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CONTROL DIAGRAMS

MACROS & TEMPLATES

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES

SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER												
OWNER'S ENGINEERING												
ENGINEERING												
PROJECT		Flémalle CCGT Project										
												
SIZE	SCALE											
A3		1	18.04.2023	For Design				ENL	OPP	OPP		
		REV.	DATE	DESCRIPTION			STATUS	DESIGNED	CHECKED	APPROVED		
DRAWING NUMBER:				SHEET:	DRAWING NAME:							
EBL-20-YI_IDY-EAI-00600				0	Control Diagram Macros & Templates						Rev.: 1	
OF: 700												
DOCUMENT EAI: 222-20-D-I-00600												

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MODIFICATIONS

REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED
1	18.04.2023	For Design				

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Sheet No.	KKS	TITLE	ISSUE		
			18.04.2023		
0		Cover	1		
1		Index	1		
1.A		Index	1		
2		References, Prel. & Pend., Notes	1		
10	01CD_10EA010	Functional Group	1		
10.A	01CD_10EA010	Functional Group	1		
10.B	01CD_10EA010	Functional Group	1		
20	01CD_10EA020	2 ACT Selector	1		
20.A	01CD_10EA020	2 ACT Selector	1		
20.B	01CD_10EA020	2 ACT Selector	1		
20.C	01CD_10EA020	2 ACT Selector	1		
20.D	01CD_10EA020	2 ACT Selector	1		
20.E	01CD_10EA020	2 ACT Selector	1		
30	01CD_10EA030	3 ACT Selector	1		
30.A	01CD_10EA030	3 ACT Selector	1		
30.B	01CD_10EA030	3 ACT Selector	1		
30.C	01CD_10EA030	3 ACT Selector	1		
30.D	01CD_10EA030	3 ACT Selector	1		
30.E	01CD_10EA030	3 ACT Selector	1		
30.F	01CD_10EA030	3 ACT Selector	1		
30.G	01CD_10EA030	3 ACT Selector	1		
30.H	01CD_10EA030	3 ACT Selector	1		
40	01CD_10EA040	4 ACT Selector	1		
40.A	01CD_10EA040	4 ACT Selector	1		
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40.C	01CD_10EA040	4 ACT Selector	1		
40.D	01CD_10EA040	4 ACT Selector	1		
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40.F	01CD_10EA040	4 ACT Selector	1		
40.G	01CD_10EA040	4 ACT Selector	1		
40.H	01CD_10EA040	4 ACT Selector	1		
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Sheet No.	KKS	TITLE	ISSUE		
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40.J	01CD_10EA040	4 ACT Selector	1		
40.K	01CD_10EA040	4 ACT Selector	1		
40.L	01CD_10EA040	4 ACT Selector	1		
40.M	01CD_10EA040	4 ACT Selector	1		
40.N	01CD_10EA040	4 ACT Selector	1		
40.O	01CD_10EA040	4 ACT Selector	1		
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100.A	01CD_10EA100	Motor	1		
100.B	01CD_10EA100	Motor	1		
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410.C	01CD_10EA410	Solenoid Fail Open Valve	1		
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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE

A3

SCALE

DRAWING NUMBER:

EBL-20-YI-IDY-EAI-00600

DOCUMENT EAI:

222-20-D-I-00600

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DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

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MODIFICATIONS							
1	18.04.2023	For Design		ENL	OPP	OPP	
REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED	

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REFERENCES	Doc. No.	By	Rev.
Control Diagrams Symbology	EBL-20-YI_IDB-EAI-00200	EAI	01
Control System Signals Interface Principle	EBL-20-YI_IR_EAI-00205	EAI	01
Plant Identification System (KKS)	EBL-20-YDC-DR_EAI-00202	EAI	01

NOTES

1. This symbology will be used in Control Diagrams.

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PRELIMINARY AND PENDING DATA

3

CONTROL OF MODIFICATIONS

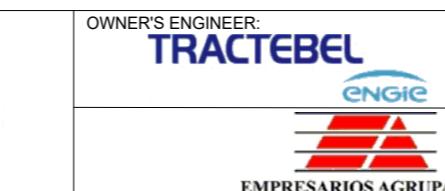
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1. First issue. N/A

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Control Diagram

Control Diagram Macros & Templates

Functional Group

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REV.	DATE	DESCRIPTION	STATUS
		DRAWN	CHECKED
1	18.04.2023	For Design	APPROVED

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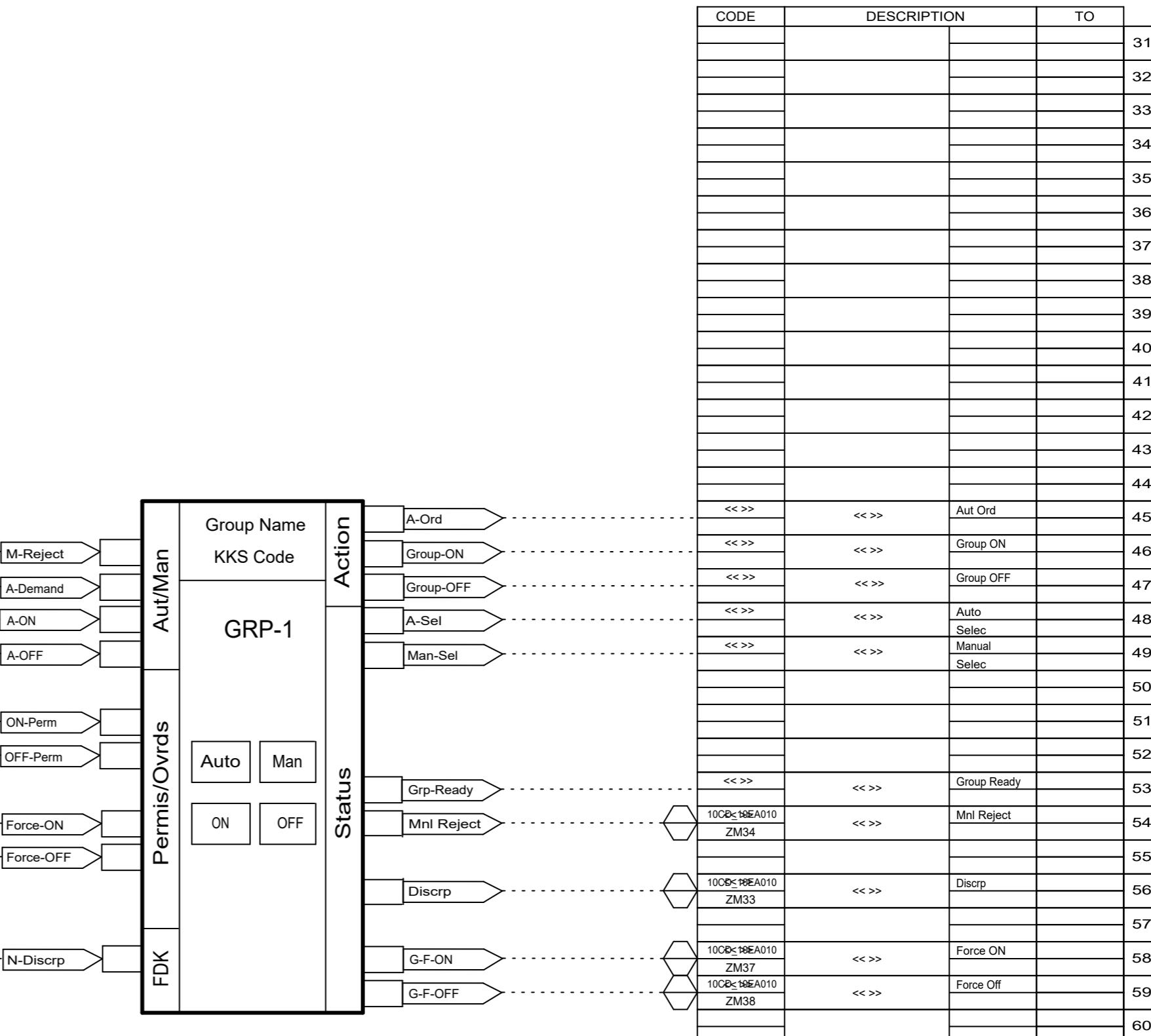
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17	<>> Auto Demand	
18	<>> Auto ON	
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24	<>> Force ON	
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28	<>> N Discrp	
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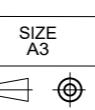


PROJECT:

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Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

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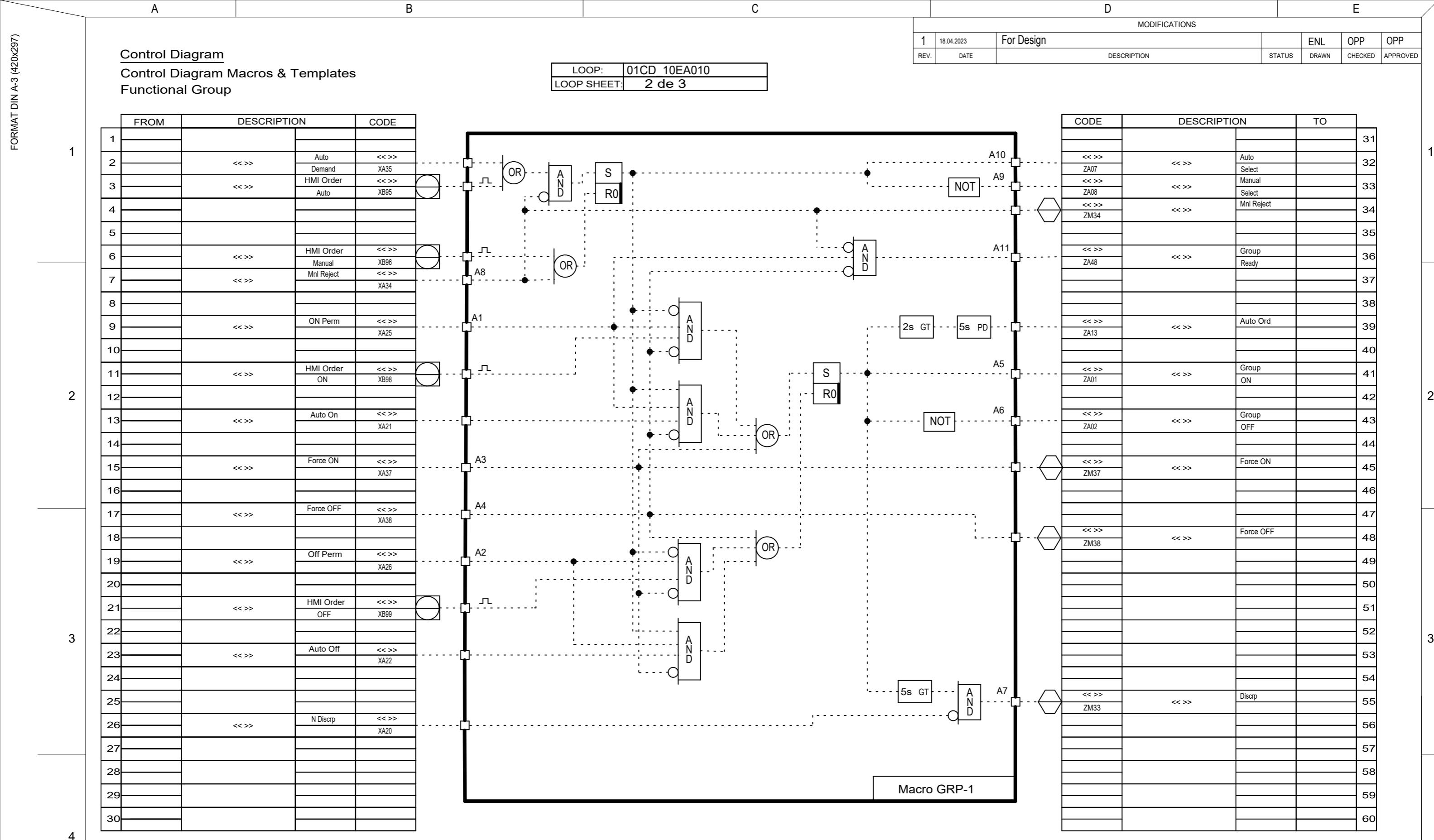
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Flémalle CCGT Project
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Control Diagram Macros & Templates
DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

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Control Diagram**Control Diagram Macros & Templates****Functional Group**

LOOP:	01CD 10EA010
LOOP SHEET:	3 de 3

MODIFICATIONS			
REV.	DATE	DESCRIPTION	STATUS
ENL	OPP	DRAWN	CHECKED

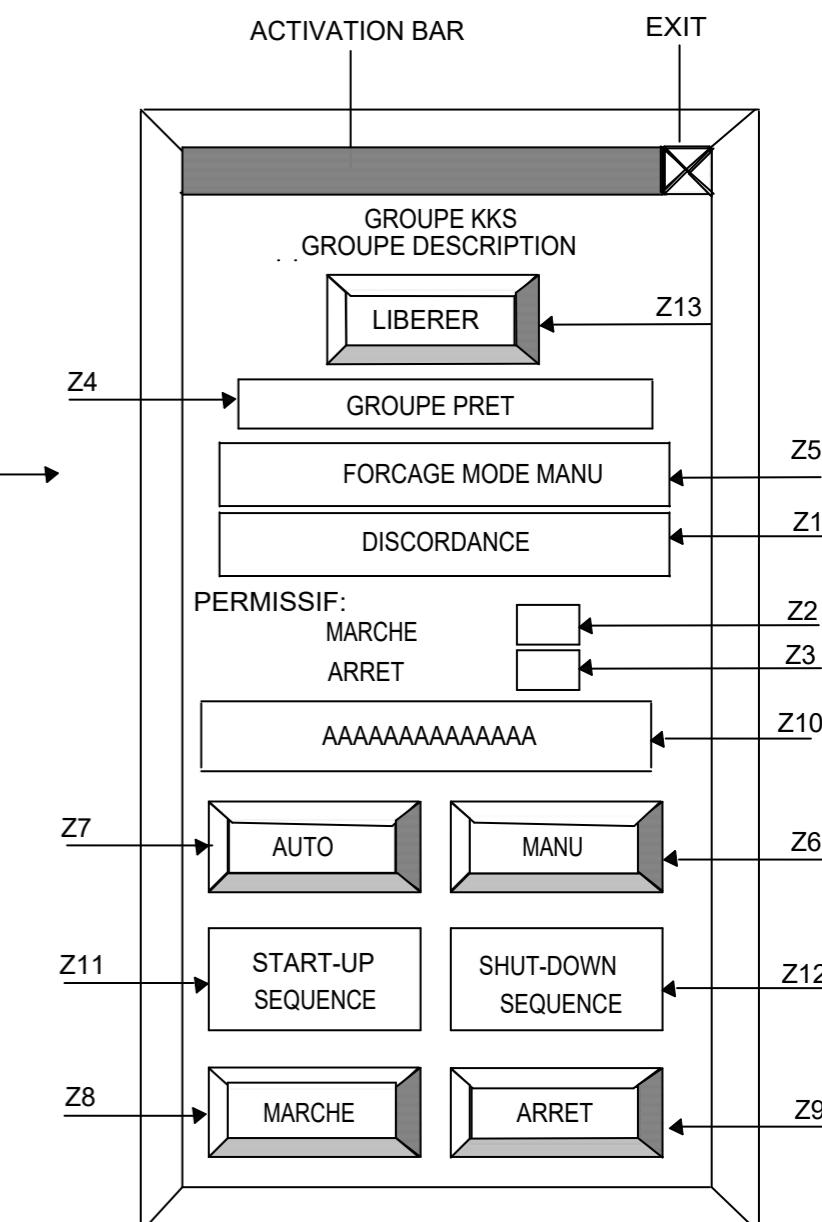
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8	Note 1 Permissive OFF A2	
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10	Note 0 Force ON A3	
11		
12	Note 0 Force OFF A4	
13		
14	Group ON A5	
15		
16	Group OFF A6	
17		
18	Discrp A7	
19		
20	Note 0 Manual Reject A8	
21		
22	Manual A9	
23		
24	Aut A10	
25		
26	Group Ready A11	
27		
28		
29		
30		

SIGNALIZATION LOGIC					
SIGNAL	LOGIC	TEXT	COLOUR TEXT	BACK GROUND COLOUR	NOTES
Z1	IF A7=1 IF A7=0	DISCORDANCE	WHITE RED	RED GREEN	2 4
Z2	IF ONP=1 IF OFFP=0			RED GREEN	
Z3	IF OFFP=1 IF OFFP=0			RED GREEN	4
Z4	IF A11=0 IF A11=1	PAS GROUPE PRET GROUPE PRET	BLACK BLACK	ORANGE GREY	
Z5	IF A8=1 IF A8=0	MANUAL REJECT	BLACK	ORANGE	2
Z6	IF A9=1 IF A9=0	MANUAL	LIGHT BLUE BLACK	GREY GREY	3
Z7	IF A10=1 IF A10=0 & A8=0 IF A10=0 & A8=1	AUTO	LIGHT BLUE BLACK WHITE	GREY GREY GREY	3 5
Z8	IF A5=1 IF A5=0 & ONP=1 IF A5=0 & ONP=0	MARCHE	BLACK BLACK WHITE	GREY GREY GREY	3 5
Z9	IF A6=1 IF A6=0 & OFFP=1 IF A6=0 & OFFP=0	ARRET	LIGHT BLUE BLACK WHITE	GREY GREY GREY	3 5
Z10	IF A3=1 IF A4=1 IF A3=0 & A4=0	GROUPE ARRET FORCEE GROUPE MARCHE FORCEE	BLACK BLACK	ORANGE ORANGE	2
Z11		START-UP SEQUENCE	BLACK	GREY	6
Z12		SHUT-DOWN SEQUENCE	BLACK	GREY	6
Z13		LIBERER	BLACK	GREY	8

ONP= 1 IF A1=1 & A4=0
OFFP= 1 IF A2=1 & A3=0

NOTES:

- 0.- Whenever this signal is not required its logical value will be continuously forced to 0.
- 1.- Whenever this signal is not required its logical value will be continuously forced to 1.
- 2.- No text will appear and the background will be coloured like the control station background.
- 3.- While the soft control switch is activated it will be sinking.
- 4.- This area will call the corresponding list of permissives. All the conditions related to status of ONP and OFFP to be included in the permissives window. This window will be as the manufacturer standard.
- 5.- The pushbutton will be disabled.
- 6.- If there is not any sequence in the functional group. No text will appear and the background will be coloured like the control station background.
- 7.- This area will call a window with the corresponding sequence. A reset button for the sequence shall be included in the window. This window will be as the manufacturer standard.
- 8.- It is necessary to press the "LIBERER" button before activating any station pushbuttons ("MARCHE", "ARRET", "AUTO" or "MANUAL"). All buttons will be shown as disabled (white text over gray background) before this buttons is pressed. This "LIBERER" action lasts five seconds. After that, operator needs to "LIBERER" again to make any further operation. This button will be shown as black over grey background when not selected and over dark grey when selected. (A double confirmation standard from DCS manufacturer is accepted if the same safety is achieved as the one described here)

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VÉRIFIER L1 L2

OWNER:**OWNER'S ENGINEER:****PROJECT:**

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

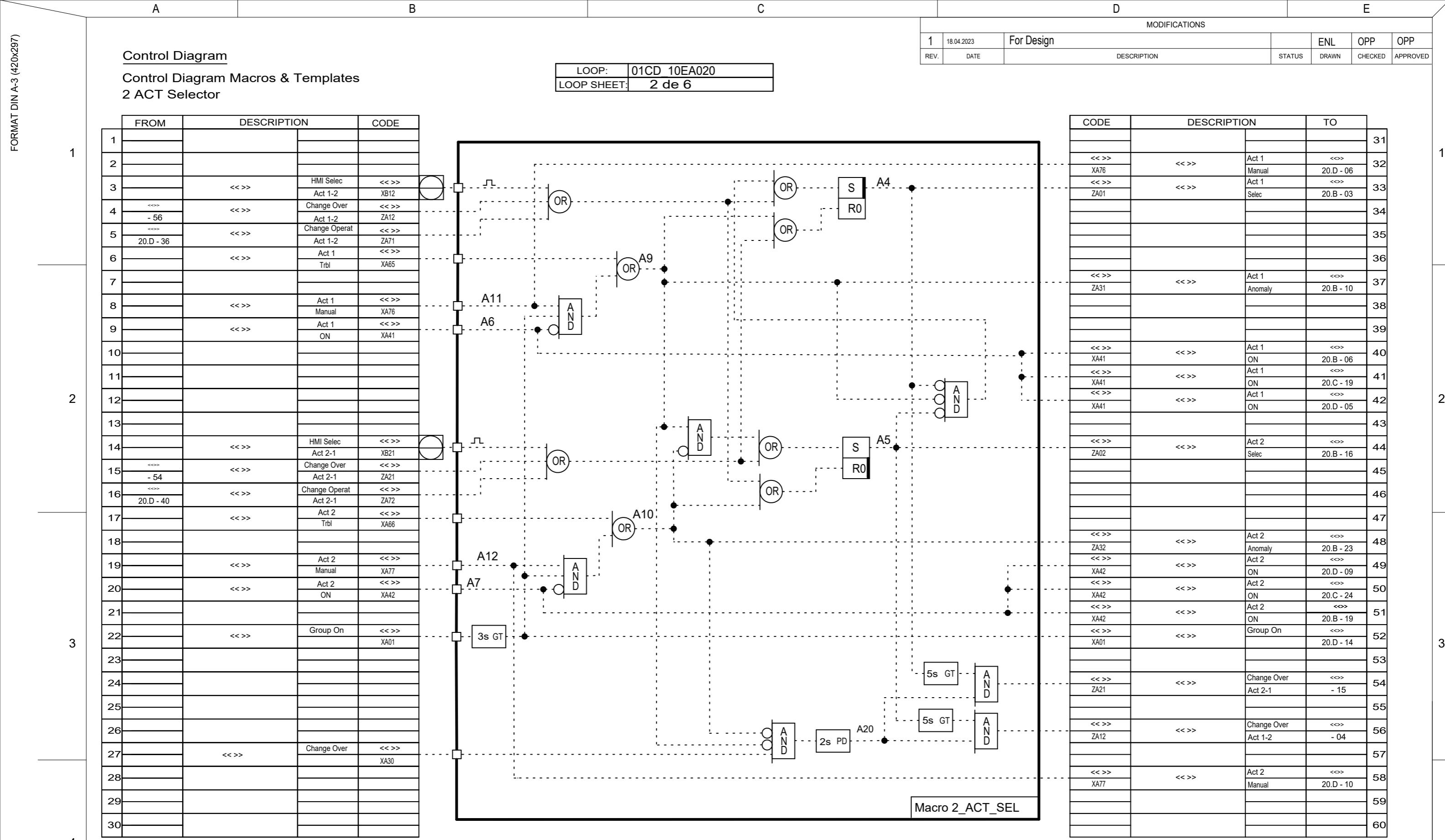


DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

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	<p>NOTE:</p> <p>1.- Change Over signal will be only used for actuator's automatic changes in operation hours, not for process conditions. In case of client's requirement.</p>																																																																																																																																																																																																											
	<p>PROPRIETARY INFORMATION This document contains proprietary information of Empresarios Agrupados Internacional,S.A. and is to be used solely for the Project and the purpose for which it is furnished. It may not be disclosed to others for a different use without the written permission of Empresarios Agrupados Internacional,S.A.</p> <p>CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES SYSTEM OR COMPONENTS YES <input checked="" type="checkbox"/> NO <input type="checkbox"/></p> <p>VERIFICATION: N/A <input type="checkbox"/> SUP. <input checked="" type="checkbox"/> VERIFIER L1 <input type="checkbox"/> L2 <input type="checkbox"/></p>																																																																																																																																																																																																											
	OWNER: 			OWNER'S ENGINEER: 		PROJECT: Flémalle CCGT Project		DRAWING NAME: Control Diagram Macros & Templates																																																																																																																																																																																																				
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									SHEET OF 20 700 REV. 1																																																																																																																																																																																																			



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 20.A 700 REV. 1

A

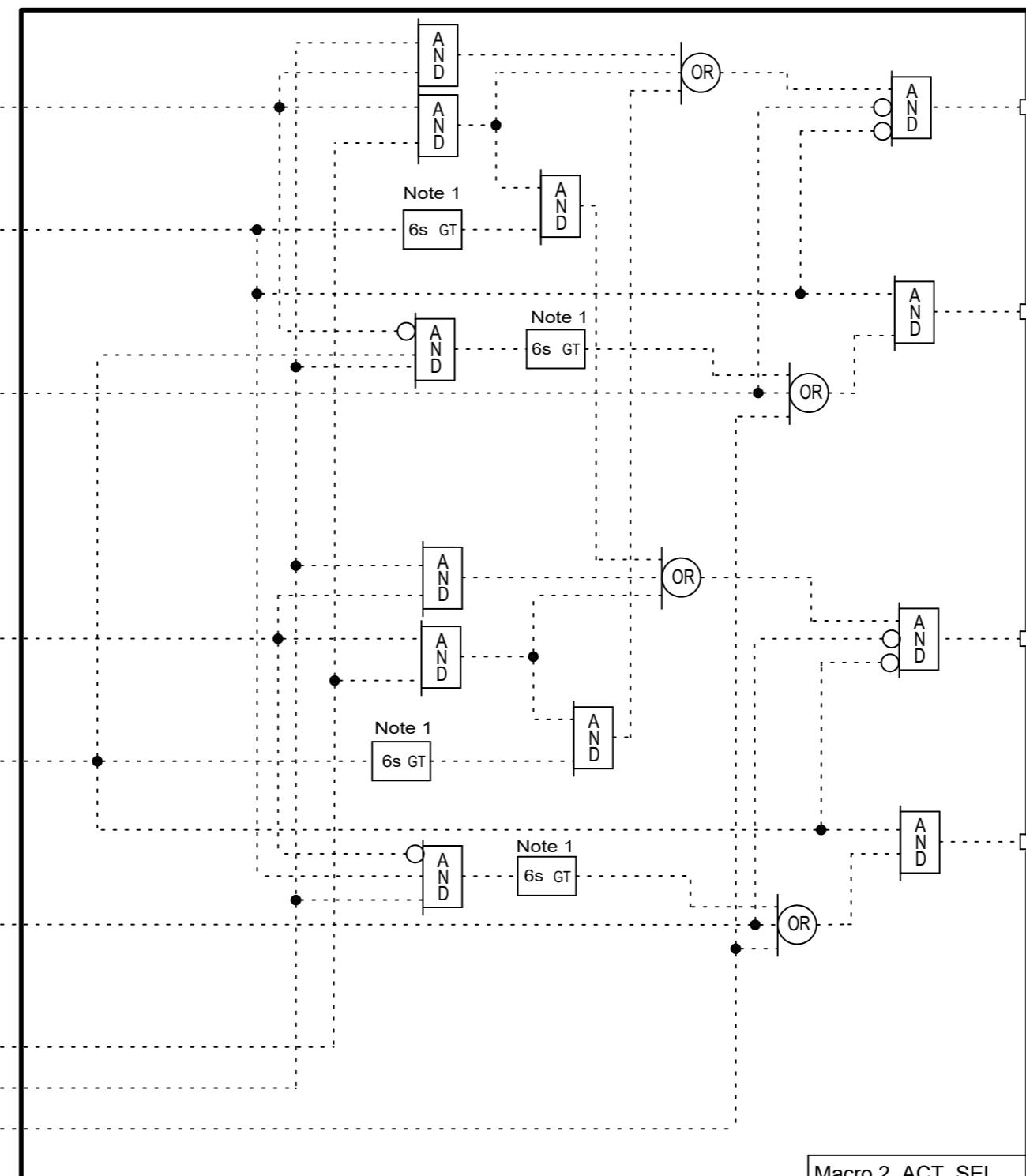
B

C

D

E

FROM	DESCRIPTION	CODE
1		
2		
3	 20.A - 33	Act 1 Selec ZA01
4		
5		
6	 20.A - 40	Act 1 ON XA41
7		
8		
9		
10	 20.A - 37	Act 1 Anomaly ZA31
11		
12		
13		
14		
15		
16	 20.A - 44	Act 2 Selec ZA02
17		
18		
19	 20.A - 51	Act 2 ON XA42
20		
21		
22		
23	 20.A - 48	Act 2 Anomaly ZA32
24		
25		
26	 20.C - 43	2 Act Required ZA46
27	 20.C - 39	1 Act Required ZA45
28	 20.C - 35	0 Act Required ZA44
29		
30		



CODE	DESCRIPTION	TO
		31
		32
<< >>		33
ZA58	Cmd Strt	
	A1	
		34
		35
		36
		37
<< >>		38
ZA59	Cmd Stp	
	A1	
		39
		40
		41
		42
		43
		44
		45
<< >>		46
ZA60	Cmd Strt	
	A2	
		47
		48
		49
		50
<< >>		51
ZA61	Cmd Stp	
	A2	
		52
		53
		54
		55
		56
		57
		58
		59
		60

NOTE

1.- These time delays shall be adjustable. Preliminary value shown unless otherwise indicate in the logic diagram of a specific system.

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUB VERIFIED L1 L2



OWNER'S ENGINE

ER'S ENGINEER:
TRACTEBEL

 EMPRESARIOS AGRUPA

PROJECT:

DRAWING NAME:
Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT ID: 600-00-B-166666

SHEET OF REV.
20.B 700 1

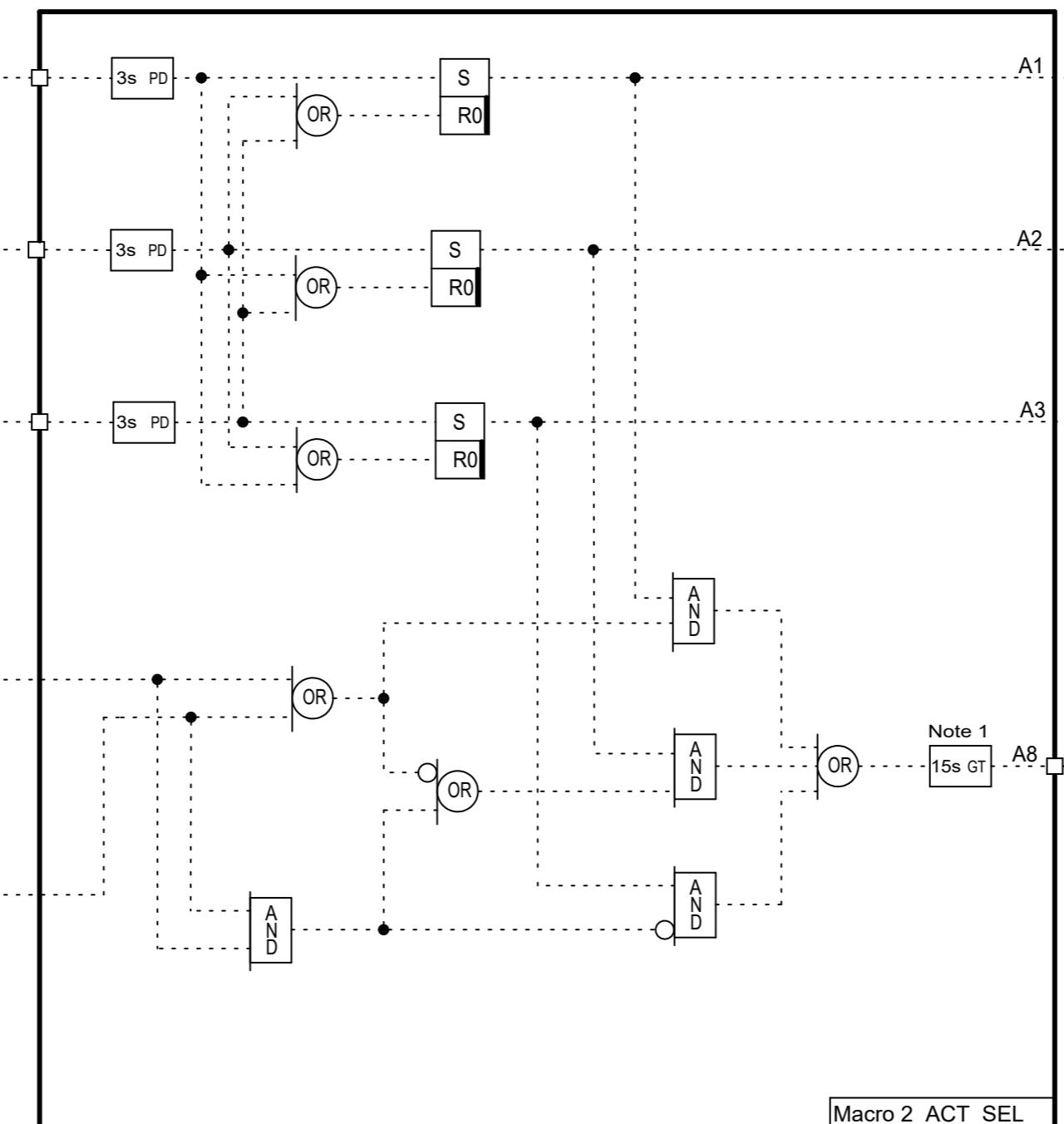
Control Diagram

Control Diagram Macros & Templates

LOOP:	01CD 10EA020
LOOP SHEET:	4 de 6

1	18.04.2023	For Design		ENL	OPP	OPP
REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED

FROM	DESCRIPTION	CODE
1		
2		
3		
4		
5	<< >>	0 Act Required << >> XA44
6		
7		
8		
9	<< >>	1 Act Required << >> XA45
10		
11		
12		
13	<< >>	2 Act Required << >> XA46
14		
15		
16		
17		
18		
19	<<>> 20.A - 41	Act 1 ON << >> XA41
20		
21		
22		
23		
24	<<>> 20.A - 50	Act 2 ON << >> XA42
25		
26		
27		
28		
29		
30		



CODE	DESCRIPTION		TO
			3
			32
			33
			34
<< >>	<< >>	0 Act	<<>>
ZA44		Required	20.B - 28
			36
			37
			38
<< >>	<< >>	1 Act	<<>>
ZA45		Required	20.B - 27
			40
			41
			42
<< >>	<< >>	2 Act	<<>>
ZA46		Required	20.B - 26
			44
			45
			46
			47
			48
			49
			50
<< >>	<< >>	Discrp	51
ZM98			52
			53
			54
			55
			56
			57
			58
			59
			60

NOTE

1.- These time delays shall be adjustable. Preliminary value shown unless otherwise indicate in the logic diagram of a specific system.

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER L1 L2



OWNER'S ENGINEER

NER'S ENGINEER:
TRACTEBEL


EMPRESARIOS AGRUPADOS

PROJECT:

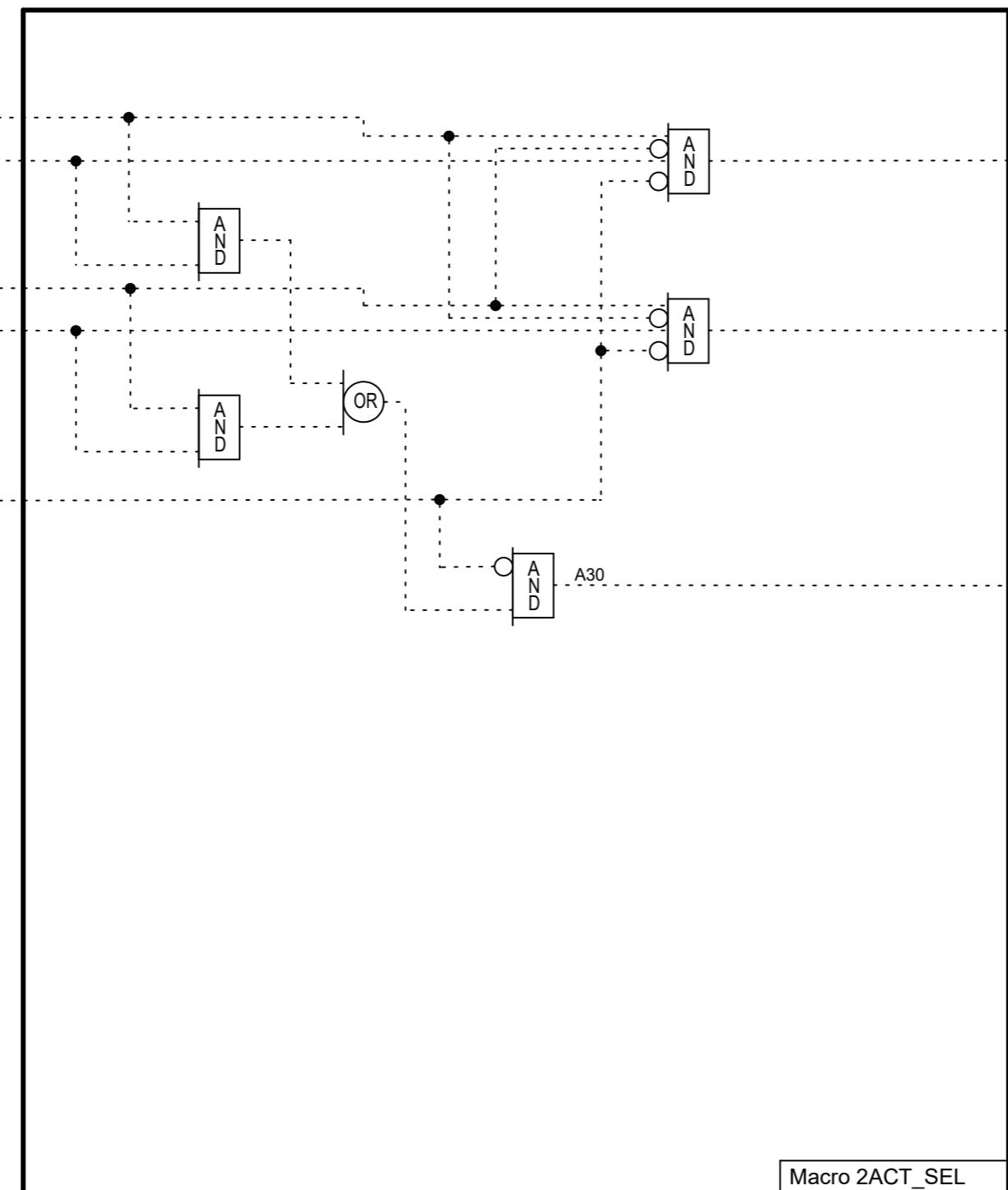
DRAWING NAME:
Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF REV.
20.C 700 1

FROM	DESCRIPTION	CODE
1		
2		
3		
4		
5	<>> 20.A - 42	Act 1 ON XA41
6	<>> 20.A - 32	Act 1 Manual XA76
7		
8		
9	<>> 20.A - 49	Act 2 ON XA42
10	<>> 20.A - 58	Act 2 Manual XA77
11		
12		
13		
14	<>> 20.A - 52	Group On XA01
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		



CODE	DESCRIPTION		TO
			3
			32
			33
			34
			35
<< >>	<< >>	Change Operat	<>
ZA71		Act 1-2	20.A - 05
			37
			38
			39
<< >>	<< >>	Change Operat	<>
ZA72		Act 2-1	20.A - 16
			40
			41
			42
			43
			44
			45
<< >>	<< >>	Selec	46
		N Perm	47
			48
			49
			50
			51
			52
			53
			54
			55
			56
			57
			58
			59
			60

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2



OWNER'S ENGINEER

ER'S ENGINEER:
TRACTEBEL

 EMPRESARIOS AGRUPA

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

SHEET OF REV.
20.D 700 1

Control Diagram

Control Diagram Macros & Templates

2 ACT Selector

FROM	DESCRIPTION	CODE
1		
2		
3	0 Act	
4	Required A1	
5	1 Act	
6	Required A2	
7	2 Act	
8	Required A3	
9	Act 1	
10	Selec A4	
11	Act 2	
12	Selec A5	
13	Act 1	
14	ON A6	
15	Act 2	
16	ON A7	
17	Discrepancy	
18	A8	
19	Act 1	
20	Anomaly A9	
21	Act 2	
22	Anomaly A10	
23	Act 1	
24	Manual A11	
25	Act 2	
26	Manual A12	
27	Change Over	
28	A20	
29	Selec	
30	N Perm A30	

LOOP: 01CD 10EA020
LOOP SHEET: 6 de 6

MODIFICATIONS			
1	18.04.2023	For Design	ENL OPP OPP

REV. DATE DESCRIPTION STATUS DRAWN CHECKED APPROVED

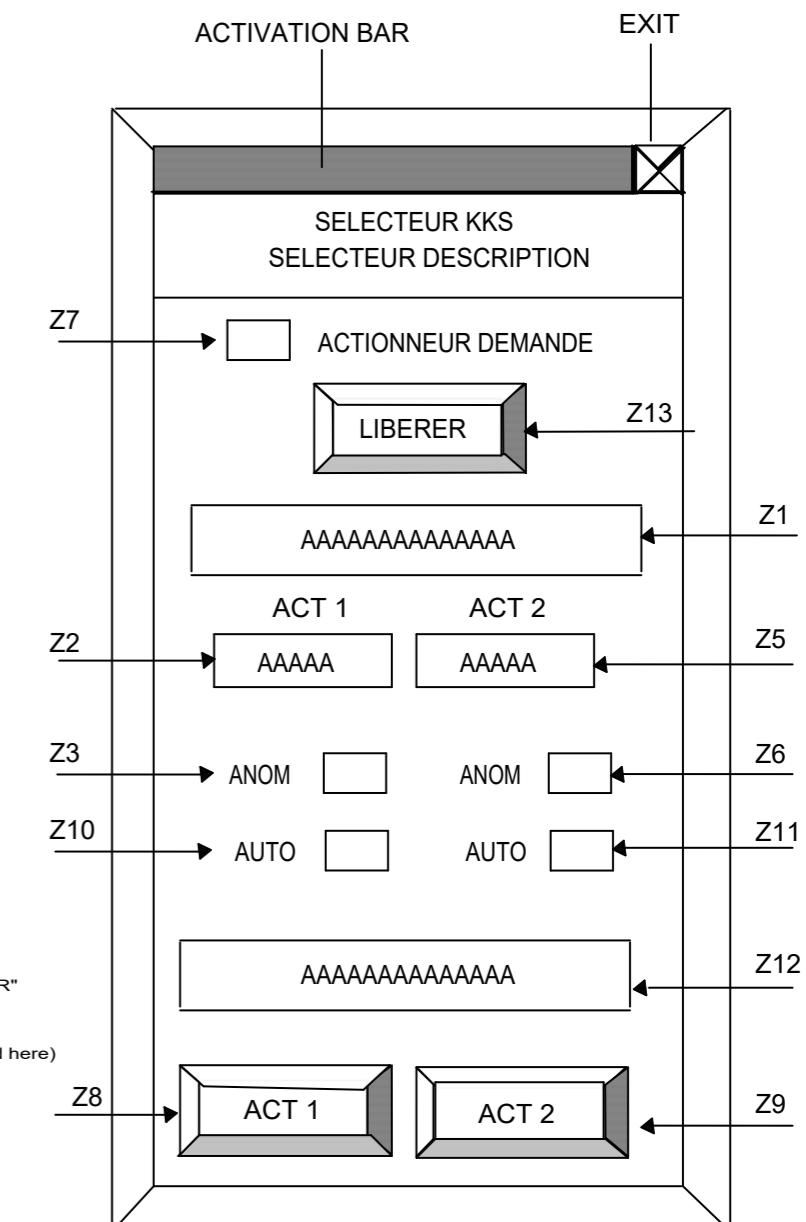
SIGNALIZATION LOGIC					
SIGNAL	LOGIC	TEXT	TEXT COLOUR	BACK GROUND COLOUR	NOTES
Z1	IF A8=1 IF A30=1 IF A8=0 & A30=0	DISCORDANCE SELECTION NON PERMIS	WHITE BLACK	RED ORANGE	1
Z2	IF A6=1 IF A6=0	EN MARCHE ARRETE	BLACK BLACK	GREEN GREY	
Z3	IF A9=1 IF A9=0	X	BLACK	ORANGE	1
Z5	IF A7=1 IF A7=0	EN MARCHE ARRETE	BLACK BLACK	GREEN GREY	
Z6	IF A10=1 IF A10=0	X	BLACK	ORANGE	1
Z7	IF A1=1 IF A2=1 IF A3=1	0 1 2	BLACK BLACK BLACK		
Z8	IF A4=1 IF A4=0 & A9=0 IF (A4=0 & A9=1) OR A30=1 OR A20=1	ACT 1 ACT 1 ACT 1	BLACK BLACK WHITE	GREEN GREY GREY	2 3
Z9	IF A5=1 IF A5=0 & A10=0 IF (A5=0 & A10=1) OR A30=1 OR A20=1	ACT 2 ACT 2 ACT 2	BLACK BLACK WHITE	GREEN GREY GREY	2 3
Z10	IF A11=0 IF A11=1	X	WHITE BLACK	GREY GREY	
Z11	IF A12=0 IF A12=1	X	WHITE BLACK	GREY GREY	
Z12	IF A4=1 IF A5=1 IF A4=0 & A5=0	ACT 1 SELECTIONNE ACT 2 SELECTIONNE NO SEQ SELECTIONNE	WHITE WHITE BLACK	BLUE BLUE ORANGE	
Z13		LIBERER	BLACK	GREY	4

NOTES:

- No text will appear and the background will be coloured like the control station background
- While the soft control switch is activated it will be sinking
- The pushbutton will be disabled
- It is necessary to press the "LIBERER" button before activating any station pushbuttons ("ACT 1" or "ACT 2"). All buttons will be shown as disabled (white text over gray background) before this buttons is pressed. This "LIBERER" action lasts five seconds. After that, operator needs to "LIBERER" again to make any further operation.

This button will be shown as black over grey background when not selected and over dark grey when selected.

(A double confirmation standard from DCS manufacturer is accepted if the same safety is achieved as the one described here)



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

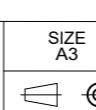
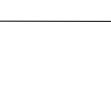


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI-IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 20.E 700 REV. 1

Control Diagram

Control Diagram Macros & Templates

3 ACT Selector

	FROM	DESCRIPTION	CODE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11	<>>	Group On	<>>
12	<>>	3 Act Required	<>>
13	<>>	2 Act Required	<>>
14	<>>	1 Act Required	<>>
15	<>>	0 Act Required	<>>
16	Note 1	Change Over	<>>
17	<>>	Act 1 Trbl	<>>
18	<>>	Act 2 Trbl	<>>
19	<>>	Act 3 Trbl	<>>
20			
21	<>>	Act 1 On	<>>
22	<>>	Act 2 On	<>>
23	<>>	Act 3 On	<>>
24			
25	<>>	Act 1 Man	<>>
26	<>>	Act 2 Man	<>>
27	<>>	Act 3 Man	<>>
28			
29			
30			

NOTES:

1.- Change over signal will be only used for actuator's automatic changes in operation hours, not for process conditions. In case of client's requirement.

LOOP: 01CD_10EA030
LOOP SHEET: 1 de 9

MODIFICATIONS

1	18.04.2023	For Design					
REV.	DATE		DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED

CODE	DESCRIPTION	TO
		31
		32
		33
		34
		35
		36
		37
		38
		39
		40
		41
		42
		43
		44
		45
		46
		47
		48
		49
		50
		51
		52
		53
		54
		55
		56
		57
		58
		59
		60

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

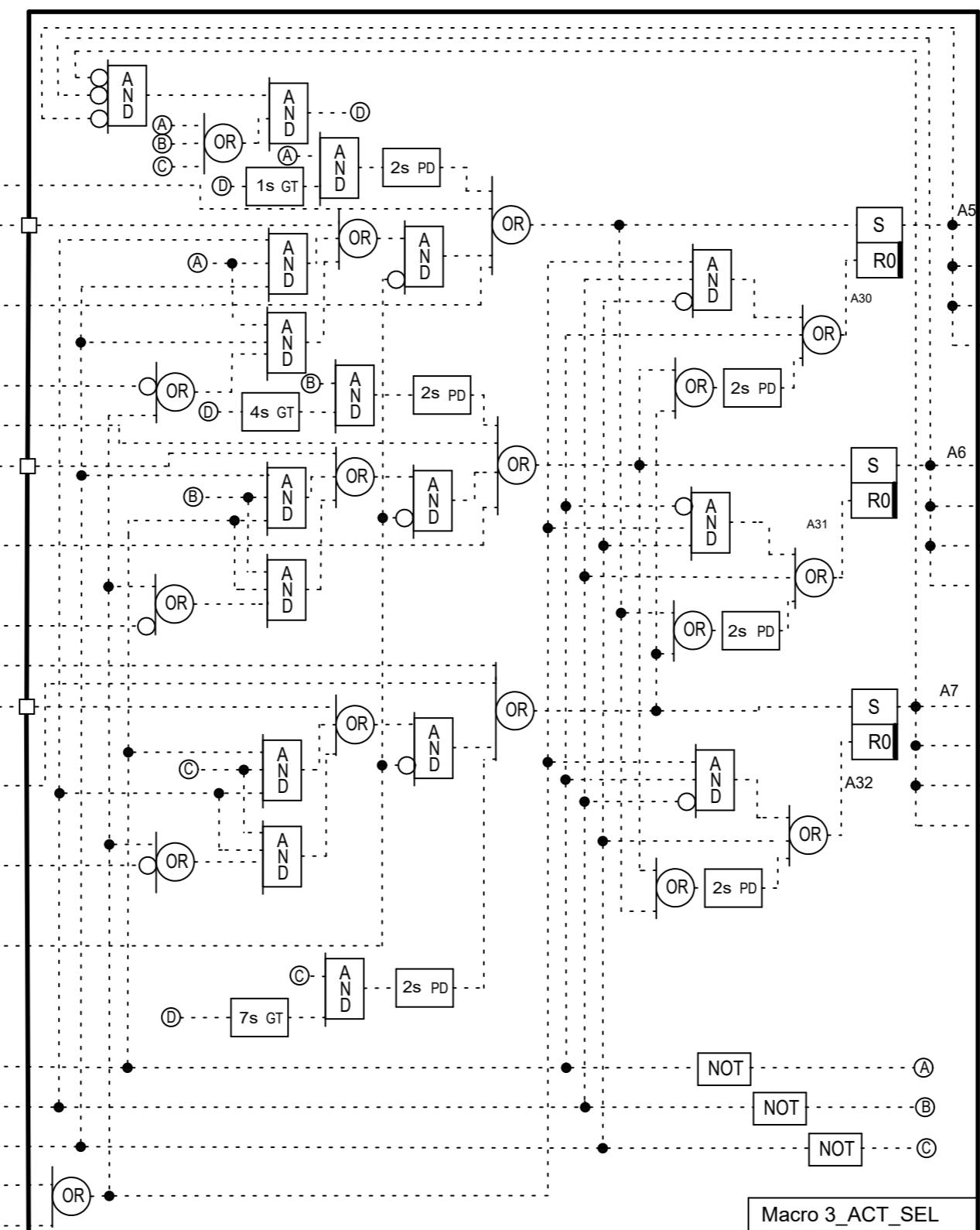
DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
30 700 REV.
1

Control Diagram

Control Diagram Macros & Templates
3 ACT Selector

FROM	DESCRIPTION	CODE
1		
2		
3		
4	<>> 30.F - 36	Change Operat Act 1-2-3 ZA71
5	<>>	HMI Select Act 1-2-3 XB12
6		
7	<>> 30.G - 40	Change Over Act 1-2-3 ZA91
8		
9	<>> 30.C - 55	Act 2 On XA42
10	<>> 30.F - 45	Change Operat Act 2-3-1 ZA72
11	<>>	HMI Select Act 2-3-1 XB23
12		
13	<>> 30.G - 34	Change Over Act 2-3-1 ZA92
14		
15	<>> 30.D - 55	Act 3 On XA43
16	<>> 30.F - 52	Change Operat Act 3-1-2 ZA73
17	<>>	HMI Select Act 3-1-2 XB31
18		
19	<>> 30.G - 37	Change Over Act 3-1-2 ZA93
20		
21	<>> 30.B - 55	Act 1 On XA41
22		
23	<>> 30.F - 58	Select N Permit ZA99
24		
25		
26	<>> 30.B - 51	Act 1 Anomaly ZA31
27	<>> 30.C - 51	Act 2 Anomaly ZA32
28	<>> 30.D - 51	Act 3 Anomaly ZA33
29	<>> 30.E - 41	2 Act Required ZA46
30	<>> 30.E - 45	3 Act Required ZA47



CODE	DESCRIPTION	TO
		31
		32
		33
		34
<>>	Act 1-2-3	<>>
ZA01	Selected	30.B - 02
<>>	Act 1-2-3	<>>
ZA01	Selected	30.C - 04
<>>	Act 1-2-3	<>>
ZA01	Selected	30.D - 06
<>>	Act 1-2-3	<>>
ZA01	Selected	30.G - 03
		39
<>>	Act 2-3-1	<>>
ZA02	Selected	30.B - 06
<>>	Act 2-3-1	<>>
ZA02	Selected	30.C - 02
<>>	Act 2-3-1	<>>
ZA02	Selected	30.D - 04
<>>	Act 2-3-1	<>>
ZA02	Selected	30.G - 06
		40
<>>	Act 3-1-2	<>>
ZA03	Selected	30.B - 04
<>>	Act 3-1-2	<>>
ZA03	Selected	30.C - 06
<>>	Act 3-1-2	<>>
ZA03	Selected	30.D - 02
<>>	Act 3-1-2	<>>
ZA03	Selected	30.G - 09
		51
		52
		53
		54
		55
		56
		57
		58
		59
		60

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

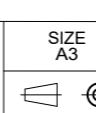


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

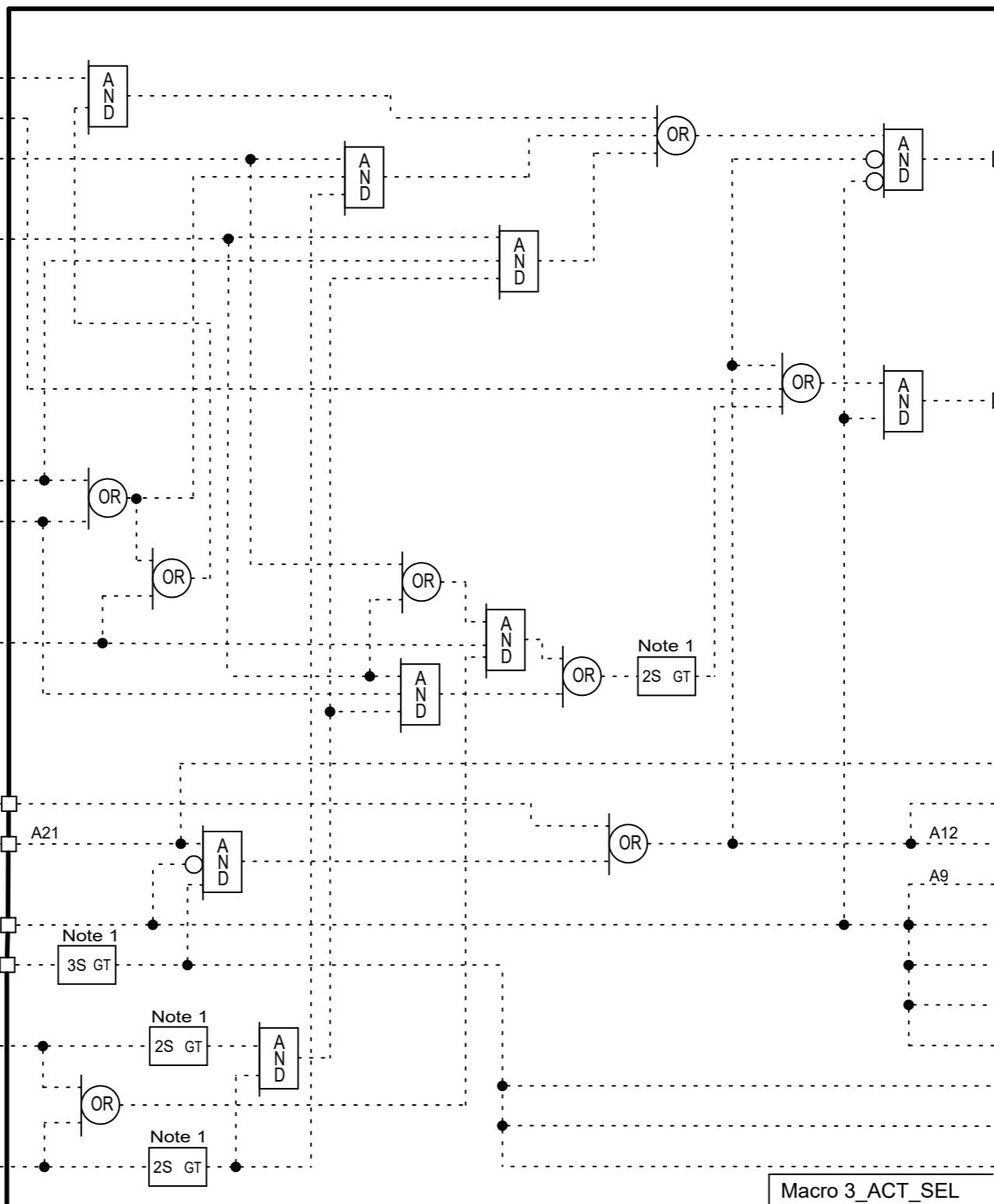
DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
30.A 700 REV.
1

Control Diagram

Control Diagram Macros & Templates
3 ACT Selector

	FROM	DESCRIPTION	CODE
1			
2	<>>	<>>	Act 1-2-3
	30.A - 35	Selected	ZA01
3	<>>	<>>	0 Act
	30.E - 31	Required	ZA44
4	<>>	<>>	Act 1-2-1
	30.A - 47	Selected	ZA03
5			
6	<>>	<>>	Act 2-3-1
	30.A - 41	Selected	ZA02
7			
8			
9			
10			
11			
12	<>>	<>>	3 Act
	30.E - 42	Required	ZA47
13	<>>	<>>	2 Act
	30.E - 38	Required	ZA46
14			
15			
16	<>>	<>>	1 Act
	30.E - 34	Required	ZA45
17			
18			
19			
20	<>>	<>>	Act 1 Trbl
			XA65
21	<>>	<>>	Act 1 Man
			XA76
22			
23	<>>	<>>	Act 1 On
			XA41
24	<>>	<>>	Group On
			XA01
25			
26	<>>	<>>	Act 2 On
	30.C - 53		XA42
27			
28	<>>	<>>	Act 3 On
	30.D - 53		XA43
29			
30			



CODE	DESCRIPTION	TO
		31
		32
		33
<>>	ZA58	Cmd Strt A1
		34
		35
		36
		37
		38
		39
<>>	ZA59	Cmd Stp A1
		40
		41
		42
		43
		44
		45
		46
		47
		48
<>>	XA76	Act 1 Man
		30.F - 11
<>>	ZA31	Act 1
		30.G - 13
<>>	ZA31	Anomaly
		30.A - 26
<>>	XAA1	Act 1 On
		30.D - 26
<>>	XAA1	Act 1 On
		30.C - 29
<>>	XAA1	Act 1 On
		30.E - 18
<>>	XAA1	Act 1 On
		30.A - 21
<>>	XAA1	Act 1 On
		30.F - 02
<>>	XAA1	Group On
		30.C - 24
<>>	XAA1	Group On
		30.D - 24
<>>	XAA1	Group On
		30.F - 20
		59
		60

NOTE:

1.- These time delays shall be adjustable. Preliminary value shown unless otherwise indicates in the logic diagram of a specific system.

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

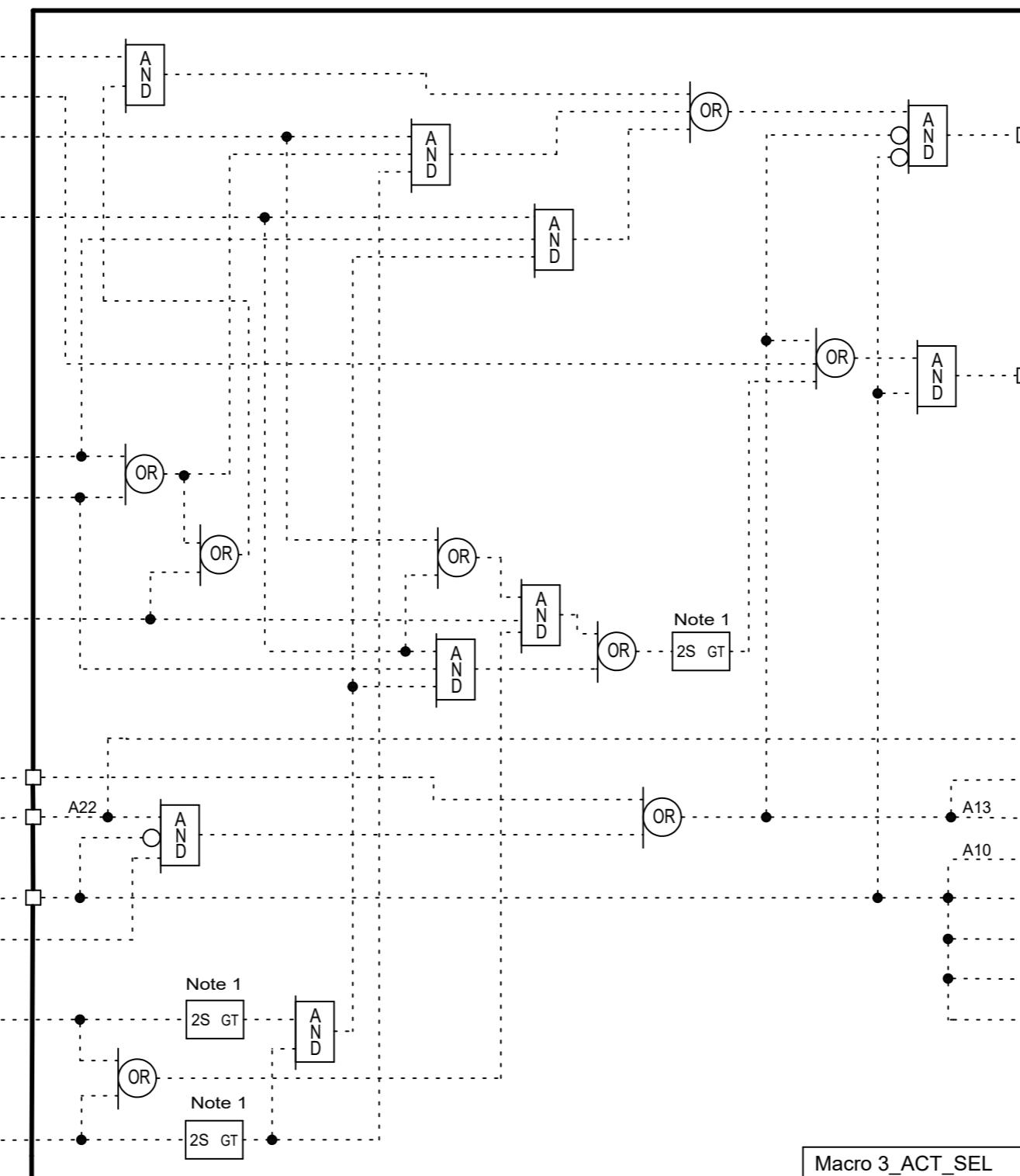
Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
30.B 700 REV.
1

FROM	DESCRIPTION		CODE
1			
2	<>>	<>>	Act 2-3-1
	30.A - 42		Selected ZA02
3	<>>	<>>	0 Act <>>
	30.E - 32		Required ZA44
4	<>>	<>>	Act 1-2-3 <>>
	30.A - 36		Selected ZA01
5			
6	<>>	<>>	Act 3-1-2 <>>
	30.A - 48		Selected ZA03
7			
8			
9			
10			
11			
12	<>>	<>>	3 Act <>>
	30.E - 43		Required ZA47
13	<>>	<>>	2 Act <>>
	30.E - 39		Required ZA46
14			
15			
16	<>>	<>>	1 Act <>>
	30.E - 35		Required ZA45
17			
18			
19			
20		<>>	Act 2 Trbl <>>
			XA67
21		<>>	Act 2 Man <>>
			XA77
22			
23		<>>	Act 2 On <>>
			XA66
24	<>>	<>>	Group On <>>
	30.B - 57		XA01
25			
26	<>>	<>>	Act 3 On <>>
	30.D - 52		XA43
27			
28			
29	<>>	<>>	Act 1 On <>>
	30.B - 53		XA41
30			



CODE	DESCRIPTION		TO
			3
			32
			33
<< >>		Cmd Strt A2	34
ZA60	<< >>		
			35
			36
			37
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			39
<< >>		Cmd Stp A2	40
ZA61	<< >>		
			41
			42
			43
			44
			45
			46
			47
			48
<< >>		Act 2 Man	<<>>
XA77	<< >>		30.F - 12
<< >>		Act 2	<<>>
ZA32	<< >>	Anomaly	30.G - 14
<< >>		Act 2	<<>>
ZA32	<< >>	Anomaly	30.A - 27
<< >>		Act 2 On	<<>>
XA42	<< >>		30.D - 29
<< >>		Act 2 On	<<>>
XA42	<< >>		30.B - 26
<< >>		Act 2 On	<<>>
XA42	<< >>		30.E - 21
<< >>		Act 2 On	<<>>
XA42	<< >>		30.A - 09
<< >>		Act 2 On	<<>>
XA42	<< >>		30.F - 03
			57
			58
			59
			60

NOTE

1.- These time delays shall be adjustable. Preliminary value shown unless otherwise indicates in the logic diagram of a specific system.

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUB VERIFIER L1 L2



OWNER'S ENGINE

PROJE

CT:

Flémalle CCGT Project

DRAWING NAME:
Control Diagram Macros & Templates



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DRAWING NUMBER: FBI-20-YI-IDY-FAI-00600

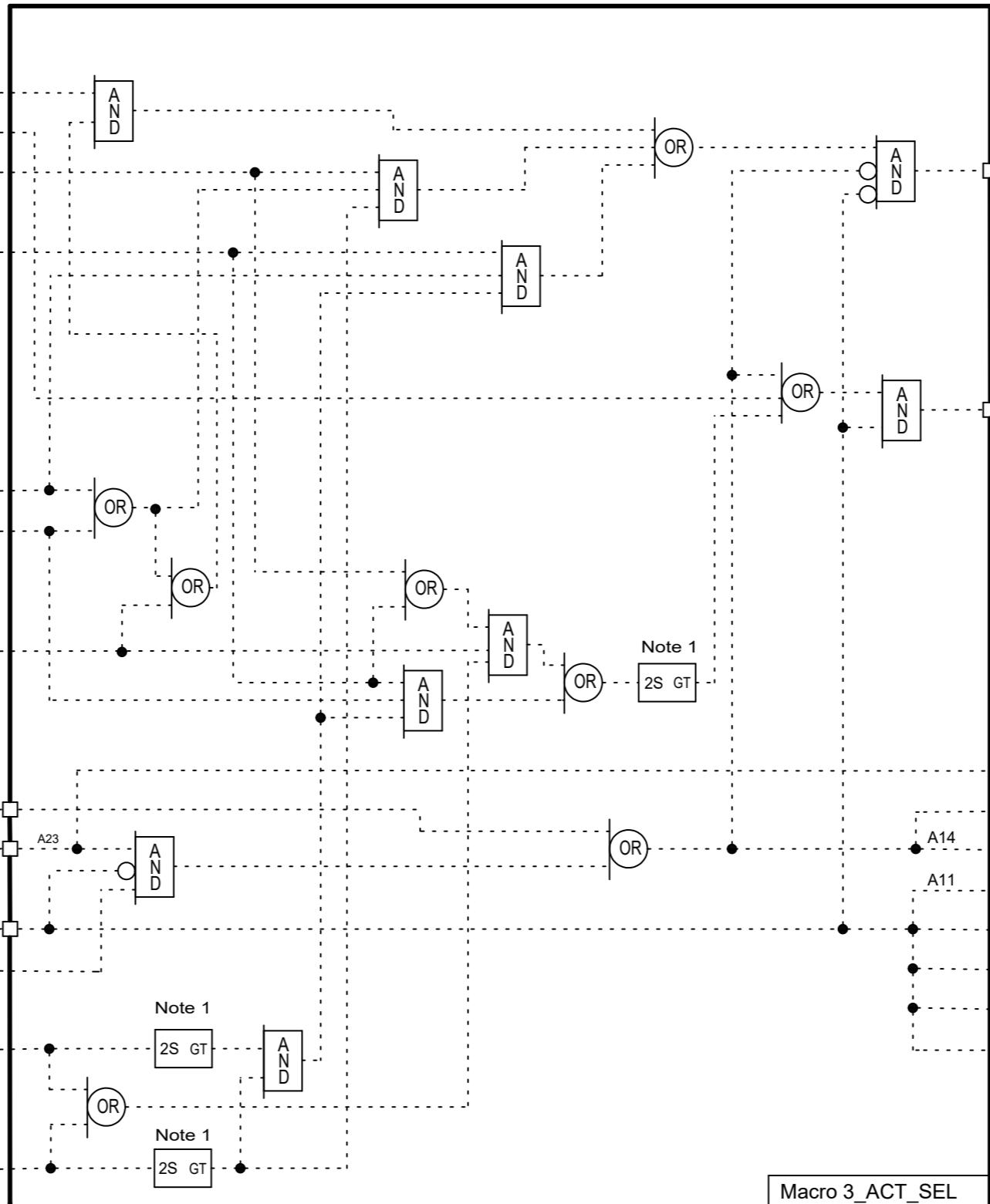
DOCUMENT EAI: 333-30-D-1-00600

SHEET OF REV.
30 C 700 1

LOOP:	01CD 10EA030
LOOP SHEET:	5 de 9

1	18.04.2023	For Design		ENL	OPP	OPP
REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED

FROM	DESCRIPTION	CODE
1		
2	<>> 30.A - 49	<>> Act 3-1-2 Selected ZA03
3	<>> 30.E - 33	<>> 0 Act Required ZA44
4	<>> 30.A - 43	<>> Act 2-3-1 Selected ZA02
5		
6	<>> 30.A - 37	<>> Act 1-2-3 Selected ZA01
7		
8		
9		
10		
11		
12	<>> 30.E - 44	<>> 3 Act Required ZA47
13	<>> 30.E - 40	<>> 2 Act Required ZA46
14		
15		
16	<>> 30.E - 36	<>> 1 Act Required ZA45
17		
18		
19		
20		Act 3 Trbl <>> XA69
21		Act 3 Man <>> XA78
22		
23		Act 3 On <>> XA68
24	<>> 30.B - 58	<>> Group On <>> XA01
25		
26	<>> 30.B - 52	<>> Act 1 On <>> XA41
27		
28		
29	<>> 30.C - 52	<>> Act 2 On <>> XA42
30		



CODE	DESCRIPTION	TO
		31
		32
		33
<< >>		Cmd Strt A3
ZA62	<< >>	34
		35
		36
		37
		38
		39
<< >>		Cmd Stp A3
ZA63	<< >>	40
		41
		42
		43
		44
		45
		46
		47
		48
<< >>		Act 3 Man
XA78	<< >>	<<>>
		30.F - 13
<< >>		Act 3
ZA33	<< >>	<<>>
		Anomaly
		30.G - 15
<< >>		Act 3
ZA33	<< >>	<<>>
		Anomaly
		30.A - 28
<< >>		Act 3 On
XA43	<< >>	<<>>
		30.C - 26
<< >>		Act 3 On
XA43	<< >>	<<>>
		30.B - 29
<< >>		Act 3 On
XA43	<< >>	<<>>
		30.E - 25
<< >>		Act 3 On
XA43	<< >>	<<>>
		30.A - 15
<< >>		Act 3 On
XA43	<< >>	<<>>
		30.F - 04
		57
		58
		59
		60

NOTE

1.- These time delays shall be adjustable. Preliminary value shown unless otherwise indicates in the logic diagram of a specific system.

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUB VERIFIER L1 L2



OWNER'S ENGINE

OWNER'S ENGINEER:
TRACTEBEL

EMPRESARIOS AGRUPA

PROJECT:

DRAWING NAME:
Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF REV.
30.D 700 1

1

23

For Design

REV.

DATE

	ENL	OPP	OPP
STATUS	DRAWN	CHECKED	APPROVED

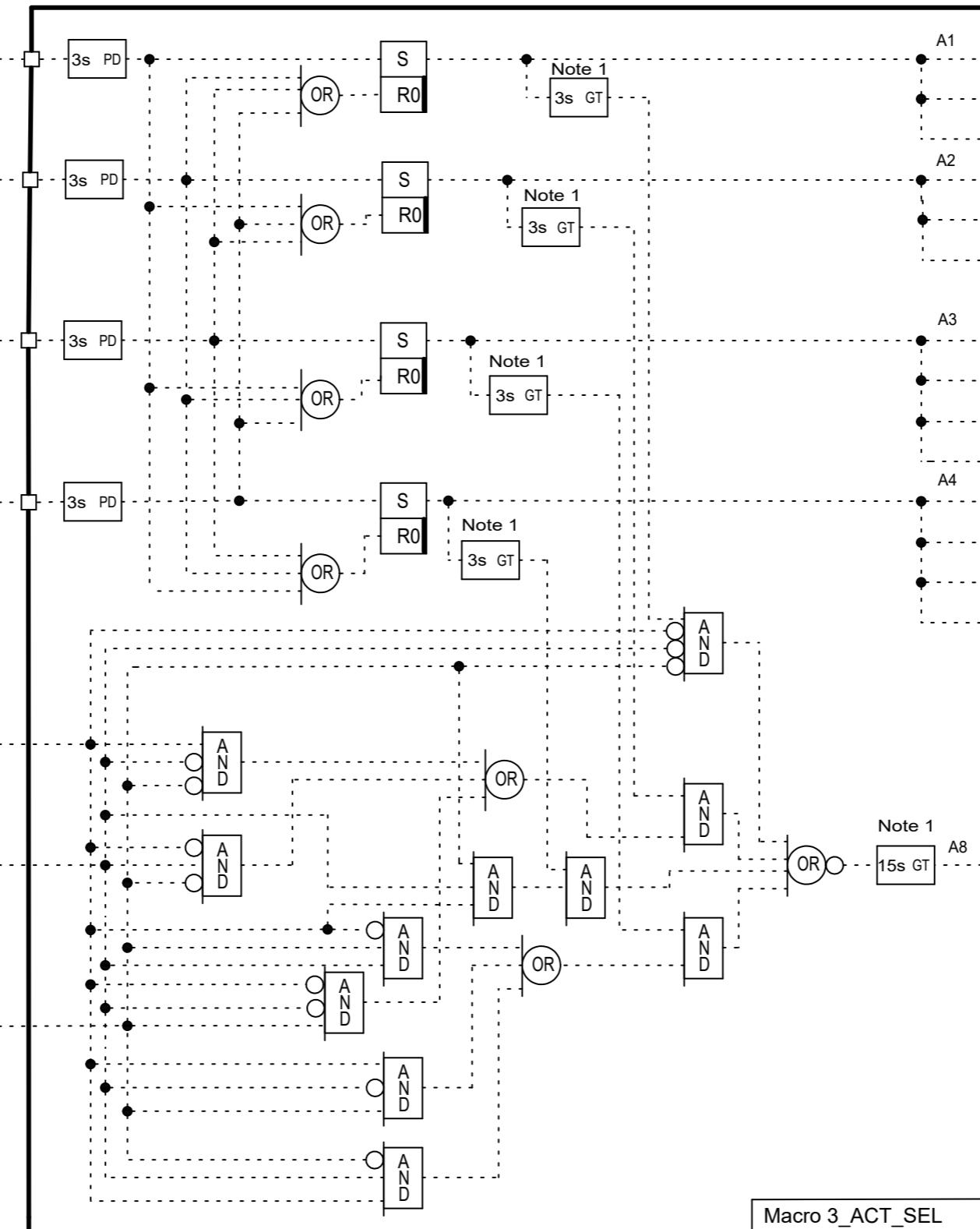
Control Diagram

Control Diagram Macros & Templates

3 ACT Selector

LOOP:	01CD 10EA030
LOOP SHEET:	6 de 9

FROM	DESCRIPTION		CODE
1	<>>	0 Act Required	<>> XA44
2			
3			
4	<>>	1 Act Required	<>> XA45
5			
6			
7			
8	<>>	2 Act Required	<>> XA46
9			
10			
11			
12	<>>	3 Act Required	<>> XA47
13			
14			
15			
16			
17			
18	<>> 30.B - 54	<>>	Act 1 On XA41
19			
20			
21	<>> 30.C - 54	<>>	Act 2 On XA42
22			
23			
24			
25	<>> 30.D - 54	<>>	Act 3 On XA43
26			
27			
28			
29			
30			



CODE	DESCRIPTION	TO	
<< >>	<< >>	0 Act	<<>>
ZA44		Required	30.B - 03
<< >>	<< >>	0 Act	<<>>
ZA44		Required	30.C - 03
<< >>	<< >>	0 Act	<<>>
ZA44		Required	30.D - 03
<< >>	<< >>	1 Act	<<>>
ZA45		Required	30.B - 16
<< >>	<< >>	1 Act	<<>>
ZA45		Required	30.C - 16
<< >>	<< >>	1 Act	<<>>
ZA45		Required	30.D - 16
			37
<< >>	<< >>	2 Act	<<>>
ZA46		Required	30.B - 13
<< >>	<< >>	2 Act	<<>>
ZA46		Required	30.C - 13
<< >>	<< >>	2 Act	<<>>
ZA46		Required	30.D - 13
<< >>	<< >>	2 Act	<<>>
ZA46		Required	30.A - 29
<< >>	<< >>	3 Act	<<>>
ZA47		Required	30.B - 12
<< >>	<< >>	3 Act	<<>>
ZA47		Required	30.C - 12
<< >>	<< >>	3 Act	<<>>
ZA47		Required	30.D - 12
<< >>	<< >>	3 Act	<<>>
ZA47		Required	30.A - 30
			46
			47
			48
			49
			50
<< >>	<< >>	Discrp	51
ZM98			52
			53
			54
			55
			56
			57
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			59
			60

NOTE

1.- These time delays shall be adjustable. Preliminary value shown unless otherwise indicates in the logic diagram of a specific system.

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER L1 L2



OWNER'S ENGINE

OWNER'S ENGINEER:
TRACTEBEL

EMPRESARIOS AGRU

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

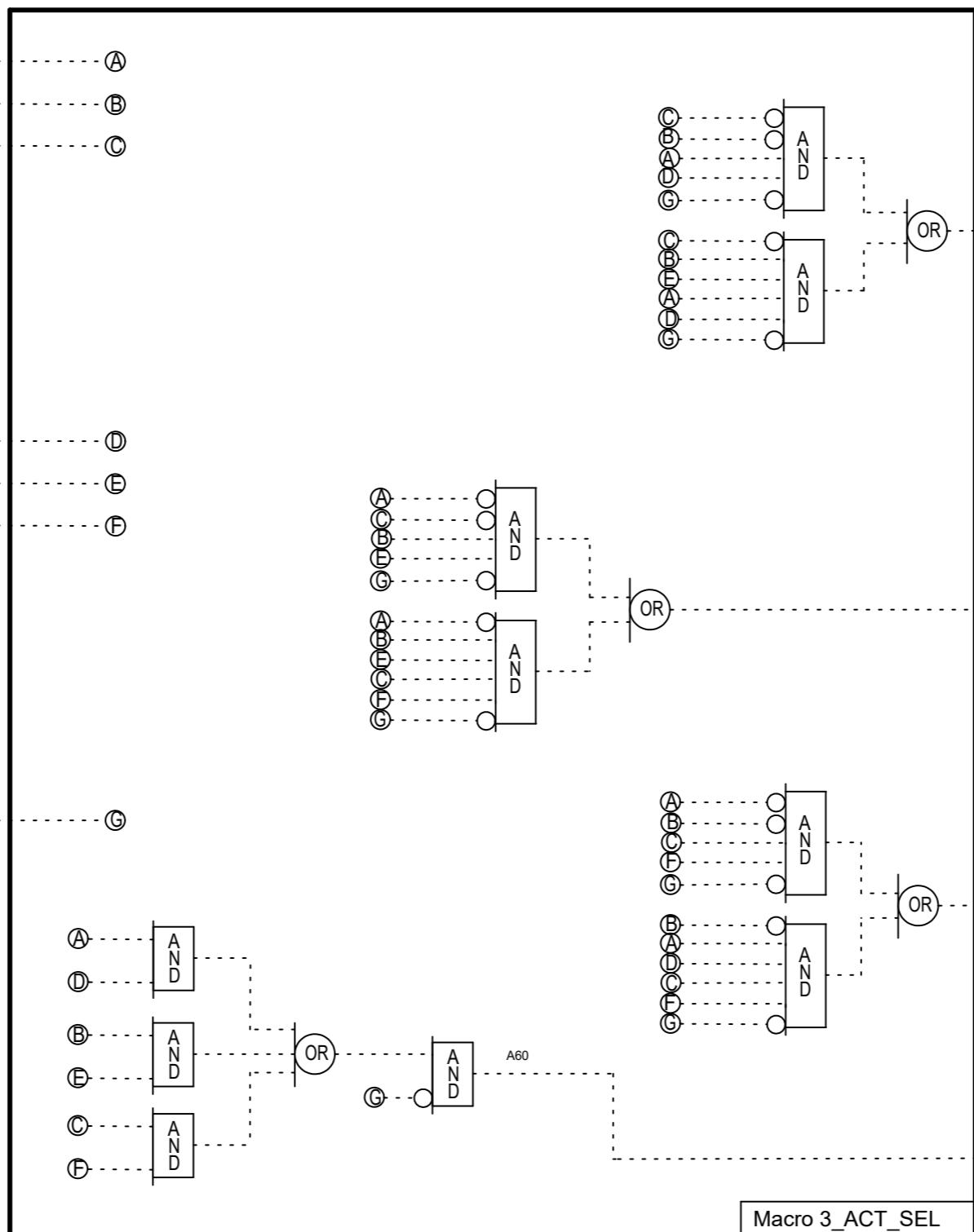
DOCUMENT EN 022-22-D-100600

SHEET OF REV.

LOOP:	01CD 10EA030
LOOP SHEET:	7 de 9

1	18.04.2023	For Design		ENL	OPP	OPP
REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED

FROM	DESCRIPTION		CODE
1			
2	<>>	Act 1 On	<>>
	30.B - 56		XA41
3	<>>	Act 2 On	<>>
	30.C - 56		XA42
4	<>>	Act 3 On	<>>
	30.D - 56		XA43
5			
6			
7			
8			
9			
10			
11	<>>	Act 1 Man	<>>
	30.B - 49		XA76
12	<>>	Act 2 Man	<>>
	30.C - 49		XA77
13	<>>	Act 3 Man	<>>
	30.D - 49		XA78
14			
15			
16			
17			
18			
19			
20	<>>	Group On	<>>
	30.B - 59		XA01
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			



CODE	DESCRIPTION		TO
			3
			32
			33
			34
			35
<< >>	<< >>	Change Operat	<>>
ZA71		Act 1-2-3	30.A - 04
			37
			38
			39
			40
			41
			42
			43
			44
<< >>	<< >>	Change Operat	<>>
ZA72		Act 2-3-1	30.A - 10
			46
			47
			48
			49
			50
			51
			52
<< >>	<< >>	Change Operat	<>>
ZA73		Act 3-1-2	30.A - 16
			53
			54
			55
			56
			57
<< >>	<< >>	Select	<>>
ZA99		N Permit	30.A - 23
			58
			59
			60

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER 11 12



OWNER'S ENGINEER

PROJECT: Flémalle CCGT Project

DRAWING NAME:
Control Diagram Macros & Templates

EMPRESARIOS AGRUPADOS

1

SIZE
A3

SCALE	DRA
	DOC

Digitized by srujanika@gmail.com

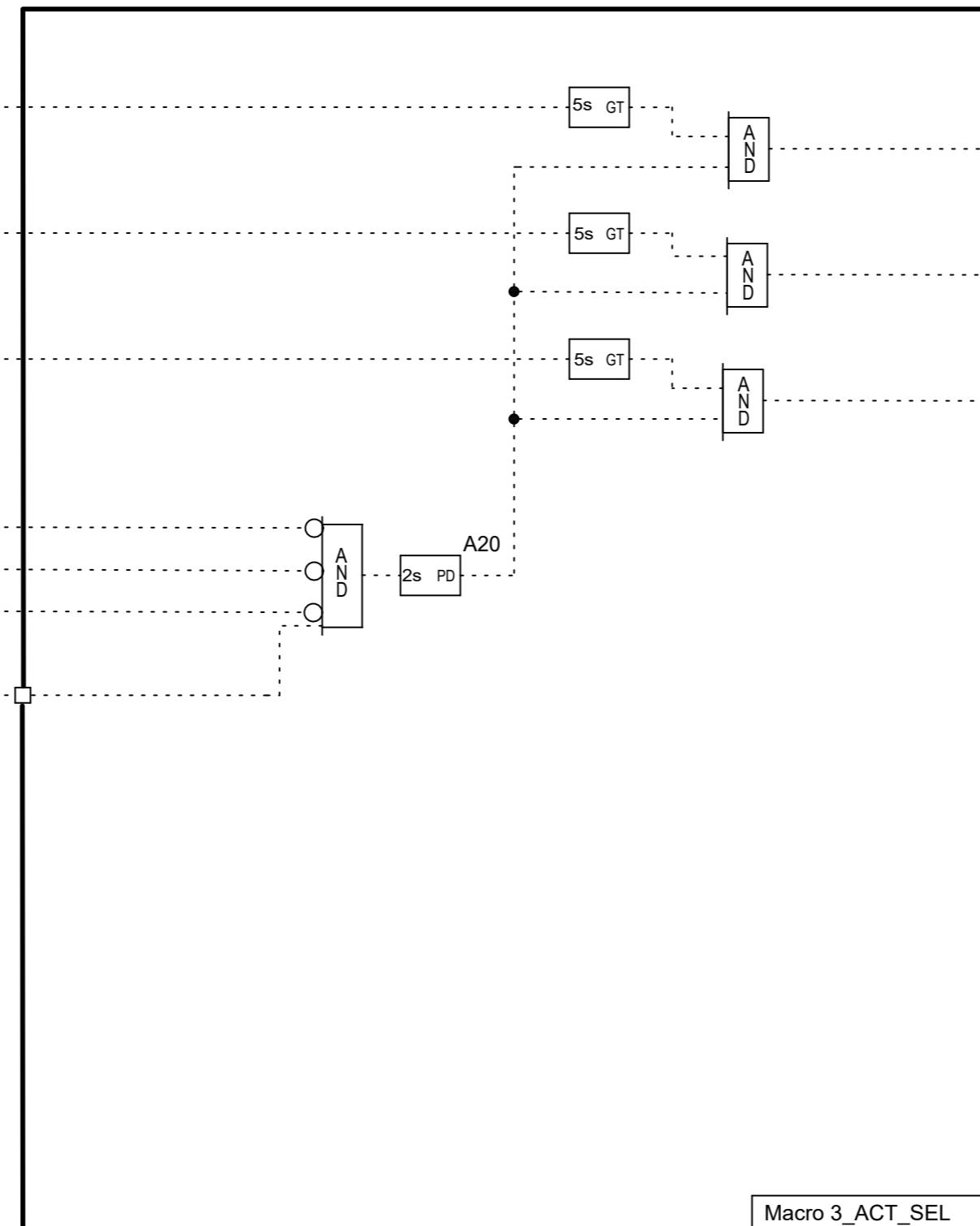
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SHEET OF RE
30 E 700 1

LOOP:	01CD 10EA030
LOOP SHEET:	8 de 9

1	18.04.2023	For Design		ENL	OPP	OPP
REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED

FROM	DESCRIPTION	CODE
1		
2		
3	Act 1-2-3 Selected	<< >> ZA01
30.A - 38	<< >>	
4		
5		
6	Act 2-3-1 Selected	<< >> ZA02
30.A - 44	<< >>	
7		
8		
9	Act 3-1-2 Selected	<< >> ZA03
30.A - 50	<< >>	
10		
11		
12		
13	Act 1 Anomaly	<< >> ZA31
30.B - 50	<< >>	
14	Act 2 Anomaly	<< >> ZA32
30.C - 50	<< >>	
15	Act 3 Anomaly	<< >> ZA33
30.D - 50	<< >>	
16		
17	Change Over	<< >> XA30
18		
19		
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28		
29		
30		



CODE	DESCRIPTION	TO
		31
		32
		33
<< >>		Change Over
ZA92	<< >>	<<>>
		Act 2-3-1
		30.A - 13
		34
		35
		36
<< >>		Change Over
ZA93	<< >>	<<>>
		Act 3-1-2
		30.A - 19
		37
		38
		39
<< >>		Change Over
ZA91	<< >>	<<>>
		Act 1-2-3
		30.A - 07
		40
		41
		42
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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2



OW

OWNER'S ENGINEER

OWNER'S ENGINEER:
TRACTEBEL
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EMPRESARIOS AGRUPA

PROJECT:

DRAWING NAME:
Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF REV.
30.G 700 1

Control Diagram

Control Diagram Macros & Templates

3 ACT Selector

FROM	DESCRIPTION	CODE
1		
2	0 Act	
3	Required	A1
4	1 Act	
5	Required	A2
6	2 Act	
7	Required	A3
8	3 Act	
9	Required	A4
10		
11	Act 1-2-3	
12	Selected	A5
13	Act 2-3-1	
14	Selected	A6
15	Act 3-1-2	
16	Selected	A7
17		
18	Discrepancy	A8
19		
20	Act 1 On	A9
21		
22	Act 2 On	A10
23		
24	Act 3 On	A11
25		
26	Act 1	
27	Anomaly	A12
28	Act 2	
29	Anomaly	A13
30	Act 3	
31	Anomaly	A14
32		
33	Act 1	
34	Manual	A21
35	Act 2	
36	Manual	A22
37	Act 3	
38	Manual	A23
39		
40	Act 1-2-3	
41	N Avail	A30
42	Act 2-3-1	
43	N Avail	A31
44	Act 3-1-2	
45	N Avail	A32
46	N Permit	
47		A60
48	Change Over	
49		A20
50		
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E

Control Diagram

Control Diagram Macros & Templates
4 ACT Selector

LOOP:	01CD_10EA040
LOOP SHEET:	1 de 16

MODIFICATIONS			
REV.	DATE	DESCRIPTION	STATUS
		ENL DRAWN	OPP CHECKED
1	18.04.2023	For Design	APPROVED

1

2

3

4

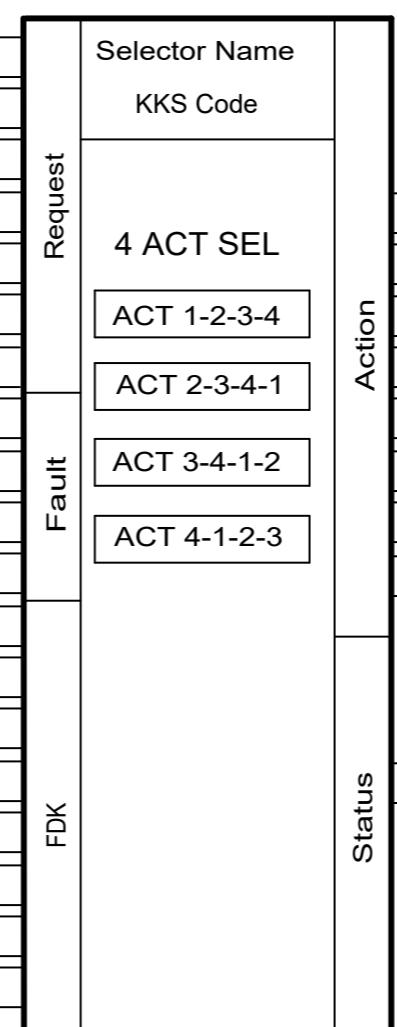
1

2

3

4

FROM	DESCRIPTION	CODE
1		
2		
3		
4		
5		
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7		
8		
9		
10	<>>	Group ON <>>
11	<>>	4 Act Required <>>
12	<>>	3 Act Required <>>
13	<>>	2 Act Required <>>
14	<>>	1 Act Required <>>
15	<>>	0 Act Required <>>
16	Note 1	Change Over <>>
17	<>>	Act 1 Trbl <>>
18	<>>	Act 2 Trbl <>>
19	<>>	Act 3 Trbl <>>
20	<>>	Act 4 Trbl <>>
21	<>>	Act 1 on <>>
22	<>>	Act 2 on <>>
23	<>>	Act 3 on <>>
24	<>>	Act 4 on <>>
25	<>>	Act 1 Manual <>>
26	<>>	Act 2 Manual <>>
27	<>>	Act 3 Manual <>>
28	<>>	Act 4 Manual <>>
29		
30		



CODE	DESCRIPTION	TO
		31
		32
		33
		34
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		42
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NOTES:

1.- Change over signal will be only used for actuator's automatic changes in operation hours, not for process conditions. In case of client's requirement.

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

TRACTEBEL



EMPRESARIOS AGRUPADOS

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 40 700 REV. 1

A

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E

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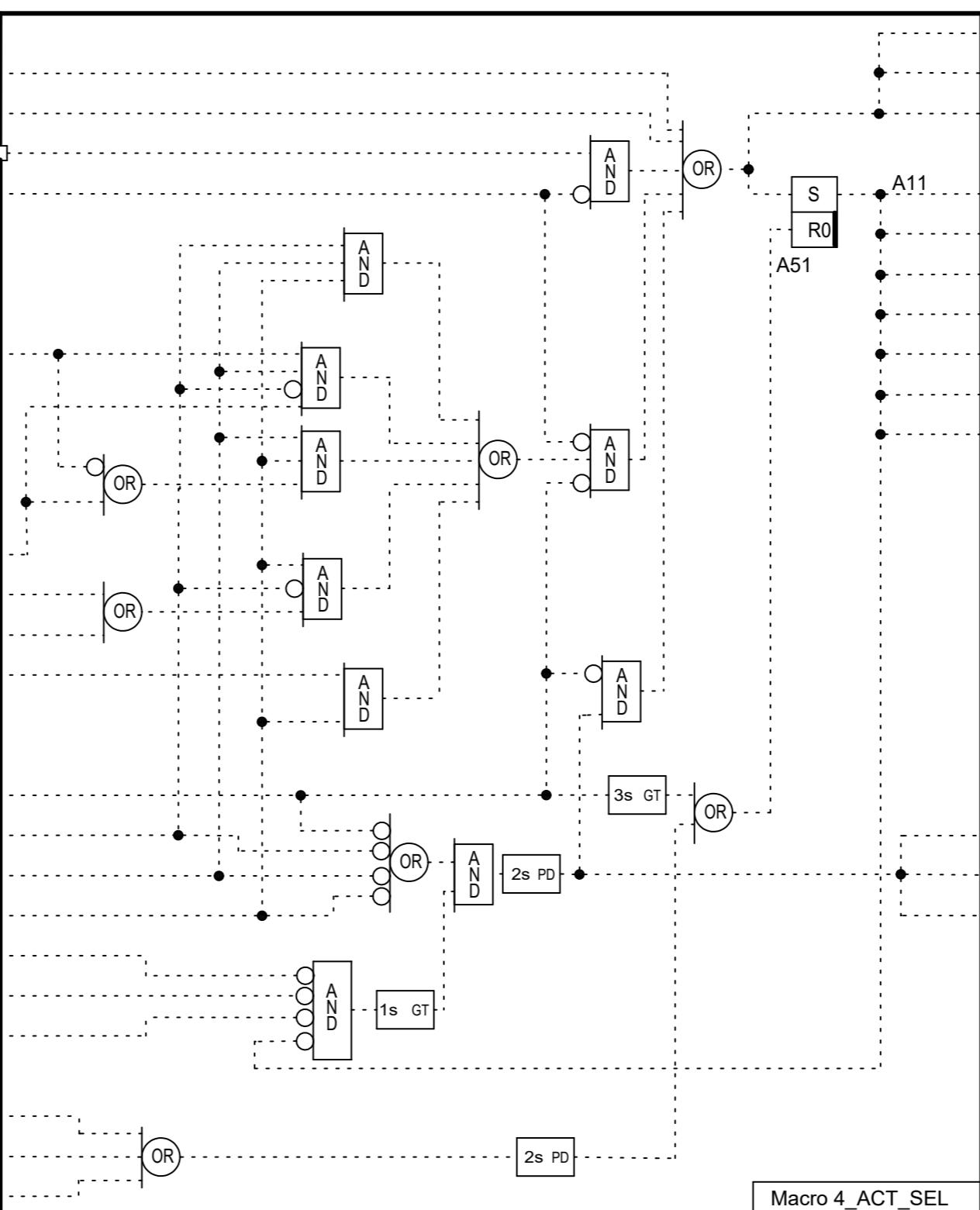
Control DiagramControl Diagram Macros & Templates4 ACT Selector

LOOP:	01CD 10EA040
LOOP SHEET:	2 de 16

1	18.04.2023	For Design
REV.	DATE	

MODIFICATIONS

FROM	DESCRIPTION	CODE
1		
2	<>>	Change Operator <>>
	40.L - 36	ZA71
3	<>>	Change Over <>>
	40.N - 42	ZA91
4	<>>	HMI Select <>>
		Act 1-2-3-4 XB12
5	<>>	Select <>>
	40.L - 43	ZA99
6		
7		
8		
9	<>>	Act 2-3-4-1 <>>
	40.B - 35	ZA02
10		
11		
12		
13		
14	<>>	2 Act <>>
	40.J - 31	ZA47
15	<>>	3 Act <>>
	40.J - 41	ZA48
16	<>>	4 Act <>>
	40.J - 51	ZA49
17	<>>	Act 4-1-2-3 <>>
	40.D - 35	ZA04
18		
19		
20	<>>	Act 1 <>>
	40.E - 39	ZA31
21	<>>	Act 2 <>>
	40.F - 39	ZA32
22	<>>	Act 3 <>>
	40.G - 39	ZA33
23	<>>	Act 4 <>>
	40.H - 39	ZA34
24	<>>	Act 2-3-4-1 <>>
	40.B - 34	ZA02
25	<>>	Act 3-4-1-2 <>>
	40.C - 34	ZA03
26	<>>	Act 4-1-2-3 <>>
	40.D - 34	ZA04
27		
28	<>>	Act 2-3-4-1 <>>
	40.B - 31	ZA52
29	<>>	Act 3-4-1-2 <>>
	40.C - 31	ZA53
30	<>>	Act 4-1-2-3 <>>
	40.D - 31	ZA54



CODE	DESCRIPTION	TO
<>>	<>>	Actdr 1-2-3-4 <>>
ZA51	selection	40.B - 28
<>>	<>>	Actdr 1-2-3-4 <>>
ZA51	selection	40.C - 28
<>>	<>>	Actdr 1-2-3-4 <>>
ZA51	selection	40.D - 28
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.B - 17
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.D - 09
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.E - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.F - 04
<>>	<>>	Act 1-2-3-4 <>>
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ZA01	Selected	40.N - 02
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<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.P - 02
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ZA01	Selected	40.R - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.S - 02
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ZA01	Selected	40.T - 02
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ZA01	Selected	40.F - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.G - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.H - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.I - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.J - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.K - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.L - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.M - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.N - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.O - 02
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ZA01	Selected	40.O - 02
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ZA01	Selected	40.Q - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.R - 02
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ZA01	Selected	40.S - 02
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ZA01	Selected	40.T - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA01	Selected	40.U - 02
<>>	<>>	Act 1-2-3-4 <>>
ZA0		

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Control Diagram

Control Diagram Macros & Templates

4 ACT Selector

LOOP: 01CD 10EA040

LOOP SHEET: 3 de 16

1 18.04.2023 For Design

REV.

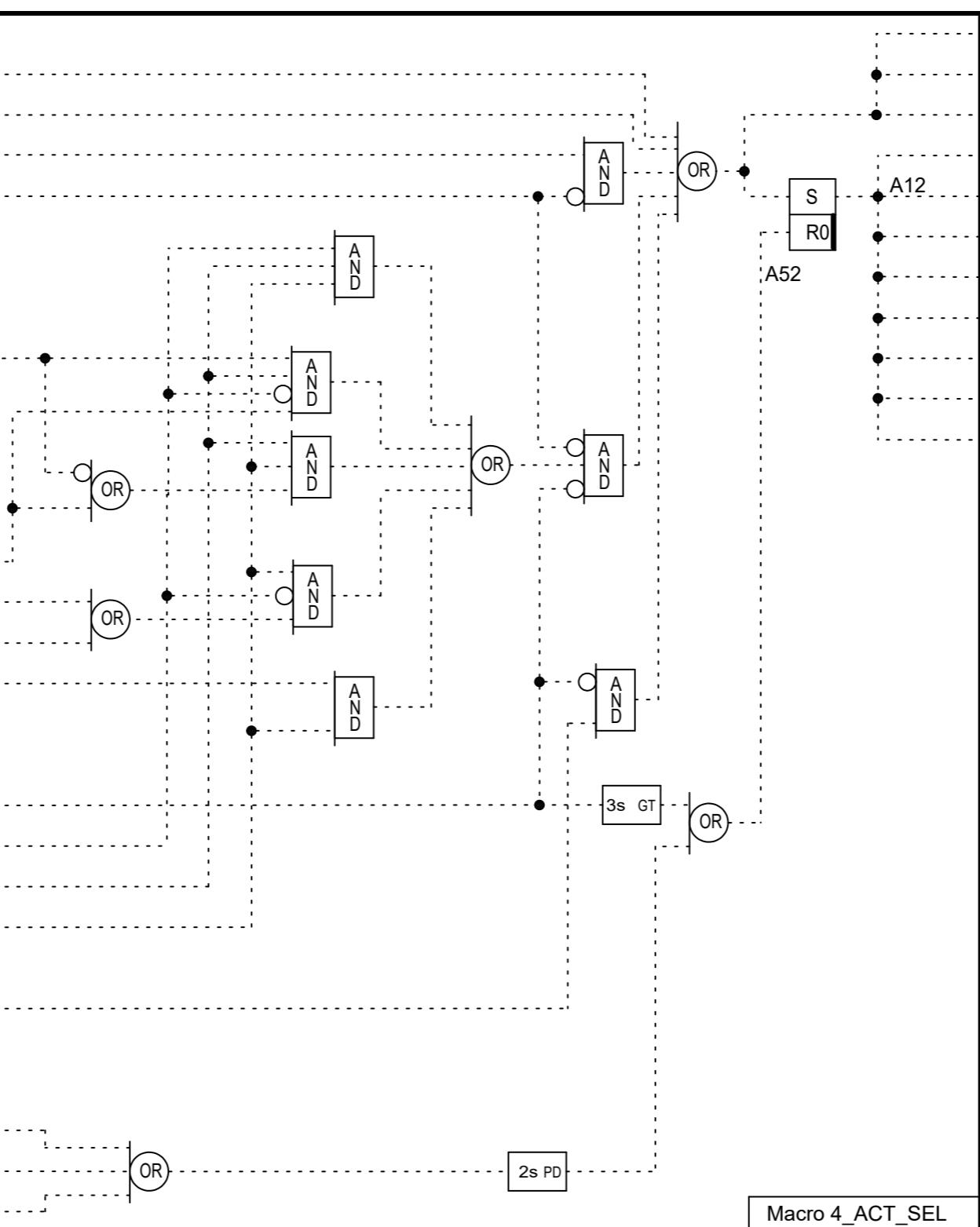
DATE

MODIFICATIONS

ENL OPP OPP

DRAWN CHECKED APPROVED

FROM	DESCRIPTION	CODE
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3 40.L - 50	<>> Change Over <>>	ZA92
4	<>> HMI Select <>>	XB23
5 <>>	<>> Select <>>	
6 40.L - 44	<>> N Permit	ZA99
7		
8		
9 <>>	<>> Act 3-4-1-2 <>>	ZA03
10 40.C - 35	<>> Selected	
11		
12		
13		
14 <>>	<>> 2 Act <>>	ZA47
15 40.J - 32	<>> Required	
16		
17 <>>	<>> 3 Act <>>	ZA48
18 40.J - 42	<>> Required	
19		
20 <>>	<>> 4 Act <>>	ZA49
21 40.J - 52	<>> Required	
22		
23 <>>	<>> Act 1-2-3-4 <>>	ZA01
24 40.A - 35	<>> Selected	
25		
26		
27		
28 <>>	<>> Act 2 <>>	ZA32
29 40.F - 40	<>> Anomaly	
30		
31 <>>	<>> Act 3 <>>	ZA33
32 40.G - 40	<>> Anomaly	
33		
34 <>>	<>> Act 4 <>>	ZA34
35 40.H - 40	<>> Anomaly	
36		
37 <>>	<>> Act 1 <>>	ZA31
38 40.E - 40	<>> Anomaly	
39		
40 <>>	<>> Act <>>	ZA09
41 40.A - 51	<>> n selection	
42		
43		
44 <>>	<>> n selection	ZA09
45 40.A - 51	<>> selection	
46		
47 <>>	<>> Act 1-2-3-4 <>>	ZA51
48 40.A - 31	<>> selection	
49		
50 <>>	<>> Act 3-4-1-2 <>>	ZA53
51 40.C - 32	<>> selection	
52		
53 <>>	<>> Act 4-1-2-3 <>>	ZA54
54 40.D - 32	<>> selection	
55		
56		
57		
58		
59		
60		



CODE	DESCRIPTION	TO
<>>	<>> Act 2-3-4-1 <>>	31
ZA52	<>> selection	40.A - 28
<>>	<>> Act 2-3-4-1 <>>	32
ZA52	<>> selection	40.C - 29
<>>	<>> Act 2-3-4-1 <>>	33
ZA02	<>> selected	40.D - 29
<>>	<>> Act 2-3-4-1 <>>	34
ZA02	<>> selected	40.A - 24
<>>	<>> Act 2-3-4-1 <>>	35
ZA02	<>> selected	40.A - 09
<>>	<>> Act 2-3-4-1 <>>	36
ZA02	<>> selected	40.C - 17
<>>	<>> Act 2-3-4-1 <>>	37
ZA02	<>> selected	40.E - 09
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ZA02	<>> selected	40.F - 02
<>>	<>> Act 2-3-4-1 <>>	39
ZA02	<>> selected	40.G - 04
<>>	<>> Act 2-3-4-1 <>>	40
ZA02	<>> selected	40.H - 06
<>>	<>> Act 2-3-4-1 <>>	41
ZA02	<>> selected	40.N - 05
		42
		43
		44
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VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

TRACTEBEL



EMPRESARIOS AGRUPADOS

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
40.B 700 REV.
1

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Control Diagram

Control Diagram Macros & Templates

4 ACT Selector

LOOP: 01CD 10EA040

LOOP SHEET: 4 de 16

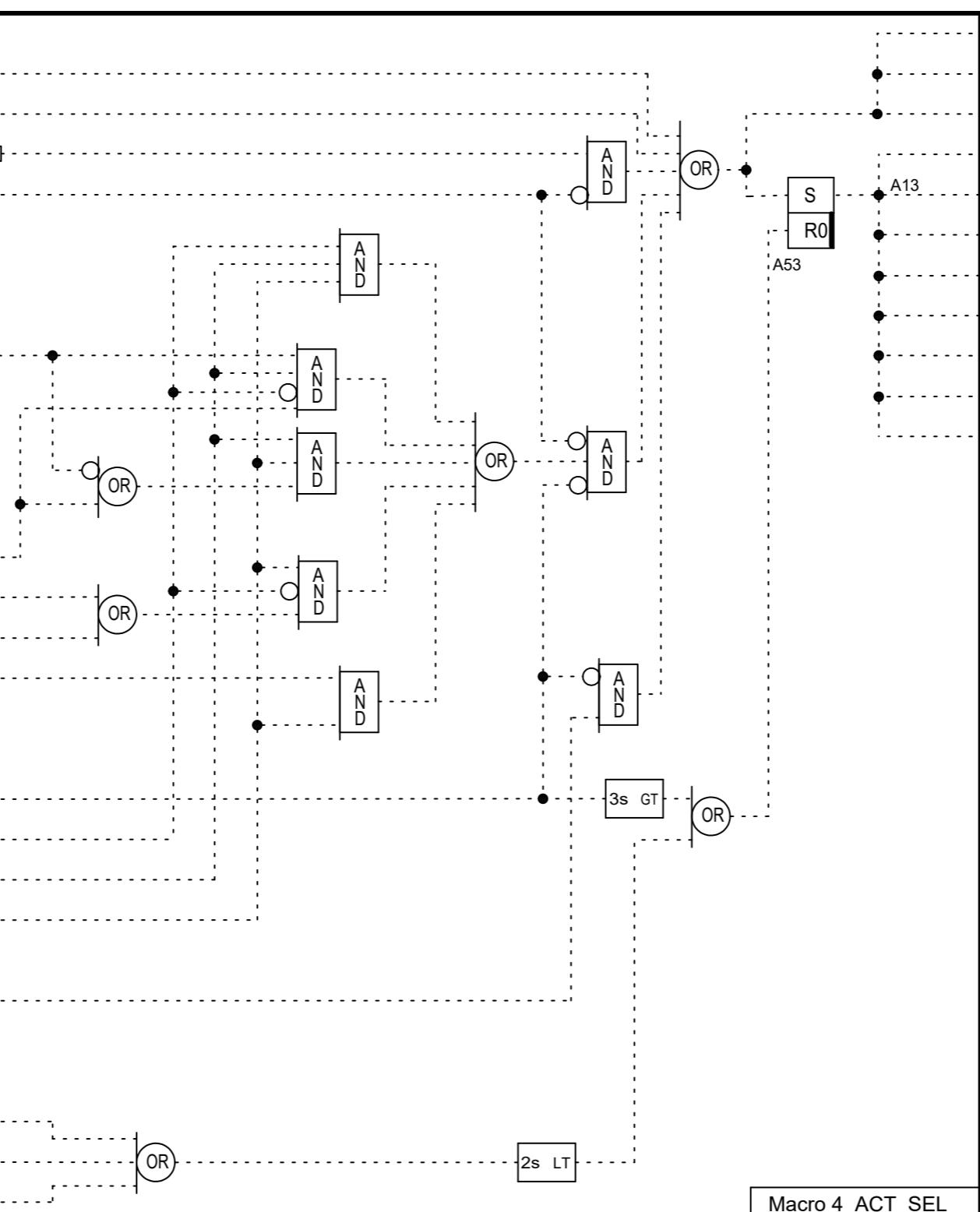
1 18.04.2023 For Design

REV. DATE

DESCRIPTION

ENL DRAWN OPP CHECKED OPP APPROVED

FROM	DESCRIPTION	CODE
1		
2	<>>	Change Operator <>>
	40.M - 36	Act 3-4-1-2 ZA73
3	<>>	Change Over <>>
	40.N - 36	Act 3-4-1-2 ZA93
4	<>>	HMI select <>>
		Act 3-4-1-2 XB34
5	<>>	Select <>>
	40.L - 45	N Permit ZA99
6		
7		
8		
9	<>>	Act 4-1-2-3 <>>
	40.D - 36	Selected ZA04
10		
11		
12		
13		
14	<>>	2 Act <>>
	40.J - 33	Req ZA47
15	<>>	3 Act <>>
	40.J - 43	Req ZA48
16	<>>	4 Act <>>
	40.J - 53	Req ZA49
17	<>>	Act 2-3-4-1 <>>
	40.B - 36	Selected ZA02
18		
19		
20	<>>	Act 3 <>>
	40.G - 41	Anomaly ZA33
21	<>>	Act 4 <>>
	40.H - 41	Anomaly ZA34
22	<>>	Act 1 <>>
	40.E - 41	Anomaly ZA31
23	<>>	Act 2 <>>
	40.F - 41	Anomaly ZA32
24		
25	<>>	Act <>>
	40.A - 52	n selection ZA09
26		
27		
28	<>>	Act 1-2-3-4 <>>
	40.A - 32	selection ZA51
29	<>>	Actdr 2-3-4-1 <>>
	40.B - 32	selection ZA52
30	<>>	Actdr 4-1-2-3 <>>
	40.D - 33	selection ZA54



CODE	DESCRIPTION	TO
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ZA53	selection	40.A - 29
<>>	<>>	Act 3-4-1-2 <>>
ZA53	selection	40.B - 29
<>>	<>>	Act 3-4-1-2 <>>
ZA53	selected	40.D - 30
<>>	<>>	Act 3-4-1-2 <>>
ZA03	selected	40.A - 25
<>>	<>>	Act 3-4-1-2 <>>
ZA03	Selected	40.B - 09
<>>	<>>	Act 3-4-1-2 <>>
ZA03	Selected	40.D - 17
<>>	<>>	Act 3-4-1-2 <>>
ZA03	Selected	40.E - 06
<>>	<>>	Act 3-4-1-2 <>>
ZA03	Selected	40.F - 09
<>>	<>>	Act 3-4-1-2 <>>
ZA03	Selected	40.G - 02
<>>	<>>	Act 3-4-1-2 <>>
ZA03	Selected	40.H - 04
<>>	<>>	Act 3-4-1-2 <>>
ZA03	Selected	40.N - 08
		42
		43
		44
		45
		46
		47
		48
		49
		50
		51
		52
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OWNER'S ENGINEER:

TRACTEBEL



EMPRESARIOS AGRUPADOS

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
40.C 700 REV.
1

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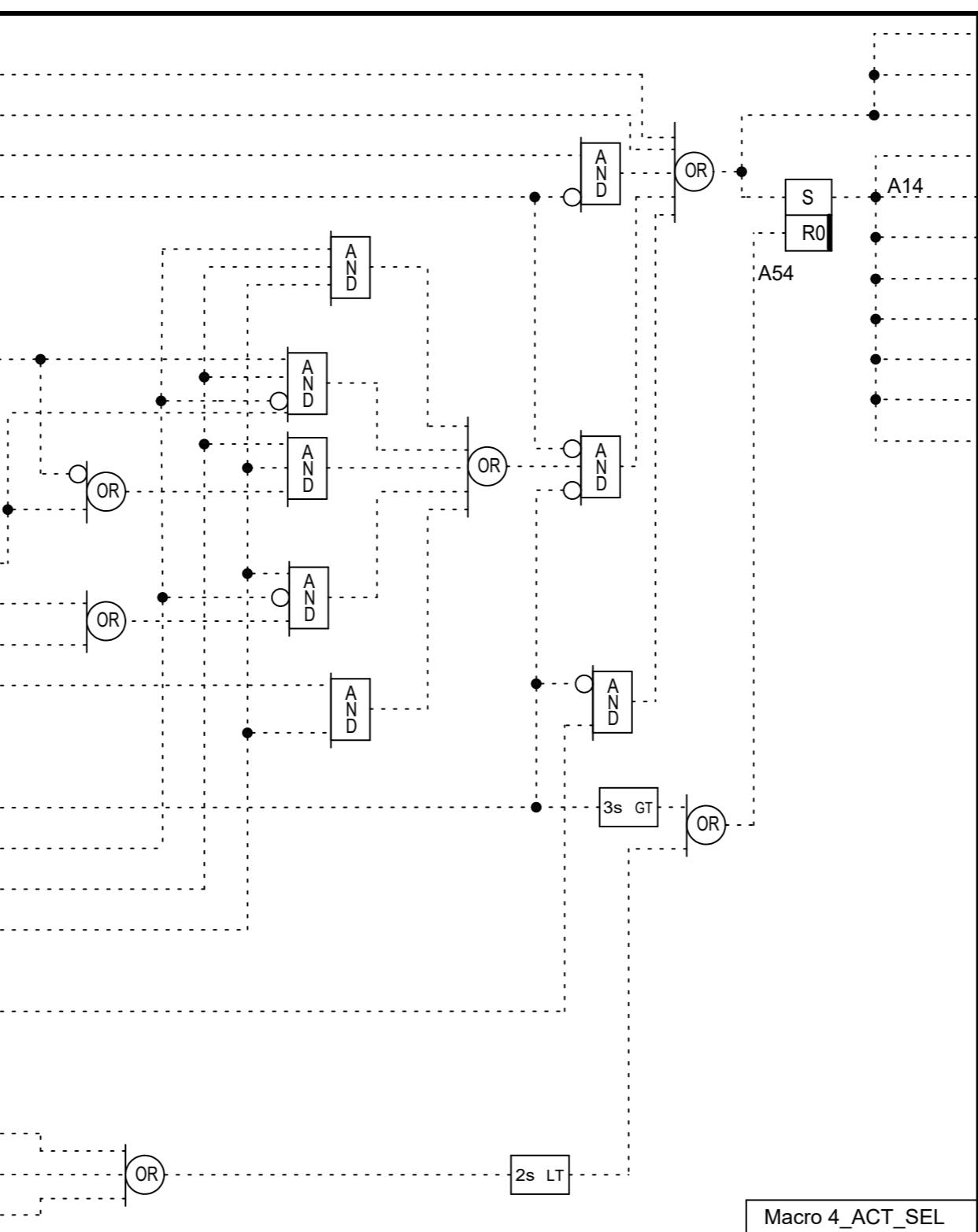
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Control DiagramControl Diagram Macros & Templates4 ACT Selector

LOOP:	01CD_10EA040
LOOP SHEET:	5 de 16

MODIFICATIONS			
REV.	DATE	DESCRIPTION	STATUS
1	18.04.2023	For Design	ENL DRAWN

FROM	DESCRIPTION	CODE
1		
2	<>>	Change Operator
40.M - 50	<>>	Act 4-1-2-3 ZA74
3	<>>	Change Over
40.N - 39	<>>	Act 4-1-2-3 ZA94
4	<>>	HMI Select
	<>>	Act 4-1-2-3 XA41
5	<>>	Select
40.L - 46	<>>	N Permit ZA99
6		
7		
8		
9	<>>	Act 1-2-3-4
40.A - 36	<>>	Selected ZA01
10		
11		
12		
13		
14	<>>	2 Act
40.J - 34	<>>	Required ZA47
15	<>>	3 Act
40.J - 44	<>>	Required ZA48
16	<>>	4 Act
40.J - 54	<>>	Required ZA49
17	<>>	Act 3-4-1-2
40.C - 36	<>>	Selected ZA03
18		
19		
20	<>>	Act 4
40.H - 42	<>>	Anomaly ZA34
21	<>>	Act 1
40.E - 42	<>>	Anomaly ZA31
22	<>>	Act 2
40.F - 42	<>>	Anomaly ZA32
23	<>>	Act 3
40.G - 42	<>>	Anomaly ZA33
24		
25	<>>	Act
40.A - 53	<>>	n selection ZA09
26		
27		
28	<>>	Act 1-2-3-4
40.A - 33	<>>	selection ZA51
29	<>>	Act 2-3-4-1
40.B - 33	<>>	selection ZA52
30	<>>	Act 3-4-1-2
40.C - 33	<>>	selection ZA53



CODE	DESCRIPTION	TO
<>>	<>>	Act 4-1-2-3 <>> 31
ZA54	selection	40.A - 30
<>>	<>>	Act 4-1-2-3 <>> 32
ZA54	selection	40.B - 30
<>>	<>>	Act 4-1-2-3 <>> 33
ZA54	selection	40.C - 30
<>>	<>>	Act 4-1-2-3 <>> 34
ZA04	Selected	40.A - 26
<>>	<>>	Act 4-1-2-3 <>> 35
ZA04	Selected	40.A - 17
<>>	<>>	Act 4-1-2-3 <>> 36
ZA04	Selected	40.C - 09
<>>	<>>	Act 4-1-2-3 <>> 37
ZA04	Selected	40.E - 04
<>>	<>>	Act 4-1-2-3 <>> 38
ZA04	Selected	40.F - 06
<>>	<>>	Act 4-1-2-3 <>> 39
ZA04	Selected	40.G - 09
<>>	<>>	Act 4-1-2-3 <>> 40
ZA04	Selected	40.H - 02
<>>	<>>	Act 4-1-2-3 <>> 41
ZA04	Selected	40.N - 11
		42
		43
		44
		45
		46
		47
		48
		49
		50
		51
		52
		53
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SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE



DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
40.D 700 REV.
1

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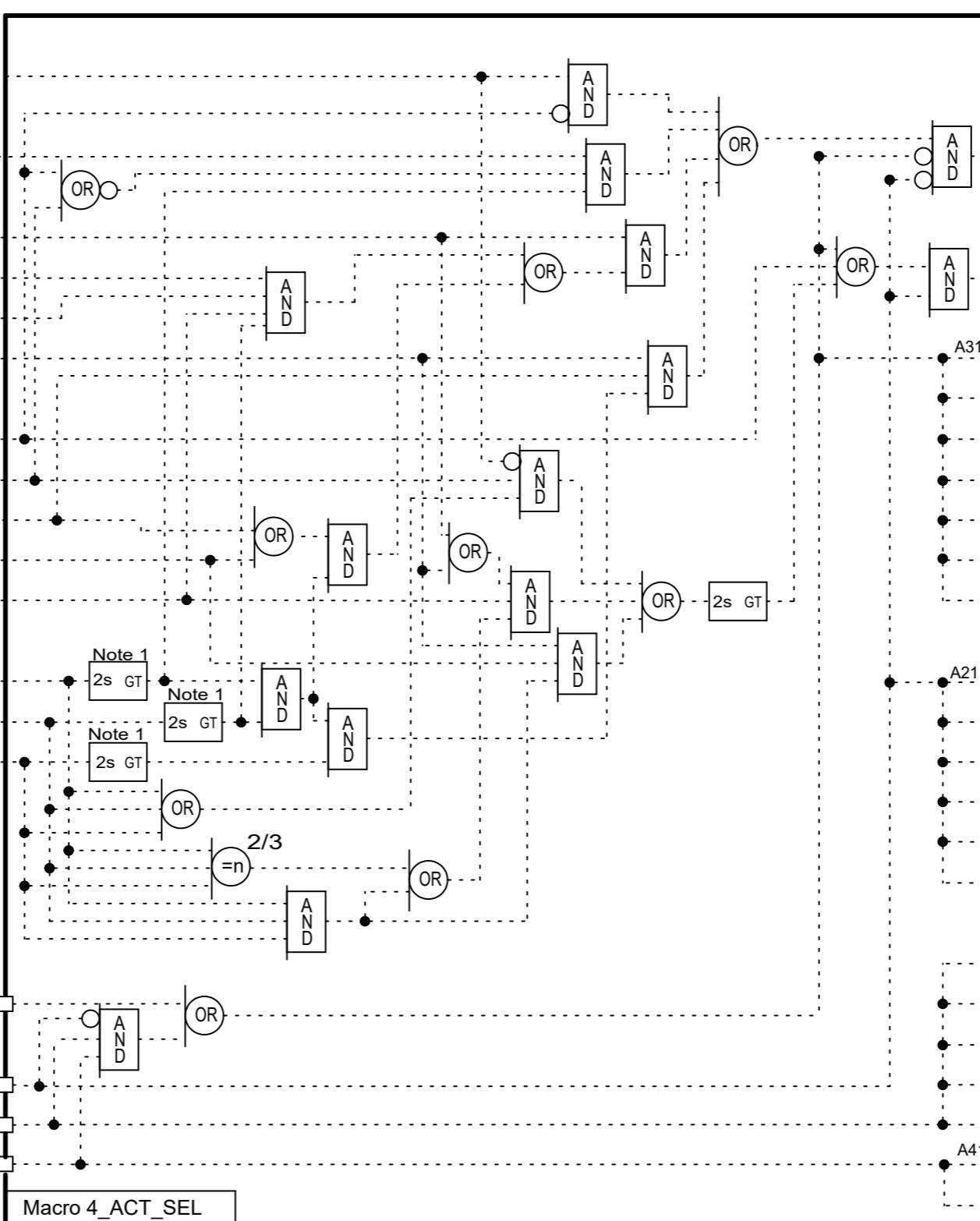
Control Diagram**Control Diagram Macros & Templates****4 ACT Selector**

LOOP: 01CD 10EA040

LOOP SHEET: 6 de 16

MODIFICATIONS			
REV.	DATE	For Design	
1	18.04.2023		

FROM	DESCRIPTION	CODE
1		
2	<>>	Act 1-2-3-4 <>>
	40.A - 37	Selected ZA01
3		
4	<>>	Act 4-1-2-3 <>>
	40.D - 37	Selected ZA04
5		
6	<>>	Act 3-4-1-2 <>>
	40.C - 37	Selected ZA03
7	<>>	Act 2 <>>
	40.F - 43	Anomaly ZA32
8	<>>	Act 4 <>>
	40.H - 43	Anomaly ZA34
9	<>>	Act 2-3-4-1 <>>
	40.B - 37	Selected ZA02
10		
11	<>>	0 Act Req <>>
	40.I - 31	ZA45
12	<>>	1 Act Req <>>
	40.I - 37	ZA46
13	<>>	4 Act Req <>>
	40.J - 55	ZA49
14	<>>	3 Act Req <>>
	40.J - 45	ZA48
15	<>>	2 Act Req <>>
	40.J - 35	ZA47
16		
17	<>>	Act 4 on <>>
	40.H - 47	XA44
18	<>>	Act 3 on <>>
	40.G - 47	XA43
19	<>>	Act 2 on <>>
	40.F - 47	XA42
20		
21		
22		
23		
24		
25	<>>	Act 1 Trbl <>>
		XA61
26		
27	<>>	Act 1 on <>>
		XA41
28	<>>	Group On <>>
		XA01
29	<>>	Act 1 <>>
		Manual XA71
30		



CODE	DESCRIPTION	TO
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		32
		33
<>>	ZA58	34
		35
<>>	ZA59	36
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<>>	ZA31	38
		39
<>>	ZA31	40
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		45
		46
<>>	ZA31	47
		48
<>>	ZA31	49
		50
<>>	ZA31	51
		52
<>>	ZA31	53
		54
<>>	ZA01	55
		56
<>>	ZA01	57
		58
<>>	ZA01	59
		60

NOTE:

1.- These time delays shall be adjustable. Preliminary value shown unless otherwise indicates in the logic diagram of a specific system.

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VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
40.E 700 REV.
1

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E

Control Diagram

Control Diagram Macros & Templates

4 ACT Selector

LOOP: 01CD_10EA040

LOOP SHEET: 7 de 16

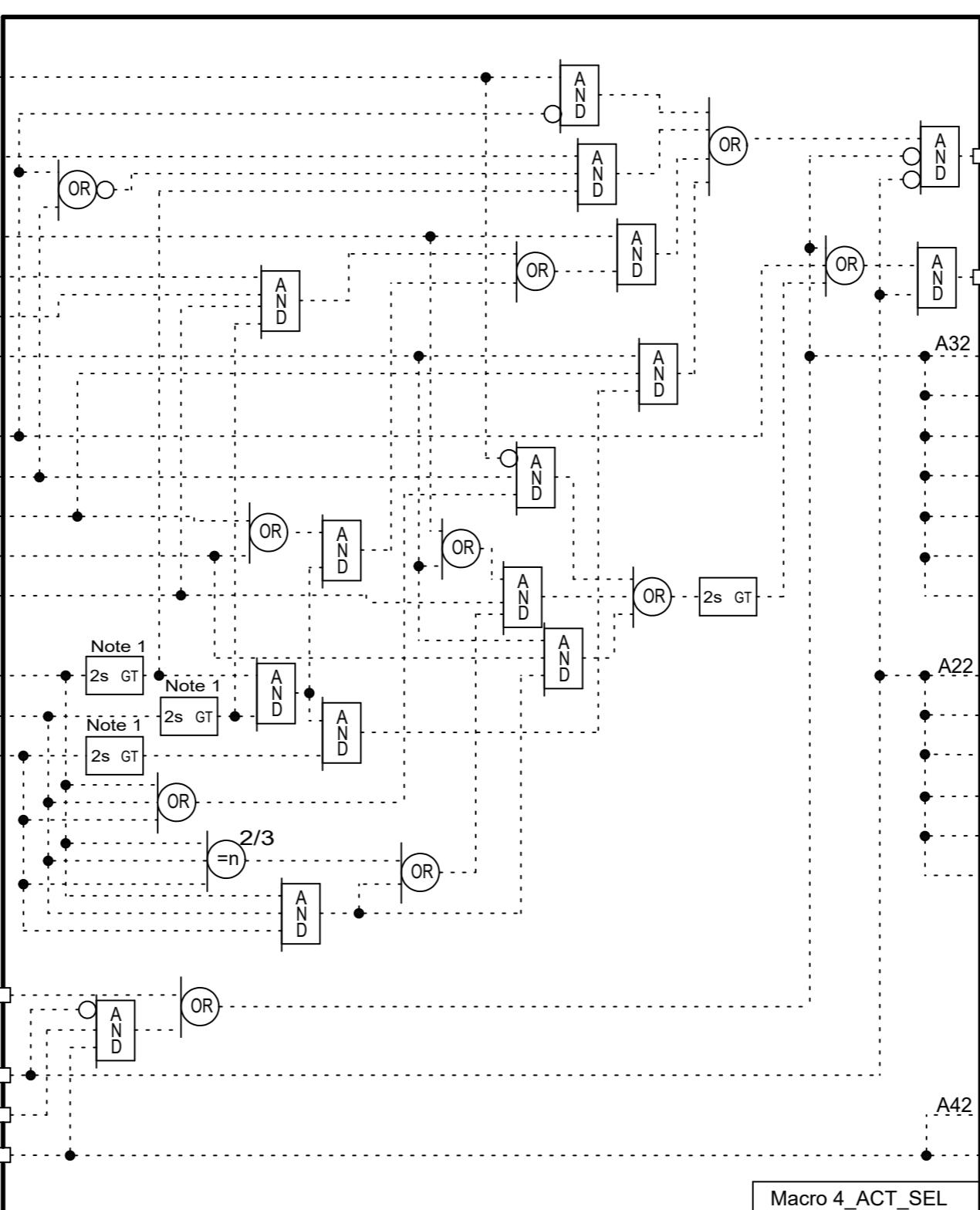
1 18.04.2023 For Design
REV. DATE

DESCRIPTION

ENL OPP OPP

DRAWN CHECKED APPROVED

FROM	DESCRIPTION	CODE
1		
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3		
4	<>>	Act 1-2-3-4 <>>
	40.A - 38	Selected ZA01
5		
6	<>>	Act 4-1-2-3 <>>
	40.D - 38	Selected ZA04
7	<>>	Act 1 <>>
	40.E - 43	Anomaly ZA31
8	<>>	Act 3 <>>
	40.G - 43	Anomaly ZA33
9	<>>	Act 3-4-1-2 <>>
	40.C - 38	Selected ZA03
10		
11	<>>	0 Act Req <>>
	40.I - 32	ZA45
12	<>>	1 Act Req <>>
	40.I - 38	ZA46
13	<>>	4 Act Req <>>
	40.J - 56	ZA49
14	<>>	3 Act Req <>>
	40.J - 46	ZA48
15	<>>	2 Act Req <>>
	40.J - 36	ZA47
16		
17	<>>	Act 1 on <>>
	40.E - 47	XA41
18	<>>	Act 4 on <>>
	40.H - 48	XA44
19	<>>	Act 3 on <>>
	40.G - 48	XA43
20		
21		
22		
23		
24		
25	<>>	Act 2 Trbl <>>
		XA62
26		
27	<>>	Act 2 on <>>
		XA42
28	<>>	Group on <>>
	40.E - 54	XA01
29	<>>	Act 2 <>>
		Manual XA72
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CODE	DESCRIPTION	TO
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ZA32	Anomaly 40.D - 22	44
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ZA32	Anomaly 40.E - 07	45
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ZA32	Anomaly 40.G - 07	46
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NOTE:

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PROPRIETARY INFORMATION

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

TRACTEBEL



EMPRESARIOS AGRUPADOS

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE

DRAWING NUMBER:

EBL-20-YI-IDY-EAI-00600



DOCUMENT EAI:

222-20-D-I-00600

SHEET OF
40.F 700 REV.
1

A

B

C

D

E

A

B

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D

E

Control DiagramControl Diagram Macros & Templates4 ACT Selector

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LOOP SHEET: 8 de 16

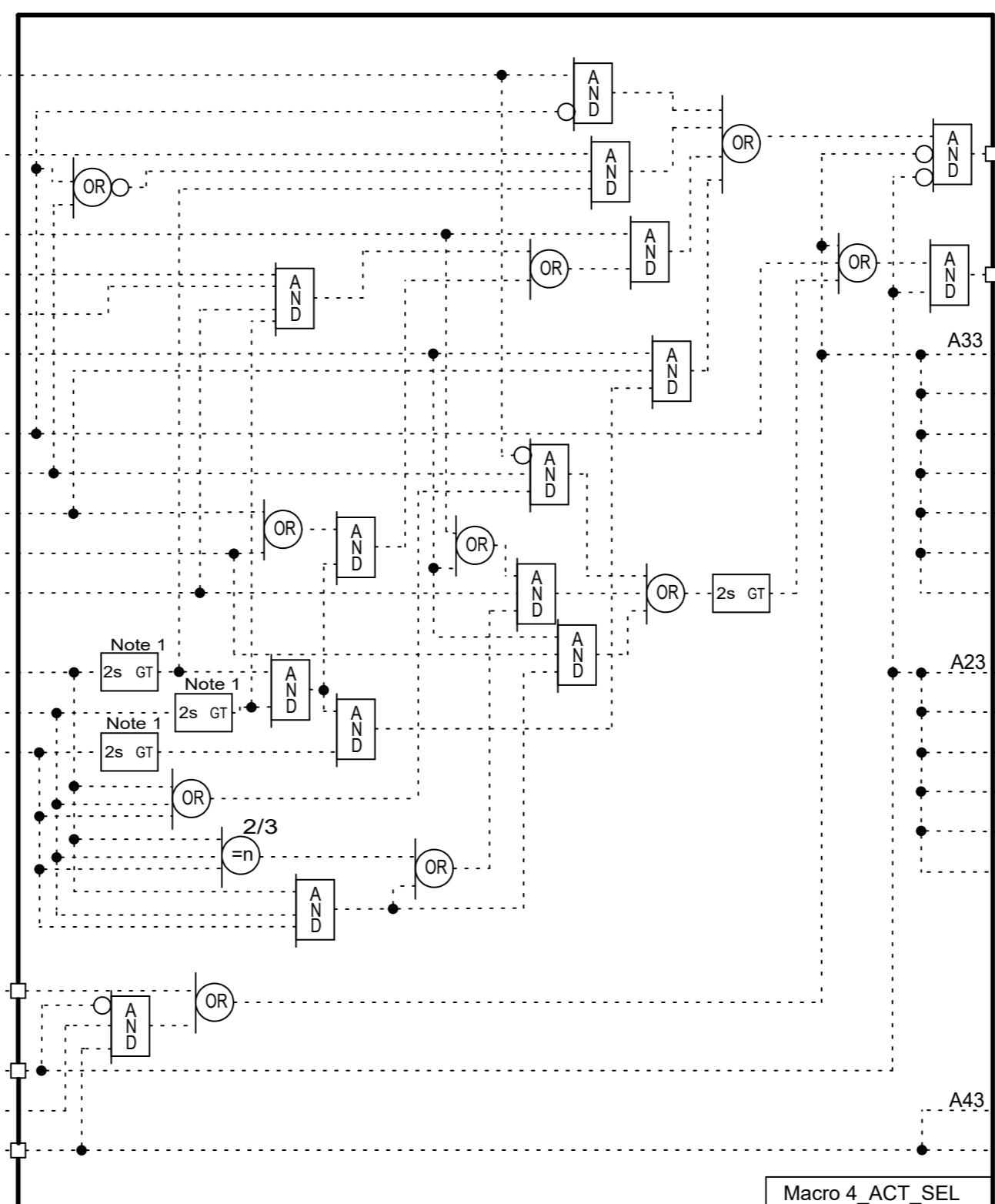
1 18.04.2023 For Design
REV. DATE

DESCRIPTION

ENL OPP OPP

STATUS DRAWN CHECKED APPROVED

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CODE	DESCRIPTION	TO
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XA43	<>>	48
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NOTE:

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
40.G 700 REV.
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C

D

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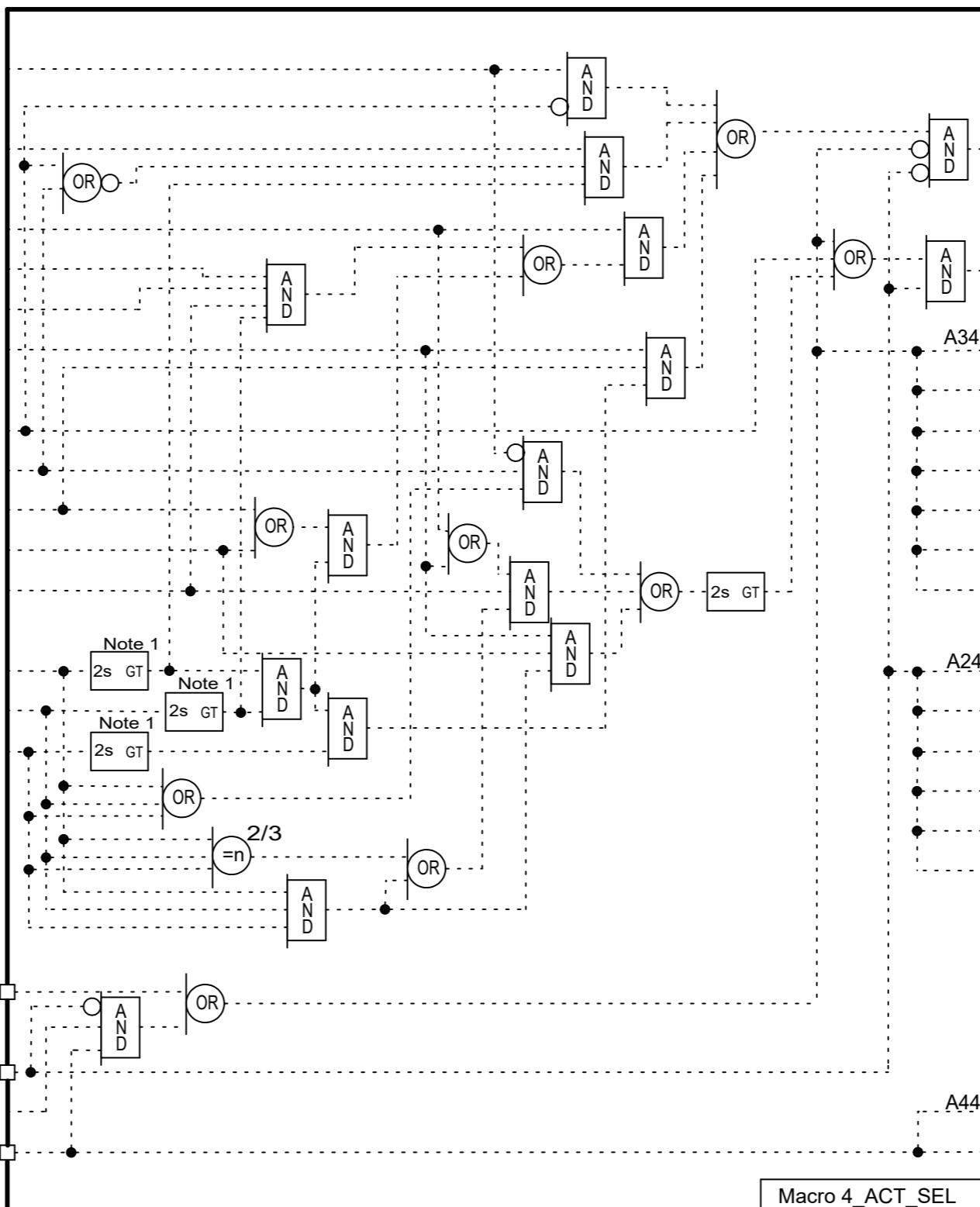
FORMAT DIN A-3 (420x297)

Control Diagram

Control Diagram Macros & Templates

4 ACT Selector

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MODIFICATIONS						
1	18.04.2023	For Design		ENL	OPP	OPP
REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED

NOTE

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER I1 I2



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OWNER'S ENGINEER

NER'S ENGINEER:
TRACTEBEL




EMPRESARIOS AGRU

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

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Control Diagram

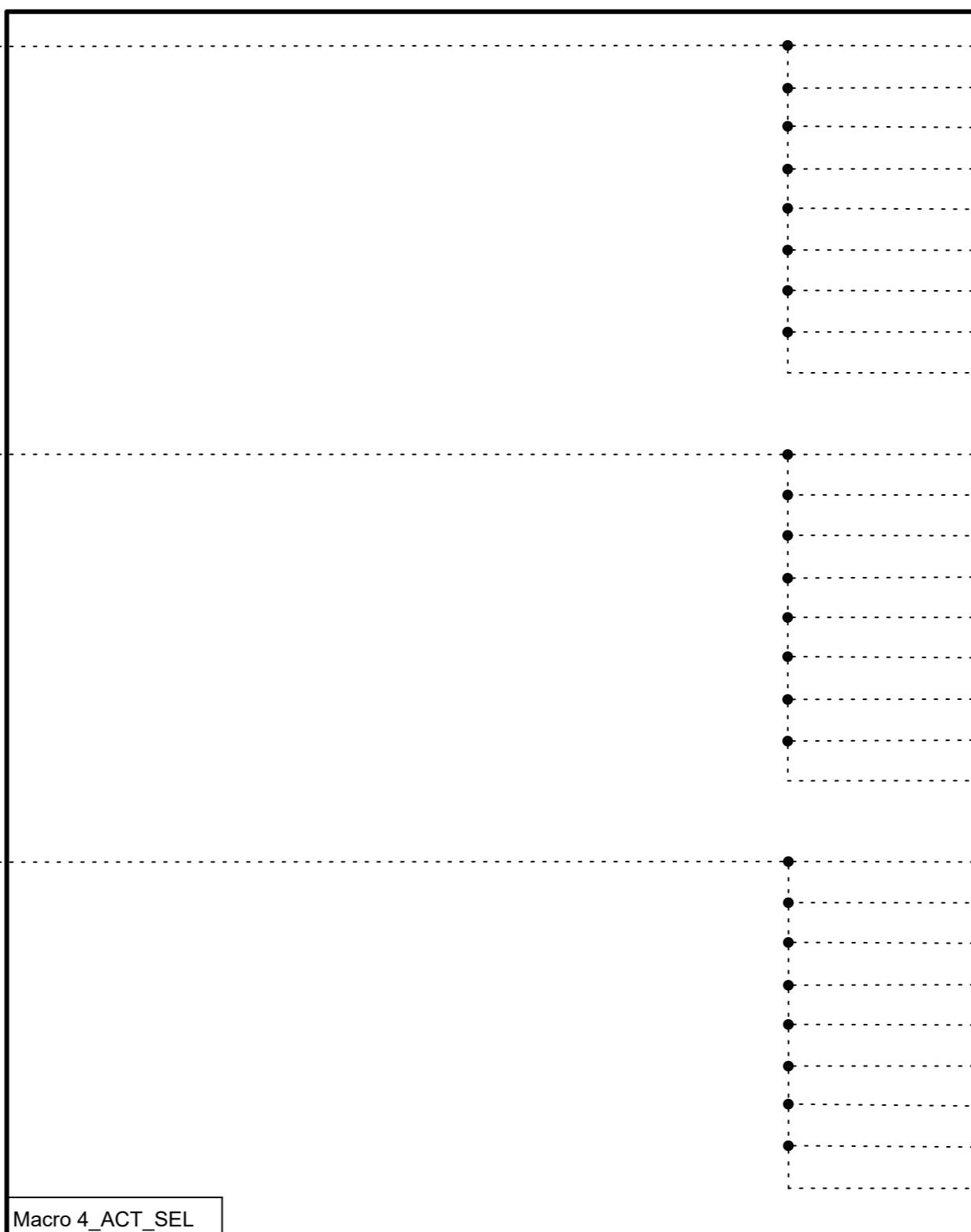
Control Diagram Macros & Templates

4 ACT Selector

LOOP:	01CD_10EA040
LOOP SHEET:	11 de 16

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1	18.04.2023					CHECKED	APPROVED

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
40.J 700 REV.
1

FORMAT DIN A-3 (420x297)

Control Diagram

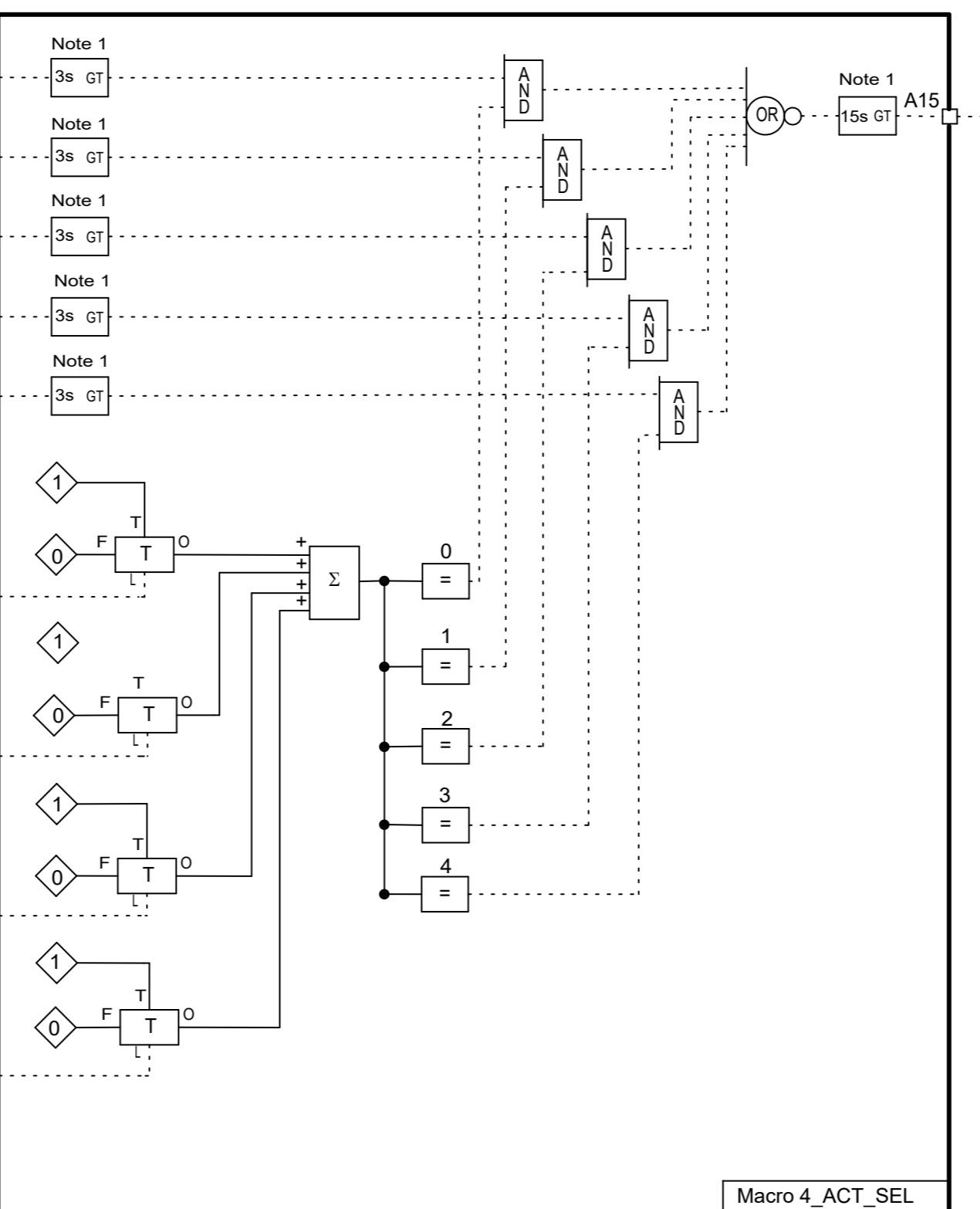
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LOOP:	01CD 10EA040
LOOP SHEET:	12 de 16

1	18.04.2023	For Design		ENL	OPP	OPP
REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED



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NOTE

1.- These time delays shall be adjustable. Preliminary value shown unless otherwise indicates in the logic diagram of a specific system.

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER 1 12



OWNER'S ENGINEER

OWNER'S ENGINEER:
TRACTEBEL




PROJECT

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

ITEM NUMBER: EBL-20-YI_IDY-EAI-00600

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Control Diagram

Control Diagram Macros & Templates

4 ACT Selector

LOOP: 01CD_10EA040

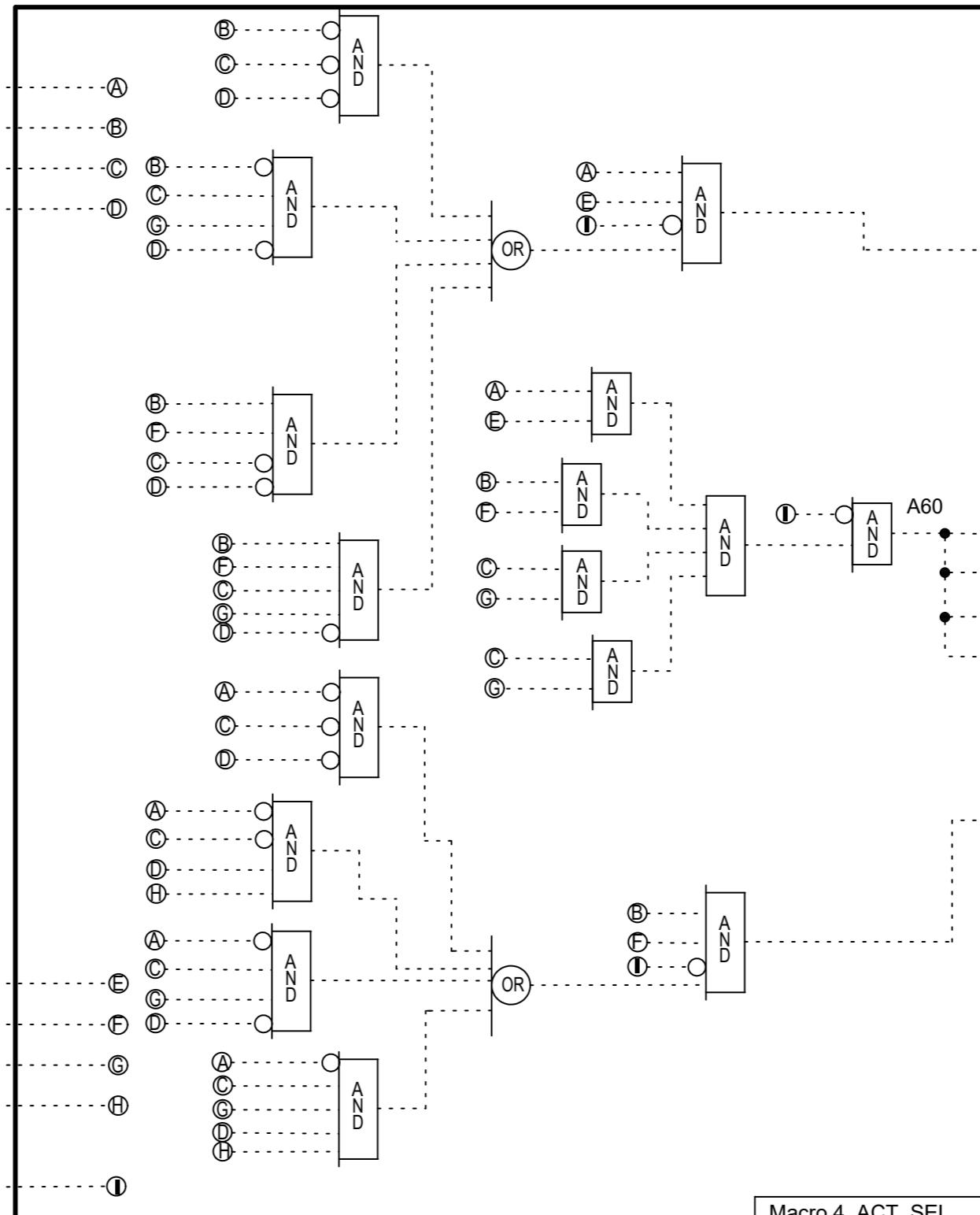
LOOP SHEET: 13 de 16

1 18.04.2023 For Design
REV. DATE

DESCRIPTION

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DRAWN CHECKED APPROVED

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SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

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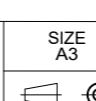


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

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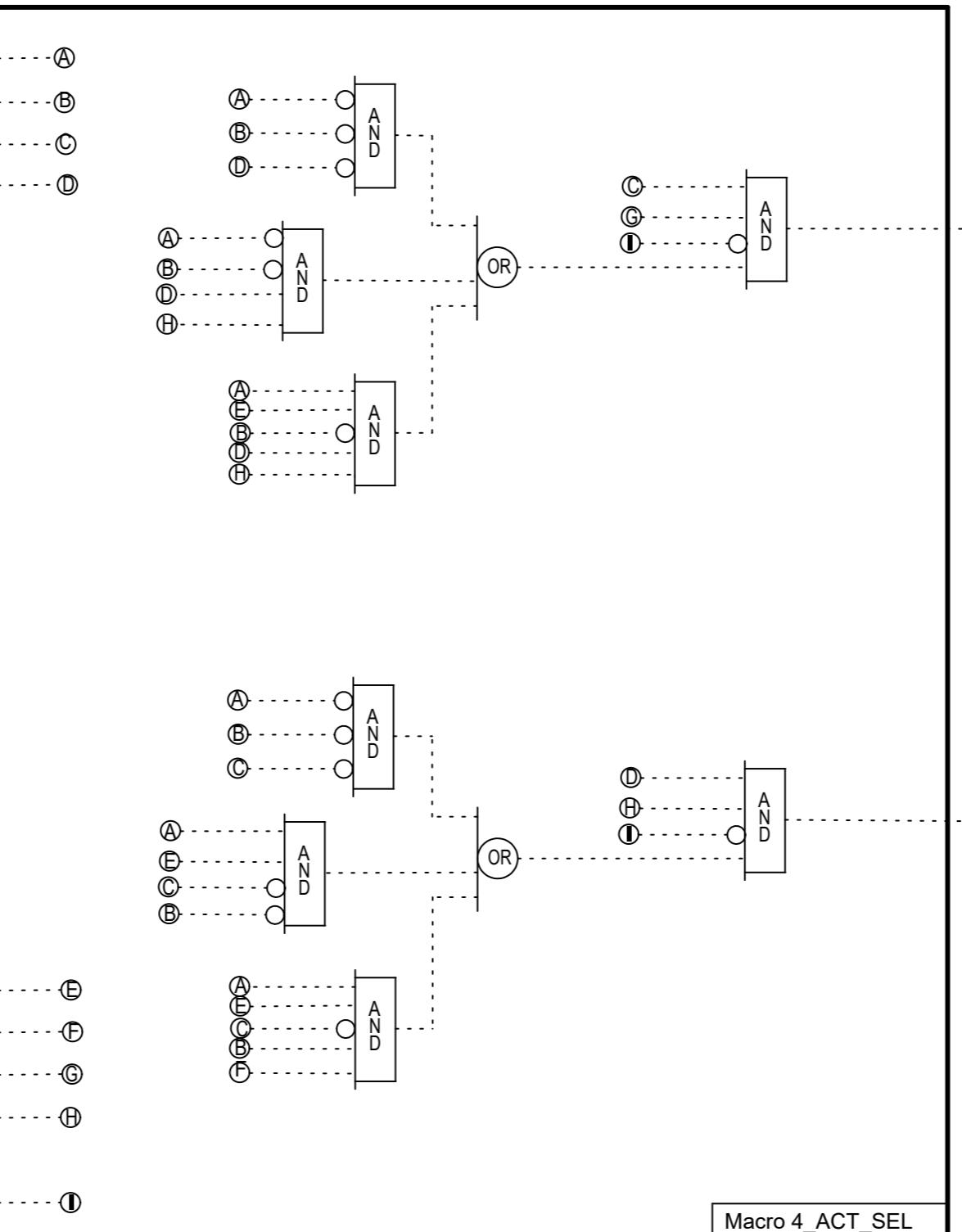
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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

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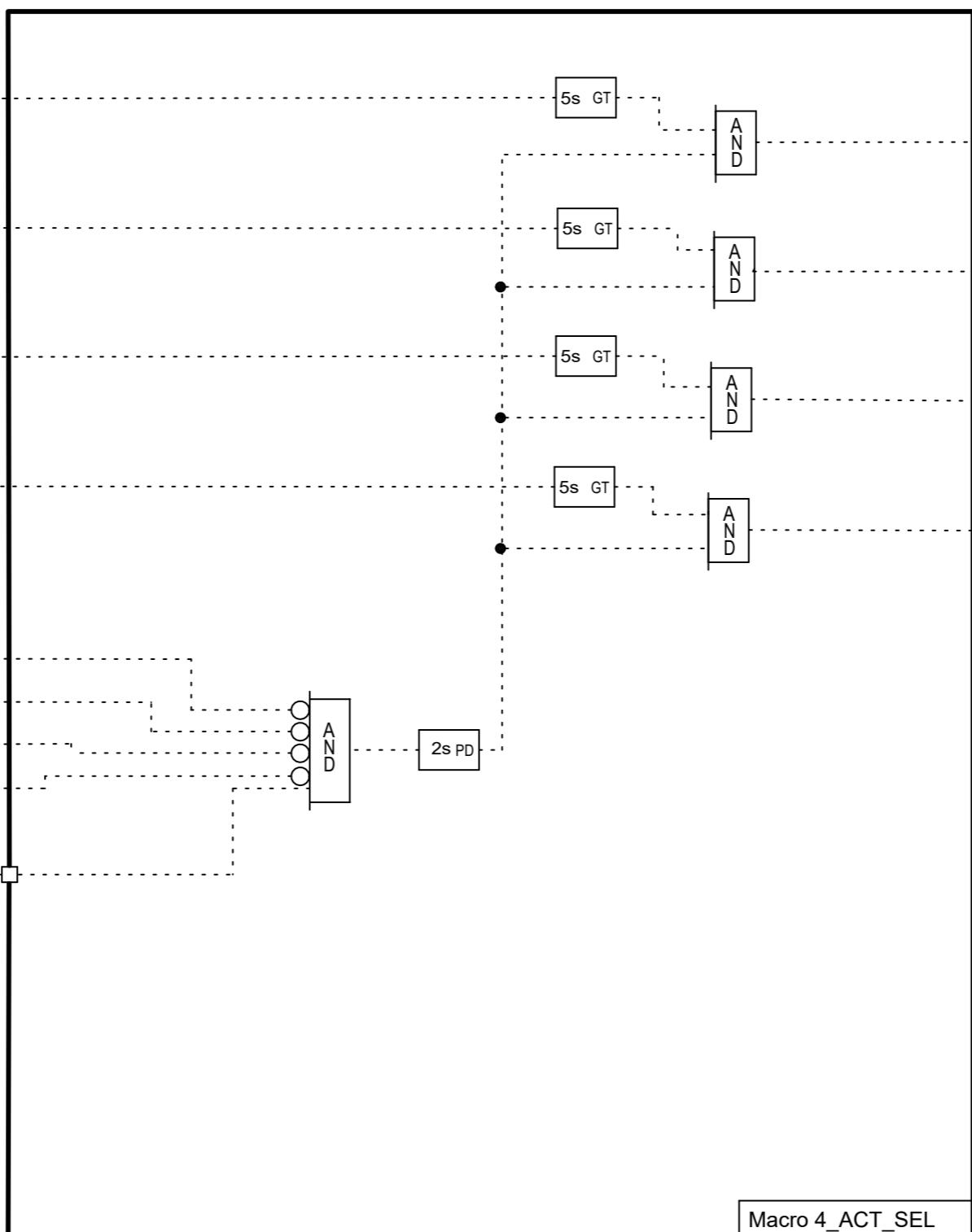
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Control Diagram Macros & Templates
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LOOP: 01CD_10EA040
LOOP SHEET: 15 de 16

1 18.04.2023 For Design
REV. DATE DESCRIPTION STATUS DRAWN CHECKED APPROVED



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 40.N 700 REV. 1

1	18.04.2023	For Design
REV.	DATE	

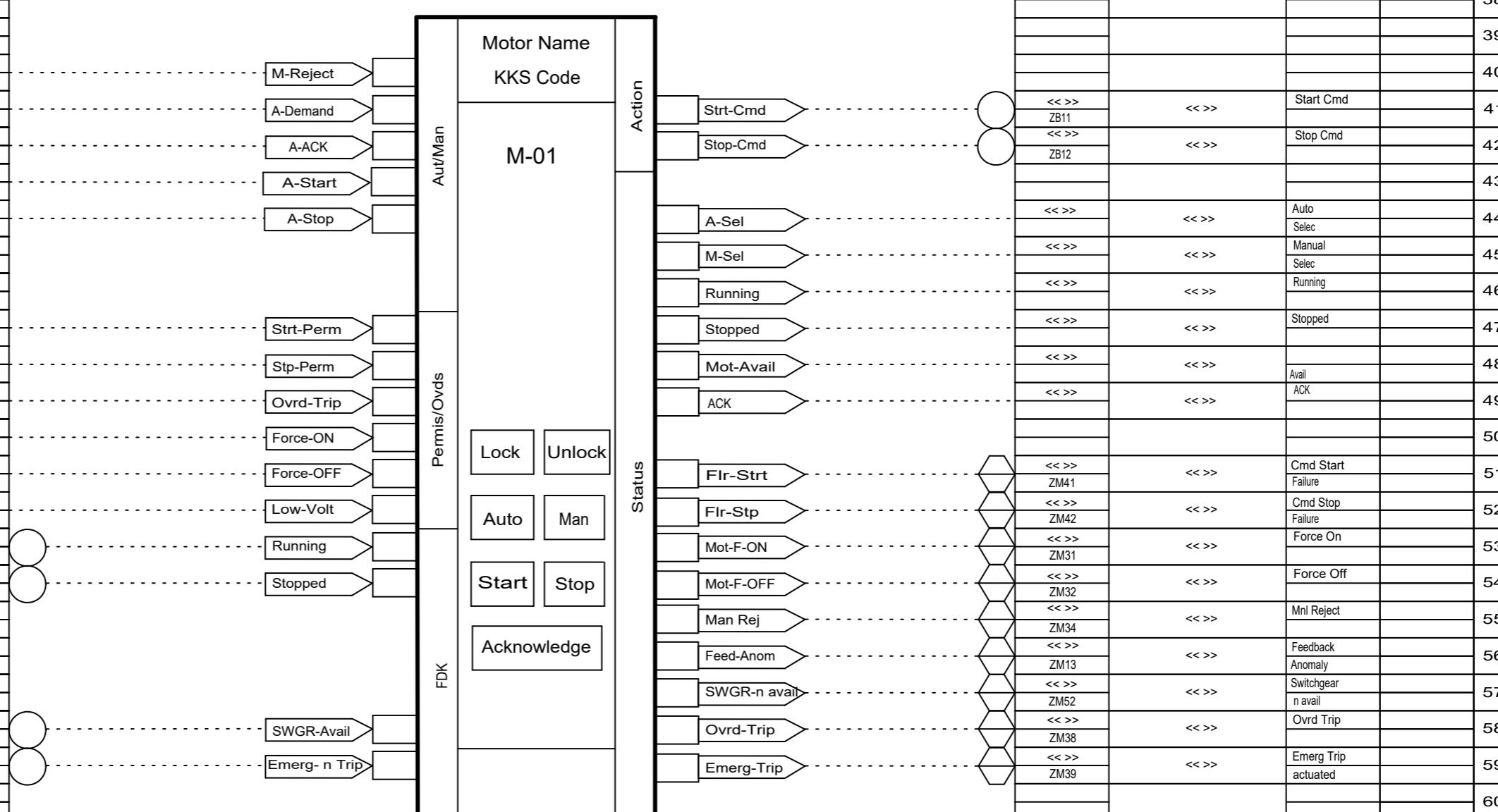
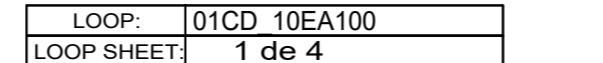
	ENL	OPP	OPP
STATUS	DRAWN	CHECKED	APPROVED

Control Diagram

Control Diagram Macros & Templates

Motor

FROM	DESCRIPTION	CODE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10	<>>	Mnl Rej <>>
11	<>>	Auto <>>
		Demand
12	<>>	Auto <>>
		ACK
13	<>>	Auto Start <>>
14	<>>	Auto Stop <>>
15		
16		
17	<>>	Start Perm <>>
18	<>>	Stop Perm <>>
19	<>>	Ovrd Trip <>>
20	<>>	Force On <>>
21	<>>	Force Off <>>
22	<>>	Volt Busb <>>
		Low
23	<>>	Running <>>
		XB01
24	<>>	Stopped <>>
		XB02
25		
26		
27		
28	<>>	Switchgear <>>
		avail XB52
29	<>>	Emerg Trip <>>
		n act XB39
30		



NOTE:
For LV switchgears motors and MCCs there is no emergency trip no actuated signal

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER 1 12

OWNER



OWNER'S ENGINE

CHAMADA PÚBLICA
TRACTEBEL



EMPRESARIOS AGRUPADOS

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600 SHEET 100 OF 700 REV. 1

A

B

C

D

E

Control Diagram

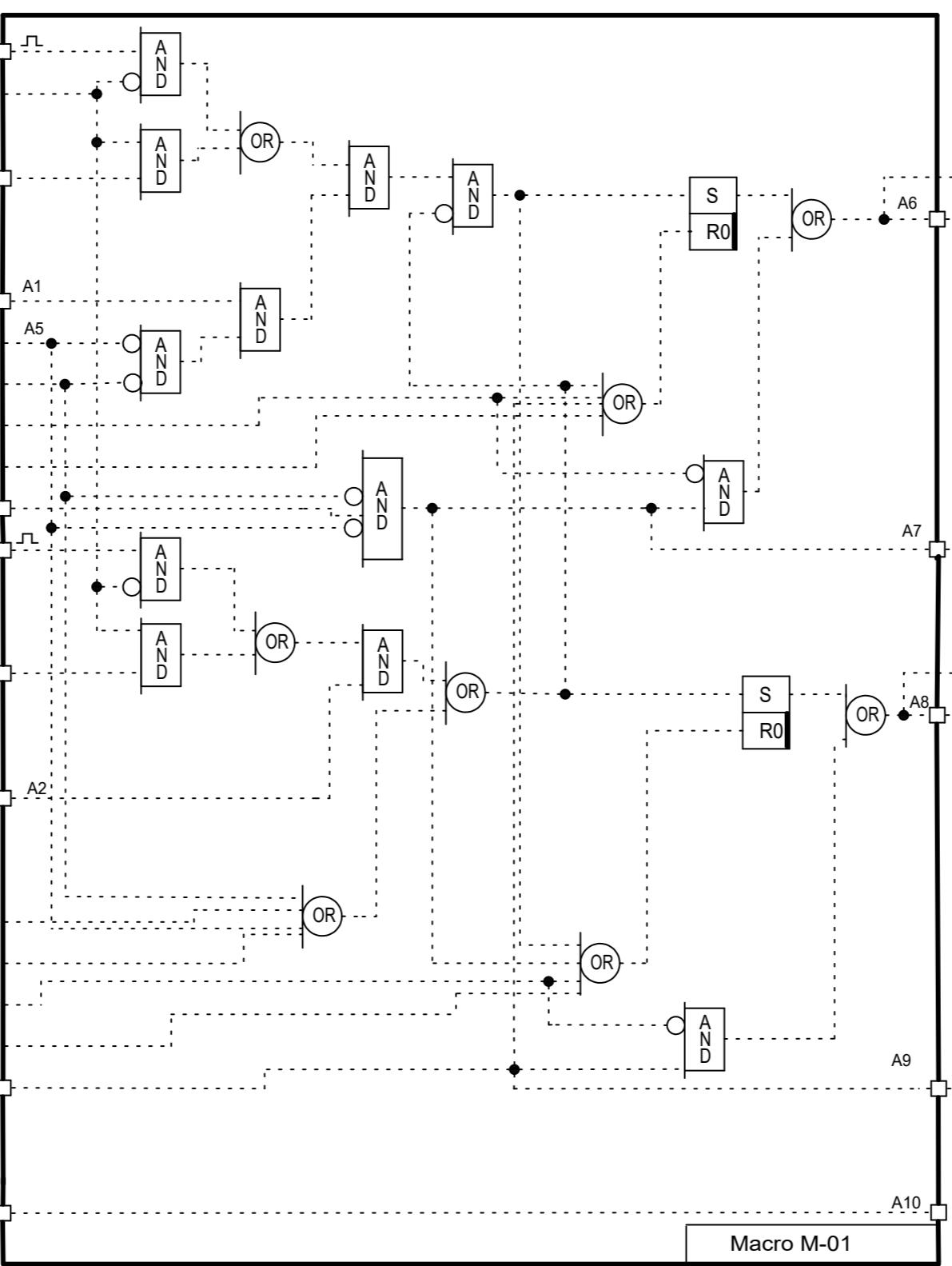
Control Diagram Macros & Templates

Motor

LOOP: 01CD 10EA100
LOOP SHEET: 2 de 4

MODIFICATIONS			
REV.	DATE	For Design	

FROM	DESCRIPTION	CODE
1	<>>	HMI Order
	Start	XB91
2	<>>	
100.B - 35	<>>	
3		
4	<>>	Auto Start
	<>>	XB21
5		
6		
7	<>>	Start Perm
	<>>	XB25
8	<>>	
100.B - 44	<>>	
9	<>>	
100.B - 48	<>>	
10	<>>	
100.B - 40	<>>	
11	<>>	Cmd Start
100.B - 50	<>>	ZB41
12	<>>	
	<>>	Force On
		XB31
13	<>>	HMI Order
	<>>	Stop
14		
15		
16	<>>	Auto Stop
	<>>	XB22
17		
18		
19	<>>	Stop Perm
	<>>	XB26
20		
21		
22	<>>	Feedback
100.B - 46	<>>	ZB13
23	<>>	
100.B - 59	<>>	
24	<>>	
100.B - 42	<>>	
25	<>>	
100.B - 52	<>>	
26	<>>	
	<>>	Cmd Stop
		ZB42
27		
28		
29		
30		



CODE	DESCRIPTION	TO
		31
		32
		33
<>>	ZB11	Start Cmd
	<>>	<>>
100.B - 19		Start Cmd
		35
		36
		37
		38
		39
		40
		41
		42
		43
		44
		45
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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
100.A 700 REV.
1

A

B

C

D

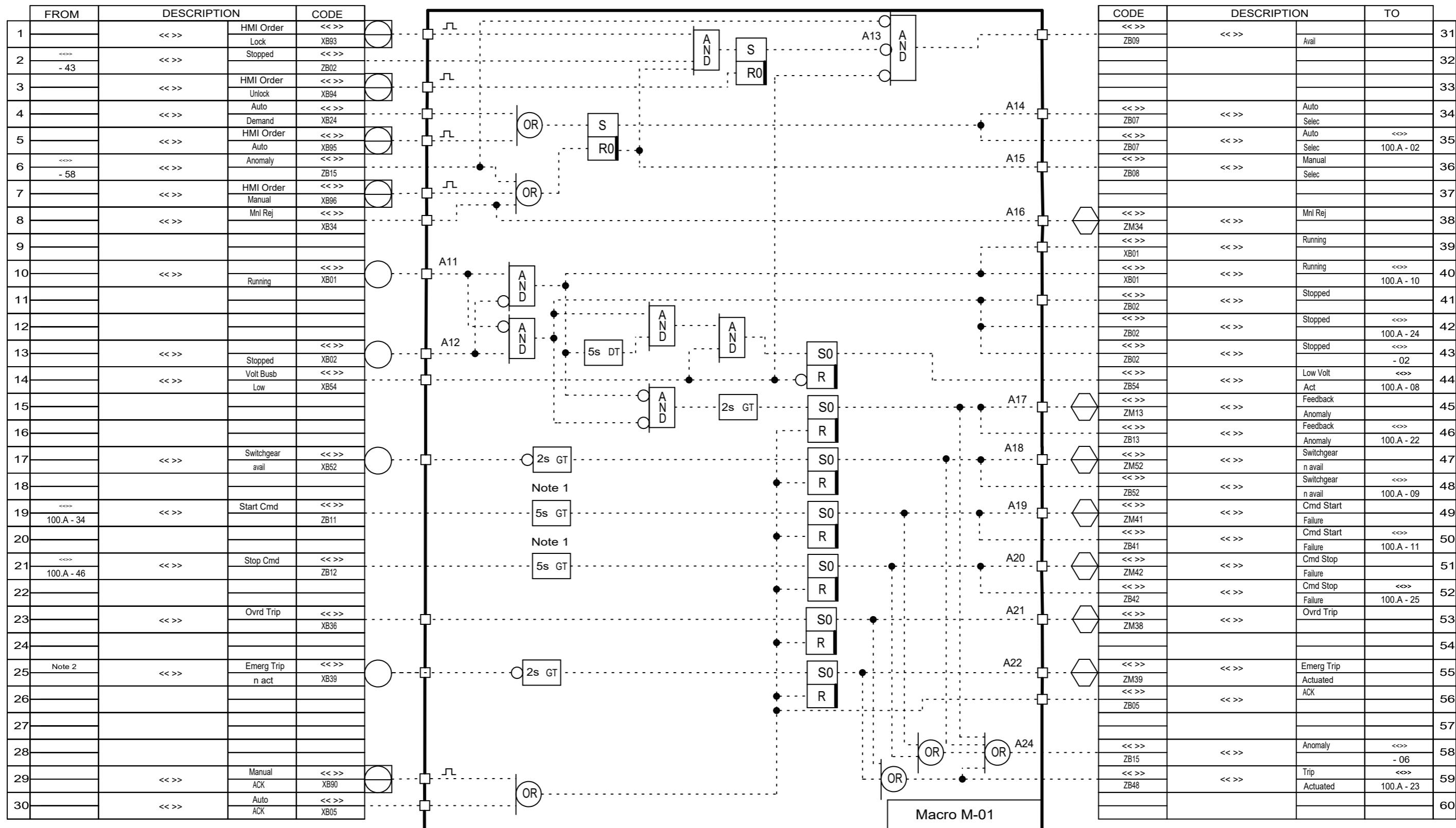
E

Control Diagram

Control Diagram Macros & Templates
Motor

LOOP: 01CD 10EA100
LOOP SHEET: 3 de 4

MODIFICATIONS							
1	18.04.2023	For Design			ENL	OPP	OPP
REV.	DATE	DESCRIPTION		STATUS	DRAWN	CHECKED	APPROVED



NOTES:

- 1.- These time delays shall be adjustable. Preliminary value shown unless otherwise indicates in the logic diagram of a specific system.
- 2.- For LV switchgears motors and MCCs this binary signal will be forced to "0".

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 100.B 700 REV. 1

Control Diagram

Control Diagram Macros & Templates

Motor

FROM	DESCRIPTION	CODE
1		
2	Note 1	Start Perm A1
3	Note 1	Stop Perm A2
4		
5		
6	Note 0	Low Volt Act A5
7		
8		Start Cmd A6
9	Note 0	Force On A7
10		Stop Cmd A8
11	Note 0	Force Off A9
12		
13	Note 0	Switchgear test pos A10
14		Running A11
15	Note 3	Stopped A12
16		Locked A13
17		Auto A14
18		Manual A15
19		
20	Note 0	Mnl Reject A16
21		Feedback A17
22	Note 0	Switchgear n avail A18
23		Cmd Start Failure A19
24		Cmd Stop Failure A20
25	Note 0	Ovrd Trip A21
26	Note 0	Emerg Trip Actuated A22
27		Anomaly A24
28		
29		
30		

LOOP: 01CD 10EA100
LOOP SHEET: 4 de 4

MODIFICATIONS			
1	18.04.2023	For Design	

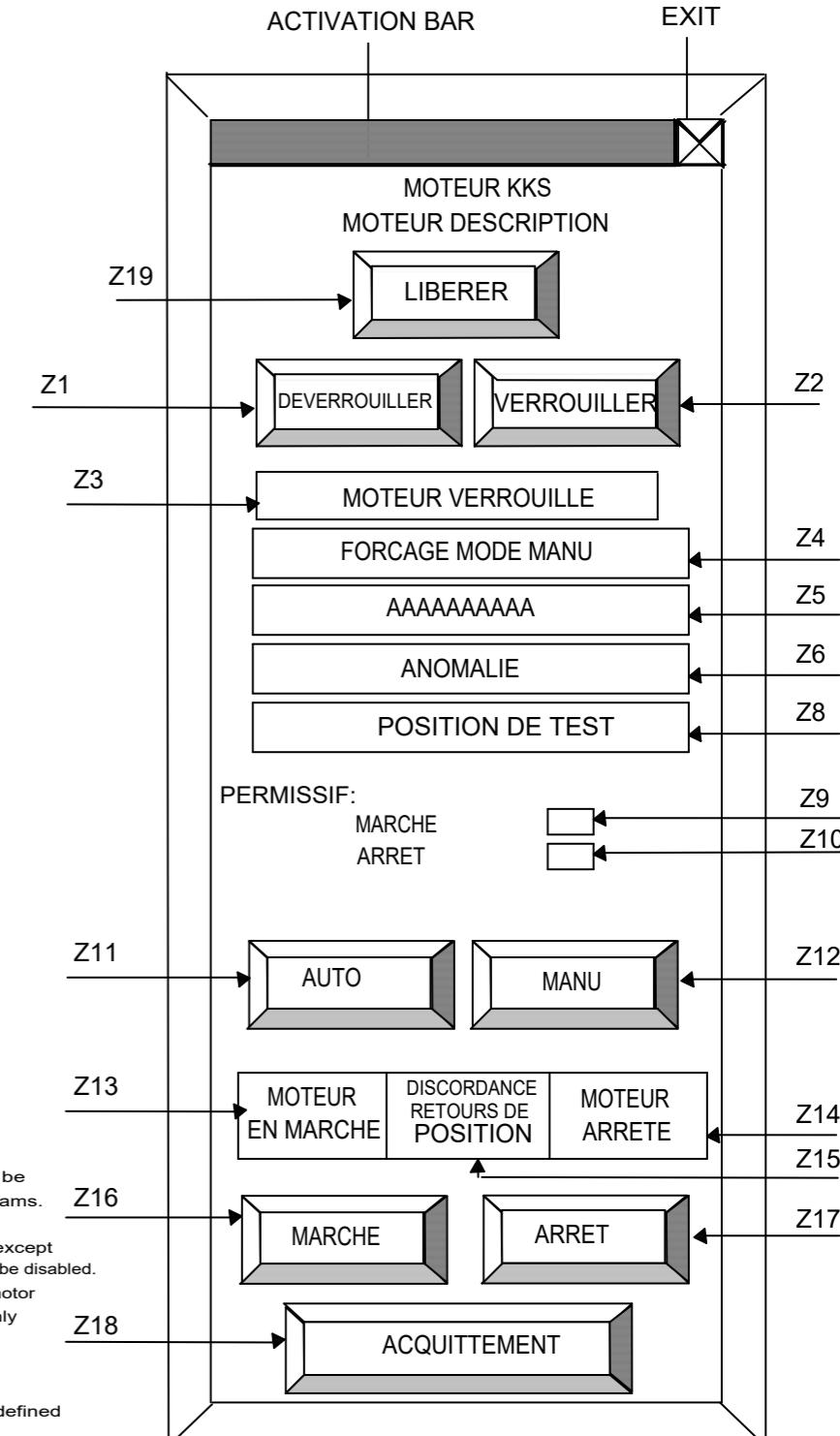
REV. DATE DESCRIPTION STATUS DRAWN CHECKED APPROVED

SIGNALIZATION LOGIC					
SIGNAL	LOGIC	TEXT	TEXT COLOUR	BACK GROUND COLOUR	NOTES
Z1	IF A13=1 IF A13=0	DEVERROUILLER DEVERROUILLER	BLACK WHITE	GREY GREY	5,7
Z2	IF A12=1 & A15=1 & A14=0 IF A12=0 OR A15=0 OR A14=1	VERROUILLER	BLACK	GREY	5,7 2,5
Z3	IF A13=1 IF A13=0	MOTEUR VERROUILLE	WHITE	RED	5 2,5
Z4	IF A16=1 IF A16=0	FORCAGE MODE MANU	BLACK	ORANGE	
Z5	IF A7=1 IF A9=1 IF A7=0 & A9=0	MARCHE FORCE ARRET FORCE	BLACK BLACK	ORANGE ORANGE	2
Z6	IF A24=1 IF A24=0	ANOMALIE	WHITE	RED	6 2,6
Z8	IF A10=1 IF A10=0	POSITION DE TEST	BLACK	ORANGE	2
Z9	IF STP=1 IF STP=0			GREEN RED	4
Z10	IF SPP=1 IF SPP=0			GREEN RED	4
Z11	IF A14=1 IF A14=0 & A16=0 & A24=0 IF A14=0 & (A16=1 OR A24=1)	AUTO	LIGHT BLUE BLACK WHITE	GREY GREY GREY	7
Z12	IF A15=1 IF A15=0	MANU	LIGHT BLUE BLACK	GREY GREY	7
Z13	IF A11=1 IF A11=0	MOTEUR EN MARCHE	BLACK	GREEN	2
Z14	IF A12=1 IF A12=0	MOTEUR ARRETE	BLACK	GREY	2
Z15	IF A17=1 IF A17=0	DISCORDANCE RETOURS DE POSITION	WHITE	RED	2
Z16	IF A6=1 IF A6=0 & STP=1 & A15=1 IF A6=0 & (STP=0 OR A15=0)	MARCHE	BLACK BLACK WHITE	GREEN GREY GREY	7 8
Z17	IF A8=1 IF A8=0 & SPP=1 & A15=1 IF A8=0 & (SPP=0 OR A15=0)	ARRET	LIGHT BLUE BLACK WHITE	GREY GREY GREY	7 8
Z18		ACQUITTEMENT	BLACK	GREY	7
Z19		LIBERER	BLACK	GREY	9

STP=1 IF A1=1 & A5=0 & A9=0 & A17=0 & A18=0 & A19=0 & A21=0 & A22=0
SPP=1 IF A2=1 & A7=0 & A20=0

NOTES:

- Whenever this signal is not required its logical value will be continuously forced to 0.
- Whenever this signal is not required its logical value will be continuously forced to 1.
- No text will appear and the background will be coloured like the control station background.
- Whenever this signal is not required its logical value will be the running signal reversed XB02 = XB01
- This area will call the corresponding list of permissives. All the conditions related to status of STP and SPP to be included in the permissives window. The list of causes that creates the signals A1 & A2 will be defined in control diagrams. This windows will be as the manufacturer standard.
- When "VERROUILLER" button is activated, all the buttons and texts of the faceplate are disabled and not visible, except the "DEVERROUILLER" button, and the message "DRIVE LOCKED OUT" appears. The complete faceplate and macro outputs will be disabled. Pressing "DEVERROUILLER" all the buttons and texts will be enabled again. "VERROUILLER" button is only visible if the motor is stopped in manual and the faceplate is not locked out. "DEVERROUILLER" button is always visible. Both buttons are only available in supervisor enviroment.
- This area will call for a window where the states of the alarms and trips are described: "Feedback anomaly" (A17), "Switchgear not available" (A18), "Command Start Failure" (A19), "Command Stop Failure" (A20), "Override Trip" (A21), "Emergency Trip" (A22) and "Electrical Protection Trip" (A23). The list of causes that creates the signals A21 will be defined in control diagrams.
- While the soft control switch is activated it will be sinking.
- The pushbutton will be disabled.
- It is necessary to press the "LIBERER" button before activating any station pushbuttons ("MARCHE", "ARRET", "LOCK", "UNLOCK", "AUTO" or "MANU"). All buttons (except ACQUITTEMENT) will be shown as disabled (white text over gray background) before this buttons is pressed. This "LIBERER" action lasts five seconds. After that, operator needs to "LIBERER" again to make any further operation. This button will be shown as black over grey background when not selected and over dark grey when selected. (A double confirmation standard from DCS manufacturer is accepted if the same safety is achived as the one described here)



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VEFIER L1 L2

OWNER:



OWNER'S ENGINEER:

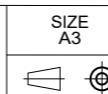


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 100.C 700 REV. 1

Control Diagram

Control Diagram Macros & Templates
Control Valve Pos Transm

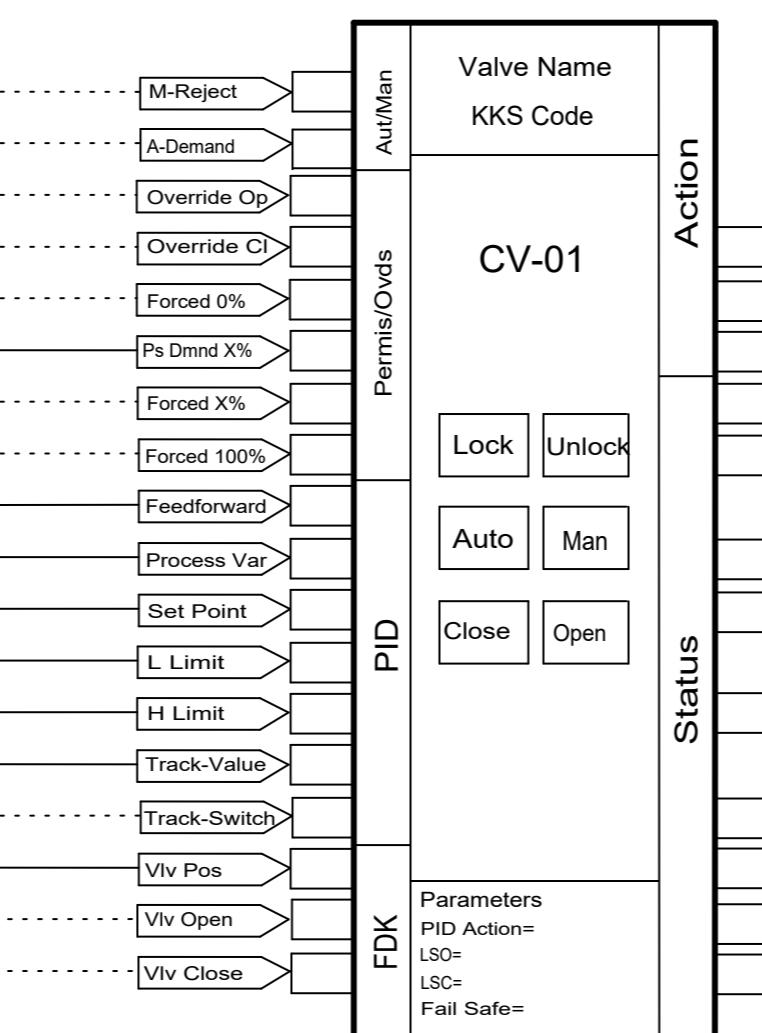
	FROM	DESCRIPTION	CODE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12	<>>	Mnl Rej <>>	
13	<>>	Auto <>>	
14	<>>	Demand	
15	<>>	Override Op <>>	
16	<>>	Override Cl <>>	
17	<>>	Postion <>>	
18	<>>	Demand	
19	<>>	Pos Demand <>>	
20	<>>	X%	
21	<>>	Forced <>>	
22	<>>	X%	
23	<>>	Forced 100%	
24	<>>	Forced X%	
25	<>>	Feedforward <>>	
26	<>>	Forced 100%	
27	<>>	Process Variable <>>	
28	<>>	Forced X%	
29	<>>	Forced 100%	
30	<>>	Feedforward	

LOOP: 01CD 10EA200
LOOP SHEET: 1 de 4

MODIFICATIONS				
1	18.04.2023	For Design	ENL	OPP

REV. DATE DESCRIPTION STATUS DRAWN CHECKED APPROVED

CODE	DESCRIPTION	TO
		31
		32
		33
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NOTES:

- 1.- In case a control valve does not have override solenoid valves, the corresponding input to the typical will be forced to 0 and the hardwired output will not be used nor included in the database.

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

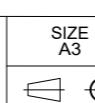


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

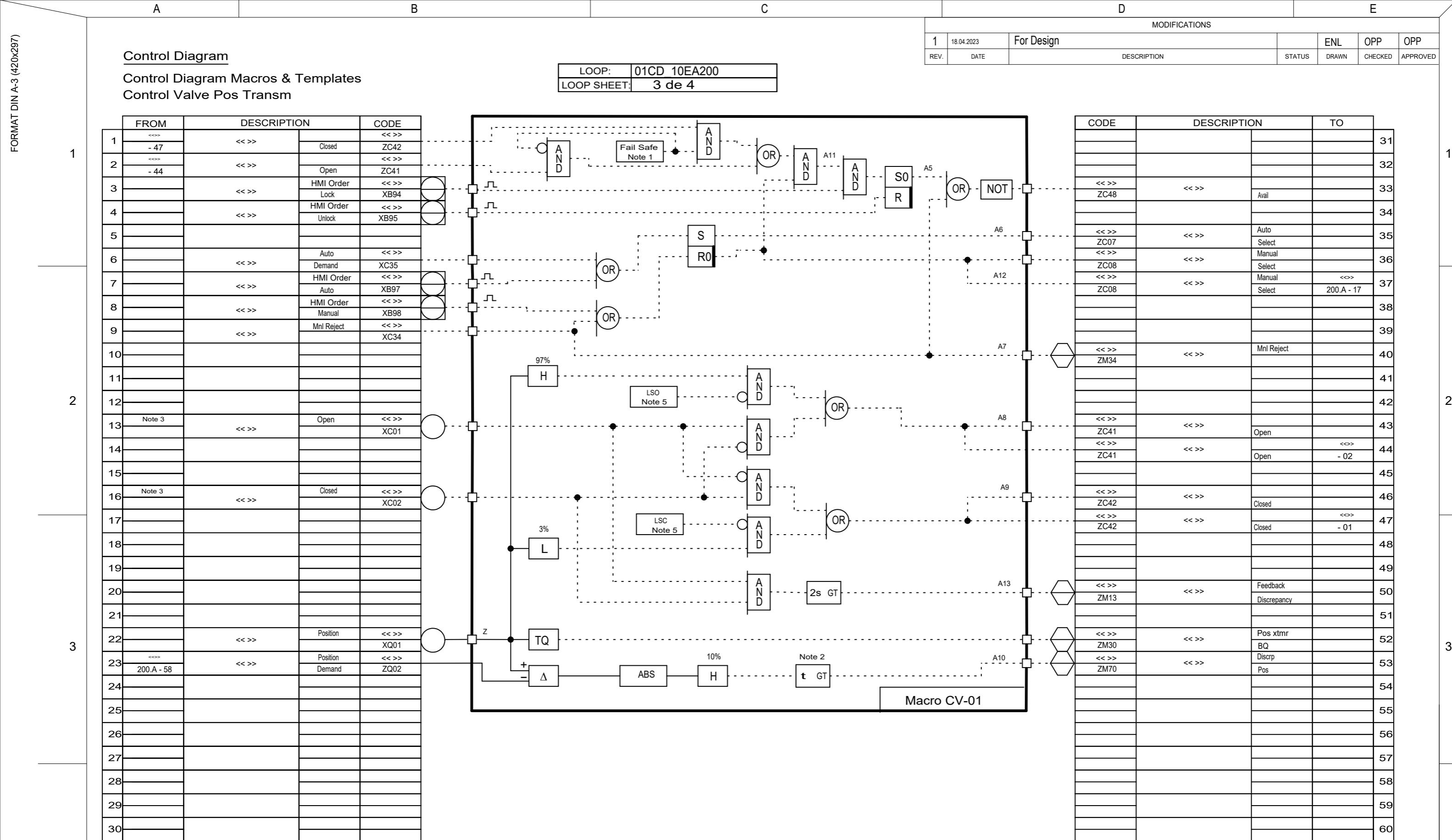
Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 200 700 REV. 1



Control Diagram

Control Diagram Macros & Templates

Control Valve Pos Transm

FROM	DESCRIPTION	CODE
1	Note 0	Tracking Switch A1
2	Note 0	Forced 0% A2
3	Note 0	Forced X% A3
4	Note 0	Forced 100% A4
5		Locked A5
6		Auto A6
7		Selec Mnl Reject A7
8		Open A8
9		Closed A9
10		Set Point SP
11		Process Var PV
12		Position Demand D
13		Position Z
14		Discrp Position A10
15		Lock Permit A11
16		Manual Select A12
17		FB Discrp A13
18		Close Ovrd n Act A14
19		Open Ovrd n Act A15
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		

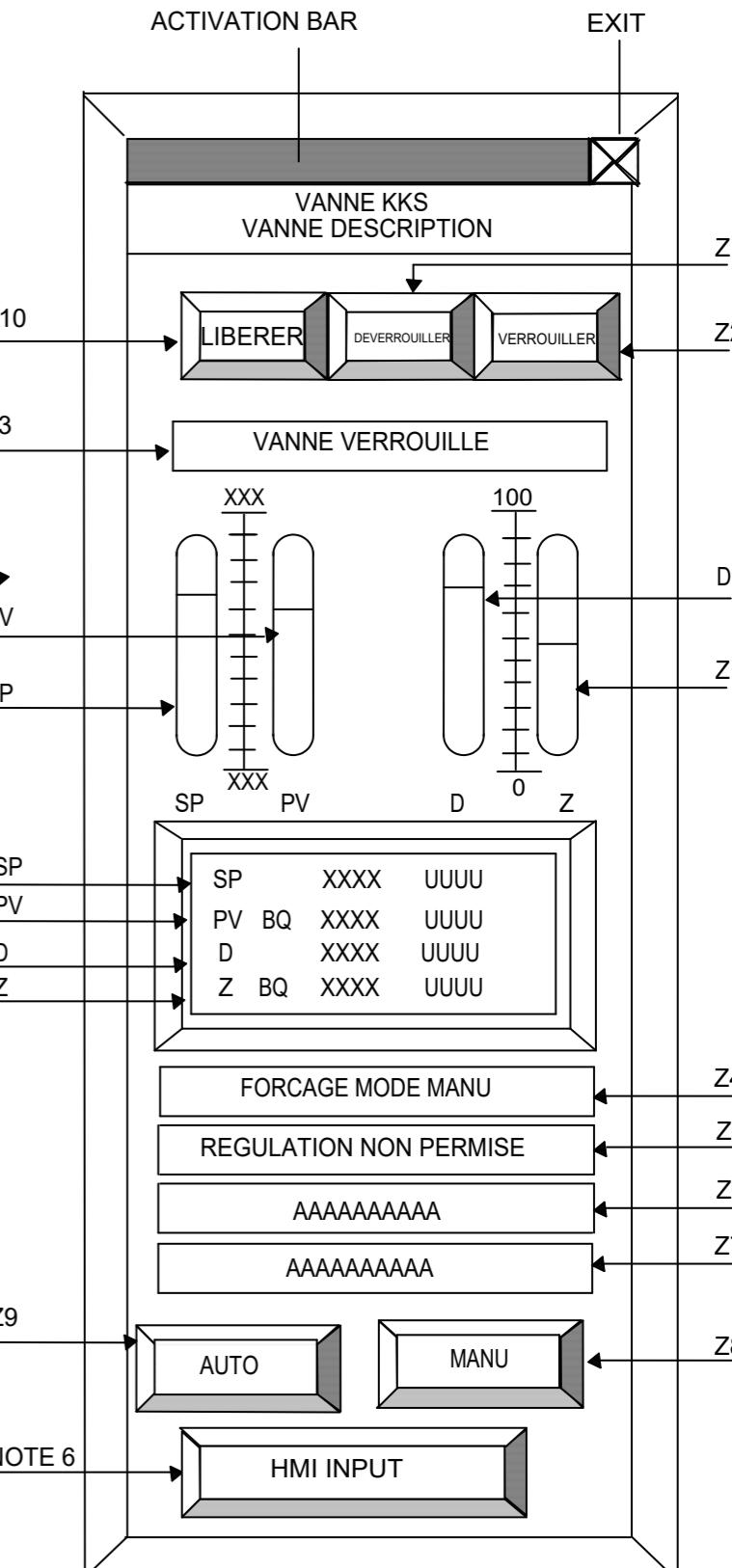
LOOP: 01CD 10EA200
LOOP SHEET: 4 de 4

1	18.04.2023	For Design	MODIFICATIONS
REV.	DATE	DESCRIPTION	STATUS
		DRAWN	ENL
		CHECKED	OPP APPROVED

SIGNALIZATION LOGIC					
SIGNAL	LOGIC	TEXT	TEXT COLOUR	BLACK GROUND COLOUR	NOTES
Z1	IF A5=1	DEVERROUILLER	BLACK	GREY	3,5
	IF A5=0	DEVERROUILLER	WHITE	GREY	
Z2	IF A11=1	VERROUILLER	BLACK	GREY	3,5
	IF A11=0				
Z3	IF A5=1	VANNE VERROUILLÉE	WHITE	RED	5
	IF A5=0				
SP	NUMERIC VALUE AND SCROLL BAR	SP	LIGHT GREEN	BLACK	4
PV	NUMERIC VALUE AND SCROLL BAR	PV	BLUE	BLACK	4
D	NUMERIC VALUE AND SCROLL BAR	D (Vanne position demande)	WHITE	BLACK	4
Z	NUMERIC VALUE AND SCROLL BAR	Z (Vanne position retour)	GREEN	BLACK	4
Z4	IF A7=1	FORAGE MODE MANU	BLACK	ORANGE	2
	IF A7=0				
Z5	IF RP=0	REGULATION NON PERMISE	BLACK	ORANGE	2
	IF RP=1				
Z6	IF A1=1 & A2=0 & A3=0 & A4=0 & A12=0	VANNE IN TRACKING MODE	BLACK	ORANGE	2
	IF A2=1 & A3=0 & A4=0	VANNE FORCEE 0%	BLACK	ORANGE	
	IF A3=1 & A4=0	VANNE FORCEE X%	BLACK	ORANGE	
	IF A4=1	VANNE FORCEE 100%	BLACK	ORANGE	
	IF (A1=0 OR A12=1) & A2=0 & A3=0 & A4=0				
Z7	IF A8=1 & A14=0 & A15=0 & A10=0 & A13=0	VANNE OUVERTURE	BLACK	GREEN	2
	IF A9=1 & A14=0 & A15=0 & A10=0 & A13=0	VANNE FERMETURE	BLACK	GREY	
	IF A10=1 & A14=0 & A15=0	CV DISCORDANCE POSITION	WHITE	RED	
	IF A13=1 & A14=0 & A15=0	DISCORDANCE RETOURS POSITION	WHITE	RED	
	IF A14=1	FERMETURE OVERRIDE	BLACK	ORANGE	
	IF A15=1	OVERTURE OVERRIDE	BLACK	ORANGE	
	IF A8=0 & A9=0 & A10=0 & A13=0 & A14=0 & A15=0				
Z8	IF A12=1	MANU	LIGHT BLUE	GREY	3
	IF A12=0	MANU	BLACK	GREY	
Z9	IF A6=1	AUTO	LIGHT BLUE	GREY	3
	IF A6=0 & A7=0	AUTO	BLACK	GREY	
	IF A6=0 & A7=1	AUTO	WHITE	GREY	
Z10	LIBERER	LIBERER	BLACK	GREY	7

NOTES:

- 0.- Whenever this signal is not required its logical value will be continuously forced to 0.
- 1.- Whenever this signal is not required its logical value will be continuously forced to 1.
- 2.- No text will appear and the background will be coloured like the control station background
- 3.- While the soft control switch is activated will be sinking.
- 4.- Analogic values will be indicated in two ways:
 - A numeric value (XXX) in engineering units (UUUU). Q appears if the signal is on bad quality.
 - Dynamic bar with the background colour indicated in the table as "TEXT COLOUR". The dynamic bar scale will be picked from the DCS I/O list. Fields "DISPLAY_LO" for the lower value and "DISPLAY_HI" for the upper value.
- 5.- When "VERROUILLER" button is activated, all the buttons of the faceplate are disabled (except the "DEVERROUILLER" button). The complete faceplate and macro outputs will be disabled. Pressing "DEVERROUILLER" all the buttons will be enabled again. "VERROUILLER" button is only visible (black text over grey background) if it is in manual and in its safe position. "DEVERROUILLER" button is always visible. Both buttons are only available in supervisor environment.
- 6.- On clicking on this button we will be able to introduce, using the keyboard, a desired value for intermediate position.
- 7.- It is necessary to press the "LIBERER" button before activating any station pushbutton. All buttons will be shown as disabled (white text over grey background) before this button is pressed. This release action lasts five seconds. After that, the operator needs to press "LIBERER" again to make any further operation. This button will be shown as black over grey background when no selected and over dark grey when selected. (A double confirmation standard from DCS manufacturer is accepted if the same safety is achieved as the one described here)



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VEFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

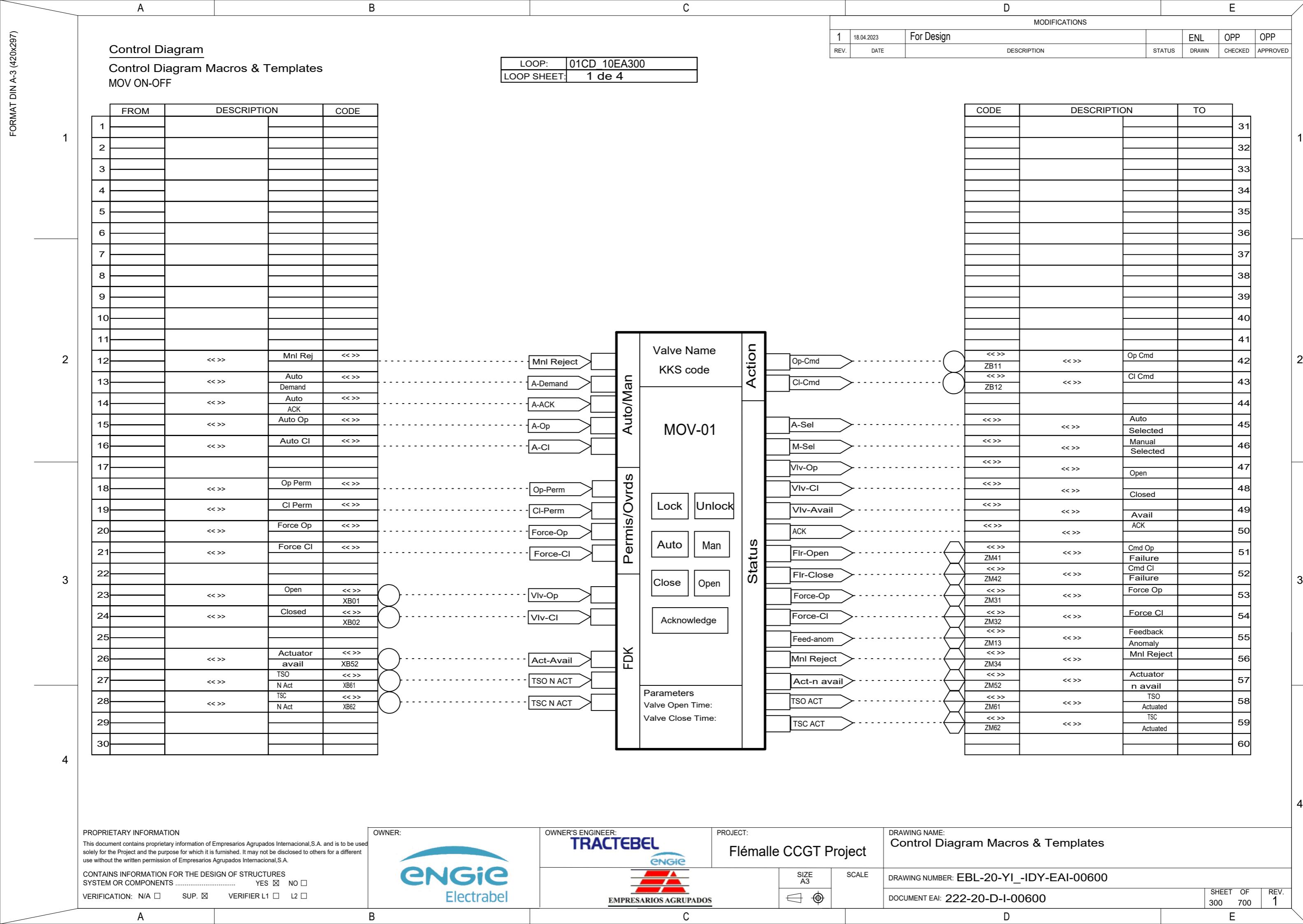
DRAWING NAME:

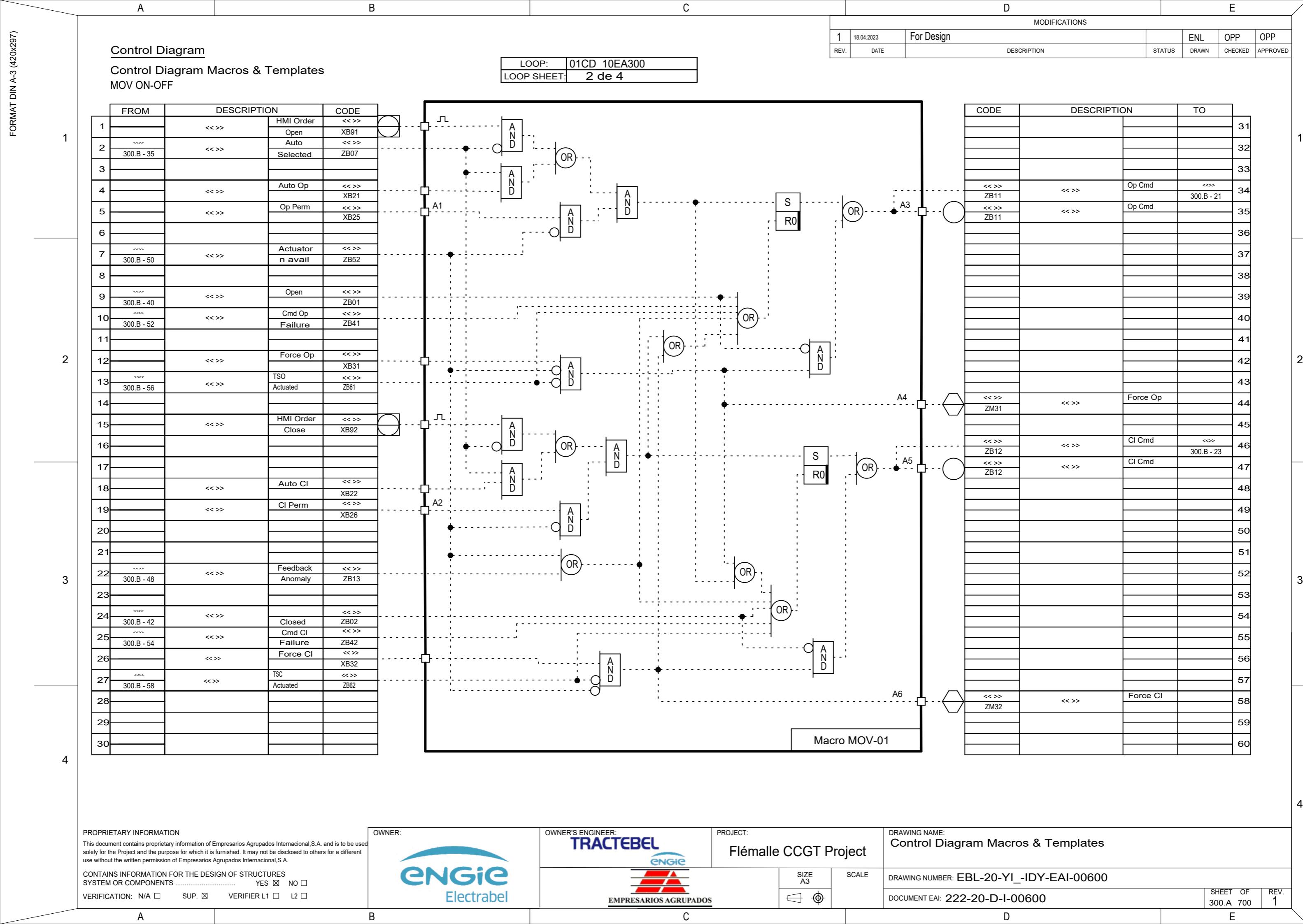
Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI-IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 200.C 700 REV. 1



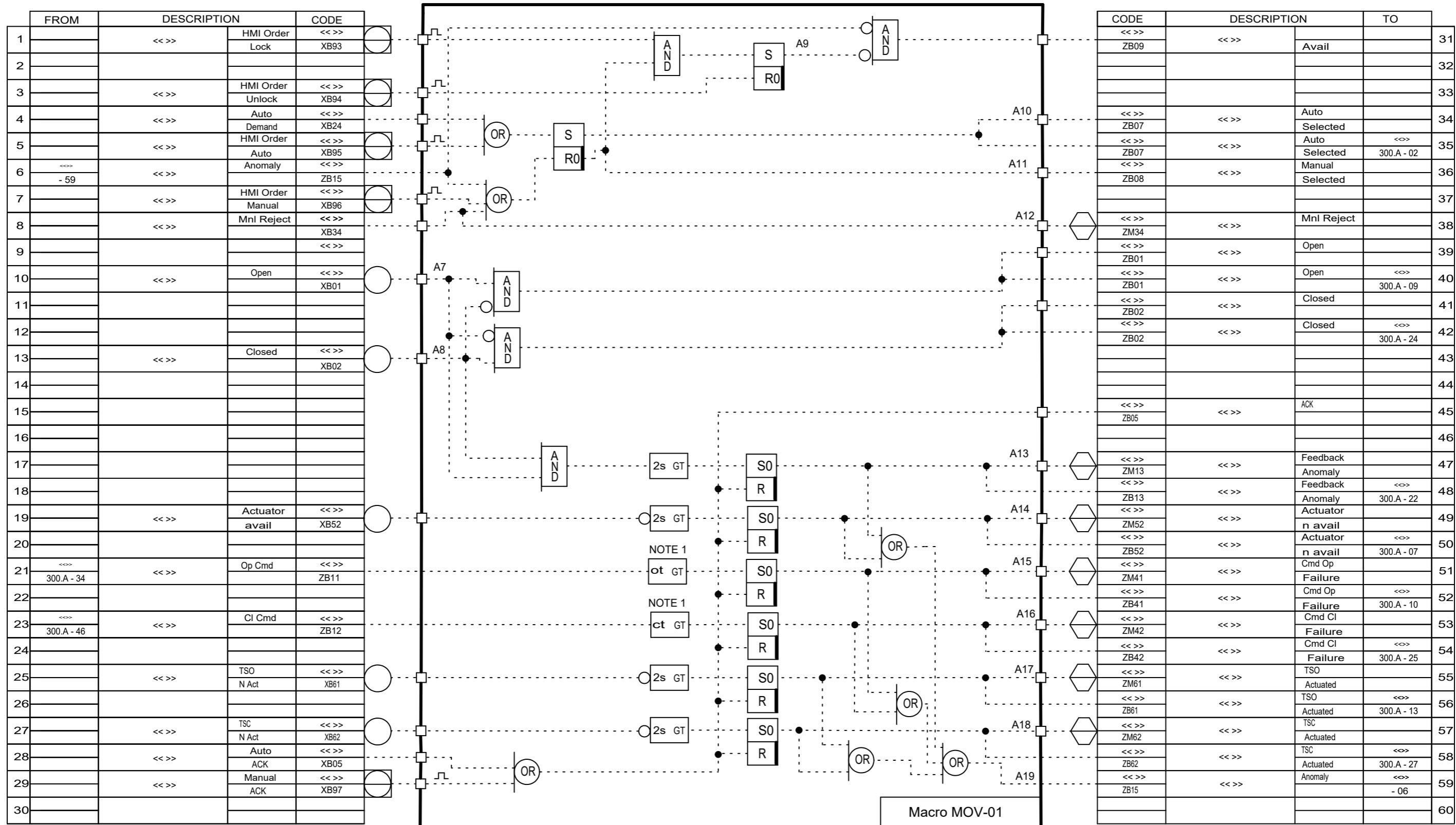


Control Diagram

Control Diagram Macros & Templates
MOV ON-OFF

LOOP: 01CD 10EA300
LOOP SHEET: 3 de 4

MODIFICATIONS							
1	18.04.2023	For Design			ENL	OPP	OPP
REV.	DATE	DESCRIPTION		STATUS	DRAWN	CHECKED	APPROVED



NOTES:

1.- ot: open time & ct: close time. To be adjusted on site for each valve

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
300.B 700 REV.
1

Control Diagram**Control Diagram Macros & Templates**

MOV ON-OFF

FROM	DESCRIPTION	CODE
1		
2	Note 1	Op Perm A1
3	Note 1	Cl Perm A2
4		
5		
6		
7		
8		Op Cmd A3
9	Note 0	Force Op A4
10		Cl Cmd A5
11	Note 0	Force Cl A6
12		
13		
14		Open A7
15	Note 3	Closed A8
16		Locked A9
17		Auto A10
18		Selected A11
19		
20	Note 0	Mnl Rej A12
21		Feedback Anomaly A13
22		
23	Note 0	Actuator n avail A14
24		Cmd Op Failure A15
25	Note 0	Cmd Cl Failure A16
26	Note 0	TSO Actuated A17
27	Note 0	TSC Actuated A18
28		Anomaly A19
29		
30		

LOOP: 01CD 10EA300
LOOP SHEET: 4 de 4

MODIFICATIONS			
1	18.04.2023	For Design	
REV.	DATE	DESCRIPTION	STATUS

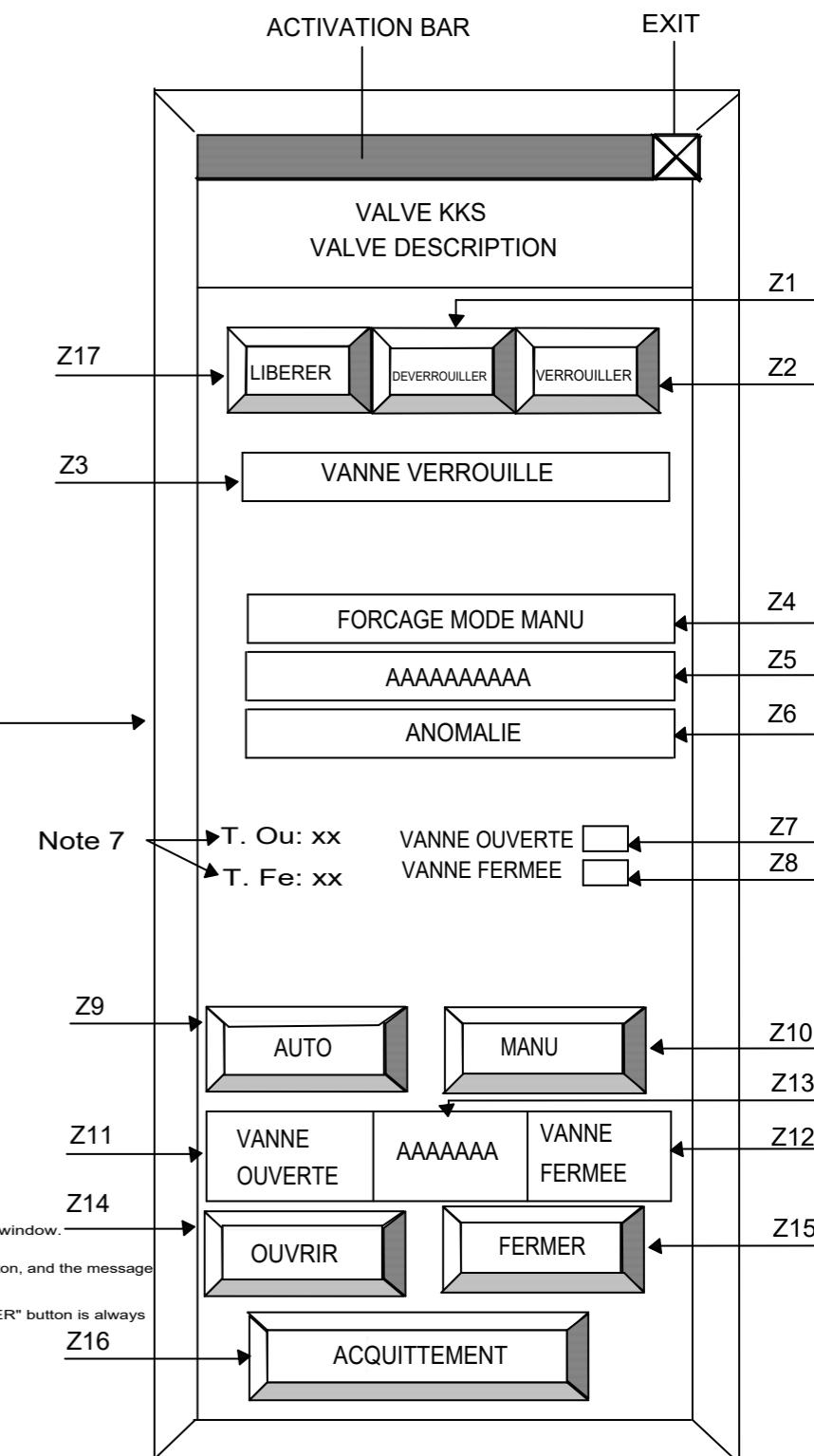
ENL OPP OPP
DRAWN CHECKED APPROVED

SIGNALIZATION LOGIC					
SIGNAL	LOGIC	TEXT	TEXT COLOUR	BACK GROUND COLOUR	NOTES
Z1	IF A9=1 IF A9=0	DEVERROUILLER DEVERROUILLER	BLACK WHITE	GREY GREY	4,6 4
Z2	IFI A9=0 & A11=1 IFI A9=1 OR A10=1	VERROUILLER	BLACK	GREY	4,6 2,4
Z3	IF A9=1 IF A9=0	VANNE VERROUILLE	WHITE	RED	4 2,4
Z4	IF A12=1 IF A12=0	FORCAGE MODE MANU	BLACK	ORANGE	2
Z5	IF A4=1 IF A6=1 IFI A4=0 & A6=0	OUVERTURE FORCEE FERMETURE FORCEE	BLACK BLACK	ORANGE ORANGE	
Z6	IF A17=1 IF A17=0	ANOMALIE	WHITE	RED	5 2
Z7	IF OP=1			GREEN	3
Z8	IF OP=0 IF CP=1 IF CP=0			RED	3
Z9	IF A10=1 IFI A10=0 & A12=0 & A17=0 IFI A10=0 & (A12=1 OR A17=1)	AUTO	LIGHT BLUE BLACK WHITE	GREY GREY GREY	6 6 6
Z10	IF A11=1 IF A11=0	MANU	LIGHT BLUE BLACK	GREY GREY	6 6
Z11	IF A7=1 IF A7=0	VANNE OUverte	BLACK	GREEN	2
Z12	IF A8=1 IF A8=0	VANNE FERMEE	BLACK	GREY	2
Z13	IF A13=1 IFI A7=0 & A8=0 IFI A13=0 & (A7=1 OR A8=1)	DISCORDANCE RETOURS DE POSITION POSITION INTERMEDIAIRE	WHITE BLACK	RED GREY	6 2
Z14	IF A3=1 IF A3=0 & OP=1 & A11=1 IFI A3=0 & (OP=0 OR A11=0)	OUVRIR	BLACK BLACK WHITE	GREEN GREY GREY	6 6 6
Z15	IF A5=1 IF A5=0 & CP=1 & A11=1 IFI A5=0 & (CP=0 OR A11=0)	FERMER	LIGHT BLUE BLACK WHITE	GREY GREY GREY	6 6 6
Z16		ACQUITTEMENT	BLACK	GREY	6
Z17		LIBERER	BLACK	GREY	9

OP=1 IF A1=1 & A6=0 & A13=0 & A14=0 & A15=0 & A17=0 & A18=0
CP=1 IF A2=1 & A4=0 & A13=0 & A14=0 & A16=0 & A17=0 & A18=0

NOTES:

- Whenever this signal is not required its logical value will be continuously forced to 0.
- Whenever this signal is not required its logical value will be continuously forced to 1.
- No text will appear and the background will be coloured like the control station background.
- This area will call the corresponding lists of permissives. All the conditions related to status of OP and CP to be included in the permissives window. The list of causes that creates the signals A1 & A2 will be defined in control diagrams. This window will be as the manufacturer standard.
- When "VERROUILLER" button is activated, all the buttons and texts of the faceplate are disabled and not visible, except "DEVERROUILLER" button, and the message "VANNE VERROUILLE" appears. The complete faceplate and macro outputs will be disabled. Pressing "DEVERROUILLER" all the buttons and texts will be enabled again. "VERROUILLER" button is only visible if the valve is in manual and the faceplate is not locked out. "DEVERROUILLER" button is always visible. Both buttons are only available in supervisor environment.
- This area will call for a window where the states of the alarms and trips are described: "Feedback anomaly" (A13), "Actuator n avail" (A14), "Open Command Failure" (A15), "Close Command Failure" (A16).
- While the soft control switch is activated it will be sinking.
- Indication of the values for Opening and Closing time implemented for the specific device.
- The pushbutton will be disabled.
- It is necessary to press the "LIBERER" button before activating any station pushbuttons ("OUVRIR", "FERMER", "VERROUILLER", "DEVERROUILLER", "AUTO", or "MANU"). All buttons (except ACQUITTEMENT) will be shown as disabled (white text over grey background) before this button is pressed.
- This "LIBERER" action lasts five seconds. After that, operator needs to "LIBERER" again to make any further operation. This button will be shown as black over grey background when not selected and over dark grey when selected. (A double confirmation standard from DCS manufacturer is accepted if the same safety is achieved as the one described here).



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VEFIER L1 L2

OWNER:



OWNER'S ENGINEER:

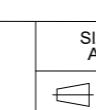


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

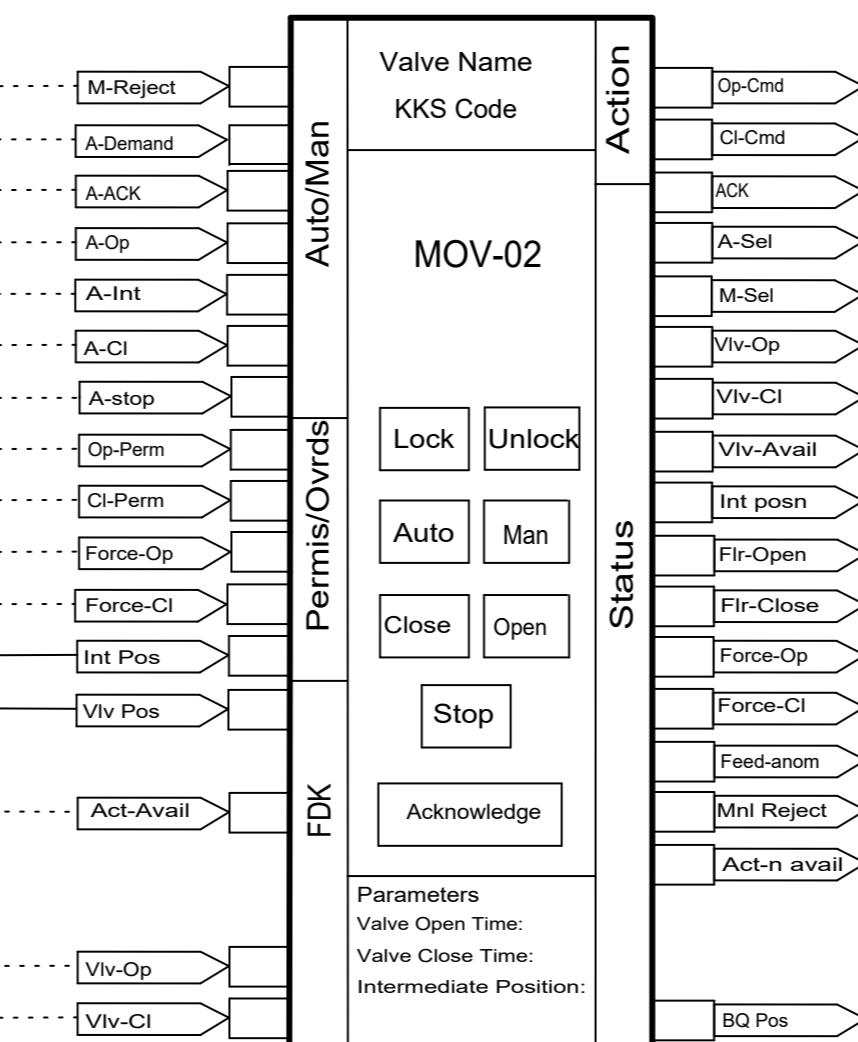


DRAWING NUMBER: EBL-20-YI-IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 300.C 700 REV. 1

FROM	DESCRIPTION	CODE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12	<>>	Mnl Rej
13	<>>	Auto
		Demand
14	<>>	Auto
		ACK
15	<>>	Auto Op
16	<>>	Auto Int
17	<>>	Auto CI
18	<>>	Auto Stop
19	<>>	Op Perm
20	<>>	CI Perm
21	<>>	Force Op
22	<>>	Force CI
23	<>>	Int
		Pos
24	<>>	Position
		<>>
		XQ01
25	<>>	
26	<>>	Actuator
		avail
27	<>>	XB52
28	<>>	
29	<>>	Open
		<>>
30	<>>	XB01



CODE	DESCRIPTION	TO
		31
		32
		33
		34
		35
		36
		37
		38
		39
		40
		41
<< >>	Op Cmd	42
ZB11		
<< >>	Cl Cmd	43
ZB12		
	ACK	44
	Auto	45
	Selected	45
	Manual	46
	Selected	46
	Open	47
	Closed	48
	Avail	49
	Int	50
	Posn	50
<< >>	Cmd Op	51
ZM41		
<< >>	Failure	51
ZM42		
<< >>	Cmd Cl	52
ZM31		
<< >>	Failure	52
ZM31		
<< >>	Force Op	53
ZM32		
<< >>	Force Cl	54
ZM32		
<< >>	Feedback	55
ZM13		
<< >>	Anomaly	55
ZM34		
<< >>	Mnl Reject	56
ZM52		
<< >>	Actuator	57
ZM52		
	n avail	58
		59
<< >>	Pos xtmr	60
ZM30		
	BQ	

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER 11 12



01

OWNER'S ENGINEER

OWNER'S ENGINEER:
TRACTEBEL

 EMPRESARIOS AC

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER 11 12



EMPRESARIOS AGRUPADOS

Page 1

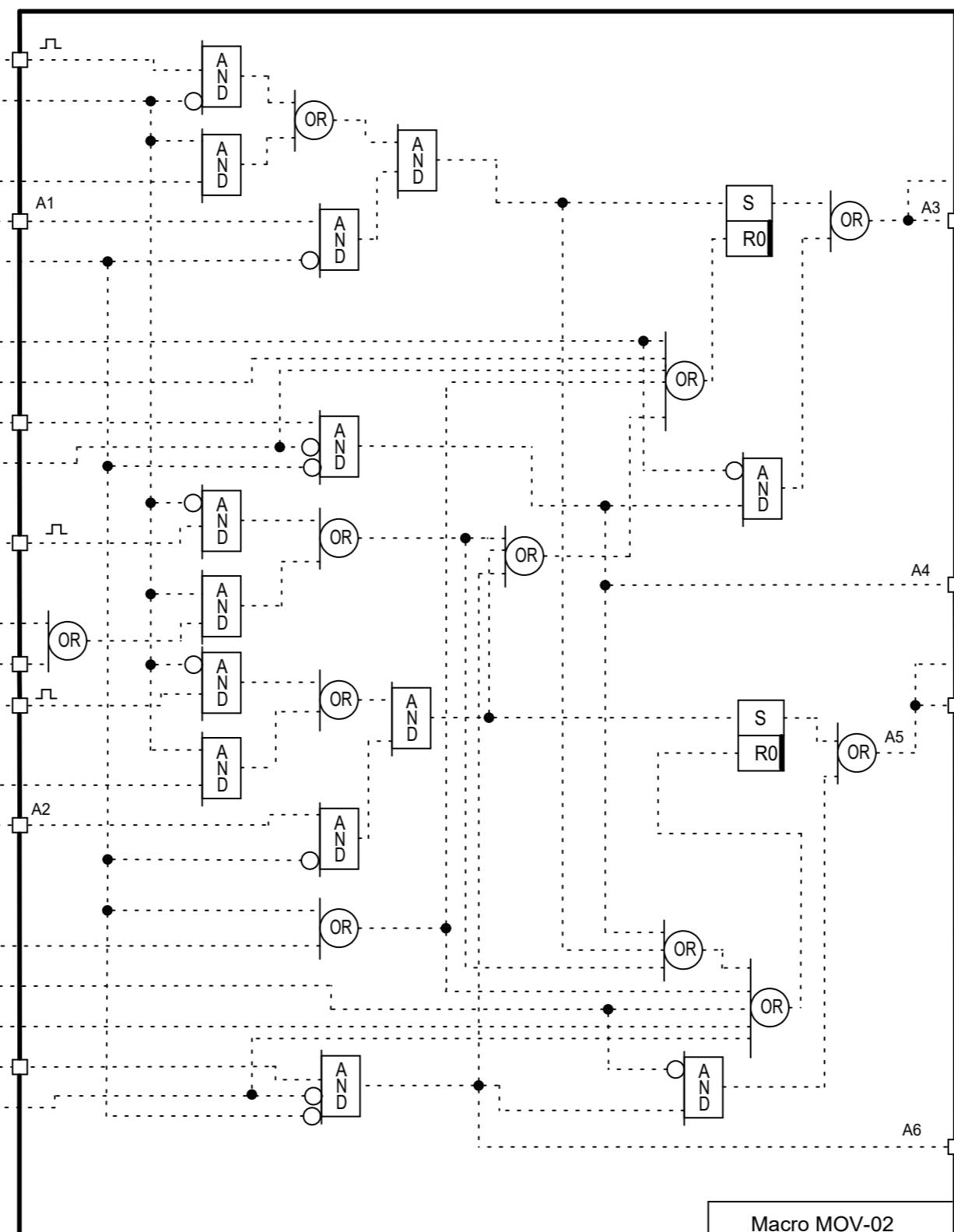
ZE
3

DRAWING

ITEM NUMBER: EBL-20-YI_IDY-EAI-00600

SHEET OF REV.
310 700 1

FROM	DESCRIPTION	CODE
1	<< >>	HMI Order Open
2	<< >> 310.B - 35	Auto Selected
3		
4	<< >> 310.C - 35	Auto Order Open
5		Op Perm
6	<< >> 310.B - 50	Actuator n avail
7		
8	<< >> 310.B - 40	Open
9	<< >> 310.B - 52	Cmd Op Failure
10		Force Op
11	<< >> 310.B - 56	TSO Actuated
12		
13		HMI Order Stop
14		
15	<< >> 310.C - 46	Auto Order Stop
16	<< >> 310.C - 33	Auto Stp
17		HMI Order Close
18		
19	<< >> 310.C - 57	Auto Order Close
20		Cl Perm
21		
22		
23	<< >> 310.B - 48	Feedback Anomaly
24	<< >> 310.B - 43	Closed
25	<< >> 310.B - 54	Cmd Cl Failure
26		Force Cl
27	<< >> 310.B - 58	TSC Actuated
28		
29		
30		



CODE	DESCRIPTION		TO
			3
			32
			33
<< >>		Op Cmd	<< >>
ZB11	<< >>		310.B - 21
<< >>		Op Cmd	
ZB11	<< >>		
			36
			37
			38
			39
			40
			41
			42
			43
<< >>		Force Op	
ZM31	<< >>		
<< >>		Cl Cmd	<< >>
ZB12	<< >>		310.B - 23
<< >>		Cl Cmd	
ZB12	<< >>		
			48
			49
			50
			51
			52
			53
			54
			55
			56
			57
<< >>		Force Cl	
ZM32	<< >>		
			58
			59
			60

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OWNER'S ENGINEER

EL

ENGIE
SISTEMAS AGRUPADOS

PROJECT: Flémalle CCGT Project

DRAWING NAME:
Control Diagram Macros & Templates

CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUB VERIFIER L1 L2

VERIFICATION: N/A SUP. VERIFIER L1 L2

A

ESTADOS AGRUPADOS

1

SIZE
A3

DR

DRAWING NUMBER

ER: EBL-20-YI_IDY-EAI-00600

222-20-D-I-00600

SHEET OF REV.
310.A 700 1

A

B

C

D

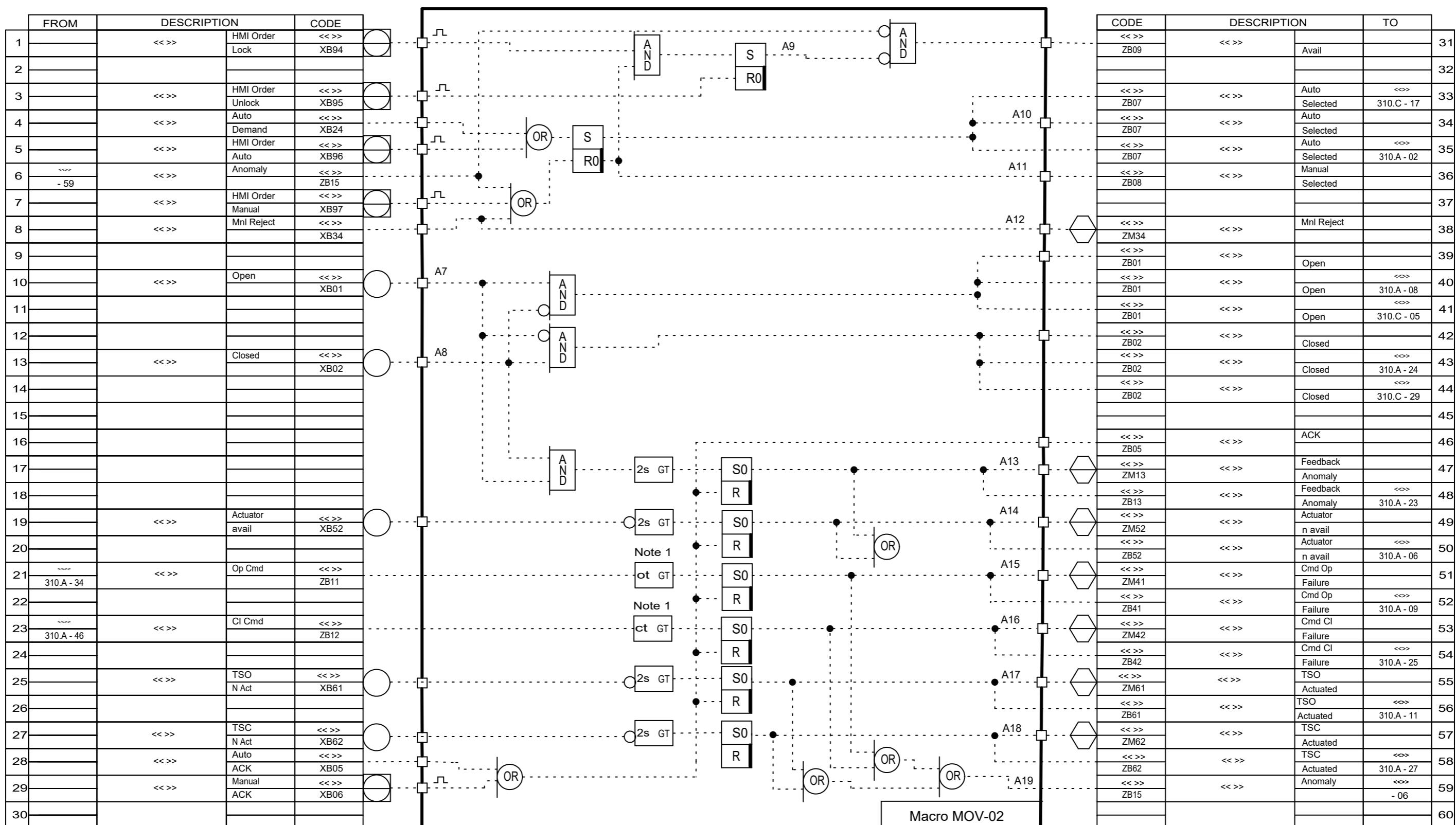
E

Control Diagram

Control Diagram Macros & Templates
MOV ON-OFF with interm pos

LOOP: 01CD 10EA310
LOOP SHEET: 3 de 5

MODIFICATIONS							
1	18.04.2023	For Design			ENL	OPP	OPP
REV.	DATE	DESCRIPTION		STATUS	DRAWN	CHECKED	APPROVED



NOTES

1.- ot: open time ct:close time. To be adjusted on site for each valve

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
310.B 700 REV.
1

A

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D

E

A

B

C

D

E

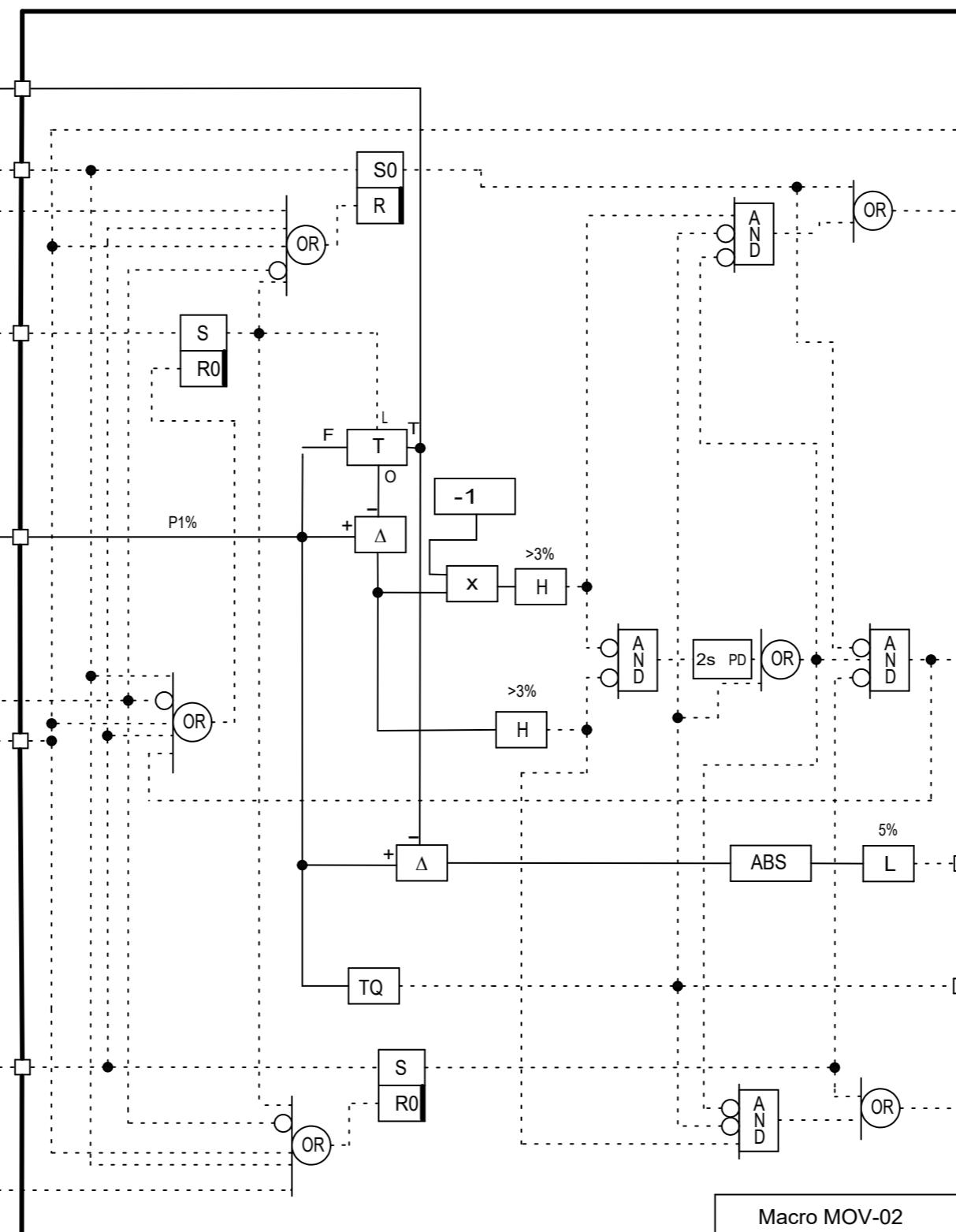
Control Diagram

Control Diagram Macros & Templates
MOV ON-OFF with interm pos

LOOP:	01CD 10EA310
LOOP SHEET:	4 de 5

MODIFICATIONS			
REV.	DATE	DESCRIPTION	STATUS
		ENL DRAWN	OPP CHECKED
1	18.04.2023	For Design	APPROVED

FROM	DESCRIPTION	CODE
1		
2	<>> Int Pos	XB55
3		
4	<>> Auto Open	XB21
5	<>> 310.B - 41 Open	ZB01
6		
7		
8	<>> Auto Int	XB28
9		
10		
11		
12		
13	<>> Position	XQ01
14		
15		
16		
17	<>> 310.B - 33 Auto Selected	ZB07
18	<>> Auto Stp	XB27
19		
20		
21		
22		
23		
24		
25		
26	<>> Auto Close	XB22
27		
28		
29	<>> 310.B - 44 Closed	ZB02
30		



CODE	DESCRIPTION	TO
		31
		32
<>> XB27	<>> Auto Stp	<>> 310.A - 16
		33
<>> ZB51	<>> Auto Order	<>> 310.A - 04
		35
		36
		37
		38
		39
		40
		41
		42
		43
		44
		45
<>> ZB57	<>> Auto Order	<>> 310.A - 15
		46
		47
		48
		49
		50
<>> ZB06	<>> Int Posn	51
		52
<>> ZM30	<>> Pos xtmr BQ	54
		55
<>> ZB92	<>> Auto Order	<>> 310.A - 19
		57
		58
		59
		60

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



SIZE	A3
SCALE	

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET	OF
310.C	700
REV.	1

A

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Control Diagram

Control Diagram Macros & Templates

MOV ON-OFF with interm pos

LOOP:	01CD 10EA310
LOOP SHEET:	5 de 5

MODIFICATIONS			
REV.	DATE	DESCRIPTION	STATUS
		DRAWN	ENL CHECKED
			OPP APPROVED

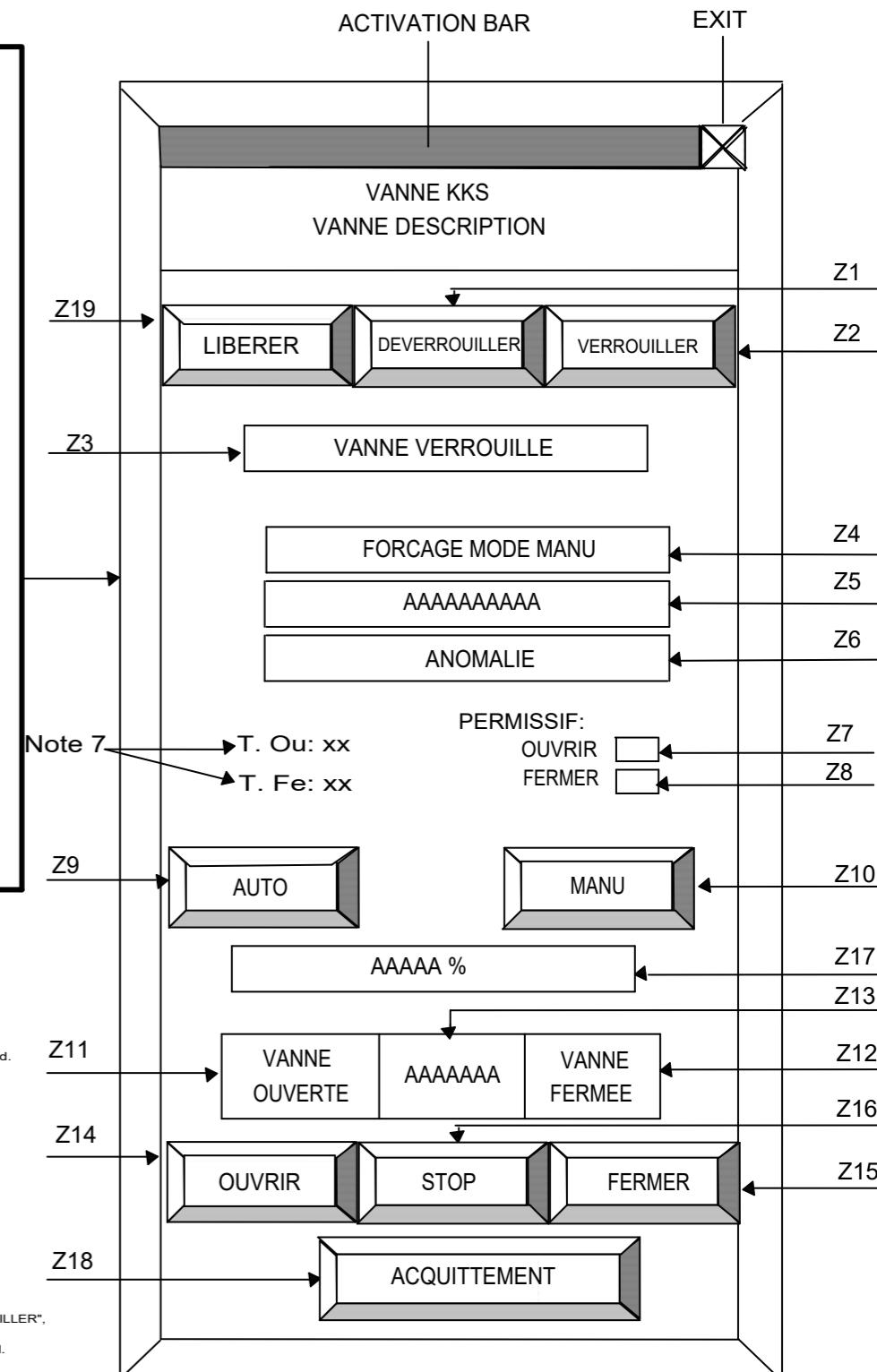
FROM	DESCRIPTION	CODE
1		
2	Note 1	Op Perm A1
3	Note 1	Cl Perm A2
4		
5		
6		
7		
8		Op Cmd A3
9	Note 0	Force Op A4
10		Cl Cmd A5
11	Note 0	Force Cl A6
12		
13		
14		Open A7
15		Closed A8
16		Locked A9
17		Auto A10
18		Selec A11
19		
20	Note 0	Mnl Rej A12
21		Feedback A13
22		Anomaly A13
23	Note 0	Actuator n avail A14
24		Op Cmd Failure A15
25		Cl Cmd Failure A16
26	Note 0	TSO Actuated A17
27	Note 0	TSC Actuated A18
28		Anomaly A19
29		
30		

SIGNALIZATION LOGIC					
SIGNAL	LOGIC	TEXT	COLOUR TEXT	BACKGROUND COLOUR	NOTES
Z1	IF A9=1 IF A9=0	DEVERROUILLER VERROUILLER	BLACK WHITE	GREY GREY	4,6 4
Z2	IF A9=0 & A11=1 IF A9=1 OR A10=1	VERROUILLER	BLACK	GREY	4,6 2,4
Z3	IF A9=1 IF A9=0	VANNE VERROUILLÉE	WHITE	RED	4 2,4
Z4	IF A12=1 IF A12=0	FORCAGE MODE MANU	BLACK	ORANGE	2
Z5	IF A4=1 IF A6=1 IF A4=0 & A6=0	OUVERTURE FORCEE FERMETURE FORCEE	BLACK BLACK	ORANGE ORANGE	2
Z6	IF A19=1 IF A19=0	ANOMALIE	WHITE	RED	5 2
Z7	IF OP=1 IF OP=0			GREEN RED	3
Z8	IF CP=1 IF CP=0			GREEN RED	3
Z9	IF A10=1 IF A10=0 & A12=0 & A19=0 IF A10=0 & (A12=1 OR A19=1)	AUTO	LIGHT BLUE BLACK WHITE	GREY GREY GREY	6 8
Z10	IF A11=1 IF A11=0	MANU	LIGHT BLUE BLACK	GREY GREY	6 2
Z11	IF A7=1 IF A7=0	VANNE OUverte	BLACK	GREEN	2
Z12	IF A8=1 IF A8=0	VANNE FERMEE	BLACK	GREY	2
Z13	IF A13=1 IF A7=0 & A8=0 IF A13=1 & (A7=1 OR A8=1)	DISCORDANCE RETOURS DE POSITION POSITION INTERMEDIAIRE	WHITE BLACK	RED GREY	2
Z14	IF A3=1 IF A3=0 & OP=1 & A11=1 IF A3=0 & (OP=0 OR A11=0)	OUVRIR	BLACK	GREEN	6 8
Z15	IF A5=1 IF A5=0 & CP=1 & A11=1 IF A5=0 & (CP=0 OR A11=0)	FERMER	LIGHT BLUE BLACK WHITE	GREY GREY GREY	6 8
Z16	IF (A3=1 OR A5=1) & A11=1 IF (A3=0 & A5=0) OR A11=0	STOP	BLACK	GREY	6 8
Z17		P1 %	BLACK	WHITE	
Z18		ACQUITTEMENT	BLACK	GREY	6
Z19		LIBERER	BLACK	GREY	9

OP=1 IF A1=1 & A6=0 & A13=0 & A14=0 & A15=0 & A17=0 & A18=0
CP=1 IF A2=1 & A4=0 & A13=0 & A14=0 & A16=0 & A17=0 & A18=0

NOTES:

- 0.- Whenever this signal is not required its logical value will be continuously forced to 0.
 - 1.- Whenever this signal is not required its logical value will be continuously forced to 1.
 - 2.- No text will appear and the background will be coloured like the control station background.
 - 3.- This area will call the corresponding list of permisives. All the conditions related to status of OP and CP to be included in the permisives windows. The list of causes that creates the signals A1 & A2 will be defined in control diagrams, The windows will be as the manufacturer standard.
 - 4.- When "LOCK" button is activated, all the buttons and texts of the faceplate are disabled and not visible, except the "UNLOCK" button.
 - Pressing "DEVERROUILLER" all the buttons and texts will be enabled again. "VERROUILLER" button is only visible if the valve is in manual and the faceplate is not locked out. "DEVERROUILLER" button is always visible. Both buttons are only available in supervisor environment.
 - This area will call for a window where the states of the alarms and trips are described: "Feedback anomaly" (A13), "Actuator n avail" (A14), "Open Command Failure" (A15), "Close Command Failure" (A16).
 - While the soft control switch is activated it will be sinking.
 - Indication of the values for Opening and Closing time implemented for the specific device.
 - The pushbutton will be disabled.
 - It is necessary to press the "LIBERER" button before activating any station pushbuttons ("OUVRIR", "FERMER", "STOP", "VERROUILLER", "DEVERROUILLER", "AUTO", "MANU"). All the buttons (except ACQUITTEMENT) will be shown as disabled (white text over grey background) before this buttons is pressed. This "LIBERER" action lasts five seconds. After that, operator needs to "LIBERER" again to make any further operation.
- This button will be shown as black over grey background when not selected and over dark grey when selected. (A double confirmation standard from DCS manufacturer is accepted if the same safety is achieved as the one described here)



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VEFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI-IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 310.D 700 REV. 1

Control Diagram

Control Diagram Macros & Templates
Solenoid Fail Close Valve

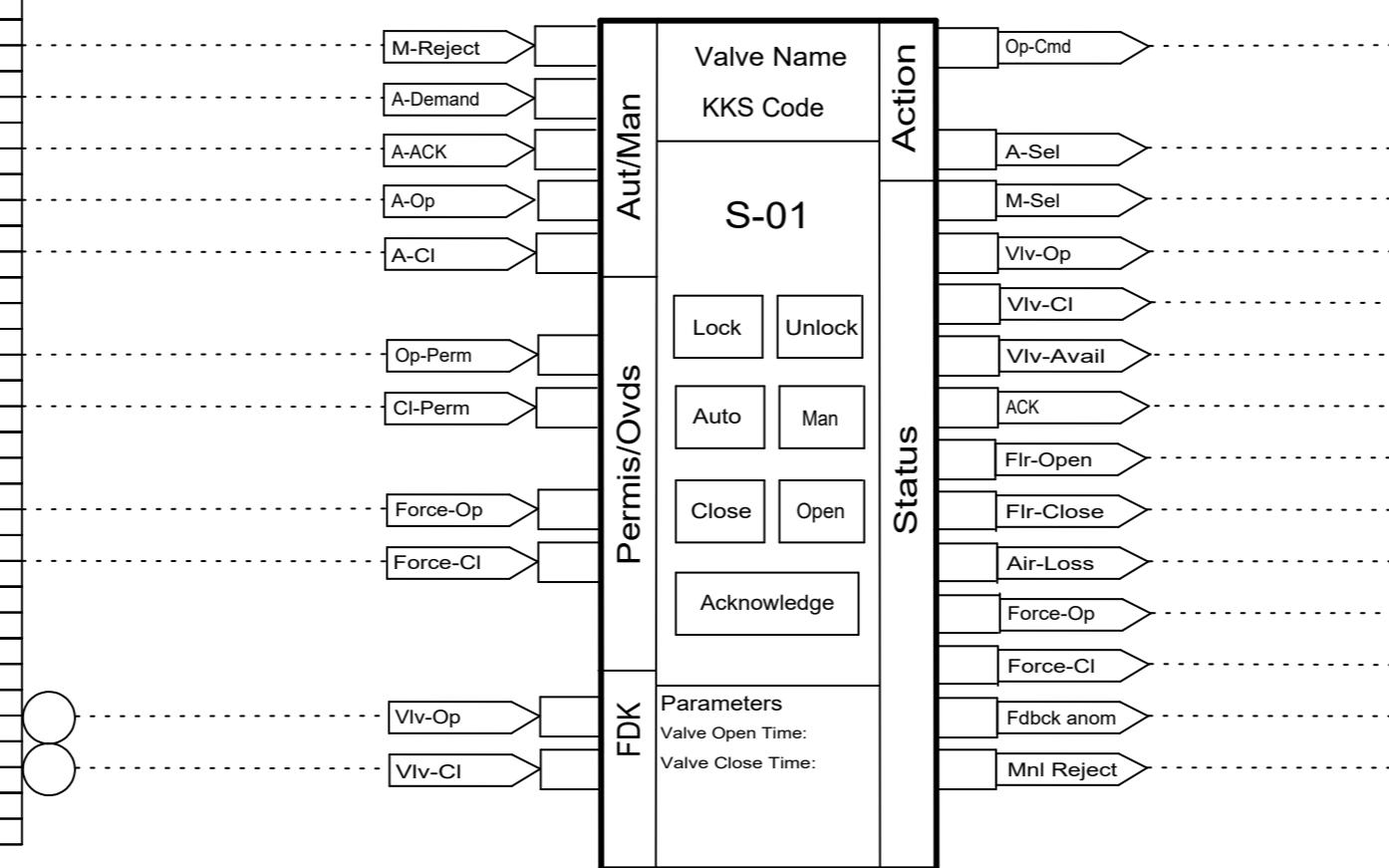
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16	<>>	Auto <>>	
		Demand	
17	<>>	Auto <>>	
		ACK	
18	<>>	Auto Op <>>	
19	<>>	Auto Cl <>>	
20			
21	<>>	Open Perm <>>	
22	<>>	Close Perm <>>	
23			
24	<>>	Force Op <>>	
25	<>>	Force Cl <>>	
26			
27			
28	<>>	Open <>>	
		XB01	
29	<>>	Closed <>>	
		XB02	
30			

LOOP: 01CD_10EA400
LOOP SHEET: 1 de 4

MODIFICATIONS			
1	18.04.2023	For Design	

REV. DATE DESCRIPTION STATUS DRAWN CHECKED APPROVED

CODE	DESCRIPTION	TO
		31
		32
		33
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		35
		36
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		45
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		59
		60



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



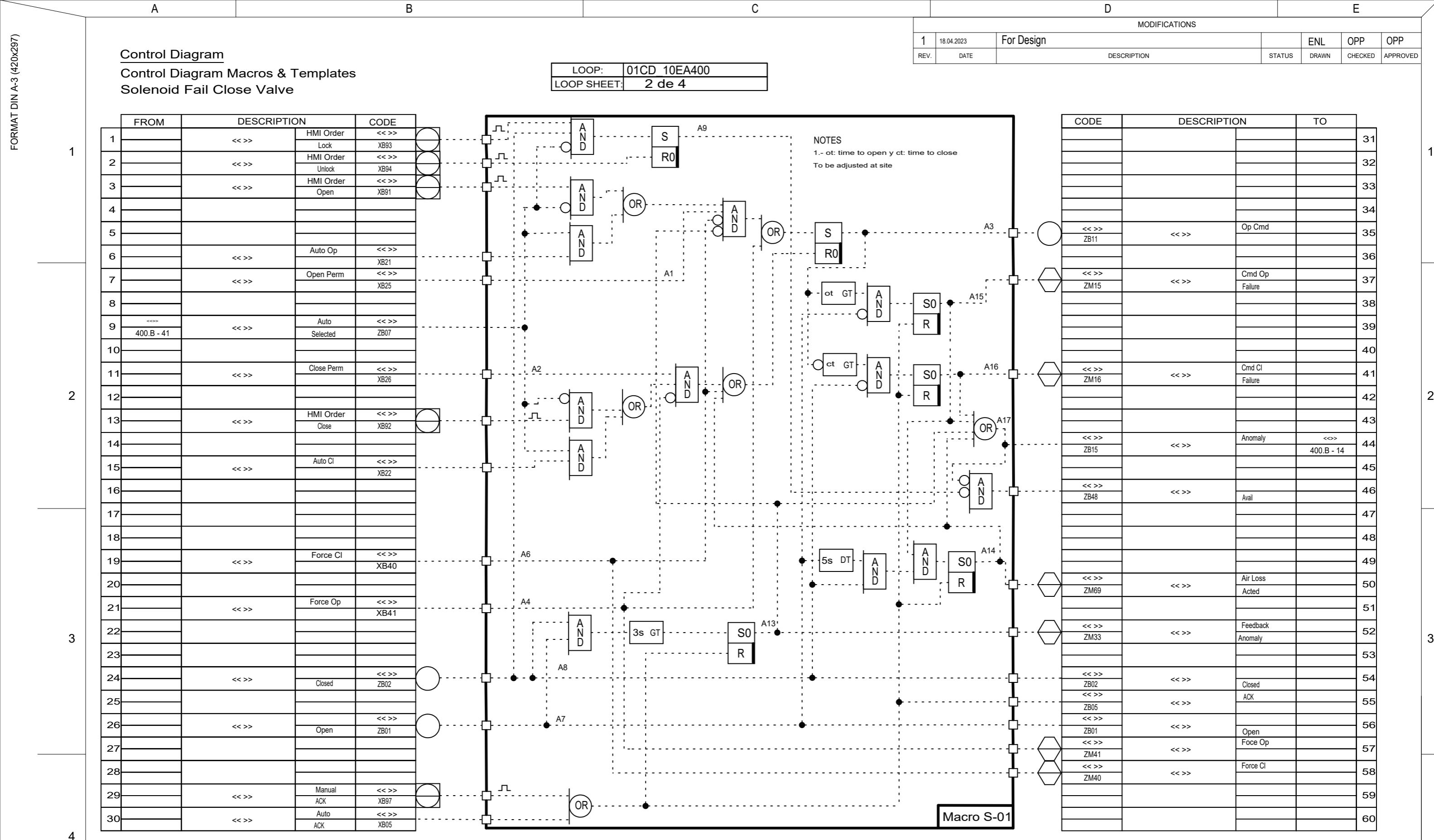
SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
400 700 REV.
1



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

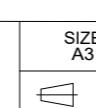


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

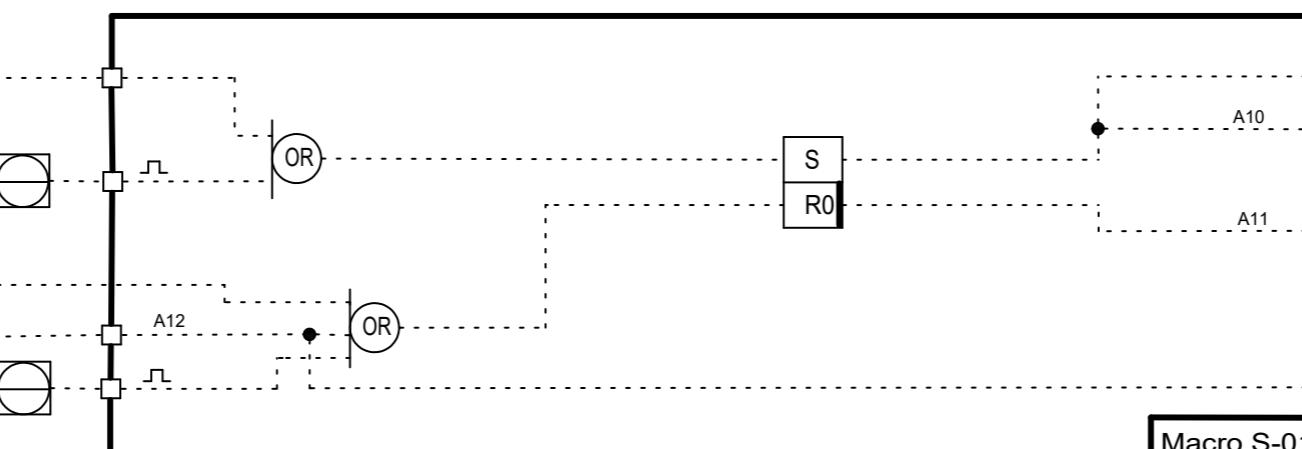


DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 400.A 700 REV. 1

A**B****C****D****E**

FORMAT DIN A-3 (420x297)	A	B	C	D	E																																																																																																																																																																																																																			
	<p>Control Diagram Control Diagram Macros & Templates Solenoid Fail Close Valve</p> <table border="1" style="margin-top: 10px; border-collapse: collapse;"> <tr> <td style="padding: 2px;">LOOP:</td> <td style="padding: 2px;">01CD 10EA400</td> </tr> <tr> <td style="padding: 2px;">LOOP SHEET:</td> <td style="padding: 2px;">3 de 4</td> </tr> </table>		LOOP:	01CD 10EA400	LOOP SHEET:	3 de 4	<p style="text-align: center;">MODIFICATIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">REV.</td> <td style="width: 10%;">DATE</td> <td style="width: 60%;">DESCRIPTION</td> <td style="width: 10%;">STATUS</td> <td style="width: 10%;">DRAWN</td> <td style="width: 10%;">CHECKED</td> <td style="width: 10%;">APPROVED</td> </tr> <tr> <td colspan="2">1 18.04.2023</td> <td>For Design</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED	1 18.04.2023		For Design																																																																																																																																																																																																				
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Control Diagram

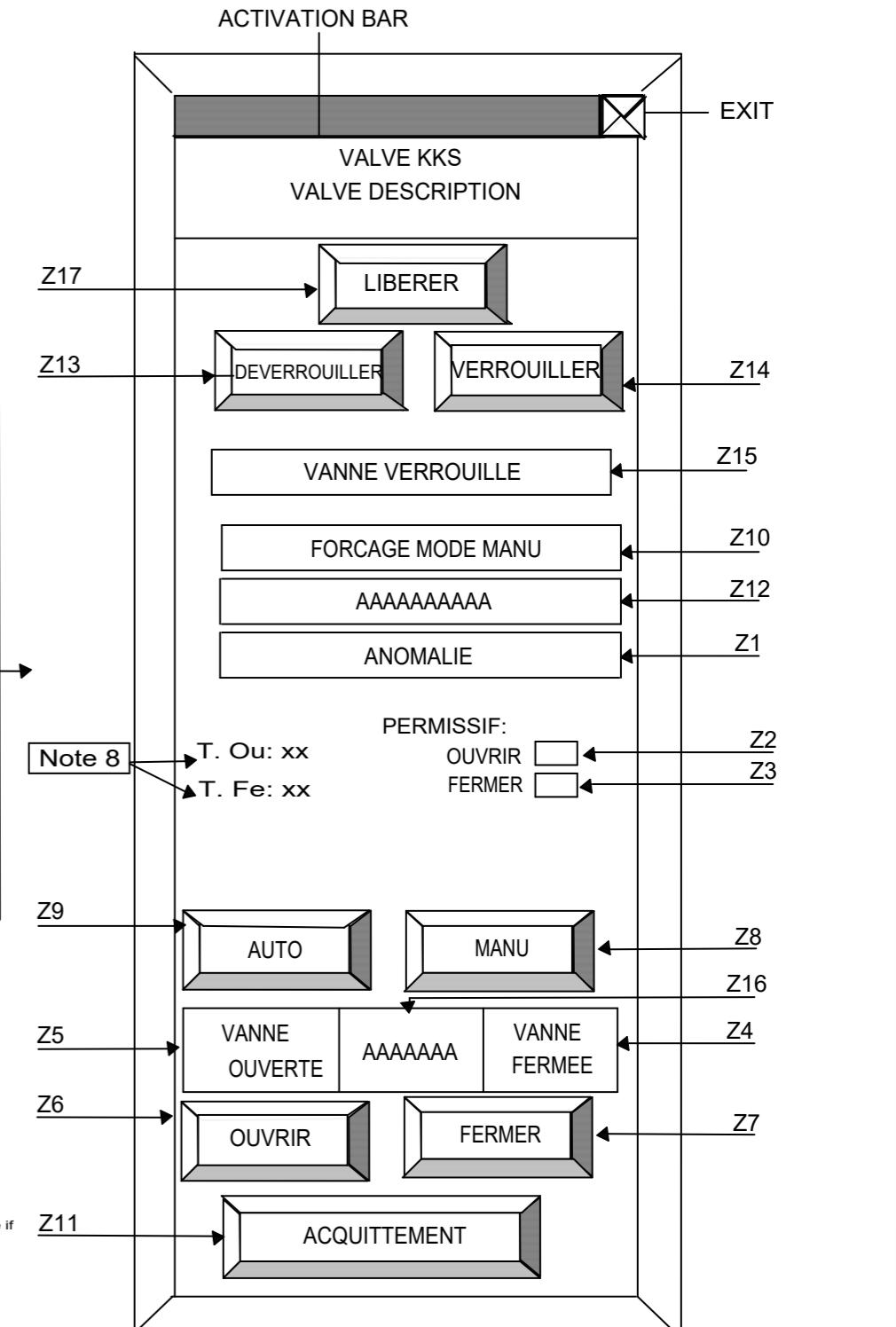
Control Diagram Macros & Templates

Solenoid Fail Close Valve

FROM	DESCRIPTION	CODE
1		
2	Note 1	Open Perm A1
3		
4	Note 1	Close Perm A2
5		
6		Open cmd A3
7		
8	Note 0	Force Open A4
9		
10	Note 0	Force Close A6
11		
12		Open A7
13		
14		Closed A8
15		
16		Locked
17		A9
18		
19		Auto Selected A10
20		
21		Manual Selected A11
22	Note 0	Mnl Reject A12
23		
24		Feedback Anomaly A13
25		
26		Air Loss Acted A14
27		
28		Cmd Op Failure A15
29		
30		Cmd Cl Failure A16
		Anomaly A17

LOOP: 01CD 10EA400
LOOP SHEET: 4 de 4

MODIFICATIONS			
1	18.04.2023	For Design	ENL OPP OPP



NOTES:

- 0.- Whenever this signal is not required its logical value will be continuously forced to 0.
- 1.- Whenever this signal is not required its logical value will be continuously forced to 1.
- 2.- No text will appear and the background will be coloured like the control station background.
- 3.- While the soft control switch is activated it will be sinking.
- 4.- This area will call the corresponding list of permissives. This windows will be as the manufacturer standard. All the conditions related to status of OP and CP to be included in the permissives window. The list of causes that creates the signals A1 y A2 will be defined in control diagrams.
- 5.- When "VERROUILLER" button is activated, all the buttons and texts of the faceplate are disabled and not visible, except the "DEVERROUILLER" button, and the message "VANNE VERROUILLÉE" appears. The complete faceplate and macro outputs will be disabled. Pressing "DEVERROUILLER" all the buttons and texts will be enabled again. "VERROUILLER" button is only visible if the valve is in manual, open (fail safe state) and the faceplate is not locked out. "DEVERROUILLER" button is always visible. Both buttons are only available in supervisor environment.
- 6.- This area will call for a window where the states of the alarms and trips are described : "Feedback anomaly" (A13), "Air Loss Acted" (A14), "Open Command Failure" (A15) and "Close Command Failure" (A16).
- 7.- In case of being disabled, a pushbutton will be shown with white text over grey background.
- 8.- Indication of the values for Opening and Closing time implemented for the specific device.
- 9.- It is necessary to press the "LIBERER" button before activating any station pushbuttons ("OUVRIR", "FERMER", "VERROUILLER", "AUTO" or "MANU"). All buttons (except ACQUITTEMENT) will be shown as disabled (white text over gray background) before this buttons are pressed. This "LIBERER" action lasts five seconds. After that, operator needs to "LIBERER" again to make any further operation. This button will be shown as black over grey background when not selected and over dark grey when selected. (A double confirmation standard from DCS manufacturer is accepted if the same safety is achieved as the one described here)

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VEFIER L1 L2

OWNER:



OWNER'S ENGINEER:

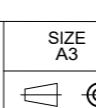


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

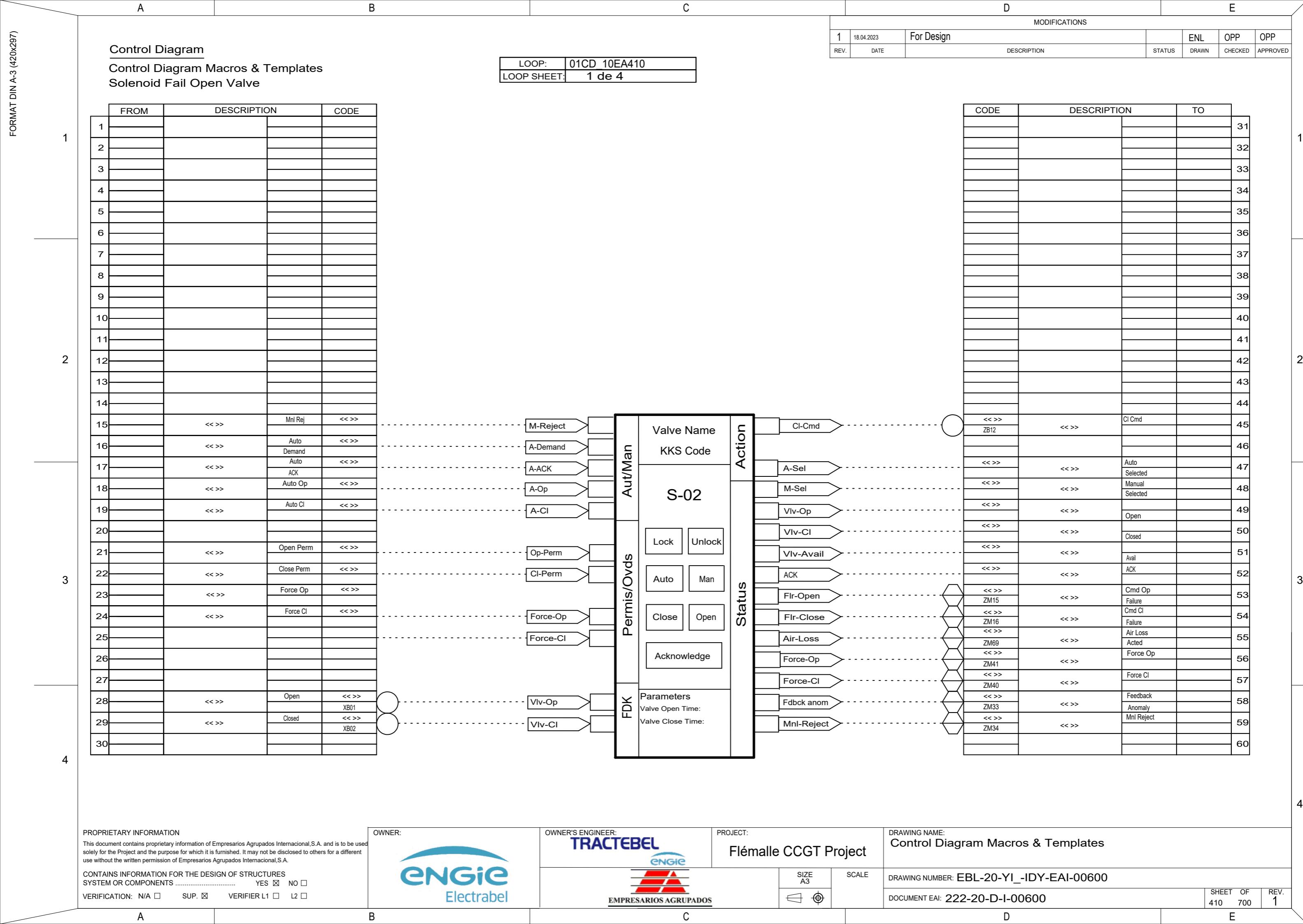
Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 400.C 700 REV. 1

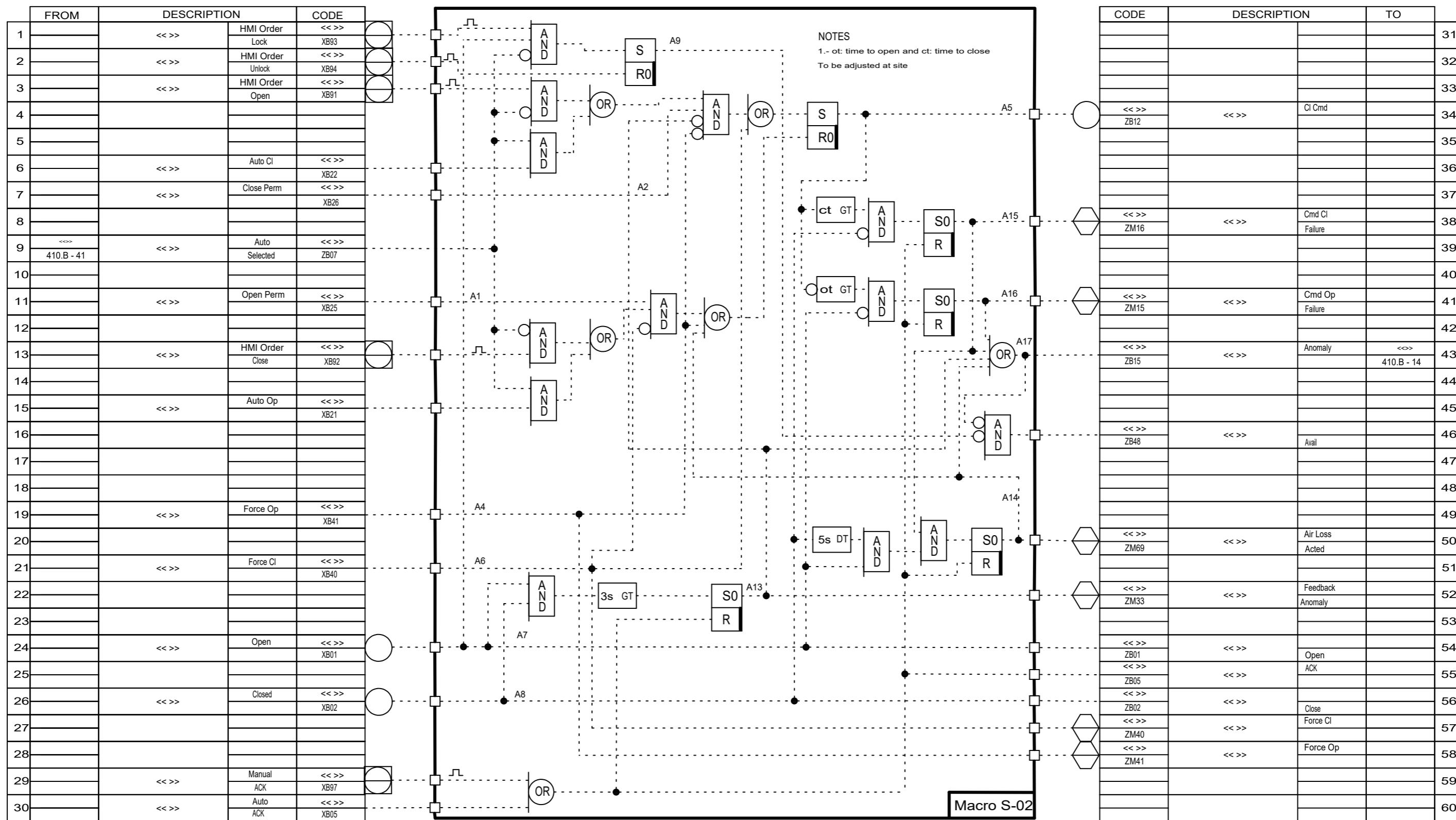


Control Diagram

Control Diagram Macros & Templates
Solenoid Fail Open Valve

LOOP: 01CD 10EA410
LOOP SHEET: 2 de 4

MODIFICATIONS			
REV.	DATE	For Design	
DESCRIPTION		STATUS DRAWN	CHECKED APPROVED
1	18.04.2023		



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3



SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
410.A 700 REV.
1

A

B

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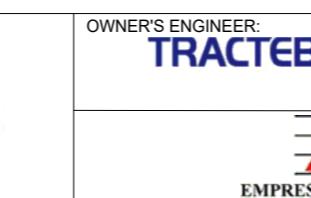
Control Diagram

Control Diagram Macros & Templates
Solenoid Fail Open Valve

LOOP:	01CD 10EA410
LOOP SHEET:	3 de 4

MODIFICATIONS			
REV.	DATE	DESCRIPTION	STATUS
		ENL DRAWN	OPP CHECKED
1	18.04.2023	For Design	APPROVED

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9			
10	<>>	Auto Demand	<>> XB35
11			
12	<>>	HMI Order Auto	<>> XB95
13			
14	<>>	Anomaly	<>> ZB15
15	<>>	Mnl Reject	<>> ZB34
16	<>>	HMI Order Manual	<>> XB96
17			
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PROJECT:
Flémalle CCGT Project

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Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

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SHEET OF
410.B 700 REV.
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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

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SHEET OF
410.B 700 REV.
1

A

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C

D

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Control Diagram

Control Diagram Macros & Templates
Solenoid Fail Open Valve

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8		Close cmd A5
9		
10	Note 0	Force Close A6
11		
12		Open A7
13		
14		Closed A8
15		Locked A9
16		
17		Auto Selected A10
18		
19		Manual Selected A11
20		
21		Mnl Reject A12
22	Note 0	
23		
24		Feedback Anomaly A13
25		
26		Air Loss Acted A14
27		
28		Cmd Op Failure A15
29		
30		Cmd Cl Failure A16
		Anomaly A17

LOOP: 01CD 10EA410
LOOP SHEET: 4 de 4

MODIFICATIONS

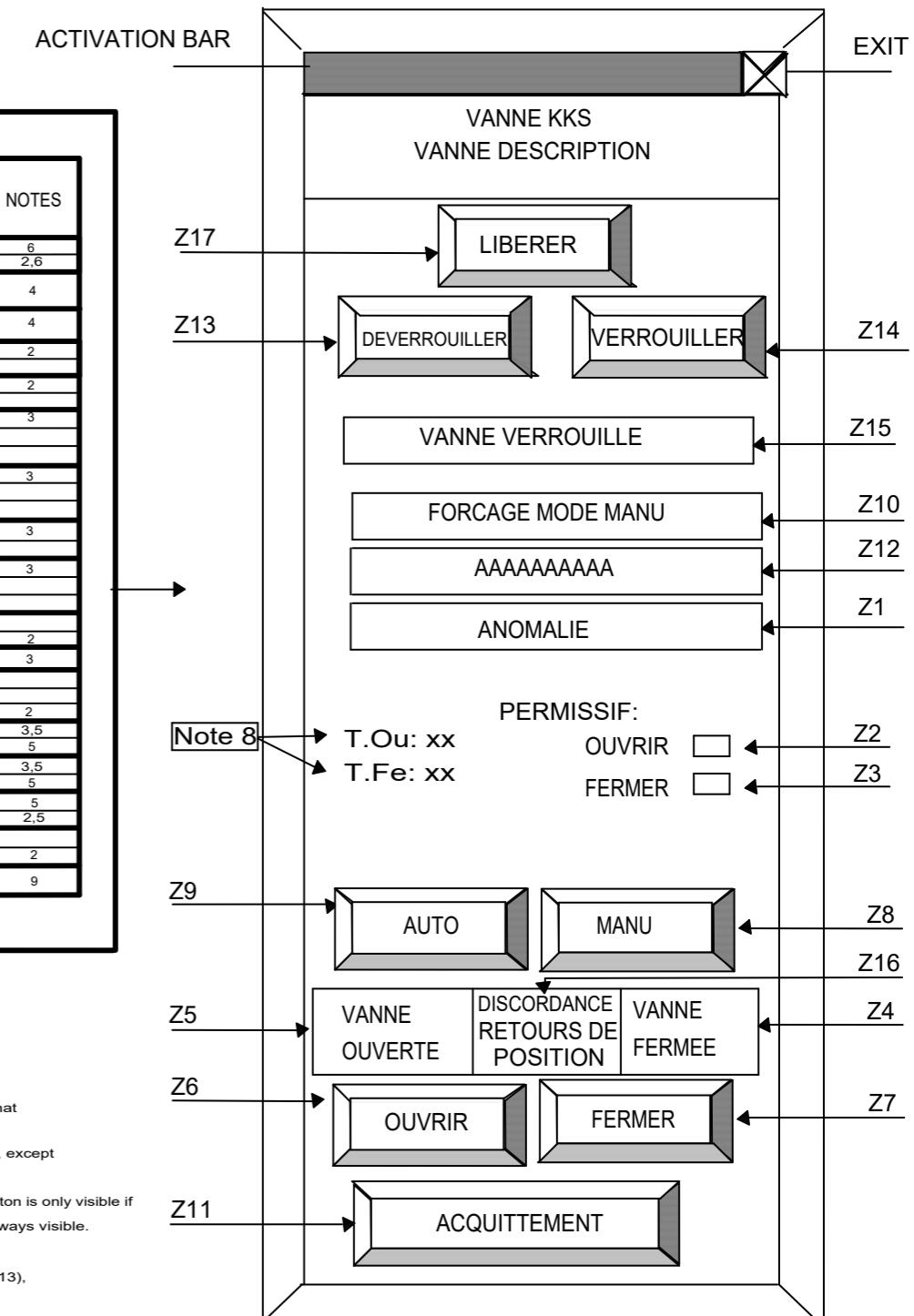
1	18.04.2023	For Design	ENL	OPP	OPP
REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED

SIGNALIZATION LOGIC					
SIGNAL	LOGIC	TEXT	TEXT COLOUR	BACK GROUND COLOUR	NOTES
Z1	IF A17=1 IF A17=0	ANOMALIE	WHITE	RED	6 2,6
Z2	IF OP=0 IF OP=1		RED	GREEN	4
Z3	IF CP=0 IF CP=1		RED	GREEN	4
Z4	IF A8=0 IF A8=1	VANNE FERMEE	BLACK	GREY	2
Z5	IF A7=0 IF A7=1	VANNE OUVERTE	BLACK	GREEN	2
Z6	IF A5=1 & OP=1 & A11=1 IF A5=1 & (OP=0 OR A11=0)	OUVRIR	BLACK	GREEN	3
Z7	IF A5=0 & CP=1 & A11=1 IF A5=0 & (CP=0 OR A11=0)	OUVRIR	WHITE	GREY	3
Z8	IF A5=1 IF A11=1	FERMER	LIGHT BLUE	GREY	3
Z9	IF A11=0	MANU	BLACK	GREY	3
Z10	IF A10=1 IF A10=0 & A12=0 & A17=0 IF A10=0 & (A12=1 OR A17=1)	AUTO	LIGHT BLUE	GREY	3
Z11	IF A10=0 & A12=0 & A17=0 IF A10=0 & (A12=1 OR A17=1)	FORCAGE MODE MANU	BLACK	ORANGE	2
Z12	IF A10=0 & A12=0 IF A10=0 & (A12=1 OR A17=1)	ACQUITTEMENT	BLACK	GREY	3
Z13	IF A9=1 IF A9=0	OUVERTURE FORCEE	BLACK	ORANGE	2
Z14	IF A9=0 IF A8=1 & A10=0 IF A8=0 OR A10=1 OR A13=1	DEVERROUILLER	BLACK	GREY	3,5 5
Z15	IF A8=1 & A10=0 IF A8=0 OR A10=1 OR A13=1	FERMER	BLACK	GREY	3,5 5
Z16	IF A8=0 IF A8=1 & A10=0 IF A8=0 OR A10=1 OR A13=1	VANNE VERROUILLÉE	WHITE	RED	5 2,5
Z17	IF A8=0 IF A8=1 & A10=0 IF A8=0 OR A10=1 OR A13=1	DISCORDANCE RETOURS DE POSITION	WHITE	RED	2
		LIBERER	BLACK	GREY	9

CP=1 IF A1=1 & A6=0
OP=1 IF A2=1 & A4=0 & A13=0 & A14=0 & A16=0

NOTES:

- 0.-Whenever this signal is not required its logical value will be continuously forced to 0.
- 1.- Whenever this signal is not required its logical value will be continuously forced to 1.
- 2.- No text will appear and the background will be coloured like the control station background.
- 3.- While the soft control switch is activated it will be sinking.
- 4.- This area will call the corresponding list of permissives. This windows will be as the manufacturer standard.
- All the conditions related to status of OP and CP to be included in the permissives window, The list of causes that creates the signals A1 y A2 will be defined in control diagrams.
- 5.-When "VERROUILLER" button is activated, all the buttons and texts of the faceplate are disabled and not visible, except the "DEVERROUILLER" button, and the message "VANNE VERROUILLÉE" appears. The complete faceplate and macro outputs will be disabled. Pressing "DEVERROUILLER" all the buttons and texts will be enabled again. "VERROUILLER" button is only visible if the valve is in manual, open (fail safe state) and the faceplate is not locked out. "DEVERROUILLER" button is always visible. Both buttons are only available in supervisor enviroment.
- 6.-This area will call for a window where the states of the alarms and trips are described : "Feedback anomaly" (A13), "Air Loss Acted" (A14), "Open Command Failure" (A15) and "Close Command Failure" (A16).
- 7.-In case of being disabled, a pushbutton will be shown with white text over grey background.
- 8.- Indication of the values for Opening and Closing time implemented for the specific device.
- 9.-It is necessary to press the "LIBERER" button before activating any station pushbuttons ("OUVRIR", "FERMER", "VERROUILLER", "AUTO" or "MANU"). All buttons (except ACKNOWLEDGE) will be shown as disabled (white text over gray background) before this buttons are pressed. This "LIBERER" action lasts five seconds. After that, operator needs to "LIBERER" again to make any further operation. This button will be shown as black over grey background when not selected and over dark grey when selected. (A double confirmation standard from DCS manufacturer is accepted if the same safety is achived as the one described here)



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VEFIER L1 L2

OWNER:



OWNER'S ENGINEER:

TRACTEBEL



EMPRESARIOS AGRUPADOS

PROJECT:

Flémalle CCGT Project

SIZE
A3

SCALE

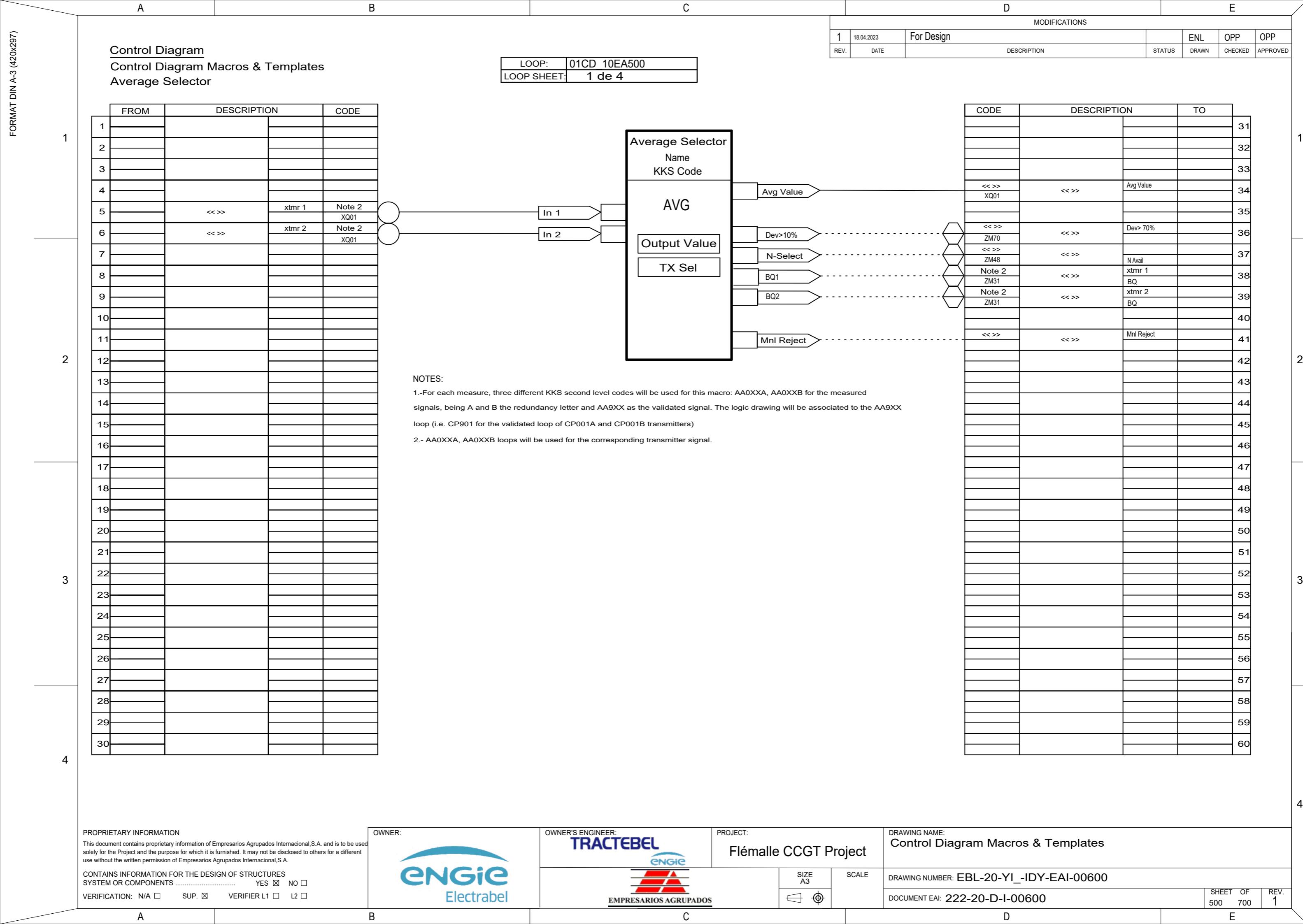
DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI-IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
410.C 700 REV.
1



FORMAT DIN A-3 (420x297)

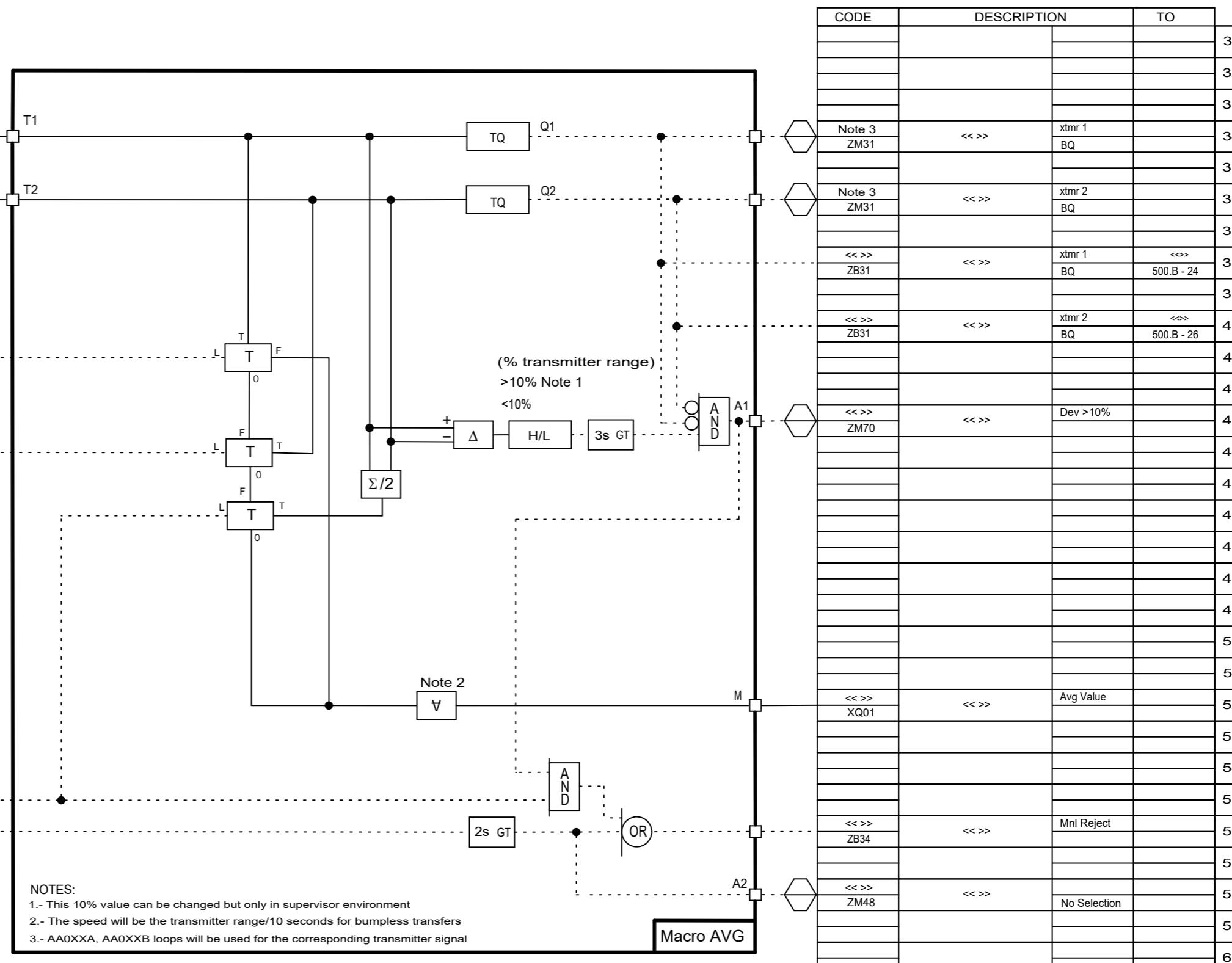
Control Diagram

Control Diagram Macros & Templates

Average Selector

FROM	DESCRIPTION	CODE
1		
2		
3		
4	<>>	xtmr 1 Note 3 XQ01
5		
6	<>>	xtmr 2 Note 3 XQ01
7		
8		
9		
10		
11	<>> 500.B - 40	Transmitter 1 Selected ZB01
12		
13		
14	<>> 500.B - 45	Transmitter 2 Selected ZB02
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25	<>> 500.B - 34	Average Selected ZB10
26	<>> 500.B - 51	No Selection ZB50
27		
28		
29		
30		

LOOP:	01CD 10EA500
LOOP SHEET:	2 de 4



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER 11 12



OWNER'S ENGINE

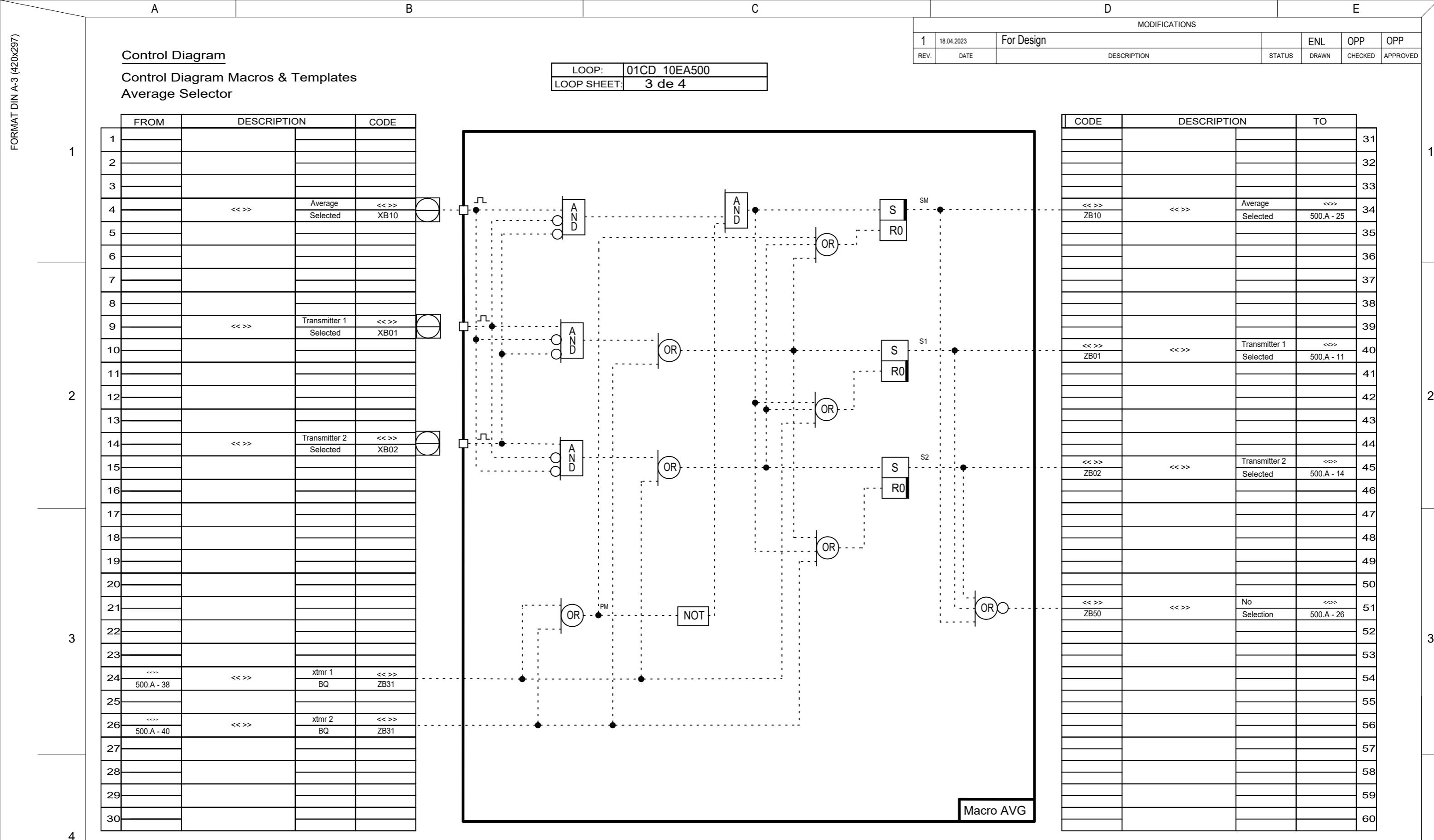
ER'S ENGINEER:
TRACTEBEL

EMPRESARIOS AGRUPA

PROJECT:

DRAWING NAME:
Control Diagram Macros & Templates

 		SIZE A3	SCALE	DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600			
EMPRESARIOS AGRUPADOS		 		DOCUMENT EAI: 222-20-D-I-00600	SHEET OF 500 A 700	REV. 1	



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
 SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:
ENGIE Electrabel

OWNER'S ENGINEER:
TRACTEBEL

EMPRESARIOS AGRUPADOS

PROJECT:
Flémalle CCGT Project

DRAWING NAME:
Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
 500.B 700 REV.
 1

Control Diagram

Control Diagram Macros & Templates

Average Selector

FROM	DESCRIPTION	CODE
1		
2		
3		
4		
5	N perm	
6	Average	PM
7	Output	
8	xmtr 1	T1
9	Output	
10	xmtr 2	T2
11	Avg Value	M
12		
13	xmtr 1	S1
14	Selected	
15	xmtr 2	S2
16	Selected	
17	Average	SM
18	Selected	
19	xmtr 1	
20	BQ	Q1
21	xmtr 2	
22	BQ	Q2
23	Dev >10%	A1
24		
25	N avail	A2
26		
27		
28		
29		
30		

LOOP: 01CD 10EA500
LOOP SHEET: 4 de 4

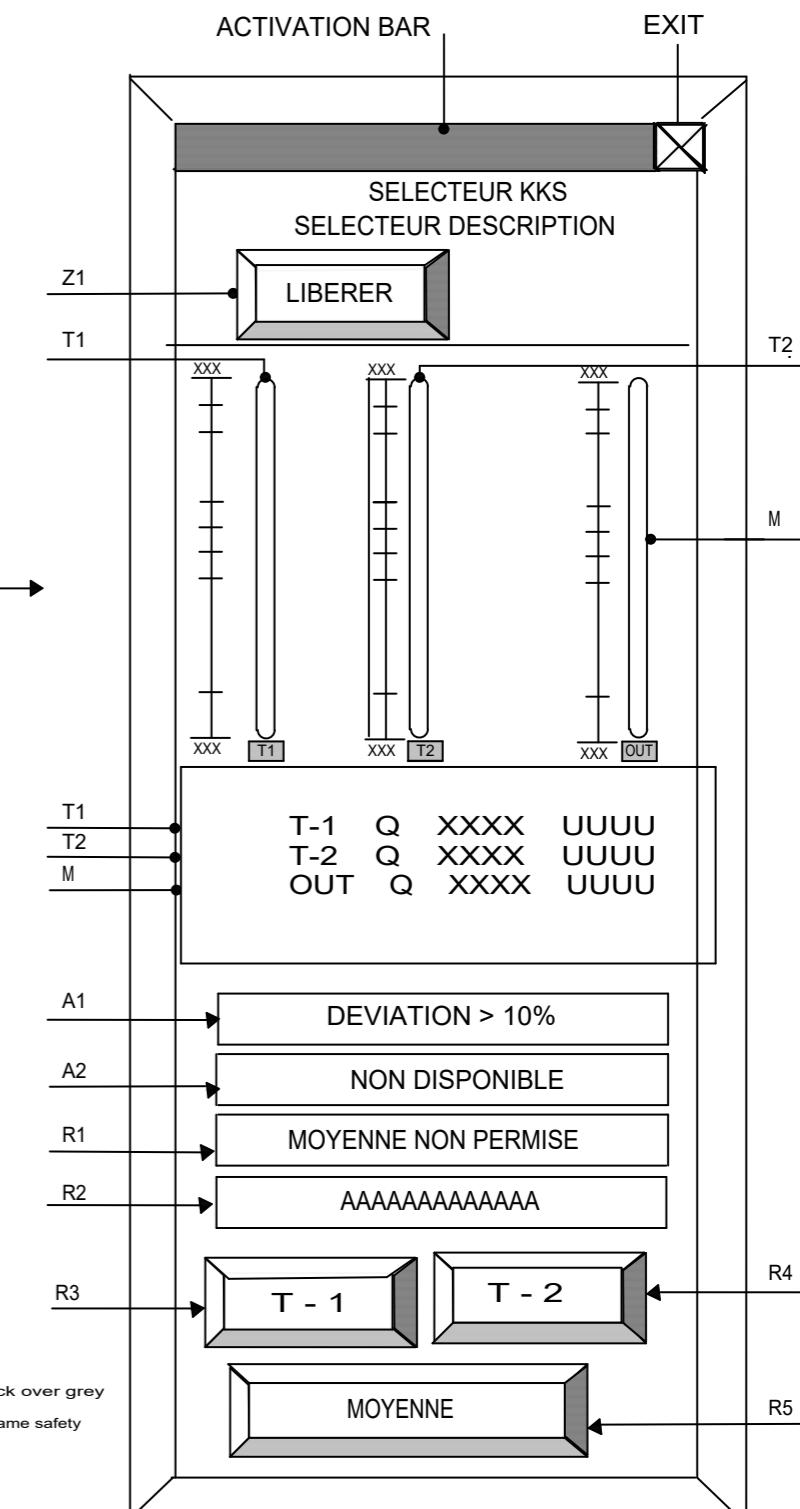
MODIFICATIONS			
1	18.04.2023	For Design	

REV. DATE DESCRIPTION STATUS DRAWN CHECKED APPROVED

SIGNALIZATION LOGIC					
SIGNAL	LOGIC	TEXT	TEXT COLOUR	BACK GROUND COLOUR	NOTES
T1	IF Q1=0 IF Q1=1	T-1	GREEN BLACK	BLACK MAGENTA	2
T2	IF Q2=0 IF Q2=1	T-2	GREEN BLACK	BLACK MAGENTA	2
M	IF Q1=0 OR Q2=0 IF Q1=1 & Q2=1	OUT	LIGHT GREEN BLACK	BLACK MAGENTA	2
A1	IF A1=0 IF A1=1	DEVIATION > 10%	WHITE	RED	1
A2	IF A2=0 IF A2=1	NON DISPONIBLE	WHITE	RED	1
R1	IF PM=0 IF PM=1	MOYENNE NON PERMISE	BLACK	ORANGE	
R2	IF S1=0 & S2=0 & SM=0	TRANSMETTEUR NON SELECTIONNE	BLACK	WHITE	
	IF S1=1	TRANSMETTEUR 1 SELECTIONNE	BLACK	WHITE	
	IF S2=1	TRANSMETTEUR 2 SELECTIONNE	BLACK	WHITE	
R3	IF SM=1	MOYENNE SELECTIONNE	BLACK	WHITE	
	IF S1=1	T-1	BLACK	GREEN	3
	IF S1=0 & Q1=0	T-1	BLACK	GREY	
R4	IF Q1=1	T-1	WHITE	GREY	4
	IF S2=1	T-2	BLACK	GREEN	3
	IF S2=0 & Q2=0	T-2	BLACK	GREY	
R5	IF Q2=1	T-2	WHITE	GREY	4
	IF SM=1	MOYENNE	BLACK	GREEN	3
	IF SM=0	MOYENNE	BLACK	GREY	
Z1	IF Q1=1 OR Q2=1	MOYENNE	WHITE	GREY	4
		LIBERER	BLACK	GREY	5

NOTES:

- No text will appear and the background will be coloured like the control station background
- Analogic values will be indicated in two ways:
 - A numeric value (XXXX) in engineering units (UUUU). Q appears if the signal is on bad quality
 - Dinamic bar with the background colour indicated in the table as "TEXT COLOUR". The dinamic bar scale will be picked from the DCS I/O list. Fields "DISPLAY_LO" for the lower value and "DISPLAY_HI" for the upper value
- While the soft control switch is activated it will be sinking
- The pushbutton will be disabled.
- It is necessary to press the "LIBERER" button before activating any station pushbuttons ("T - 1", "T - 2", "MOYENNE"). All buttons will be shown as disabled (white text over gray background) before this buttons is pressed. This "LIBERER" action lasts five seconds. After that, operator needs to "LIBERER" again to make any further operation. This button will be shown as black over grey background when not selected and over dark grey when selected. (A double confirmation standard from DCS manufacturer is accepted if the same safety is achieved as the one described here)



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

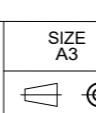


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

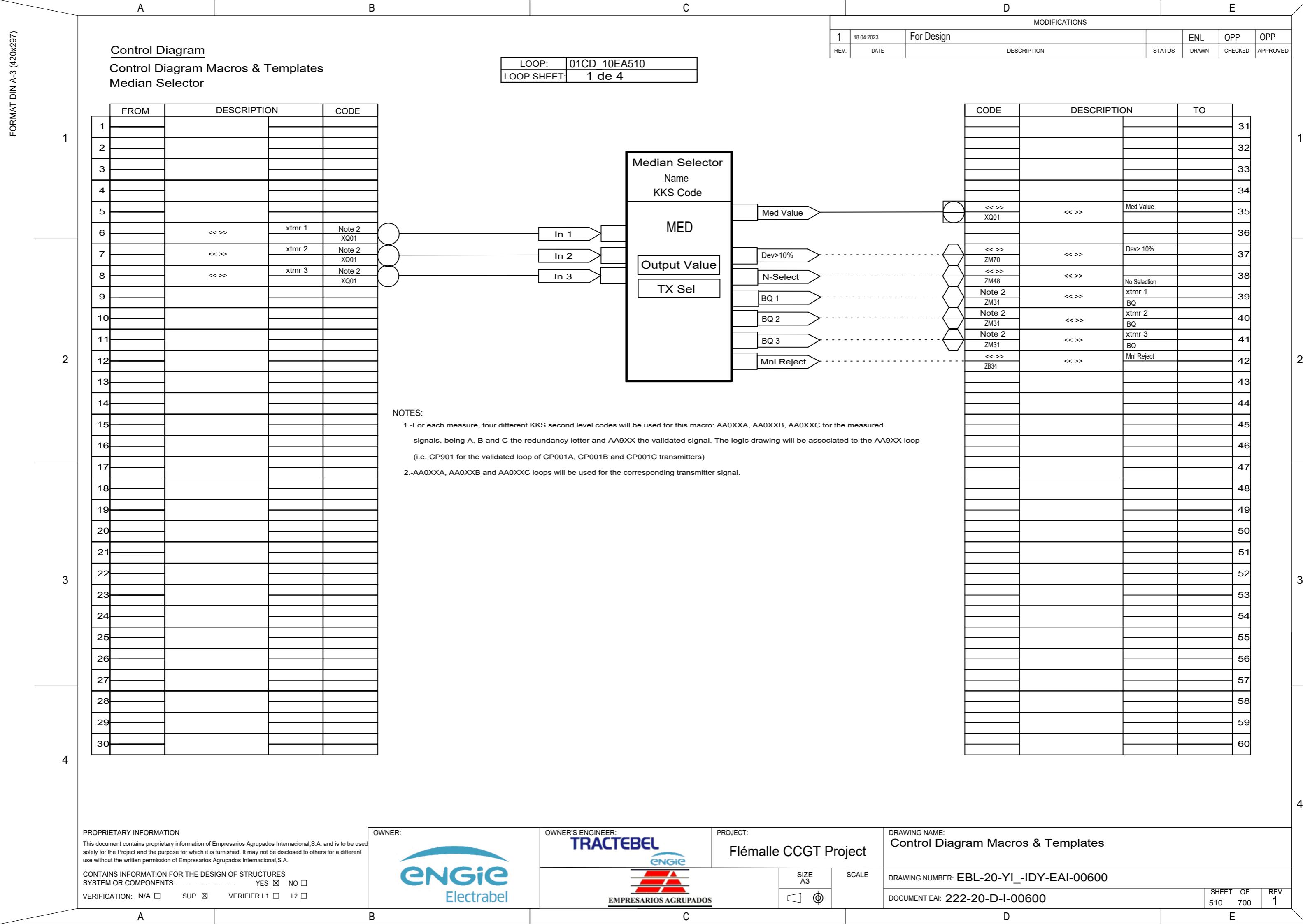
Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI-IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 500.C 700 REV. 1



A

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FORMAT DIN A-3 (420x297)

Control Diagram

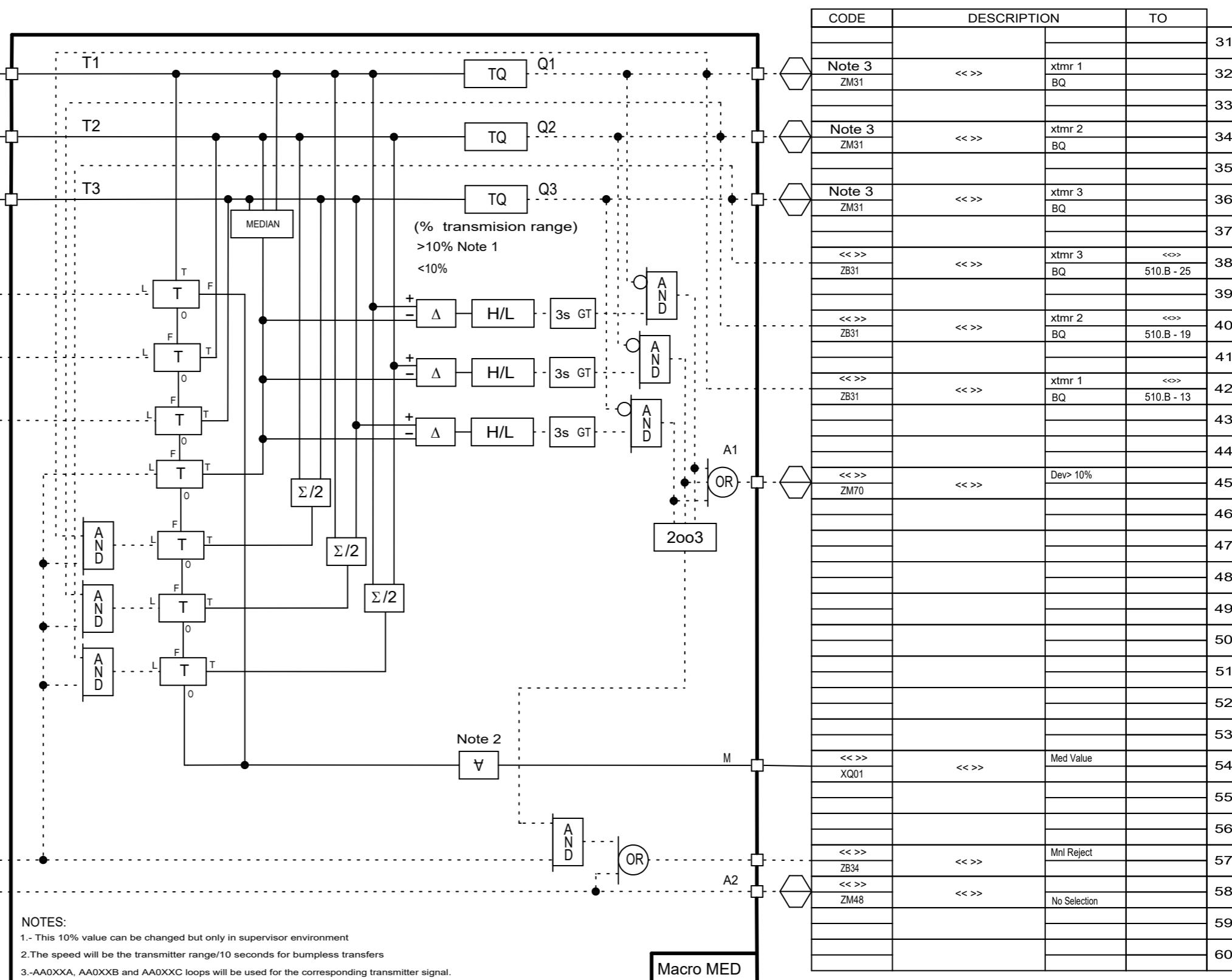
Control Diagram Macros & Templates

Median Selector

LOOP:	01CD 10EA510
LOOP SHEET:	2 de 4

MODIFICATIONS							
1	18.04.2023	For Design					
REV.	DATE	DESCRIPTION		STATUS	DRAWN	CHECKED	APPROVED

FROM	DESCRIPTION	CODE
1		
2	<>>	xtrmr 1 Note 3 XQ01
3		
4	<>>	xtrmr 2 Note 3 XQ01
5		
6	<>>	xtrmr 3 Note 3 XQ01
7		
8		
9	<>>	Transmitter 1 <>> Selected ZB01
10		
11	<>>	Transmitter 2 <>> Selected ZB02
12		
13	<>>	Transmitter 3 <>> Selected ZB03
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27	<>>	Median <>> Selected ZB10
28	<>>	No <>> Selection ZB55
29		
30		



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



SIZE A3	SCALE
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DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 510.A 700	REV. 1
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A

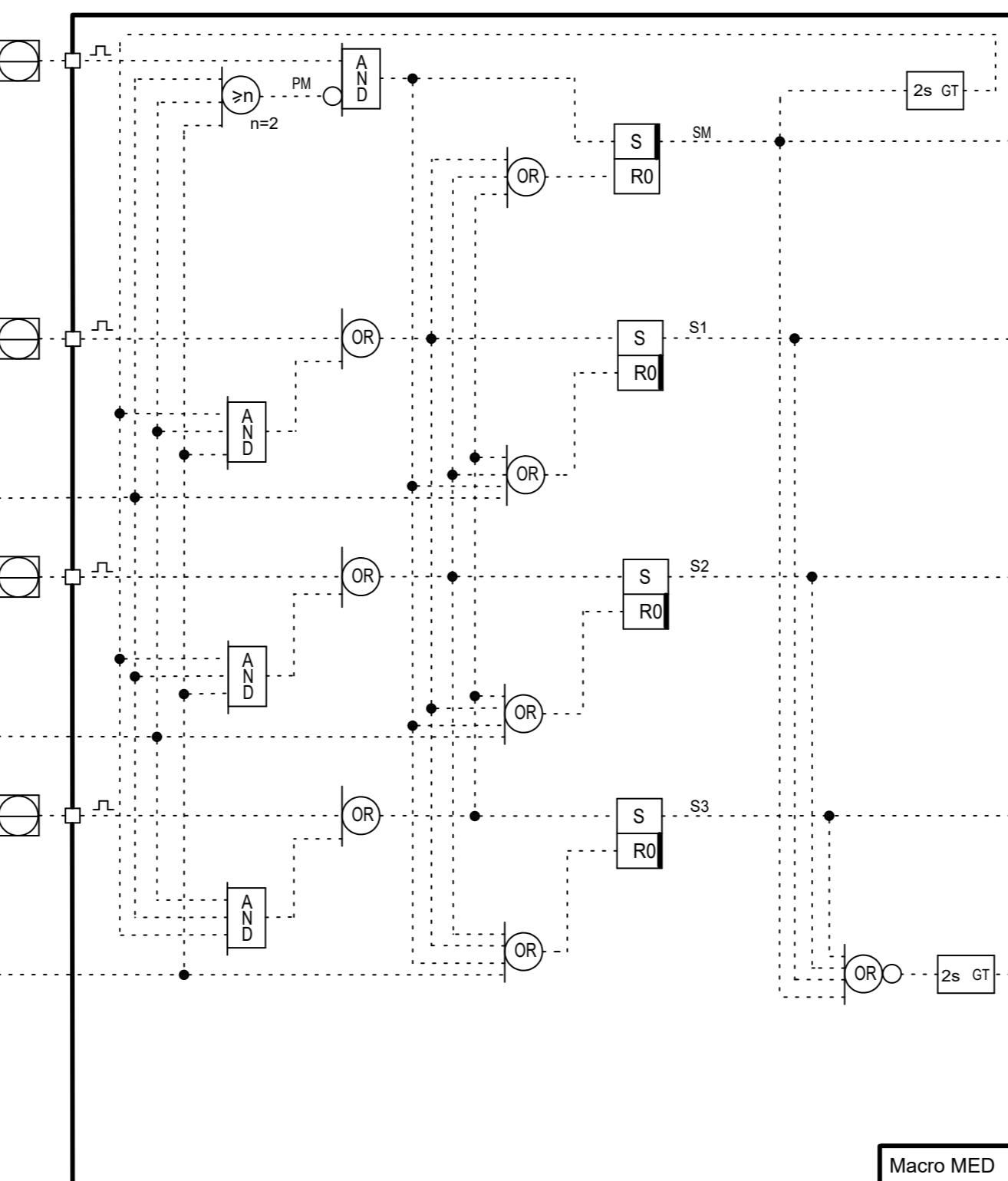
B

C

D

E

FROM	DESCRIPTION	CODE
1		
2	<< >>	Median Selected << >> XB10
3		
4		
5		
6		
7		
8		
9	<< >>	Transmitter 1 Selected << >> XB01
10		
11		
12		
13	<<>> 510.A - 42	xtrmr 1 BQ << >> ZB31
14		
15	<<>>	Transmitter 2 Selected << >> XB02
16		
17		
18		
19	<<>> 510.A - 40	xtrmr 2 BQ << >> ZB31
20		
21	<<>>	Transmitter 3 Selected << >> XB03
22		
23		
24		
25	<<>> 510.A - 38	xtrmr 3 BQ << >> ZB31
26		
27		
28		
29		
30		



CODE	DESCRIPTION		TO
			3
			32
			33
			33
<< >>	<< >>	Median	<< >>
ZB10		Selected	510.A - 27
			34
			35
			36
			37
			38
<< >>	<< >>	Transmitter 1	<< >>
ZB01		Selected	510.A - 09
			39
			40
			41
			42
			43
			44
<< >>	<< >>	Transmitter 2	<< >>
ZB02		Selected	510.A - 11
			45
			46
			47
			48
			49
			50
<< >>	<< >>	Transmitter 3	<< >>
ZB03		Selected	510.A - 13
			51
			52
			53
			54
<< >>	<< >>	No	<< >>
ZB55		Selection	510.A - 28
			55
			56
			57
			58
			59
			60

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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP VERIFIER 11 12



OWNER'S ENGINEER

PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



1000

SIZE
A3

SCALE

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF REV.
510 B 700 1

Control Diagram

Control Diagram Macros & Templates

Median Selector

FROM	DESCRIPTION	CODE
1		
2		
3	N Perm	
4	Median	PM
5	Output	
6	xtrmr 1	T1
7	Output	
8	xtrmr 2	T2
9	Output	
10	xtrmr 3	T3
11	Med Value	
12		M
13	xtrmr 1	
14	Selected	S1
15	xtrmr 2	
16	Selected	S2
17	xtrmr 3	
18	Selected	S3
19	Median	
20	Selected	SM
21	xtrmr 1	
22	BQ	Q1
23	xtrmr 2	
24	BQ	Q2
25	xtrmr 3	
26	BQ	Q3
27	Dev > 10%	A1
28		
29	N Avail	A2
30		

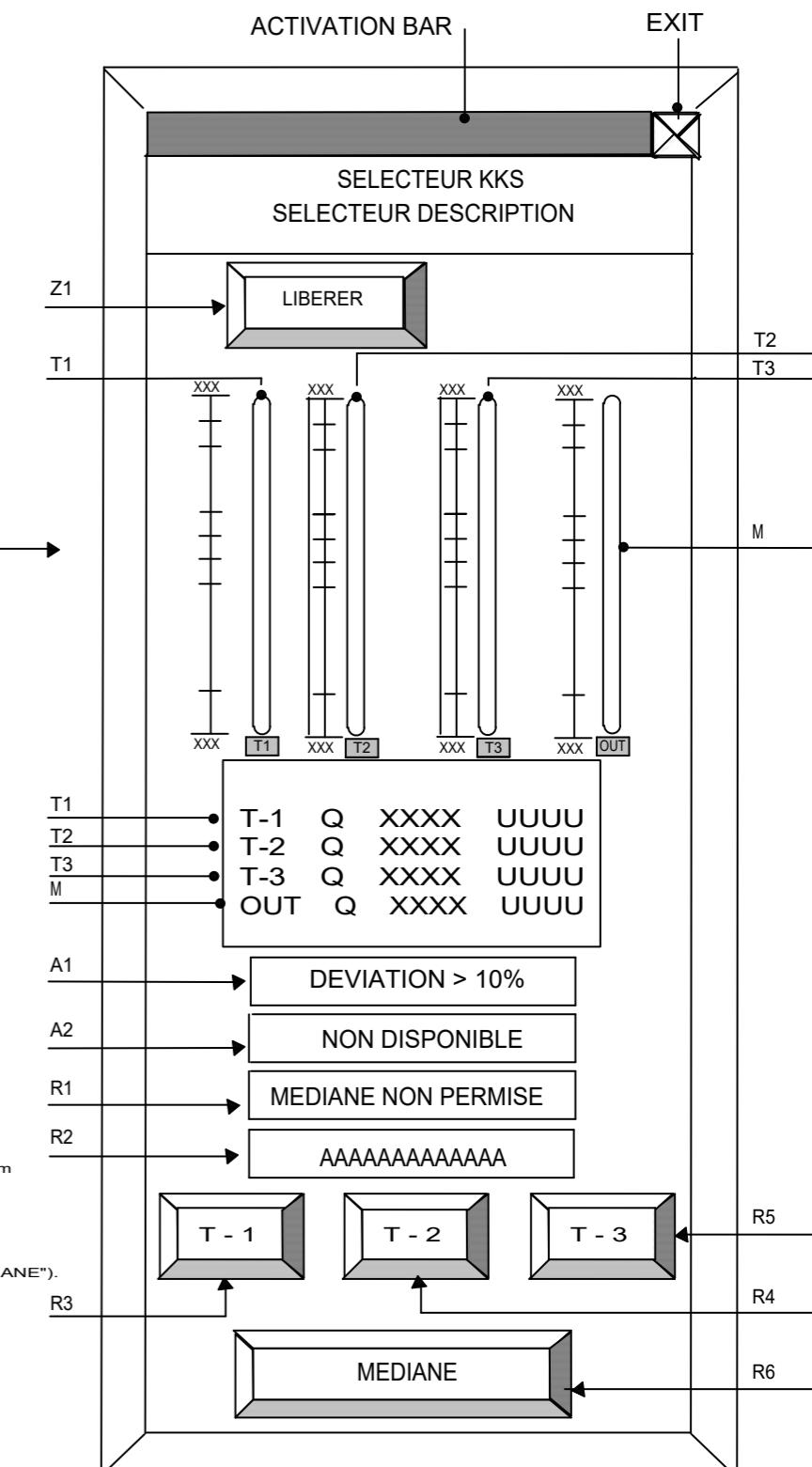
LOOP: 01CD 10EA510
LOOP SHEET: 4 de 4

MODIFICATIONS			
1	18.04.2023	For Design	

SIGNALIZATION LOGIC					
SIGNAL	LOGIC	TEXT	TEXT COLOUR	BACK GROUND COLOUR	NOTES
T1	IF Q1=0	T-1	GREEN	BLACK	
	IF Q1=1		BLACK	MAGENTA	2
T2	IF Q2=0	T-2	GREEN	BLACK	2
	IF Q2=1		BLACK	MAGENTA	
T3	IF Q3=0	T-3	GREEN	BLACK	2
	IF Q3=1		BLACK	MAGENTA	
M	PM=0	OUT	LIGHT GREEN	BLACK	2
	PM=1		BLACK	MAGENTA	
A1	IF A1=0	DEVIATION > 10%	WHITE	RED	1
	IF A1=1				
A2	IF A2=0	NON DISPONIBLE	WHITE	RED	1
	IF A2=1				
R1	IF PM=0	MEDIANE NOT PERMITTED	BLACK	ORANGE	1
	IF PM=1				
R2	IF S1=0 & S2=0 & S3=0 & SM=0	TRANSMETTEUR NON SELECTIONNE	BLACK	WHITE	
	IF S1=1	TRANSMETTEUR 1 SELECTIONNE	BLACK	WHITE	
	IF S2=1	TRANSMETTEUR 2 SELECTIONNE	BLACK	WHITE	
	IF S3=1	TRANSMETTEUR 3 SELECTIONNE	BLACK	WHITE	
	IF SM=1	MEDIANE SELECTIONNE	BLACK	WHITE	
R3	IF S1=1	T-1	BLACK	GREEN	3
	IF S1=0 & Q1=0	T-1	BLACK	GREY	
	IF Q1=1	T-1	WHITE	GREY	4
R4	IF S2=1	T-2	BLACK	GREEN	3
	IF S2=0 & Q2=0	T-2	BLACK	GREY	
	IF Q2=1	T-2	WHITE	GREY	4
R5	IF S3=1	T-3	BLACK	GREEN	3
	IF S3=0 & Q3=0	T-3	BLACK	GREY	
	IF Q3=1	T-3	WHITE	GREY	4
R6	IF SM=1	MEDIANE	BLACK	GREEN	3
	IF SM=0 & PM=0	MEDIANE	BLACK	GREY	
	IF SM=0 & PM=1	MEDIANE	WHITE	GREY	4
Z1	LIBERER	LIBERER	BLACK	GREY	5

NOTES:

- No text will appear and the background will be coloured like the control station background
- Analogic values will be indicated with:
 - A numeric value (XXX) in engineering units (UUUU). Q appears if the signal is on bad quality
 - Dinamic bar with the background colour indicated in the table as "TEXT COLOUR". The dinamic bar scale will be picked from the DCS I/O list.Fields "DISPLAY_LO" for the lower value and "DISPLAY_HI" for the upper value
- While the soft control switch is activated it will be sinking
- The pushbutton will be disabled.
- It is necessary to press the "LIBERER" button before activating any station pushbuttons ("T - 1", "T - 2", "T - 3", "MEDIANE"). All buttons will be shown as disabled (white text over gray background) before this buttons is pressed. This "LIBERER" action lasts five seconds. After that, operator needs to "LIBERER" again to make any further operation. This button will be shown as black over grey background when not selected and over dark grey when selected (A double confirmation standard from DCS manufacturer is accepted if the same safety is achived as the one described here)



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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:

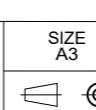


PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI-IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 510.C 700 REV. 1

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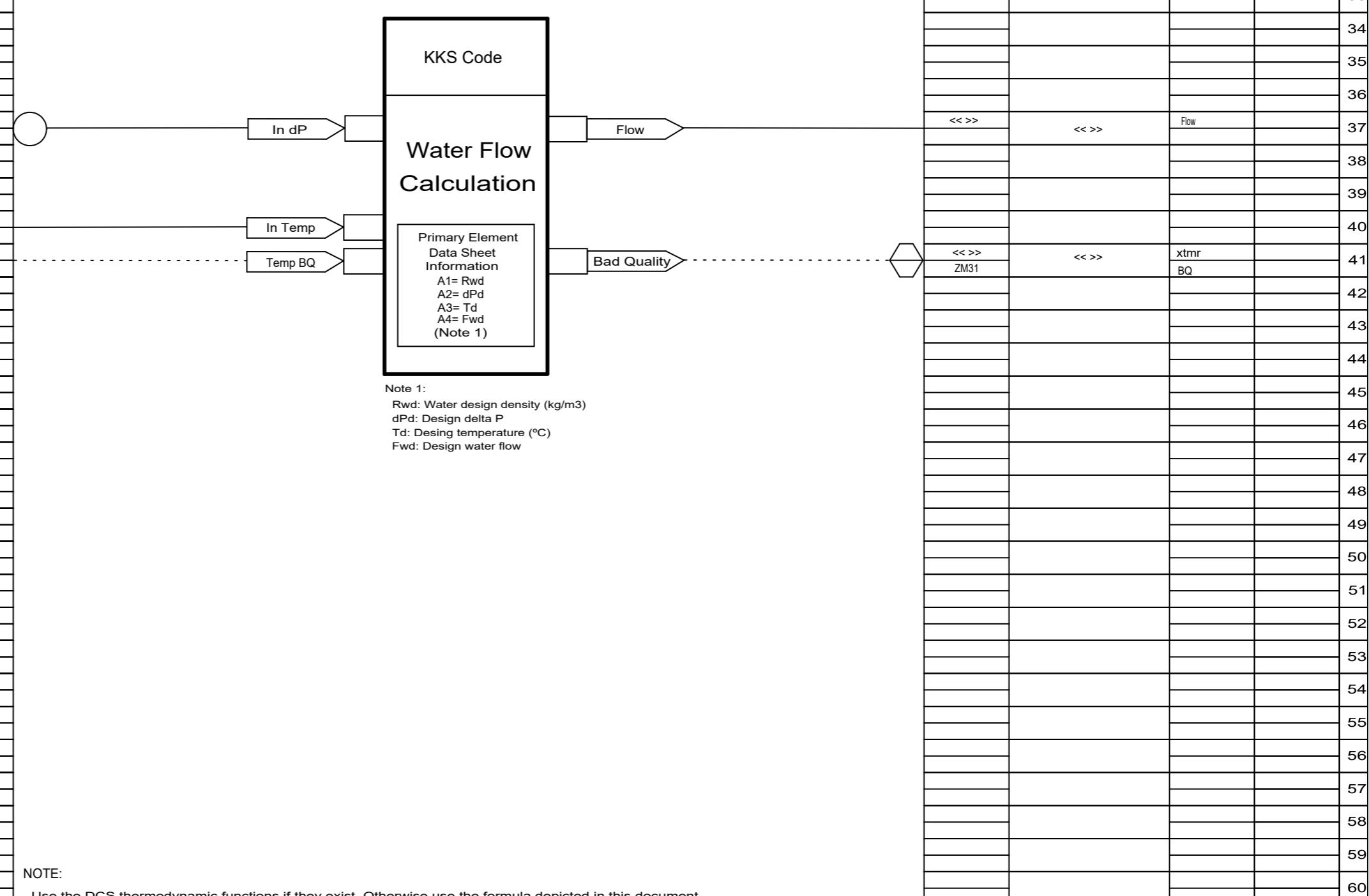
Control Diagram**Control Diagram Macros & Templates****Water Flow Calculation**

	FROM	DESCRIPTION	CODE
1			
2			
3			
4			
5			
6			
7	<>>	xtrmr dP	XQ01
8			
9			
10	<>>	xtrmr temp	
11	<>>	xtrmr temp	<>>
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

LOOP:	01CD_10EA600
LOOP SHEET:	1 de 2

MODIFICATIONS							
1	18.04.2023	For Design					

REV.	DATE	DESCRIPTION	STATUS	DRAWN	CHECKED	APPROVED
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CONTAINS INFORMATION FOR THE DESIGN OF STRUCTURES
SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:**OWNER'S ENGINEER:****PROJECT:**

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates



DRAWING NUMBER: EBL-20-YI-IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF
600 700 REV.
1

A

B

C

D

E

A

B

C

D

E

Control Diagram

Control Diagram Macros & Templates

Water Flow Calculation

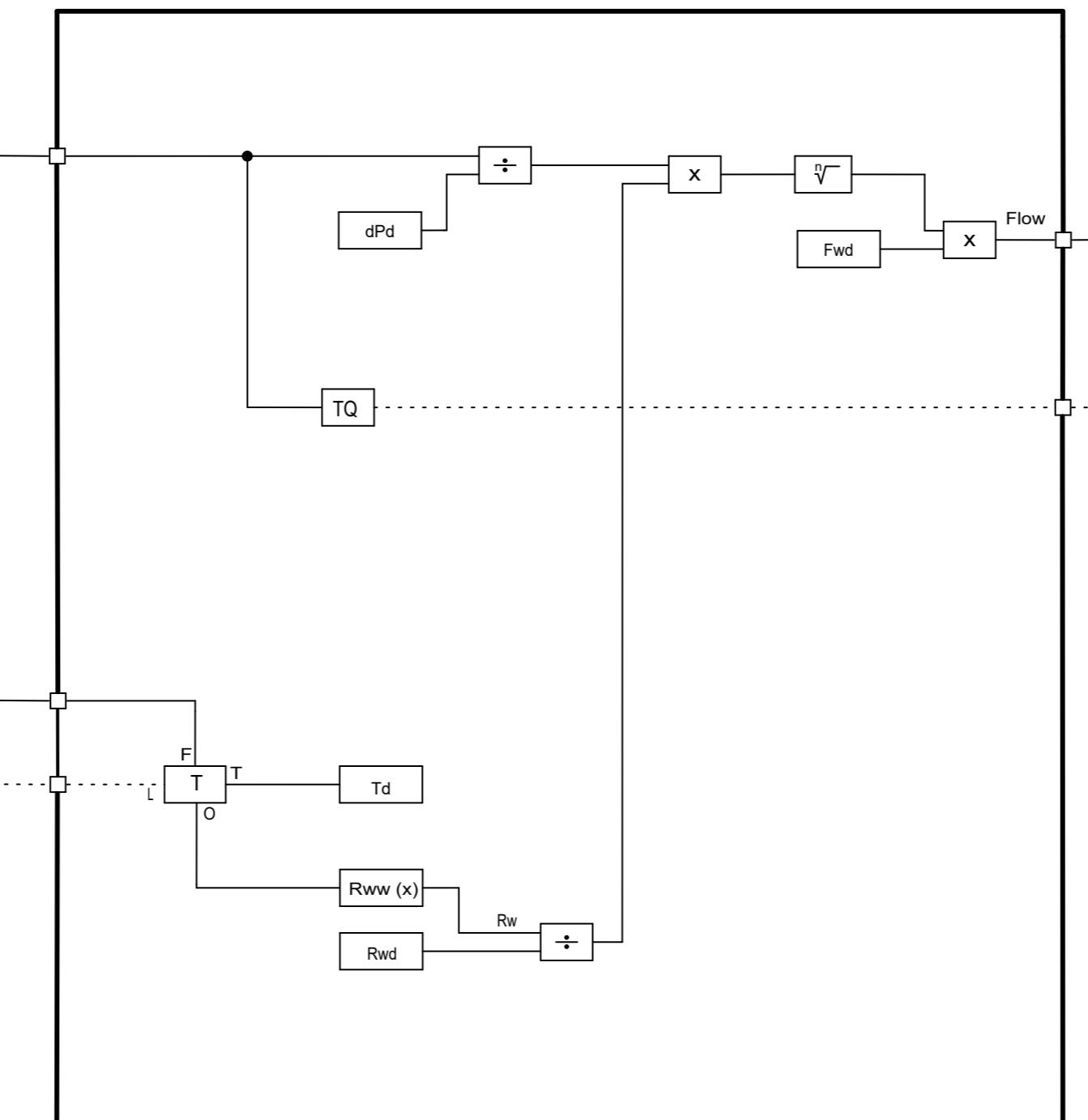
	FROM	DESCRIPTION	CODE
1			
2			
3			
4			
5		<>> xtmr dP XQ01	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18		<>> xtmr temp	
19			
20		<>> xtmr temp BQ	
21			
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LOOP:	01CD 10EA600
LOOP SHEET:	2 de 2

MODIFICATIONS			
1	18.04.2023	For Design	

REV.	DATE	DESCRIPTION	STATUS
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CODE	DESCRIPTION	TO
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SYSTEM OR COMPONENTS YES NO

VERIFICATION: N/A SUP. VERIFIER L1 L2

OWNER:



OWNER'S ENGINEER:



PROJECT:

Flémalle CCGT Project

DRAWING NAME:

Control Diagram Macros & Templates

DRAWING NUMBER: EBL-20-YI_IDY-EAI-00600

DOCUMENT EAI: 222-20-D-I-00600

SHEET OF 600.A 700 REV. 1

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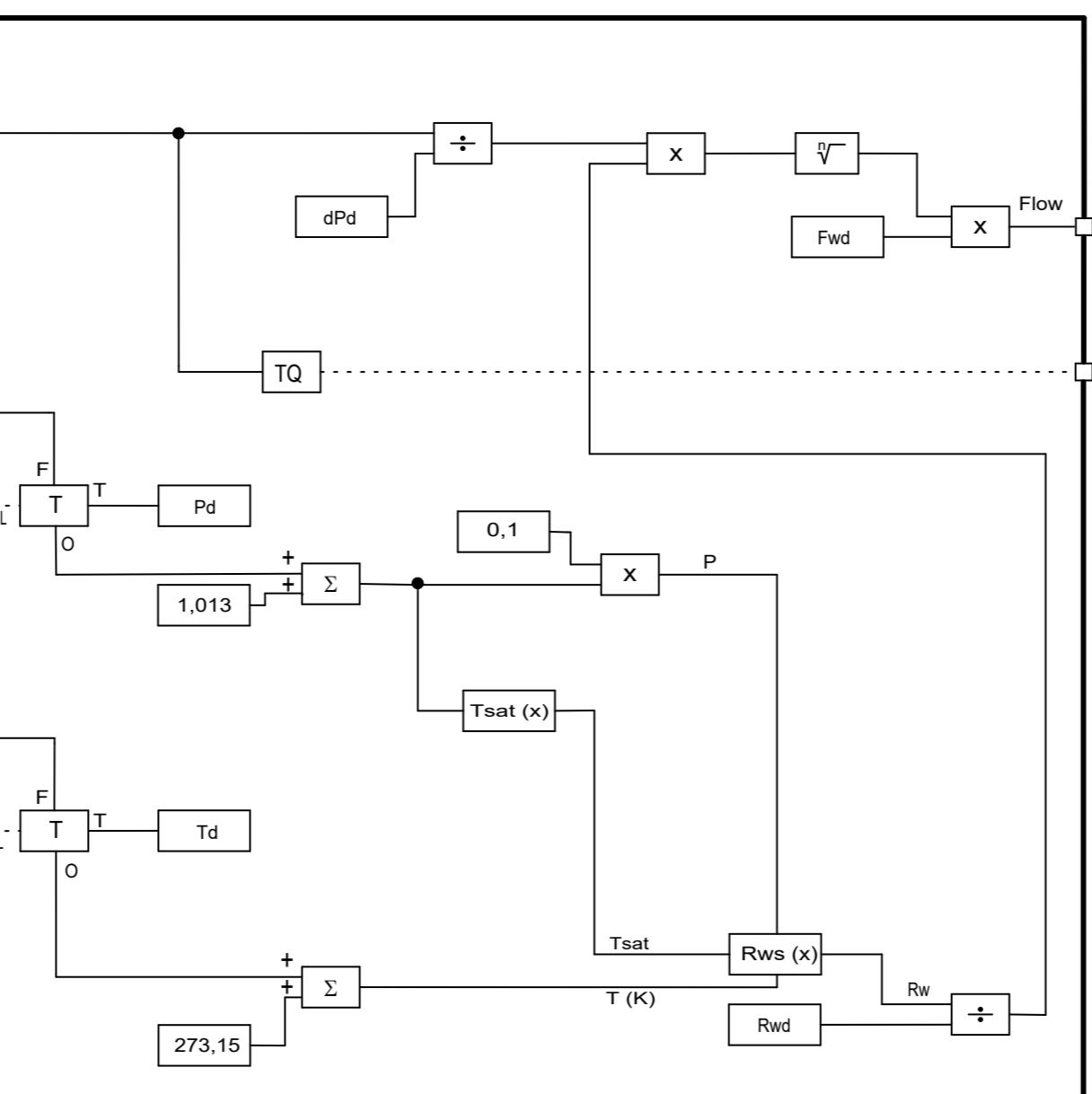
Control Diagram

Control Diagram Macros & Templates

Steam Flow Calculation

	FROM	DESCRIPTION	CODE
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3	Note 2	<>>	xtrmr dP XQ01
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6			
7			
8			
9		<>>	xtrmr press
10			
11		<>>	xtrmr press BQ
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14			
15			
16		<>>	xtrmr temp
17			
18		<>>	xtrmr temp BQ
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LOOP: 01CD 10EA610
LOOP SHEET: 2 de 2



CODE	DESCRIPTION	TO
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	<>>	xtrmr BQ
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NOTES

- Fwd: Design water flow
- dPd: Design delta P
- Td: Design temperature (°C)
- Pd: Design pressure (barg)
- Rwd: Steam design density (kg/m³)
- Tsat: Saturation Temperature (K)
- P: Steam Pressure (MPa)
- T: Steam Temperature (K)
- If the signal is in bad quality, the value will be Td or Pd.

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SIZE
A3

SCALE

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SHEET OF
610.A 700 REV.
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Control Diagram

Control Diagram Macros & Templates
Step Sequence Block

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LOOP:	01CD 10EA700
LOOP SHEET:	1 de 1

MODIFICATIONS			
1	18.04.2023	For Design	

REV.	DATE	DESCRIPTION	STATUS	ENL	OPP	OPP
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DRAWN	CHECKED	APPROVED
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CODE	DESCRIPTION	TO
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Block logic inputs:

- **Step Permissives:** The “Order” output will not be activated until this input gets active. Each one of the inputs used for this input must have a Bypass/Reset Pushbutton.
- **Feedbacks:** “Step Completed” output is activated if this input gets active after “Order” output activation.
- **Bypass Step:** When this input gets active, the “Step Completed” output is activated.
- **Previous Step Completed:** This signal comes from the “Step Completed” output of the previous step (nn-1). Once this input is active, the “Order” output shall be activated once “Step Permissives” input is active.

Block logic outputs:

- **Step Completed:** This signal is connected to the “Previous Step Completed” input of the following step (nn+1). This output gets active if any of the following conditions is met:
 - o “Bypass Step” input gets active.
 - o “Feedbacks” input gets active after “Order” output activation.
- **Step Time Limit:** A time exceeded alarm shall be configured for each step.
- **Order:** This output gets active once the “Previous Step Completed” input is active and “Step Permissives” input is active. This output must be reset once the “Step Completed” output gets active or time limit reached.

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