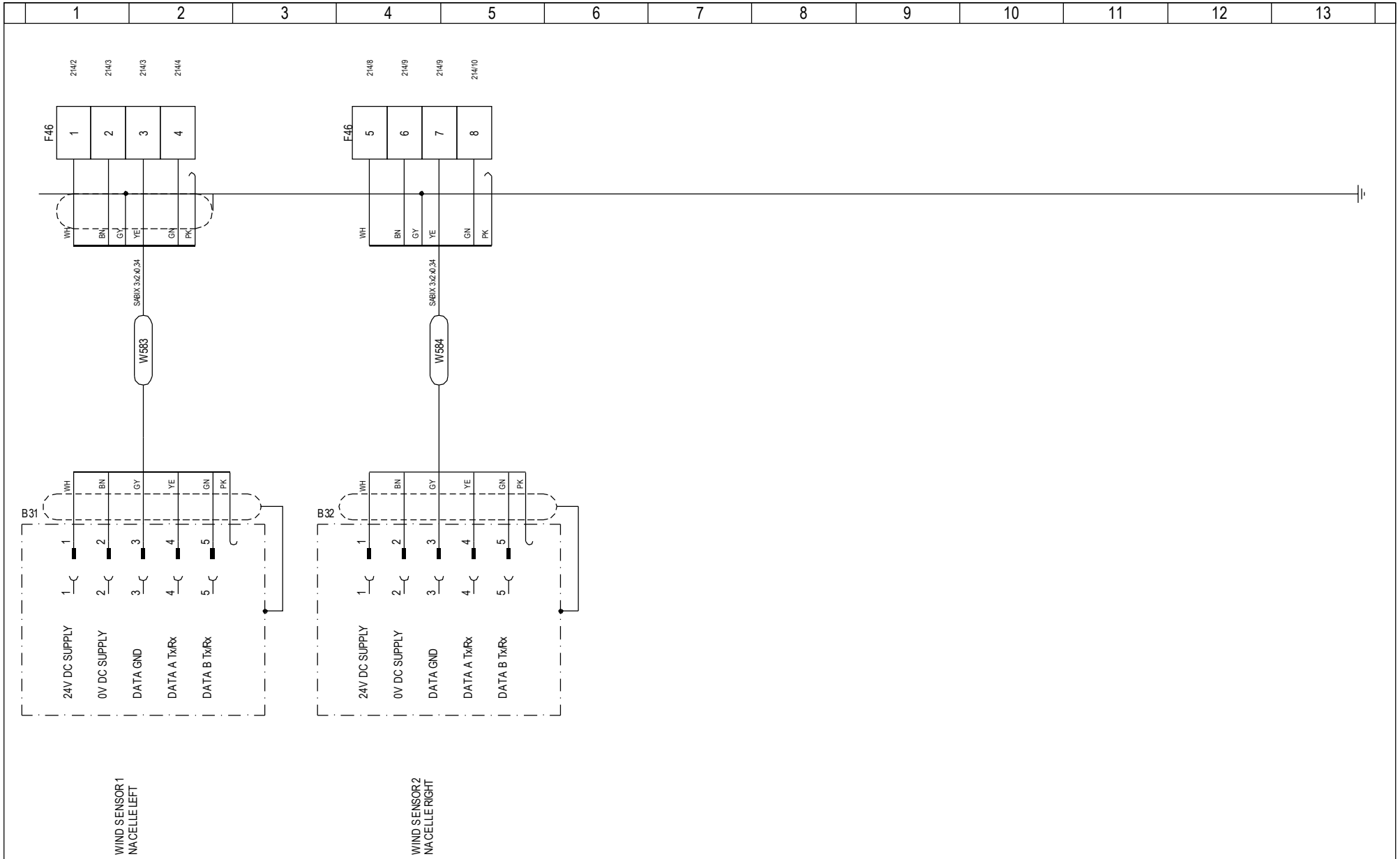

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	Date	Initials	Function	External connections Wind sensores		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 050	Sheet 049

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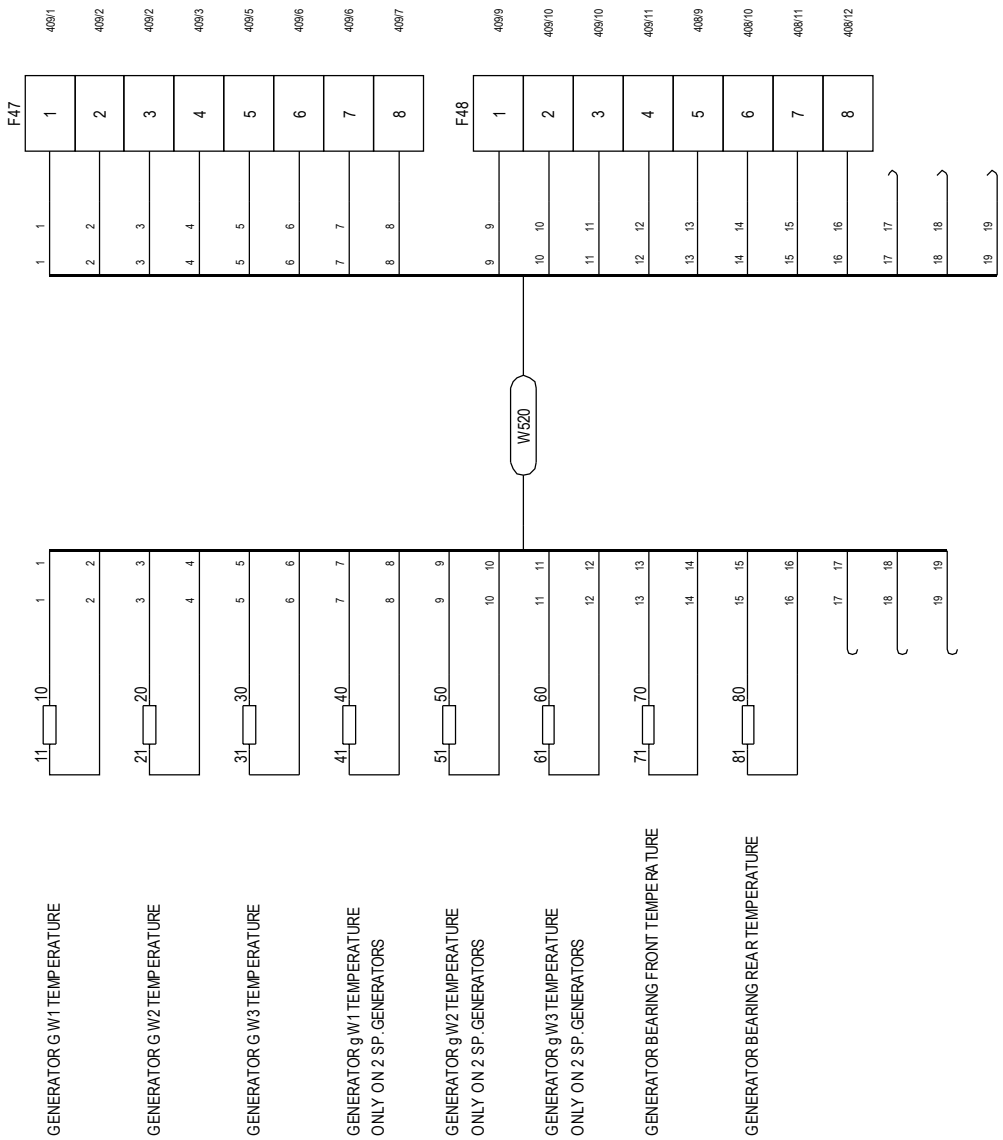

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	Date	Initials	Function	External Connections Generator Temp.		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 051	Sheet 050

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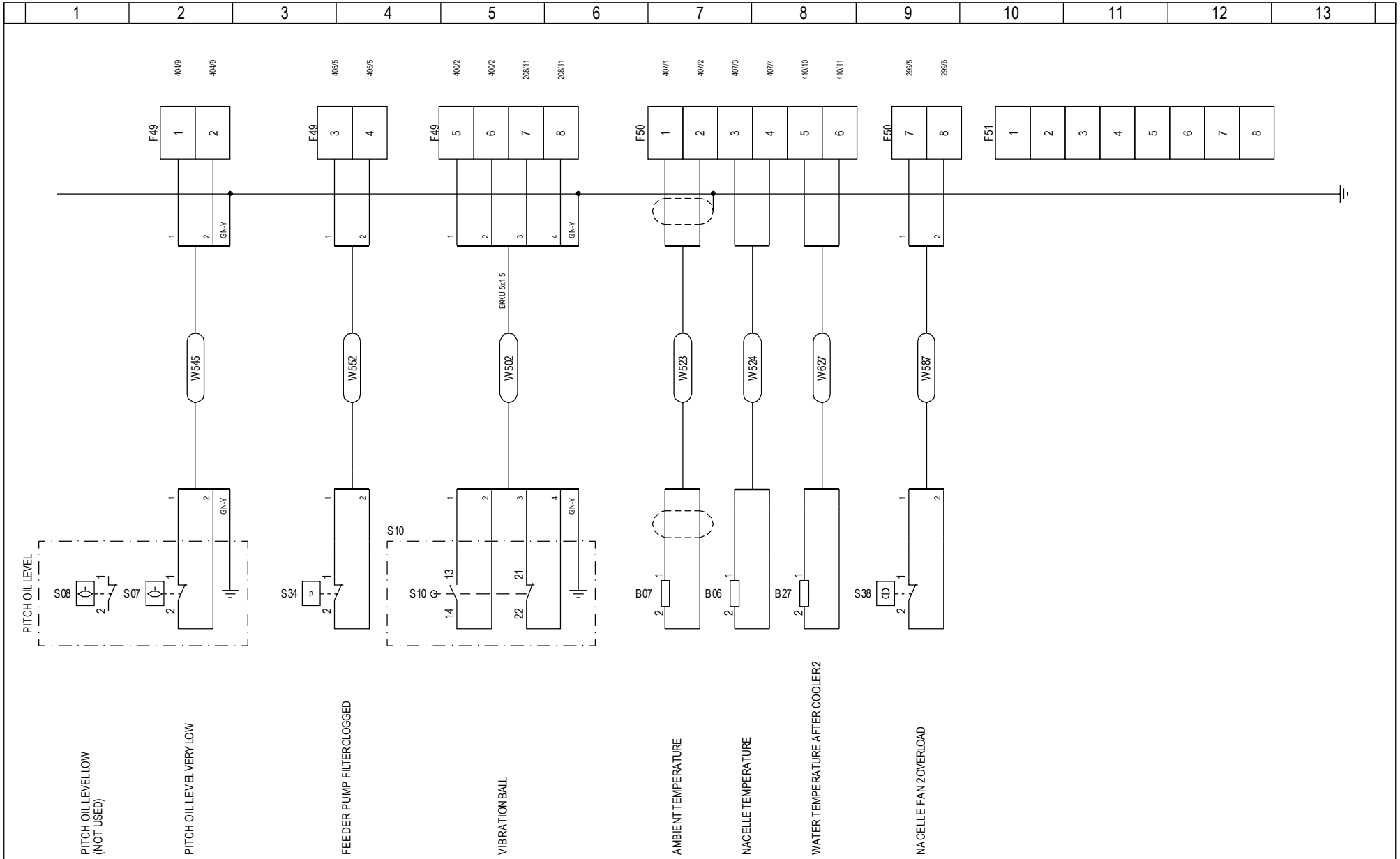

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	Date	Initials	Function	External connections		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 060	Sheet 051

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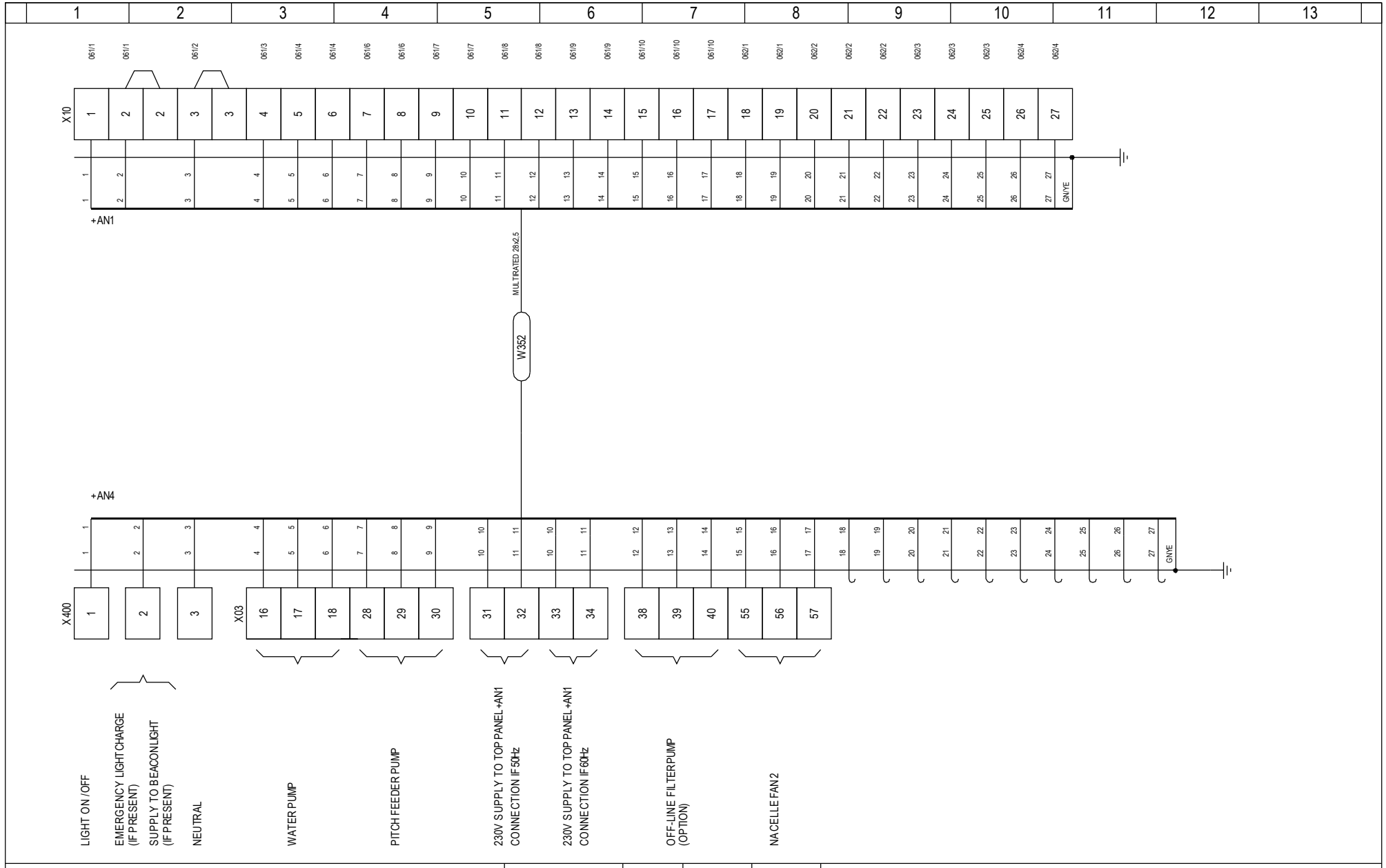

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	Date	Initials	Function	Connections to motor box +AN4		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 061	Sheet 060

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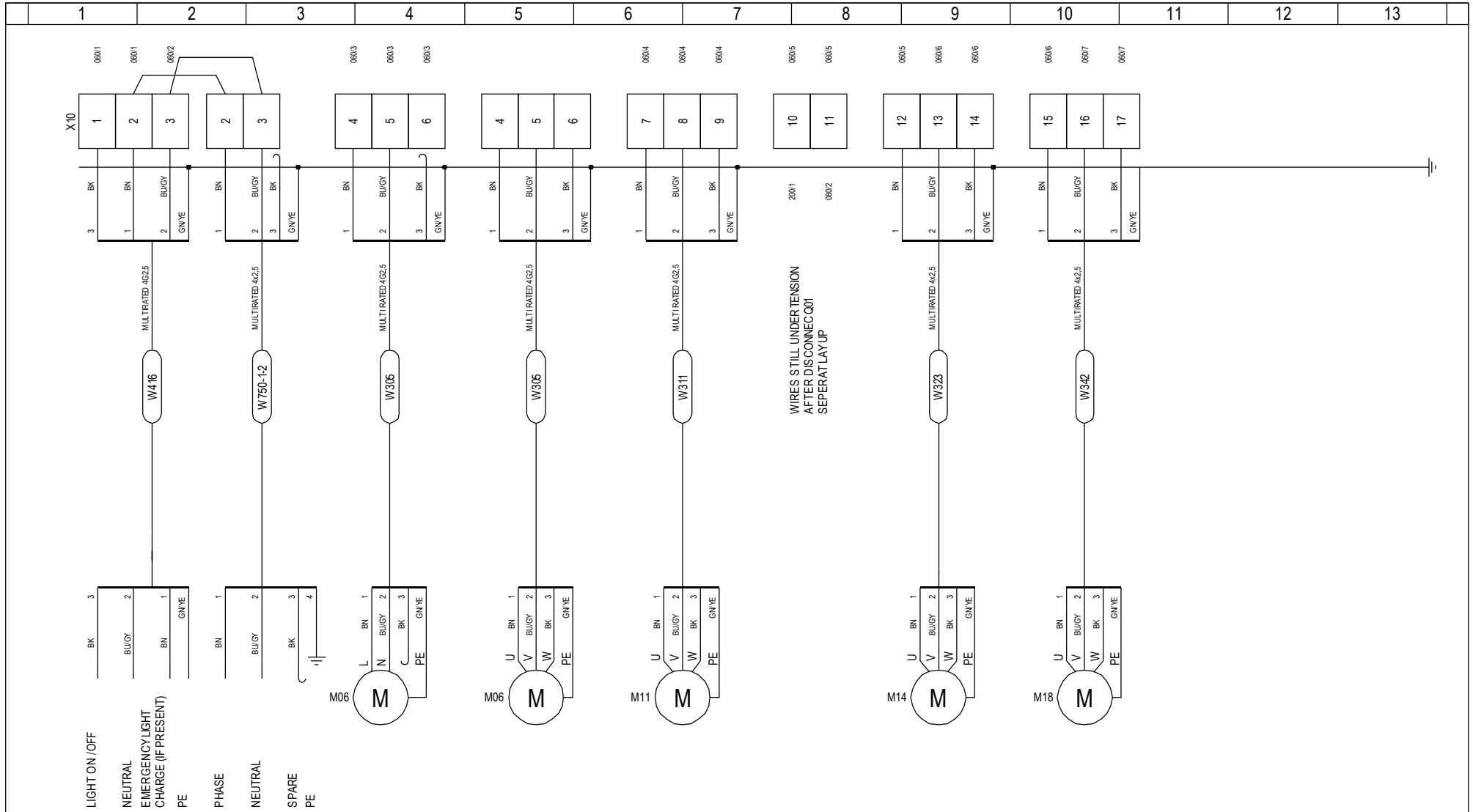

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	Date	Initials	Function	External motor Connections		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 062	Sheet 061

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1	2	3	4	5	6	7	8	9	10	11	12	13

060/7	060/8	060/8	060/8	060/9	060/9	060/9	060/10	060/10	060/10
18	19	20	21	22	23	24	25	26	27

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	Date	Initials	Function	External motor Connections		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 080	Sheet 062

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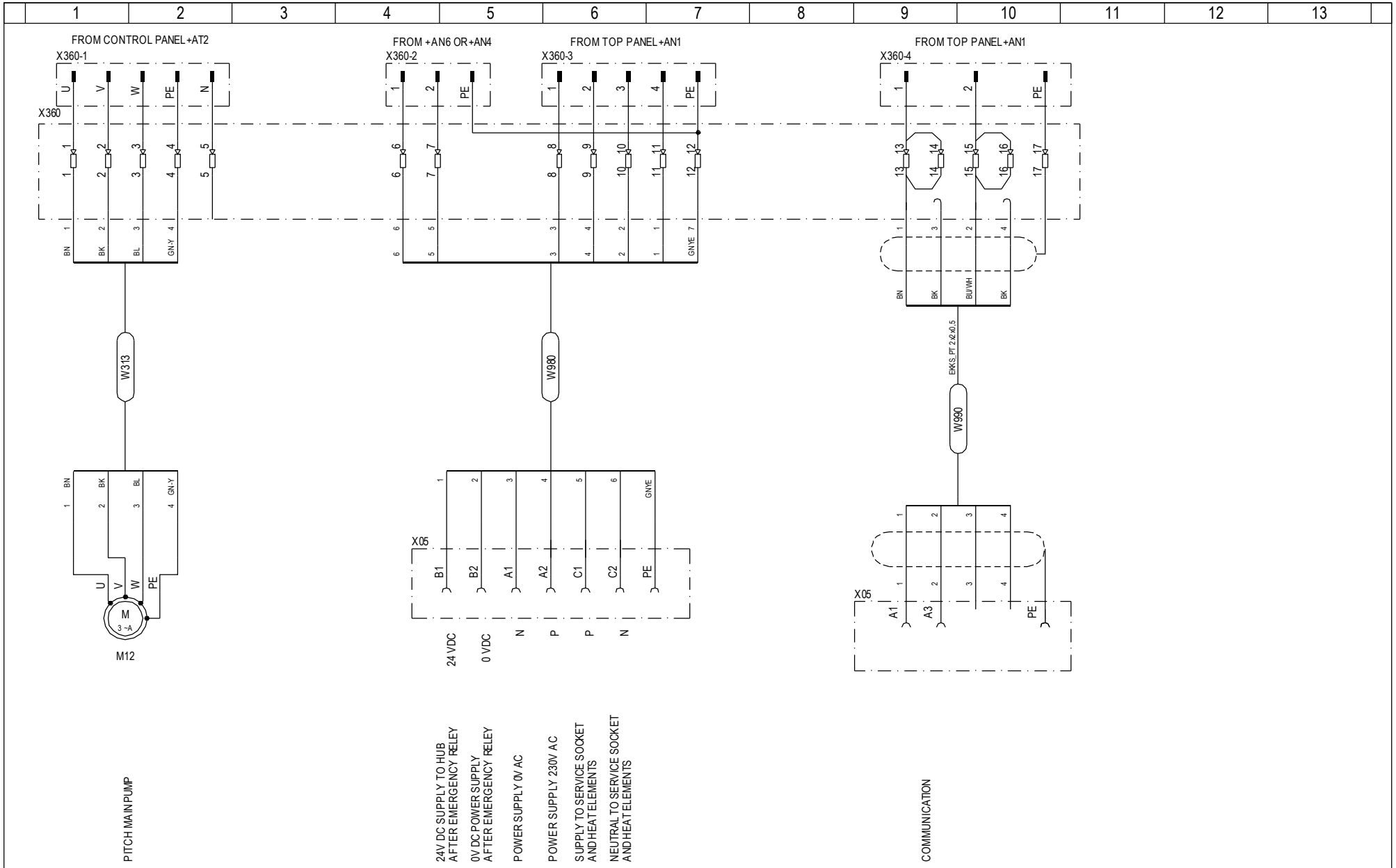

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	Date	Initials	Function	Connections f. Sliprings		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 200	Sheet 080

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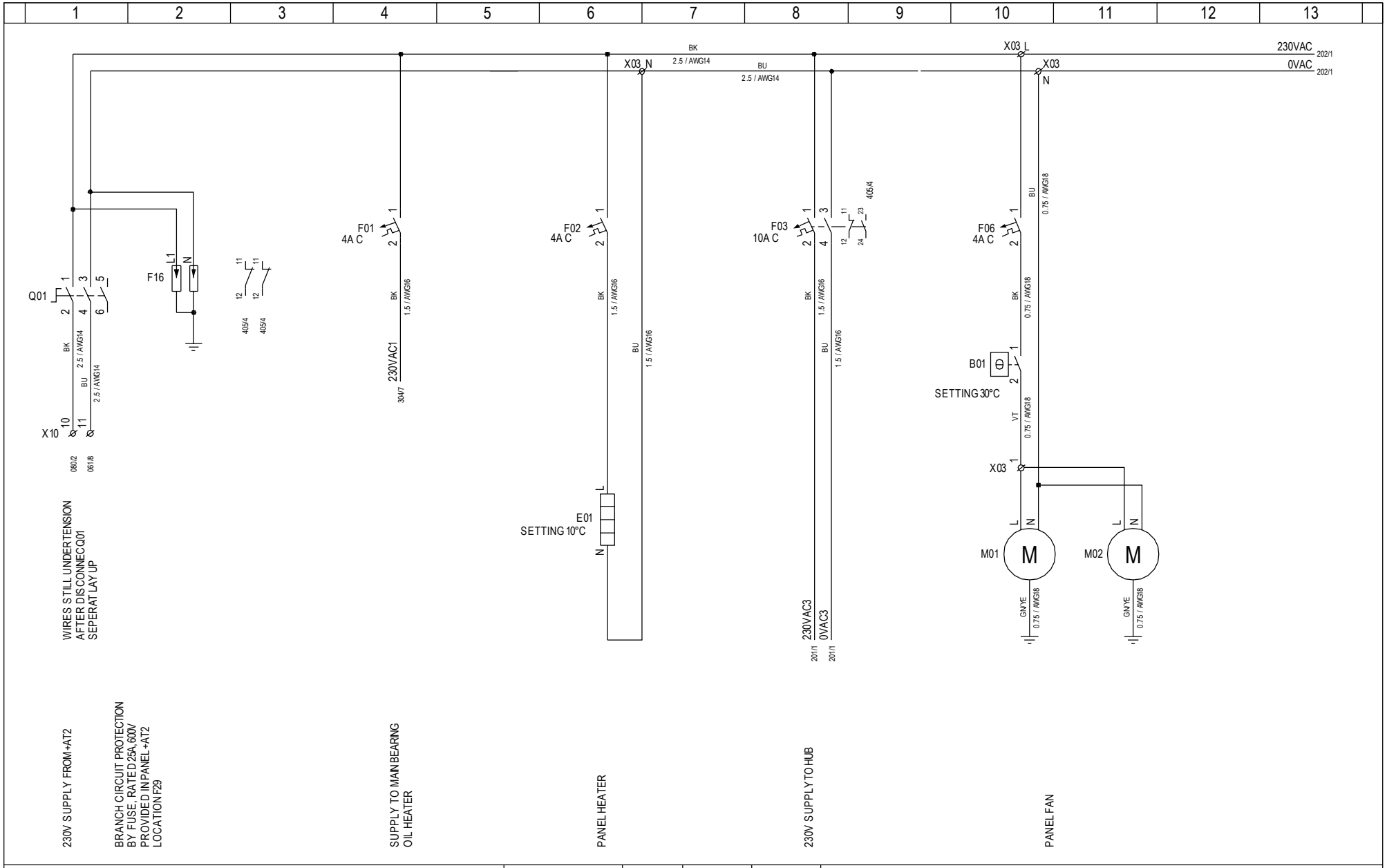

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	Date	Initials	Function	Supply		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 201	Sheet 200

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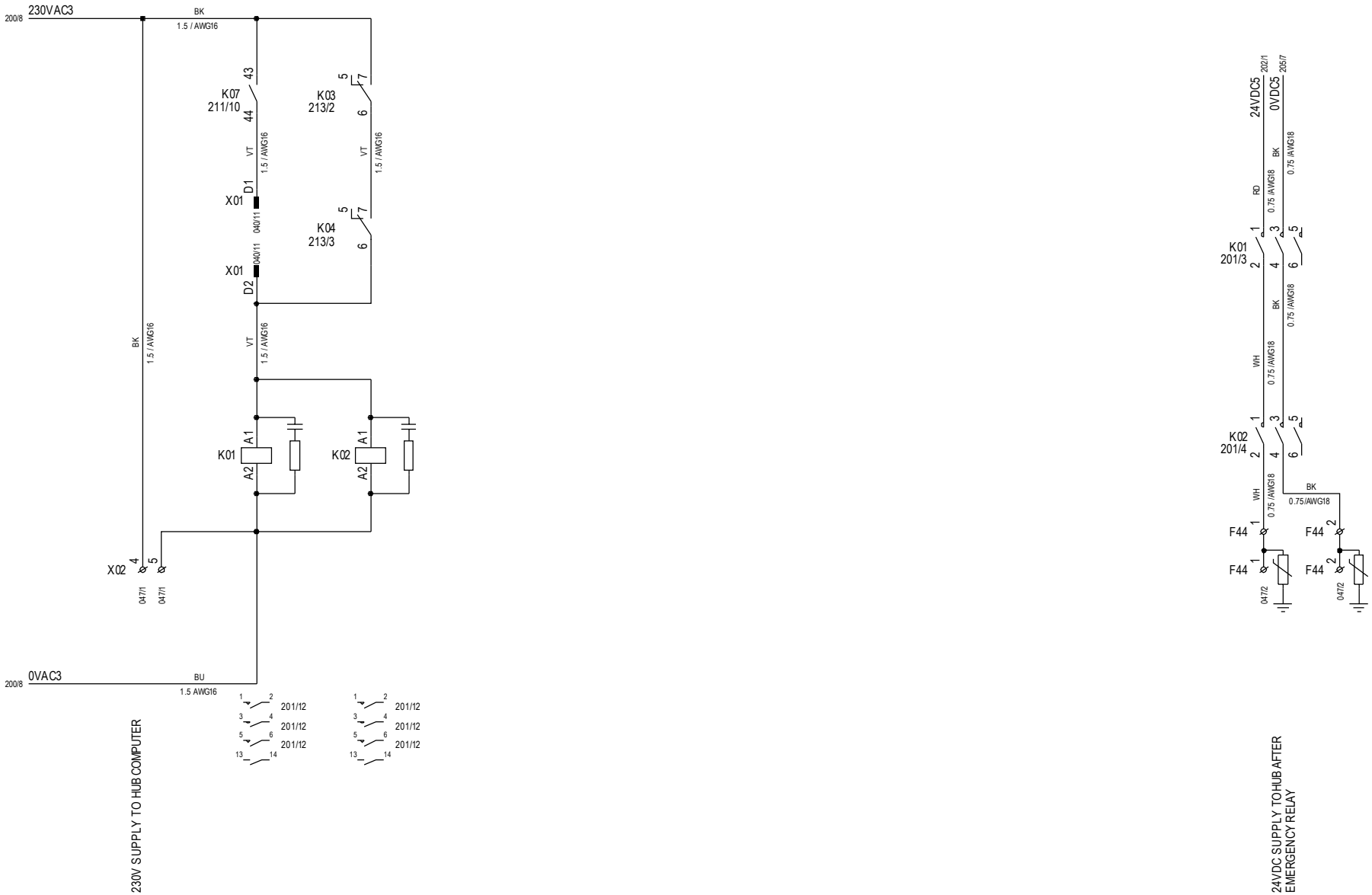

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Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 202	Sheet 201

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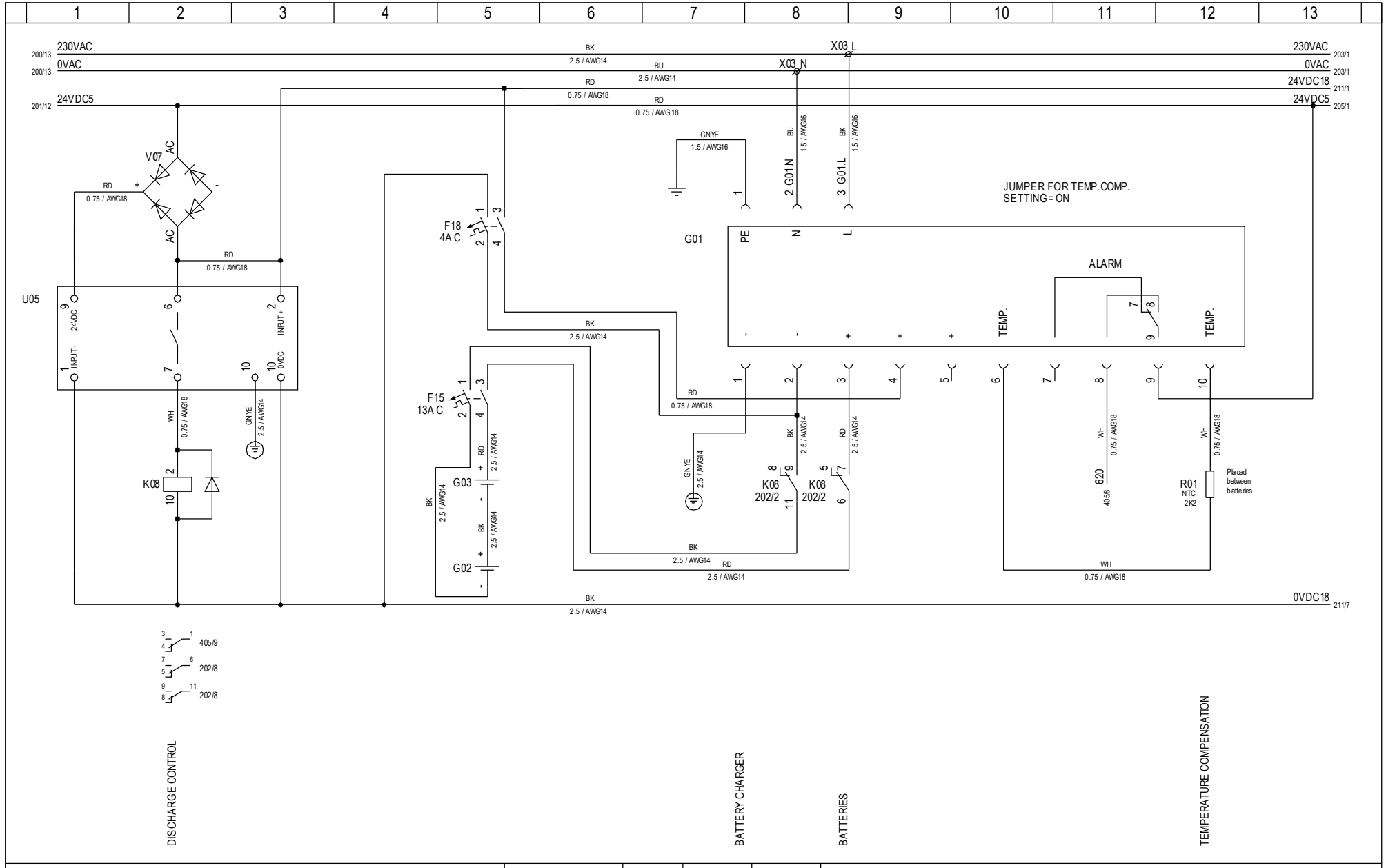

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	Date	Initials	Function	Battery Back up Supply		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 203	Sheet 202

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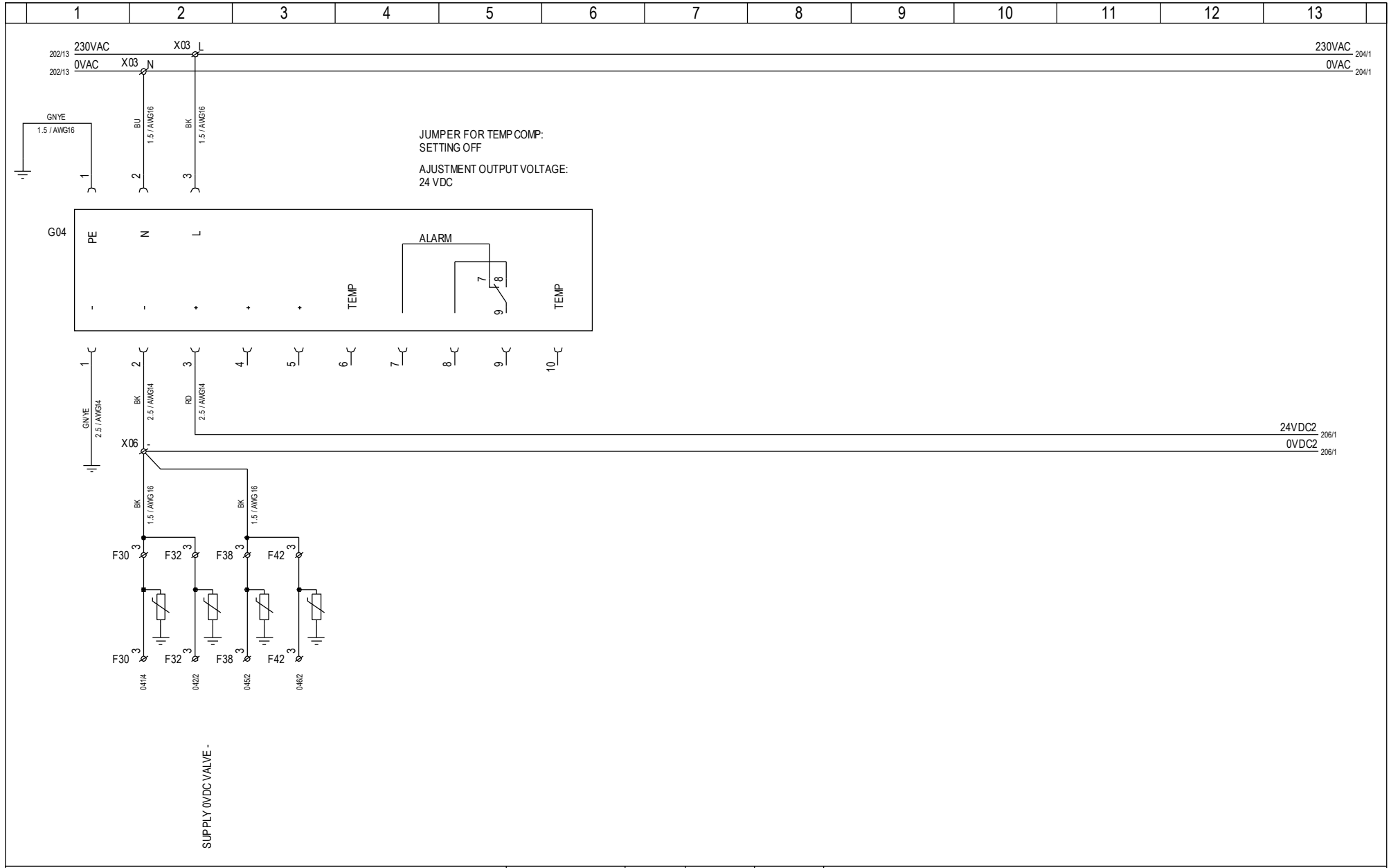

	Date	Initials	Function	24V Valve / Motor Supply		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 204	Sheet 203

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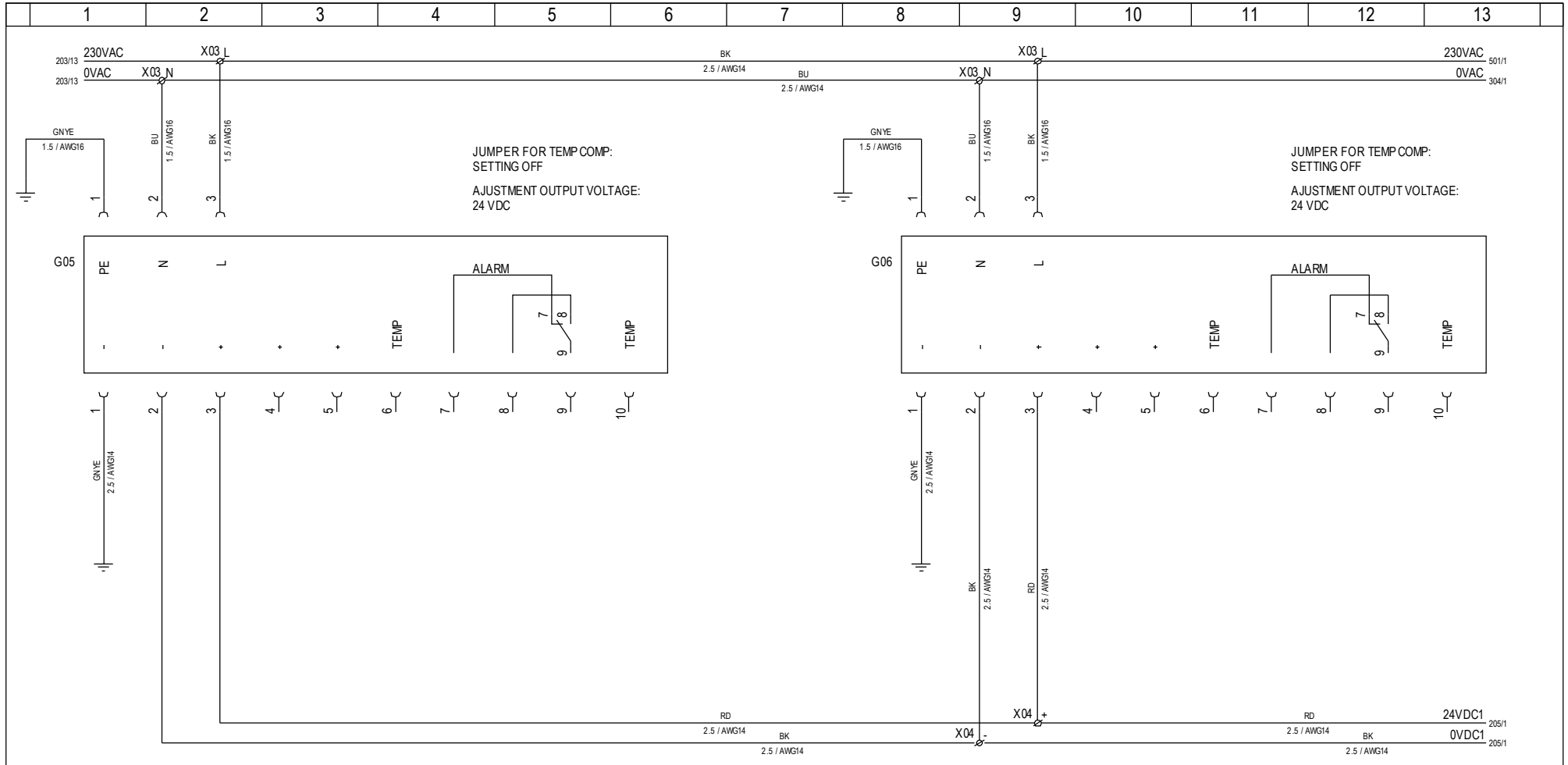

	Date	Initials	Function	24V Sensor supply		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 205	Sheet 204

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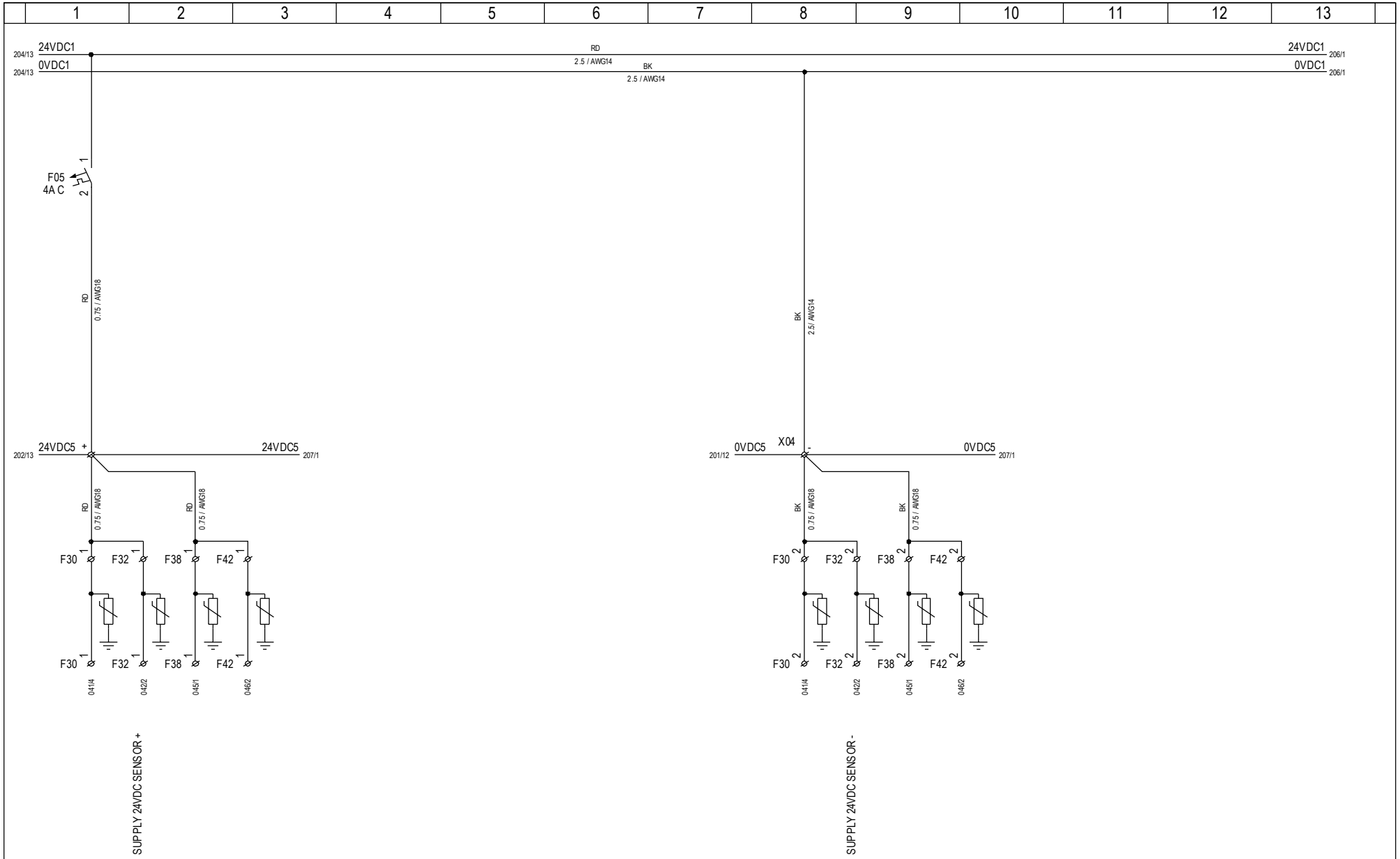

	Date	Initials	Function	Sensor Supply		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Reviced	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 206	Sheet 205

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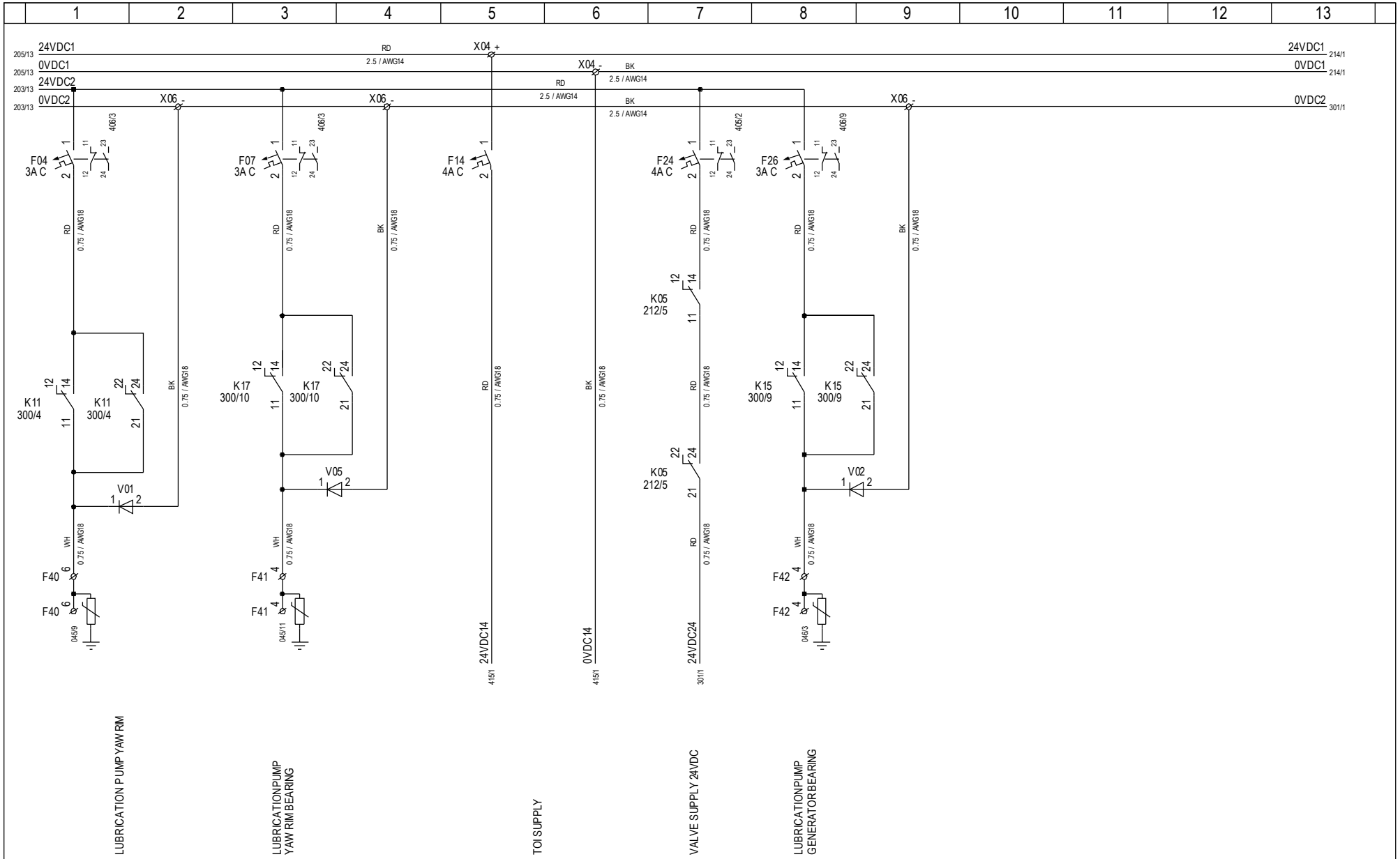

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	Date	Initials	Function	Relays		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 207	Sheet 206

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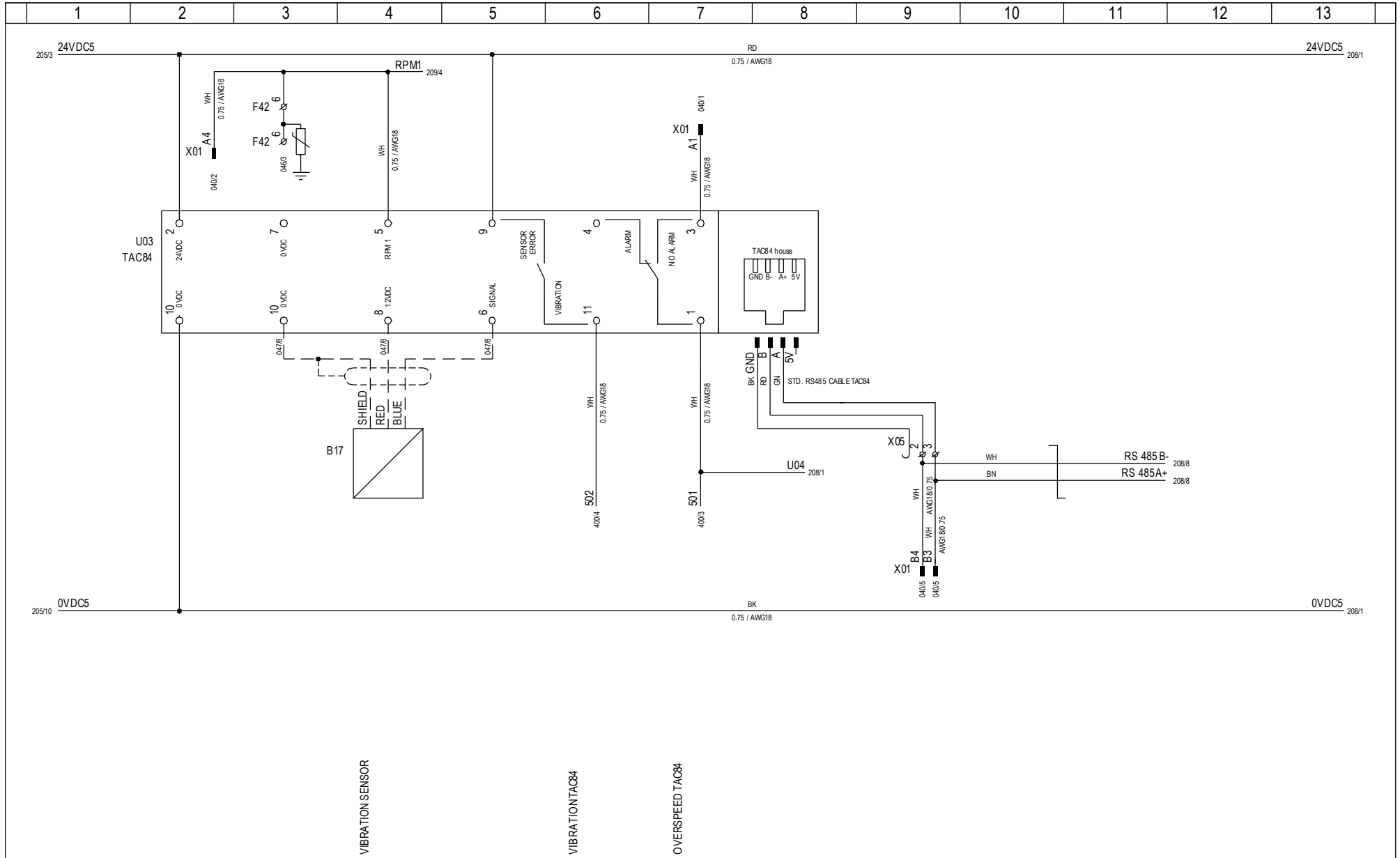

VIBRATION SENSOR

VIBRATION TAC84

OVERSPEED TAC84

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Vibration / Overspeed TAC 84	
		Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz	
		Approved	090519	FLT	Comments	-	Customer: Vestas Wind Systems A/S
		Reviced	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 208 / Sheet 207

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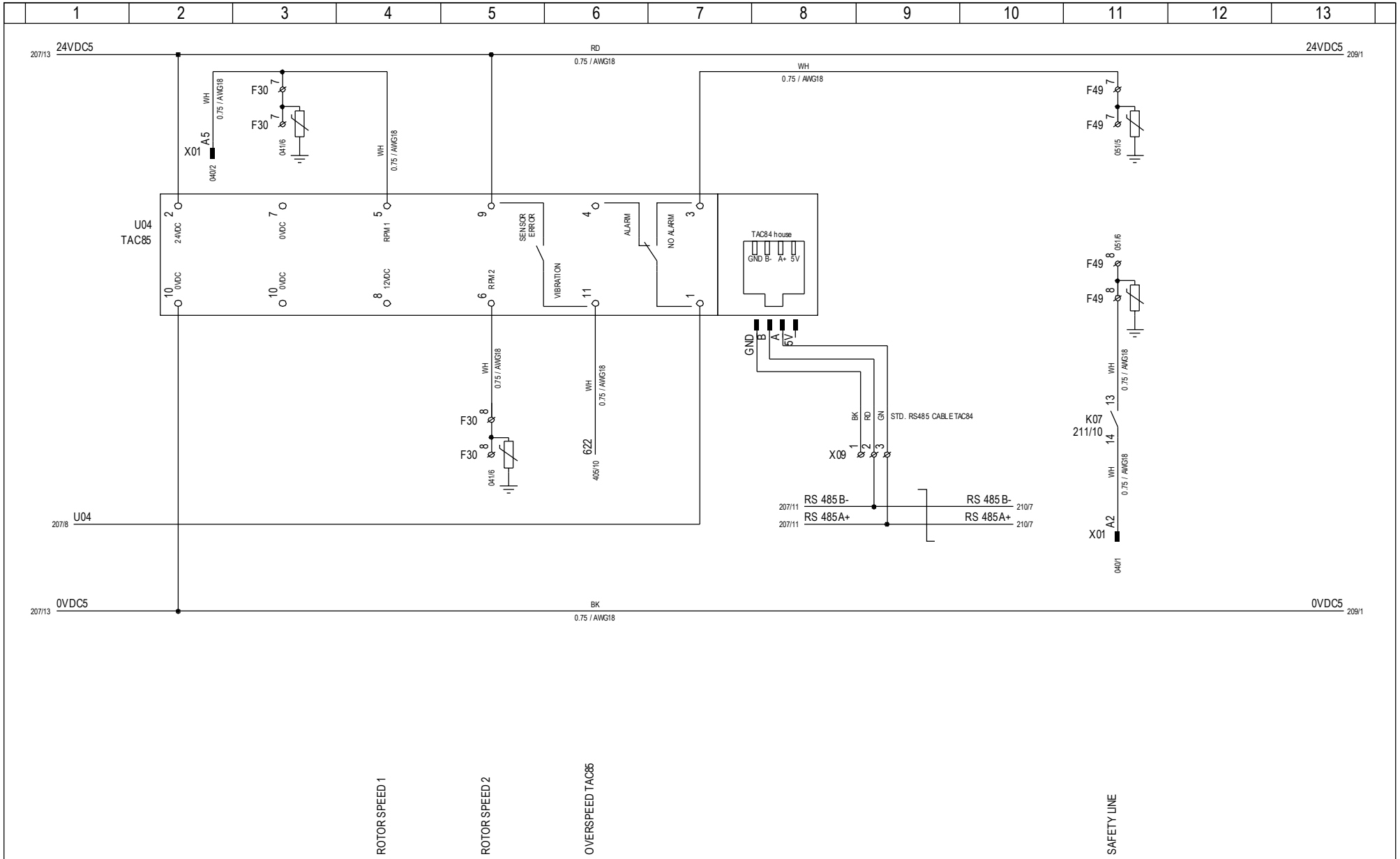

	Date	Initials	Function	Over Speed TAC 85		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Reviced	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 209	Sheet 208

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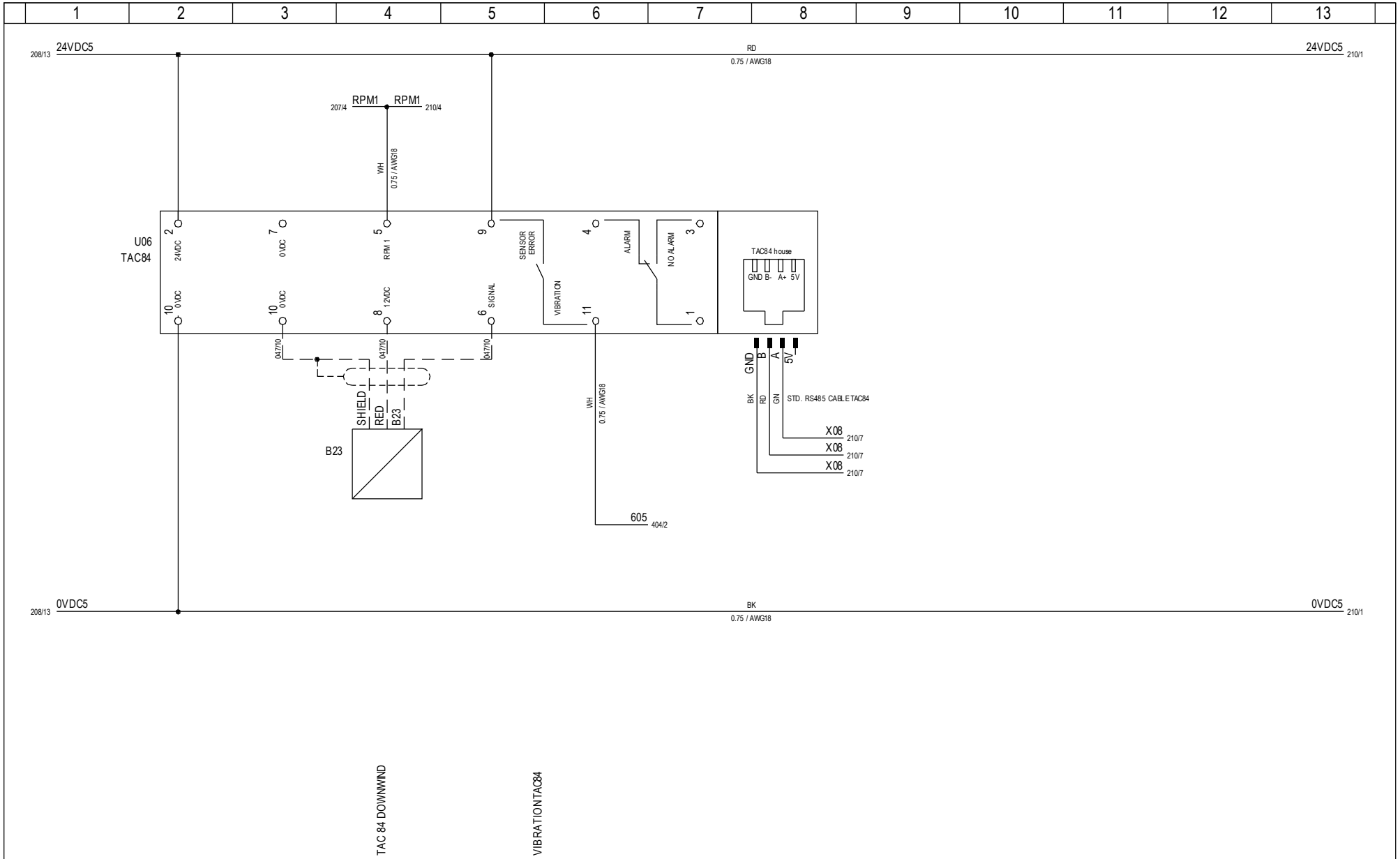

	Date	Initials	Function	TAC 84 Down wind		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Reviced	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 210	Sheet 209

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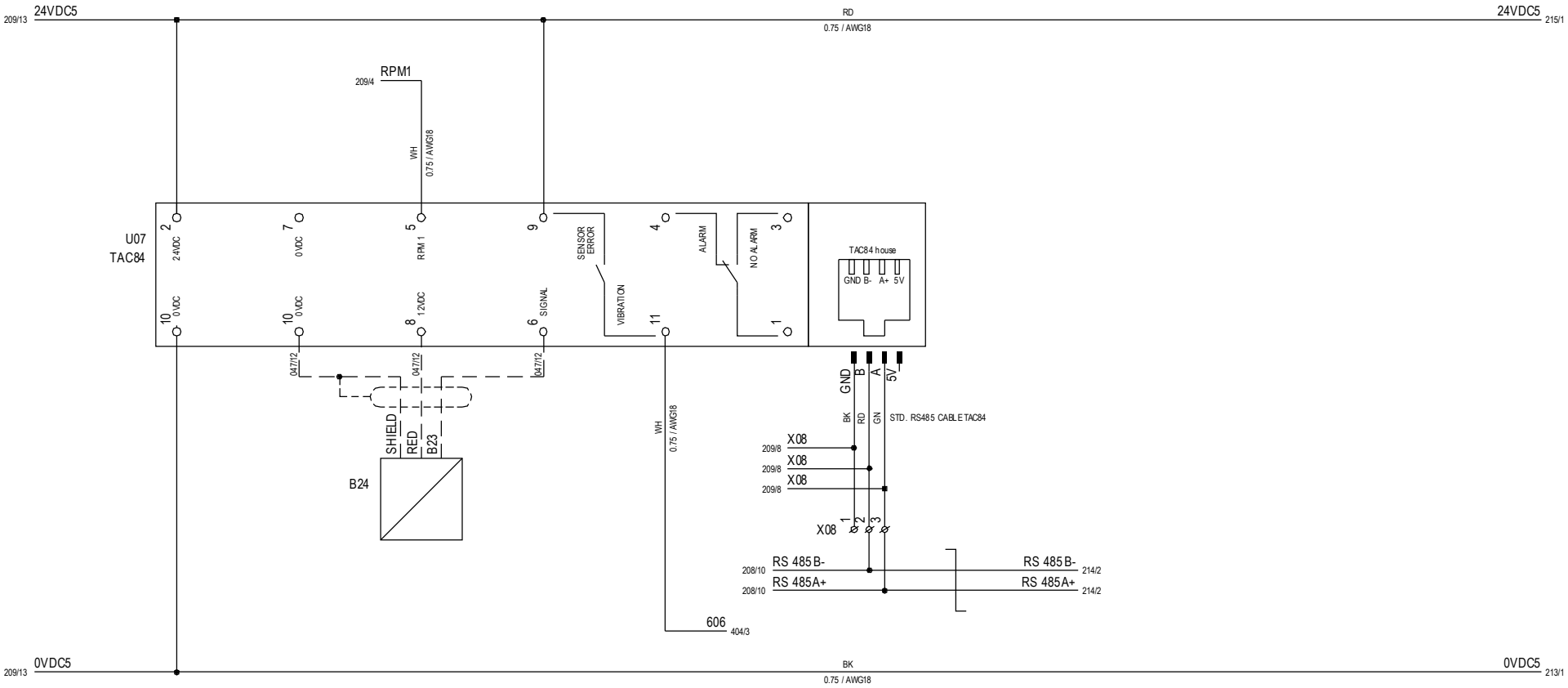

TAC 84 LATERAL

VIBRATIONTAC84

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	TAC 84 Lateral	
		Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz	
		Approved	090519	FLT	Comments	-	Customer: Vestas Wind Systems A/S
		Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 211 / Sheet 210

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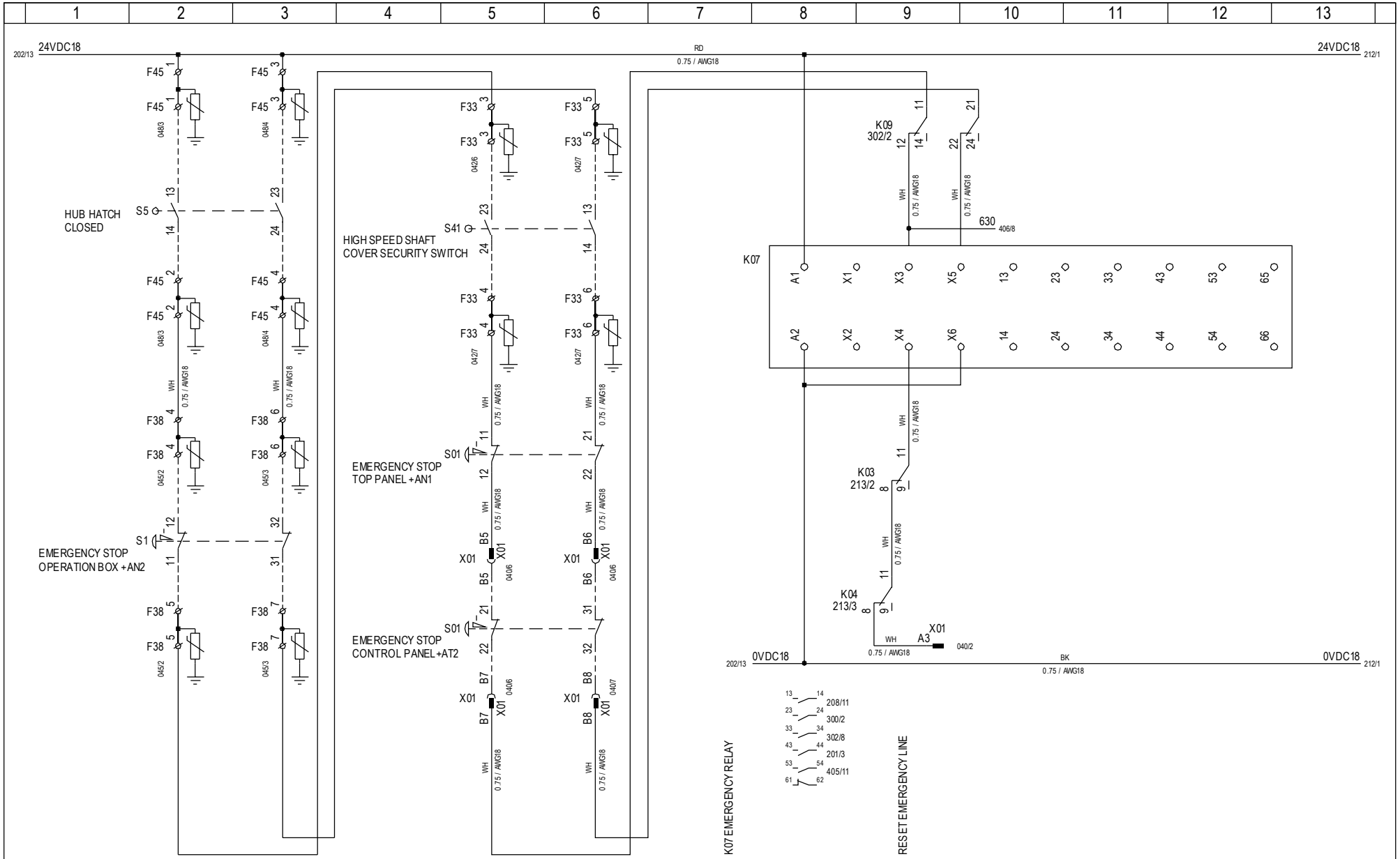

	Date	Initials	Function	Emergency relay		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 212	Sheet 211

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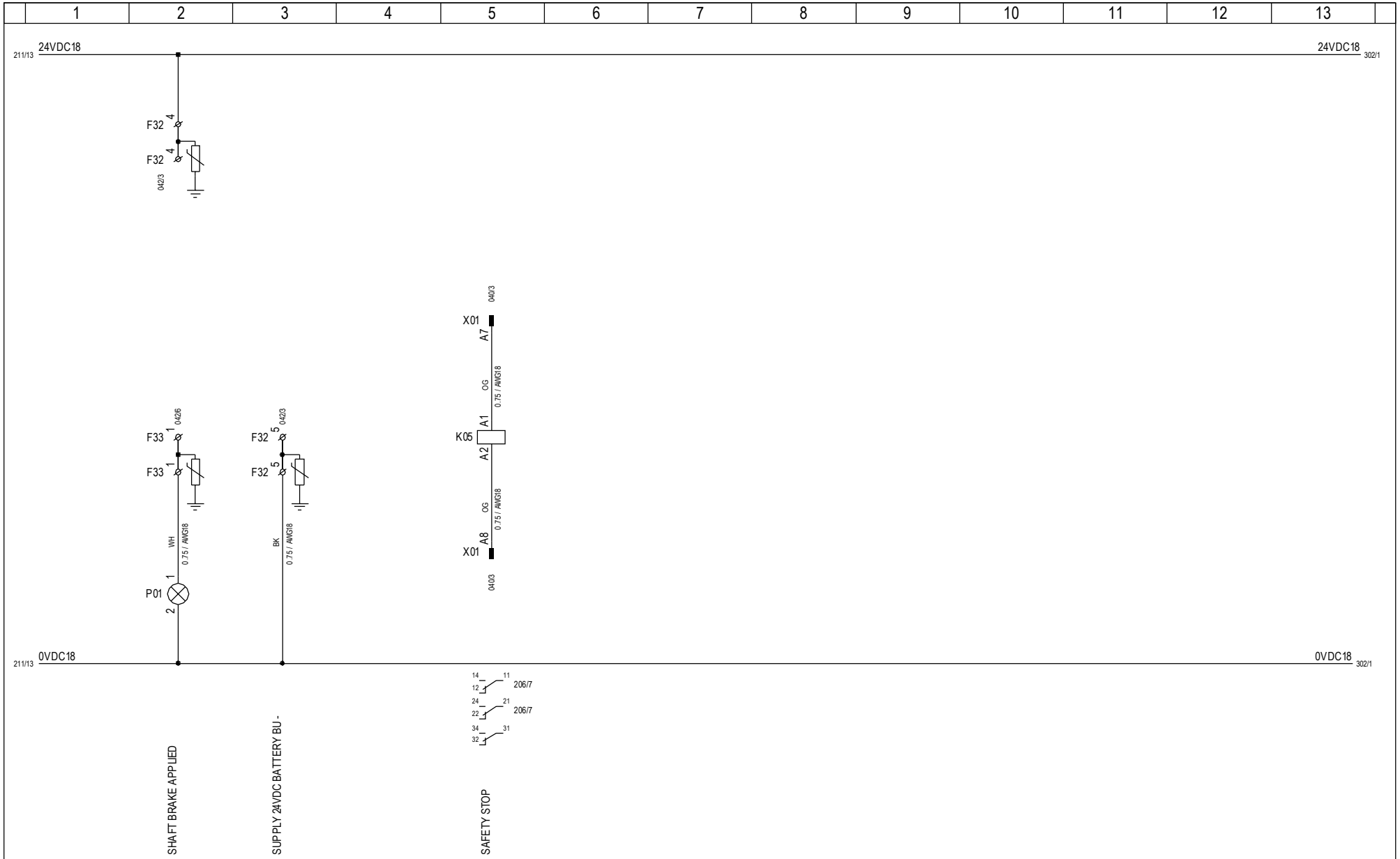

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	Date	Initials	Function	Emergency relay		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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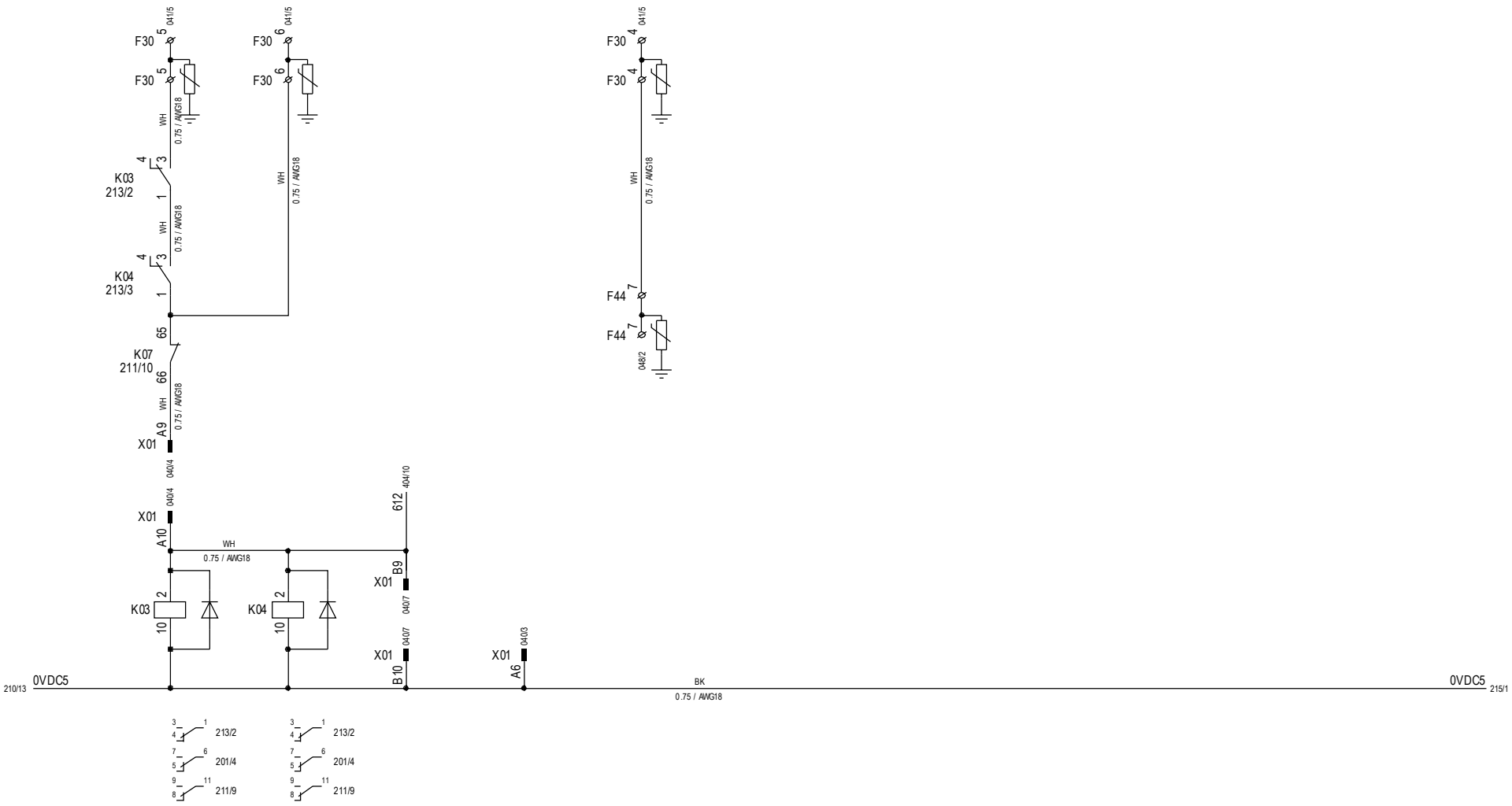

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		Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz	
		Approved	090519	FLT	Comments	-	Customer: Vestas Wind Systems A/S
		Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 214 / Sheet 213

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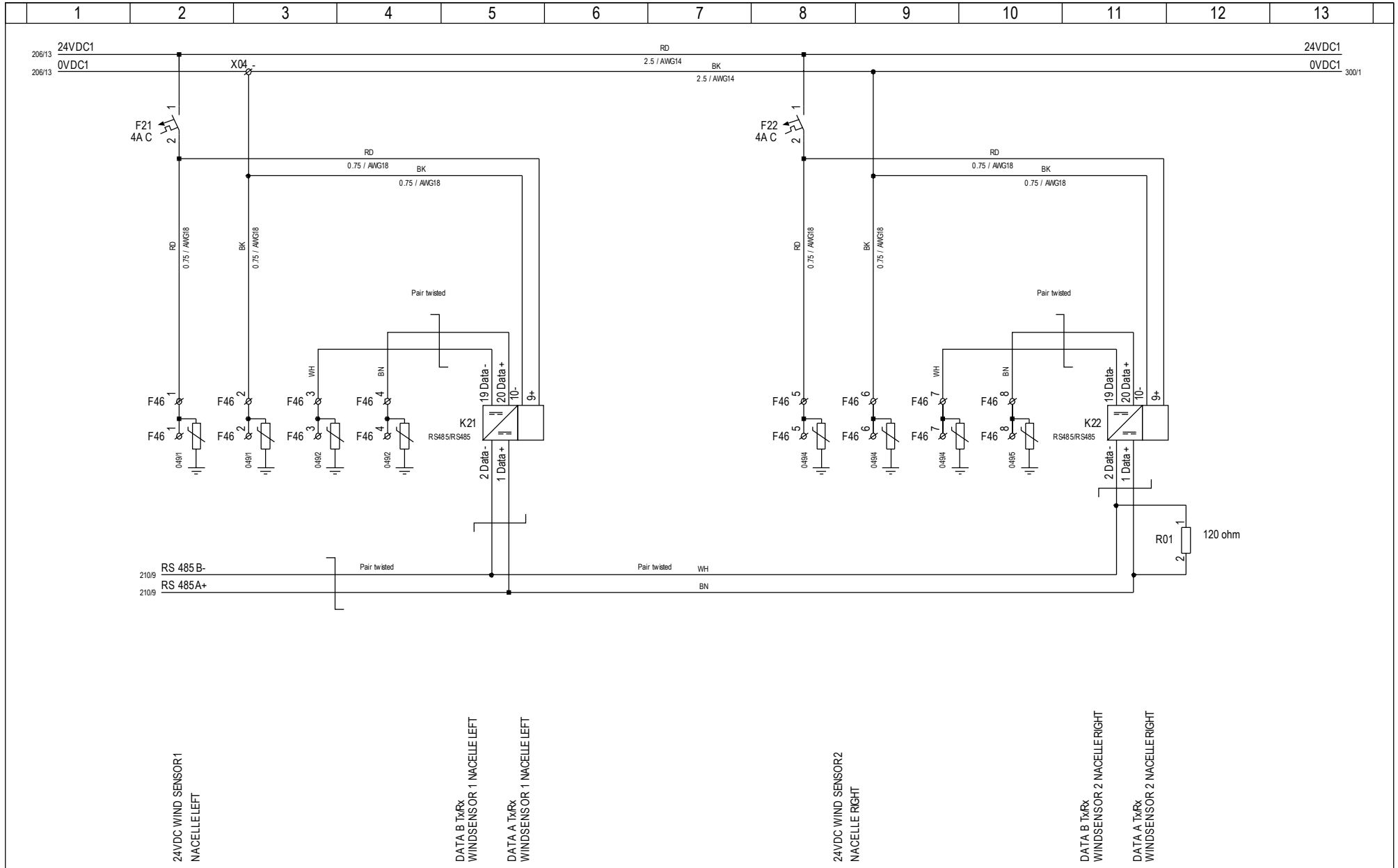

	Date	Initials	Function	Wind Sensores		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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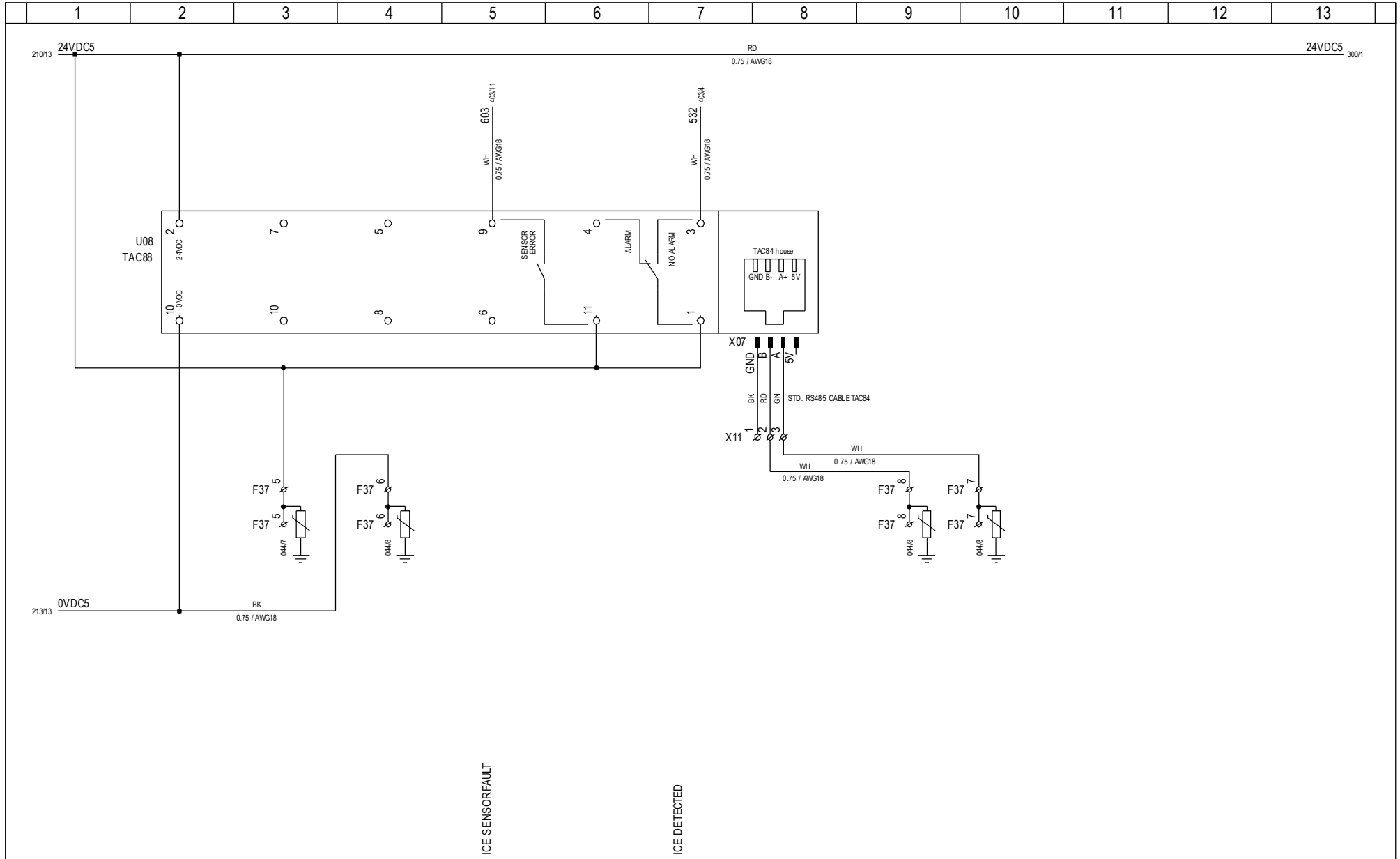

	Date	Initials	Function	Ice Detector (Option)		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 299	Sheet 215

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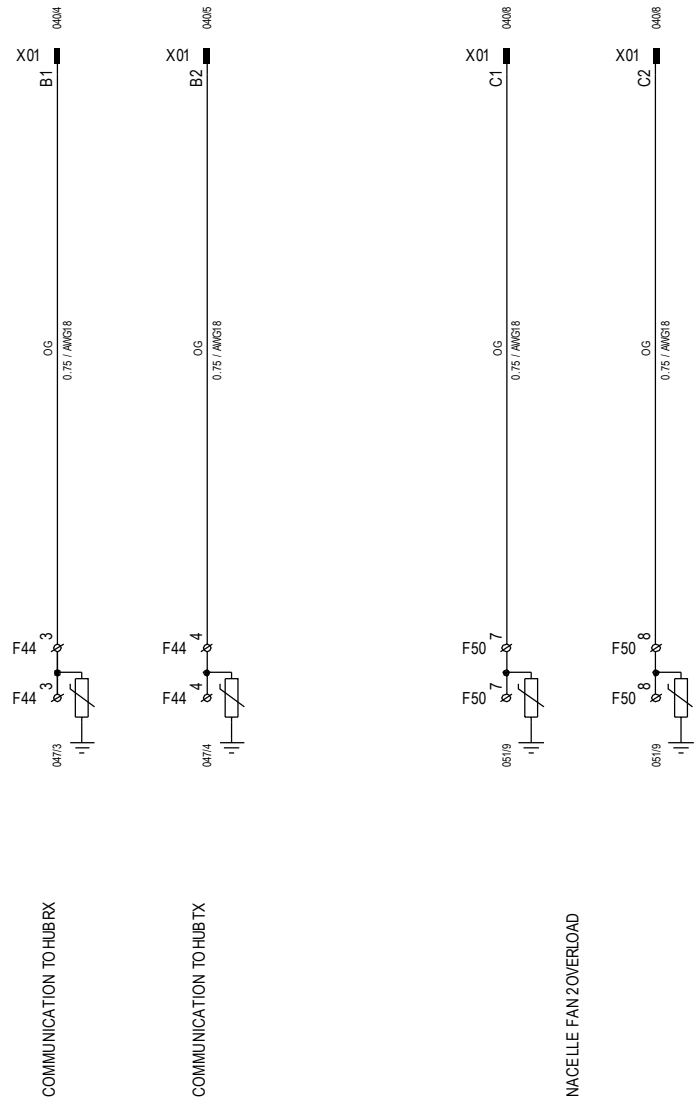

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	Date	Initials	Function	Transit connections		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 300	Sheet 299

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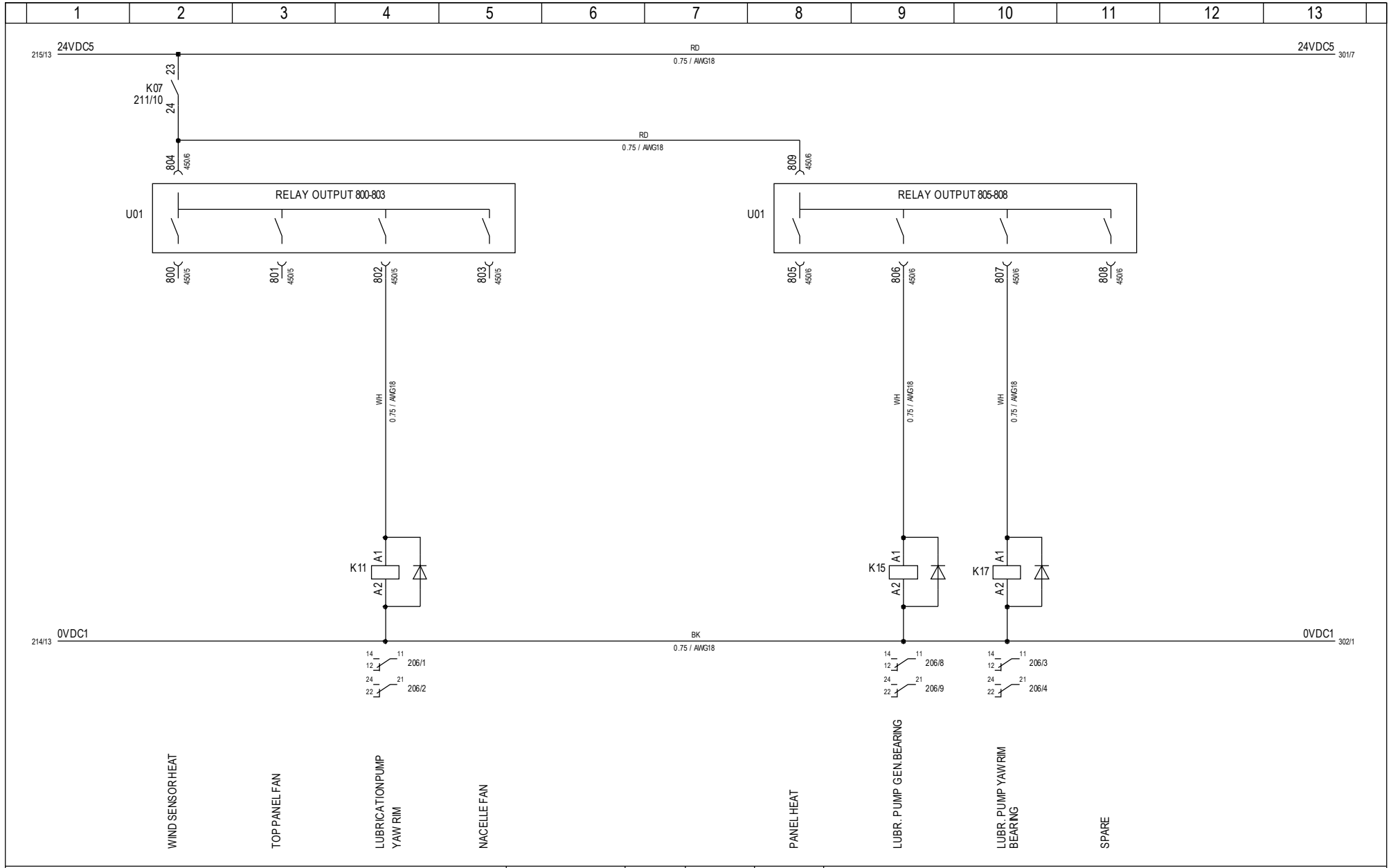

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	Date	Initials	Function	Output 800-809		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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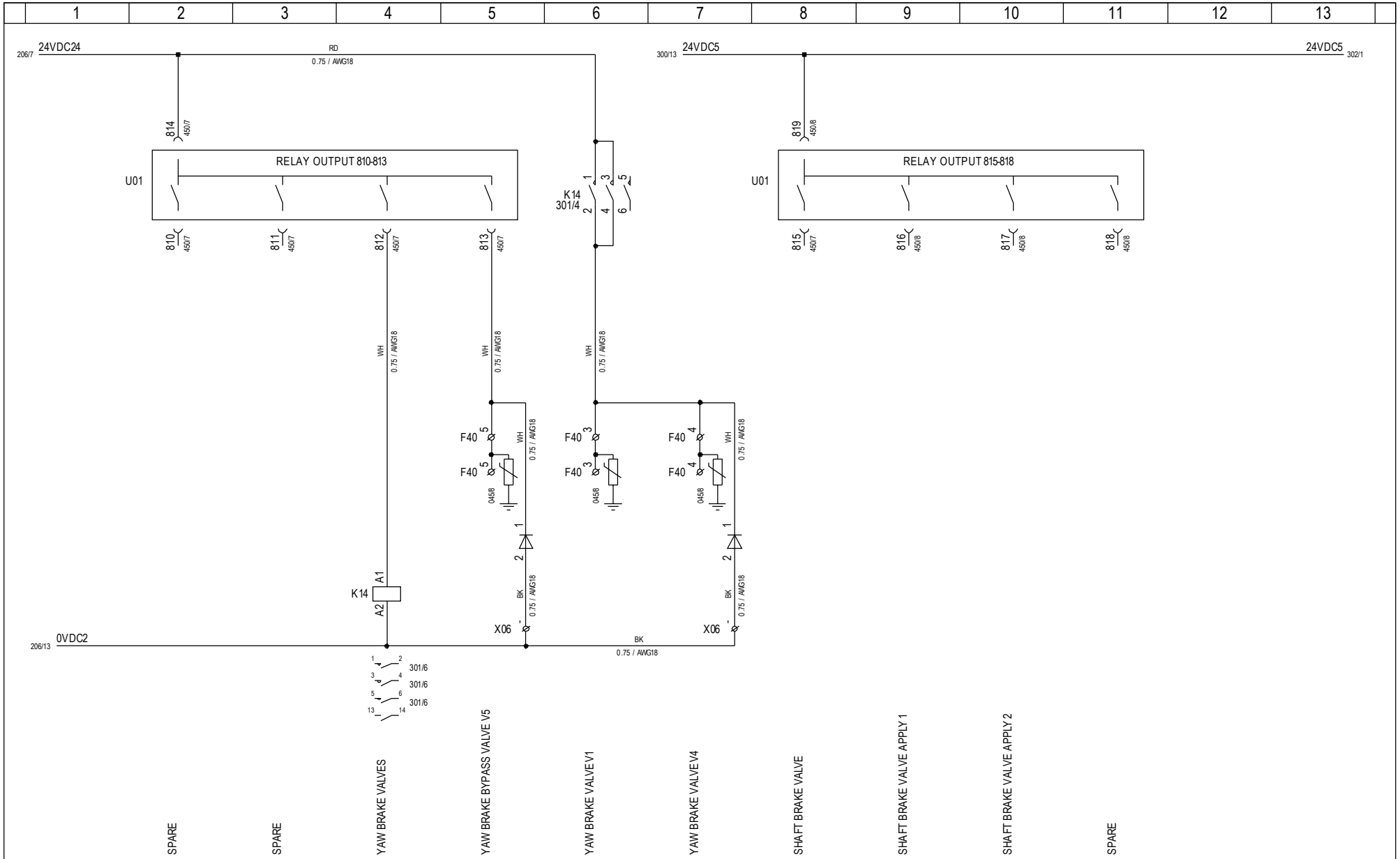

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	Date	Initials	Function	Output 810-818		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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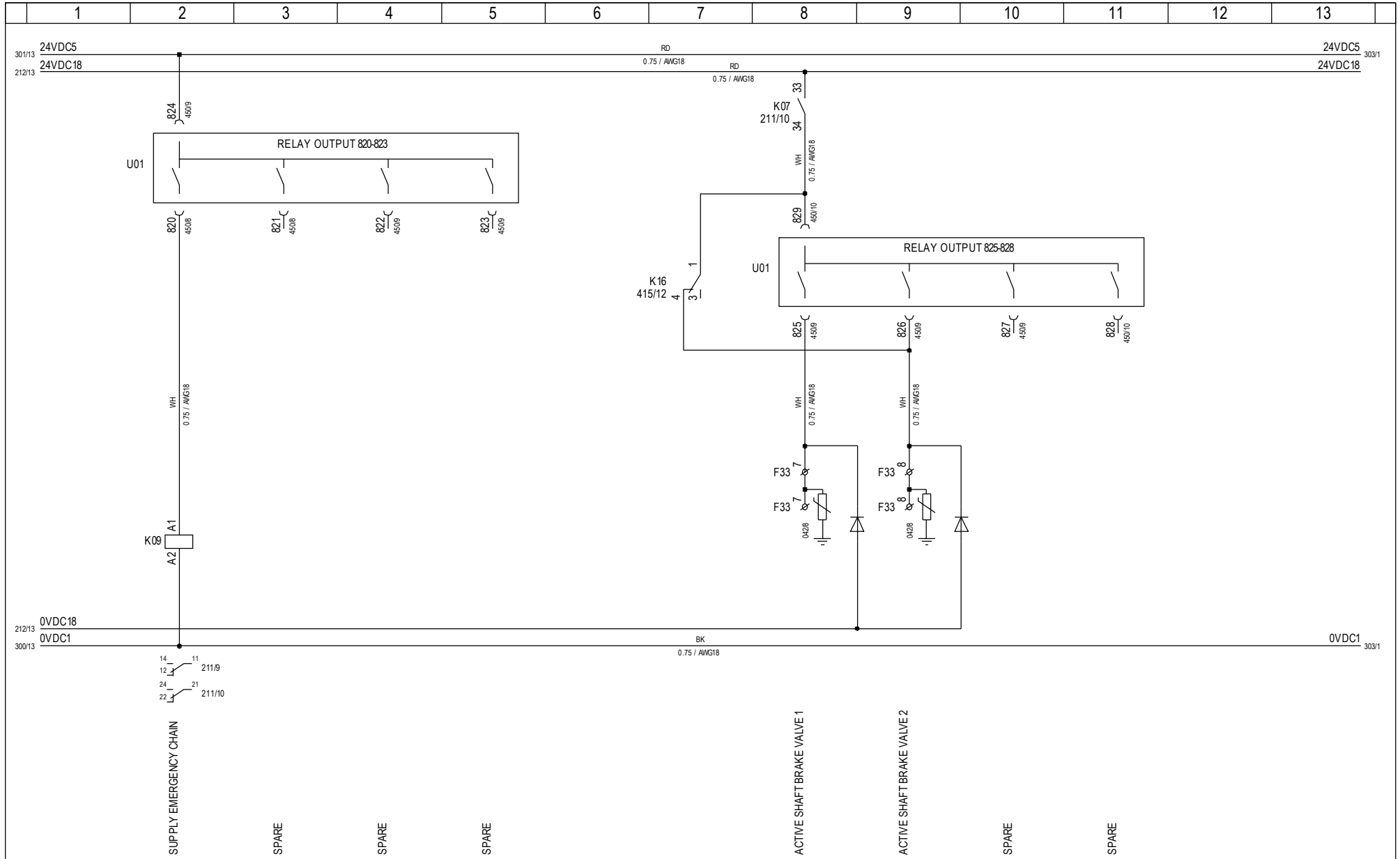

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	Date	Initials	Function	Output 820-828		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Reviced	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 303	Sheet 302

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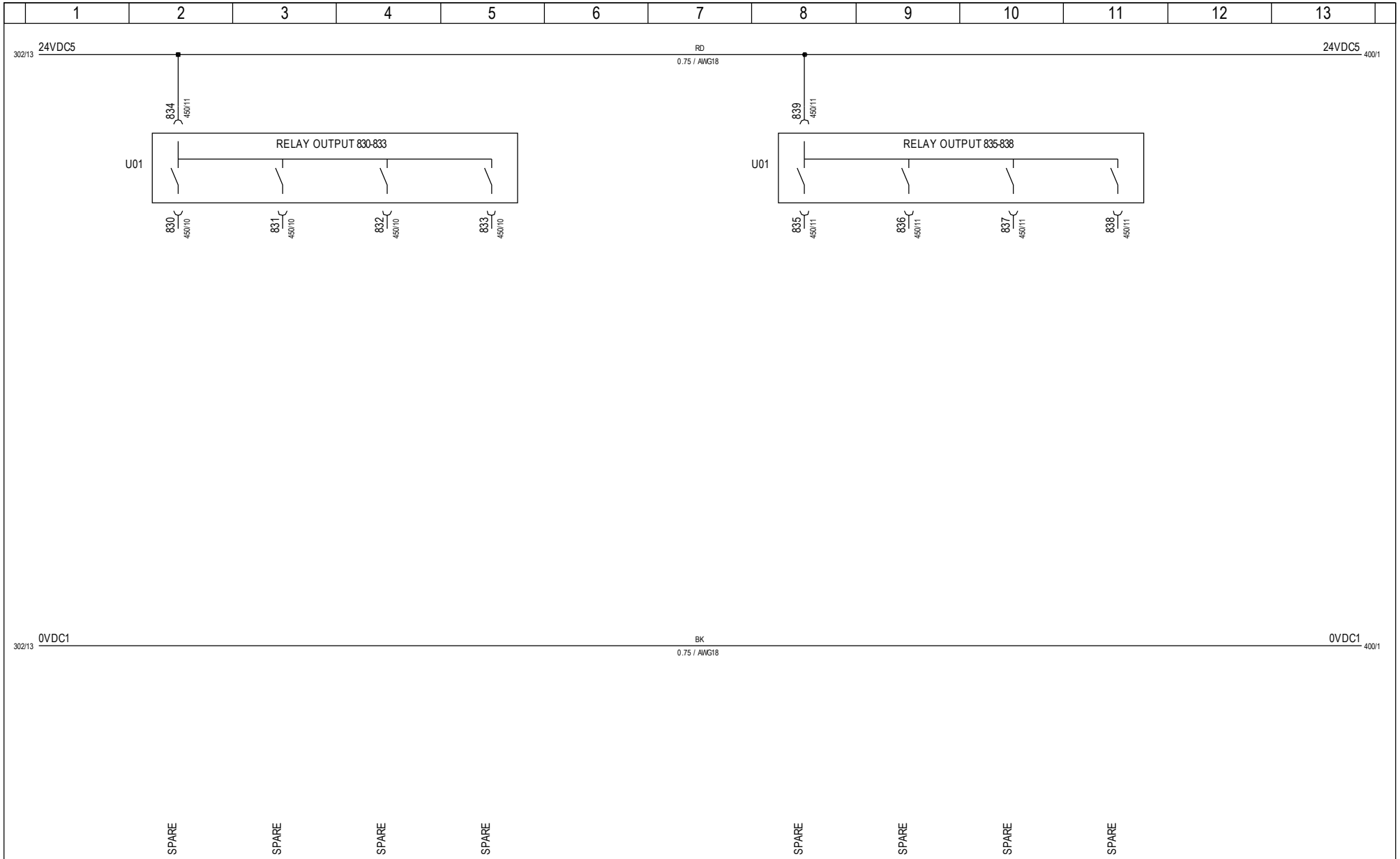

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	Date	Initials	Function	Output 830-838		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 304	Sheet 303

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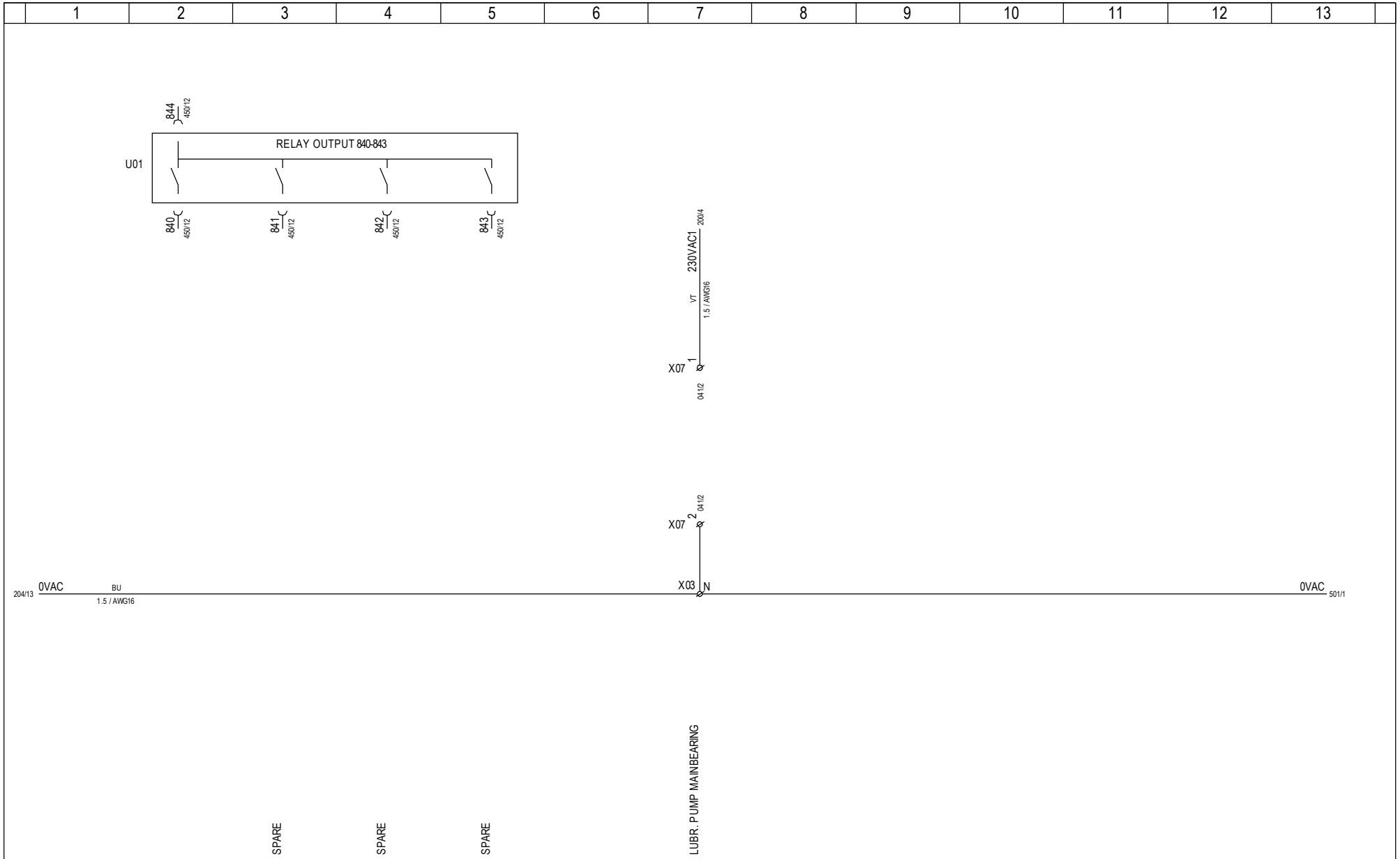

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	Date	Initials	Function	Output 840-844		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 400	Sheet 304

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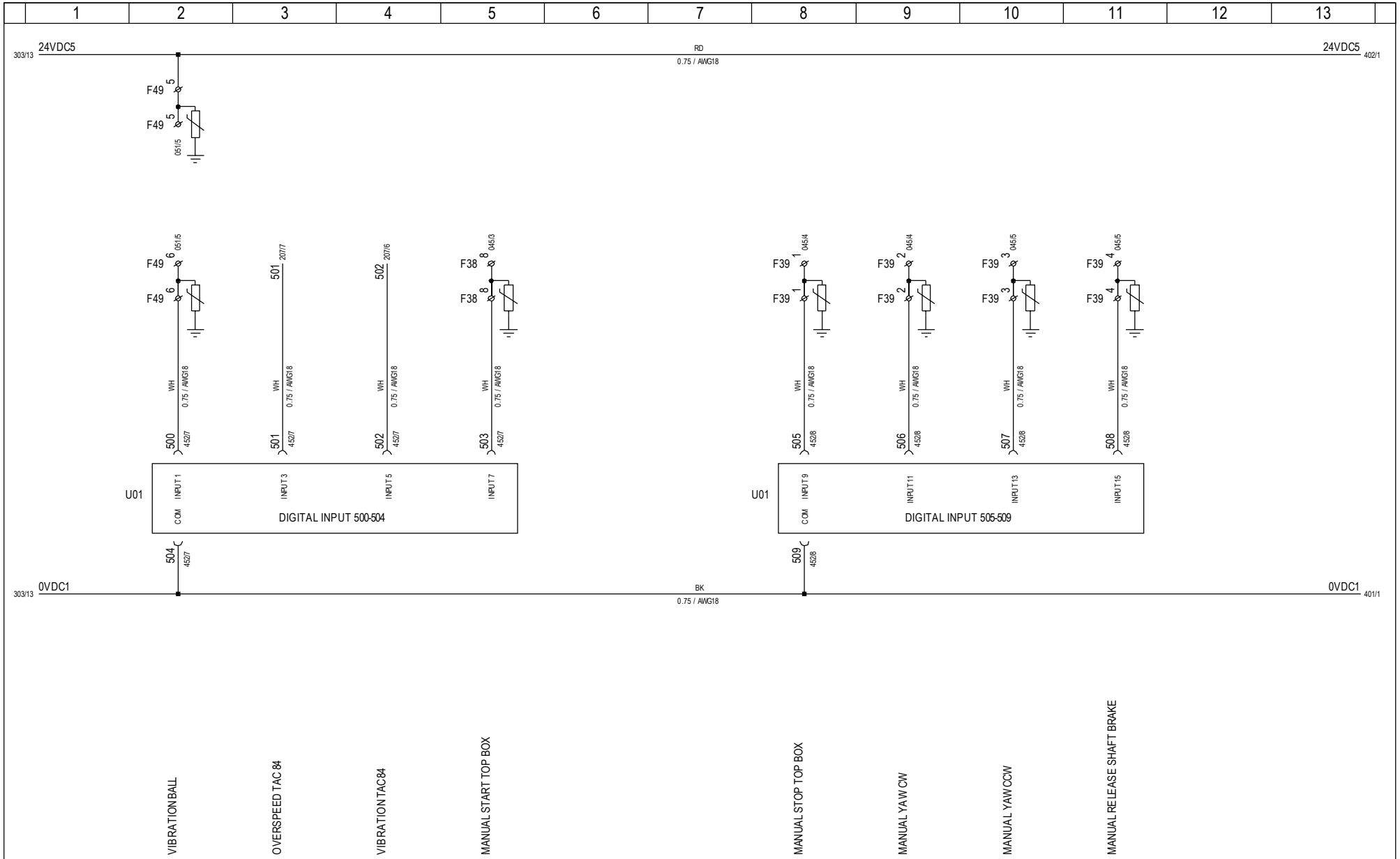

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	Date	Initials	Function	Input 500-508		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 401	Sheet 400

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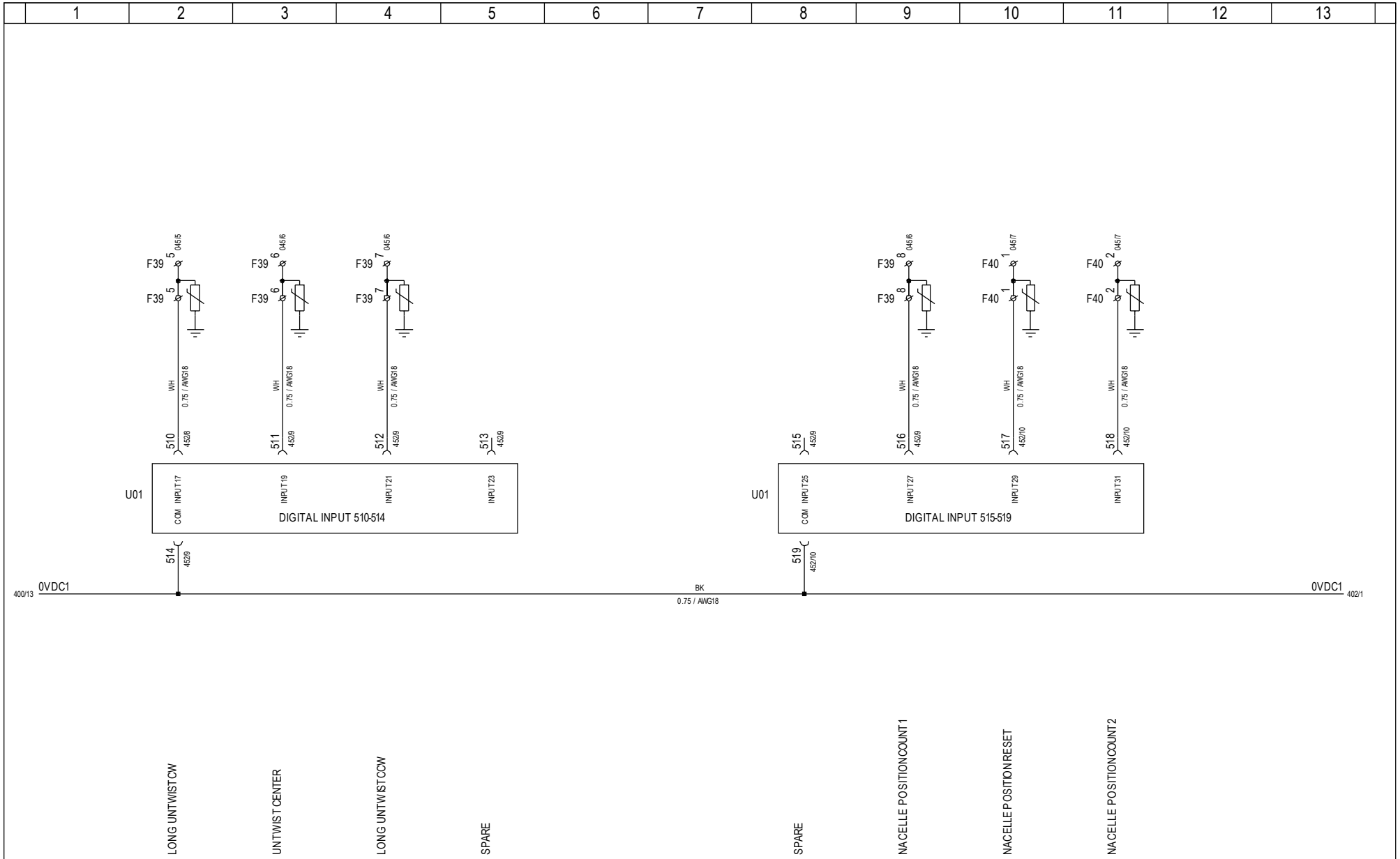

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	Date	Initials	Function	Input 510-518		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Reviced	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 402	Sheet 401

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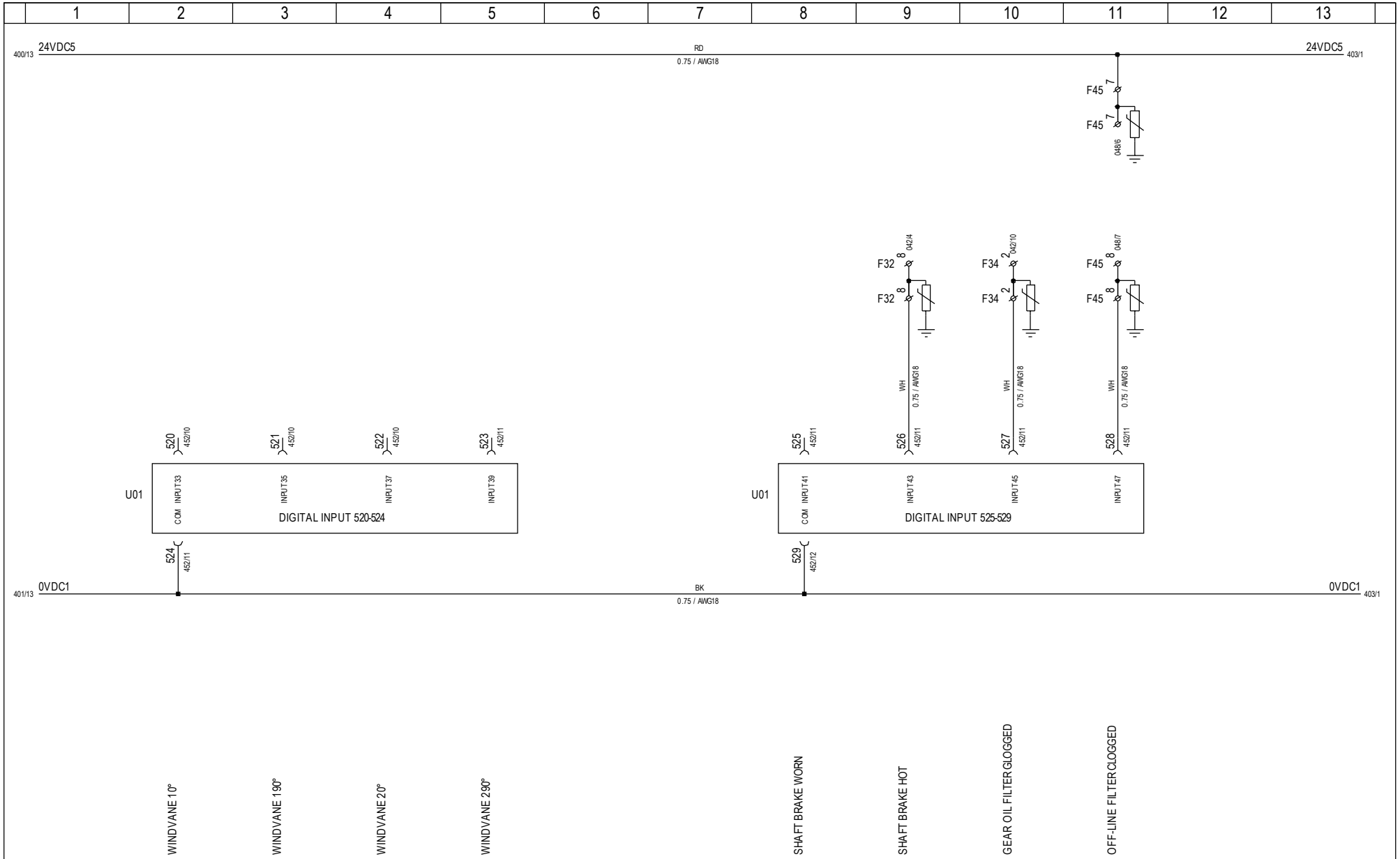

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	Date	Initials	Function	Input 520-528		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 403	Sheet 402

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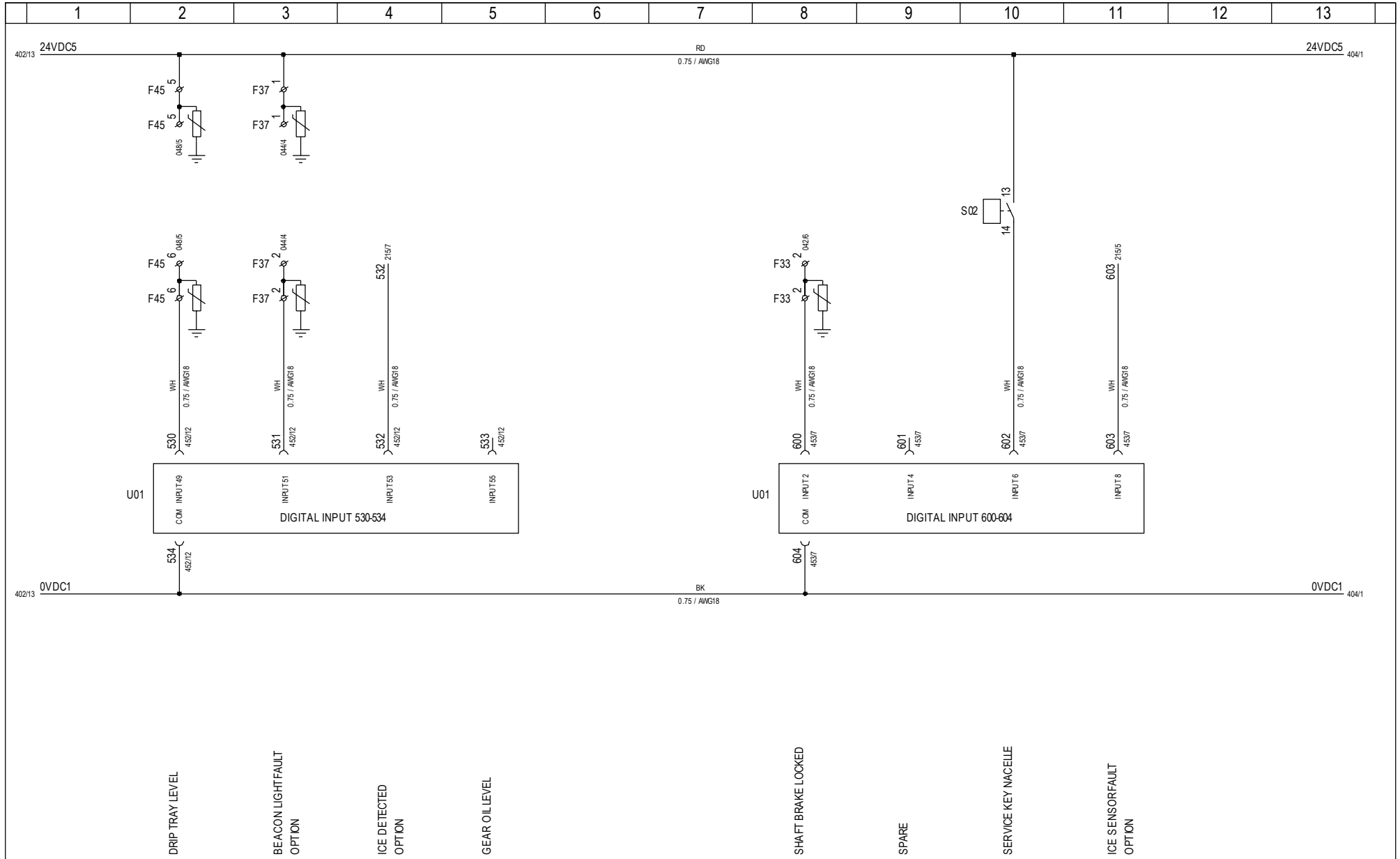

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	Date	Initials	Function	Input 530-603		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 404	Sheet 403

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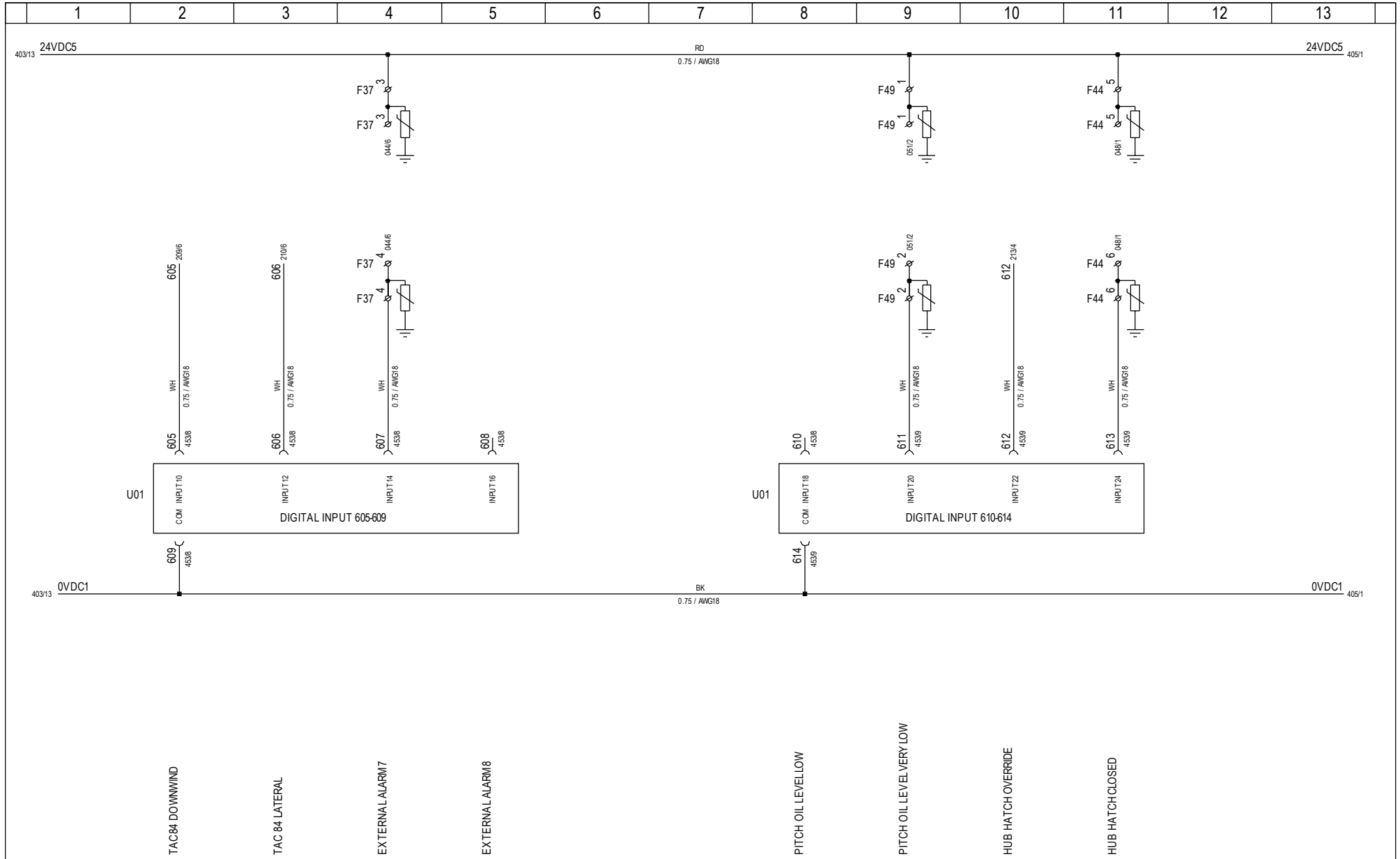

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	Date	Initials	Function	Input 604-613		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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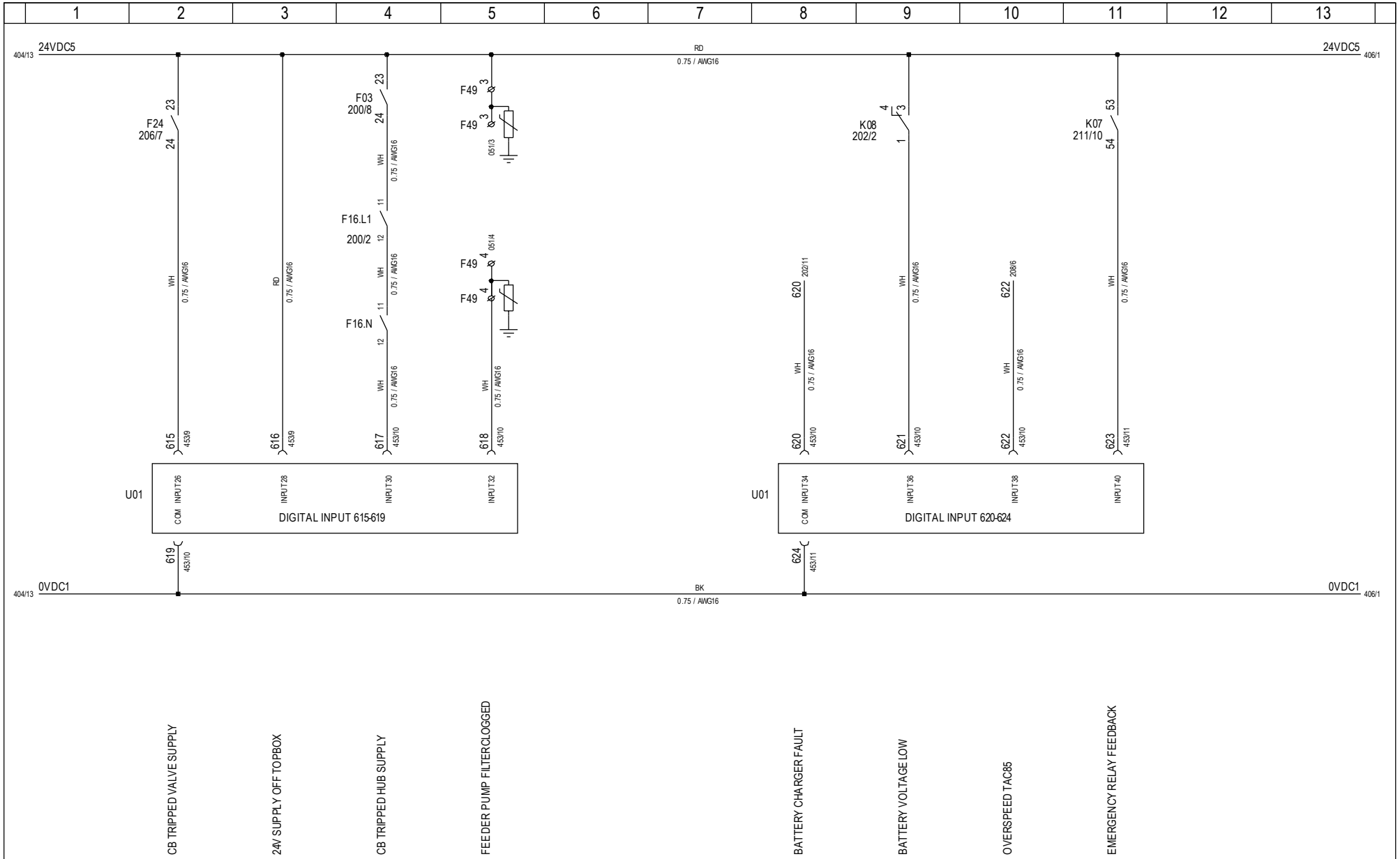

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	Date	Initials	Function	Input 615-623		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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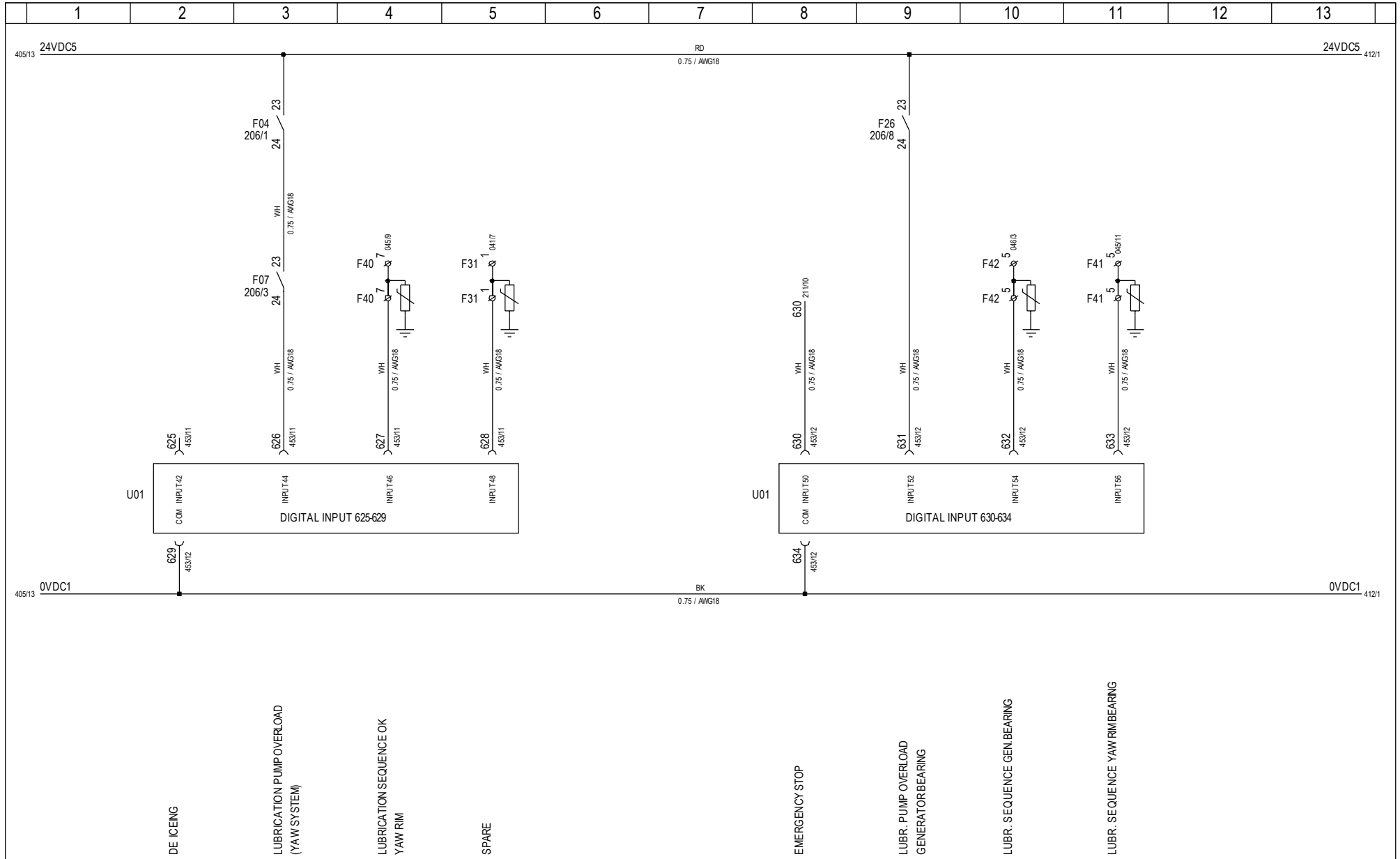

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	Date	Initials	Function	Input 625-634		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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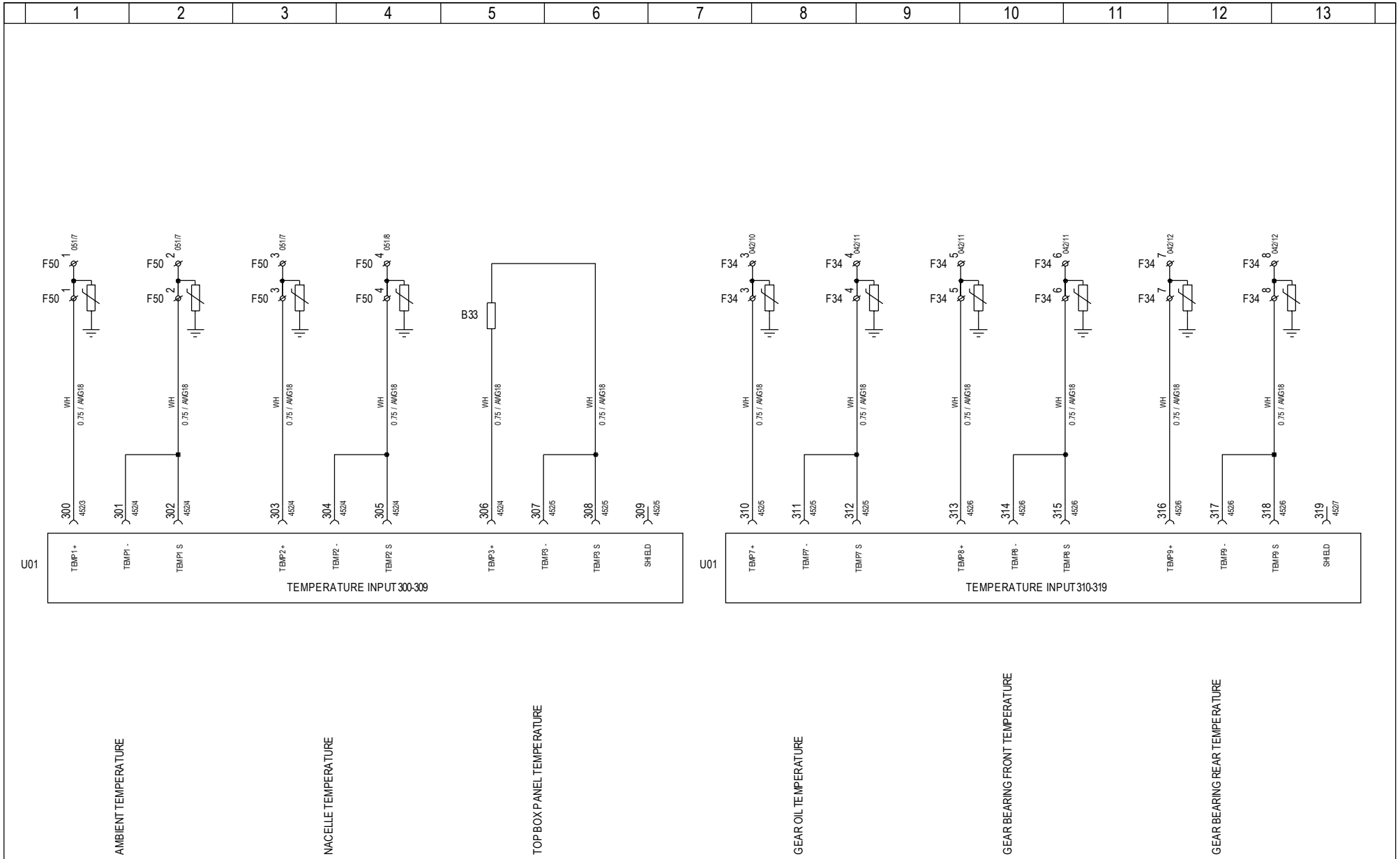

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	Date	Initials	Function	Input 300-319		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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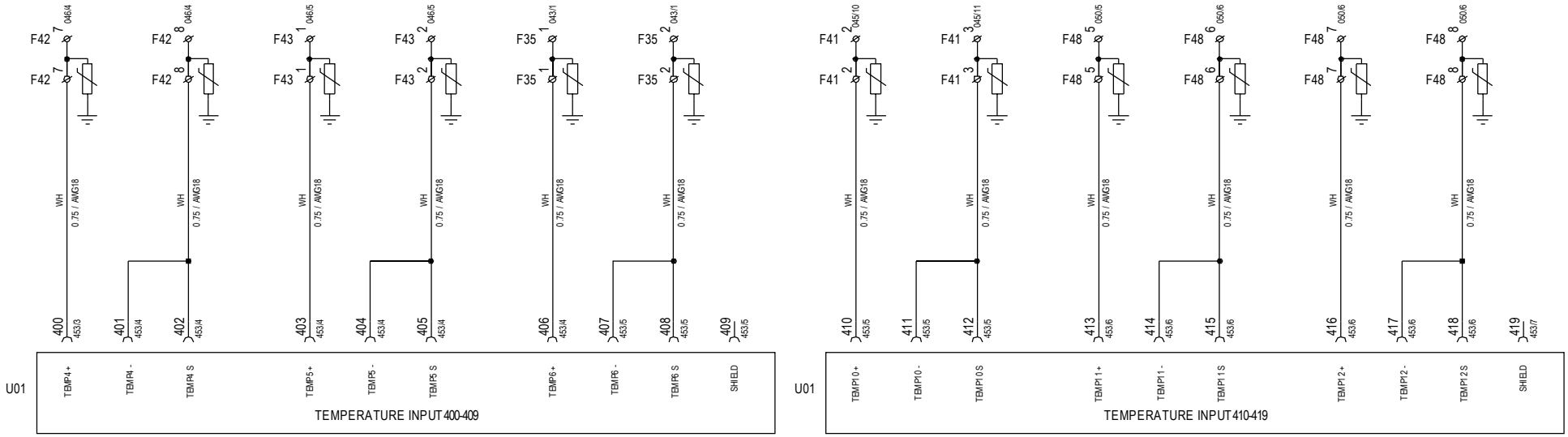

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	Date	Initials	Function	Input 400-418		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 409	Sheet 408

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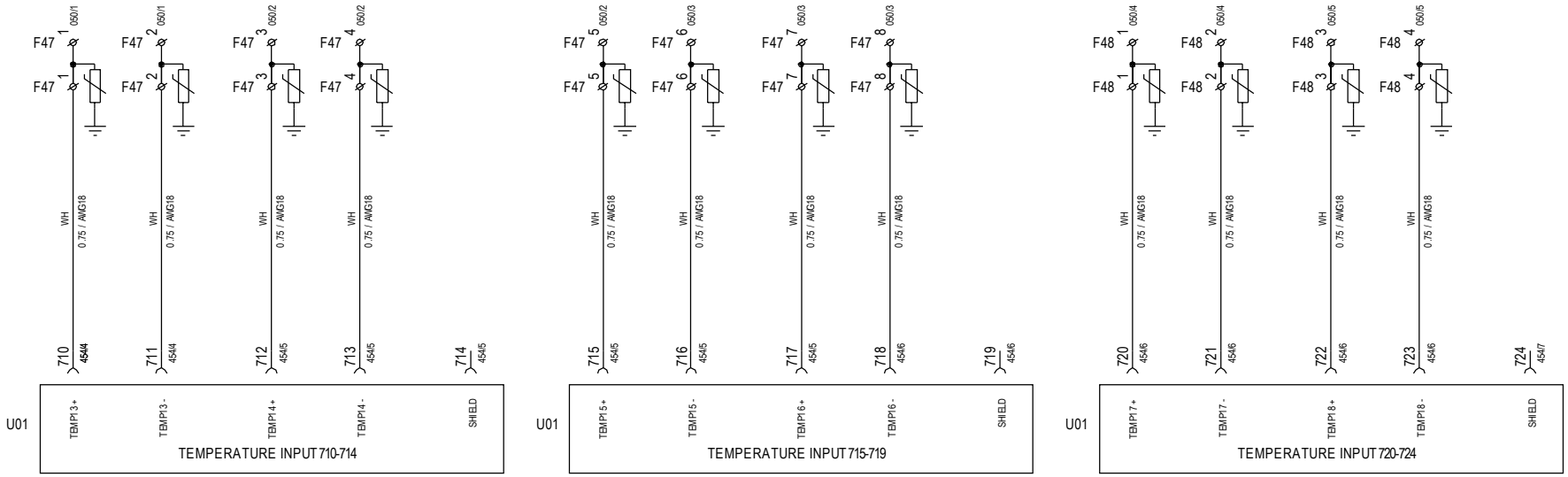

GENERATOR G W1 TEMPERATURE

GENERATOR G W2 TEMPERATURE

GENERATOR G W3 TEMPERATURE

GENERATOR gW1 TEMPERATURE ONLY ON2SP GENERATORES

GENERATOR gW2 TEMPERATURE ONLY ON2SP GENERATORES

GENERATOR gW3 TEMPERATURE ONLY ON2SP GENERATORES

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	Date	Initials	Function	Input 710-723		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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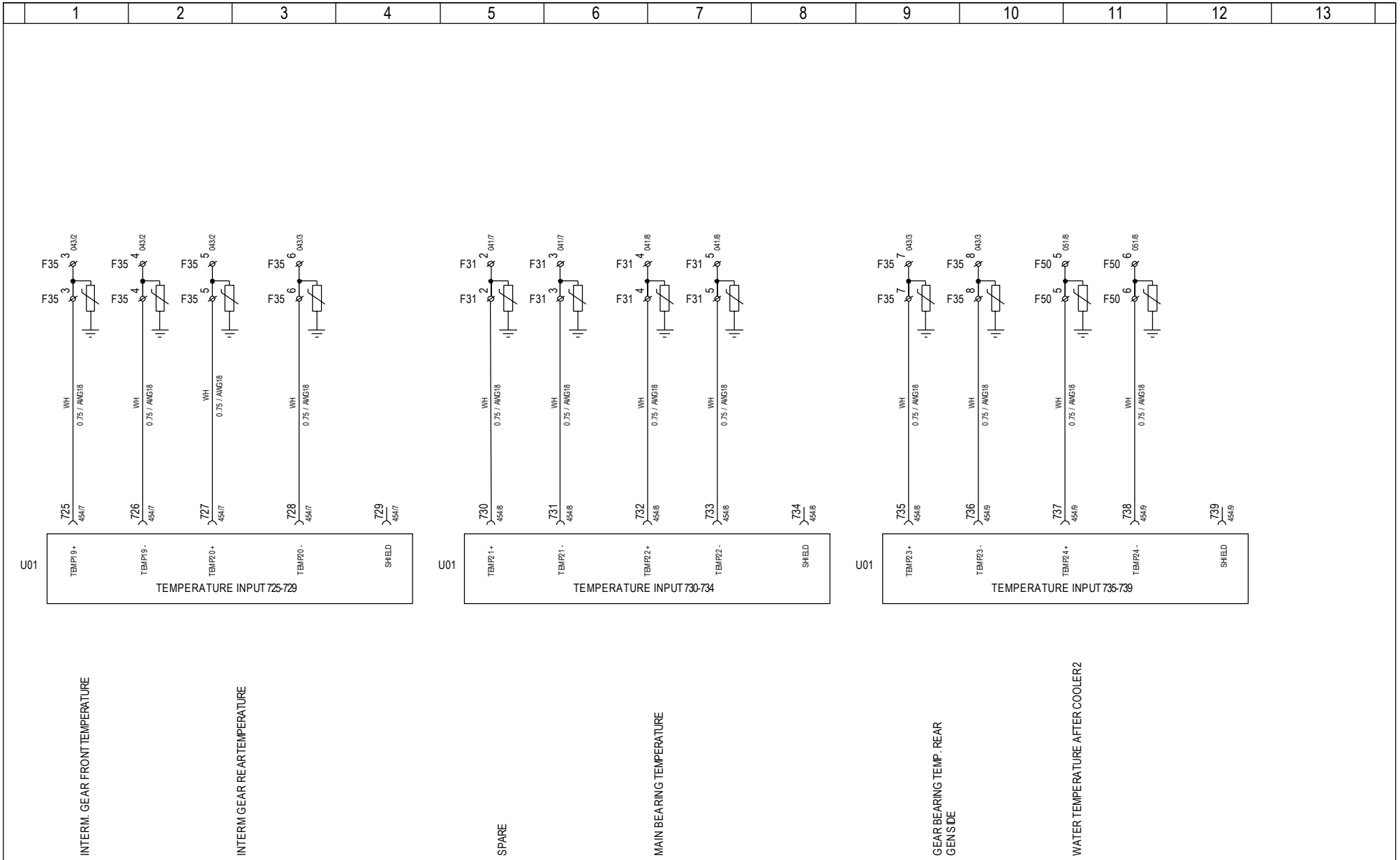

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	Date	Initials	Function	Input 725-738		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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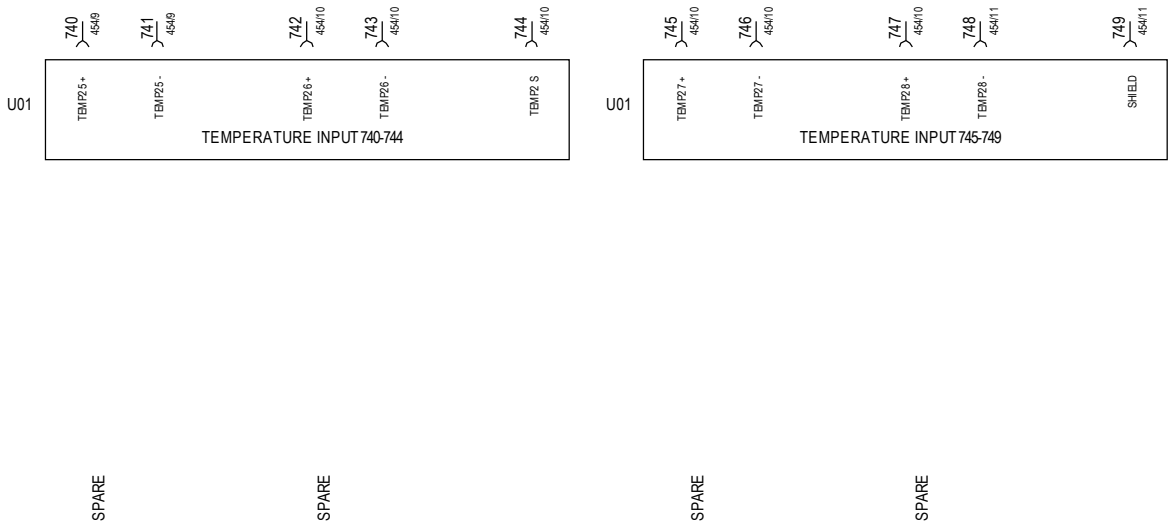

	Date	Initials	Function	Input 740-749		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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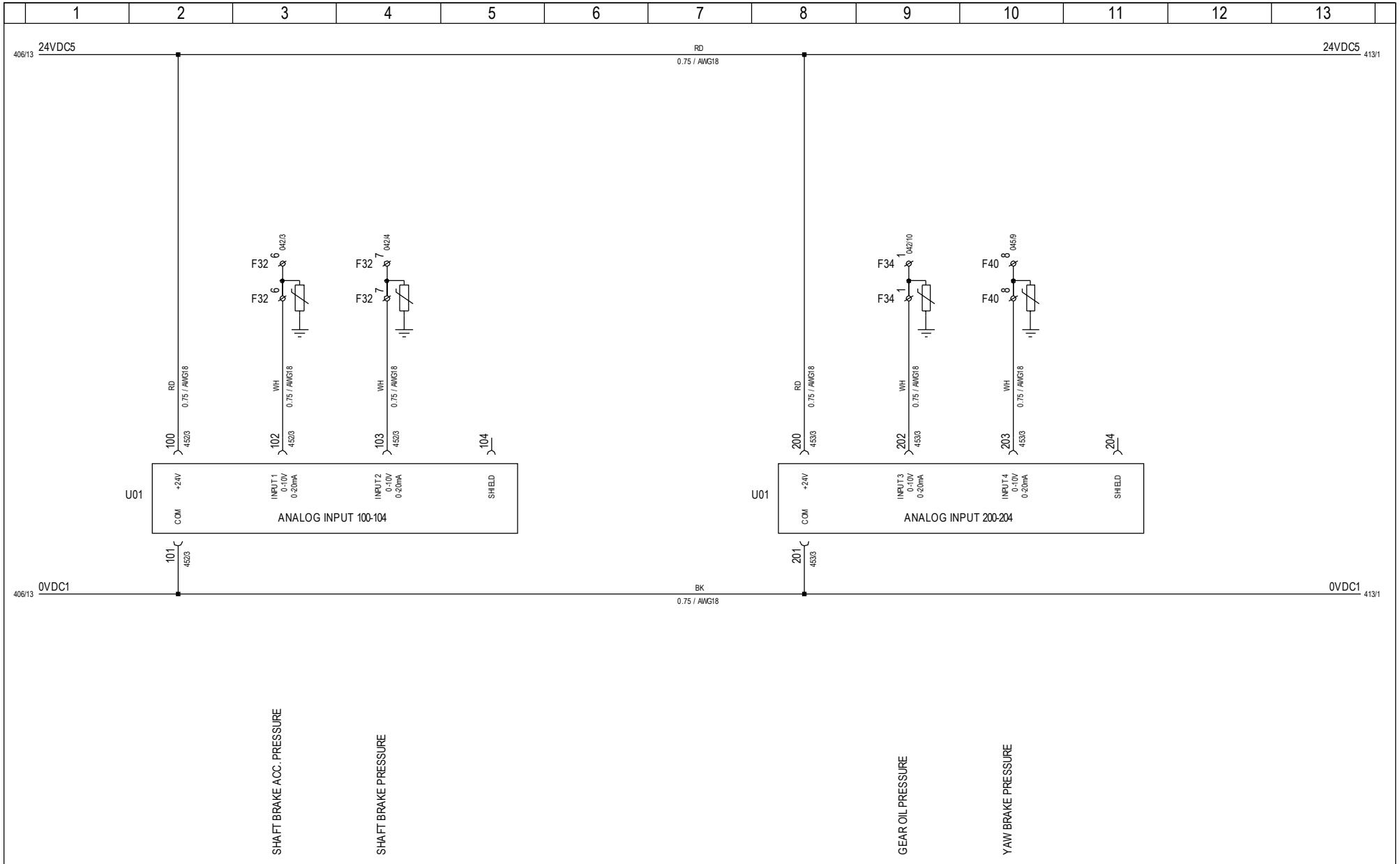

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	Date	Initials	Function	Input 100-203		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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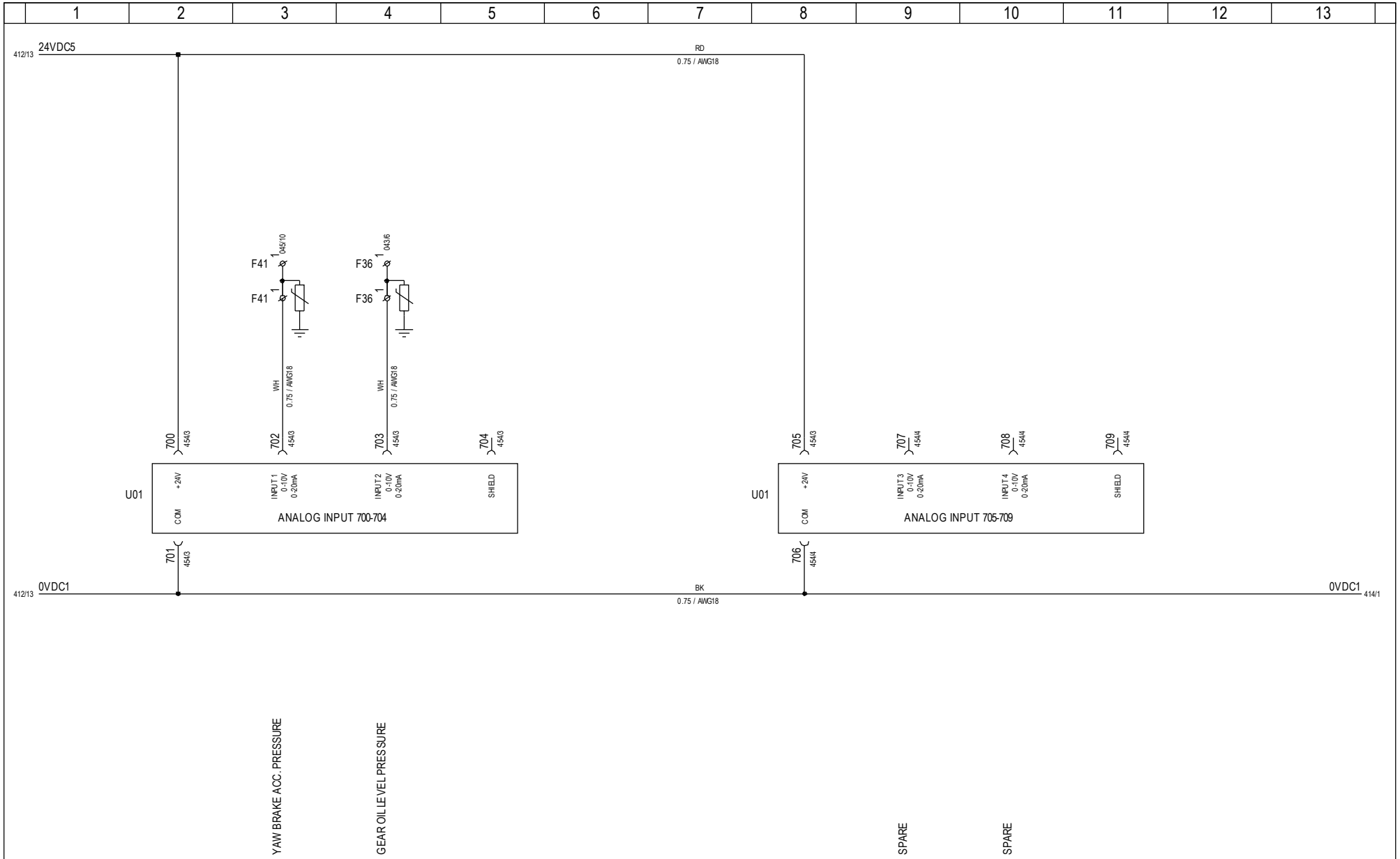

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	Date	Initials	Function	Input 700-708		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 414	Sheet 413

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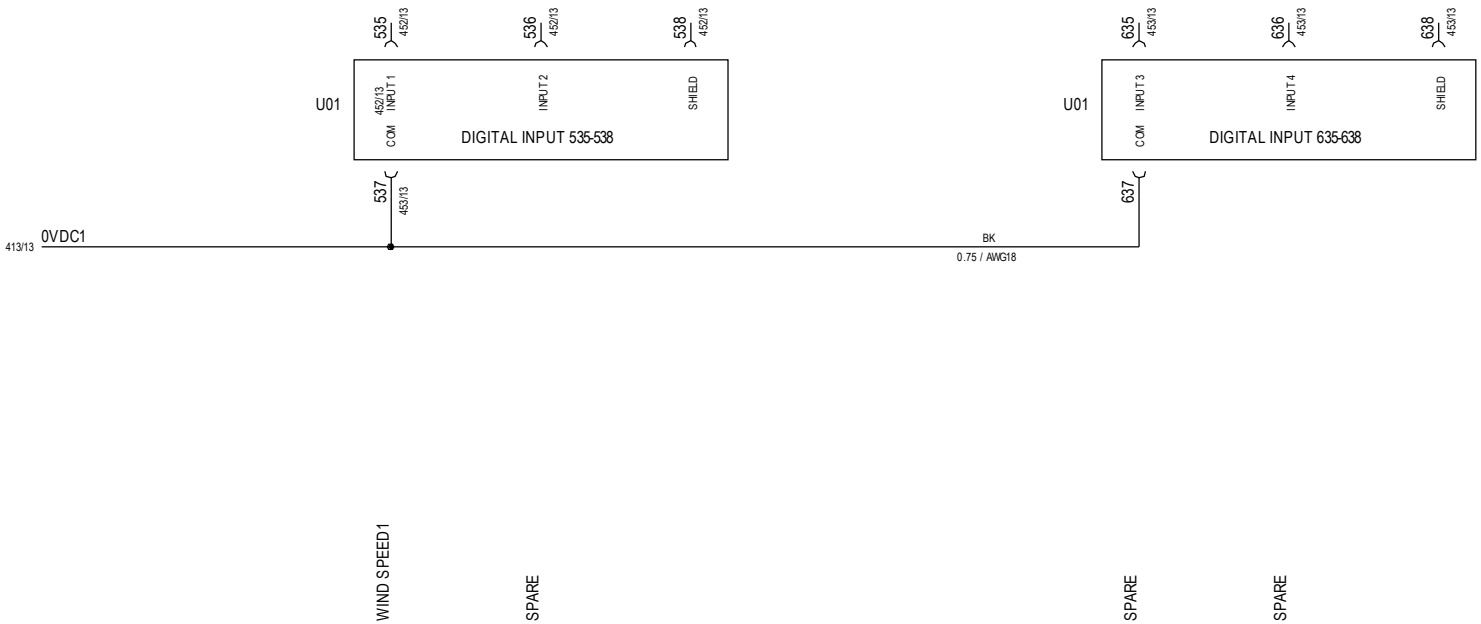

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Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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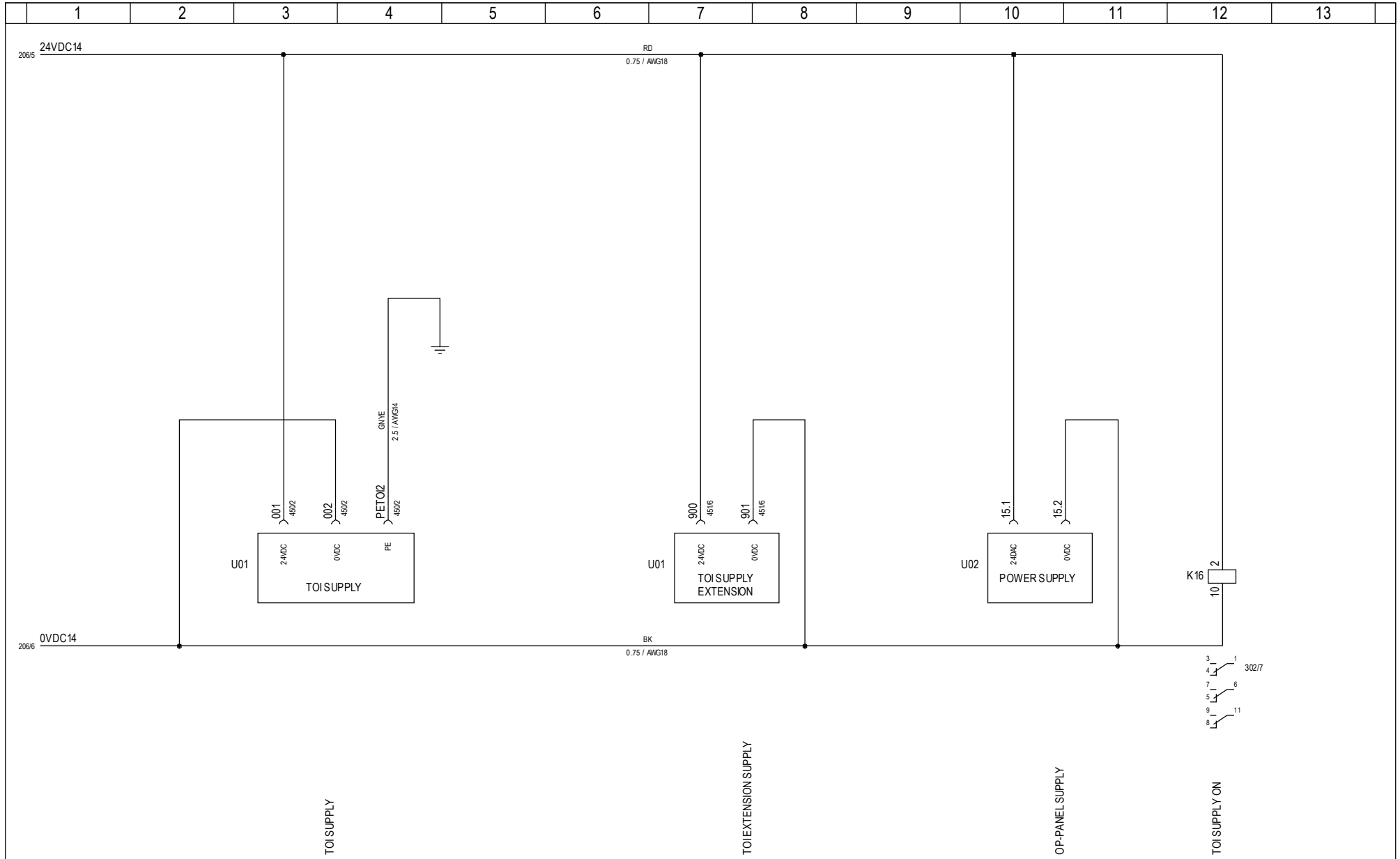

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	Date	Initials	Function	TOI Supply		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 450	Sheet 415

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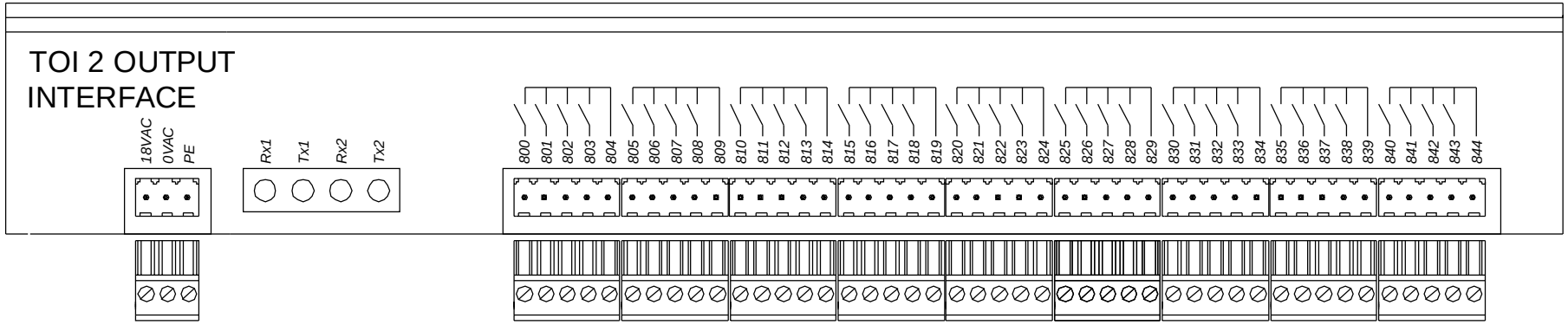
TOI 2 OUTPUT INTERFACE



PAGE		
415/3	TOI SUPPLY 24VDC 14	
415/4	TOI SUPPLY 0VDC 14	
415/4	PE TOI2	
500/2	RX1	
500/3	TX2	
500/4	RX2	
500/4	TX2	
300/2	WIND SENSOR HEAT	
300/3	TOP PANEL FAN	
300/4	LUBRICATION PUMP YAW RIM	
300/5	NACELLE FAN	
300/2	SUPPLY 24VDC	
300/8	PANEL HEAT	
300/9	LUBR. PUMP GEN.BEARING	
300/10	LUBR. PUMP YAW RIM BEARING	
300/11	SPARE	
300/8	SUPPLY 24VDC	
301/2	SPARE	
301/3	SPARE	
301/4	YAW BRAKE VALVES	
301/5	YAW BRAKE BYPASS VALVE V5	
301/2	SUPPLY 24VDC	
301/8	SHAFT BRAKE VALVE	
301/9	SHAFT BRAKE VALVE APPLY 1	
301/10	SHAFT BRAKE VALVE APPLY 2	
301/11	SPARE	
301/8	SUPPLY 24VDC	
302/2	SUPPLY EMERGENCY CHAIN	
302/3	SPARE	
302/4	SPARE	
302/5	SPARE	
302/2	SUPPLY 24VDC	
302/8	ACTIVE SHAFT BRAKE VALVE 1	
302/9	ACTIVE SHAFT BRAKE VALVE 2	
302/10	SPARE	
302/11	SPARE	
302/8	SUPPLY 24VDC	
303/2	SPARE	
303/3	SPARE	
303/4	SPARE	
303/5	SPARE	
303/2	SUPPLY 24VDC	
303/8	SPARE	
303/9	SPARE	
303/10	SPARE	
303/11	SPARE	
303/8	SUPPLY 24VDC	
304/2	LUBR. PUMP MAIN BEARING	
304/3	SPARE	
304/4	SPARE	
304/5	SPARE	
304/2	SUPPLY 230VAC6	

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	Date	Initials	Function	TOI Outline Output		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 451	Sheet 450

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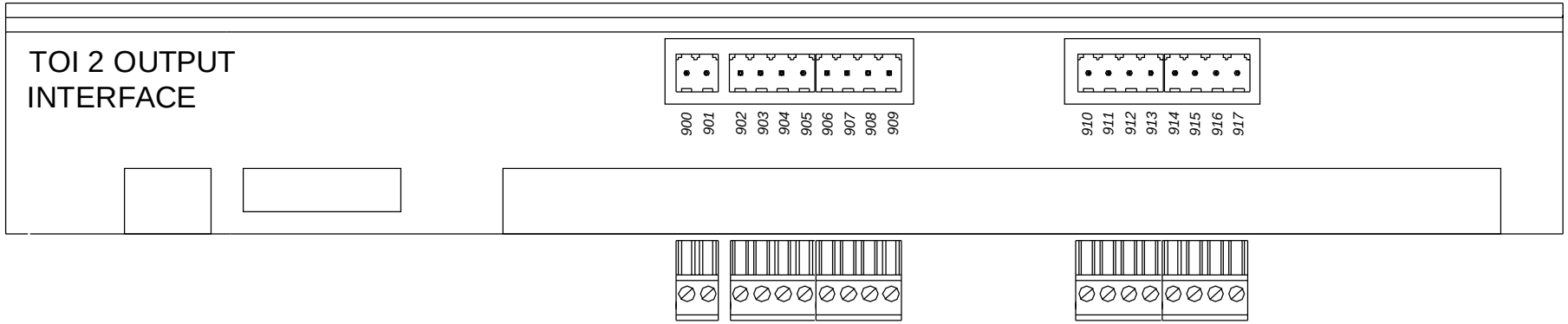

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TOI EXTENCION SUPPLY

902 903 904 906 907 907 908 909

910 911 912 913 914 915 916 917

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	Date	Initials	Function	TOI Outline Output ext.		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 452	Sheet 451

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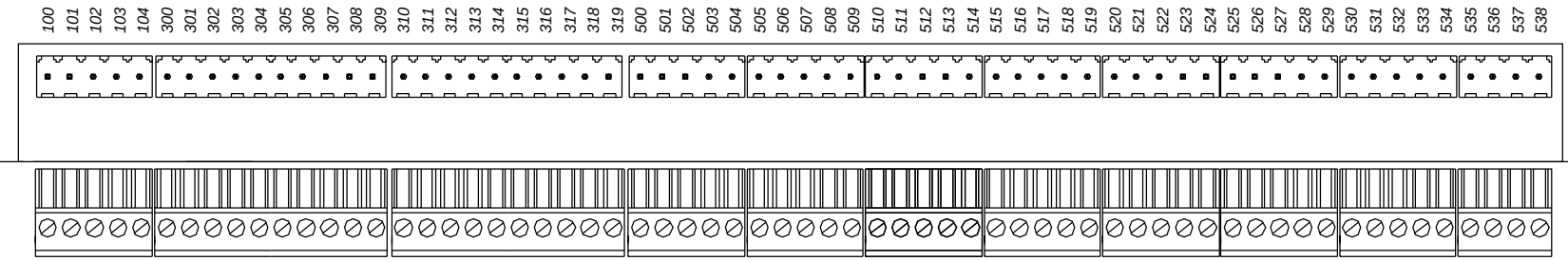

	PAGE	
100	412/2	24VDC5
101	412/2	0VDC1
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103	412/4	SHAFT BRAKE PRESSURE
104	412/5	SHIELD
300	407/1	AMBIENT TEMPERATURE
301	407/2	AMBIENT TEMPERATURE
302	407/2	AMBIENT TEMPERATURE
303	407/3	NACELLE TEMPERATURE
304	407/4	NACELLE TEMPERATURE
305	407/4	NACELLE TEMPERATURE
306	407/5	TOP BOX PANEL TEMPERATURE
307	407/6	TOP BOX PANEL TEMPERATURE
308	407/6	TOP BOX PANEL TEMPERATURE
309	407/7	SHIELD
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311	407/8	GEAR OIL TEMPERATURE
312	407/9	GEAR OIL TEMPERATURE
313	407/10	GEAR BEARING FRONT TEMPERATURE
314	407/10	GEAR BEARING FRONT TEMPERATURE
315	407/11	GEAR BEARING FRONT TEMPERATURE
316	407/12	GEAR BEARING REAR TEMPERATURE
317	407/12	GEAR BEARING REAR TEMPERATURE
318	407/13	GEAR BEARING REAR TEMPERATURE
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504	400/2	0VDC1
505	400/8	MANUAL STOP TOP BOX
506	400/9	MANUAL YAW CW
507	400/10	MANUAL YAW CCW
508	400/11	MANUAL RELEASE SHAFT BRAKE
509	400/8	0VDC1
510	401/2	LONG UNTWIST CW
511	401/3	UNTWIST CENTER
512	401/4	LONG UNTWIST CCW
513	401/5	SPARE
514	401/2	0VDC1
515	401/8	SPARE
516	401/9	NACELLE POSITION COUNT 1
517	401/10	NACELLE POSITION RESET
518	401/11	NACELLE POSITION COUNT 2
519	401/8	0VDC1
520	402/2	WINDVANE 10°
521	402/3	WINDVANE 190°
522	402/4	WINDVANE 20°
523	402/5	WINDVANE 290°
524	402/2	0VDC1
525	402/8	SHAFT BRAKE WORN
526	402/9	SHAFT BRAKE HOT
527	402/10	GEAR OIL FILTER CLOGGED
528	402/11	OFF-LINE FILTER CLOGGED
529	402/8	0VDC1
530	403/2	DRIP TRAY LEVEL
531	403/3	BEACON LIGHT FAULT
532	403/4	ICE DETECTED
533	403/5	GEAR OIL LEVEL
534	403/2	0VDC1
535	414/3	WIND SPEED 1
536	414/4	SPARE
537	414/3	0VDC1
538	414/5	SHIELD

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	Date	Initials	Function	TOI Outline Input		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
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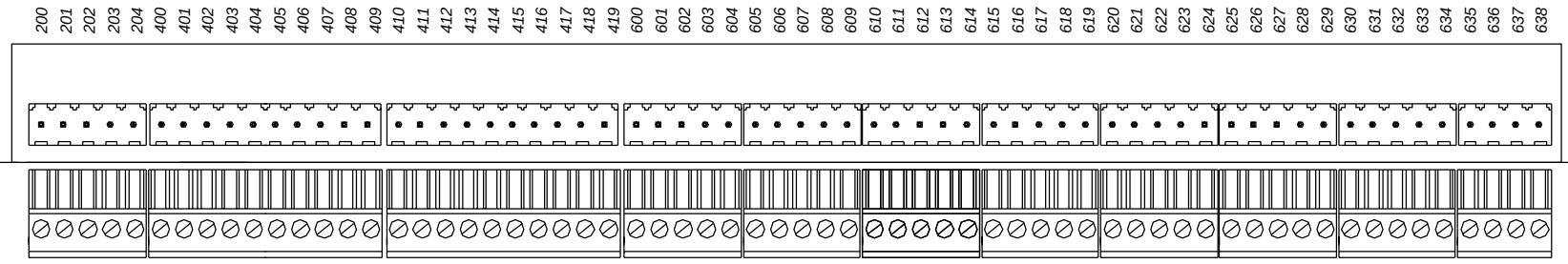

	PAGE	
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201	412/8	0VDC1
202	412/9	GEAR OIL PRESSURE
203	412/10	YAW BRAKE PRESSURE
204	412/10	SHIELD
400	408/1	WATER TEMPERATURE BEFORE COOLER
401	408/2	WATER TEMPERATURE BEFORE COOLER
402	408/2	WATER TEMPERATURE BEFORE COOLER
403	408/3	WATER TEMPERATURE AFTER COOLER
404	408/4	WATER TEMPERATURE AFTER COOLER
405	408/4	WATER TEMPERATURE AFTER COOLER
406	408/5	GEAR OIL TEMP. AFTER EXCHANGE
407	408/6	GEAR OIL TEMP. AFTER EXCHANGE
408	408/6	GEAR OIL TEMP. AFTER EXCHANGE
409	408/7	SHIELD
410	408/8	YAW RIM TEMPERATURE (ARCTIC)
411	408/8	YAW RIM TEMPERATURE (ARCTIC)
412	408/9	YAW RIM TEMPERATURE (ARCTIC)
413	408/10	GENERATOR BEARING FRONT TEMPERATURE
414	408/10	GENERATOR BEARING FRONT TEMPERATURE
415	408/11	GENERATOR BEARING FRONT TEMPERATURE
416	408/12	GENERATOR BEARING REAR TEMPERATURE
417	408/12	GENERATOR BEARING REAR TEMPERATURE
418	408/13	GENERATOR BEARING REAR TEMPERATURE
419	408/13	SHIELD
600	403/8	SHAFT BRAKE LOCKED
601	403/9	SPARE
602	403/10	SERVICE KEY NACELLE
603	403/11	ICE SENSORFAULT
604	403/8	0VDC1
605	404/2	TAC 84 DOWNWIND
606	404/3	TAC 84 LATERAL
607	404/4	EXTERNAL ALARM7
608	404/5	EXTERNAL ALARM8
609	404/2	0VDC1
610	404/8	PITCH OIL LEVEL LOW
611	404/9	PITCH OIL LEVEL VERY LOW
612	404/10	HUB HATCH OVERRIDE
613	404/11	HUB HATCH CLOSED
614	404/8	0VDC1
615	405/2	CB TRIPPED VALVE SUPPLY
616	405/3	24VDC SUPPLY OFF TOPBOX
617	405/4	CB TRIPPED HUB SUPPLY
618	405/5	FEEDER PUMP FILTER CLOGGED
619	405/2	0VDC1
620	405/8	BATTERY CHARGER FAULT
621	405/9	BATTERY VOLTAGE LOW
622	405/10	OVERSPEED TAC 85
623	405/11	EMERGENCY RELAY FEEDBACK
624	405/8	0VDC1
625	406/2	DE-ICENG
626	406/3	LUBRICATION PUMP OVERLOAD (YAW SYSTEM)
627	406/4	LUBRICATION SEQUENCE OK (YAW RIM)
628	406/5	SPARE
629	406/2	0VDC1
630	406/8	EMERGENCY STOP
631	406/9	LUBR. PUMP OVERLOAD GENERATOR
632	406/10	LUBR. SEQUENCE GEN. BEARING
633	406/11	LUBR. SEQUENCE YAW RIM BEARING
634	406/8	0VDC1
635	414/8	SPARE
636	414/9	SPARE
637	414/3	0VDC1
638	414/10	SHIELD

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	Date	Initials	Function	TOI Outline Input		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 454	Sheet 453

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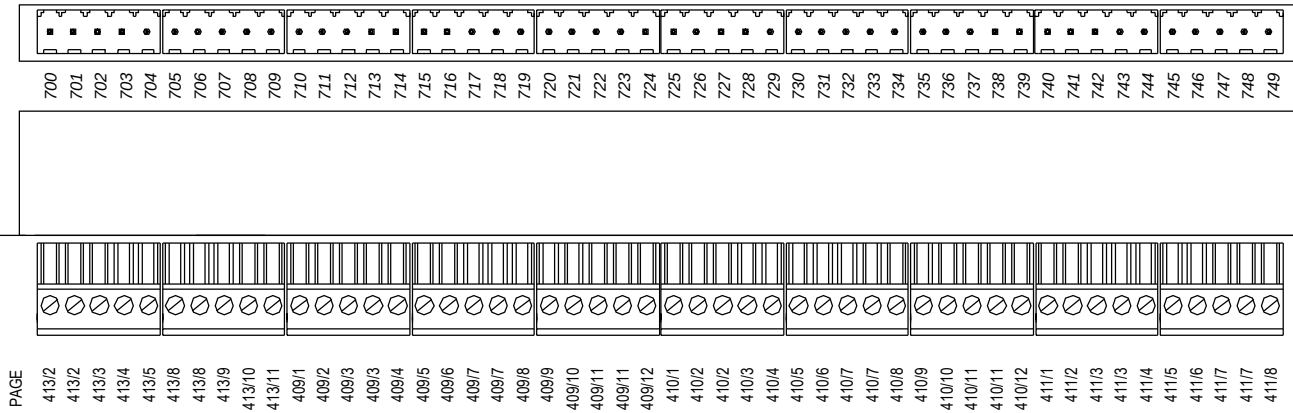

	PAGE	
700	413/2	24VDC5
701	413/2	0VDC1
702	413/3	YAW BRAKE ACC. PRESSURE
703	413/4	GEAR OIL LEVEL PRESSURE
704	413/5	SHIELD
705	413/8	24VDC5
706	413/8	0VDC1
707	413/9	SPARE
708	413/10	SPARE
709	413/11	SHIELD
710	409/1	GENERATOR GW1 TEMPERATURE
711	409/2	GENERATOR GW1 TEMPERATURE
712	409/3	GENERATOR GW2 TEMPERATURE
713	409/3	GENERATOR GW2 TEMPERATURE
714	409/4	SHIELD
715	409/5	GENERATOR GW3 TEMPERATURE
716	409/6	GENERATOR GW3 TEMPERATURE
717	409/7	GENERATOR gW1 TEMPERATURE
718	409/7	GENERATOR gW1 TEMPERATURE
719	409/8	SHIELD
720	409/9	GENERATOR gW2 TEMPERATURE
721	409/10	GENERATOR gW2 TEMPERATURE
722	409/11	GENERATOR gW3 TEMPERATURE
723	409/11	GENERATOR gW3 TEMPERATURE
724	409/12	SHIELD
725	410/1	INTERM. GEAR FRONT TEMPERATURE
726	410/2	INTERM. GEAR FRONT TEMPERATURE
727	410/2	INTERM. GEAR REAR TEMPERATURE
728	410/3	INTERM. GEAR REAR TEMPERATURE
729	410/4	SHIELD
730	410/5	SPARE
731	410/6	SPARE
732	410/7	MAIN BEARING TEMPERATURE
733	410/7	MAIN BEARING TEMPERATURE
734	410/8	SHIELD
735	410/9	GEAR BEARING TEMP. REARGEN SIDE
736	410/10	GEAR BEARING TEMP. REARGEN SIDE
737	410/11	WATER TEMPERATURE AFTER COOLER2
738	410/11	WATER TEMPERATURE AFTER COOLER2
739	410/12	SHIELD
740	411/1	SPARE
741	411/2	SPARE
742	411/3	SPARE
743	411/3	SPARE
744	411/4	SHIELD
745	411/5	SPARE
746	411/6	SPARE
747	411/7	SPARE
748	411/7	SPARE
749	411/8	SHIELD

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	Date	Initials	Function	TOI Outline input ext.		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 500	Sheet 454

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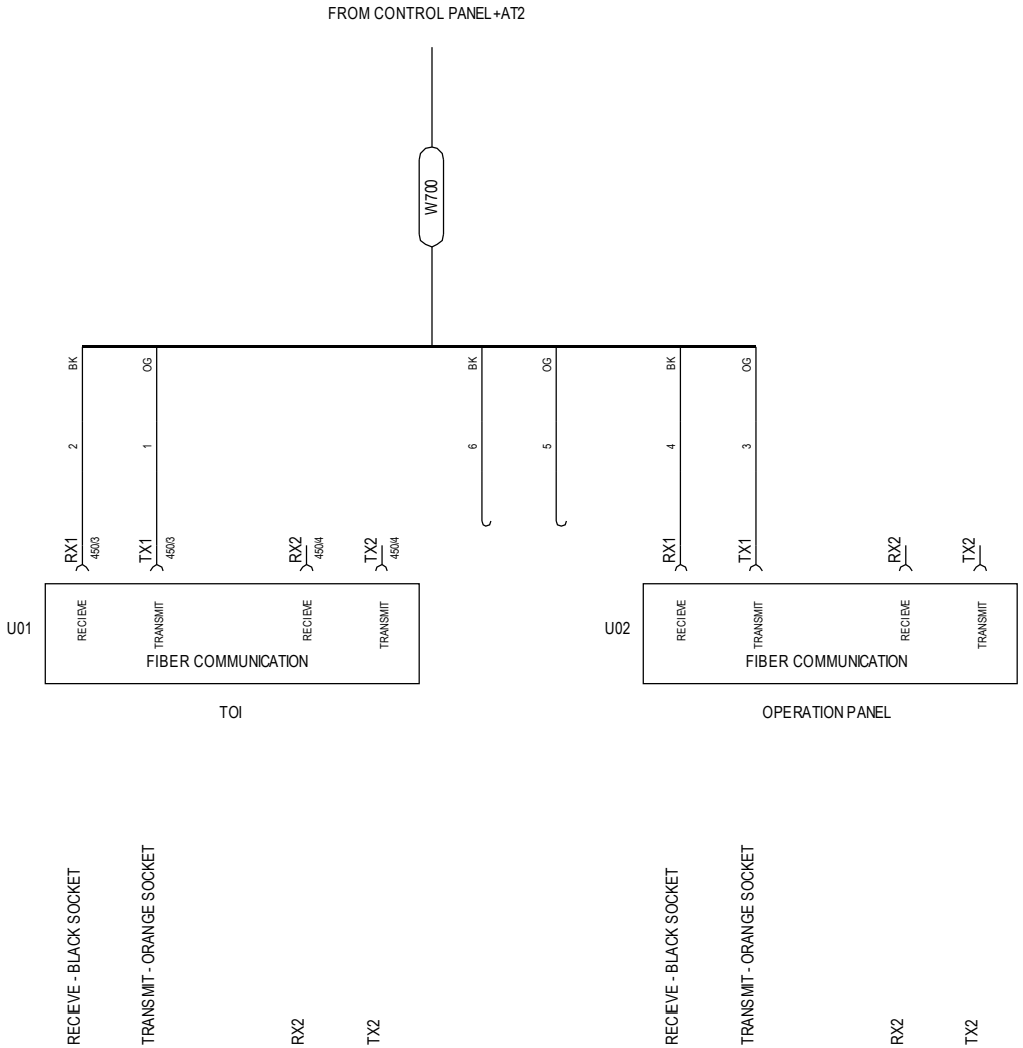

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	Date	Initials	Function	Communication		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet 501	Sheet 500

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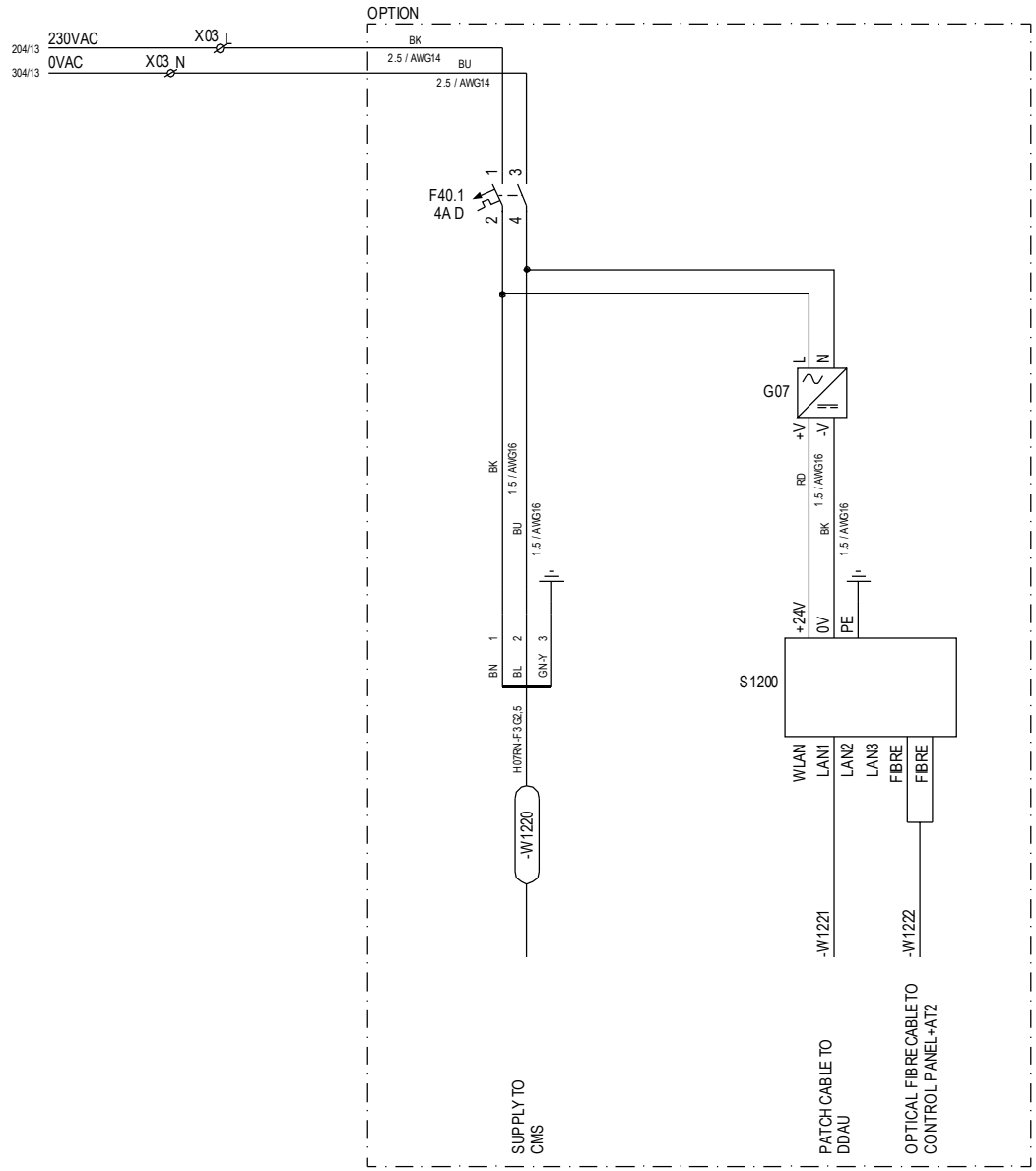

	Date	Initials	Function	CMS - Option		
Designed	090519	FLT	Project title	Top Panel +AN1 - V82-1.65MW - 50/60Hz		
Approved	090519	FLT	Comments	-	Customer	Vestas Wind Systems A/S
Revised	090519	INI	Rev. -	Drawing no. 0003-2029	Cont. sheet -	Sheet 501

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765219 TOP PANEL+AN1 V82-1.65MW 50/60

Component	Description	Qty per	Stk UM	Position Number
VT720708	RUD SWIVEL EYE PLATE WLL 200KG	0,000	EA	
VT720709	LIFT TABLE U-FORM 1000KG	0,000	EA	
VT720712	DISTANCE PIECE TOP +AN1 V82	0,000	EA	
VT720713	DISTANCE PIECE BOTTOM +AN1 V82	0,000	EA	
VT730870	SLINGS 0,7 2GR WLL 140/100KG	0,000	EA	
0003-2029	TOP PANEL+AN1 V82-1.65MW 50/60	0,000	EA	
098462	OBSERVATION WINDOW OBR304738	1,000	EA	
115637	CABLE TIE HOLDER MB4APT	5,000	EA	
115638	CABLE TIE SPACER T50SDSBS5	1,000	EA	
118588	LABEL UL 508A ENCLOSED ICP	1,000	EA	
119083	LABEL CONNECTION OPTICAL FIBRE	1,000	EA	
119161	LABEL AVOID TENSION	2,000	EA	
119162	LABEL TYPE 1 ENCLOSURE	1,000	EA	
119391	TYPE SIGN FOR 765219	1,000	EA	
146470/0150	FLEX HOSE Ø15,8X150 MM BLACK	1,000	EA	
146470/1850	FLEX HOSE Ø15,8X1850 MM BLACK	1,000	EA	
149831	LOCTITE 454, 31713	0,100	EA	
158043	LOCK NUT M 5, A4-70	10,000	EA	
158392	FENDER WASHER M 5, A4-70	14,000	EA	
193722	LOCKNUT MM20GPA POLYAMID	7,000	EA	
471100/0288	CABLE CONDUIT 15X25X288MM	1,000	EA	
471100/0350	CABLE CONDUIT 15X25X350MM	1,000	EA	
471115/0275	CABLE CONDUIT 25X40X275MM	2,000	EA	
471115/0350	CABLE CONDUIT 25X40X350MM	1,000	EA	
471120/0338	CABLE CONDUIT 25X60X338MM	1,000	EA	
471125/0163	CABLE CONDUIT 25X80X163MM	1,000	EA	
471135/0350	CABLE CONDUIT 40X40X350MM	1,000	EA	
471135/1150	CABLE CONDUIT 40X40X1150MM	1,000	EA	
471145/0213	CABLE CONDUIT 40X80X213MM	1,000	EA	
471145/0313	CABLE CONDUIT 40X80X313MM	1,000	EA	
471145/0350	CABLE CONDUIT 40X80X350MM	5,000	EA	
471145/0388	CABLE CONDUIT 40X80X388MM	4,000	EA	
471145/0413	CABLE CONDUIT 40X80X413MM	1,000	EA	
471145/0563	CABLE CONDUIT 40X80X563MM	1,000	EA	
471145/0650	CABLE CONDUIT 40X80X650MM	1,000	EA	
471145/0788	CABLE CONDUIT 40X80X788MM	1,000	EA	
471160/0388	CABLE CONDUIT 60X80X388MM	2,000	EA	
471200/0290	CABLE CONDUIT LID 15X290MM	1,000	EA	
471200/0350	CABLE CONDUIT LID 15X350MM	1,000	EA	
471205/0167	CABLE CONDUIT LID 25X167MM	1,000	EA	
471205/0280	CABLE CONDUIT LID 25X280MM	2,000	EA	
471205/0340	CABLE CONDUIT LID 25X340MM	1,000	EA	
471205/0350	CABLE CONDUIT LID 25X350MM	1,000	EA	
471210/0220	CABLE CONDUIT LID 40X220MM	1,000	EA	
471210/0320	CABLE CONDUIT LID 40X320MM	1,000	EA	
471210/0350	CABLE CONDUIT LID 40X350MM	1,000	EA	
471210/0355	CABLE CONDUIT LID 40X355MM	2,000	EA	
471210/0363	CABLE CONDUIT LID 40X363MM	3,000	EA	
471210/0390	CABLE CONDUIT LID 40X390MM	3,000	EA	
471210/0397	CABLE CONDUIT LID 40X397MM	1,000	EA	
471210/0420	CABLE CONDUIT LID 40X420MM	1,000	EA	
471210/0570	CABLE CONDUIT LID 40X570MM	1,000	EA	
471210/0655	CABLE CONDUIT LID 40X655MM	1,000	EA	
471210/0795	CABLE CONDUIT LID 40X795MM	1,000	EA	
471210/1150	CABLE CONDUIT LID 40X1150MM	1,000	EA	
471215/0390	CABLE CONDUIT LID 60X390MM	2,000	EA	
60006822	STICKER "LYN" 25MM	0,700	EA	
60006823	STICKER "LYN" 50MM	0,500	EA	
60007182/0040	DIN RAIL PRE CUT 7,5X35X40MM	1,000	M	
60007182/0100	DIN RAIL PRE CUT 7,5X35X100MM	1,000	M	
60007182/0150	DIN RAIL PRE CUT 7,5X35X150MM	1,000	M	
60007182/0275	DIN RAIL PRE CUT 7,5X35X275MM	2,000	M	
60007182/0350	DIN RAIL PRE CUT 7,5X35X350MM	4,000	M	
60007182/0375	DIN RAIL PRE CUT 7,5X35X375MM	1,000	M	
60007182/0415	DIN RAIL PRE CUT 7,5X35X415MM	1,000	M	
60007194/0315	DIN RAIL PRE CUT 15X35X315MM	1,000	M	
60007201/0162	EARTH BAR PRE CUT 9X6.5X162MM	1,000	M	
60007201/0265	EARTH BAR PRE CUT 9X6.5X265MM	1,000	M	
60007201/0349	EARTH BAR PRE CUT 9X6.5X349MM	1,000	M	
60007458	CABLE TIE 140x2.5mm WH	2,000	EA	
60007470	CABLE TIE 762x9mm WH	2,000	EA	

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60009617	SCREW HFC 9046 M 4 x 16 - 4.8	1,000	EA	
60014555	COOLING COMPOUND HTS35SL 35ML	0,005	EA	
60096871	THREADED BLOCK PS4163.000 8MM	5,000	EA	
60108741/001	WIRING +AN1 V82 MRK3 0VDC	1,000	EA	
60108741/002	WIRING +AN1 V82 MRK3 VAR BOX	1,000	EA	
60108741/003	WIRING +AN1 V82 MRK3 24VDC 5	1,000	EA	
60108741/004	WIRING +AN1 V82 MRK3 230V	1,000	EA	
60108741/005	WIRING +AN1 V82 MRK3 300-400	1,000	EA	
60108741/006	WIRING +AN1 V82 MRK3 500	1,000	EA	
60108741/007	WIRING +AN1 V82 MRK3 600	1,000	EA	
60108741/008	WIRING +AN1 V82 MRK3 700	1,000	EA	
60108741/009	WIRING +AN1 V82 MRK3 800	1,000	EA	
60108741/010	WIRING +AN1 V82 MRK3 BACKSIDE	1,000	EA	
60108741/011	WIRING +AN1 V82 MRK3 G01	1,000	EA	
60108741/012	WIRING +AN1 V82 MRK3 PANEL	1,000	EA	
60108741/013	WIRING +AN1 V82 MRK3 X01	1,000	EA	
60108741/014	WIRING +AN1 V82 MRK3 INTERNAL	1,000	EA	
60108741/100	+AN1 BRAIDED SLEEVE 600MM	1,000	EA	
60108741/101	+AN1 BRAIDED SLEEVE 650MM	1,000	EA	
60108948	LABEL TYPE SIGN +AN1 NM72/V82	0,330	EA	
60109089	WIRING +AN1 V82 MRK3 DATA	1,000	EA	
60006819	STICKER "EARTH" 14mm	0,200	EA	BACK
60007195	DIN RAIL FITTING TST 2/M6 100m	3,000	EA	BACK
60007197	SCREW FKSC M6x12MM	3,000	EA	BACK
60009578	SCREW ISO 7045 M 3 x 8 - FZB	5,000	EA	BACK
60009599	SCR CRS PH M4x14 4.8 FZB	5,000	EA	BACK
60009639	SCR HEX SET M8x20 8.8 FZB	1,000	EA	BACK
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	40,000	EA	BACK
60009795	WASHER SPR 6 FZG	4,000	EA	BACK
60009803	WASHER SPR 8 FZG	1,000	EA	BACK
60009838	LOCK WASHER DIN 6798 A4 - FZB	5,000	EA	BACK
60009841	WASHER LOCK 8 FZB	1,000	EA	BACK
60009861	NUT ISO 4032 M 4 - 6 - FZB	5,000	EA	BACK
60009873	NUT ISO 4032 M 8 - 8 - FZB	1,000	EA	BACK
60013412	ANGLE BRACKET 2x10x25MM	5,000	EA	BACK
60013657	SHELF F TWO H4 BATTERIES	1,000	EA	BACK
60033040	SCR HEX SET M6x20 8.8 FZB	4,000	EA	BACK
60108956	MARK WAGO 2 +AN1 PANEL V82	1,000	EA	BACK
60109070	MOUNT PLATE TS8 W/W	1,000	EA	BACK
114447	THERMOSTAT KTS 01147.9-00	1,000	EA	B01
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B06
60007481	CABLE RACK TK 5-7	1,000	EA	B33
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	B33
153146	HEX SCR. M 8X 16 8.8 GZN	5,000	EA	CABINET
51705401	VS05E ACCELEROMETER 12m	1,000	EA	CABINET
60002320	STICKER GEN USE VCS	1,000	EA	CABINET
60002649	LABEL	1,000	EA	CABINET
60006819	STICKER "EARTH" 14mm	1,000	EA	CABINET
60007459	CABLE TIE WHITE 200x2.5mm	55,000	EA	CABINET
60007464	CABLE TIE WHITE 368x4.8mm	8,000	EA	CABINET
60007584	CABLE GLAND M16 PA6 BM-EN-11	17,000	EA	CABINET
60007585	CABLE GLAND M20 PA6 BM-EN-12	7,000	EA	CABINET
60007586	CABLE GLAND M25 PA6 BM-EN-13	10,000	EA	CABINET
60007588	CABLE GLAND M40 PA6 BM-EN-15	2,000	EA	CABINET
60007589	CABLE GLAND BM-EN-16 M50 PA 6	1,000	EA	CABINET
60007592	LOCKNUT M16 PA6 BML-11	17,000	EA	CABINET
60007594	LOCKNUT M25 PA6 BML-13	10,000	EA	CABINET
60007596	LOCKNUT M40 PA6 BML-15	4,000	EA	CABINET
60007597	Locknut BML-16 M50 PA 6	1,000	EA	CABINET
60007829	WIRE TIN 16 150MM Ø8 IEC/UL	1,000	EA	CABINET
60007829	WIRE TIN 16 150MM Ø8 IEC/UL	1,000	EA	CABINET
60008794	FIBRE PLUG ST-COUPLER AMP 05-5	4,000	EA	CABINET
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	CABINET
60009619	SCR M4.2x9.5 FZB	16,000	EA	CABINET
60009838	LOCK WASHER DIN 6798 A4 - FZB	4,000	EA	CABINET
60009861	NUT ISO 4032 M 4 - 6 - FZB	4,000	EA	CABINET
60042162	WASHER ISO 7093 8 140HV A2	2,000	EA	CABINET
60096851	TORX SCREW 2486.500 5.5X13MM	26,000	EA	CABINET
60096871	THREADED BLOCK PS4163.000 8MM	5,000	EA	CABINET
60096978	PUNCHED RAIL 8612.260	6,000	EA	CABINET
60100476	CABINET TS8 1 DOOR R7035	1,000	EA	CABINET
60108709	CABLE ENTRY PLATE ALU ZINC	1,000	EA	CABINET
60108881	BRA F FIBRE PLUG ST-COUPLER	1,000	EA	CABINET
60108947	PVC COVER TOP PANEL	1,000	EA	CABINET
60110413	CABLE GLAND M40 PLASTIC	2,000	EA	CABINET

Vestas Wind Systems A/S • Alsvej 21 • 8940 Randers SV • Denmark • Tel: +45 9730 0000 • Fax: +45 9730 0001
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118934	LABEL ELECTRICAL WARNING UNIV.	4,000	EA	CABINET FRONT
60002424	LABEL "+AN1"	1,000	EA	CABINET FRONT
60109951	LABEL "WAR UNDER TENSION TO	1,000	EA	CABINET FRONT
60109951	LABEL "WAR UNDER TENSION TO	2,000	EA	CABINET REAR
60109966	LABEL "WAR NOT DISCONNECTED"	1,000	EA	CABINET REAR
60014729	HEATER FAN CR0 27 475/550W UL	1,000	EA	E01
60006819	STICKER "EARTH" 14mm	0,200	EA	FRONT
60007195	DIN RAIL FITTING TST 2/M6 100m	6,000	EA	FRONT
60007197	SCREW FKSC M6x12MM	6,000	EA	FRONT
60008830	PATCH CABLE DUPLEX MULTIMODE 6	1,000	EA	FRONT
60008830	PATCH CABLE DUPLEX MULTIMODE 6	1,000	EA	FRONT
60009578	SCREW ISO 7045 M 3 x 8 - FZB	8,000	EA	FRONT
60009599	SCR CRS PH M4x14 4.8 FZB	3,000	EA	FRONT
60009617	SCREW HFC 9046 M 4 x 16 - 4.8	4,000	EA	FRONT
60009639	SCR HEX SET M8x20 8.8 FZB	2,000	EA	FRONT
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	64,000	EA	FRONT
60009803	WASHER SPR 8 FZG	2,000	EA	FRONT
60009838	LOCK WASHER DIN 6798 A4 - FZB	3,000	EA	FRONT
60009841	WASHER LOCK 8 FZB	2,000	EA	FRONT
60009861	NUT ISO 4032 M 4 - 6 - FZB	3,000	EA	FRONT
60009873	NUT ISO 4032 M 8 - 8 - FZB	2,000	EA	FRONT
60013412	ANGLE BRACKET 2x10x25MM	3,000	EA	FRONT
60108955	MARK WAGO 1 +AN1 PANEL V82	1,000	EA	FRONT
60109065	MOUNT PLATE TS8 W/W	1,000	EA	FRONT
60112001	THERMO 25x150mm AN1 MRKIII 1	1,000	EA	FRONT
60112190	THERMO 25x90mm AN1 MRKIII 2	1,000	EA	FRONT
60112191	THERMO 25x75mm AN1 MRKIII 3	1,000	EA	FRONT
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F01
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F02
60005160	MCB 5SX2210-7 10.0A C 2P	1,000	EA	F03
60005193	AUX CONTACT 5SX9100	1,000	EA	F03
60005135	MCB 5SX2103-7 3.0A C 1P	1,000	EA	F04
60005193	AUX CONTACT 5SX9100	1,000	EA	F04
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F05
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F06
60005135	MCB 5SX2103-7 3.0A C 1P	1,000	EA	F07
60005193	AUX CONTACT 5SX9100	1,000	EA	F07
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F14
60005162	MCB 5SX2213-7 13.0A C 2P	1,000	EA	F15
195123	PROTC SA DG S 275 FM 275VAC	2,000	EA	F16
60000677	BUSBAR 2 OVPS	1,000	EA	F16
60009610	SCR CRS PH M6x14 4.8 FZB	1,000	EA	F16
60009795	WASHER SPR 6 FZG	1,000	EA	F16
60013281	BUSBAR CU 3x15x75MM FISH F.	1,000	EA	F16
60005154	MCB 5SX2204-7 4.0A C 2P	1,000	EA	F18
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F21
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F22
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	F24
60005193	AUX CONTACT 5SX9100	1,000	EA	F24
60005135	MCB 5SX2103-7 3.0A C 1P	1,000	EA	F26
60005193	AUX CONTACT 5SX9100	1,000	EA	F26
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	F26
60001869	CONN MSTBT F 4 LEADED	22,000	EA	F30-F51
60001869	CONN MSTBT F 4 LEADED	44,000	EA	F30-F51/B06
51706201	VARISTOR BOX X8	22,000	EA	F30-51
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	F37
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	F51
188453	PS ADC 5483R-3 10A-27,4 NM PIN	1,000	EA	G01
60091912	END STOP WAGO 249-117 10MM	5,000	EA	G01-G06
60000711	BAT H4 12V 32Ah	1,000	EA	G02
60000711	BAT H4 12V 32Ah	1,000	EA	G03
188453	PS ADC 5483R-3 10A-27,4 NM PIN	1,000	EA	G04
188453	PS ADC 5483R-3 10A-27,4 NM PIN	1,000	EA	G05
188453	PS ADC 5483R-3 10A-27,4 NM PIN	1,000	EA	G06
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	K01
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	K01
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	K01
60004394	CONT 3RT10161AP02 230V 50/60Hz	1,000	EA	K02
60004450	RCUNIT 3RT19161CD00 127-240VAC	1,000	EA	K02
60004532	RELAY MT3230C4 10A 24V 3P	1,000	EA	K03
60005026	SOCKET MT 78740 11-POLED	1,000	EA	K03
60005028	FASTENING BRACKET F RELAY 3P	1,000	EA	K03
60004532	RELAY MT3230C4 10A 24V 3P	1,000	EA	K04
60005026	SOCKET MT 78740 11-POLED	1,000	EA	K04
60005028	FASTENING BRACKET F RELAY 3P	1,000	EA	K04

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60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K05
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K05
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K05
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K05
60004996	RELAY EMER 3TK2806OBB4 400V	1,000	EA	K07
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	K07
60004532	RELAY MT3230C4 10A 24V 3P	1,000	EA	K08
60005026	SOCKET MT 78740 11-POLED	1,000	EA	K08
60005028	FASTENING BRACKET F RELAY 3P	1,000	EA	K08
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K09
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K09
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K09
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K09
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K11
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K11
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K11
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K11
60004391	CONT 3RT1016-1BB41 24V DC	1,000	EA	K14
60004452	DIODE 3RT1916-1LM00 24-70V	1,000	EA	K14
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K15
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K15
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K15
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K15
60004532	RELAY MT3230C4 10A 24V 3P	1,000	EA	K16
60005026	SOCKET MT 78740 11-POLED	1,000	EA	K16
60005028	FASTENING BRACKET F RELAY 3P	1,000	EA	K16
60004513	RELAY RT424024 8A 24V 2P	1,000	EA	K17
60004517	SKT RT RT78625 2x12A 300VAC 2P	1,000	EA	K17
60004518	RETAINER FOR RT SOCEKT RT16016	1,000	EA	K17
60004520	DIODE MODULE RPML0024 12-24V	1,000	EA	K17
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	K17
60004933	RS485/RS485 REPEATER I-75	1,000	EA	K21
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	K21
60004933	RS485/RS485 REPEATER I-75	1,000	EA	K22
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	K22
60108632	FAN 55M3/H 230V	1,000	EA	M01
60108634	FILTER EXH 148x148x24	1,000	EA	M01
60108632	FAN 55M3/H 230V	1,000	EA	M02
60108634	FILTER EXH 148x148x24	1,000	EA	M02
60005838	PILOT LIGHT ISFA 616 400 R1002	1,000	EA	P01
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	P01
60005850	LAMP BLOCK SK616 003-A	1,000	EA	P01
60005886	BULB BA9S 24V	1,000	EA	P01
60102749	LABEL "SHAFT BRAKE LOCKED"	1,000	EA	P01
118994	LABEL Q01 MAIN SWI CONTROL V	1,000	EA	Q01
60005768	LOAD BREAK SWITCH OT25ET3 3-PO	1,000	EA	Q01
60005774	HANDLE OHB 2RJ BK	1,000	EA	Q01
60005776	SWI COVER OTS32T3 3P	2,000	EA	Q01
60005824	MUSHROOM BUTTON ISAF616510R100	1,000	EA	S01
60005846	CONTACT ELEMENT SK616 001-B 1N	2,000	EA	S01
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S01
60005871	SIGN SK615546-2 "EMERGENCY STO	1,000	EA	S01
60002421	LABEL "SERVICE 0 1"	1,000	EA	S02
60005836	SELECT SWITCH ISFA616280R100 2	1,000	EA	S02
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	S02
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S02
VT720721	EDMO LIFT TSL 1000	0,000	EA	Use in Test
51713101	TOI-II INTERF EXT V82 TOP	1,000	EA	U01
60001911	CONN BLA F 2 LEADED	1,000	EA	U01
60001918	CONN BLA F 3 LEADED	1,000	EA	U01
60001927	CONN BLA F 4 LEADED	6,000	EA	U01
60001934	CONN BLA F 5 LEADED	7,000	EA	U01
60108384	BRA F TOI +AN1 1650KW V82 MRK3	2,000	EA	U01
51701701	DISP OP-PANEL 50u 1.5MW C	1,000	EA	U02
60001911	CONN BLA F 2 LEADED	1,000	EA	U02
51701001	TAC 84C VIB GUARD 2 FILTERS	1,000	EA	U03
60005026	SOCKET MT 78740 11-POLED	1,000	EA	U03
60005027	FASTENING BRACKET for S-SYSTEM	1,000	EA	U03
60012101	WIRING RS485 - TAC84/85	1,000	EA	U03
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	U03
51700402	TAC 85-1 DIRECTION GUARD VWS	1,000	EA	U04
60005026	SOCKET MT 78740 11-POLED	1,000	EA	U04
60005027	FASTENING BRACKET for S-SYSTEM	1,000	EA	U04
60012101	WIRING RS485 - TAC84/85	1,000	EA	U04
60004924	TRIP AMPLIFIER 2231D-1050	1,000	EA	U05

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60005026	SOCKET MT 78740 11-POLED	1,000	EA	U05
60005027	FASTENING BRACKET for S-SYSTEM	1,000	EA	U05
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	U05
51700101	TAC 84C VIB GUARD RS485 NMCS	1,000	EA	U06
60005026	SOCKET MT 78740 11-POLED	1,000	EA	U06
60005027	FASTENING BRACKET for S-SYSTEM	1,000	EA	U06
60012101	WIRING RS485 - TAC84/85	1,000	EA	U06
51700101	TAC 84C VIB GUARD RS485 NMCS	1,000	EA	U07
60005026	SOCKET MT 78740 11-POLED	1,000	EA	U07
60005027	FASTENING BRACKET for S-SYSTEM	1,000	EA	U07
60012101	WIRING RS485 - TAC84/85	1,000	EA	U07
60000980	DIODE BRID KBPC3506G 600V 35A	1,000	EA	V07
60002503	LABEL "-X01"	1,000	EA	X01
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X01
60006072	TERMINAL WAGO 870-551 3-LEV.0,	2,000	EA	X02
60006084	END SECTION 870-568 3-LEV GREY	1,000	EA	X02
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X02
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X02
60006078	TERMINAL WAGO DOUBLE 870-831 2	9,000	EA	X03
60006079	END PLATE 870-948	1,000	EA	X03
60006088	PUSH-IN JUMPER BAR 870-404 4-P	2,000	EA	X03
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X03
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X03
60006078	TERMINAL WAGO DOUBLE 870-831 2	3,000	EA	X04
60006079	END PLATE 870-948	1,000	EA	X04
60006086	PUSH-IN JUMPER BAR 870-402 2-P	1,000	EA	X04
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X04
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X04
60006072	TERMINAL WAGO 870-551 3-LEV.0,	2,000	EA	X05
60006084	END SECTION 870-568 3-LEV GREY	1,000	EA	X05
60006086	PUSH-IN JUMPER BAR 870-402 2-P	3,000	EA	X05
60006078	TERMINAL WAGO DOUBLE 870-831 2	2,000	EA	X06
60006079	END PLATE 870-948	1,000	EA	X06
60006086	PUSH-IN JUMPER BAR 870-402 2-P	1,000	EA	X06
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X06
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X06
60006072	TERMINAL WAGO 870-551 3-LEV.0,	1,000	EA	X07
60006084	END SECTION 870-568 3-LEV GREY	1,000	EA	X07
60091912	END STOP WAGO 249-117 10MM	1,000	EA	X07
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X07
60006072	TERMINAL WAGO 870-551 3-LEV.0,	2,000	EA	X08
60006084	END SECTION 870-568 3-LEV GREY	1,000	EA	X08
60006086	PUSH-IN JUMPER BAR 870-402 2-P	3,000	EA	X08
60006071	TERMINAL WAGO 870-501 2-LEV.0,	1,000	EA	X09
60006083	END SECTION 870-518 2-LEVEL GR	1,000	EA	X09
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	X09
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X10
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X10
60096685	TERMINAL WAGO1-LEV 0.08-4.0MM2	29,000	EA	X10
60097064	END SEC 281-328 GY	1,000	EA	X10
60100036	PUSH-IN JUMPER BAR 2-POL	2,000	EA	X10
60007422	WIRE HOSE BLACK 30mm	0,320	M	2X160MM
60006078	TERMINAL WAGO DOUBLE 870-831 2	1,000	EA	24VDC5+
60006079	END PLATE 870-948	1,000	EA	24VDC5+
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	24VDC5+
60091912	END STOP WAGO 249-117 10MM	1,000	EA	24VDC5+
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	24VDC5+

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Change Info

Item no.	***Item text:***
60112234	**Operation Box +AN2**

Active revision for production

Drawing no.: 6010125

Version	Date	Init./App.	Description of change since last revision
04	13.12.2007	INI /BIVA	Changed with ECO 232839 - All pages updated with new Vestas logo. Page 030: Layout, box bottom inside, position ID corrected. Page 040: Symbols for S2, S3 and S4 updated, terminal numbers corrected.

LST no.: 21000218 *Material BOM no.: 60112234*

Version	Date	Init./App.	Description of change since last revision
03	18.04.2007	HHU+INI/FLT	Changed with ECO 216586 + ECO 223407_Updated for production in Spain Added items: 60073080 Bracket x 1 pc. 60009587 SCREW ISO 7046 M4 x 2 pc. 60009599 SCREW ISO 7045 x 4 pc. 60009838 LOCK WASHER DIN 6798 x 4 pc. 60009987 MAGNET x 2 pc. Removed item 60007458 CABLE TIE 140x2.5mm WH x 3 pc.

Old revisions for service

Drawing no.: 6010125

Version	Date	Init./App.	Description of change since last revision
03	10.03.2006	INI /FLT	Reason for changes, Push button box 60010964 is left out from ABB assortment, replaced with 769055 Page 001 Updated Page 030: Layout updated with the new box.
02	29.09.2005	INI /FLT	Reason for changes, new pushbutton series from ABB, dim. of PG changed. Layout corrected with new 60005849_SAFETY HOLDER and illustrated that terminals are placed inside the cover. PG21 changed to PG13.5 Page 40:Internal connections updated.
01	24.04.2003	INI /FLT	First version in the new SAP no. system.

LST no.: 21000218 *Material BOM no.: 60112234*

Version	Date	Init./App.	Description of change since last revision
03	18.04.2007	HHU+INI/FLT	Changed with ECO 216586 + ECO 223407_Updated for production in Spain Added items: 60073080 Bracket x 1 pc. 60009587 SCREW ISO 7046 M4 x 2 pc. 60009599 SCREW ISO 7045 x 4 pc. 60009838 LOCK WASHER DIN 6798 x 4 pc. 60009987 MAGNET x 2 pc. Removed item 60007458 CABLE TIE 140x2.5mm WH x 3 pc.
02	02.03.2006	INI/FLT	Reason for changes, Push button box 60010964 is left out from ABB assortment, replaced with 769055 60010964 changed to 769055_Push Bottom Box 4 holes 60002309 changed to 118928_Sign 60007541 changed to 193712_Cable gland FM20GPA polyamid. 60007557 changed to 193722_Locknut MM20GPA polyamid. 60005844 changed to 60005845_CE SK616 002-A 1NO din rail 60005847x1 pc CE SK616 002B 1NC din rail added 60007458x3 pc. Cable tie 140x2.5mm WH added. 60005881x4 pc. 60007665x1 pc. 60005849x3 pc. removed
01	03.10.20005	INI/FLT	Reason for changes, new pushbutton series from ABB. Added: 60007656_Reduction adapter PG21-PG13.5 60005849_Safety holder f.3 ELEMEN.1SFA616605R1100 (S2,S3,S4) 60110724_Wiring 70MM X-LINE 0,75MM2 RØD SV/SV Changed: 60007545 to 60007541_cable gland BS14 PG13.5 nylon 60005832 to 60112230_SS ISFA611210R1006 3POS BK 60005834 to 60112231_SS ISFA611212R1006 3POS RETUR 60005828 to 60112228_SS ISFA611202R1006 B-C RETURN 60005845 to 60005844_Contact element SK616 001-A 1NO

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Earlier BOM no Longer Active for Serial Production

LST no.: 21000003 *Material BOM no.: 60015962*

Version	Date	Init./App.	Description of change since last revision
02	02.06.2005	HRN/	Production required changes.
01	14.03.2000	FLT /FLT	First version in the new SAP no. system.

Change Info: 0000203

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PAGE	CONTENT	DATE	REVISION
001	Table of Contents	071213	04
030	Layout	071213	-
040	Internal Connection	071213	-

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	Date	Initials	Function	Table of Contents		
Designed	010924	FLT	Project title	Operation Box +AN2		
Approved	071213	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071213	INI	Rev. 04	Drawing no. 6010125	Cont. sheet 030	Sheet 001

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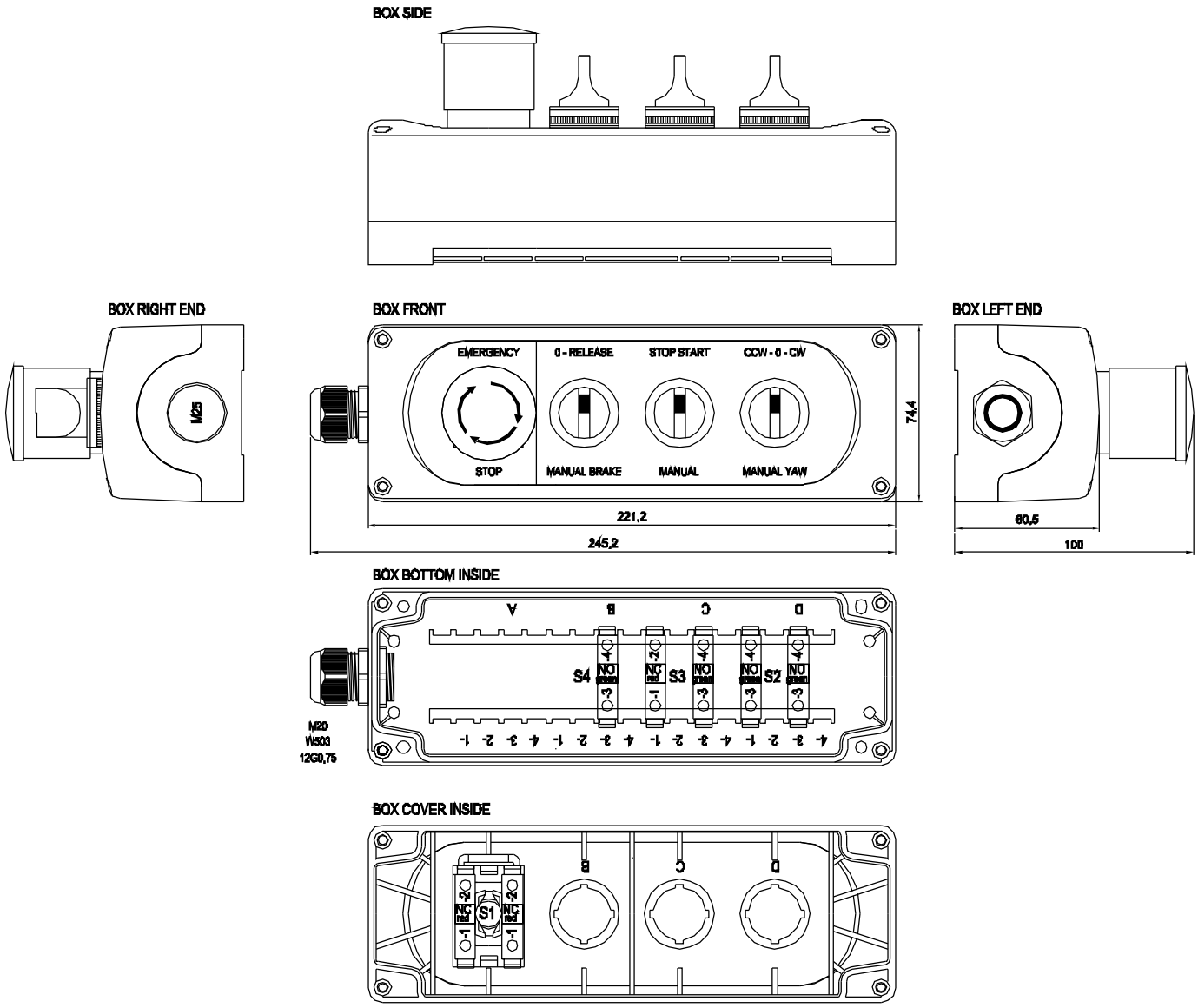

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		Designed	010924	FLT	Project title: Operation Box +AN2	
		Approved	071213	BIVA	Comments	Customer: Vestas Wind Systems A/S
		Revised	071213	INI	Rev.: - / Drawing no.: 6010125	Cont. sheet: 040 / Sheet: 030

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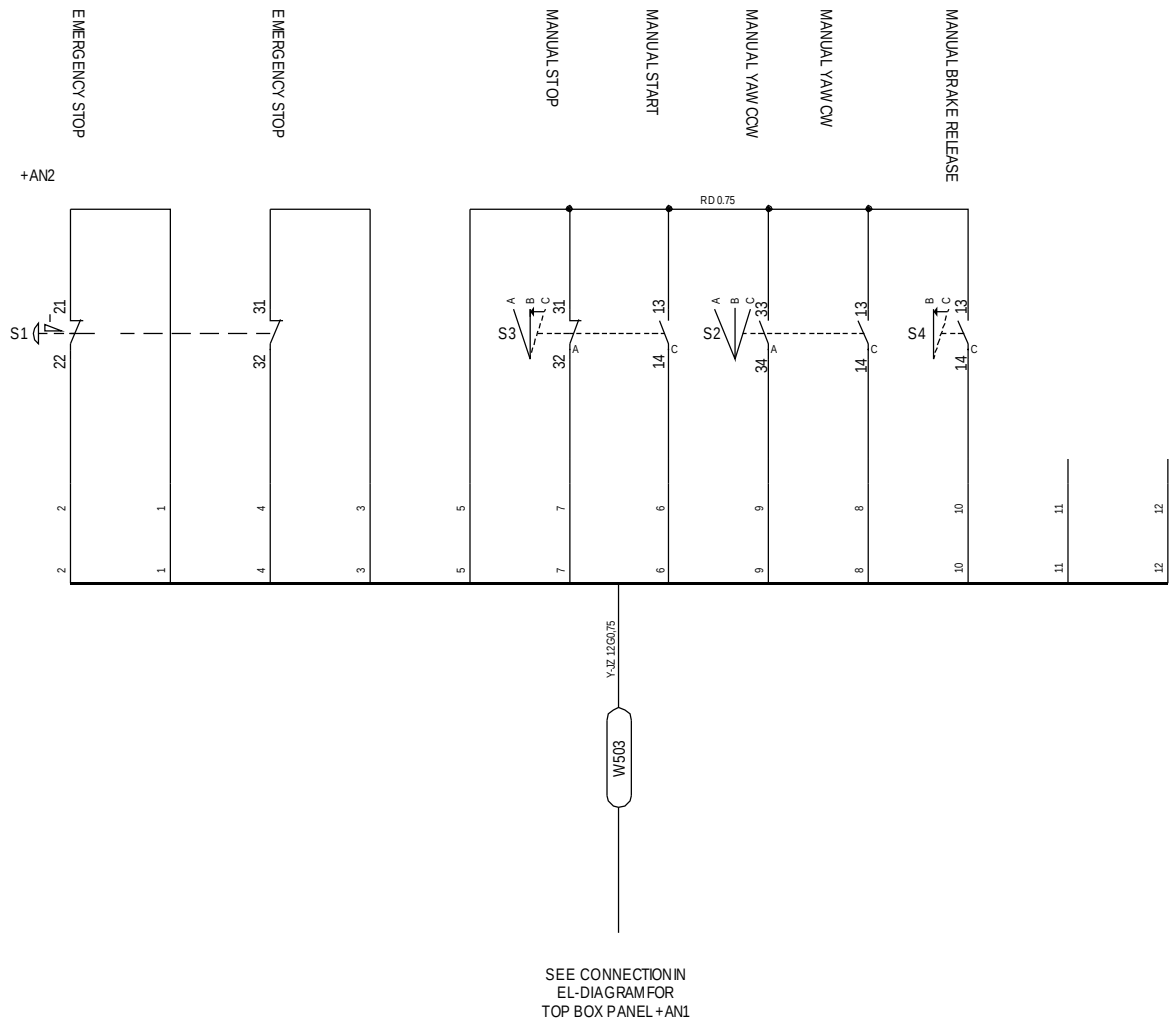

	Date	Initials	Function	Internal Connection		
Designed	010924	FLT	Project title	Operation Box +AN2		
Approved	071213	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071213	INI	Rev. -	Drawing no. 6010125	Cont. sheet -	Sheet 040

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60112234 OPERATION BOX +AN2 30t

Component	Description	Qty per	Stk UM	Position Number
D6010125	OPERATION BOX +AN2 30t	0,000	EA	
60110664	CABLE F OPERATIONS BOX +AN2	1,000	EA	
60110724	WIRING 70MM X-LINE 0,75MM2	4,000	EA	
769055	PUSH BOTTON BOX W. 4 HOLES	1,000	EA	
118928	SIGN, OPERATION BOX +AN2 V82	1,000	EA	
193712	CABLE GLAND FM20GPA POLYAMID	1,000	EA	
193722	LOCKNUT MM20GPA POLYAMID	1,000	EA	
D1001713	WKI f. production of +AN2 NM72	0,000	EA	
60009587	SCR CRS UH M4x10 4.8 FZB	2,000	EA	
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	
60009987	MAGNET A43A-KSM4 43MM	2,000	EA	
60073080	BRA F CONTROL BOX AN2	1,000	EA	
60009838	LOCK WASHER DIN 6798 A4 - FZB	4,000	EA	
60005824	MUSHROOM BUTTON ISAF616510R100	1,000	EA	S1
60005846	CONTACT ELEMENT SK616 001-B 1N	2,000	EA	S1
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S1
60112230	SS M3SS1-10B 3POS BK	1,000	EA	S2
60005845	CE SK616 002-A 1NO DIN RAIL	2,000	EA	S2
60112231	SS M3SS3-10B 3POS RETUR	1,000	EA	S3
60005847	CE SK616 002-B 1NC DIN RAIL	1,000	EA	S3
60005845	CE SK616 002-A 1NO DIN RAIL	1,000	EA	S3
60112228	SS M2SS3-10B B-C RETURN	1,000	EA	S4
60005845	CE SK616 002-A 1NO DIN RAIL	1,000	EA	S4

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Change Info

Item no.	***Item text:***
60109799	**Motor Box +AN4, V82-1.65MW MK5 50Hz**

Active revision *for production*

Drawing no.: 934706

Version	Date	Init./App.	Description of change since last revision
00	2007-06-28	INI/FLT	First version

BoM no.: 60109799 *Document no.: 21000204*

Version	Date	Init./App.	Description of change since last revision
04	2007-04-18	INI/FLT	Changed with ECO 223422_Updated for production in Spain. Added: 60007459 CABLE TIE WHITE 200x2.5mm x 2 pc. Removed: 60094881 MARKER CARD WAGO Nos 71-80 TYP x 0,1 pc. Quantity changed: 60009599 SCREW ISO 7045, 6 pc. to 14 pc. 60009751 SCREW, 10 pc. to 9 pc. 60009838 LOCK WASHER, 6 pc. to 14 pc. 60009861 NUT ISO 4032, 6 pc. to 14 pc. 60096685 TERMINAL, 71 pc. to 70 pc. 60105941 QUICK-RELEASE FASTENER, 6 pc. to 0,5 pc.

Old revisions *for service*

Drawing no.: xxxxxx

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/xxx	Write the change here.

BoM no.: 60109799 *Document no.: 21000204*

Version	Date	Init./App.	Description of change since last revision
03	2005-10-06	HRN/MILJE	Production required change. 60007693 replaced with 60007584_Cable gland BM-EN-11 M16 PA6
02	2005-05-25	MILJE/FLT	Updates according to production 60110696 wiring X02, 60110701 wiring X400 and 60110702 wiring X01 added.
01	2005-04-27	FLT/FLT	First version

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001	Table of Contents	070628	0
030	Panel front	070628	-
031	Panel outline	070628	-
032	Terminal rows X400, X401	070628	-
040	Connection to +AT2 contro	070628	-
041	Connection to +AT2 contro	070628	-
042	Connection to conection b	070628	-
043	Connection to top panel +	070628	-
101	External connections	070628	-
102	External connections	070628	-
103	External connections	070628	-
104	External connections	070628	-
105	External connections	070628	-
106	External connections	070628	-

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	Date	Initials	Function	Table of Contents		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. 0	Drawing no. 934706	Cont. sheet 030	Sheet 001

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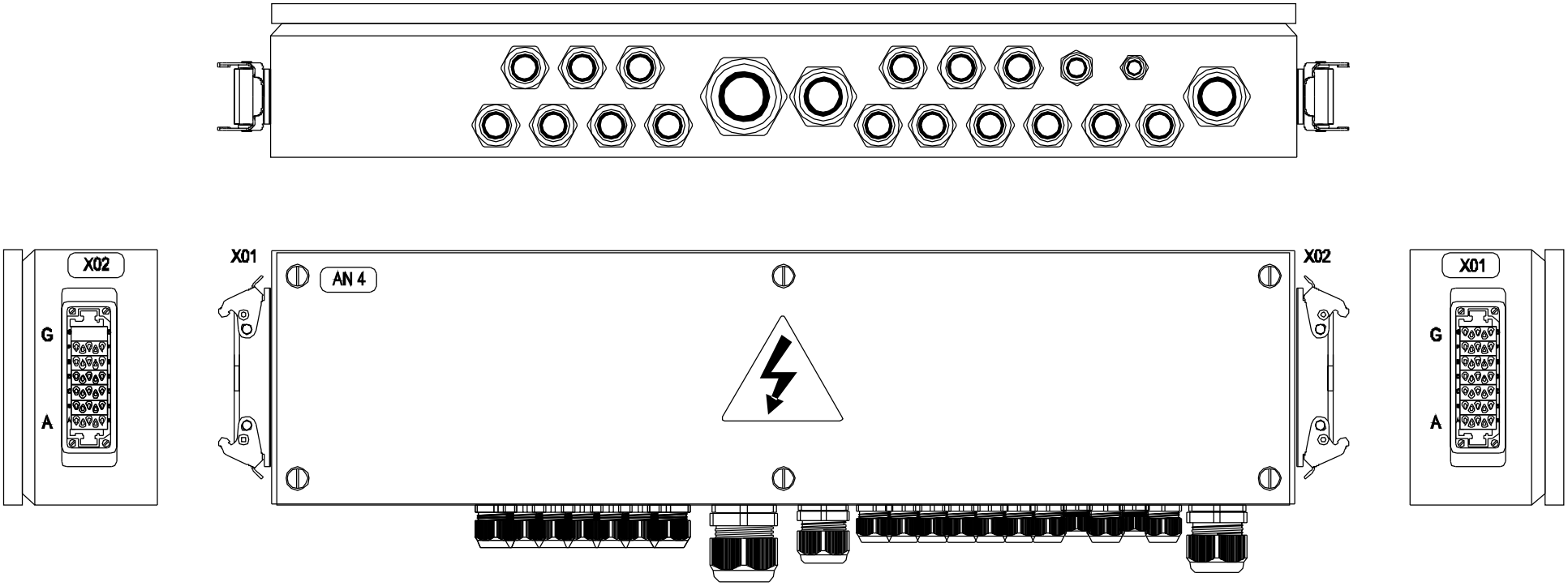

800x200x120mm (WxHxD)

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		Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments		Customer: Vestas Wind Systems A/S
		Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 031 / Sheet 030

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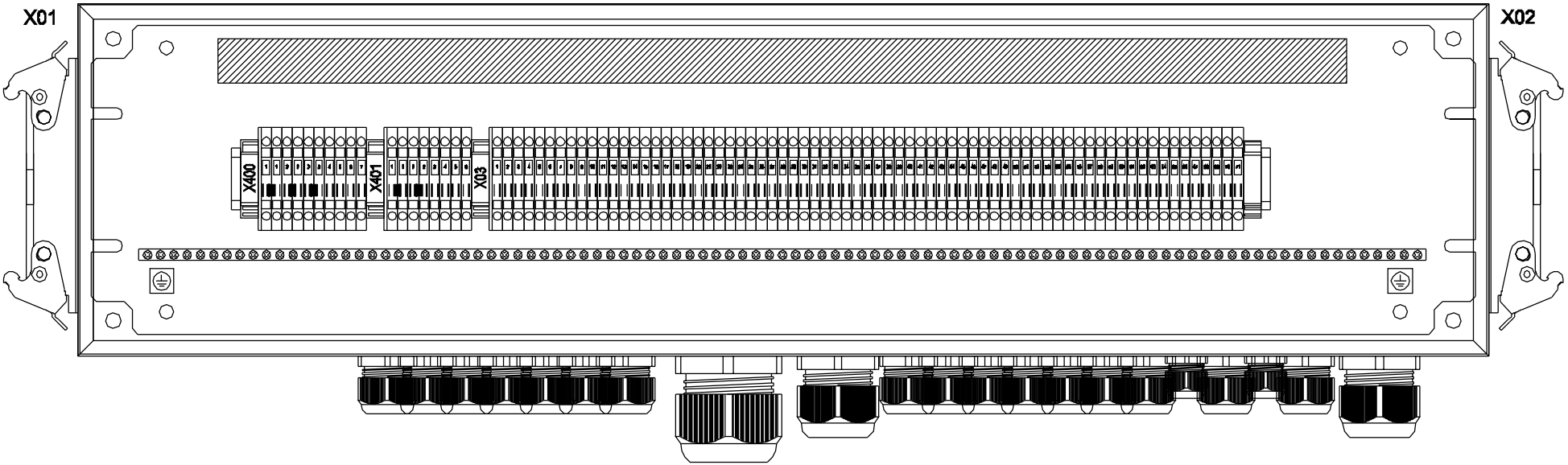

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	Date	Initials	Function	Panel outline		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 032	Sheet 031

VESTAS PROPRIETARY NOTICE

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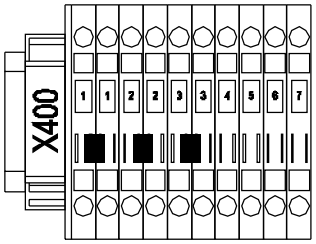

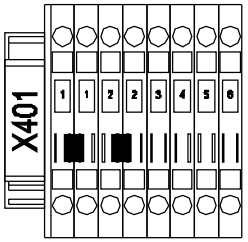

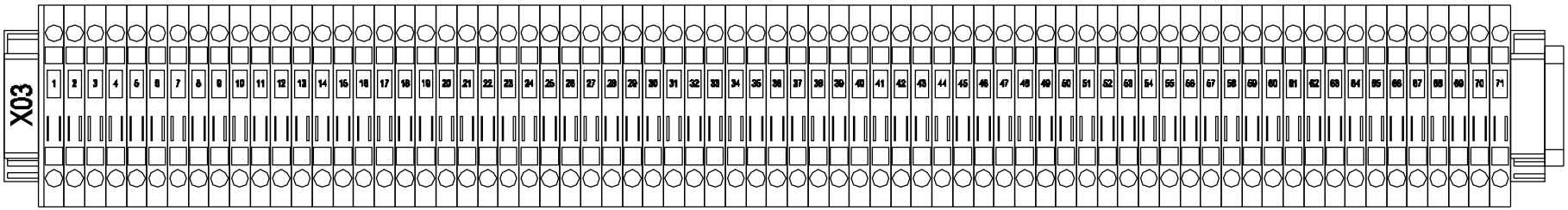

	Date	Initials	Function	Terminal rows X400, X401 and X03		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 040	Sheet 032

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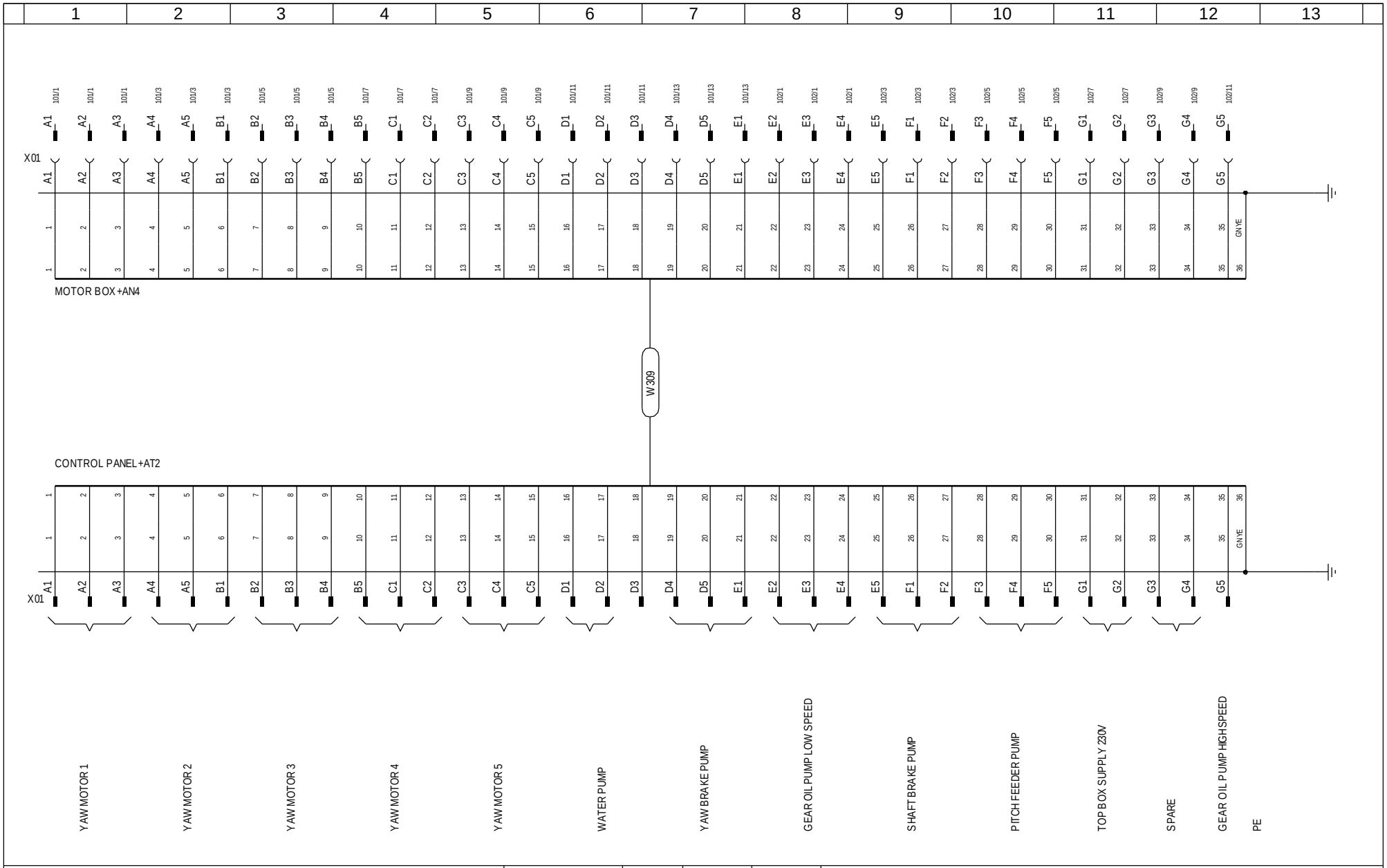

Vestas

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	Date	Initials	Function	Connection to +AT2 control panel		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 041	Sheet 040

VESTAS PROPRIETARY NOTICE

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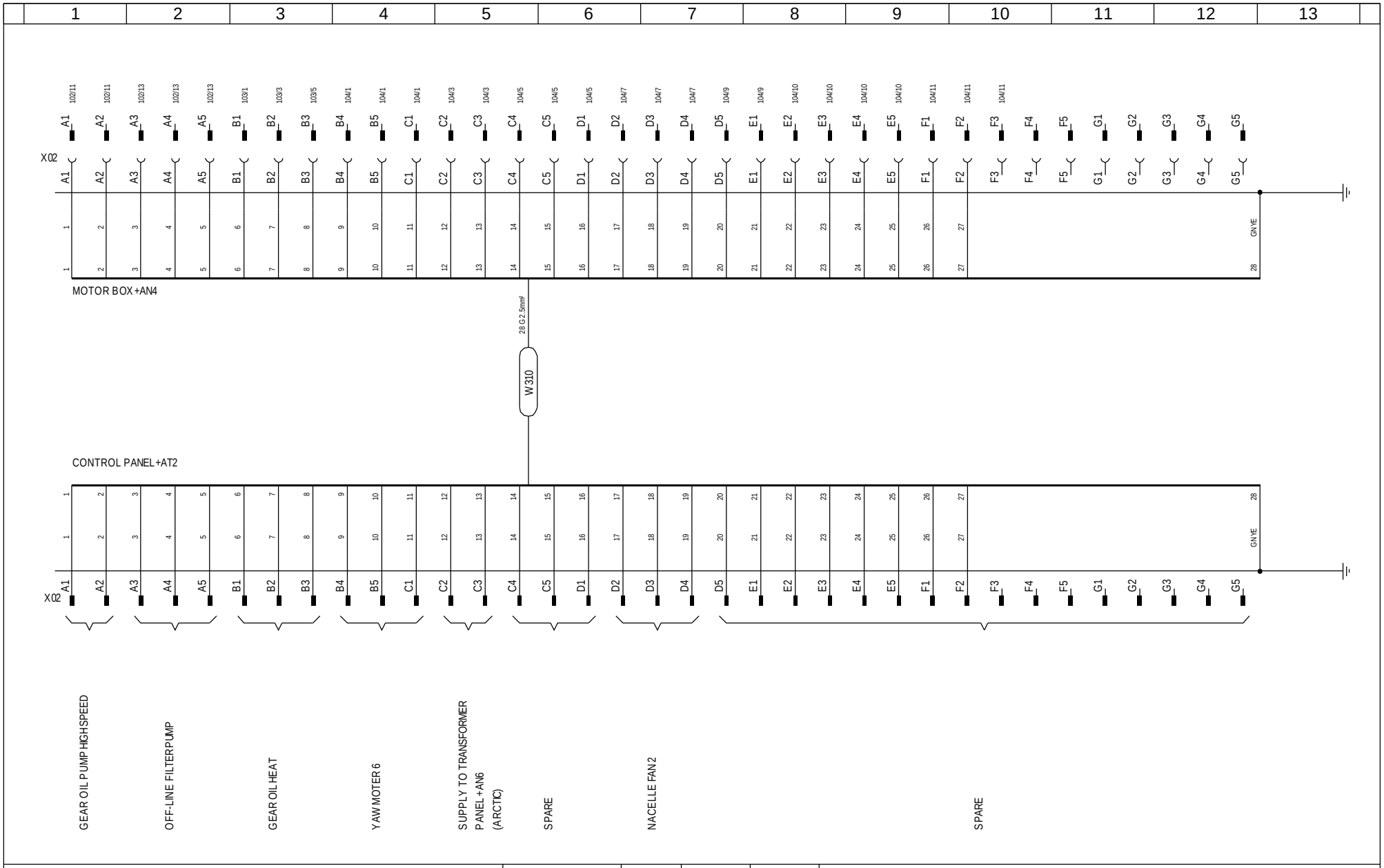

Vestas

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	Date	Initials	Function	Connection to +AT2 control panel		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 042	Sheet 041

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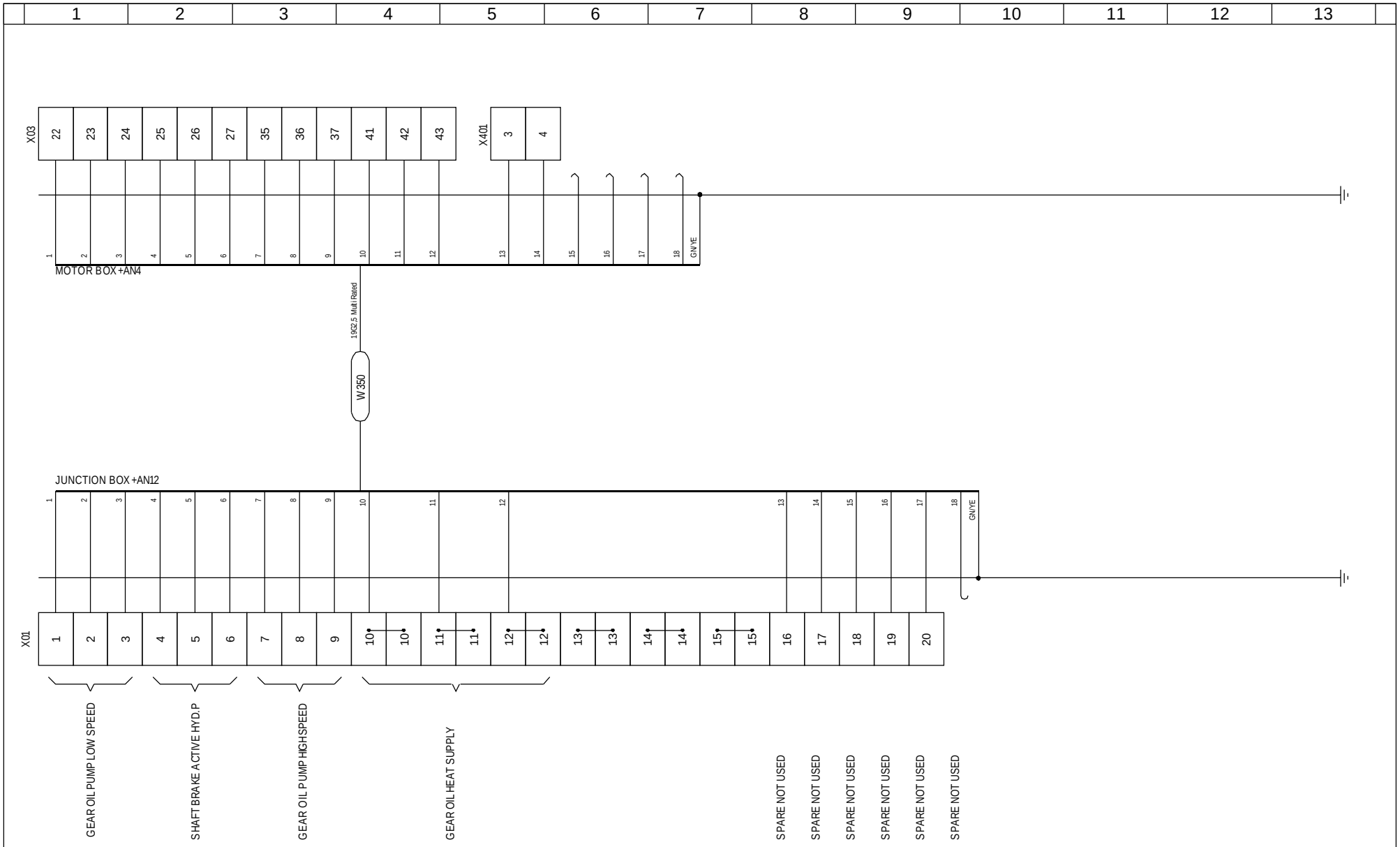

Vestas

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	Date	Initials	Function	Connection to conection box +AN12		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 043	Sheet 042

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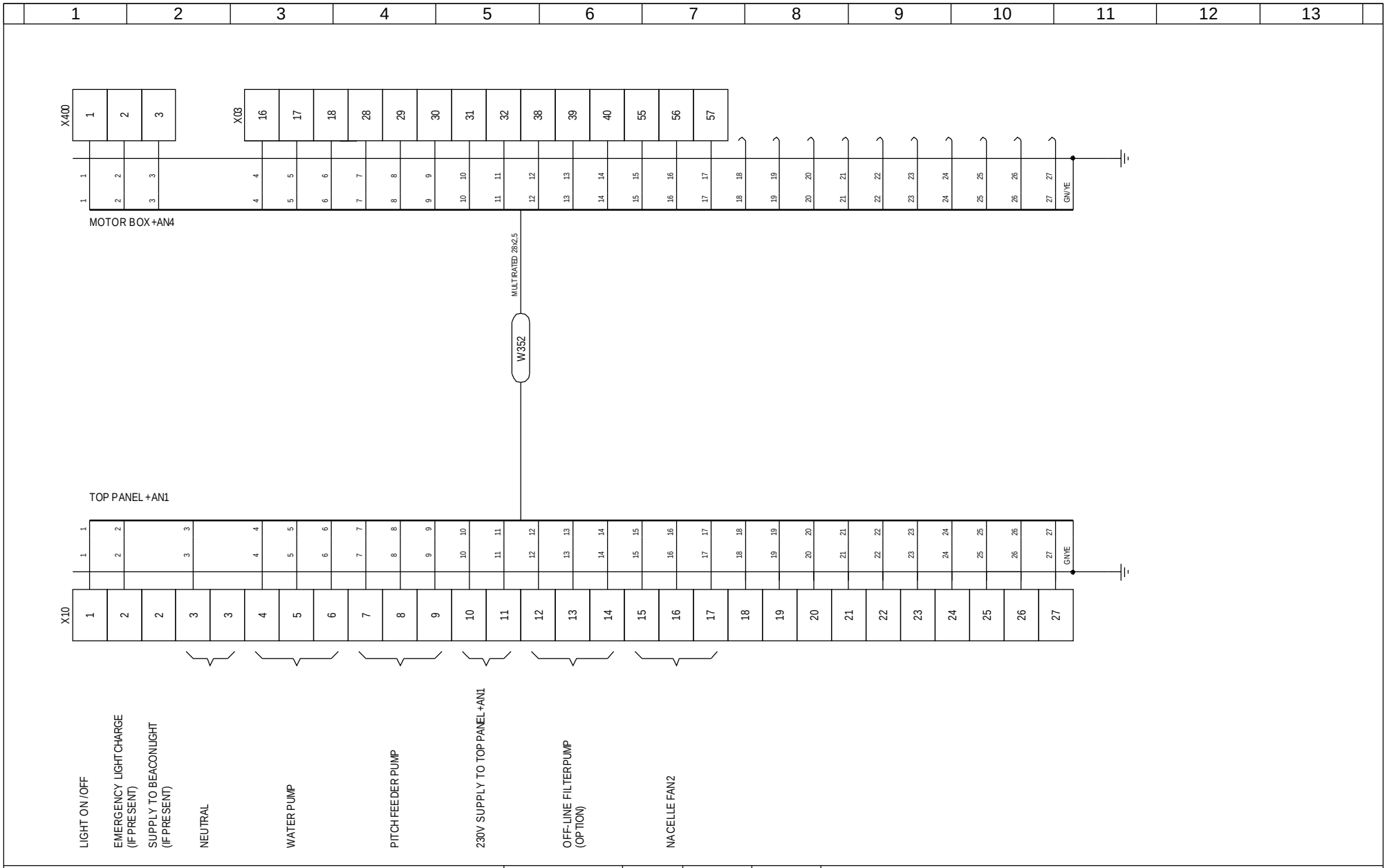

Vestas

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	Date	Initials	Function	Connection to top panel +AN1		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 101	Sheet 043

VESTAS PROPRIETARY NOTICE

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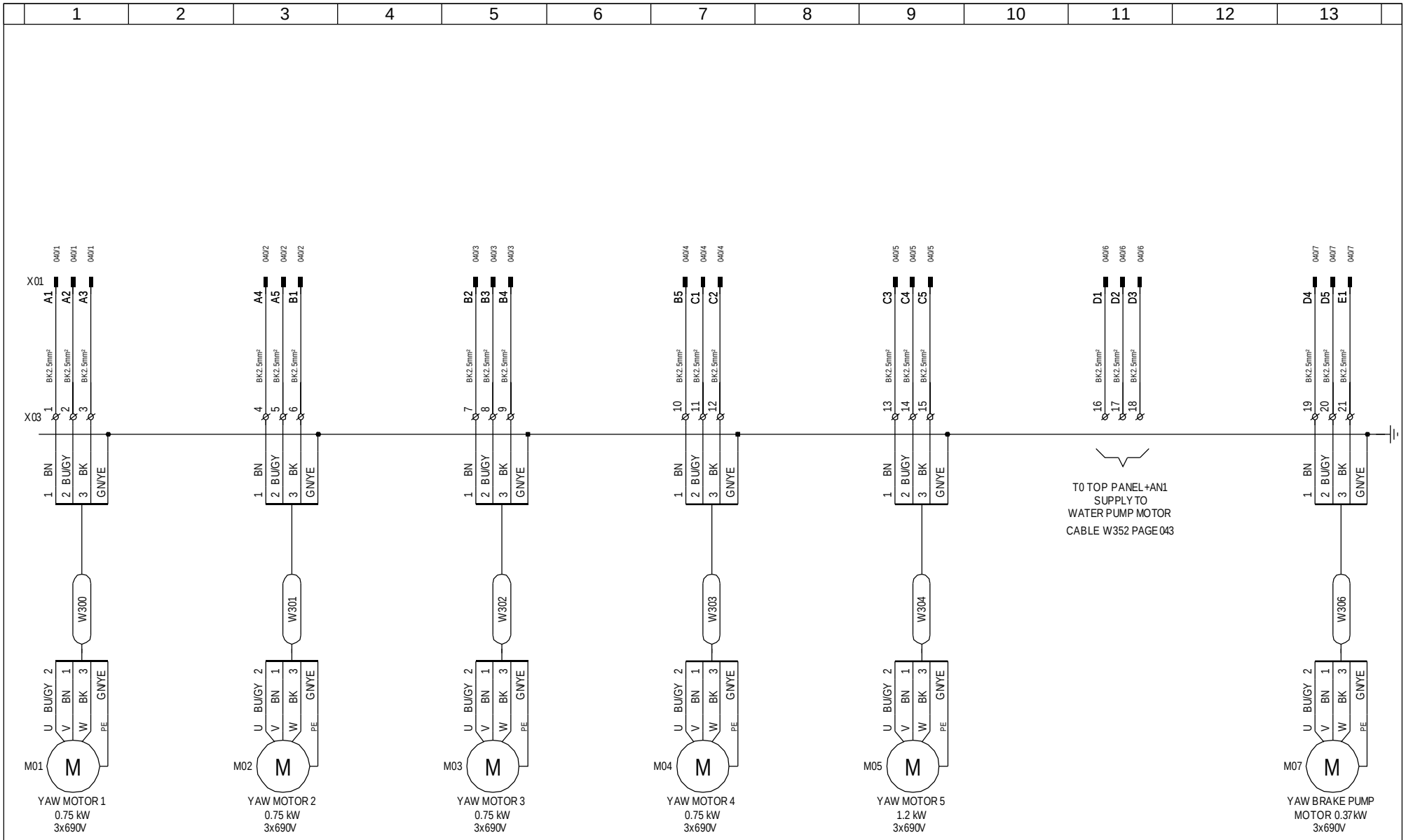

Vestas

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	Date	Initials	Function	External connections		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 102	Sheet 101

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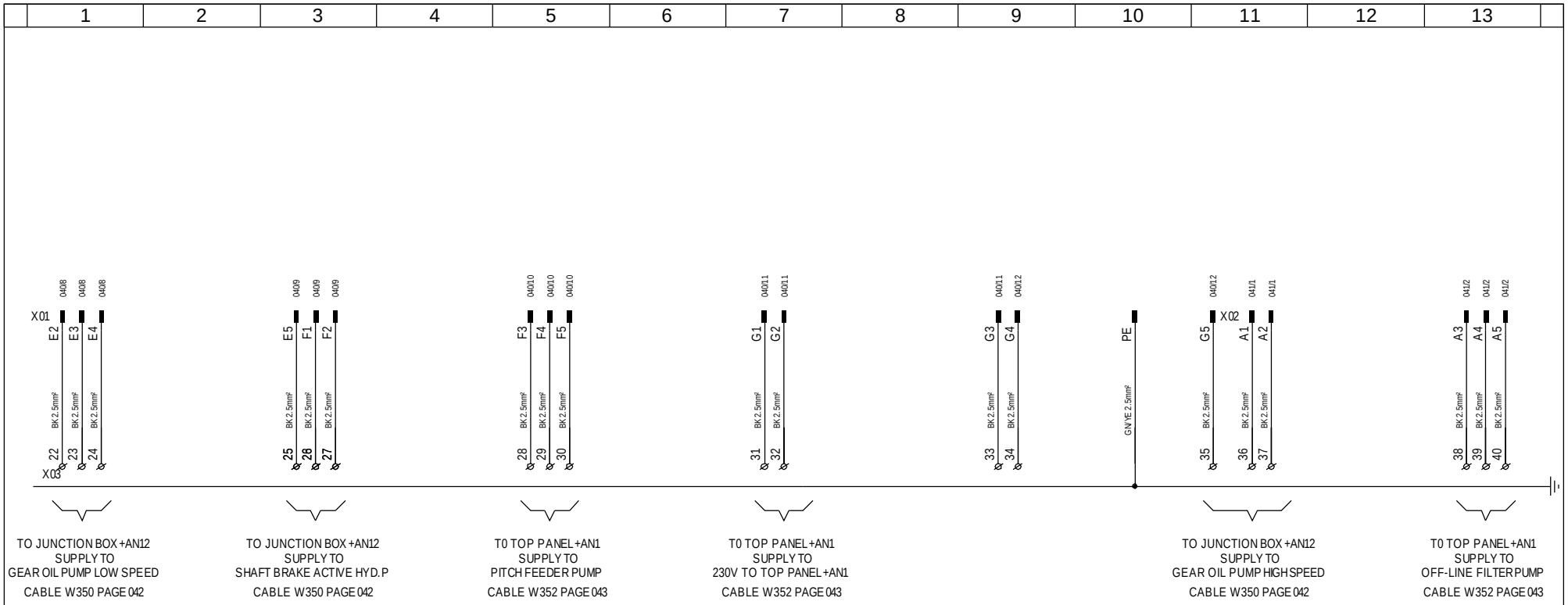

Vestas

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	Date	Initials	Function	External connections		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 103	Sheet 102

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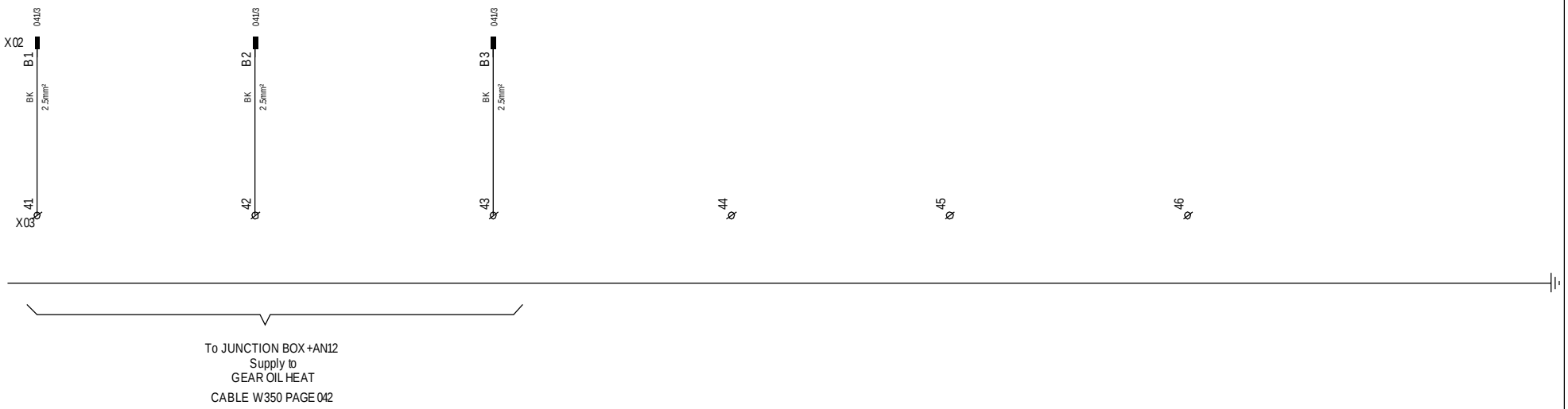
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



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	Date	Initials	Function	External connections		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 104	Sheet 103

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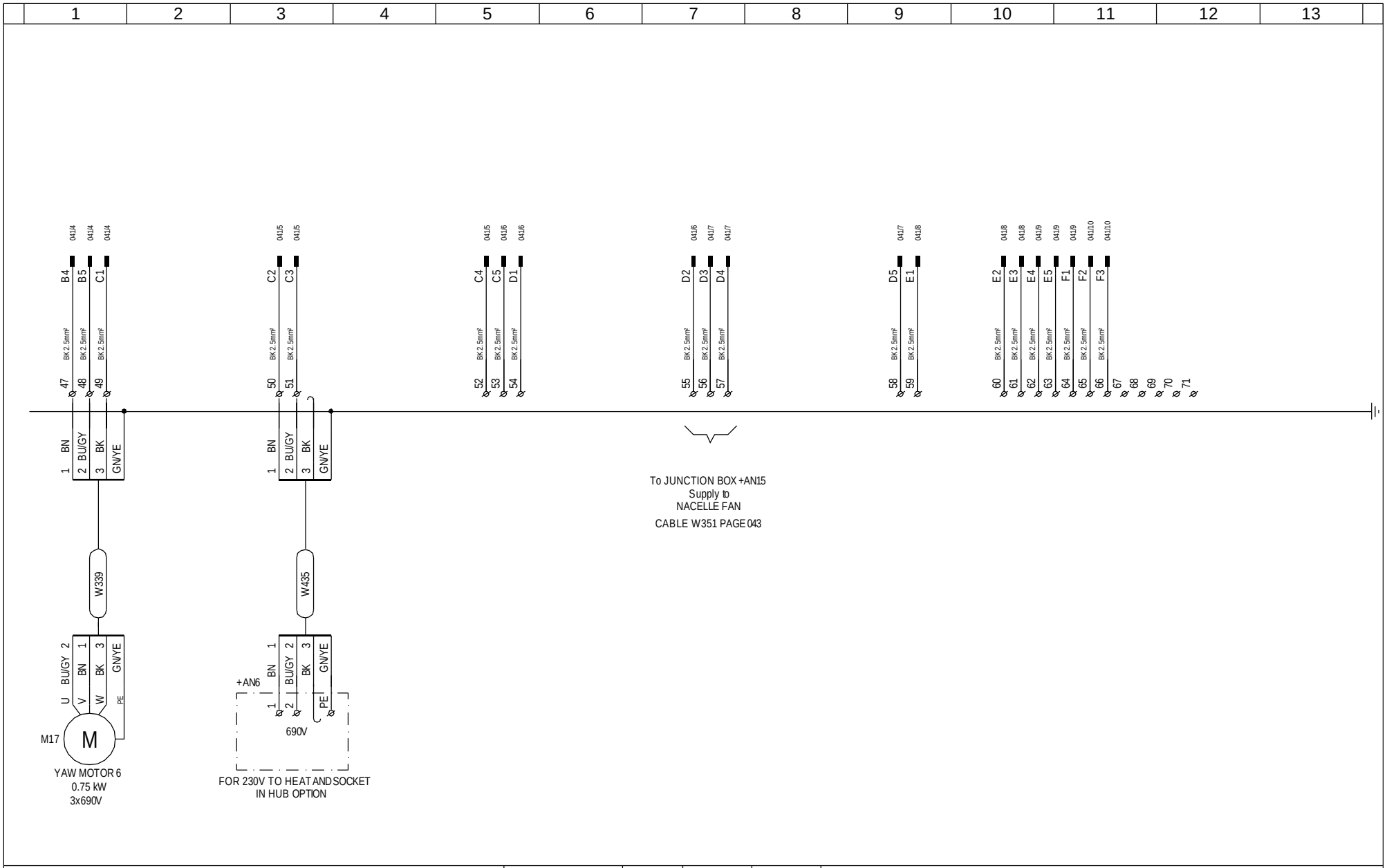
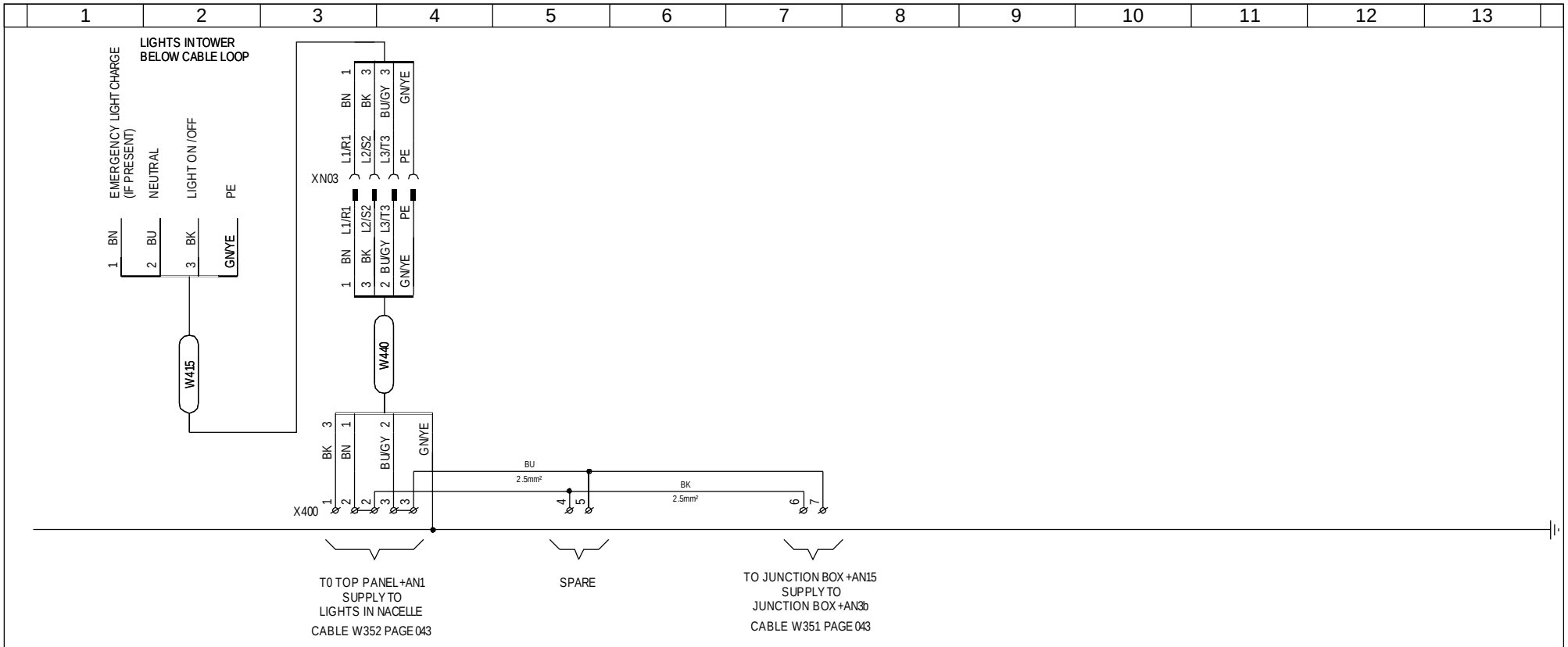
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.	Date	Initials	Function	External connections	
		070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz	
		070628	FLT	Comments	Customer	Vestas Wind Systems A/S
		070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 105 / Sheet 104

VESTAS PROPRIETARY NOTICE

T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas

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	Date	Initials	Function	External connections		
Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz		
Approved	070628	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet 106	Sheet 105

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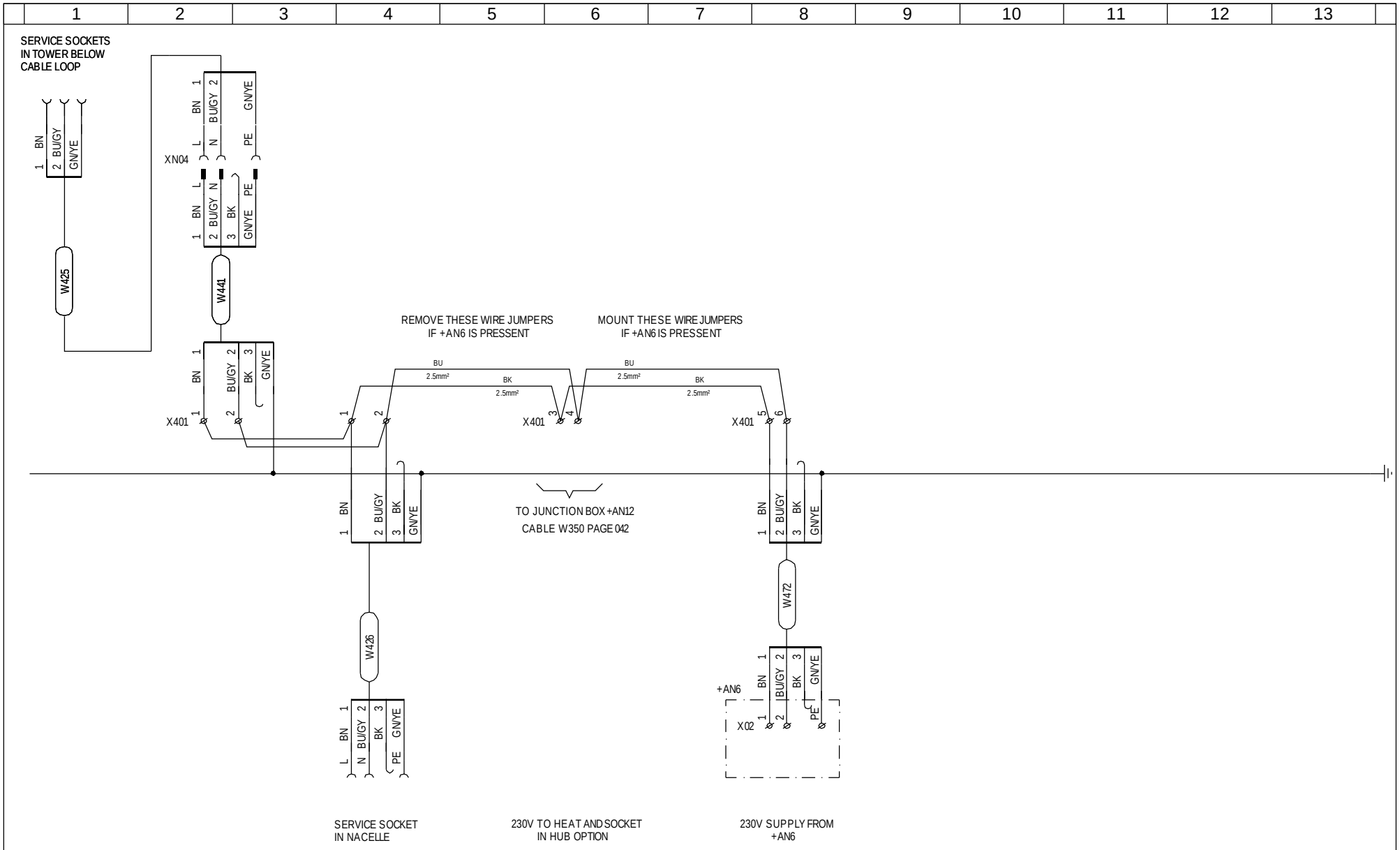
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	External connections	
		Designed	070628	FLT	Project title	Motor Box +AN4 V82-1.65MW MK5 50Hz	
		Approved	070628	FLT	Comments		Customer: Vestas Wind Systems A/S
		Revised	070628	INI	Rev. -	Drawing no. 934706	Cont. sheet - / Sheet 106

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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

Document no.: 21000204
Version: 04
Date: 18/04/2007
Init: Inge Nielsen

60109799 MOTOR BOX+AN4 V82 MRK III

Component	Description	Qty per	Stk UM	Position Number
D1001693	Work instructions for producti	0,000	EA	
D1001710	Work instructions f. productio	0,000	EA	
D6015969	MOTOR BOX +AN4, NM30t MRK III	0,000	EA	
D6016254	MOTOR BOX +AN4, NM30t MRK III	0,000	EA	
60109852	BOX KL RAL7035 W/W	1,000	EA	
60010402	MOUN PL KL 1574.150 W/W	1,000	EA	
60096809	WALL BRACKET RITTAL 1580.000	4,000	EA	
60014034	LABEL MOTOR BOX +AN4	1,000	EA	
60002446	LABEL "+AN4"	1,000	EA	
60002503	LABEL "-X01"	1,000	EA	
60002504	LABEL "-X02"	1,000	EA	
60006824	STICKER "LIGHTNING" 100MM	1,000	EA	
60007584	CABLE GLAND BM-EN-11 M16 PA 6	1,000	EA	
60007592	LOCKNUT M16 PA6 BML-1S	1,000	EA	
60007585	CABLE GLAND M20 PA6 BM-EN-12	1,000	EA	
60007593	LOCKNUT BML-12 M20 PA 6	1,000	EA	
60007586	CABLE GLAND M25 PA6 BM-EN-13	16,000	EA	
60007594	LOCKNUT M25 PA6 BML-13	16,000	EA	
60007547	CABLE GLAND PG36 NYLON BS18	1,000	EA	
60007559	LOCKNUT PG36 PA6 BLN18	1,000	EA	
60007589	CABLE GLAND BM-EN-16 M50 PA 6	1,000	EA	
60007597	Locknut BML-16 M50 PA 6	1,000	EA	
60007588	CABLE GLAND BM-EN-15 M40 PA 6	1,000	EA	
60007596	LOCKNUT M40 PA6 BML-15	1,000	EA	
60094860	MARKER CARD WAGO NOS 1-10	0,500	EA	
60094872	MARKER CARD WAGO NOS 11-20	0,100	EA	
60094874	MARKER CARD WAGO NOS 21-30	0,100	EA	
60094875	MARKER CARD WAGO NOS 31-40	0,100	EA	
60094876	MARK WAGO NOS 41-50 TYP WMB	0,100	EA	
60094879	MARK WAGO NOS 51-60 TYP WMB	0,100	EA	
60094880	MARK WAGO NOS 61-70 TYP WMB	0,100	EA	
60100036	PUSH-IN JUMPER BAR 2-POL	3,000	EA	
60097064	END SEC 281-328 GY	1,000	EA	
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	
60091912	END STOP WAGO 249-117 10MM	1,000	EA	
60097064	END SEC 281-328 GY	1,000	EA	
60100036	PUSH-IN JUMPER BAR 2-POL	2,000	EA	
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	
60091912	END STOP WAGO 249-117 10MM	1,000	EA	
60006819	STICKER "EARTH" 14MM	0,040	EA	
60007201	EARTH BAR 01130 9x6.5x1000MM	0,725	M	
60007182	DIN RAIL PP0735H 7x35MM	0,625	M	
60007359	CABLE CONDUIT 40x60mm 21160	0,625	M	
60013412	ANGLE BRACKET 2x10x25MM	6,000	EA	
60009578	SCR CRS PH M3x8 FZB	6,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60110696	WIRING X02 +AN4 UL MRKIII	1,000	EA	
60110701	WIRING X400 +AN4 UL MRKIII	1,000	EA	
60110702	WIRING X01 +AN4 UL MRKIII	1,000	EA	
D21000204	BOM_60109799_MOTOR BOX +AN4 V8	0,000	EA	
D22000354	CI-MOTOR BOX +AN4 NM72/82 for	0,000	EA	
D22000563	CI. MOTOR BOX +AN4 V82-1.65MW	0,000	EA	
D22000572	CI-MOTOR BOX +AN4, V82-1.65MW	0,000	EA	
60007459	CABLE TIE WHITE 200x2.5mm	2,000	EA	
60009599	SCR CRS PH M4x14 4.8 FZB	14,000	EA	
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	9,000	EA	
60009838	LOCK WASHER DIN 6798 A4 - FZB	14,000	EA	
60009861	NUT ISO 4032 M 4 - 6 - FZB	14,000	EA	
60105941	QUICK-RELEASE FASTENER KL BOX	0,500	EA	
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X01
60006576	HOUSING C14610F0240001 46P BUL	1,000	EA	X02
60097064	END SEC 281-328 GY	1,000	EA	X03
60091912	END STOP WAGO 249-117 10MM	2,000	EA	X03
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	X03
60096685	TERMINAL WAGO1-LEV 0.08-4.0MM2	70,000	EA	X03
60096685	TERMINAL WAGO1-LEV 0.08-4.0MM2	10,000	EA	X400
60096685	TERMINAL WAGO1-LEV 0.08-4.0MM2	8,000	EA	X401

Vestas Wind Systems A/S • Alsvej 21 • 8900 Randers • Denmark • Tel: +45 9730 0000 • Fax: +45 9730 0001
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Change Info

Item no.	***Item text:***
097930	**Transformer Box +AN6, V82-1.65MW 690V 50Hz**

Active revision for production

Drawing no.: 6016280

Version	Date	Init./App.	Description of change since last revision
00	2005-05-11	FLT/FLT	First version.

LST no.: 21000230 *Bill of Material no.: 097930*

Version	Date	Init./App.	Description of change since last revision
02	2007-01-21	RUBUC/FLT	Implemented with ECO 233922 Replaced: 60009288 with 114447 THERMOSTAT KTS 01147.9-00

Old revisions for service

Drawing no.: xxxxxxx

Version	Date	Init./App.	Description of change since last revision
xx	yyyy-mm-dd	xxx/	Write the change

LST no.: 21000230 *Bill of Material no.: 097930*

Version	Date	Init./App.	Description of change since last revision
01	2007-02-20	FLT+INI/FLT	Implemented with ECO 214812 + 221747, Changed from RAL 7032 to RAL 7035 First version.

Earlier Bill of Material no Longer Active for Serial Production.

LST no.: 21000094 *Bill of Material no.: 60099926 Cabinet RAL 7032*

Version	Date	Init./App.	Description of change since last revision
05	2005-01-07	FLT/FLT	60005765 this model is discontinued and replaced by 60110888 RCCB F202-25/0.03 2-POLED 25A 400VAC. The new one is also UL approved with file no. KDAX2.E244046.
04	2005-06-13	MILJE	Production requirement, serial production.
03	2005-05-24	HRN/FLT	Production required change - 60110372_Wiring added.
02	2004-09-27	CHO/CHO	Type sign label 60002792 changed to 60106616.
01	2004-07-05	CHO/CHO	First version

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1	2	3	4	5	6	7	8	9	10	11	12	13

PAGE	CONTENT	DATE	REVISION
001	Table of Contents	050511	00
030	Front Layout	050511	-
031	Panel Outline	050511	-
040	External connections	050511	-
100	Internal connections	050511	-

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	Date	Initials	Function	Table of Contents		
Designed	050511	FLT	Project title	Transformer Box +AN6 IEC MRK III		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050511	FLT	Rev. 00	Drawing no. 6016280	Cont. sheet 030	Sheet 001

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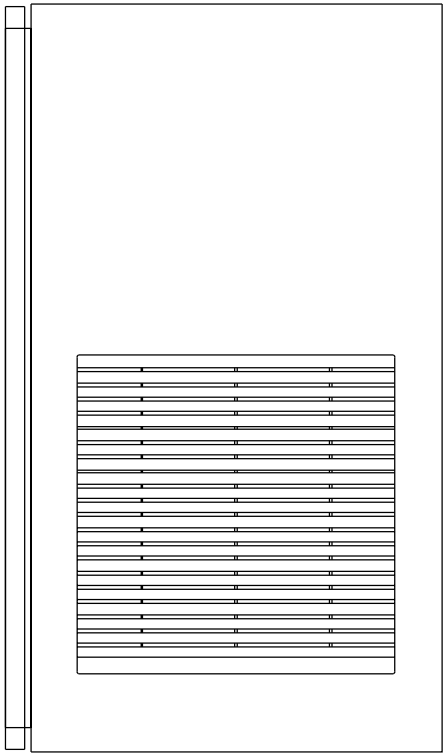
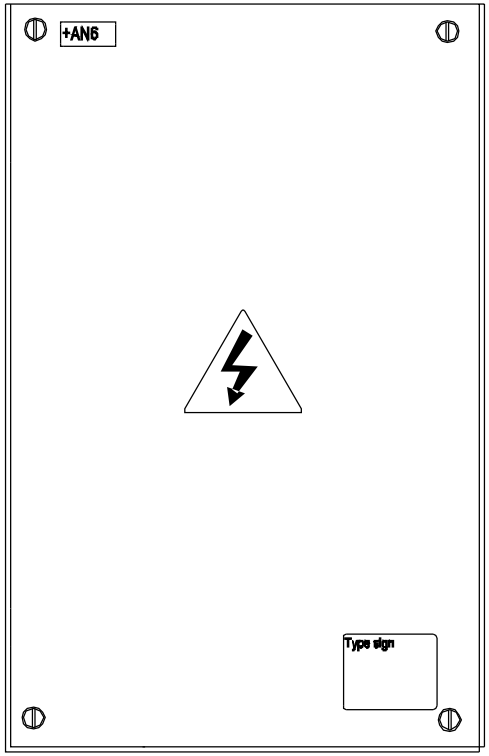
11-05-05

10:17

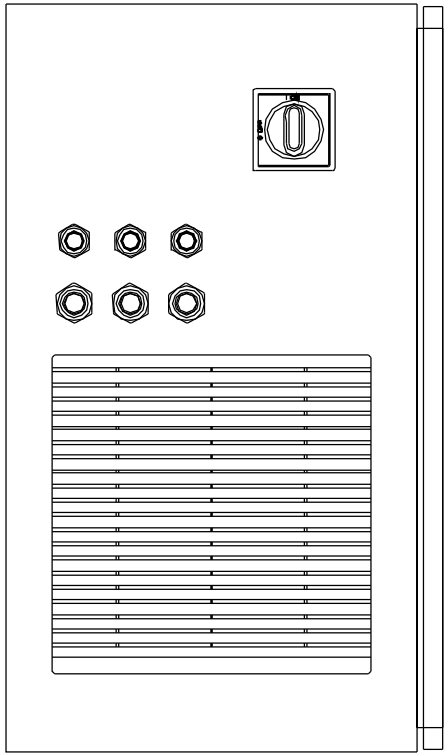
1	2	3	4	5	6	7	8	9	10	11	12	13

RIGHT SIDE





LEFT SIDE



380 x 600 x 350 (WxHxD)
WEIGHT 65 kg.

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	Date	Initials	Function	Front Layout		
Designed	050511	FLT	Project title	Transformer Box +AN6 IEC MRK III		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050511	FLT	Rev. -	Drawing no. 6016280	Cont. sheet 031	Sheet 030

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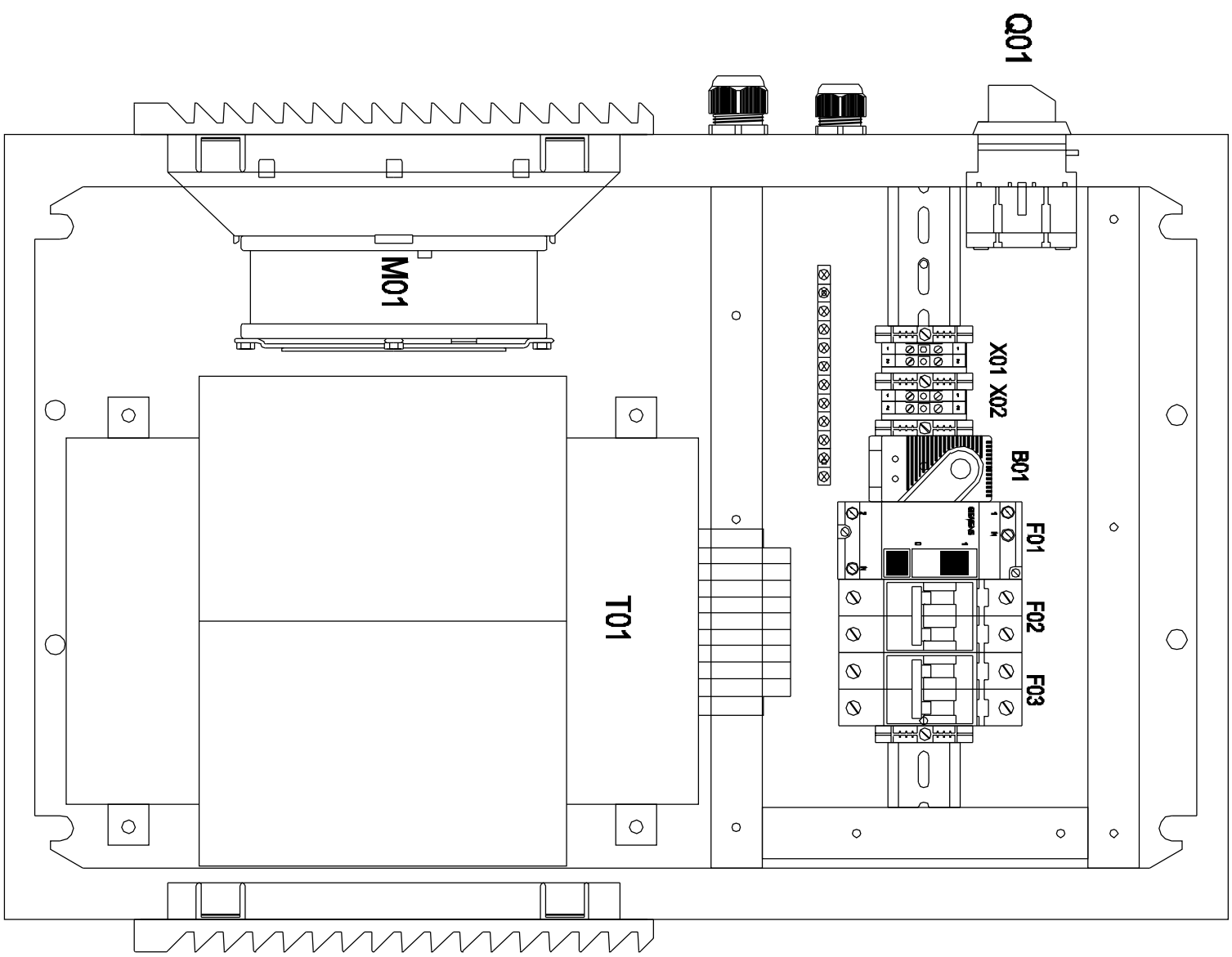
11-05-05 10:17



	Date	Initials	Function	Panel Outline		
Designed	050511	FLT	Project title	Transformer Box +AN6 IEC MRK III		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050511	FLT	Rev. -	Drawing no. 6016280	Cont. sheet 040	Sheet 031

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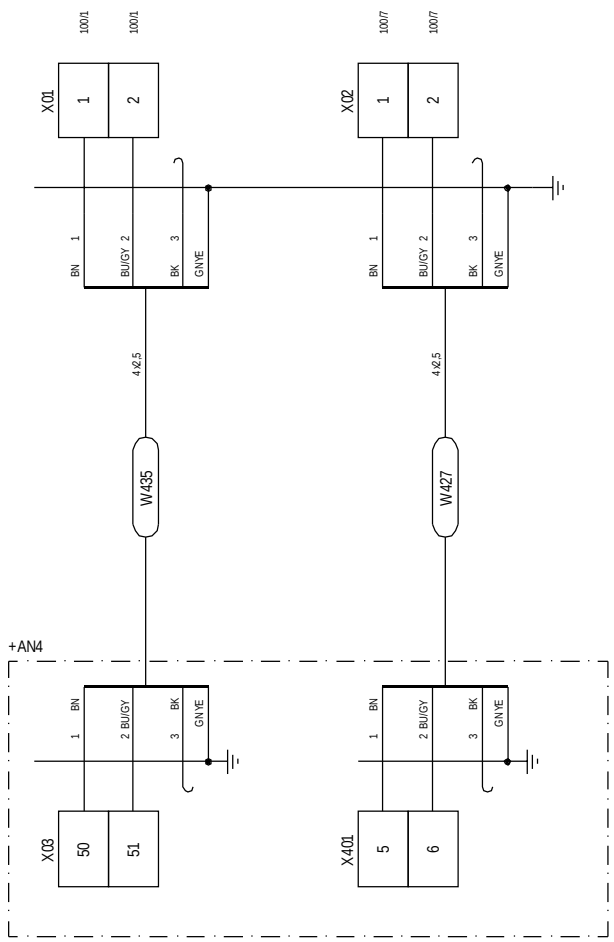
11-05-05

10:17



690V SUPPLY
FROM +AN4

230VAC SUPPLY TO HEAT &
SERVICE SOCKET IN HUB

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	Date	Initials	Function	External connections		
Designed	050511	FLT	Project title	Transformer Box +AN6 IEC MRK III		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050511	FLT	Rev. -	Drawing no. 6016280	Cont. sheet 100	Sheet 040

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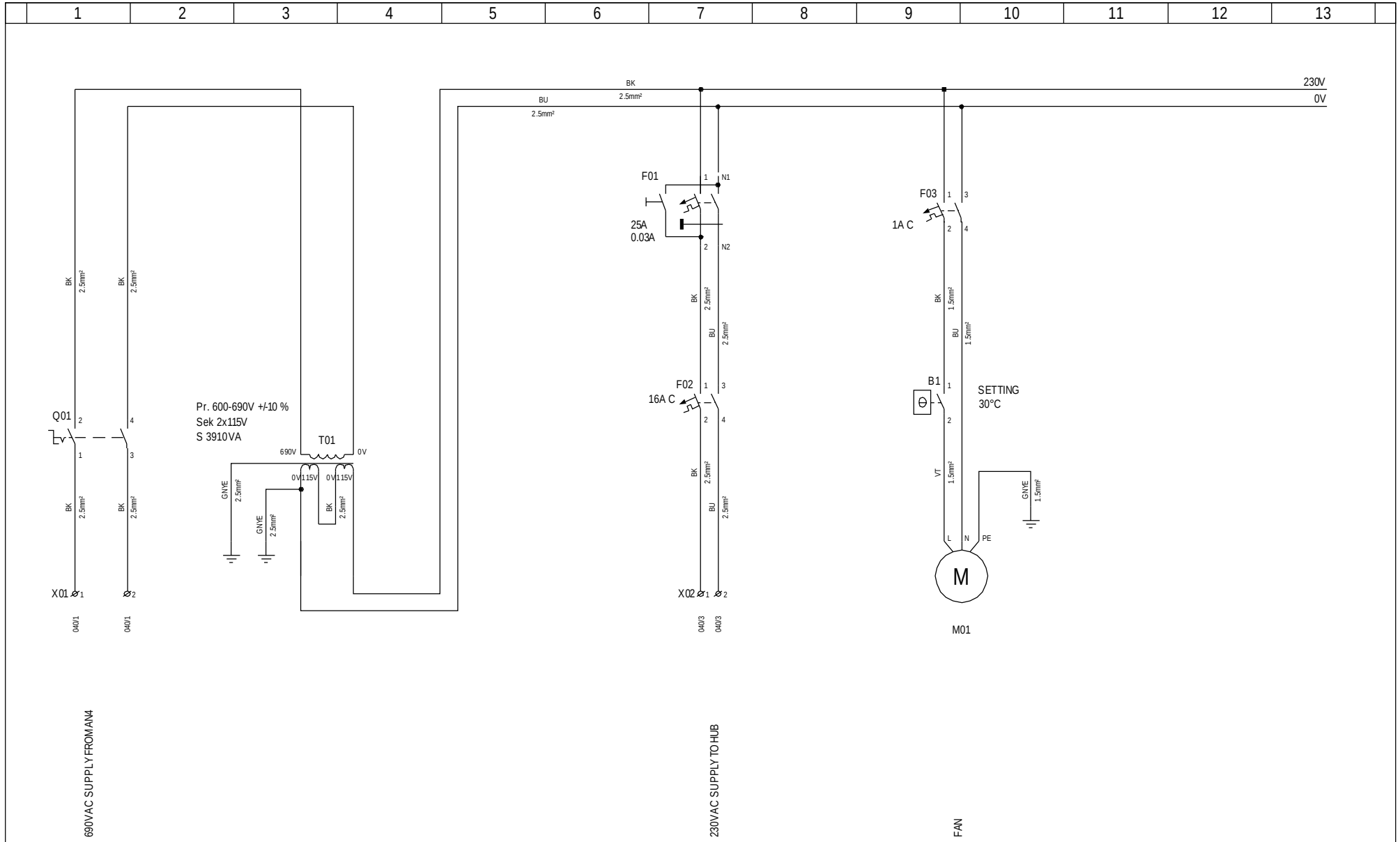

	Date	Initials	Function	Internal connections		
Designed	050511	FLT	Project title	Transformer Box +AN6 IEC MRK III		
Approved			Comments		Customer	Vestas Wind Systems A/S
Reviced	050511	FLT	Rev. -	Drawing no. 6016280	Cont. sheet -	Sheet 100

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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

11-05-05 10:17

Document no.: D21000230
Version: 02
Date: 06/03/2009
Init: Inge Nielsen

097930 TRAFO BOX +AN6 690V RAL 7035

Component	Description	Qty per	Stk UM	Position Number
D6016280	TRAFO BOX +AN6 690V MRK III	0,000	EA	
091839	FILT EXH 255x255x17.5 RAL 7035	1,000	EA	
091848	FAN 230M3/H 230V RAL 7035	1,000	EA	
114447	THERMOSTAT KTS 01147.9-00	1,000	EA	
117158	CABLE CONDUIT SEGMA 25X40MM	1,000	M	
193722	LOCKNUT MM20GPA POLYAMID	3,000	EA	
60002488	LABEL "+AN6"	1,000	EA	
60005150	MCB 5SX2201-7 1.0A C 2P	1,000	EA	
60005163	MCB 5SX2216-7 16.0A C 2P	1,000	EA	
60005768	LOAD BREAK SWITCH OT25ET3 3-PO	1,000	EA	
60005774	HANDLE OHB 2RJ BK	1,000	EA	
60005776	SWI COVER OTS32T3 3P	2,000	EA	
60005983	TERMINAL STD M4/6	4,000	EA	
60005998	END SEC FEM6 GY 118368.16	2,000	EA	
60006034	END STOP 9708/2 S35	4,000	EA	
60006819	STICKER "EARTH" 14mm	2,000	EA	
60006824	STICKER "LIGHTNING" 100MM	1,000	EA	
60007182	DIN RAIL PP0735H 7x35MM	1,000	M	
60007201	EARTH BAR 01130 9x6.5x1000MM	0,120	M	
60007585	CABLE GLAND M20 PA6 BM-EN-12	3,000	EA	
60007586	CABLE GLAND M25 PA6 BM-EN-13	3,000	EA	
60007594	LOCKNUT M25 PA6 BML-13	3,000	EA	
60009578	SCREW ISO 7045 M 3 x 8 - FZB	2,000	EA	
60009599	SCR CRS PH M4x14 4.8 FZB	2,000	EA	
60009639	SCR HEX SET M8x20 8.8 FZB	4,000	EA	
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	8,000	EA	
60009838	LOCK WASHER DIN 6798 A4 - FZB	2,000	EA	
60009841	WASHER LOCK 8 FZB	4,000	EA	
60009861	NUT ISO 4032 M 4 - 6 - FZB	2,000	EA	
60009877	NUT HEX FLANGE M8 8 FZB	4,000	EA	
60010375	MOUN PL AE 1338.601.01 W/W	1,000	EA	
60010445	WALL BRA 2508.000 25x10mm	4,000	EA	
60013412	ANGLE BRACKET 2x10x25MM	2,000	EA	
60014138	MARK CARD RC610 NOS 1-10	1,000	EA	
60103946	TRAFO 600-690/2x115 3910VA	1,000	EA	
60106616	LABEL TYPE SIGN TRAFO BOX	1,000	EA	
60110372	WIRING TRAFOBOX +AN6 IEC	1,000	EA	
60110888	RCCB F202-25/0.03 25A 0.03A 2P	1,000	EA	
765122	CABINET W. 1 DOOR AE 1338.500	1,000	EA	

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Change Info

Item no.	***Item text:***
60108019	**Junction Box +AN11, V82-1.65MW 50/60Hz**

Active revision *for production*

Drawing no.: 934707

Version	Date	Init./App.	Description of change since last revision
01	2007-12-19	INI/BIVA	Changed with ECO 232839_ All pages updated with new Vestas logo. Page 100: Text in Head of the Drawing is changed from External Connection to Heat Element to External Connection to Lubrication Pump.

BoM no.: 60108019 *Document no.: 21000205*

Version	Date	Init./App.	Description of change since last revision
03	2007-04-18	INI/FLT	Changed with ECO 223430_Updated for production in Spain. Quantity changed: 60006819 STICKER "JORD" 1 pc. to 0,185 pc. 60006824 STICKER "LYN" 1 pc. to 0,3 pc. 60009578 SCREW 2 pc. to 6 pc. 60009599 SCREW 6 pc. to 2 pc. 60105941 QUICK FASTENER 4 pc. to 0,3 pc.

Old revisions *for service*

Drawing no.: 934707

Version	Date	Init./App.	Description of change since last revision
00	2007-06-28	INI/FLT	First version

BoM no.: 60108019 *Document no.: 21000205*

Version	Date	Init./App.	Description of change since last revision
02	2005-06-13	MILJE/	Production requirement serial production
01	2005-05-17	FLT+MILJE/FLT	First version

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PAGE	CONTENT	DATE	REVISION
001	Table of Contents	071219	01
030	Panel front	071219	-
031	Panel outline	071219	-
040	Connection to +AN1 Top bo	071219	-
100	Externals connections to	071219	-
200	Externals connections to	071219	-
201	Externals connections to	071219	-

19-12-07
12:22

Vestas

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	Date	Initials	Function	Table of Contents		
Designed	070628	FLT	Project title	Junction Box +AN11 V82-1.65MW 50/60Hz		
Approved	071219	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071219	INI	Rev. 01	Drawing no. 934707	Cont. sheet 030	Sheet 001

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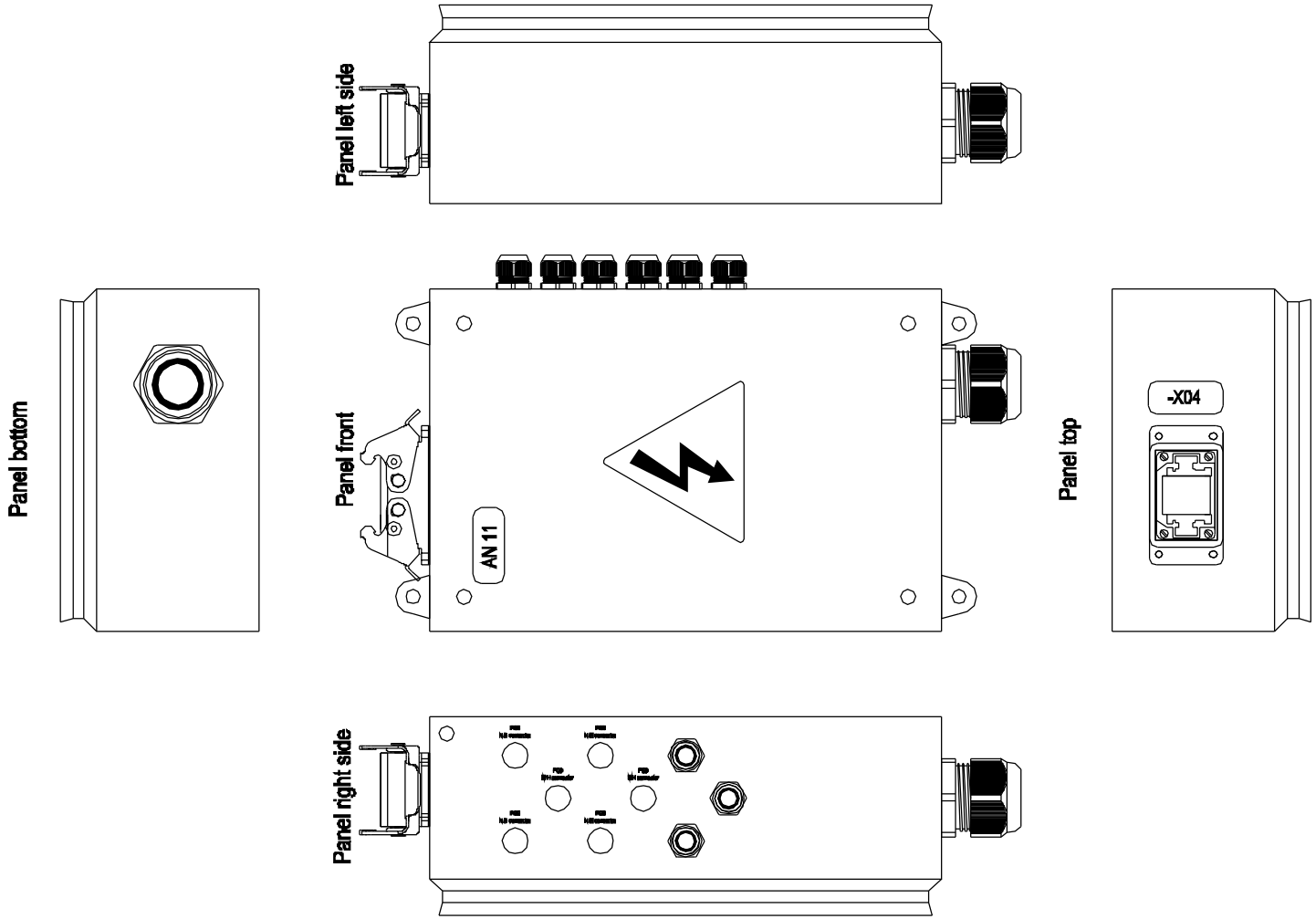

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function: Panel front
		Designed	070628	FLT	Project title: Junction Box +AN11 V82-1.65MW 50/60Hz
		Approved	071219	BIVA	Comments / Customer: Vestas Wind Systems A/S
		Revised	071219	INI	Rev.: - / Drawing no.: 934707 / Cont. sheet: 031 / Sheet: 030

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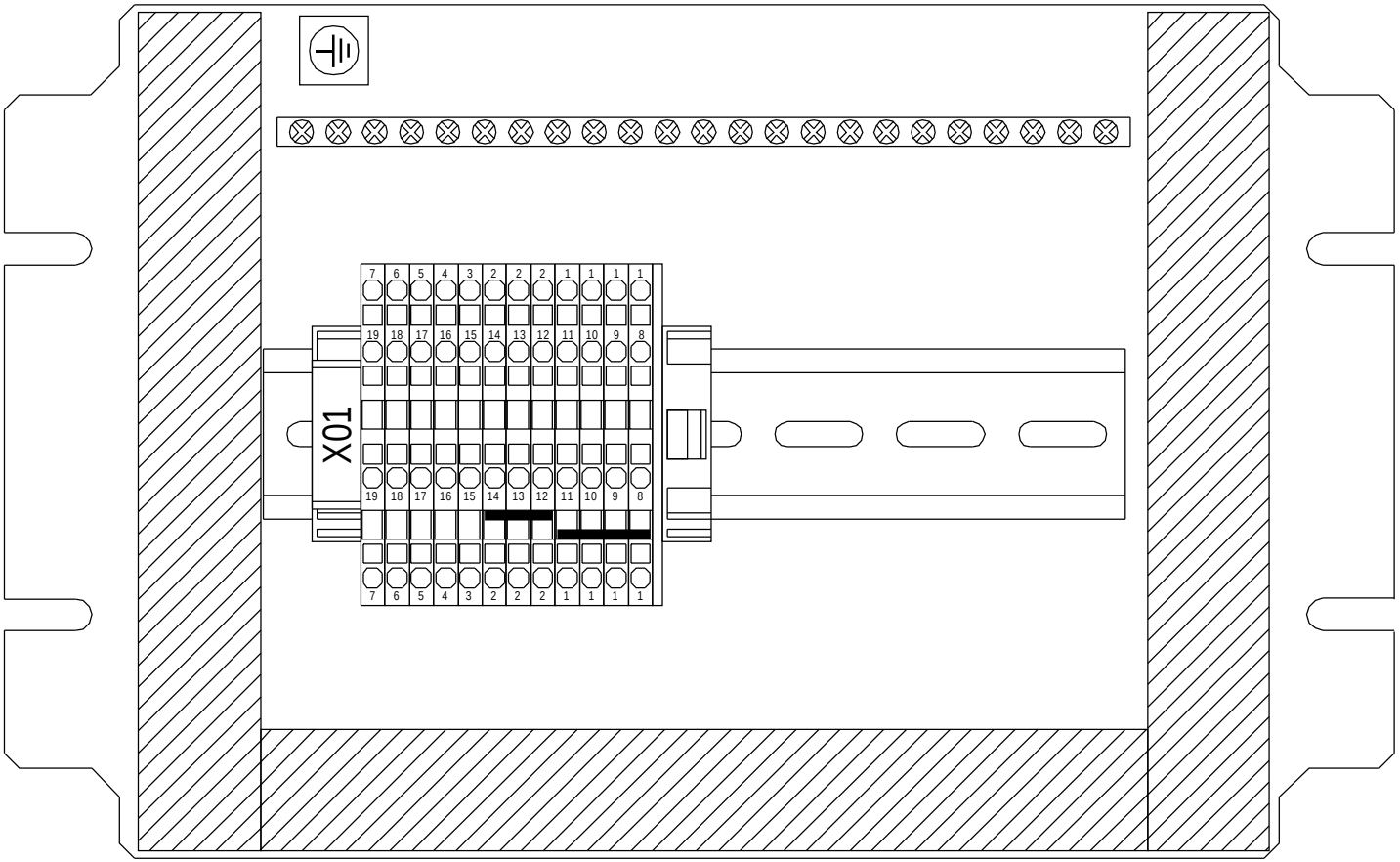
Mounting plate



Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel outline
		Designed	070628	FLT	Project title	Junction Box +AN11 V82-1.65MW 50/60Hz
		Approved	071219	BIVA	Comments	Customer: Vestas Wind Systems A/S
		Revised	071219	INI	Rev. -	Drawing no. 934707
					Cont. sheet 040	Sheet 031

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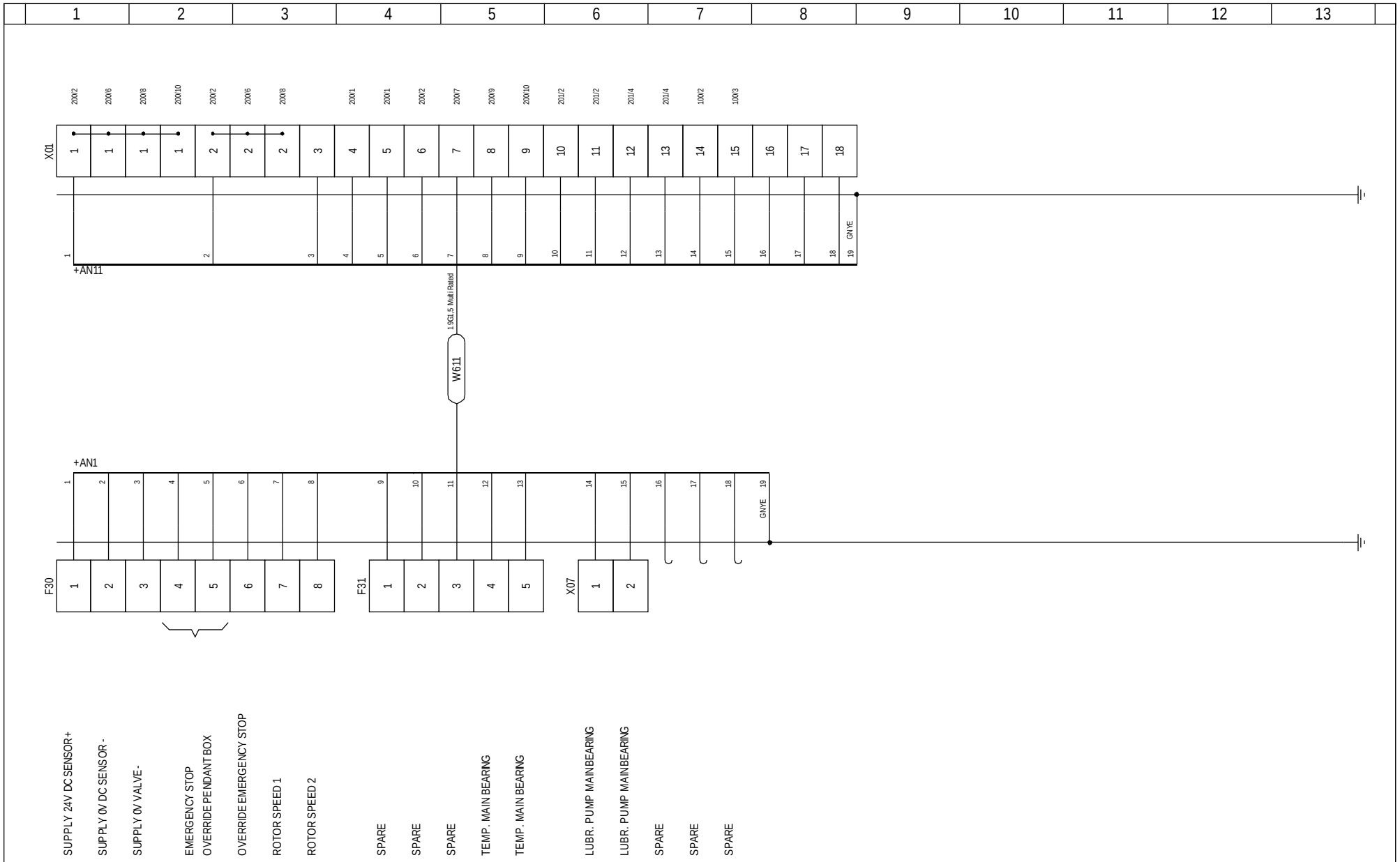

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	Date	Initials	Function	Connection to +AN1 Top box		
Designed	070628	FLT	Project title	Junction Box +AN11 V82-1.65MW 50/60Hz		
Approved	071219	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071219	INI	Rev. -	Drawing no. 934707	Cont. sheet 100	Sheet 040

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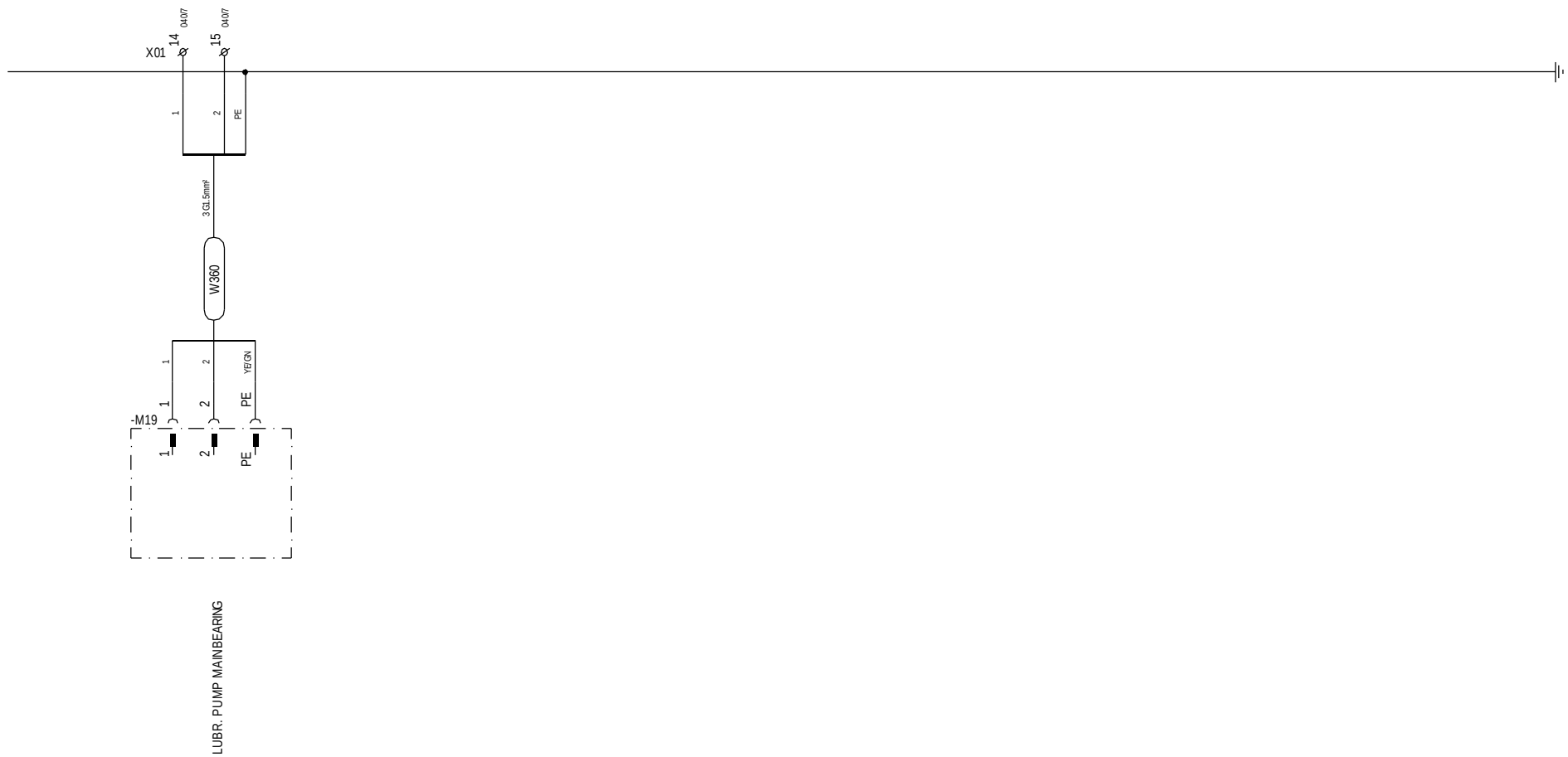

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Externals Connections to Lubrication Pump
		Designed	070628	FLT	Project title	Junction Box +AN11 V82-1.65MW 50/60Hz
		Approved	071219	BIVA	Comments	Customer: Vestas Wind Systems A/S
		Revised	071219	INI	Rev. -	Drawing no. 934707
					Cont. sheet 200	Sheet 100

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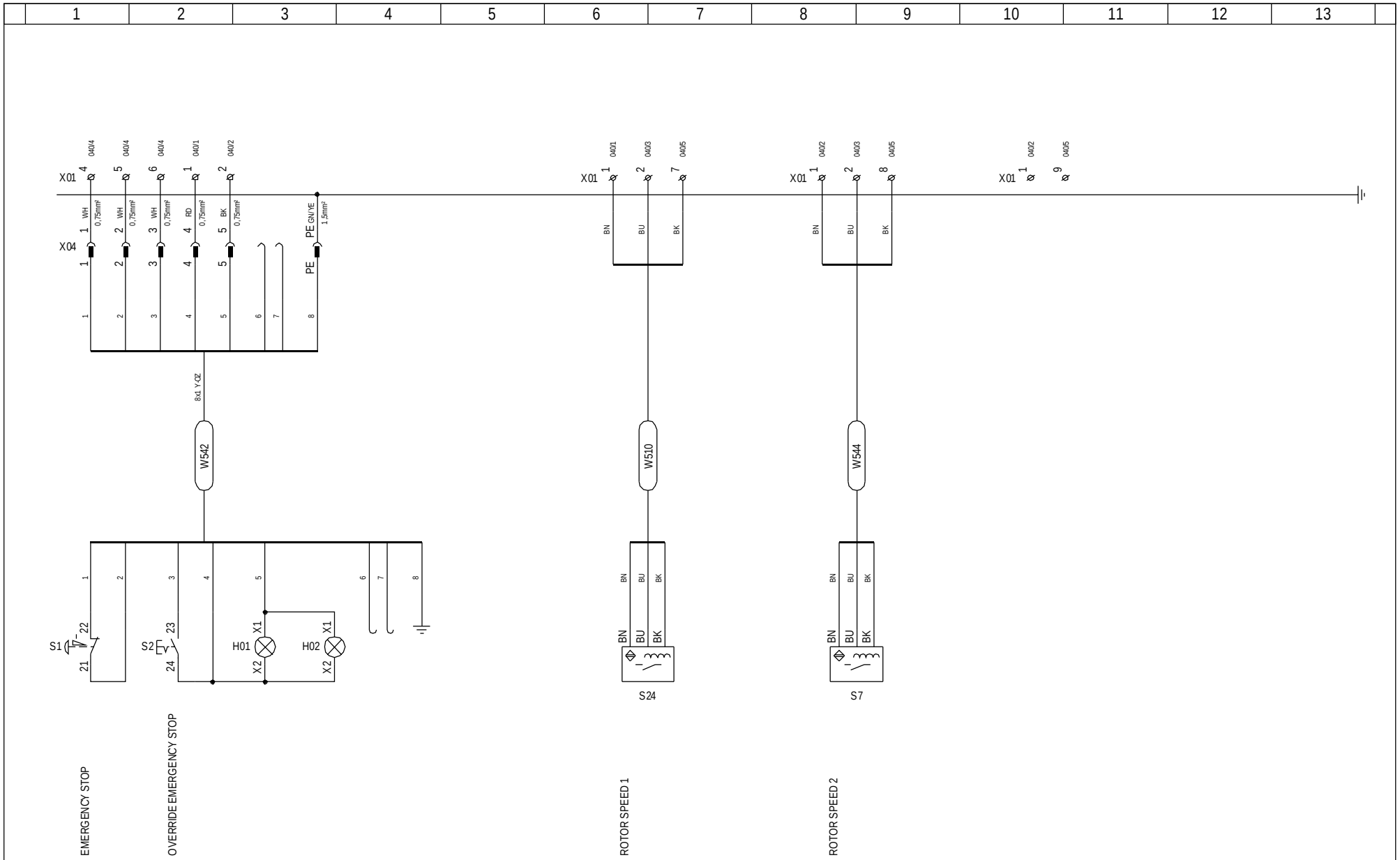

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	Date	Initials	Function	Externals connections to signals		
Designed	070628	FLT	Project title	Junction Box +AN11 V82-1.65MW 50/60Hz		
Approved	071219	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071219	INI	Rev. -	Drawing no. 934707	Cont. sheet 201	Sheet 200

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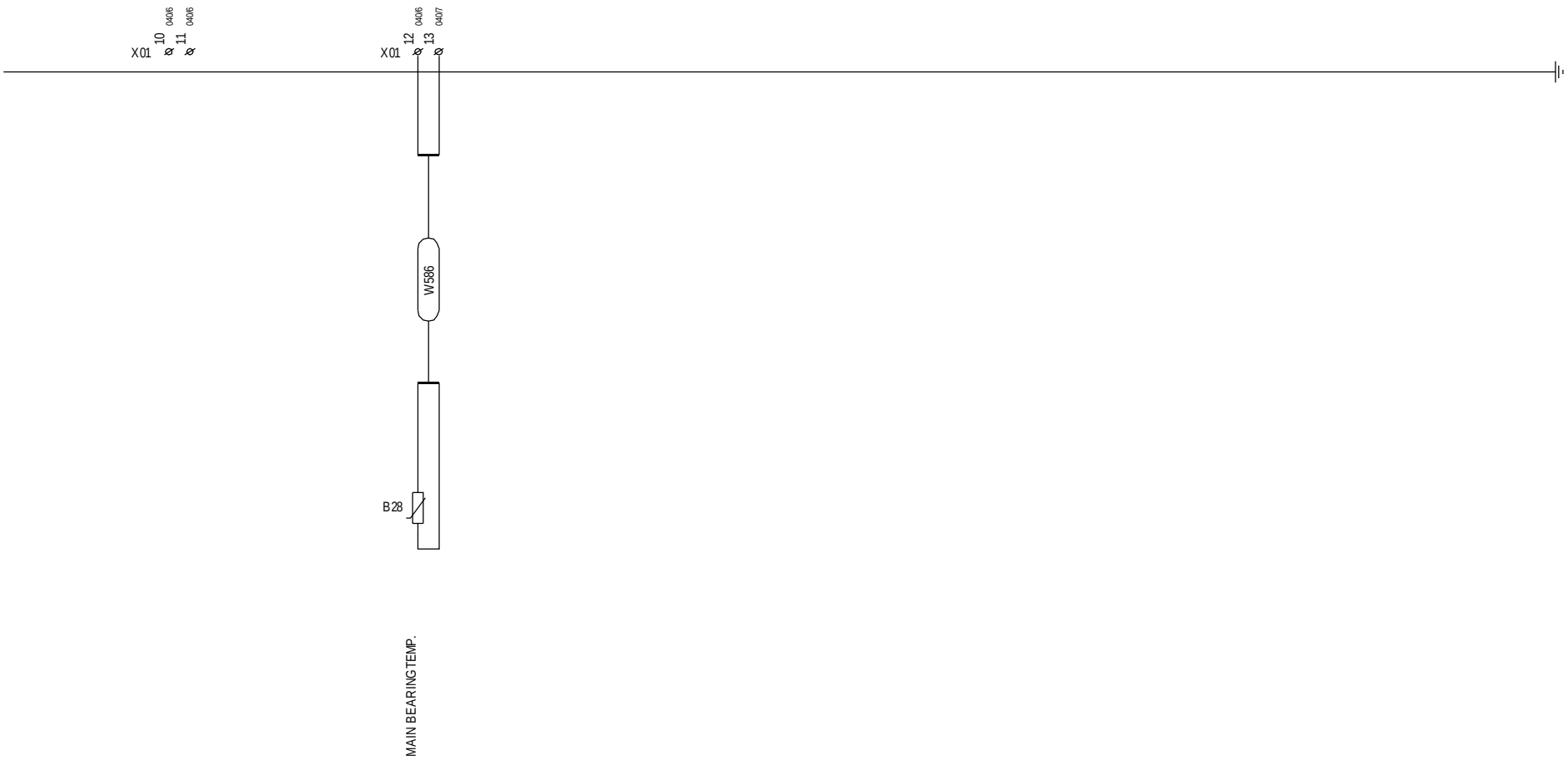

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function: Externals connections to signals	
		Designed	070628	FLT	Project title: Junction Box +AN11 V82-1.65MW 50/60Hz	
		Approved	071219	BIVA	Comments	Customer: Vestas Wind Systems A/S
		Revised	071219	INI	Rev. - / Drawing no. 934707	Cont. sheet - / Sheet 201

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Document no.: 21000205
Version: 03
Date: 18/04/2007
Init: Inge Nielsen

60108019 BOX+AN11 '05 MRKIII

Component	Description	Qty per	Stk UM	Position Number
D1001694	Work instructions f. productio	0,000	EA	
D6015813	JUNCTION BOX +AN11	0,000	EA	
60108076	BOX KL 1503.510 RAL 7035 W/W	1,000	EA	
60096809	WALL BRACKET RITTAL 1580.000	4,000	EA	
60102739	MOUN PL KL W/W	1,000	EA	
60007588	CABLE GLAND BM-EN-15 M40 PA 6	1,000	EA	
60007596	LOCKNUT M40 PA6 BML-15	1,000	EA	
60007584	CABLE GLAND BM-EN-11 M16 PA 6	3,000	EA	
60007592	LOCKNUT M16 PA6 BML-1S	3,000	EA	
60007534	CONNECTOR PG9 FOR HOSE PROT	6,000	EA	
60007553	LOCKNUT PG9 PA6 BLN12	6,000	EA	
60007195	DIN RAIL FITTING TST 2/M6 100m	2,000	EA	
60013412	ANGLE BRACKET 2x10x25MM	2,000	EA	
60101923	LABEL +AN11	1,000	EA	
60009861	NUT ISO 4032 M 4 - 6 - FZB	6,000	EA	
60009838	LOCK WASHER DIN 6798 A4 - FZB	6,000	EA	
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	10,000	EA	
60007197	SCREW FKSC M6x12MM	2,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60110878	MARK WAGO +AN11 PANEL V82	1,000	EA	
60111002	CABLE CONDUIT DIN RAIL	1,000	EA	
60111320	LABEL TYPE SIGN MARKING "-X01"	1,000	EA	
D21000205	BOM_60108019_Junction Box +AN1	0,000	EA	
D22000564	CI-JUNCTION BOX +AN11	0,000	EA	
60006819	STICKER "EARTH" 14MM	1,850	EA	
60006824	STICKER "LIGHTNING" 100MM	0,300	EA	
60009578	SCR CRS PH M3x8 FZB	6,000	EA	
60009599	SCR CRS PH M4x14 4.8 FZB	2,000	EA	
60105941	QUICK-RELEASE FASTENER KL BOX	0,300	EA	
60006071	TERMINAL WAGO 870-501 2-LEV.0,	12,000	EA	-X01
60006083	END SECTION 870-518 2-LEVEL GR	1,000	EA	-X01
60006087	PUSH-IN JUMPER BAR 870-403	1,000	EA	-X01
60006088	PUSH-IN JUMPER BAR 870-404 4-P	1,000	EA	-X01
60091912	END STOP WAGO 249-117 10MM	2,000	EA	-X01
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X01
60097599	HOUSING 24P BULKHEAD	1,000	EA	-X04
60006428	COVER METAL 6-POLED	1,000	EA	-X04
60103163	WIRING +AN11 -X04	1,000	EA	-X04
60002506	LABEL "-X04"	1,000	EA	-X04

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Change Info

Item no.	***Item text:***
60108020	**Junction Box +AN12, V82-1.65 MW**

Active revision *for production*

Drawing no.: 6015816

Version	Date	Init./App.	Description of change since last revision
04	14.12.2007	INI/BIVA	Changed with ECO 232839. All pages updated with new Vestas logo Page 100: Correction of Shaft Brake Pump which is wired in terminals 4, 5 & 6. Correction of Gear Oil Pump H/S which is wired in terminals 7, 8 & 9

LST no.: 21000206 *Material BOM no.: 60108020*

Version	Date	Init./App.	Description of change since last revision
03	19.04.2007	INI/FLT	Change with ECO 223463_Updated for production In Spain. Quantity changed: 60006819 STICKER "JORD" from 0,04 pc. to 0,018 pc. 60105941 QUICK-RELEASE FASTENER from 4 pc. to 0,33 pc.

Old revisions *for service*

Drawing no.: 6015816

Version	Date	Init./App.	Description of change since last revision
03	06.06.2005	INI/FLT	Page 001: Updated Page 041: +AN12. X02 core 4 connection changed from terminal 5 to terminal 4.
02	11.05.2005	FLT/FLT	Updated in connection with prototype production. Connection of active shaft brake valve 1 and 2 changed. 031: Terminal row X02 one terminal no. 3 is removed and one terminal no. 5 is add. 041: Terminal row X02 one terminal no. 3 is removed and one terminal no. 5 is add. 201: Two terminals in X02 renamed from 3 to 5.
01	15.02.2005	FLT/	Updated in connection with prototype production 030: 2 pc PG9 N/H connectors swapped with 2 pc M16 040: X401 terminal 3 and 4 added 101: W320 changed to W334. Connections to slip ring added.
00	13.12.2004	FLT/	First version

LST no.: 21000206 *Material BOM no.: 60108020*

Version	Date	Init./App.	Description of change since last revision
02	13.06.2005	MILJE/	Production requirement, serial production
01	17.05.2005	FLT+MILJE/FLT	First version

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030	Panel front	071214	-
031	Panel outline	071214	-
040	Connections to +AN4 Motor	071214	-
041	Connections to +AN1 Top b	071214	-
042	Connections to +AN1 Top b	071214	-
043	Connections to +AN1 Top b	071214	-
100	External connections to m	071214	-
101	External connections to h	071214	-
200	External connections to s	071214	-
201	External connections to s	071214	-
202	External connections to s	071214	-

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	Date	Initials
Designed	041213	FLT
Approved	071214	BIVA
Revised	071214	INI

Function: Table of Contents

Project title: Junction Box +AN12

Comments

Customer: Vestas Wind Systems A/S

Rev. 04 | Drawing no. 6015816 | Cont. sheet 030 | Sheet 001

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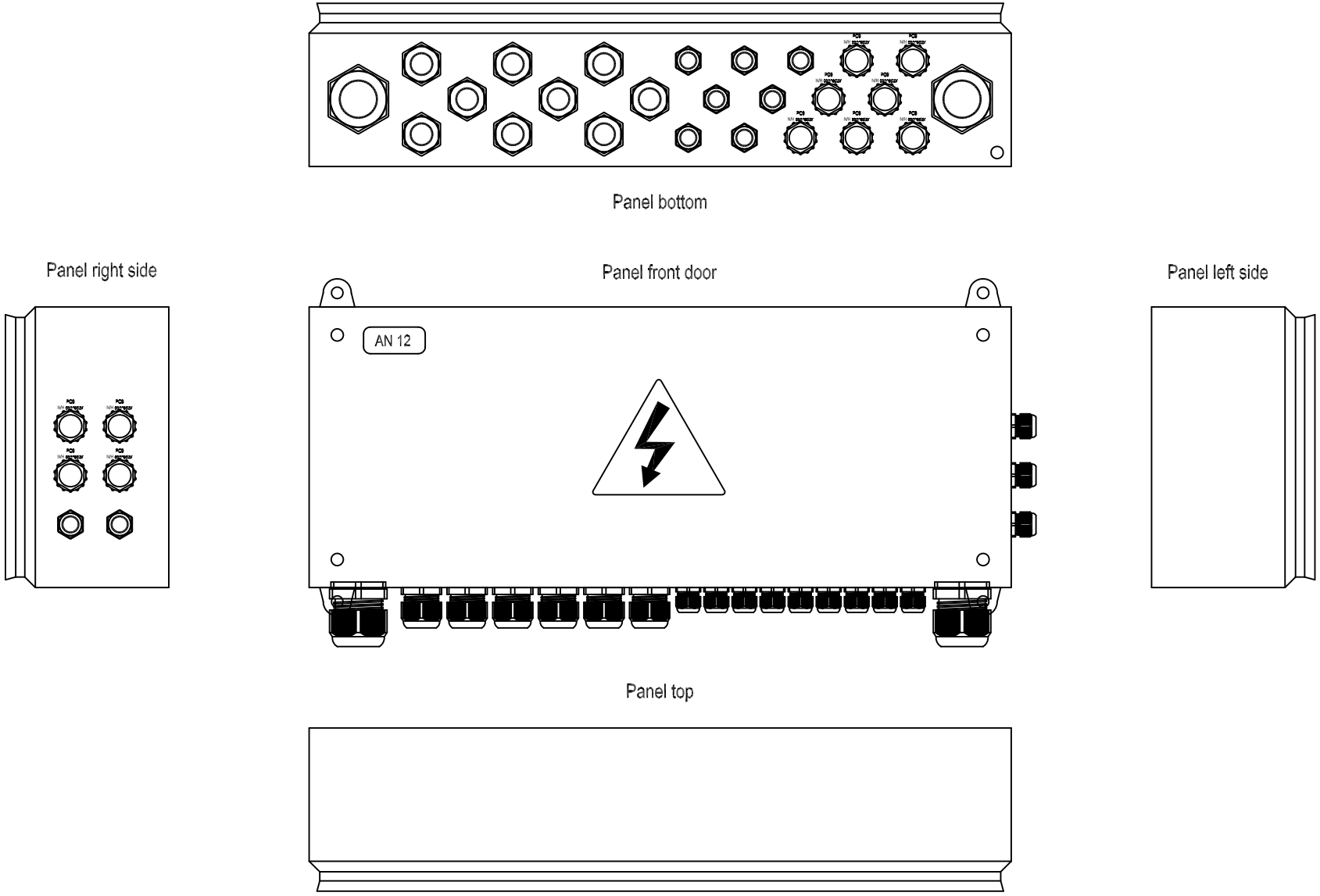

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		Designed	041213	FLT	Project title	Junction Box +AN12
		Approved	071214	BIVA	Comments	Customer: Vestas Wind Systems A/S
		Revised	071214	INI	Rev. -	Drawing no. 6015816
					Cont. sheet 031	Sheet 030

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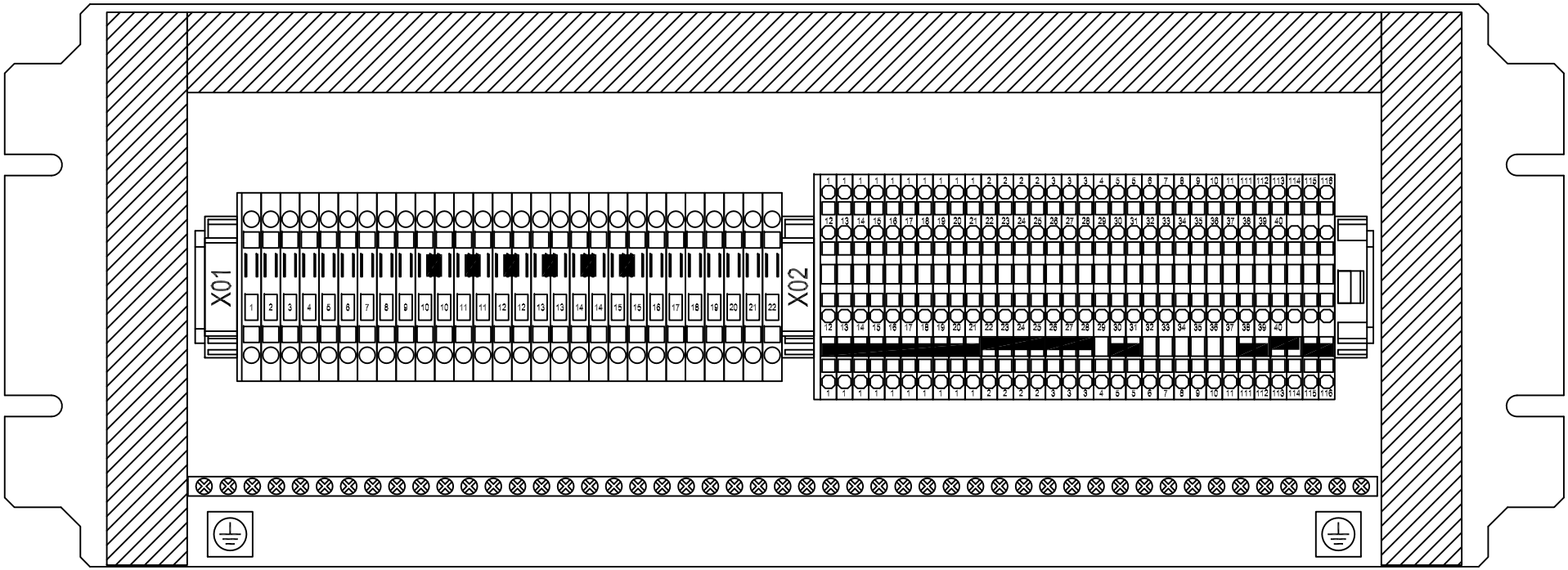
14-12-07 12:08

Mounting plate



	Date	Initials	Function	Panel outline		
Designed	041213	FLT	Project title	Junction Box +AN12		
Approved	071214	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071214	INI	Rev. -	Drawing no. 6015816	Cont. sheet 040	Sheet 031

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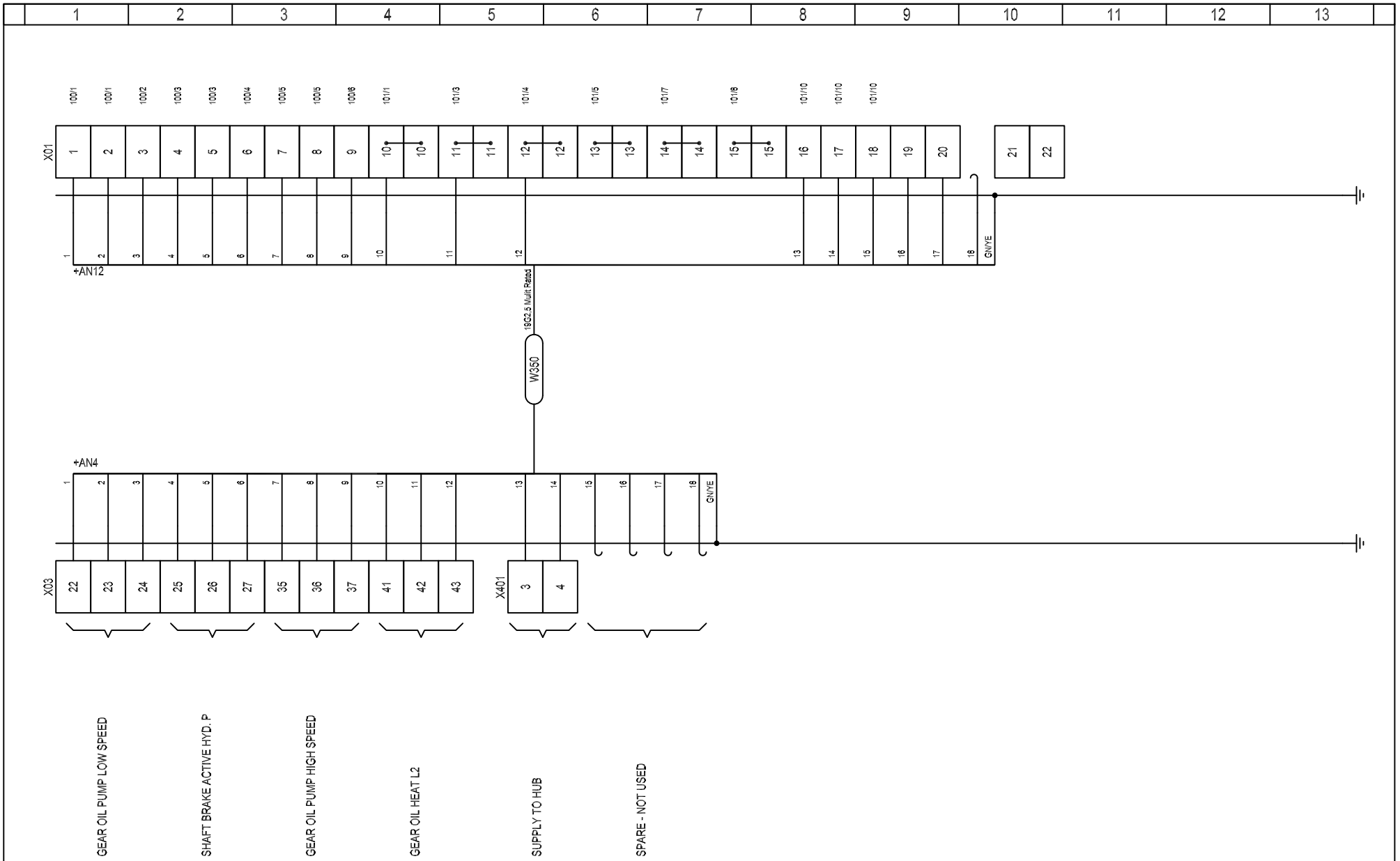

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	Date	Initials	Function	Connections to +AN4 Motor box		
Designed	041213	FLT	Project title	Junction Box +AN12		
Approved	071214	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071214	INI	Rev. -	Drawing no. 6015816	Cont. sheet 041	Sheet 040

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14-12-07 12:08

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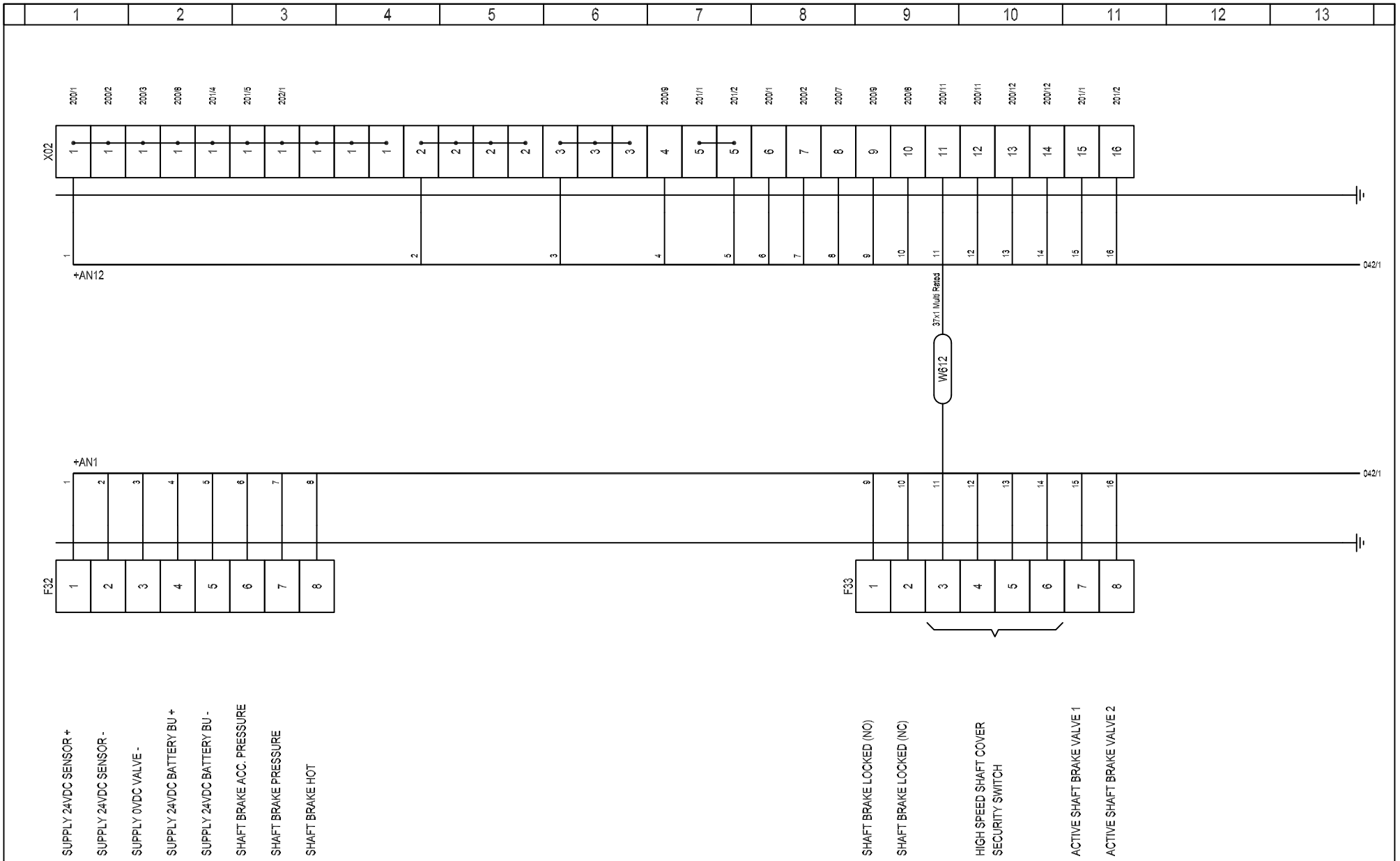

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	Date	Initials	Function	Connections to +AN1 Top box		
Designed	041213	FLT	Project title	Junction Box +AN12		
Approved	071214	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071214	INI	Rev. -	Drawing no. 6015816	Cont. sheet 042	Sheet 041

14-12-07 12:08

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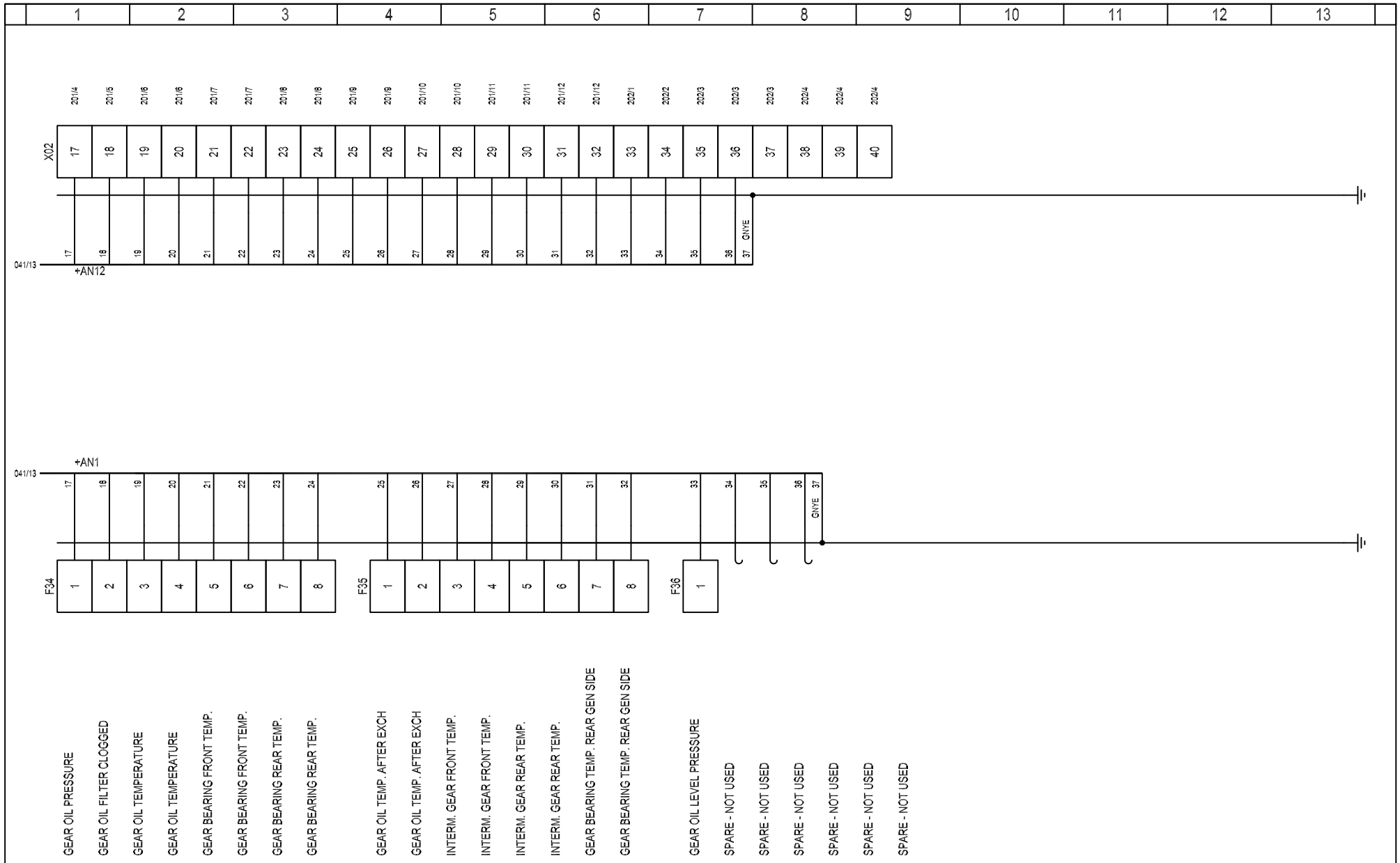
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



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	Date	Initials	Function	Connections to +AN1 Top box		
Designed	041213	FLT	Project title	Junction Box +AN12		
Approved	071214	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071214	INI	Rev. -	Drawing no. 6015816	Cont. sheet 043	Sheet 042

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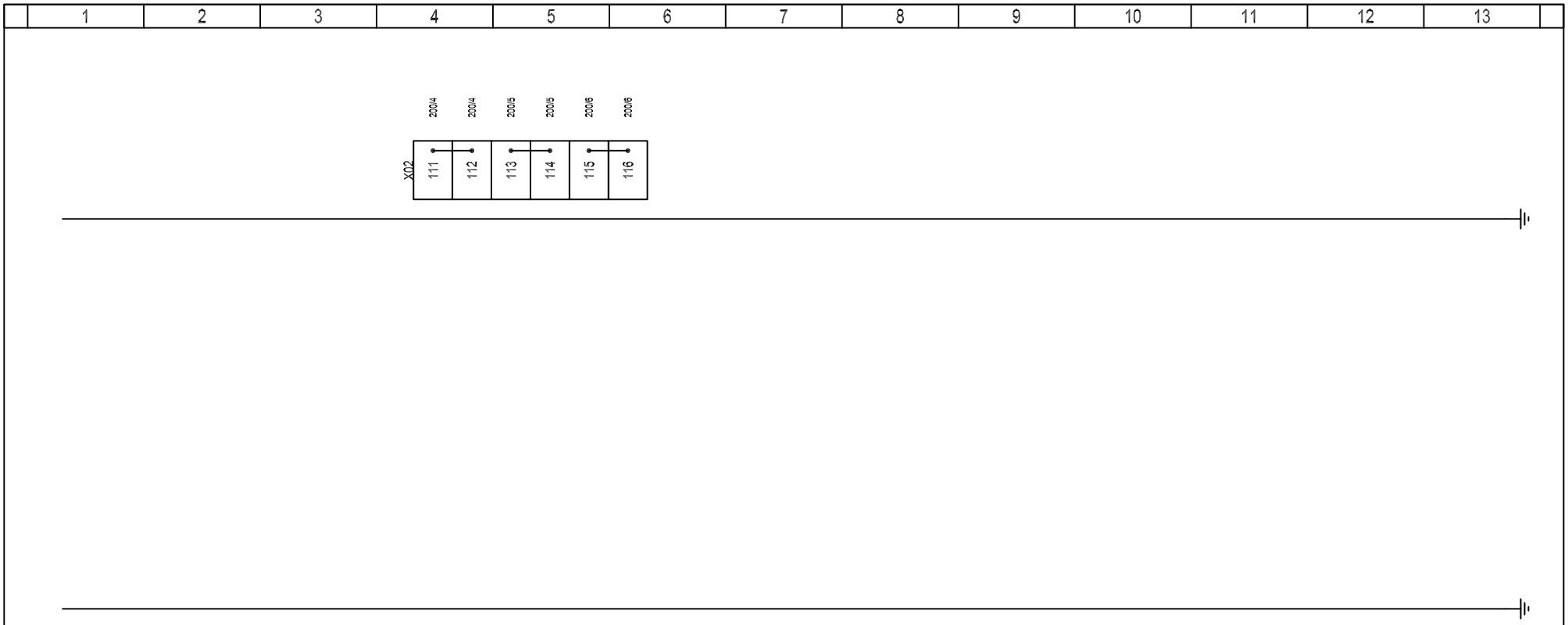

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		Designed	041213	FLT	Project title: Junction Box +AN12	
		Approved	071214	BIVA	Comments	Customer: Vestas Wind Systems A/S
		Revised	071214	INI	Rev. - / Drawing no. 6015816	Cont. sheet 100 / Sheet 043

14-12-07
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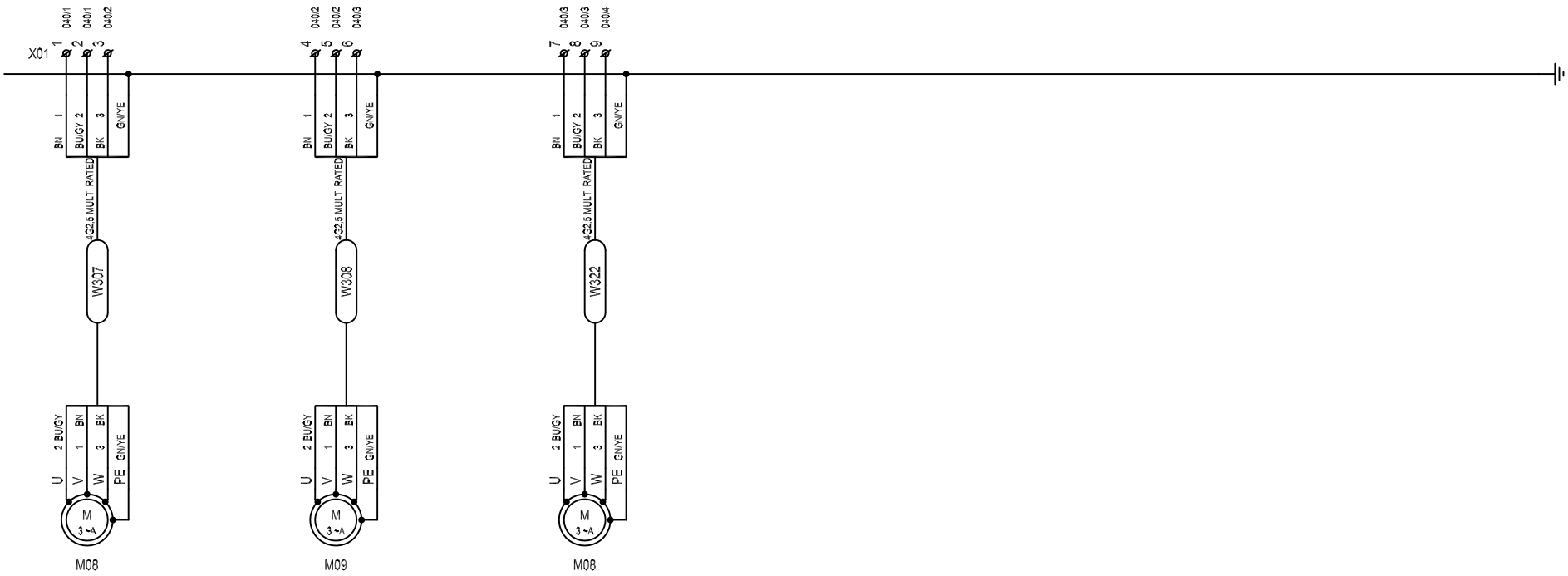

GEAR OIL PUMP LOW SPEED

3 x 690V 50Hz WTG
3 x 480V 60Hz WTG

SHAFT BRAKE PUMP

3 x 690V 50Hz WTG
3 x 480V 60Hz WTG

GEAR OIL PUMP HIGH SPEED

3 x 690V 50Hz WTG
3 x 480V 60Hz WTG

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	Date	Initials	Function	External connections to motors		
Designed	041213	FLT	Project title	Junction Box +AN12		
Approved	071214	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071214	INI	Rev. -	Drawing no. 6015816	Cont. sheet 101	Sheet 100

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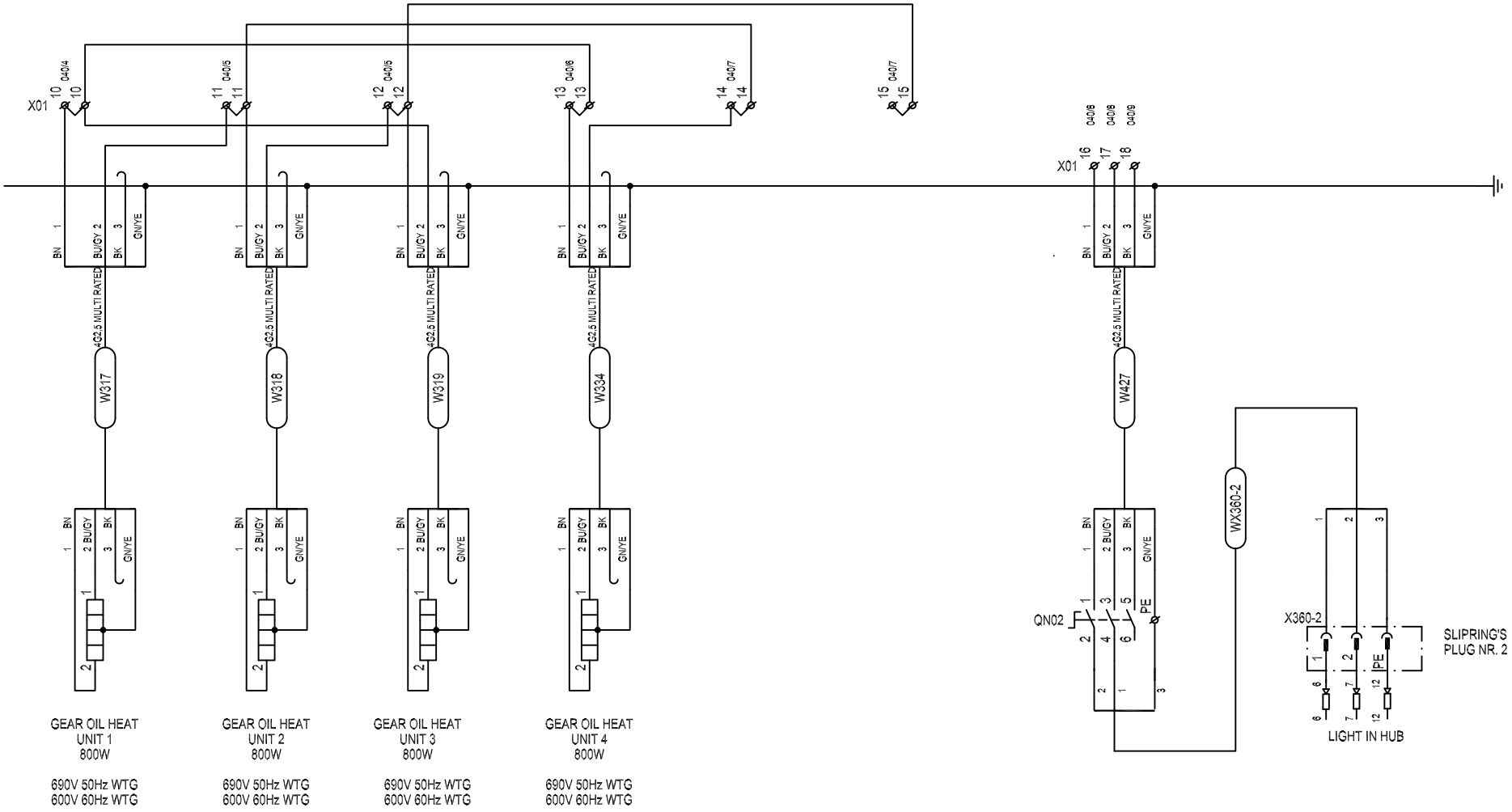

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	Date	Initials	Function	External connections to heating elements		
Designed	041213	FLT	Project title	Junction Box +AN12		
Approved	071214	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071214	INI	Rev. -	Drawing no. 6015816	Cont. sheet 200	Sheet 101

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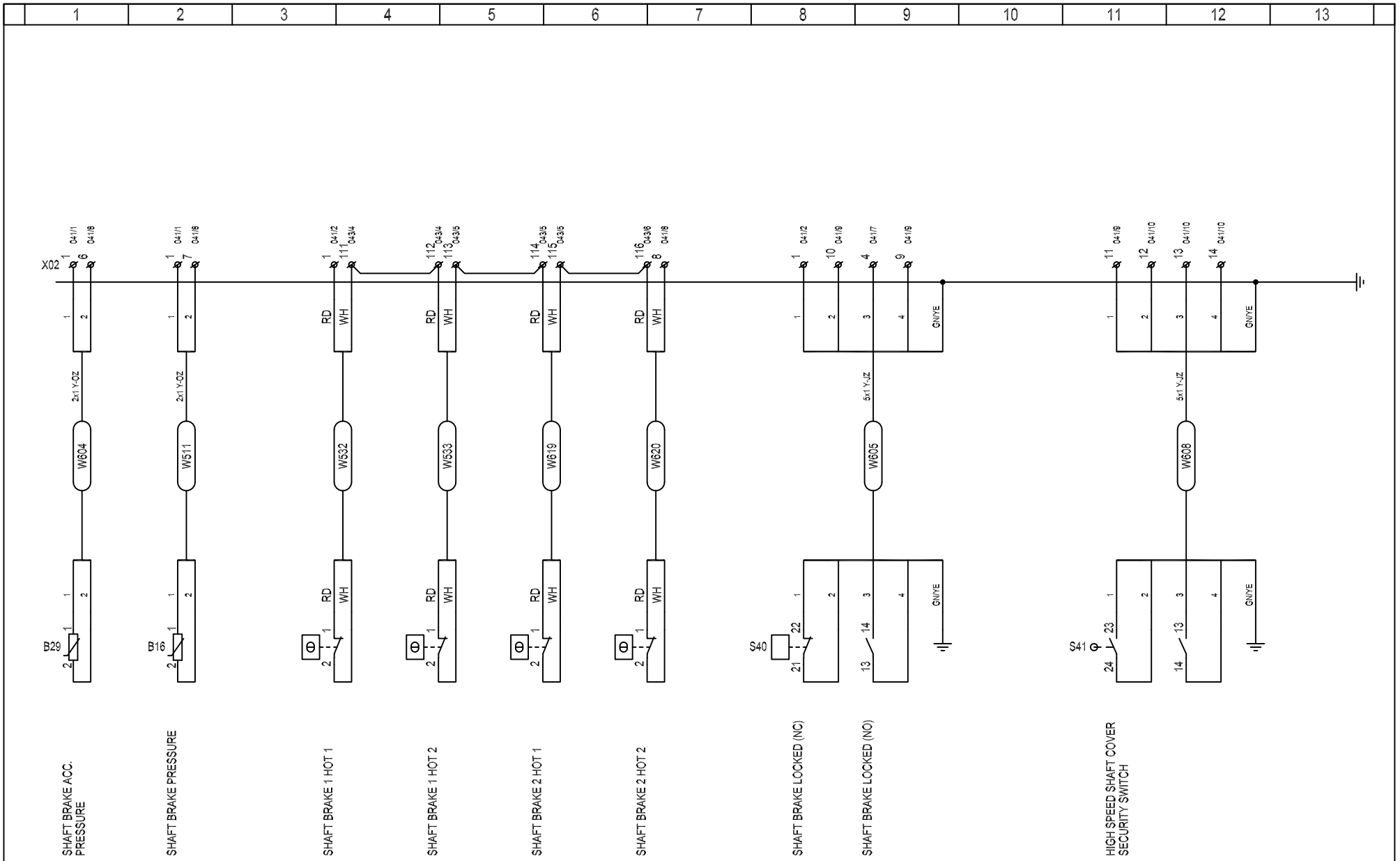

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	Date	Initials	Function	External connections to signals		
Designed	041213	FLT	Project title	Junction Box +AN12		
Approved	071214	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071214	INI	Rev. -	Drawing no. 6015816	Cont. sheet 201	Sheet 200

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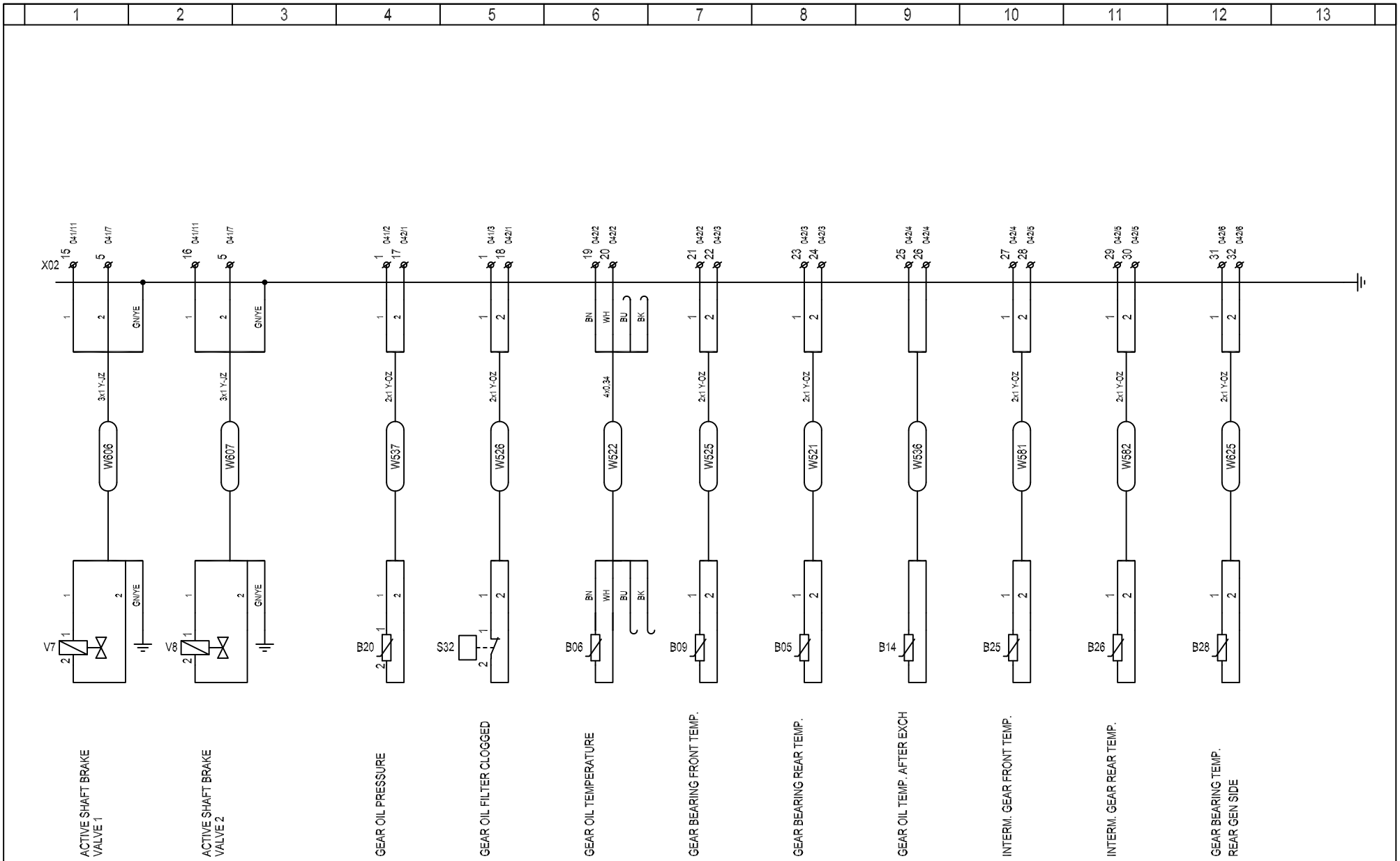
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



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	Date	Initials	Function	External connections to signals		
Designed	041213	FLT	Project title	Junction Box +AN12		
Approved	071214	BIVA	Comments		Customer	Vestas Wind Systems A/S
Revised	071214	INI	Rev. -	Drawing no. 6015816	Cont. sheet 202	Sheet 201

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	Date	Initials	Function	External connections to signals		
Designed	041213	FLT	Project title	Junction Box +AN12		
Approved	071214	BIVA	Comments		Customer	Vestas Wind Systems A/S
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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

Document no.: 21000206
Version: 03
Date: 19/04/2007
Init: Inge Nielsen

60108020 BOX+AN12 '05 MRKIII

Component	Description	Qty per	Stk UM	Position Number
D1001695	Work instructions f. productio	0,000	EA	
D6015816	JUNCTION BOX +AN12	0,000	EA	
60108090	BOX KL 1505.510 RAL 7035 W/W	1,000	EA	
60096809	WALL BRACKET RITTAL 1580.000	4,000	EA	
60102741	MOUN PL KL W/W	1,000	EA	
60110413	CABLE GLAND M40 PLASTIC	2,000	EA	
60007596	LOCKNUT M40 PA6 BML-15	2,000	EA	
60007586	CABLE GLAND M25 PA6 BM-EN-13	9,000	EA	
60007594	LOCKNUT M25 PA6 BML-13	9,000	EA	
60007584	CABLE GLAND BM-EN-11 M16 PA 6	9,000	EA	
60007592	LOCKNUT M16 PA6 BML-1S	9,000	EA	
60007534	CONNECTOR PG9 FOR HOSE PROT	11,000	EA	
60007553	LOCKNUT PG9 PA6 BLN12	11,000	EA	
60007195	DIN RAIL FITTING TST 2/M6 100m	4,000	EA	
60013412	ANGLE BRACKET 2x10x25MM	3,000	EA	
60101926	LABEL TYPE SIGN +AN12	1,000	EA	
60006824	STICKER "LIGHTNING" 100MM	0,330	EA	
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	16,000	EA	
60009599	SCR CRS PH M4x14 4.8 FZB	3,000	EA	
60009861	NUT ISO 4032 M 4 - 6 - FZB	3,000	EA	
60009838	LOCK WASHER DIN 6798 A4 - FZB	3,000	EA	
60009578	SCR CRS PH M3x8 FZB	3,000	EA	
60007197	SCREW FKSC M6x12MM	4,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60110879	MARK WAGO +AN12 PANEL V82	2,000	EA	
60111003	CABLE CONDUIT DIN RAIL AN12	1,000	EA	
60111322	LABEL TYPE SIGN MARKING	1,000	EA	
D21000206	BOM_60108020_Junction Box +AN1	0,000	EA	
D22000565	CI-JUNCTION BOX +AN12	0,000	EA	
60006819	STICKER "EARTH" 14MM	0,018	EA	
60105941	QUICK-RELEASE FASTENER KL BOX	0,330	EA	
60096685	TERMINAL WAGO1-LEV 0.08-4.0MM2	28,000	EA	-X01
60097064	END SEC 281-328 GY	1,000	EA	-X01
60100036	PUSH-IN JUMPER BAR 2-POL	6,000	EA	-X01
60091912	END STOP WAGO 249-117 10MM	1,000	EA	-X01
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X01
60110649	WIRING CONN BOX+AN12-X01MRKIII	1,000	EA	-X01
60006071	TERMINAL WAGO 870-501 2-LEV.0,	32,000	EA	-X02
60006083	END SECTION 870-518 2-LEVEL GR	1,000	EA	-X02
60006090	PUSH-IN JUMPER BAR 870-410	1,000	EA	-X02
60006088	PUSH-IN JUMPER BAR 870-404 4-P	1,000	EA	-X02
60006087	PUSH-IN JUMPER BAR 870-403	1,000	EA	-X02
60006086	PUSH-IN JUMPER BAR 870-402 2-P	4,000	EA	-X02
60091912	END STOP WAGO 249-117 10MM	2,000	EA	-X02
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X02

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Change Info

Item no.	***Item text:***
60108021	**Junction Box +AN13, V82-1.65MW**

Active revision *for production*

Drawing no.: 6015817

Version	Date	Init./App.	Description of change since last revision
01	21.02.2005	INI/FLT	Page 001 updated to show page 202 Page 040, 041 and 200: Text and references updated. Page 201: W598 corrected to W558 and references updated.

LST no.: 21000207 *Material BOM no.: 60108021*

Version	Date	Init./App.	Description of change since last revision
05	26.06.2007	INI/BIVA	Changed with ECO 226004_Replament 2 x 60007593 LOCKNUT repl. by 2 x 193722 LOCKNUT MM20GPA POLYAMID.

Old revisions *for service*

Drawing no.: 6015817

Version	Date	Init./App.	Description of change since last revision
00	13.12.2004	FLT/FLT	First version

LST no.: 21000207 *Material BOM no.: 60108021*

Version	Date	Init./App.	Description of change since last revision
04	19.04.2007	INI/FLT	Changed with ECO 223454_Updated for production in Spain. Quantity changed: 60006819 STICKER "JORD" 14mm from 1 pc. to 0,018 pc. 60006824 "LYN" 1 pc. to 0,33 pc. 60105941 QUICK- FASTENER 4 pc. To 0,33 pc.
03	13.06.2005	MILJE/	Production requirement, serial production
02	25.05.2005	MILJE/FLT	Updates according to production, 2pc. 60091902_end stop added
01	17.05.2005	FLT+MILJE/FLT	First version

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1	2	3	4	5	6	7	8	9	10	11	12	13

PAGE	CONTENT	DATE	REVISION
001	Table of Contents	050221	01
030	Panel front	041213	-
031	Panel outline	041213	-
040	Connection to +AN1 Top bo	050221	-
041	Connection to +AN1 Top bo	050221	-
200	Externals connections to	050221	-
201	Externals connections to	050221	-
202	Externals connections to	041213	-

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	Date	Initials	Function	Table of Contents		
Designed	041213	FLT	Project title	Junction Box +AN13		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050221	INI	Rev. 01	Drawing no. 6015817	Cont. sheet 030	Sheet 001

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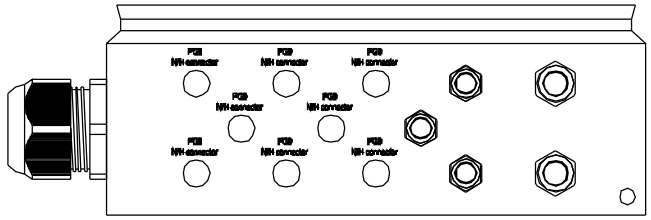
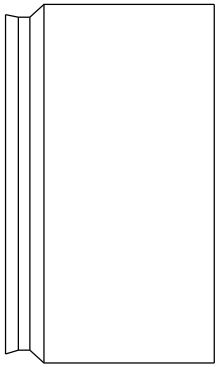
21-02-05 11:01

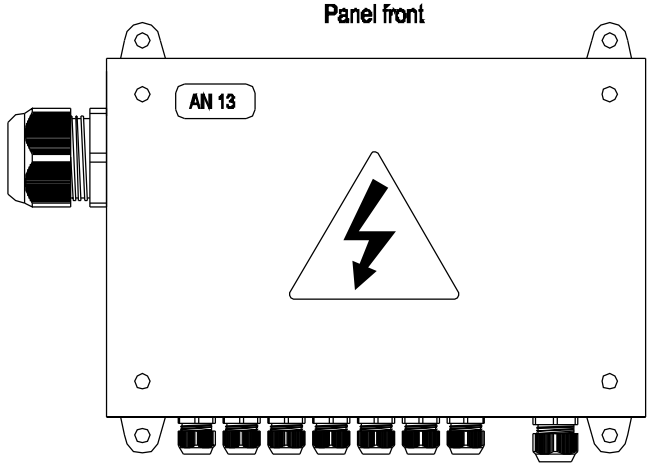


Panel bottom

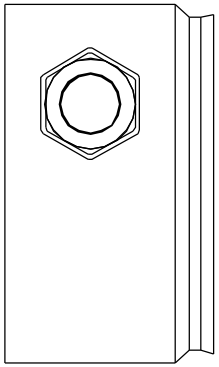
Panel right side



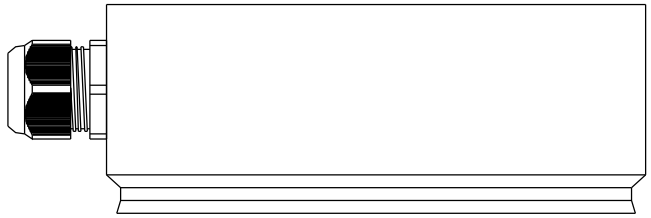
Panel front



Panel left side



Panel top



Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel front
		Designed	041213	FLT	Project title	Junction Box +AN13
		Approved			Comments	Customer: Vestas Wind Systems A/S
		Revised	041213	FLT	Rev. - / Drawing no. 6015817	Cont. sheet 031 / Sheet 030

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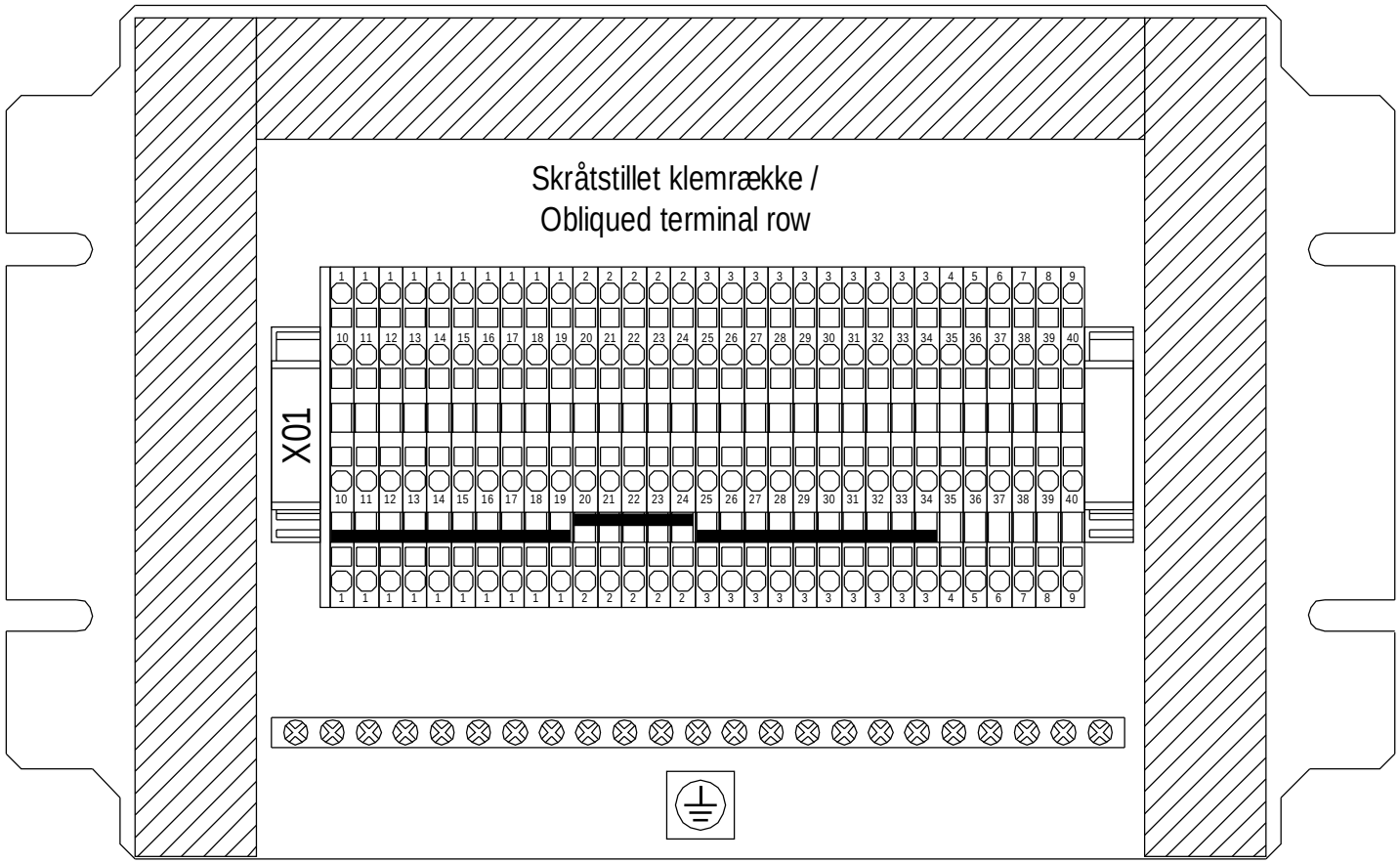
Mounting plate



Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel outline
		Designed	041213	FLT	Project title	Junction Box +AN13
		Approved			Comments	Customer: Vestas Wind Systems A/S
		Revised	041213	FLT	Rev. -	Drawing no. 6015817 · Cont. sheet 040 · Sheet 031

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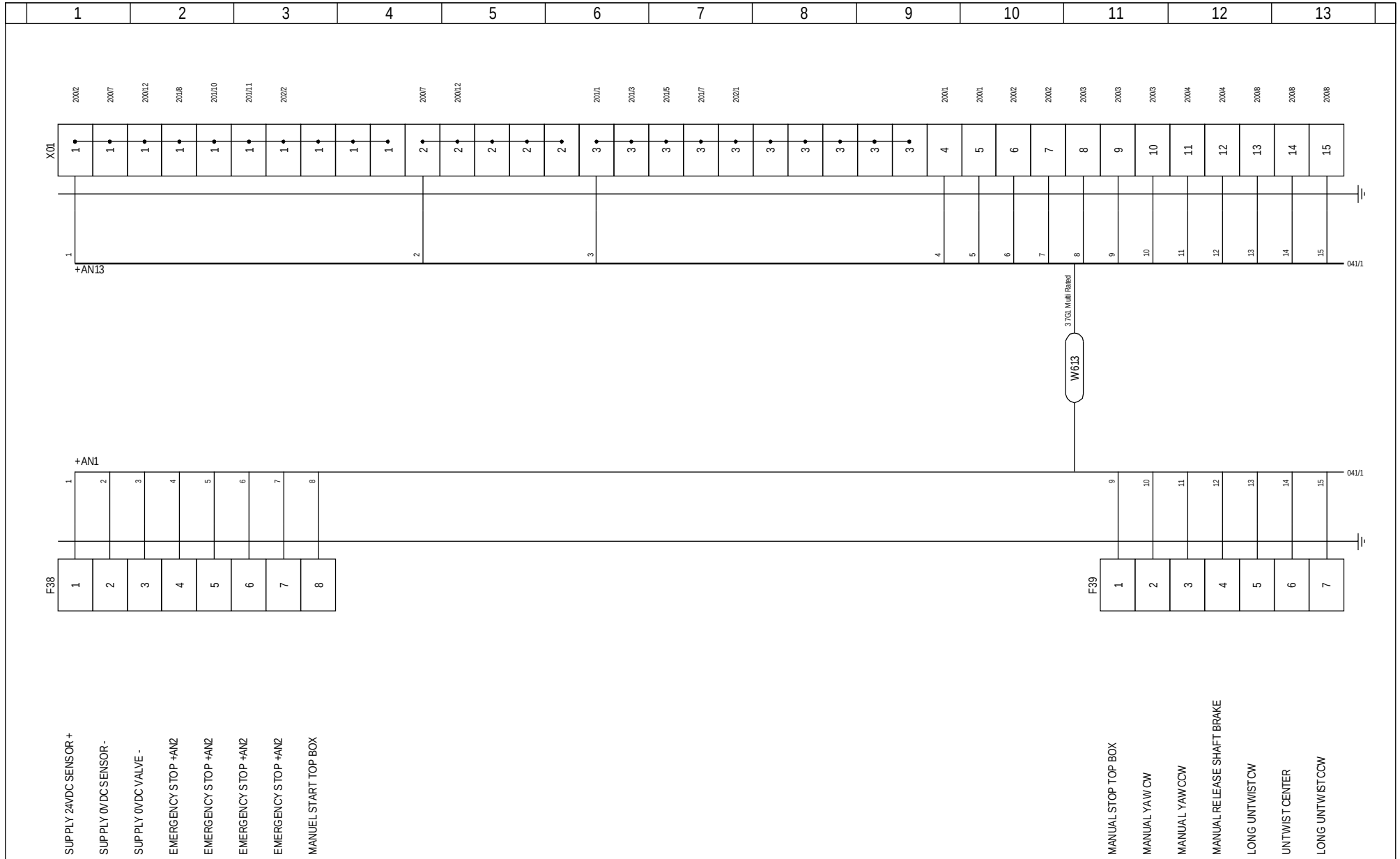

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	Date	Initials	Function	Connection to +AN1 Top box		
Designed	041213	FLT	Project title	Junction Box +AN13		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050221	INI	Rev. -	Drawing no. 6015817	Cont. sheet 041	Sheet 040

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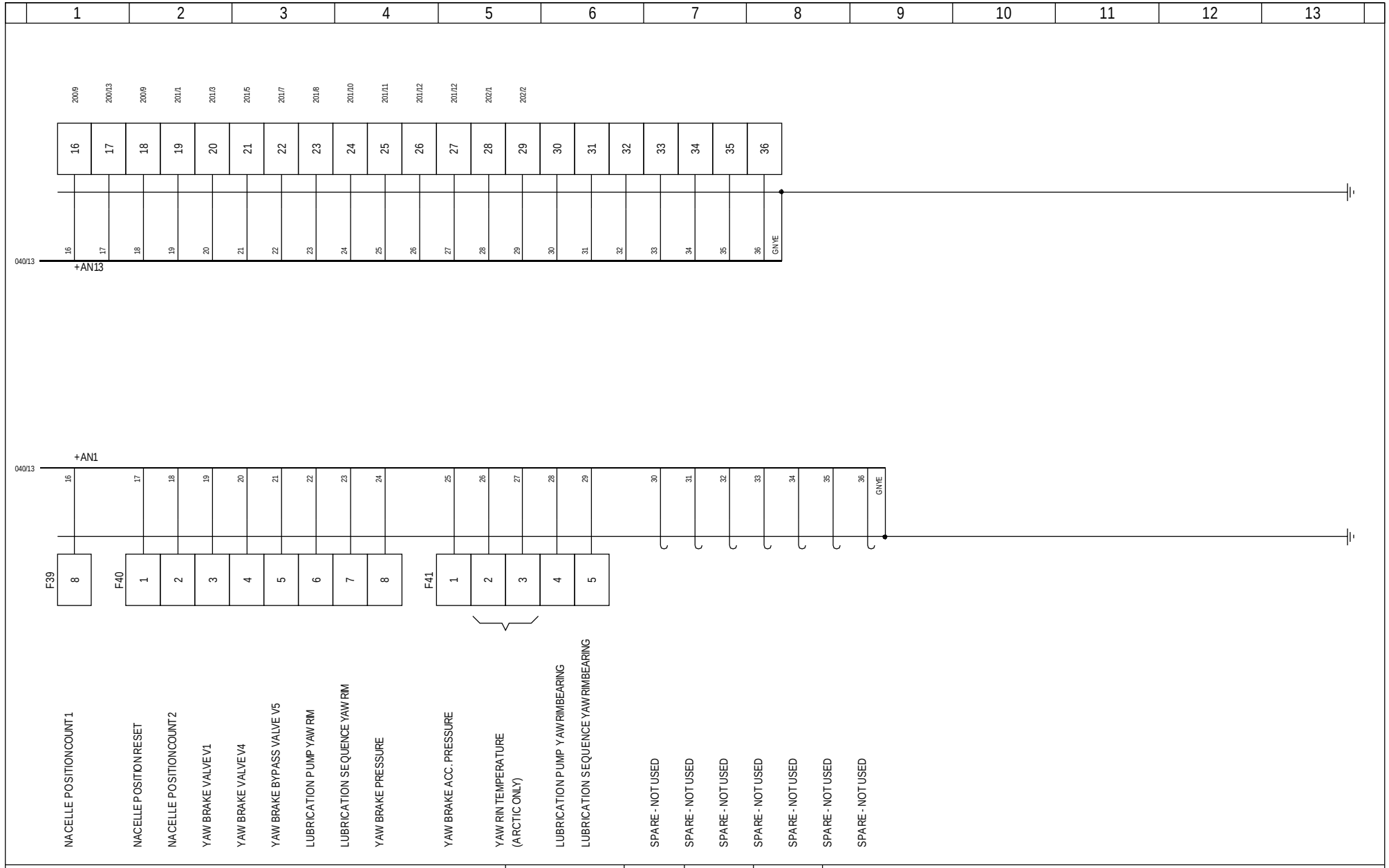

21-02-05
11:01

Vestas

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	Date	Initials	Function	Connection to +AN1 Top box		
Designed	041213	FLT	Project title	Junction Box +AN13		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050221	INI	Rev. -	Drawing no. 6015817	Cont. sheet 200	Sheet 041

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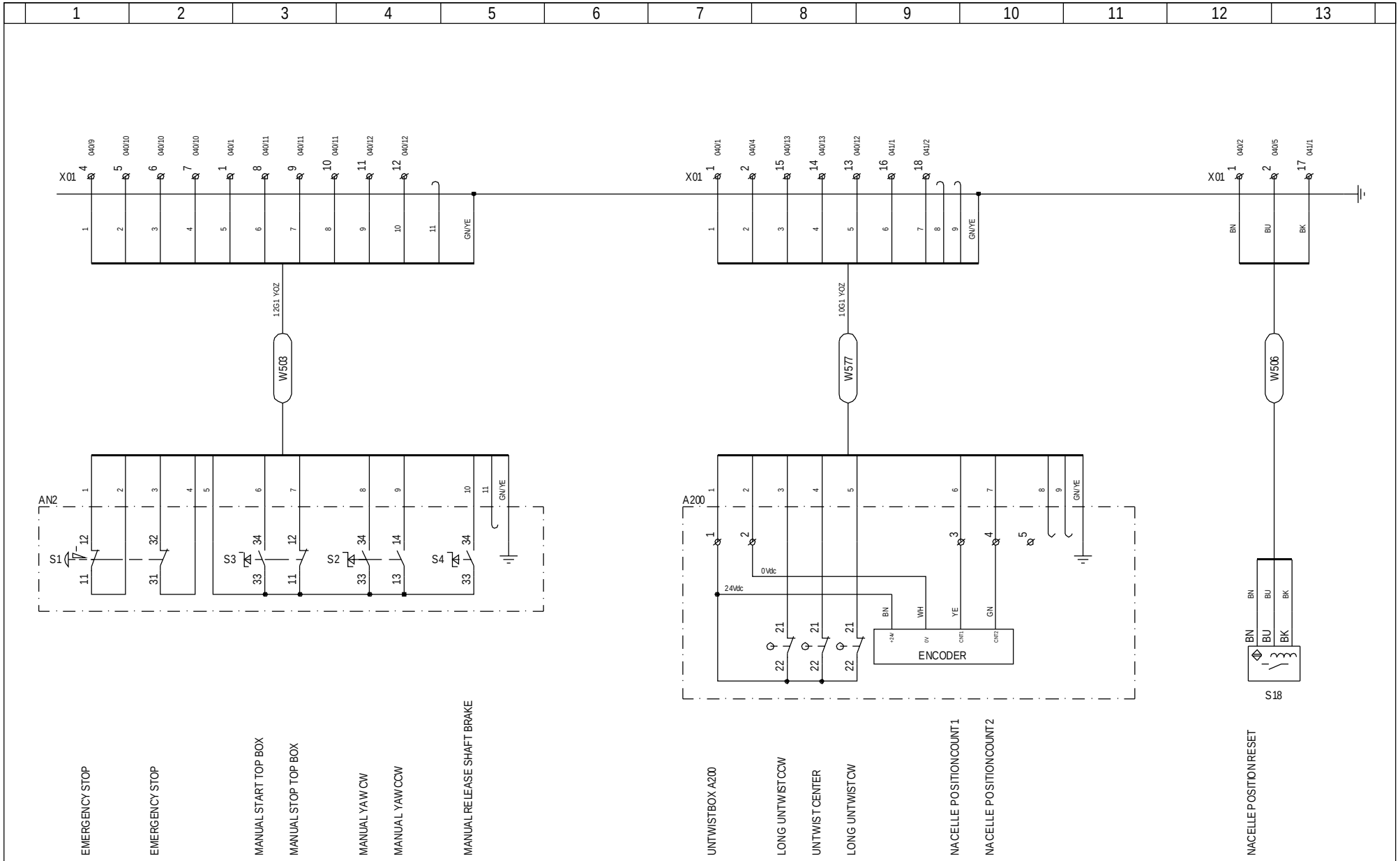
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



	Date	Initials	Function	Externals connections to signals		
Designed	041213	FLT	Project title	Junction Box +AN13		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050221	INI	Rev. -	Drawing no. 6015817	Cont. sheet 201	Sheet 200

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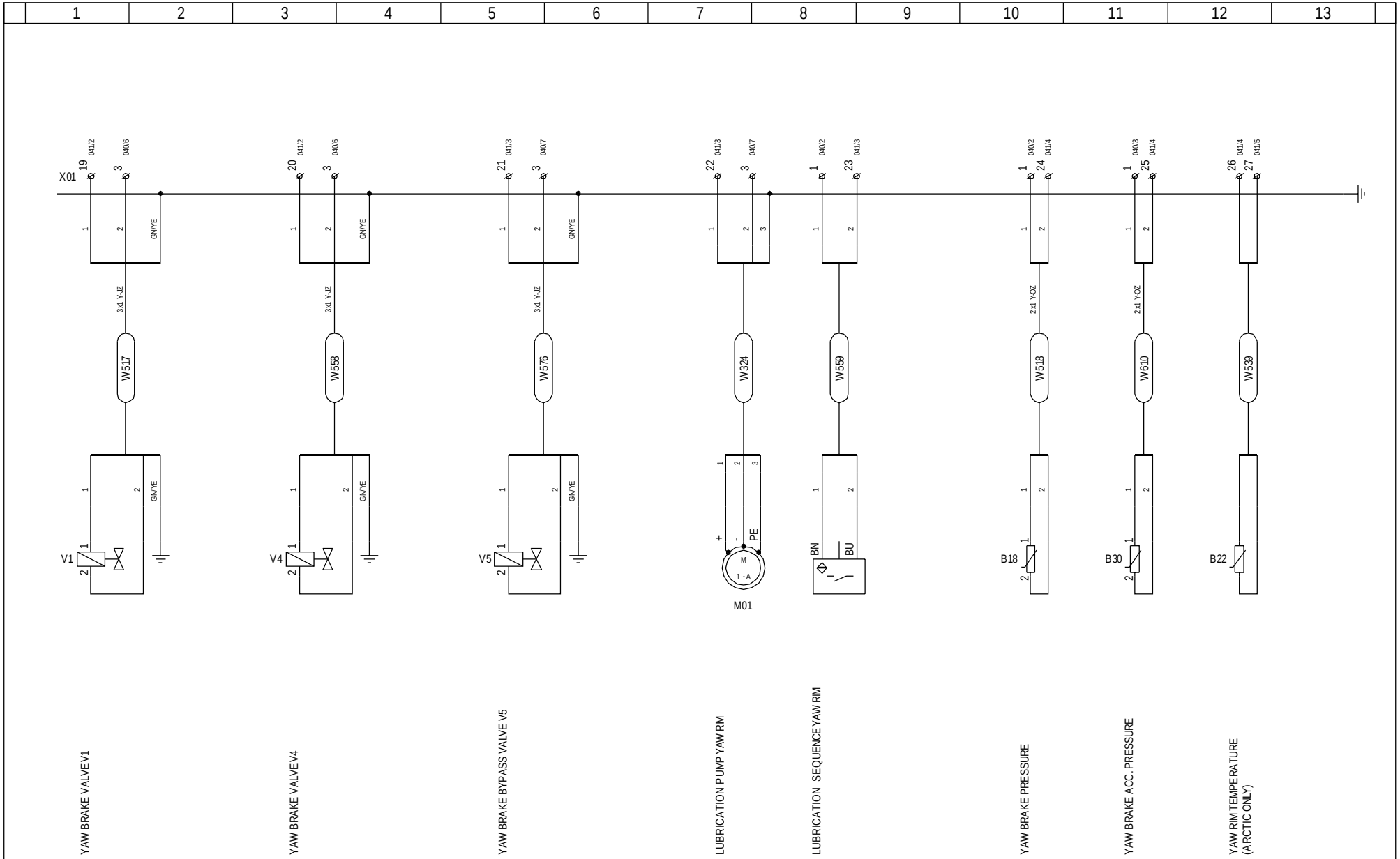

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	Date	Initials	Function	Externals connections to signals		
Designed	041213	FLT	Project title	Junction Box +AN13		
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Revised	050221	INI	Rev. -	Drawing no. 6015817	Cont. sheet 202	Sheet 201

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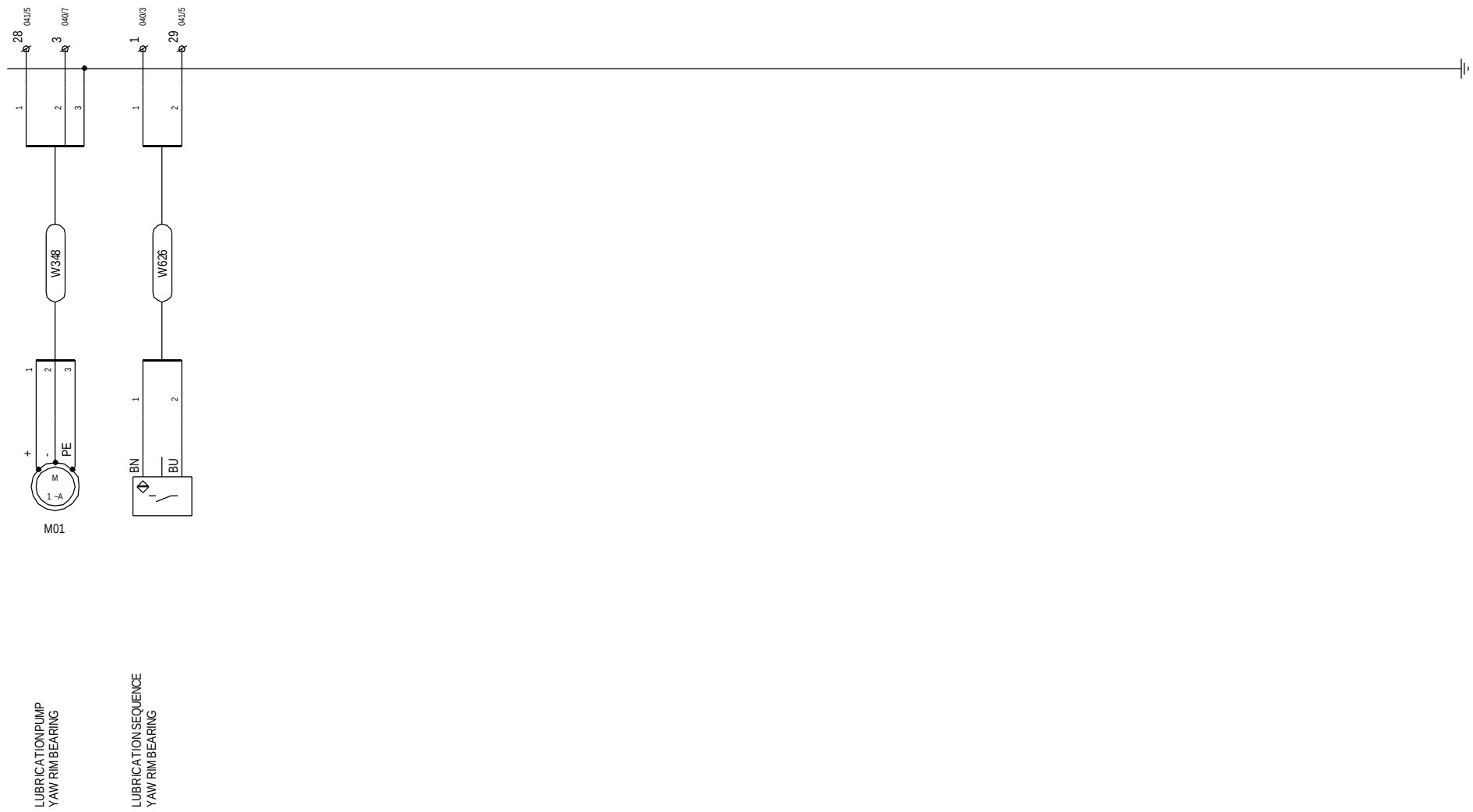

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	Date	Initials	Function	Externals connections to signals		
Designed	041213	FLT	Project title	Junction Box +AN13		
Approved			Comments		Customer	Vestas Wind Systems A/S
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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

Document no.: 21000207
Version: 05
Date: 21/12/2007
Init: Inge Nielsen

60108021 JUNCTION BOX +AN13

Component	Description	Qty per	Stk UM	Position Number
D1001696	Work instructions f. productio	0,000	EA	
D6015817	JUNCTION BOX +AN13	0,000	EA	
60108147	BOX KL 1503.510 RAL 7035 W/W	1,000	EA	
60096809	WALL BRACKET RITTAL 1580.000	4,000	EA	
60102739	MOUN PL KL W/W	1,000	EA	
60110413	CABLE GLAND M40 PLASTIC	1,000	EA	
60007596	LOCKNUT M40 PA6 BML-15	1,000	EA	
60007585	CABLE GLAND BM-EN-12 M20 PA 6	2,000	EA	
60007584	CABLE GLAND BM-EN-11 M16 PA 6	3,000	EA	
60007592	LOCKNUT M16 PA6 BML-1S	3,000	EA	
60007534	CONNECTOR PG9 FOR HOSE PROT	8,000	EA	
60007553	LOCKNUT PG9 PA6 BLN12	8,000	EA	
60007196	DIN RAIL FTG TSTW 72x48MM	2,000	EA	
60013412	ANGLE BRACKET 2x10x25MM	2,000	EA	
60101927	LABEL +AN13	1,000	EA	
60009599	SCR CRS PH M4x14 4.8 FZB	2,000	EA	
60009861	NUT ISO 4032 M 4 - 6 - FZB	2,000	EA	
60009838	LOCK WASHER DIN 6798 A4 - FZB	2,000	EA	
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	10,000	EA	
60009578	SCR CRS PH M3x8 FZB	2,000	EA	
60007197	SCREW FKSC M6x12MM	2,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60110880	MARK WAGO +AN13 PANEL V82	2,000	EA	
60111002	CABLE CONDUIT DIN RAIL	1,000	EA	
60111320	LABEL TYPE SIGN MARKING "-X01"	1,000	EA	
D21000207	BOM_60108021_Junction Box +AN1	0,000	EA	
D22000566	CI-JUNCTION BOX +AN13	0,000	EA	
193722	LOCKNUT MM20GPA POLYAMID	2,000	EA	
60006819	STICKER "EARTH" 14MM	0,018	EA	
60006824	STICKER "LIGHTNING" 100MM	0,330	EA	
60105941	QUICK-RELEASE FASTENER KL BOX	0,330	EA	
60006071	TERMINAL WAGO 870-501 2-LEV.0,	31,000	EA	-X01
60006083	END SECTION 870-518 2-LEVEL GR	1,000	EA	-X01
60006089	PUSH-IN JUMPER BAR 870-405	1,000	EA	-X01
60006090	PUSH-IN JUMPER BAR 870-410	2,000	EA	-X01
60091902	END STOP WAGO 249-116 6MM TS35	2,000	EA	-X01
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X01

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Change Info

Item no.	***Item text:***
60108022	**Junction Box +AN14, V82-1.65MW MRK III**

Active revision *for production*

Drawing no.: 6015818

Version	Date	Init./App.	Description of change since last revision
02	18.05.2005	INI/FLT	Page 001 updated. Page 031: Earth label rotated.

LST no.: 21000208 *Material BOM no.: 60108022*

Version	Date	Init./App.	Description of change since last revision
03	03.04.2007	HHU+INI/FLT	Changed with ECO 223431_Updated for production in Spain. Quantity changed: 60006819 STICKER "JORD"_1 pc. to 0,018 pc. 60006824 "LYN"_1 pc. to 0,35 pc. 60105941 QUICK FASTENER_4 pc. to 0,33 pc. 60110881 MARK WAGO_1 pc. to 0,5 pc.

Old revisions *for service*

Drawing no.: 6015818

Version	Date	Init./App.	Description of change since last revision
01	21.02.2005	INI/	Not in use
00	13.12.2004	FLT/FLT	First version

LST no.: 21000208 *Material BOM no.: 60108022*

Version	Date	Init./App.	Description of change since last revision
02	13.06.2005	MILJE/	Production requirement serial production
01	17.05.2005	FLT+MILJE/FLT	First version

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PAGE	CONTENT	DATE	REVISION
001	Table of Contents	050518	02
030	Front	041213	-
031	Outline	050518	-
040	Connections to +AN1 Top b	041213	-
200	External connection to si	041213	-

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	Date	Initials	Function	Table of Contents		
Designed	041213	FLT	Project title	Junction Box +AN14		
Approved	050518	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	050518	INI	Rev. 02	Drawing no. 6015818	Cont. sheet 030	Sheet 001

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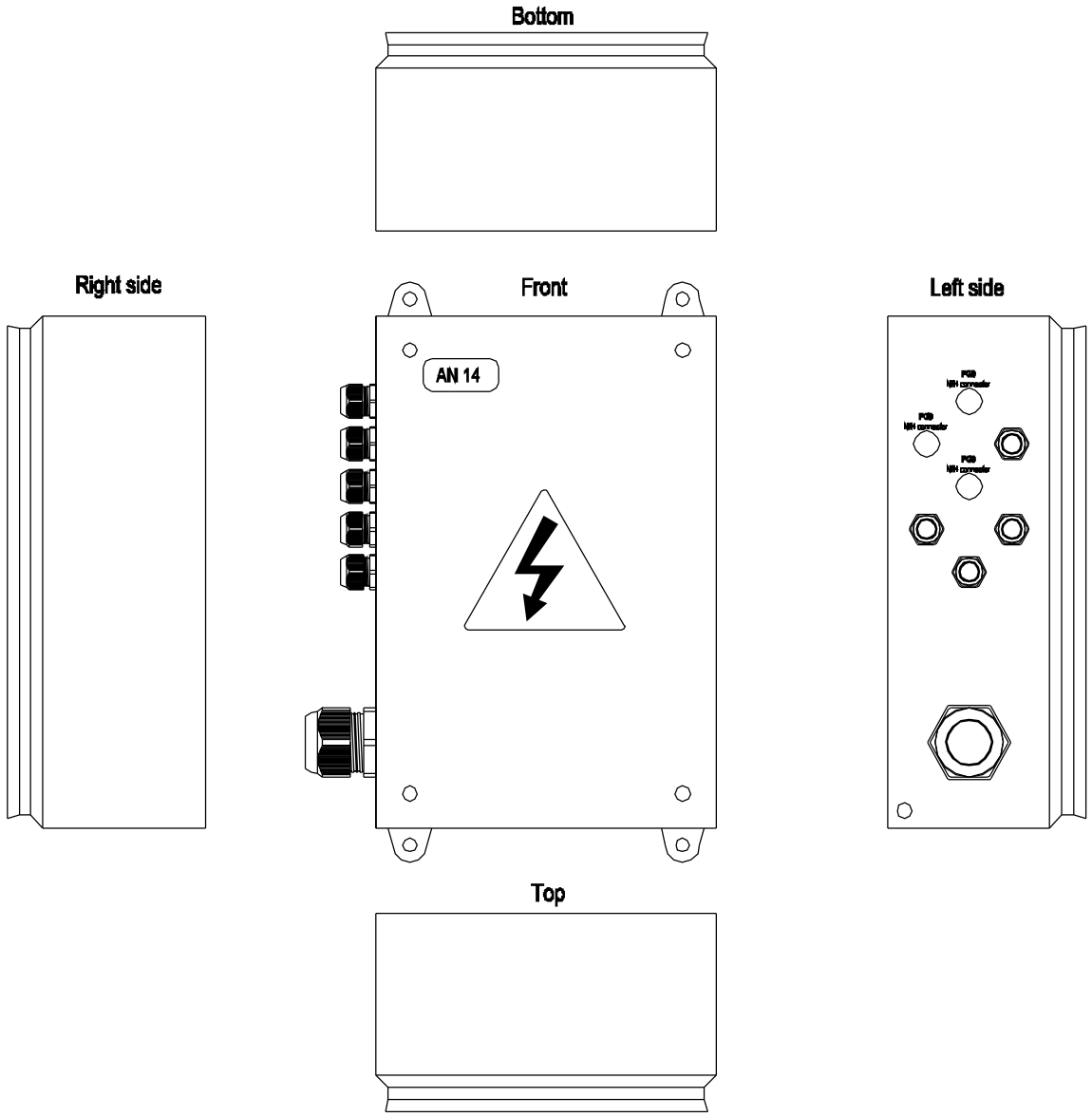
18-05-05

10:14



	Date	Initials		
Designed	041213	FLT	Project title	Junction Box +AN14
Approved			Comments	
Revised	041213	FLT	Rev. -	Drawing no. 6015818

Function: Front

Customer: Vestas Wind Systems A/S

Cont. sheet: 031 Sheet: 030

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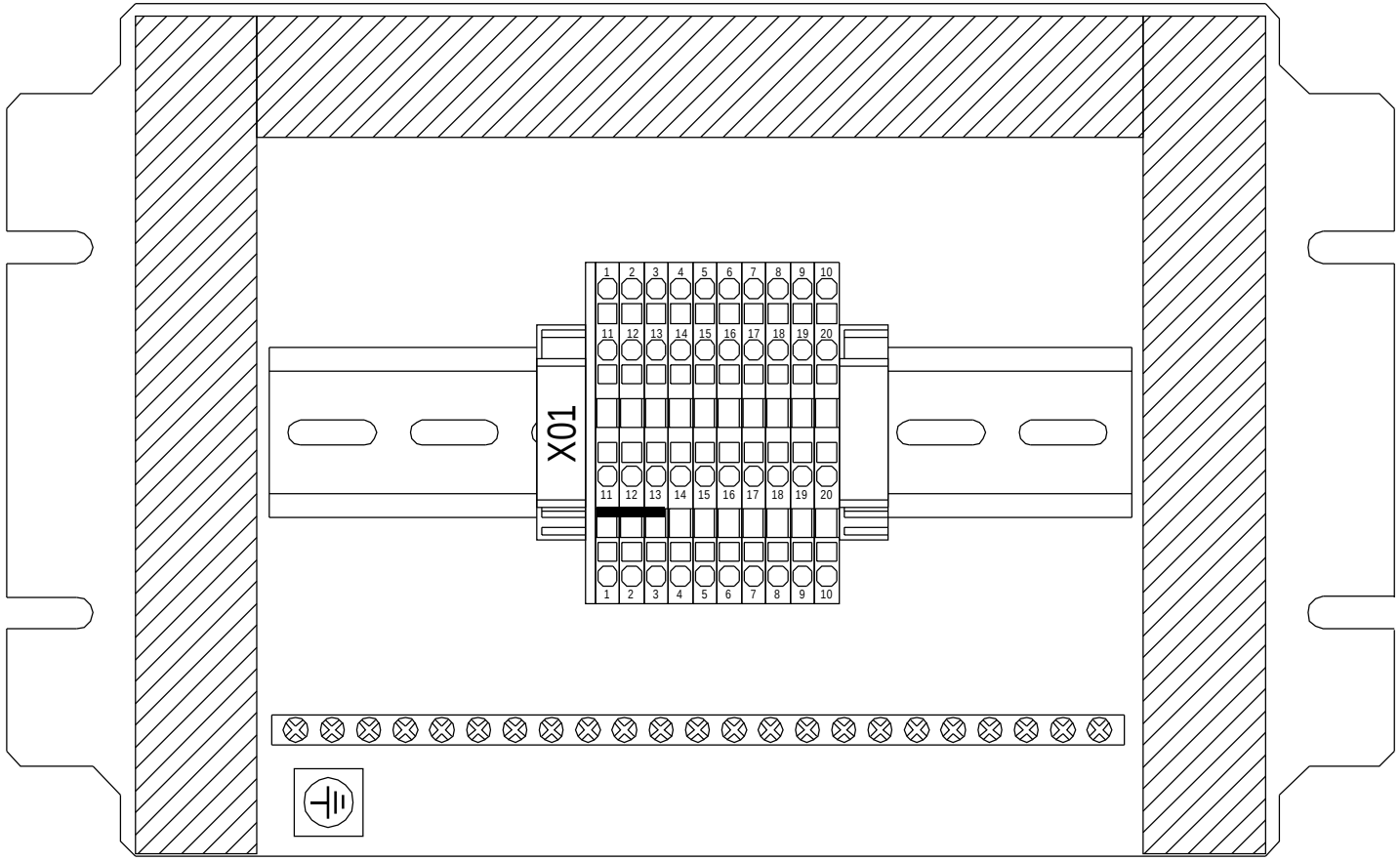
18-05-05 10:14

Mounting plate



Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Outline	
		Designed	041213	FLT	Project title	Junction Box +AN14	
		Approved	050518	FLT	Comments		Customer: Vestas Wind Systems A/S
		Revised	050518	INI	Rev. -	Drawing no. 6015818	Cont. sheet 040 / Sheet 031

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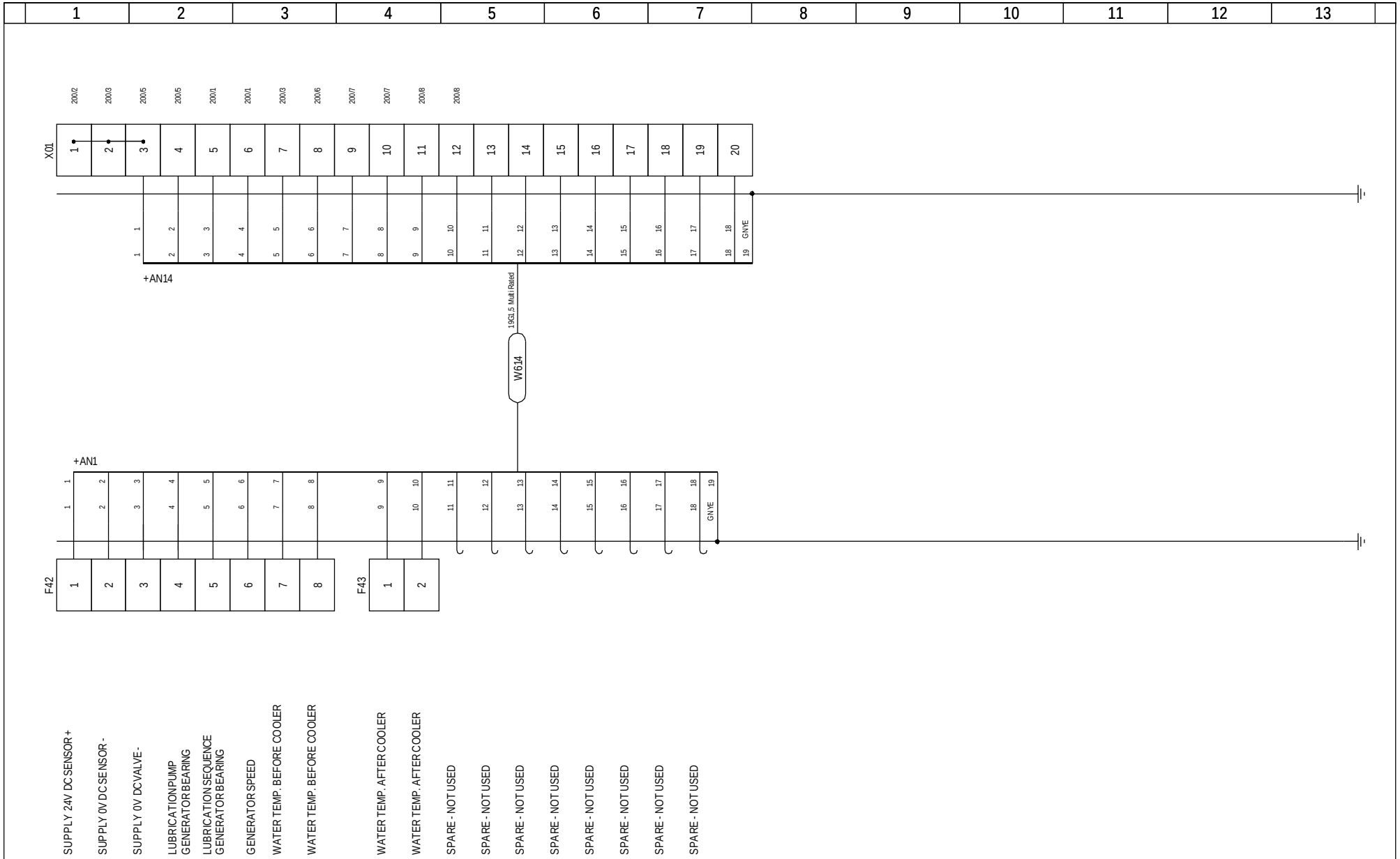
18-05-05 10:14



	Date	Initials	Function	Connections to +AN1 Top box		
Designed	041213	FLT	Project title	Junction Box +AN14		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041213	FLT	Rev. -	Drawing no. 6015818	Cont. sheet 200	Sheet 040

Vestas

18-05-05 10:14

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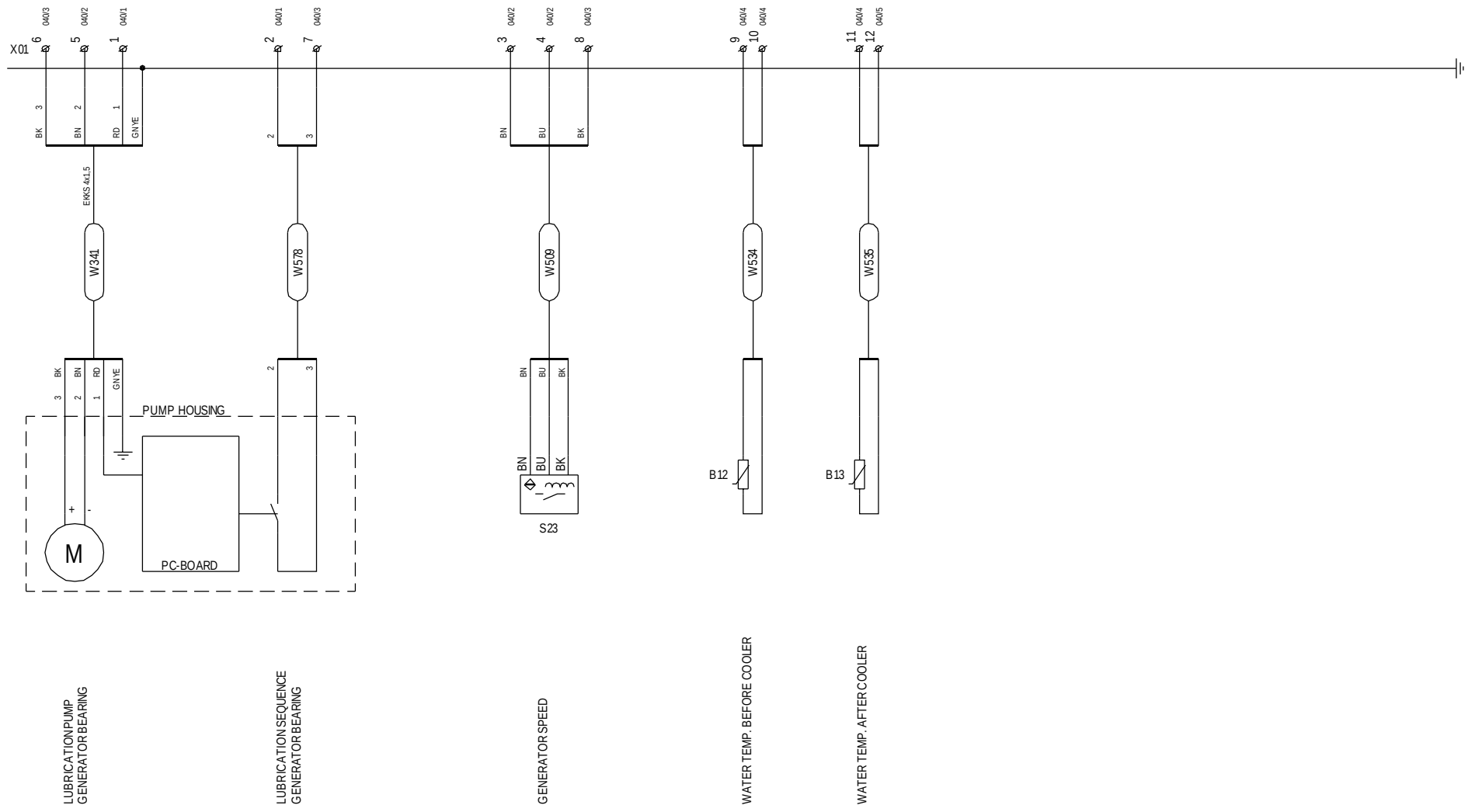

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	Date	Initials	Function	External connection to signals		
Designed	041213	FLT	Project title	Junction Box +AN14		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	041213	FLT	Rev. -	Drawing no. 6015818	Cont. sheet -	Sheet 200

18-05-05

10:14

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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

Document no.: 21000208
Version: 03
Date: 20/04/2007
Init: Inge Nielsen

60108022 BOX+AN14 '05 MRKIII

Component	Description	Qty per	Stk UM	Position Number
D1001697	Work instructions f. productio	0,000	EA	
D6015818	JUNCTION BOX +AN14	0,000	EA	
60108148	BOX KL 1503.510 RAL 7035 W/W	1,000	EA	
60096809	WALL BRACKET RITTAL 1580.000	4,000	EA	
60102739	MOUN PL KL W/W	1,000	EA	
60007588	CABLE GLAND BM-EN-15 M40 PA 6	1,000	EA	
60007596	LOCKNUT M40 PA6 BML-15	1,000	EA	
60007584	CABLE GLAND BM-EN-11 M16 PA 6	4,000	EA	
60007592	LOCKNUT M16 PA6 BML-1S	4,000	EA	
60007534	CONNECTOR PG9 FOR HOSE PROT	3,000	EA	
60007553	LOCKNUT PG9 PA6 BLN12	3,000	EA	
60013412	ANGLE BRACKET 2x10x25MM	2,000	EA	
60101928	LABEL +AN14	1,000	EA	
60006824	STICKER "LIGHTNING" 100MM	0,350	EA	
60006819	STICKER "EARTH" 14MM	0,018	EA	
60105941	QUICK-RELEASE FASTENER KL BOX	0,330	EA	
60009599	SCR CRS PH M4x14 4.8 FZB	2,000	EA	
60009861	NUT ISO 4032 M 4 - 6 - FZB	2,000	EA	
60009838	LOCK WASHER DIN 6798 A4 - FZB	2,000	EA	
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	8,000	EA	
60009578	SCR CRS PH M3x8 FZB	2,000	EA	
60002320	STICKER GEN USE VCS	1,000	EA	
60110881	MARK WAGO +AN14 PANEL V82	0,500	EA	
60111002	CABLE CONDUIT DIN RAIL	1,000	EA	
60111320	LABEL TYPE SIGN MARKING "-X01"	1,000	EA	
D21000208	BOM_60108022_Junction Box +AN1	0,000	EA	
D22000567	CI-JUNCTION BOX +AN14	0,000	EA	
60006071	TERMINAL WAGO 870-501 2-LEV.0,	10,000	EA	-X1
60006087	PUSH-IN JUMPER BAR 870-403	1,000	EA	-X1
60006083	END SECTION 870-518 2-LEVEL GR	1,000	EA	-X1
60091912	END STOP WAGO 249-117 10MM	2,000	EA	-X1
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X1

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Change Info

Item no.	***Item text:***
60019632	**Nacelle Heater 2x10 kW 690V 50Hz**

Active revision for production

Drawing no.: 6012661

Version	Date	Init./App.	Description of change since last revision
02	02.06.2005	INI/FLT	All pages updated with Vestas logo.

LST no.: 21000084 *Material BOM no.: 60016183*

Version	Date	Init./App.	Description of change since last revision
02	17.11.2006	INI/FLT	Changed with ECO 218664 60008058 replaced with 194173_Cable rubber 4G2,5 60

Old revisions for service

Drawing no.: 6012661

Version	Date	Init./App.	Description of change since last revision
01	08.10.2003	INI/RPJ	First version in SAP no. system. Drawing converted to another drawing program. Project title changed.

LST no.: 21000084 *Material BOM no.: 60016183*

Version	Date	Init./App.	Description of change since last revision
01	07.12.2000	RPJ/RPJ	First version in SAP no. system. Description text changed.

Earlier Drawings and Part Lists no Longer Active for Serial Production

Change Info: 0000500

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PAGE	CONTENT	DATE	REVISION
001	Table of Contents	050602	02
030	Panel Front	050602	-
031	Panel Outline	050602	-
100	Main Connections, Main Pa	050602	-
101	Main Connections, Nacelle	050602	-

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	Date	Initials	Function	Table of Contents		
Designed	011207	RPJ	Project title	Nacelle Heater 2x10 kW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. 02	Drawing no. 6012661	Cont. sheet 030	Sheet 001

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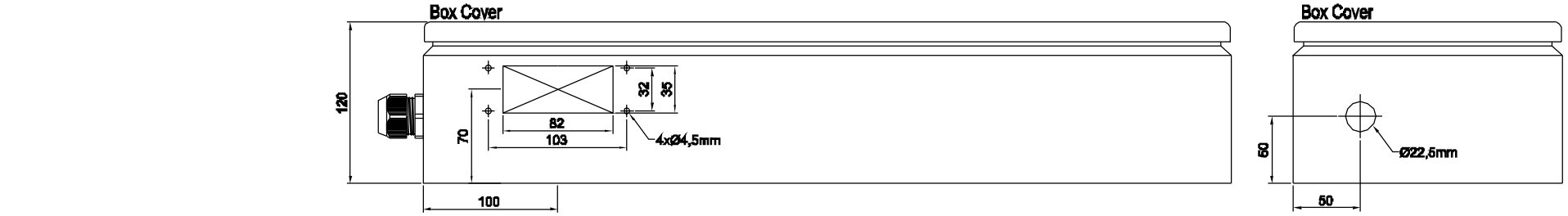
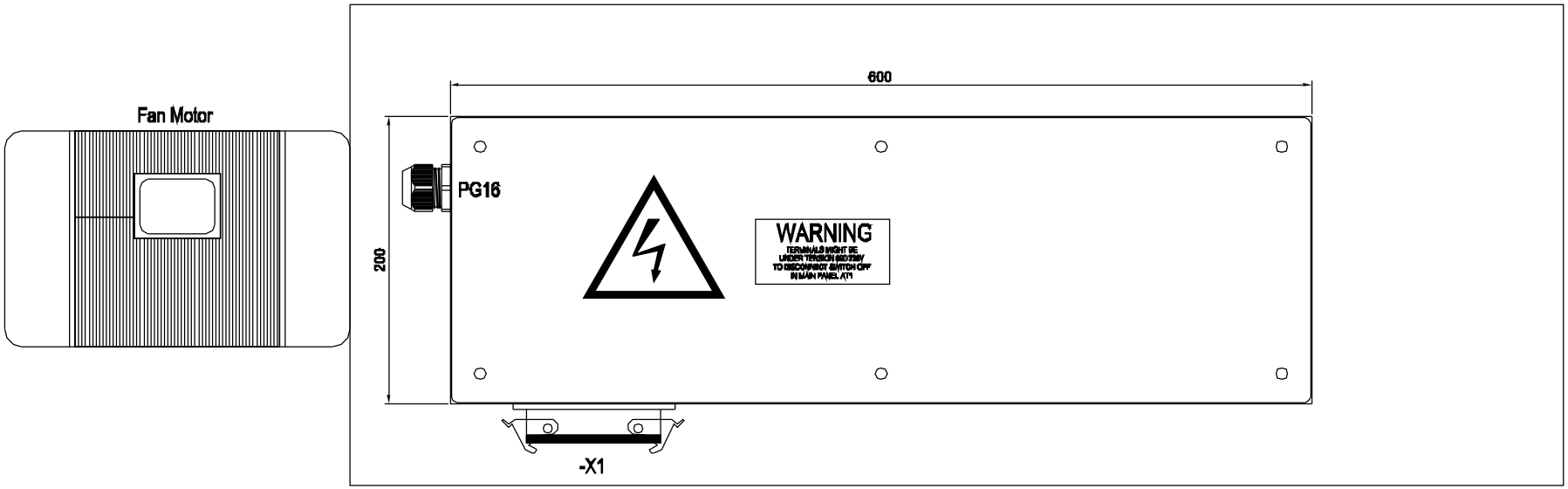
02-06-05 15:23





	Date	Initials	Function	Panel Front		
Designed	011207	RPJ	Project title	Nacelle Heater 2x10 kW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. -	Drawing no. 6012661	Cont. sheet 031	Sheet 030

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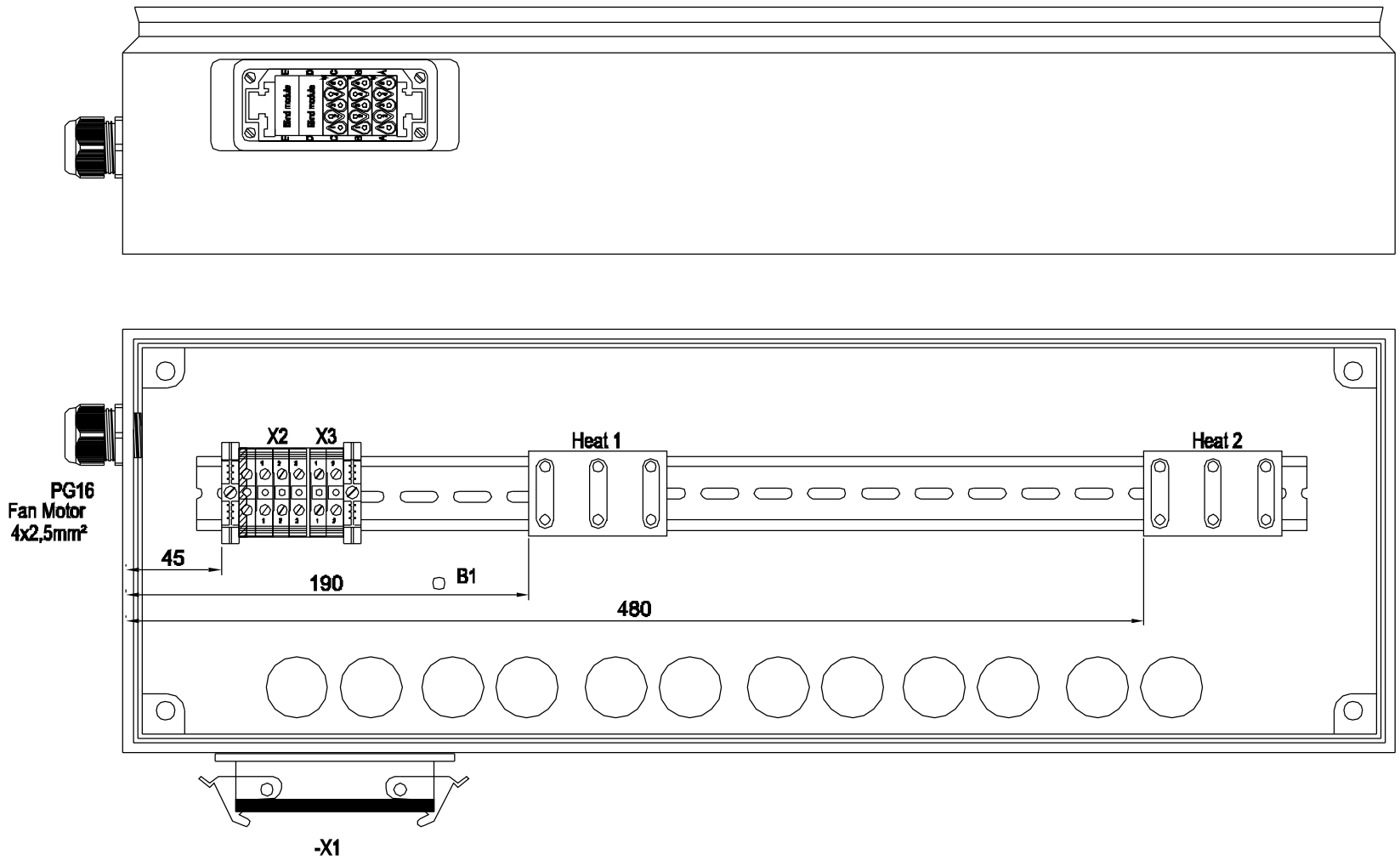

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel Outline	
		Designed	011207	RPJ	Project title	Nacelle Heater 2x10 kW 690V 50Hz	
		Approved			Comments		Customer: Vestas Wind Systems A/S
		Revised	050602	INI	Rev. -	Drawing no. 6012661	Cont. sheet 100 / Sheet 031

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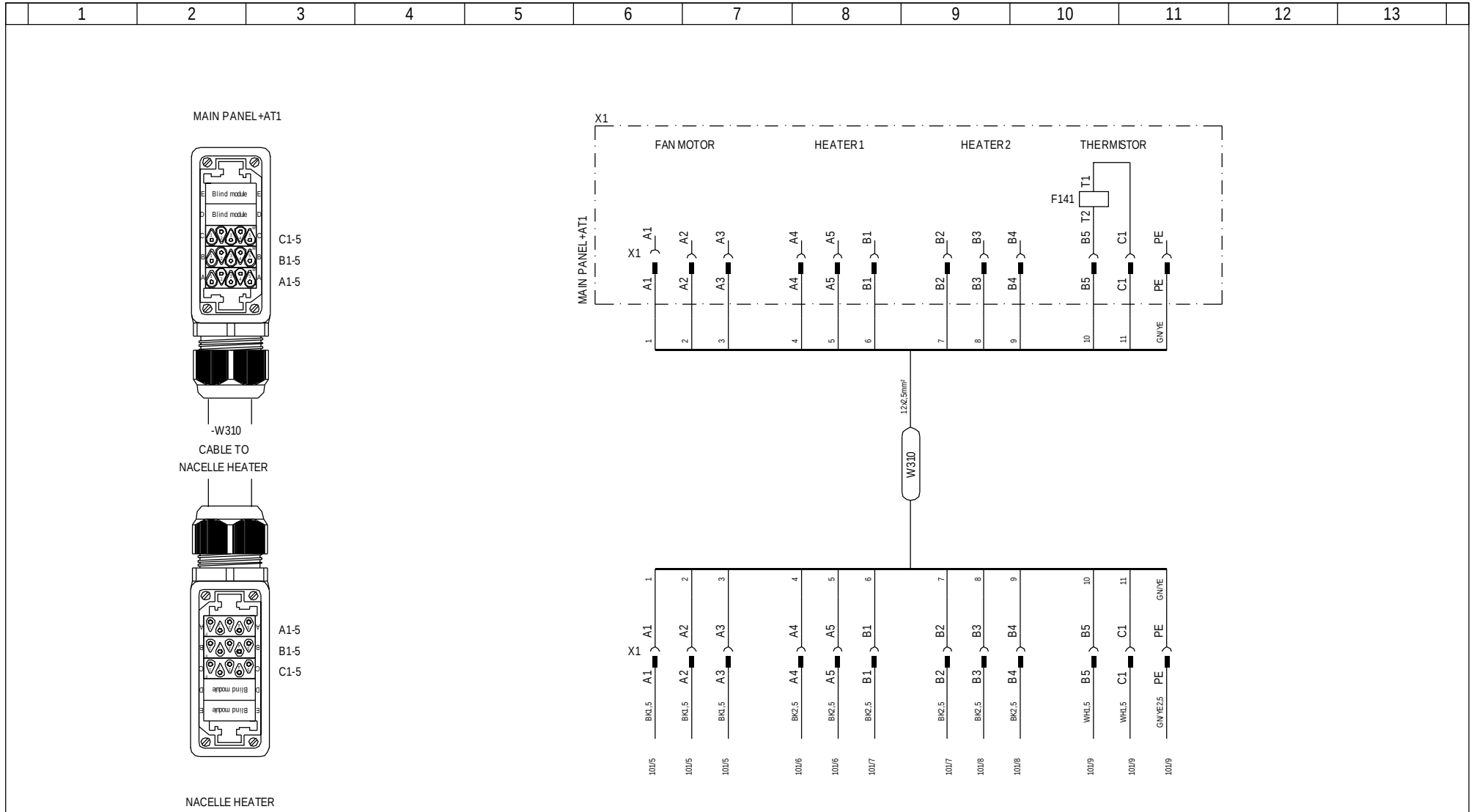
02-06-05 15:23



	Date	Initials	Function	Main Connections, Main Panel +AT1		
Designed	011207	RPJ	Project title	Nacelle Heater 2x10 kW 690V 50Hz		
Approved			Comments		Customer	Vestas Wind Systems A/S
Revised	050602	INI	Rev. -	Drawing no. 6012661	Cont. sheet 101	Sheet 100

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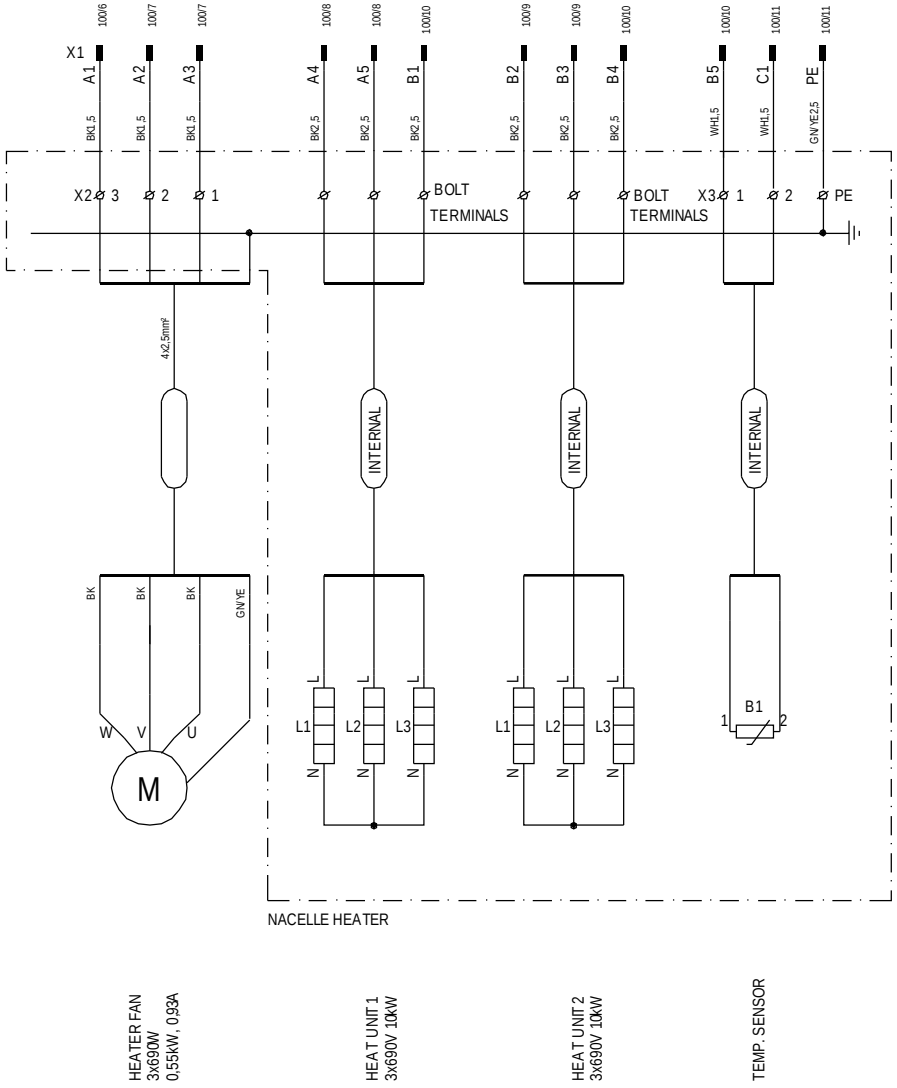
02-06-05 15:23



	Date	Initials		
Designed	011207	RPJ	Function	Main Connections, Nacelle Heater
Approved			Project title	Nacelle Heater 2x10 kW 690V 50Hz
Revised	050602	INI	Comments	
			Customer	Vestas Wind Systems A/S
			Rev. -	Drawing no. 6012661
			Cont. sheet -	Sheet 101

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02-06-05 15:23

60016183 NAC HEATER 2x10 kW 690V 50Hz

Component	Description	Qty per	Stk UM	Position Number
D6012661	NACELLE HEATER 2x10 kV, 690V 5	0,000	EA	
60006824	STICKER "LIGHTNING" 100MM	1,000	EA	
60014091	MARK CARD RC610 HEATER NM750	1,000	EA	
60002655	LABEL	1,000	EA	
60007603	CABLE GLAND PG16 BRASS BSBC-05	1,000	EA	
60007614	LOCKNUT PG16 BRASS BSL-05	1,000	EA	
60014736	HEATER 3x690V 2x10kW NM900	1,000	EA	
D21000084	60016183 MATERIAL BOM, NACELLE	0,000	EA	
D22000188	NACELLE HEATER 2x10 kW 690V 50	0,000	EA	
194173	MO. WIRE H07RN-F 4G2.5MM2	1,000	M	
60000601	RES PTC 100R 155C 1 MODUL	1,000	EA	B1
60002736	LABEL TYPE SIGN NACELLE HEATER	1,000	EA	Outside
60006571	HOUSING 32P BULKHEAD	1,000	EA	X1
60012189	WIRING NAC HEATER	1,000	EA	X1
60007351	CABLE CONDUIT 15x40mm 21153	0,530	M	X1
60002439	LABEL "-X1"	1,000	EA	X1
60005983	TERMINAL STD M4/6	3,000	EA	X2
60005998	END SEC FEM6 GY 118368.16	1,000	EA	X2
60006034	END STOP 9708/2 S35	2,000	EA	X2
60005984	TERMINAL GROUND M4/6P	1,000	EA	X2
60005983	TERMINAL STD M4/6	2,000	EA	X3
60005998	END SEC FEM6 GY 118368.16	1,000	EA	X3
60006034	END STOP 9708/2 S35	1,000	EA	X3

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Change Info

Item no.	***Item text:***
60110471	**Hub Computer Panel +AK4 CEE, V82-1.65MW**

Active revision for production

Drawing no.: 6015908

Version	Date	Init./App.	Description of change since last revision'
05	2008-12-17	INI/PRO	Changed with ECO 251881_ For making a better workflow doing it the same way at all 3 HUB items. Cables are been changed to only PK and GNYE. Pages changed from 100 to 212, 215, 313 and 343.

BoM no.: 60110471 *Document no.: 21000238*

Version	Date	Init./App.	Description of change since last revision
05	2008-12-17	INI/PRO	Changed with ECO 251881_ For making a better workflow doing it the same way at all 3 HUB items. Cables are been changed to only PK and GNYE. Replaced: 60005140 repl. by 60005135 MCB 5SX2103-7 C 1-POL. 3.0A Added: 1 x 60112358 WIRING HUB CPU IEC/UL (34) 1 x 60010699 CONDENSATION PROTECTION DRY BA 4 x 60007459 CABLE TIE WHITE 200x2.5, 1x119161 LABEL AVOID TENSION, 1 x 119162 LABEL TYPE 1 ENCLOS., 1,92m 146470 FLEX HOSE 15,8MM BK Removed: 1 x 60021530 Cable W926, 2 x 60001890 MVSTBW 2,5/10 - ST -5,08 2 x 60001892 GMVSTBW 2,5/3 - ST - 7,62

Old revisions for service

Drawing no.: 6015908

Version	Date	Init./App.	Description of change since last revision
04	2008-06-12	INI/OLZED	Changed with ECO 240165 - All paged updated with new Vestas Logo Page 034: ID for socket no. X04 corrected to X05. Page 343: ID for X1 Emergency X01corrected to K01
03	2007-10-10	INI/BIVA	Changed with ECO 227961 Page 033: 1 pc. M16 & 16 pcs. M20 not used cable gland removed. Page 034: Cable gland on panel updated.
02	2007-07-26	INI/BIVA	Changed with ECO 227101_Holes for cable glands changed in bottom. Page 033: Holes for Heating Mat changed. Page 034: 1 pc. cable gland changed from M16 to M12 and 3 pcs. M20 changed to M16.
01	2005-11-28	INI/KSS	Text changed or added for better understanding of the diagram. Page 210: X15 hub input D1 => D4 changed to DI 4 <= DI 1. Page 211: X16 hub input D5 => D8 changed to DI 8 <= DI 5. Page 212: Text (DI 12), (DI 11), (DI 10), (DI 9) added to input. Page 213: X18 hub input DI 9 => DI 12 changed to DI 16 <= DI 13. Text (DI 16), (DI 15), (DI 14), (DI 13) to input & text "only for internal use!" added. Page 214: Digital input-X18 corrected to Analog input. Text (ANI 6), (ANI 5), (ANI 4), (ANI 9) added to input. TAC Channel no added. Page 215: TAC Channel no added. Page 216: Text (ANI 8), (ANI 7) and TAC Channel no added. Page 310,311,312 & 313: Text (OP 1) to (OP 16) added. Page 340,341 & 342: Text (ANO 1) to (ANO 3) and chart of proportional value. Page 210, 211, 212, 213, 214, 215, 340, 341, 342, 600 & 601: Correction of terminal numbers in text " Supplied to –X.."
00	2005-01-20	CHO+INI/FLT	First version

BoM no.: 60110471 *Document no.: 21000238*

Version	Date	Init./App.	Description of change since last revision
04	2008-02-19	BJMAD/FLT	Changed with ECO 235102 - 60098773 LASER LABEL +AK4 Replaced by 092992 MARKING LABELS +AK4 GENERAL 0,03 pc., 092993 MARKING LABELS +AK4 G400 G401 0,005 pc., 092994 MARKING LABELS +AK4 S01 X06 0,005 pc.

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03	2007-10-11	SHL+INI/BIVA	Changed with ECO 227533: 2 pcs. 60000719 PS ADC 5483R-3 10A-27,4 NM PIN replaced with 188453 Changed with ECO 227961: 60007584 CABLE GLAND BM-EN-11 M16 PA 6, 14 pcs. changed to 13 pcs. 60007592 LOCKNUT M16 PA6 BML-1S, 14 pcs. changed to 13 pcs. 60007585 CABLE GLAND BM-EN-12 M20 PA 6, 33 pcs. changed to 17 pcs. 193722 LOCKNUT MM20GPA POLYAMID, 33 pcs. changed to 17 pcs.
02	2007-07-26	INI/BIVA	Changed with ECO 227101_Holes for cable glands changed in bottom. 60007583 CABLE GLAND M12 changed from 1 pc. to 2 pcs. 60007591 LOCKNUT M12 changed from 1 pc. to 2 pcs. 60007584 CABLE GLAND M16 changed from 12 pcs. to 14 pcs. 60007592 LOCKNUT M16 changed from 12 pcs. to 14 pcs. 60007585 CABLE GLAND M20 changed from 36 pcs. to 33 pcs. 193722 LOCKNUT M20 changed from 36 pcs. to 33 pcs.
01	2007-07-03	SHL/FLT	MAPICS implementation, Controls DK Århus. Phased out 6005652 and replaced with 51701801_SIF HUB comp. cabinet.

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030	Panel Outline	080612	-
031	Panel outline	081217	-
032	Panel Right-hand Side	080612	-
033	Bottom Layout of Glands	080612	-
034	Panel Front	080612	-
035	Flange for X06 CEE Socket	081217	-
036	Flange for X06 UL Socket	081217	-
037	Flange for X06 Australian	081217	-
040	External connections	080612	-
041	Connection for sliprings	080612	-
059	Terminal layout X09	080612	-
061	External connections	080612	-
062	External connections	080612	-
070	External connections inpu	080612	-
071	External connections inpu	080612	-
072	External connections inpu	080612	-
073	External connections outp	080612	-
074	External connections outp	080612	-
075	External connections outp	080612	-
076	External connections outp	080612	-
077	External Connections Prop	080612	-
080	Connestions f. Sliprings	080612	-
100	Power supply 24V DC Propv	081217	-
101	Power supply 24V DC norma	081217	-
102	Power supply for Input X1	081217	-
103	Isolation amplifier 4-20m	081217	-
105	Emergency relay 24 V DC3	081217	-
110	OPTION Terminal loyout he	081217	-
210	Digital input -X15 DI 4	081217	-
211	Digital input -X16 DI 8	081217	-
212	Digital input -X17 CNT1	081217	-
213	Digital input -X18 DI 1	080612	-
214	Analog input -X18 Press	080612	-
215	Analog input -X19 AN1 =	081217	-

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14:50

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	Date	Initials	Function	Table of Contents		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. 05	Drawing no. 6015908	Cont. sheet 002	Sheet 001

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PAGE	CONTENT	DATE	REVISION
216	Temp. input -X20 Temp 1	080612	-
310	Digital output -X2 OP1	080612	-
311	Digital output -X3 OP5	080612	-
312	Digital output -X5 OP9 =	080612	-
313	Digital output -X6 OP13	081217	-
340	Analog output -X8 OVUT1	080612	-
341	Analog output -X9 OVUT2	080612	-
342	Analog output -X10 OVUT	080612	-
343	Emergency line	081217	-
500	Bus communication RS 485	080612	-
600	NAV Computer input	080612	-
601	NAV Computer output	080612	-
602	NAV Computer supply	080612	-

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	Date	Initials	Function	Table of Contents		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. 05	Drawing no. 6015908	Cont. sheet 030	Sheet 002

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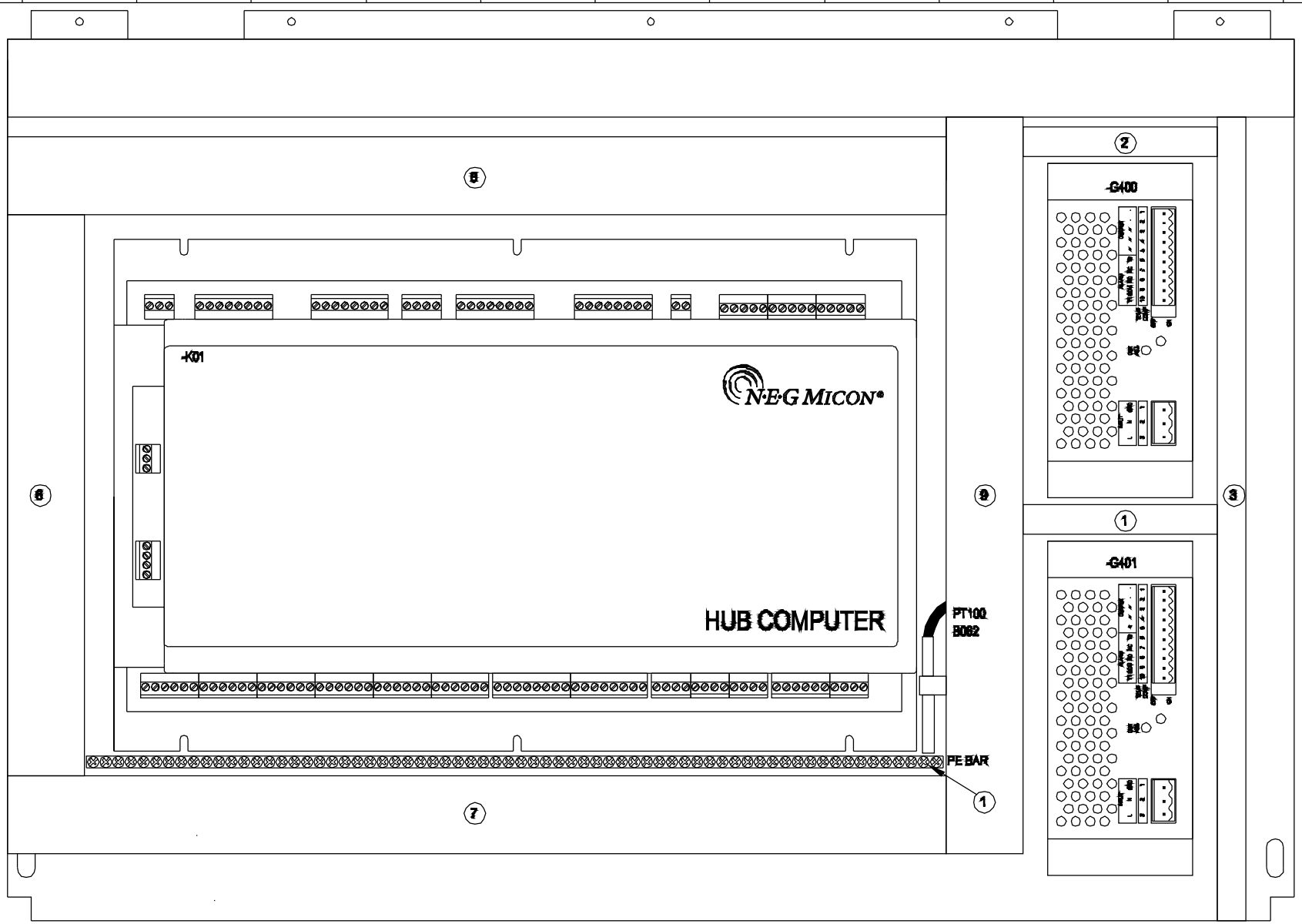

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel Outline	
		Designed	050120	CHO	Project title	Hub Computer Panel +AK4	
		Approved	080612	OLZED	Comments	V82-1.65MW	Customer: Vestas Wind Systems A/S
		Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 031 / Sheet 030

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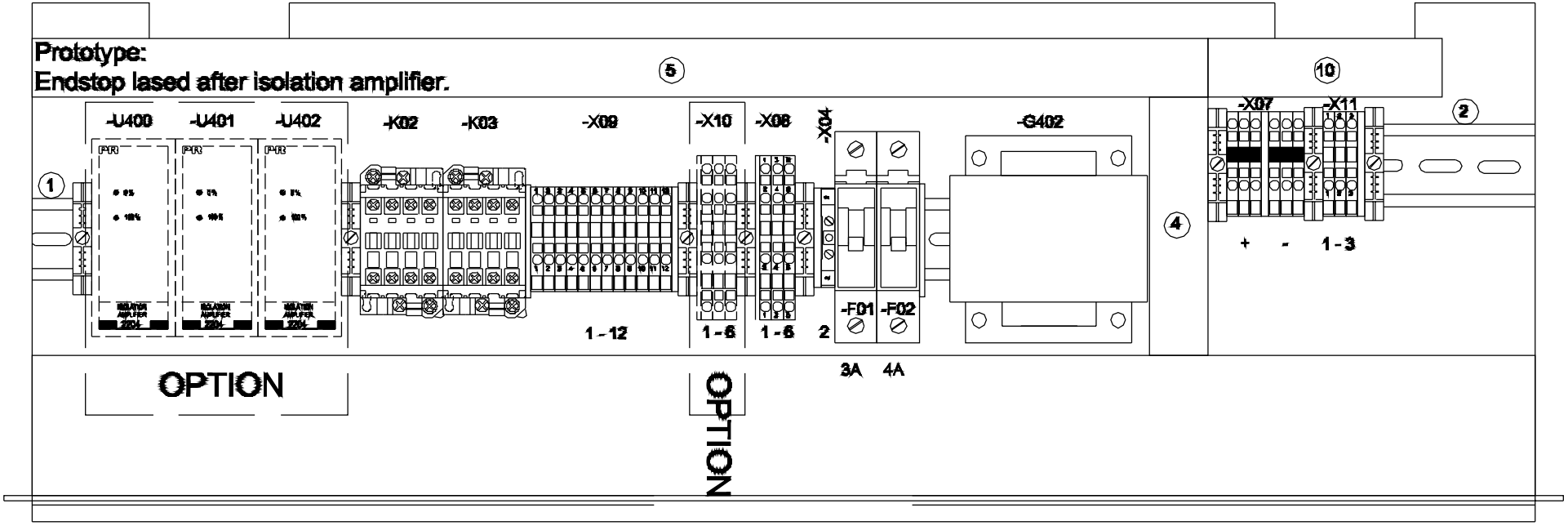

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel outline
		Designed	050120	CHO	Project title	Hub Computer Panel +AK4
		Approved	081217	PRO	Comments	V82-1.65MW
		Revised	081217	INI	Rev. -	Drawing no. 6015908

Customer: Vestas Wind Systems A/S
Cont. sheet: 032
Sheet: 031

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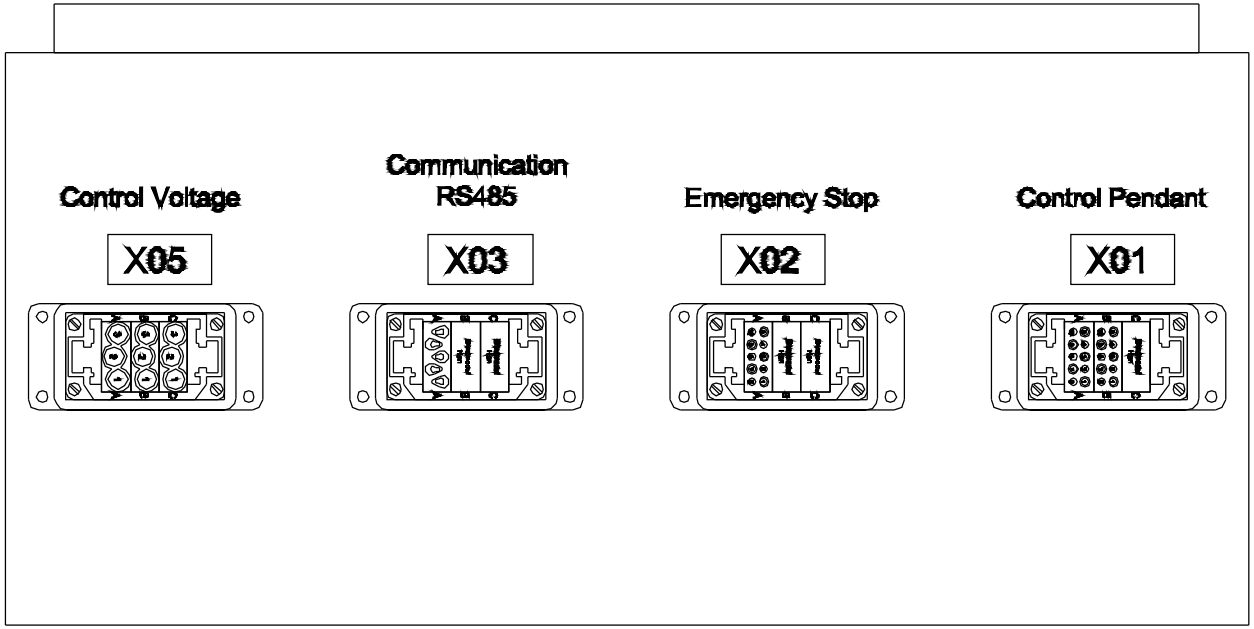

Module C: C1 and C2 230V AC Heating
Module B: 1 and 2 24 V DC After Emergency
Module A: A1 and A2 230V AC Power supply

Module C: Blind
Module B: Blind
Module A: 1,3 and 5

Module C: Blind
Module B: Blind
Module A: 1 and 3

Module C: Blind
Module B: 1 and 2
Module A: Complete

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	Date	Initials	Function	Panel Right-hand Side		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 033	Sheet 032

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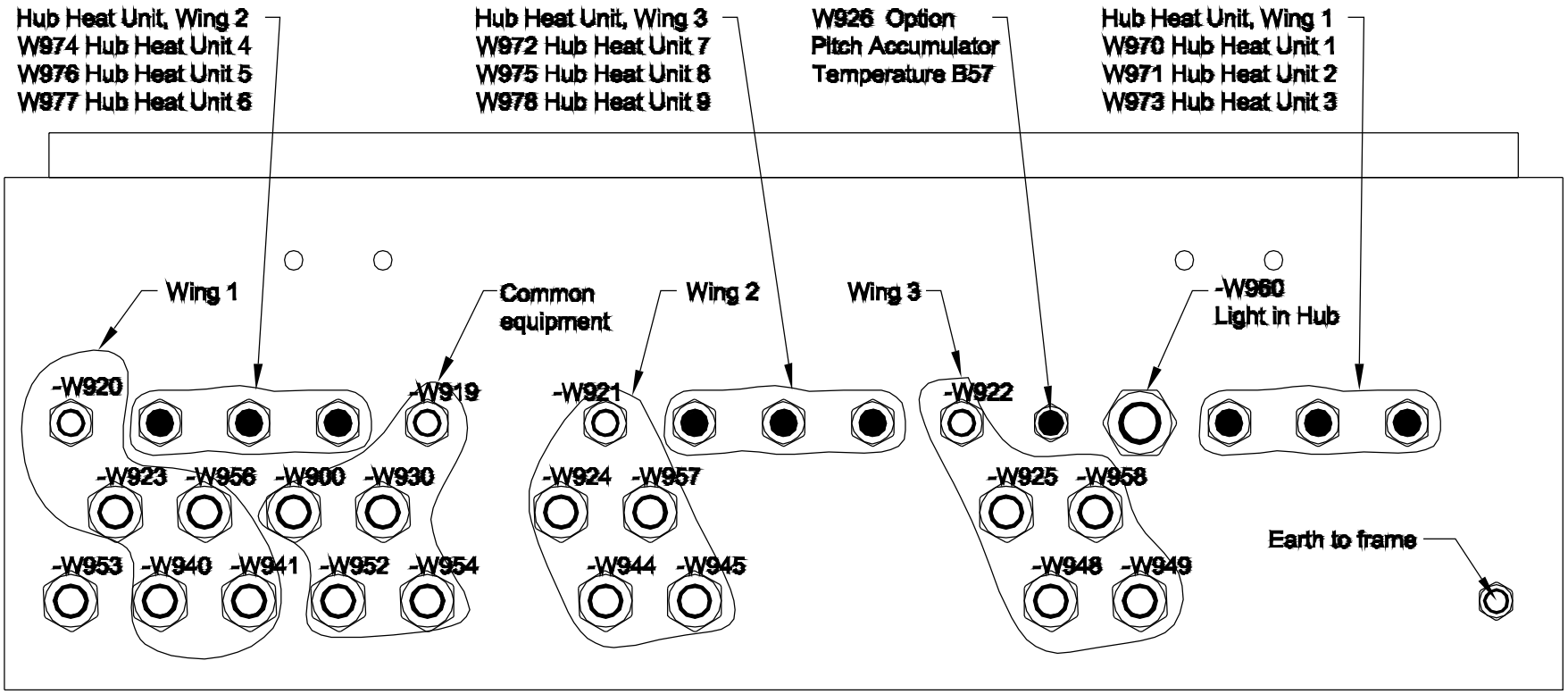

Bottom

	Date	Initials				
Designed	050120	CHO	Function	Bottom Layout of Glands		
Approved	080612	OLZED	Project title	Hub Computer Panel +AK4		
Revised	080612	INI	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
			Rev.	-	Drawing no. 6015908	Cont. sheet 034 / Sheet 033

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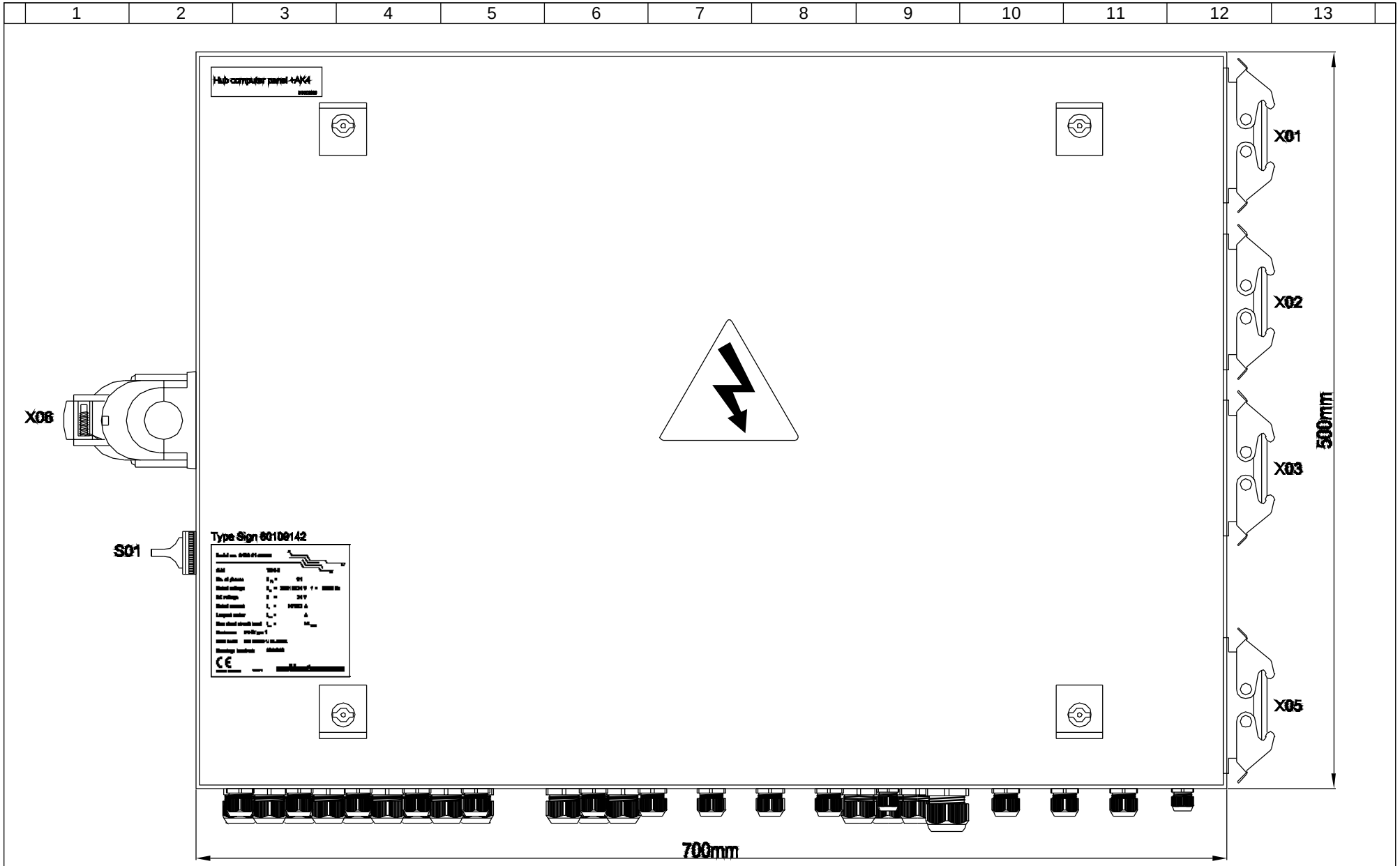

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Panel Front	
		Designed	050120	CHO	Project title	Hub Computer Panel +AK4	
		Approved	080612	OLZED	Comments	V82-1.65MW	Customer: Vestas Wind Systems A/S
		Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 035 / Sheet 034

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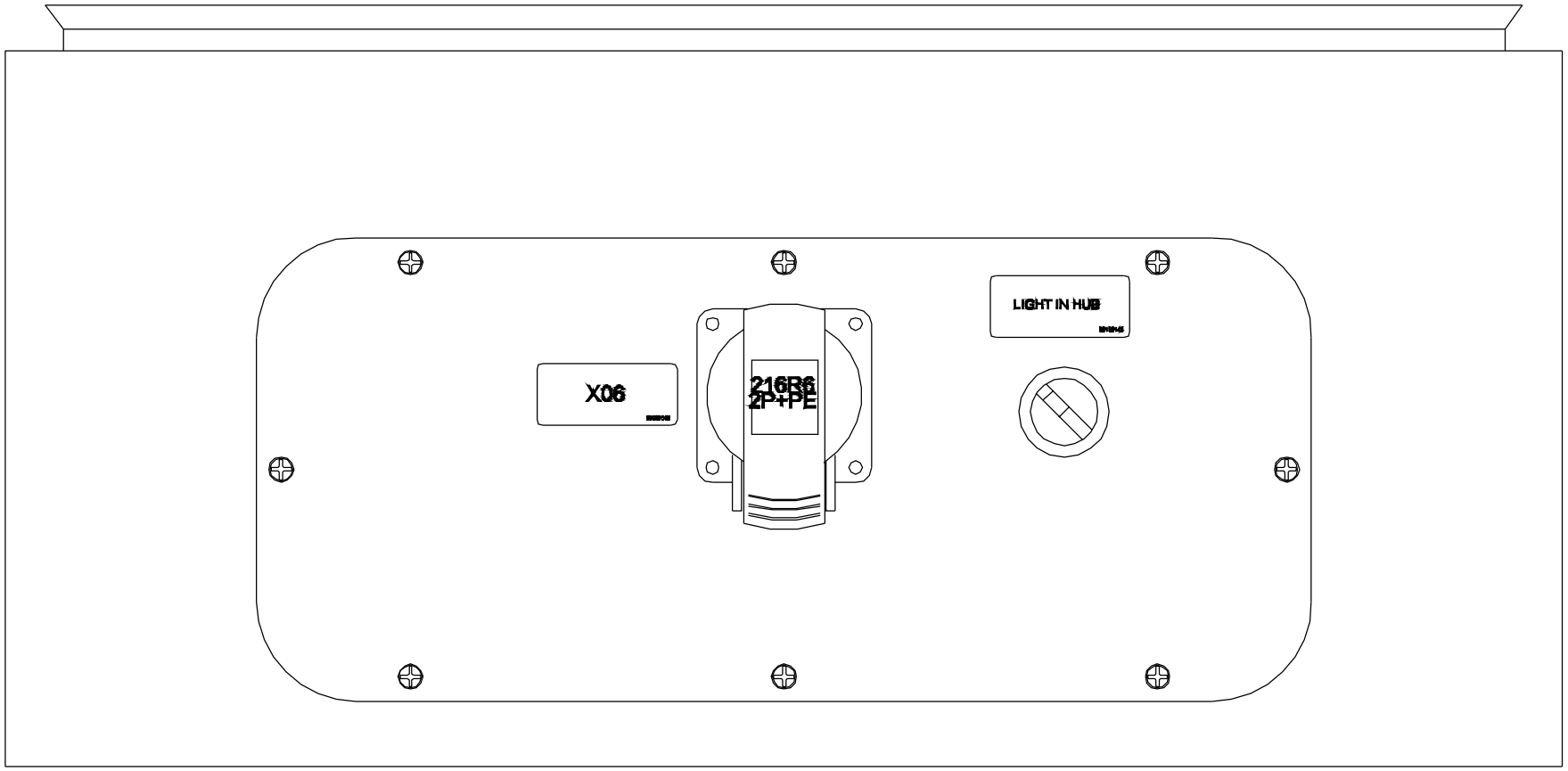

	Date	Initials	Function	Flange for X06 CEE Socket		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 036	Sheet 035

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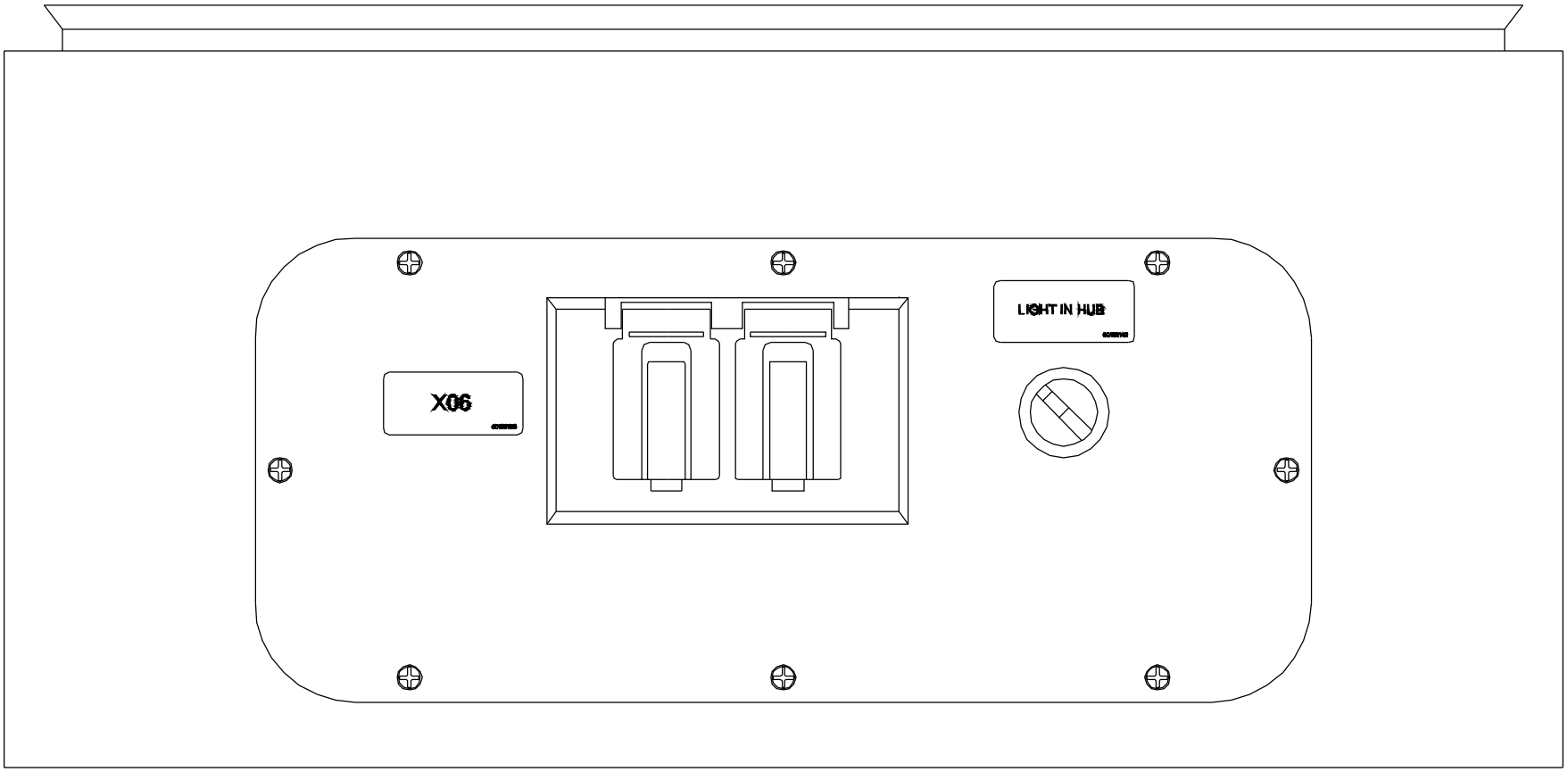

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Flange for X06 UL Socket	
		Designed	050120	CHO	Project title	Hub Computer Panel +AK4	
		Approved	081217	PRO	Comments	V82-1.65MW	Customer: Vestas Wind Systems A/S
		Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 037 / Sheet 036

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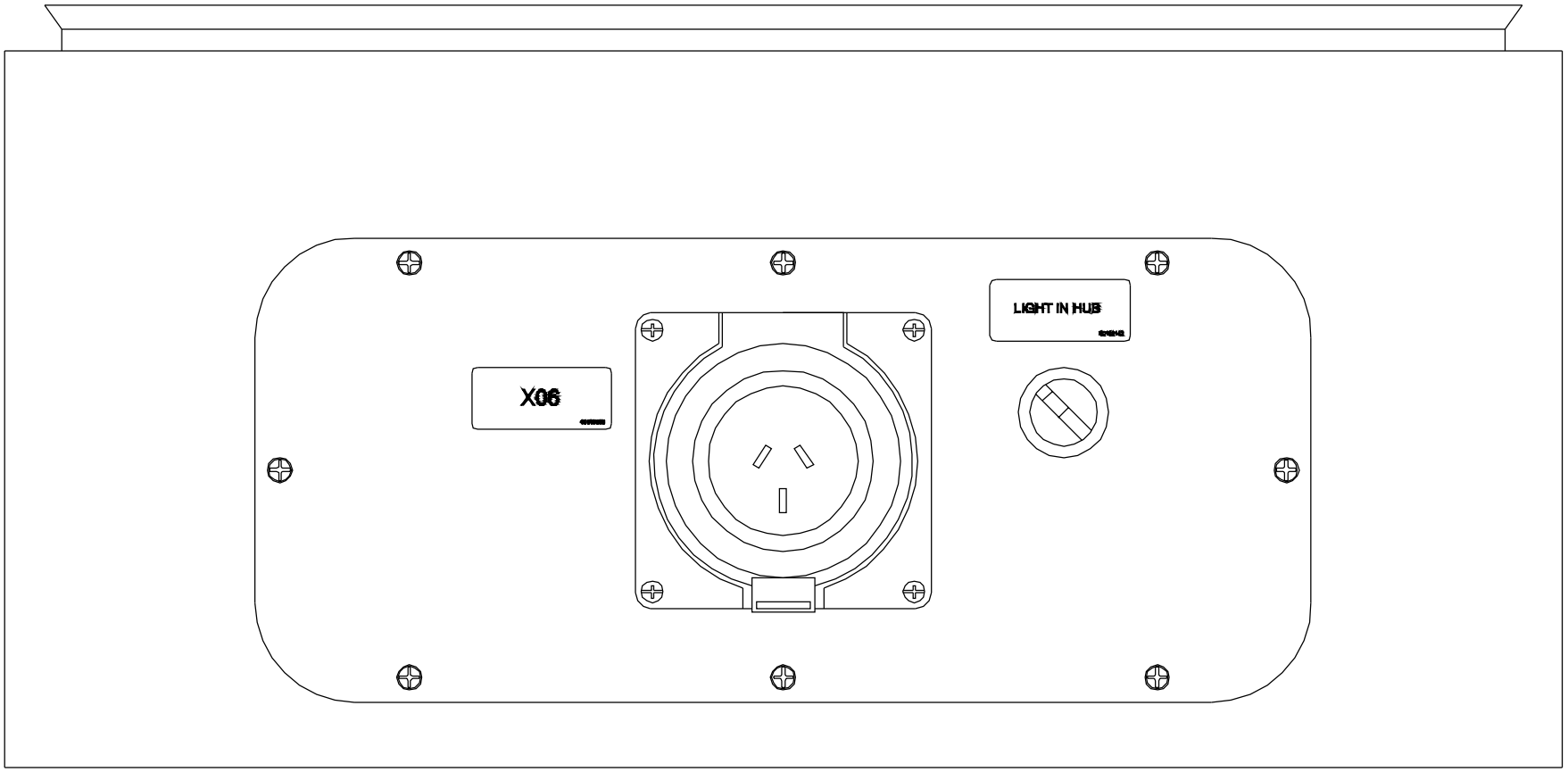

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	Date	Initials	Function	Flange for X06 Australian Socket		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 040	Sheet 037

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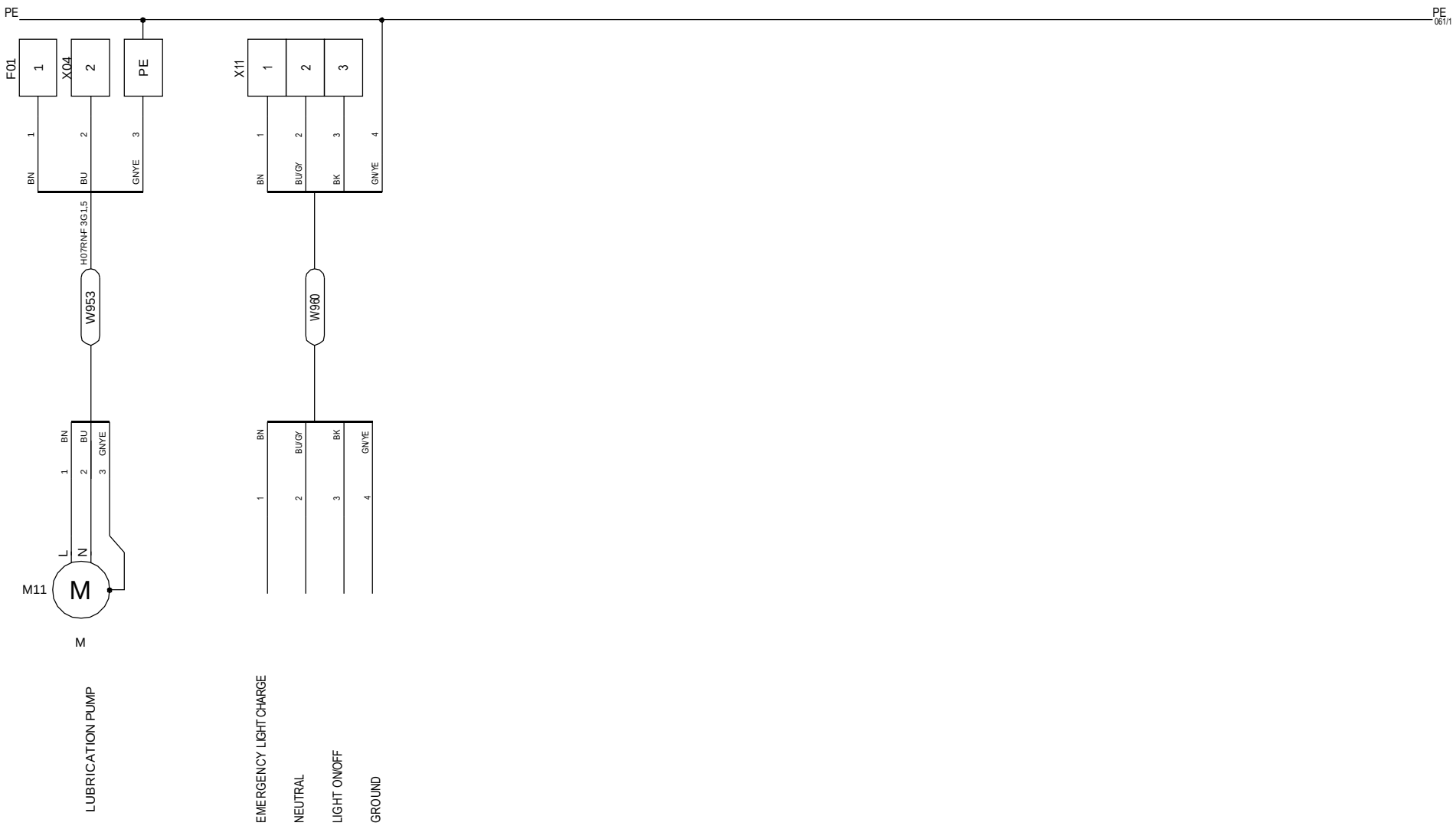

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	Date	Initials	Function	External connections		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 041	Sheet 040

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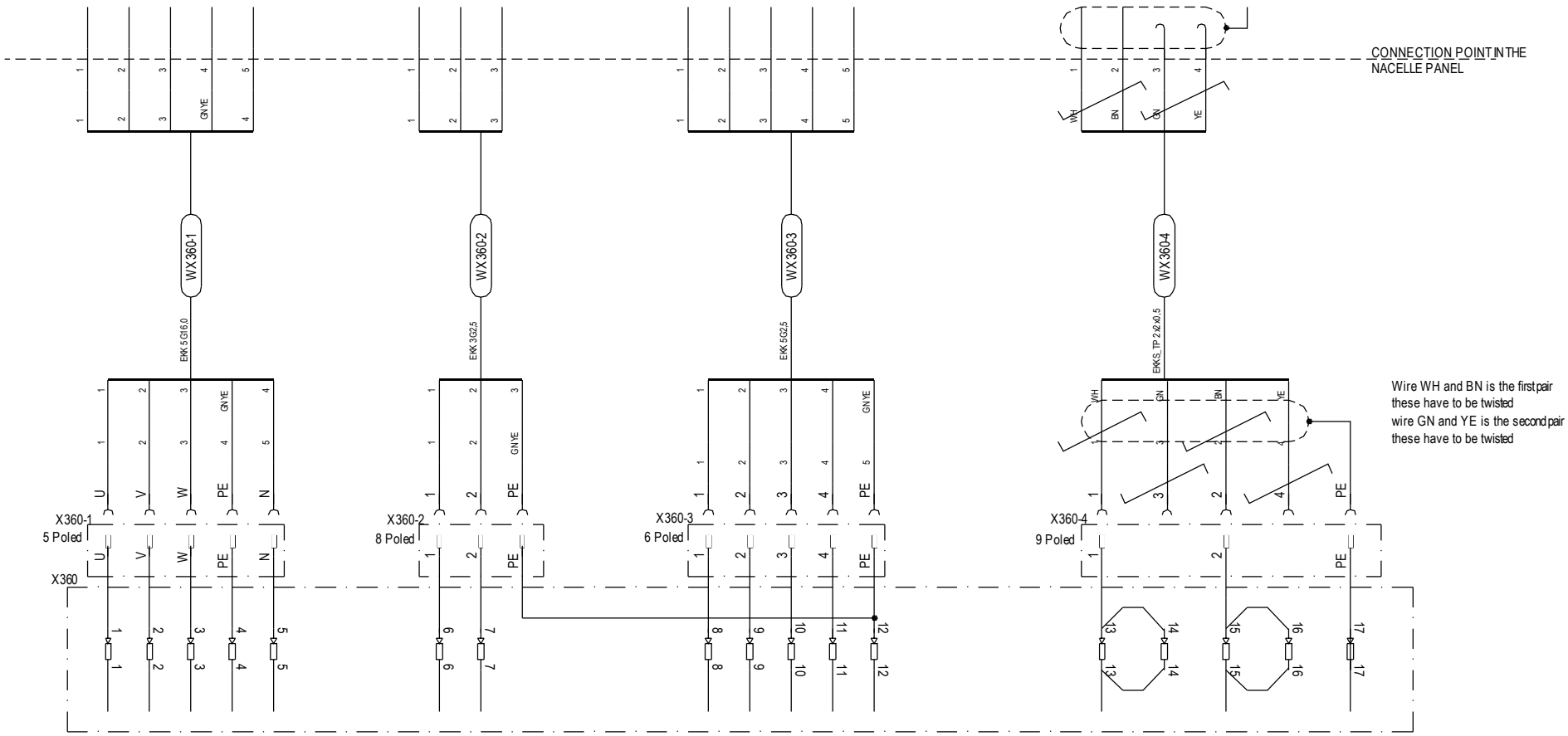

	Date	Initials	Function	Connection for sliprings		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 059	Sheet 041

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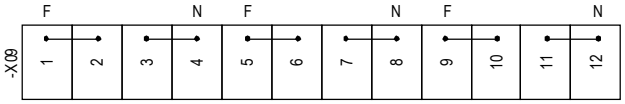

Connection of heating elements
UL 115V AC Turbines connections.
IEC 230V AC Turbines connections.

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	Date	Initials	Function	Terminal layout X09		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 061	Sheet 059

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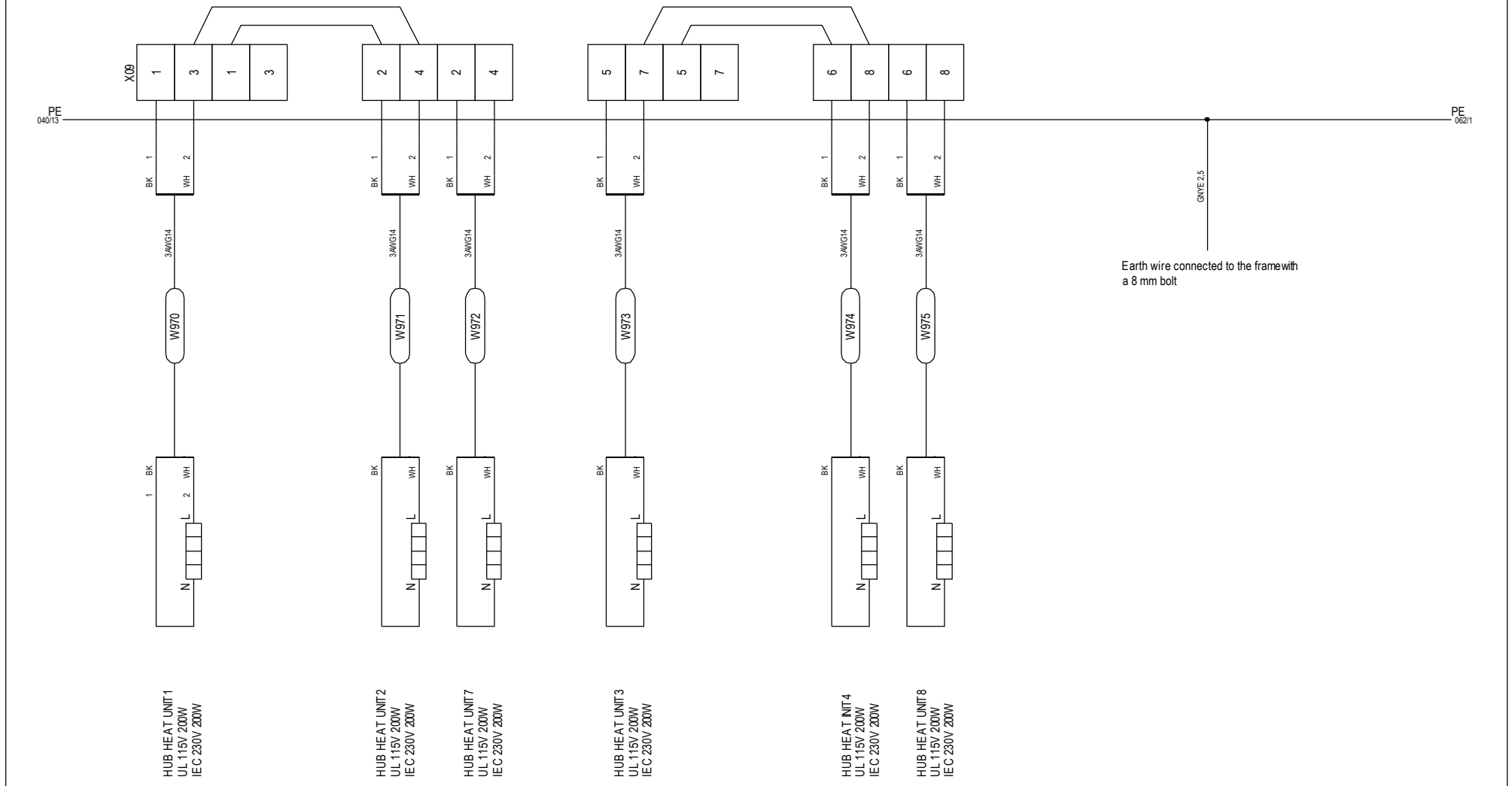
HEAT UNIT CONNECTION IN TURBINES



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	Date	Initials	Function	External connections		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 062	Sheet 061

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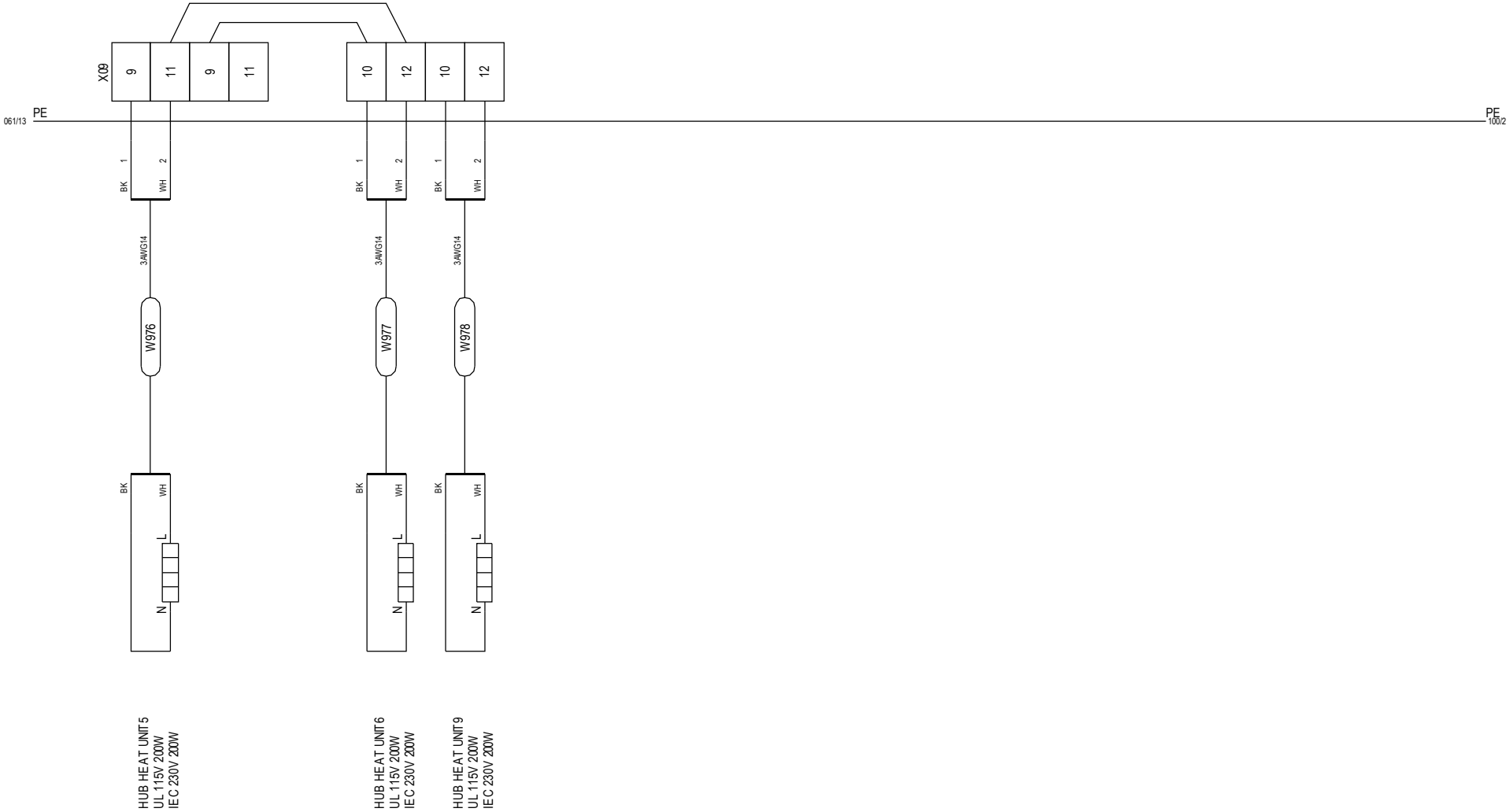
14:50

HEAT UNIT CONNECTION IN TURBINES



	Date	Initials	Function	External connections		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 070	Sheet 062

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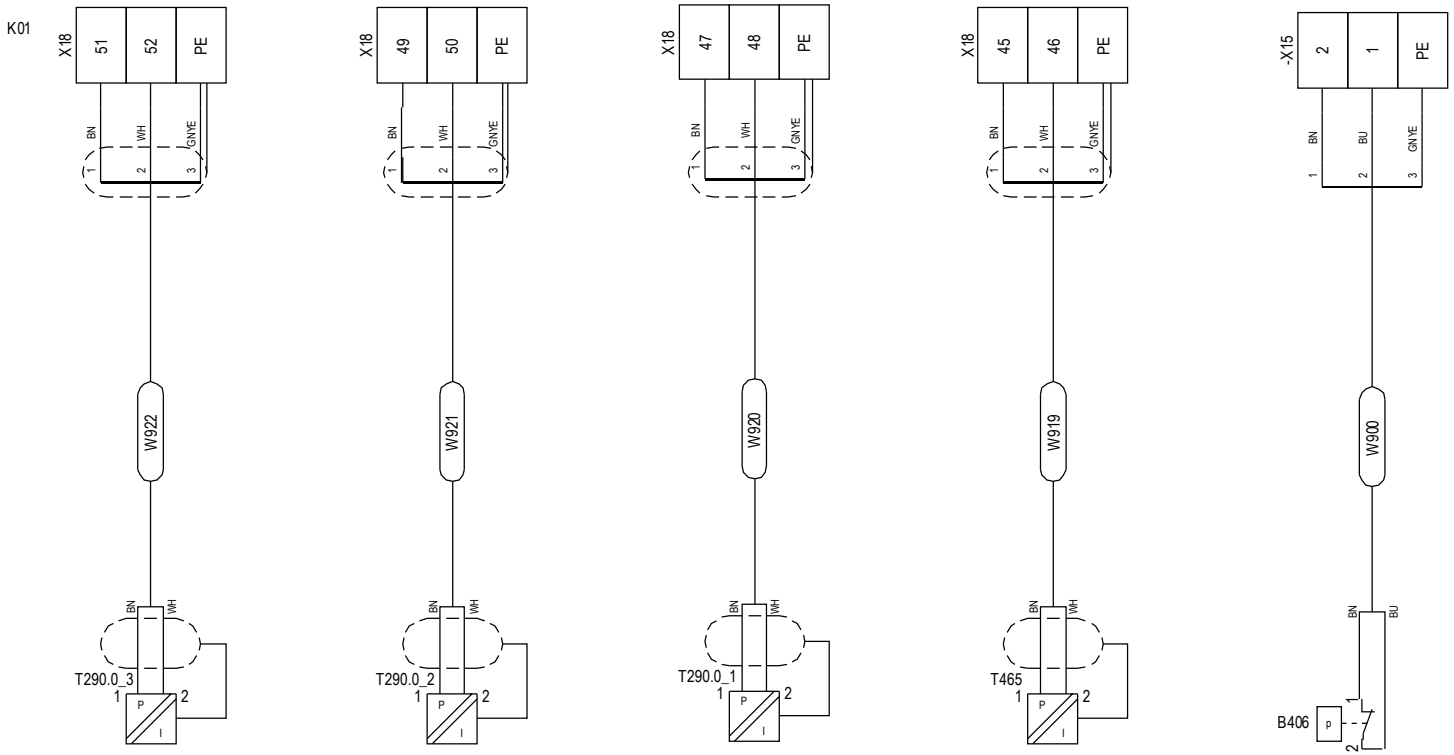

	Date	Initials	Function	External connections input analog		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 071	Sheet 070

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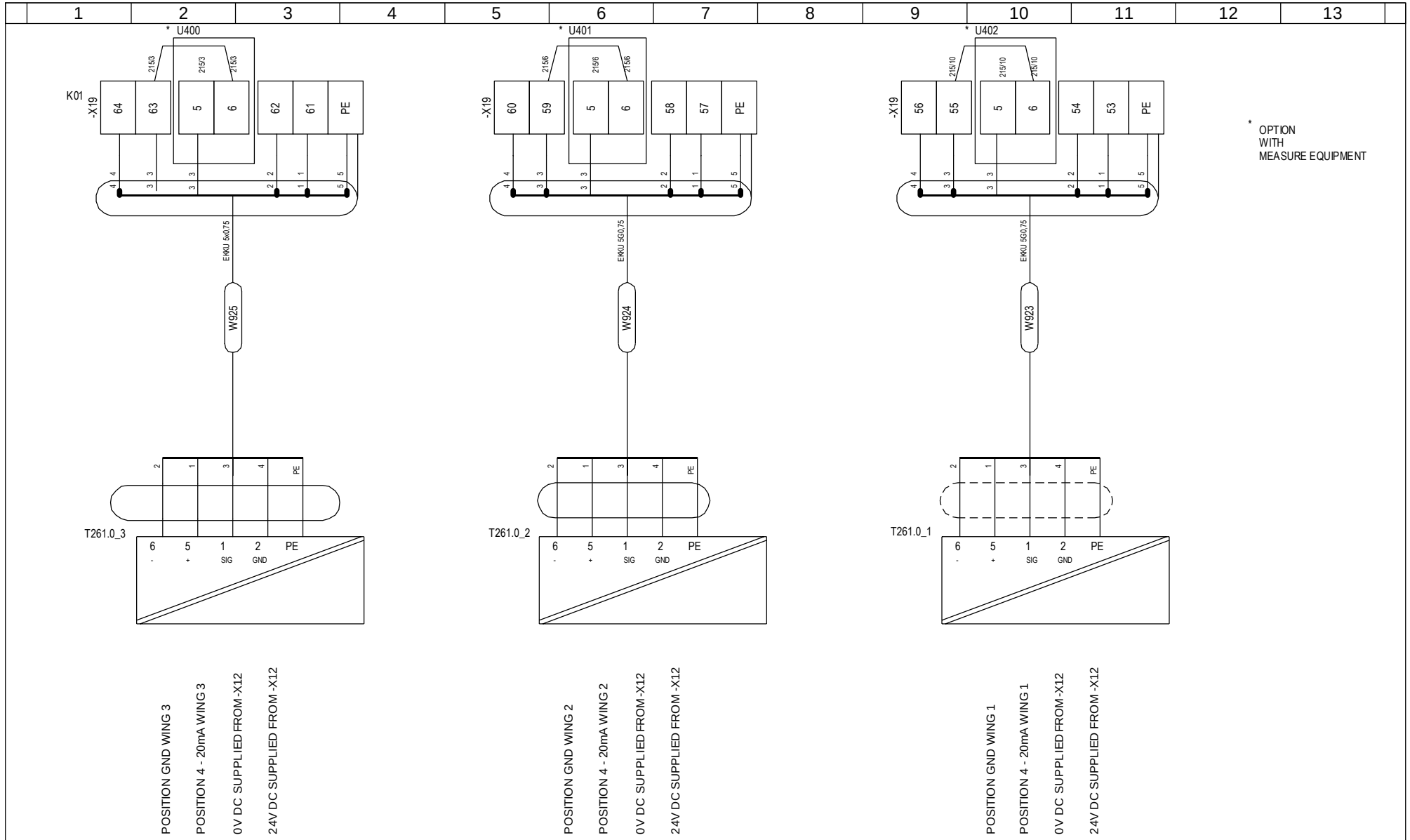

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	Date	Initials	Function	External connections input analog		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 072	Sheet 071

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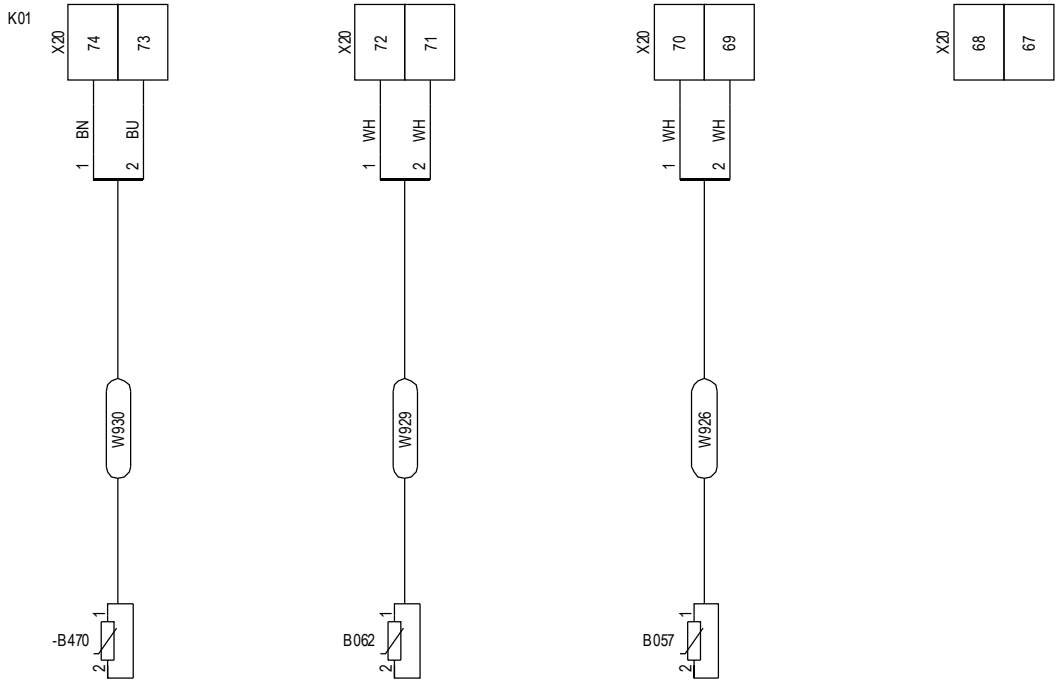

HYDR. OIL TEMP. -B470

TEMPERATURE I HUB PANEL

OPTION
PITCH ACCUMULATOR
TEMPERATURE B57

SPARE

	Date	Initials	Function	External connections input analog			
Designed	050120	CHO	Project title	Hub Computer Panel +AK4			
Approved	080612	OLZED	Comments	V82-1.65MW		Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908		Cont. sheet 073	Sheet 072

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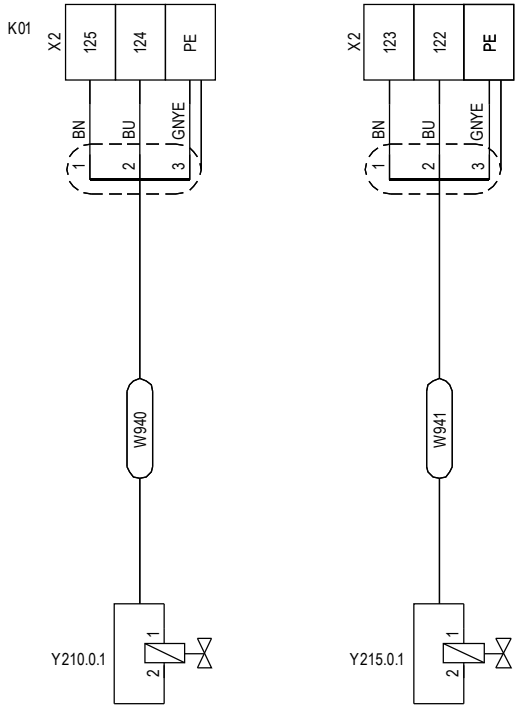
14:50



PARKING VALVE Y210.0_1
WING 1

SHUT DOWN VALVE Y215.0_1
WING 1

	Date	Initials	Function	External connections output analog		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 074	Sheet 073

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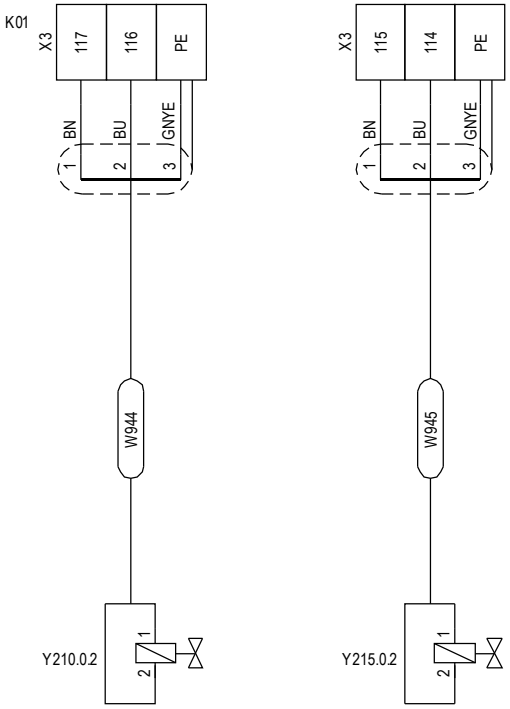

	Date	Initials	Function	External connections output analog		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 075	Sheet 074

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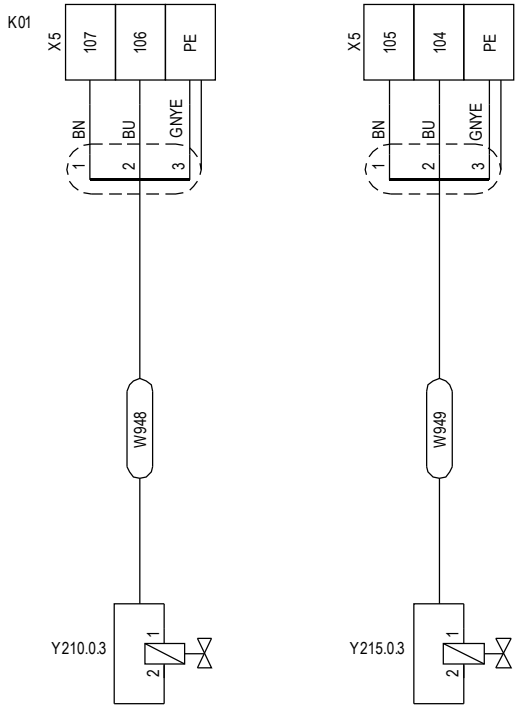

PARKING VALVE Y210.0_3
WING 3

SHUT DOWN VALVE Y215.0_3
WING 3

	Date	Initials	Function	External connections output analog		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 076	Sheet 075

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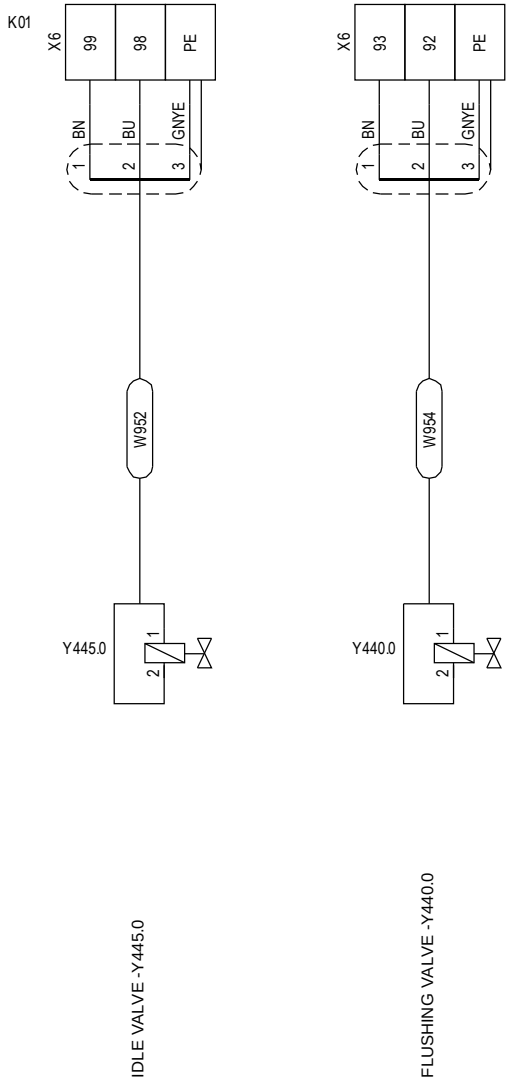

	Date	Initials	Function	External connections output Digital		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 077	Sheet 076

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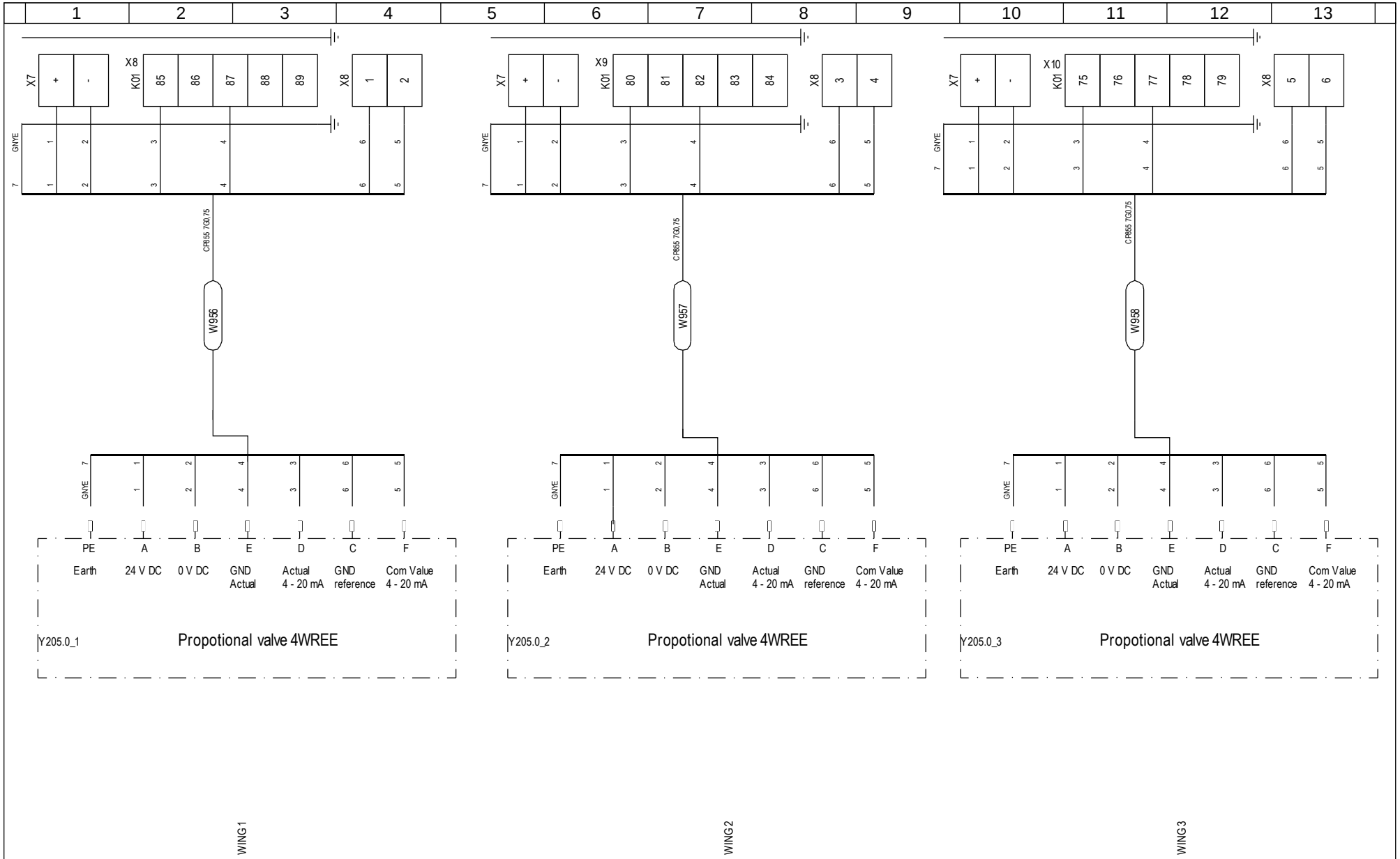

	Date	Initials	Function	External Connections Proportional valves		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 080	Sheet 077

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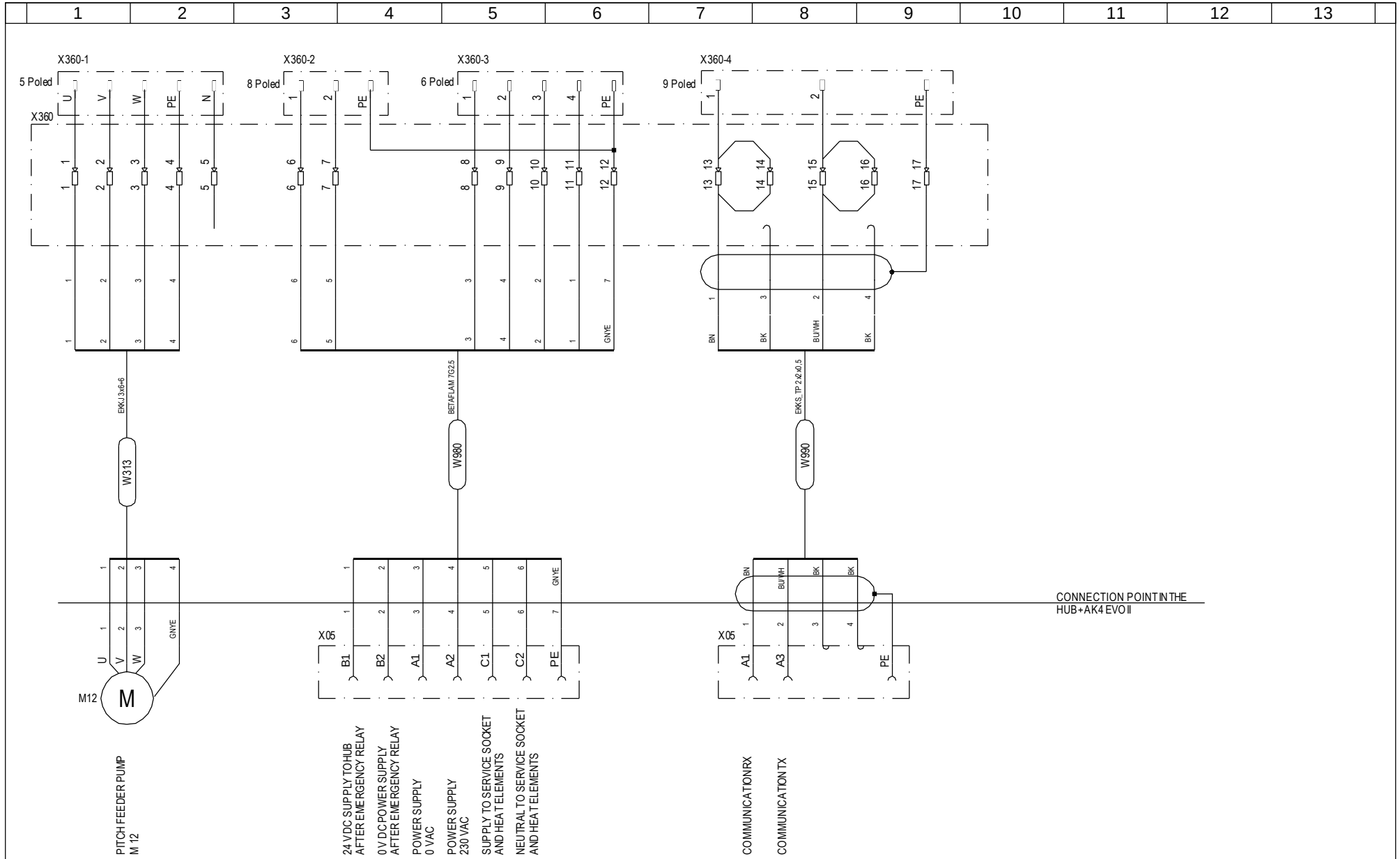

	Date	Initials	Function	Connestions f. Sliprings		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 100	Sheet 080

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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

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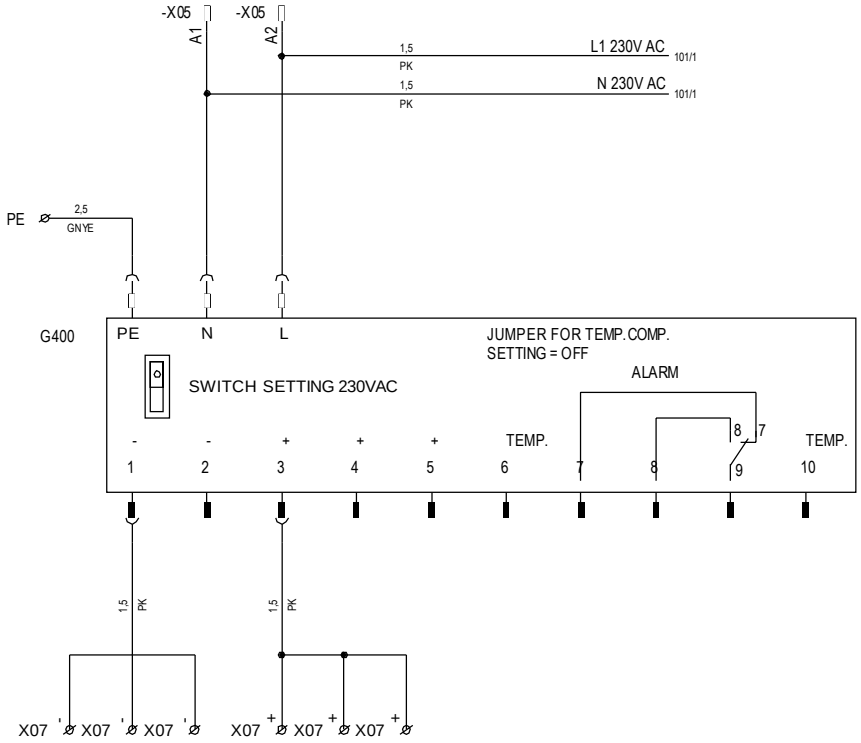

	Date	Initials	Function	Power supply 24V DC Propvent			
Designed	050120	CHO	Project title	Hub Computer Panel +AK4			
Approved	081217	PRO	Comments	V82-1.65MW		Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908		Cont. sheet 101	Sheet 100

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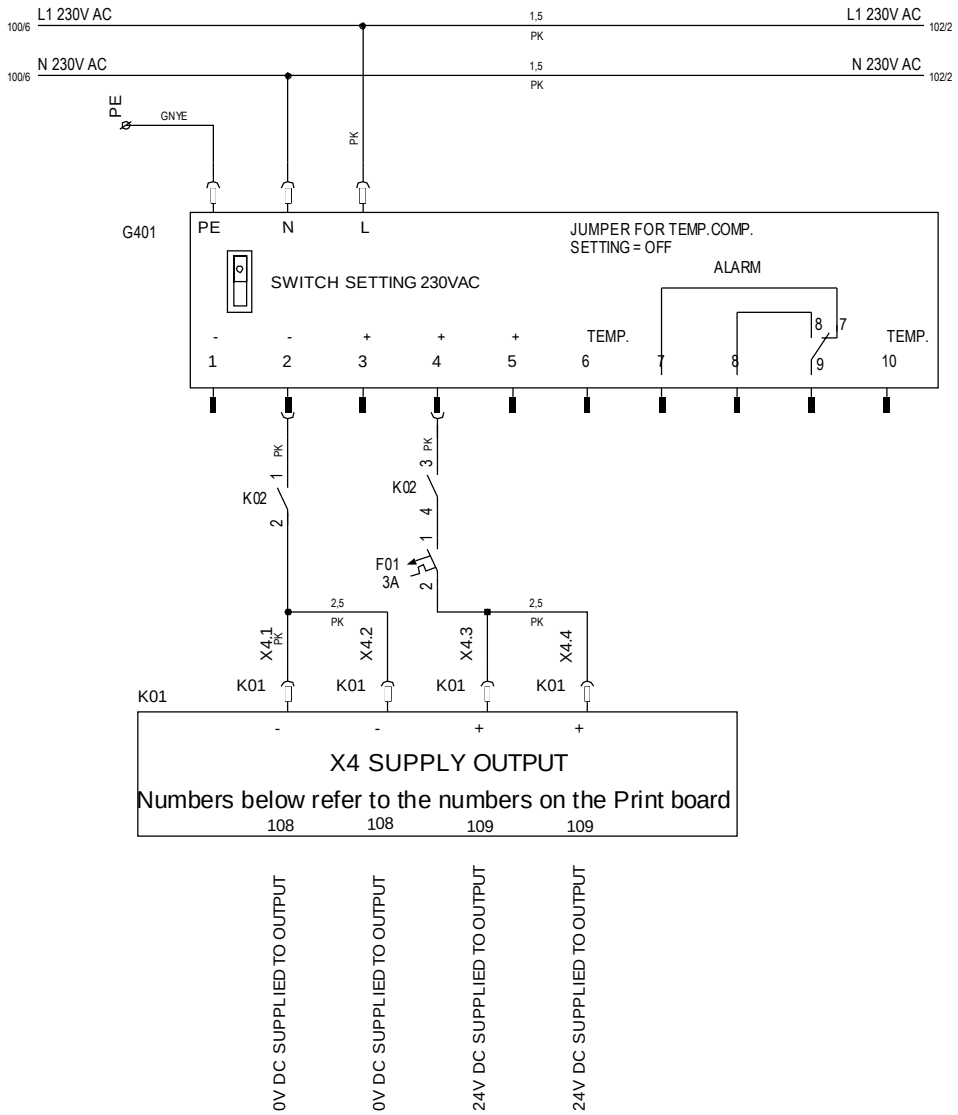

	Date	Initials	Function	Power supply 24V DC normal valves		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 102	Sheet 101

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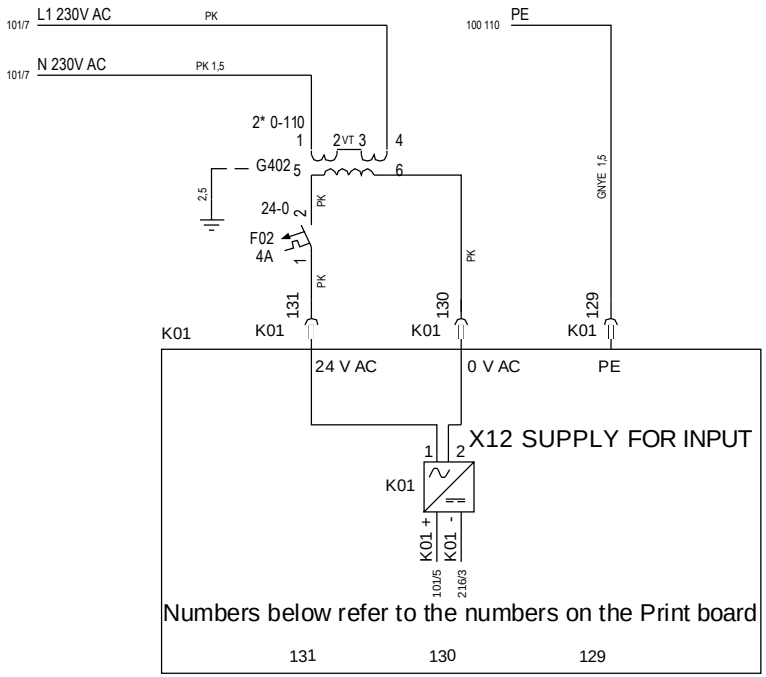

24V AC SUPPLY
ON INPUT TERMINALS

0V AC SUPPLY
ON INPUT TERMINALS

EARTH

Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Power supply for Input X12
		Designed	050120	CHO	Project title	Hub Computer Panel +AK4
		Approved	081217	PRO	Comments	V82-1.65MW
		Revised	081217	INI	Rev.	-

Customer: Vestas Wind Systems A/S
Drawing no. 6015908
Cont. sheet 103
Sheet 102

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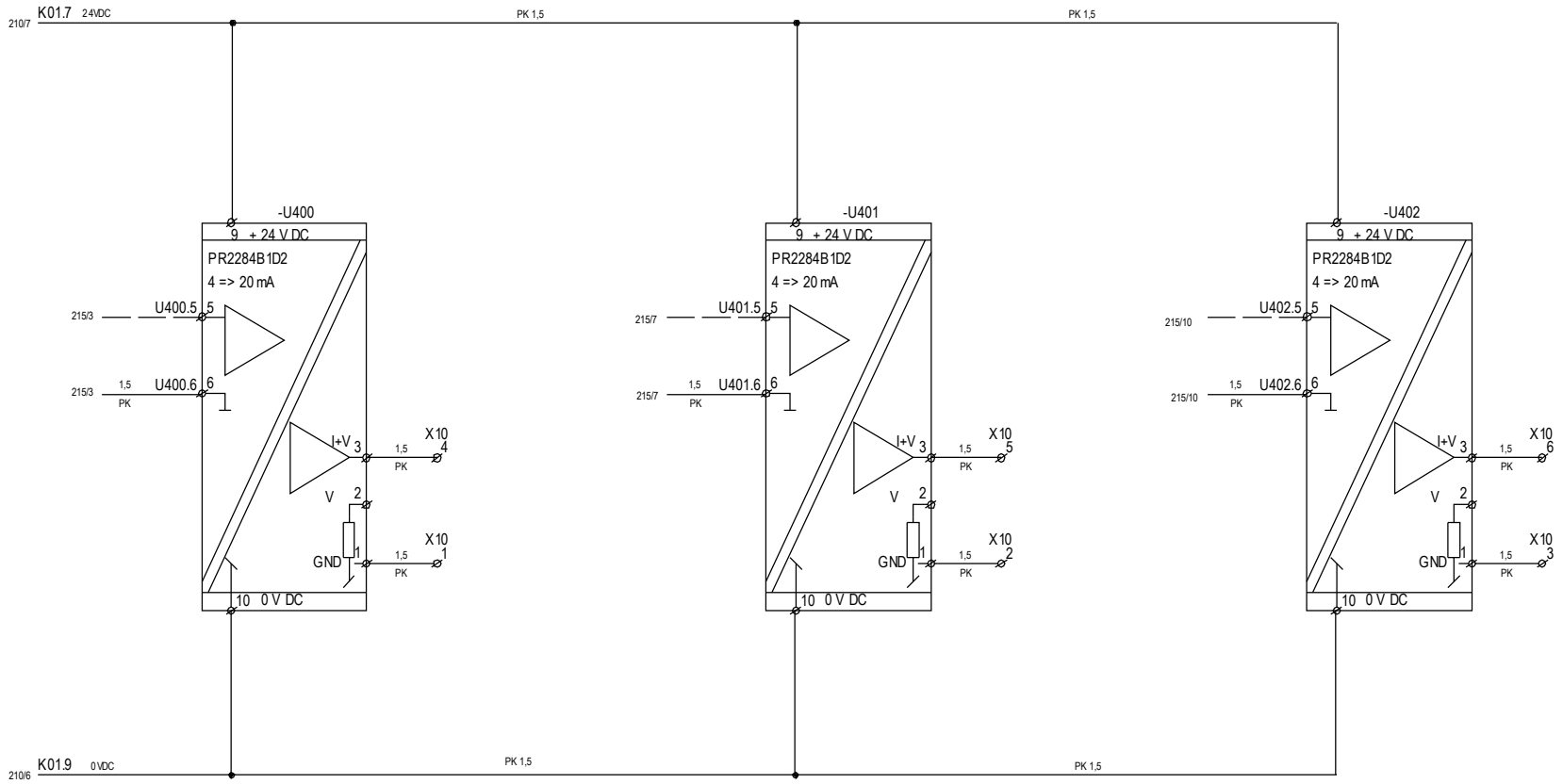

OPTION

WING3 WING2 WING1

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		Designed	050120	CHO	Project title	Hub Computer Panel +AK4
		Approved	081217	PRO	Comments	V82-1.65MW
		Revised	081217	INI	Rev. -	Drawing no. 6015908

Customer: Vestas Wind Systems A/S
Cont. sheet: 105
Sheet: 103

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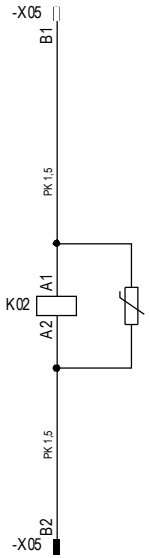
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

1	2	3	4	5	6	7	8	9	10	11	12	13



Vestas	Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.		Date	Initials	Function	Emergency relay 24 V DC3 from Nacelle	
		Designed	050120	CHO	Project title	Hub Computer Panel +AK4	
		Approved	081217	PRO	Comments	V82-1.65MW	Customer: Vestas Wind Systems A/S
		Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 110 / Sheet 105

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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

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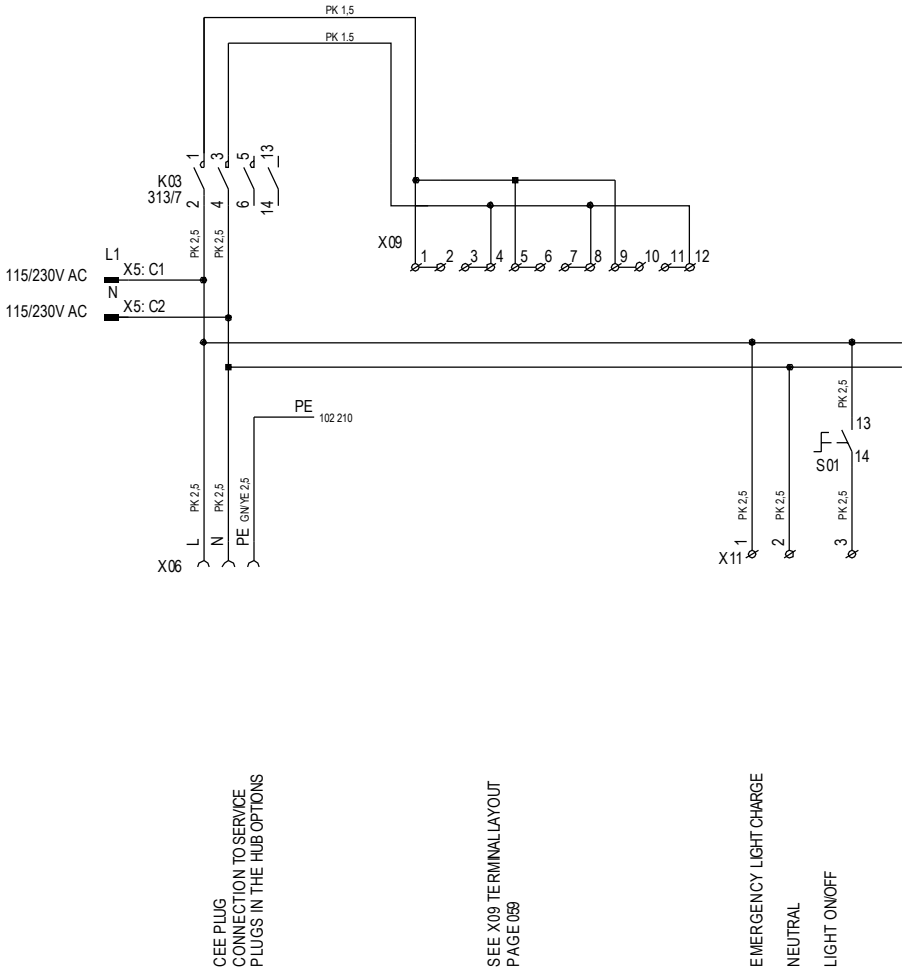

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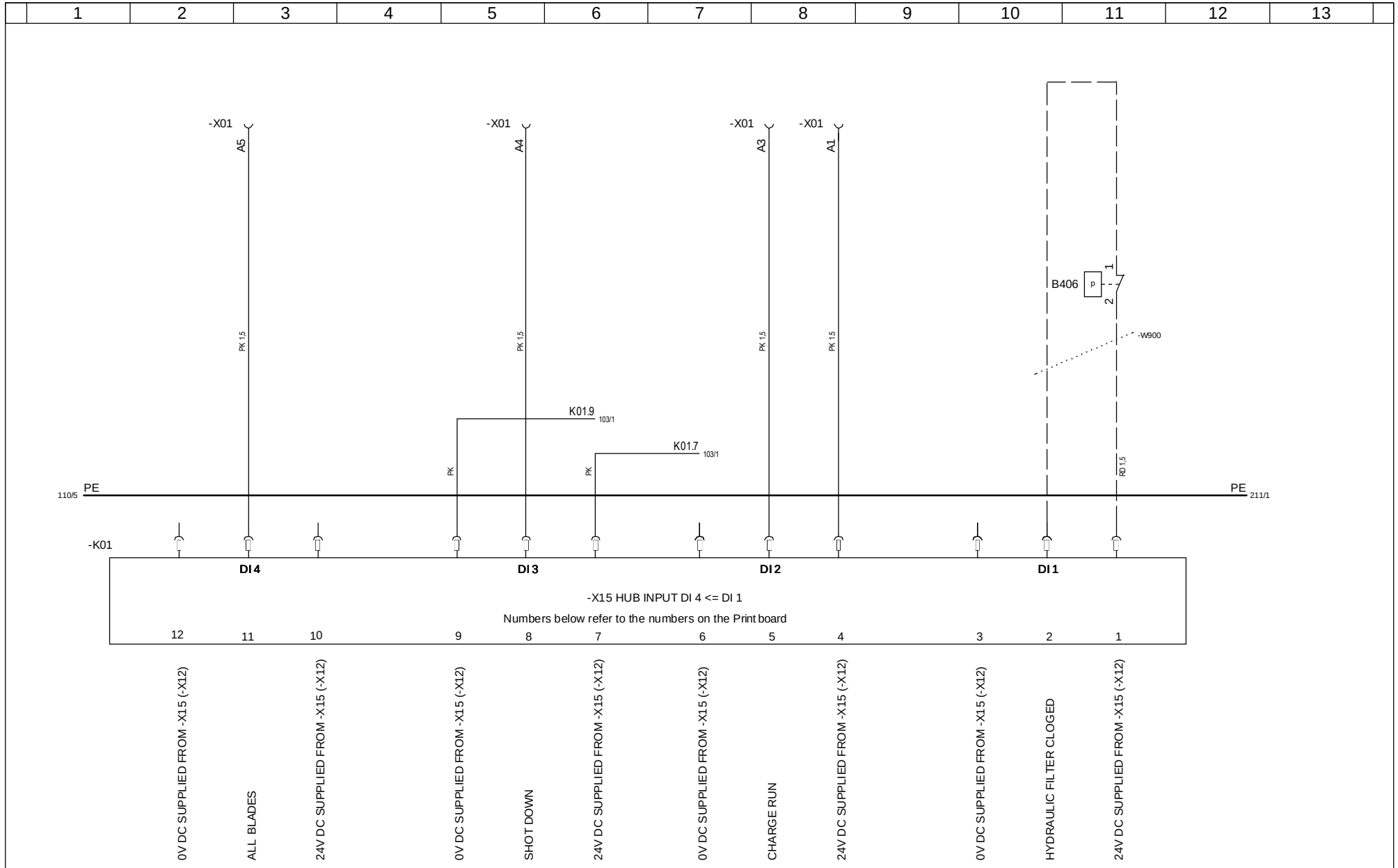
	Date	Initials	Function	OPTION Terminal loyout heating		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 210	Sheet 110

VESTAS PROPRIETARY NOTICE

T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



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	Date	Initials	Function	Digital input -X15 DI 4 => DI 1		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 211	Sheet 210

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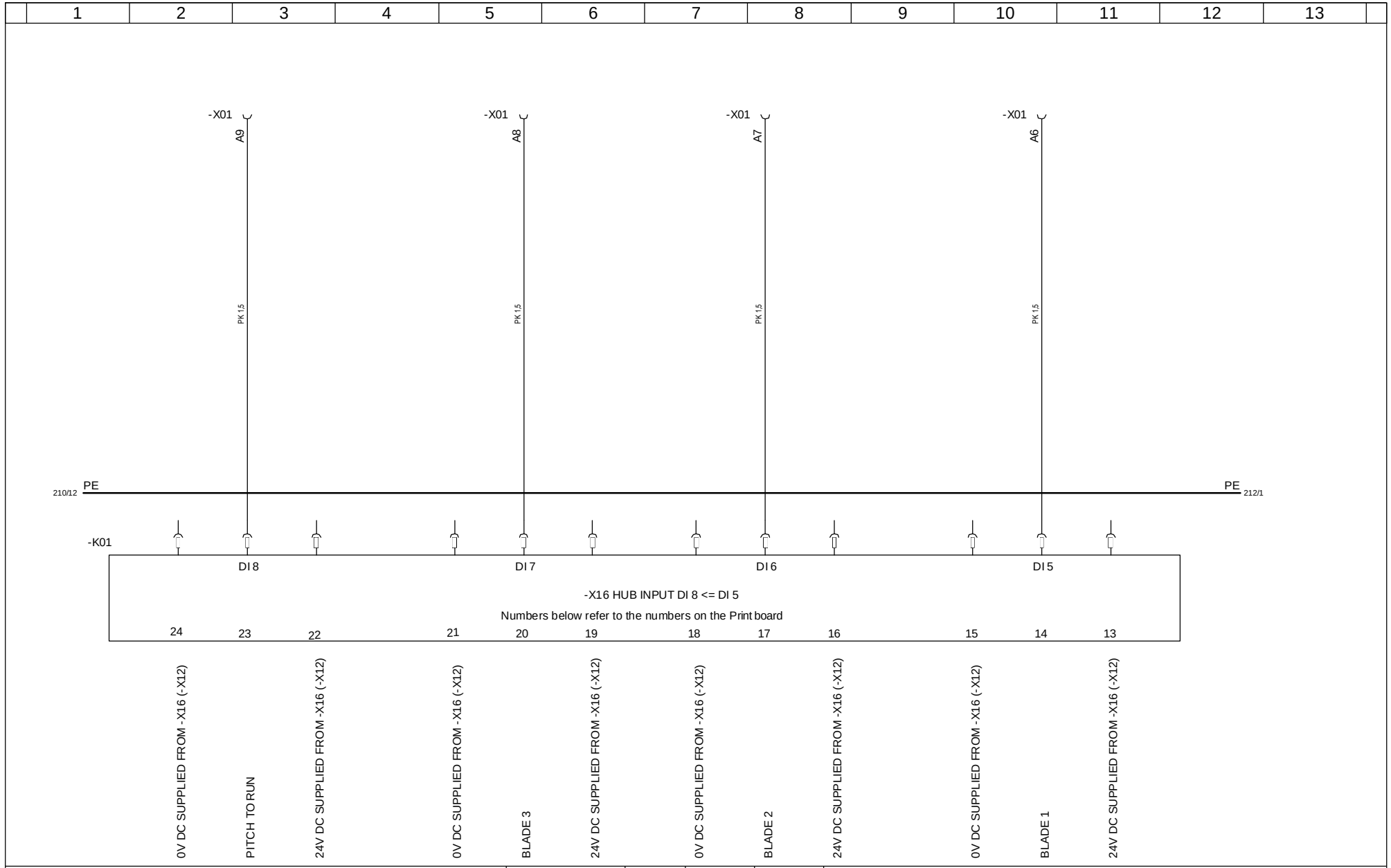

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	Date	Initials	Function	Digital input -X16 DI 8 => DI 5		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 212	Sheet 211

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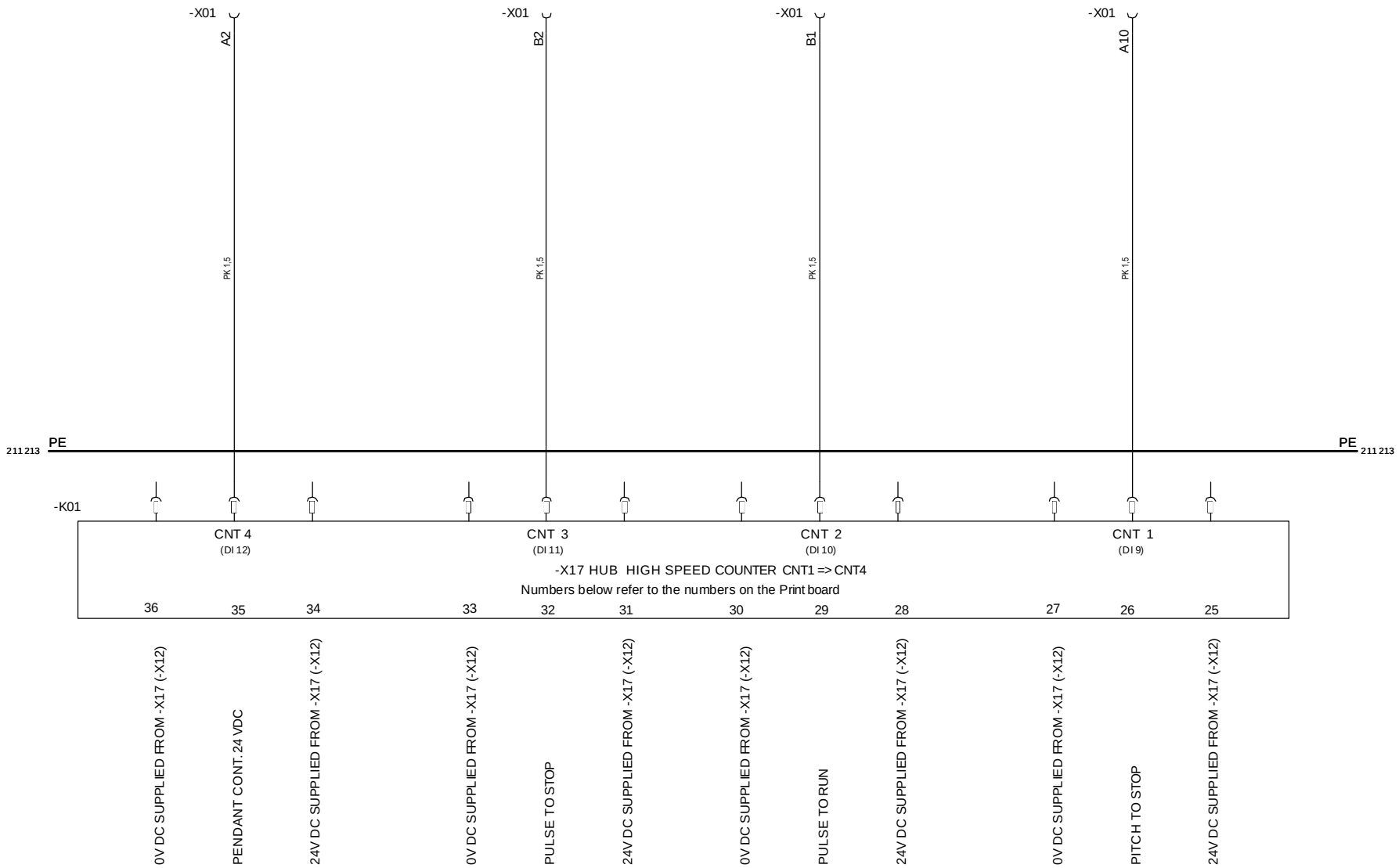

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	Date	Initials	Function	Digital input -X17 CNT1 => CNT4		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 213	Sheet 212

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212/12 PE — PE 214/1

-K01

DI 16		DI 15		DI 14		DI 13	
-X18_1 HUB INPUT DI 16 <= DI 13							
Numbers below refer to the numbers on the Print board							
44	43	42	41	40	39	38	37
SPARE	24V DC SUPPLIED FROM -X18 (-X12)	SPARE	24V DC SUPPLIED FROM -X18 (-X12)	SPARE	24V DC SUPPLIED FROM -X18 (-X12)	SPARE	24V DC SUPPLIED FROM -X18 (-X12)

ONLY FOR INTERNAL USE !

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	Date	Initials	Function	Digital input -X18 DI 16 <= DI 13		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 214	Sheet 213

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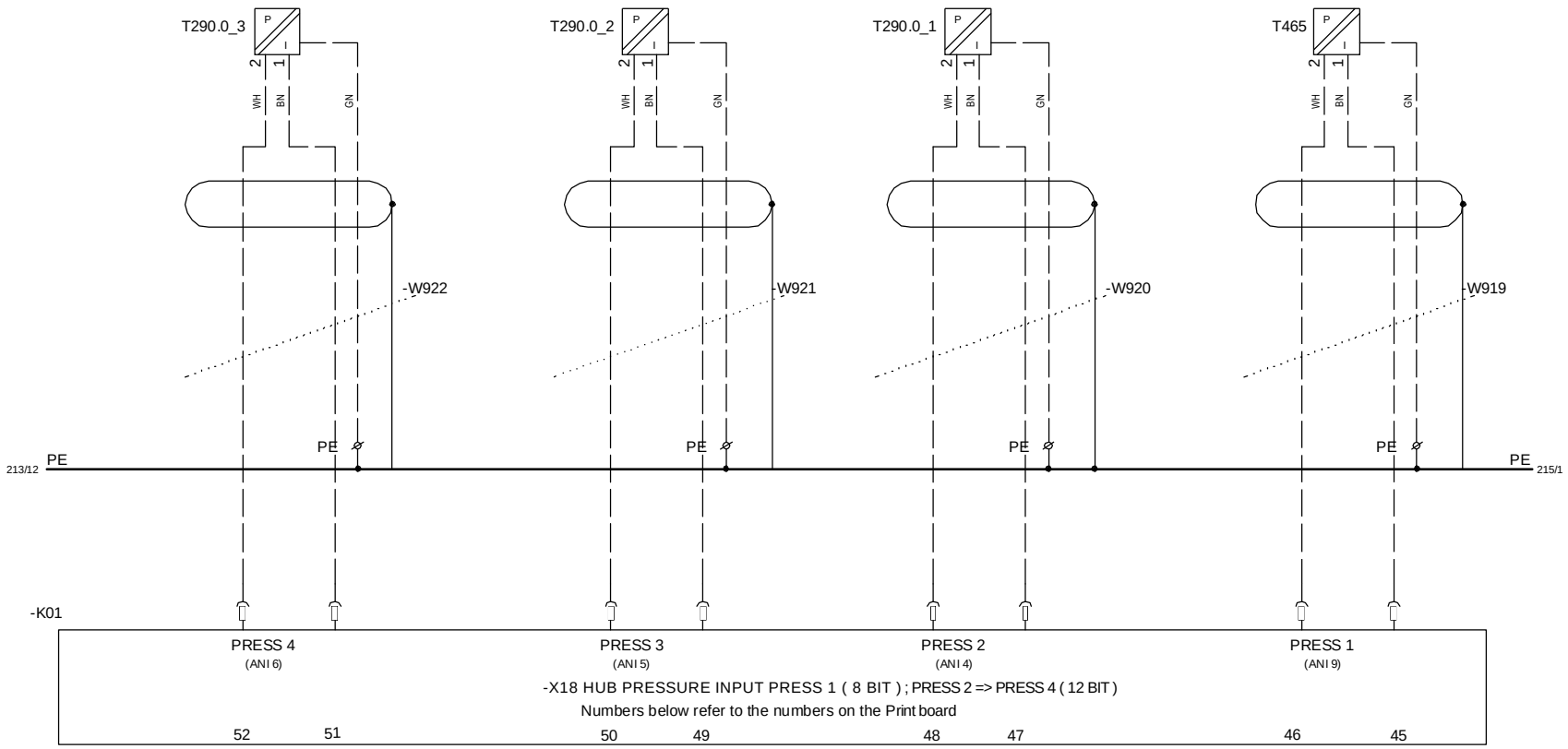
T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH



PRESSURE WING 3
400 BAR 4 - 20 mA
TAC CHANNEL 6

24V DC SUPPLIED FROM -X18 (-X12)

PRESSURE WING 2
400 BAR 4 - 20 mA
TAC CHANNEL 5

24V DC SUPPLIED FROM -X18 (-X12)

PRESSURE WING 1
400 BAR 4 - 20 mA
TAC CHANNEL 4

24V DC SUPPLIED FROM -X18 (-X12)

PRESSURE MAIN FLOW
25 BAR 4 - 20 mA
TAC CHANNEL 9

24V DC SUPPLIED FROM -X18 (-X12)

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	Date	Initials	Function	Analog input -X18 Press 1 => Press 4		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 215	Sheet 214

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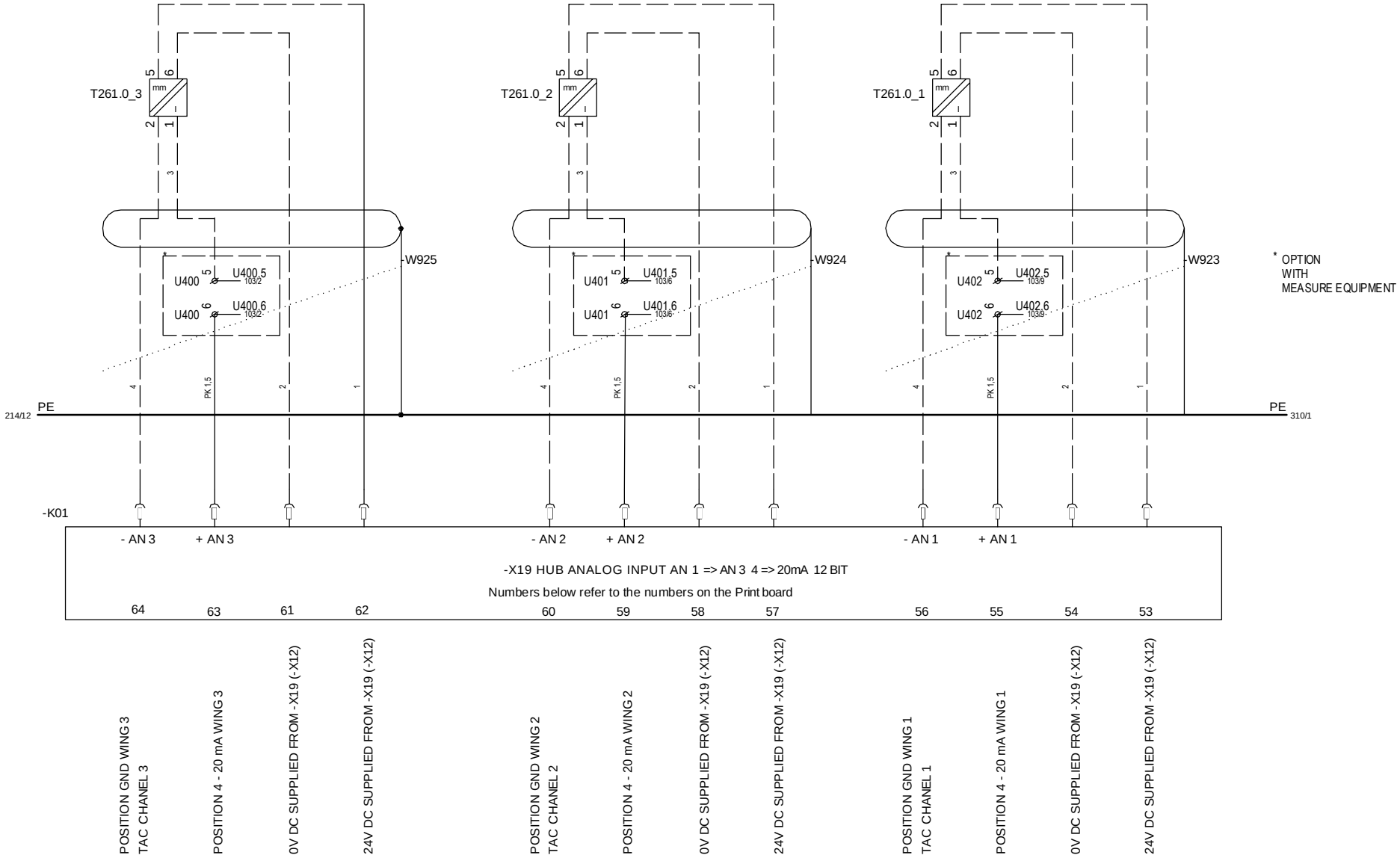

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	Date	Initials	Function	Analog input -X19 AN1 => AN3		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 216	Sheet 215

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T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

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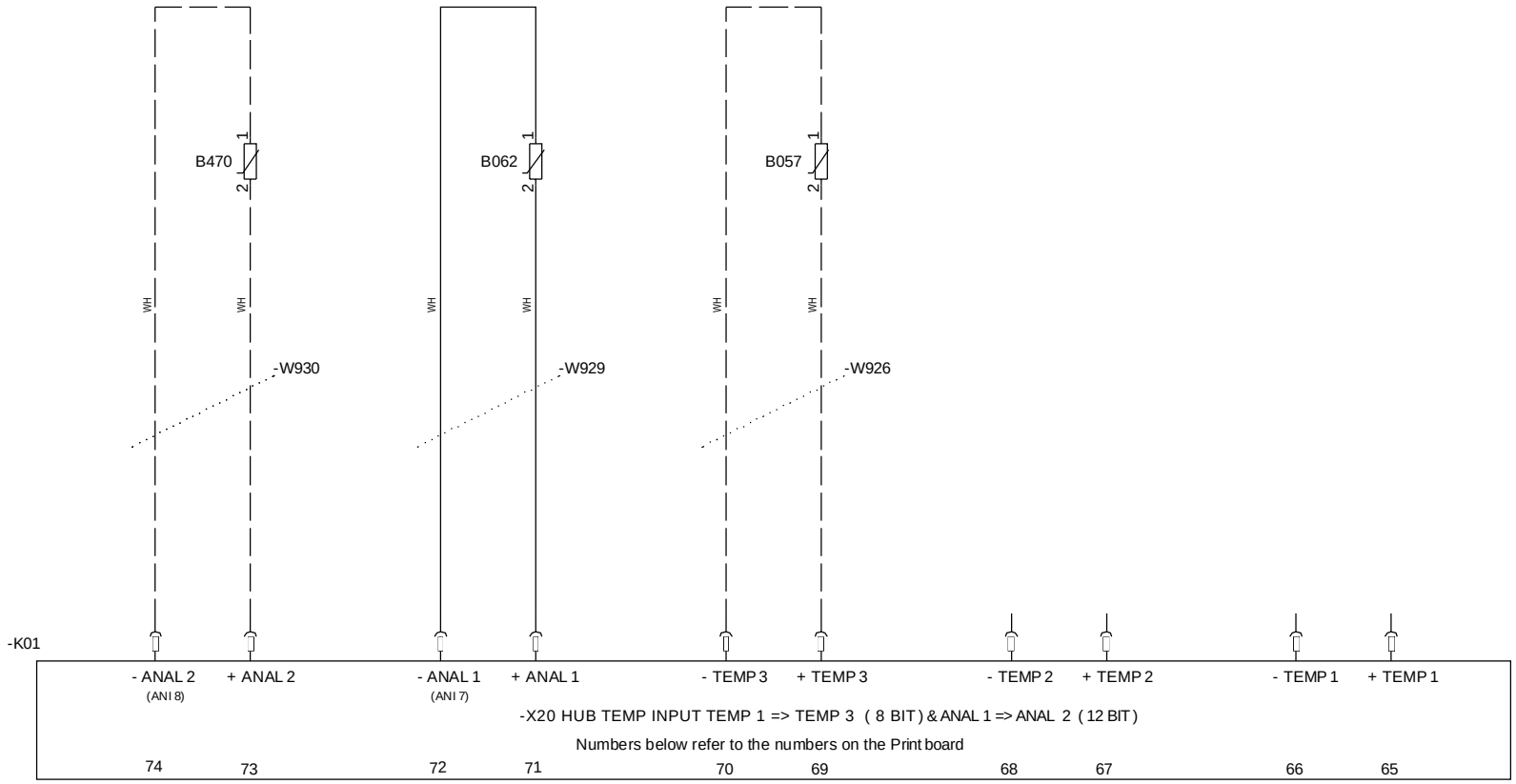

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	Date	Initials	Function	Temp. input -X20 Temp 1 => Temp 3 and Analog 1 => 2		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 310	Sheet 216

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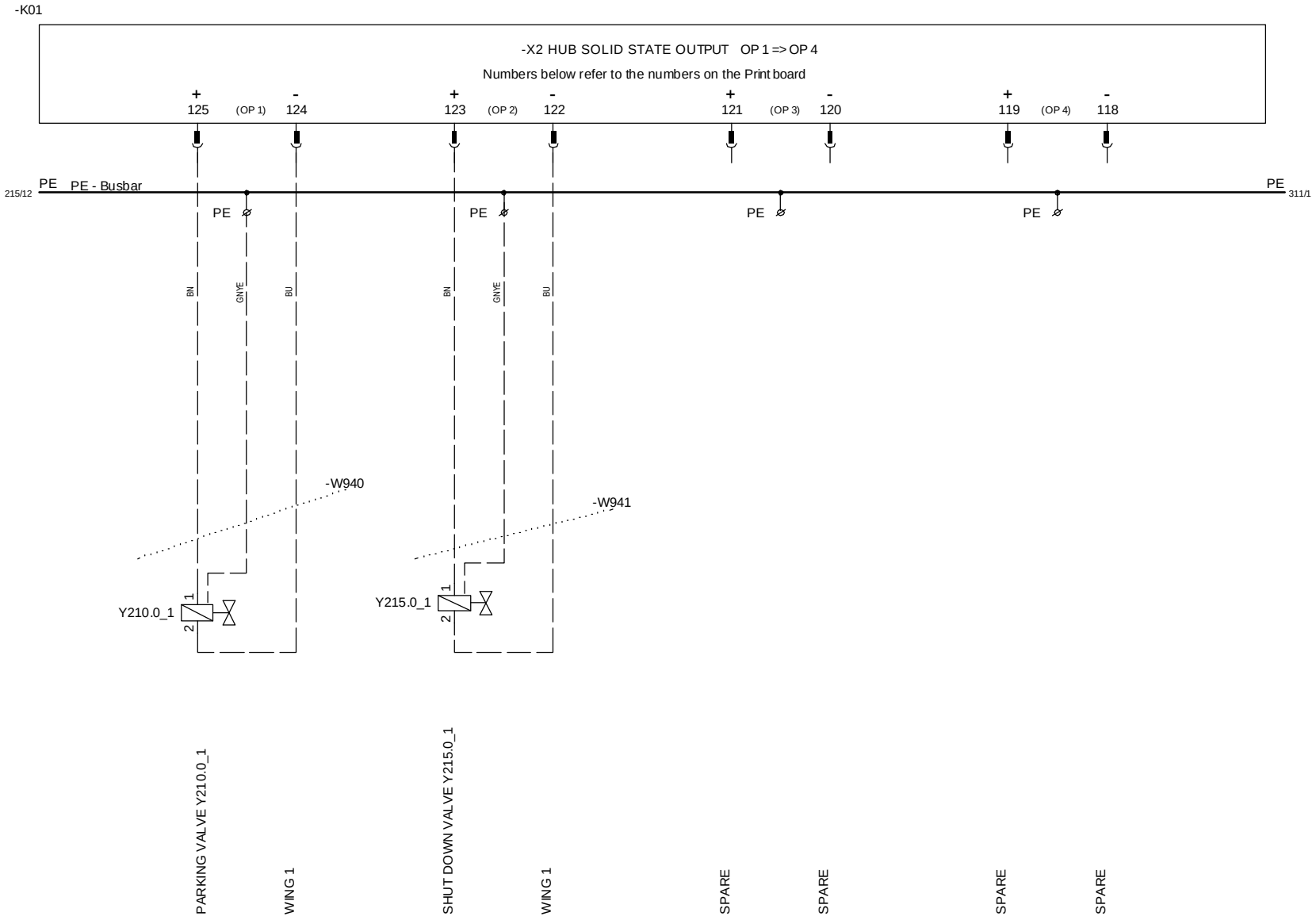

	Date	Initials	Function	Digital output -X2 OP1 => OP4 WING 1		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
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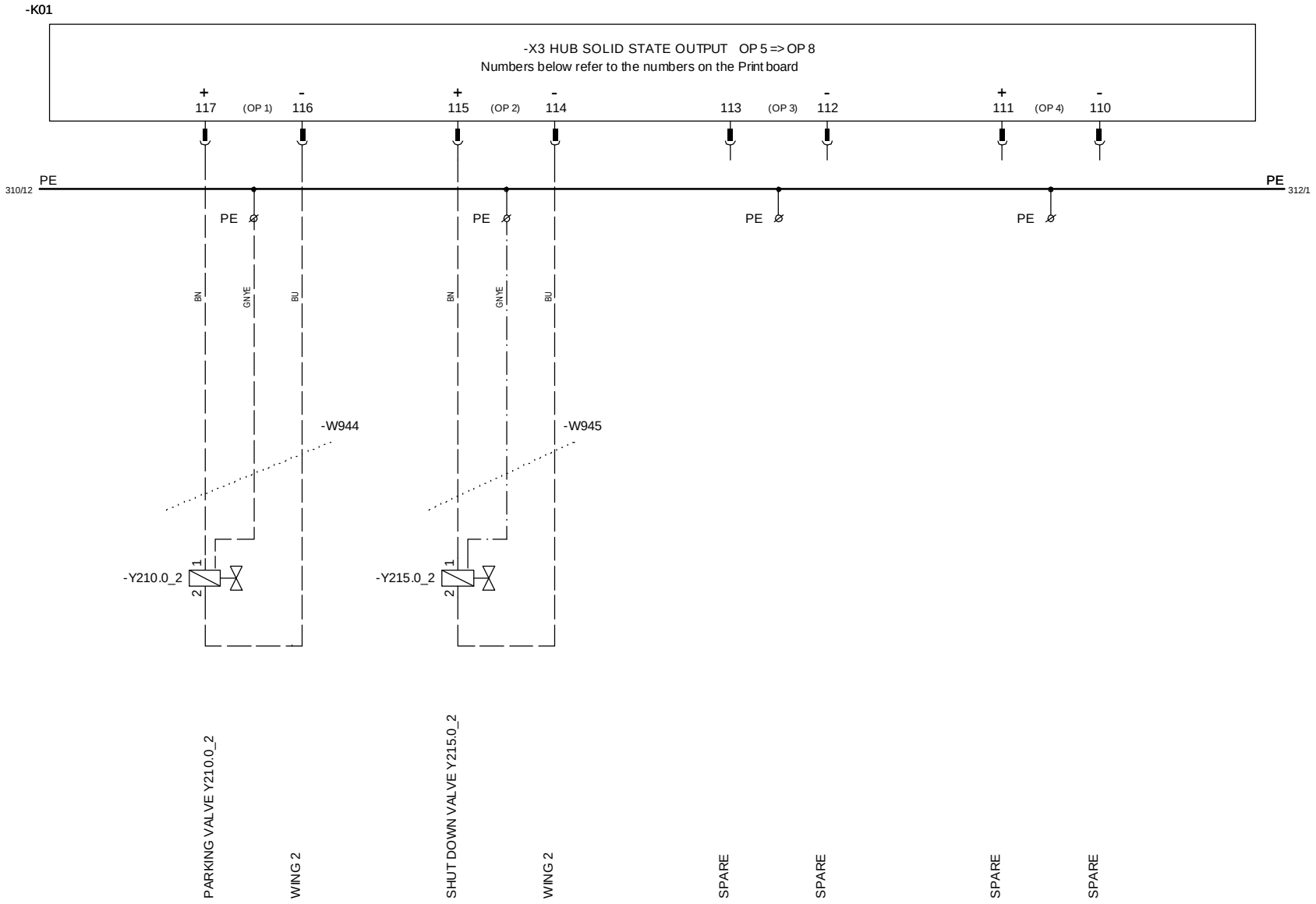

	Date	Initials	Function	Digital output -X3 OP5 => OP8 WING 2		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
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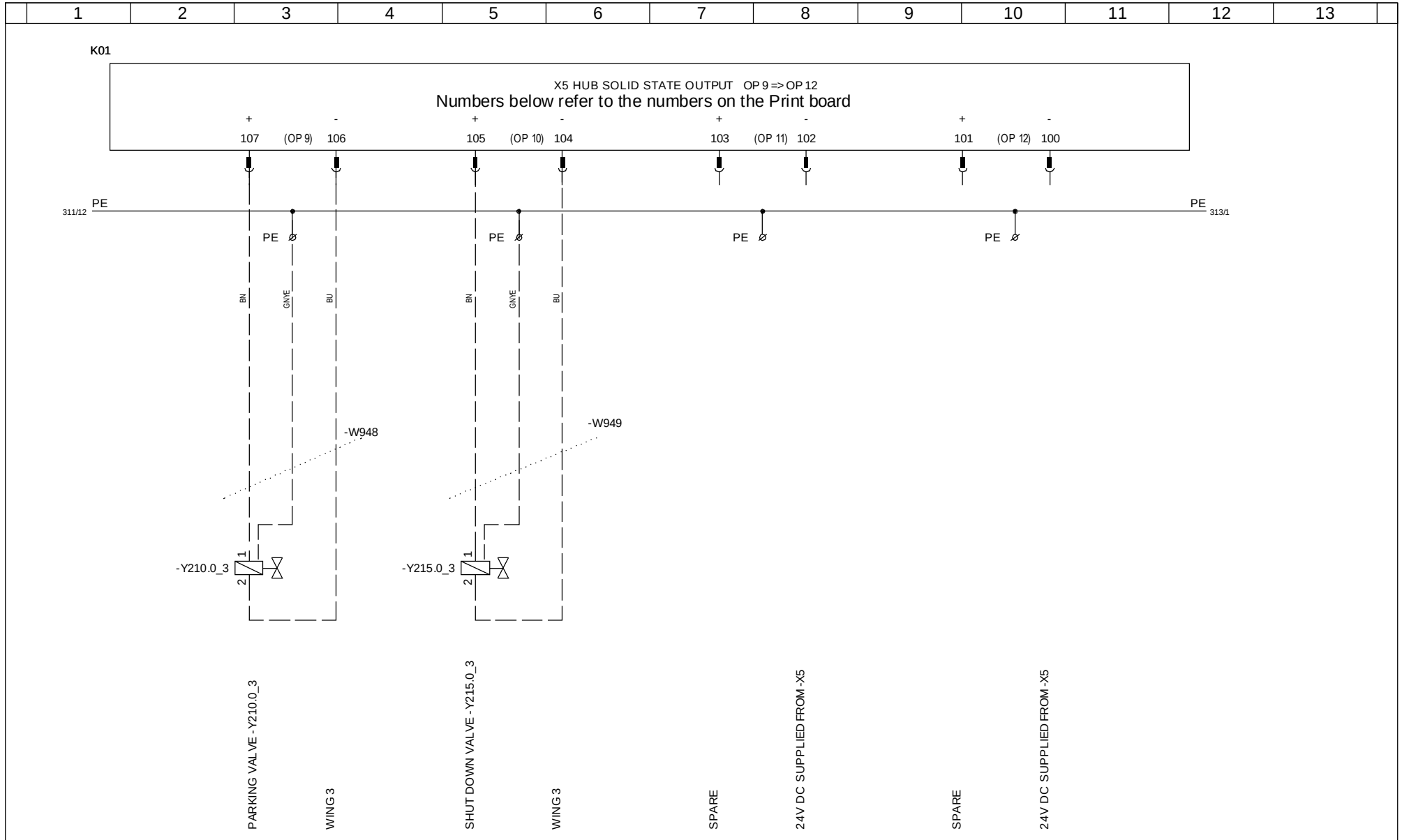

	Date	Initials	Function	Digital output -X5 OP9 => OP12 WING 3		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 313	Sheet 312

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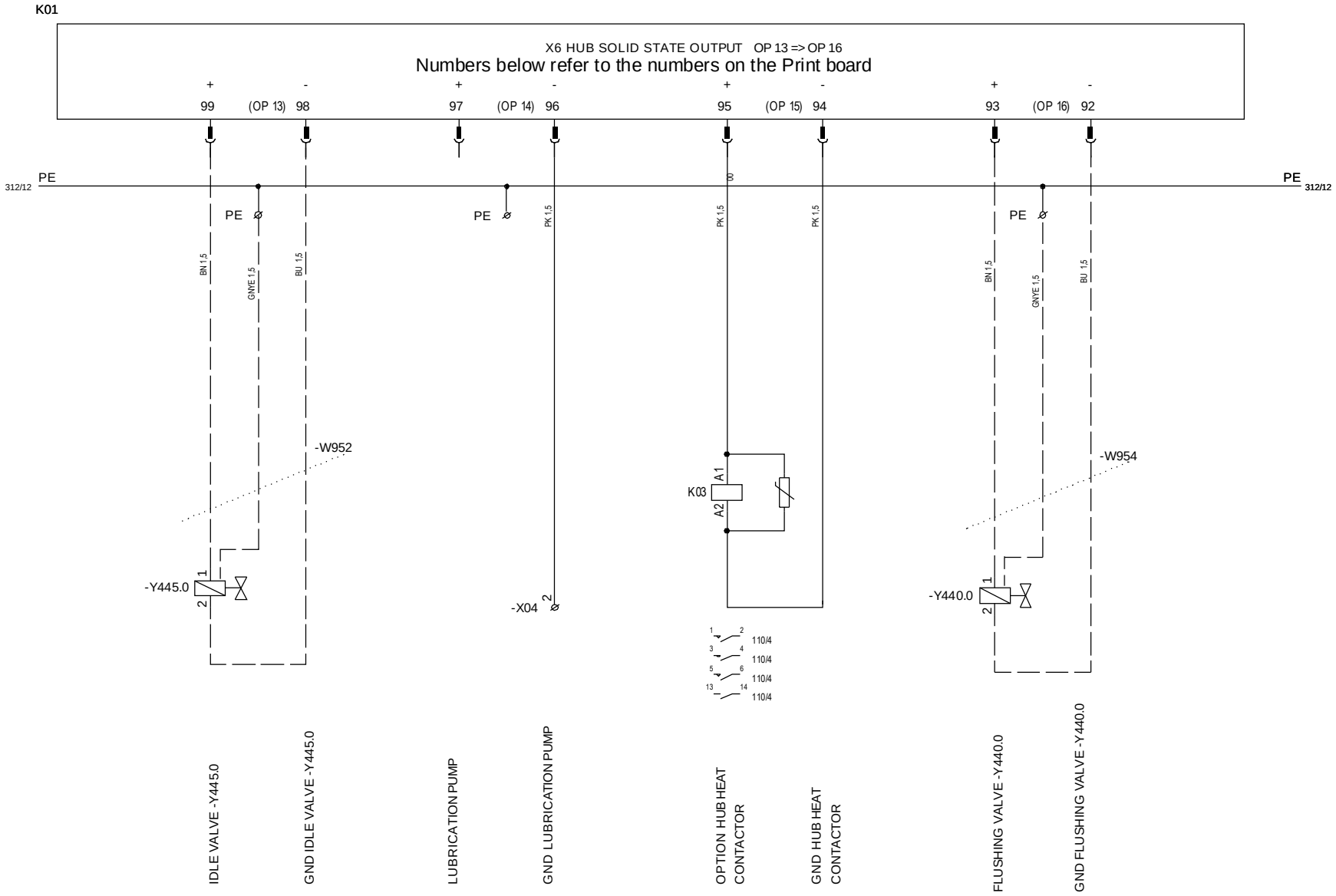

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		Designed	050120	CHO	Project title	Hub Computer Panel +AK4	
		Approved	081217	PRO	Comments	V82-1.65MW	Customer: Vestas Wind Systems A/S
		Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 340 / Sheet 313

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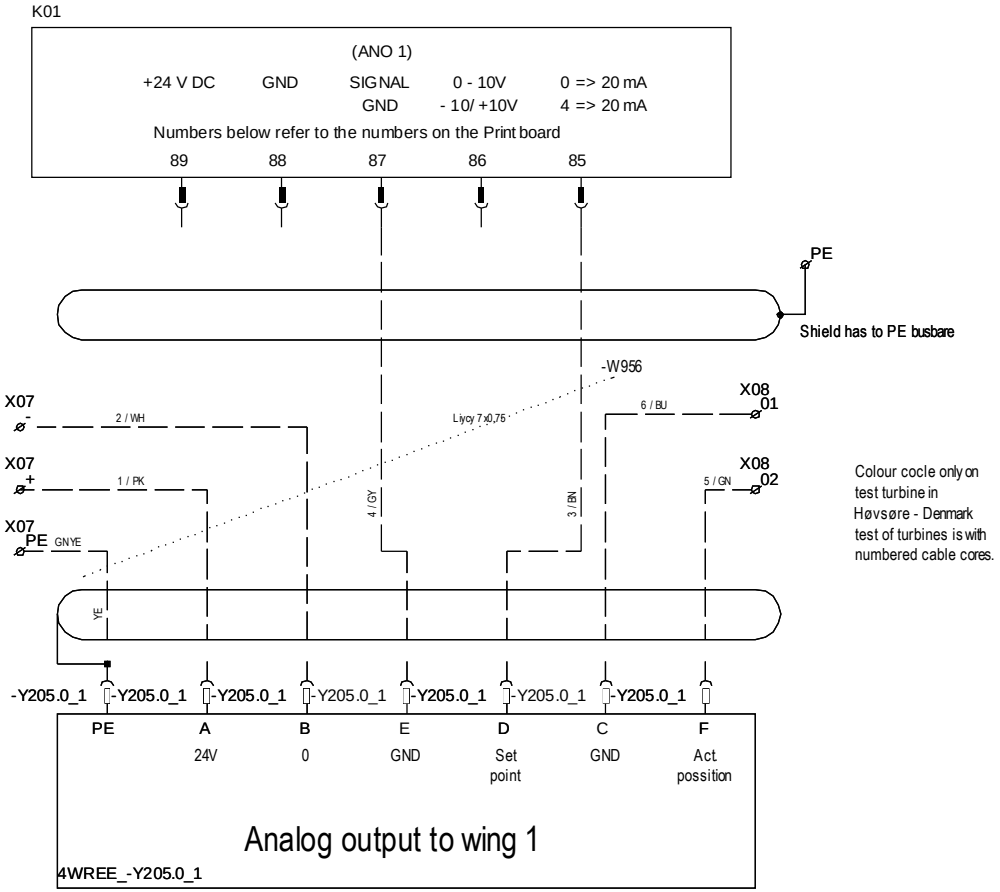

Colour cocle only on test turbine in Høvsøre - Denmark test of turbines is with numbered cable cores.

THIS CHART REFER TO EACH PROPORTIONAL VALUE	
PRODUCT NAME	MEASURE VALUE
BOSCH REXROTH	4 - 20 mA
PARKER HANNIFIN	-10.. 0.. + 10V
MEASURE VALUE IS MEASURED ON TERMINAL X08:	

24V DC SUPPLIED FROM -X8 (-X12)

0V DC SUPPLIED FROM -X8 (-X12)

SIGNAL GND

ANALOG OUTPUT VOLTAGE

ANALOG OUTPUT CURRENT

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	Date	Initials	Function	Analog output -X8 OVUT1 & IOUT1 WING 1		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
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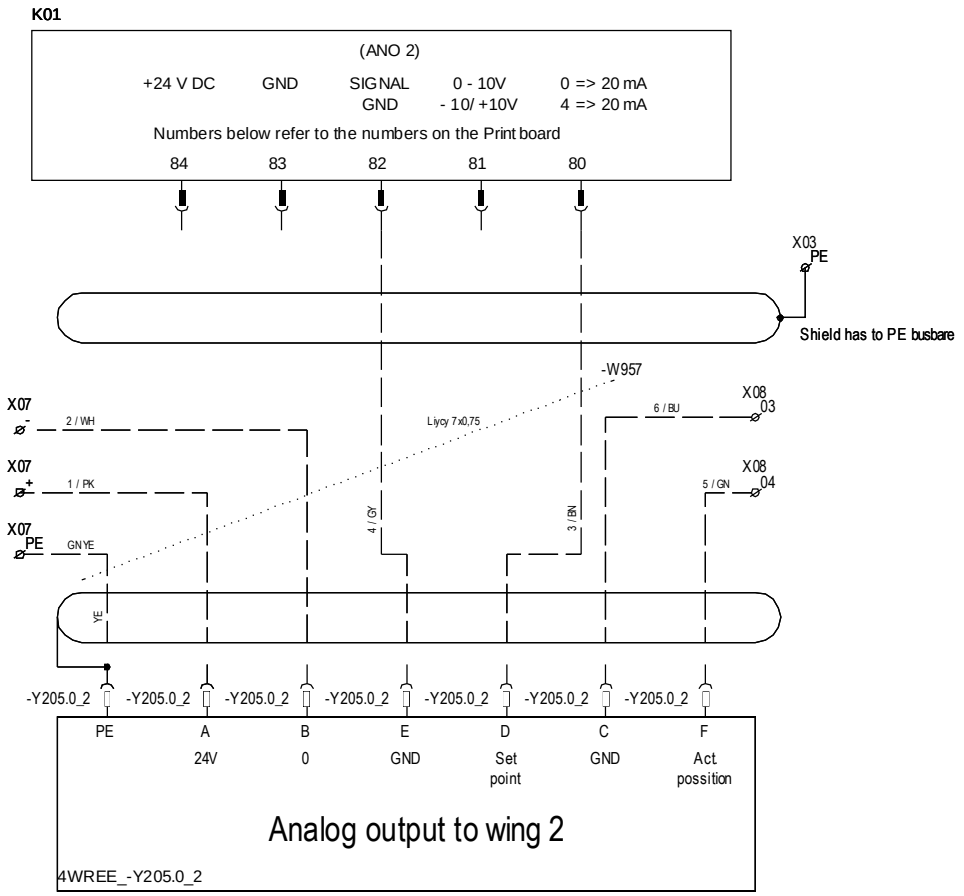

THIS CHART REFER TO EACH PROPORTIONAL VALUE	
PRODUCT NAME	MEASURE VALUE
BOSCH REXROTH	4 - 20 mA
PARKER HANNIFIN	-10.. 0.. + 10V
MEASURE VALUE IS MEASURED ON TERMINAL X08:	

T10 0000-1638 Ver 03 - Approved - Exported from DMS: 2015-03-16 by GIRCH

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	Date	Initials	Function	Analog output -X9 OVUT2 & IOUT2 WING 2		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 342	Sheet 341

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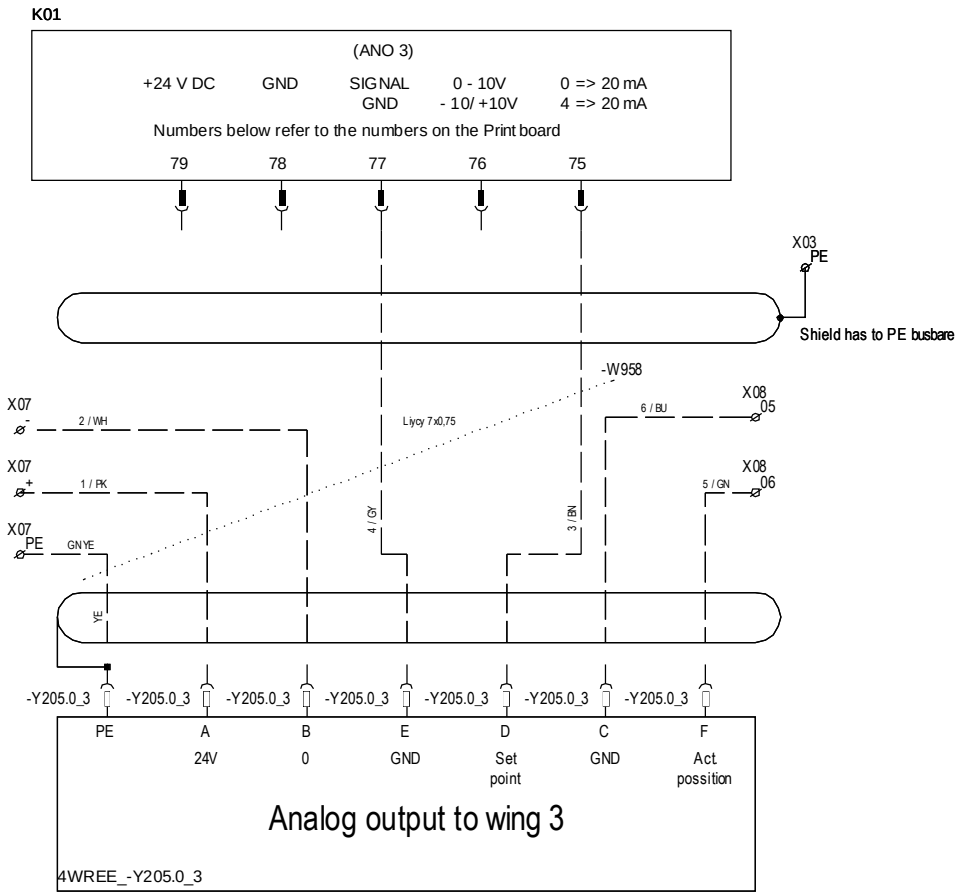

THIS CHART REFER TO EACH PROPORTIONAL VALUE	
PRODUCT NAME	MEASURE VALUE
BOSCH REXROTH	4 - 20 mA
PARKER HANNIFIN	-10.. 0.. + 10V
MEASURE VALUE IS MEASURED ON TERMINAL X08:	

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	Date	Initials	Function	Analog output -X10 OVUT3 & IOUT3 WING 3		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
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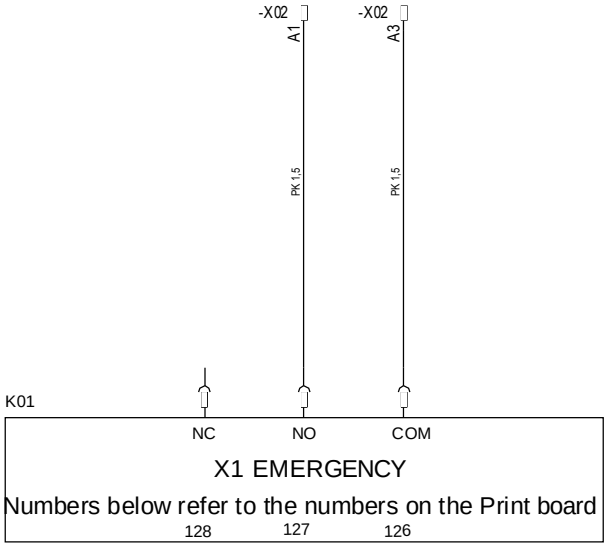
1	2	3	4	5	6	7	8	9	10	11	12	13



EMERGENCY STOP RELAY NC

EMERGENCY STOP RELAY NO

EMERGENCY STOP RELAY COMMON

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	Date	Initials	Function	Emergency line		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	081217	PRO	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	081217	INI	Rev. -	Drawing no. 6015908	Cont. sheet 500	Sheet 343

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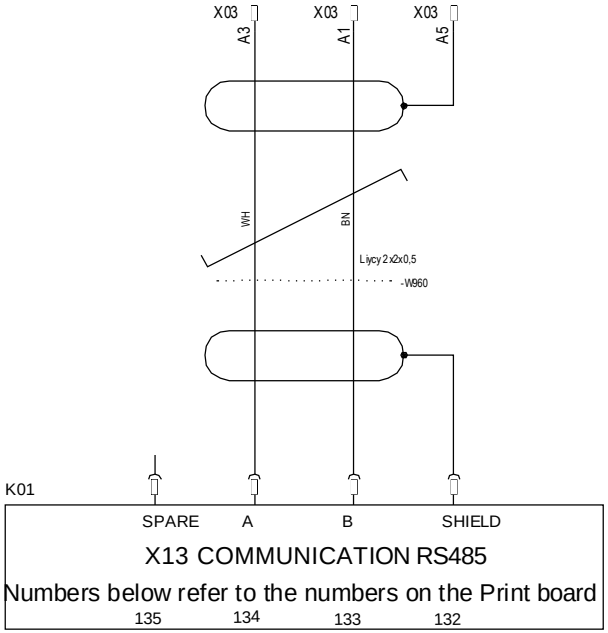
1	2	3	4	5	6	7	8	9	10	11	12	13



SPARE RXA RXB SHIELD

	Date	Initials	Function	Bus communication RS 485		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 600	Sheet 500

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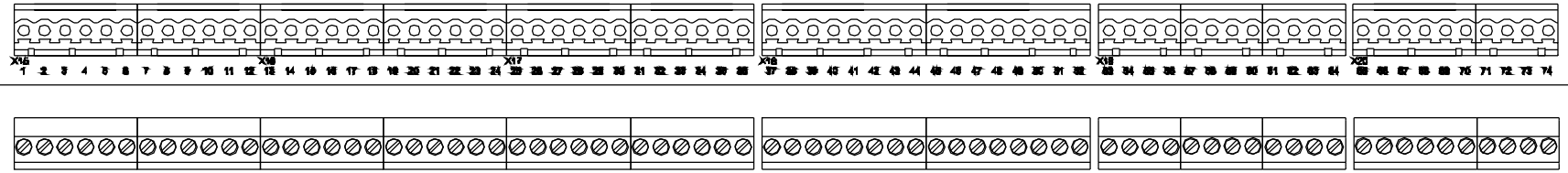
1	2	3	4	5	6	7	8	9	10	11	12	13

NAV Computer Input



1	24V DC SUPPLIED FROM -X15 (-X12)
2	FILTER CLOGMANIFOLD -B406
3	0V DC SUPPLIED FROM -X15 (-X12)
4	24V DC SUPPLIED FROM -X15 (-X12)
5	CHARGE RUN
6	0V DC SUPPLIED FROM -X15 (-X12)
7	24V DC SUPPLIED FROM -X15 (-X12)
8	SHOT DOWN
9	0V DC SUPPLIED FROM -X15 (-X12)
10	24V DC SUPPLIED FROM -X15 (-X12)
11	ALL BLADES
12	0V DC SUPPLIED FROM -X15 (-X12)
13	24V DC SUPPLIED FROM -X16 (-X12)
14	BLADE 1
15	0V DC SUPPLIED FROM -X16 (-X12)
16	24V DC SUPPLIED FROM -X16 (-X12)
17	BLADE 2
18	0V DC SUPPLIED FROM -X16 (-X12)
19	24V DC SUPPLIED FROM -X16 (-X12)
20	BLADE 3
21	0V DC SUPPLIED FROM -X16 (-X12)
22	24V DC SUPPLIED FROM -X16 (-X12)
23	PITCH TO RUN
24	0V DC SUPPLIED FROM -X16 (-X12)
25	24V DC SUPPLIED FROM -X17 (-X12)
26	PITCH TO STOP
27	0V DC SUPPLIED FROM -X17 (-X12)
28	24V DC SUPPLIED FROM -X17 (-X12)
29	PULSE TO RUN
30	0V DC SUPPLIED FROM -X17 (-X12)
31	24V DC SUPPLIED FROM -X17 (-X12)
32	PULSE TO STOP
33	0V DC SUPPLIED FROM -X17 (-X12)
34	24V DC SUPPLIED FROM -X17 (-X12)
35	PENDANT CONT. 24 VDC
36	0V DC SUPPLIED FROM -X17 (-X12)
37	24V DC SUPPLIED FROM -X18 (-X12)
38	SPARE
39	24V DC SUPPLIED FROM -X18 (-X12)
40	SPARE
41	24V DC SUPPLIED FROM -X18 (-X12)
42	SPARE
43	24V DC SUPPLIED FROM -X18 (-X12)
44	SPARE
45	24V DC SUPPLIED FROM -X18 (-X12)
46	PRESSURE MAIN FLOW, 25 BAR 4-20mA
47	24V DC SUPPLIED FROM -X18 (-X12)
48	PRESSURE WING 1, 400 BAR 4-20mA
49	24V DC SUPPLIED FROM -X18 (-X12)
50	PRESSURE WING 2, 400 BAR 4-20mA
51	24V DC SUPPLIED FROM -X18 (-X12)
52	PRESSURE WING 3, 400 BAR 4-20mA
53	24V DC SUPPLIED FROM -X19 (-X12)
54	0V DC SUPPLIED FROM -X19 (-X12)
55	POSITION 4 - 20mA WING 1
56	POSITION GND WING 1
57	24V DC SUPPLIED FROM -X19 (-X12)
58	0V DC SUPPLIED FROM -X19 (-X12)
59	POSITION 4 - 20mA WING 2
60	POSITION GND WING 2
61	24V DC SUPPLIED FROM -X19 (-X12)
62	0V DC SUPPLIED FROM -X19 (-X12)
63	POSITION 4 - 20mA WING 3
64	POSITION GND WING 3
65	
66	
67	SPARE
68	SPARE
69	SPARE
70	SPARE
71	OPTION, PITCH ACC. TEMP. B57
72	OPTION, PITCH ACC. TEMP. B57
73	TEMPERATURE IN HUB PANEL
74	TEMPERATURE IN HUB PANEL
75	HYDR. OIL TEMP. -B470
76	HYDR. OIL TEMP. -B470

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	Date	Initials	Function	NAV Computer input		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 601	Sheet 600

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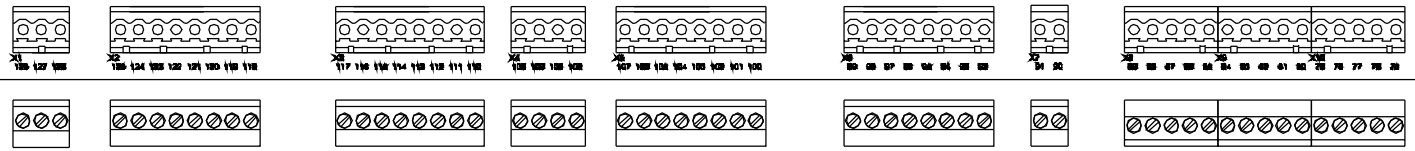
1	2	3	4	5	6	7	8	9	10	11	12	13

NAV Computer Output



EMERGENCY STOP RELAY NC
EMERGENCY STOP RELAY NO
EMERGENCY STOP RELAY COMMON

PARKING VALVE Y210.0_1
WING 1
SHUT DOWN VALVE Y215.0_1
WING 1
SPARE
SPARE
SPARE
SPARE

PARKING VALVE Y210.0_2
WING 2
SHUT DOWN VALVE Y215.0_2
WING 2
SPARE
SPARE
SPARE
SPARE

24V DC SUPPLIED TO OUTPUT
24V DC SUPPLIED TO OUTPUT
0V DC SUPPLIED TO OUTPUT
0V DC SUPPLIED TO OUTPUT

PARKING VALVE Y210.0_3
WING 3
SHUT DOWN VALVE Y215.0_3
WING 3
SPARE
24V DC SUPPLIED FROM -X5
SPARE
24V DC SUPPLIED FROM -X5

IDLE VALVE -Y445.0
GND IDLE VALVE -Y445.0
LUBRICATION PUMP
GND LUBRICATION PUMP
OPTION HUB HEAT CONTACTOR
GND HUB HEAT CONTACTOR
FLUSHING VALVE Y440.0
GND FLUSHING VALVE Y440.0

24V DC SUPPLIED FROM -X8 (X12)
0V DC SUPPLIED FROM -X8 (X12)
SIGNAL GND
ANALOG OUTPUT VOLTAGE
ANALOG OUTPUT CURRENT
24V DC SUPPLIED FROM -X9 (X12)
0V DC SUPPLIED FROM -X9 (X12)
SIGNAL GND
ANALOG OUTPUT VOLTAGE
ANALOG OUTPUT CURRENT
24V DC SUPPLIED FROM -X10 (-X12)
0V DC SUPPLIED FROM -X10 (X12)
SIGNAL GND
ANALOG OUTPUT VOLTAGE
ANALOG OUTPUT CURRENT

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	Date	Initials	Function	NAV Computer output		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet 602	Sheet 601

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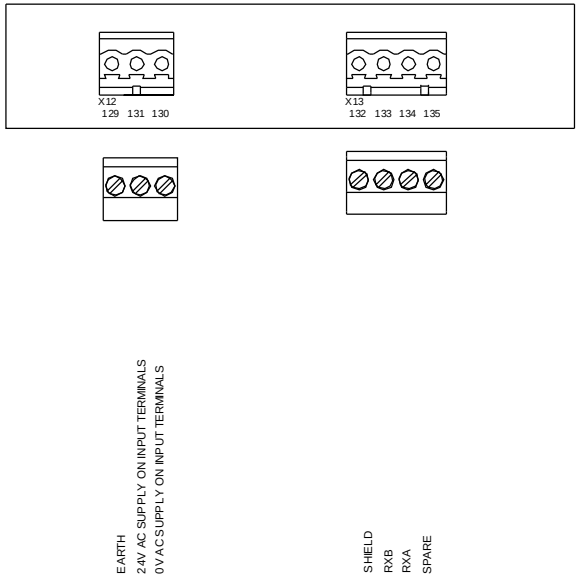
1	2	3	4	5	6	7	8	9	10	11	12	13



	Date	Initials	Function	NAV Computer supply		
Designed	050120	CHO	Project title	Hub Computer Panel +AK4		
Approved	080612	OLZED	Comments	V82-1.65MW	Customer	Vestas Wind Systems A/S
Revised	080612	INI	Rev. -	Drawing no. 6015908	Cont. sheet -	Sheet 602

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60110471 HUB CPU PAN+AK4 CEE V82-1.65MW

Component	Description	Qty per	Stk UM	Position Number
D1001213	MOUNTING MANUAL, HUB COMP. PAN	0,000	EA	
D6015908	HUB CPU PANEL+AK4 RAL7035 V82/	0,000	EA	
092992	MARKING LABELS +AK4 GENERAL	0,030	EA	
092993	MARKING LABELS +AK4 G400 G401	0,005	EA	
092994	MARKING LABELS +AK4 S01 X06	0,005	EA	
60006819	STICKER "EARTH" 14mm	0,020	EA	
60006824	STICKER "LIGHTNING" 100MM	0,330	EA	
60007583	CABLE GLAND M12 PA6 BM-EN-1S	2,000	EA	
60007591	LOCKNUT M12 PA6 BML-1S	2,000	EA	
60009578	SCREW ISO 7045 M 3 x 8 - FZB	9,000	EA	
60009578	SCREW ISO 7045 M 3 x 8 - FZB	1,000	EA	
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	
60011435	GASKET B 216 SKT 216R6 CEE	1,000	EA	
60014306	MARK +AK4 HUB COMP. EVO II	1,000	EA	
60100917	LABEL KIT HEAT BLANKET HUB	1,000	EA	
60110062	CABLE 4G1.5 W960 NM30T MRKIII	1,000	EA	
60110350/101	WIRING HUB CPU IEC/UL (35)	1,000	EA	
60110567	GLAND PL W/W RAL 7035 CEE	1,000	EA	
60112102	WIRING HUB CPU IEC/UL (1)	1,000	EA	
60112103	WIRING HUB CPU IEC/UL (2)	1,000	EA	
60112104	WIRING HUB CPU IEC/UL (3)	1,000	EA	
60112105	WIRING HUB CPU IEC/UL (4)	1,000	EA	
60112106	WIRING HUB CPU IEC/UL (5)	1,000	EA	
60112107	WIRING HUB CPU IEC/UL (6)	1,000	EA	
60112108	WIRING HUB CPU IEC/UL (7)	1,000	EA	
60112109	WIRING HUB CPU IEC/UL (8)	1,000	EA	
60112110	WIRING HUB CPU IEC/UL (9)	1,000	EA	
60112111	WIRING HUB CPU IEC/UL (10)	1,000	EA	
60112112	WIRING HUB CPU IEC/UL (11)	1,000	EA	
60112113	WIRING HUB CPU IEC/UL (12)	1,000	EA	
60112114	WIRING HUB CPU IEC/UL (13)	1,000	EA	
60112115	WIRING HUB CPU IEC/UL (14)	1,000	EA	
60112116	WIRING HUB CPU IEC/UL (15)	1,000	EA	
60112118	WIRING HUB CPU IEC/UL (16)	1,000	EA	
60112119	WIRING HUB CPU IEC/UL (17)	1,000	EA	
60112120	WIRING HUB CPU IEC/UL (18)	1,000	EA	
60112121	WIRING HUB CPU IEC/UL (19)	1,000	EA	
60112122	WIRING HUB CPU IEC/UL (20)	1,000	EA	
60112123	WIRING HUB CPU IEC/UL (21)	1,000	EA	
60112124	WIRING HUB CPU IEC/UL (22)	1,000	EA	
60112125	WIRING HUB CPU IEC/UL (23)	1,000	EA	
60112126	WIRING HUB CPU IEC/UL (24)	1,000	EA	
60112128	WIRING HUB CPU IEC/UL (26)	1,000	EA	
60112129	WIRING HUB CPU IEC/UL (25)	1,000	EA	
60112143	CABLES WING 1 HUB PANEL EVO II	1,000	EA	
60112144	CABLES WING 2 HUB PANEL EVO II	1,000	EA	
60112145	CABLES WING 3 HUB PANEL EVO II	1,000	EA	
60112146	CABLES COMMON HUB PANEL EVO II	1,000	EA	
60112147	EARTH BAR HUB PANEL EVO II	1,000	EA	
60112156	DIN RAIL 7x35x0.135 M	1,000	EA	
60112157	DIN RAIL 35x7x0.39 M	1,000	EA	
60112349	WIRING HUB CPU IEC/UL (27)	1,000	EA	
60112350	WIRING HUB CPU IEC/UL (28)	1,000	EA	
60112351	WIRING HUB CPU IEC/UL (29)	1,000	EA	
60112352	WIRING HUB CPU IEC/UL (30)	1,000	EA	
60112353	WIRING HUB CPU IEC/UL (31)	1,000	EA	
60112354	WIRING HUB CPU IEC/UL (32)	1,000	EA	
60112355	WIRING HUB CPU IEC/UL (33)	1,000	EA	
193722	LOCKNUT MM20GPA POLYAMID	17,000	EA	
60007584	CABLE GLAND M16 PA6 BM-EN-11	13,000	EA	
60007592	LOCKNUT M16 PA6 BML-11	13,000	EA	
60112358	WIRING HUB CPU IEC/UL (34)	1,000	EA	
60010699	CONDENSATION PROT DRY BAG 500G	1,000	EA	
60007459	CABLE TIE WHITE 200x2.5mm	4,000	EA	
119161	LABEL AVOID TENSION	1,000	EA	
119162	LABEL TYPE 1 ENCLOSURE	1,000	EA	
146470	FLEX HOSE 15,8MM BLACK	1,920	M	
60002320	STICKER GEN USE VCS	1,000	EA	+AK4
60002580	LABEL	1,000	EA	+AK4
60007586	CABLE GLAND M25 PA6 BM-EN-13	1,000	EA	+AK4
60007594	LOCKNUT M25 PA6 BML-13	1,000	EA	+AK4

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60009617	SCREW HFC 9046 M 4 x 16 - 4.8	5,000	EA	+AK4
60009639	SCR HEX SET M8x20 8.8 FZB	4,000	EA	+AK4
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	32,000	EA	+AK4
60009802	WASHER M8 140HV FZB	4,000	EA	+AK4
60009877	NUT HEX FLANGE M8 8 FZB	4,000	EA	+AK4
60010159	MOUNTING PLATE 665x690x2mm	1,000	EA	+AK4
60010445	WALL BRA 2508.000 25x10mm	4,000	EA	+AK4
60108981	ENCL AE 1057.600.01 1D W/W	1,000	EA	+AK4
60109142	LABEL TYPE SIGN HUB COMPUTER	1,000	EA	+AK4
60110224	LABEL " LIGHT IN HUB" 20X45MM	1,000	EA	+AK4
60007481	CABLE RACK TK 5-7	1,000	EA	-B062
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	-B062
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	-F02
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	-F02/-G402
188453	PS ADC 5483R-3 10A-27,4 NM PIN	1,000	EA	-G400
60010158	MOUN PL W/W	1,000	EA	-G400
60009577	SCR CRS PH M3x6 FZB	8,000	EA	-G400-G401
60009580	SCREW ISO 7045 M4X10-FZB-H	12,000	EA	-G400-G401-SIF
188453	PS ADC 5483R-3 10A-27,4 NM PIN	1,000	EA	-G401
60010158	MOUN PL W/W	1,000	EA	-G401
60006942	TRAFO 2x110/24VAC 70VA	1,000	EA	-G402
51701801	SIF HUB COMPUTER CABINET EVOII	1,000	EA	-K01
60001914	CONN BLZ F 2 LEADED	1,000	EA	-K01
60001930	CONN BLZ F 4 LEADED	4,000	EA	-K01
60001937	CONN BLZ F 5 LEADED	3,000	EA	-K01
60001946	CONN BLZ F 6 LEADED	1,000	EA	-K01
60001960	CONN BLZ F 8 LEADED	5,000	EA	-K01
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	-K02
60110379	CONT AL 9-30-10 24V DC	1,000	EA	-K02
60110382	VARISTOR 24-60V RV 5/50	1,000	EA	-K02
60110379	CONT AL 9-30-10 24V DC	1,000	EA	-K03
60110382	VARISTOR 24-60V RV 5/50	1,000	EA	-K03
60005827	SELECT SWITCH 1SFA611200R1006	1,000	EA	-S01
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	-S01
60005848	HOLDER for 3 ELEMENTS SK616 01	1,000	EA	-S01
60002503	LABEL "-X01"	1,000	EA	-X01
60006483	CONN MODULE BLIND MALE	1,000	EA	-X01
60006566	HOUSING 42P BULKHEAD	1,000	EA	-X01
60006567	COVER F HOUSING 10P	1,000	EA	-X01
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	-X01
60099102	FRAME F 3 MOD MALE 2+PE	1,000	EA	-X01
60002504	LABEL "-X02"	1,000	EA	-X02
60006483	CONN MODULE BLIND MALE	2,000	EA	-X02
60006566	HOUSING 42P BULKHEAD	1,000	EA	-X02
60006567	COVER F HOUSING 10P	1,000	EA	-X02
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	-X02
60099102	FRAME F 3 MOD MALE 2+PE	1,000	EA	-X02
60002505	LABEL "-X03"	1,000	EA	-X03
60006483	CONN MODULE BLIND MALE	2,000	EA	-X03
60006566	HOUSING 42P BULKHEAD	1,000	EA	-X03
60006567	COVER F HOUSING 10P	1,000	EA	-X03
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	-X03
60099102	FRAME F 3 MOD MALE 2+PE	1,000	EA	-X03
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	-X04
60006078	TERMINAL WAGO DOUBLE 870-831 2	1,000	EA	-X04/-F01
60005135	MCB 5SX2103-7 3.0A C 1P	1,000	EA	-X04/-F01
60002507	LABEL "-X05"	1,000	EA	-X05
60006566	HOUSING 42P BULKHEAD	1,000	EA	-X05
60006567	COVER F HOUSING 10P	1,000	EA	-X05
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	-X05
60099102	FRAME F 3 MOD MALE 2+PE	1,000	EA	-X05
60002508	LABEL "-X06"	1,000	EA	-X06
60011434	SKT 216R6 2P+E 250V 16A CEE	1,000	EA	-X06
60021542	CABLE W953 LUBR PUMP M11	1,000	EA	-X06
60006078	TERMINAL WAGO DOUBLE 870-831 2	6,000	EA	-X07
60006079	END PLATE 870-948	2,000	EA	-X07
60006087	PUSH-IN JUMPER BAR 870-403	2,000	EA	-X07
60091902	END STOP WAGO 249-116 6MM TS35	2,000	EA	-X07
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X07;-X04
60006071	TERMINAL WAGO 870-501 2-LEV.0,	3,000	EA	-X08
60006083	END SECTION 870-518 2-LEVEL GR	1,000	EA	-X08
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	-X08
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X08
60006078	TERMINAL WAGO DOUBLE 870-831 2	12,000	EA	-X09
60006079	END PLATE 870-948	1,000	EA	-X09

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60006086	PUSH-IN JUMPER BAR 870-402 2-P	6,000	EA	-X09
60091902	END STOP WAGO 249-116 6MM TS35	2,000	EA	-X09
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X09
60006079	END PLATE 870-948	1,000	EA	-X10
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X10
60006078	TERMINAL WAGO DOUBLE 870-831 2	3,000	EA	-X11
60006079	END PLATE 870-948	1,000	EA	-X11
60091902	END STOP WAGO 249-116 6MM TS35	2,000	EA	-X11
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X11
60007196	DIN RAIL FTG TSTW 72x48MM	3,000	EA	DIN 2
60007197	SCREW FKSC M6x12MM	3,000	EA	DIN 2
60112149	CABLE CONDUIT COVER 25x0.100 M	2,000	EA	Pos 1-2
60112158	CABLE CONDUIT 25x40MM 0.09 M	2,000	EA	Pos 1-2
60112150	CABLE CONDUIT COVER 25x0.44 M	1,000	EA	Pos 3
60112159	CABLE CONDUIT 25x40MM 0.435 M	1,000	EA	Pos 3
60112151	CABLE CONDUIT COVER 25x0.115 M	1,000	EA	Pos 4
60112160	CABLE CONDUIT 25x40MM 0.115 M	1,000	EA	Pos 4
60112152	CABLE CONDUIT COVER 25x0.615 M	1,000	EA	Pos 5
60112161	CABLE CONDUIT 25x40MM 0.61 M	1,000	EA	Pos 5
60112153	CABLE CONDUIT COVER 40x0.29 M	1,000	EA	Pos 6
60112162	CABLE CONDUIT 40x60MM 0.29 M	1,000	EA	Pos 6
60110350/200	CABLE CONDUIT 40x60MM 0.475M	1,000	EA	Pos 7
60112154	CABLE CONDUIT COVER 40x0.48 M	2,000	EA	Pos 7-8
60112163	CABLE CONDUIT 40x60MM 0.475 M	1,000	EA	Pos 8
60112155	CABLE CONDUIT COVER 40x0.405 M	1,000	EA	Pos 9
60112164	CABLE CONDUIT 40x60MM 0.435 M	1,000	EA	Pos 9

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Change Info

Item no.	***Item text:***
60110472	**Hub Computer Panel +AK4 AUS, V82-1.65MW**

Active revision *for production*

Drawing no.: 6015908 — *See drawing in previous section.*

Version	Date	Init./App.	Description of change since last revision
05	2008-12-17	INI/PRO	Changed with ECO 251881_ For making a better workflow doing it the same way at all 3 HUB items. Cables are been changed to only PK and GNYE. Pages changed from 100 to 212, 215, 313 and 343.

BoM no.: 60110472 — *Document no.: 21000239*

Version	Date	Init./App.	Description of change since last revision
03	2008-12-17	INI/PRO	Changed with ECO 251881_ For making a better workflow doing it the same way at all 3 HUB items. Cables are been changed to only PK and GNYE. Replaced: 60005140 repl. by 60005135 MCB 5SX2103-7 C 1-POL. 3.0A Added: 1 x 60112358 WIRING HUB CPU IEC/UL (34) 1 x 60010699 CONDENSATION PROTECTION DRY BA 4 x 60007459 CABLE TIE WHITE 200x2.5, 1x119161 LABEL AVOID TENSION, 1 x 119162 LABEL TYPE 1 ENCLOS., 1,92m 146470 FLEX HOSE 15,8MM BK Removed: 1 x 60021530 Cable W926, 2 x 60001890 MVSTBW 2,5/10 - ST -5,08 2 x 60001892 GMVSTBW 2,5/3 - ST - 7,62

Old revisions *for service*

Drawing no.: 6015908 — *See drawing in previous section.*

Version	Date	Init./App.	Description of change since last revision
04	2008-06-12	INI/OLZED	Changed with ECO 240165 - All paged updated with new Vestas Logo Page 034: ID for socket no. X04 corrected to X05. Page 343: ID for X1 Emergency X01corrected to K01
03	2007-10-10	INI/BIVA	Changed with ECO 227961 Page 033: 1 pc. M16 & 16 pcs. M20 not used cable gland removed. Page 034: Cable gland on panel updated.
02	2007-07-26	INI/BIVA	Changed with ECO 227101_Holes for cable glands changed in bottom. Page 033: Holes for Heating Mat changed. Page 034: 1 pc. cable gland changed from M16 to M12 and 3 pcs. M20 changed to M16.
01	2005-11-28	INI/KSS	Text changed or added for better understanding of the diagram. Page 210: X15 hub input D1 => D4 changed to DI 4 <= DI 1. Page 211: X16 hub input D5 => D8 changed to DI 8 <= DI 5. Page 212: Text (DI 12), (DI 11), (DI 10), (DI 9) added to input. Page 213: X18 hub input DI 9 => DI 12 changed to DI 16 <= DI 13. Text (DI 16), (DI 15), (DI 14), (DI 13) to input & text “only for internal use!” added. Page 214: Digital input-X18 corrected to Analog input. Text (ANI 6), (ANI 5), (ANI 4), (ANI 9) added to input. TAC Channel no added. Page 215: TAC Channel no added. Page 216: Text (ANI 8), (ANI 7) and TAC Channel no added. Page 310,311,312 & 313: Text (OP 1) to (OP 16) added. Page 340,341 & 342: Text (ANO 1) to (ANO 3) and chart of proportional value. Page 210, 211, 212, 213, 214, 215, 340, 341, 342, 600 & 601: Correction of terminal numbers in text “ Supplied to –X..”
00	2005-01-20	CHO+INI/FLT	First version

BoM no.: 60110472 — *Document no.: 21000239*

Version	Date	Init./App.	Description of change since last revision
02	2007-07-26	INI/BIVA	Changed with ECO 227101_Holes for cable glands changed in bottom. 60007583 CABLE GLAND M12 changed from 1 pc. to 2 pcs. 60007591 LOCKNUT M12 changed from 1 pc. to 2 pcs. 60007584 CABLE GLAND M16 changed from 12 pcs. to 14 pcs. 60007592 LOCKNUT M16 changed from 12 pcs. to 14 pcs. 60007585 CABLE GLAND M20 changed from 36 pcs. to 33 pcs. 193722 LOCKNUT M20 changed from 36 pcs. to 33 pcs.
01	2007-07-03	SHL/FLT	MAPICS implementation, Controls DK Århus. Phased out 6005652 and replaced with 51701801_SIF HUB comp. cabinet.

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60110472 HUB CPU PAN+AK4 V82/NM72 AUS

Component	Description	Qty per	Stk UM	Position Number
D1001213	MOUNTING MANUAL, HUB COMP. PAN	0,000	EA	
D6015908	HUB CPU PANEL+AK4 RAL7035 V82/	0,000	EA	
092992	MARKING LABELS +AK4 GENERAL	0,030	EA	
092993	MARKING LABELS +AK4 G400 G401	0,005	EA	
092994	MARKING LABELS +AK4 S01 X06	0,005	EA	
118959	LABEL TYPE SIGN HUB COMP. AUS	1,000	EA	
193722	LOCKNUT MM20GPA POLYAMID	17,000	EA	
60006819	STICKER "EARTH" 14mm	0,020	EA	
60006824	STICKER "LIGHTNING" 100MM	0,330	EA	
60007583	CABLE GLAND M12 PA6 BM-EN-1S	2,000	EA	
60007584	CABLE GLAND M16 PA6 BM-EN-11	13,000	EA	
60007585	CABLE GLAND M20 PA6 BM-EN-12	17,000	EA	
60007591	LOCKNUT M12 PA6 BML-1S	2,000	EA	
60007592	LOCKNUT M16 PA6 BML-11	13,000	EA	
60009578	SCREW ISO 7045 M 3 x 8 - FZB	9,000	EA	
60009578	SCREW ISO 7045 M 3 x 8 - FZB	1,000	EA	
60011427	WA SKT 56SO310ARO 2P+E 250V	1,000	EA	
60014306	MARK +AK4 HUB COMP. EVO II	1,000	EA	
60021542	CABLE W953 LUBR PUMP M11	1,000	EA	
60037590	SCR SLOT CH M4x30 A2	4,000	EA	
60100917	LABEL KIT HEAT BLANKET HUB	1,000	EA	
60110062	CABLE 4G1.5 W960 NM30T MRKIII	1,000	EA	
60110350/101	WIRING HUB CPU IEC/UL (35)	1,000	EA	
60110571	GLAND PL W/W RAL 7035 AUS	1,000	EA	
60112102	WIRING HUB CPU IEC/UL (1)	1,000	EA	
60112103	WIRING HUB CPU IEC/UL (2)	1,000	EA	
60112104	WIRING HUB CPU IEC/UL (3)	1,000	EA	
60112105	WIRING HUB CPU IEC/UL (4)	1,000	EA	
60112106	WIRING HUB CPU IEC/UL (5)	1,000	EA	
60112107	WIRING HUB CPU IEC/UL (6)	1,000	EA	
60112108	WIRING HUB CPU IEC/UL (7)	1,000	EA	
60112109	WIRING HUB CPU IEC/UL (8)	1,000	EA	
60112110	WIRING HUB CPU IEC/UL (9)	1,000	EA	
60112111	WIRING HUB CPU IEC/UL (10)	1,000	EA	
60112112	WIRING HUB CPU IEC/UL (11)	1,000	EA	
60112113	WIRING HUB CPU IEC/UL (12)	1,000	EA	
60112114	WIRING HUB CPU IEC/UL (13)	1,000	EA	
60112115	WIRING HUB CPU IEC/UL (14)	1,000	EA	
60112116	WIRING HUB CPU IEC/UL (15)	1,000	EA	
60112118	WIRING HUB CPU IEC/UL (16)	1,000	EA	
60112119	WIRING HUB CPU IEC/UL (17)	1,000	EA	
60112120	WIRING HUB CPU IEC/UL (18)	1,000	EA	
60112121	WIRING HUB CPU IEC/UL (19)	1,000	EA	
60112122	WIRING HUB CPU IEC/UL (20)	1,000	EA	
60112123	WIRING HUB CPU IEC/UL (21)	1,000	EA	
60112124	WIRING HUB CPU IEC/UL (22)	1,000	EA	
60112125	WIRING HUB CPU IEC/UL (23)	1,000	EA	
60112126	WIRING HUB CPU IEC/UL (24)	1,000	EA	
60112128	WIRING HUB CPU IEC/UL (26)	1,000	EA	
60112129	WIRING HUB CPU IEC/UL (25)	1,000	EA	
60112143	CABLES WING 1 HUB PANEL EVO II	1,000	EA	
60112144	CABLES WING 2 HUB PANEL EVO II	1,000	EA	
60112145	CABLES WING 3 HUB PANEL EVO II	1,000	EA	
60112146	CABLES COMMON HUB PANEL EVO II	1,000	EA	
60112147	EARTH BAR HUB PANEL EVO II	1,000	EA	
60112156	DIN RAIL 7x35x0.135 M	1,000	EA	
60112157	DIN RAIL 35x7x0.39 M	1,000	EA	
60112349	WIRING HUB CPU IEC/UL (27)	1,000	EA	
60112350	WIRING HUB CPU IEC/UL (28)	1,000	EA	
60112351	WIRING HUB CPU IEC/UL (29)	1,000	EA	
60112352	WIRING HUB CPU IEC/UL (30)	1,000	EA	
60112353	WIRING HUB CPU IEC/UL (31)	1,000	EA	
60112354	WIRING HUB CPU IEC/UL (32)	1,000	EA	
60112355	WIRING HUB CPU IEC/UL (33)	1,000	EA	
60112358	WIRING HUB CPU IEC/UL (34)	1,000	EA	
60010699	CONDENSATION PROT DRY BAG 500G	1,000	EA	
60007459	CABLE TIE WHITE 200x2.5mm	4,000	EA	
119161	LABEL AVOID TENSION	1,000	EA	
119162	LABEL TYPE 1 ENCLOSURE	1,000	EA	
146470	FLEX HOSE 15,8MM BLACK	1,920	M	
60002320	STICKER GEN USE VCS	1,000	EA	+AK4

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60002580	LABEL	1,000	EA	+AK4
60007586	CABLE GLAND M25 PA6 BM-EN-13	1,000	EA	+AK4
60007594	LOCKNUT M25 PA6 BML-13	1,000	EA	+AK4
60009617	SCREW HFC 9046 M 4 x 16 - 4.8	5,000	EA	+AK4
60009639	SCR HEX SET M8x20 8.8 FZB	4,000	EA	+AK4
60009751	SCREW HFC 208 M 4.8 X 9.5 -FZB	32,000	EA	+AK4
60009802	WASHER M8 140HV FZB	4,000	EA	+AK4
60009877	NUT HEX FLANGE M8 8 FZB	4,000	EA	+AK4
60010159	MOUNTING PLATE 665x690x2mm	1,000	EA	+AK4
60010445	WALL BRA 2508.000 25x10mm	4,000	EA	+AK4
60108981	ENCL AE 1057.600.01 1D W/W	1,000	EA	+AK4
60110224	LABEL " LIGHT IN HUB" 20X45MM	1,000	EA	+AK4
60007481	CABLE RACK TK 5-7	1,000	EA	-B062
60009279	PT100 180-4-2M Ø6x60mm	1,000	EA	-B062
60005136	MCB 5SX2104-7 4.0A C 1P	1,000	EA	-F02
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	-F02/-G402
188453	PS ADC 5483R-3 10A-27,4 NM PIN	1,000	EA	-G400
60010158	MOUN PL W/W	1,000	EA	-G400
60009577	SCR CRS PH M3x6 FZB	8,000	EA	-G400-G401
60009580	SCREW ISO 7045 M4X10-FZB-H	12,000	EA	-G400-G401-SIF
188453	PS ADC 5483R-3 10A-27,4 NM PIN	1,000	EA	-G401
60010158	MOUN PL W/W	1,000	EA	-G401
60006942	TRAFO 2x110/24VAC 70VA	1,000	EA	-G402
51701801	SIF HUB COMPUTER CABINET EVOII	1,000	EA	-K01
60001914	CONN BLZ F 2 LEADED	1,000	EA	-K01
60001930	CONN BLZ F 4 LEADED	4,000	EA	-K01
60001937	CONN BLZ F 5 LEADED	3,000	EA	-K01
60001946	CONN BLZ F 6 LEADED	1,000	EA	-K01
60001960	CONN BLZ F 8 LEADED	5,000	EA	-K01
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	-K02
60110379	CONT AL 9-30-10 24V DC	1,000	EA	-K02
60110382	VARISTOR 24-60V RV 5/50	1,000	EA	-K02
60110379	CONT AL 9-30-10 24V DC	1,000	EA	-K03
60110382	VARISTOR 24-60V RV 5/50	1,000	EA	-K03
60005827	SELECT SWITCH 1SFA611200R1006	1,000	EA	-S01
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	-S01
60005848	HOLDER for 3 ELEMENTS SK616 01	1,000	EA	-S01
60002503	LABEL "-X01"	1,000	EA	-X01
60006483	CONN MODULE BLIND MALE	1,000	EA	-X01
60006566	HOUSING 42P BULKHEAD	1,000	EA	-X01
60006567	COVER F HOUSING 10P	1,000	EA	-X01
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	-X01
60099102	FRAME F 3 MOD MALE 2+PE	1,000	EA	-X01
60002504	LABEL "-X02"	1,000	EA	-X02
60006483	CONN MODULE BLIND MALE	2,000	EA	-X02
60006566	HOUSING 42P BULKHEAD	1,000	EA	-X02
60006567	COVER F HOUSING 10P	1,000	EA	-X02
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	-X02
60099102	FRAME F 3 MOD MALE 2+PE	1,000	EA	-X02
60002505	LABEL "-X03"	1,000	EA	-X03
60006483	CONN MODULE BLIND MALE	2,000	EA	-X03
60006566	HOUSING 42P BULKHEAD	1,000	EA	-X03
60006567	COVER F HOUSING 10P	1,000	EA	-X03
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	-X03
60099102	FRAME F 3 MOD MALE 2+PE	1,000	EA	-X03
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	-X04
60006078	TERMINAL WAGO DOUBLE 870-831 2	1,000	EA	-X04/-F01
60005135	MCB 5SX2103-7 3.0A C 1P	1,000	EA	-X04/-F01
60002507	LABEL "-X05"	1,000	EA	-X05
60006566	HOUSING 42P BULKHEAD	1,000	EA	-X05
60006567	COVER F HOUSING 10P	1,000	EA	-X05
60009599	SCR CRS PH M4x14 4.8 FZB	4,000	EA	-X05
60099102	FRAME F 3 MOD MALE 2+PE	1,000	EA	-X05
60002508	LABEL "-X06"	1,000	EA	-X06
60006078	TERMINAL WAGO DOUBLE 870-831 2	6,000	EA	-X07
60006079	END PLATE 870-948	2,000	EA	-X07
60006087	PUSH-IN JUMPER BAR 870-403	2,000	EA	-X07
60091902	END STOP WAGO 249-116 6MM TS35	2,000	EA	-X07
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X07;-X04
60006071	TERMINAL WAGO 870-501 2-LEV.0,	3,000	EA	-X08
60006083	END SECTION 870-518 2-LEVEL GR	1,000	EA	-X08
60091902	END STOP WAGO 249-116 6MM TS35	1,000	EA	-X08
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X08
60006078	TERMINAL WAGO DOUBLE 870-831 2	12,000	EA	-X09
60006079	END PLATE 870-948	1,000	EA	-X09

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60006086	PUSH-IN JUMPER BAR 870-402 2-P	6,000	EA	-X09
60091902	END STOP WAGO 249-116 6MM TS35	2,000	EA	-X09
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X09
60006079	END PLATE 870-948	1,000	EA	-X10
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X10
60006078	TERMINAL WAGO DOUBLE 870-831 2	3,000	EA	-X11
60006079	END PLATE 870-948	1,000	EA	-X11
60091902	END STOP WAGO 249-116 6MM TS35	2,000	EA	-X11
60091915	END STOP LABEL HOLDER WAGO 249	1,000	EA	-X11
60007196	DIN RAIL FTG TSTW 72x48MM	3,000	EA	DIN 2
60007197	SCREW FKSC M6x12MM	3,000	EA	DIN 2
60112149	CABLE CONDUIT COVER 25x0.100 M	2,000	EA	Pos 1-2
60112158	CABLE CONDUIT 25x40MM 0.09 M	2,000	EA	Pos 1-2
60112150	CABLE CONDUIT COVER 25x0.44 M	1,000	EA	Pos 3
60112159	CABLE CONDUIT 25x40MM 0.435 M	1,000	EA	Pos 3
60112151	CABLE CONDUIT COVER 25x0.115 M	1,000	EA	Pos 4
60112160	CABLE CONDUIT 25x40MM 0.115 M	1,000	EA	Pos 4
60112152	CABLE CONDUIT COVER 25x0.615 M	1,000	EA	Pos 5
60112161	CABLE CONDUIT 25x40MM 0.61 M	1,000	EA	Pos 5
60112153	CABLE CONDUIT COVER 40x0.29 M	1,000	EA	Pos 6
60112162	CABLE CONDUIT 40x60MM 0.29 M	1,000	EA	Pos 6
60110350/200	CABLE CONDUIT 40x60MM 0.475M	1,000	EA	Pos 7
60112154	CABLE CONDUIT COVER 40x0.48 M	2,000	EA	Pos 7-8
60112163	CABLE CONDUIT 40x60MM 0.475 M	1,000	EA	Pos 8
60112155	CABLE CONDUIT COVER 40x0.405 M	1,000	EA	Pos 9
60112164	CABLE CONDUIT 40x60MM 0.435 M	1,000	EA	Pos 9

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Change Info

Item no.	***Item text:***
60112243	**Hub Hatch Override Pendant 30t**

Active revision *for production*

Drawing no.: 6010129

Version	Date	Init./App.	Description of change since last revision
07	22.03.2007	INI/FLT	Changed with ECO 222950 and SAP ECM 500000006852. Page 040: Cable number for NM2000 corrected to W504.

LST no.: 21000219 *BOM no.: 60112243*

Version	Date	Init./App.	Description of change since last revision
06	03.04.2007	HHU+INI/FLT	Changed with ECO 222950 + 223433_Updated for production in Spain. Added: 60110725 wiring120mm X-line 1,5mm² reed_3 pcs. Removed: 60025271_Locktite 243 nut lock, is still used but not 2 cans, just a touch from a can.

Old revisions *for service*

Drawing no.: 6010129

Version	Date	Init./App.	Description of change since last revision
06	20.09.2006	INI/FLT	Changed with ECO 216938. Text in bottom/cover inside were mirror written. Page 030: Numbers and capital letters in the bottom/cover inside layout are been corrected
05	10.03.2006	INI/FLT	Reason for changes, Push button box 60010964 is left out from ABB assortment, replaced with 769055 Page 001 Updated Page 030: Layout updated with the new box.
04	06.01.2006	INI/FLT	Reason for change, layout of cover inside corrected. Page 030: Holder removed from S2, layout cover inside.
03	22.11.2005	INI/FLT	Reason for changes, ABB have changed series of push-button and revision 02 was not entirely correct. Page 001_Index, updated Page 030_Layout, cover inside, terminal S1.11/S1.12 corrected to S1.21/S1.22 and terminal S2.13 /S2.14 removed. Layout of bottom with terminal S2.23/S2.24 added. Page 040_Internal Connection, terminal S2.13/S2.14 corrected to S2.23/S2.24.
02	29.09.2005	INI/FLT	Reason for changes, new pushbutton series from ABB. Page 001: New index Page 030: Layout corrected with new 60005849_SAFETY HOLDER and illustrated that terminals are placed inside the cover. PG21 changed to PG13.5 Page 040: New page with updated internal connections.
01	14.05.2003	FLT/FLT	First version in SAP no. system.

LST no.: 21000219 *BOM no.: 60112243*

Version	Date	Init./App.	Description of change since last revision
05	20.09.2006	INI/FLT	Changed with ECO 216938. Following item are been added: 2x60009587_SCREW ISO 7046 M 4 x 10 - 4.8 - FZB - Z 2x60025271_LOCTITE 243 NUT LOCK 4x60009600_SCREW ISO 7045 M 4 x 16 - 4.8 - FZB - Z 4x60009838_LOCK WASHER DIN 6798 A 4 – FZB
04	02.03.2006	INI/FLT	Reason for changes, Push button box 60010964 is left out from ABB assortment, replaced with 769055 60010964 changed to 769055_Push Bottom Box 4 holes 60005874 + 60005876 changed to 118928_Sign 60007541 changed to 193712_Cable gland FM20GPA polyamid. 60007557 changed to 193722_Locknut MM20GPA polyamid. 60112246 changed to 185029_Lamp blockMLB-1B 60112248 changed to 185030_Push bottom blue MP1-10L 60007458x3 pc. Cable tie 140x2.5mm WH added. 60005881x2 pc. 60007656x1 pc. 60112245x2 pc. removed
03	06.01.2006	INI/FLT	Reason for change, version 02 was printed in a wrong view, so that phased out items were shown.
02	23.11.2005	INI/FLT	Reason for changes, ABB have changed series of push-button and revision 02 was not entirely correct. Replaced item, 60005844_CONTACT ELEMENT SK616 001-A 1NO with 60005845_CONTACT ELEMENT SK616 002-A 1NO DIN-RAIL Removed item 60112245 _HO 3 ELEMEN 1SFA611605R1100

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01	03.10.2005	INI/FLT	Reason for changes, new pushbutton series from ABB. 60005826 changed to 60112248_PB 1SFA616162R1015 RESET W "R" 60005848 changed to 60112245_HO 3 ELEMEN 1SFA611605R1100 60005842 changed to 60112244_PIL 1SFA 611 400 R1008 CLEAR 60005850 changed to 60112246_LAMP BLOCK 1SFA611620R1001 Added 60005881_INSERT for PUSH BUTTON 36122100.

Earlier BOM no Longer Active for Serial Production

LST no.: 21000166 *BOM no.: 60104917*

Version	Date	Init./App.	Description of change since last revision
04	13.06.2005	MILJE/MILJE	Production required changes.
03	29.03.2005	MILJE/MILJE	Production required change 2x60009987_ MAGNET A43A-KSM4 43mm added. 1x60073080_ Bracket for control box +AN2 added
02	13.12.2004	MILJE/MILJE	60108271 CABLE for OVERRIDE PENDANT added Following items is removed from BOM 60006456 HOUSING, 09300061541 6P+PE ANGLE PG16 1PC 60007543 CABLE GLAND BS15 PG16 NYLON 1PC 60006448 ADAPTER 09330062601 MALE 6P+PE SCREW 1PC 60008948 CABLE 8G0.75mm² Y-JZ IEC 8,0 M
01	30.06.2004	CHO/CHO	First version

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030	Layout	060920	-
040	Internal Connection	070322	-

Vestas

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	Date	Initials	Function	Table of Contents		
Designed	010924	FLT	Project title	Hub Hatch Override Pendant		
Approved	070322	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	070322	INI	Rev. 07	Drawing no. 6010129	Cont. sheet 030	Sheet 001

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22-03-07 11:41

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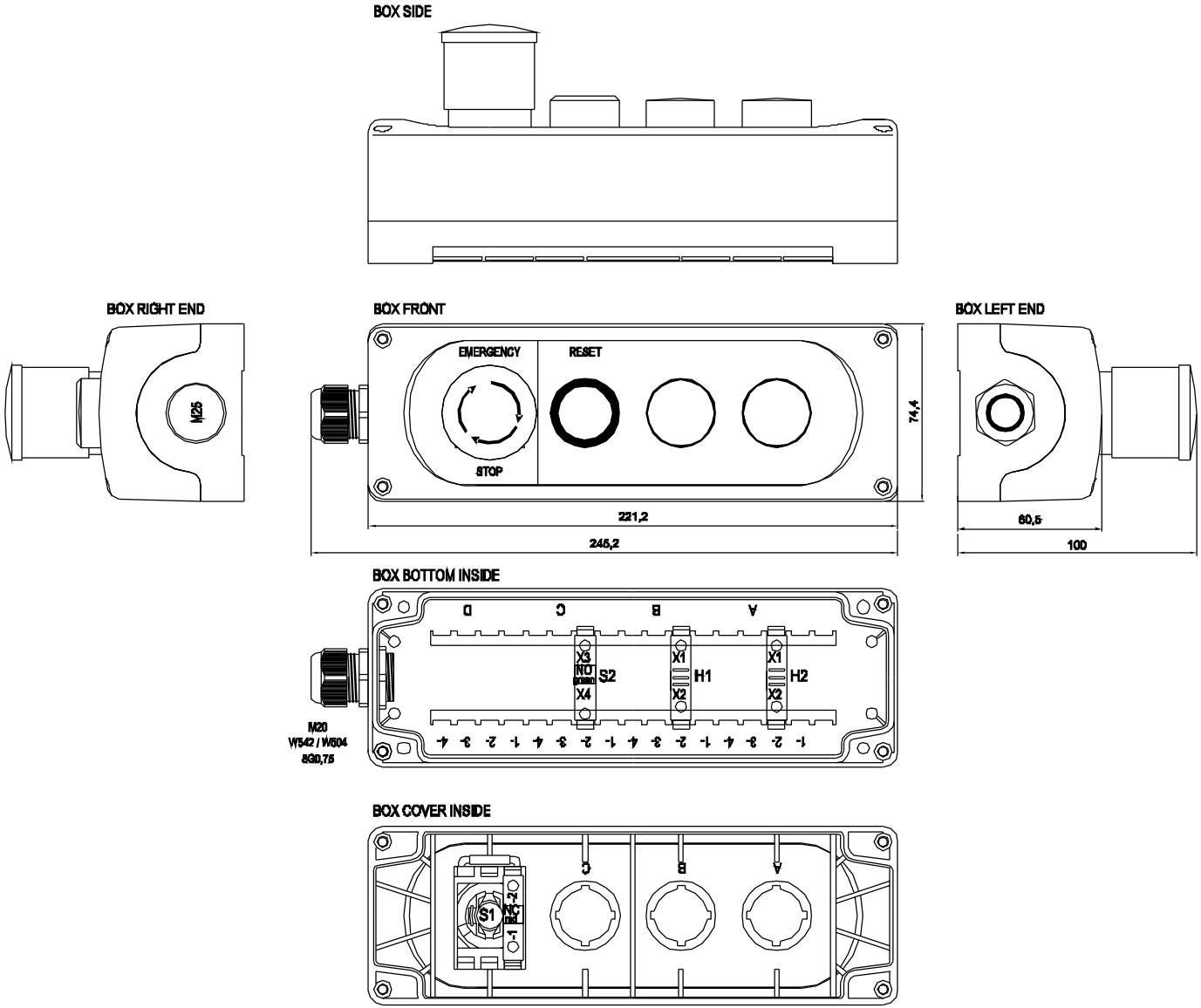

	Date	Initials	Function	Layout		
Designed	010924	FLT	Project title	Hub Hatch Override Pendant		
Approved	060920	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	060920	INI	Rev. -	Drawing no. 6010129	Cont. sheet 040	Sheet 030

Vestas

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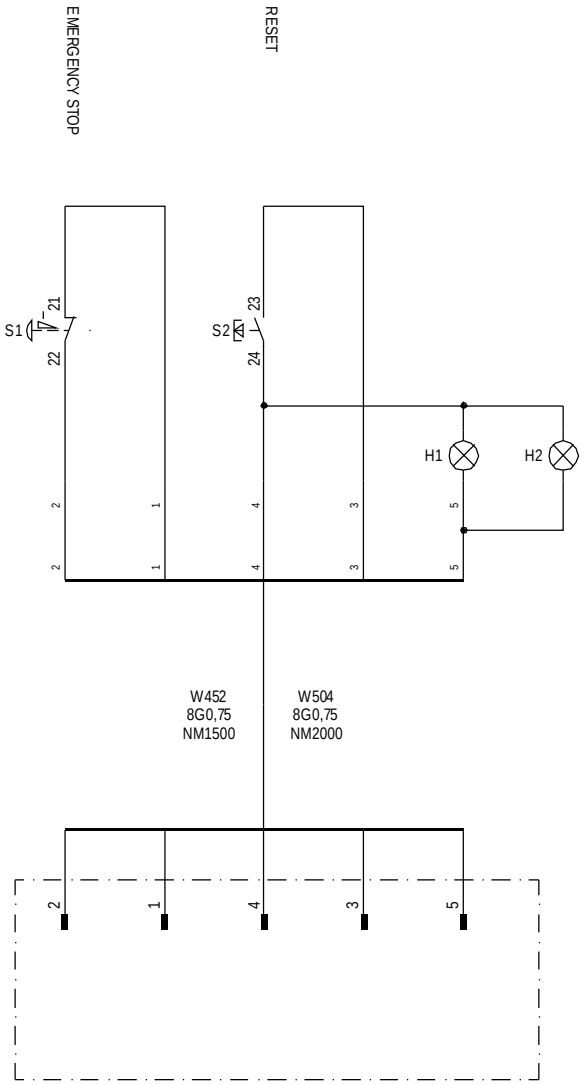

	Date	Initials		
Designed	010924	FLT	Function	Internal Connection
Approved	070322	FLT	Project title	Hub Hatch Override Pendant
Revised	070322	INI	Comments	
			Customer	Vestas Wind Systems A/S
			Rev.	-
			Drawing no.	6010129
			Cont. sheet	-
			Sheet	040

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60112243 HUB HATCH OVERRIDE PENDANT 30t

Component	Description	Qty per	Stk UM	Position Number
D6010129	HUB HATCH OVERRIDE PENDANT	0,000	EA	
60108271	CABLE F OVERRIDE PENDANT	1,000	EA	
60009987	MAGNET A43A-KSM4 43MM	2,000	EA	
60073080	BRA F CONTROL BOX AN2	1,000	EA	
193712	CABLE GLAND FM20GPA POLYAMID	1,000	EA	
193722	LOCKNUT MM20GPA POLYAMID	1,000	EA	
118927	SIGN, HUB HATCH OVERR. PENDANT	1,000	EA	
769055	PUSH BOTTON BOX W. 4 HOLES	1,000	EA	
60007458	CABLE TIE 140x2.5mm WH	3,000	EA	
60009587	SCR CRS UH M4x10 4.8 FZB	2,000	EA	
60009600	SCREW ISO 7045 M 4 X 16 - 4.8	4,000	EA	
60009838	LOCK WASHER DIN 6798 A4 - FZB	4,000	EA	
60110725	WIRING 120MM X-LINE 1,5MM2	3,000	EA	
60112244	PIL 1SFA 611 400 R1008 CLEAR	1,000	EA	H1
60005886	BULB BA9S 24V	2,000	EA	H1+H2
185029	LAMP BLOCK MLB-1B	2,000	EA	H1, H2
60112244	PIL 1SFA 611 400 R1008 CLEAR	1,000	EA	H2
60005824	MUSHROOM BUTTON ISAF616510R100	1,000	EA	S1
60005846	CONTACT ELEMENT SK616 001-B 1N	1,000	EA	S1
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S1
60005845	CE SK616 002-A 1NO DIN RAIL	1,000	EA	S2
185030	PUSH-BOTTON BLUE MP1-10L	1,000	EA	S2

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Change Info

Item no.	***Item text:***
60019483	**Control Pendant**

Active revision *for production*

Drawing no.: 6010130

Version	Date	Init./App.	Description of change since last revision
03	03.05.2005	INI/FLT	All pages updated with Vestas logo and to another no system

LST number: 21000005 *Material BOM no.: 60015995*

Version	Date	Init./App.	Description of change since last revision
06	11.05.2007	MOJDA/FLT	Changed with ECO 224800_Updated for production in Spain. 60005848 replaced by 60005849 HO 3 ELEMEN 1SFA616605R1100 1 pc. Pos. S1 60005848 replaced by 60005849 HO 3 ELEMEN 1SFA616605R1100 1 pc. Pos. S2 60005848 replaced by 60005849 HO 3 ELEMEN 1SFA616605R1100 1 pc. Pos. S4 60005848 replaced by 60005849 HO 3 ELEMEN 1SFA616605R1100 1 pc. Pos. S5 60005848 replaced by 60005849 HO 3 ELEMEN 1SFA616605R1100 1 pc. Pos. S6 60005848 replaced by 60005849 HO 3 ELEMEN 1SFA616605R1100 1 pc. Pos. S7 Item 60009587 SCREW ISO 7046 M 4 x 10 - 4.8_8 pc. added.

Old revisions *for service*

Drawing no.: 6010130

Version	Date	Init./App.	Description of change since last revision
02	02.05.2005	FLT/FLT	Page 2:Test W529 removed.
01	14.05.2003	FLT/FLT	First version in SAP no. system.

LST number: 21000005 *Material BOM no.: 60015995*

Version	Date	Init./App.	Description of change since last revision
05	13.06.2005	MILJE/	Production requirement serial production,
04	13.12.2004	MILJE/MILJE	Following items is removed 60008997 CABLE 18G1.5mm² Y-JZ IEC 2,5M 60006565 HOUSING C14610G0106008 3-mod. TOP ENTR 1PC 60098976 FRAME f. 3 MOD. C146 S10 00 2G8 FEM.2+PE 1PC 60099095 ADAPTER f.STAMP. C146 C10 001 G8FEM. 10P 2PC 60006484 MODULE BLIND C146B00001E8 FEMALE 1PC 60093531 CRIMP CONT. TN020160002 FEM. 0.5-1.5mm² 12PC 60007604 CABLE GLAND BSBC-06 PG21 BRASS 1PC 60006336 INSUL. END TERMINAL 18/0.75mm² 8mm CHAIN 19PC
03	17.06.2004	ATM/CHO	60006476 substituted by 60098976 and 60006496 substituted by 60099095.
02	23.07.2003	AME/FLT	Item no 60006510 changed to 60093531
01	29.06.2001	RPJ /RPJ	First version in the new SAP no. system.

Earlier Drawings and Part Lists no Longer Active for Serial Production

Change Info: 0000243

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1	2	3	4	5	6	7	8	9	10	11	12	13

PAGE	CONTENT	DATE	REVISION
001	Table of Contents	050503	03
030	Box Front	050503	-
040	Terminals	050503	-
100	Controls	050503	-

Property of Vestas Wind Systems A/S. This drawing must not be passed on to any person, nor be copied or other wise made use of without our approval.

	Date	Initials	Function	Table of Contents		
Designed	000411	MSL	Project title	Control Pendant		
Approved	050504	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	050503	INI	Rev. 03	Drawing no. 6010130	Cont. sheet 030	Sheet 001

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04-05-05 10:03

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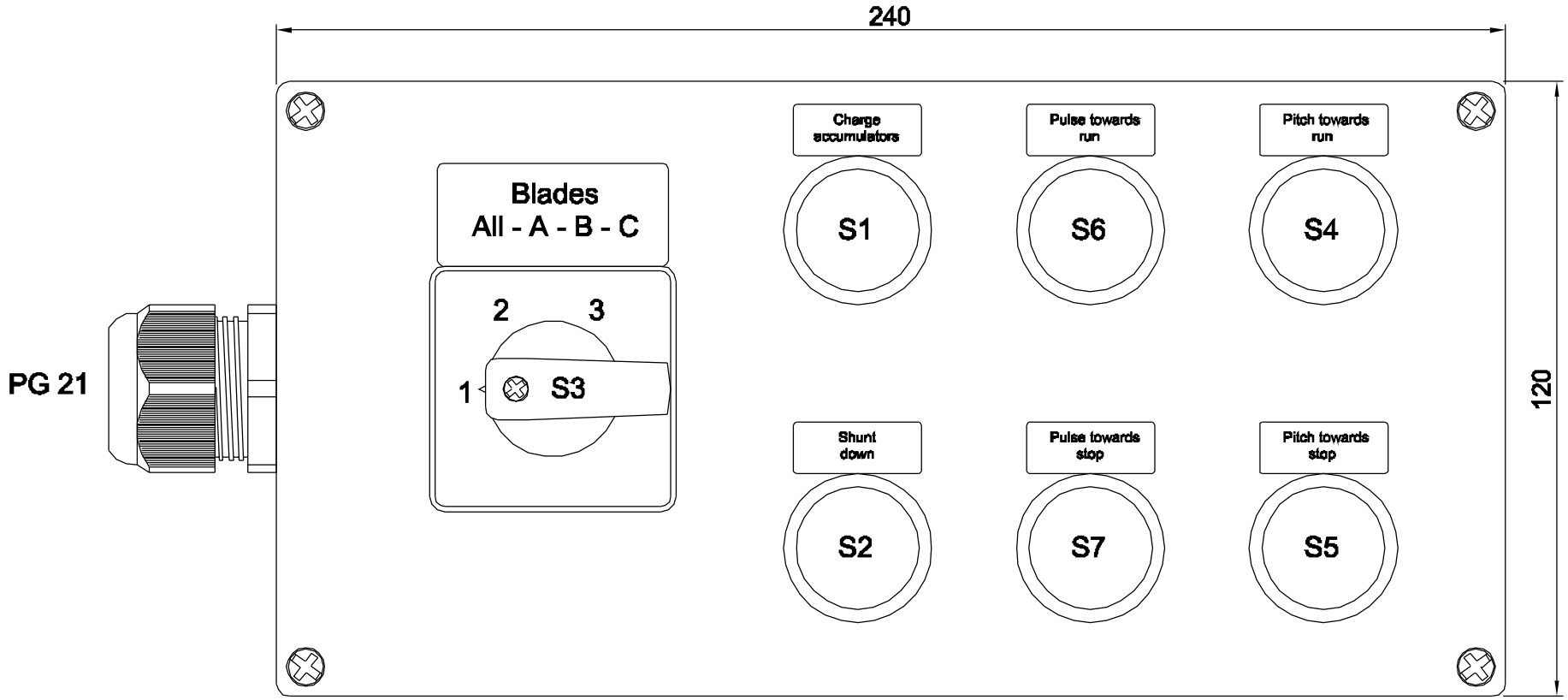

Dim.: 240x120x100mm

	Date	Initials		
Designed	000411	MSL	Function	Box Front
Approved	050504	FLT	Project title	Control Pendant
Revised	050503	INI	Comments	
			Customer	Vestas Wind Systems A/S
			Rev. -	Drawing no. 6010130
			Cont. sheet 040	Sheet 030

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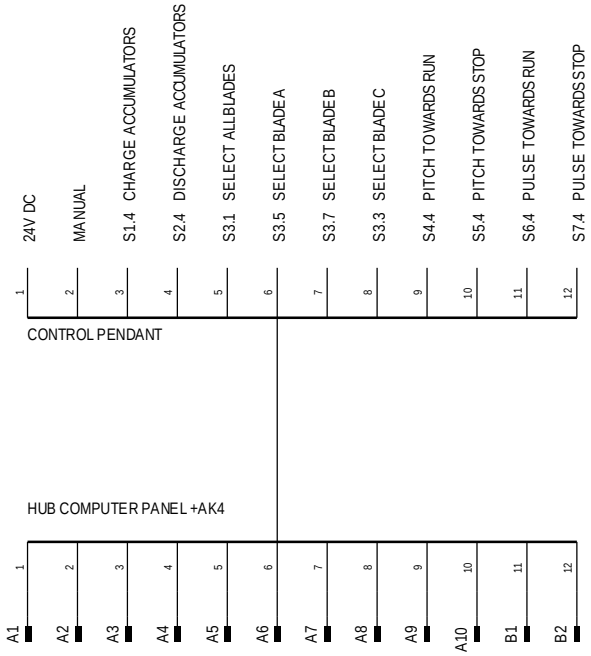
04-05-05

10:03



	Date	Initials	Function	Terminals		
Designed	000411	MSL	Project title	Control Pendant		
Approved	050504	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	050503	INI	Rev. -	Drawing no. 6010130	Cont. sheet 100	Sheet 040

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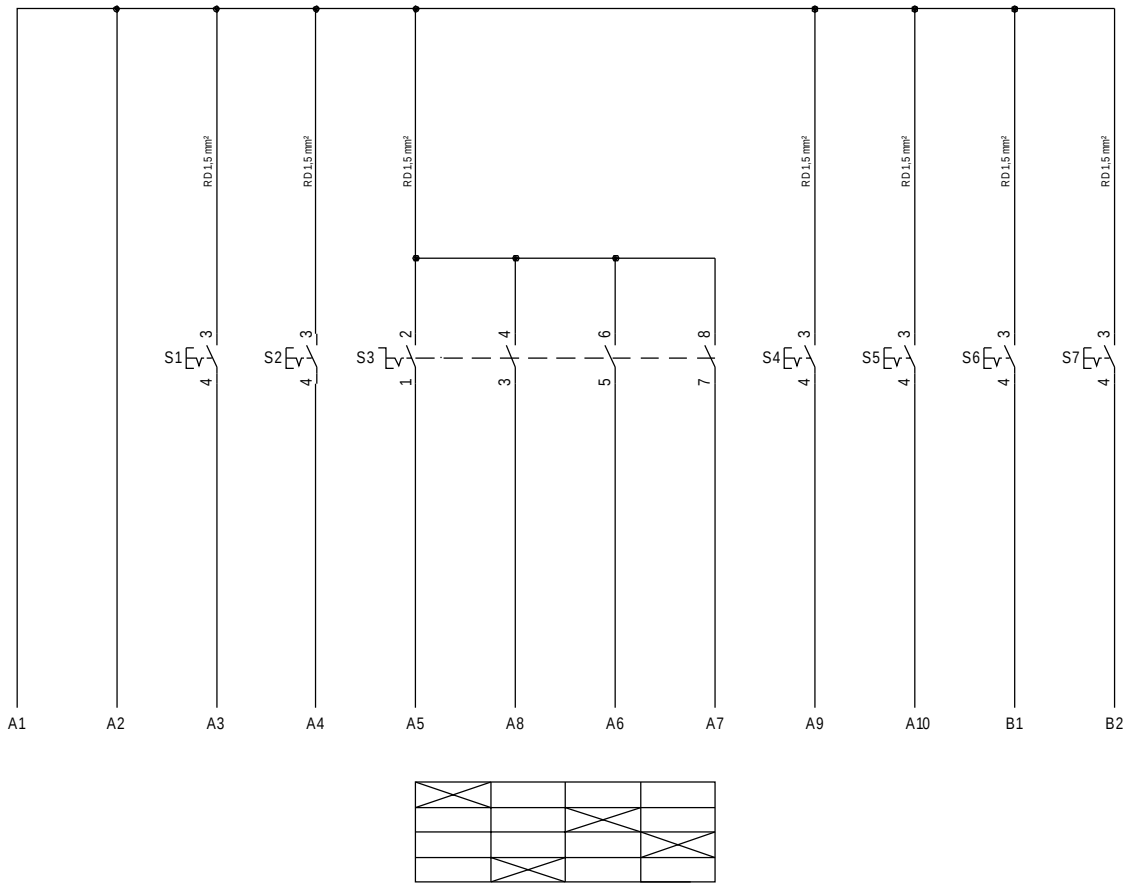

	Date	Initials	Function	Controls		
Designed	000411	MSL	Project title	Control Pendant		
Approved	050504	FLT	Comments		Customer	Vestas Wind Systems A/S
Revised	050503	INI	Rev. -	Drawing no. 6010130	Cont. sheet -	Sheet 100

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04-05-05 10:03

Document no.: 21000005
Version: 06
Date: 04/07/2007
Init: Inge Nielsen

60015995 CONTROL PENDANT NM72 HUB

Component	Description	Qty per	Stk UM	Position Number
D6010130	CONTROL PENDANT	0,000	EA	
60011008	BOX TS242 240x120x100mm	1,000	EA	
60002455	LABEL "PULS TOWARDS STOP"	1,000	EA	
60002457	LABEL "PITCH TOWARDS RUN"	1,000	EA	
60002459	LABEL "PULSE TOWARDS RUN"	1,000	EA	
60002461	LABEL "PITCH TOWARDS STOP"	1,000	EA	
60002463	LABEL "CHARGE ACCUMULATORS"	1,000	EA	
60002465	LABEL "SHUT DOWN"	1,000	EA	
60002467	LABEL "BLADES ALL A-B-C"	1,000	EA	
60009987	MAGNET A43A-KSM4 43MM	4,000	EA	
60009587	SCR CRS UH M4x10 4.8 FZB	8,000	EA	
D22000013	CI-CONTROL PENDANT	0,000	EA	
D21000005	60015995 BOM CONTROL PENDANT	0,000	EA	
60111290	LABEL TYPE SIGN CTRL PENDANT	1,000	EA	
60110725	WIRING 120MM X-LINE 1,5MM2	6,000	EA	
60072439	BRA F CTRL BOX-HUB NM1500C/72	1,000	EA	
60007557	LOCKNUT PG21 PA6 BLN16	1,000	EA	
60007545	CABLE GLAND PG21 NYLON BS16	1,000	EA	
60005803	PB 1SFA 616 100 R1006 BLACK	1,000	EA	S1
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S1
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	S1
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S2
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	S2
60005803	PB 1SFA 616 100 R1006 BLACK	1,000	EA	S2
60005862	TS 5318136328 4-POSITIONS	1,000	EA	S3
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	S4
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S4
60005803	PB 1SFA 616 100 R1006 BLACK	1,000	EA	S4
60005803	PB 1SFA 616 100 R1006 BLACK	1,000	EA	S5
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	S5
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S5
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S6
60005803	PB 1SFA 616 100 R1006 BLACK	1,000	EA	S6
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	S6
60005844	CONTACT ELEMENT SK616 001-A 1N	1,000	EA	S7
60005849	HO 3 ELEMEN 1SFA616605R1100	1,000	EA	S7
60005803	PB 1SFA 616 100 R1006 BLACK	1,000	EA	S7

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Change Info

Item no.	***Item text:***
None	**Table of Tightening Torques of Electrical Components in Panels**

Active revision for production

WKI number: 1000827

Revision	Date	Init./App.	Description of change since last revision
04	19.04.2006	KEGHA/SLB	Updated with new items.

LST no.: None *Material BOM no.: None*

Revision	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xxx	Write the change

Old revisions for service

WKI number: 1000827

Revision	Date	Init./App.	Description of change since last revision
03	11.08.2005	INI/SLB	Torque in Lb.ft. added.
02	28.07.2004	RPJ/RPJ	Item numbers changed from XAL to SAP numbers. Entrelec terminals added.
01	21.08.2002	RPJ /RPJ	First version in the new SAP no. system.

LST no.: xxxxxxxx *Material BOM no.: xxxxxxxx*

Revision	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xxx	Write the change

Earlier Drawings and Part Lists no Longer Active for Serial Production

Change Info: 4002134

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Date: 19.05.2006	Doc. Type: WKI	Doc. No.: 1000827	Version: 04	Approver: SLB	Creator: RPJ / Rev.: KEGHA

Tightening Torque

Component	Standard bolt / nut	Torque Interval min	Torque Interval max	Torque Prefered [Nm]	Torque Prefered [Lb.ft.]	Tools	Vestas item no.	Supplier item no.
	[mm]					[mm]		
Standard Bolts								
	3 mm			0,128	0,09			
	4 mm			0,290	0,21			
Standard bolt and nut	5 mm			0,575	0,42	8		
Standard bolt and nut	6 mm			9,9	7,30	10	**60009622-9729**	Steel 8,8
Standard bolt and nut	8 mm			24	17,70	12 / 13	**60009622-9729**	Steel 8,8
Standard bolt and nut	10 mm			48	35,40	16 / 17	**60009622-9729**	Steel 8,8
Standard bolt and nut	12 mm			70	51,63	18 / 19	**60009622-9729**	Steel 8,8
Standard bolt and nut	14 mm			75	55,32	22	**60009622-9729**	Steel 8,8
Standard bolt and nut	16 mm			90	66,38	24	**60009622-9729**	Steel 8,8
Standard bolt and nut								
CAPACITORS								
Capacitor 6,8kVAr 3x960V Vishay				2	1,48		**60000920**	50511/ PhMKP960.2.06.8
Capacitor 9,6kVAr 3x960V Vishay				2	1,48		**60000921**	50510/ PhMKP960.2.09.6
Capacitor 27,2kVAr 3x960V Vishay				10	7,38		**60000934**	50509/ PhMKDg 960.2.27.22
DIODES								
Diode STPS12045TV 2x60A 45V	4mm		1,5	1,3	0,96		**60000972**	567-449
Circuit Breakers								
ABB Circuit Breaker E2N	12 mm			70	51,63	18 / 19	**60005748**	25900314
Fixing on mounting plate	10 mm			48	35,40	16 / 17		
ABB Circuit Breaker S6H800 PR212 complete							**60005675**	25700308
- Relay screws to breaker				9	6,64			
- Relay screws to busbars				30	22,13			
-Cable terminal to breaker				9	6,64			
-Cable terminal to cable 70-185				43	31,72			
ABB Circuit Breaker S4H	8 mm			9	6,64		**60005660**	25700245
Fixing on mounting plate				2	1,48			
Siemens Circuit Breakers S00		0,8	1,2	1	0,74	PZ2	**60004779-4790**	3RV1X 11
Siemens Circuit Breakers S0		2	2,5	2,3	1,70	PZ2	**60004779-4790**	3RV1X 2X
Siemens Circuit Breakers S2		3	4,5	3,8	2,80	PZ2	**60004779-4790**	3RV1X 3X
Siemens Circuit Breakers S3		4	6	5	3,69	Hexagon	**60004779-4790**	3RV1X 4X
Siemens Transverse Auxiliary Switch 1NO + 1NC f. S00, S0, S2, S3		0,8	1,2	1	0,74	PZ2	**60004778**	3RV 19 01-E1
Siemens Transverse Auxiliary Switch 1changeover contact f. S00, S0, S2, S3		0,8	1,2	1	0,74	PZ2	**60004777**	3RV 19 01-G1
Siemens Lateran Auxiliary Switch 1NO + 1NC f. S00, S0, S2, S3		0,8	1,2	1	0,74	PZ2	**60004779**	3RV 19 01-1A
Siemens Lateral Auxiliary Switch 2NO f. S00, S0, S2, S3		0,8	1,2	1	0,74	PZ2	**60004780**	3RV 19 01-1B
Siemens Lateral Auxiliary Switch 2NC f. S00, S0, S2, S3		0,8	1,2	1	0,74	PZ2	**60004781**	3RV 19 01-1C
Miniature Circuit Breakers								

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VESTAS PROPRIETARY NOTICE

Tightening Torque

Component	Standard bolt / nut	Torque Interval min	Torque Interval max	Torque Prefered [Nm]	Torque Prefered [Lb.ft.]	Tools	Vestas item no.	Supplier item no.
	[mm]	[Nm]			[Lb.ft.]	[mm]		
Type ABB S230 6-40A 1-3 Pol				2	1,48			
Type ABB S260 0,5-63A 1-4 Pol				2	1,48			
Type ABB S270 0,5-63A 1-4 Pol				2	1,48			
Type ABB S280 0,2-63A 1-4 Pol				2	1,48			
Type ABB S290 80,100,125A 1-4 Pol				4,5	3,32			
Type ABB S200 0,5-63A 1-4 Pol				2,8	2,07			
Siemens MCB 5SX2.., 5SX4.., 5SX5.. 5SX7…0,5-63A	Top terminal		2,5	2	1,48	PZ2	**60005131-5193**	5SX2.., 5SX4.., 5SX5.. 5SX7…
Siemens MCB 5SX2.., 5SX4.., 5SX5.. 5SX7…0,5-63A	Bottom terminal		3	2	1,48	PZ2	**60005131-5193**	5SX2.., 5SX4.., 5SX5.. 5SX7…
Siemens MCB 63A 4pol C 5SP4463-7		3	3,5	3,2	2,36		**60005192**	5SP4463-7
Siemens MCB 16A 4pol C 5SY6616-7		2,5	3	2,7	1,99		**60005191**	5SY6616-7
Siemens Auxiliary Contact 1NO + 1NC f. 5SX2/4/5				0,5	0,37	PZ2	**60005193**	5SX9100
Siemens Circuit Breaker Auxiliary Contact 1NO + 1NC				0,5	0,37	PZ2	**??**	5SX9 260
Miniature Circuit Breakers with residual current release								
Siemens Residual Current Circuit Breakers 6A C 2 pol 0,03A		2,5	3	2,8	2,07	PZ2	**60005185**	5SU3 767-0KW06
Siemens Residual Current Circuit Breakers 10A C 2 pol 0,03A		2,5	3	2,8	2,07	PZ2	**60005186**	5SU3 767-0KW10
Siemens Residual Current Circuit Breakers 13A C 2 pol 0,03A		2,5	3	2,8	2,07	PZ2	**60005187**	5SU3 767-0KW13
Siemens Residual Current Circuit Breakers 16A C 2 pol 0,03A		2,5	3	2,8	2,07	PZ2	**60005188**	5SU3 767-0KW16
Residual Current Circuit Breakers								
Siemens Residual Current Circuit Breakers 16A 2 pol 30mA		2,5	3	2,8	2,07	PZ2	**??**	5SM1 111-6
Siemens Residual Current Circuit Breakers 25A 2 pol 30mA		2,5	3	2,8	2,07	PZ2	**60005759**	5SM1 312-6
Siemens Residual Current Circuit Breakers 25A 4 pol 30mA		2,5	3	2,8	2,07	PZ2	**??**	5SM1 342-6
Siemens Residual Current Circuit Breakers 40A 4 pol 30mA		2,5	3	2,8	2,07	PZ2	**60005762**	5SM1 344-6CA
Siemens Residual Current Circuit Breakers 63A 4 pol 30mA		2,5	3	2,8	2,07	PZ2	**??**	5SM1 346-6CA
ABB Residual Current Circuit Breakers 25A 2 pol 30mA F202A-25/0,03				2,8		PZ2	**185082**	8012542782506
Siemens Residual Current Module 0,03A for MCB		2,5	3	2,8	2,07	PZ2	**60005190**	5SM2342-6
Siemens Auxiliary Contact 1NO + 1NC 5SX9 260				0,5	0,37	PZ2	**??**	5SX9 260
Siemens Auxiliary Contact 1NO + 1NC 5SW3000		0,6	0,8	0,7	0,52	PZ2	**60005760**	5SW3000
Load break switches and Fuse material								
ABB Fuse Switch OESA250 D3-52 NH1	10 mm			22	16,23	16 / 17	**60005648**	34003500
ABB Aux contact 1no/1nc f. OESA_PL 200-800A				0,8	0,59		**60005641**	OZXK 1
ABB Fuse Switch OS 125 D04 N2 125A	8 mm			8	5,90	12 / 13	**60005633**	340020070

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VESTAS PROPRIETARY NOTICE

Tightening Torque

Component	Standard bolt / nut	Torque Interval min	Torque Interval max	Torque Prefered		Tools	Vestas item no.	Supplier item no.
	[mm]	[Nm]			[Lb.ft.]	[mm]		
ABB Load break switch OT16E				0,8	0,59			
ABB Load break switch OT25E				0,8	0,59		**60005768**	OT25ET3
ABB Load break switch OT32E				0,8	0,59		**184922**	
ABB Load break switch OT45E				2	1,48			
ABB Load break switch OT45M				2	1,48		**60005605**	OT45 M4
ABB Load break switch OT63E				2	1,48		**60005772**	OT63ET4
ABB Load break switch OT80E				2,5	1,84			
ABB Load break switch OT100E				6	4,43			
ABB Load break switch OT125E				6	4,43		**60005606**	OT125ET3
ABB Load break switch OT160E				6	4,43		**60005607**	OT160ET4
ABB aux. Switch for OT16 - 125				0,8	0,59		**60005625**	0A1 GA10 1
ABB aux. Switch for OT125 - 160				0,8	0,59		**60005627**	OBEA 10
ABB Load Switch OETL400 D1	10 mm			17	12,54	16 / 17	**60005609**	6417019 13888 6
ABB change over switch 3p 16A OT16E3C				0,8	0,59		**184819**	OT16E3C
ABB Fuse holder baseline NH00		30	44	44	32,45		**60005062**	OFAX 00 S1L
WOHNER Fuse Switch for Mounting on Busbar NH00 3pol	8 mm	12	14	13	9,59	12 / 13	**60005071**	33198
Ferraz Fuse holder 3P600V UL F6R			13,5	13,5	9,96		**60005363**	C209624
Contactors and relays								
ABB Contactor EH1200 Contactor	10 mm			48	35,40	16 / 17		364 63 300
ABB Contactor EH1200 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH1200 Earth Connection	10 mm			18	13,28	Hexagon		
ABB Contactor EH1200 Fixing on Mounting plate	6 mm			3	2,21	PZ2		
ABB Contactor EH800 Contactor	10 mm			48	35,40	16 / 17		364 59 300
ABB Contactor EH800 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH800 Earth Connection	10 mm			18	13,28	Hexagon		
ABB Contactor EH800 Fixing on Mounting plate	6 mm			3	2,21	PZ2		
ABB Contactor EH700 Contactor	10 mm			48	35,40	16 / 17		364 59 110
ABB Contactor EH700 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH700 Earth Connection	10 mm			18	13,28	Hexagon		
ABB Contactor EH70 Fixing on Mounting plate	6 mm			3	2,21	PZ2		
ABB Contactor EH550 Contactor	10 mm			48	35,40	16 / 17		364 57 100
ABB Contactor EH550 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH550 Earth Connection	10 mm			18	13,28	Hexagon		
ABB Contactor EH550 Fixing on Mounting plate	6 mm			3	2,21	PZ2		

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Tightening Torque

Component	Standard bolt / nut	Torque				Tools	Vestas item no.	Supplier item no.
		Interval		Prefered				
		min	max					
	[mm]	[Nm]			[Lb.ft.]	[mm]		
ABB Contactor EH370 Contactor	10 mm			48	35,40	16 / 17		364 56 850
ABB Contactor EH370 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH370 Earth Connection	10 mm			18	13,28	Hexagon Socket		
ABB Contactor EH370 Fixing on Mounting plate	6 mm			3	2,21	PZ2		
ABB Contactor EH300 Contactor	10 mm			48	35,40	16 / 17		364 56 655
ABB Contactor EH300 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH300 Fix on Mounting plate	6 mm			3	2,21	PZ2		
ABB Contactor EH260 Contactor	10 mm			48	35,40	16 / 17		364 55 265
ABB Contactor EH260 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH260 Fix on Mounting plate	6 mm			3	2,21	PZ2		
ABB Contactor EH210 Contactor	10 mm			48	35,40	16 / 17		364 54 655
ABB Contactor EH210 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH210 Fix on Mounting plate	6 mm			3	2,21	PZ2		
ABB Contactor EH160 Contactor	10 mm			48	35,40	16 / 17		364 52 810
ABB Contactor EH160 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH160 Fix on Mounting plate	6 mm			3	2,21	PZ2		
ABB Contactor EH145 Contactor	6 mm			9,9	7,30	10		EH 145 AR 400-415/60
ABB Contactor EH145 Coil	3,5 mm	0,8	1,2	1	0,74	PZ2		
ABB Contactor EH145 Fix on Mounting plate	5 mm			3	2,21	PZ2		
ABB Contactor A9-30-10-80	3,5 mm		1,2	1			**093332**	
ABB aux contact for EH			1,2	1	0,74		**60004318**	CAL16-11A
ABB contactor UA75 contactor			6,5	6	4,43		**60004349**	UA75-30-00-R
ABB aux contact for A9-A110			1,2	1	0,74		**60004362**	CA5-10
Siemens Contactor S00 Coil	3 mm	0,8	1,2	1	0,74			3RT1X 1X
Siemens Contactor S00 Contactor	3 mm	0,8	1,2	1	0,74			3RT1X 1X
Siemens Contactor S0 Coil	3 mm	0,8	1,2	1	0,74			3RT10 2X
Siemens Contactor S0 Contactor	4 mm	2	2,5	2,3	1,70	PZ2		3RT10 2X
Siemens Contactor S2 Coil	3 mm	0,8	1,2	1	0,74			3RT10 3X
Siemens Contactor S2 Contactor	6 mm	3	4,5	3,8	2,80	PZ2		3RT10 3X
Siemens Contactor S3 Coil	3 mm	0,8	1,2	1	0,74			3RT10 4X
Siemens contactor S3 Contactor	6 mm	4	6	5	3,69	Hexagon		3RT10 4X

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Tightening Torque

Component	Standard bolt / nut	Torque Interval min	Torque Interval max	Torque Prefered		Tools	Vestas item no.	Supplier item no.
	[mm]	[Nm]			[Lb.ft.]	[mm]		
Siemens Aux. Contact for contactors 3RH1921-1CA01		0,8	1,2	1	0,74		**60004443**	3RH1921-1CA01
Siemens Aux. Contact for contactors 3RH1921-1FA22		0,8	1,2	1	0,74		**60004444**	3RH1921-1FA22
Siemens Emergency-stop Relay 3TK2806-0BB4	3,5 mm	0,8	1,2	1	0,74		**60004996**	3TK2806-OBB4
Schrack Relay socket 2POL 10A RT78625				0,8	0,59		**60004517**	RT78625
Lightning protection								
Dehnguard 600				3	2,21	PZ2	**188521**	900 627
Dehnguard 600FM				3	2,21	PZ2	**60000674**	
Dehnguard 600FM Auxiliary contact		0,5	0,8	0,7	0,52			
Dehnguardr 440FM				3	2,21	PZ2	**60000673**	900 627
Dehnguard 440FM Auxiliary contact		0,5	0,8	0,7	0,52			
Dehnguard 320				3	2,21	PZ2	**195052**	
Dehnguard 275FM				3	2,21	PZ2	**60000672**	900 620
Dehnguard 275FM Auxiliary contact		0,5	0,8	0,7	0,52			
Dehnguard 150				3	2,21	PZ2	**188488**	
Dehnguard 75				3	2,21	PZ2	**188508**	
Dehnguard 75FM				3	2,21	PZ2	**60000671**	900 624
Dehnguard 75FM Auxiliary contact		0,5	0,8	0,7	0,52			
Dehnguard DG TNC 600 / 1000 FM/S				5	3,69	PZ2	**60000684**	900 545S
Dehngap B N-PE SPD Uc 1000V				7	5,16	PZ2	**60000680**	**900130S**
Dehngap T- C SPD N-PE Uc 255V				5	3,69	PZ2	**60000681**	**900133**
Dehn terminal DK				5	3,69	PZ2	**60000687**	**900699**
PHOENIX CONTACT Overvoltage protection RS485 MT RS485	M3			0,8	0,59		**60000693**	2762265
Pushbuttons and lamps								
ABB PDA aux.contact 1NC/1NC						0,9	**60005844-47**	SK 616 001-A….2-B
ABB PDA Lamp holder						0,9	**60005850**	SK 616 003-A
Terminals								
Entrelec Terminal M2,5/5 2,5mm2		0,4	0,6	0,5	0,37		**60005970**	24517080
Entrelec Terminal M4/6 4mm2		0,5	0,8	0,7	0,52		**60005983**	24519250
Entrelec Terminal M6/8 6mm2		0,8	1	0,9	0,66		**60005996**	24519300
Entrelec Terminal M10/10 10mm2		1,2	1,4	1,3	0,96		**60006003**	24523800
Entrelec Terminal M16/12 16mm2		1,2	1,4	1,3	0,96		**60006008**	24519550

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Tightening Torque

Component	Standard bolt / nut	Torque				Tools	Vestas item no.	Supplier item no.
		Interval		Prefered				
		min	max					
	[mm]	[Nm]			[Lb.ft.]	[mm]		
Entrelec Terminal M35/16 35mm2		2,8	3	2,9	2,14		**60006012**	24519400
Entrelec Terminal M70/22 70mm2		6	7	6,5	4,79		**60006019**	24521750
Entrelec fuse terminal M10/16 10mm2		0,8	1	0,9	0,66		**60005977**	24522300
Entrelec fuse terminal M4/8 4mm2		0,5	0,8	0,7	0,52		**60005975**	24520000
Jumber bar BJM5 & BJM5D	Entrelec		0,6	0,6	0,44			
Jumber bar BJM6 & BJM6D	Entrelec		0,6	0,6	0,44			
Jumber bar BJM62	Entrelec		0,6	0,6	0,44			
Jumber bar BJM8	Entrelec		0,6	0,6	0,44			
Jumber bar BJM10	Entrelec		0,6	0,6	0,44			
Jumber bar BJM12	Entrelec		0,6	0,6	0,44			
Jumber bar BJM16	Entrelec		1,2	1,2	0,89			
Jumber bar BJS22	Entrelec	2	3	2,9	2,14			
ERICO/Entrelec Distribution Terminal BRU 250A Connection 35 - 120mm2 (1 piece)				19	14,01	Hexagon	**60006028**	15870615
BRU 250 Outlet X2 6 - 25mm2 (2 piece)				3,5	2,58			
BRU 250 Outlet X5 2,5 - 16mm2 (5 piece)				2	1,48			
BRU 250 Outlet X4 2,5 - 10mm2 (4 piece)				2	1,48			
ENSTO Terminal KE58 (2x150 - 1x300 mm2) ALU/CU Terminal	8 mm			35	25,81	Hexagon	**60006050**	KE58
ENSTO Terminal KE58 Mounting on Busbar	12 mm			70	51,63	18 / 19		
ENSTO Terminal KE37 (300 mm2) ALU Terminal	8 mm			35	25,81	Hexagon	**60006049**	KE37
ENSTO Terminal KE37 Mounting on Busbar	12 mm			70	51,63	18 / 19		
ENSTO Terminal KE40.4 (240 mm2) ALU	8 mm	30	40	35	25,81	Hexagon	**60006048**	KE40.4
ENSTO Terminal KE40.4 Mounting on Busbar	12 mm			70	51,63	18 / 19		
Phoenex UKK 3 MSTB 5,08		0,5	0,6	0,55	0,41		**60006036**	2770888
VAN ALFEN Terminal Cu 25t/m 95mm2 Terminal <50mm2				25	18,44		**60006060**	2645.095-M10-DA
VAN ALFEN Terminal Cu 25t/m 95mm2 Terminal >50mm2				40	29,50			
VAN ALFEN Terminal Cu 25t/m 95mm2 Mounting on Busbar				45	33,19			
VAN ALFEN Terminal Cu 35t/m 120mm2 Terminal				40	29,50		**60006061**	2645.150/M10S
VAN ALFEN Terminal Cu 35t/m 120mm2 Mounting on Busbar				45	33,19			
VAN ALFEN Terminal Cu 70t/m 185mm2 Terminal				40	29,50		**60006062**	2645.185/M12
VAN ALFEN Terminal Cu 70t/m 182mm2 Mounting on Busbar				30	22,13			
Wöhner groundbar 01 130			3				**60007201**	
Wieland 35mm2 terminal 2,5-35mm2	6 mm			3			**190986**	57.535.0155.0

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Tightening Torque

Component	Standard bolt / nut	Torque				Tools	Vestas item no.	Supplier item no.
		Interval		Prefered				
		min	max					
	[mm]	[Nm]			[Lb.ft.]	[mm]		
Current Transformer								
GARRE Current Transformer 2000/1 K100K				2	1,48		**60007164**	K100K 100-4813-2BK-1kV
GARRE Current Transformer 250/1 G33				2	1,48		**60007141**	G33 024-3513-4A
Transformer								
KOHSEL Voltage Transformer EI66/25		0,5	0,8	0,7	0,52		**60006928**	EI66/25-6835
KOHSEL Voltage Transformer EI66/25 230VAC		0,5	0,8	0,7	0,52		**60006921**	EI66/25-6852
KOHSEL Transformer UI150/75 400-690/230VAC				6			**188290**	UI150/75-7794
KOHSEL Transformer UI150/75 400-690/100-110VAC				6			**188289**	UI150/75-7792
DanTrafo Trafo UI180/78 400/690V+/-10%/230V		1,2	4	3	2,21		**60007030**	DT 15093-1
Busbar systems								
Siemens busbar holder 8US1923-2AA00		4	4	4	2,95		**60007240**	8US1923-2AA00
Erico Insulator ISO 15M4	4 mm			2,66	1,96			
Erico Insulator ISO 20M4	4 mm			2,66	1,96			
Erico Insulator ISO 20M6	6 mm			9,1	6,71		**60007324**	
Erico Insulator ISO 25M5	5 mm			5,2	3,84			
Erico Insulator ISO 25M6	6 mm			9,1	6,71		**60007325**	
Erico Insulator ISO 30M6	6 mm			9,1	6,71		**60007326**	
Erico Insulator ISO 30M8	8 mm			22	16,23		**60007329**	
Erico Insulator ISO 35M6L	6 mm			9,1	6,71		**60007327**	
Erico Insulator ISO 35M8	8 mm			22	16,23			
Erico Insulator ISO 35M10	10 mm			44	32,45			
Erico Insulator ISO 40M6	6 mm			9,1	6,71		**60007328**	
Erico Insulator ISO 40M8	8 mm			22	16,23		**60007330**	
Erico Insulator ISO 40M10	10 mm			44	32,45		**60007332**	
Erico Insulator ISO 45M6	6 mm			9,1	6,71			
Erico Insulator ISO 45M8	8 mm			22	16,23			
Erico Insulator ISO 45M8L	8 mm			22	16,23			
Erico Insulator ISO 45M10	10 mm			44	32,45			
Erico Insulator ISO 50M6	6 mm			9,1	6,71			
Erico Insulator ISO 50M8	8 mm			22	16,23		**60007331**	
Erico Insulator ISO 50M10	10 mm			44	32,45		**60007333**	
Erico Insulator ISO 60M8	8 mm			22	16,23			
Erico Insulator ISO 60M10	10 mm			44	32,45		**60007334**	
Erico Insulator ISO 70M12	12 mm			76	56,05			
Erico Insulator ISO 70M16	16 mm			189	139,40			
Erico Insulator ISO 75M12	12 mm			76	56,05		**60007335**	
Erico Insulator ISO 75M16	16 mm			189	139,40			
Erico Insulator ISO 80M12	12 mm			76	56,05		**60007336**	

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Tightening Torque

Component	Standard bolt / nut	Torque				Tools	Vestas item no.	Supplier item no.
		Interval		Prefered				
		min	max					
	[mm]	[Nm]			[Lb.ft.]	[mm]		
Erico Insulator ISO 80M16	16 mm			189	139,40			
Erico Insulator ISO 100M12	12 mm			76	56,05		**60007337**	
Erico Insulator ISO 100M16	16 mm			189	139,40			
Power supply units								
Omron power supply 10A 24Vdc				0,74	0,55		**60015070**	S82K-24024-10A
Omron power supply 0,6A 24Vdc				0,74	0,55		**60015067**	S82K-01524
Omron power Supply 1,2A 12Vdc				0,74	0,55		**60015069**	S82K-01512
Powernet 115-230/24V 5A ADC5183	3 mm	0,5	0,6	0,5	0,37		**60000717**	ADC5183
Powernet 115-230/24V 10A ADC5483	3 mm	0,5	0,6	0,5	0,37		**60000719**	ADC5483
Ventilation components								
Phannenberg Ventilator PF3000		0,5	0,8	0,7			**194959**	
Stego Termostat KTS		0,3	0,5	0,4			**114447**	
Panel/Service outlet								
ABB Service socket for Dinrail G.			1,2	1,2	0,89		**60011324**	13450000
Panel inlet								
ABB CEE inlet 2P+PE 230V 16A				0,8			**185050**	2CMA193338R1000
Control System Own Components								
TAC1 Computer	3 mm	0,5	0,6	0,5	0,37			
TAC2 Computer	3 mm	0,5	0,6	0,5	0,37			
TOI1 Interface	3 mm	0,5	0,6	0,5	0,37			
TOI2 Interface	3 mm	0,5	0,6	0,5	0,37			
TAC 40 Triggerboard 690V	3 mm	0,5	0,6	0,5	0,37			
TAC 41 Triggerboard 960V	3 mm	0,5	0,6	0,5	0,37			
Socket 11 pol for TAC 70, 80, 81, 82, 83, 84, 85, 86, 87	3 mm	0,5	0,6	0,5	0,37			
Varisterbox x 8	3 mm	0,5	0,6	0,5	0,37			
Resistor Modul	3 mm	0,5	0,6	0,5	0,37			
Power converters								
C-Thiim P-Conv. WAD 200kW/690V 4-20mA		1	1	1	0,74		**60004961**	

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Change Info

Item no.	***Item text:***
60113008	**Nacelle Crane CPL, V82-1.65MW 50Hz**

Active revision *for production*

Drawing no.: 6016777

Version	Date	Init./App.	Description of change since last revision
01	2007-05-22	TKS/HABRO	Changed by ECO 500000006873 & ECO 225018 All pages have got Vestas no. and version no.

BoM no.: 60113008 *Document no.: 0000-1769*

Version	Date	Init./App.	Description of change since last revision
00	2007-06-26	INI/HABRO	First version

Old revisions *for service*

Drawing no.: 6016777

Version	Date	Init./App.	Description of change since last revision
00	2006-08-07	TKS/HABRO	First version Page 1: Pendant station and motor conn. Drw. No. Rev. 01 Date 07.08.06 Page 2: Main circuit power supply 230VAC 97992/1 Rev. 0 Date 27.06.06 Page 3: Control circuit 97992/2 Rev. 0 Date 27.06.06 Page 4: Hoist panel 97992/3 Rev. 01 Date 07.08.06

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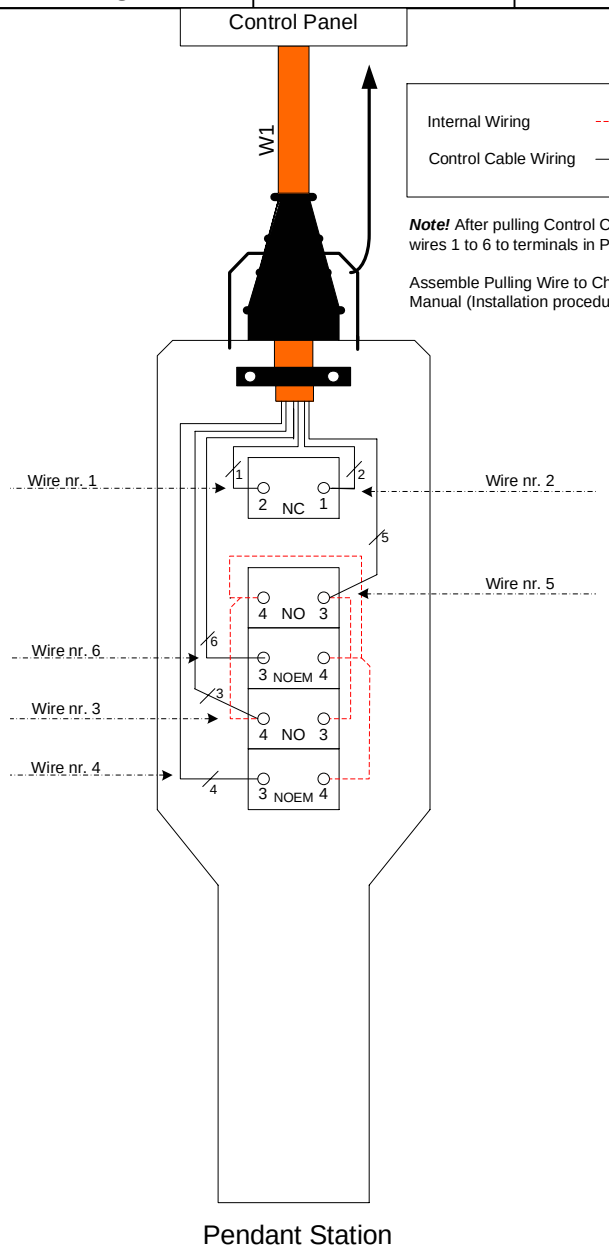
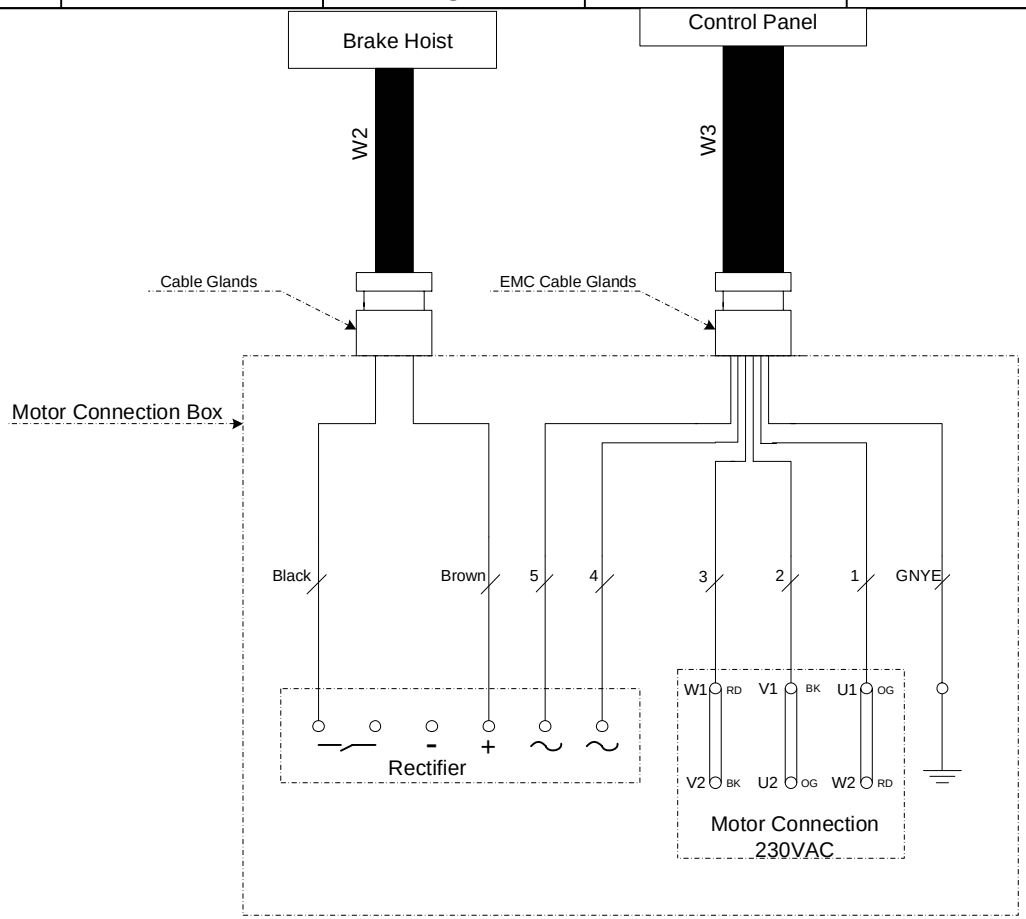


Internal Wiring

Control Cable Wiring 1 - - - - - 6

Note! After pulling Control Cable through Cable Gate, connect wires 1 to 6 to terminals in Pendant Station as shown in diagram.

Assemble Pulling Wire to Chain hoist as shown in Owners Manual (Installation procedure)



REV.	Changes	Date	SIGN
01	Wire nr. 4 and 6 in pendant station has been switched in order to change the direction on crane (up / down)	07.08.06	T.T
02	Vestas no. is set on diagram	07.06.07	T.T

TKS

Date: 06.07.2006

Drawn by: T.T

Confirm by:

Title: Pendant Station and Motor Connection

Vestas no: 6016777 vers: 01

Drawings nr:

Sheet: 1

Total: 4

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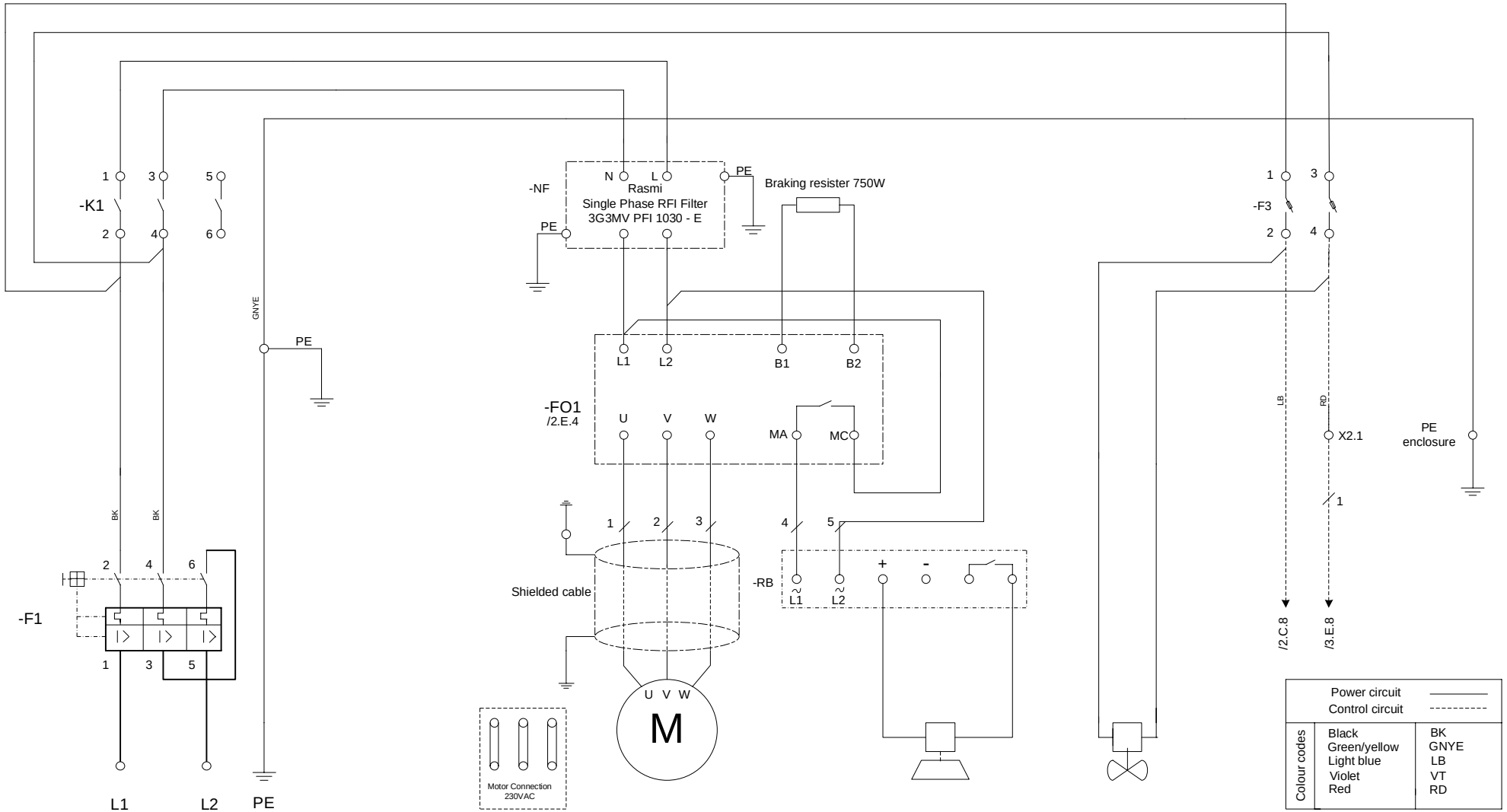

Colour codes		
	Black	BK
	Green/yellow	GNYE
	Light blue	LB
	Violet	VT
	Red	RD

Power circuit ———
Control circuit - - - -

Supply	230 VAC		230VAC	230VAC - 200VDC	230VAC - 18W	230VAC	
Fuse						Circuit Breaker ABB S202 M	
Protective circuit	Telemecanique GV2ME22 / 13 - 18A		Internal protection in Inverter				
Contactor/omformer	B&J K3 22A 230VAC Stop		Omron V7 Inverter 2,2 kw				
Motor			Motor Hoisting	Rectifier Motor Brake	Enclosure Fan	Output control circuit	

REV.	CHANGES	DATE	SIGN
		27.06.06	
01	Vestas no. is set on diagram	07.06.07	T.T

TKS

Date: 27.06.06
Drawn by:
Confirm by:

Title: Main circuit Power supply 230VAC

Vestas no: 6016777 vers. 01
Drawings nr: 97992

Sheet: 2
Total: 4

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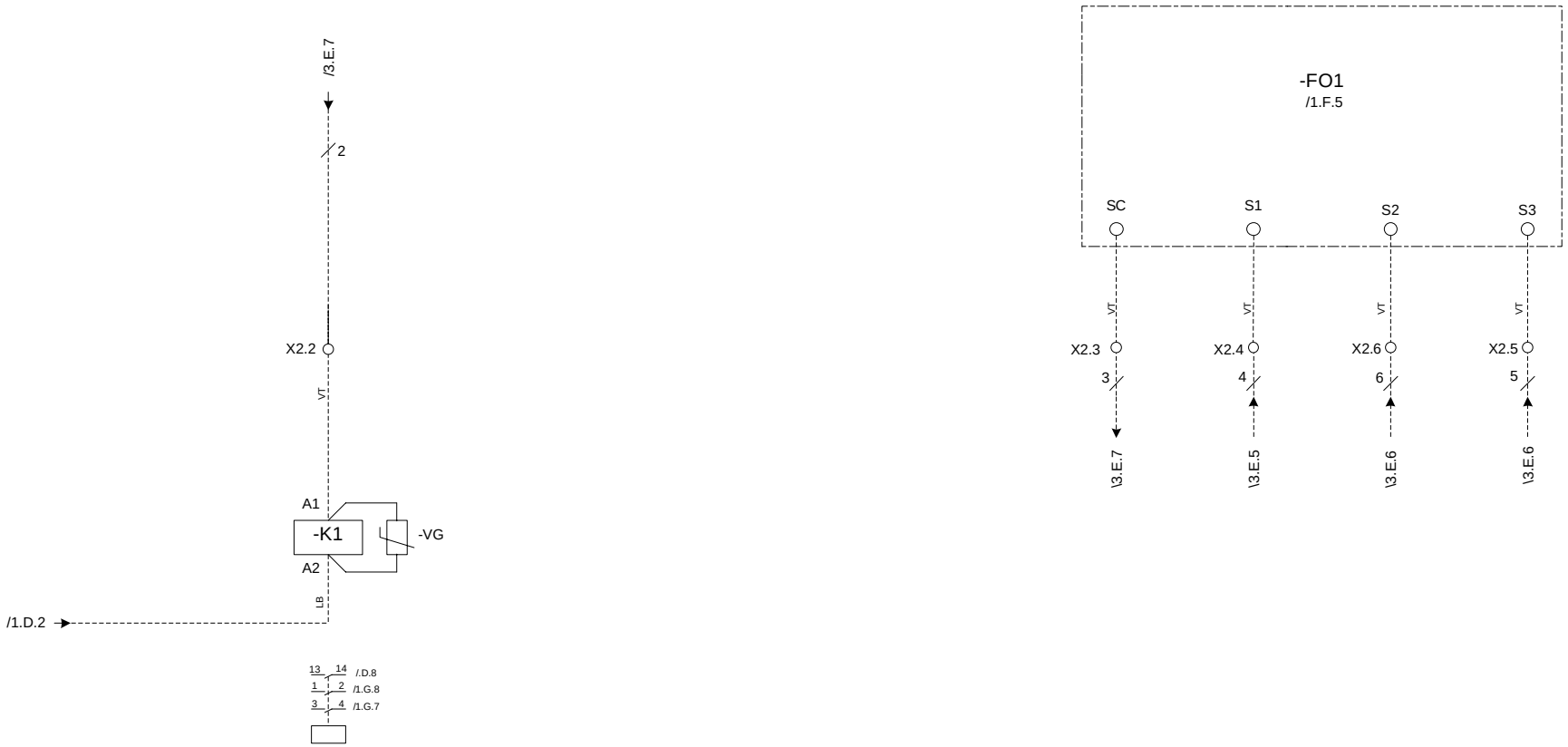

Main contactor / Varistor		Sequence input common	Multi - function input 1 Hoist up	Multi - function input 2 Hoist down	Multi - function input 3 High Speed

REV.	CHANGES	DATE	SIGN
01	Vestas no. is set on diagram	07.06.07	T.T

TKS

Date: 27.06.06
Drawn by:
Confirm by:

Title: Control circuit

Vestas no: 6016777 vers: 01

Drawing nr: 97992

Sheet: 3
Total: 4

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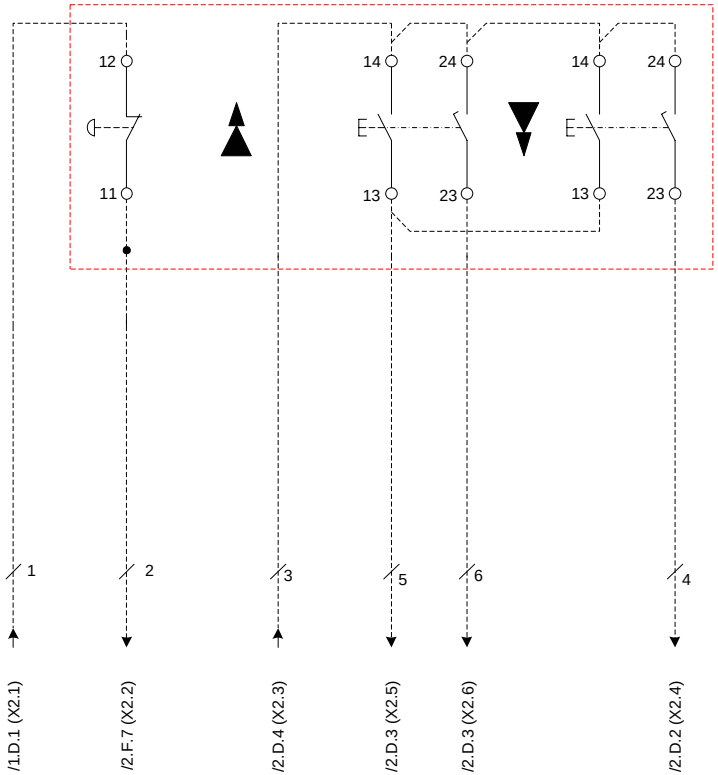

Hoist Panel type Telemecanique XAC A2074

Control supply	Stop	Sequense input common	Up - High speed - down Hoist			

REV.	CHANGES	DATE	SIGN
	Wire nr. 4 and 6 in pendant station has been switched		
01	in order to change the direction on crane (up / down)	07.08.06	T:T
02	Vestas no. is set on giagram	07.06.07	T.T

TKS

Date: 27.06.06
Drawn by:
Confirm by:

Title: Hoist panel

Vestas no: 6016777 vers: 01
Drawing nr: 97992

Sheet: 4
Total: 4

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60113008 NACELLE CRANE CPL.V82 50Hz

Component	Description	Qty per	Stk UM	Position Number
D6016762	NAC. CRANE CPL. V82 MK4	0,000	EA	
D7000360	Chain Hoist for V82-1.65MW Nac	1,000	EA	
60024002	SCREW ISO 4017 M 8 x 20 - A2	4,000	EA	
60024004	NUT HEX LOCK M8 A2	4,000	EA	
60024006	WASHER 8 140HV A2	8,000	EA	
60034964	Screw ISO 4017 M 8 x 35 - A2	4,000	EA	
60042162	WASHER 8 140HV A2	4,000	EA	
60049892	Eye bolt DIN 580 M10 - FZB	1,000	EA	
60092361	SHACKLE CROSBY G209 SWL 2 TON	1,000	EA	
60112918	Chain Box	1,000	EA	
60112989	Chain 5x15mm 120m DIN 5684-8	1,000	EA	
60113010	Control box for nacelle crane	1,000	EA	
60113494	RELIEVING SPRING	1,000	EA	
60113558	Bushing M8 x 14 outside x L=15	4,000	EA	
60113564	Label, chain parking	1,000	EA	
60113579	Spiral hose SPF15	3,500	EA	
60113600	Hook protector	1,000	EA	
D22000605	CI_NACELLE CRANE CPL. V82 50Hz	0,000	EA	
D6016777	NACELLE CRANE CPL.V82 50Hz	0,000	EA	
D5003335	Supplier Manual V82 Crane	0,000	EA	
D5003336	Suppl.Manual V82 Crane Invert	0,000	EA	
D5003339	Hoist freq.converter par.list	0,000	EA	
D1001812	Internal crane assembly	0,000	EA	
60113524	Elec. chain hoist 250kg NON-UL	1,000	EA	

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Change Info

Item no.	***Item text:***
None	**Condition Monitoring System, V82-1.65MW**

Active revision *for production*

Drawing no.: 934391

Version	Date	Init./App.	Description of change since last revision
0	21.06.2006	FLT/FLT	First version

LST no.: xxxxxxxx *Material BOM no.: xxxxxx*

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xxx/	Write the change

Old revisions *for service*

Drawing no.: xxxxxx

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xxx/	Write the change

LST no.: xxxxxxxx *Material BOM no.: xxxxxx*

Version	Date	Init./App.	Description of change since last revision
xx	dd.mm.yyyy	xxx/	Write the change

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Vestas is the world leader in wind technology and a driving force in the development of the wind power industry.

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Vestas Wind Systems A/S Alsvej 21 8900 Randers Denmark Tel.: +45 97 30 00 00 Fax: +45 97 30 00 01	Vestas CMS DDAU-2 B&K Vibro	Frontpage	Plot dato: 21-06-2006	Proj. nr.: VCMS_V82	Tegn. nr.: 934391	Init.: FLT	Rev.: R0	Blad: 1
			Plot tid: 15:58:38	Dato: 09-11-2004	Funkt.: =	Plac.: +	Antal blade: 9	Næste blad: 2

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CODE FOR DESIGNATION OF COLOURS

BK: BLACK
BN: BROWN
RD: RED
OG: ORANGE
YE: YELLOW
GN: GREEN
BU: BLUE (or LIGHT BLUE)
VT: VIOLET (PURPLE)
GY: GREY (SLATE)
WH: WHITE
PK: PINK
GD: GOLD
TQ: TURQUISE
SR: SILVER
GNYE: GREEN-AND-YELLOW or
SC: SCREEN

VESTAS TERM:

*1: BLACK WIRE AT BROWN
*2: BLACK WIRE AT BLUE

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Vestas CMS DDAU-2 B&K Vibro	Info page	Plot dato: 21-06-2006	Proj. nr.: VCMS_V82	Tegn. nr.: 934391	Init.: FLT	Rev.: R0	Blad: 2
		Plot tid: 15:58:38	Dato: 09-11-2004	Funkt.: =	Plac.: +	Antal blade: 9	Næste blad: =CMS/1

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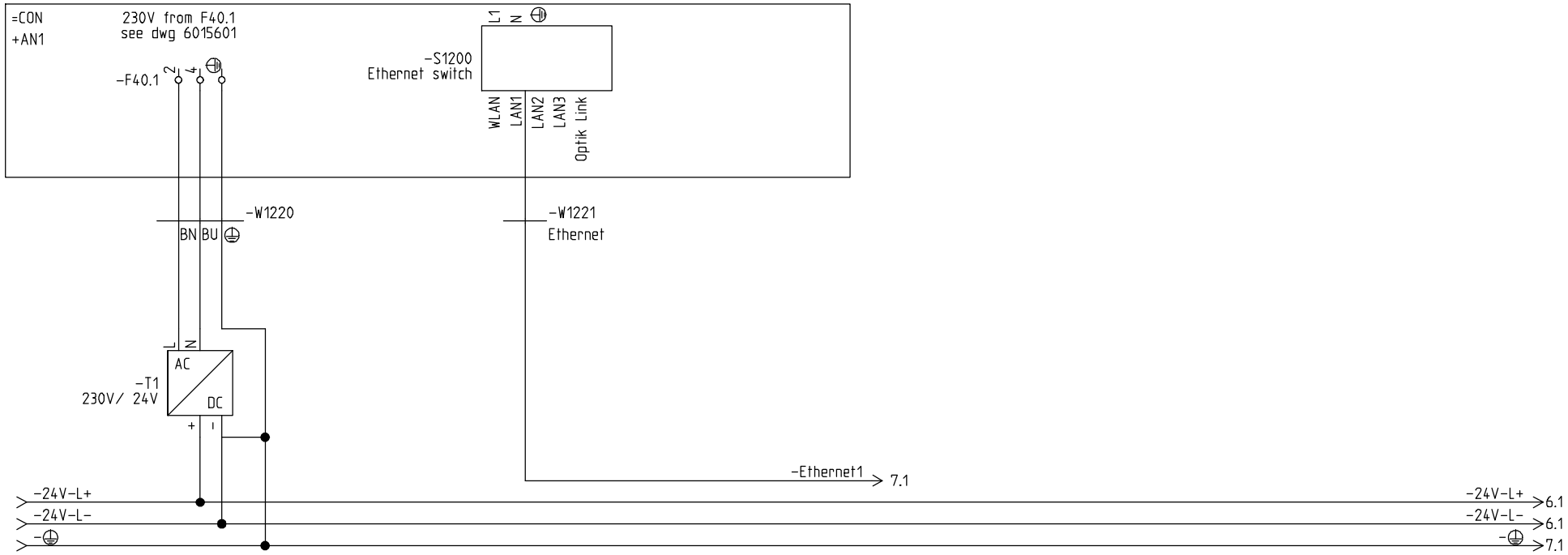

Vestas Wind Systems A/S Alsvej 21 8900 Randers Denmark Tel.: +45 97 30 00 00 Fax: +45 97 30 00 01	Vestas CMS DDAU-2 B&K Vibro	Interface VMP Brüel & Kjær Vibro	Plot date: 21-06-2006	Proj. no.: VCMS_V82	Draw. no.: 934391	Init.: FLT	Rev.: R0	Page: 1
			Plot time: 15:58:38	Date: 18-02-2005	Function.: =CMS	Location.: +DDAU-2	Proj. pages: 9	Next page: =CMS/2

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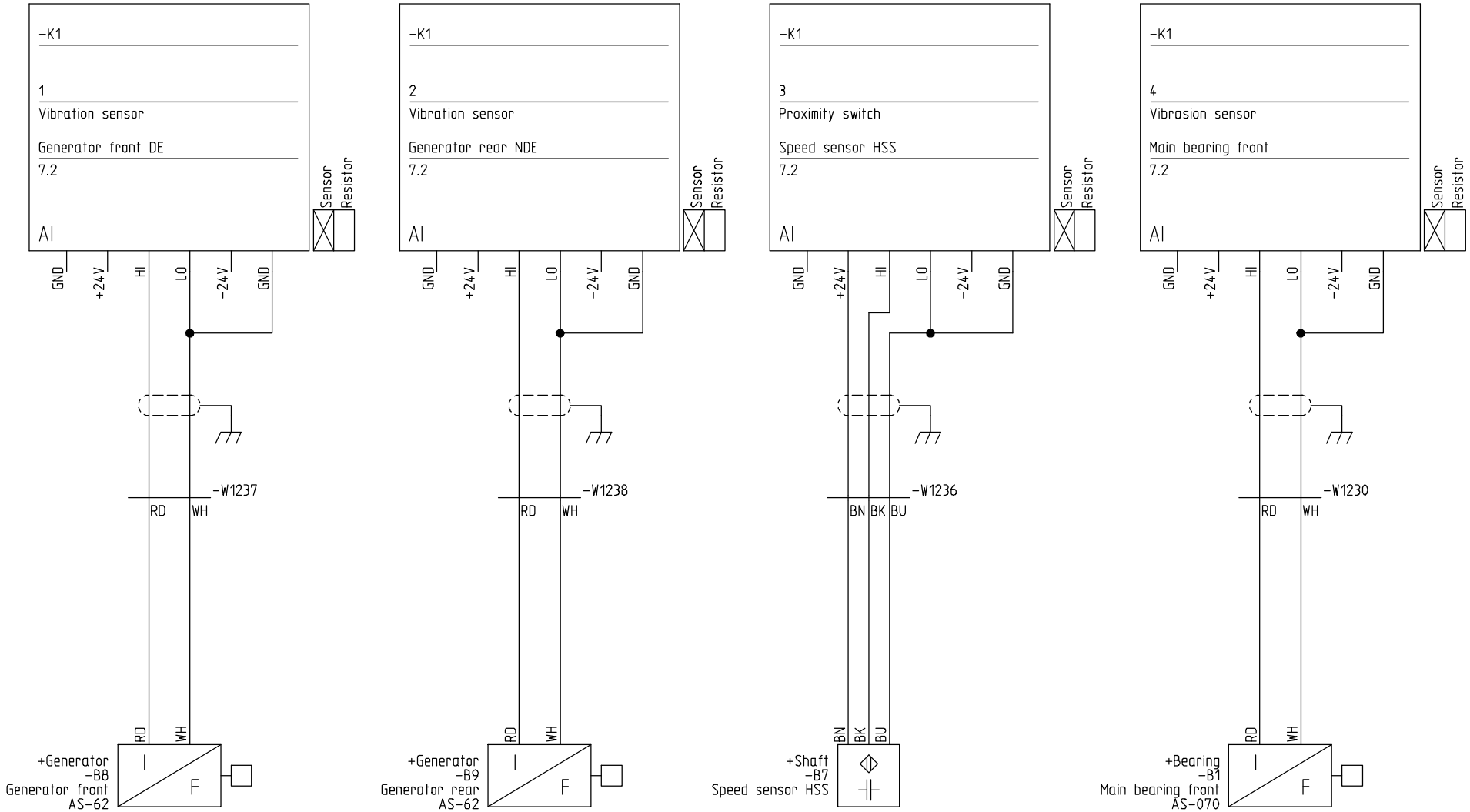

Vestas Wind Systems A/S Alsvej 21 8900 Randers Denmark Tel.: +45 97 30 00 00 Fax: +45 97 30 00 01	Vestas CMS DDAU-2 B&K Vibro	Vibro I/O Brüel & Kjær Vibro	Plot date: 21-06-2006	Proj. no.: VCMS_V82	Draw. no.: 934391	Init.: FLT	Rev.: R0	Page: 2
			Plot time: 15:58:38	Date: 18-02-2005	Function.: =CMS	Location.: +DDAU-2	Proj. pages: 9	Next page: =CMS/3

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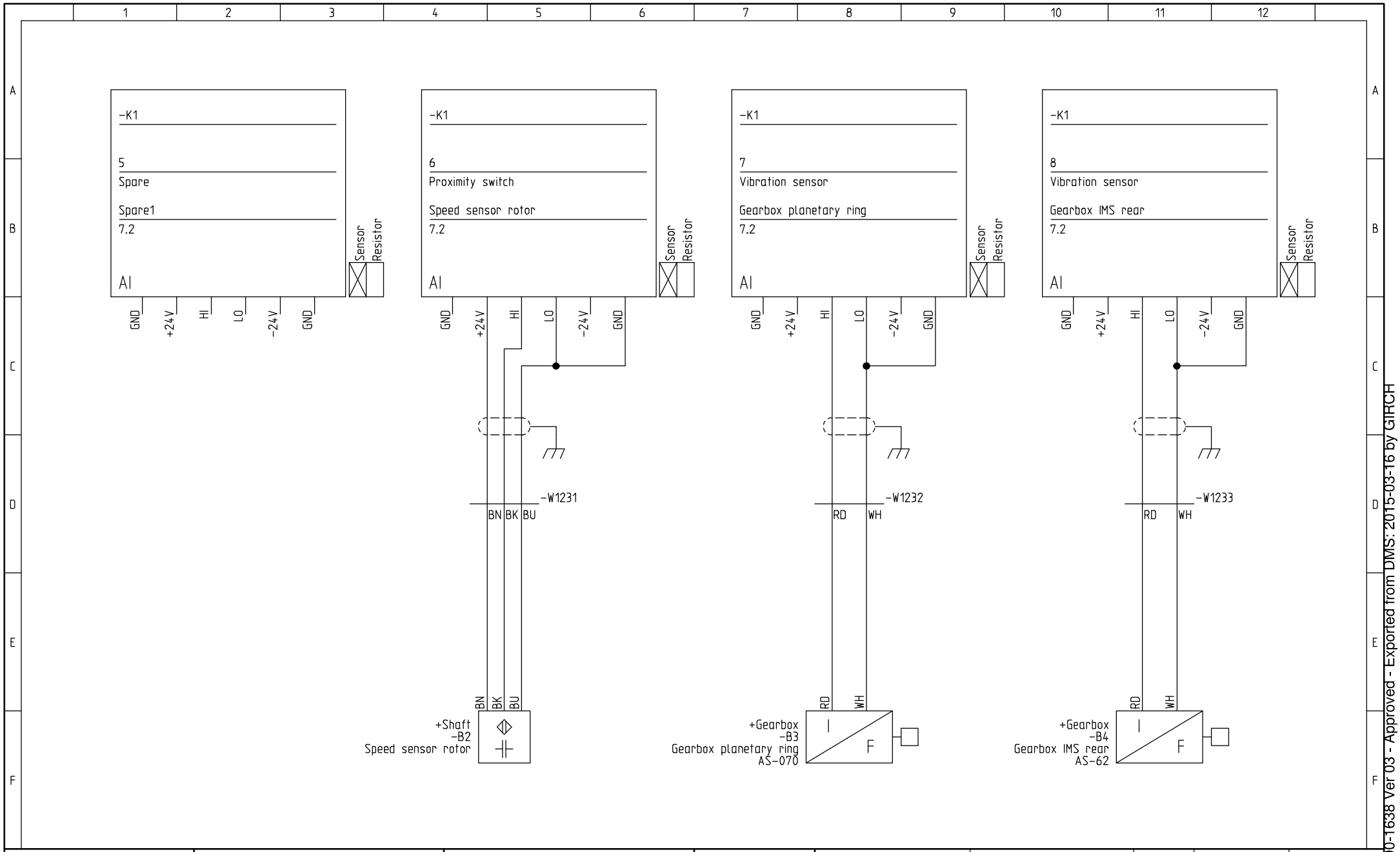

Vestas Wind Systems A/S Alsvej 21 8900 Randers Denmark Tel.: +45 97 30 00 00 Fax: +45 97 30 00 01	Vestas CMS DDAU-2 B&K Vibro	Vibro I/O Brüel & Kjær Vibro	Plot date: 21-06-2006	Proj. no.: VCMS_V82	Draw. no.: 934391	Init.: FLT	Rev.: R0	Page: 3
			Plot time: 15:58:38	Date: 18-02-2005	Function.: =CMS	Location.: +DDAU-2	Proj. pages: 9	Next page: =CMS/4

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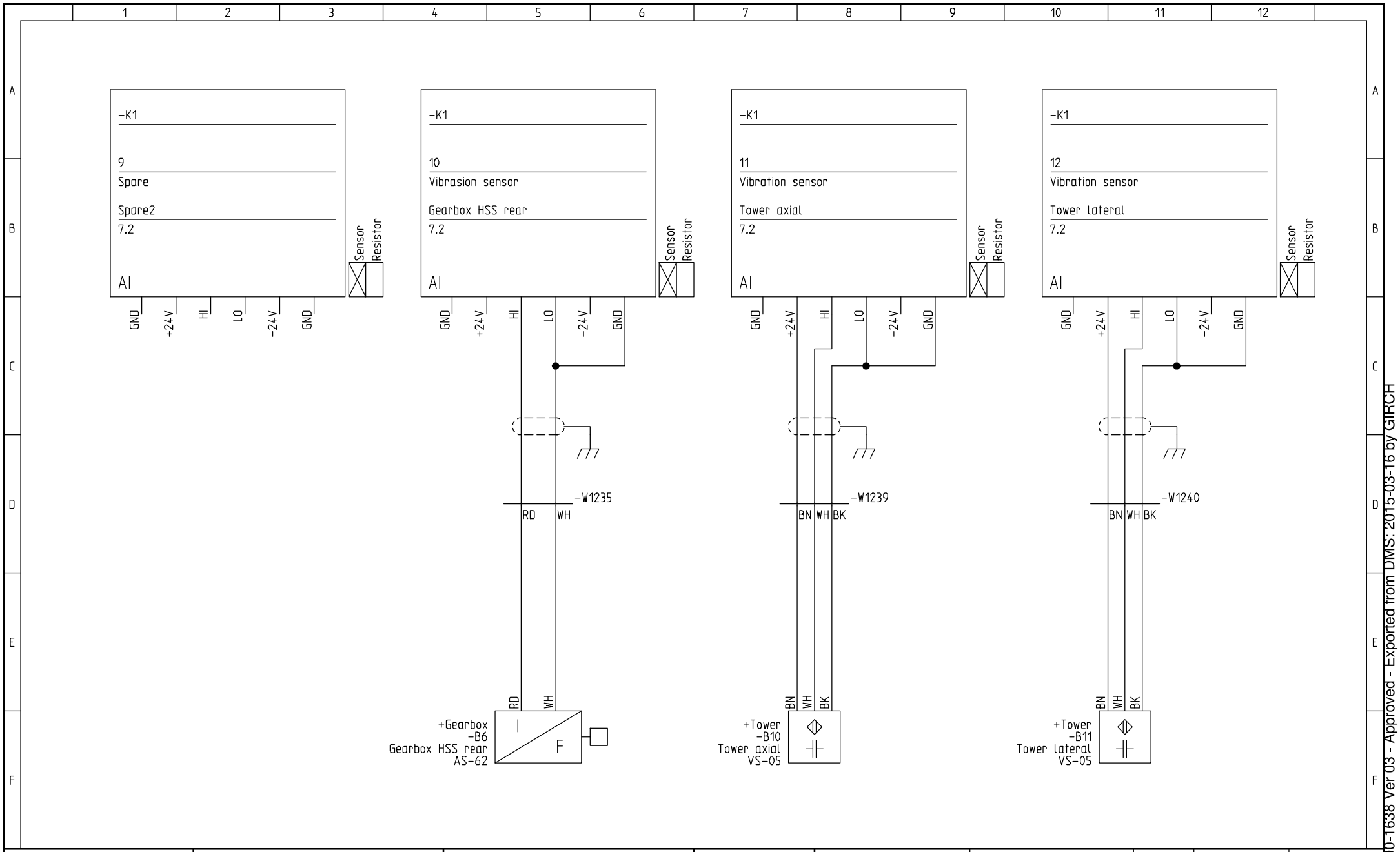

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			Plot time: 15:58:38	Date: 18-02-2005	Function.: =CMS	Location.: +DDAU-2	Proj. pages: 9	Next page: =CMS/5

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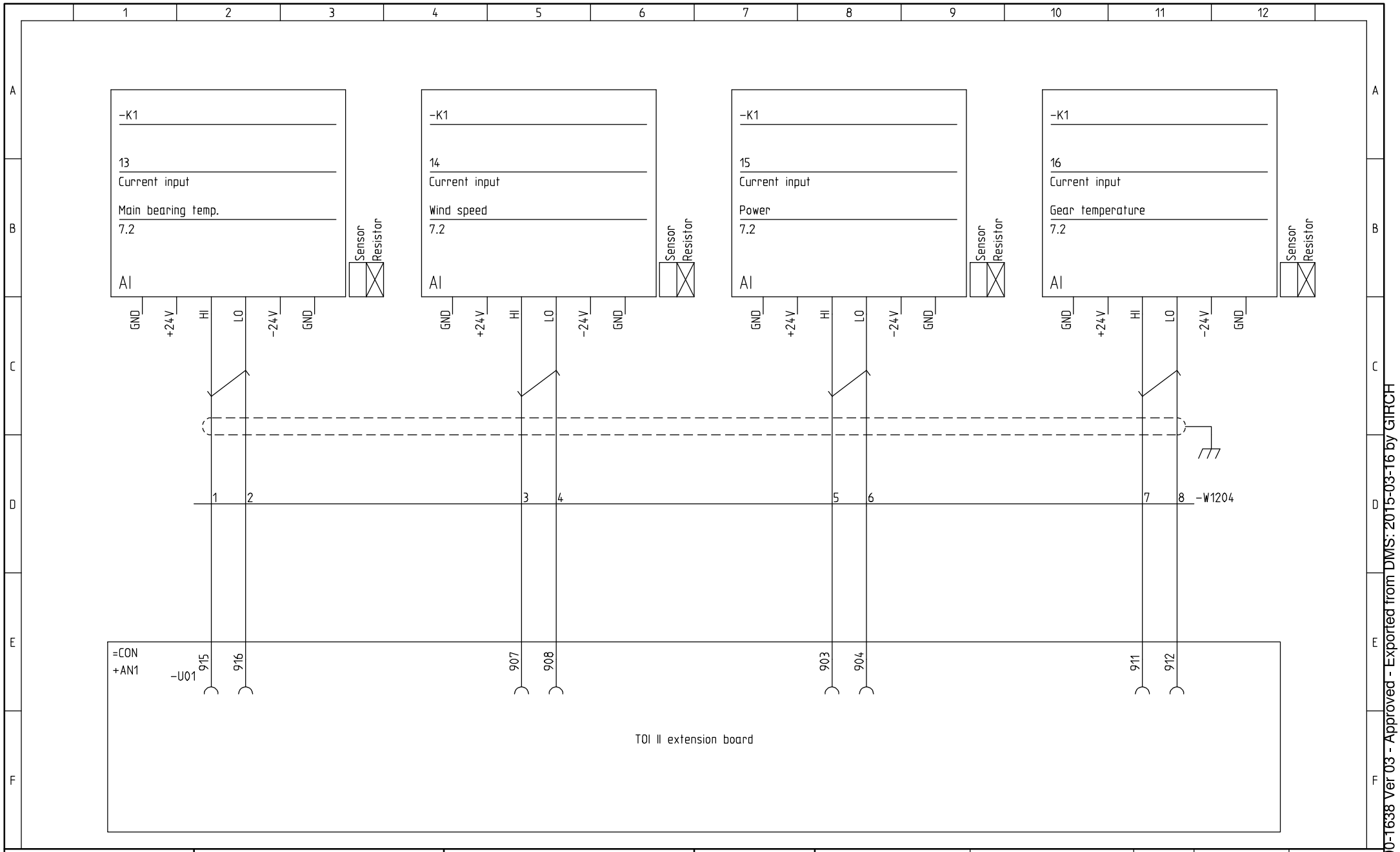

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			Plot time: 15:58:38	Date: 18-02-2005	Function.: =CMS	Location.: +DDAU-2	Proj. pages: 9	Next page: =CMS/6

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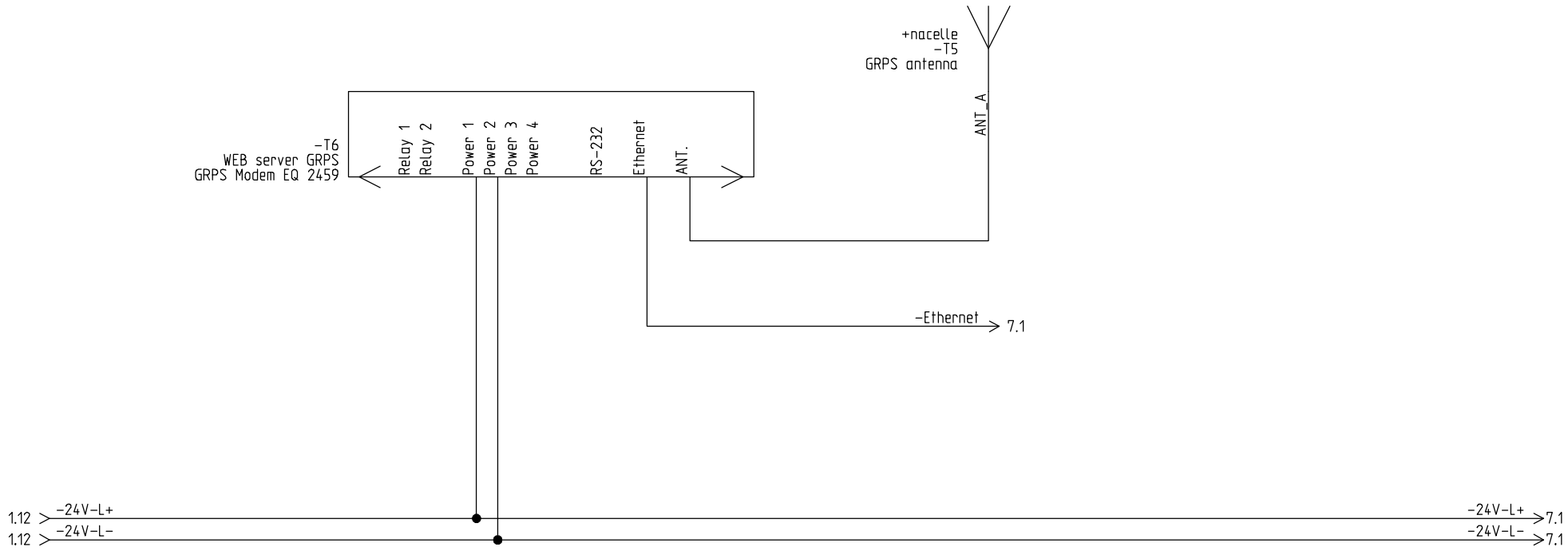

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Vestas CMS DDAU-2 B&K Vibro	Web server GRPS Brüel & Kjær Vibro	Plot date: 21-06-2006	Proj. no.: VCMS_V82	Draw. no.: 934391	Init.: FLT	Rev.: R0	Page: 6
		Plot time: 15:58:38	Date: 21-02-2005	Function.: =CMS	Location.: +DDAU-2	Proj. pages: 9	Next page: =CMS/7

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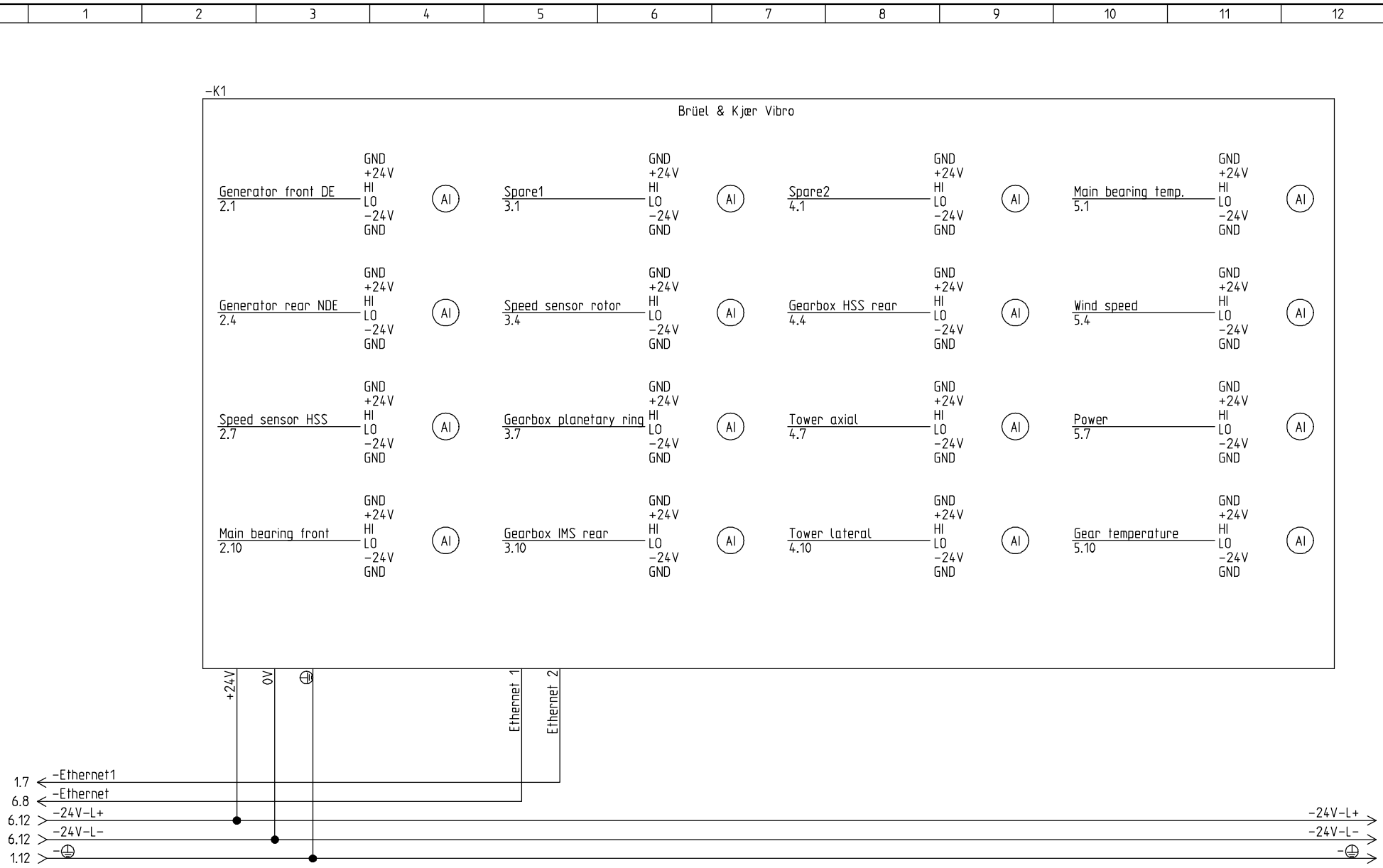

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			Plot time: 15:58:38	Date: 18-02-2005	Function.: =CMS	Location.: +DDAU-2	Proj. pages: 9	Next page:

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=CMS	1	Arrangementstegning	Lay-out gear & generator	19-06-2006
=CMS	2	Arrangementstegning	Lay-out +DDAU-2 cabinet	19-06-2006
	1	Dokumentliste		21-06-2006
=CMS	1	Kabelkoreliste	Interface VMP	19-06-2006
=CMS	2	Kabelkoreliste	Interface VMP	19-06-2006
=CMS	1	Kabelliste	Interface VMP	19-06-2006
=CON	1	Klemmematrice	-F40.1	
=CON	2	Klemmematrice	-U01	
=CON	3	Klemmematrice	-X2	
	1	Kredsskema	Frontpage	20-06-2006
	2	Kredsskema	Info page	20-06-2006
=CMS	1	Kredsskema	Interface VMP	20-06-2006
=CMS	2	Kredsskema	Vibro I/O	20-06-2006
=CMS	3	Kredsskema	Vibro I/O	20-06-2006
=CMS	4	Kredsskema	Vibro I/O	20-06-2006
=CMS	5	Kredsskema	Vibro I/O	20-06-2006
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=CMS	7	Kredsskema	Vibro I/O reference	19-06-2006
=CMS	1	PLC IO-liste		
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=CMS	3	PLC IO-liste		
=CMS	4	PLC IO-liste		
=CMS	1	Produktliste		
=CON	2	Produktliste		

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Vestas CMS DDAU-2
B&K Vibro

Plot date:	Proj. no.:	Draw. no.:	Init.:	Rev.:	Page:
21-06-2006	VCMS_V82	934391			1
Plot time:	Date:	Function.:	Location.:	No. of page:	Next page:
15:58:38	21-06-2006	=	+	1	

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Component list

Function (=)	Location (+)	Item (-)	Type	Description	Manufacturer	Vestas item number	Page	Column.
=CMS	+Bearing	-B1	AS-070	Main bearing front			2	11
=CMS	+DDAU-2	-K1	DDAU 2 2540	Brüel & Kjær Vibro			7	2
=CMS	+DDAU-2	-T1	Power supply EQ 2483	230V/ 24V			1	2
=CMS	+DDAU-2	-T6	GRPS Modem EQ 2459	WEB server GRPS			6	4
=CMS	+Gearbox	-B3	AS-070	Gearbox planetary ring			3	8
=CMS	+Gearbox	-B4	AS-62	Gearbox IMS rear			3	11
=CMS	+Gearbox	-B6	AS-62	Gearbox HSS rear			4	5
=CMS	+Generator	-B8	AS-62	Generator front			2	2
=CMS	+Generator	-B9	AS-62	Generator rear			2	5
=CMS	+nacelle	-T5	GSM mobil antenna	GRPS antenna			6	8
=CMS	+Shaft	-B2	NA	Speed sensor rotor	NA	NA	3	5
=CMS	+Shaft	-B7	NA	Speed sensor HSS	NA	NA	2	8
=CMS	+Tower	-B10	VS-05	Tower axial			4	8
=CMS	+Tower	-B11	VS-05	Tower lateral			4	11

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Vestas CMS DDAU-2
B&K Vibro

Project:	Draw. no.:	Rev.:	Init.:
VCMS_V82	934391		
Date: 21-06-2006			Page: 1

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VESTAS PROPRIETARY NOTICE

Component list

Function (=)	Location (+)	Item (-)	Type	Description	Manufacturer	Vestas item number	Page	Column.
=CON	+AN1	-S1200		Ethernet switch			1	4

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Vestas CMS DDAU-2
B&K Vibro

Project:	Draw. no.:	Rev.:	Init.:
VCMS_V82	934391		
Date: 21-06-2006			Page: 2

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VESTAS PROPRIETARY NOTICE

Cable list

Function (=)	Location (+)	Cable name (-)	Description	Type	Vestas item no.	From	To
=CMS	+DDAU-2	-W1204	Signal cable to +AN1	LIYCY-BD 4x2x0,5		=CMS+DDAU-2-K1	=CON+AN1-U01
=CMS	+DDAU-2	-W1220	Supply 230V	A07RN-F 3G1,5		=CON+AN1-F40.1	=CMS+DDAU-2-T1
=CMS	+DDAU-2	-W1221	Ethernet	Patch cable		=CON+AN1-S1200	=CMS+DDAU-2-K1
=CMS	+DDAU-2	-W1230	Main bearing front	LIYCY-P 2x0,75		=CMS+DDAU-2-K1	=CMS+Bearing-B1
=CMS	+DDAU-2	-W1231	Speed sensor rotor	LIYCY-P 3x0,5		=CMS+DDAU-2-K1	=CMS+Shaft-B2
=CMS	+DDAU-2	-W1232	Gearbox planetary ring	LIYCY-P 2x0,75		=CMS+DDAU-2-K1	=CMS+Gearbox-B3
=CMS	+DDAU-2	-W1233	Gearbox IMS rear	LIYCY-P 2x0,75		=CMS+DDAU-2-K1	=CMS+Gearbox-B4
=CMS	+DDAU-2	-W1235	Gearbox HSS rear	LIYCY-P 2x0,75		=CMS+DDAU-2-K1	=CMS+Gearbox-B6
=CMS	+DDAU-2	-W1236	Speed sensor HSS	LIYCY-P 3x0,5		=CMS+DDAU-2-K1	=CMS+Shaft-B7
=CMS	+DDAU-2	-W1237	Generator front	LIYCY-P 2x0,75		=CMS+DDAU-2-K1	=CMS+Generator-B8
=CMS	+DDAU-2	-W1238	Generator rear	LIYCY-P 2x0,75		=CMS+DDAU-2-K1	=CMS+Generator-B9
=CMS	+DDAU-2	-W1239	Tower axial	LIYCY-P 3x0,5		=CMS+DDAU-2-K1	=CMS+Tower-B10
=CMS	+DDAU-2	-W1240	Tower lateral	LIYCY-P 3x0,5		=CMS+DDAU-2-K1	=CMS+Tower-B11

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Vestas CMS DDAU-2
B&K Vibro

Interface VMP
Brüel & Kjær Vibro

Project:	Draw. no.:	Rev.:	Init.:
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VESTAS PROPRIETARY NOTICE

Cable core list

Cable no.	Cable Pipe	Size	Colour	Connection 1	Connection 2	Page	Column
-W1204				=CMS+DDAU-2-K1:HI	=CON+AN1-U01:915	5	2
-W1204				=CMS+DDAU-2-K1:LO	=CON+AN1-U01:916	5	2
-W1204				=CMS+DDAU-2-K1:HI	=CON+AN1-U01:907	5	5
-W1204				=CMS+DDAU-2-K1:LO	=CON+AN1-U01:908	5	5
-W1204				=CMS+DDAU-2-K1:HI	=CON+AN1-U01:903	5	8
-W1204				=CMS+DDAU-2-K1:LO	=CON+AN1-U01:904	5	8
-W1204				=CMS+DDAU-2-K1:HI	=CON+AN1-U01:911	5	11
-W1204				=CMS+DDAU-2-K1:LO	=CON+AN1-U01:912	5	11
-W1220		1,5	BN	=CON+AN1-F40.1:2	=CMS+DDAU-2-T1:L	1	2
-W1220		1,5	BU	=CON+AN1-F40.1:4		1	2
-W1220		1,5	⏚	=CON+AN1-X2:⏚		1	2
-W1221				=CON+AN1-S1200:LAN1	=CMS+DDAU-2-K1:Ethernet 2	1	5
-W1230		0.75	RD	=CMS+DDAU-2-K1:HI	=CMS+Bearing-B1:RD	2	11
-W1230		0.75	WH	=CMS+DDAU-2-K1:LO	=CMS+Bearing-B1:WH	2	11
-W1231		0,5	BN	=CMS+DDAU-2-K1:+24V	=CMS+Shaft-B2:BN	3	5
-W1231		0,5	BK	=CMS+DDAU-2-K1:HI	=CMS+Shaft-B2:BK	3	5
-W1231		0,5	BU	=CMS+DDAU-2-K1:LO	=CMS+Shaft-B2:BU	3	5
-W1232		0.75	RD	=CMS+DDAU-2-K1:HI	=CMS+Gearbox-B3:RD	3	8
-W1232		0.75	WH	=CMS+DDAU-2-K1:LO	=CMS+Gearbox-B3:WH	3	8
-W1233		0.75	RD	=CMS+DDAU-2-K1:HI	=CMS+Gearbox-B4:RD	3	11
-W1233		0.75	WH	=CMS+DDAU-2-K1:LO	=CMS+Gearbox-B4:WH	3	11
-W1235		0.75	RD	=CMS+DDAU-2-K1:HI	=CMS+Gearbox-B6:RD	4	5

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Vestas CMS DDAU-2
B&K Vibro

Interface VMP
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Cable core list

Cable no.	Cable Pipe	Size	Colour	Connection 1	Connection 2	Page	Column
-W1235		0.75	WH	=CMS+DDAU-2-K1:LO	=CMS+Gearbox-B6:WH	4	5
-W1236		0,5	BN	=CMS+DDAU-2-K1:+24V	=CMS+Shaft-B7:BN	2	8
-W1236		0,5	BK	=CMS+DDAU-2-K1:HI	=CMS+Shaft-B7:BK	2	8
-W1236		0,5	BU	=CMS+DDAU-2-K1:LO	=CMS+Shaft-B7:BU	2	8
-W1237		0.75	RD	=CMS+DDAU-2-K1:HI	=CMS+Generator-B8:RD	2	2
-W1237		0.75	WH	=CMS+DDAU-2-K1:LO	=CMS+Generator-B8:WH	2	2
-W1238		0.75	RD	=CMS+DDAU-2-K1:HI	=CMS+Generator-B9:RD	2	5
-W1238		0.75	WH	=CMS+DDAU-2-K1:LO	=CMS+Generator-B9:WH	2	5
-W1239		0,5	BN	=CMS+DDAU-2-K1:+24V	=CMS+Tower-B10:BN	4	8
-W1239		0,5	WH	=CMS+DDAU-2-K1:HI	=CMS+Tower-B10:WH	4	8
-W1239		0,5	BK	=CMS+DDAU-2-K1:LO	=CMS+Tower-B10:BK	4	8
-W1240		0,5	BN	=CMS+DDAU-2-K1:+24V	=CMS+Tower-B11:BN	4	11
-W1240		0,5	WH	=CMS+DDAU-2-K1:HI	=CMS+Tower-B11:WH	4	11
-W1240		0,5	BK	=CMS+DDAU-2-K1:LO	=CMS+Tower-B11:BK	4	11

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Order by Function (=), Location (+) and PLC (-)

PLC I/O list

Function (=)	Location (+)	PLC (-)	Operand	Symboladresse	Description	Conn. nr.	Connection	Page	Col.
=CMS	+DDAU-2	-K1	Generator front DE	1	Vibration sensor	GND		2	1
=CMS	+DDAU-2	-K1	Generator front DE	1	Vibration sensor	GND	=CMS+DDAU-2-K1:LO	2	1
=CMS	+DDAU-2	-K1	Generator front DE	1	Vibration sensor	HI	=CMS+Generator-B8:RD	2	1
=CMS	+DDAU-2	-K1	Generator front DE	1	Vibration sensor	LO	=CMS+DDAU-2-K1:GND	2	1
=CMS	+DDAU-2	-K1	Generator front DE	1	Vibration sensor	LO	=CMS+Generator-B8:WH	2	1
=CMS	+DDAU-2	-K1	Generator front DE	1	Vibration sensor	+24V		2	1
=CMS	+DDAU-2	-K1	Generator front DE	1	Vibration sensor	-24V		2	1
=CMS	+DDAU-2	-K1	Generator rear NDE	2	Vibration sensor	GND	=CMS+DDAU-2-K1:LO	2	4
=CMS	+DDAU-2	-K1	Generator rear NDE	2	Vibration sensor	GND		2	4
=CMS	+DDAU-2	-K1	Generator rear NDE	2	Vibration sensor	HI	=CMS+Generator-B9:RD	2	4
=CMS	+DDAU-2	-K1	Generator rear NDE	2	Vibration sensor	LO	=CMS+Generator-B9:WH	2	4
=CMS	+DDAU-2	-K1	Generator rear NDE	2	Vibration sensor	LO	=CMS+DDAU-2-K1:GND	2	4
=CMS	+DDAU-2	-K1	Generator rear NDE	2	Vibration sensor	+24V		2	4
=CMS	+DDAU-2	-K1	Generator rear NDE	2	Vibration sensor	-24V		2	4
=CMS	+DDAU-2	-K1	Speed sensor HSS	3	Proximity switch	GND	=CMS+DDAU-2-K1:LO	2	7
=CMS	+DDAU-2	-K1	Speed sensor HSS	3	Proximity switch	GND		2	7
=CMS	+DDAU-2	-K1	Speed sensor HSS	3	Proximity switch	HI	=CMS+Shaft-B7:BK	2	7
=CMS	+DDAU-2	-K1	Speed sensor HSS	3	Proximity switch	LO	=CMS+DDAU-2-K1:GND	2	7
=CMS	+DDAU-2	-K1	Speed sensor HSS	3	Proximity switch	LO	=CMS+Shaft-B7:BU	2	7
=CMS	+DDAU-2	-K1	Speed sensor HSS	3	Proximity switch	+24V	=CMS+Shaft-B7:BN	2	7
=CMS	+DDAU-2	-K1	Speed sensor HSS	3	Proximity switch	-24V		2	7
=CMS	+DDAU-2	-K1	Main bearing front	4	Vibrasion sensor	GND		2	10
=CMS	+DDAU-2	-K1	Main bearing front	4	Vibrasion sensor	GND	=CMS+DDAU-2-K1:LO	2	10
=CMS	+DDAU-2	-K1	Main bearing front	4	Vibrasion sensor	HI	=CMS+Bearing-B1:RD	2	10
=CMS	+DDAU-2	-K1	Main bearing front	4	Vibrasion sensor	LO	=CMS+Bearing-B1:WH	2	10
=CMS	+DDAU-2	-K1	Main bearing front	4	Vibrasion sensor	LO	=CMS+DDAU-2-K1:GND	2	10
=CMS	+DDAU-2	-K1	Main bearing front	4	Vibrasion sensor	+24V		2	10
=CMS	+DDAU-2	-K1	Main bearing front	4	Vibrasion sensor	-24V		2	10
=CMS	+DDAU-2	-K1	Spare1	5	Spare	GND		3	1
=CMS	+DDAU-2	-K1	Spare1	5	Spare	GND		3	1
=CMS	+DDAU-2	-K1	Spare1	5	Spare	HI		3	1
=CMS	+DDAU-2	-K1	Spare1	5	Spare	LO		3	1

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Vestas CMS DDAU-2
B&K Vibro

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PLC I/O list

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=CMS	+DDAU-2	-K1	Spare1	5	Spare	+24V		3	1
=CMS	+DDAU-2	-K1	Spare1	5	Spare	-24V		3	1
=CMS	+DDAU-2	-K1	Speed sensor rotor	6	Proximity switch	GND		3	4
=CMS	+DDAU-2	-K1	Speed sensor rotor	6	Proximity switch	GND	=CMS+DDAU-2-K1:LO	3	4
=CMS	+DDAU-2	-K1	Speed sensor rotor	6	Proximity switch	HI	=CMS+Shaft-B2:BK	3	4
=CMS	+DDAU-2	-K1	Speed sensor rotor	6	Proximity switch	LO	=CMS+Shaft-B2:BU	3	4
=CMS	+DDAU-2	-K1	Speed sensor rotor	6	Proximity switch	LO	=CMS+DDAU-2-K1:GND	3	4
=CMS	+DDAU-2	-K1	Speed sensor rotor	6	Proximity switch	+24V	=CMS+Shaft-B2:BN	3	4
=CMS	+DDAU-2	-K1	Speed sensor rotor	6	Proximity switch	-24V		3	4
=CMS	+DDAU-2	-K1	Gearbox planetary ring	7	Vibration sensor	GND		3	7
=CMS	+DDAU-2	-K1	Gearbox planetary ring	7	Vibration sensor	GND	=CMS+DDAU-2-K1:LO	3	7
=CMS	+DDAU-2	-K1	Gearbox planetary ring	7	Vibration sensor	HI	=CMS+Gearbox-B3:RD	3	7
=CMS	+DDAU-2	-K1	Gearbox planetary ring	7	Vibration sensor	LO	=CMS+Gearbox-B3:WH	3	7
=CMS	+DDAU-2	-K1	Gearbox planetary ring	7	Vibration sensor	LO	=CMS+DDAU-2-K1:GND	3	7
=CMS	+DDAU-2	-K1	Gearbox planetary ring	7	Vibration sensor	+24V		3	7
=CMS	+DDAU-2	-K1	Gearbox planetary ring	7	Vibration sensor	-24V		3	7
=CMS	+DDAU-2	-K1	Gearbox IMS rear	8	Vibration sensor	GND	=CMS+DDAU-2-K1:LO	3	10
=CMS	+DDAU-2	-K1	Gearbox IMS rear	8	Vibration sensor	GND		3	10
=CMS	+DDAU-2	-K1	Gearbox IMS rear	8	Vibration sensor	HI	=CMS+Gearbox-B4:RD	3	10
=CMS	+DDAU-2	-K1	Gearbox IMS rear	8	Vibration sensor	LO	=CMS+Gearbox-B4:WH	3	10
=CMS	+DDAU-2	-K1	Gearbox IMS rear	8	Vibration sensor	LO	=CMS+DDAU-2-K1:GND	3	10
=CMS	+DDAU-2	-K1	Gearbox IMS rear	8	Vibration sensor	+24V		3	10
=CMS	+DDAU-2	-K1	Gearbox IMS rear	8	Vibration sensor	-24V		3	10
=CMS	+DDAU-2	-K1	Spare2	9	Spare	GND		4	1
=CMS	+DDAU-2	-K1	Spare2	9	Spare	GND		4	1
=CMS	+DDAU-2	-K1	Spare2	9	Spare	HI		4	1
=CMS	+DDAU-2	-K1	Spare2	9	Spare	LO		4	1
=CMS	+DDAU-2	-K1	Spare2	9	Spare	+24V		4	1
=CMS	+DDAU-2	-K1	Spare2	9	Spare	-24V		4	1
=CMS	+DDAU-2	-K1	Gearbox HSS rear	10	Vibrasion sensor	GND	=CMS+DDAU-2-K1:LO	4	4
=CMS	+DDAU-2	-K1	Gearbox HSS rear	10	Vibrasion sensor	GND		4	4
=CMS	+DDAU-2	-K1	Gearbox HSS rear	10	Vibrasion sensor	HI	=CMS+Gearbox-B6:RD	4	4

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Vestas CMS DDAU-2
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PLC I/O list

Function (=)	Location (+)	PLC (-)	Operand	Symboladresse	Description	Conn. nr.	Connection	Page	Col.
=CMS	+DDAU-2	-K1	Gearbox HSS rear	10	Vibrasion sensor	LO	=CMS+Gearbox-B6:WH	4	4
=CMS	+DDAU-2	-K1	Gearbox HSS rear	10	Vibrasion sensor	LO	=CMS+DDAU-2-K1:GND	4	4
=CMS	+DDAU-2	-K1	Gearbox HSS rear	10	Vibrasion sensor	+24V		4	4
=CMS	+DDAU-2	-K1	Gearbox HSS rear	10	Vibrasion sensor	-24V		4	4
=CMS	+DDAU-2	-K1	Tower axial	11	Vibration sensor	GND	=CMS+DDAU-2-K1:LO	4	7
=CMS	+DDAU-2	-K1	Tower axial	11	Vibration sensor	GND		4	7
=CMS	+DDAU-2	-K1	Tower axial	11	Vibration sensor	HI	=CMS+Tower-B10:WH	4	7
=CMS	+DDAU-2	-K1	Tower axial	11	Vibration sensor	LO	=CMS+Tower-B10:BK	4	7
=CMS	+DDAU-2	-K1	Tower axial	11	Vibration sensor	LO	=CMS+DDAU-2-K1:GND	4	7
=CMS	+DDAU-2	-K1	Tower axial	11	Vibration sensor	+24V	=CMS+Tower-B10:BN	4	7
=CMS	+DDAU-2	-K1	Tower axial	11	Vibration sensor	-24V		4	7
=CMS	+DDAU-2	-K1	Tower lateral	12	Vibration sensor	GND	=CMS+DDAU-2-K1:LO	4	10
=CMS	+DDAU-2	-K1	Tower lateral	12	Vibration sensor	GND		4	10
=CMS	+DDAU-2	-K1	Tower lateral	12	Vibration sensor	HI	=CMS+Tower-B11:WH	4	10
=CMS	+DDAU-2	-K1	Tower lateral	12	Vibration sensor	LO	=CMS+Tower-B11:BK	4	10
=CMS	+DDAU-2	-K1	Tower lateral	12	Vibration sensor	LO	=CMS+DDAU-2-K1:GND	4	10
=CMS	+DDAU-2	-K1	Tower lateral	12	Vibration sensor	+24V	=CMS+Tower-B11:BN	4	10
=CMS	+DDAU-2	-K1	Tower lateral	12	Vibration sensor	-24V		4	10
=CMS	+DDAU-2	-K1	Main bearing temp.	13	Current input	GND		5	1
=CMS	+DDAU-2	-K1	Main bearing temp.	13	Current input	GND		5	1
=CMS	+DDAU-2	-K1	Main bearing temp.	13	Current input	HI	=CON+AN1-U01:915	5	1
=CMS	+DDAU-2	-K1	Main bearing temp.	13	Current input	LO	=CON+AN1-U01:916	5	1
=CMS	+DDAU-2	-K1	Main bearing temp.	13	Current input	+24V		5	1
=CMS	+DDAU-2	-K1	Main bearing temp.	13	Current input	-24V		5	1
=CMS	+DDAU-2	-K1	Wind speed	14	Current input	GND		5	4
=CMS	+DDAU-2	-K1	Wind speed	14	Current input	GND		5	4
=CMS	+DDAU-2	-K1	Wind speed	14	Current input	HI	=CON+AN1-U01:907	5	4
=CMS	+DDAU-2	-K1	Wind speed	14	Current input	LO	=CON+AN1-U01:908	5	4
=CMS	+DDAU-2	-K1	Wind speed	14	Current input	+24V		5	4
=CMS	+DDAU-2	-K1	Wind speed	14	Current input	-24V		5	4
=CMS	+DDAU-2	-K1	Power	15	Current input	GND		5	7
=CMS	+DDAU-2	-K1	Power	15	Current input	GND		5	7

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=CMS	+DDAU-2	-K1	Power	15	Current input	HI	=CON+AN1-U01:903	5	7
=CMS	+DDAU-2	-K1	Power	15	Current input	LO	=CON+AN1-U01:904	5	7
=CMS	+DDAU-2	-K1	Power	15	Current input	+24V		5	7
=CMS	+DDAU-2	-K1	Power	15	Current input	-24V		5	7
=CMS	+DDAU-2	-K1	Gear temperature	16	Current input	GND		5	10
=CMS	+DDAU-2	-K1	Gear temperature	16	Current input	GND		5	10
=CMS	+DDAU-2	-K1	Gear temperature	16	Current input	HI	=CON+AN1-U01:911	5	10
=CMS	+DDAU-2	-K1	Gear temperature	16	Current input	LO	=CON+AN1-U01:912	5	10
=CMS	+DDAU-2	-K1	Gear temperature	16	Current input	+24V		5	10
=CMS	+DDAU-2	-K1	Gear temperature	16	Current input	-24V		5	10

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Terminal matrix

Terminal strip -F40.1

Column	1	2
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Cable description	Cable type	Cable name	---- Cable -----

Connection 1	Term.	No.	Connection 2
=CMS+DDAU-2-T1:L	O	2	
	O	4	
	O		
	O		
	O

Terminal matrix

Terminal strip -U01

Column	Page	Cable description	Cable type	Cable name	Connection 1	Term.	No.	Connection 2
8	5	Signal cable to +AN1	LIYCY-BD 4x2x0,5	=CMS+DDAU-2-W1204		O	903	=CMS+DDAU-2-K1:HI
8	5					O	904	=CMS+DDAU-2-K1:LO
5	5					O	907	=CMS+DDAU-2-K1:HI
5	5					O	908	=CMS+DDAU-2-K1:LO
11	5					O	911	=CMS+DDAU-2-K1:HI
11	5					O	912	=CMS+DDAU-2-K1:LO
2	5					O	915	=CMS+DDAU-2-K1:HI
2	5					O	916	=CMS+DDAU-2-K1:LO

Cable description / Cable type / Cable name: ---- Cable -----

Cable description / Cable type / Cable name: ----- Cable -----

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Terminal matrix

Terminal strip

-X2

Column	1	2
Page		

Cable description	Cable type	Cable name	---- Cable -----

Connection 1	Term.	No.	Connection 2
	O	⊕	
	O		
	O		
	O