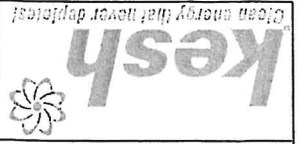


TYPE	POWER(KVA)	FUNCTIONAL MARK	DESIGNATION
CN 800	300	14 LKA 002JD	CONTROL BUILDING AUXILIARIES 2
DTH630	50	15LKA 001JD	WORKSHOP
CN 3200/DTH 630	1600	13 LKA 004JD	L.V. SUPPLY 2
135	135	13LKA 007JD	SURGE CHAMBER
CN 1250	527	13SXD 002JD	UNWATERING AND DRAINING
CN 800	283	13 DVA 002JD	VENTILATION 2
CN 800	500	13 LKB 002JD	GENERAL AUXILIARIES 2
CN 800	214	50 LKA 002JD	SWITCHYARD AUXILIARIES 2
CN 800	340	02 GTA 002JD	GENERATING SFT AUXILIARIES U2
CN 800	340	04 GTA 002JD	GENERATING SFT AUXILIARIES U4
1600	340	01 GTA 002JD	DIESEL GENERATOR
CABLE SECTION LENGTH	3X150	3X150	3X4X500
CABLE SECTION LENGTH	3X150	3X150	3X150



ALBANIAN
POWER
CORPORATION

ANDRITZ HYDRO

PROJECT: Koman HPP rehabilitation and installation of a new CMS

Existing project
Designed by Koman HPP

Built
January 2007

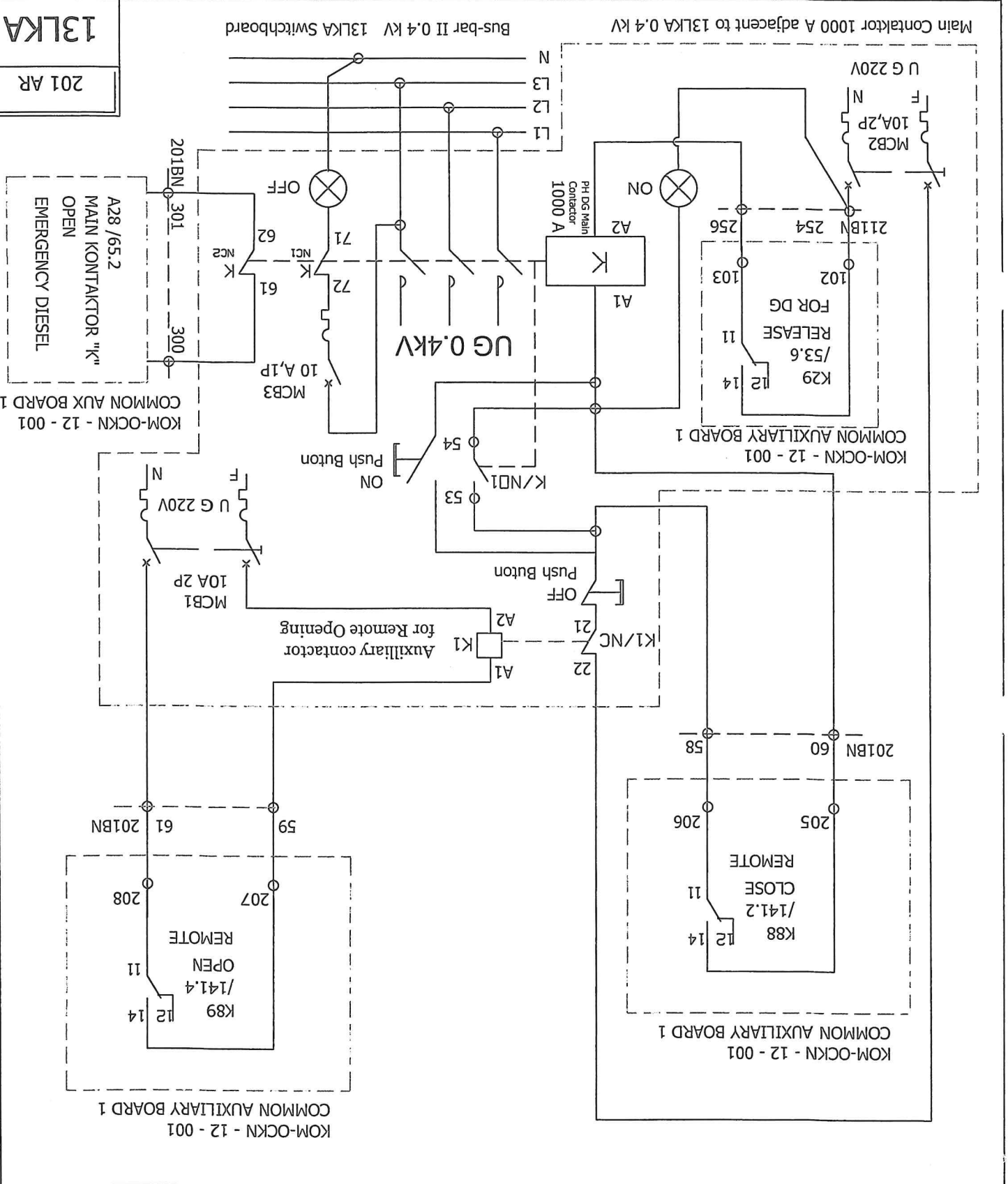
First revision
January 2009

Approved
KESH Sh.a.

Andritz Hydro
Revision 2018

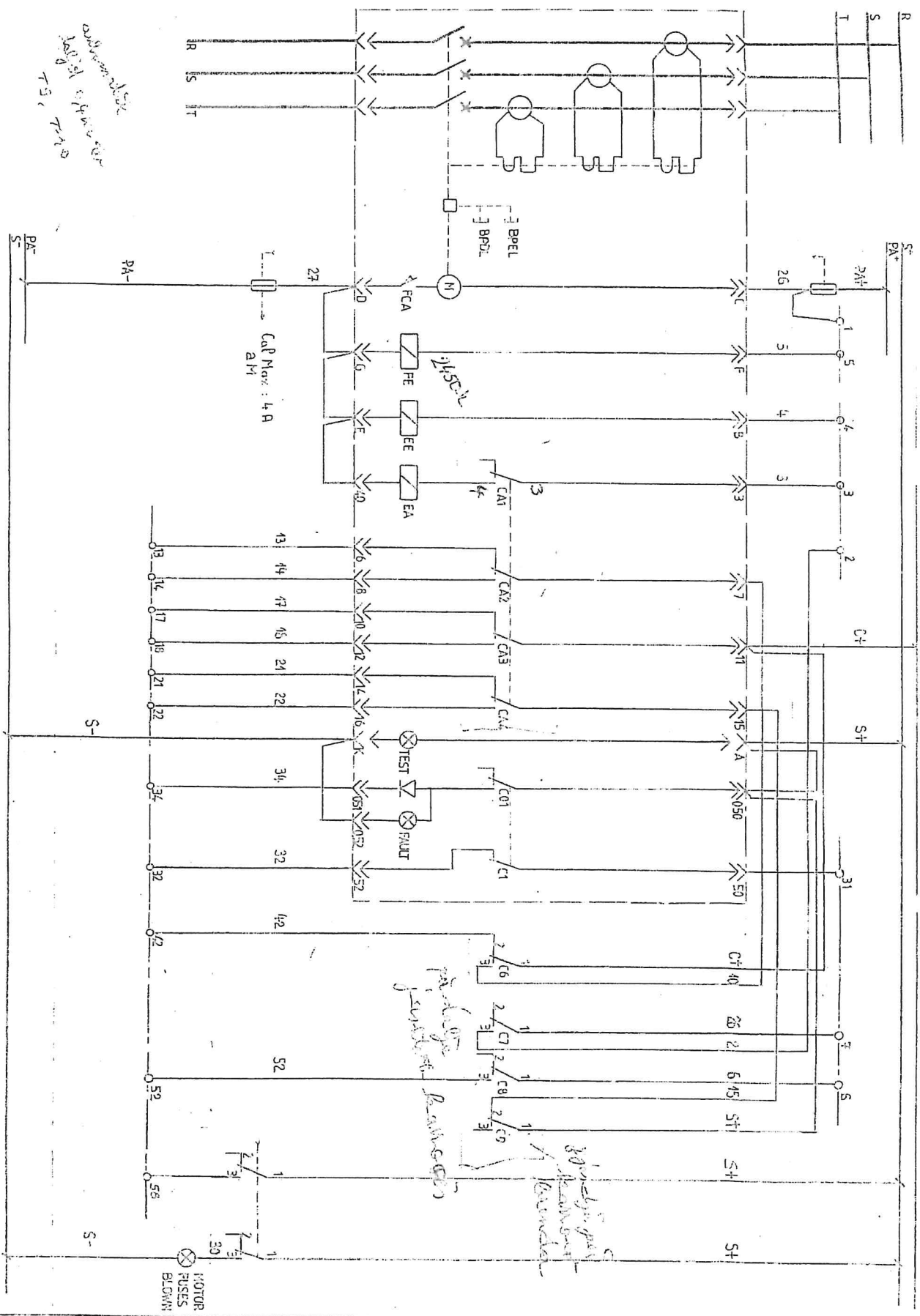
Sheet 2/2

Ref. PHDG500KVA Power House Diesel Generator 500 KVA - Main Contactor CONTROL DIAGRAM



13LKA
201 AR

20/03/83
 10/01/83
 T-5, T-4, B



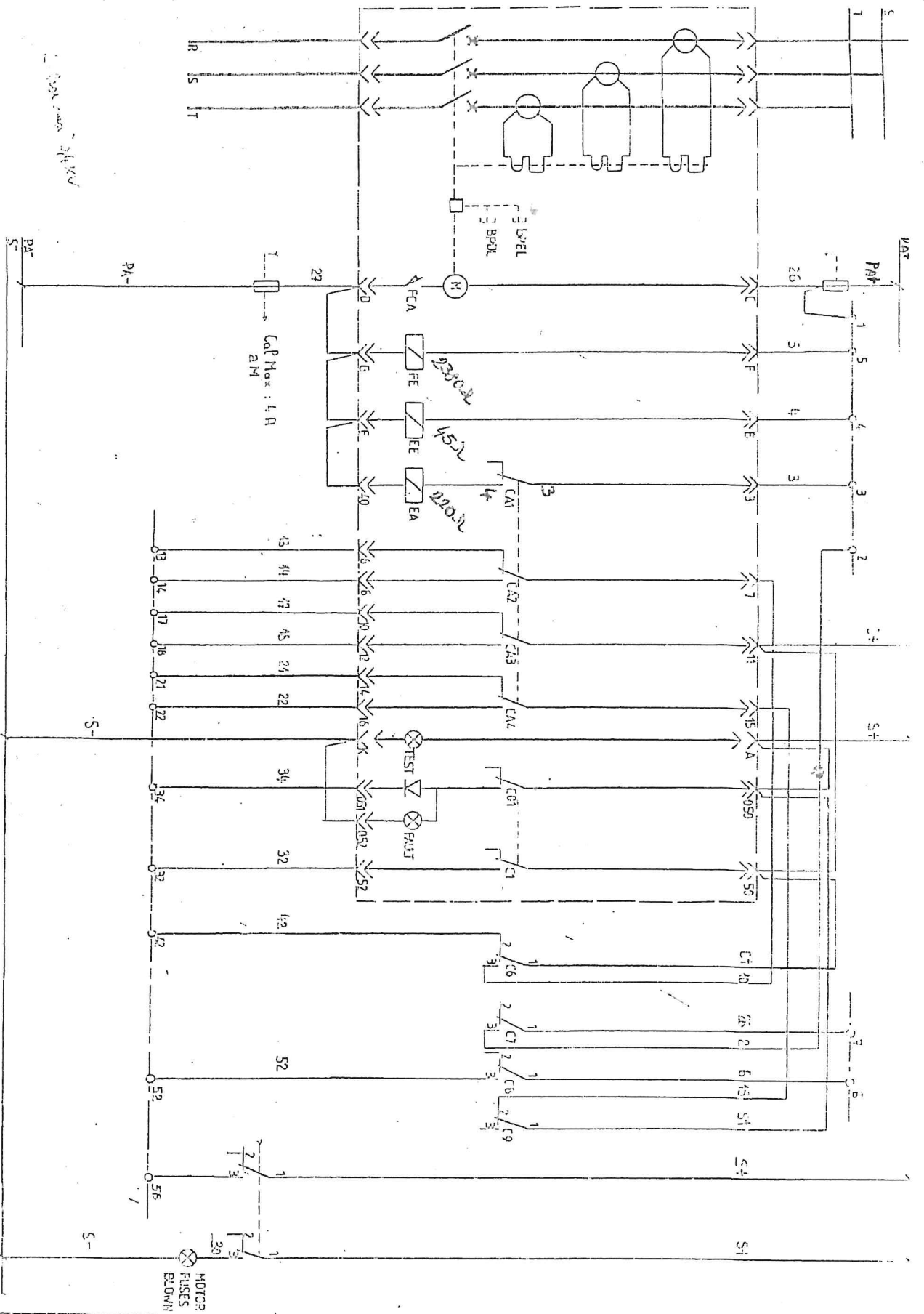
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1 2 3 4	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80	81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

CN 3200
 ELECTRIC MOTOR
 OPERATED CONTROL
 AA. 149 295/100

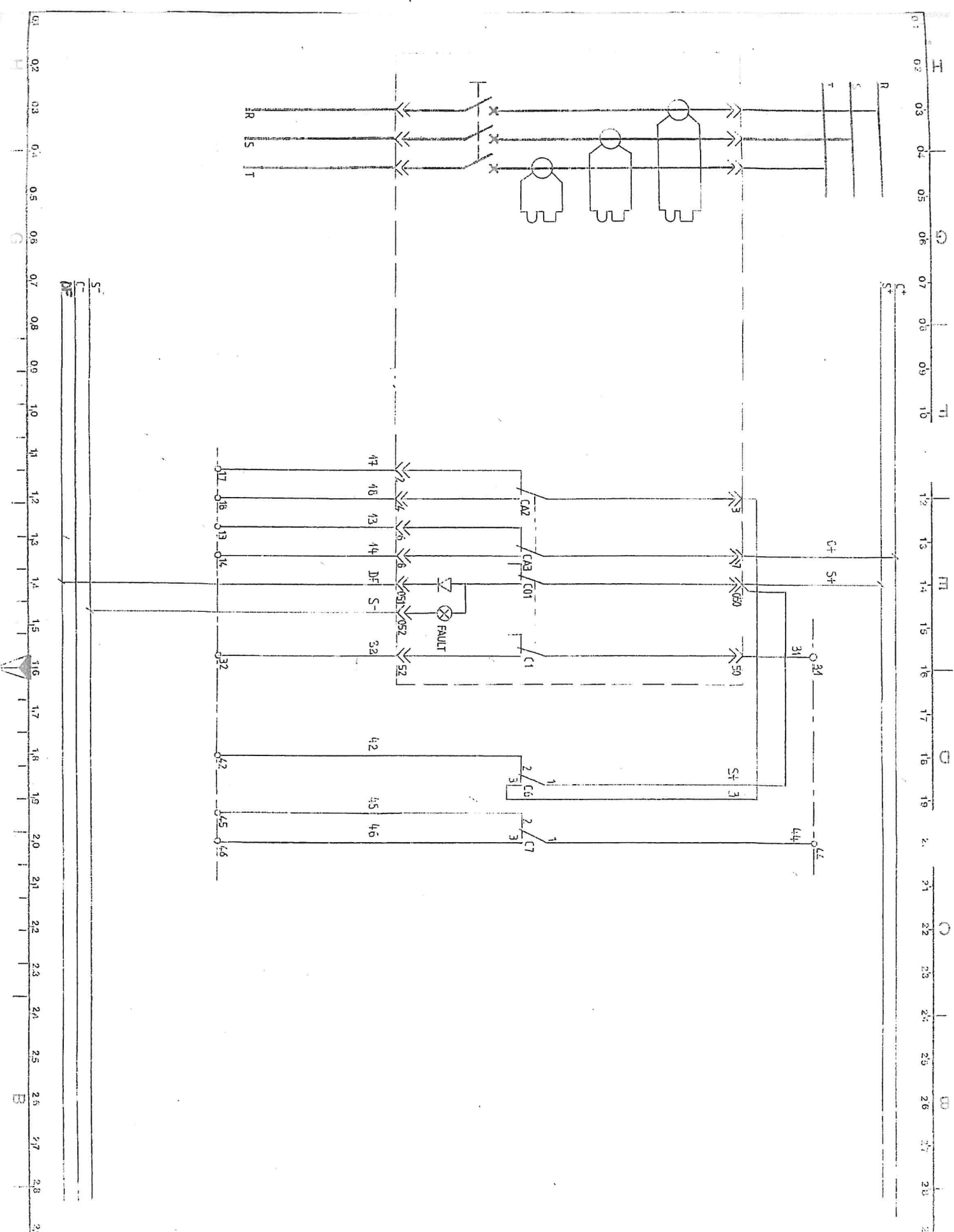
ECHELLE
 1/10

HYDRO POWER PLANT 4x150 MW
 CGEE ALSTHOM 52309-LEVALLOIS-PEL
 CEDEX - FRANCE
 P-5.2.5.5-A.3.0.0.2.8-

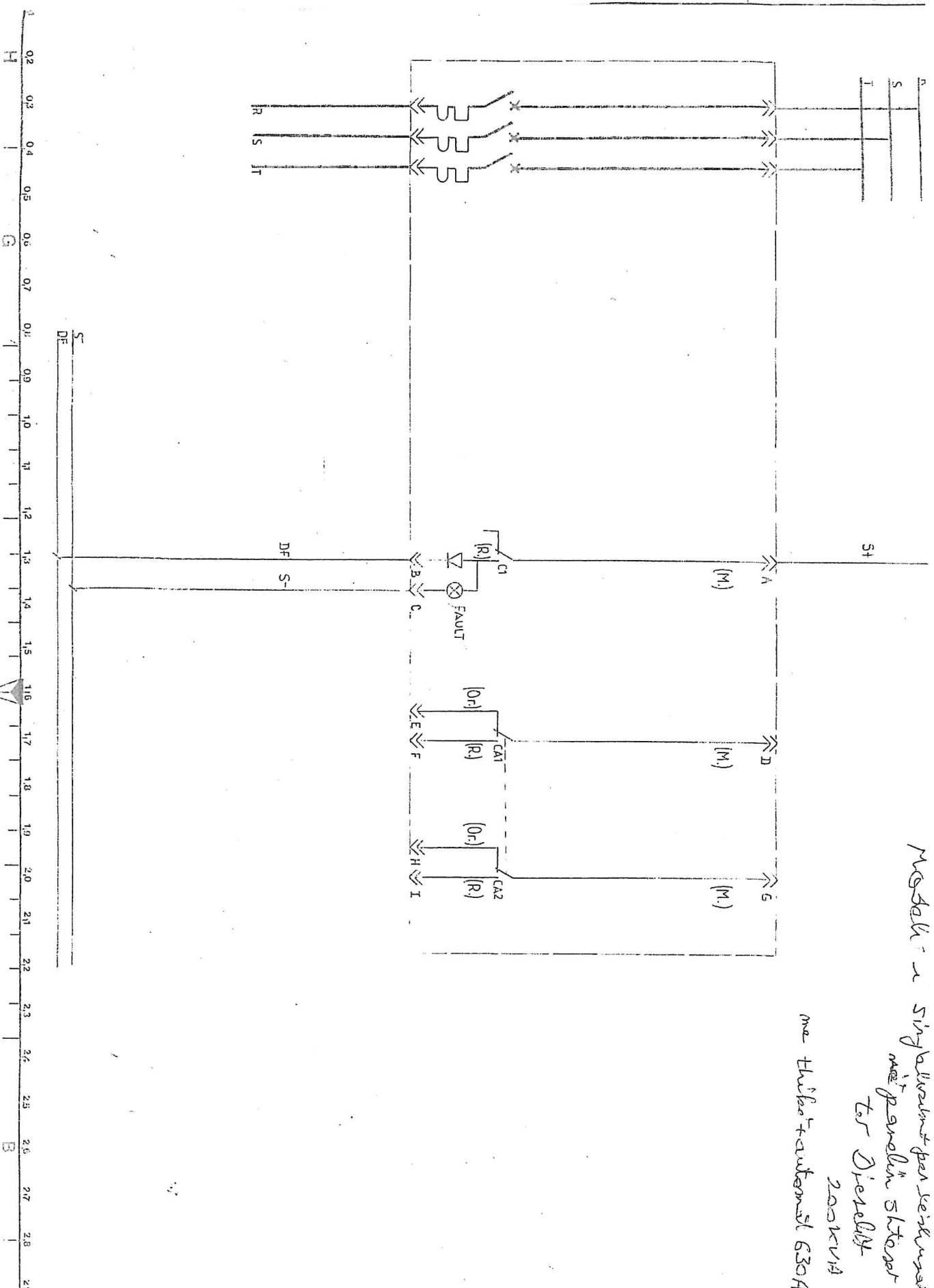
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CN 2500-CN1000 ELECTRIC MOTOR OPERATED CONTROL		ECHELLE	HYDRO POWER PLANT 4x150 MW
AA. 149 295 / 100			CGEE ALSTHOM 82300-LEVALLOIS-PER CEDEX - FRANCE
STABU	LE	VERIF	LE
P-5.2.55-A.3.0.0.2.8-		8	

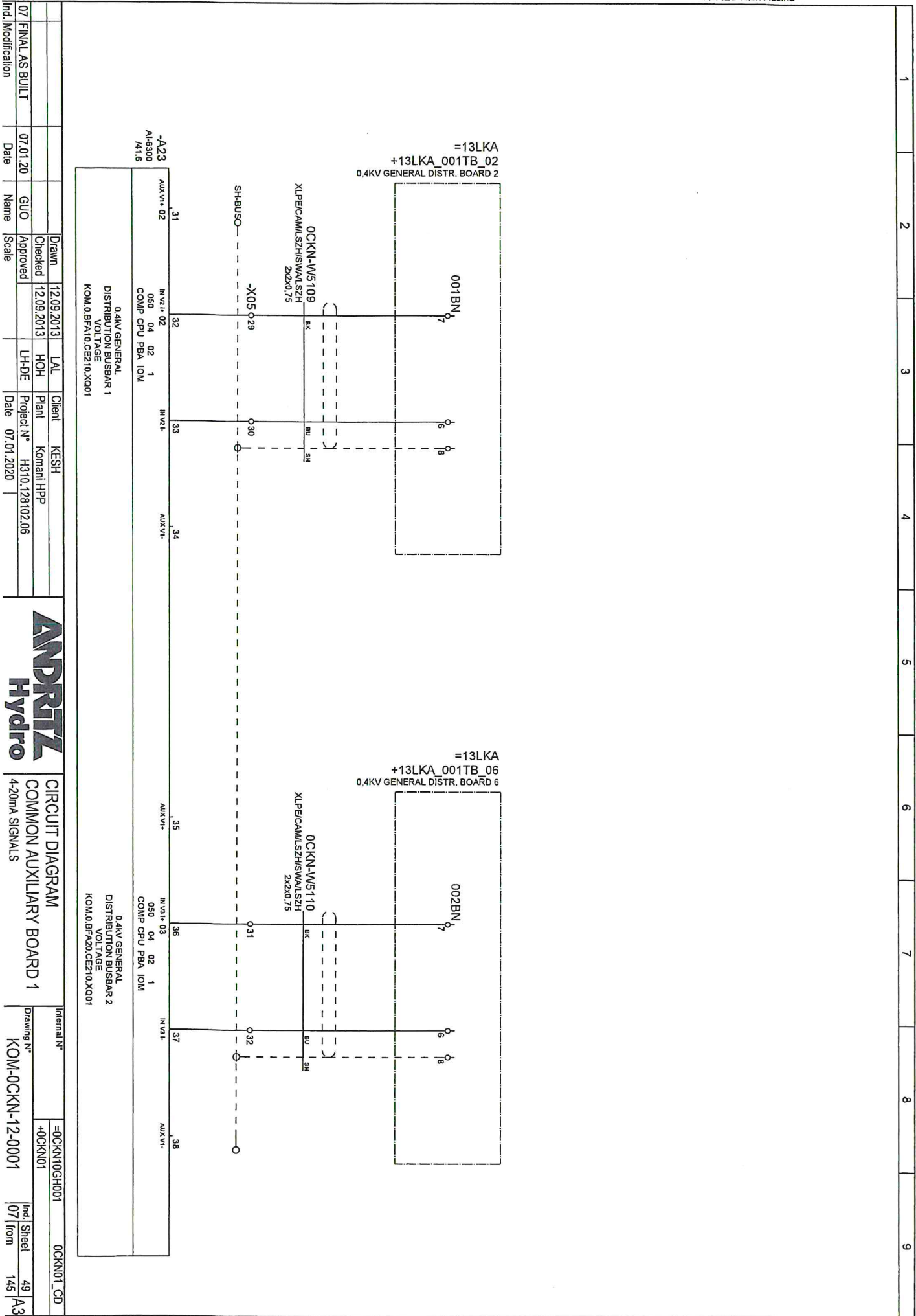


CN 800 - CN 1250 MANUALLY OPERATED CONTROL		ECHELLE 	HYDRO POWER PLANT 4x150 MW CGEE ALSTHOM <small>32300-LEVALLOIS-PERRET CEDEX FRANCE</small>
01.05.83 02.06.83 03.03.83	Up to date by AA Up to date Mod. polarities BF, MF	AA - 149 295/100	P-5.2.5.5-A 3.0.0.2.8 - 11 12
ETABL LE VERIF LE			



Model: a single point for service
 meet parallel stop
 for Diesel
 2001/1/14
 me. Eliska + autometr 630A

DTH 630 MANUALLY OPERATED CONTROL		ECHFLUE	HYDRO POWER PLANT 4x150 MW
AA - 149295/100		CEDEX	CGEE ALSTHOM 92709-LEVALLOIS P CEDEX FRA
21.06.03	Up to date by AA	P-5 2 5 5-A 3 0 0 2 8-	



07	FINAL AS BUILT	07.01.20	G.U.O	Drawn	12.09.2013	LAL	Client	KESH
				Checked	12.09.2013	HOH	Plant	Komant HPP
				Approved		LH-DE	Project N°	H310.128102.06
							Date	07.01.2020

ANDRITZ
Hydro
 CIRCUIT DIAGRAM
 COMMON AUXILIARY BOARD 1
 4-20mA SIGNALS

Internal N°	=OCKN10GH001	OCKN01_CD
Drawing N°	+OCKN01	
Ind. Sheet	49	A3
Ind. from	07	145

Incl./Modification	Date	Name	Scale
07/ FINAL AS BUILT	07.01.20	GUO	

Drawn	12.09.2013	LAL	Client	KESH
Checked	12.09.2013	HOH	Plant	Komani HPP
Approved		LH-DE	Project N°	H310.128102.06
			Date	07.01.2020



CIRCUIT DIAGRAM
COMMON AUXILIARY BOARD 1
 125V DC DIGITAL OUTPUTS

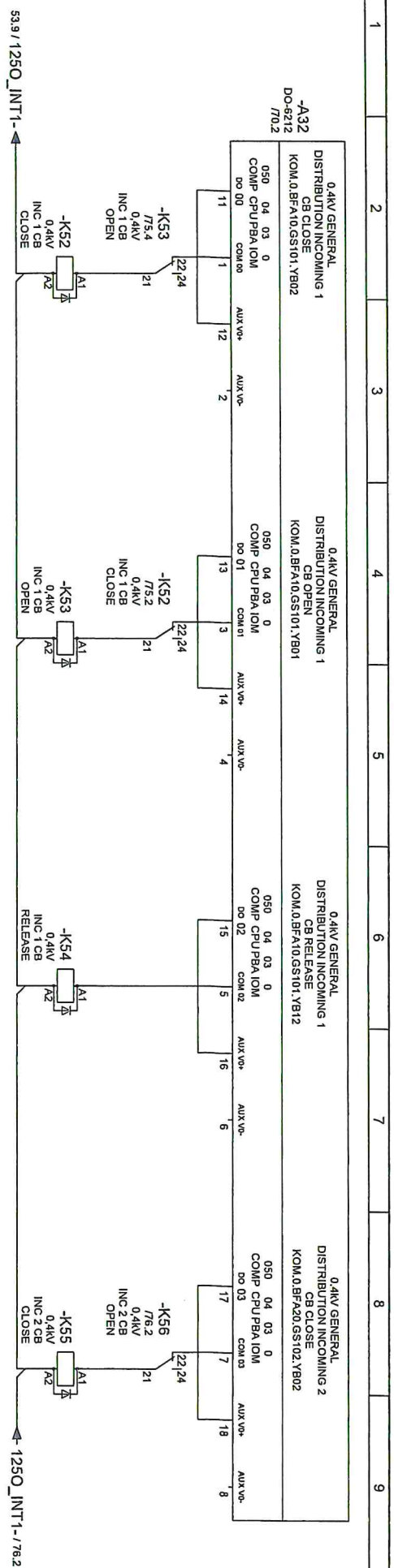
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Incl. Sheet	75	A3
from	145	

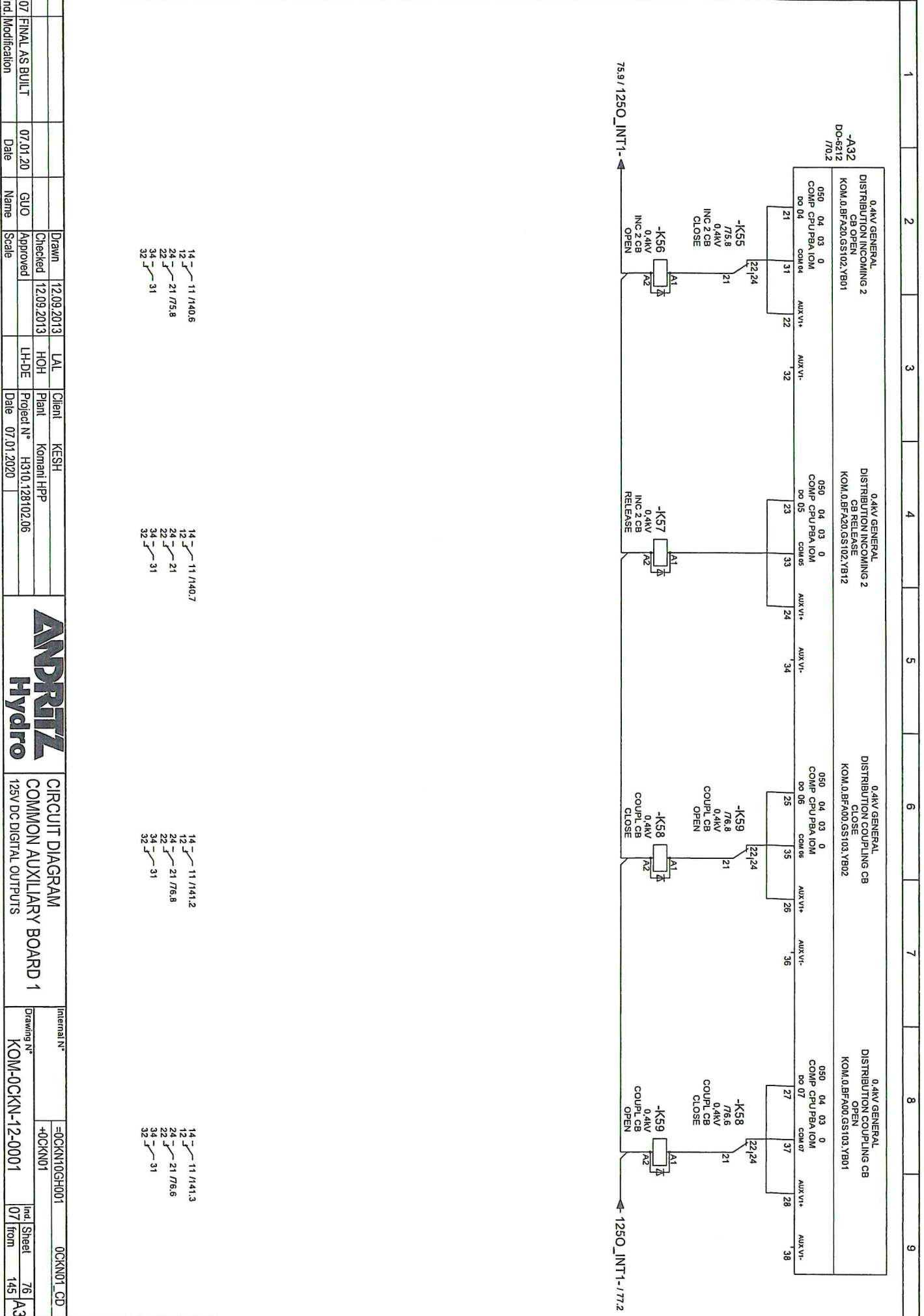
14 - 11 / 140.1
 12 - 21 / 75.4
 24 - 21 / 75.4
 22 - 31
 34 - 31
 32 - 31

14 - 11 / 140.2
 12 - 21 / 75.2
 24 - 21 / 75.2
 22 - 31
 34 - 31
 32 - 31

14 - 11 / 140.3
 12 - 21
 24 - 21
 22 - 31
 34 - 31
 32 - 31

14 - 11 / 140.5
 12 - 21 / 76.2
 24 - 21 / 76.2
 22 - 31
 34 - 31
 32 - 31





Indl. Modification	Date	Name	Scale
07 FINAL AS BUILT	07.01.20	GUO	Approved

Drawn	12.09.2013	LAL	Client	KESH
Checked	12.09.2013	HOH	Plant	Komani HPP
Approved		LH-DE	Project N°	H310.128102.06
			Date	07.01.2020

Internal N°	=0CKN10GH001	0CKN01_CD
Drawing N°	+0CKN01	
Indl. Sheet	76	A3
from	145	



CIRCUIT DIAGRAM
COMMON AUXILIARY BOARD 1
 125V DC DIGITAL OUTPUTS

Incl. Modification	Date	Name	Scale
07 FINAL AS BUILT	07.01.20	GUO	Approved

Drawn	12.09.2013	LAL	Client	KESH
Checked	12.09.2013	HOH	Plant	Komani HPP
Approved		LH-DE	Project N°	H310.128102.05
			Date	07.01.2020



CIRCUIT DIAGRAM
COMMON AUXILIARY BOARD 1
 125V DC DIGITAL OUTPUTS

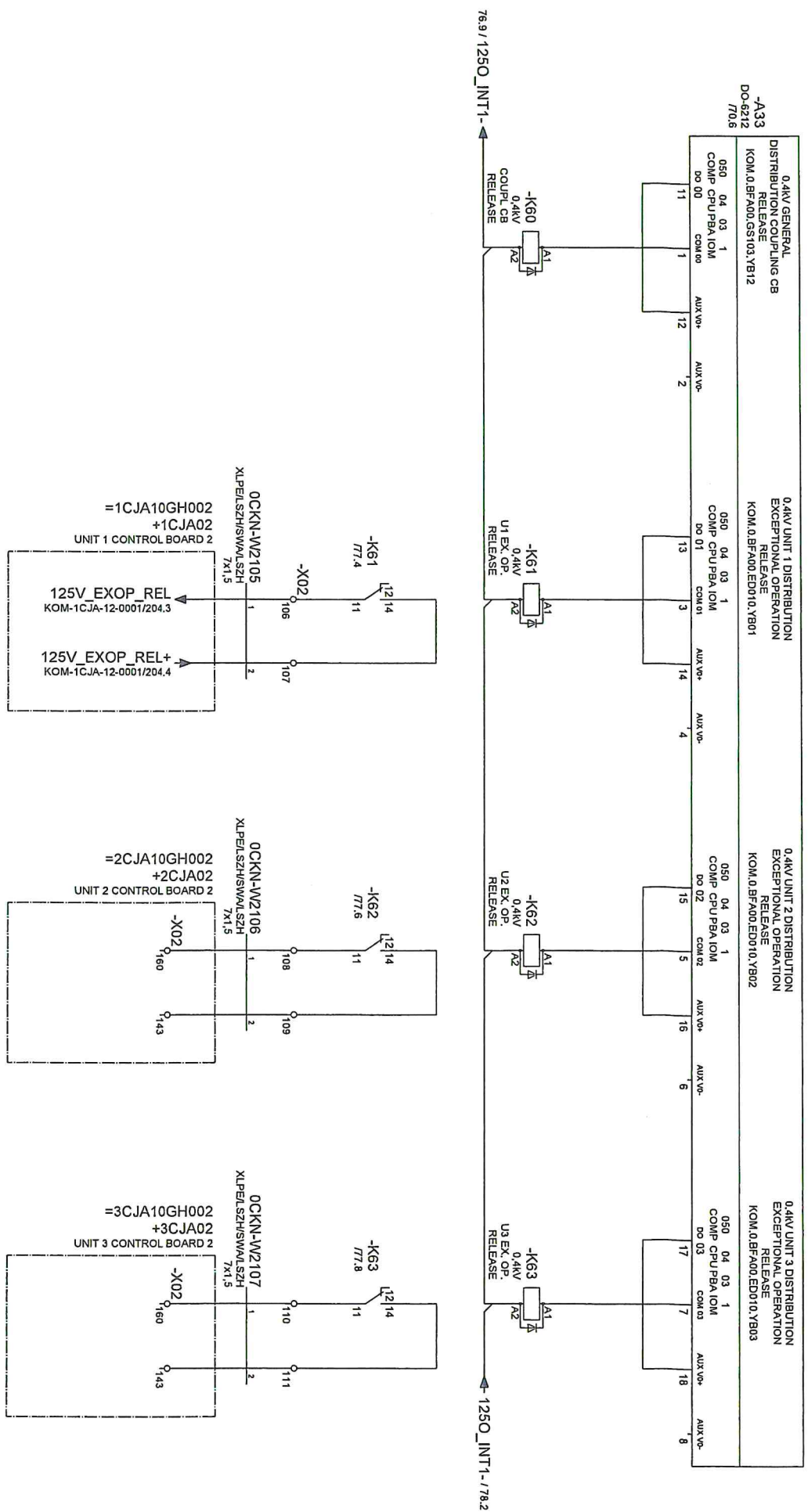
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Drawing N°	KOM-0CKN-12-0001	
Incl. Sheet	07	77
from		145
		A3

- 14 --- 11 /141.4
- 12 --- 11 /177.4
- 24 --- 21
- 22 --- 21
- 34 --- 31
- 32 --- 31

- 14 --- 11 /177.4
- 12 --- 11 /77.4
- 24 --- 21
- 22 --- 21
- 34 --- 31
- 32 --- 31

- 14 --- 11 /77.6
- 12 --- 11 /77.6
- 24 --- 21
- 22 --- 21
- 34 --- 31
- 32 --- 31

- 14 --- 11 /77.8
- 12 --- 11 /77.8
- 24 --- 21
- 22 --- 21
- 34 --- 31
- 32 --- 31



Note protection ISO 16016

A3_Hydro_R01

Incl. Modification

07 FINAL AS BUILT

07.01.20 Date

GUO Name

Scale

Drawn

Checked

Approved

LAL Client

HOH Plant

LH-DE Project N°

Date

12.09.2013

12.09.2013

07.01.2020

KESH

Komani: HPP

H310.128102.05

07.01.2020

Scale

Scale

Scale

Scale

Scale

Scale

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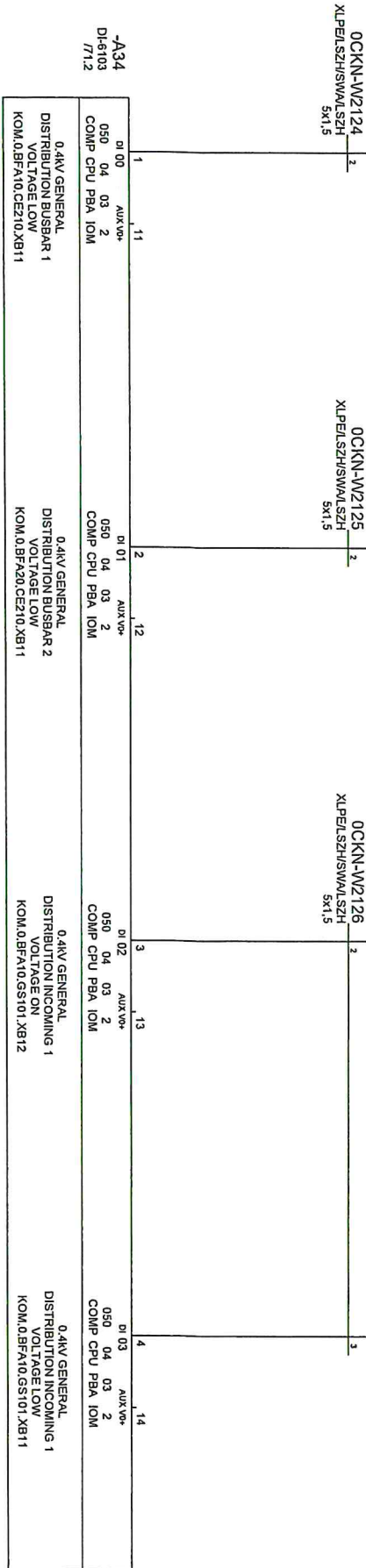
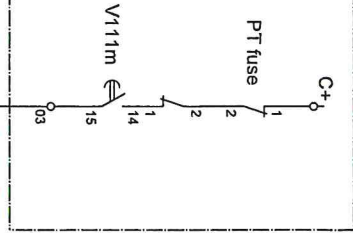
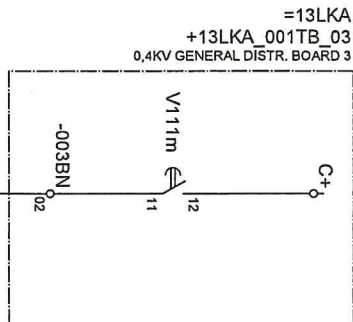
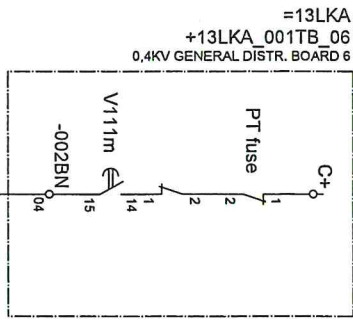
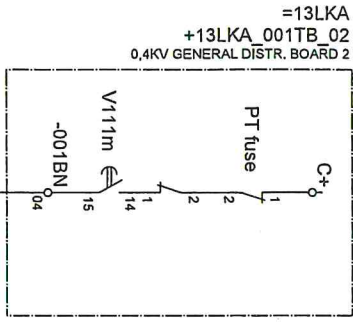
Scale

Scale

Scale

Scale

1 2 3 4 5 6 7 8 9



**CIRCUIT DIAGRAM
 COMMON AUXILIARY BOARD 1**

125V DC DIGITAL INPUTS

Internal N°
 =OCKN10GH001
 +OCKN01

0CKN01_CD

Indl. Sheet 79 A3
 from 145

Note protection ISO 16016

Hydra_R01

07 FINAL AS BUILT
 Indl. Modification

07.01.20
 Date

GUO
 Name

Approved
 Scale

12.09.2013
 Date

HOH
 Date

Project N°
 Date

H310.128102.06
 Date

KESH
 Client

Komant HPP
 Plant

07.01.2020
 Date

Client

Plant

Project N°

Date

Client

Plant

Project N°

Date

Client

Plant

Project N°

Date

Client

Plant

Project N°

Date

Client

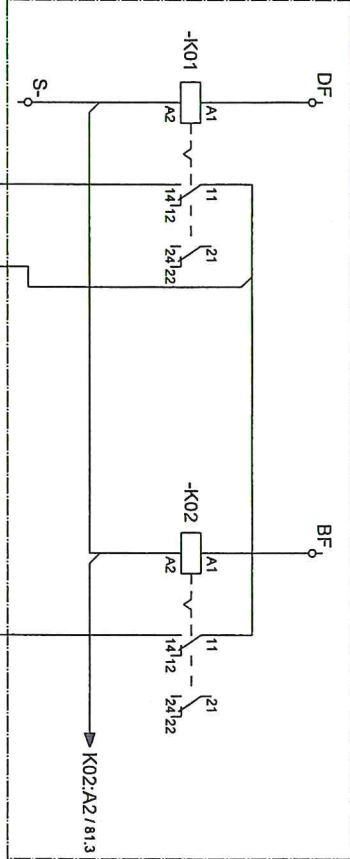
Plant

Project N°

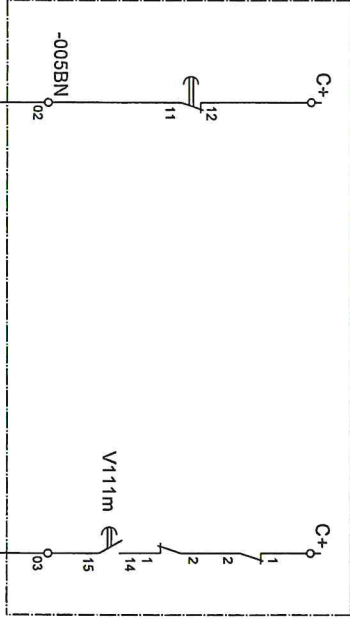
Date

1 2 3 4 5 6 7 8 9

=13LKA
 +13LKA_001TB_01
 0,4KV GENERAL DISTR. BOARD 1



=13LKA
 +13LKA_001TB_05
 0,4KV GENERAL DISTR. BOARD 5



00CKN-W02127
 XLPBLSZHSWMLSZH
 5x1,5

00CKN-W02128
 XLPBLSZHSWMLSZH
 5x1,5

-A34
 D16T03
 7/1,2

0,4KV GENERAL
 DISTRIBUTION COMMON
 DISTR. FAULT
 KOM.0.BF.A00.ED010.XM01

0,4KV GENERAL
 DISTRIBUTION METERING PT
 FUSE TRIPPED
 KOM.0.BF.A00.ED010.XM02

0,4KV GENERAL
 DISTRIBUTION INCOMING 2
 VOLTAGE ON
 KOM.0.BF.A20.GS102.XB12

0,4KV GENERAL
 DISTRIBUTION INCOMING 2
 VOLTAGE LOW
 KOM.0.BF.A20.GS102.XB11



**CIRCUIT DIAGRAM
 COMMON AUXILIARY BOARD 1**
 125V DC DIGITAL INPUTS

Internal N°

Drawing N°

KOM-00CKN-12-0001

00CKN10GH001

+00CKN01

Indl. Sheet

07 from

80

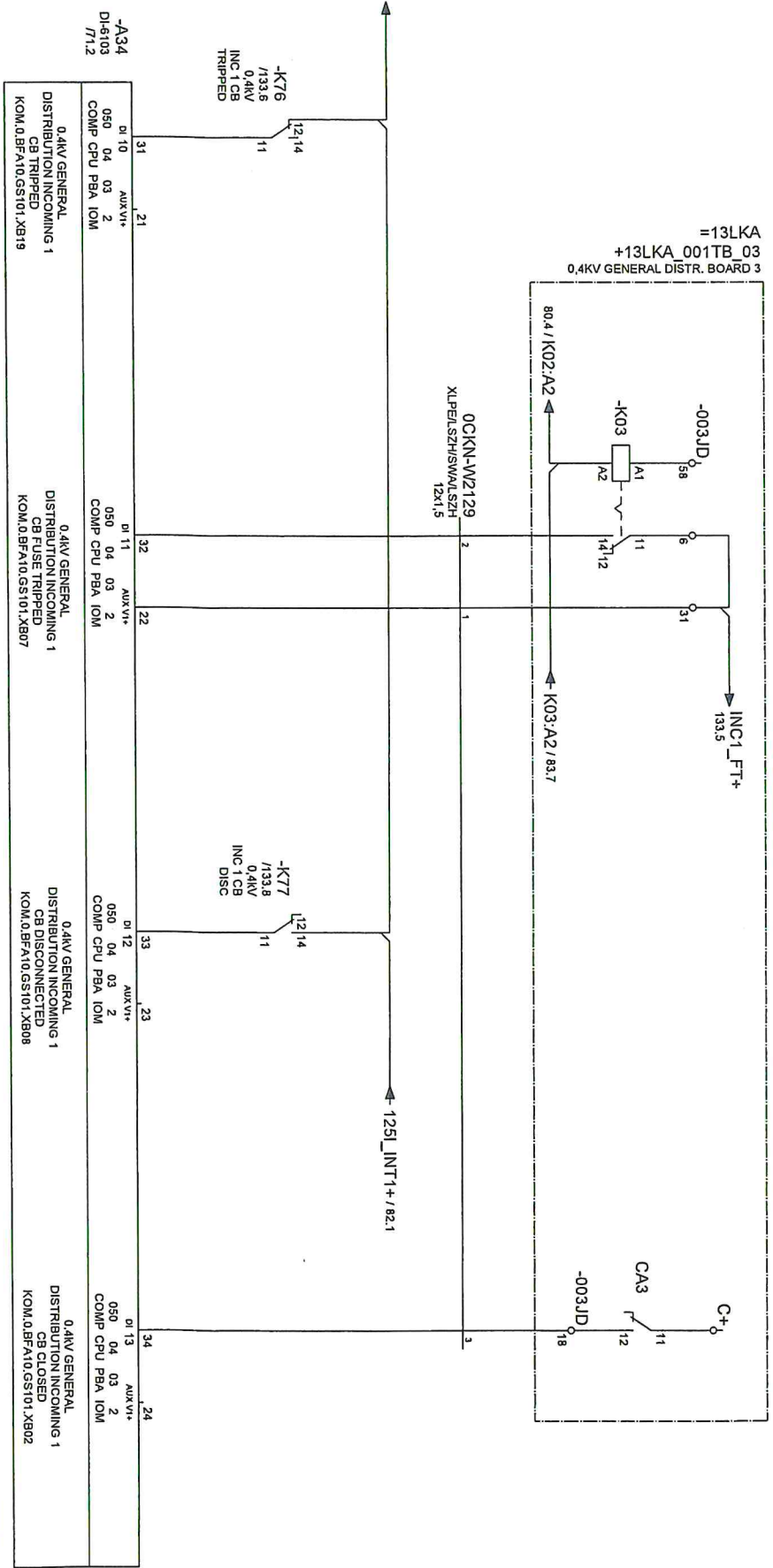
A3

00CKN01_CD

Note protection ISO 16016

Ind. Modification	Date	Name	Scale	Drawn	Checked	LAL	Client	Plant	Project N°	Project Date	Internal N°	Drawing N°	Ind. Sheet
07	07.01.20	GUO		12.09.2013	12.09.2013	HOH	KESH	Komani HPP	H310.128102.06	07.01.2020	-0CKN10SH001	+0CKN01	81
						LH-DE							145
													A3

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ANDRITZ
Hydro

CIRCUIT DIAGRAM
COMMON AUXILIARY BOARD 1
125V DC DIGITAL INPUTS

Internal N°: -0CKN10SH001
 Drawing N°: +0CKN01
 Ind. Sheet: 81
 from: 145
 A3

Note protection ISO 16016

A3_Hydro_R01

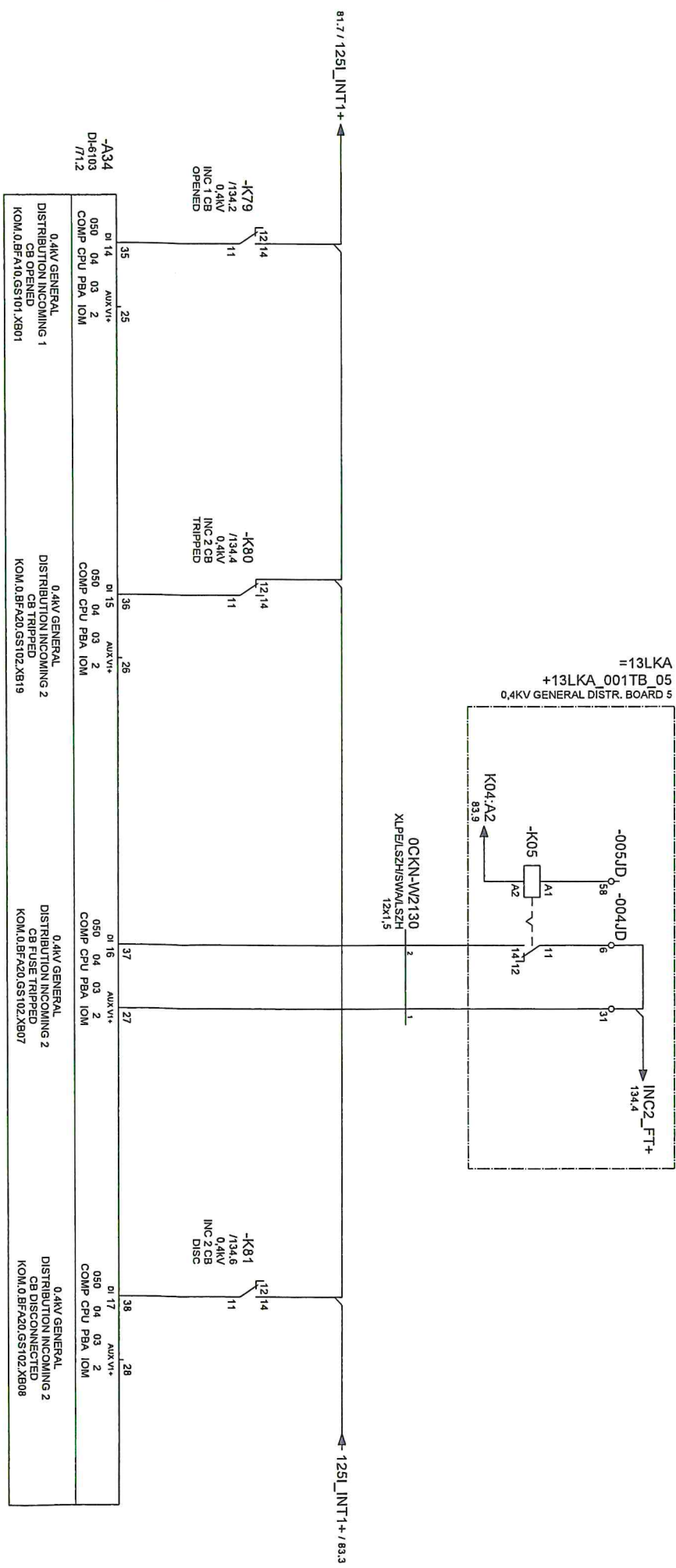
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				Checked	12.09.2013	HOH	Plant	Komani HPP
				Approved		LH-DE	Project N°	H310.128102.06
							Date	07.01.2020

ANDRITZ
Hydro

CIRCUIT DIAGRAM
COMMON AUXILIARY BOARD 1
 125V DC DIGITAL INPUTS

Internal N°	-OCHKN10GH001	OCHKN01_CD
Drawing N°	+OCHKN01	
Ind. Sheet	07	82
from	145	A3

1 2 3 4 5 6 7 8 9



Note protection ISO 16016

Hydro_R01

07 FINAL AS BUILT
 07.01.20
 Date

GUO
 Name

12.09.2013
 Drawn

LAL
 Client

HOH
 Plant

LH-DE
 Project N°

07.01.2020
 Date

KESH
 Komani HPP

H310.128102.06

CIRCUIT DIAGRAM
 COMMON AUXILIARY BOARD 1

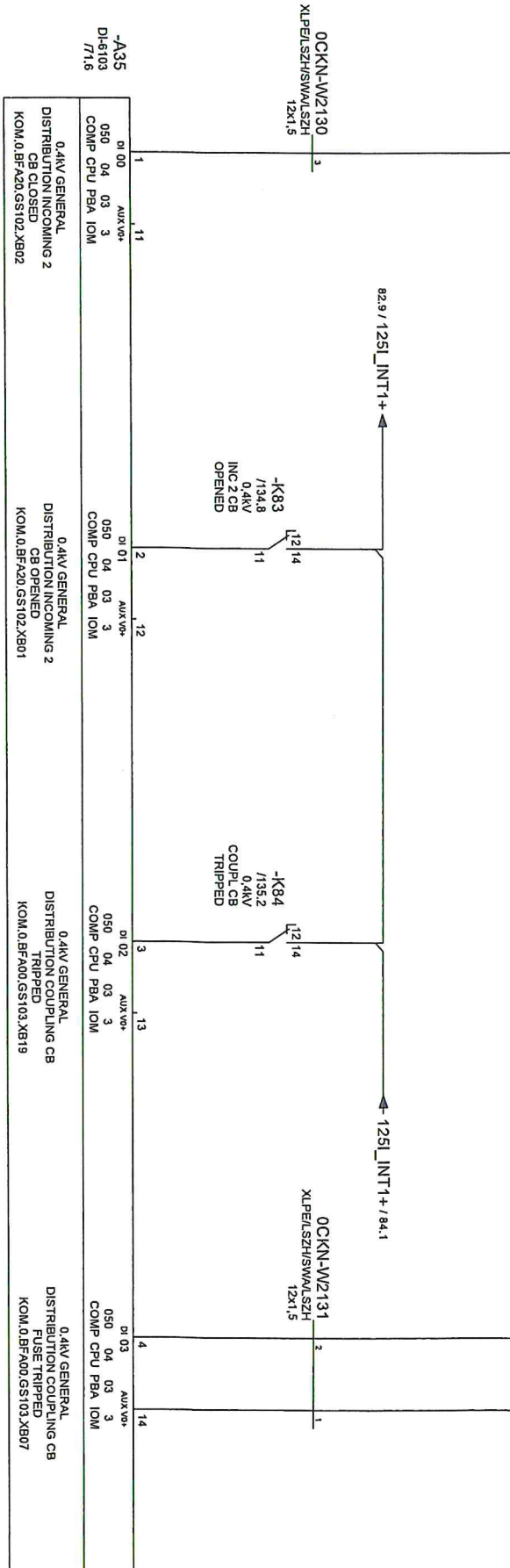
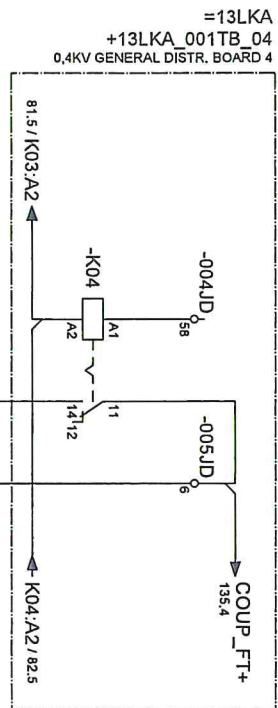
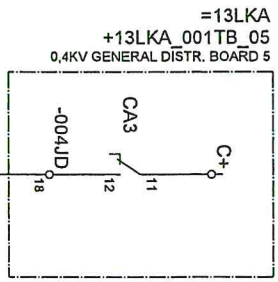
125V DC DIGITAL INPUTS

Internal N°
 =OCHKN10GH001

Drawing N°
 +OCHKN01

Incl. Sheet
 07 from 83
 145 A3

1 2 3 4 5 6 7 8 9



di 00	AUX.vp	050	04	03	3
COMP CPU PBA IOM					
0,4KV GENERAL DISTRIBUTION INCOMING 2					
CB CLOSED					
KOM.O.BFA00.GS102.XB02					

di 01	AUX.vp	050	04	03	3
COMP CPU PBA IOM					
0,4KV GENERAL DISTRIBUTION INCOMING 2					
CB OPENED					
KOM.O.BFA00.GS102.XB01					

di 02	AUX.vp	050	04	03	3
COMP CPU PBA IOM					
0,4KV GENERAL DISTRIBUTION TRIPPED					
KOM.O.BFA00.GS103.XB19					

di 03	AUX.vp	050	04	03	3
COMP CPU PBA IOM					
0,4KV GENERAL DISTRIBUTION COUPLING CB					
FUSE TRIPPED					
KOM.O.BFA00.GS103.XB07					

Note protection ISO 16016

Hydro_R01

Ind./Modification	Date	Name	Scale
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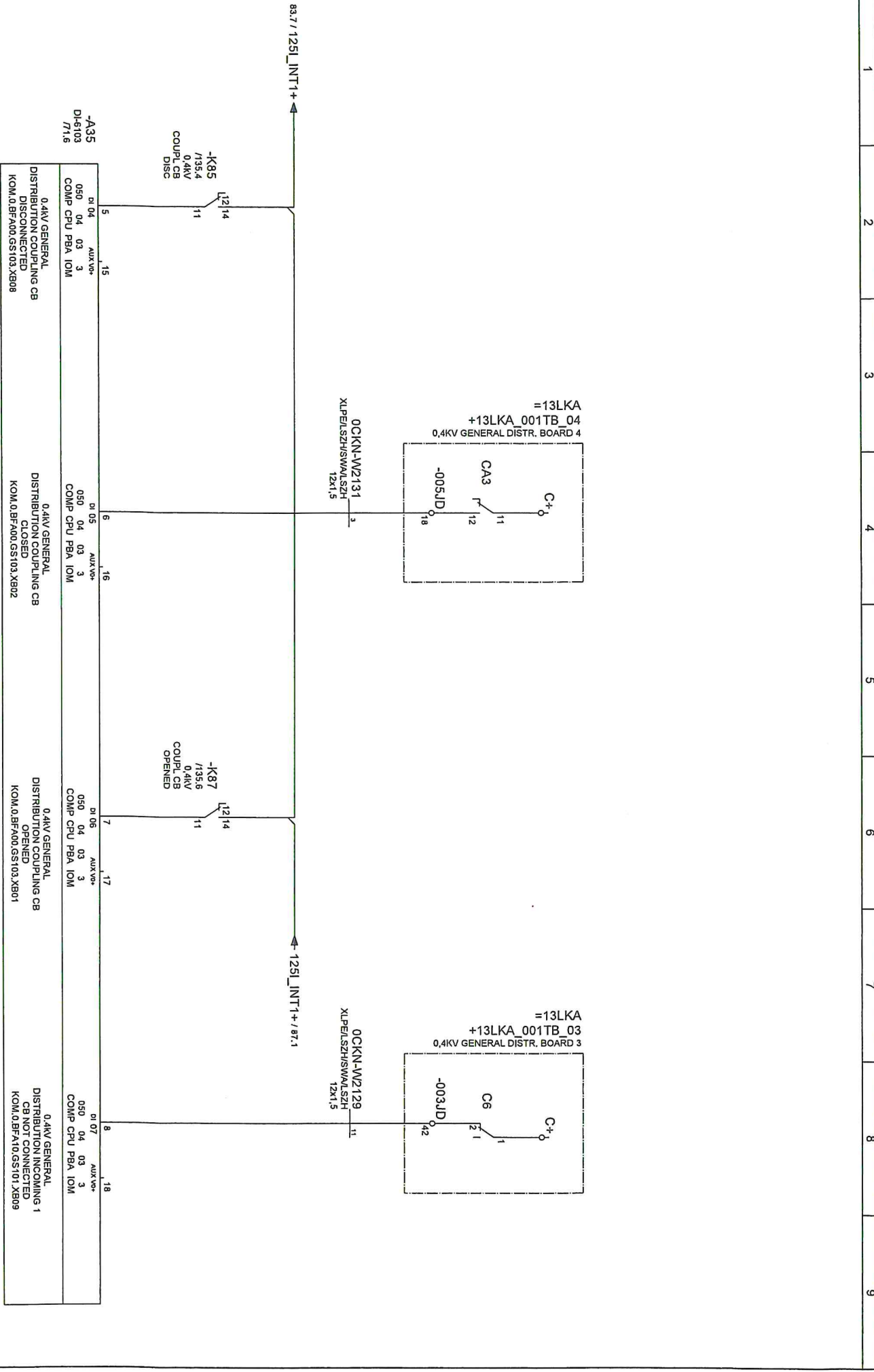
Drawn	12.09.2013	LAL	Client	KESH
Checked	12.09.2013	HOH	Plant	Komani HPP
Approved		LH-DE	Project N°	H310.128102.06
			Date	07.01.2020

ANDRITZ
Hydro

CIRCUIT DIAGRAM
COMMON AUXILIARY BOARD 1

125V DC DIGITAL INPUTS

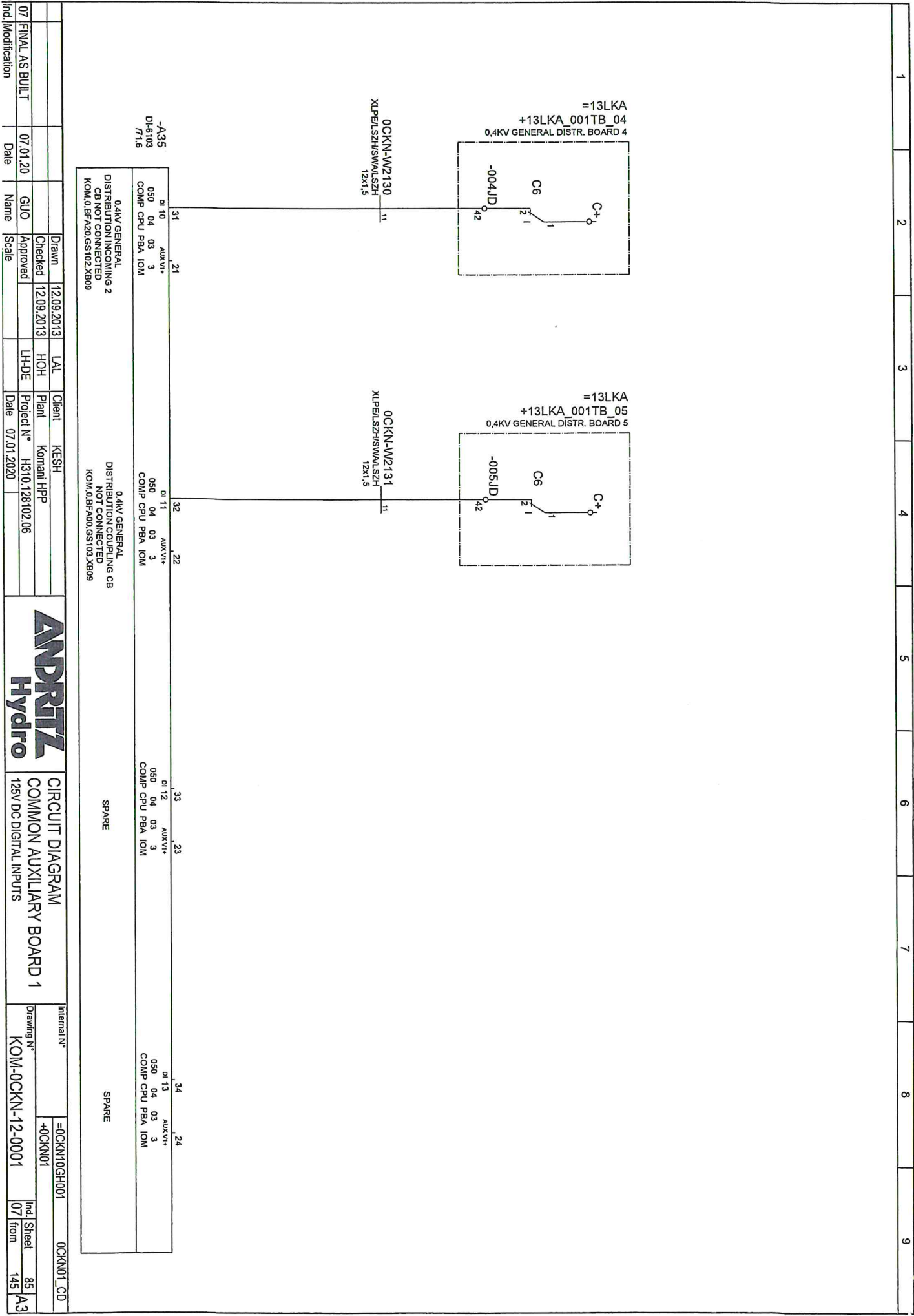
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Drawing N°	KOM-0CKN-12-0001	
Ind. Sheet	84	
from	145	



1 2 3 4 5 6 7 8 9

Note protection ISO 16016

Hydro_R01



1	2	3	4	5	6	7	8	9
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07	FINAL AS BUILT	07.01.20	GUO	Checked	12.09.2013	LAL	Client	KESH
				Approved		HOH	Plant	Komani HPP
						LH-DE	Project N°	H310.128102.06
							Date	07.01.2020

0.4KV GENERAL DISTRIBUTION INCOMING 2 C6 NOT CONNECTED KOM.0.BFA20.GS102.XB09		0.4KV GENERAL DISTRIBUTION COUPLING CB NOT CONNECTED KOM.0.BFA00.GS103.XB09	
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di 10	AUXV+	di 11	AUXV+	di 12	AUXV+	di 13	AUXV+
050	04	050	04	050	04	050	04
03	3	03	3	03	3	03	3
COMP CPU PBA IOM		COMP CPU PBA IOM		COMP CPU PBA IOM		COMP CPU PBA IOM	

SPARE		SPARE	
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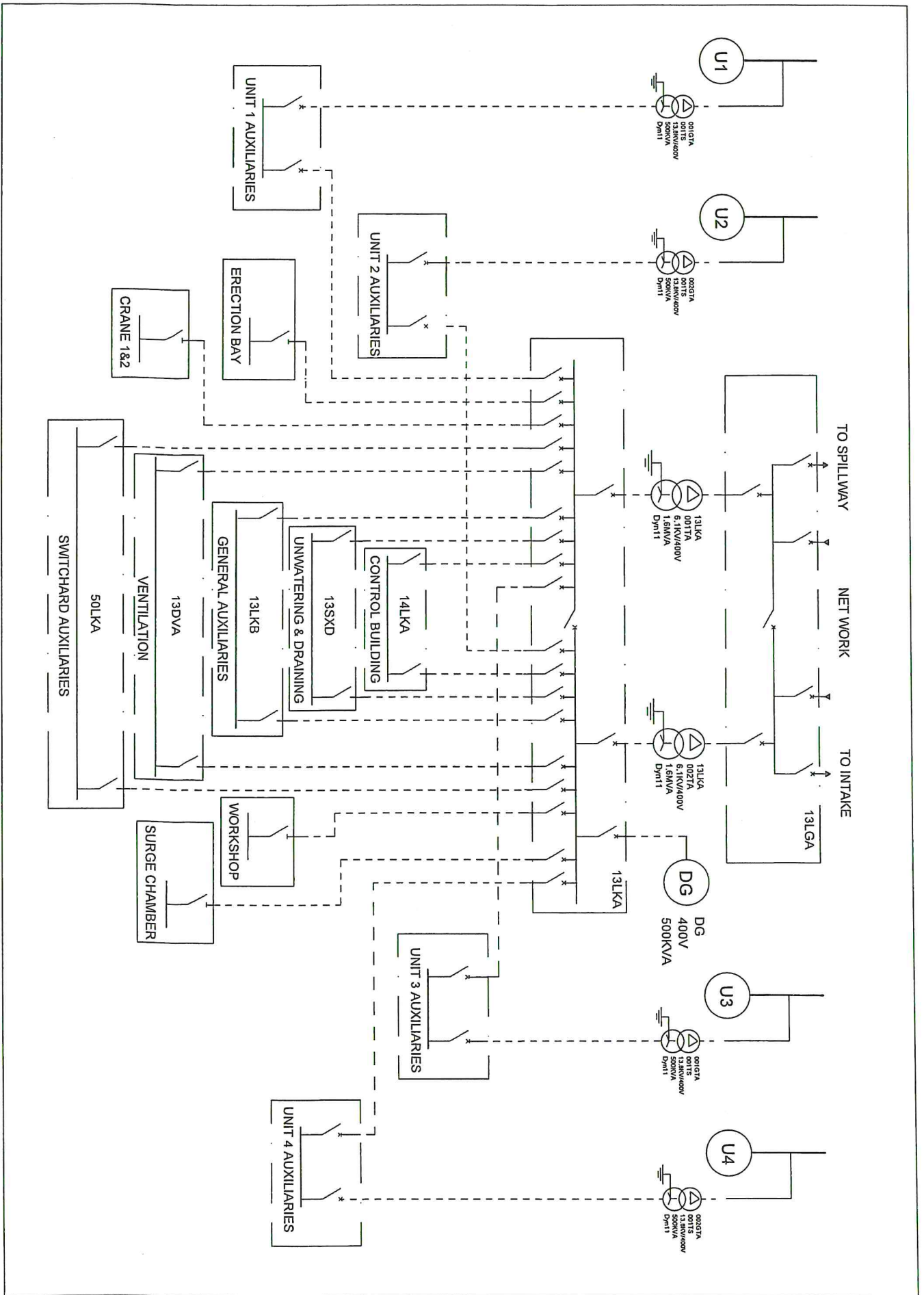
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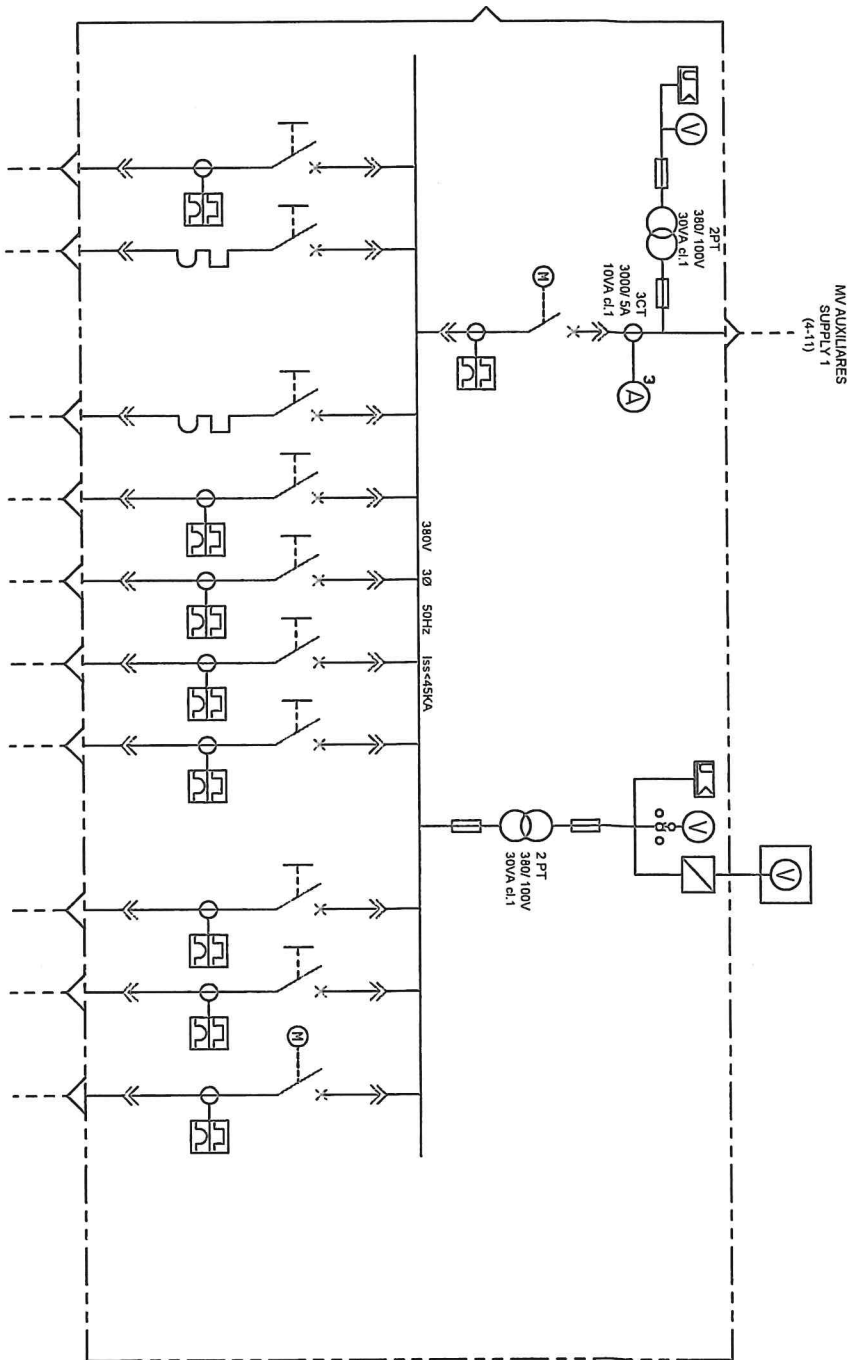
SPARE		SPARE	
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ANDRITZ
Hydro

CIRCUIT DIAGRAM
COMMON AUXILIARY BOARD 1
 125V/DC DIGITAL INPUTS

Internal N°	=OCKN10GH001	OCKN01_CD
Drawing N°	+OCKN01	
Incl. Sheet	07	85
from		145
		A3





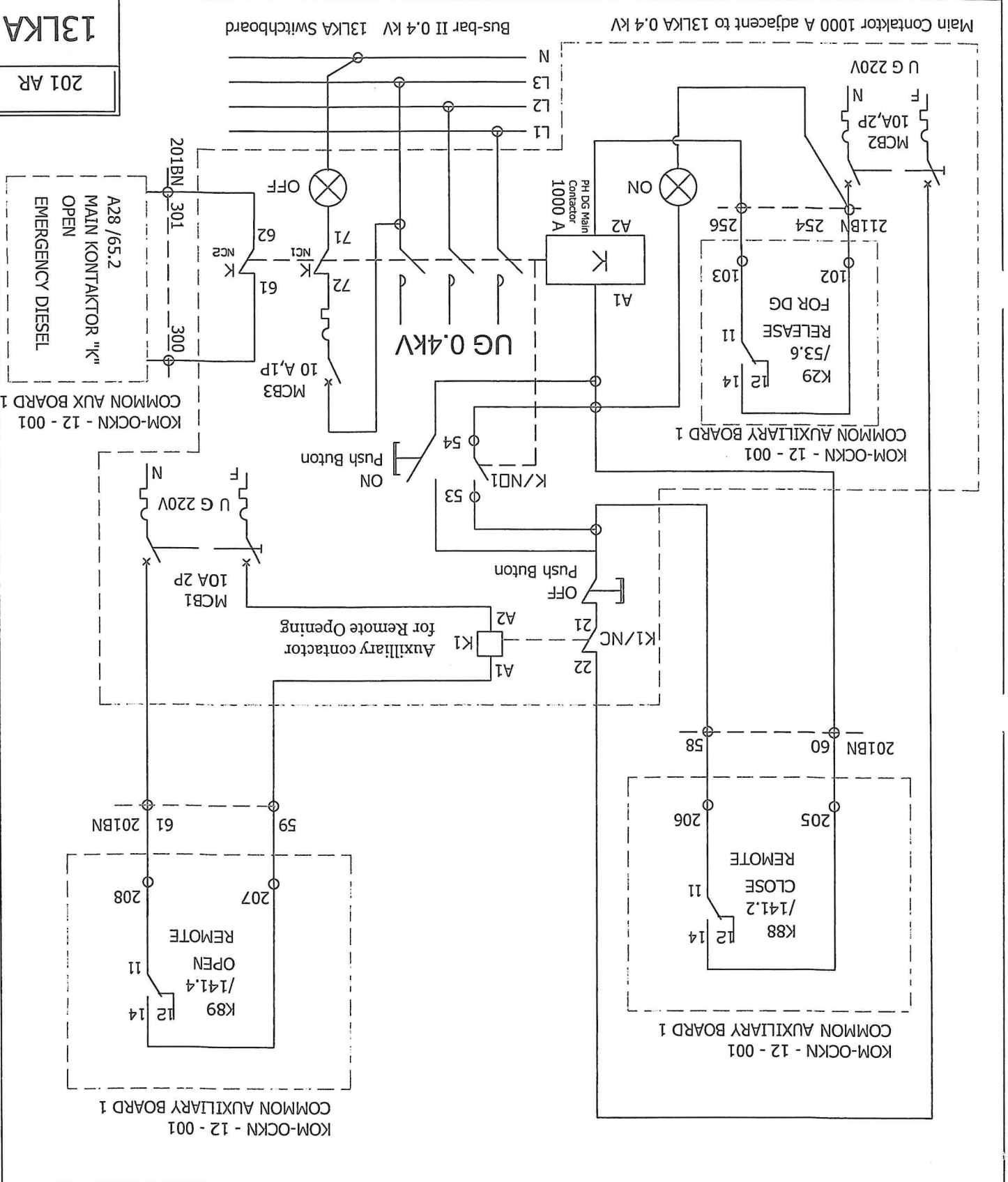
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POWER(KVA)		300	50	1600	135	527	283	500					
FUNCTIONAL MARK		14 LKA 002JD	15LKA 001JD	13 LKA 004JD	13LKA 007JD	13SXD 002JD	13 DVA 002JD	13 LKB 002JD					
DESIGNATION													
CABLE SECTION		3X150	3X150	3X4X500	3X150		3X150	3X150					
LENGTH													
		CONTROL BUILDING AUXILIARIES 2	WORKSHOP	L.V SUPPLY 2	SURGE CHAMBER	UNWATERING AND DRAINING	VENTILATION 2	GENERAL AUXILIARIES 2	SWITCHYARD AUXILIARIES 2		GENERATING SFT AUXILIARIES U2	GENERATING SFT AUXILIARIES U4	DIESEL GENERATOR

ANDRITZ HYDRO

PROJECT: Koman HPP rehabilitation and installation of a new CMS

Existing project Designed by Koman HPP	Built January 2007	First revision January 2009	Approved KESH Sh.a.	Andritz Hydro Revision 2018	Sheet 2/2
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Ref. PHDG500KVA Power House Diesel Generator 500 KVA - Main Contactor CONTROL DIAGRAM



13LKA
201 AR

A28 /65.2
MAIN KONTAKTOR "K"
OPEN
EMERGENCY DIESEL
KOM-OCKN - 12 - 001
COMMON AUX BOARD 1

KOM-OCKN - 12 - 001
COMMON AUXILIARY BOARD 1

KOM-OCKN - 12 - 001
COMMON AUXILIARY BOARD 1

KOM-OCKN - 12 - 001
COMMON AUXILIARY BOARD 1