

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150  
30855 Langenhagen  
Germany

Phone : +49 511 7702-0  
Fax.: +49 511 7702-125



# Weatherford®

Company / customer	Weatherford Münchner Strasse 52 Langenhagen Germany
Type	Testpult
Drawing number	4_22.5215
Part number	02324572
Year of manufacture	2014
End customer	Weatherford Münchner Strasse 52 Langenhagen Germany
Project name	Centralizer Test Stand
Place of installation	Weatherford
Responsible for project	MWie



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# Weatherford®

## Electrical Data

Supply voltage	: 3x 400V/50 Hz
Current	: A
Control voltage 1	: 230 V AC
Control voltage 2	: 24 V DC
Control voltage 3	: 0...10 V DC
Input lead	: mm
Pre-fuse	: A

## Standards and regulations

Machinery Directive	: -/-
IP protection	: IP 54
Ex protection	: -/-
Environment temperature	: 45°C
Part features	: -/-
Environmental consideration	: -/-

# Line Color

Main circuit (L)	: BK (black)
Neutral conductor	: BU (light blue)
Control voltage 230 V AC	: RD (red)
Control voltage 24 V DC	: BU (dark blue)
Control voltage 0...10 V DC	: WH (white)
Measuring voltage	: WH (white)
Protective wire	: GNYE (green-yellow)
Potential free	: OR (orange)

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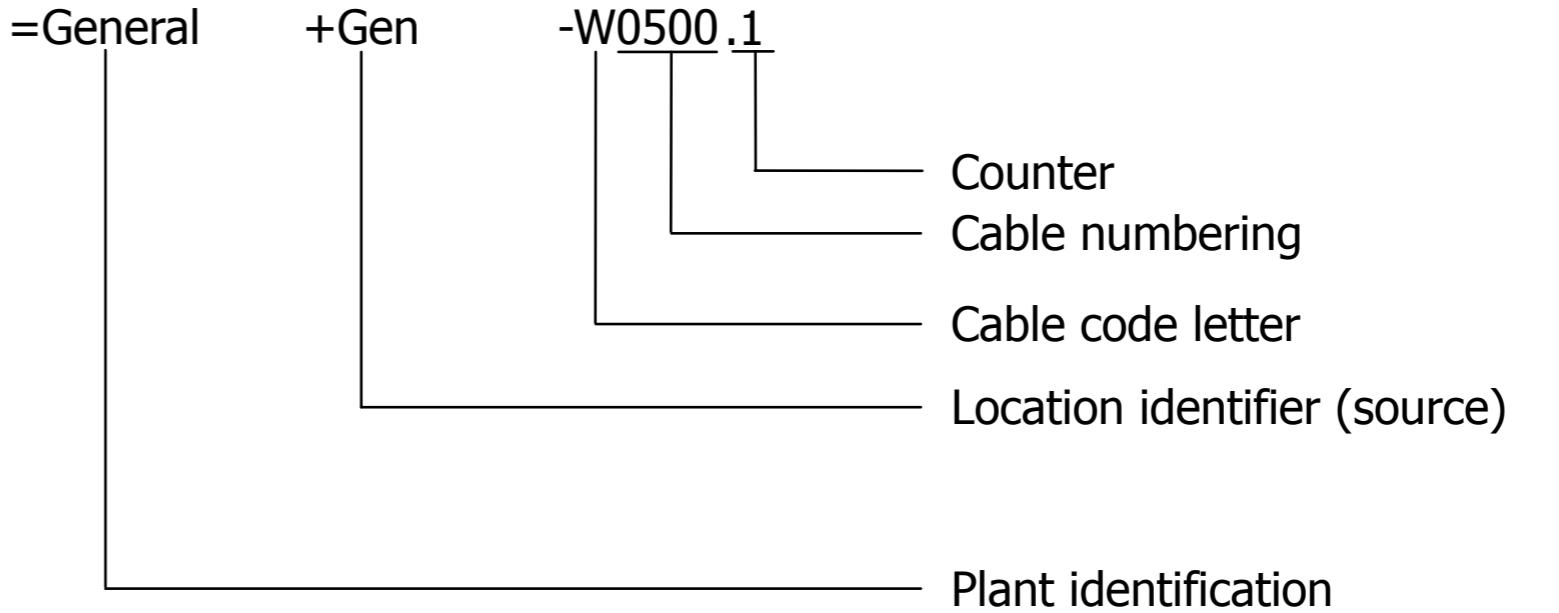


# Weatherford®

## Cable numbering

0000	Power supply
0100 - 0199	400 V AC Power output
0200 - 0299	230 V AC Voltage (cabinet)
0300 - 0399	230 V AC Control voltage (cabinet)
0400 - 0499	Measuring value line
0500 - 0599	Emergency stop
0600 - 0699	24 V DC Sensors / Power actuators
0700 - 0799	24 V DC Valves
0800 - 0899	Bus lines
0900 - 0999	Pump Controller
1000 - 1099	Control Switches and Lamps
1100 - 1199	Floating inputs
1200 - 1299	Floating outputs
1300 - 1399	Equipotential bonding
1400 - 1499	Intrinsically In-/output
1500 - 1599	Junction box remote

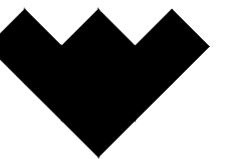
## Example designation cable



# Weatherford Oil Tool GmbH

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# Weatherford®

## Terminal strip definition

- X0 : Power supply
- X1 : 400 V AC Power output
- X2 : 230 V AC Voltage (cabinet)
- X3 : 24 V DC Control voltage (cabinet)
- X3.1 : 230 V AC Control voltage
- X4 : Measuring value line / analog signals
- X5 : Emergency Off / Emergency Stop
- X6 : 24 V DC Sensors / Power actuators
- X7 : 24 V DC Valves
- X8 : Bus lines
- X9 : Pump controller
- X10 : Control switches and lamps
- X11 : Floating inputs
- X12 : Floating outputs
- X14 : Intrinsically in- / output
- X15 : Equipotential bonding

## Connector definition

- X00 : -/-
- X01 : 400 V AC Power output
- X02 : 230 V AC Voltage (cabinet)
- X03 : 24 V DC Control voltage (cabinet)
- X03.1 : 230 V AC Control voltage
- X04 : Measuring value line / analog signals
- X05 : Emergency Off / Emergency Stop
- X06 : 24 V DC Sensors / Power actuators
- X07 : 24 V DC Valves
- X08 : Bus lines
- X09 : Pump controller
- X10 : Control switches and lamps
- X11 : Floating inputs
- X12 : Floating outputs
- X14 : Intrinsically in- / output
- X15 : Equipotential bonding

		Date	25.02.2013	Weatherford
		Drn.	H. Armbrecht	Langenhagen
		Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd	See Windchill



Centralizer Test Tool  
Cover sheet

Part number: 02324572

= General  
+ Gen  
General  
Page 4  
of 156



Weatherford®

Rev.: Drawing number: 4\_22.5215

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=General	+Gen	1	Cover sheet		23.06.2014	H. Armbrecht
	+Gen	2	Cover sheet		23.06.2014	H. Armbrecht
	+Gen	3	Cover sheet		23.06.2014	H. Armbrecht
	+Gen	4	Cover sheet		23.06.2014	H. Armbrecht
	+Gen	5	Table of contents : =General+Gen/1 - =General+Overview/3		22.01.2015	H. Armbrecht
	+Gen	6	Table of contents : =CT+MC/1 - =CT+MC/24		22.01.2015	H. Armbrecht
	+Gen	7	Table of contents : =CT+MC/25 - =CT+MC/65		22.01.2015	H. Armbrecht
	+Gen	8	Table of contents : =CT+MC/66 - =CT+HP1/10		22.01.2015	H. Armbrecht
	+Gen	9	Table of contents : =CT+HP1/16 - =CT+FR/2		22.01.2015	H. Armbrecht
	+Gen	10	Table of contents : =CT+FR/3 - =CT+HPU/11		22.01.2015	H. Armbrecht
	+Gen	11	Table of contents : =Summ_Part/1 - =Summ_Part/6		22.01.2015	H. Armbrecht
	+Gen	26	Structure identifier overview		17.11.2014	H. Armbrecht
	+Gen	27	Structure identifier overview		17.11.2014	H. Armbrecht
	+Gen	28	Structure identifier overview		17.11.2014	H. Armbrecht
	+CAB	1	Cover sheet		23.06.2014	H. Armbrecht
	+CAB	2	Cable overview		22.01.2015	H. Armbrecht
	+CAB	3	Cable overview		22.01.2015	H. Armbrecht
	+CAB	4	Cable overview		22.01.2015	H. Armbrecht
	+CAB	5	Cable overview		22.01.2015	H. Armbrecht
	+CAB	6	Cable overview		22.01.2015	H. Armbrecht
+CAB	7	Cable overview		22.01.2015	H. Armbrecht	
+CAB	8	Cable overview		22.01.2015	H. Armbrecht	
+CAB	9	Cable overview		22.01.2015	H. Armbrecht	
+Overview	1	Cover sheet		23.06.2014	H. Armbrecht	
+Overview	2	Plant overview		17.11.2014	H. Armbrecht	
+Overview	3	Cable overview		13.08.2014	H. Armbrecht	

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=CT	+MC	1	Cover sheet		25.06.2014	H. Armbrecht
	+MC	2	Power supply Power distribution		09.01.2015	H. Armbrecht
	+MC	3	Power supply 24VDC		03.09.2014	H. Armbrecht
	+MC	4	Distribution 24VDC		10.11.2014	H. Armbrecht
	+MC	5	Servomotor Shaft 1/Shft 2		12.09.2014	H. Armbrecht
	+MC	6	Servomotor Shaft 3/Shft 4		12.09.2014	H. Armbrecht
	+MC	7	Servomotor Shaft 5/Shft 6		12.09.2014	H. Armbrecht
	+MC	8	Servomotor Shaft 7		12.09.2014	H. Armbrecht
	+MC	9	Servomotor Shaft 8/Shft 9		12.09.2014	H. Armbrecht
	+MC	10	Servomotor Electric cylinder 1		12.09.2014	H. Armbrecht
	+MC	11	Servomotor Electric cylinder 2		12.09.2014	H. Armbrecht
	+MC	12	Cabinet Cooler		21.08.2014	H. Armbrecht
	+MC	13	Emergency Stop Relay		29.08.2014	H. Armbrecht
	+MC	14	Emergency Stop Relay Safety doors		29.08.2014	H. Armbrecht
	+MC	15	Emergency Stop Relay Safety doors		17.11.2014	H. Armbrecht
	+MC	16	PLC EherCAT Controller		17.11.2014	H. Armbrecht
	+MC	16a	PLC EherCAT Controller		09.01.2015	H. Armbrecht
	+MC	17	PLC Input		28.08.2014	H. Armbrecht
	+MC	17a	PLC Input		28.08.2014	H. Armbrecht
	+MC	17b	PLC Input		28.08.2014	H. Armbrecht
	+MC	18	PLC Output		17.11.2014	H. Armbrecht
	+MC	19	PLC Output		17.11.2014	H. Armbrecht
	+MC	19a	PLC Output		17.11.2014	H. Armbrecht
	+MC	20	Control Fuses		21.10.2014	H. Armbrecht
	+MC	21	Manual Mode Table device		29.08.2014	H. Armbrecht
	+MC	22	Manual Mode Table device		29.08.2014	H. Armbrecht
	+MC	23	Manual Mode Table device		29.08.2014	H. Armbrecht
	+MC	24	Sensors Table device		17.11.2014	H. Armbrecht

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=CT	+MC	25	Sensors Table device		17.11.2014	H. Armbrecht
	+MC	26	Sensors Table device		17.11.2014	H. Armbrecht
	+MC	27	Sensors Clamp Top Side		17.11.2014	H. Armbrecht
	+MC	28	Sensors Clamp Top Side		17.11.2014	H. Armbrecht
	+MC	29	Sensors Support/Chuck		22.01.2015	H. Armbrecht
	+MC	30	Sensors Support/Chuck		22.01.2015	H. Armbrecht
	+MC	31	Sensors Frame		28.08.2014	H. Armbrecht
	+MC	32	Sensors Frame		13.01.2015	H. Armbrecht
	+MC	33	Output Motor		22.01.2015	H. Armbrecht
	+MC	34	Output HPU/Valve		22.01.2015	H. Armbrecht
	+MC	35	Inputs HPU		28.08.2014	H. Armbrecht
	+MC	36	Output HPU Valve		22.01.2015	H. Armbrecht
	+MC	37	Output HPU Valve		28.08.2014	H. Armbrecht
	+MC	38	Output HPU Valve		12.01.2015	H. Armbrecht
	+MC	39	Torque and Turns		09.01.2015	H. Armbrecht
	+MC	40	Panel layout		22.01.2015	H. Armbrecht
	+MC	41	Enclosure		21.08.2014	H. Armbrecht
	+MC	55	Parts list : 02357998 - 01322459		22.01.2015	H. Armbrecht
	+MC	56	Parts list : 01322459 - 01295532		22.01.2015	H. Armbrecht
	+MC	57	Parts list : 01295195 - 02050540		22.01.2015	H. Armbrecht
	+MC	58	Parts list : 01877851 - AM8021-0B21-0000		22.01.2015	H. Armbrecht
	+MC	59	Parts list : AM8041-0E20-0000 - 01035343		22.01.2015	H. Armbrecht
	+MC	60	Parts list : 02330442 - 02358018		22.01.2015	H. Armbrecht
	+MC	61	Parts list : 02358018 - 01036504		22.01.2015	H. Armbrecht
	+MC	62	Parts list : 01037472 - 01032675		22.01.2015	H. Armbrecht
+MC	63	Parts list : 01036504 - 01036536		22.01.2015	H. Armbrecht	
+MC	64	Parts list : 01035500 - 01220100		22.01.2015	H. Armbrecht	
+MC	65	Summarized parts list : 02357998 - 02359317		22.01.2015	H. Armbrecht	



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=CT	+MC	66	Summarized parts list : BOS.R911286918 - 01044913		22.01.2015	H. Armbrecht
	+MC	67	Summarized parts list : 01032859 - 02052941		22.01.2015	H. Armbrecht
	+MC	68	Summarized parts list : 02052926 - 0205828		22.01.2015	H. Armbrecht
	+CP	1	Cover sheet		25.06.2014	H. Armbrecht
	+CP	2	Power supply / distribution 24VDC		17.11.2014	H. Armbrecht
	+CP	3	PLC EherCAT Controller		28.08.2014	H. Armbrecht
	+CP	4	PLC EherCAT Controller		28.08.2014	H. Armbrecht
	+CP	4a	PLC EherCAT Controller		22.08.2014	H. Armbrecht
	+CP	5	PLC Input		28.08.2014	H. Armbrecht
	+CP	5a	PLC Input		22.08.2014	H. Armbrecht
	+CP	6	Emergency Stop		28.08.2014	H. Armbrecht
	+CP	7	HPU Operation		17.11.2014	H. Armbrecht
	+CP	8	HPU Operation		28.08.2014	H. Armbrecht
	+CP	9	HPU Operation		28.08.2014	H. Armbrecht
	+CP	10	Output Control light		28.08.2014	H. Armbrecht
	+CP	11	Output Control light		28.08.2014	H. Armbrecht
	+CP	15	Control Panel		04.09.2014	H. Armbrecht
	+CP	16	Control Panel		22.08.2014	H. Armbrecht
	+CP	17	Schalschrank Motageplatte		22.08.2014	H. Armbrecht
	+CP	18			15.10.2014	H. Armbrecht
	+CP	29	Parts list : 01295884 - 01329039		22.01.2015	H. Armbrecht
	+CP	30	Parts list : 01329040 - 01387541		22.01.2015	H. Armbrecht
	+CP	31	Parts list : 01044906 - 01036504		22.01.2015	H. Armbrecht
	+CP	32	Summarized parts list : 01295183 - 01960281		22.01.2015	H. Armbrecht
+CP	33	Summarized parts list : 01329039 - 01329035		22.01.2015	H. Armbrecht	
+HP1	1	Cover sheet		28.08.2014	H. Armbrecht	
+HP1	2	Sensors Table device		17.11.2014	H. Armbrecht	
+HP1	10	Control Panel		05.09.2014	H. Armbrecht	

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=CT	+HP1	16	Parts list : 01283235 - 01740433		22.01.2015	H. Armbrecht
	+HP1	17	Parts list : 01036520 - 01036511		22.01.2015	H. Armbrecht
	+HP1	18	Summarized parts list : 3SB3000-3AH01 - 01036511		22.01.2015	H. Armbrecht
	+TD	1	Cover sheet		18.08.2014	H. Armbrecht
	+TD	2	Sensors Table device		17.11.2014	H. Armbrecht
	+TD	3	Sensors Table device		22.01.2015	H. Armbrecht
	+TD	4	Sensors Table device		17.11.2014	H. Armbrecht
	+TD	10	Control Panel		01.09.2014	H. Armbrecht
	+TD	16	Parts list : 01320643 - 01032655		22.01.2015	H. Armbrecht
	+TD	17	Parts list : 02030085 - PXC.3030213		22.01.2015	H. Armbrecht
	+TD	18	Parts list : 01872505 - 01872507		22.01.2015	H. Armbrecht
	+TD	19	Summarized parts list : 01320643 - 02113131		22.01.2015	H. Armbrecht
	+CTS	1	Cover sheet		18.08.2014	H. Armbrecht
	+CTS	2	Sensors Clamp Top Side		17.11.2014	H. Armbrecht
	+CTS	3	Torque Controller Clamp Top Side		17.11.2014	H. Armbrecht
	+CTS	10	Control Panel		01.09.2014	H. Armbrecht
	+CTS	14	Parts list : 01035128 - PXC.3030213		22.01.2015	H. Armbrecht
	+CTS	15	Summarized parts list : BAL.BTL7-E1 - 02113131		22.01.2015	H. Armbrecht
	+CTS	16	Parts list : 01036504 - 01036504		22.01.2015	H. Armbrecht
	+SC	1	Cover sheet		19.08.2014	H. Armbrecht
+SC	2	Sensors Support/Chuck		01.09.2014	H. Armbrecht	
+SC	3	Sensors Support/Chuck		22.01.2015	H. Armbrecht	
+SC	10	Control Panel		01.09.2014	H. Armbrecht	
+SC	15	Parts list : 01320643 - 02030085		22.01.2015	H. Armbrecht	
+SC	16	Parts list : 02030085 - 01036504		22.01.2015	H. Armbrecht	
+SC	17	Summarized parts list : 01320643 - BI2-EG08-VP6X-H1341		22.01.2015	H. Armbrecht	
+FR	1	Cover sheet		19.08.2014	H. Armbrecht	
+FR	2	Sensors Support/Chuck		01.09.2014	H. Armbrecht	



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=CT	+FR	3	Sensors Support/Chuck		17.11.2014	H. Armbrecht
	+FR	10	Control Panel		01.09.2014	H. Armbrecht
	+FR	14	Parts list : 01320643 - 01036504		22.01.2015	H. Armbrecht
	+FR	15	Summarized parts list : 01320643 - BI2-EG08-VP6X-H1341		22.01.2015	H. Armbrecht
	+HPU	1	Cover sheet		20.08.2014	H. Armbrecht
	+HPU	2	External HPU Inputs		20.08.2014	H. Armbrecht
	+HPU	3	Output Valve		20.08.2014	H. Armbrecht
	+HPU	4	Output Valve		17.11.2014	H. Armbrecht
	+HPU	5	Output Valve		20.08.2014	H. Armbrecht
	+HPU	9	Parts list : 02333153 - 01042998		22.01.2015	H. Armbrecht
	+HPU	10	Parts list : 02274128 - 02274128		22.01.2015	H. Armbrecht
	+HPU	11	Summarized parts list : 01037279 - 02333153		22.01.2015	H. Armbrecht

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		2	Summarized parts list : 02358031 - 02274128		22.01.2015	H. Armbrecht
		3	Summarized parts list : 02050944 - 01036502		22.01.2015	H. Armbrecht
		4	Summarized parts list : 01037472 - Rittal_TP6742.500		22.01.2015	H. Armbrecht
		5	Summarized parts list : 01960278 - 01387541		22.01.2015	H. Armbrecht
		6	Summarized parts list : 01220076 - BI2-EG08-VP6X-H1341		22.01.2015	H. Armbrecht

# overview structure identifier

<b>Higher-level function (=)</b>	<i>Description</i>	<b>Mounting location (+)</b>	<i>Description</i>	<i>Number of pages per listed structure identifier</i>
General		► Gen	<i>General</i>	14
		► CAB	<i>Cable Overview</i>	9
		► Overview	<i>Overview</i>	3

# overview structure identifier

<b>Higher-level function (=)</b>	<i>Description</i>	<b>Mounting location (+)</b>	<i>Description</i>	<i>Number of pages per listed structure identifier</i>
CT	<i>Centrelaizer Test Stand</i>	► MC	<i>Main Cabinet</i>	59
		► CP	<i>Control panel</i>	22
		► HP1	<i>Hand Panel 1</i>	6
		► TD	<i>Table device</i>	9
		► CTS	<i>Portal Frame</i>	7
		► SC	<i>Support chuck</i>	7
		► FR	<i>Frame</i>	6
		► HPU	<i>Hydraulic unit</i>	8

# overview structure identifier

<b>Higher-level function (=)</b>	<i>Description</i>	<b>Mounting location (+)</b>	<i>Description</i>	<i>Number of pages per listed structure identifier</i>
Summ_Part		▶		6

Date	25.02.2013	Weatherford
Drn.	H. Armbrecht	Langenhagen
Chk	See Windchill	Germany
Rev. No.	ECN-No.	App'd



# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

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**Weatherford®**

**Customer:** Weatherford

Type/Serial No.: Centralizer Test Tool

Assembly: =General +CAB

Year of manufacture: 2014

Drawing number: 4\_22.5215

Part number: 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz

Mains current: A

Control voltage 1: 230 V AC

Control voltage 2: 24 V DC

Control voltage 3: 0...10 V DC

## Line Color

Main circuit (L): BK (black)

Neutral conductor: BU (light blue)

Control voltage 230 V AC: RD (red)

Control voltage 24 V DC: BU (dark blue)

Sensor: WH (white)

Ground wire: GNYE (green-yellow)

Floating distance: OR (orange)

## Terminal Block Designation

-X0 --> Power supply

-X1 --> 400 V AC Power output

-X2 --> 230 V AC Voltage (enclosure)

-X3 --> 24 V DC Control voltage (enclosure)

-X4 --> Measuring value line

-X5 --> Emergency off/Emergency stop

-X6 --> 24 V DC Sensors/Power actuators

-X7 --> 24 V DC Valve

-X8 --> Bus line

-X9 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

## Connector Designation

-X00 --> -/-

-X01 --> 400 V AC Power output

-X02 --> 230 V AC Voltage (enclosure)

-X03 --> 24 V DC Control voltage (enclosure)

-X04 --> Measuring value line

-X05 --> Emergency off/Emergency stop

-X06 --> 24 V DC Sensors/Power actuators

-X07 --> 24 V DC Valve

-X08 --> Bus line

-X09 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= General
Drn.	H. Armbrecht	Langenhagen	Cover sheet		+ CAB	Cable Overview
Chk	See Windchill	Germany				
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

# Cable overview

Cable designation	from	to	Cable type	Conductors	Ø	Cable Ø	Length	Function text
=CT+MC-W1.1			ÖLFLEX 110	4	2,5 mm <sup>2</sup>	8,9 mm		Hydraulic unit
=CT+MC-W3.1	=CT+MC-X3	=CT+CP-X3	ÖLFLEX 110	3	1,5 mm <sup>2</sup>	6,7 mm		24V DC Power distribution
=CT+MC-W3.2	=CT+MC-X3.2	=CT+HP1-S2.1	ÖLFLEX FD 855 CP G	25	0,5 mm <sup>2</sup>	16,1 mm		Emergency Stop Control cabinet
		=CT+HP1-S2.2						
		=CT+HP1-S2.3						
		=CT+HP1-S2.4						
		=CT+HP1-S2.5						
		=CT+HP1-S2.6						
		=CT+HP1-W3.2						
=CT+MC-W5.1	=CT+MC-X5.1	=CT+CP-X5	ÖLFLEX 110	16	1,5 mm <sup>2</sup>	13,4		Emergency Stop Control cabinet
	=CT+MC-X5.2							
	=CT+MC-X5.3							
=CT+MC-W6.1	=CT+MC-X6.1	=CT+TD-X6.1	ÖLFLEX FD 855 P	25	1 mm <sup>2</sup>	17,3		TD Locking cylinder left plugged in
=CT+MC-W6.2	=CT+MC-X6.2	=CT+CTS-X6.2	ÖLFLEX FD 855 P	12	1 mm <sup>2</sup>	11,6		
=CT+MC-W6.3	=CT+MC-X6.3	=CT+SC-X6.3	ÖLFLEX FD 855 P	25	1 mm <sup>2</sup>	17,3		SC Motor 2 Adjustment Position
=CT+MC-W6.4	=CT+MC-X6.4	=CT+FR-X6.4	ÖLFLEX FD 855 P	25	1 mm <sup>2</sup>	17,3		
=CT+MC-W6.21								
=CT+MC-W6.22								CTS Pipe horizontal position Left site
=CT+MC-W7.1	=CT+MC-X7	=CT+HPU-U3.1-X7	ÖLFLEX 110	25	1,5 mm <sup>2</sup>	16,9 mm		HPU Valve 5a
=CT+MC-W8.1	=CT+MC-X8.1	=CT+MC-A16.2	PUR	8	0,25 mm <sup>2</sup>	7 mm	3 m	Hydraulic Controller MP 0V
=CT+MC-W8.2	=CT+MC-X8.1	=CT+CTS-W8	PUR	8	0,34 mm <sup>2</sup>	7,0 mm	20 m	=
		=CT+CTS-A3.2						
=CT+MC-W11.1	=CT+MC-X11	=CT+HPU-X3	ÖLFLEX FD 855 P	25	1,5 mm <sup>2</sup>	19,3		HPU Stop
=CT+MC-W53.1	=CT+MC-X5.3	=CT+MC-S15.1	ÖLFLEX 110	3	1 mm <sup>2</sup>	6		Safety door 1
=CT+MC-W53.2	=CT+MC-S15.1	=CT+MC-S15.2	ÖLFLEX 110	3	1 mm <sup>2</sup>	6		Safety door 2
=CT+MC-W53.3	=CT+MC-S15.2	=CT+MC-S15.3	ÖLFLEX 110	3	1 mm <sup>2</sup>	6		Safety door 3
=CT+MC-W53.4	=CT+MC-S15.3	=CT+MC-S15.4	ÖLFLEX 110	3	1 mm <sup>2</sup>	6		Safety door 4
=CT+MC-W53.5	=CT+MC-S15.4	=CT+MC-S15.5	ÖLFLEX 110	3	1 mm <sup>2</sup>	6		Safety door 5
=CT+MC-W53.6	=CT+MC-S15.5	=CT+MC-S15.6	ÖLFLEX 110	3	1 mm <sup>2</sup>	6		Safety door 6

# Cable overview

Cable designation	from	to	Cable type	Conductors	Ø	Cable Ø	Length	Function text
=CT+MC-W53.7	=CT+MC-X5.3	=CT+MC-S15.6	ÖLFLEX 110	3	1 mm <sup>2</sup>	6		Safety door 6
=CT+MC-WM5.1	=CT+MC-A5.1	=CT+MC-M5.1	ZK4500-8023	9		12	10 m	Servomotor Shaft 1
=CT+MC-WM5.2	=CT+MC-A5.1	=CT+MC-M5.2	ZK4500-8023	9		12	10 m	Servomotor Shaft 2
=CT+MC-WM6.1	=CT+MC-A6.1	=CT+MC-M6.1	ZK4500-8023	9		12	10 m	Servomotor Shaft 3
=CT+MC-WM6.2	=CT+MC-A6.1	=CT+MC-M6.2	ZK4500-8023	9		12	10 m	Servomotor Shaft 4
=CT+MC-WM7.1	=CT+MC-A7.1	=CT+MC-M7.1	ZK4500-8023	9		12	10 m	Servomotor Shaft 5
=CT+MC-WM7.2	=CT+MC-A7.1	=CT+MC-M7.2	ZK4500-8023	9		12	10 m	Servomotor Shaft 6
=CT+MC-WM8.1	=CT+MC-A8.1	=CT+MC-M8.1	ZK4500-8023	9		12	10 m	Servomotor Shaft 7
=CT+MC-WM9.1	=CT+MC-A9.1	=CT+MC-M9.1	ZK4500-8023	9		12	10 m	Servomotor Shaft 8
=CT+MC-WM9.2	=CT+MC-A9.1	=CT+MC-M9.2	ZK4500-8023	9		12	10 m	Servomotor Shaft 9
=CT+MC-WM10.1	=CT+MC-A10.1	=CT+MC-M10.1						Electric cylinder 1
=CT+MC-WM11.1	=CT+MC-A11.1	=CT+MC-M11.1						Electric cylinder 2

# Cable overview

Cable designation	from	to	Cable type	Conductors	$\emptyset$	Cable $\emptyset$	Length	Function text
=CT+CP-W8.1	=CT+CP-A3.2	=CT+CP-A4.1	CAT 5E	8	0,34 mm <sup>2</sup>	40.00	1 m	Keyboard

# Cable overview

Cable designation	from	to	Cable type	Conductors	$\emptyset$	Cable $\emptyset$	Length	Function text
=CT+TD-W06.1	=CT+TD-X6.1	=CT+TD-B2.1	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Clamp cylinder 4 Adjustment Position
=CT+TD-W06.2	=CT+TD-X6.1	=CT+TD-B2.2	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Clamp cylinder 4 plugged-out
=CT+TD-W06.3	=CT+TD-X6.1	=CT+TD-B2.3	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Clamp cylinder 4 plugged-in
=CT+TD-W06.4	=CT+TD-X6.1	=CT+TD-B2.4	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Gear drive plugged-out
=CT+TD-W06.5	=CT+TD-X6.1	=CT+TD-B2.5	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Gear drive plugged-in
=CT+TD-W06.6	=CT+TD-X6.1	=CT+TD-B2.6	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Clamp cylinder 3 plugged-out
=CT+TD-W06.7	=CT+TD-X6.1	=CT+TD-B2.7	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Clamp cylinder 3 plugged-in
=CT+TD-W06.8	=CT+TD-X6.1	=CT+TD-B2.8	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Confirmation table vertical position (90°)
=CT+TD-W06.9	=CT+TD-X6.1	=CT+TD-B3.1	PUR	4	0,34 mm <sup>2</sup>		5 m	TD Locking cylinder left plugged in
=CT+TD-W06.10	=CT+TD-X6.1	=CT+TD-B3.2	PUR	4	0,34 mm <sup>2</sup>		5 m	TD Locking cylinder left plugged out
=CT+TD-W06.11	=CT+TD-X6.1	=CT+TD-B3.3	PUR	4	0,34 mm <sup>2</sup>		5 m	TD Locking cylinder right plugged in
=CT+TD-W06.12	=CT+TD-X6.1	=CT+TD-B3.4	PUR	4	0,34 mm <sup>2</sup>		5 m	TD Locking cylinder rechts plugged out
=CT+TD-W06.13	=CT+TD-X6.1	=CT+TD-B3.5	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Confirmation table Horizontal Position (0°)
=CT+TD-W06.14	=CT+TD-X6.1	=CT+TD-B3.6	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Confirmation table Position (85°)
=CT+TD-W06.21	=CT+TD-X6.1	=CT+TD-B4.1	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	TD Electric cylinder 2 Rear pos.

# Cable overview

Cable designation	from	to	Cable type	Conductors	Ø	Cable Ø	Length	Function text
=CT+CTS-W06.1	=CT+CTS-X6.2	=CT+CTS-B2.1	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Clamp cylinder plugged-out
=CT+CTS-W06.2	=CT+CTS-X6.2	=CT+CTS-B2.2	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Clamp cylinder plugged-in
=CT+CTS-W06.3	=CT+CTS-X6.2	=CT+CTS-B2.3	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Clamp cylinde Adjustment Position
=CT+CTS-W06.8	=CT+CTS-X6.2	=CT+CTS-B2.4	PUR	8	0,25 mm <sup>2</sup>	6,7	10 m	FR Position Clamping tool
=CT+CTS-W8.1	=CT+CTS-A3.1	=CT+CTS-A3.2	PUR	6x	0,25 mm <sup>2</sup>			Torque Transducer
=CT+CTS-W8.2	=CT+CTS-A3.1	=CT+CTS-P3.2	PUR	6x	0,25 mm <sup>2</sup>			Load Cell 1
=CT+CTS-W8.3	=CT+CTS-A3.1	=CT+CTS-P3.1	PUR	6x	0,25 mm <sup>2</sup>			Load Cell 2

# Cable overview

Cable designation	from	to	Cable type	Conductors	$\emptyset$	Cable $\emptyset$	Length	Function text
=CT+SC-W06.1	=CT+SC-X6.3	=CT+SC-B2.1	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Clamp cylinder plugged-in
=CT+SC-W06.2	=CT+SC-X6.3	=CT+SC-B2.2	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Clamp cylinde Adjustment Position
=CT+SC-W06.3	=CT+SC-X6.3	=CT+SC-B2.3	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Clamp cylinder plugged-out
=CT+SC-W06.4	=CT+SC-X6.3	=CT+SC-B2.4	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Motor 1 Adjustment Position
=CT+SC-W06.5	=CT+SC-X6.3	=CT+SC-B2.5	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Motor 1 plugged-in
=CT+SC-W06.6	=CT+SC-X6.3	=CT+SC-B2.6	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Motor 1 plugged-out
=CT+SC-W06.7	=CT+SC-X6.3	=CT+SC-B2.7	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Motor 2 Adjustment Position
=CT+SC-W06.8	=CT+SC-X6.3	=CT+SC-B2.8	PUR	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	CTS Motor 2 plugged-in
=CT+SC-W06.9	=CT+SC-X6.3	=CT+SC-B3.6	PUR	4	0,34 mm <sup>2</sup>		5 m	CTS Motor 2 plugged-out
=CT+SC-W06.15	=CT+SC-X6.3	=CT+SC-B3.7	PUR-OB	4	0,34 mm <sup>2</sup>	5.2 mm	5 m	=

# Cable overview

Cable designation	from	to	Cable type	Conductors	$\emptyset$	Cable $\emptyset$	Length	Function text
=CT+FR-W1	=CT+FR-X6.4	=CT+FR-B2.1	PUR	3	0,34 mm <sup>2</sup>		5 m	FR Motor 1 plugged-in
=CT+FR-W2	=CT+FR-X6.4	=CT+FR-B2.2	PUR	3	0,34 mm <sup>2</sup>		5 m	FR Motor 1 Adjustment Position
=CT+FR-W3	=CT+FR-X6.4	=CT+FR-B2.3	PUR	3	0,34 mm <sup>2</sup>		5 m	FR Motor 1 plugged-out
=CT+FR-W4	=CT+FR-X6.4	=CT+FR-B2.4	PUR	3	0,34 mm <sup>2</sup>		5 m	FR Motor 2 plugged-out
=CT+FR-W5	=CT+FR-X6.4	=CT+FR-B2.5	PUR	3	0,34 mm <sup>2</sup>		5 m	FR Motor 2 Adjustment Position
=CT+FR-W6	=CT+FR-X6.4	=CT+FR-B2.6	PUR	3	0,34 mm <sup>2</sup>		5 m	FR Motor 2 plugged-in

# Cable overview

Cable designation	from	to	Cable type	Conductors	Ø	Cable Ø	Length	Function text
=CT+HPU-W1	=CT+HPU-U3.1-X7	=CT+HPU-Y3.1	PUR-JZ	4x	0,75 mm <sup>2</sup>	6,5 mm	5 m	HPU Valve 1a
=CT+HPU-W2	=CT+HPU-U3.1-X7	=CT+HPU-Y3.2	PUR-JZ	4x	0,75 mm <sup>2</sup>	6,5 mm	5 m	HPU Valve 2a
=CT+HPU-W4	=CT+HPU-U3.1-X7	=CT+HPU-Y3.3	PUR-JZ	4x	0,75 mm <sup>2</sup>	6,5 mm	5 m	HPU Valve 3a
=CT+HPU-W5	=CT+HPU-U3.1-X7	=CT+HPU-Y3.4	PUR-JZ	4x	0,75 mm <sup>2</sup>	6,5 mm	5 m	HPU Valve 4a

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

Phone : +49 511 7702-0

Fax.: +49 511 7702-125



**Weatherford®**

**Customer:** Weatherford

Type/Serial No.: Centralizer Test Tool

Assembly: =General +Overview

Year of manufacture: 2014

Drawing number: 4\_22.5215

Part number: 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz

Mains current: A

Control voltage 1: 230 V AC

Control voltage 2: 24 V DC

Control voltage 3: 0...10 V DC

## Line Color

Main circuit (L): BK (black)

Neutral conductor: BU (light blue)

Control voltage 230 V AC: RD (red)

Control voltage 24 V DC: BU (dark blue)

Sensor: WH (white)

Ground wire: GNYE (green-yellow)

Floating distance: OR (orange)

## Terminal Block Designation

-X0 --> Power supply

-X1 --> 400 V AC Power output

-X2 --> 230 V AC Voltage (enclosure)

-X3 --> 24 V DC Control voltage (enclosure)

-X4 --> Measuring value line

-X5 --> Emergency off/Emergency stop

-X6 --> 24 V DC Sensors/Power actuators

-X7 --> 24 V DC Valve

-X8 --> Bus line

-X9 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

## Connector Designation

-X00 --> -/-

-X01 --> 400 V AC Power output

-X02 --> 230 V AC Voltage (enclosure)

-X03 --> 24 V DC Control voltage (enclosure)

-X04 --> Measuring value line

-X05 --> Emergency off/Emergency stop

-X06 --> 24 V DC Sensors/Power actuators

-X07 --> 24 V DC Valve

-X08 --> Bus line

-X09 --> Pump controller

-X10 --> Control switches and lamps

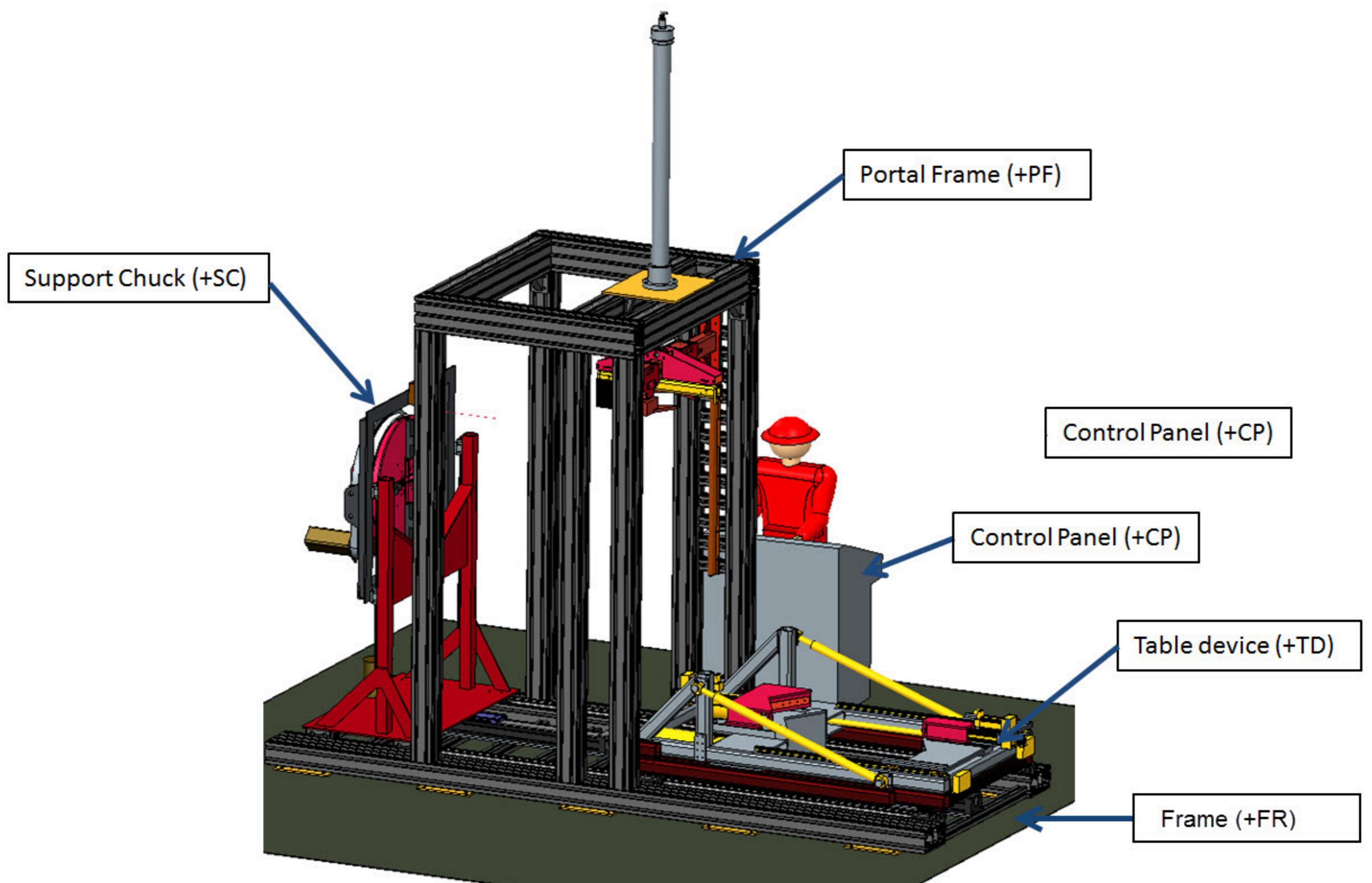
-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= General
Drn.	H. Armbrecht	Langenhagen	Cover sheet		+ Overview	Overview
Chk	See Windchill	Germany				
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

# General overview



		Date	25.02.2013	Weatherford
		Drn.	H. Armbrecht	Langenhagen
		Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd	See Windchill



Centralizer Test Tool  
Cable overview

Part number: 02324572

= General  
+ Overview  
Overview

Rev.: Drawing number: 4\_22.5215

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of 156

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

Phone : +49 511 7702-0

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**Weatherford®**

**Customer:** Weatherford

Type/Serial No.: Centralizer Test Tool

Assembly: =CT +MC

Year of manufacture: 2014

Drawing number: 4\_22.5215

Part number: 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz

Mains current: A

Control voltage 1: 230 V AC

Control voltage 2: 24 V DC

Control voltage 3: 0...10 V DC

## Line Color

Main circuit (L): BK (black)

Neutral conductor: BU (light blue)

Control voltage 230 V AC: RD (red)

Control voltage 24 V DC: BU (dark blue)

Sensor: WH (white)

Ground wire: GNYE (green-yellow)

Floating distance: OR (orange)

## Terminal Block Designation

-X0 --> Power supply

-X1 --> 400 V AC Power output

-X2 --> 230 V AC Voltage (enclosure)

-X3 --> 24 V DC Control voltage (enclosure)

-X4 --> Measuring value line

-X5 --> Emergency off/Emergency stop

-X6 --> 24 V DC Sensors/Power actuators

-X7 --> 24 V DC Valve

-X8 --> Bus line

-X9 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

## Connector Designation

-X00 --> -/-

-X01 --> 400 V AC Power output

-X02 --> 230 V AC Voltage (enclosure)

-X03 --> 24 V DC Control voltage (enclosure)

-X04 --> Measuring value line

-X05 --> Emergency off/Emergency stop

-X06 --> 24 V DC Sensors/Power actuators

-X07 --> 24 V DC Valve

-X08 --> Bus line

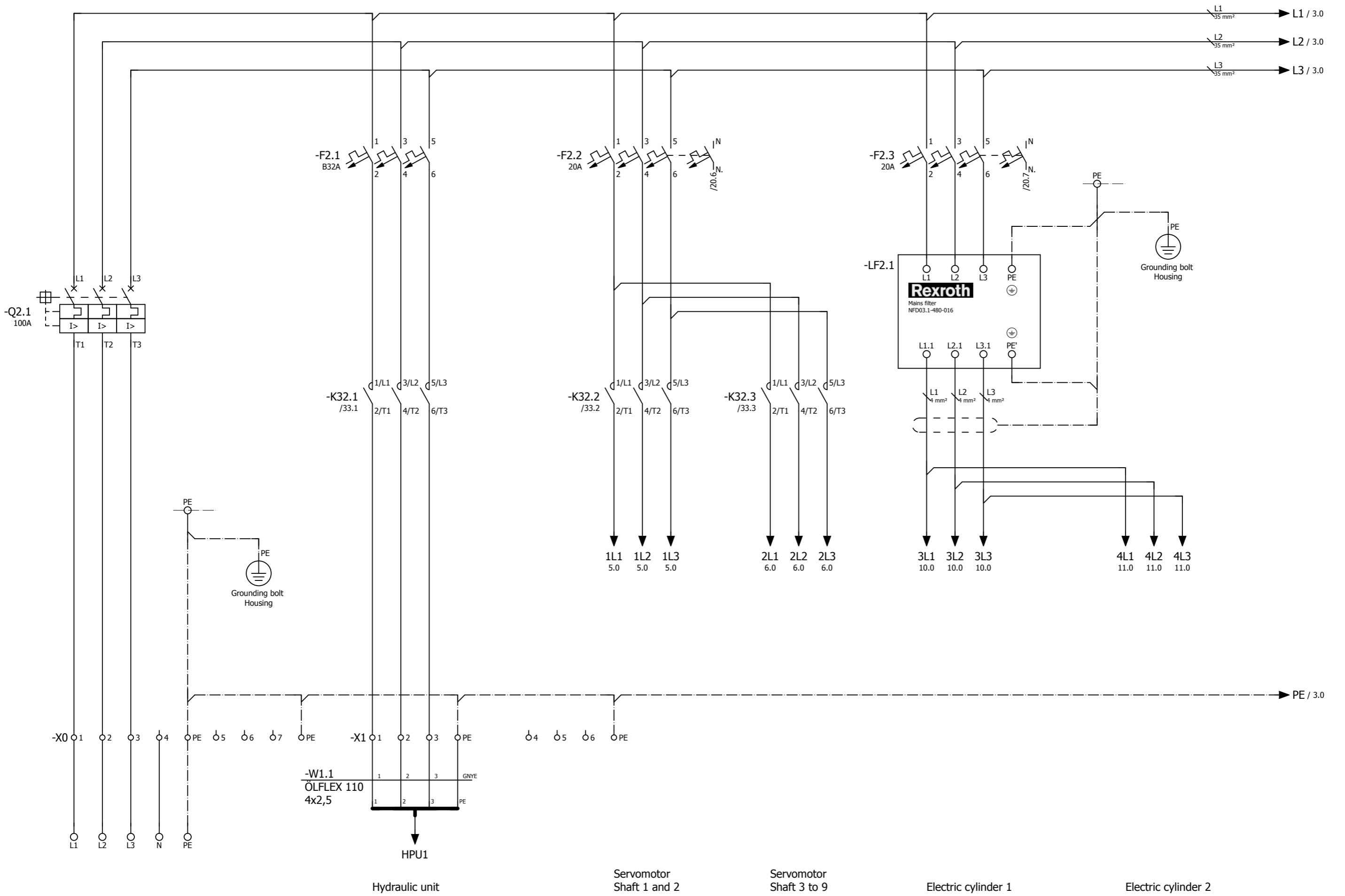
-X09 --> Pump controller

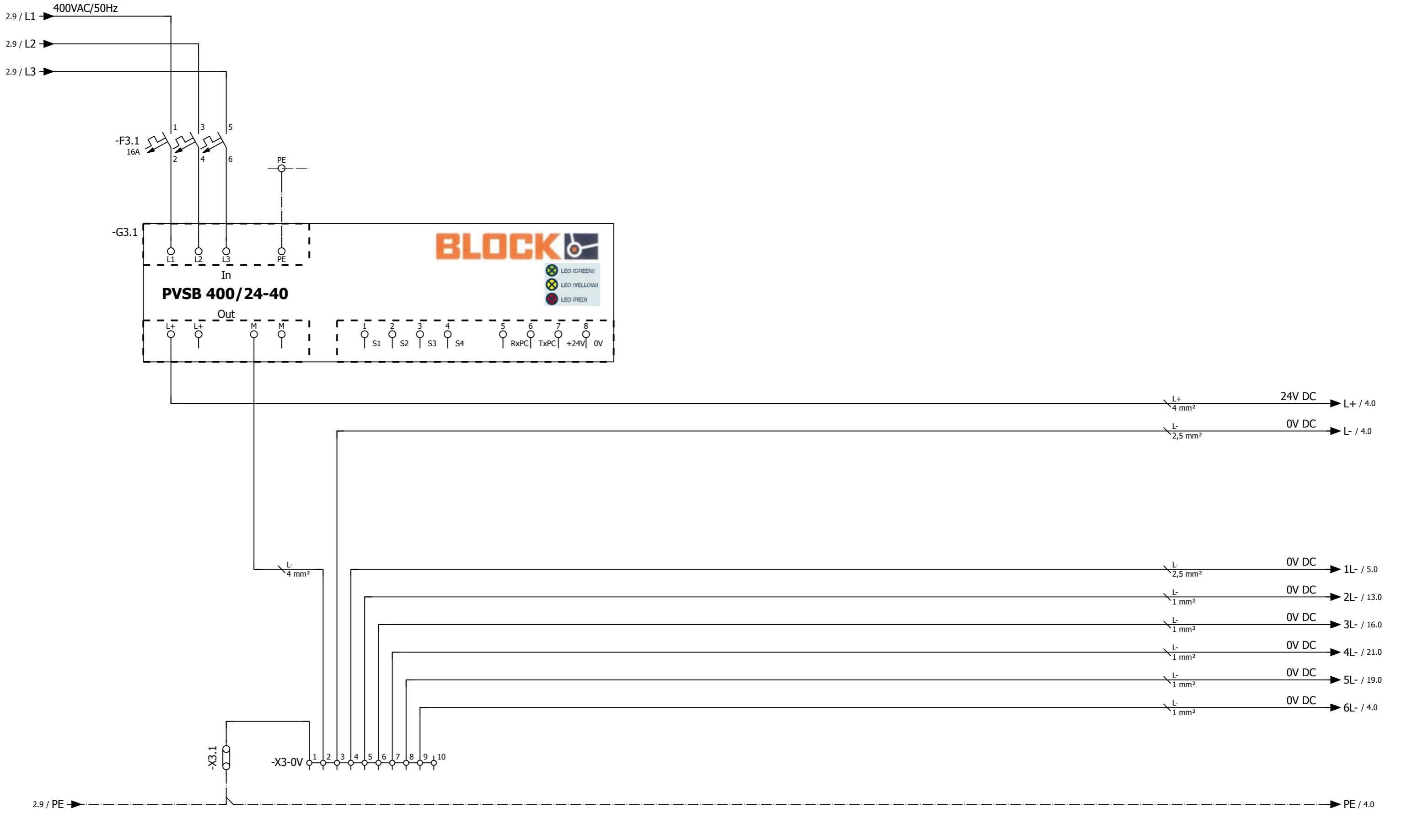
-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output





24V DC  
Power supply

			Date	25.02.2013	Weatherford Langenhagen Germany	
			Drn.	H. Armbrecht		
			Chk	See Windchill		
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

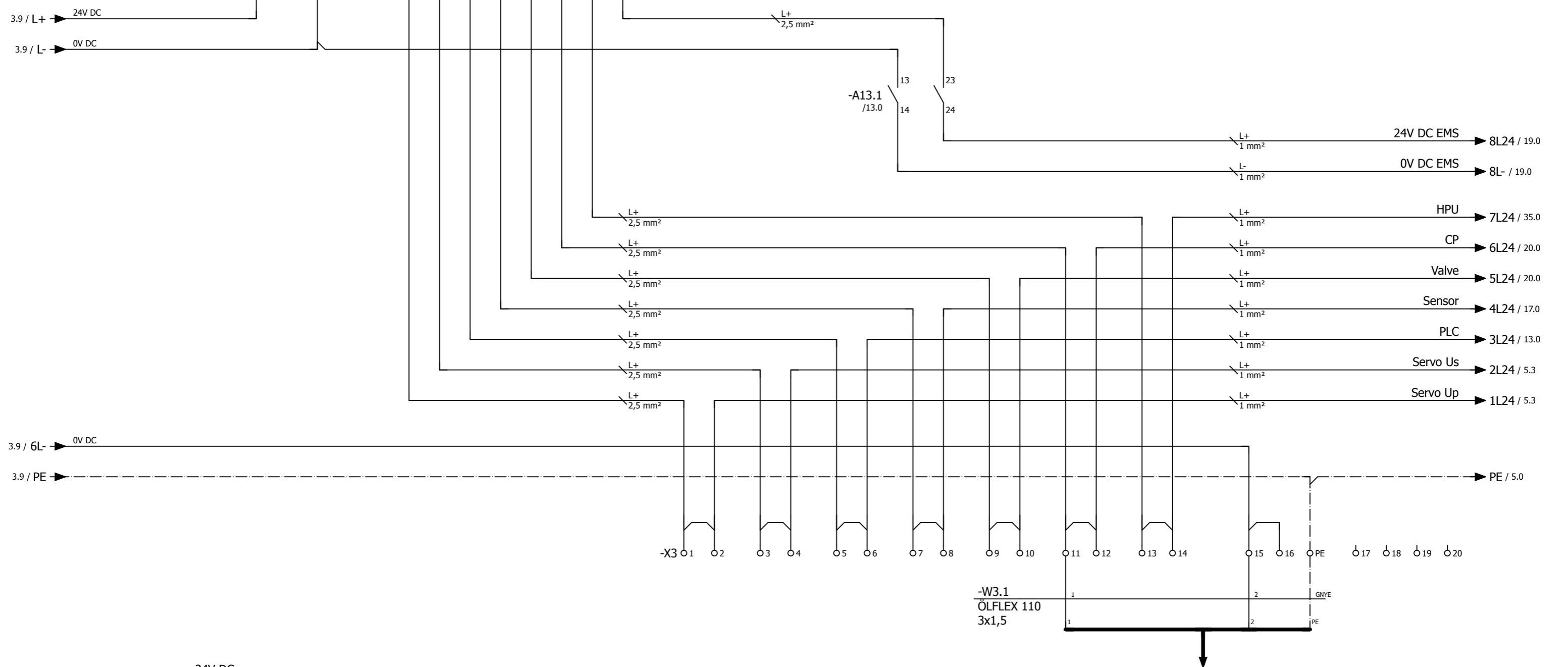
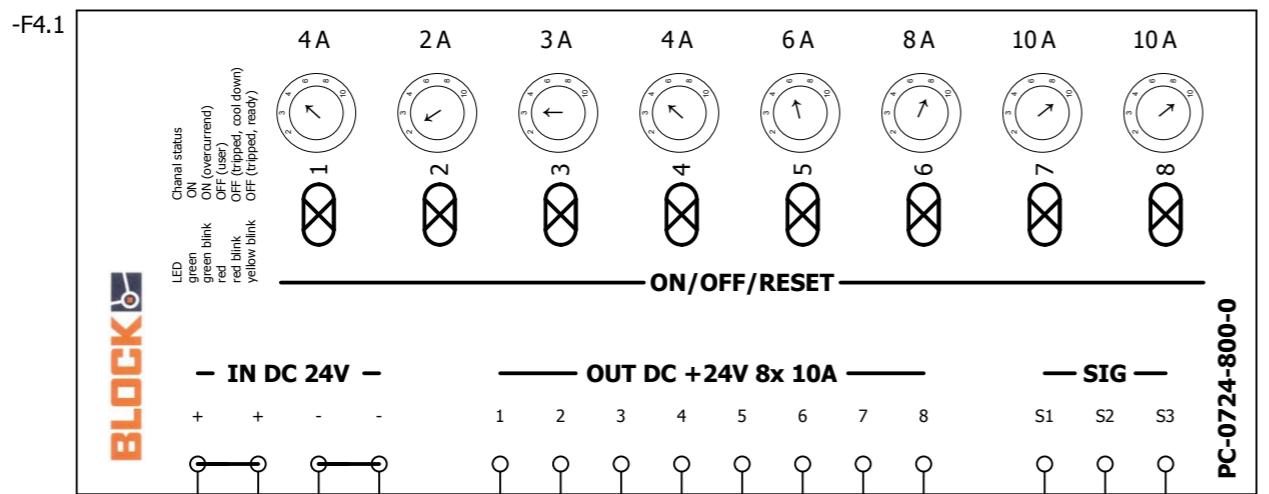


Centralizer Test Tool  
Power supply 24VDC

Part number: 02324572

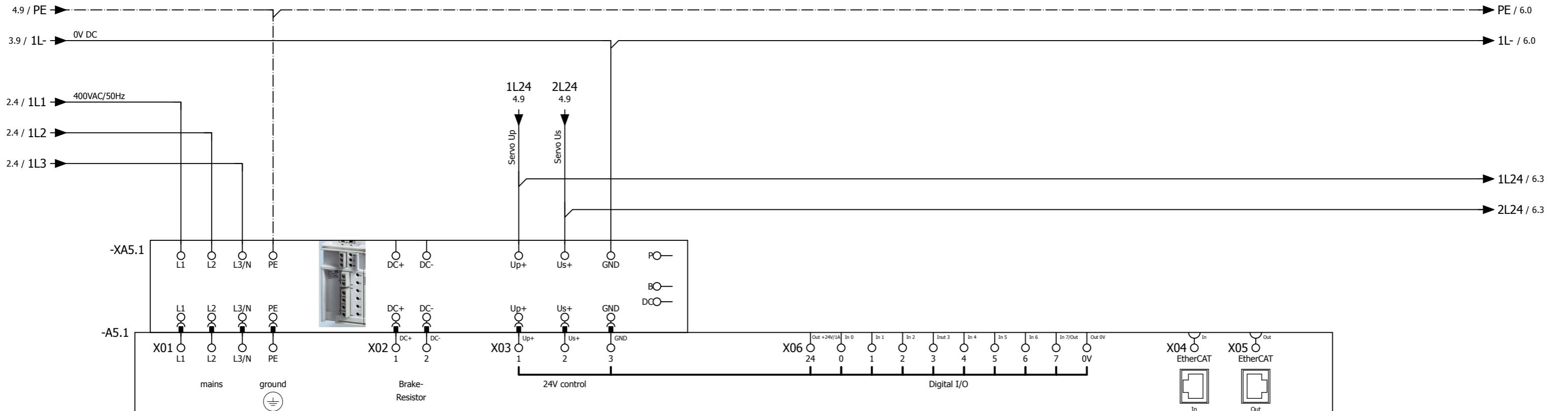
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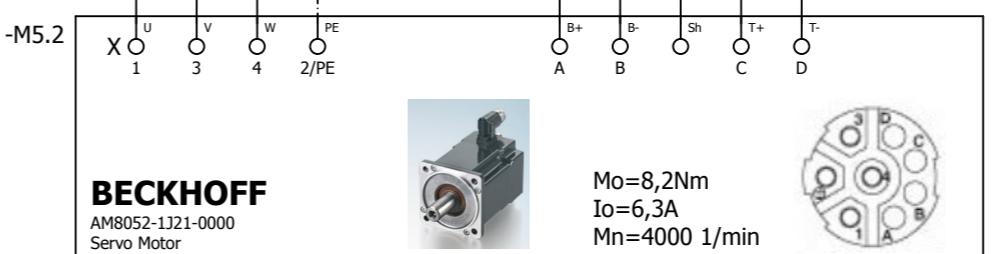
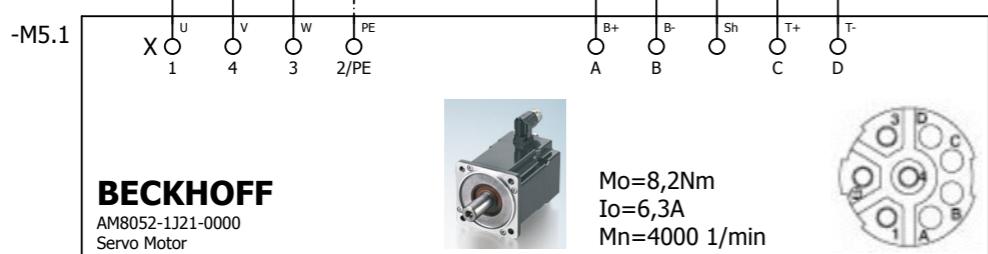
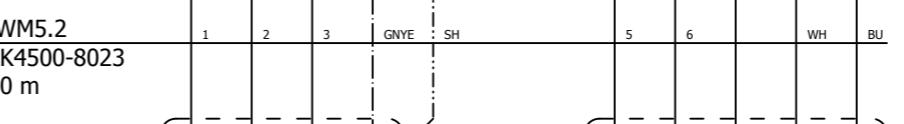
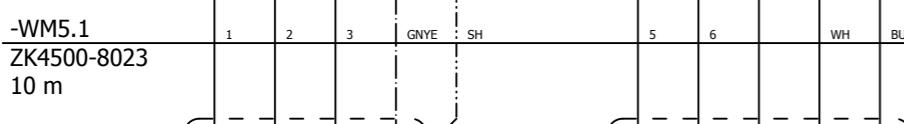
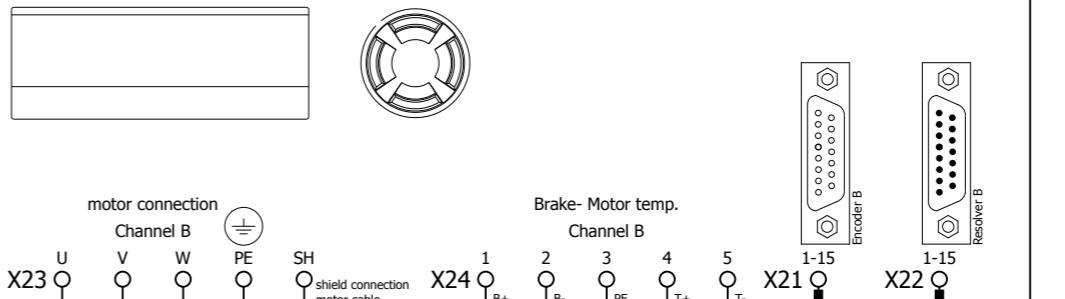
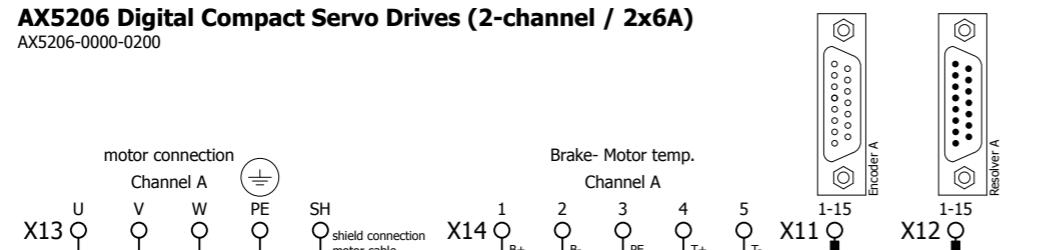
24V DC  
Power distribution

Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= CT
Drn.	H. Armbrecht	Langenhagen	Distribution 24VDC		+ MC	Main Cabinet
Chk	See Windchill	Germany				
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4
						Page 4 of 156



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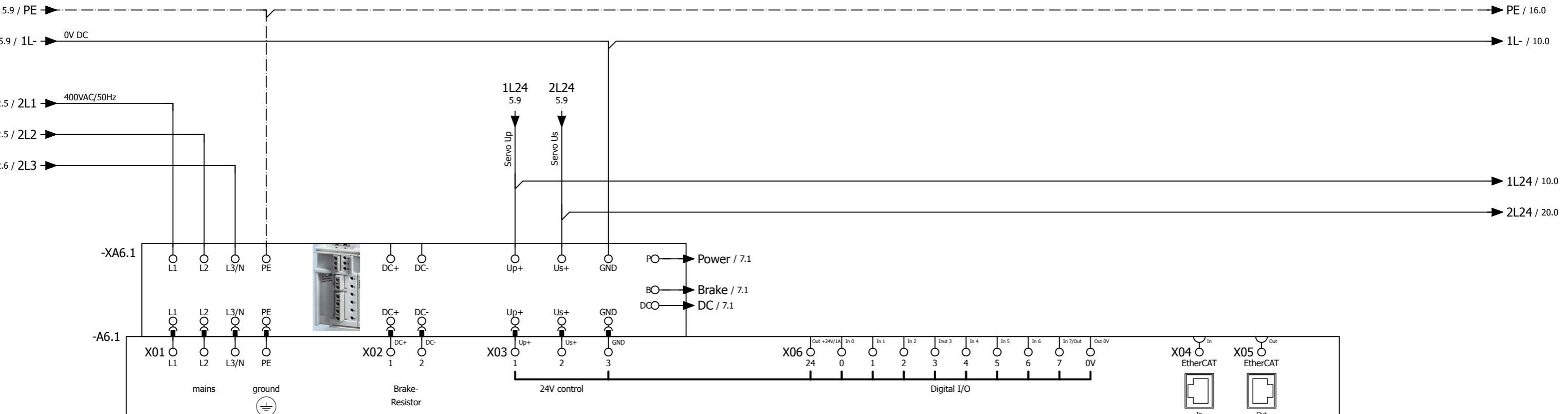
**AX5206 Digital Compact Servo Drives (2-channel / 2x6A)**  
 AX5206-0000-0200



Servomotor Shaft 1

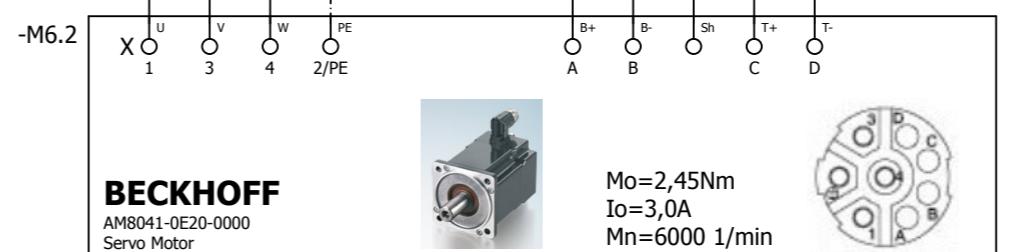
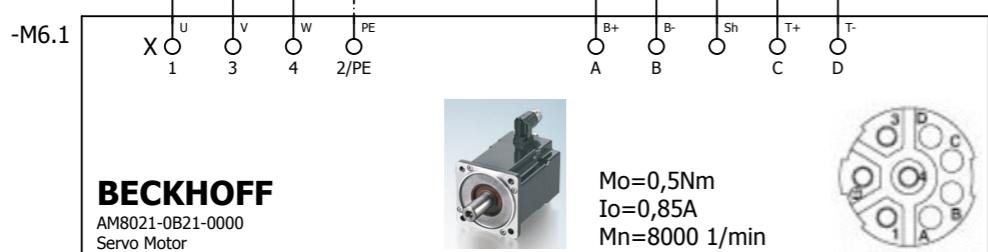
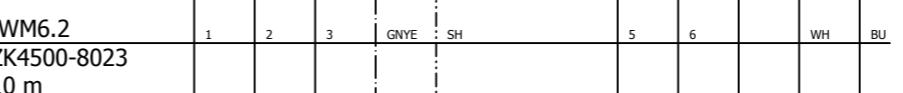
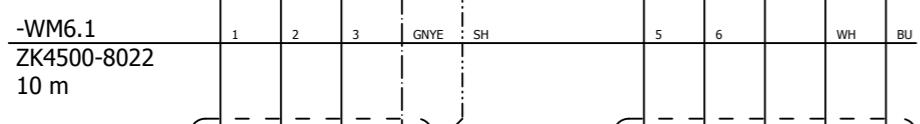
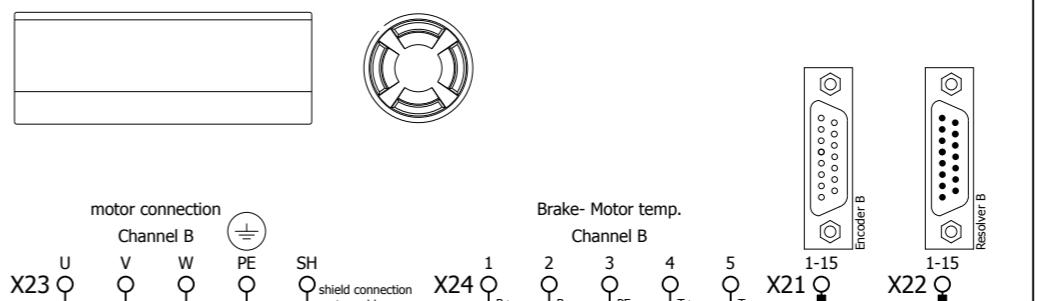
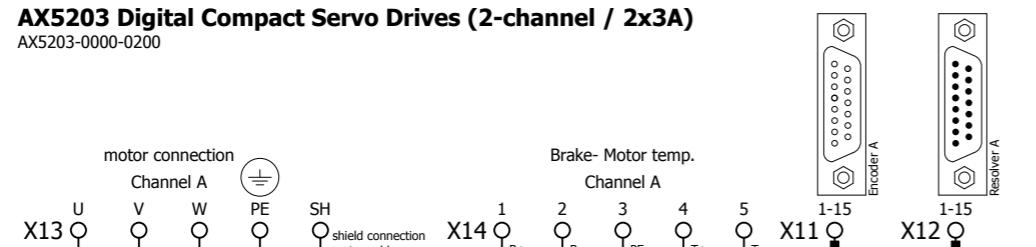
Servomotor Shaft 2

		Date	25.02.2013	Weatherford Langenhagen Germany	 <b>Weatherford</b>	Centralizer Test Tool Servomotor Shaft 1/Shaf	Part number:	02324572	= CT
		Drn.	H. Armbrecht				+ MC		Main Cabinet
		Chk	See Windchill						
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4	Rev.:	Drawing number:	4_22.5215
								Page	5
								of	156



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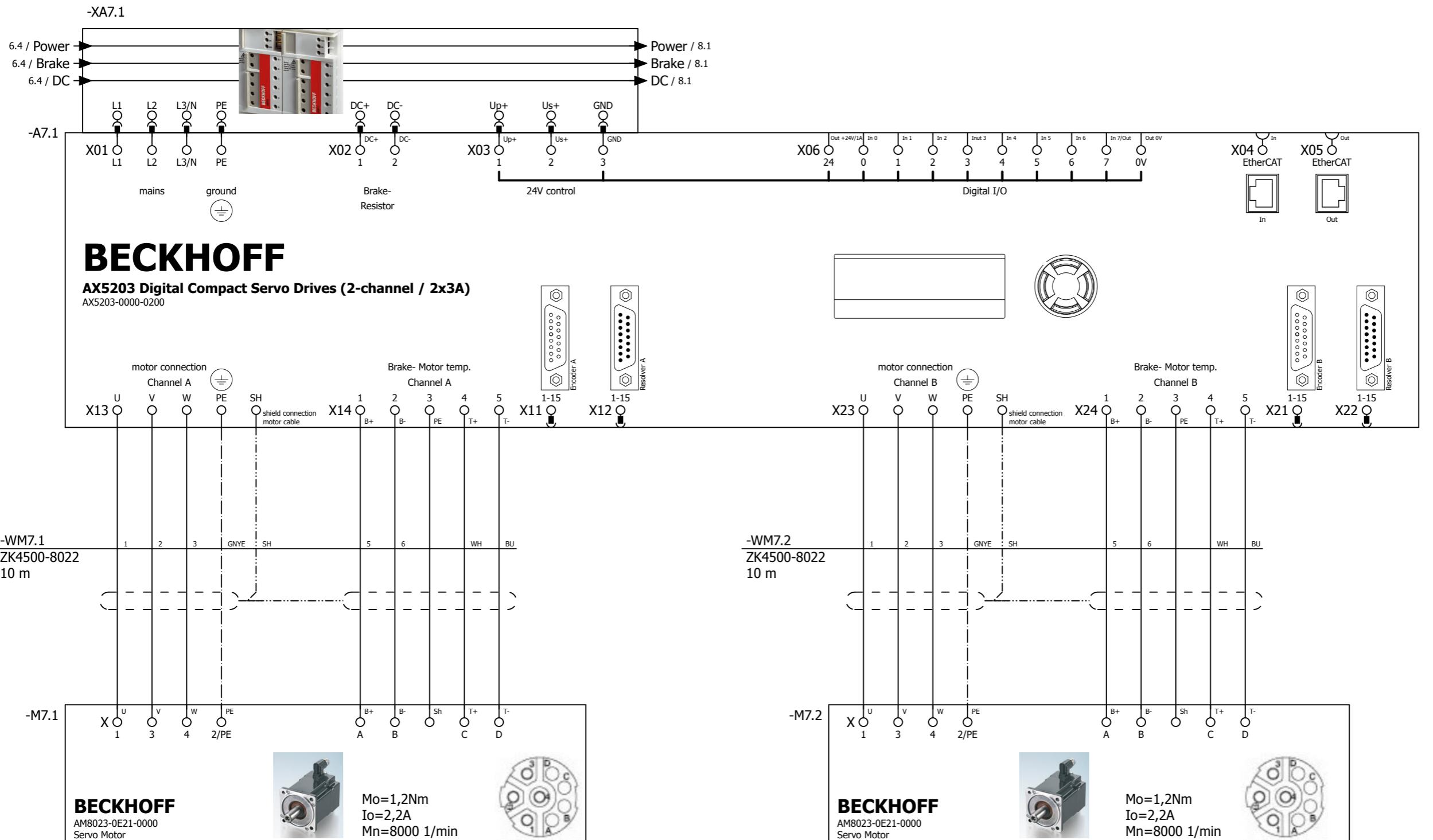
**AX5203 Digital Compact Servo Drives (2-channel / 2x3A)**  
 AX5203-0000-0200



Servomotor Shaft 3

Servomotor Shaft 4

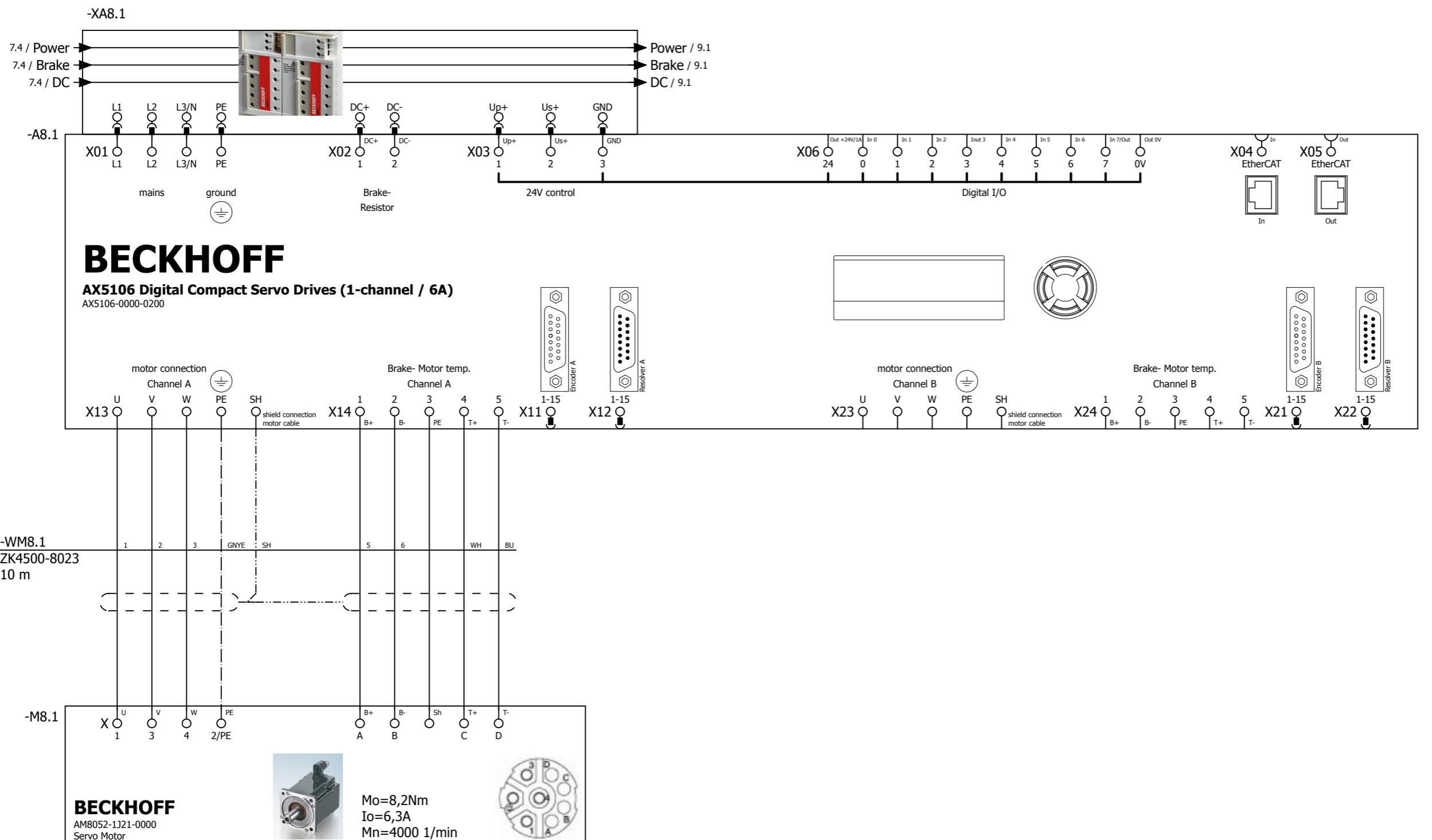
		Date	25.02.2013	Weatherford Langenhagen Germany	 <b>Weatherford</b>	Centralizer Test Tool Servomotor Shaft 3/Shaf	Part number:	02324572	= CT
		Drn.	H. Armbrecht				+ MC		Main Cabinet
		Chk	See Windchill	Germany			Rev.:	Drawing number:	4_22.5215
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4			Page 6 of 156



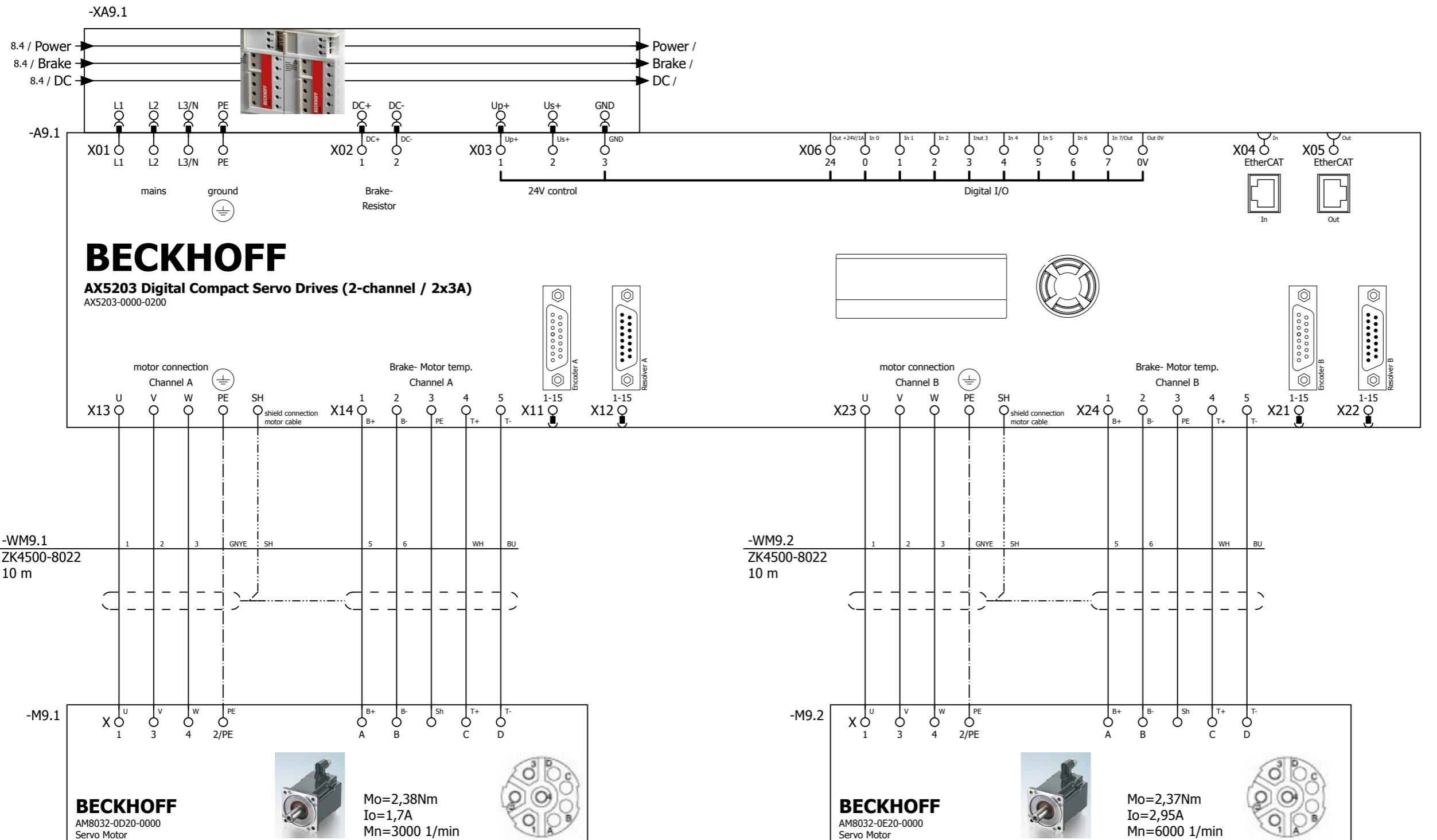
Servomotor Shaft 5

Servomotor Shaft 6

Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= CT
Drn.	H. Armbrecht	Langenhagen	Servomotor			+ MC
Chk	See Windchill	Germany	Shaft 5/Shaft 6			Main Cabinet
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



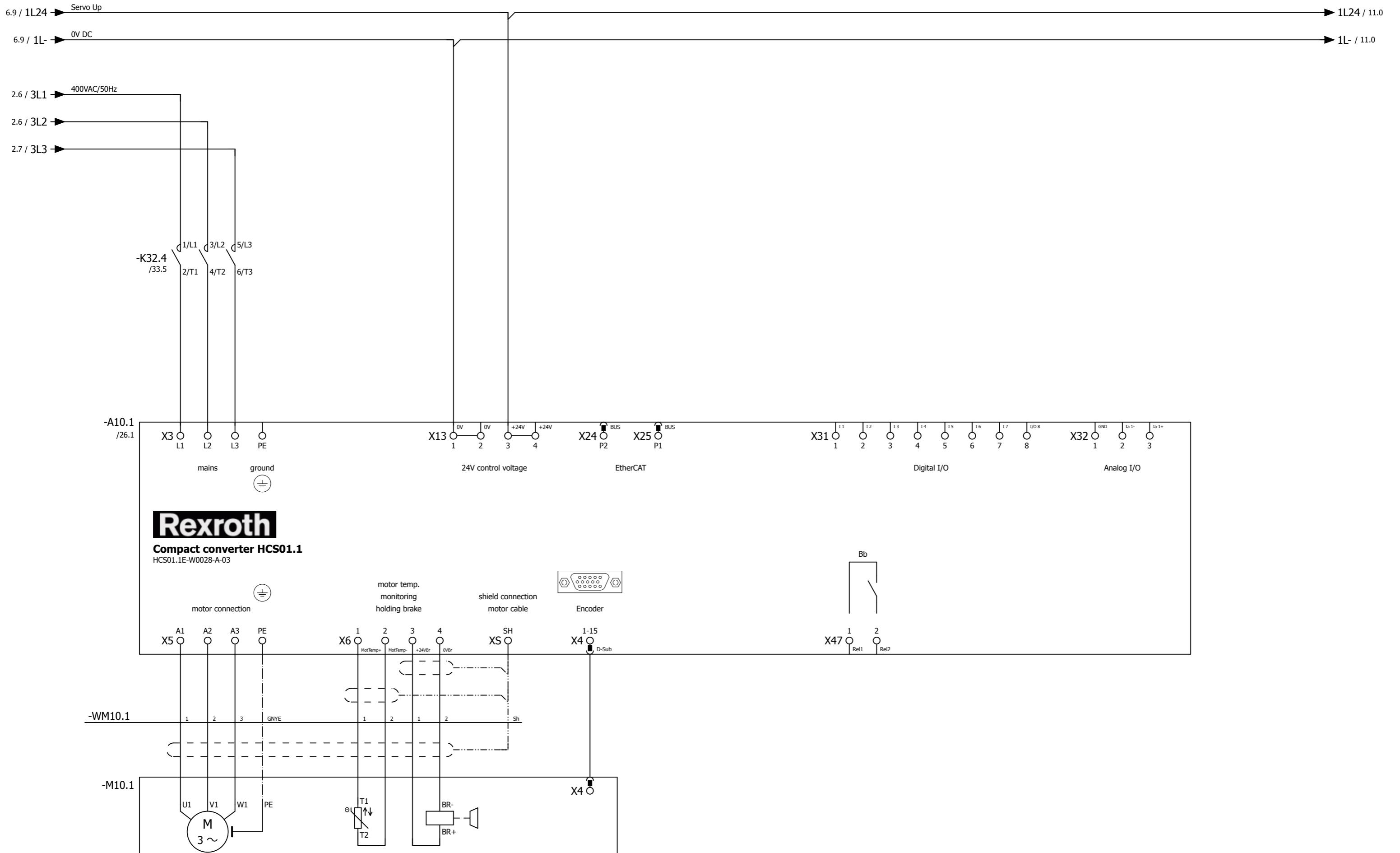
Servomotor Shaft 7



Servomotor Shaft 8

Servomotor Shaft 9

Date	25.02.2013	Weatherford Langenhagen Germany				Centralizer Test Tool Servomotor Shaft 8/Shaft 9	Part number:	02324572	= CT
Drn.	H. Armbrecht						+ MC		Main Cabinet
Chk	See Windchill						Rev.:	Drawing number:	4_22.5215
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4			Page 9 of 156



Electric cylinder 1

Date	25.02.2013	Weatherford
Drn.	H. Armbrecht	Langenhagen
Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.



Centralizer Test Tool  
Servomotor  
Electric cylinder 1

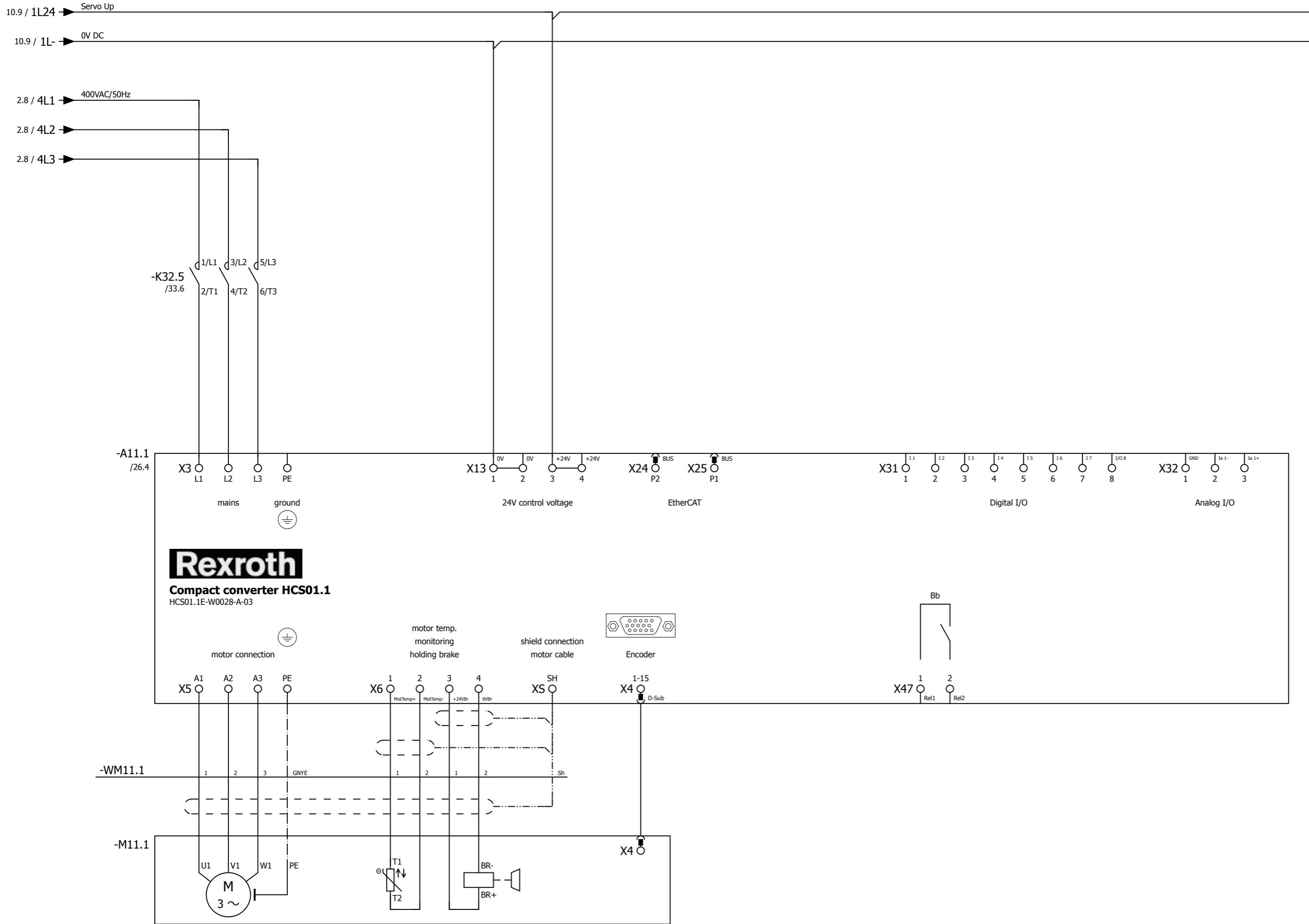
Part number: 02324572

= CT  
+ MC  
Main Cabinet  
Page 10  
of 156

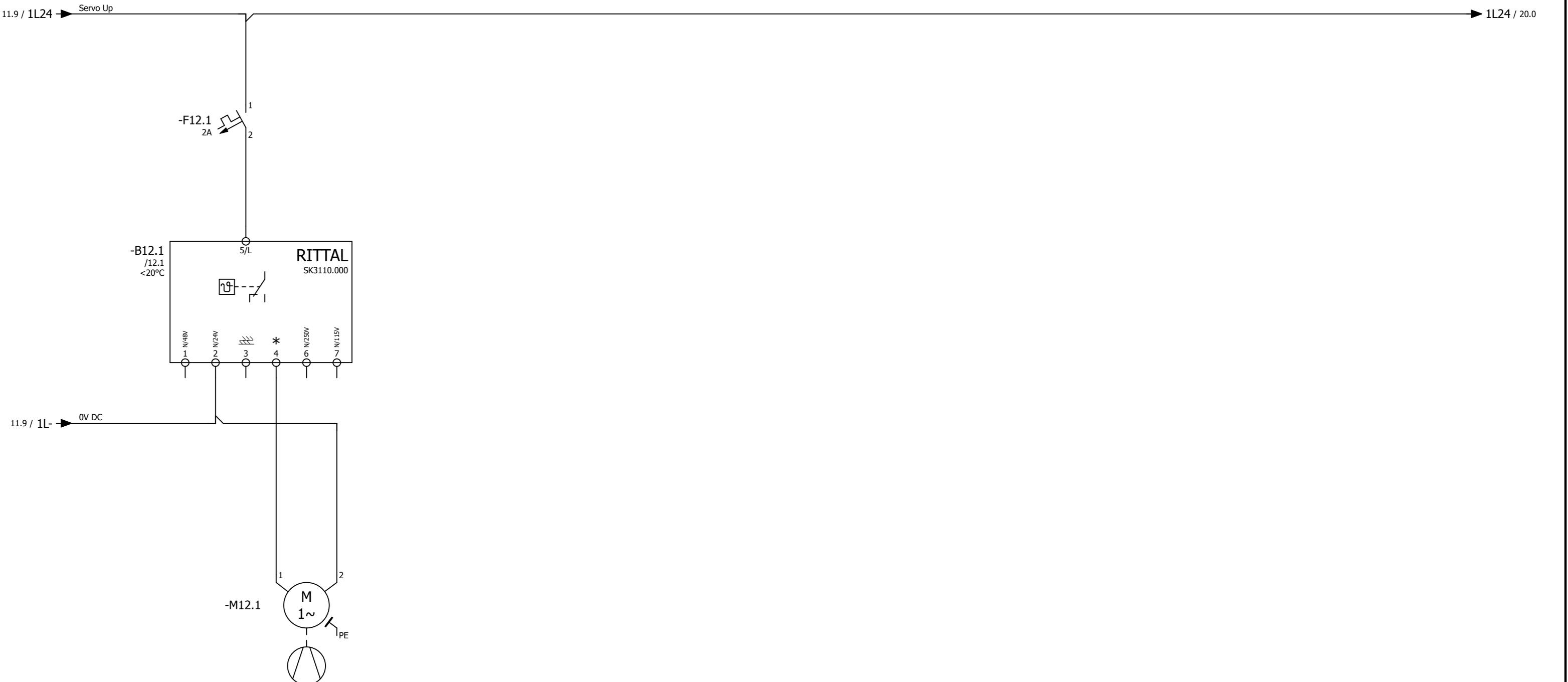


Weatherford®

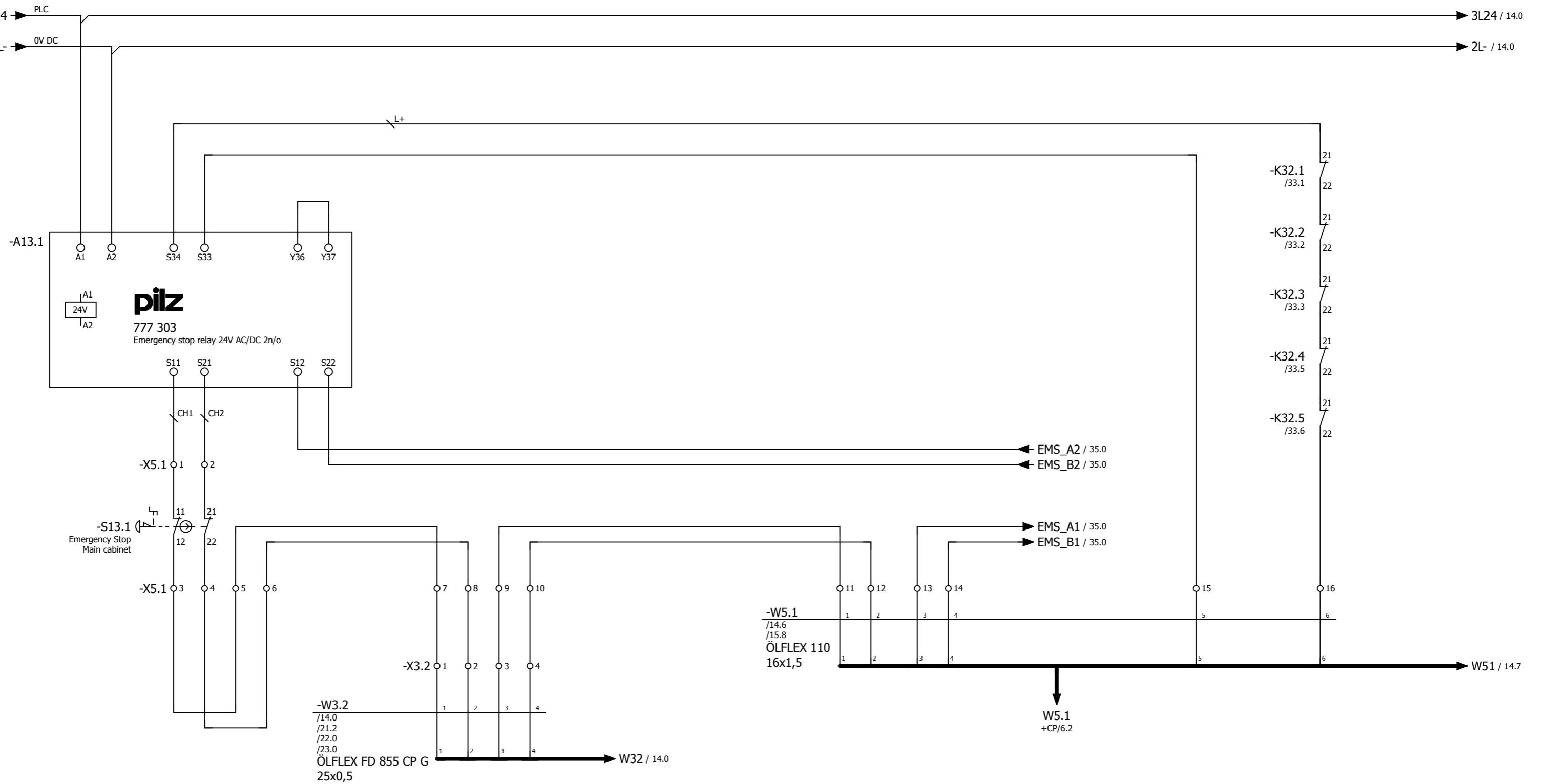
Rev.: Drawing number: 4\_22.5215



## Electric cylinder 2



Cabinet Cooler  
Controller



Emergency Stop  
Emergency Stop  
Control cabinet

Date	25.02.2013	Weatherford Langenhagen Germany
Drn.	H. Armbrecht	
Chk	See Windchill	
Rev. No.	ECN-No.	Drn.



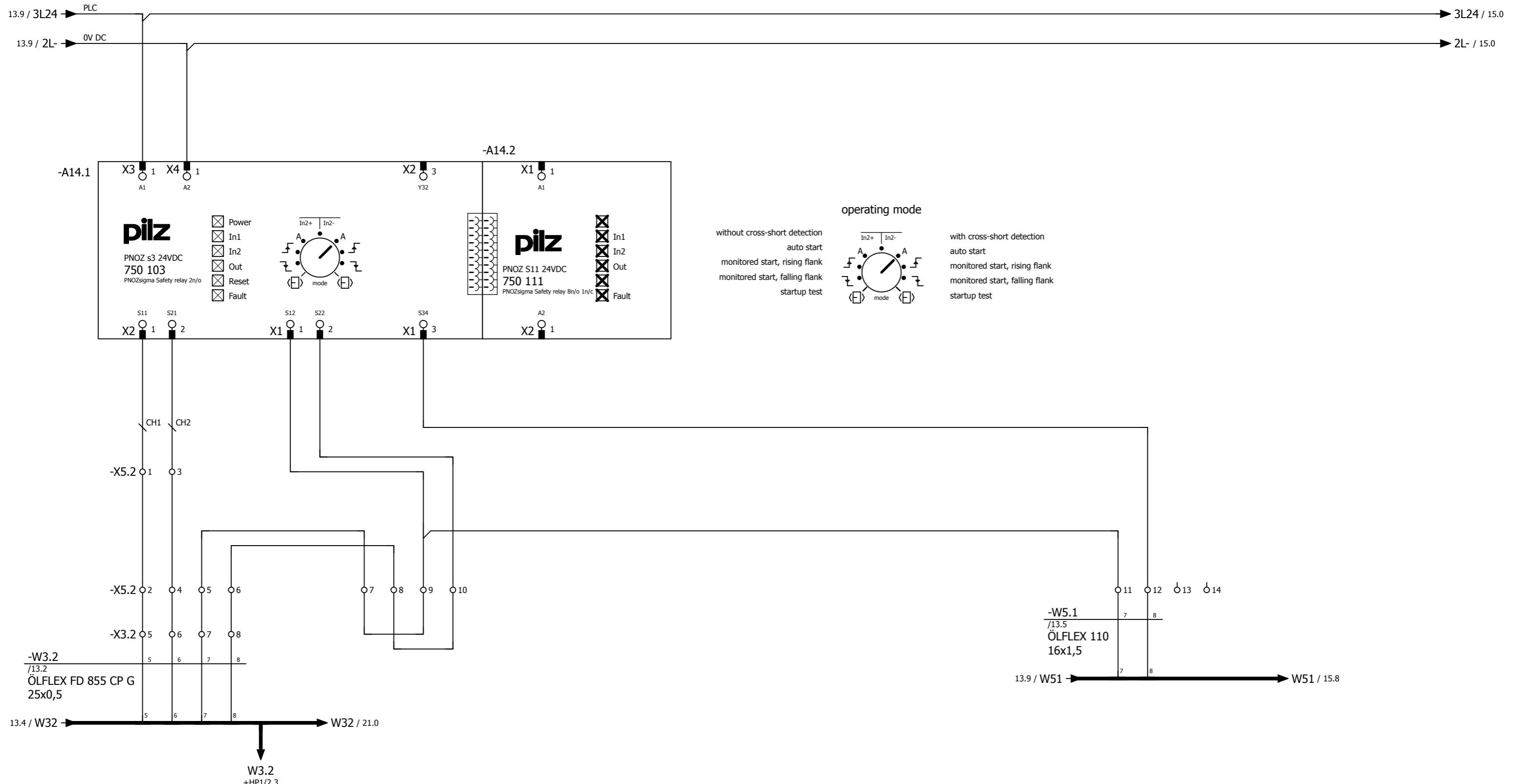
Centralizer Test Tool  
Emergency Stop Relay

Part number: 02324572

= CT  
+ MC  
Main Cabinet

Rev.: Drawing number: 4\_22.5215

Page 13  
of 156



Safety door 1

13 — 14 /21.1  
23 — 2413 — 14 /19.4  
23 — 24 /19.4  
33 — 34 /33.4  
43 — 44  
63 — 64  
73 — 74  
83 — 84  
93 — 94  
51 — 52 /15.9Safety door  
OverrideReset  
Safety door  
Override

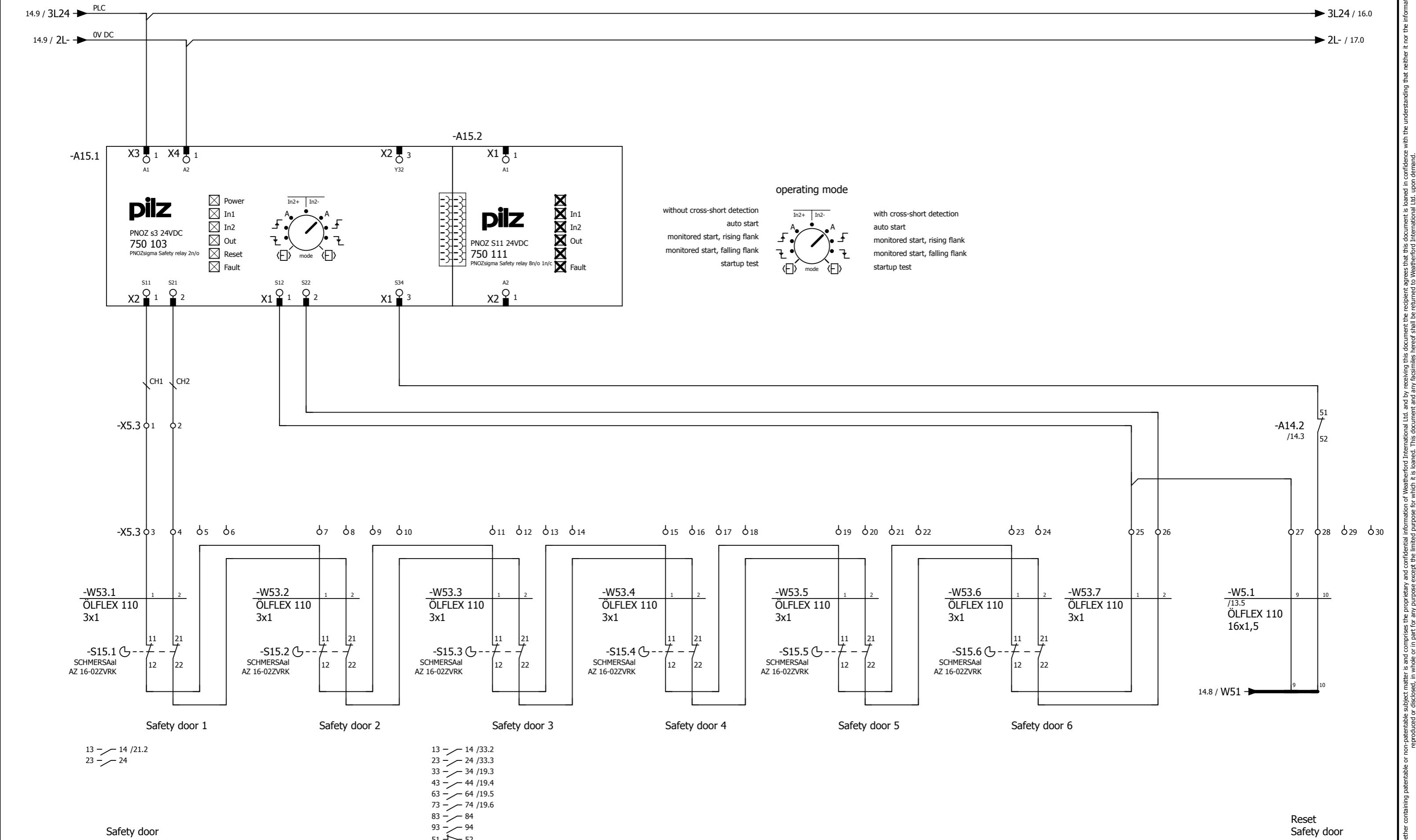
Date	25.02.2013	Weatherford Langenhagen Germany
Drn.	H. Armbrecht	
Chk	See Windchill	
Rev. No.	ECN-No.	Drn.

Centralizer Test Tool  
Emergency Stop Relay  
Safety doors

Part number: 02324572

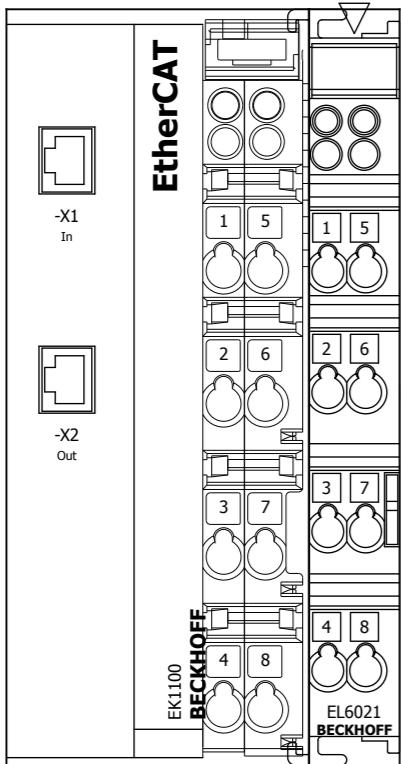
= CT  
+ MC  
Main Cabinet

Rev.: Drawing number: 4\_22.5215



-A16.1  
/16.4  
/16a.0

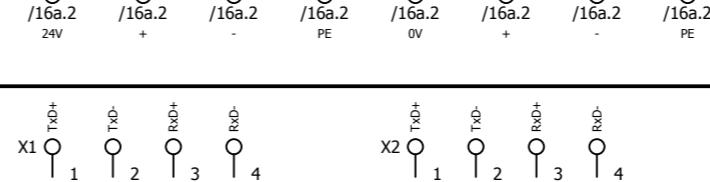
-A16.2  
/39.7  
/16a.2



-A16.1  
/16.0

**BECKHOFF**

EK1100  
EK EtherCAT coupler



15.9 / 3L24 → PLC  
3.9 / 3L- → 0V DC  
6.9 / PE →

EtherCAT Controller

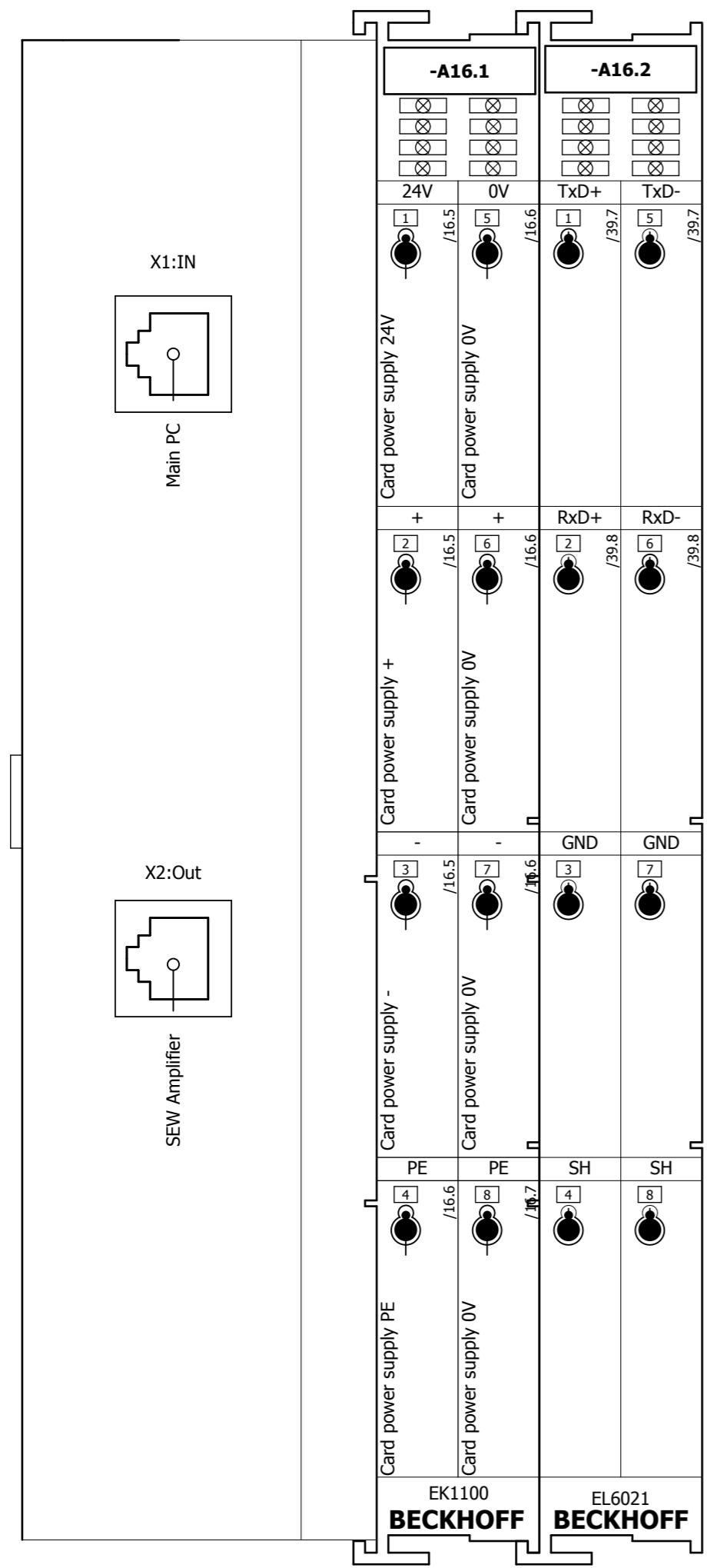
= CT
+ MC
Main Cabinet

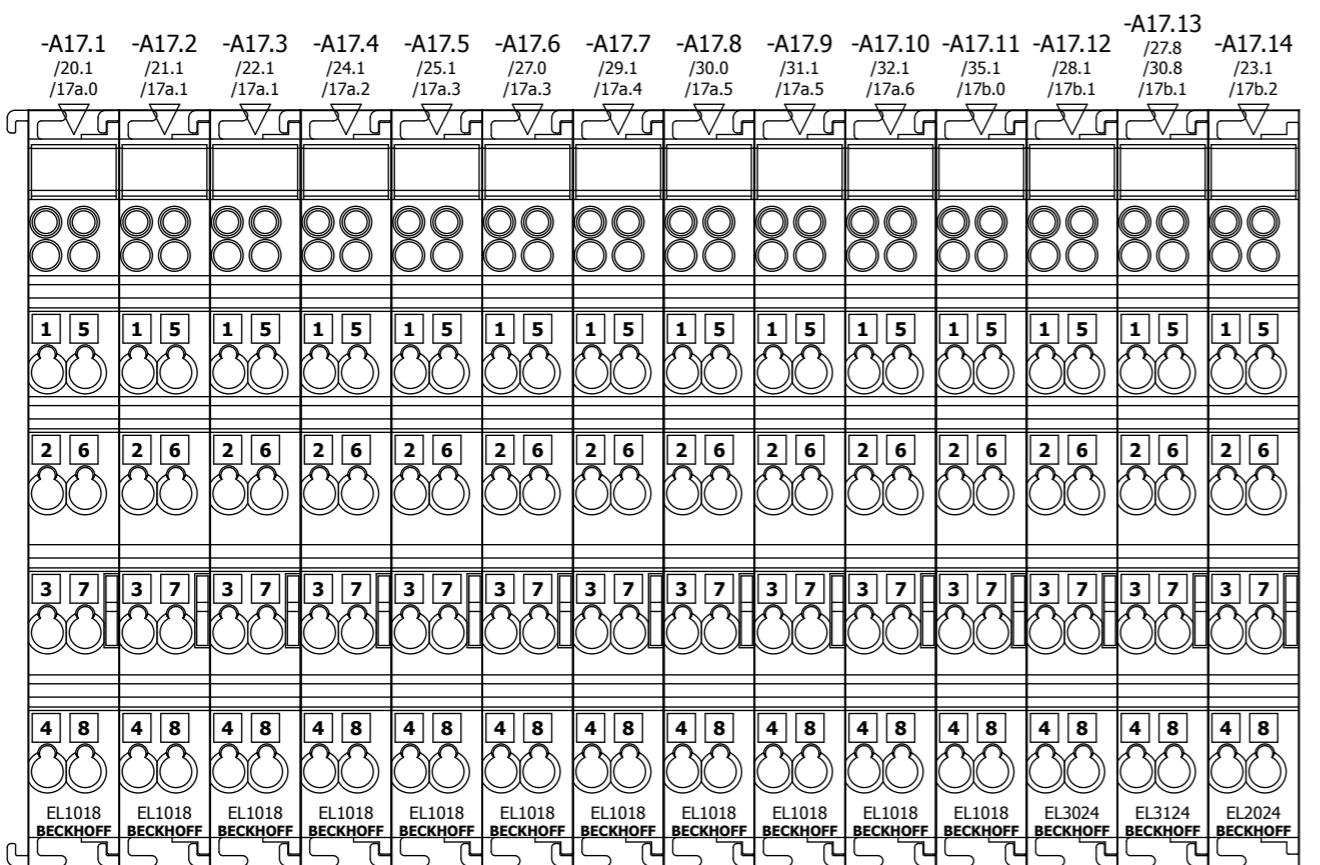
Rev. No.	ECN-No.	Drn.	Date	25.02.2013	Weatherford Langenhagen Germany	Centralizer Test Tool PLC EtherCAT Controller	Part number:	02324572
		Drn.	Drn.	H. Armbrecht				+ MC
		Chk	App'd	See Windchill	See Windchill			Main Cabinet

Page size:	A3	ePLAN P8 / ePLAN Fluid Vers.:	2.4.4
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15 16a  
Rev.: Drawing number: 4\_22.5215  
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of 156





4.9 / 41 24 → Sensor

15.9 / 21 - 0V DC

16.9 / RE

8x Digital  
24 VDC Input

8x Digital 24 VDC Input	8x Digital 4,,20mA Input	8x Digital 4,,20mA Input	4x Digital 24 VDC Output				
----------------------------	----------------------------	----------------------------	----------------------------	----------------------------	-----------------------------	-----------------------------	-----------------------------

16a

7a

		Date	25.02.2013	Weatherford Langenhagen Germany	
		Drn.	H. Armbrecht		
		Chk	See Windchill		
Rev. No.	ECN-No.	Drn.	App'd	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



# Centralizer Test Tool

## PLC

### Input

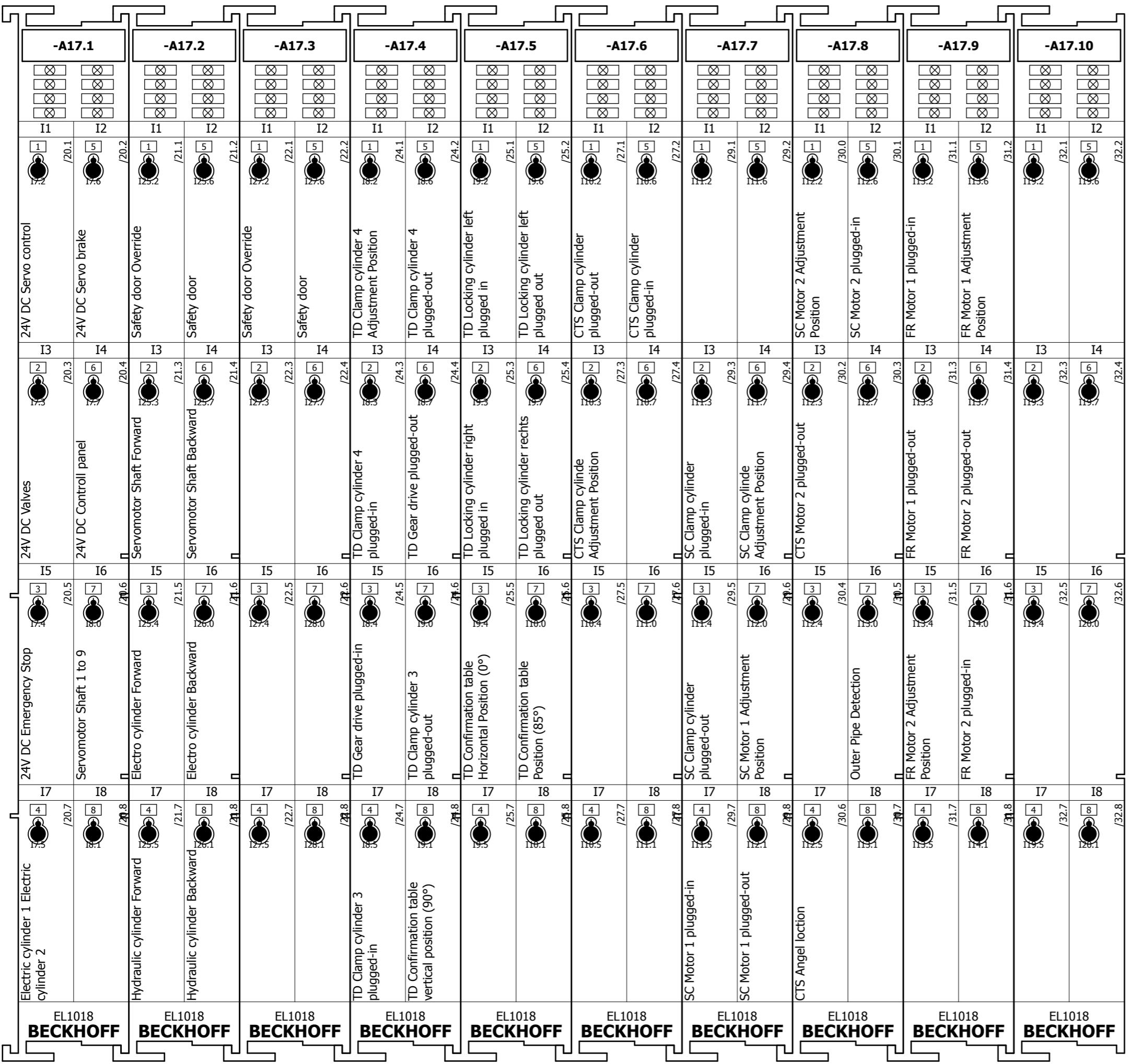
File number: 02324572

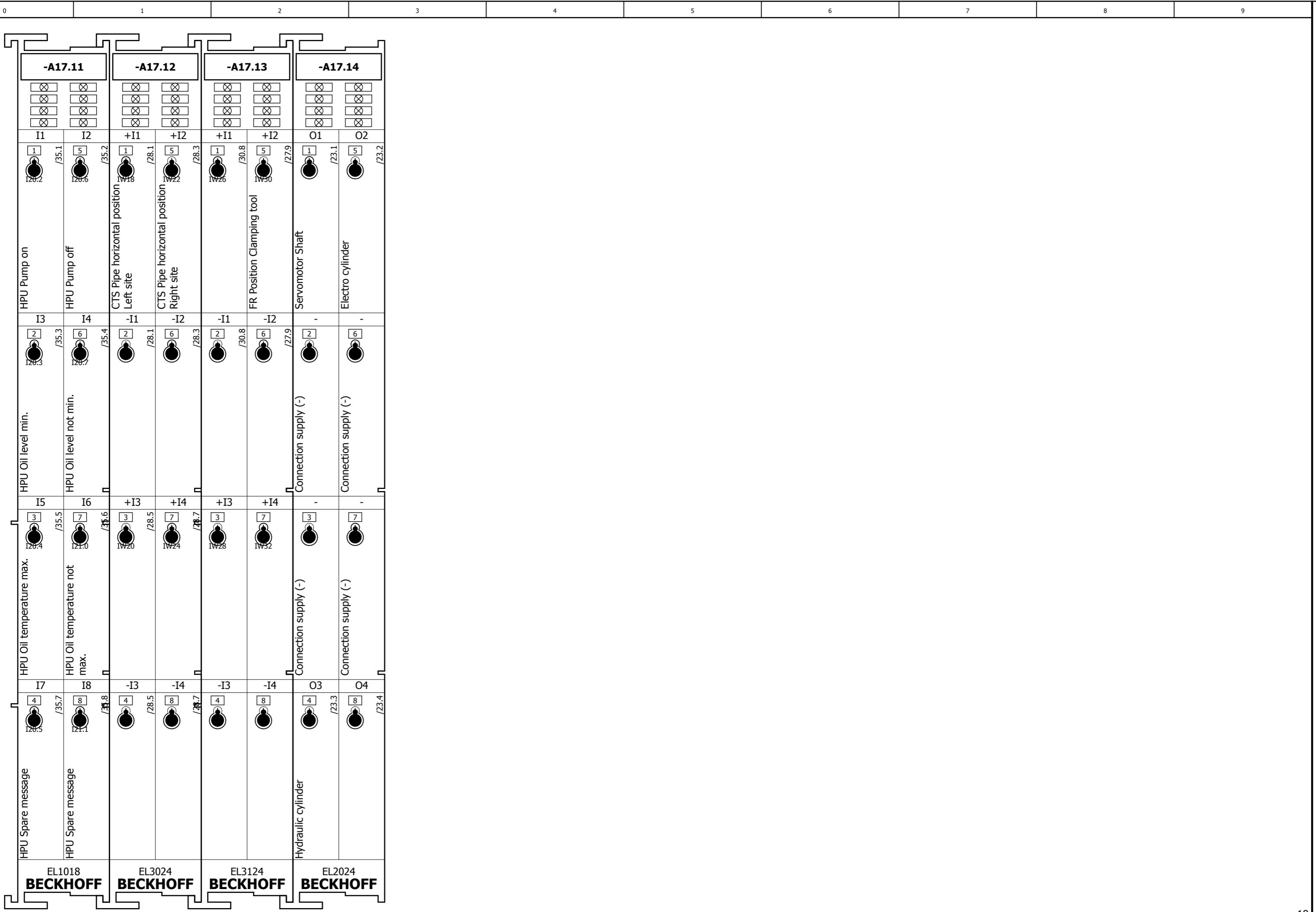
$$= CT$$

---

Number: 0252 1572 + MC

Main Cabinet





17a

18

	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill

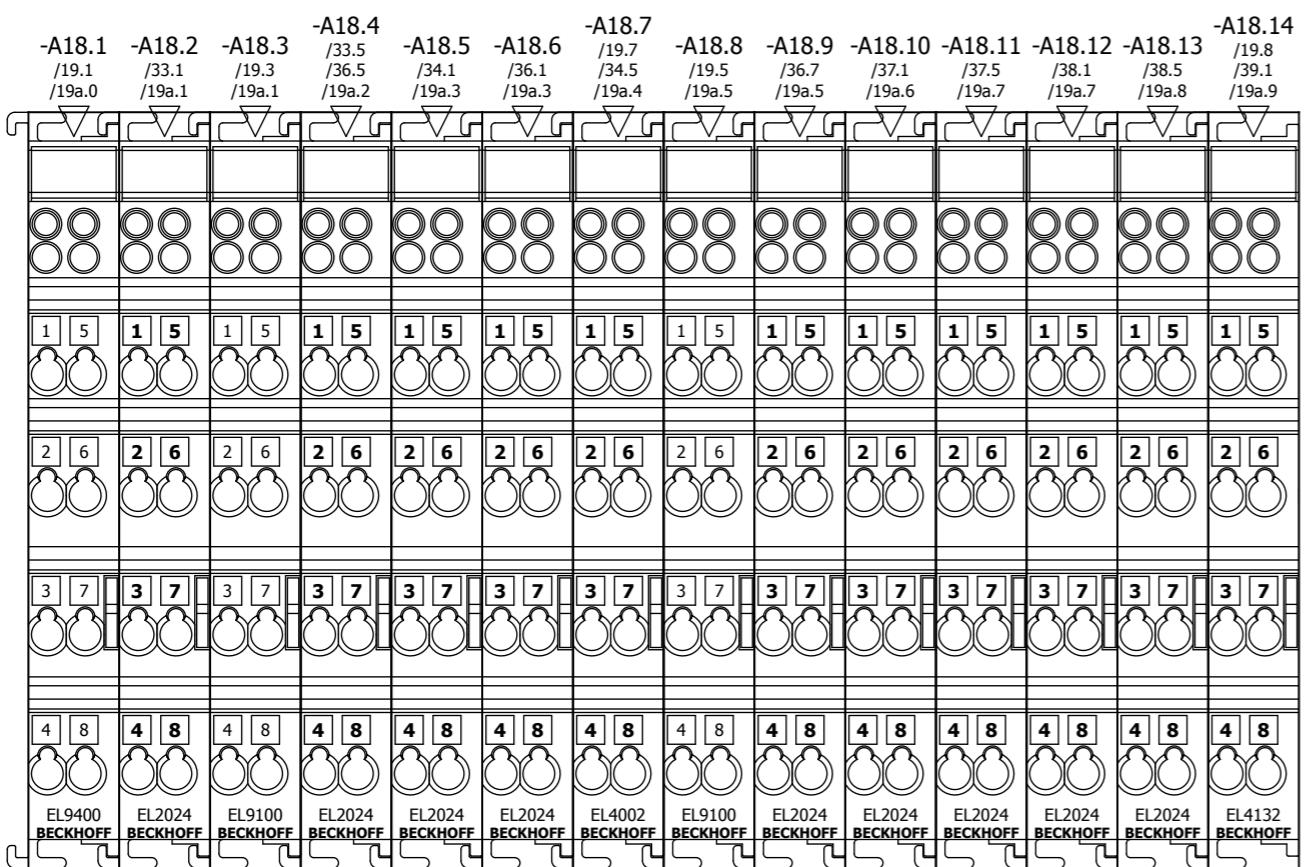


Centralizer Test Tool  
PLC  
Input

Part number: 02324572

= CT  
+ MC  
Main Cabinet  
Page 17b  
of 156

Rev.: Drawing number: 4\_22.5215



24 VDC Power Input  
4x Digital 24 VDC Output  
24 VDC Power Input  
4x Digital 24 VDC Output  
4x Digital 24 VDC Output  
4x Digital 24 VDC Output  
2x Analog 0...10V Output  
24 VDC Power Input  
4x Digital 24 VDC Output  
2x Analog -10...10V Output

17b

	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill



Centralizer Test Tool  
PLC  
Output

Part number: 02324572

= CT  
+ MC

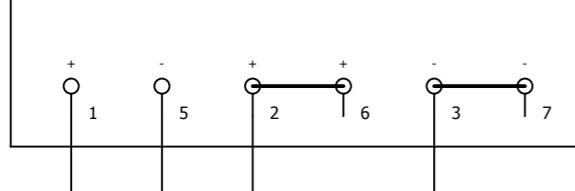
Main Cabinet

Rev.: Drawing number: 4\_22.5215

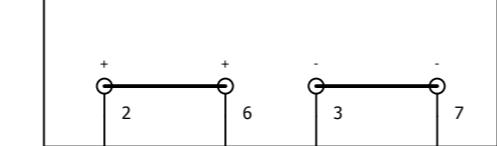
19

of 156

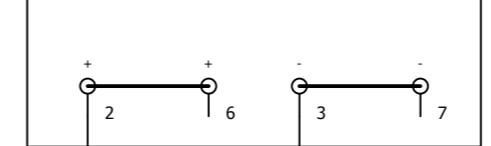
-A18.1 /18.0  
**BECKHOFF**  
EL9400 EL Power supply terminals for E-bus



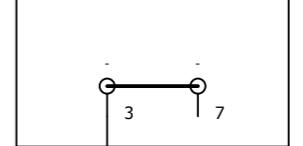
-A18.3 /18.1  
**BECKHOFF**  
EL9100 EL Power Connector



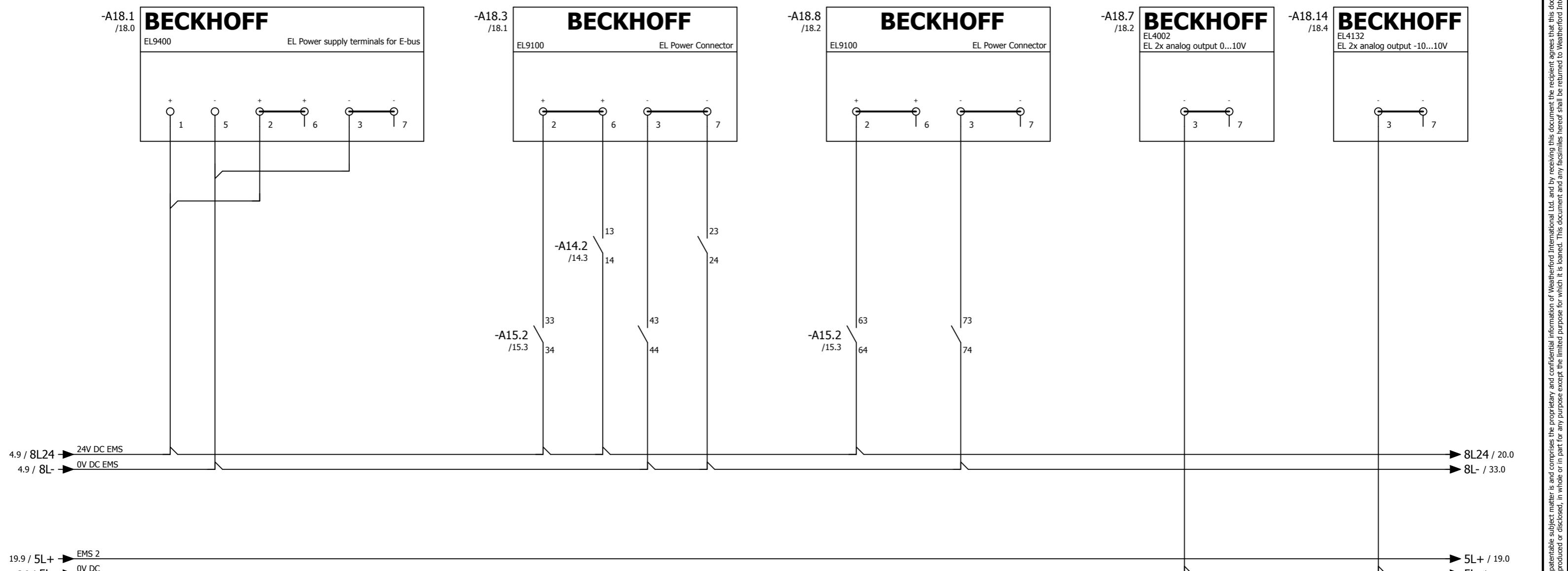
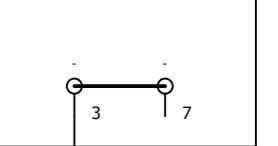
-A18.8 /18.2  
**BECKHOFF**  
EL9100 EL Power Connector



-A18.7 /18.2  
**BECKHOFF**  
EL4002 EL 2x analog output 0...10V



-A18.14 /18.4  
**BECKHOFF**  
EL4132 EL 2x analog output -10...10V



24 VDC  
Power Input

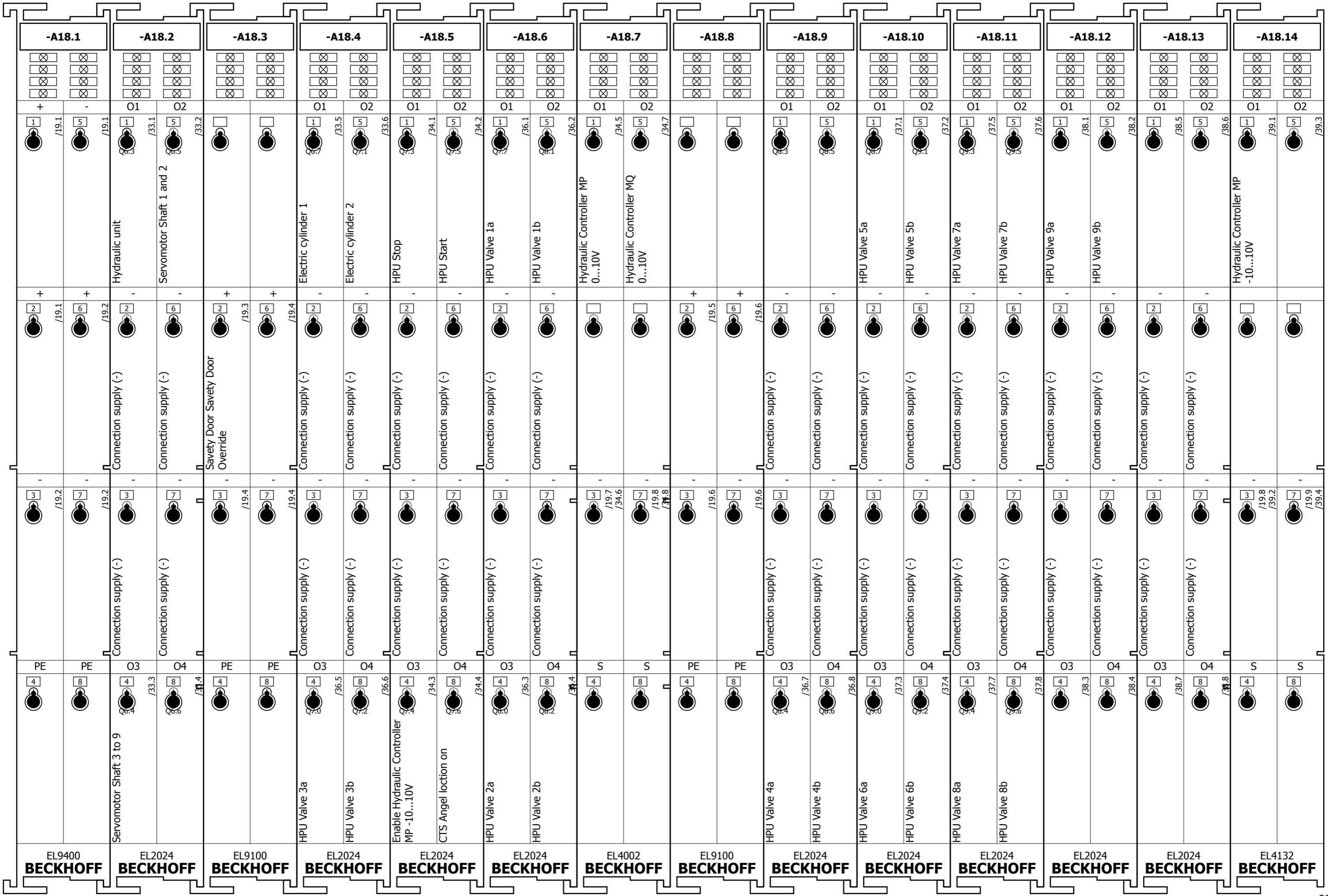
Safety Door  
Safety Door Override

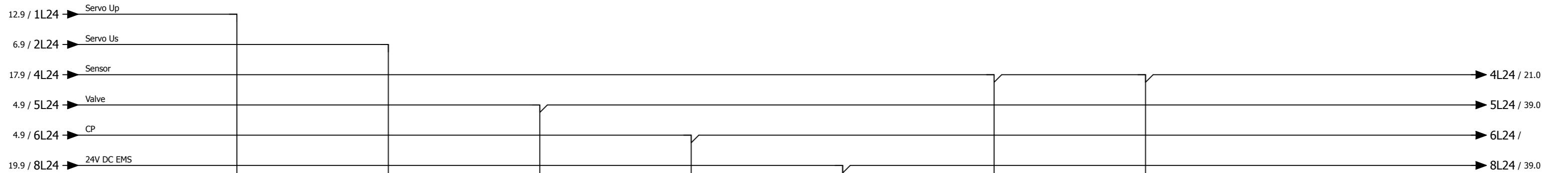
Safety Door

2x Analog  
0...10V Output

2x Analog  
-10...10V Output

		Date	25.02.2013	Weatherford	 <b>Weatherford</b>	Centralizer Test Tool PLC Output	Part number: 02324572 Rev.: <input type="text"/> Drawing number: 4_22.5215	= CT
		Drn.	H. Armbrecht	+ MC			Main Cabinet	
		Chk	See Windchill					
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4		Page 19 of 156





<b>-A17.1</b>							
I1 /17a.0 24V DC Servo control	I2 /17a.1 24V DC Servo brake	I3 /17a.0 24V DC Valves	I4 /17a.1 24V DC Controll panel	I5 /17a.0 24V DC Emergency Stop	I6 /17a.1 Servomotor Shaft 1 to 9	I7 /17a.0 Electric cylinder 1 Electric cylinder 2	I8 /17a.1 8x DI 24VDC
<b>BECKHOFF</b>							
EL1018							

24V DC  
Servo control24V DC  
Servo brake24V DC  
Valves24V DC  
Controll panel24V DC  
Emergency StopServomotor  
Shaft 1 to 9Electric cylinder 1  
Electric cylinder 2

Date	25.02.2013	Weatherford Langenhagen Germany
Drn.	H. Armbrecht	
Chk	See Windchill	
Rev. No.	ECN-No.	Drn.
App'd	See Windchill	Page size: A3
		ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



Centralizer Test Tool  
Control  
Fuses

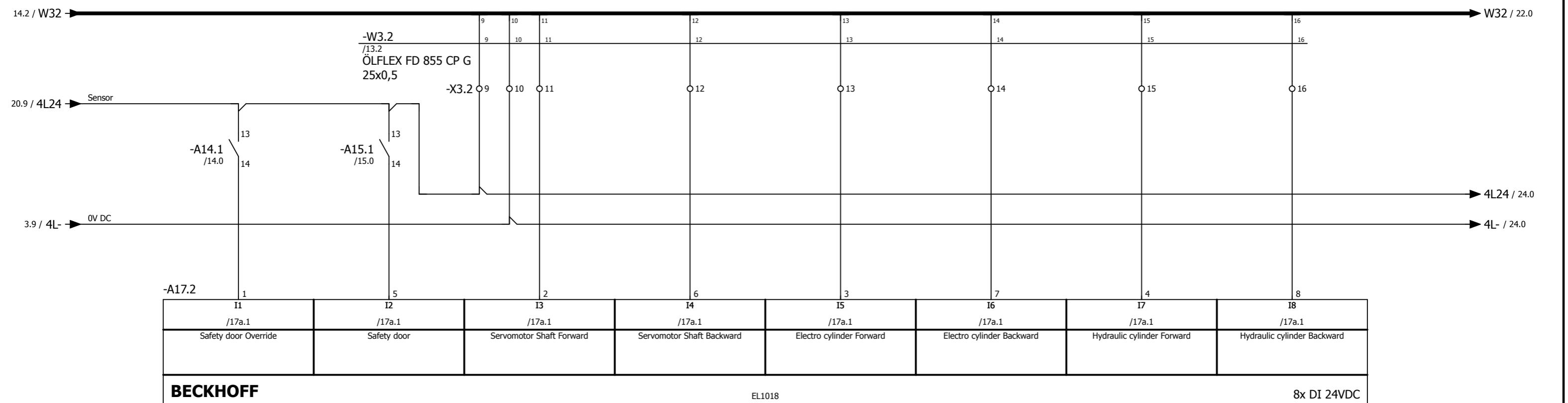
Part number: 02324572

= CT  
+ MC

Main Cabinet

Rev.: Drawing number: 4\_22.5215

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of 156

Safety door  
Override

Safety door

Servomotor Shaft  
ForwardServomotor Shaft  
BackwardElectro cylinder  
ForwardElectro cylinder  
BackwardHydraulic cylinder  
ForwardHydraulic cylinder  
Backward

	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill



Centralizer Test Tool  
Manual Mode  
Table device

Part number: 02324572

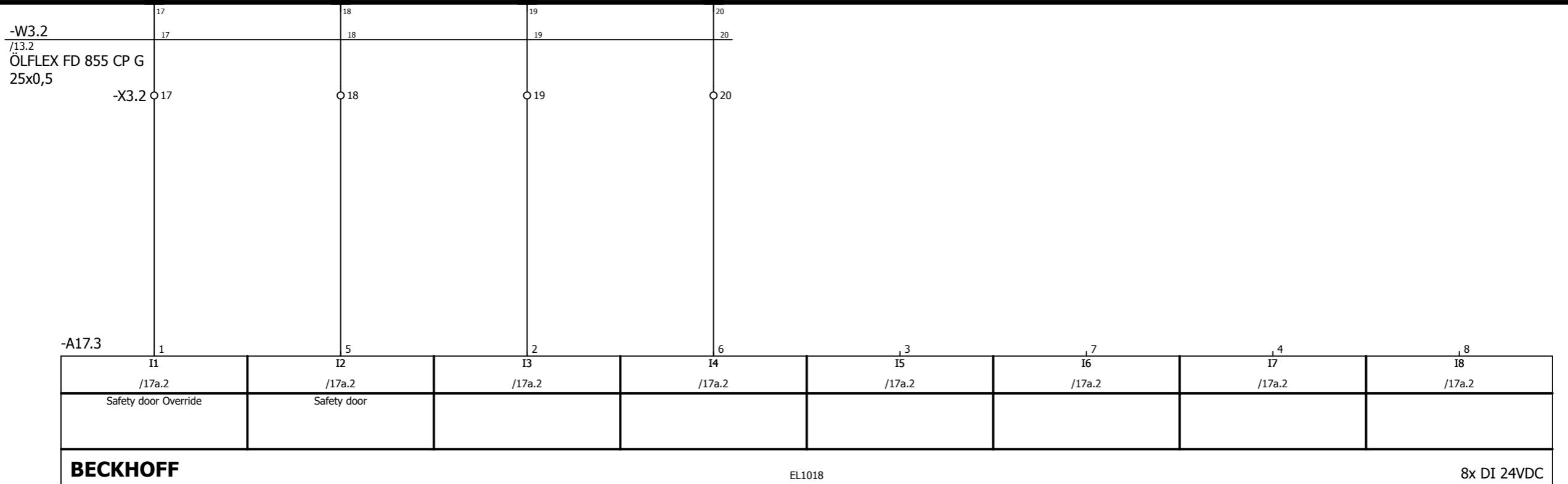
= CT  
+ MC

Main Cabinet

Rev.: Drawing number: 4\_22.5215

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of 156

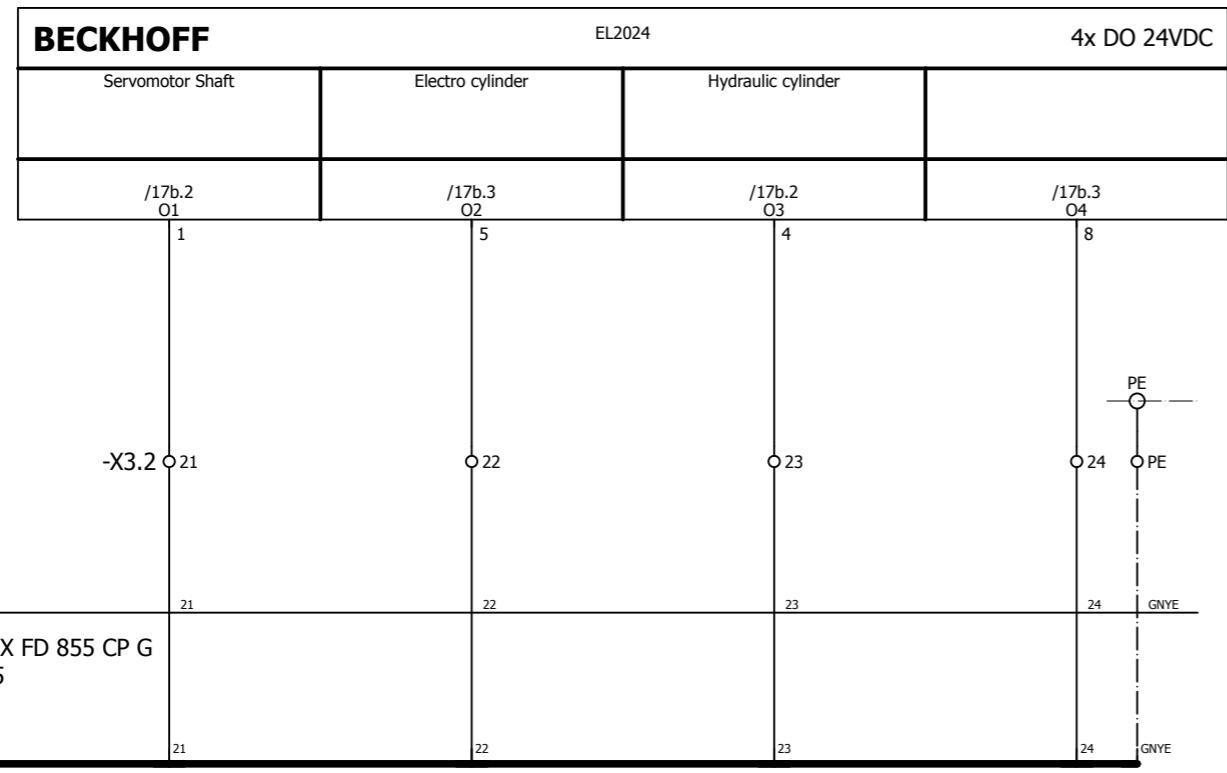
21.9 / W32 → W32 / 23.0



Safety door  
Override

Safety door

-A17.14



Servomotor Shaft

Electro cylinder

Hydraulic cylinder

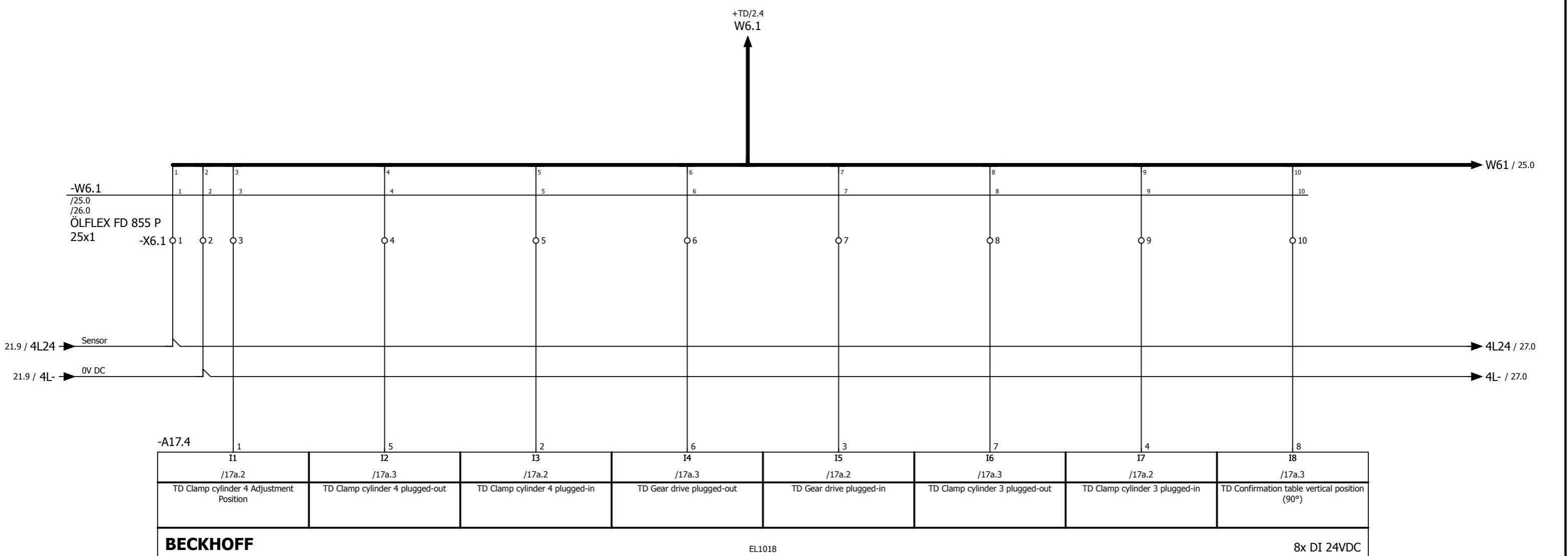
Date	25.02.2013	Weatherford
Drn.	H. Armbrecht	Langenhagen
Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.


 Centralizer Test Tool  
 Manual Mode  
 Table device

Part number: 02324572

= CT  
+ MC  
Main Cabinet  
Page 23  
of 156

Rev.: Drawing number: 4\_22.5215



TD  
Clamp cylinder 4  
Adjustment Position

TD  
Clamp cylinder 4  
plugged-out

TD  
Clamp cylinder 4  
plugged-in

TD  
Gear drive  
plugged-out

TD  
Gear drive  
plugged-in

TD  
Clamp cylinder 3  
plugged-out

TD  
Clamp cylinder 3  
plugged-in

TD  
Confirmation table  
vertical position (90°)

	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill



Centralizer Test Tool  
Sensors  
Table device

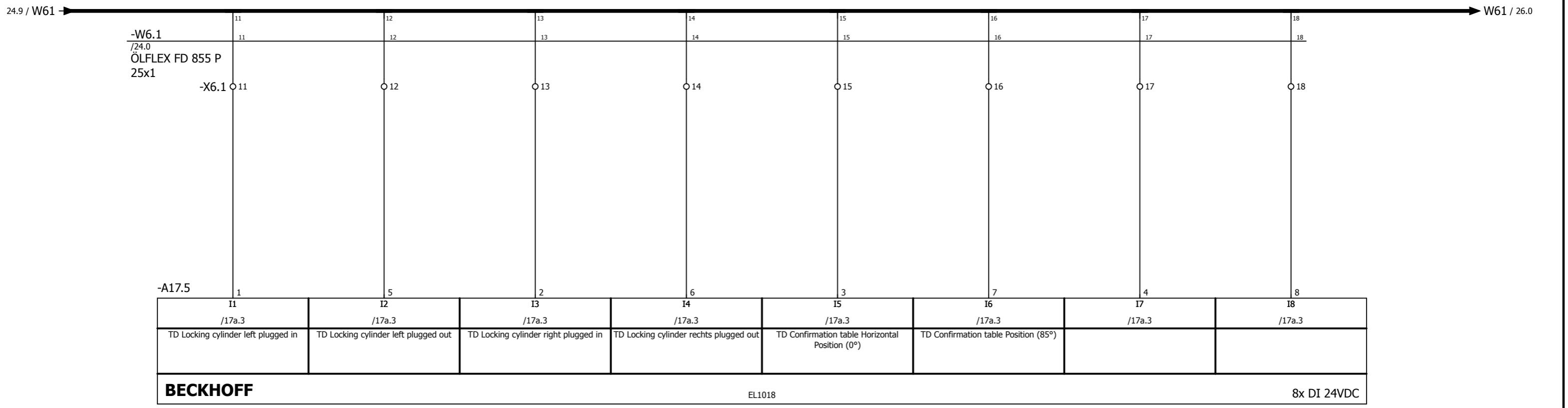
Part number: 02324572

= CT  
+ MC

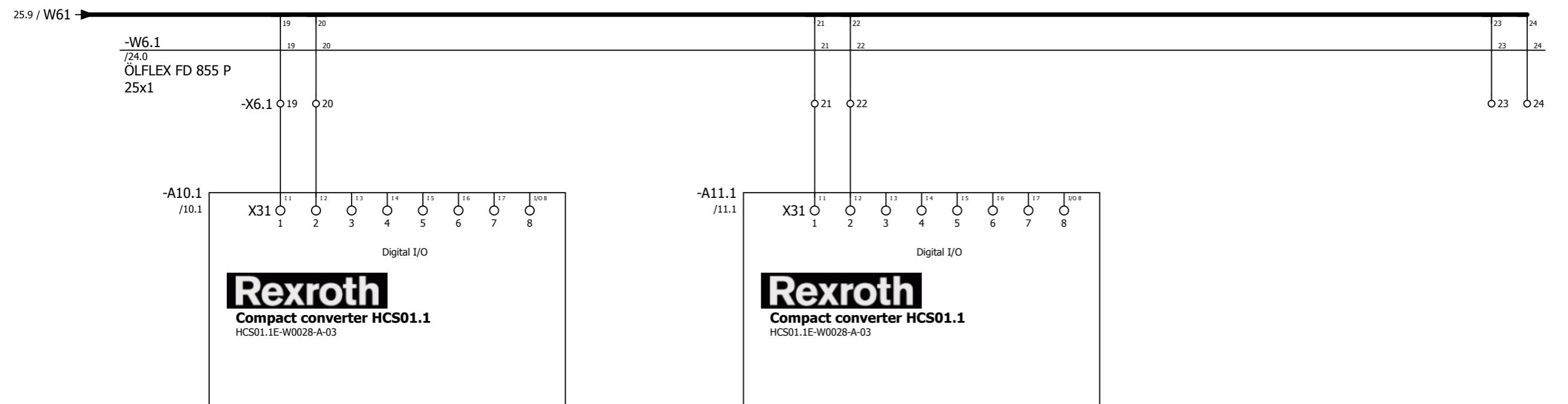
Main Cabinet

Rev.: Drawing number: 4\_22.5215

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of 156



TD  
Locking cylinder left  
plugged in      TD  
Locking cylinder left  
plugged out      TD  
Locking cylinder right  
plugged in      TD  
Locking cylinder rechts  
plugged out      TD  
Confirmation table  
Horizontal Position (0°)      TD  
Confirmation table  
Position (85°)



TD  
Confirmation table  
Horizontal Position (0°)

Date	25.02.2013	Weatherford
Drn.	H. Armbrecht	Langenhagen
Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.



Centralizer Test Tool  
Sensors  
Table device

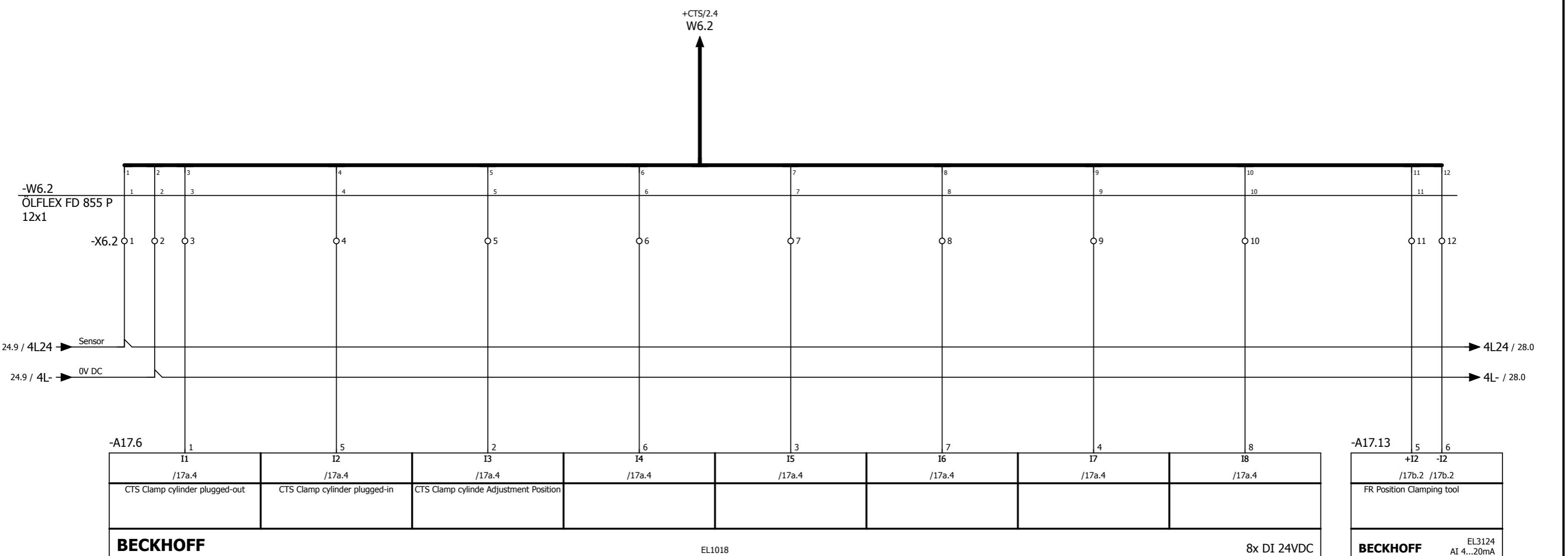
Part number: 02324572

= CT  
+ MC

Main Cabinet

Rev.: Drawing number: 4\_22.5215

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of 156

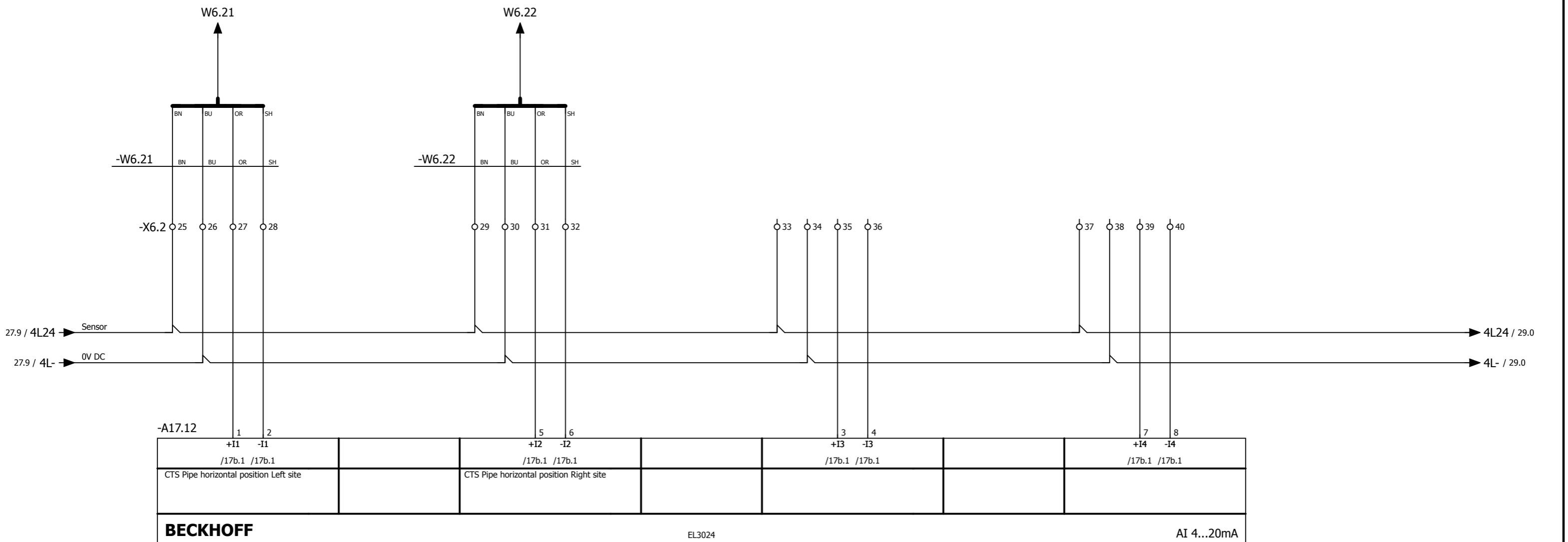


CTS  
Clamp cylinder  
plugged-out

CTS  
Clamp cylinder  
plugged-in

CTS  
Clamp cylinder  
Adjustment Position

FR  
Position  
Clamping tool



CTS  
Pipe horizontal position  
Left site

CTS  
Pipe horizontal position  
Right site

Date	25.02.2013	Weatherford
Drn.	H. Armbrecht	Langenhagen
Chk	See Windchill	Germany
Rev. No.	ECN-No.	App'd



Centralizer Test Tool  
Sensors  
Clamp Top Side

Part number: 02324572

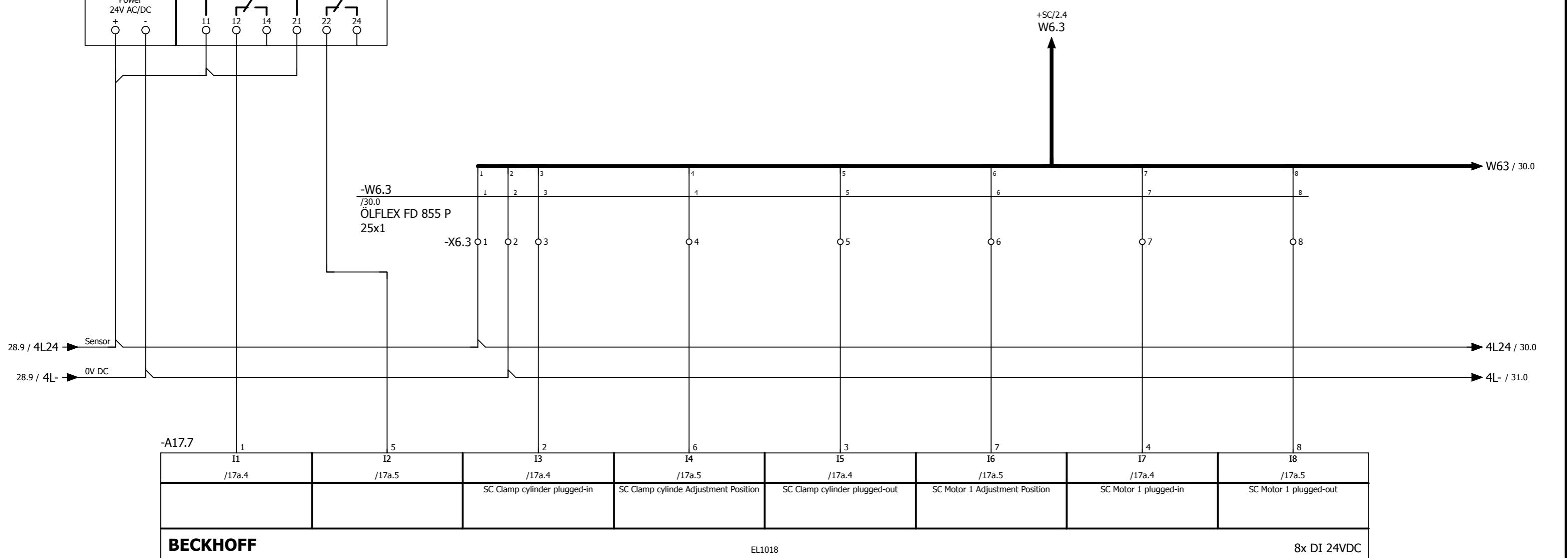
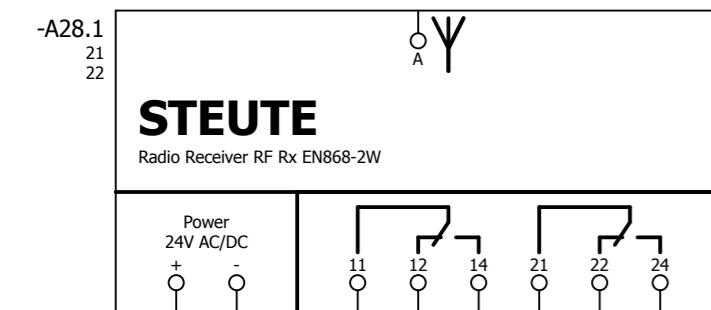
= CT  
+ MC

Main Cabinet

Rev.: Drawing number: 4\_22.5215

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of 156



SC  
Clamp cylinder  
plugged-in

SC  
Clamp cylinder  
Adjustment Position

SC  
Clamp cylinder  
plugged-out

SC  
Motor 1  
Adjustment Position

SC  
Motor 1  
plugged-in

SC  
Motor 1  
plugged-out

	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill



Centralizer Test Tool  
Sensors  
Support/Chuck

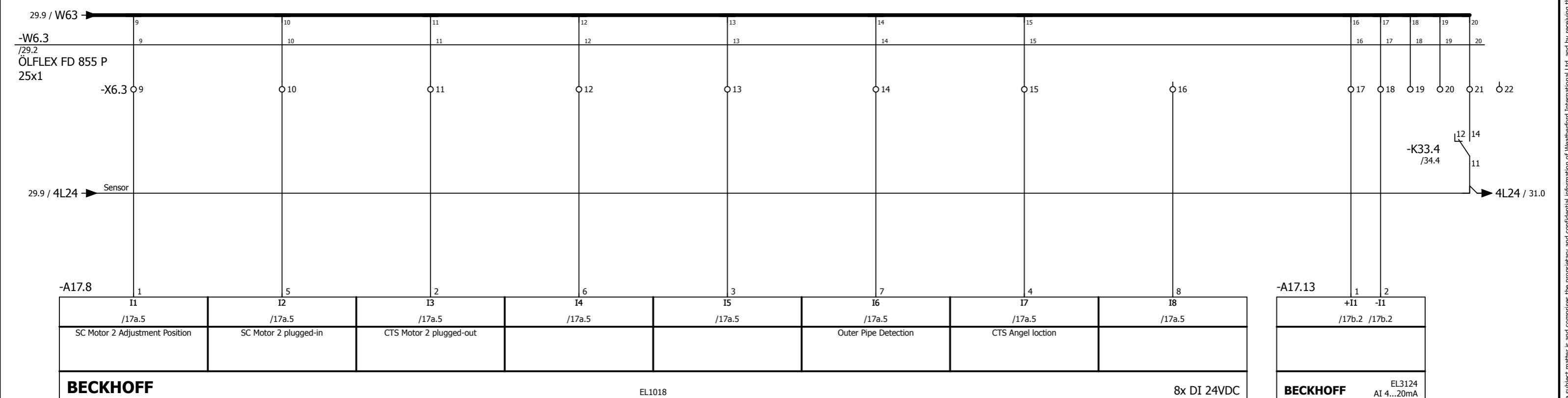
Part number: 02324572

= CT  
+ MC

Main Cabinet

Rev.: Drawing number: 4\_22.5215

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of 156

SC  
Motor 2  
Adjustment PositionSC  
Motor 2  
plugged-inCTS  
Motor 2  
plugged-outOuter  
Pipe DetectionCTS  
Angel loction

		Date	25.02.2013	Weatherford Langenhagen Germany
		Drn.	H. Armbrecht	
		Chk	See Windchill	
Rev. No.	ECN-No.	Drn.	App'd	See Windchill Page size: A3 ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

Centralizer Test Tool  
Sensors  
Support/Chuck

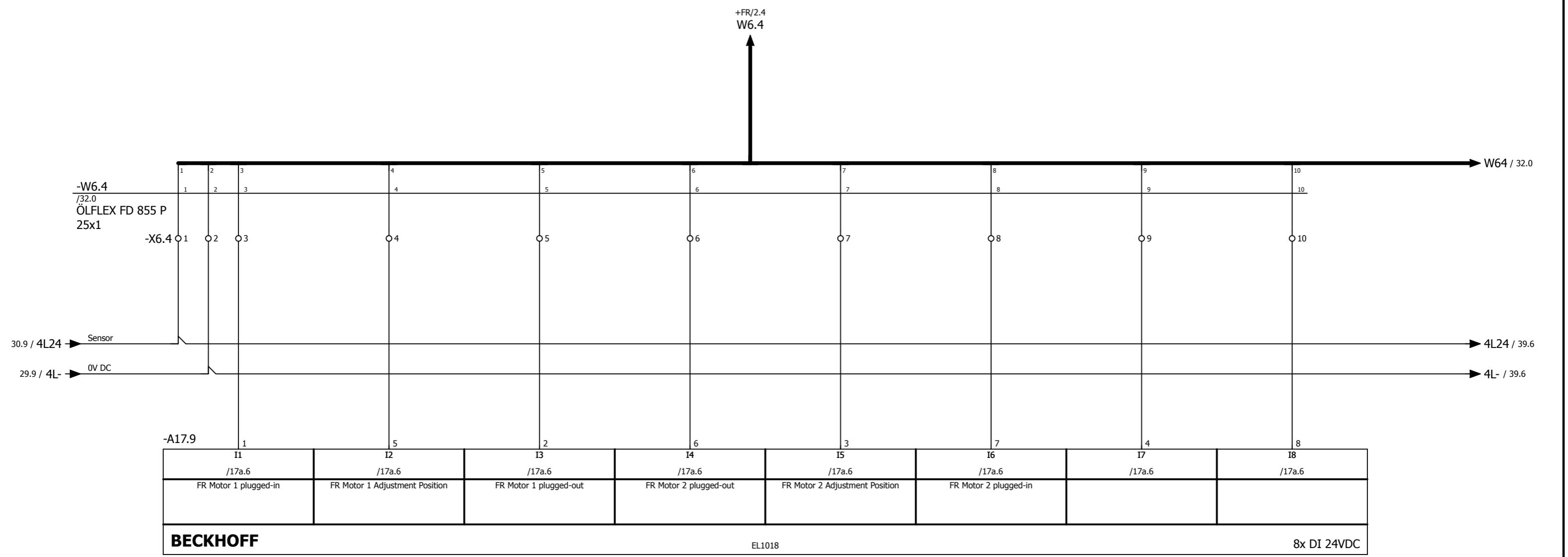
Part number: 02324572

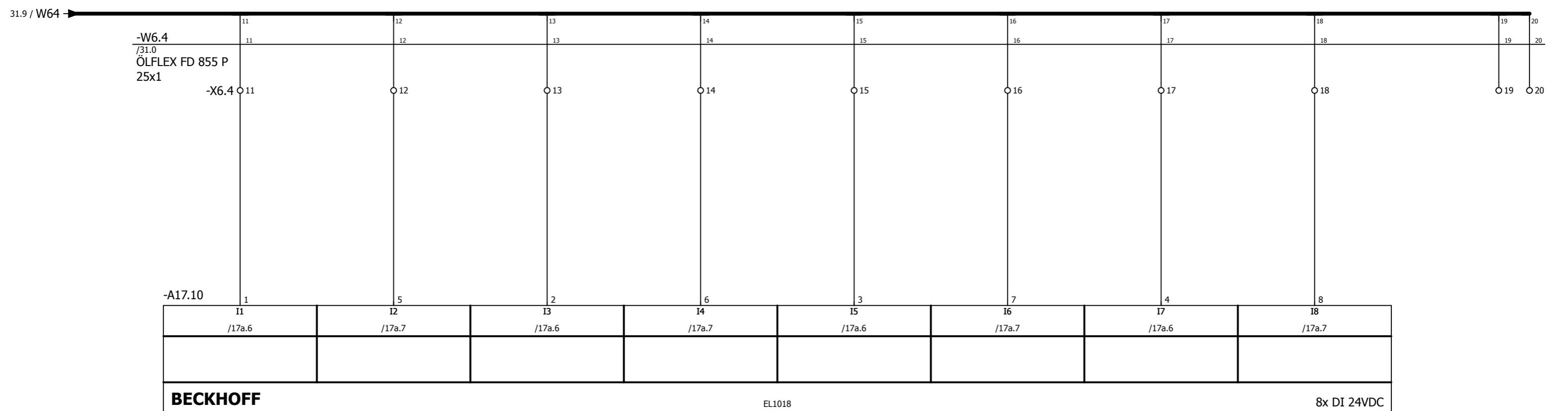
= CT  
+ MC

Main Cabinet

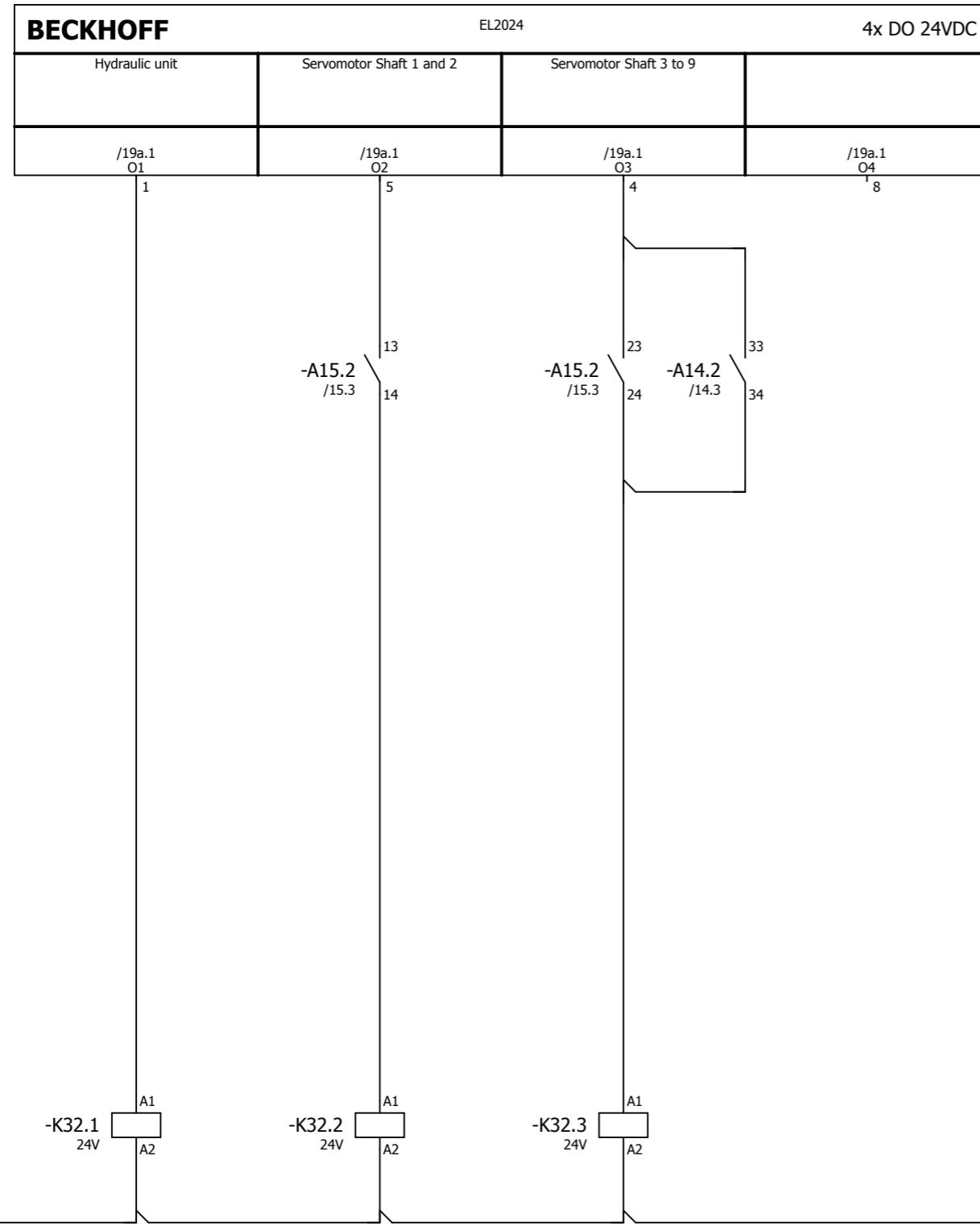
Rev.: Drawing number: 4\_22.5215

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of 156

FR  
Motor 1  
plugged-inFR  
Motor 1  
Adjustment PositionFR  
Motor 1  
plugged-outFR  
Motor 2  
plugged-outFR  
Motor 2  
Adjustment PositionFR  
Motor 2  
plugged-in



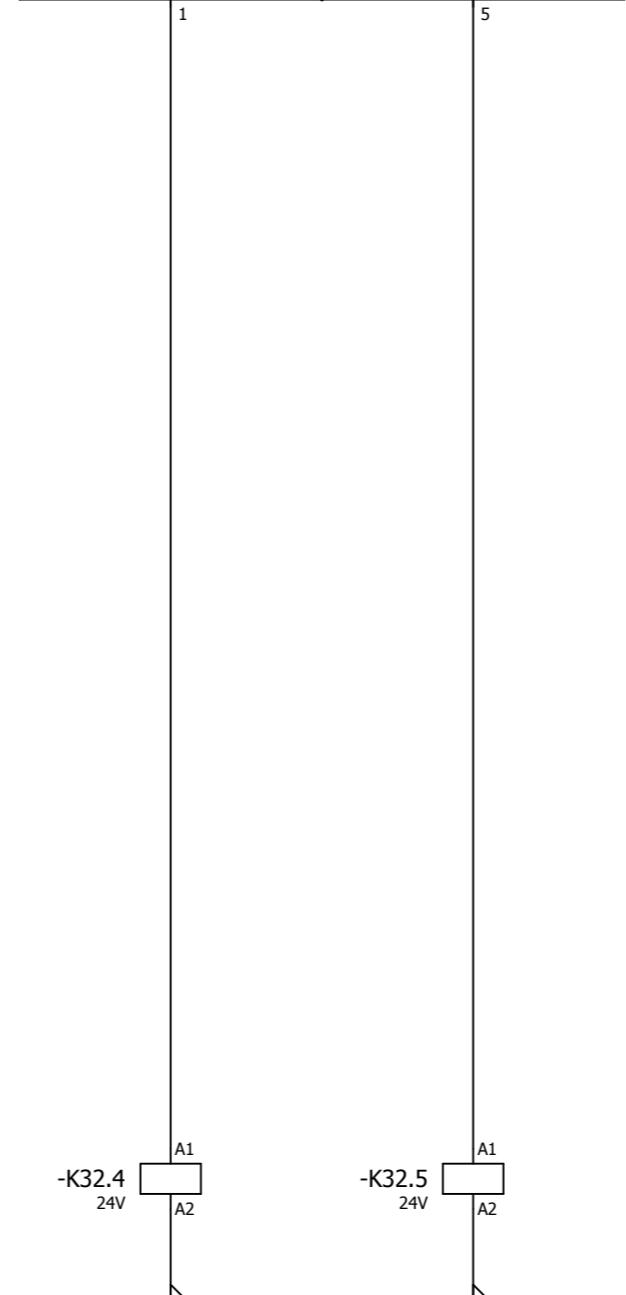
-A18.2



-A18.4

**BECKHOFF** EL2024 4x DO 24VDC

Electric cylinder 1	Electric cylinder 2
/19a.2 O1	/19a.3 O2



19.9 / 8L- ➔ 0V DC EMS

➔ 8L- / 34.0

1/L1 2/T1 /2.2  
3/L2 4/T2 /2.3  
5/L3 6/T3 /2.3  
21 22 /13.8  
31 32  
43 44  
53 54

1/L1 2/T1 /2.4  
3/L2 4/T2 /2.4  
5/L3 6/T3 /2.4  
21 22 /13.8  
31 32  
43 44  
53 54

1/L1 2/T1 /2.5  
3/L2 4/T2 /2.5  
5/L3 6/T3 /2.6  
21 22 /13.8  
31 32  
43 44  
53 54

1/L1 2/T1 /10.1  
3/L2 4/T2 /10.1  
5/L3 6/T3 /10.1  
21 22 /13.8  
31 32  
43 44  
53 54

1/L1 2/T1 /11.1  
3/L2 4/T2 /11.1  
5/L3 6/T3 /11.1  
21 22 /13.8  
31 32  
43 44  
53 54

Hydraulic unit

Servomotor  
Shaft 1 and 2Servomotor  
Shaft 3 to 9

Electric cylinder 1

Electric cylinder 2

	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill



Centralizer Test Tool  
Output  
Motor

Part number: 02324572

= CT

+ MC

Main Cabinet

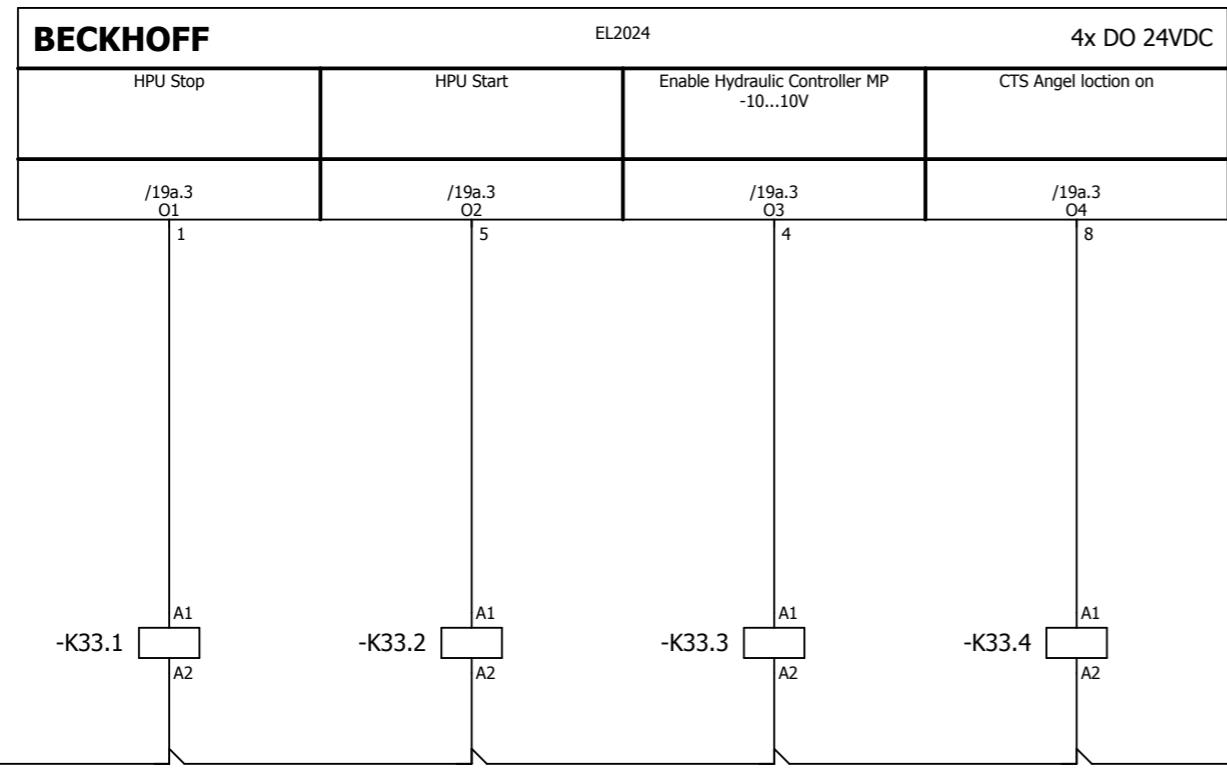
Rev.:

Drawing number: 4\_22.5215

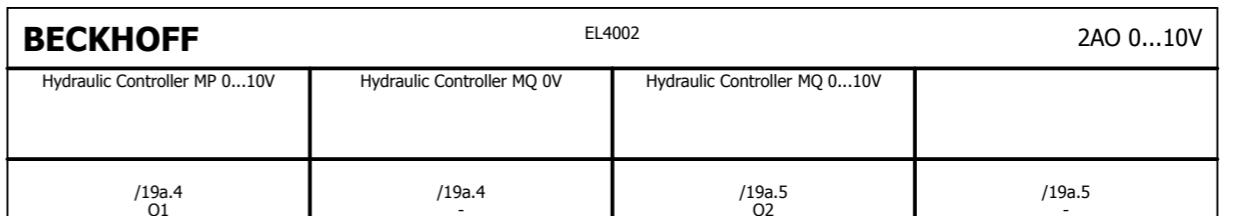
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-A18.5



-A18.7



14 — 11 /34.1  
12 — 11 /34.2  
14 — 11 /39.1  
12 — 11 /30.9

HPU Stop HPU Start Enable Hydraulic Controller MP -10...10V CTS Angel location on Hydraulic Controller MP 0...10V Hydraulic Controller MQ 0V Hydraulic Controller MQ 0...10V

Date	25.02.2013	Weatherford Langenhagen Germany
Drn.	H. Armbrecht	
Chk	See Windchill	
Rev. No.	ECN-No.	Drn.

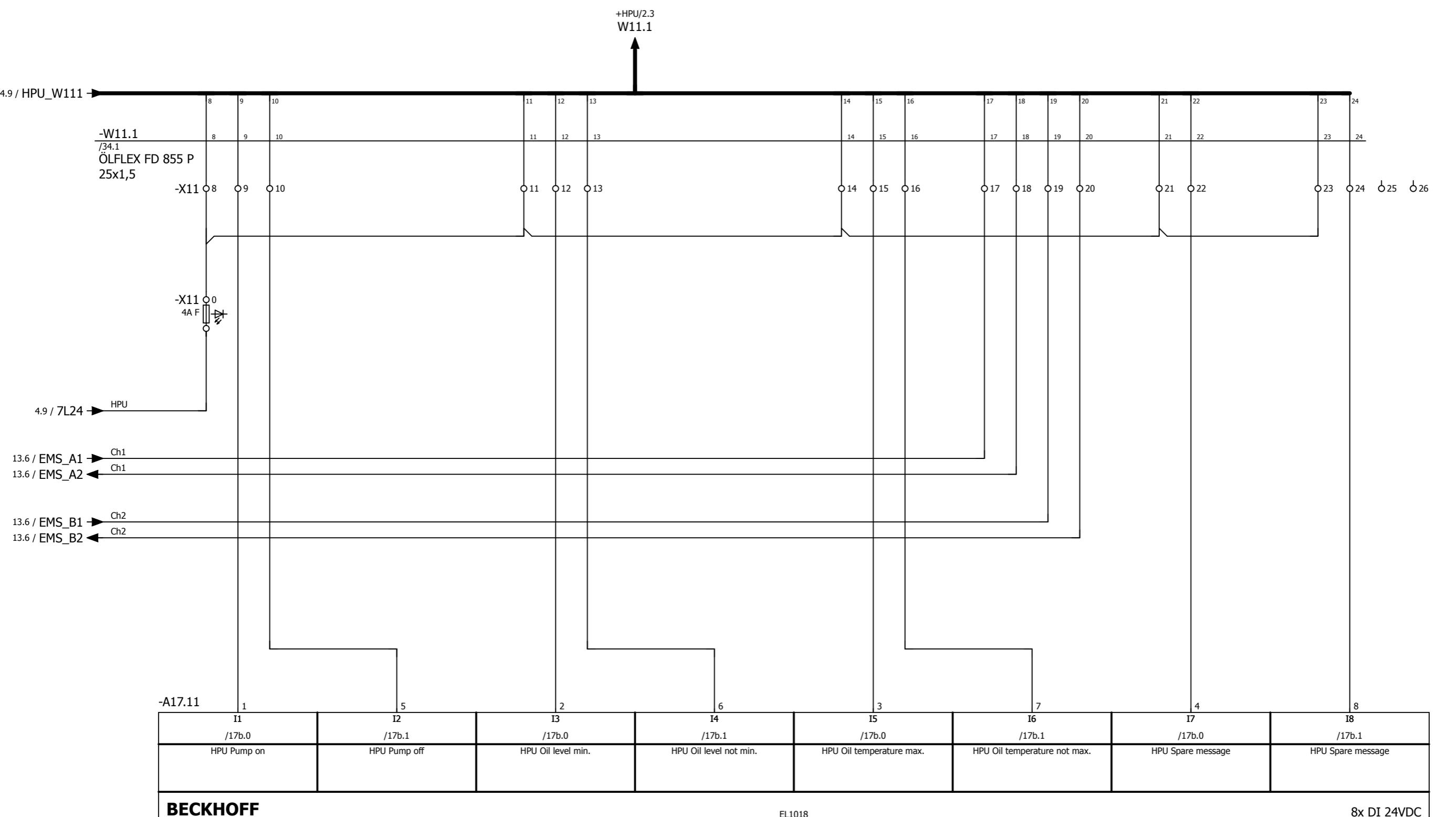


Centralizer Test Tool  
Output  
HPU/Valve

Part number: 02324572

= CT  
+ MC  
Main Cabinet  
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Rev.: Drawing number: 4\_22.5215



HPU  
Pump on      HPU  
Pump off      HPU  
Oil level min.      HPU  
Oil level not min.      HPU  
Oil temperature max.      HPU  
Oil temperature not max.      HPU  
Spare message      HPU  
Spare message

Date	25.02.2013	Weatherford Langenhagen Germany
Drn.	H. Armbrecht	
Chk	See Windchill	
Rev. No.	ECN-No.	Drn.



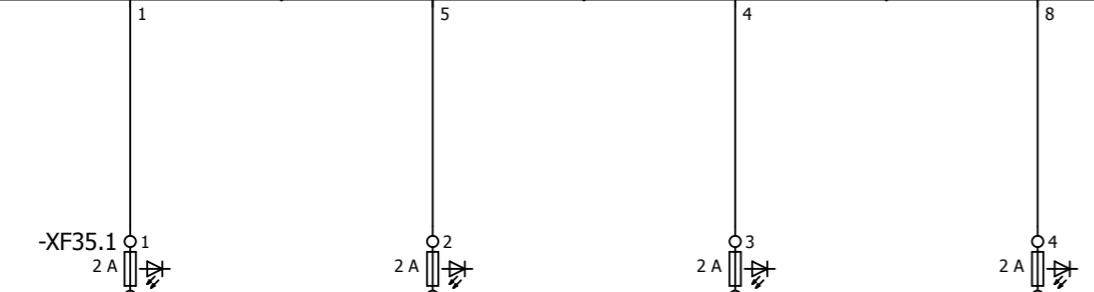
Centralizer Test Tool  
Inputs HPU

Part number: 02324572

Rev.: Drawing number: 4\_22.5215

-A18.6

BECKHOFF EL2024 4x DO 24VDC			
HPU Valve 1a	HPU Valve 1b	HPU Valve 2a	HPU Valve 2b
/19a.4 O1	/19a.4 O2	/19a.4 O3	/19a.4 O4

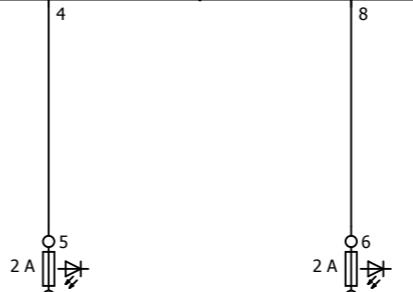


34.9 / 8L- → 0V DC EMS → 8L- / 37.0  
 17.9 / PE → → PE / 37.0



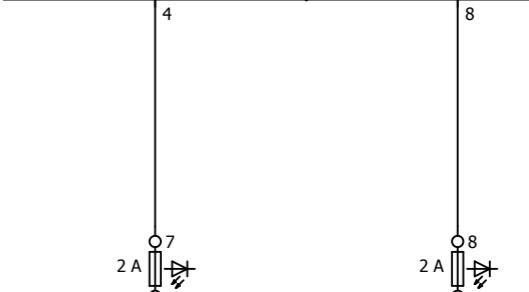
-A18.4

BECKHOFF EL2024 4x DO 24VDC	
HPU Valve 3a	HPU Valve 3b
/19a.2 O3	/19a.3 O4



-A18.9

BECKHOFF EL2024 4x DO 24VDC	
HPU Valve 4a	HPU Valve 4b
/19a.6 O3	/19a.6 O4

HPU  
Valve 1aHPU  
Valve 1bHPU  
Valve 2aHPU  
Valve 2bHPU  
Valve 3aHPU  
Valve 3bHPU  
Valve 4aHPU  
Valve 4b

Date	25.02.2013	Weatherford Langenhagen Germany
Drn.	H. Armbrecht	
Chk	See Windchill	
Rev. No.	ECN-No.	Drn.



Centralizer Test Tool  
Output  
HPU Valve

Part number: 02324572

= CT  
+ MC

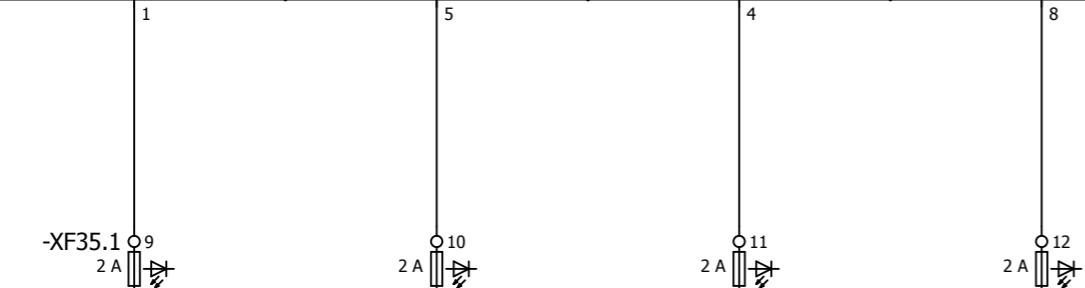
Main Cabinet

Rev.: Drawing number: 4\_22.5215

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of 156

-A18.10

BECKHOFF EL2024 4x DO 24VDC			
HPU Valve 5a	HPU Valve 5b	HPU Valve 6a	HPU Valve 6b
/19a.6 01	/19a.7 02	/19a.6 03	/19a.7 04



36.9 / 8L- → 0V DC EMS

36.9 / PE →

-X7 10 11 12 13 14 15 16 17

-W7.1  
/36.0  
ÖLFLEX 110  
25x1,5

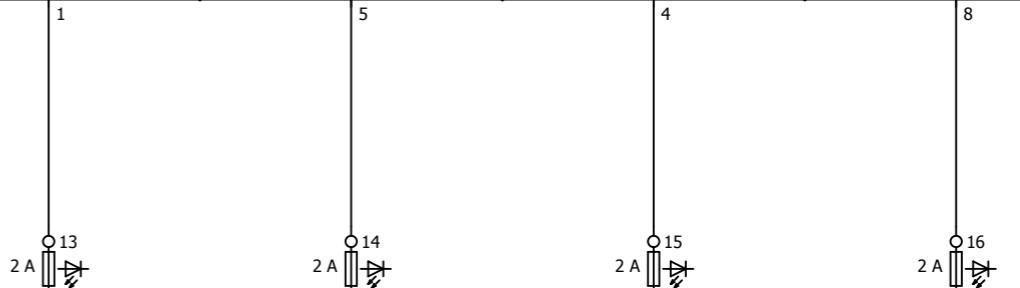
10 11 12 13 14 15 16 17

36.9 / HPU\_2W → HPU\_2W / 38.0

HPU  
Valve 5aHPU  
Valve 5bHPU  
Valve 6aHPU  
Valve 6bHPU  
Valve 7aHPU  
Valve 7bHPU  
Valve 8aHPU  
Valve 8b

-A18.11

BECKHOFF EL2024 4x DO 24VDC			
HPU Valve 7a	HPU Valve 7b	HPU Valve 8a	HPU Valve 8b
/19a.7 01	/19a.7 02	/19a.7 03	/19a.7 04



8L- → 38.0

PE → 38.0

Date	25.02.2013	Weatherford Langenhagen
Drn.	H. Armbrecht	
Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.



Centralizer Test Tool  
Output  
HPU Valve

Part number: 02324572

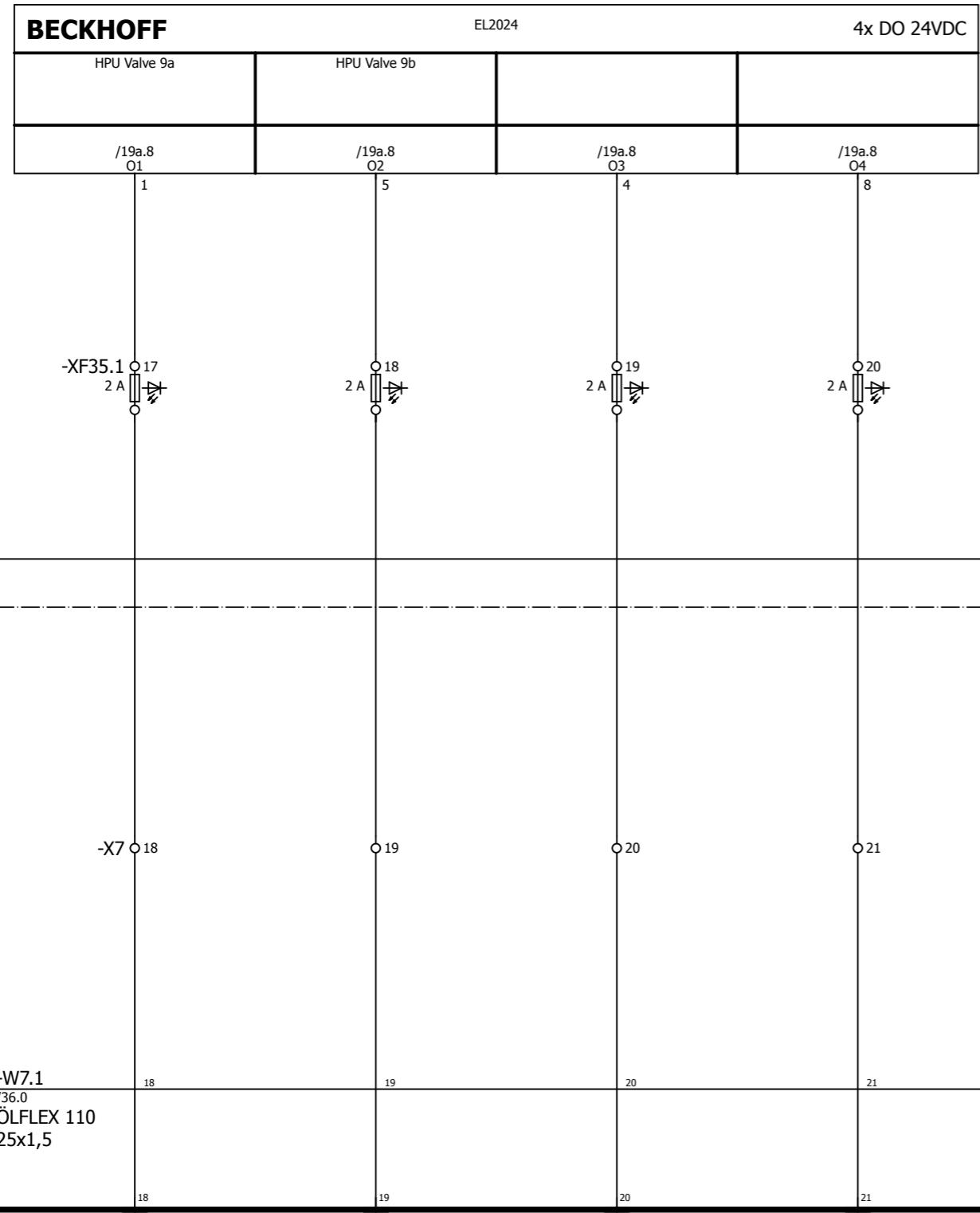
= CT  
+ MC

Main Cabinet

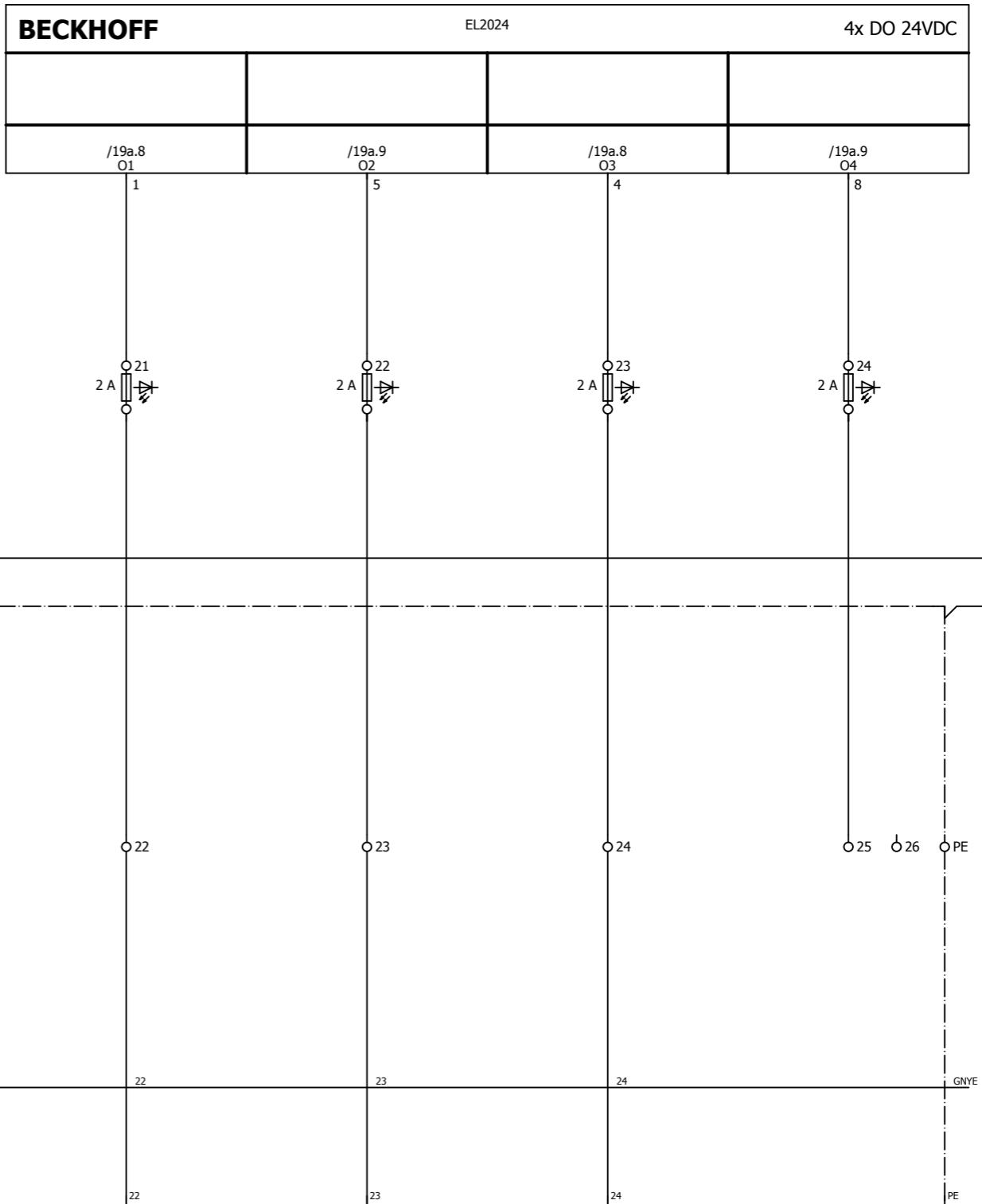
Rev.: Drawing number: 4\_22.5215

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-A18.12

HPU  
Valve 9aHPU  
Valve 9b

-A18.13



Date	25.02.2013	Weatherford Langenhagen
Drn.	H. Armbrecht	
Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.


 Centralizer Test Tool  
Output  
HPU Valve

Part number: 02324572

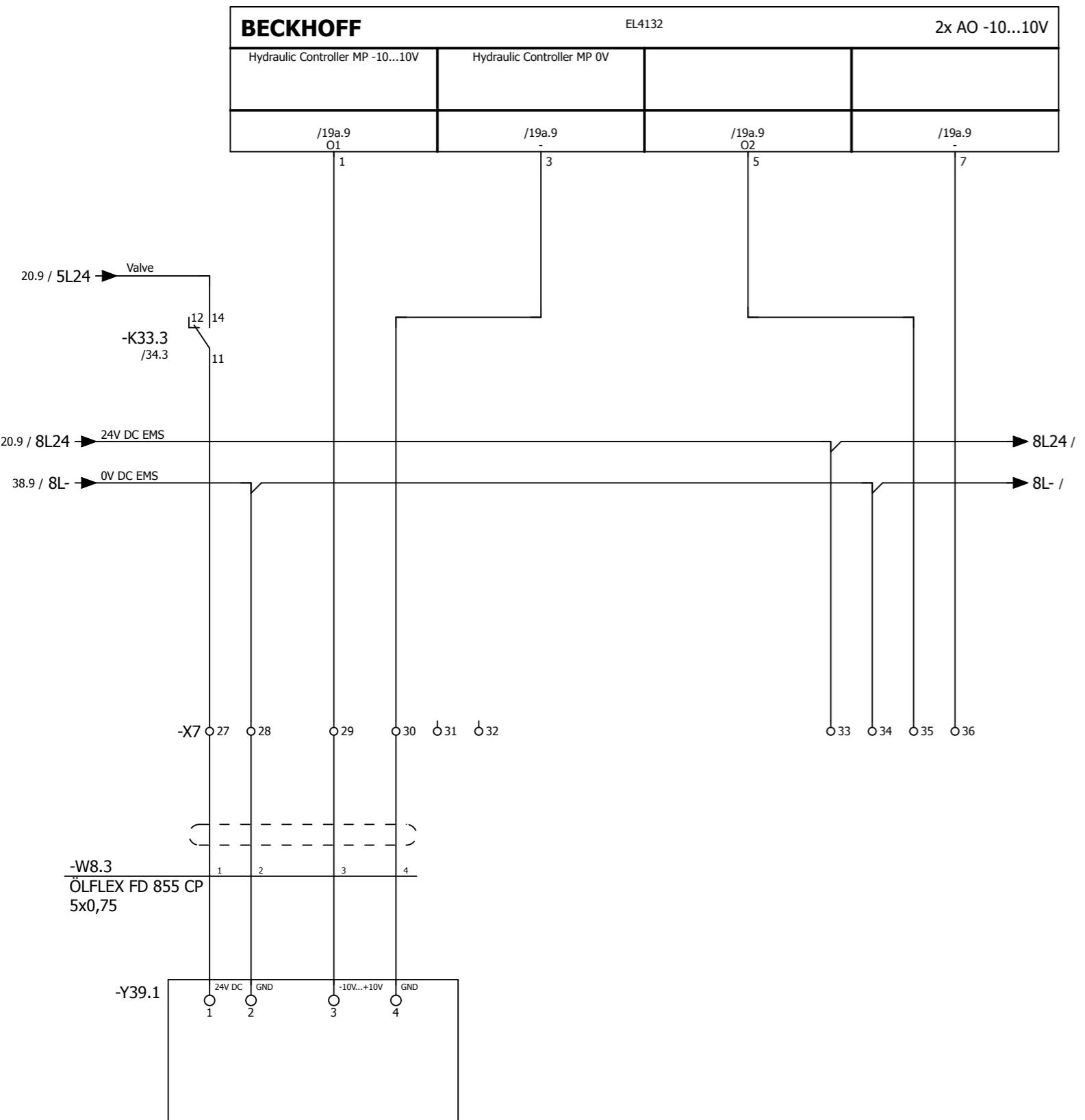
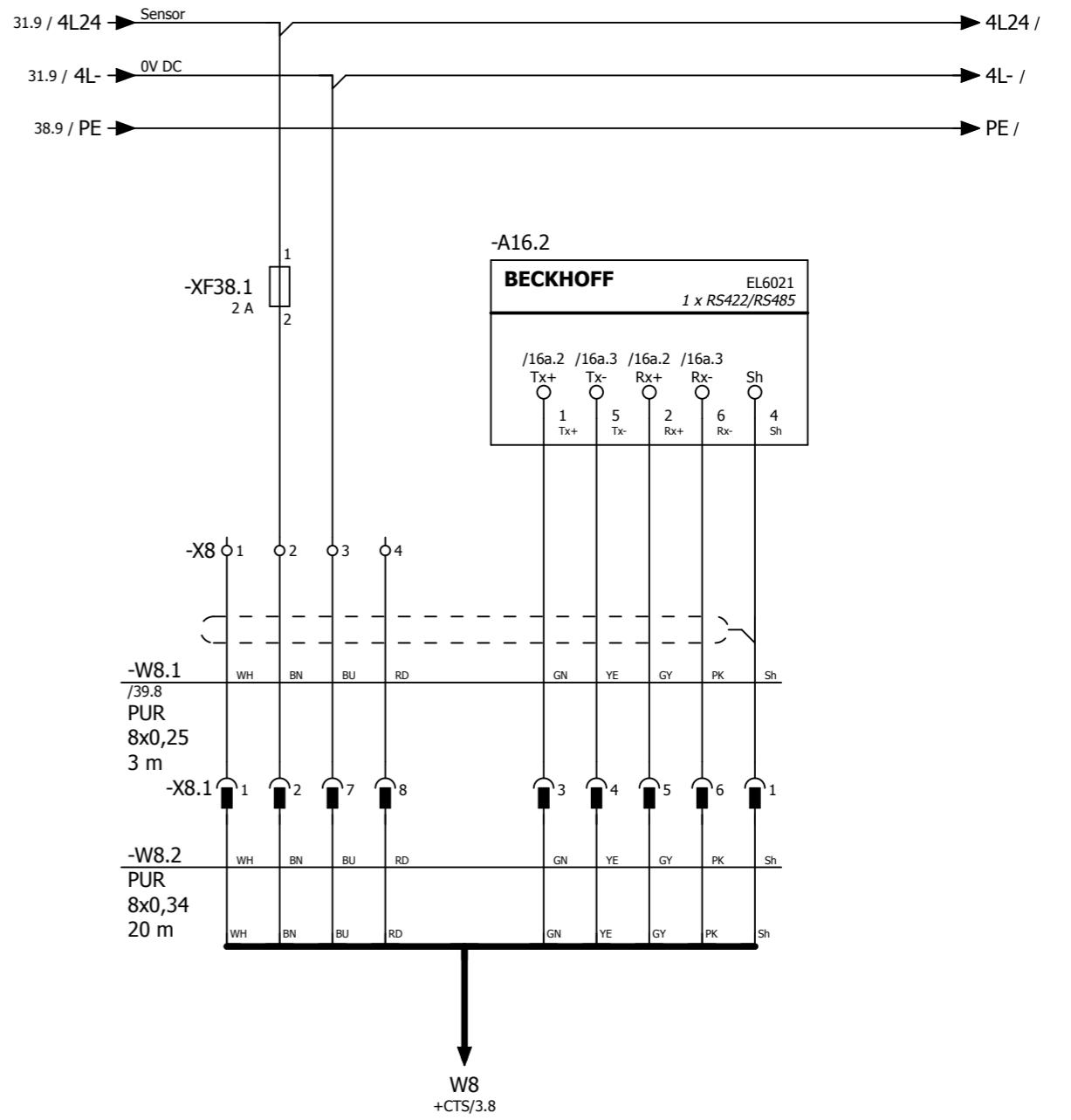
 = CT  
+ MC  
Main Cabinet  
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 Centralizer Test Tool  
Output  
HPU Valve

Part number: 02324572

 = CT  
+ MC  
Main Cabinet  
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-A18.14

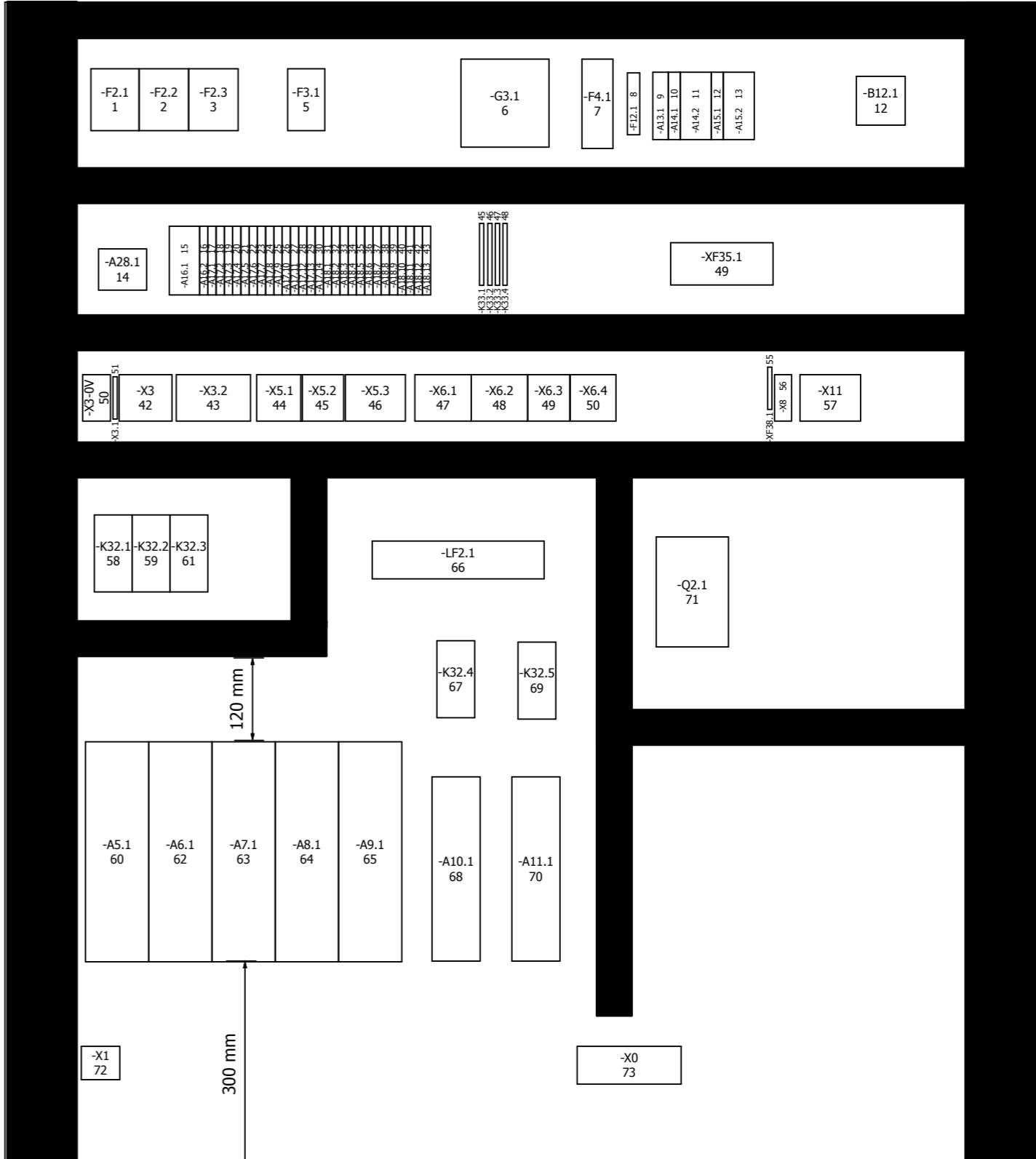
Hydraulic Controller MP  
-10...10VHydraulic Controller MP  
0VPower  
AEDCommunication  
AED

Date	25.02.2013	Weatherford Langenhagen Germany	Centralizer Test Tool Torque and Turns	Part number:	02324572	= CT
Drn.	H. Armbrecht				+ MC	Main Cabinet
Chk	See Windchill					
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

# Enclosure legend

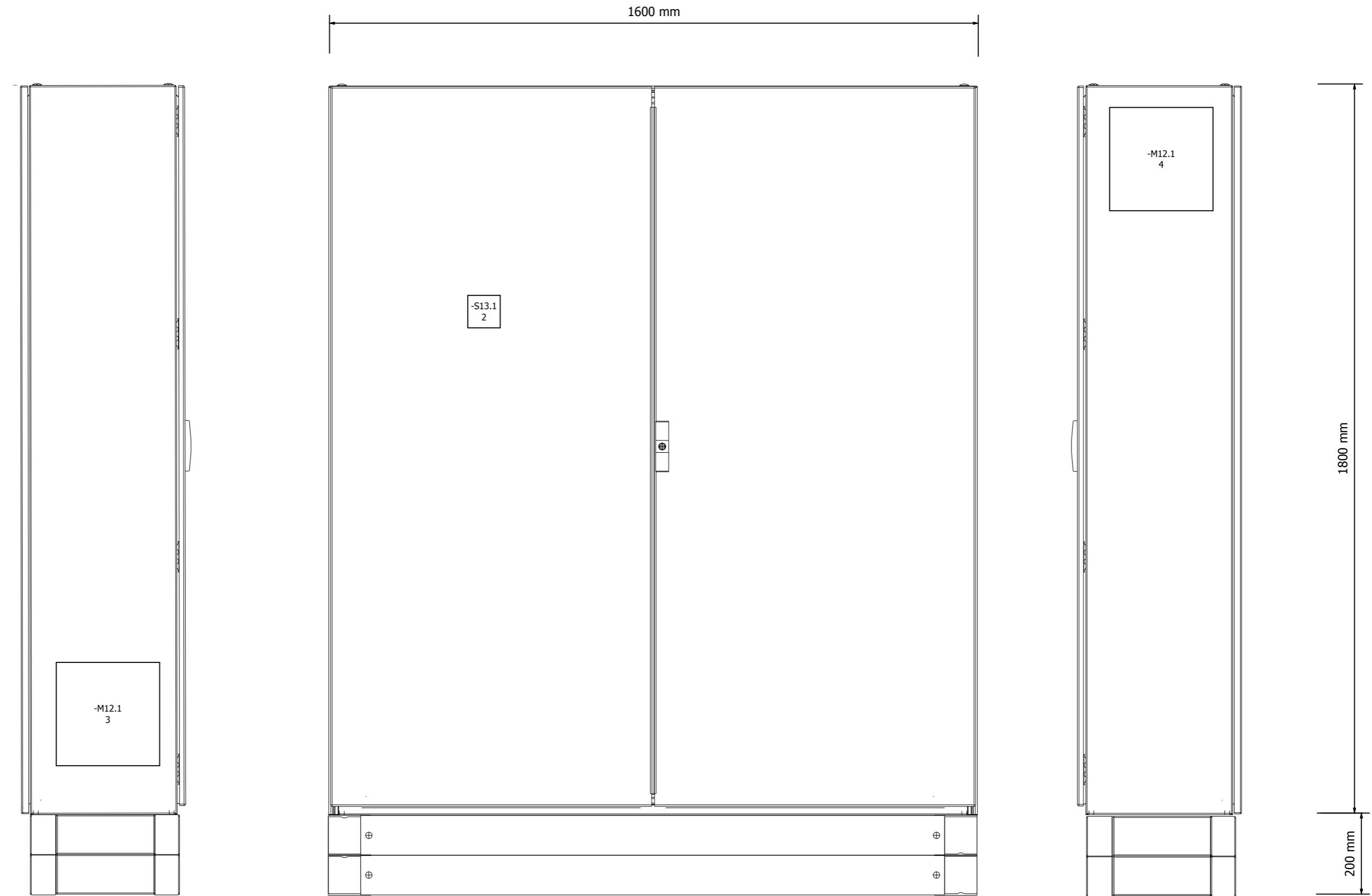
item number	device tag	function text
1	F2.1	Hydraulic unit
2	F2.2	Servomotor Shaft 1 and 2
3	F2.3	Electric cylinder 1
5	F3.1	24V DC Power supply
6	G3.1	=
7	F4.1	24V DC Power distribution
8	F12.1	Cabinet Cooler
9	A13.1	Emergency Stop
10	A14.1	Safety door Override
11	A14.2	Safety door
12	A15.1	=
12	B12.1	Cabinet Cooler Controller
13	A15.2	Safety door
15	A16.1	EtherCAT Controller
16	A16.2	
17	A17.1	8x Digital 24 VDC Input
18	A17.2	=
19	A17.3	=
20	A17.4	=
21	A17.5	=
22	A17.6	=
23	A17.7	=
24	A17.8	=
25	A17.9	=
26	A17.10	=
27	A17.11	=
28	A17.12	8x Digital 4,,,20mA Input
29	A17.13	=
30	A17.14	4x Digital 24 VDC Output
31	A18.1	24 VDC Power Input
32	A18.2	4x Digital 24 VDC Output
33	A18.3	24 VDC Power Input
34	A18.4	4x Digital 24 VDC Output
35	A18.5	=
36	A18.6	=
37	A18.7	2x Analog 0...10V Output
38	A18.8	24 VDC Power Input
39	A18.9	4x Digital 24 VDC Output
40	A18.10	=
41	A18.11	=
42	X3	
42	A18.12	4x Digital 24 VDC Output
43	A18.13	=
43	X3.2	
44	X5.1	
45	K33.1	HPU Stop
45	X5.2	
46	K33.2	HPU Start
46	X5.3	
47	X6.1	
47	K33.3	Enable Hydraulic Controller MP -10...10V
48	X6.2	
48	K33.4	CTS Angel location on
49	XF35.1	
49	X6.3	
50	X3-0V	
50	X6.4	
51	X3.1	
55	XF38.1	Power AED
56	X8	

item number	device tag	function text
57	X11	
58	K32.1	Hydraulic unit
59	K32.2	Servomotor Shaft 1 and 2
60	A5.1	Servomotor Shaft 1
61	K32.3	Servomotor Shaft 3 to 9
62	A6.1	Servomotor Shaft 3
63	A7.1	Servomotor Shaft 5
64	A8.1	Servomotor Shaft 7
65	A9.1	Servomotor Shaft 8
66	LF2.1	Electric cylinder 1
67	K32.4	=
68	A10.1	=
69	K32.5	Electric cylinder 2
70	A11.1	=
71	Q2.1	Main switch
72	X1	
73	X0	



# Enclosure legend

item number	device tag	function text
2	-S13.1	Emergency Stop Main cabinet
3	-M12.1	Cabinet Cooler
4	-M12.1	=



## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-A5.1	1	AX5206 Digital Compact Servo Drives (2-channel / 2x6A)	02357998	BECKHOFF BECKHOFF	AX5206-0000-0200 AX5206-0000-0200	
-A6.1	1	AX5203 Digital Compact Servo Drives (2-channel / 2x3A)	02357999	BECKHOFF BECKHOFF	AX5203-0000-0200 AX5203-0000-0200	
-A7.1	1	AX5203 Digital Compact Servo Drives (2-channel / 2x3A)	02357999	BECKHOFF BECKHOFF	AX5203-0000-0200 AX5203-0000-0200	63
-A8.1	1	AX5106 Digital Compact Servo Drives (1-channel / 6A)	02358006	BECKHOFF BECKHOFF	AX5106-0000-0200 AX5106-0000-0200	64
-A9.1	1	AX5203 Digital Compact Servo Drives (2-channel / 2x3A)	02357999	BECKHOFF BECKHOFF	AX5203-0000-0200 AX5203-0000-0200	
-A10.1	1 Piece	Compact converter HCS01.1	02359317	BOSCH BOSCH	HCS01.1E-W0028-A-03 HCS01.1E-W0028-A-03-B-ET-EC-NN-NN-FW	68
-A11.1	1 Piece	Compact converter HCS01.1	02359317	BOSCH BOSCH	HCS01.1E-W0028-A-03 HCS01.1E-W0028-A-03-B-ET-EC-NN-NN-FW	70
-A13.1	1 Piece	Emergency stop relay 24V AC/DC 2n/o	01166696	PILZ PILZ	PNOZ X2 P 24VAC/DC 777 303	9
-A14.1	1 Stück	PNOZsigma Safety relay 2n/o 17,5mm P-05-Housing	PILZ.750 103	PILZ PILZ	PNOZ s3 24VDC 750 103	10
-A14.2	1 Piece	PNOZsigma Safety relay 8n/o 1n/c	01391997	PILZ PILZ	PNOZ S11 24VDC 750 111	11
-A15.1	1 Stück	PNOZsigma Safety relay 2n/o 17,5mm P-05-Housing	PILZ.750 103	PILZ PILZ	PNOZ s3 24VDC 750 103	12
-A15.2	1 Piece	PNOZsigma Safety relay 8n/o 1n/c	01391997	PILZ PILZ	PNOZ S11 24VDC 750 111	13
-A16.1	1 Piece	EK EtherCAT coupler	01295183	BECKHOFF BECKHOFF	EK1100 EK1100	15
-A16.2	1 Piece	EL6021 Serial interface RS422/RS485	01295514	BECKHOFF BECKHOFF	EL6021 EL6021	16
-A17.1	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	17
-A17.2	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	18
-A17.3	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	19
-A17.4	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	20

## Parts list

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Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-A17.5	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	21
-A17.6	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	22
-A17.7	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	23
-A17.8	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	24
-A17.9	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	25
-A17.10	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	26
-A17.11	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	27
-A17.12	1 Piece	EL 4x Analog Input 4...20mA	02197460	BECKHOFF BECKHOFF	EL3024 EL3024	28
-A17.13	1 Piece	EL 4x Analog Input 4...20mA	02446787	BECKHOFF BECKHOFF	EL3124 EL3124	29
-A17.14	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	30
-A18.1	1 Piece	EL Power supply terminals for E-bus	01414679	BECKHOFF BECKHOFF	EL9400 EL9400	31
-A18.2	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	32
-A18.3	1 Piece	EL Power Connector	01295532	BECKHOFF BECKHOFF	EL9100 EL9100	33
-A18.4	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	34
-A18.5	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	35
-A18.6	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	36
-A18.7	1 Piece	EL 2x analog output 0...10V	01295507	BECKHOFF BECKHOFF	EL4002 EL4002	37
-A18.8	1 Piece	EL Power Connector	01295532	BECKHOFF BECKHOFF	EL9100 EL9100	38



## Parts list

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Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-A18.9	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	39
-A18.10	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	40
-A18.11	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	41
-A18.12	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	42
-A18.13	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	43
-A18.14	1	EL 2x analog output -10...10V	EL4132	BECKHOFF BECKHOFF	EL4132 EL4132	
-A28.1	1 Piece	Radio Receiver RF Rx EN868-2W	0205828	STEUTE STEUTE	RF Rx EN868-2W 90590012	14
-B12.1	1 Piece	Enclosure internal thermostat	01037260	RITTAL	SK3110.000 SK3110.000	12
-CAB41.1	1	SE Standalone Enclosure, platform TS8 1800/1600/400	02052892	RITTAL RITTAL	SE5842.500 SE5842.500	
-CAB41.1	2	Base/plinth components f+r, RAL 7022 W x H 1600 x 100 mm	02052886	RITTAL RITTAL	TS8601.920 TS8601.920	
-CAB41.1	2 Piece	Base/plinth trim side, 100 mm high	01960281	RITTAL RITTAL	TS8601.040 TS8601.040	
-F2.1	1 Piece	Circuit breaker 32A/B 3-pole 400V, 10kA	01116293	SIEMENS SIEMENS	5SY4332-6 5SY4332-6	1
-F2.2	1	Circuit Breaker 20 A/C 3-pol.+N	SIE.5SY4620-7	SIEMENS SIEMENS	5SY4620-7 5SY4620-7	2
-F2.3	1	Circuit Breaker 20 A/C 3-pol.+N	SIE.5SY4620-7	SIEMENS SIEMENS	5SY4620-7 5SY4620-7	3
-F3.1	1 Piece	Circuit breaker 16 A/C 3-pole	SIE.5SY4316-7	SIEMENS SIEMENS	5SY4316-7 5SY4316-7	5
-F4.1	1	Electronic Circuit Breaker 24V DC, 8x 10A	PC-0724-800-0	BLOCK BLOCK	PC-0724-800-0 PC-0724-800-0	7
-F12.1	1 Piece	Siemens Circuit Breaker 2 A/C 1-pol.	01039030	SIEMENS SIEMENS	5SY4 102-7 5SY4102-7	8
-G3.1	1 Stück	Power supply 3x 340 ... 3x 550 VAC/24VDC/40A	02050540	BLOCK BLOCK	PVSB 400/24-40 PVSB 400/24-40	6

## Parts list

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Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-K32.1	1 Piece	Contactor 15KW	01877851	SIEMENS SIEMENS	3RT1034-1BB40 (15KW, 24V) 3RT1034-1BB40	58
-K32.1	1 Piece	Auxiliary contact for contactor 3RH1911, 2NO/2NC	01043218	SIEMENS SIEMENS	3RH 2O / 2C 3RH1911-1HA22	
-K32.2	1 Piece	Contactor 15KW	01877851	SIEMENS SIEMENS	3RT1034-1BB40 (15KW, 24V) 3RT1034-1BB40	59
-K32.2	1 Piece	Auxiliary contact for contactor 3RH1911, 2NO/2NC	01043218	SIEMENS SIEMENS	3RH 2O / 2C 3RH1911-1HA22	
-K32.3	1 Piece	Contactor 15KW	01877851	SIEMENS SIEMENS	3RT1034-1BB40 (15KW, 24V) 3RT1034-1BB40	61
-K32.3	1 Piece	Auxiliary contact for contactor 3RH1911, 2NO/2NC	01043218	SIEMENS SIEMENS	3RH 2O / 2C 3RH1911-1HA22	
-K32.4	1 Piece	Contactor 15KW	01877851	SIEMENS SIEMENS	3RT1034-1BB40 (15KW, 24V) 3RT1034-1BB40	67
-K32.4	1 Piece	Auxiliary contact for contactor 3RH1911, 2NO/2NC	01043218	SIEMENS SIEMENS	3RH 2O / 2C 3RH1911-1HA22	
-K32.5	1 Piece	Contactor 15KW	01877851	SIEMENS SIEMENS	3RT1034-1BB40 (15KW, 24V) 3RT1034-1BB40	69
-K32.5	1 Piece	Auxiliary contact for contactor 3RH1911, 2NO/2NC	01043218	SIEMENS SIEMENS	3RH 2O / 2C 3RH1911-1HA22	
-K33.1	1 Piece	Coupling relay 24VDC/1co	01043610	MURR MURR	6652005 1W 6652005	45
-K33.2	1 Piece	Coupling relay 24VDC/1co	01043610	MURR MURR	6652005 1W 6652005	46
-K33.3	1 Piece	Coupling relay 24VDC/1co	01043610	MURR MURR	6652005 1W 6652005	47
-K33.4	1 Piece	Coupling relay 24VDC/1co	01043610	MURR MURR	6652005 1W 6652005	48
-LF2.1	1 PCE	Mains filter	BOS.R911286918	BOSCH BOSCH	NFD03.1-480-016 R911286918	66
-M5.1	1	Servo Motor	AM8052-1J21-0000	BECKHOFF BECKHOFF	AM8052-1J21-0000 AM8052-1J21-0000	
-M5.2	1	Servo Motor	AM8052-1J21-0000	BECKHOFF BECKHOFF	AM8052-1J21-0000 AM8052-1J21-0000	
-M6.1	1	Servo Motor	AM8021-0B21-0000	BECKHOFF BECKHOFF	AM8021-0B21-0000 AM8021-0B21-0000	

## Parts list

WFD\_F01\_002

Device tag	Quantity	Designation	Part number	Manufacturer	Type number	Pos
Placement				Supplier	Order number	
-M6.2	1	Servo Motor	AM8041-0E20-0000	BECKHOFF BECKHOFF	AM8041-0E20-0000 AM8041-0E20-0000	
-M7.1	1	Servo Motor	AM8023-0E21-0000	BECKHOFF BECKHOFF	AM8023-0E21-0000 AM8023-0E21-0000	
-M7.2	1	Servo Motor	AM8023-0E21-0000	BECKHOFF BECKHOFF	AM8023-0E21-0000 AM8023-0E21-0000	
-M8.1	1	Servo Motor	AM8052-1J21-0000	BECKHOFF BECKHOFF	AM8052-1J21-0000 AM8052-1J21-0000	
-M9.1	1	Servo Motor	AM8032-0D20-0000	BECKHOFF BECKHOFF	AM8032-0D20-0000 AM8032-0D20-0000	
-M9.2	1	Servo Motor	AM8032-0E20-0000	BECKHOFF BECKHOFF	AM8032-0E20-0000 AM8032-0E20-0000	
-M12.1	1 Piece	Fan-and-filter unit, 55 m³/h 24 V DC, RAL 7035	01797385	RITTAL	SK3238.124 SK3238.124	3
-M12.1	1 ST	Outlet filter for fan-and-filter units 3324 / 3325 RAL 7035	01398694	RITTAL RITTAL	SK3325.207 SK3325.207	4
-Q2.1	1 Piece	Circuit Breaker 100 A VL 160X N	02151715	SIEMENS SIEMENS	3VL1710-1DE36-0AA0 3VL1710-1DE36-0AA0	71
-Q2.1	2 Piece	Box terminals 3 pol for VL 150X UL	02052930	SIEMENS SIEMENS	3VL9120-4TC31 3VL9120-4TC31	
-Q2.1	1 Piece	Terminal cover for 3VL3125	02052941	SIEMENS SIEMENS	3VL9300-8CB31 3VL9300-8CB31	
-Q2.1	1 Piece	Terminal cover for VL 150X UL	02052926	SIEMENS SIEMENS	3VL9300-8CA31 3VL9300-8CA31	
-Q2.1	1 Piece	Door-Coupling Rotary Mechanism for VL150XUL - VL250UL	02052932	SIEMENS SIEMENS	3VL9300-3HG06 3VL9300-3HG06	
-S13.1	1 Piece	EMS pushbutton red complete +1NO +1NC	01283235	SIEMENS SIEMENS	3SB3201-1HA20-0CC0 3SB3201-1HA20-0CC0	2
-S13.1	1 Piece	Contact block for 3SB3, 1NC	01044907	SIEMENS SIEMENS	3SB3400-0C 3SB3400-0C	
-W1.1	1 m	ÖLFLEX CLASSIC 110 4 G	02050944	LAPP LAPP	ÖLFLEX CLASSIC 110 4 G2,5 1119404	
-W3.1	1 m	ÖLFLEX CLASSIC 110 3 G	01092534	LAPP LAPP	ÖLFLEX CLASSIC 110 3G1,5 1119303	
-W3.2	1 m	ÖLFLEX FD 855 CP 25 G	01035343	LAPP LAPP	ÖLFLEX FD 855 CP 25G0,5 0027613	

## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-W5.1	1 m	ÖLFLEX CLASSIC 110 16 G	02330442	LAPP	ÖLFLEX CLASSIC 110 16 G1,5 1119316	
-W6.1	1 m	ÖLFLEX FD 855 P 25 G	02345102	LAPP LAPP	ÖLFLEX FD 855 P 25G1 0027568	
-W6.2	1 m	ÖLFLEX FD 855 P 12 G	02345864	LAPP LAPP	ÖLFLEX FD 855 P 12G1 0027565	
-W6.3	1 m	ÖLFLEX FD 855 P 25 G	02345102	LAPP LAPP	ÖLFLEX FD 855 P 25G1 0027568	
-W6.4	1 m	ÖLFLEX FD 855 P 25 G	02345102	LAPP LAPP	ÖLFLEX FD 855 P 25G1 0027568	
-W7.1	1 m	ÖLFLEX CLASSIC 110 25 G	01037481	LAPP	ÖLFLEX CLASSIC 110 25 G1,5 1119325	
-W8.1	1 Piece 3 m	Cable M12 BU Straight 3m 8x0,25mm <sup>2</sup>	01295880	MURR MURR	7000-17121-2910300 7000-17121-2910300	
-W8.2	1 Piece 20 m	Cable M12 ST Straight 20m 8x0,25mm <sup>2</sup>	02001297	MURR MURR	7000-17101-2912000 7000-17101-2912000	
-W8.3	1 m	ÖLFLEX FD 855 CP 5 G	02052303	LAPP LAPP	ÖLFLEX FD 855 CP 5 G 0,75 0027623	
-W11.1	1 m	ÖLFLEX FD 855 P 25 G	02345100	LAPP LAPP	ÖLFLEX FD 855 P 25G1,5 0027582	
-W53.1	1 m	ÖLFLEX CLASSIC 110 3 G	01043205	LAPP	ÖLFLEX CLASSIC 110 3 G1 1119203	
-W53.2	1 m	ÖLFLEX CLASSIC 110 3 G	01043205	LAPP	ÖLFLEX CLASSIC 110 3 G1 1119203	
-W53.3	1 m	ÖLFLEX CLASSIC 110 3 G	01043205	LAPP	ÖLFLEX CLASSIC 110 3 G1 1119203	
-W53.4	1 m	ÖLFLEX CLASSIC 110 3 G	01043205	LAPP	ÖLFLEX CLASSIC 110 3 G1 1119203	
-W53.5	1 m	ÖLFLEX CLASSIC 110 3 G	01043205	LAPP	ÖLFLEX CLASSIC 110 3 G1 1119203	
-W53.6	1 m	ÖLFLEX CLASSIC 110 3 G	01043205	LAPP	ÖLFLEX CLASSIC 110 3 G1 1119203	
-W53.7	1 m	ÖLFLEX CLASSIC 110 3 G	01043205	LAPP	ÖLFLEX CLASSIC 110 3 G1 1119203	
-WM5.1	1 m 10 m	Motor cable ZK4500	02358018	BECKHOFF BECKHOFF	ZK4500-8023-0100 ZK4500-8023-0100	

## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-WM5.2	1 m 10 m	Motor cable ZK4500	02358018	BECKHOFF BECKHOFF	ZK4500-8023-0100 ZK4500-8023-0100	
-WM6.1	1 m 10 m	Motor cable ZK4500	02358018_1	BECKHOFF BECKHOFF	ZK4500-8022-0100 ZK4500-8022-0100	
-WM6.2	1 m 10 m	Motor cable ZK4500	02358018	BECKHOFF BECKHOFF	ZK4500-8023-0100 ZK4500-8023-0100	
-WM7.1	1 m 10 m	Motor cable ZK4500	02358018_1	BECKHOFF BECKHOFF	ZK4500-8022-0100 ZK4500-8022-0100	
-WM7.2	1 m 10 m	Motor cable ZK4500	02358018_1	BECKHOFF BECKHOFF	ZK4500-8022-0100 ZK4500-8022-0100	
-WM8.1	1 m 10 m	Motor cable ZK4500	02358018	BECKHOFF BECKHOFF	ZK4500-8023-0100 ZK4500-8023-0100	
-WM9.1	1 m 10 m	Motor cable ZK4500	02358018_1	BECKHOFF BECKHOFF	ZK4500-8022-0100 ZK4500-8022-0100	
-WM9.2	1 m 10 m	Motor cable ZK4500	02358018_1	BECKHOFF BECKHOFF	ZK4500-8022-0100 ZK4500-8022-0100	
-X0	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035501	PHOENIX PHOENIX	D-ST 2,5 3030417	
-X0	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X0	7 Piece	Feed through terminal Screw connection, cross section: 0,75 mm <sup>2</sup> - 35 mm <sup>2</sup> , AWG: 18-2	01233224	PHOENIX PHOENIX	UT 35 3044225	
-X0	2 Piece	Ground modular terminal Screw connection, cross section: 0,75 mm <sup>2</sup> - 50 mm <sup>2</sup> , AWG 18 - 1/0	PXC.3044241	PHOENIX PHOENIX	UT35 PE PXC.3044241	
-X1	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035501	PHOENIX PHOENIX	D-ST 2,5 3030417	
-X1	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X1	6 Piece	Feed-through modular terminal block Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036502	PHOENIX PHOENIX	ST 2,5 3031212	
-X1	2 Piece	Ground modular terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01037472	PHOENIX PHOENIX	ST 2,5-PE 3031238	
-X3	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X3	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	

## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-X3	10 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X3	2 Piece	Ground modular terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01037472	PHOENIX PHOENIX	ST 2,5-PE 3031238	
-X3-0V	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X3-0V	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X3-0V	5 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X3.1	1 Piece	Knife disconnect terminal block Spring cage connection, cross section: 0,08 mm <sup>2</sup> - 6 mm <sup>2</sup> , AWG 28 - 10	01044913	PHOENIX PHOENIX	ST 4-HEDI 3035140	51
-X3.2	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X3.2	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X3.2	17 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X3.2	1 Piece	Ground modular terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG: 28 - 12	01032859	PHOENIX PHOENIX	STTB 2,5-PE 3036026	
-X5.1	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X5.1	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X5.1	10 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X5.2	12 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X5.3	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X5.3	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X5.3	15 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X6.1	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	

## Parts list

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Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-X6.1	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X6.1	13 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X6.2	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X6.2	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X6.2	20 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X6.3	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X6.3	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X6.3	11 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X6.4	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X6.4	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X6.4	10 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X7	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X7	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X7	18 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X7	1 Piece	Ground modular terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG: 28 - 12	01032859	PHOENIX PHOENIX	STTB 2,5-PE 3036026	
-X8	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X8	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X8	2 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	

		Date	25.02.2013	Weatherford Langenhagen Germany		Centralizer Test Tool Parts list : 01032675 - 01036504	Part number:	02324572	= CT
		Drn.	H. Armbrecht				+ MC		Main Cabinet
		Chk	See Windchill						
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4	Rev.:	Drawing number:	4_22.5215
							Page	63	
							of	156	

## Parts list

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Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-X8.1	1 Piece	Cupboard Lead Through 8-pol 8 pole. M12	01036536	MURR MURR	7000-48111-0000000 7000-48111-0000000	
-X11	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X11	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X11	1 Piece	Fuse terminal Spring-cage connection, cross section 0,08 mm <sup>2</sup> - 6 mm <sup>2</sup> , AWG: 28 - 10, I: 6,3 A, U: 30 V	01037491	PHOENIX PHOENIX	ST 4-HESILED 24 (5X20) 3036547	
-X11	1 Piece	Fuse 4A F	01136313	REXEL	FUSE	
-X11	13 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-XA5.1	1	Power supply connector	02358031	BECKHOFF BECKHOFF	AX5901-0000-0000 AX5901-0000-0000	
-XA6.1	1	Power supply connector	02358031	BECKHOFF BECKHOFF	AX5901-0000-0000 AX5901-0000-0000	
-XA7.1	1	Power bridge	02358032	BECKHOFF BECKHOFF	AX5911-0000-0000 AX5911-0000-0000	
-XA8.1	1	Power bridge	02358032	BECKHOFF BECKHOFF	AX5911-0000-0000 AX5911-0000-0000	
-XA9.1	1	Power bridge	02358032	BECKHOFF BECKHOFF	AX5911-0000-0000 AX5911-0000-0000	
-XF35.1	24 Piece	Fuse terminal Spring-cage connection, cross section 0,08 mm <sup>2</sup> - 6 mm <sup>2</sup> , AWG: 28 - 10, I: 6,3 A, U: 30 V	01037491	PHOENIX PHOENIX	ST 4-HESILED 24 (5X20) 3036547	
-XF35.1	24 Piece	Fuse 2A T	01220100	REXEL	Fuse 2A T	
-XF38.1	1 Piece	Fuse terminal Spring-cage connection, cross section 0,08 mm <sup>2</sup> - 6 mm <sup>2</sup> , AWG: 28 - 10, I: 6,3 A, U: 30 V	01037491	PHOENIX PHOENIX	ST 4-HESILED 24 (5X20) 3036547	55
-XF38.1	1 Piece	Fuse 2A T	01220100	REXEL	Fuse 2A T	

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>BECKHOFF</b>					
	1 0	02357998	AX5206 Digital Compact Servo Drives (2-channel / 2x6A)	AX5206-0000-0200	AX5206-0000-0200
	3 0	02357999	AX5203 Digital Compact Servo Drives (2-channel / 2x3A)	AX5203-0000-0200	AX5203-0000-0200
	1 0	02358006	AX5106 Digital Compact Servo Drives (1-channel / 6A)	AX5106-0000-0200	AX5106-0000-0200
	1 0	01295183	EK EtherCAT coupler	EK1100	EK1100
	1 0	01295514	EL6021 Serial interface RS422/RS485	EL6021	EL6021
	11 0	01322459	EL 8x Digital Input 24VDC	EL1018	EL1018
	1 0	02197460	EL 4x Analog Input 4...20mA	EL3024	EL3024
	1 0	02446787	EL 4x Analog Input 4...20mA	EL3124	EL3124
	10 0	01295195	EL 4x digital output 2A	EL2024	EL2024
	1 0	01414679	EL Power supply terminals for E-bus	EL9400	EL9400
	2 0	01295532	EL Power Connector	EL9100	EL9100
	1 0	01295507	EL 2x analog output 0...10V	EL4002	EL4002
	1 0	EL4132	EL 2x analog output -10...10V	EL4132	EL4132
	3 0	AM8052-1J21-0000	Servo Motor	AM8052-1J21-0000	AM8052-1J21-0000
	1 0	AM8021-0B21-0000	Servo Motor	AM8021-0B21-0000	AM8021-0B21-0000
	1 0	AM8041-0E20-0000	Servo Motor	AM8041-0E20-0000	AM8041-0E20-0000
	2 0	AM8023-0E21-0000	Servo Motor	AM8023-0E21-0000	AM8023-0E21-0000
	1 0	AM8032-0D20-0000	Servo Motor	AM8032-0D20-0000	AM8032-0D20-0000
	1 0	AM8032-0E20-0000	Servo Motor	AM8032-0E20-0000	AM8032-0E20-0000
	4 40 m	02358018	Motor cable ZK4500	ZK4500-8023-0100	ZK4500-8023-0100
	5 50 m	02358018_1	Motor cable ZK4500	ZK4500-8022-0100	ZK4500-8022-0100
	2 0	02358031	Power supply connector	AX5901-0000-0000	AX5901-0000-0000
	3 0	02358032	Power bridge	AX5911-0000-0000	AX5911-0000-0000
<b>BLOCK</b>					
	1 0	PC-0724-800-0	Electronic Circuit Breaker 24V DC, 8x 10A	PC-0724-800-0	PC-0724-800-0
	1 0	02050540	Power supply 3x 340 ... 3x 550 VAC/24VDC/40A	PVSB 400/24-40	PVSB 400/24-40

## Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
BOSCH					
	2 0	02359317	Compact converter HCS01.1	HCS01.1E-W0028-A-03-B-ET-EC-NN-NN-NN-FW	HCS01.1E-W0028-A-03
	1 0	BOS.R911286918	Mains filter	R911286918	NFD03.1-480-016
LAPP					
	1 0	02050944	ÖLFLEX CLASSIC 110 4 G	1119404	ÖLFLEX CLASSIC 110 4 G2,5
	1 0	01092534	ÖLFLEX CLASSIC 110 3 G	1119303	ÖLFLEX CLASSIC 110 3G1,5
	1 0	01035343	ÖLFLEX FD 855 CP 25 G	0027613	ÖLFLEX FD 855 CP 25G0,5
	1 0	02330442	ÖLFLEX CLASSIC 110 16 G	1119316	ÖLFLEX CLASSIC 110 16 G1,5
	3 0	02345102	ÖLFLEX FD 855 P 25 G	0027568	ÖLFLEX FD 855 P 25G1
	1 0	02345864	ÖLFLEX FD 855 P 12 G	0027565	ÖLFLEX FD 855 P 12G1
	1 0	01037481	ÖLFLEX CLASSIC 110 25 G	1119325	ÖLFLEX CLASSIC 110 25 G1,5
	1 0	02052303	ÖLFLEX FD 855 CP 5 G	0027623	ÖLFLEX FD 855 CP 5 G 0,75
	1 0	02345100	ÖLFLEX FD 855 P 25 G	0027582	ÖLFLEX FD 855 P 25G1,5
	7 0	01043205	ÖLFLEX CLASSIC 110 3 G	1119203	ÖLFLEX CLASSIC 110 3 G1
MURR					
	4 0	01043610	Coupling relay 24VDC/1co	6652005	6652005 1W
	1 3 m	01295880	Cable M12 BU Straight 3m 8x0,25mm <sup>2</sup>	7000-17121-2910300	7000-17121-2910300
	1 20 m	02001297	Cable M12 ST Straight 20m 8x0,25mm <sup>2</sup>	7000-17101-2912000	7000-17101-2912000
	1 0	01036536	Cupboard Lead Through 8-pol	7000-48111-0000000	7000-48111-0000000
PHOENIX					
	2 0	01035501	End cover	3030417	D-ST 2,5
	28 0	01032675	End bracket	1421659	E/MK 1
	7 0	01233224	Feed through terminal	3044225	UT 35
	2 0	PXC.3044241	Ground modular terminal	PXC.3044241	UT35 PE
	6 0	01036502	Feed-through modular terminal block	3031212	ST 2,5
	4 0	01037472	Ground modular terminal	3031238	ST 2,5-PE
	12	01035500	End cover	3030459	D-STTB 2,5

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>PHOENIX</b>					
	156 0	01036504	Feed through terminal	3031270	STTB 2,5
	1 0	01044913	Knife disconnect terminal block	3035140	ST 4-HEDI
	2 0	01032859	Ground modular terminal	3036026	STTB 2,5-PE
	26 0	01037491	Fuse terminal	3036547	ST 4-HESILED 24 (5X20)
<b>PILZ</b>					
	1 0	01166696	Emergency stop relay 24V AC/DC 2n/o	777 303	PNOZ X2 P 24VAC/DC
	2 0	PILZ.750 103	PNOZsigma Safety relay 2n/o	750 103	PNOZ s3 24VDC
	2 0	01391997	PNOZsigma Safety relay 8n/o 1n/c	750 111	PNOZ S11 24VDC
<b>REXEL</b>					
	1 0	01136313	Fuse 4A F		FUSE
	25 0	01220100	Fuse 2A T		Fuse 2A T
<b>RITTAL</b>					
	1 0	01037260	Enclosure internal thermostat	SK3110.000	SK3110.000
	1 0	02052892	SE Standalone Enclosure, platform TS8 1800/1600/400	SE5842.500	SE5842.500
	2 0	02052886	Base/plinth components f+r, RAL 7022 W x H 1600 x 100 mm	TS8601.920	TS8601.920
	2 0	01960281	Base/plinth trim side, 100 mm high	TS8601.040	TS8601.040
	1 0	01797385	Fan-and-filter unit, 55 m³/h 24 V DC, RAL 7035	SK3238.124	SK3238.124
	1 0	01398694	Outlet filter for fan-and-filter units 3324 / 3325 RAL 7035	SK3325.207	SK3325.207
<b>SIEMENS</b>					
	1 0	01116293	Circuit breaker 32A/B 3-pole	5SY4332-6	5SY4332-6
	2 0	SIE.5SY4620-7	Circuit Breaker 20 A/C 3-pol.+N	5SY4620-7	5SY4620-7
	1 0	SIE.5SY4316-7	Circuit breaker 16 A/C 3-pole	5SY4316-7	5SY4316-7
	1 0	01039030	Siemens Circuit Breaker 2 A/C 1-pol.	5SY4102-7	5SY4 102-7
	5 0	01877851	Contactor 15KW	3RT1034-1BB40	3RT1034-1BB40 (15KW, 24V)
	5 0	01043218	Auxiliary contact for contactor 3RH1911, 2NO/2NC	3RH1911-1HA22	3RH 20 / 2C
	1 0	02151715	Circuit Breaker 100 A VL 160X N	3VL1710-1DE36-0AA0	3VL1710-1DE36-0AA0



# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>SIEMENS</b>					
	2 0	02052930	Box terminals 3 pol for VL 150X UL	3VL9120-4TC31	3VL9120-4TC31
	1 0	02052941	Terminal cover for 3VL3125	3VL9300-8CB31	3VL9300-8CB31
	1 0	02052926	Terminal cover for VL 150X UL	3VL9300-8CA31	3VL9300-8CA31
	1 0	02052932	Door-Coupling Rotary Mechanism for VL150XUL - VL250UL	3VL9300-3HG06	3VL9300-3HG06
	1 0	01283235	EMS pushbutton red complete +1NO +1NC	3SB3201-1HA20-0CC0	3SB3201-1HA20-0CC0
	1 0	01044907	Contact block for 3SB3, 1NC	3SB3400-0C	3SB3400-0C
<b>STEUTE</b>					
	1 0	0205828	Radio Receiver RF Rx EN868-2W	90590012	RF Rx EN868-2W

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

Phone : +49 511 7702-0

Fax.: +49 511 7702-125



**Weatherford®**

**Customer:** Weatherford  
**Type/Serial No.:** Centralizer Test Tool  
**Assembly:** =CT +CP  
**Year of manufacture:** 2014  
**Drawing number:** 4\_22.5215  
**Part number:** 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz  
Mains current: A  
Control voltage 1: 230 V AC  
Control voltage 2: 24 V DC  
Control voltage 3: 0...10 V DC

## Line Color

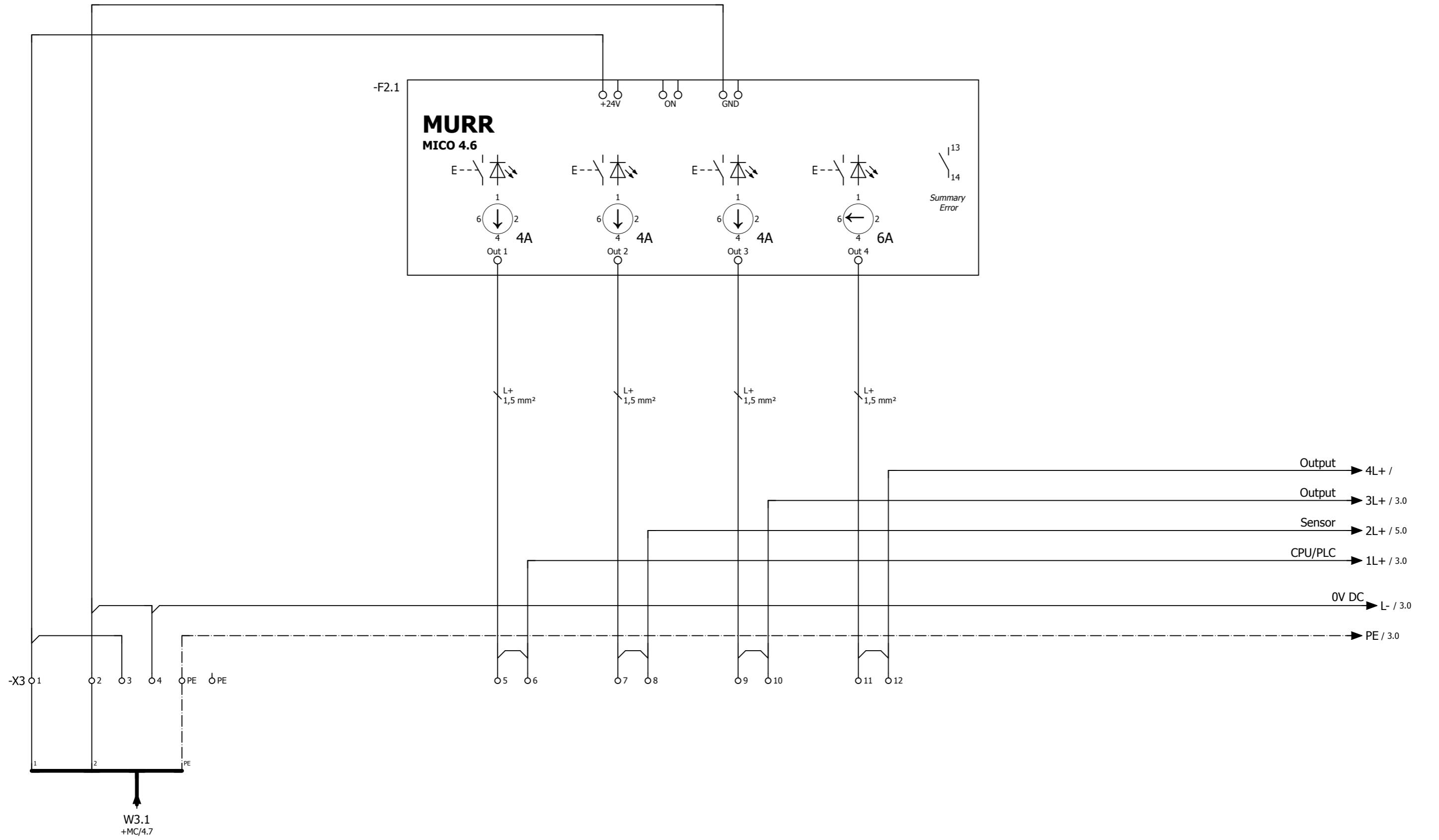
Main circuit (L): BK (black)  
Neutral conductor: BU (light blue)  
Control voltage 230 V AC: RD (red)  
Control voltage 24 V DC: BU (dark blue)  
Sensor: WH (white)  
Ground wire: GNYE (green-yellow)  
Floating distance: OR (orange)

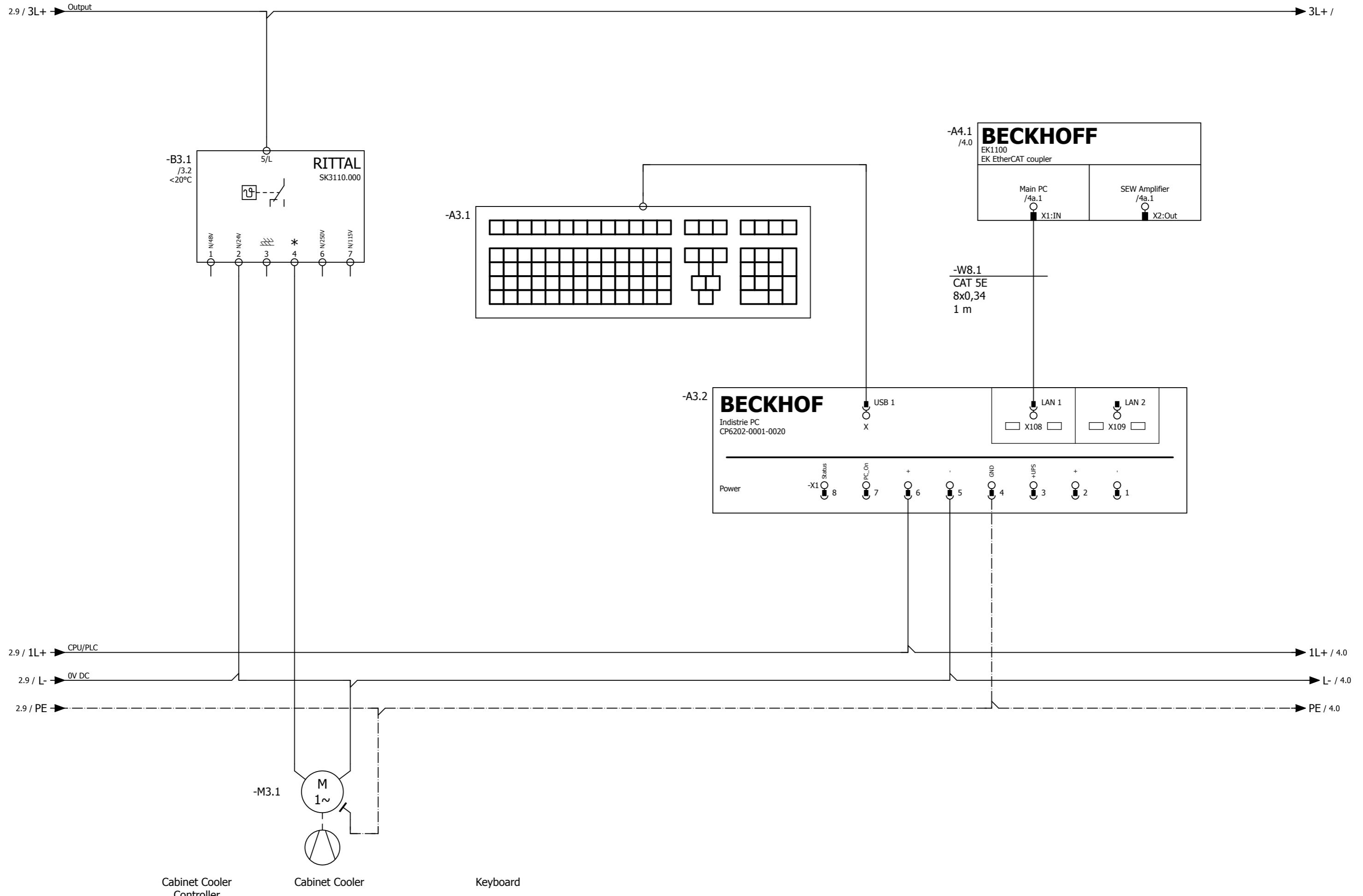
## Terminal Block Designation

-X0 --> Power supply  
-X1 --> 400 V AC Power output  
-X2 --> 230 V AC Voltage (enclosure)  
-X3 --> 24 V DC Control voltage (enclosure)  
-X4 --> Measuring value line  
-X5 --> Emergency off/Emergency stop  
-X6 --> 24 V DC Sensors/Power actuators  
-X7 --> 24 V DC Valve  
-X8 --> Bus line  
-X9 --> Pump controller  
-X10 --> Control switches and lamps  
-X11 --> Floating input  
-X12 --> Floating output  
-X14 --> Intrinsically safe input/output

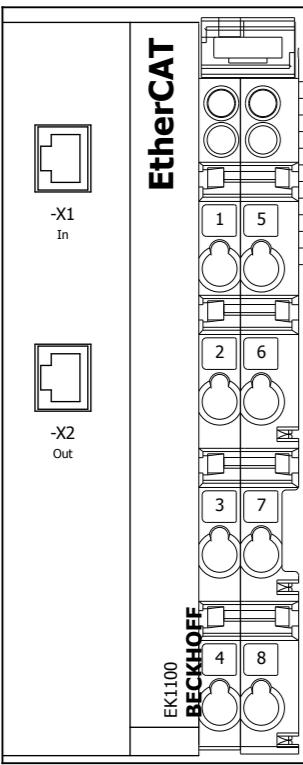
## Connector Designation

-X00 --> -/-  
-X01 --> 400 V AC Power output  
-X02 --> 230 V AC Voltage (enclosure)  
-X03 --> 24 V DC Control voltage (enclosure)  
-X04 --> Measuring value line  
-X05 --> Emergency off/Emergency stop  
-X06 --> 24 V DC Sensors/Power actuators  
-X07 --> 24 V DC Valve  
-X08 --> Bus line  
-X09 --> Pump controller  
-X10 --> Control switches and lamps  
-X11 --> Floating input  
-X12 --> Floating output  
-X14 --> Intrinsically safe input/output





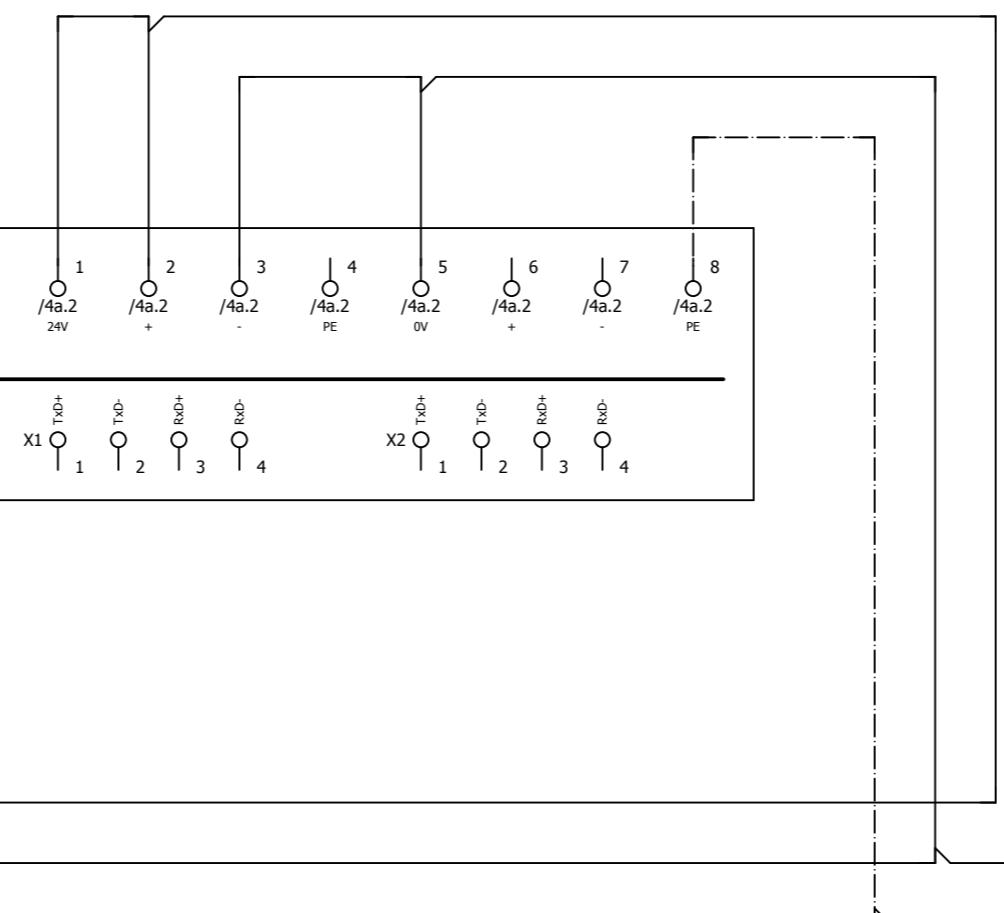
-A4.1  
/3.6  
/4.2  
/4a.0



-A4.1  
/4.0

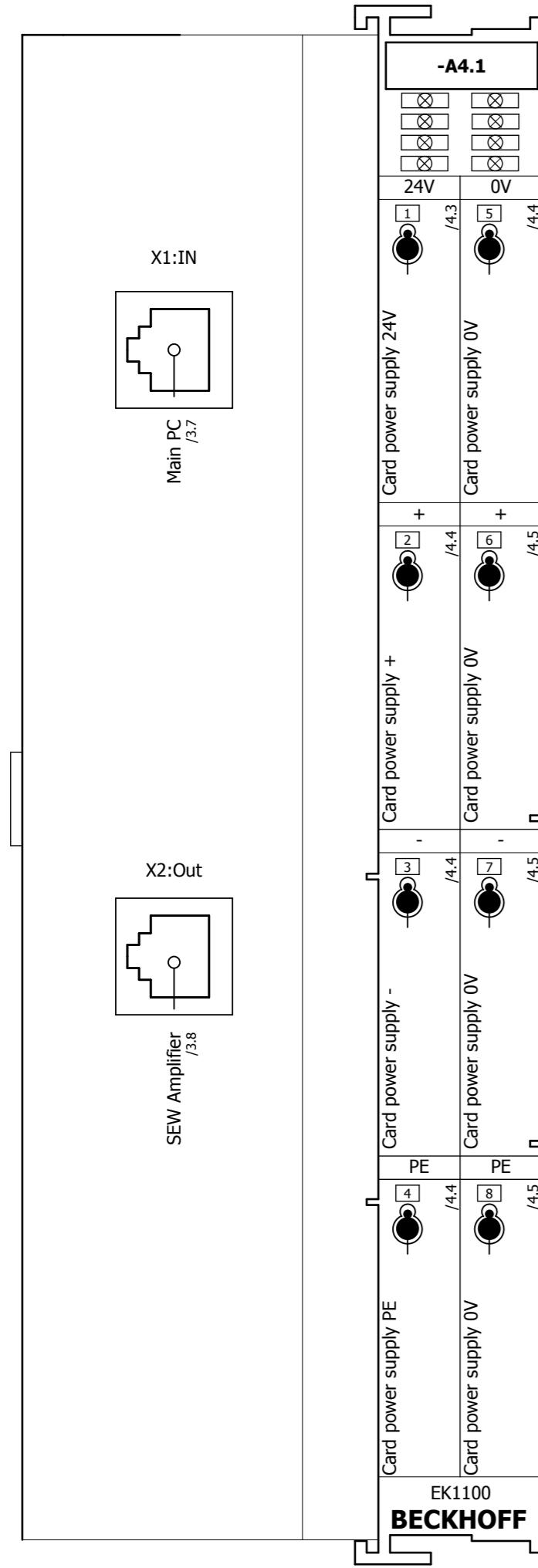
**BECKHOFF**

EK1100  
EK EtherCAT coupler

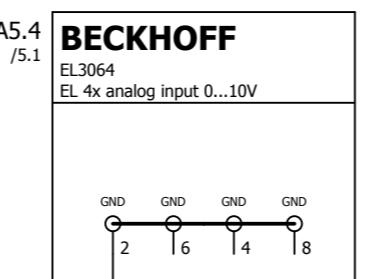
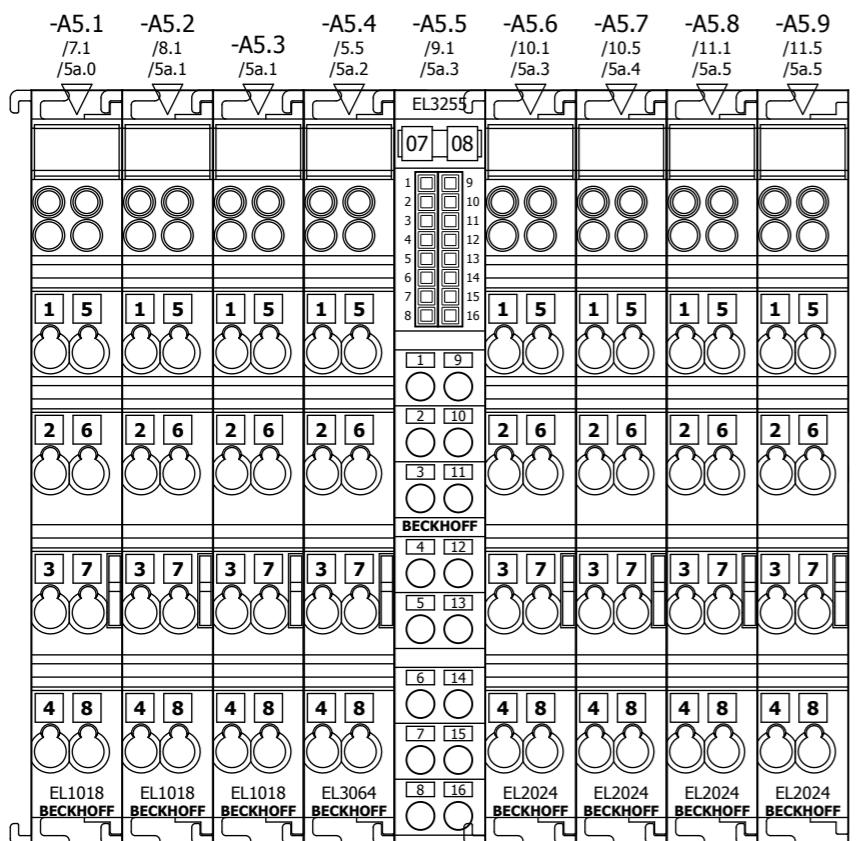


3.9 / 1L+ → CPU/PLC  
3.9 / L- → 0V DC → L- / 5.0  
3.9 / PE → PE / 5.0

EtherCAT Controller



Date	25.02.2013	Weatherford Langenhagen	Centralizer Test Tool PLC EtherCAT Controller	Part number:	02324572	= CT
Drn.	H. Armbrecht				+ CP	Control panel
Chk	See Windchill	Germany				
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



2.9 / 2L+ → Sensor → 2L+ / 7.0  
 4.9 / L- → 0V DC → L- / 10.0  
 4.9 / PE → PE /

8x Digital  
24 VDC Input  
8x Digital  
24 VDC Input  
8x Digital  
24 VDC Input  
4x Analog  
0...10V Input  
5x Input  
Resistor  
4x Digital  
24 VDC Output  
4x Digital  
24 VDC Output  
4x Digital  
24 VDC Output  
4x Digital  
24 VDC Output

4a

Date	25.02.2013	Weatherford
Drn.	H. Armbrecht	Langenhagen
Chk	See Windchill	Germany
Rev. No.	ECN-No.	App'd

See Windchill

Page size: A3 ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



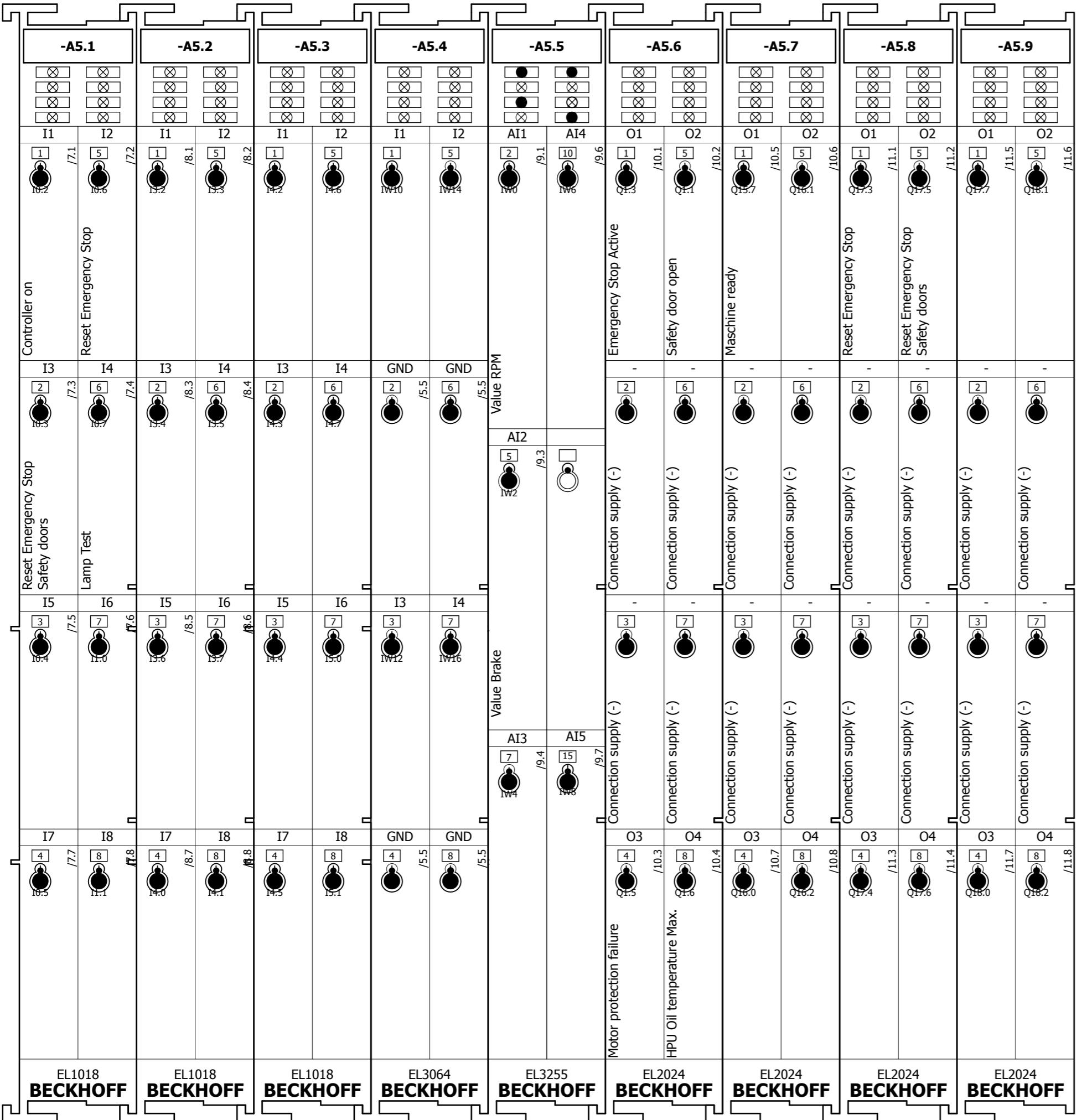
Centralizer Test Tool  
PLC  
Input

Part number: 02324572

= CT  
+ CP  
Control panel  
Page 5  
of 156

Rev.: Drawing number: 4\_22.5215

5a



		Date	25.02.2013	Weatherford
		Drn.	H. Armbrecht	Langenhagen
		Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd	See Windchill
				Page size: A3
				ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



## Centralizer Test Tool

### PLC

#### Input

er: 02324572

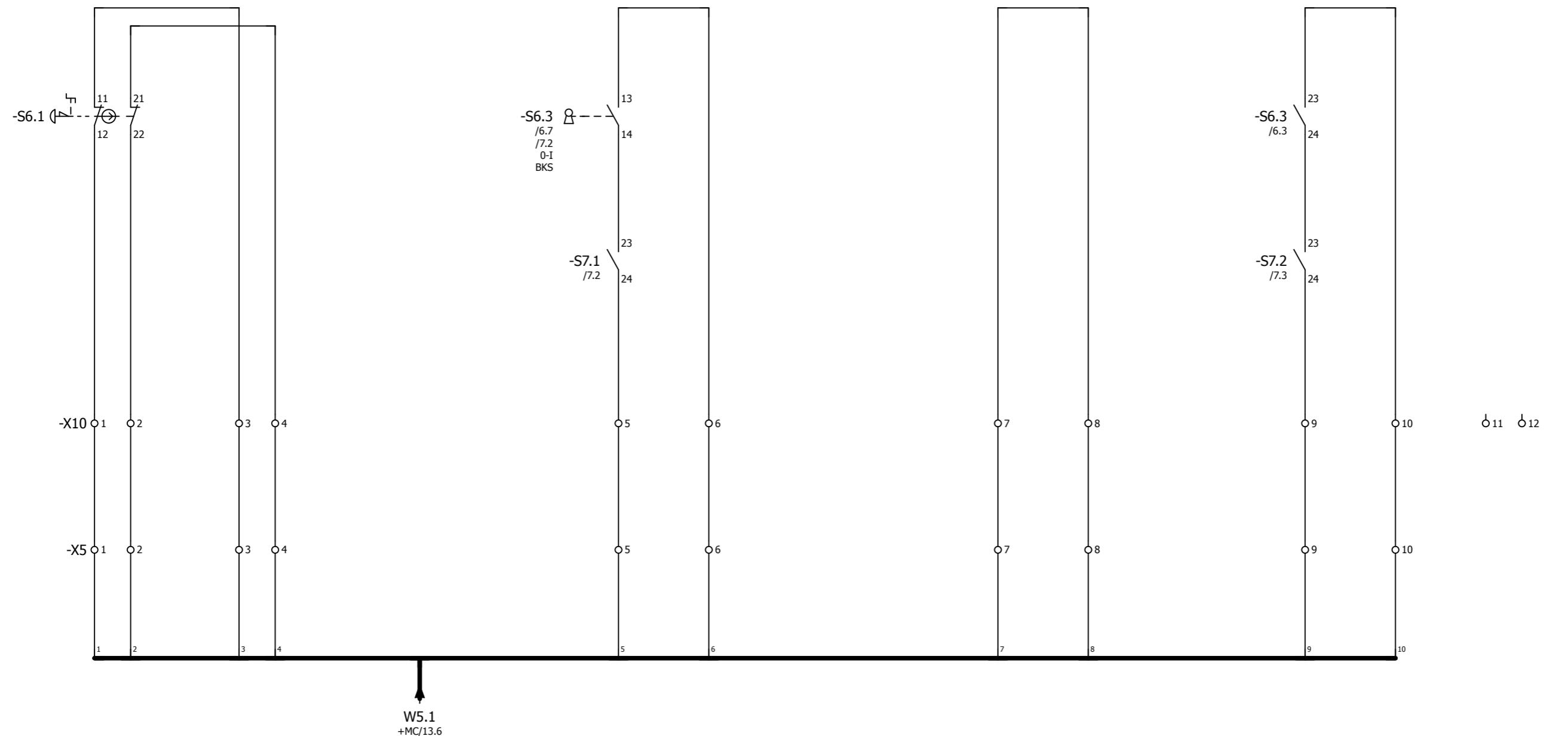
$$= CT$$

---

Contractual note

ent is C

5a



Emergency Stop  
Control desk

Reset  
Emergency Stop

Reset  
Safety door  
Override

Reset  
Emergency Stop  
Safety doors

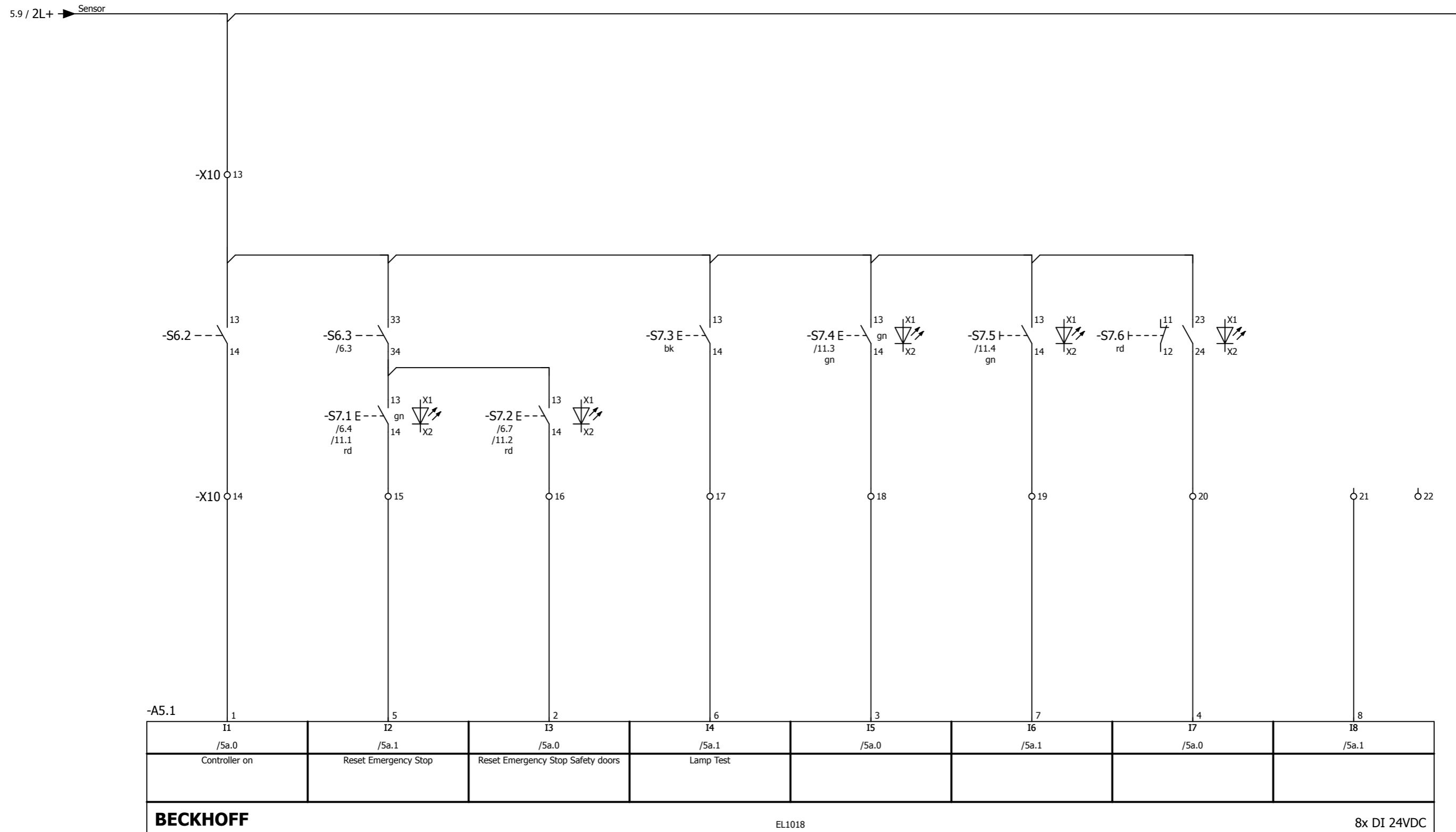
	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill



Centralizer Test Tool  
Emergency Stop

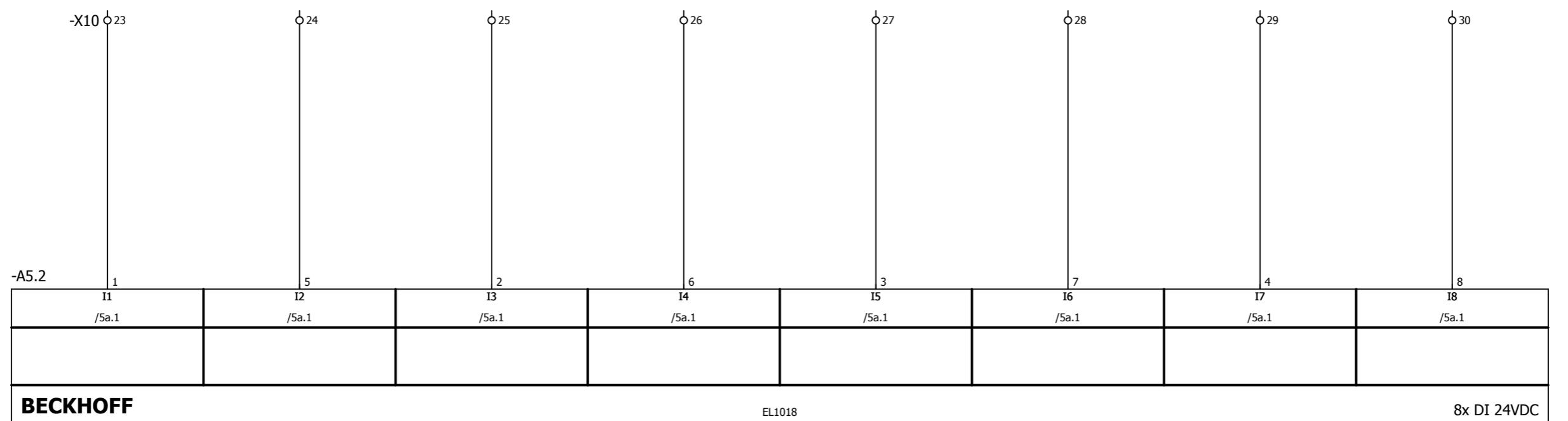
Part number: 02324572

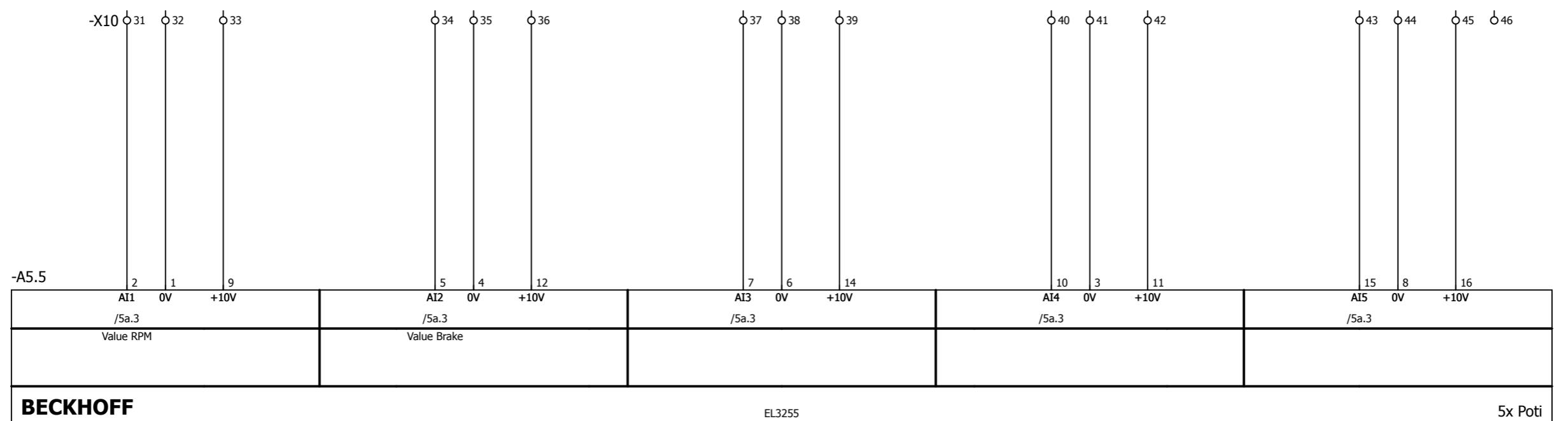
= CT  
+ CP  
Control panel



Controller on      Reset Emergency Stop      Reset Emergency Stop Safety doors      Lamp Test

7.9 / 2L+ Sensor → 2L+ /

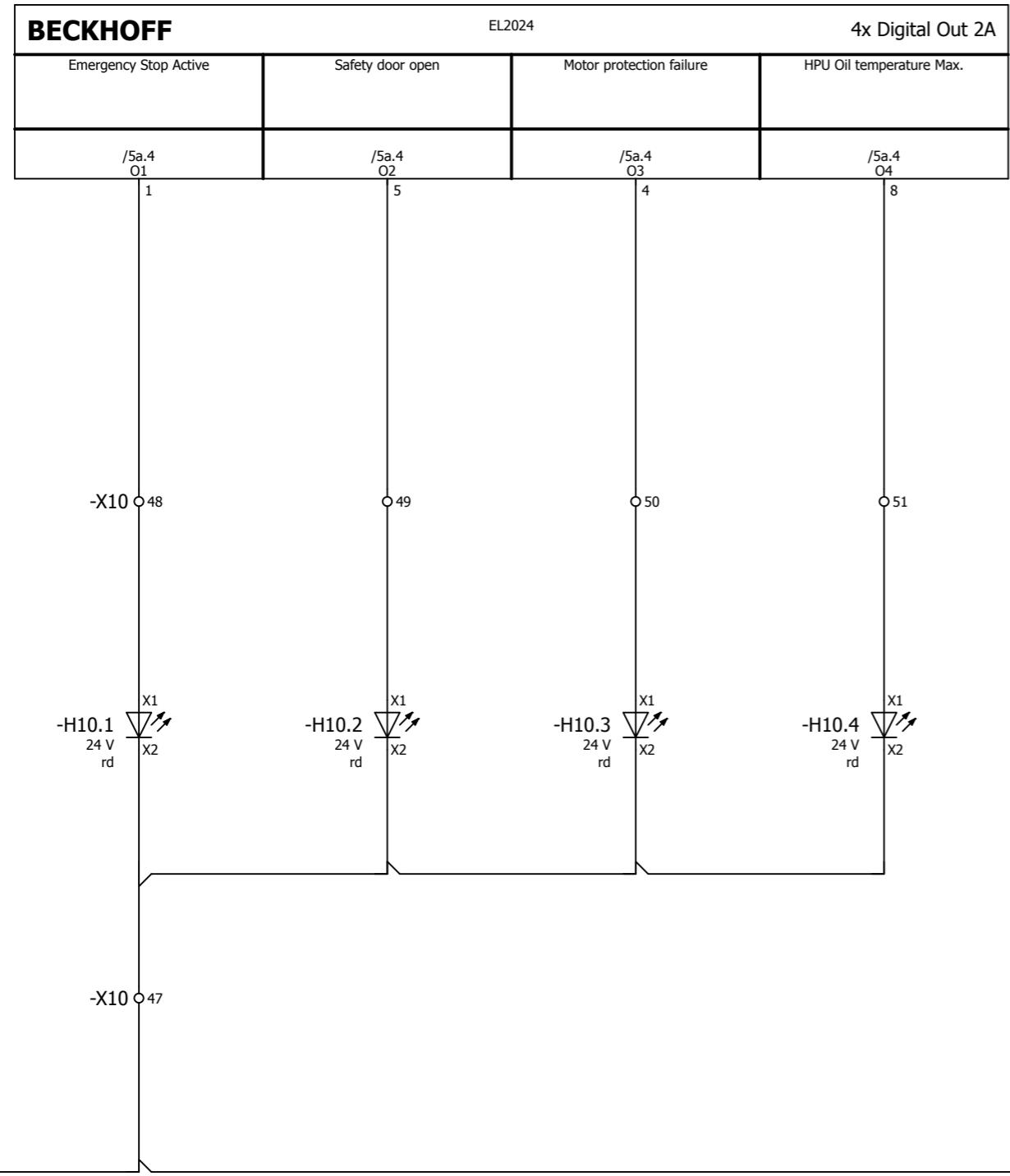


Value  
RPMValue  
Brake

Date	25.02.2013	Weatherford
Drn.	H. Armbrecht	Langenhagen
Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.



-A5.6



Emergency Stop Active

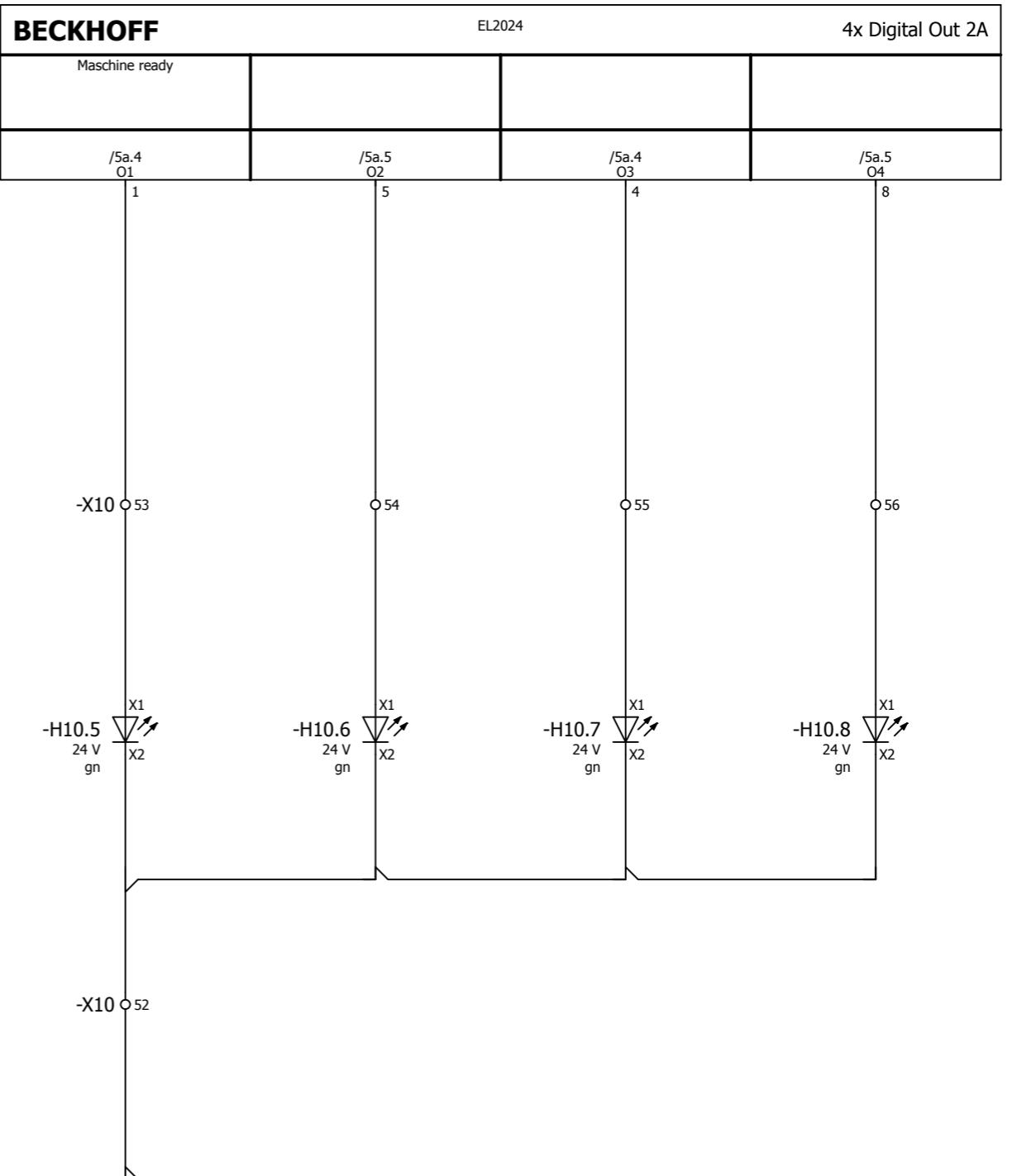
Safety door open

Motor protection failure

HPU Oil temperature Max.

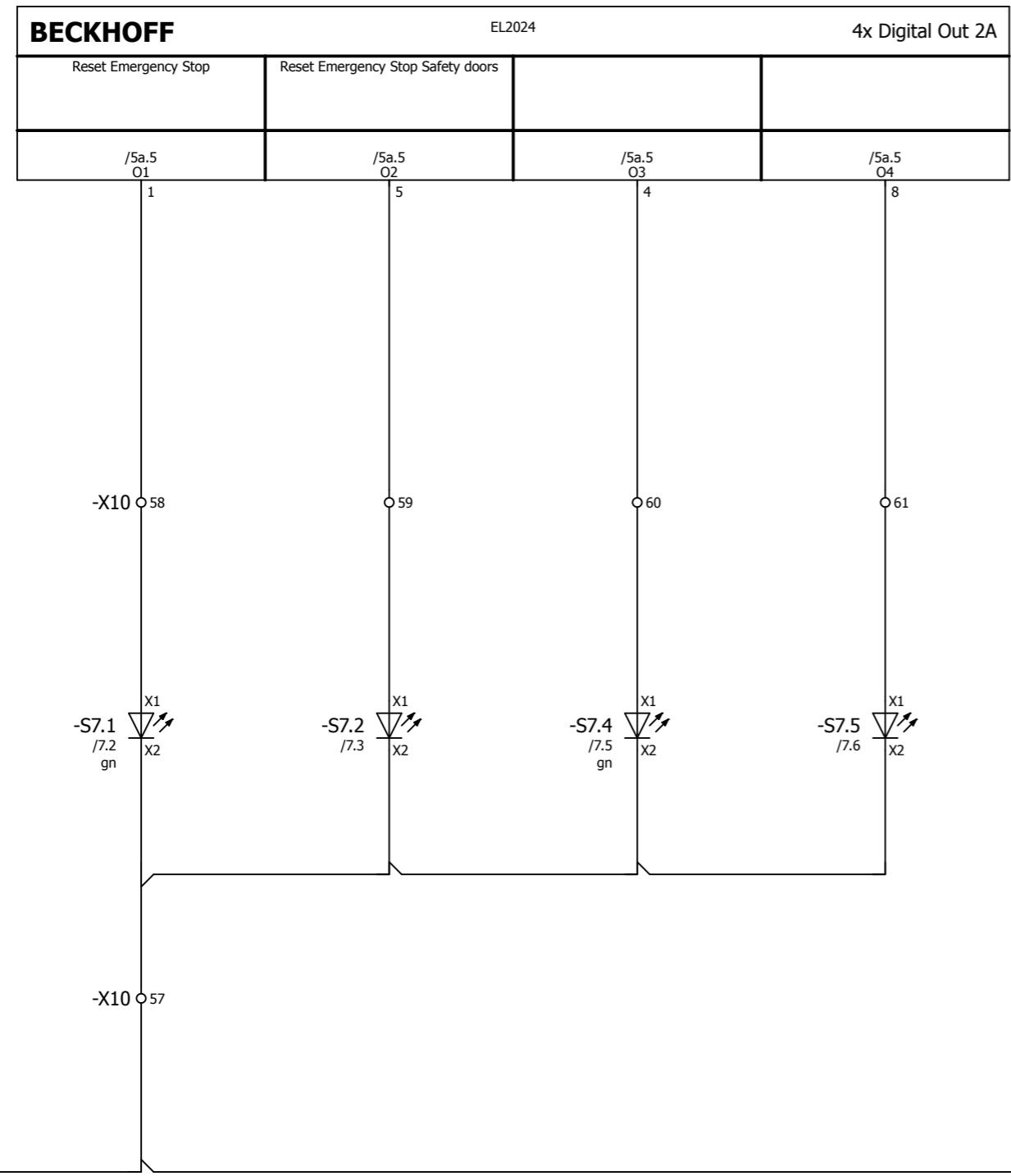
Maschine ready

-A5.7



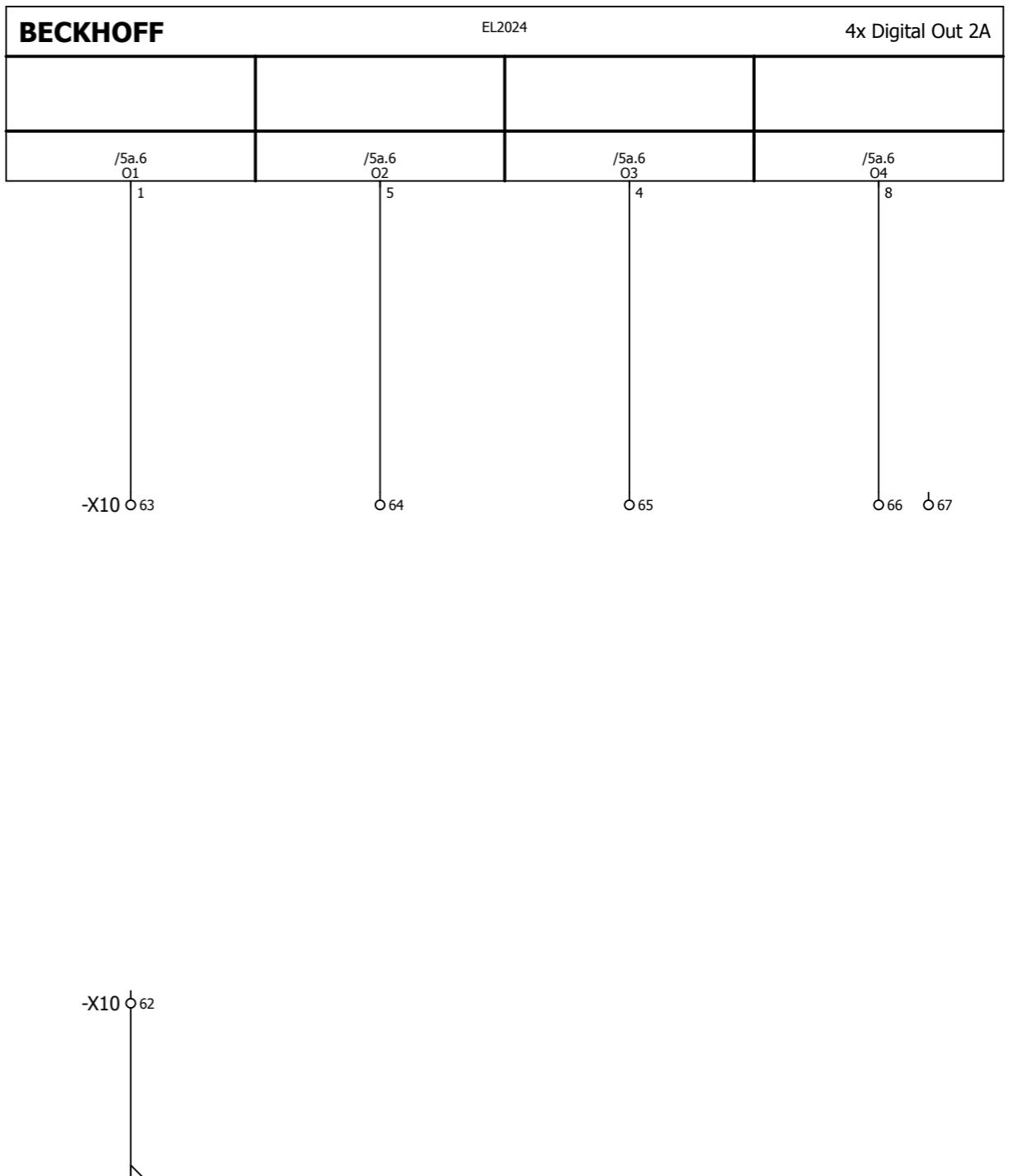
Date	25.02.2013	Weatherford Langenhagen Germany	Centralizer Test Tool Output Control light	Part number: 02324572	= CT
Drn.	H. Armbrecht				+ CP
Chk	See Windchill				Control panel
Rev. No.	ECN-No.	Drn.	App'd	Drawing number: 4_22.5215	Page 10 of 156
			See Windchill		
			Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4	

-A5.8



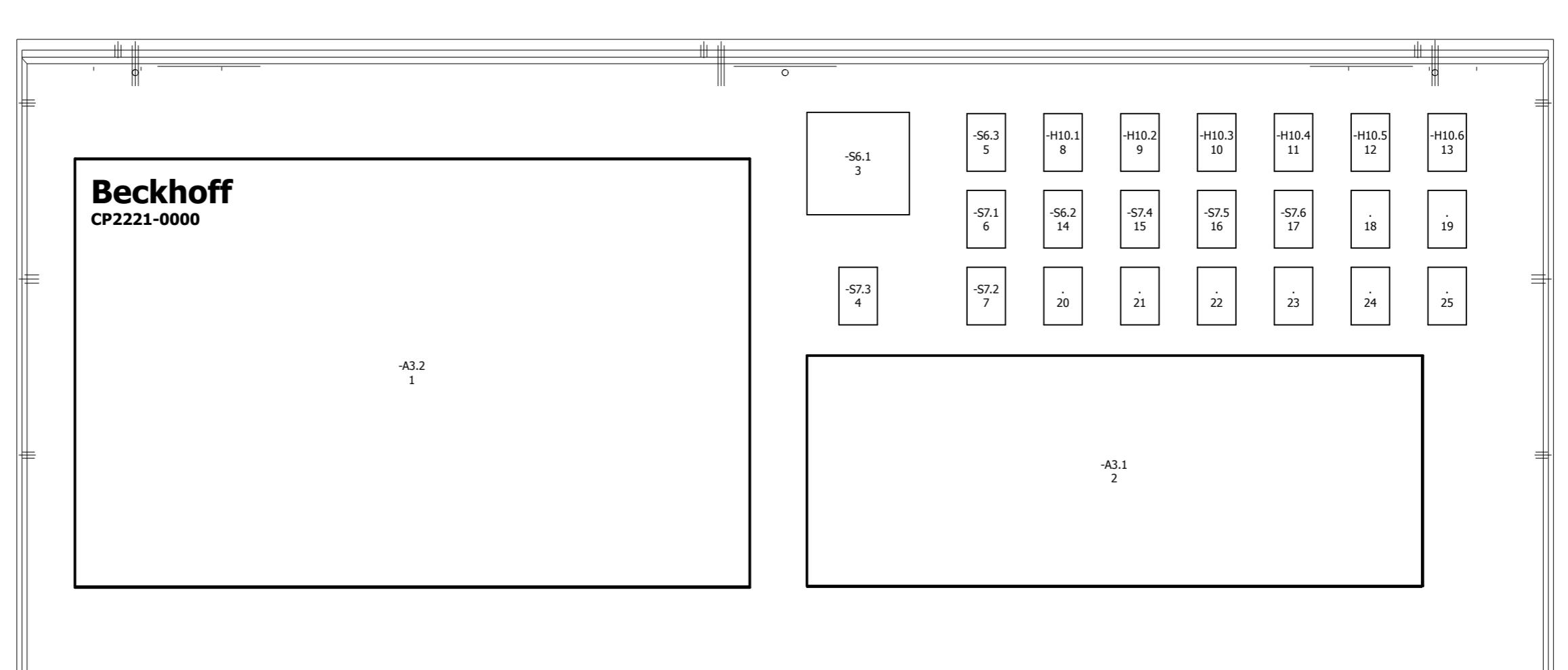
Reset  
Emergency Stop  
Reset  
Emergency Stop  
Safety doors

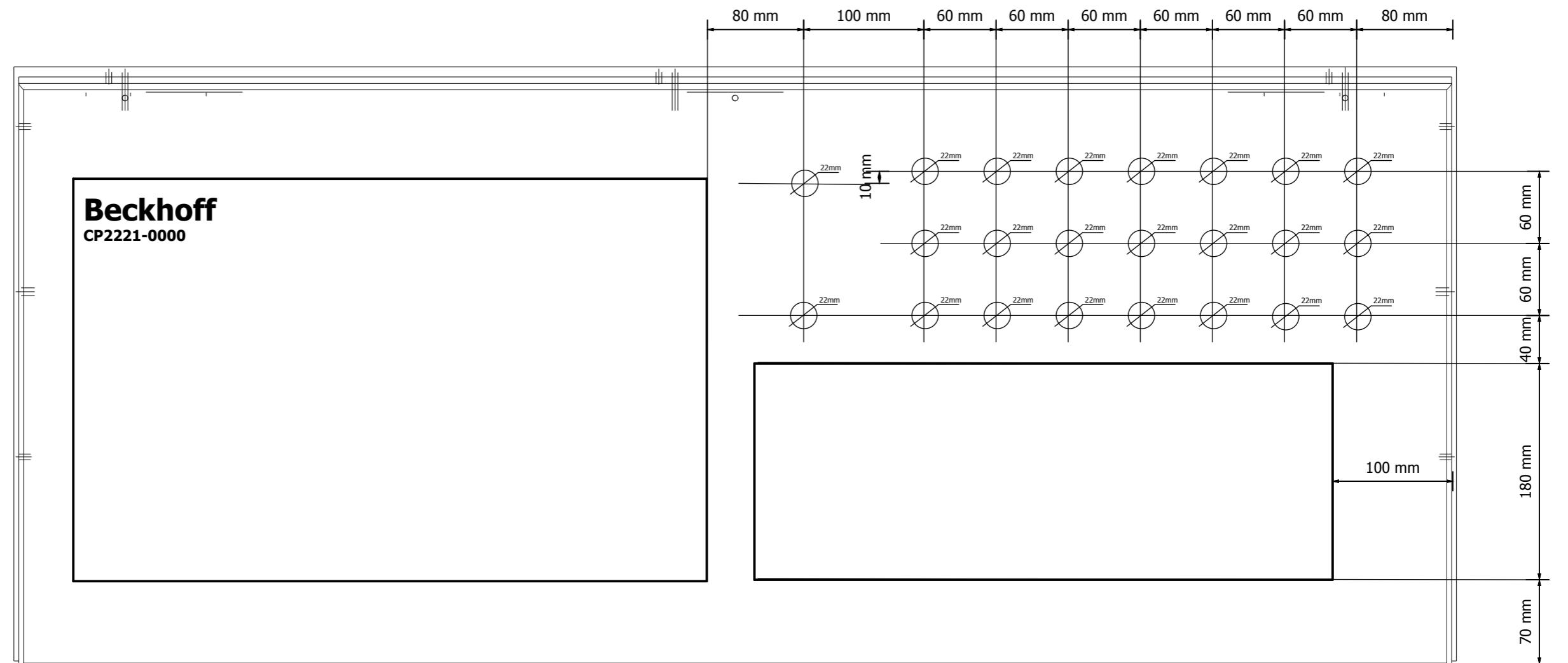
-A5.9



## Enclosure legend

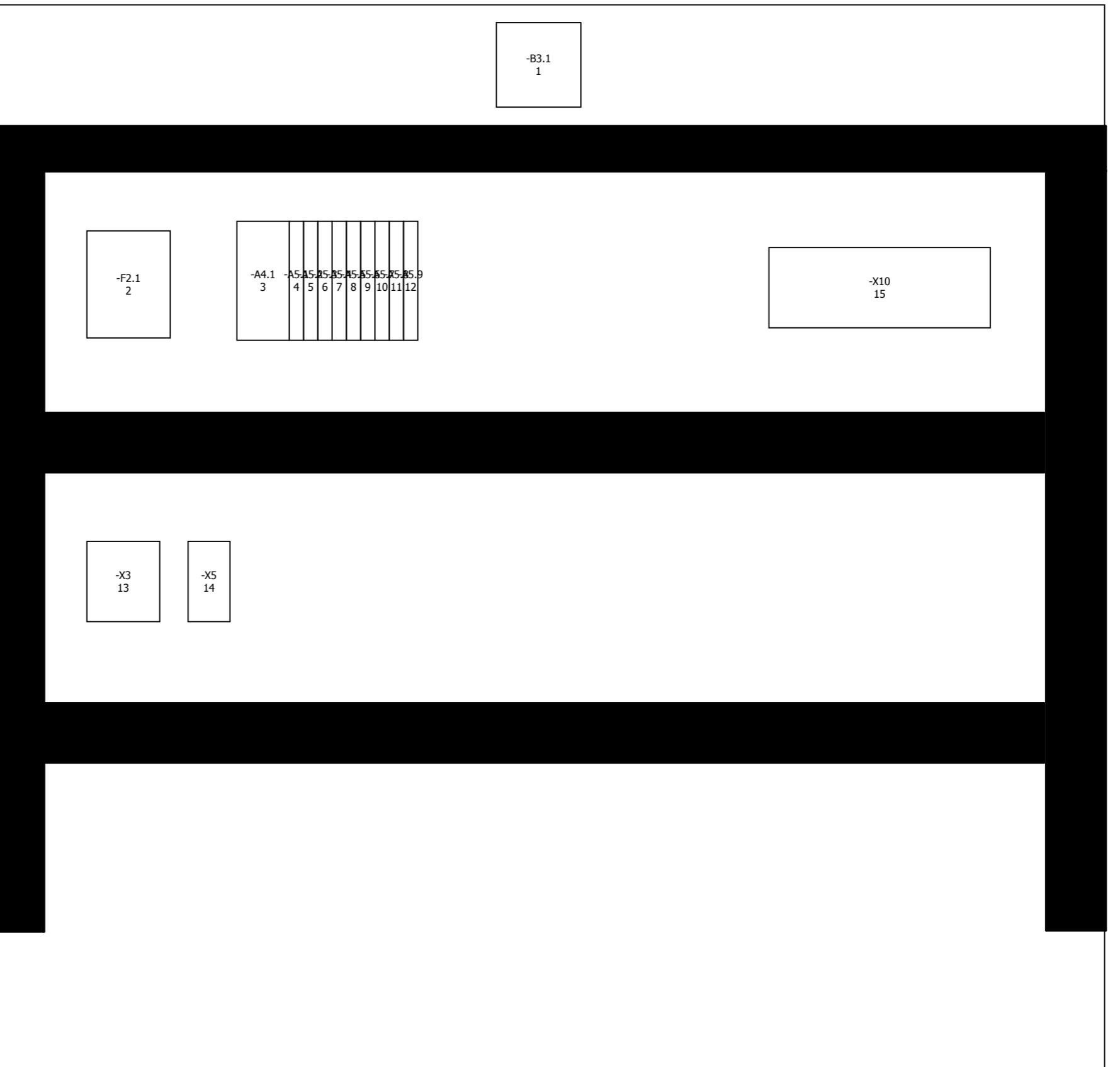
item number	device tag	function text
1	A3.2	
2	A3.1	Keyboard
3	S6.1	Emergency Stop Control desk
4	S7.3	Lamp Test
5	S6.3	Reset Emergency Stop Safety doors
6	S7.1	Reset Emergency Stop
7	S7.2	Reset Emergency Stop Safety doors
8	H10.1	Emergency Stop Active
9	H10.2	Safety door open
10	H10.3	Motor protection failure
11	H10.4	HPU Oil temperature Max.
12	H10.5	Maschine ready
13	H10.6	
14	S6.2	
15	S7.4	
16	S7.5	
17	S7.6	
18	.	
19	.	
20	.	
21	.	
22	.	
23	.	
24	.	
25	.	

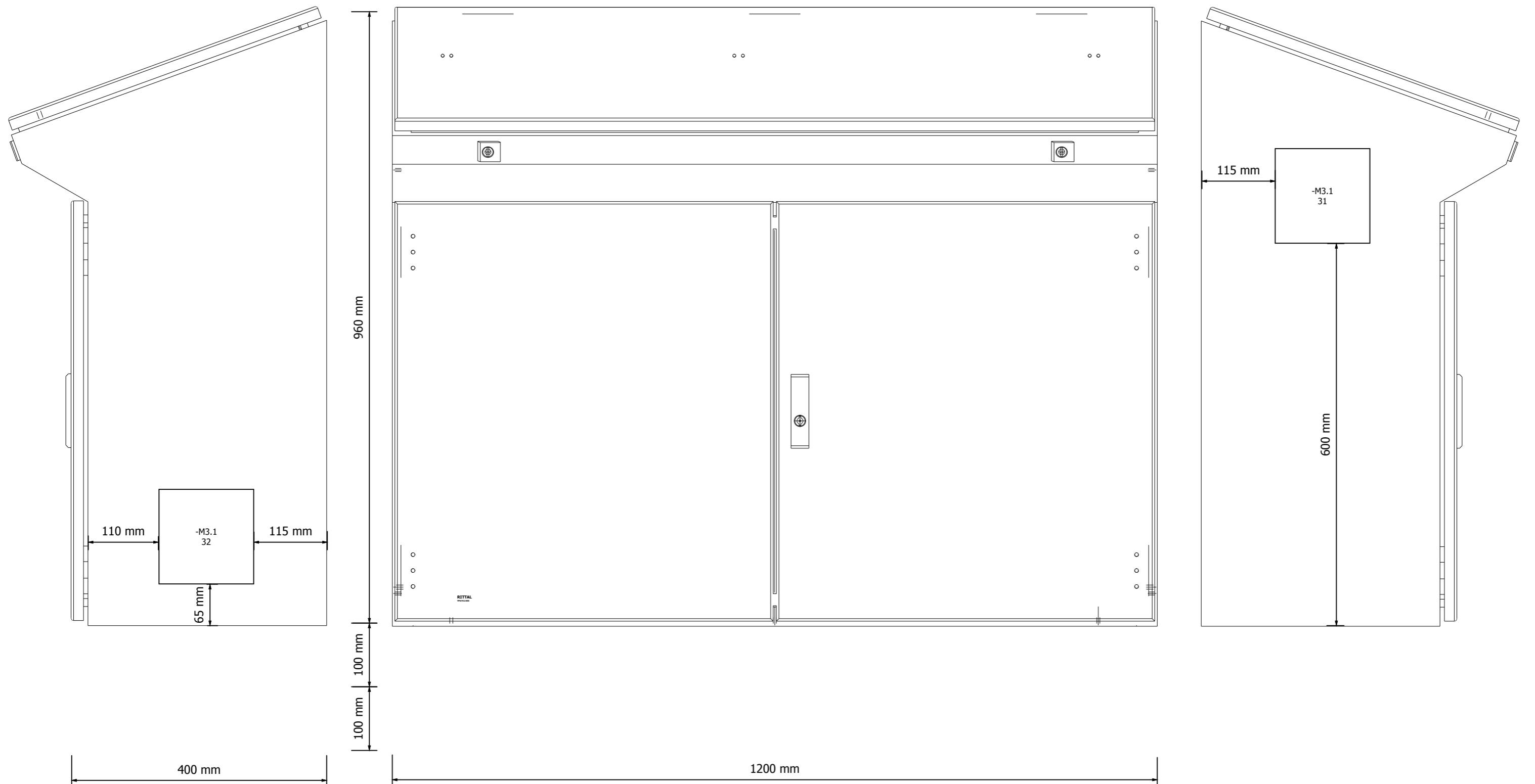




## Enclosure legend

item number	device tag	function text
1	B3.1	Cabinet Cooler Controller
2	F2.1	Fuse Block 24V DC
3	A4.1	EtherCAT Controller
4	A5.1	8x Digital 24 VDC Input
5	A5.2	8x Digital 24 VDC Input
6	A5.3	8x Digital 24 VDC Input
7	A5.4	4x Analog 0...10V Input
8	A5.5	5x Input Resistor
9	A5.6	4x Digital 24 VDC Output
10	A5.7	4x Digital 24 VDC Output
11	A5.8	4x Digital 24 VDC Output
12	A5.9	4x Digital 24 VDC Output
13	X3	
14	X5	Not-Sstop
15	X10	Bedienelemente
31	M3.1	Cabinet Cooler
32	M3.1	Cabinet Cooler





## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-A3.1	1 Piece	Keyboard for TPC	01295884	GETT	TKS-105c-TOUCH-MODUL-EP-PS/2-US KS18374	
-A3.1	1 Piece	USB - PS/2 adapter	01418745	BELKIN BELKIN	F5U119eaE 01418745	
-A4.1	1 Piece	EK EtherCAT coupler	01295183	BECKHOFF BECKHOFF	EK1100 EK1100	3
-A5.1	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	4
-A5.2	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	5
-A5.3	1 Piece	EL 8x Digital Input 24VDC	01322459	BECKHOFF BECKHOFF	EL1018 EL1018	6
-A5.4	1 Piece	EL 4x analog input 0...10V	01387542	BECKHOFF BECKHOFF	EL3064 EL3064	7
-A5.5	1 Piece	EL 5x Potentiometer	02049904	BECKHOFF BECKHOFF	EL3255 EL3255	8
-A5.6	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	9
-A5.7	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	10
-A5.8	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	11
-A5.9	1 Piece	EL 4x digital output 2A	01295195	BECKHOFF BECKHOFF	EL2024 EL2024	12
-B3.1	1 Piece	Enclosure internal thermostat	01037260	RITTAL	SK3110.000 SK3110.000	1
-F2.1	1 Piece	Load monitoring MICO 4.6	01298406	MURR MURR	MICO 4.6 9000-41034-0100600	2
-H10.1	1 Piece	Complete device, round, LED red	01329039	SIEMENS SIEMENS	3SB3244-6AA20 3SB3244-6AA20	8
-H10.2	1 Piece	Complete device, round, LED red	01329039	SIEMENS SIEMENS	3SB3244-6AA20 3SB3244-6AA20	9
-H10.3	1 Piece	Complete device, round, LED red	01329039	SIEMENS SIEMENS	3SB3244-6AA20 3SB3244-6AA20	10
-H10.4	1 Piece	Complete device, round, LED red	01329039	SIEMENS SIEMENS	3SB3244-6AA20 3SB3244-6AA20	11

## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-H10.5	1 Piece	Complete device, round, LED green	01329040	SIEMENS SIEMENS	3SB3244-6AA40 3SB3244-6AA40	12
-H10.6	1 Piece	Complete device, round, LED green	01329040	SIEMENS SIEMENS	3SB3244-6AA40 3SB3244-6AA40	13
-H10.7	1 Piece	Complete device, round, LED green	01329040	SIEMENS SIEMENS	3SB3244-6AA40 3SB3244-6AA40	
-H10.8	1 Piece	Complete device, round, LED green	01329040	SIEMENS SIEMENS	3SB3244-6AA40 3SB3244-6AA40	
-M3.1	1 Piece	Fan-and-filter unit, 55 m³/h 24 V DC, RAL 7035	01797385	RITTAL	SK3238.124 SK3238.124	31
-M3.1	1 Piece	Outlet filter RAL 7035 for fan-and-filter units 3322.xxx	01842072	RITTAL	SK3238.200 SK3238.200	32
-M17.1	1 Piece	Consoles TP6742.500 (1200x960x400 bxhxt)	Rittal_TP6742.500	RITTAL RITTAL	TP6742.500 TP6742.500	
-M17.1	2 ST	TS extrusion for cable entry	01960278	RITTAL RITTAL	TS.8802120 8802120	
-M17.1	2 Stück	Socket Front Rear	RIT.TS8601200	RITTAL RITTAL	TS8601200 TS8601200	
-M17.1	2 Piece	Base/plinth trim side, 100 mm high	01960281	RITTAL RITTAL	TS8601.040 TS8601.040	
-S6.1	1 Piece	EMS pushbutton red complete +1NO +1NC	01283235	SIEMENS SIEMENS	3SB3201-1HA20-0CC0 3SB3201-1HA20-0CC0	3
-S6.1	1 Piece	Contact block for 3SB3, 1NC	01044907	SIEMENS SIEMENS	3SB3400-0C 3SB3400-0C	
-S6.2	1 Piece	Keyswitch CES 22mm touch-0-lock	01298450	SIEMENS SIEMENS	3SB3 BKS KEY 3SB3000-4SD01	14
-S6.3	1 Piece	Keyswitch BKS 22mm 0-1	01242151	SIEMENS SIEMENS	3SB3000-5AD01 3SB3000-5AD01	5
-S6.3	2 Piece	Contact block for 3SB3, 2NO	01044906	SIEMENS SIEMENS	3SB3400-0D 3SB3400-0D	
-S6.3	1 Piece	Holder Plate f. Poti 12,5x27mm	01036512	SIEMENS SIEMENS	3SB3922-0AW 3SB3922-0AW	
-S6.3	1 Piece	Inscription Plate 12,5x27mm	01037477	SIEMENS SIEMENS	3SB3902-1AA 3SB3902-1AA	
-S7.1	1 Piece	Button red, Complete device, round, pushbutton +1NO +1NC +LED	01387541	SIEMENS SIEMENS	3SB3247-0AA21 3SB3247-0AA21	6

## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-S7.1	1 Piece	Contact block for 3SB3, 2NO	01044906	SIEMENS SIEMENS	3SB3400-0D 3SB3400-0D	
-S7.2	1 Piece	Button red, Complete device, round, pushbutton +1NO +1NC +LED	01387541	SIEMENS SIEMENS	3SB3247-0AA21 3SB3247-0AA21	7
-S7.2	1 Piece	Contact block for 3SB3, 2NO	01044906	SIEMENS SIEMENS	3SB3400-0D 3SB3400-0D	
-S7.3	1 Piece	Button black, Complete device, round, pushbutton	01220076	SIEMENS SIEMENS	3SB3201-0AA11 3SB3201-0AA11	4
-S7.4	1 Piece	Button green, Complete device, round, pushbutton +1NO +LED	01329035	SIEMENS SIEMENS	3SB3245-0AA41 3SB3245-0AA41	15
-S7.5	1 Piece	Button green, Complete device, round, pushbutton +1NO +LED	01329035	SIEMENS SIEMENS	3SB3245-0AA41 3SB3245-0AA41	16
-S7.6	1 Piece	Button red, Complete device, round, pushbutton +1NO +1NC +LED	01387541	SIEMENS SIEMENS	3SB3247-0AA21 3SB3247-0AA21	17
-W8.1	1 m 1 m	Patch-Cable S-FTP 1,0M CAT.5E	01033241	LAPP LAPP	Patch-Cable CE6648	
-X3	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X3	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X3	8 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X3	1 Piece	Ground modular terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG: 28 - 12	01032859	PHOENIX PHOENIX	STTB 2,5-PE 3036026	
-X5	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X5	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X5	5 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-X10	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X10	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X10	33 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>BECKHOFF</b>					
	1 0	01295183	EK EtherCAT coupler	EK1100	EK1100
	3 0	01322459	EL 8x Digital Input 24VDC	EL1018	EL1018
	1 0	01387542	EL 4x analog input 0...10V	EL3064	EL3064
	1 0	02049904	EL 5x Potentiometer	EL3255	EL3255
	4 0	01295195	EL 4x digital output 2A	EL2024	EL2024
<b>BELKIN</b>					
	1 0	01418745	USB - PS/2 adapter	01418745	F5U119eaE
<b>GETT</b>					
	1 0	01295884	Keyboard for TPC	KS18374	TKS-105c-TOUCH-MODUL-EP-PS/2-US
<b>LAPP</b>					
	1 1 m	01033241	Patch-Cable S-FTP 1,0M CAT.5E	CE6648	Patch-Cable
<b>MURR</b>					
	1 0	01298406	Load monitoring MICO 4.6	9000-41034-0100600	MICO 4.6
<b>PHOENIX</b>					
	3 0	01035500	End cover	3030459	D-STTB 2,5
	6 0	01032675	End bracket	1421659	E/MK 1
	46 0	01036504	Feed through terminal	3031270	STTB 2,5
	1 0	01032859	Ground modular terminal	3036026	STTB 2,5-PE
<b>RITTAL</b>					
	1 0	01037260	Enclosure internal thermostat	SK3110.000	SK3110.000
	1 0	01797385	Fan-and-filter unit, 55 m³/h 24 V DC, RAL 7035	SK3238.124	SK3238.124
	1 0	01842072	Outlet filter RAL 7035 for fan-and-filter units 3322.xxx	SK3238.200	SK3238.200
	1 0	Rittal_TP6742.500	Consoles TP6742.500 (1200x960x400 bxhxt)	TP6742.500	TP6742.500
	2 0	01960278	TS extrusion for cable entry	8802120	TS.8802120
	2 0	RIT.TS8601200	Socket Front Rear	TS8601200	TS8601200
	2 0	01960281	Base/plinth trim side, 100 mm high	TS8601.040	TS8601.040

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>SIEMENS</b>					
	4 0	01329039	Complete device, round, LED red	3SB3244-6AA20	3SB3244-6AA20
	4 0	01329040	Complete device, round, LED green	3SB3244-6AA40	3SB3244-6AA40
	1 0	01283235	EMS pushbutton red complete +1NO +1NC	3SB3201-1HA20-0CC0	3SB3201-1HA20-0CC0
	1 0	01044907	Contact block for 3SB3, 1NC	3SB3400-0C	3SB3400-0C
	1 0	01298450	Keyswitch CES 22mm touch-0-lock	3SB3000-4SD01	3SB3 BKS KEY
	1 0	01242151	Keyswitch BKS 22mm 0-1	3SB3000-5AD01	3SB3000-5AD01
	4 0	01044906	Contact block for 3SB3, 2NO	3SB3400-0D	3SB3400-0D
	1 0	01036512	Holder Plate f. Poti 12,5x27mm	3SB3922-0AW	3SB3922-0AW
	1 0	01037477	Inscription Plate 12,5x27mm	3SB3902-1AA	3SB3902-1AA
	3 0	01387541	Button red, Complete device, round, pushbutton +1NO +1NC +LED	3SB3247-0AA21	3SB3247-0AA21
	1 0	01220076	Button black, Complete device, round, pushbutton	3SB3201-0AA11	3SB3201-0AA11
	2 0	01329035	Button green, Complete device, round, pushbutton +1NO +LED	3SB3245-0AA41	3SB3245-0AA41

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

Phone : +49 511 7702-0

Fax.: +49 511 7702-125



**Weatherford®**

**Customer:** Weatherford

Type/Serial No.: Centralizer Test Tool

Assembly: =CT +HP1

Year of manufacture: 2014

Drawing number: 4\_22.5215

Part number: 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz

Mains current: A

Control voltage 1: 230 V AC

Control voltage 2: 24 V DC

Control voltage 3: 0...10 V DC

## Line Color

Main circuit (L): BK (black)

Neutral conductor: BU (light blue)

Control voltage 230 V AC: RD (red)

Control voltage 24 V DC: BU (dark blue)

Sensor: WH (white)

Ground wire: GNYE (green-yellow)

Floating distance: OR (orange)

## Terminal Block Designation

-X0 --> Power supply

-X1 --> 400 V AC Power output

-X2 --> 230 V AC Voltage (enclosure)

-X3 --> 24 V DC Control voltage (enclosure)

-X4 --> Measuring value line

-X5 --> Emergency off/Emergency stop

-X6 --> 24 V DC Sensors/Power actuators

-X7 --> 24 V DC Valve

-X8 --> Bus line

-X9 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

## Connector Designation

-X00 --> -/-

-X01 --> 400 V AC Power output

-X02 --> 230 V AC Voltage (enclosure)

-X03 --> 24 V DC Control voltage (enclosure)

-X04 --> Measuring value line

-X05 --> Emergency off/Emergency stop

-X06 --> 24 V DC Sensors/Power actuators

-X07 --> 24 V DC Valve

-X08 --> Bus line

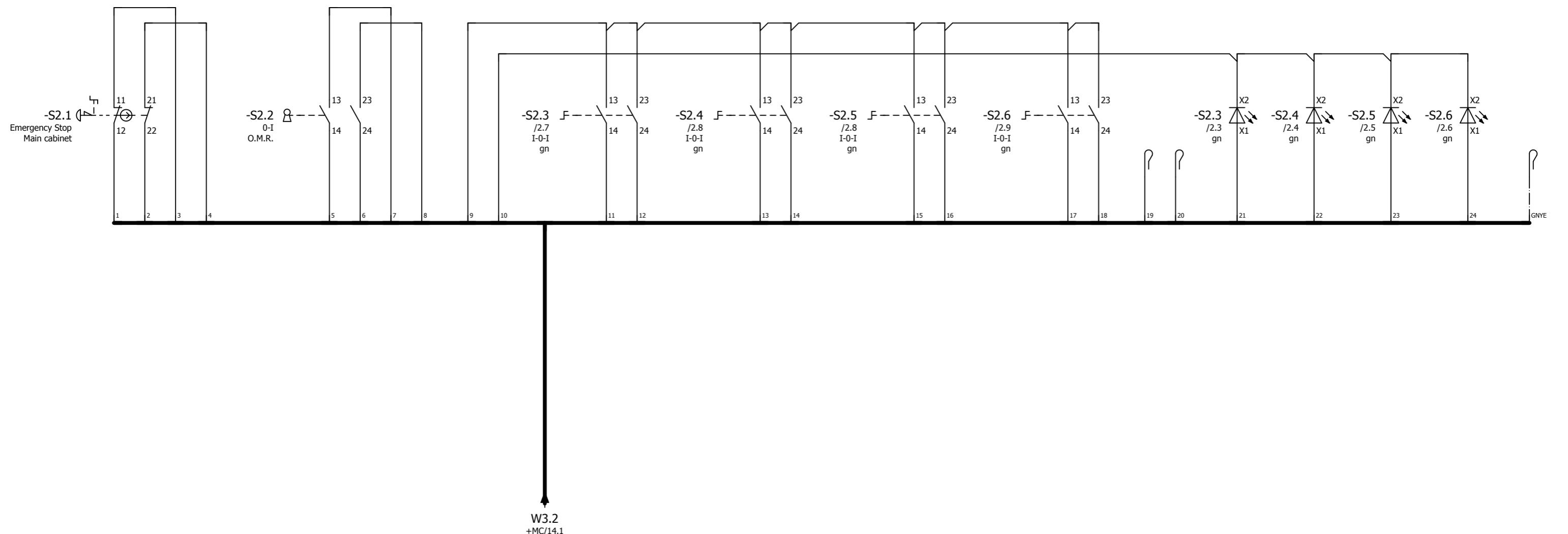
-X09 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output



Emergency Stop

Safety door  
OverrideServomotor Shaft  
Forward/BackwardElectro cylinder  
Forward/BackwardHydraulic cylinder  
Forward/Backward

Servomotor Shaft

Electro cylinder

Hydraulic cylinder

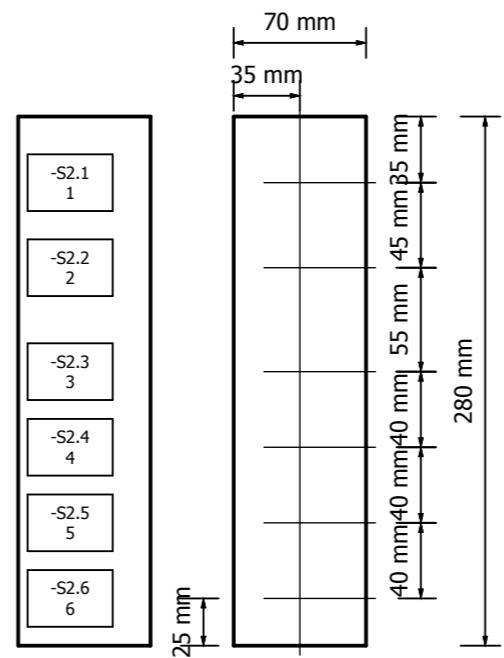
		Date	25.02.2013	Weatherford Langenhagen Germany	 Centralizer Test Tool Sensors Table device	Part number:	02324572	= CT
		Drn.	H. Armbrecht			+ HP1		Hand Panel 1
		Chk	See Windchill					
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4	Rev.:	Drawing number: 4_22.5215
							Page 2 of 156	

## Enclosure legend

item number	device tag	function text
1	S2.1	Emergency Stop Main cabinet
2	S2.2	Safety door Override
3	S2.3	Servomotor Shaft Forward/Backward
4	S2.4	Electro cylinder Forward/Backward
5	S2.5	Hydraulic cylinder Forward/Backward
6	S2.6	



PILOT 30



## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-S2.1	1 Piece	EMS pushbutton red complete +1NO +1NC	01283235	SIEMENS SIEMENS	3SB3201-1HA20-0CC0 3SB3201-1HA20-0CC0	1
-S2.1	1 Piece	Contact block for 3SB3, 1NC	01044907	SIEMENS SIEMENS	3SB3400-0C 3SB3400-0C	
-S2.2	1		3SB3000-3AH01			2
-S2.2	2 Piece	Contact block for 3SB3, 2NO	01044906	SIEMENS SIEMENS	3SB3400-0D 3SB3400-0D	
-S2.2	1 Piece	Holder Plate f. Poti 12,5x27mm	01036512	SIEMENS SIEMENS	3SB3922-0AW 3SB3922-0AW	
-S2.2	1 Piece	Inscription Plate 12,5x27mm	01037477	SIEMENS SIEMENS	3SB3902-1AA 3SB3902-1AA	
-S2.3	1 Piece	Selector Swich Illuminated green, I-0-II spring return, metal	3SB3501-2EA41	SIEMENS SIEMENS	3SB3501-2EA41 3SB3501-2EA41	3
-S2.3	1 Piece	Holder Terminal with LED green for 3SB3	01740433	SIEMENS SIEMENS	3SB3403-1PC 3SB3403-1PC	
-S2.3	2 Piece	Contact block for 3SB3, 1NO	01036520	SIEMENS SIEMENS	3SB3400-0B 3SB3400-0B	
-S2.3	1 Piece	Inscription Plate 12,5x27mm	01037477	SIEMENS SIEMENS	3SB3902-1AA 3SB3902-1AA	
-S2.3	1 Piece	Holder Plate f. Switch and Lamp 12,5x27mm	01036511	SIEMENS SIEMENS	3SB3922-0AV 3SB3922-0AV	
-S2.4	1 Piece	Selector Swich Illuminated green, I-0-II spring return, metal	3SB3501-2EA41	SIEMENS SIEMENS	3SB3501-2EA41 3SB3501-2EA41	4
-S2.4	1 Piece	Holder Terminal with LED green for 3SB3	01740433	SIEMENS SIEMENS	3SB3403-1PC 3SB3403-1PC	
-S2.4	2 Piece	Contact block for 3SB3, 1NO	01036520	SIEMENS SIEMENS	3SB3400-0B 3SB3400-0B	
-S2.4	1 Piece	Inscription Plate 12,5x27mm	01037477	SIEMENS SIEMENS	3SB3902-1AA 3SB3902-1AA	
-S2.4	1 Piece	Holder Plate f. Switch and Lamp 12,5x27mm	01036511	SIEMENS SIEMENS	3SB3922-0AV 3SB3922-0AV	
-S2.5	1 Piece	Selector Swich Illuminated green, I-0-II spring return, metal	3SB3501-2EA41	SIEMENS SIEMENS	3SB3501-2EA41 3SB3501-2EA41	5
-S2.5	1 Piece	Holder Terminal with LED green for 3SB3	01740433	SIEMENS SIEMENS	3SB3403-1PC 3SB3403-1PC	

# Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-S2.5	2 Piece	Contact block for 3SB3, 1NO	01036520	SIEMENS SIEMENS	3SB3400-0B 3SB3400-0B	
-S2.5	1 Piece	Inscription Plate 12,5x27mm	01037477	SIEMENS SIEMENS	3SB3902-1AA 3SB3902-1AA	
-S2.5	1 Piece	Holder Plate f. Switch and Lamp 12,5x27mm	01036511	SIEMENS SIEMENS	3SB3922-0AV 3SB3922-0AV	
-S2.6	1 Piece	Selector Swich Illuminated green, I-0-II spring return, metal	3SB3501-2EA41	SIEMENS SIEMENS	3SB3501-2EA41 3SB3501-2EA41	6
-S2.6	1 Piece	Holder Terminal with LED green for 3SB3	01740433	SIEMENS SIEMENS	3SB3403-1PC 3SB3403-1PC	
-S2.6	2 Piece	Contact block for 3SB3, 1NO	01036520	SIEMENS SIEMENS	3SB3400-0B 3SB3400-0B	
-S2.6	1 Piece	Inscription Plate 12,5x27mm	01037477	SIEMENS SIEMENS	3SB3902-1AA 3SB3902-1AA	
-S2.6	1 Piece	Holder Plate f. Switch and Lamp 12,5x27mm	01036511	SIEMENS SIEMENS	3SB3922-0AV 3SB3922-0AV	

Date	25.02.2013	Weatherford Langenhagen Germany
Drn.	H. Armbrecht	
Chk	See Windchill	
Rev. No.	ECN-No.	Drn.



Centralizer Test Tool  
Parts list : 01036520 - 01036511

Part number: 02324572

= CT  
+ HP1  
Hand Panel 1  
Page 17  
of 156

Drawing number: 4\_22.5215

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
	1 0	3SB3000-3AH01			
SIEMENS					
	1 0	01283235	EMS pushbutton red complete +1NO +1NC	3SB3201-1HA20-0CC0	3SB3201-1HA20-0CC0
	1 0	01044907	Contact block for 3SB3, 1NC	3SB3400-0C	3SB3400-0C
	2 0	01044906	Contact block for 3SB3, 2NO	3SB3400-0D	3SB3400-0D
	1 0	01036512	Holder Plate f. Poti 12,5x27mm	3SB3922-0AW	3SB3922-0AW
	5 0	01037477	Inscription Plate 12,5x27mm	3SB3902-1AA	3SB3902-1AA
	4 0	3SB3501-2EA41	Selector Swich Illuminated green, I-0-II spring return, metal	3SB3501-2EA41	3SB3501-2EA41
	4 0	01740433	Holder Terminal with LED green for 3SB3	3SB3403-1PC	3SB3403-1PC
	8 0	01036520	Contact block for 3SB3, 1NO	3SB3400-0B	3SB3400-0B
	4 0	01036511	Holder Plate f. Switch and Lamp 12,5x27mm	3SB3922-0AV	3SB3922-0AV

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

Phone : +49 511 7702-0

Fax.: +49 511 7702-125



**Weatherford®**

**Customer:** Weatherford

Type/Serial No.: Centralizer Test Tool

Assembly: =CT +TD

Year of manufacture: 2014

Drawing number: 4\_22.5215

Part number: 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz

Mains current: A

Control voltage 1: 230 V AC

Control voltage 2: 24 V DC

Control voltage 3: 0...10 V DC

## Line Color

Main circuit (L): BK (black)

Neutral conductor: BU (light blue)

Control voltage 230 V AC: RD (red)

Control voltage 24 V DC: BU (dark blue)

Sensor: WH (white)

Ground wire: GNYE (green-yellow)

Floating distance: OR (orange)

## Terminal Block Designation

-X0 --> Power supply

-X1 --> 400 V AC Power output

-X2 --> 230 V AC Voltage (enclosure)

-X3 --> 24 V DC Control voltage (enclosure)

-X4 --> Measuring value line

-X5 --> Emergency off/Emergency stop

-X6 --> 24 V DC Sensors/Power actuators

-X7 --> 24 V DC Valve

-X8 --> Bus line

-X9 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

## Connector Designation

-X00 --> -/-

-X01 --> 400 V AC Power output

-X02 --> 230 V AC Voltage (enclosure)

-X03 --> 24 V DC Control voltage (enclosure)

-X04 --> Measuring value line

-X05 --> Emergency off/Emergency stop

-X06 --> 24 V DC Sensors/Power actuators

-X07 --> 24 V DC Valve

-X08 --> Bus line

-X09 --> Pump controller

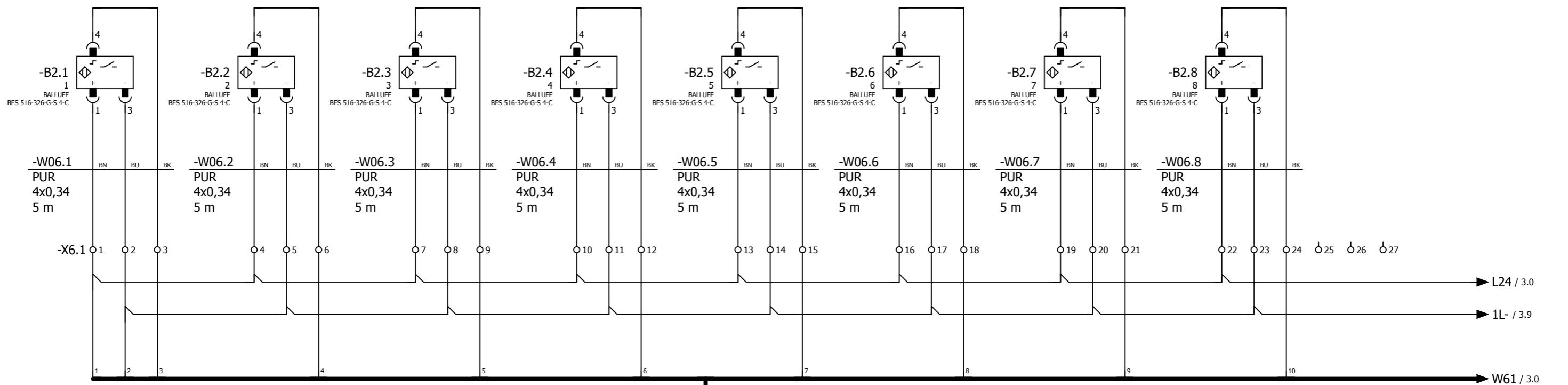
-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= CT
Drn.	H. Armbrecht	Langenhagen	Cover sheet		+ TD	Table device
Chk	See Windchill	Germany				
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



**TD**  
Clamp cylinder 4  
Adjustment Position

**TD**  
Clamp cylinder 4  
plugged-out

**TD**  
Clamp cylinder 4  
plugged-in

**TD**  
Gear drive  
plugged-out

**TD**  
Gear drive  
plugged-in

**TD**  
Clamp cylinder 3  
plugged-out

**TD**  
Clamp cylinder 3  
plugged-in

**TD**  
Confirmation table  
vertical position (90°)

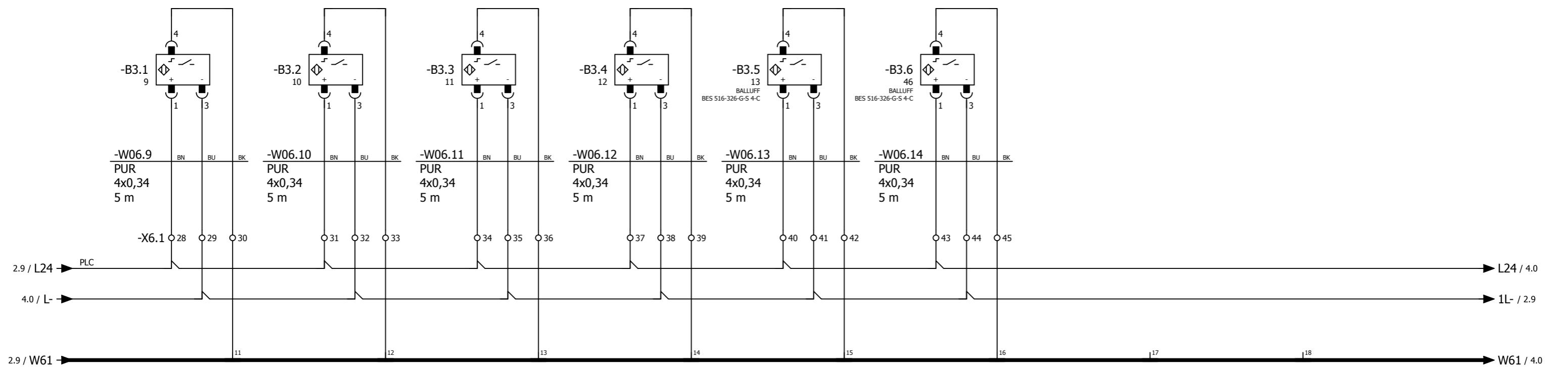
Date	25.02.2013	Weatherford Langenhagen Germany	Centralizer Test Tool Sensors Table device	Part number:	02324572	= CT
Drn.	H. Armbrecht				+ TD	Table device
Chk	See Windchill					
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



Centralizer Test Tool  
Sensors  
Table device

Part number: 02324572

Rev.: Drawing number: 4\_22.5215



TD  
Locking cylinder left  
plugged in

TD  
Locking cylinder left  
plugged out

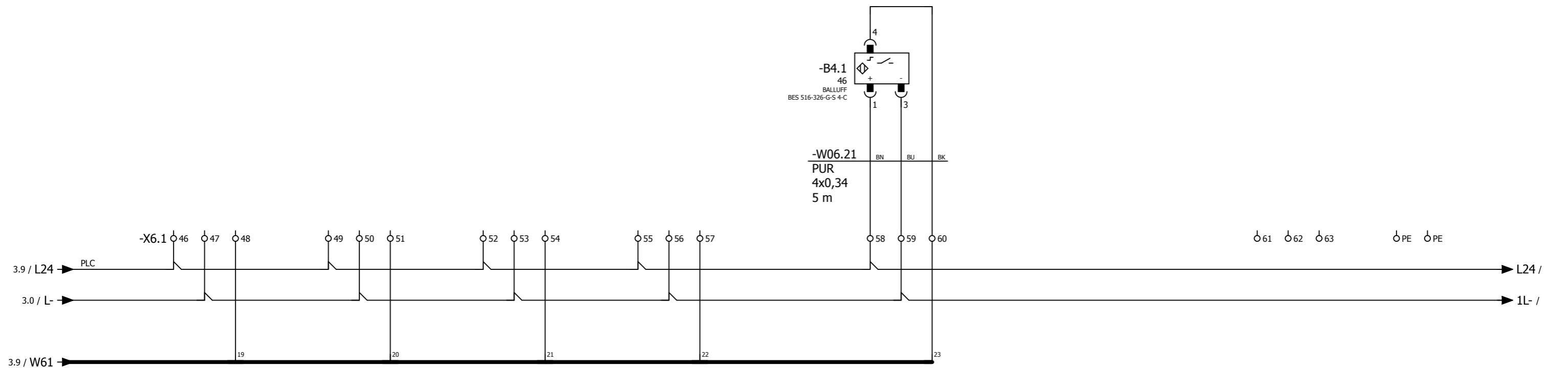
TD  
Locking cylinder right  
plugged in

TD  
Locking cylinder rechts  
plugged out

TD  
Confirmation table  
Horizontal Position (0°)

TD  
Confirmation table  
Position (85°)

		Date	25.02.2013	Weatherford Langenhagen Germany		Centralizer Test Tool Sensors Table device	Part number:	02324572	= CT
		Drn.	H. Armbrecht				+ TD		Table device
		Chk	See Windchill				Rev.:	4_22.5215	Page 3 of 156
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4			



TD  
Electric cylinder 1  
Front pos.

TD  
Electric cylinder 1  
Rear pos.

TD  
Electric cylinder 2  
Front pos.

TD  
Electric cylinder 2  
Rear pos.

	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill



Centralizer Test Tool  
Sensors  
Table device

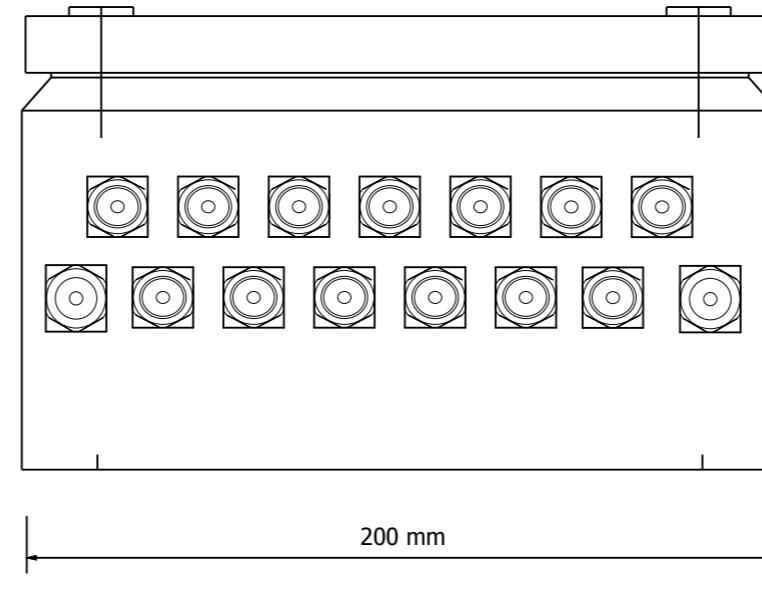
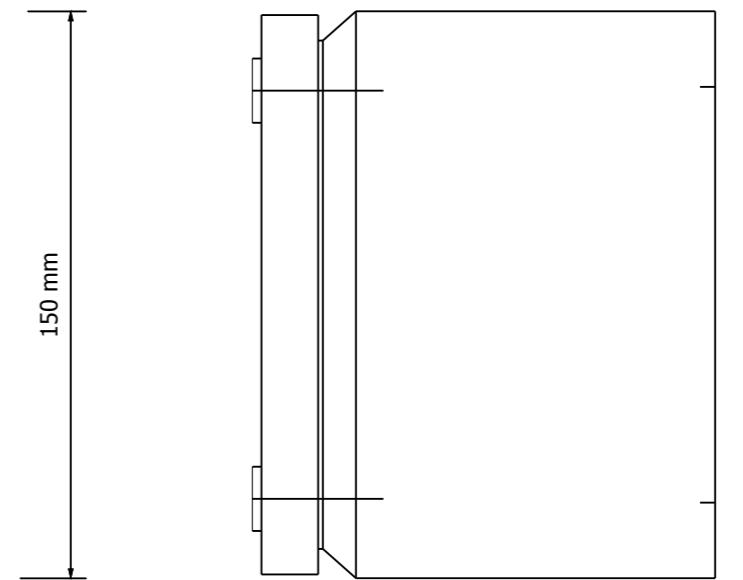
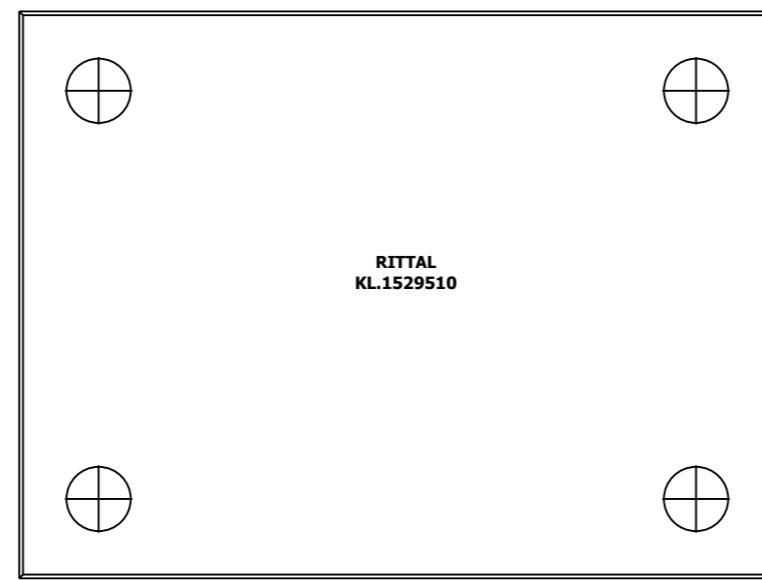
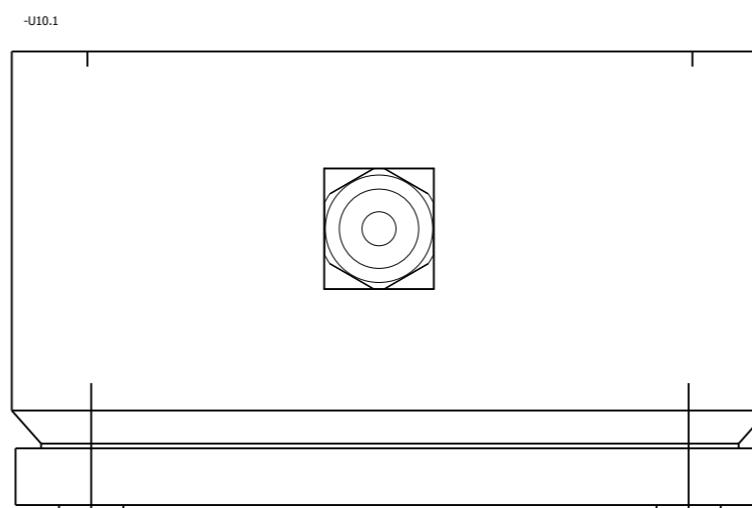
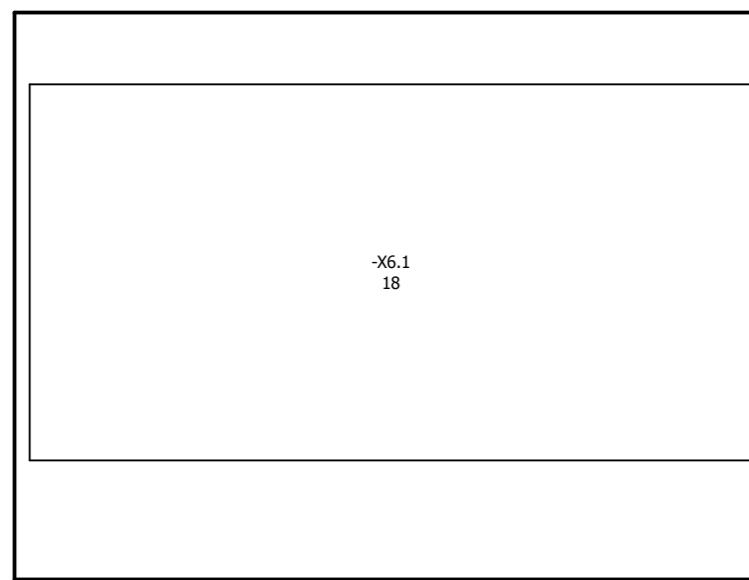
Part number: 02324572

= CT  
+ TD

Table device

Rev.: Drawing number: 4\_22.5215

Page 4  
of 156



Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= CT
Drn.	H. Armbrecht	Langenhagen	Control Panel			+ TD
Chk	See Windchill	Germany				Table device
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-B2.1	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.2	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.3	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.4	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.5	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.6	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.7	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.8	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B3.1	1		MZR40128			
-B3.2	1		MZR40128			
-B3.3	1		MZR40128			
-B3.4	1		MZR40128			
-B3.5	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B3.6	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B4.1	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-U10.1	1	Terminal box painted, without gland plate RAL 7035	02113131	RITTAL RITTAL	KL.1529510 1529510	
-U10.1	15 Piece	Cable gland HT-M M12; 3-6,5mm	01042998	HELU HELU	HELUTOP HT-M 93923	2...16
-U10.1	1 Piece	Cable gland HT-M M25; 11,00-17,0mm	01032655	HELU HELU	HELUTOP HT-M 93926	17



## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-W06.1	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.2	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.3	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.4	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.5	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.6	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.7	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.8	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.9	1 5 m		7000-12261-2230500			
-W06.10	1 5 m		7000-12261-2230500			
-W06.11	1 5 m		7000-12261-2230500			
-W06.12	1 5 m		7000-12261-2230500			
-W06.13	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.14	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.21	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-X6.1	1 Stück	End cover	01872501	PHOENIX PHOENIX	D-ST 2,5-3L 3036660	
-X6.1	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X6.1	6 Stück	Plug-in bridge	PXC.3030213	PHOENIX PHOENIX	FBS 10-5 3030213	

# Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-X6.1	30 Piece	Feed through terminal	01872505	PHOENIX PHOENIX	ST 2,5-3L 3036042	
-X6.1	4 Piece	Ground modular terminal	01872507	PHOENIX PHOENIX	ST 2,5-3PE 3036071	

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>BALLUFF</b>					
	11 0	01320643	Inductiv Sensor M18, 1NO	BES 516-326-G-S 4-C	BES 516-326-G-S 4-C
	4 0	MZR40128			
<b>HELU</b>					
	15 0	01042998	Cable gland HT-M M12; 3-6,5mm	93923	HELUTOP HT-M
	1 0	01032655	Cable gland HT-M M25; 11,00-17,0mm	93926	HELUTOP HT-M
<b>MURR</b>					
	11 55 m	02030085	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	7000-12421-2240500	7000-12421-2240500
	4 20 m	7000-12261-2230500			
<b>PHOENIX</b>					
	1 0	01872501	End cover	3036660	D-ST 2,5-3L
	2 0	01032675	End bracket	1421659	E/MK 1
	6 0	PXC.3030213	Plug-in bridge	3030213	FBS 10-5
	30 0	01872505	Feed through terminal	3036042	ST 2,5-3L
	4 0	01872507	Ground modular terminal	3036071	ST 2,5-3PE
<b>RITTAL</b>					
	1 0	02113131	Terminal box painted, without gland plate RAL 7035	1529510	KL.1529510

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

Phone : +49 511 7702-0

Fax.: +49 511 7702-125



**Weatherford®**

**Customer:** Weatherford

Type/Serial No.: Centralizer Test Tool

Assembly: =CT +CTS

Year of manufacture: 2014

Drawing number: 4\_22.5215

Part number: 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz

Mains current: A

Control voltage 1: 230 V AC

Control voltage 2: 24 V DC

Control voltage 3: 0...10 V DC

## Line Color

Main circuit (L): BK (black)

Neutral conductor: BU (light blue)

Control voltage 230 V AC: RD (red)

Control voltage 24 V DC: BU (dark blue)

Sensor: WH (white)

Ground wire: GNYE (green-yellow)

Floating distance: OR (orange)

## Terminal Block Designation

-X0 --> Power supply

-X1 --> 400 V AC Power output

-X2 --> 230 V AC Voltage (enclosure)

-X3 --> 24 V DC Control voltage (enclosure)

-X4 --> Measuring value line

-X5 --> Emergency off/Emergency stop

-X6 --> 24 V DC Sensors/Power actuators

-X7 --> 24 V DC Valve

-X8 --> Bus line

-X9 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

## Connector Designation

-X00 --> -/-

-X01 --> 400 V AC Power output

-X02 --> 230 V AC Voltage (enclosure)

-X03 --> 24 V DC Control voltage (enclosure)

-X04 --> Measuring value line

-X05 --> Emergency off/Emergency stop

-X06 --> 24 V DC Sensors/Power actuators

-X07 --> 24 V DC Valve

-X08 --> Bus line

-X09 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

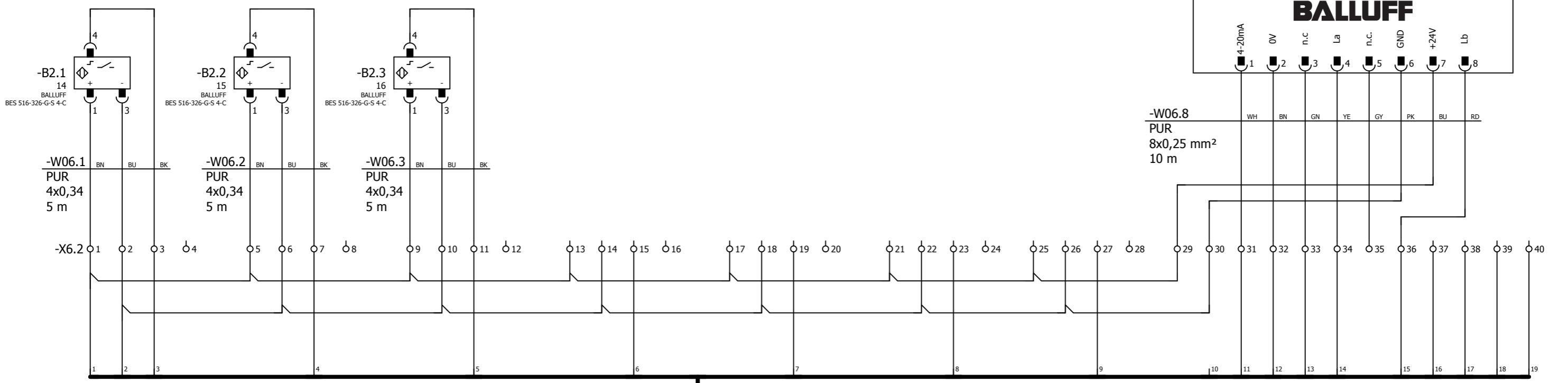
-X12 --> Floating output

-X14 --> Intrinsically safe input/output

Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= CT
Drn.	H. Armbrecht	Langenhagen	Cover sheet		+ CTS	Portal Frame
Chk	See Windchill	Germany				
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

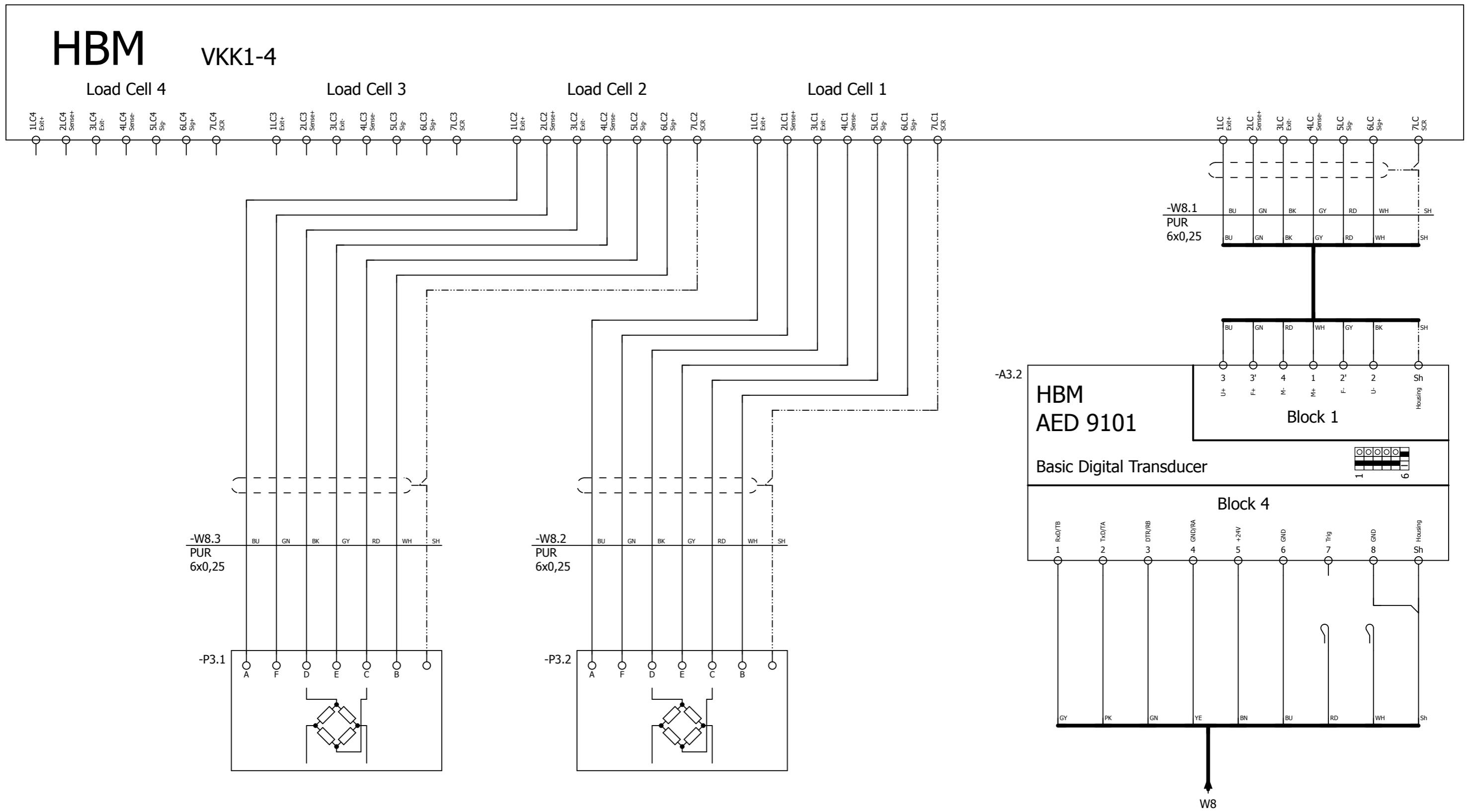


Rev.: Drawing number: 4\_22.5215

W6.2  
+MC/27.4CTS  
Clamp cylinder  
plugged-outCTS  
Clamp cylinder  
plugged-inCTS  
Clamp cylinde  
Adjustment PositionFR  
Position  
Clamping tool

Date	25.02.2013	Weatherford Langenhagen Germany	Centralizer Test Tool Sensors Clamp Top Side	Part number:	02324572	= CT
Drn.	H. Armbrecht					+ CTS
Chk	See Windchill					Portal Frame
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

-A3.1



Torque Junction Box

Load Cell 2

Load Cell 1

Torque Transducer

Date	25.02.2013	Weatherford Langenhagen Germany
Drn.	H. Armbrecht	
Chk	See Windchill	
Rev. No.	ECN-No.	Drn.



Centralizer Test Tool  
Torque Controller  
Clamp Top Side

Part number: 02324572

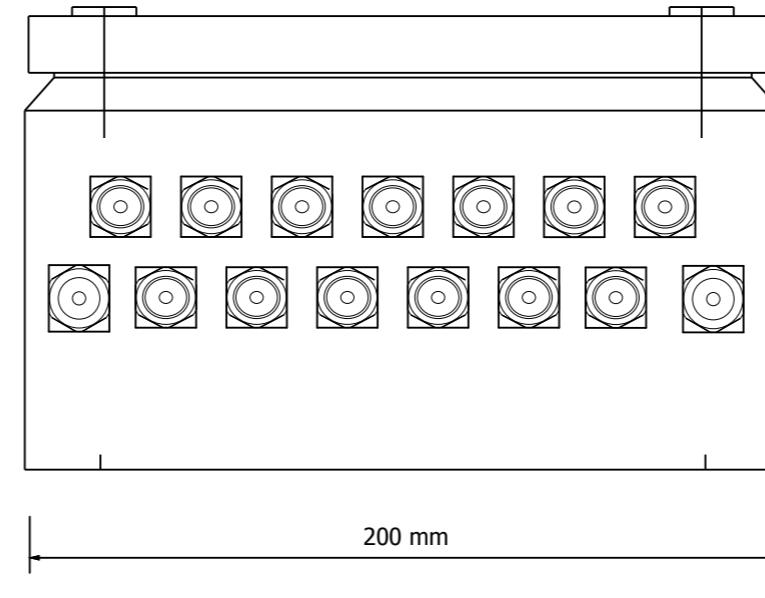
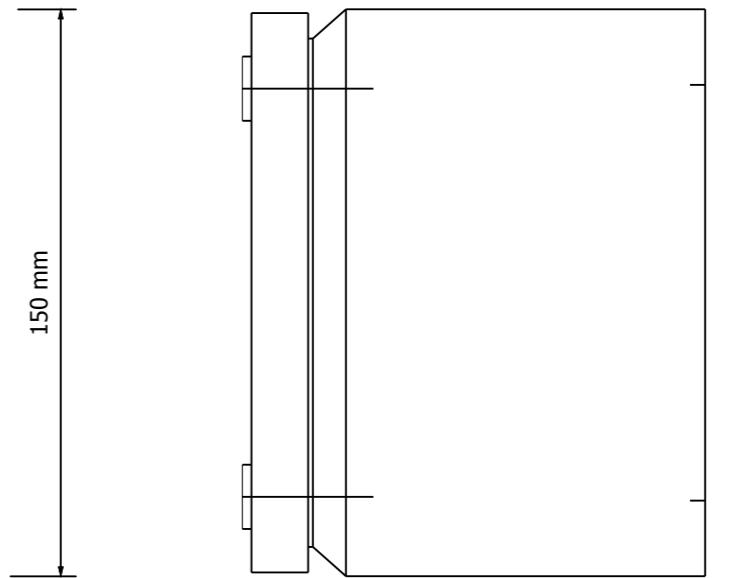
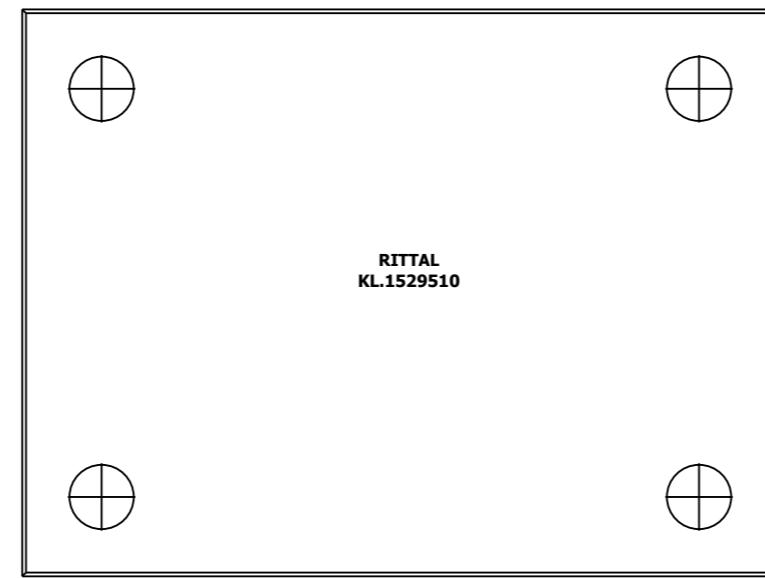
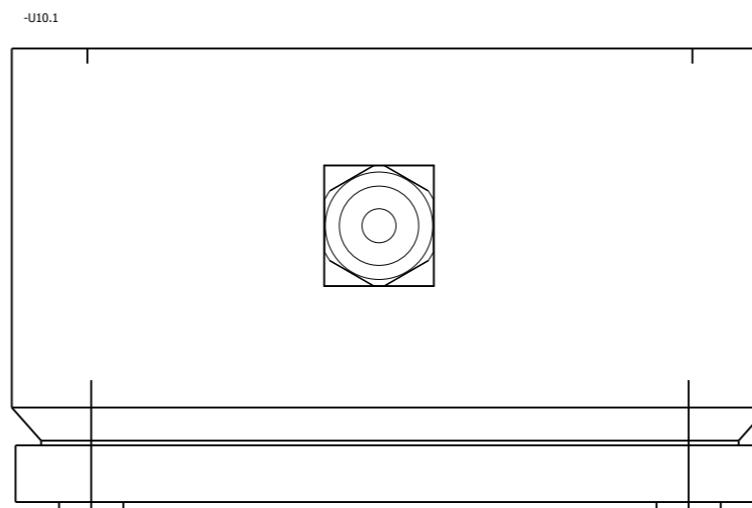
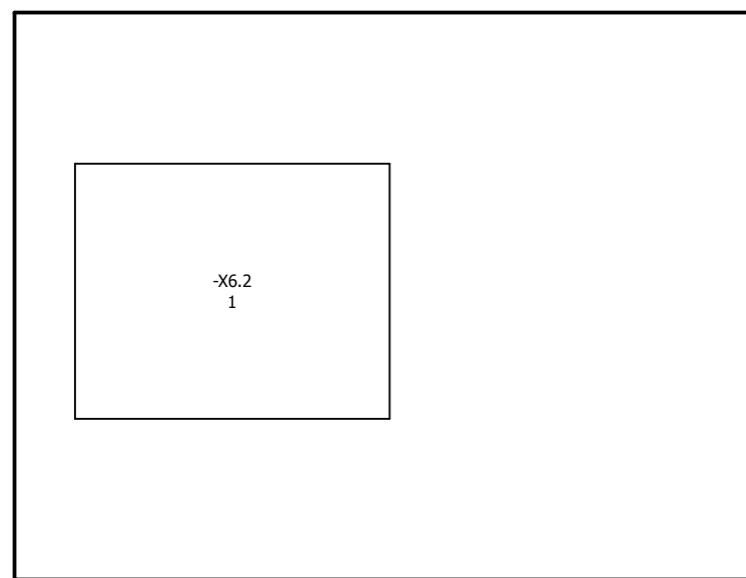
= CT  
+ CTS

Portal Frame

Rev.: Drawing number: 4\_22.5215

Page 3

of 156



120 mm

Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= CT
Drn.	H. Armbrecht	Langenhagen	Control Panel			+ CTS
Chk	See Windchill	Germany				Portal Frame
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4
						Page 10 of 156

## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-A3.1	1 Piece	Junction Box EA 1-VKK1-4	01035128	HBM	1-VKK1-4 1-VKK1-4	
-A3.2	1 Piece	Amplifier AED 9101 Complete RS-422 AED 9101	01265398	HBM	AED 9101 COMPLETE RS-422 AED 9101 Complete RS-422	
-B2.1	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.2	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.3	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.4	1		BAL.BTL7-E1			
-U10.1	1	Terminal box painted, without gland plate RAL 7035	02113131	RITTAL RITTAL	KL.1529510 1529510	
-U10.1	15 Piece	Cable gland HT-M M12; 3-6,5mm	01042998	HELU HELU	HELUTOP HT-M 93923	2...16
-U10.1	1 Piece	Cable gland HT-M M25; 11,00-17,0mm	01032655	HELU HELU	HELUTOP HT-M 93926	17
-W06.1	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.2	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.3	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.8	1 10 m	MICROPULSE Cable w. Plug, 8pol, 10m	02345099	BALLUFF BALLUFF	BKS-S32M-10 BCC00TZ	
-W06.8	1 Piece 10 m	Cable gland HT-M M16; 4,0-8,0mm	01037279	HELU HELU	HELUTOP HT-M 93924	
-W06.8	1 Piece 10 m	Counternut with collar M16x1,5	02274129	HELU HELU	KMK-PA-MB 94261	
-X6.2	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X6.2	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X6.2	2 Stück	Plug-in bridge	PXC.3030213	PHOENIX PHOENIX	FBS 10-5 3030213	



# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
	1 0	BAL.BTL7-E1			
BALLUFF					
	3 0	01320643	Inductiv Sensor M18, 1NO	BES 516-326-G-S 4-C	BES 516-326-G-S 4-C
	1 10 m	02345099	MICROPULSE Cable w. Plug, 8pol, 10m	BCC00TZ	BKS-S32M-10
HBM					
	1 0	01035128	Junction Box EA 1-VKK1-4	1-VKK1-4	1-VKK1-4
	1 0	01265398	Amplifier AED 9101 Complete RS-422	AED 9101 Complete RS-422	AED 9101 COMPLETE RS-422
HELU					
	15 0	01042998	Cable gland HT-M M12; 3-6,5mm	93923	HELUTOP HT-M
	1 0	01032655	Cable gland HT-M M25; 11,00-17,0mm	93926	HELUTOP HT-M
	1 10 m	01037279	Cable gland HT-M M16; 4,0-8,0mm	93924	HELUTOP HT-M
	1 10 m	02274129	Counternut with collar M16x1,5	94261	KMK-PA-MB
MURR					
	3 15 m	02030085	Cable M12 fem. 90° 5m 4x0,34mm², grey, LED	7000-12421-2240500	7000-12421-2240500
PHOENIX					
	1 0	01035500	End cover	3030459	D-STTB 2,5
	2 0	01032675	End bracket	1421659	E/MK 1
	2 0	PXC.3030213	Plug-in bridge	3030213	FBS 10-5
	20 0	01036504	Feed through terminal	3031270	STTB 2,5
RITTAL					
	1 0	02113131	Terminal box painted, without gland plate RAL 7035	1529510	KL.1529510

# Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-X6.2	20 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	

Date	25.02.2013	Weatherford
Drn.	H. Armbrecht	Langenhagen
Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.



Centralizer Test Tool  
Parts list : 01036504 - 01036504

Part number: 02324572

= CT  
+ CTS

Portal Frame

Rev.: Drawing number: 4\_22.5215

Page 16  
of 156

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

Phone : +49 511 7702-0

Fax.: +49 511 7702-125



**Weatherford®**

**Customer:** Weatherford  
**Type/Serial No.:** Centralizer Test Tool  
**Assembly:** =CT +SC  
**Year of manufacture:** 2014  
**Drawing number:** 4\_22.5215  
**Part number:** 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz  
Mains current: A  
Control voltage 1: 230 V AC  
Control voltage 2: 24 V DC  
Control voltage 3: 0...10 V DC

## Line Color

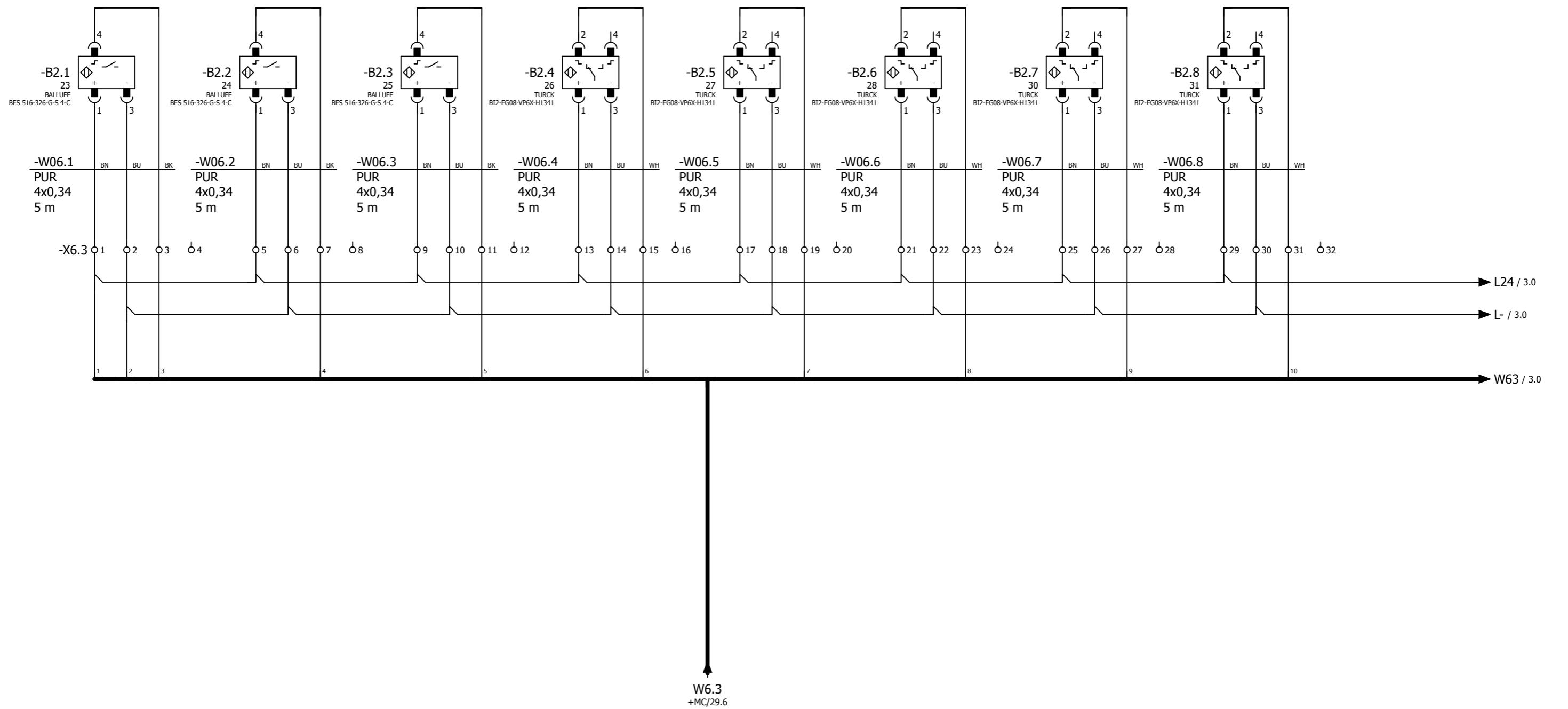
Main circuit (L): BK (black)  
Neutral conductor: BU (light blue)  
Control voltage 230 V AC: RD (red)  
Control voltage 24 V DC: BU (dark blue)  
Sensor: WH (white)  
Ground wire: GNYE (green-yellow)  
Floating distance: OR (orange)

## Terminal Block Designation

-X0 --> Power supply  
-X1 --> 400 V AC Power output  
-X2 --> 230 V AC Voltage (enclosure)  
-X3 --> 24 V DC Control voltage (enclosure)  
-X4 --> Measuring value line  
-X5 --> Emergency off/Emergency stop  
-X6 --> 24 V DC Sensors/Power actuators  
-X7 --> 24 V DC Valve  
-X8 --> Bus line  
-X9 --> Pump controller  
-X10 --> Control switches and lamps  
-X11 --> Floating input  
-X12 --> Floating output  
-X14 --> Intrinsically safe input/output

## Connector Designation

-X00 --> -/-  
-X01 --> 400 V AC Power output  
-X02 --> 230 V AC Voltage (enclosure)  
-X03 --> 24 V DC Control voltage (enclosure)  
-X04 --> Measuring value line  
-X05 --> Emergency off/Emergency stop  
-X06 --> 24 V DC Sensors/Power actuators  
-X07 --> 24 V DC Valve  
-X08 --> Bus line  
-X09 --> Pump controller  
-X10 --> Control switches and lamps  
-X11 --> Floating input  
-X12 --> Floating output  
-X14 --> Intrinsically safe input/output



CTS  
Clamp cylinder  
plugged-in

CTS  
Clamp cylinder  
Adjustment Position

CTS  
Clamp cylinder  
plugged-out

CTS  
Motor 1  
Adjustment Position

CTS  
Motor 1  
plugged-in

CTS  
Motor 1  
plugged-out

CTS  
Motor 2  
Adjustment Position

CTS  
Motor 2  
plugged-in

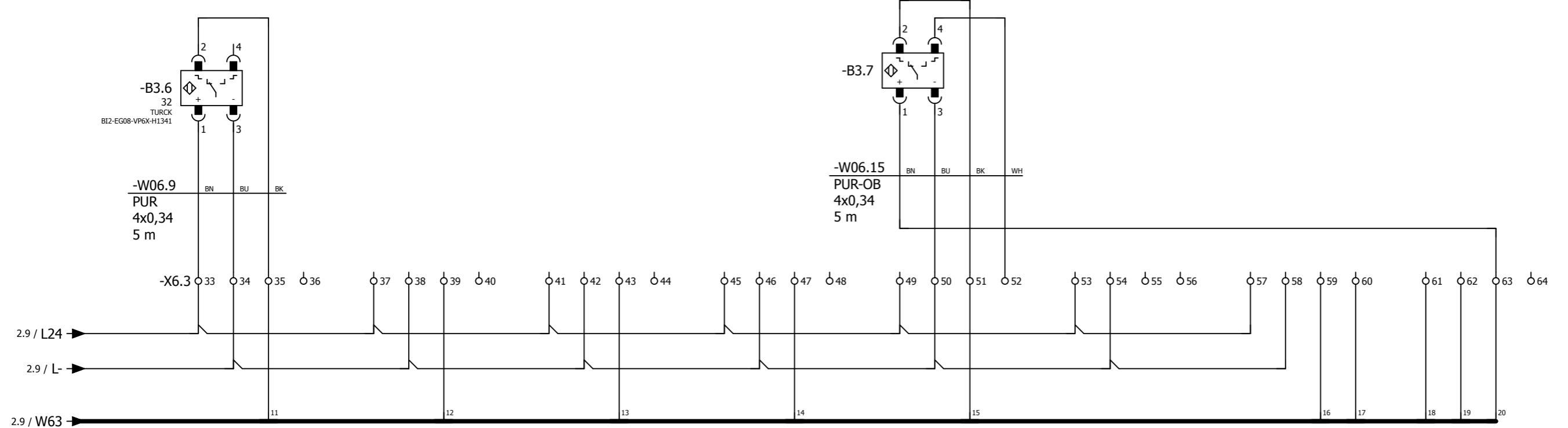
Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= CT
Drn.	H. Armbrecht	Langenhagen	Sensors		+ SC	Support chuck
Chk	See Windchill	Germany	Support/Chuck			
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

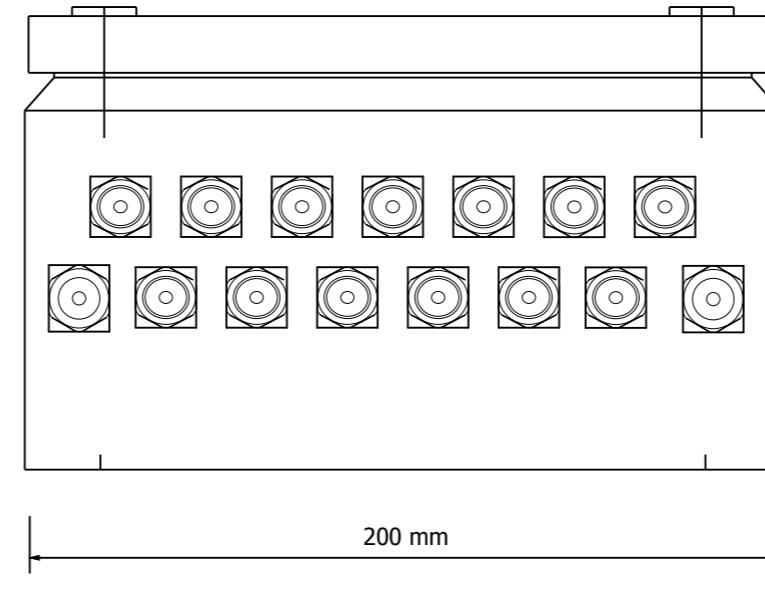
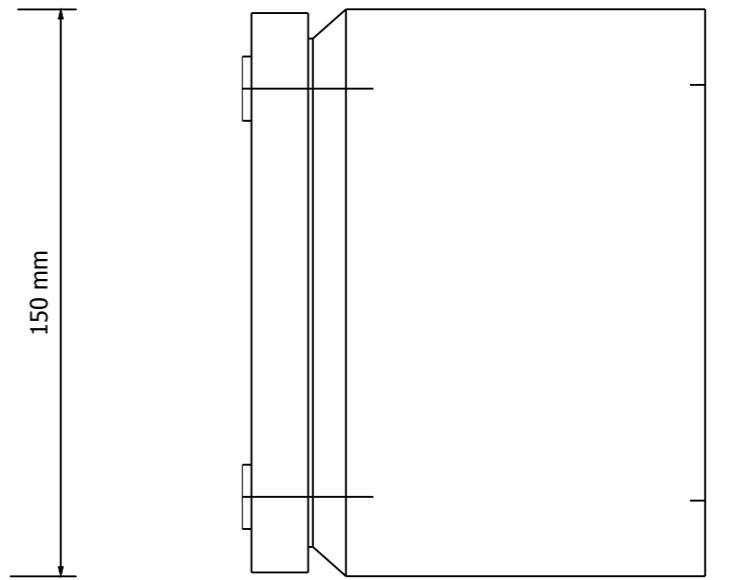
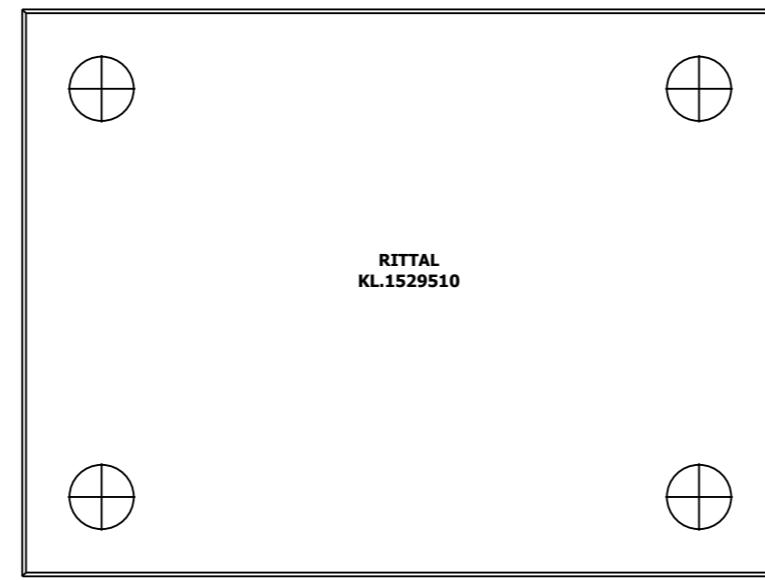
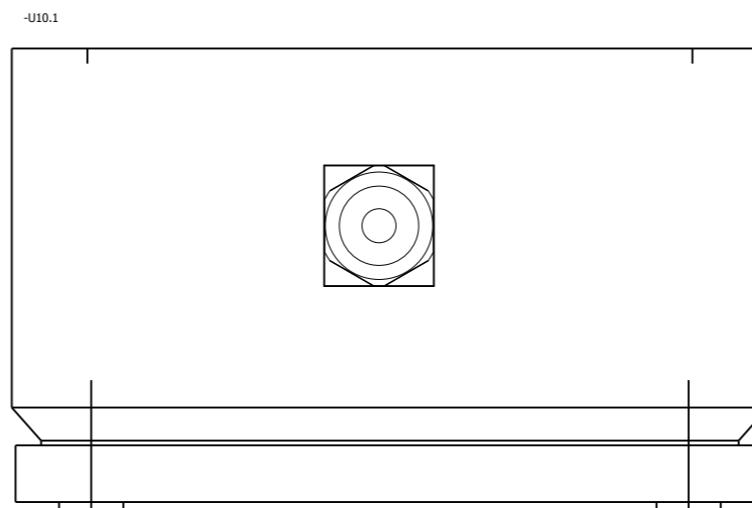
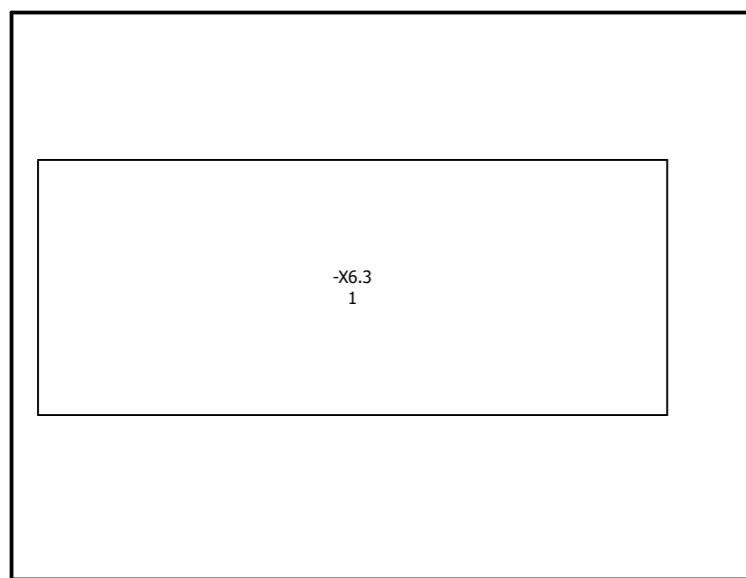


Centralizer Test Tool  
Sensors  
Support/Chuck

Rev.:

Drawing number: 4\_22.5215





Date	25.02.2013	Weatherford
Drn.	H. Armbrecht	Langenhagen
Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.

## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-B2.1	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.2	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.3	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.4	1 Piece	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	TURCK TURCK	BI2-EG08-VP6X-H1341 BI2-EG08-VP6X-H1341	
-B2.5	1 Piece	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	TURCK TURCK	BI2-EG08-VP6X-H1341 BI2-EG08-VP6X-H1341	
-B2.6	1 Piece	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	TURCK TURCK	BI2-EG08-VP6X-H1341 BI2-EG08-VP6X-H1341	
-B2.7	1 Piece	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	TURCK TURCK	BI2-EG08-VP6X-H1341 BI2-EG08-VP6X-H1341	
-B2.8	1 Piece	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	TURCK TURCK	BI2-EG08-VP6X-H1341 BI2-EG08-VP6X-H1341	
-B3.6	1 Piece	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	TURCK TURCK	BI2-EG08-VP6X-H1341 BI2-EG08-VP6X-H1341	
-U10.1	1	Terminal box painted, without gland plate RAL 7035	02113131	RITTAL RITTAL	KL.1529510 1529510	
-U10.1	15 Piece	Cable gland HT-M M12; 3-6,5mm	01042998	HELU HELU	HELUTOP HT-M 93923	2...16
-U10.1	1 Piece	Cable gland HT-M M25; 11,00-17,0mm	01032655	HELU HELU	HELUTOP HT-M 93926	17
-W06.1	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.2	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.3	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.4	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.5	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.6	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	

## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-W06.7	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.8	1 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	02030085	MURR MURR	7000-12421-2240500 7000-12421-2240500	
-W06.9	1 5 m		7000-12261-2230500			
-W06.15	1 Piece 5 m	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey	02137230	MURR MURR	7000-12341-2240500 7000-12341-2240500	
-X6.3	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X6.3	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X6.3	2 Stück	Plug-in bridge	PXC.3030213	PHOENIX PHOENIX	FBS 10-5 3030213	
-X6.3	32 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
BALLUFF					
	3 0	01320643	Inductiv Sensor M18, 1NO	BES 516-326-G-S 4-C	BES 516-326-G-S 4-C
HELU					
	15 0	01042998	Cable gland HT-M M12; 3-6,5mm	93923	HELUTOP HT-M
	1 0	01032655	Cable gland HT-M M25; 11,00-17,0mm	93926	HELUTOP HT-M
MURR					
	8 40 m	02030085	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	7000-12421-2240500	7000-12421-2240500
	1 5 m	7000-12261-2230500			
	1 5 m	02137230	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey	7000-12341-2240500	7000-12341-2240500
PHOENIX					
	1 0	01035500	End cover	3030459	D-STTB 2,5
	2 0	01032675	End bracket	1421659	E/MK 1
	2 0	PXC.3030213	Plug-in bridge	3030213	FBS 10-5
	32 0	01036504	Feed through terminal	3031270	STTB 2,5
RITTAL					
	1 0	02113131	Terminal box painted, without gland plate RAL 7035	1529510	KL.1529510
TURCK					
	6 0	BI2-EG08-VP6X-H1341	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	BI2-EG08-VP6X-H1341

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

Phone : +49 511 7702-0

Fax.: +49 511 7702-125



**Weatherford®**

**Customer:** Weatherford  
**Type/Serial No.:** Centralizer Test Tool  
**Assembly:** =CT +FR  
**Year of manufacture:** 2014  
**Drawing number:** 4\_22.5215  
**Part number:** 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz  
Mains current: A  
Control voltage 1: 230 V AC  
Control voltage 2: 24 V DC  
Control voltage 3: 0...10 V DC

## Line Color

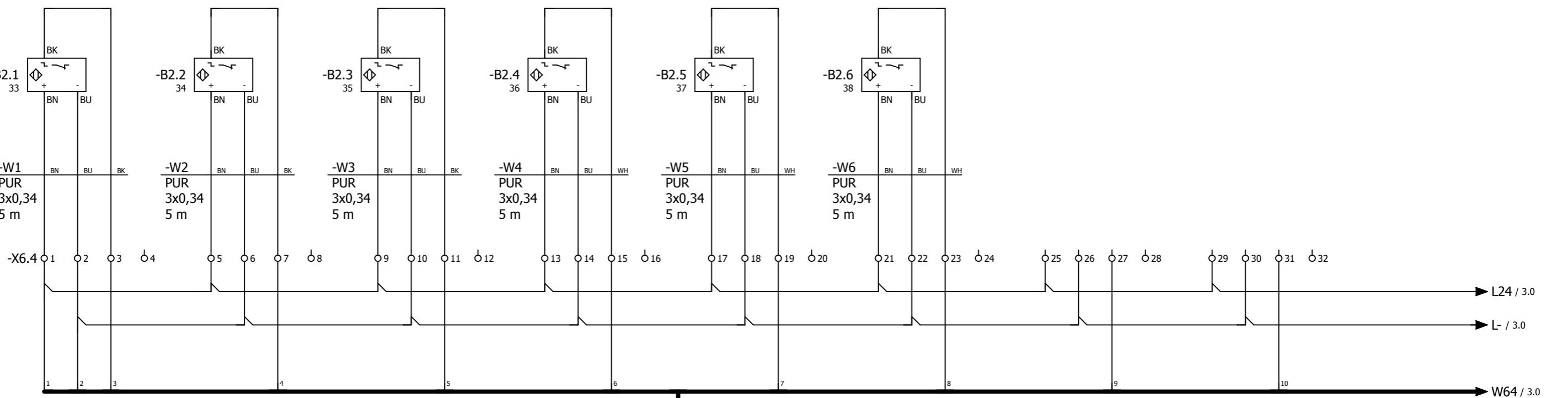
Main circuit (L): BK (black)  
Neutral conductor: BU (light blue)  
Control voltage 230 V AC: RD (red)  
Control voltage 24 V DC: BU (dark blue)  
Sensor: WH (white)  
Ground wire: GNYE (green-yellow)  
Floating distance: OR (orange)

## Terminal Block Designation

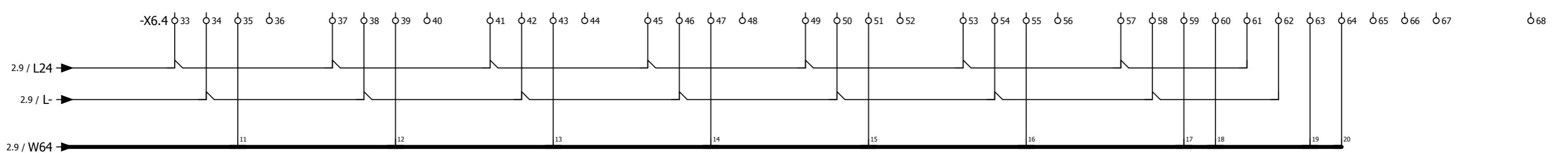
-X0 --> Power supply  
-X1 --> 400 V AC Power output  
-X2 --> 230 V AC Voltage (enclosure)  
-X3 --> 24 V DC Control voltage (enclosure)  
-X4 --> Measuring value line  
-X5 --> Emergency off/Emergency stop  
-X6 --> 24 V DC Sensors/Power actuators  
-X7 --> 24 V DC Valve  
-X8 --> Bus line  
-X9 --> Pump controller  
-X10 --> Control switches and lamps  
-X11 --> Floating input  
-X12 --> Floating output  
-X14 --> Intrinsically safe input/output

## Connector Designation

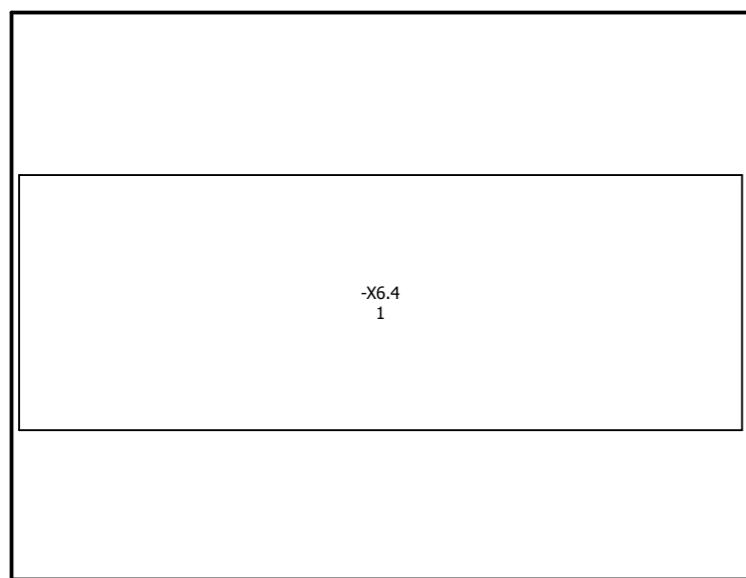
-X00 --> -/-  
-X01 --> 400 V AC Power output  
-X02 --> 230 V AC Voltage (enclosure)  
-X03 --> 24 V DC Control voltage (enclosure)  
-X04 --> Measuring value line  
-X05 --> Emergency off/Emergency stop  
-X06 --> 24 V DC Sensors/Power actuators  
-X07 --> 24 V DC Valve  
-X08 --> Bus line  
-X09 --> Pump controller  
-X10 --> Control switches and lamps  
-X11 --> Floating input  
-X12 --> Floating output  
-X14 --> Intrinsically safe input/output

W6.4  
+MC/31.4FR  
Motor 1  
plugged-inFR  
Motor 1  
Adjustment PositionFR  
Motor 1  
plugged-outFR  
Motor 2  
plugged-outFR  
Motor 2  
Adjustment PositionFR  
Motor 2  
plugged-in

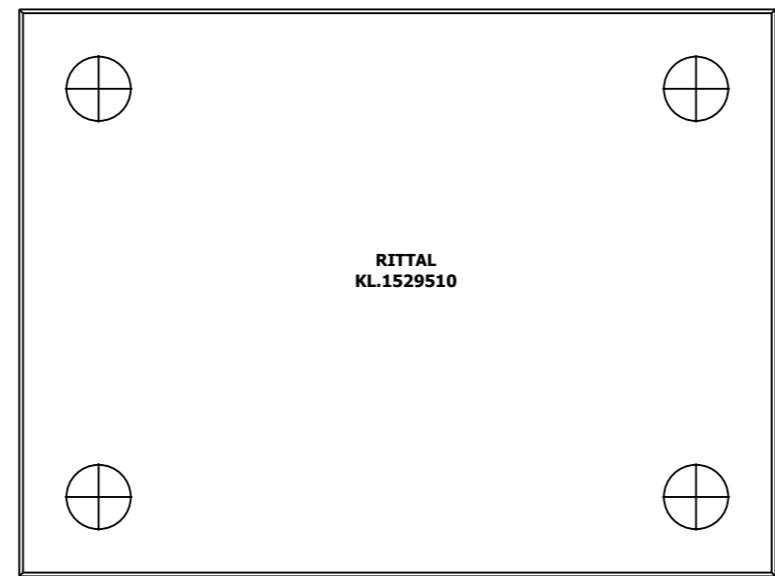
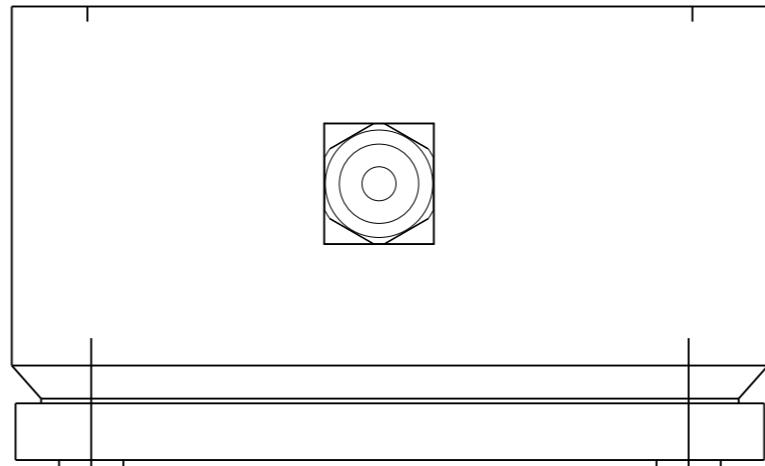
Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= CT
Drn.	H. Armbrecht	Langenhagen	Sensors		+ FR	Frame
Chk	See Windchill	Germany	Support/Chuck			
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



-U10.1

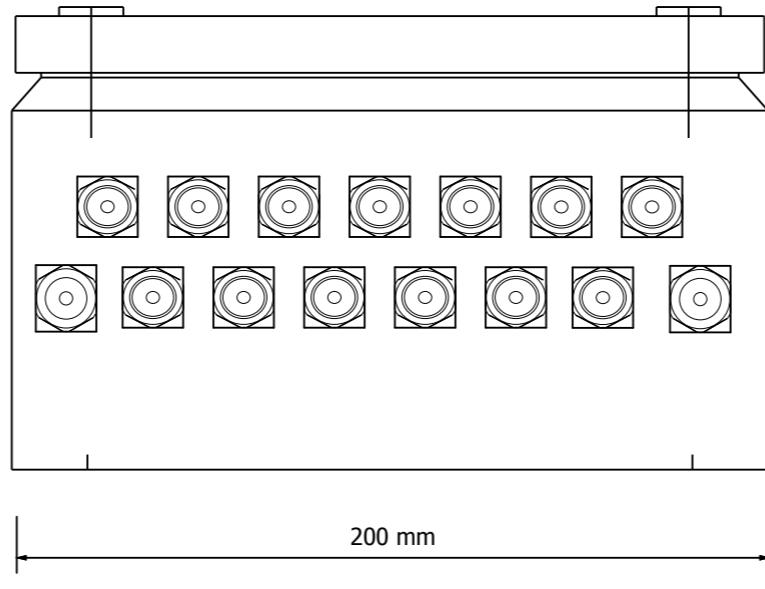


-X6.4  
1



RITTAL  
KL.1529510

A technical drawing showing a vertical rectangular frame. Two horizontal lines extend from the left side of the frame downwards, each ending in a small rectangular component. The total height of the frame is indicated by a vertical dimension line on the left side, labeled "150 mm".



120 mm

200 mm

# Parts list

WFD\_F01\_002

Device tag	Quantity	Designation	Part number	Manufacturer	Type number	Pos
Placement				Supplier	Order number	
-B2.1	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.2	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.3	1 Piece	Inductiv Sensor M18, 1NO	01320643	BALLUFF BALLUFF	BES 516-326-G-S 4-C BES 516-326-G-S 4-C	
-B2.4	1 Piece	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	TURCK TURCK	BI2-EG08-VP6X-H1341 BI2-EG08-VP6X-H1341	
-B2.5	1 Piece	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	TURCK TURCK	BI2-EG08-VP6X-H1341 BI2-EG08-VP6X-H1341	
-B2.6	1 Piece	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	TURCK TURCK	BI2-EG08-VP6X-H1341 BI2-EG08-VP6X-H1341	
-U10.1	1	Terminal box painted, without gland plate RAL 7035	02113131	RITTAL RITTAL	KL.1529510 1529510	
-U10.1	15 Piece	Cable gland HT-M M12; 3-6,5mm	01042998	HELU HELU	HELUTOP HT-M 93923	2...16
-U10.1	1 Piece	Cable gland HT-M M25; 11,00-17,0mm	01032655	HELU HELU	HELUTOP HT-M 93926	17
-X6.4	1 Piece	End cover Feed through terminal end cover, wide 2,2mm, color: grey	01035500	PHOENIX PHOENIX	D-STTB 2,5 3030459	
-X6.4	2 Piece	End bracket End clamp width: 6 mm, color: gray	01032675	PHOENIX PHOENIX	E/MK 1 1421659	
-X6.4	2 Stück	Plug-in bridge	PXC.3030213	PHOENIX PHOENIX	FBS 10-5 3030213	
-X6.4	34 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
BALLUFF					
	3 0	01320643	Inductiv Sensor M18, 1NO	BES 516-326-G-S 4-C	BES 516-326-G-S 4-C
HELU					
	15 0	01042998	Cable gland HT-M M12; 3-6,5mm	93923	HELUTOP HT-M
	1 0	01032655	Cable gland HT-M M25; 11,00-17,0mm	93926	HELUTOP HT-M
PHOENIX					
	1 0	01035500	End cover	3030459	D-STTB 2,5
	2 0	01032675	End bracket	1421659	E/MK 1
	2 0	PXC.3030213	Plug-in bridge	3030213	FBS 10-5
	34 0	01036504	Feed through terminal	3031270	STTB 2,5
RITTAL					
	1 0	02113131	Terminal box painted, without gland plate RAL 7035	1529510	KL.1529510
TURCK					
	3 0	BI2-EG08-VP6X-H1341	Inductiv Sensor M8, 1CO	BI2-EG08-VP6X-H1341	BI2-EG08-VP6X-H1341

# Weatherford Oil Tool GmbH

Hainhäuser Weg 150

Langenhagen

Germany

Phone : +49 511 7702-0

Fax.: +49 511 7702-125



**Weatherford®**

**Customer:** Weatherford

Type/Serial No.: Centralizer Test Tool

Assembly: =CT +HPU

Year of manufacture: 2014

Drawing number: 4\_22.5215

Part number: 02324572

## Electrical Data

Mains power: 3x 400V/50 Hz

Mains current: A

Control voltage 1: 230 V AC

Control voltage 2: 24 V DC

Control voltage 3: 0...10 V DC

## Line Color

Main circuit (L): BK (black)

Neutral conductor: BU (light blue)

Control voltage 230 V AC: RD (red)

Control voltage 24 V DC: BU (dark blue)

Sensor: WH (white)

Ground wire: GNYE (green-yellow)

Floating distance: OR (orange)

## Terminal Block Designation

-X0 --> Power supply

-X1 --> 400 V AC Power output

-X2 --> 230 V AC Voltage (enclosure)

-X3 --> 24 V DC Control voltage (enclosure)

-X4 --> Measuring value line

-X5 --> Emergency off/Emergency stop

-X6 --> 24 V DC Sensors/Power actuators

-X7 --> 24 V DC Valve

-X8 --> Bus line

-X9 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

## Connector Designation

-X00 --> -/-

-X01 --> 400 V AC Power output

-X02 --> 230 V AC Voltage (enclosure)

-X03 --> 24 V DC Control voltage (enclosure)

-X04 --> Measuring value line

-X05 --> Emergency off/Emergency stop

-X06 --> 24 V DC Sensors/Power actuators

-X07 --> 24 V DC Valve

-X08 --> Bus line

-X09 --> Pump controller

-X10 --> Control switches and lamps

-X11 --> Floating input

-X12 --> Floating output

-X14 --> Intrinsically safe input/output

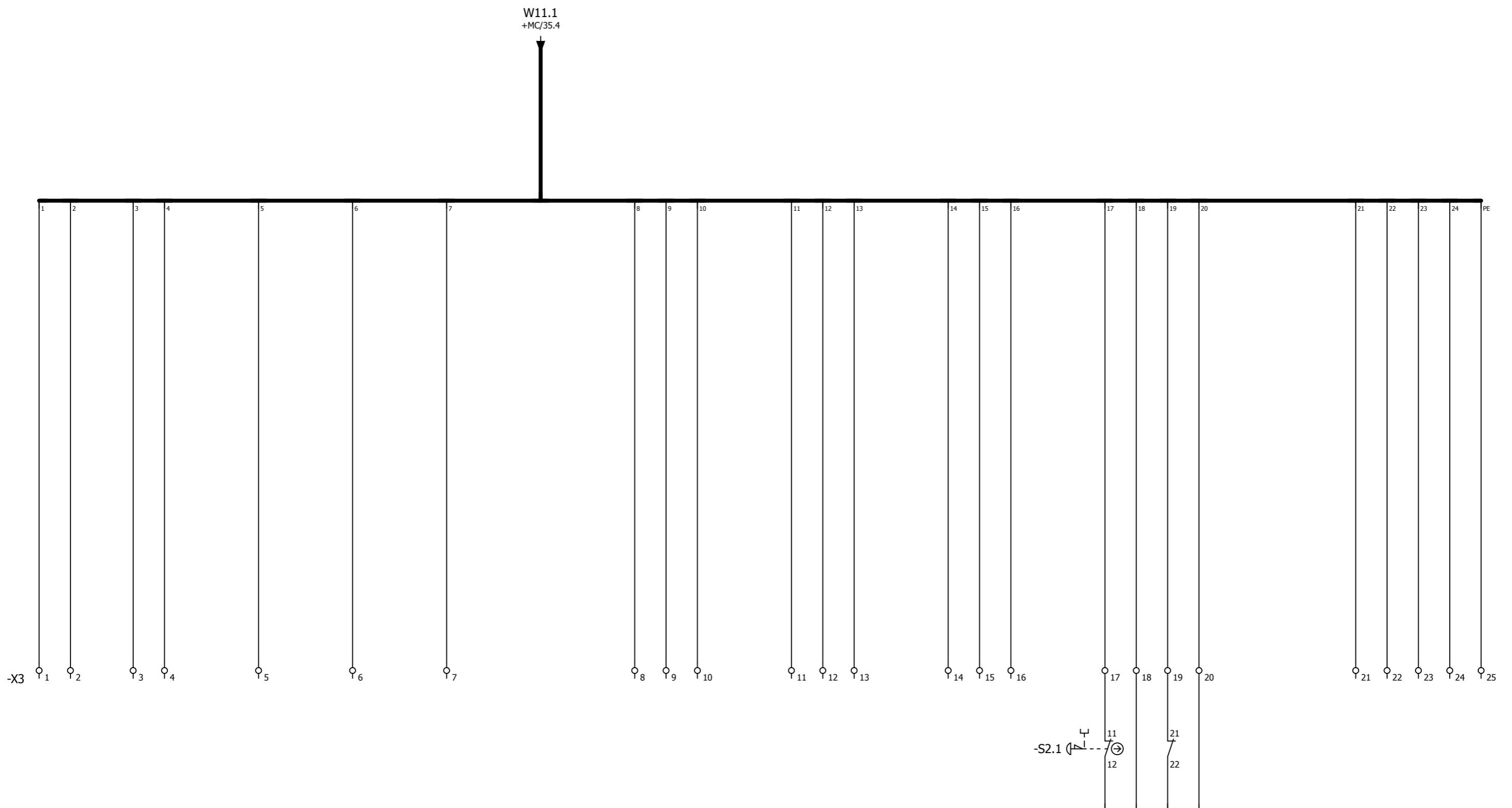
Date	25.02.2013	Weatherford	Centralizer Test Tool	Part number:	02324572	= CT
Drn.	H. Armbrecht	Langenhagen	Cover sheet		+ HPU	Hydraulic unit
Chk	See Windchill	Germany				
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4



Centralizer Test Tool  
Cover sheet

Rev.: Drawing number:

4\_22.5215

HPU  
StopHPU  
StartHydraulic Controller MP  
0...10VHydraulic Controller MQ  
0...10VHPU  
Pump onHPU  
Oil level min.HPU  
Oil temperature max.HPU  
Spare messageHydraulic Controller MQ  
0V

	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill

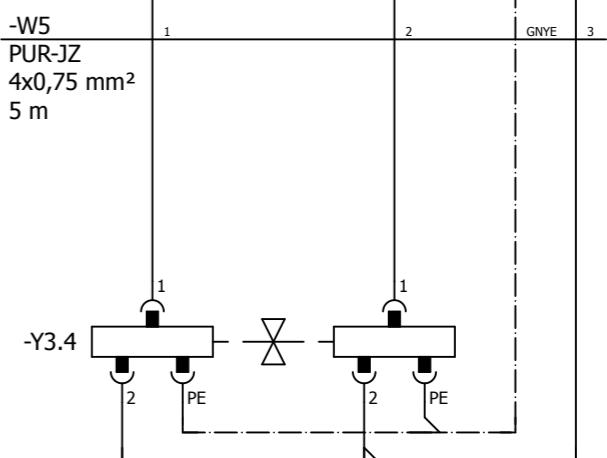
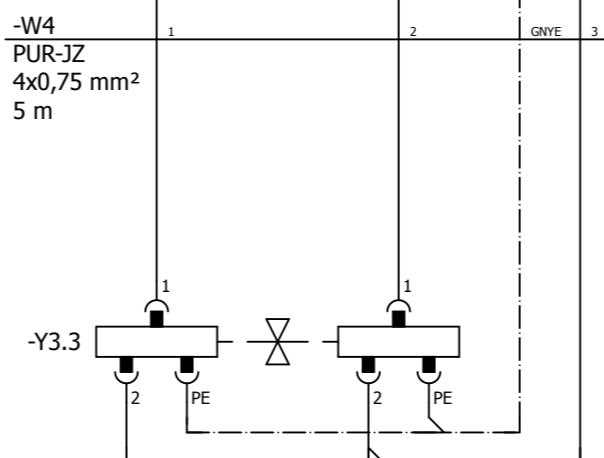
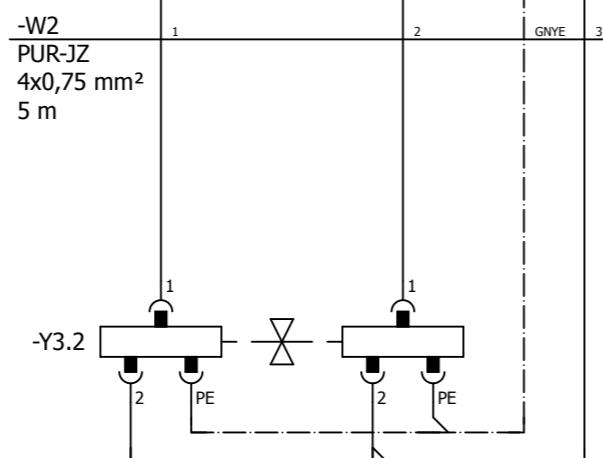
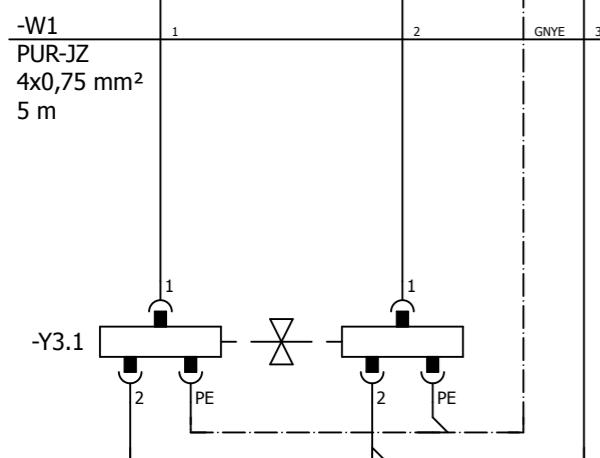
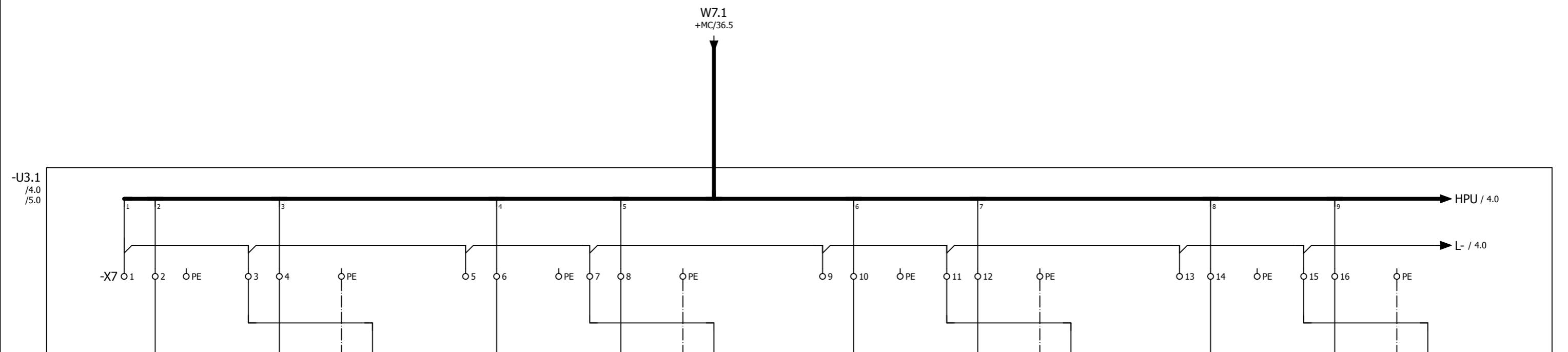
Page size: A3 ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

Centralizer Test Tool  
External HPU Inputs

Part number: 02324572

= CT  
+ HPU  
Hydraulic unit  
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HPU  
Valve 1aHPU  
Valve 1bHPU  
Valve 2aHPU  
Valve 2bHPU  
Valve 3aHPU  
Valve 3bHPU  
Valve 4aHPU  
Valve 4b

	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill

Page size: A3 ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

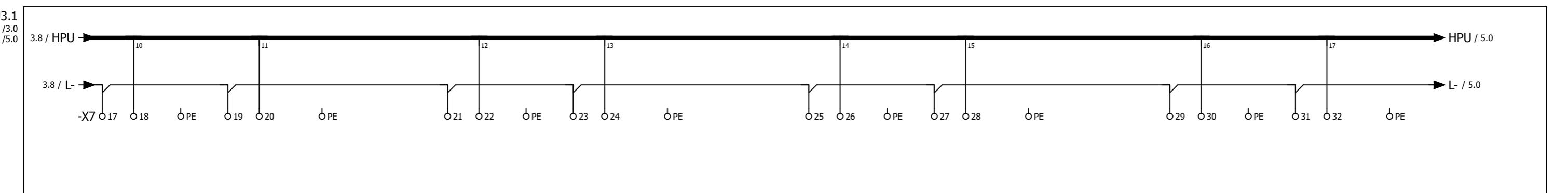


Centralizer Test Tool  
Output  
Valve

Part number: 02324572

= CT  
+ HPU  
Hydraulic unit  
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of 156

Rev.: Drawing number: 4\_22.5215



	Date	25.02.2013	Weatherford
	Drn.	H. Armbrecht	Langenhagen
	Chk	See Windchill	Germany
Rev. No.	ECN-No.	Drn.	App'd See Windchill

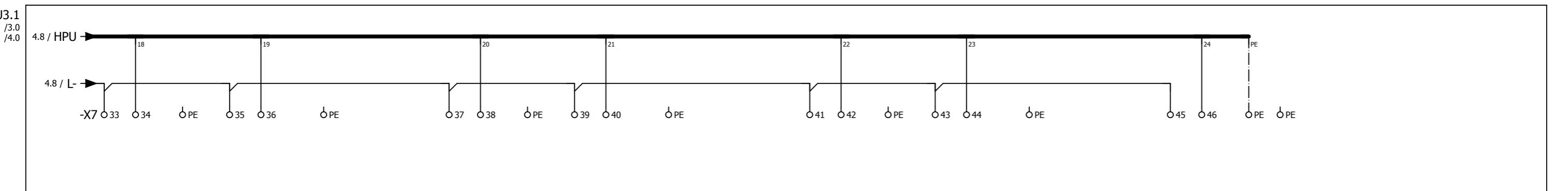


Centralizer Test Tool  
Output  
Valve

Part number: 02324572  
= CT  
+ HPU

Hydraulic unit  
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## Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-U3.1	3 Piece	Cast aluminium enclosure	02333153	RITTAL RITTAL	GA.9110210 9110210	
-U3.1	9 Piece	Cable gland HT-M M16; 4,0-8,0mm	01037279	HELU HELU	HELUTOP HT-M 93924	
-U3.1	9 Piece	Counternut with collar M16x1,5	02274129	HELU HELU	KMK-PA-MB 94261	
-U3.1	3 Piece	Cable gland HT-M M32; 12,00-21,0mm	01032656	HELU HELU	HELUTOP HT-M 93927	
-U3.1	3 Piece	Counternut with collar M32x1,5	02274132	HELU HELU	KMK-PA-MB 94264	
-U3.1-X7	23 Piece	Feed through terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01036504	PHOENIX PHOENIX	STTB 2,5 3031270	
-U3.1-X7	24 Piece	Ground modular terminal Spring-cage connection, cross section: 0,08 mm <sup>2</sup> - 4 mm <sup>2</sup> , AWG 28 - 12,	01037472	PHOENIX PHOENIX	ST 2,5-PE 3031238	
-W1	1 Piece 5 m	MSUD double valve form A 5m 4x0,75mm <sup>2</sup> , grey	02030075	MURR MURR	7000-58021-2270500 7000-58021-2270500	
-W1	1 Piece 5 m	Cable gland HT-M M12; 3-6,5mm	01042998	HELU HELU	HELUTOP HT-M 93923	
-W1	1 Piece 5 m	Counternut with collar M12x1,5	02274128	HELU HELU	KMK-PA-MB 94260	
-W2	1 Piece 5 m	MSUD double valve form A 5m 4x0,75mm <sup>2</sup> , grey	02030075	MURR MURR	7000-58021-2270500 7000-58021-2270500	
-W2	1 Piece 5 m	Cable gland HT-M M12; 3-6,5mm	01042998	HELU HELU	HELUTOP HT-M 93923	
-W2	1 Piece 5 m	Counternut with collar M12x1,5	02274128	HELU HELU	KMK-PA-MB 94260	
-W4	1 Piece 5 m	MSUD double valve form A 5m 4x0,75mm <sup>2</sup> , grey	02030075	MURR MURR	7000-58021-2270500 7000-58021-2270500	
-W4	1 Piece 5 m	Cable gland HT-M M12; 3-6,5mm	01042998	HELU HELU	HELUTOP HT-M 93923	
-W4	1 Piece 5 m	Counternut with collar M12x1,5	02274128	HELU HELU	KMK-PA-MB 94260	
-W5	1 Piece 5 m	MSUD double valve form A 5m 4x0,75mm <sup>2</sup> , grey	02030075	MURR MURR	7000-58021-2270500 7000-58021-2270500	
-W5	1 Piece 5 m	Cable gland HT-M M12; 3-6,5mm	01042998	HELU HELU	HELUTOP HT-M 93923	



# Parts list

WFD\_F01\_002

Device tag Placement	Quantity	Designation	Part number	Manufacturer Supplier	Type number Order number	Pos
-W5	1 Piece 5 m	Counternut with collar M12x1,5	02274128	HELU HELU	KMK-PA-MB 94260	

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
HELU					
	9 0	01037279	Cable gland HT-M M16; 4,0-8,0mm	93924	HELUTOP HT-M
	9 0	02274129	Counternut with collar M16x1,5	94261	KMK-PA-MB
	3 0	01032656	Cable gland HT-M M32; 12,00-21,0mm	93927	HELUTOP HT-M
	3 0	02274132	Counternut with collar M32x1,5	94264	KMK-PA-MB
	4 20 m	01042998	Cable gland HT-M M12; 3-6,5mm	93923	HELUTOP HT-M
	4 20 m	02274128	Counternut with collar M12x1,5	94260	KMK-PA-MB
MURR					
	4 20 m	02030075	MSUD double valve form A 5m 4x0,75mm <sup>2</sup> , grey	7000-58021-2270500	7000-58021-2270500
PHOENIX					
	23 0	01036504	Feed through terminal	3031270	STTB 2,5
	24 0	01037472	Ground modular terminal	3031238	ST 2,5-PE
RITTAL					
	3 0	02333153	Cast aluminium enclosure	9110210	GA.9110210

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
	1 0	3SB3000-3AH01			
	1 0	BAL.BTL7-E1			
BALLUFF					
	20 0	01320643	Inductiv Sensor M18, 1NO	BES 516-326-G-S 4-C	BES 516-326-G-S 4-C
	4 0	MZR40128			
	1 10 m	02345099	MICROPULSE Cable w. Plug, 8pol, 10m	BCC00TZ	BKS-S32M-10
BECKHOFF					
	1 0	02357998	AX5206 Digital Compact Servo Drives (2-channel / 2x6A)	AX5206-0000-0200	AX5206-0000-0200
	3 0	02357999	AX5203 Digital Compact Servo Drives (2-channel / 2x3A)	AX5203-0000-0200	AX5203-0000-0200
	1 0	02358006	AX5106 Digital Compact Servo Drives (1-channel / 6A)	AX5106-0000-0200	AX5106-0000-0200
	2 0	01295183	EK EtherCAT coupler	EK1100	EK1100
	1 0	01295514	EL6021 Serial interface RS422/RS485	EL6021	EL6021
	14 0	01322459	EL 8x Digital Input 24VDC	EL1018	EL1018
	1 0	02197460	EL 4x Analog Input 4...20mA	EL3024	EL3024
	1 0	02446787	EL 4x Analog Input 4...20mA	EL3124	EL3124
	14 0	01295195	EL 4x digital output 2A	EL2024	EL2024
	1 0	01414679	EL Power supply terminals for E-bus	EL9400	EL9400
	2 0	01295532	EL Power Connector	EL9100	EL9100
	1 0	01295507	EL 2x analog output 0...10V	EL4002	EL4002
	1 0	EL4132	EL 2x analog output -10...10V	EL4132	EL4132
	3 0	AM8052-1J21-0000	Servo Motor	AM8052-1J21-0000	AM8052-1J21-0000
	1 0	AM8021-0B21-0000	Servo Motor	AM8021-0B21-0000	AM8021-0B21-0000
	1 0	AM8041-0E20-0000	Servo Motor	AM8041-0E20-0000	AM8041-0E20-0000
	2 0	AM8023-0E21-0000	Servo Motor	AM8023-0E21-0000	AM8023-0E21-0000
	1 0	AM8032-0D20-0000	Servo Motor	AM8032-0D20-0000	AM8032-0D20-0000
	1 0	AM8032-0E20-0000	Servo Motor	AM8032-0E20-0000	AM8032-0E20-0000

=CT+HPU/11

Date	25.02.2013	Weatherford Langenhagen Germany	Centralizer Test Tool Summarized parts list : 3SB3000-3AH01 - AM8032-0E20-0000	Part number:	02324572	= Summ_Part
Drn.	H. Armbrecht				+	
Chk	See Windchill			Rev.:	Drawing number:	4_22.5215
Rev. No.	ECN-No.	Drn.	App'd	See Windchill	Page size: A3	ePLAN P8 / ePLAN Fluid Vers.: 2.4.4

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>BECKHOFF</b>					
	4 40 m	02358018	Motor cable ZK4500	ZK4500-8023-0100	ZK4500-8023-0100
	5 50 m	02358018_1	Motor cable ZK4500	ZK4500-8022-0100	ZK4500-8022-0100
	2 0	02358031	Power supply connector	AX5901-0000-0000	AX5901-0000-0000
	3 0	02358032	Power bridge	AX5911-0000-0000	AX5911-0000-0000
	1 0	01387542	EL 4x analog input 0...10V	EL3064	EL3064
	1 0	02049904	EL 5x Potentiometer	EL3255	EL3255
<b>BELKIN</b>					
	1 0	01418745	USB - PS/2 adapter	01418745	F5U119eaE
<b>BLOCK</b>					
	1 0	PC-0724-800-0	Electronic Circuit Breaker 24V DC, 8x 10A	PC-0724-800-0	PC-0724-800-0
	1 0	02050540	Power supply 3x 340 ... 3x 550 VAC/24VDC/40A	PVSB 400/24-40	PVSB 400/24-40
<b>BOSCH</b>					
	2 0	02359317	Compact converter HCS01.1	HCS01.1E-W0028-A-03-B-ET-EC-NN-NN-NN-FW	HCS01.1E-W0028-A-03
	1 0	BOS.R911286918	Mains filter	R911286918	NFD03.1-480-016
<b>GETT</b>					
	1 0	01295884	Keyboard for TPC	KS18374	TKS-105c-TOUCH-MODUL-EP-PS/2-US
<b>HBM</b>					
	1 0	01035128	Junction Box EA 1-VKK1-4	1-VKK1-4	1-VKK1-4
	1 0	01265398	Amplifier AED 9101 Complete RS-422	AED 9101 Complete RS-422	AED 9101 COMPLETE RS-422
<b>HELU</b>					
	64 20 m	01042998	Cable gland HT-M M12; 3-6,5mm	93923	HELUTOP HT-M
	4 0	01032655	Cable gland HT-M M25; 11,00-17,0mm	93926	HELUTOP HT-M
	10 10 m	01037279	Cable gland HT-M M16; 4,0-8,0mm	93924	HELUTOP HT-M
	10 10 m	02274129	Counternut with collar M16x1,5	94261	KMK-PA-MB
	3 0	01032656	Cable gland HT-M M32; 12,00-21,0mm	93927	HELUTOP HT-M
	3 0	02274132	Counternut with collar M32x1,5	94264	KMK-PA-MB

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
HELU					
	4 20 m	02274128	Counternut with collar M12x1,5	94260	KMK-PA-MB
LAPP					
	1 0	02050944	ÖLFLEX CLASSIC 110 4 G	1119404	ÖLFLEX CLASSIC 110 4 G2,5
	1 0	01092534	ÖLFLEX CLASSIC 110 3 G	1119303	ÖLFLEX CLASSIC 110 3G1,5
	1 0	01035343	ÖLFLEX FD 855 CP 25 G	0027613	ÖLFLEX FD 855 CP 25G0,5
	1 0	02330442	ÖLFLEX CLASSIC 110 16 G	1119316	ÖLFLEX CLASSIC 110 16 G1,5
	3 0	02345102	ÖLFLEX FD 855 P 25 G	0027568	ÖLFLEX FD 855 P 25G1
	1 0	02345864	ÖLFLEX FD 855 P 12 G	0027565	ÖLFLEX FD 855 P 12G1
	1 0	01037481	ÖLFLEX CLASSIC 110 25 G	1119325	ÖLFLEX CLASSIC 110 25 G1,5
	1 0	02052303	ÖLFLEX FD 855 CP 5 G	0027623	ÖLFLEX FD 855 CP 5 G 0,75
	1 0	02345100	ÖLFLEX FD 855 P 25 G	0027582	ÖLFLEX FD 855 P 25G1,5
	7 0	01043205	ÖLFLEX CLASSIC 110 3 G	1119203	ÖLFLEX CLASSIC 110 3 G1
	1 1 m	01033241	Patch-Cable S-FTP 1,0M CAT.5E	CE6648	Patch-Cable
MURR					
	4 0	01043610	Coupling relay 24VDC/1co	6652005	6652005 1W
	1 3 m	01295880	Cable M12 BU Straight 3m 8x0,25mm <sup>2</sup>	7000-17121-2910300	7000-17121-2910300
	1 20 m	02001297	Cable M12 ST Straight 20m 8x0,25mm <sup>2</sup>	7000-17101-2912000	7000-17101-2912000
	1 0	01036536	Cupboard Lead Through 8-pol	7000-48111-0000000	7000-48111-0000000
	1 0	01298406	Load monitoring MICO 4.6	9000-41034-0100600	MICO 4.6
	22 110 m	02030085	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey, LED	7000-12421-2240500	7000-12421-2240500
	5 25 m	7000-12261-2230500			
	1 5 m	02137230	Cable M12 fem. 90° 5m 4x0,34mm <sup>2</sup> , grey	7000-12341-2240500	7000-12341-2240500
	4 20 m	02030075	MSUD double valve form A 5m 4x0,75mm <sup>2</sup> , grey	7000-58021-2270500	7000-58021-2270500
PHOENIX					
	2 0	01035501	End cover	3030417	D-ST 2,5
	42 0	01032675	End bracket	1421659	E/MK 1

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>PHOENIX</b>					
	7 0	01233224	Feed through terminal	3044225	UT 35
	2 0	PXC.3044241	Ground modular terminal	PXC.3044241	UT35 PE
	6 0	01036502	Feed-through modular terminal block	3031212	ST 2,5
	28 0	01037472	Ground modular terminal	3031238	ST 2,5-PE
	18 0	01035500	End cover	3030459	D-STTB 2,5
	311 0	01036504	Feed through terminal	3031270	STTB 2,5
	1 0	01044913	Knife disconnect terminal block	3035140	ST 4-HEDI
	3 0	01032859	Ground modular terminal	3036026	STTB 2,5-PE
	26 0	01037491	Fuse terminal	3036547	ST 4-HESILED 24 (5X20)
	1 0	01872501	End cover	3036660	D-ST 2,5-3L
	12 0	PXC.3030213	Plug-in bridge	3030213	FBS 10-5
	30 0	01872505	Feed through terminal	3036042	ST 2,5-3L
	4 0	01872507	Ground modular terminal	3036071	ST 2,5-3PE
<b>PILZ</b>					
	1 0	01166696	Emergency stop relay 24V AC/DC 2n/o	777 303	PNOZ X2 P 24VAC/DC
	2 0	PILZ.750 103	PNOZsigma Safety relay 2n/o	750 103	PNOZ s3 24VDC
	2 0	01391997	PNOZsigma Safety relay 8n/o 1n/c	750 111	PNOZ S11 24VDC
<b>REXEL</b>					
	1 0	01136313	Fuse 4A F		FUSE
	25 0	01220100	Fuse 2A T		Fuse 2A T
<b>RITTAL</b>					
	2 0	01037260	Enclosure internal thermostat	SK3110.000	SK3110.000
	1 0	02052892	SE Standalone Enclosure, platform TS8 1800/1600/400	SE5842.500	SE5842.500
	2 0	02052886	Base/plinth components f+r, RAL 7022 W x H 1600 x 100 mm	TS8601.920	TS8601.920
	4 0	01960281	Base/plinth trim side, 100 mm high	TS8601.040	TS8601.040
	2 0	01797385	Fan-and-filter unit, 55 m³/h 24 V DC, RAL 7035	SK3238.124	SK3238.124



Rev.: Drawing number: 4\_22.5215

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>RITTAL</b>					
	1 0	01398694	Outlet filter for fan-and-filter units 3324 / 3325 RAL 7035	SK3325.207	SK3325.207
	1 0	01842072	Outlet filter RAL 7035 for fan-and-filter units 3322.xxx	SK3238.200	SK3238.200
	1 0	Rittal_TP6742.500	Consoles TP6742.500 (1200x960x400 bxhxt)	TP6742.500	TP6742.500
	2 0	01960278	TS extrusion for cable entry	8802120	TS.8802120
	2 0	RIT.TS8601200	Socket Front Rear	TS8601200	TS8601200
	4 0	02113131	Terminal box painted, without gland plate RAL 7035	1529510	KL.1529510
	3 0	02333153	Cast aluminium enclosure	9110210	GA.9110210
<b>SIEMENS</b>					
	1 0	01116293	Circuit breaker 32A/B 3-pole	5SY4332-6	5SY4332-6
	2 0	SIE.5SY4620-7	Circuit Breaker 20 A/C 3-pol.+N	5SY4620-7	5SY4620-7
	1 0	SIE.5SY4316-7	Circuit breaker 16 A/C 3-pole	5SY4316-7	5SY4316-7
	1 0	01039030	Siemens Circuit Breaker 2 A/C 1-pol.	5SY4102-7	5SY4 102-7
	5 0	01877851	Contactor 15KW	3RT1034-1BB40	3RT1034-1BB40 (15KW, 24V)
	5 0	01043218	Auxiliary contact for contactor 3RH1911, 2NO/2NC	3RH1911-1HA22	3RH 20 / 2C
	1 0	02151715	Circuit Breaker 100 A VL 160X N	3VL1710-1DE36-0AA0	3VL1710-1DE36-0AA0
	2 0	02052930	Box terminals 3 pol for VL 150X UL	3VL9120-4TC31	3VL9120-4TC31
	1 0	02052941	Terminal cover for 3VL3125	3VL9300-8CB31	3VL9300-8CB31
	1 0	02052926	Terminal cover for VL 150X UL	3VL9300-8CA31	3VL9300-8CA31
	1 0	02052932	Door-Coupling Rotary Mechanism for VL150XUL - VL250UL	3VL9300-3HG06	3VL9300-3HG06
	3 0	01283235	EMS pushbutton red complete +1NO +1NC	3SB3201-1HA20-0CC0	3SB3201-1HA20-0CC0
	3 0	01044907	Contact block for 3SB3, 1NC	3SB3400-0C	3SB3400-0C
	4 0	01329039	Complete device, round, LED red	3SB3244-6AA20	3SB3244-6AA20
	4 0	01329040	Complete device, round, LED green	3SB3244-6AA40	3SB3244-6AA40
	1 0	01298450	Keyswitch CES 22mm touch-0-lock	3SB3000-4SD01	3SB3 CES KEY
	1 0	01242151	Keyswitch BKS 22mm 0-1	3SB3000-5AD01	3SB3000-5AD01
	6 0	01044906	Contact block for 3SB3, 2NO	3SB3400-0D	3SB3400-0D

# Summarized parts list

Supplier	Quantity	Part number	Designation	Order number	Type number
<b>SIEMENS</b>					
	2 0	01036512	Holder Plate f. Poti 12,5x27mm	3SB3922-0AW	3SB3922-0AW
	6 0	01037477	Inscription Plate 12,5x27mm	3SB3902-1AA	3SB3902-1AA
	3 0	01387541	Button red, Complete device, round, pushbutton +1NO +1NC +LED	3SB3247-0AA21	3SB3247-0AA21
	1 0	01220076	Button black, Complete device, round, pushbutton	3SB3201-0AA11	3SB3201-0AA11
	2 0	01329035	Button green, Complete device, round, pushbutton +1NO +LED	3SB3245-0AA41	3SB3245-0AA41
	4 0	3SB3501-2EA41	Selector Switch Illuminated green, I-0-II spring return, metal	3SB3501-2EA41	3SB3501-2EA41
	4 0	01740433	Holder Terminal with LED green for 3SB3	3SB3403-1PC	3SB3403-1PC
	8 0	01036520	Contact block for 3SB3, 1NO	3SB3400-0B	3SB3400-0B
	4 0	01036511	Holder Plate f. Switch and Lamp 12,5x27mm	3SB3922-0AV	3SB3922-0AV
<b>STEUTE</b>					
	1 0	0205828	Radio Receiver RF Rx EN868-2W	90590012	RF Rx EN868-2W
<b>TURCK</b>					
	9 0	BI2-EG08-VP6X-H1341	Inductive Sensor M8, 1CO	BI2-EG08-VP6X-H1341	BI2-EG08-VP6X-H1341