DOKUMETACE SKUTEČNÉHO PROVEDENÍ

Č.změny	Text změny - odůvodnění	Datum	Podpis

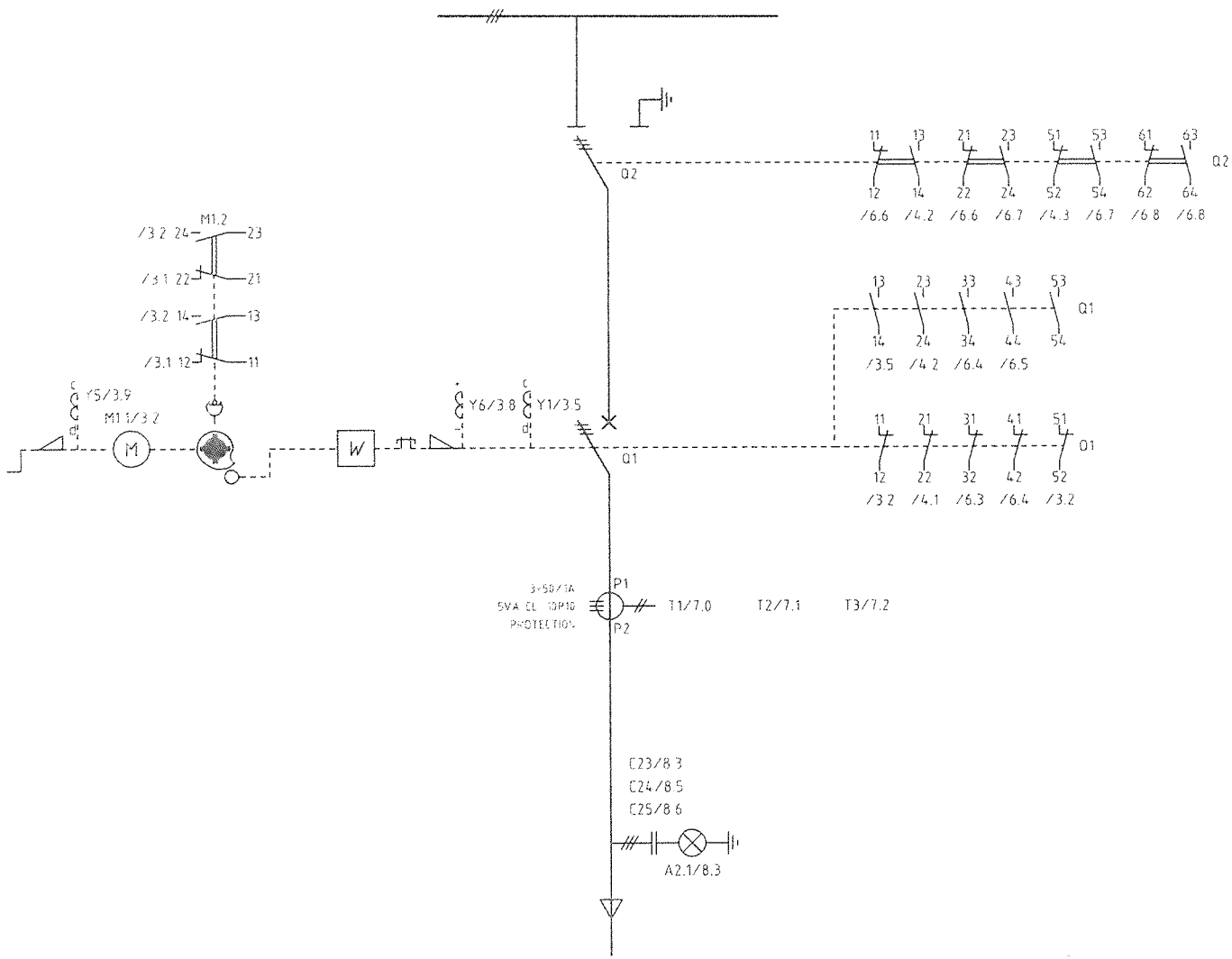
SUDOP PRAHA a.s.

Olšanská 1a
130 80 Praha 3
Česká republika
tel.: 224 22 71 68
fax: 224 23 03 16
faxmodem: 2670 943 64
E-mail: praha@sudop.cz

OBJEDNATEL	Sprava železniční dopravní cesty, s.o. a České dráhy a.s. v zastoupení: SŽDC s.o., Stavení správa Olomouc, Nerudova 1, 772 58 Olomouc		
STŘEDISKO	208 ELEKTROTECHNIKY, TRAKCE, SDĚLOVACÍ A ZABEZPEČOVACÍ TECHNIKY	VEDOUCÍ STŘEDISKA ING. MARTIN RAIBR	GENERÁLNÍ ŘEDITEL ING. JOSEF FIDLER
ODPOVĚDNÝ PROJEKTANT STAVBY	ODPOVĚDNÝ PROJ. OBJ., PS	NAVRHL, VYPRACOVAL	KONTROLOVAL
ING.MONIKA CHRENKOVÁ MCO a.s.	ING. PETR VEČEŘ	ING. PETR VEČEŘ	ING. KAREL KREMLÁČEK
KRAJ OLOMOUCKÝ	MÚ/OÚ/POVĚŘENÁ OBEC ŠUMPERK	ÚČEL	DSP
Elektrizace trati Zábřeh - Šumperk PS 04-09-01 Žst. Šumperk, TM Šumperk, technologie - rozvaděč 22 kV		DATUM	04/2010
		MĚŘÍTKO	———
		FORMÁTY	A4
Obvodové schéma - rozvaděč 22 kV - vývod na transformátor TVS1		ČÁST D.3.3	PŘÍL. 9

TVS1

VLASTNI SPOTREBA 1



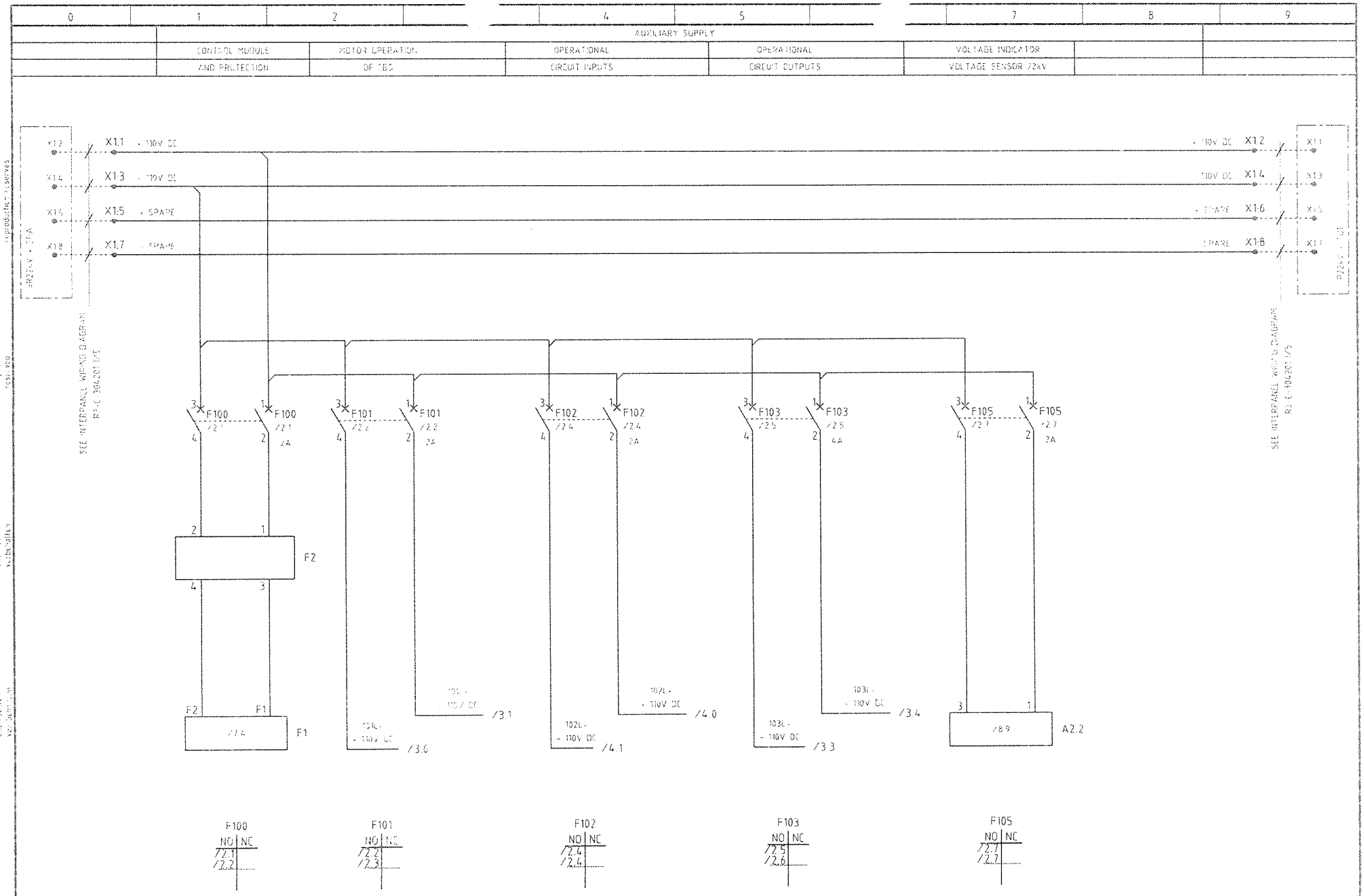
----- WIRING TO BE FITTED BY EATON HOLEC
-·-·- WIRING NOT TO BE FITTED BY EATON HOLEC
—+— WIRING YELLOW/GREEN

PANEL WIRING FOR C.T. CIRCUIT 2.5mm² GREY

OTHER CIRCUITS 1.5mm² GREY

NOTE DRAWN
Q1 - OPEN / WITH SPRING CHARGED
Q2 - IN THE OPERATING POSITION

SINGLE LINE MR SUMPERK, SWITCHBOARD 22kV SIGNALBAU - CZECH REPUBLIC	Project 304201 Inst. type SVS-08	EATON | Holec Eaton Holec Medium Voltage, part of Eaton Electric B.V.	drawing nr R3-C-304201 VI sheet 1 / 14 sh
		dr'n 06.05.2009 L.W. chkd 06.05.2009 V. THIEL appr 06.05.2009 DE JONG	Ref. Replaces


0
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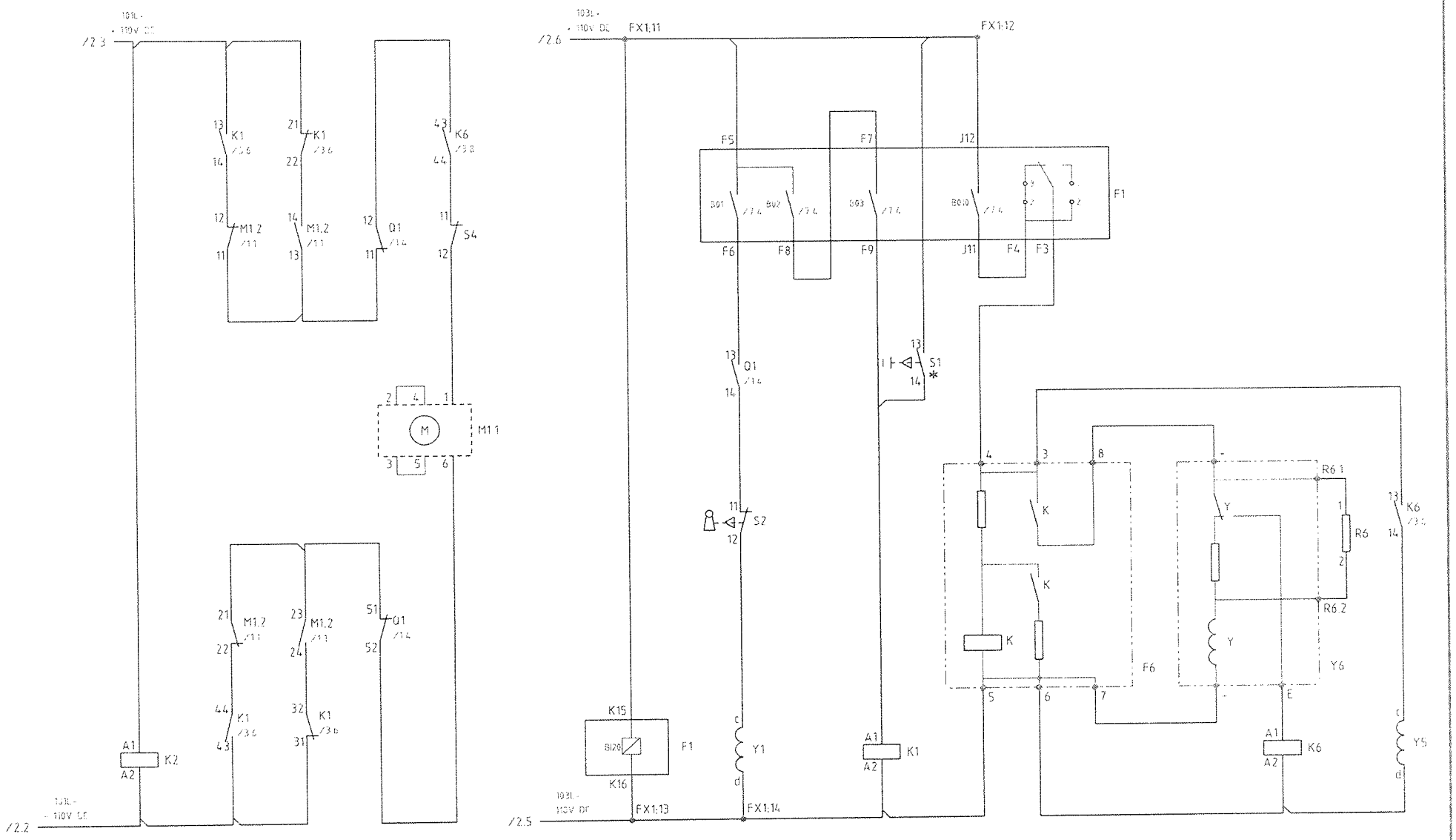
AUXILIARY SUPPLY
CONTROL MODULE AND PROTECTION
MOTOR OPERATION OF TBS
OPERATIONAL CIRCUIT INPUTS
OPERATIONAL CIRCUIT OUTPUTS
VOLTAGE INDICATOR VOLTAGE SENSOR 22kV
X1.1 - 110V DC
X1.3 - 110V DC
X1.5 - SPARE
X1.7 - SPARE
- 110V DC X1.2
110V DC X1.4
- SPARE X1.6
SPARE X1.8
SEE INTERPANEL WIRING DIAGRAM R3-C-304201 1/5
F100 /2.1 2A
F101 /2.2 2A
F102 /2.4 2A
F103 /2.6 4A
F105 /2.7 2A
F2
F1
/1.4
/3.0
/3.1
/4.1
/4.0
/3.3
/3.4
/8.9
A2.2
F100 NO NC /2.1 /2.2
F101 NO NC /2.2 /2.3
F102 NO NC /2.4 /2.4
F103 NO NC /2.5 /2.6
F105 NO NC /2.7 /2.7
CIRCUIT DIAGRAM
MR SUMPERK, SWITCHBOARD 22kV
SIGNALBAU - CZECH REPUBLIC
Project 304201
Inst. type: SVS-08
EATON | Holec
Eaton Holec Medium Voltage, part of Eaton Electric B.V.
drw 08.05.2009 L.W.
chec 08.05.2009 V. THIEL
appr 08.05.2009 DE JONG
drawing nr R3-C-304201 VI
sheet 2
14
Replaces
rev. description date by

0	1	2		4	5	6	7	8	9
AUX. VOLTAGE	CLOSING CIRCUIT EBC 01			VOLTAGE DX	TRIP CIRCUIT	CLOSING CIRCUIT	01 OPENED / IRF	NO VOLTAGE RELEASE 01	LOCKING COIL
WATCH DOG	SPRING-CHARGING AND CLOSING MOTOR			FOR OUTPUTS	01 OPEN	01 CLOSE	UNDERVOLTAGE TRIGGER		



A	10-REF 1150	19.06.2009	LS
rev	rev. description	date	by

CIRCUIT DIAGRAM

MR SUMPERK, SWITCHBOARD 22kV
SIGNALBAU - CZECH REPUBLIC

Project: 304201
Inst. type: SVS-08

EATON | Holec
Eaton Holec Medium Voltage, part of Eaton Electric B.V.

drw	08.05.2009	L.W.
chec	19.06.2009	V. THIEL
appr	19.06.2009	CE JONG
Ref		

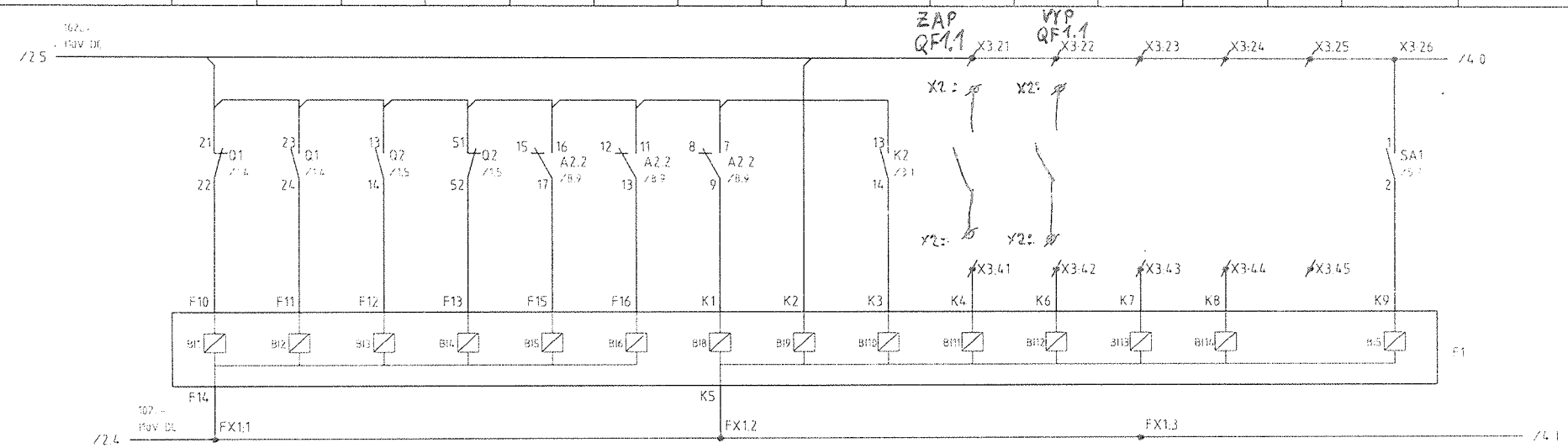
drawing nr
R3-C-304201 VI

sheet 3
A
14 sh

0	1	2	4	5	7	8	9

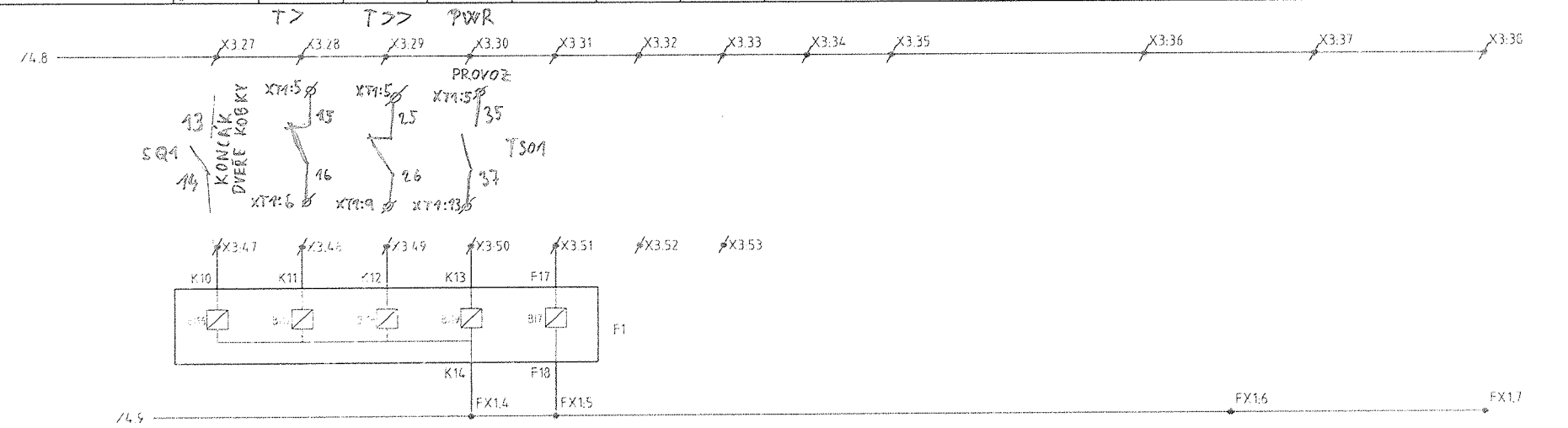
INPUTS PROTECTION RELAY

	CBS	CBS	DISCONNECTOR	DISCONNECTOR	22KV	22KV	AUX. VOLTAGE	VOLTAGE OK	AUX. VOLTAGE	SECONDARY	SECONDARY	SPARE	SPARE		INTERLOCKING TO	
	OPENED	CLOSED	EARTHED	IN OPERATION	NO VOLTAGE	LIVE VOLTAGE	LOST	FOR INPUTS	LOST	LV MCB	LV MCB				OPEN CBS	
									FOR OPERATION	OPENED	CLOSED					



INPUTS PROTECTION RELAY

	SPARE	TEMPER. PROTECTION TV31			SPARE	SPARE	SPARE
	DOOR	HIGH	DANGEROUS	AUX. VOLTAGE			
	OPEN	TEMPERATURE	TEMPERATURE	LOST			



Rev	Rev. description	Date	by

CIRCUIT DIAGRAM

MR SUMPERK, SWITCHBOARD 22kV
SIGNALBAU - CZECH REPUBLIC

Project: 304201
Inst. type: SV5-06

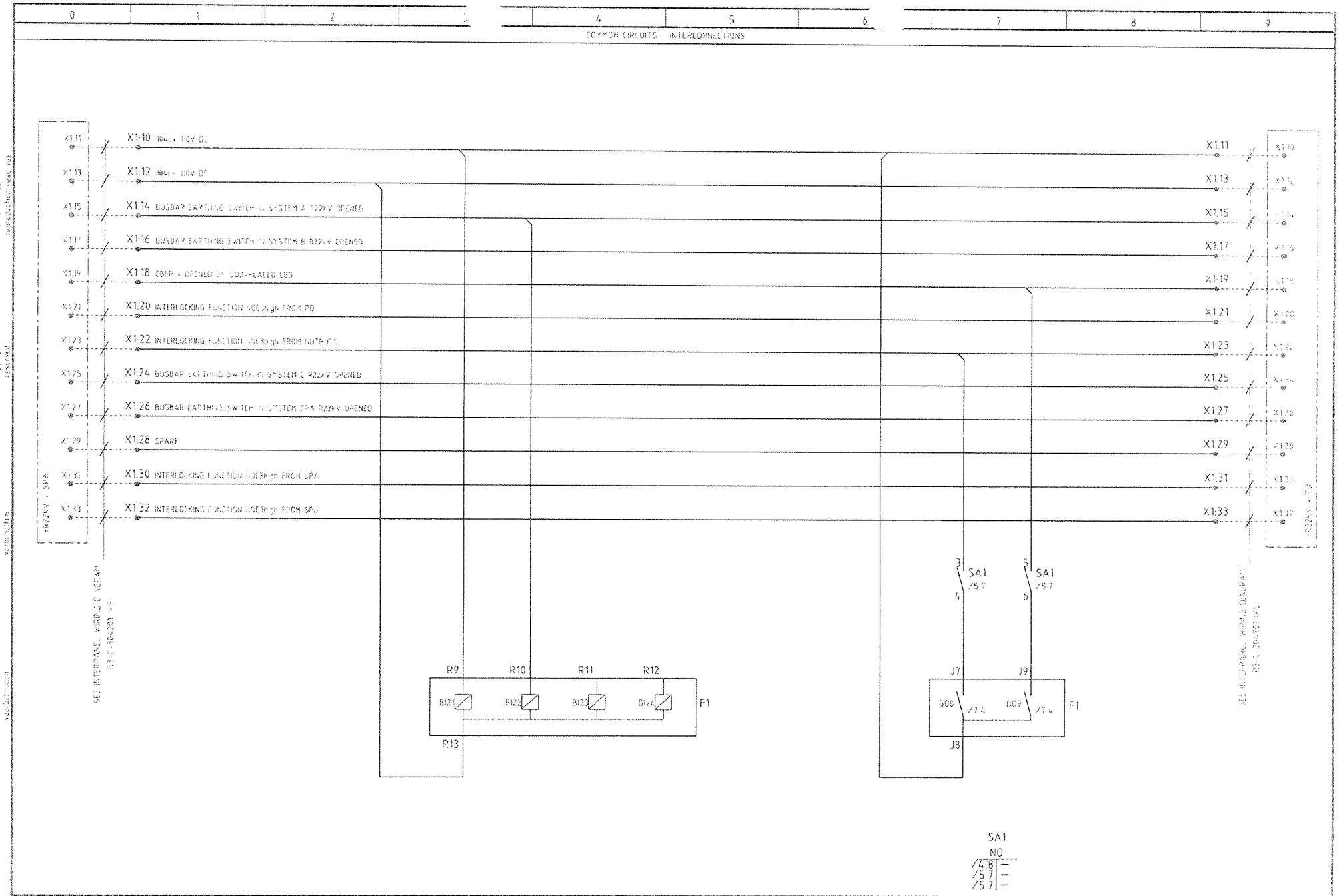
EATON | Holec
Eaton Holec Medium Voltage, part of Eaton Electric B.V.

drw.	08.05.2009	E.W.
chec	08.05.2009	V. THIEL
appr	08.05.2009	E.E. JONG
Ref		

Drawing no: R3-C-304201 VI

Sheet 4 / 14

Replaces:



rev	rev. description	date	by

CIRCUIT DIAGRAM

MR SUMPERK, SWITCHBOARD 22kV
SIGNALBAU - CZECH REPUBLIC

Project 304201
Inst. type SVS-08

EATON | Holec
Eaton Holec Medium Voltage, part of Eaton Electric B.V.

dr.w.	08 05 2009	L.W.
chec	08 05 2009	V. THIEL
appr	08 05 2009	C.F. JONG

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drawing nr
R3-C-304201 VI

Replaces

sheet 5
14 sh.

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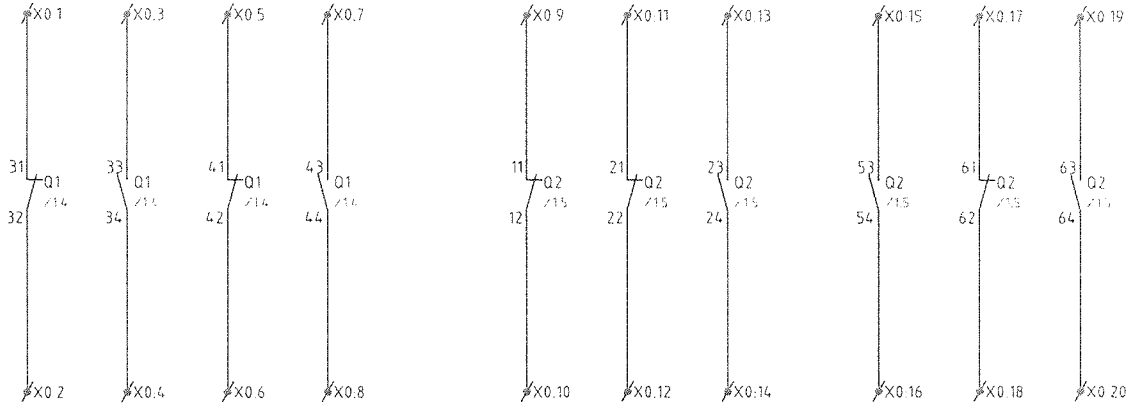
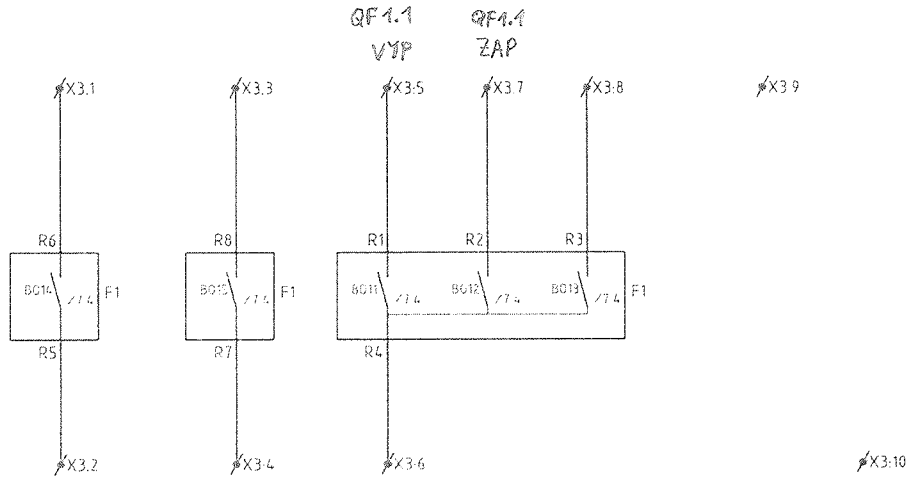
0	1	2		4	5		7	8	9

AUXILIARY CONTACTS

	CIRCUIT-BREAKER	CHANGEOVER SWITCH		
		EARTHING POSITION	OPERATING POSITION	



PROTECTION RELAY					SPARE
SPARE	SPARE	SPARE	SPARE	SPARE	



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CIRCUIT DIAGRAM

MP SUMPERK, SWITCHBOARD 22kV

SIGNALBAU - CZECH REPUBLIC

Project: 304201

Inst. type: SVS-98

EATON | Holec

Eaton Holec Medium Voltage, part of Eaton Electric B.V.

d.w	08.05.2009	L.W.
chec	08.05.2009	V. THIEL
appr	08.05.2009	GF. JONG

Ref.

drawing nr R3-C-304201 VI

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14 sh.

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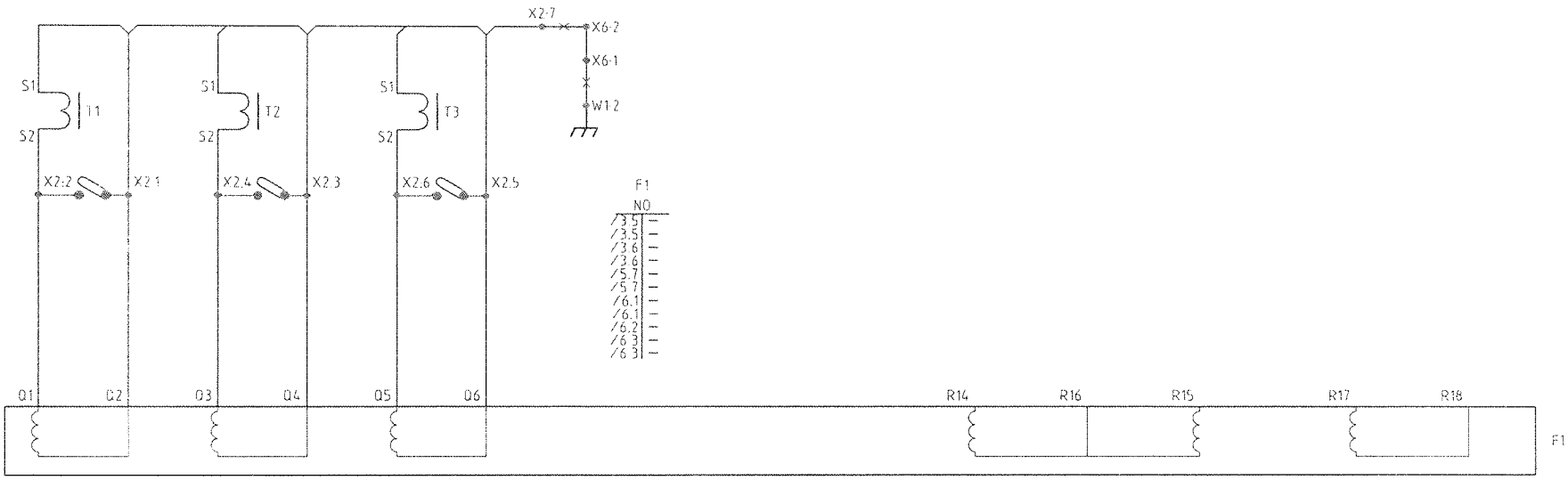
0	1	2	4	5	7	8	9
CURRENT TRANSFORMER CIRCUIT PROTECTION				VOLTAGE TRANSFORMER CIRCUIT BUSBAR SIDE			
	L1	L2	L3	MEASURING WINDING		EARTH WINDING	
				L1	L2	L3	4a	4n



rev	rev. description	date	by

CIRCUIT DIAGRAM

MR SUMPERK, SWITCHBOARD 22kV

SIGNALBAU - CZECH REPUBLIC

Project: 304201

Inst. type: SVS-08

EATON | Holec

Eaton Holec Medium Voltage, part of Eaton Electric B.V.

drw	06.05.2009	L.W.	
chec	06.05.2009	V. THILL	
appr	06.05.2009	DE JONG	
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drawing nr R3-C-304201 VI

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14 sh

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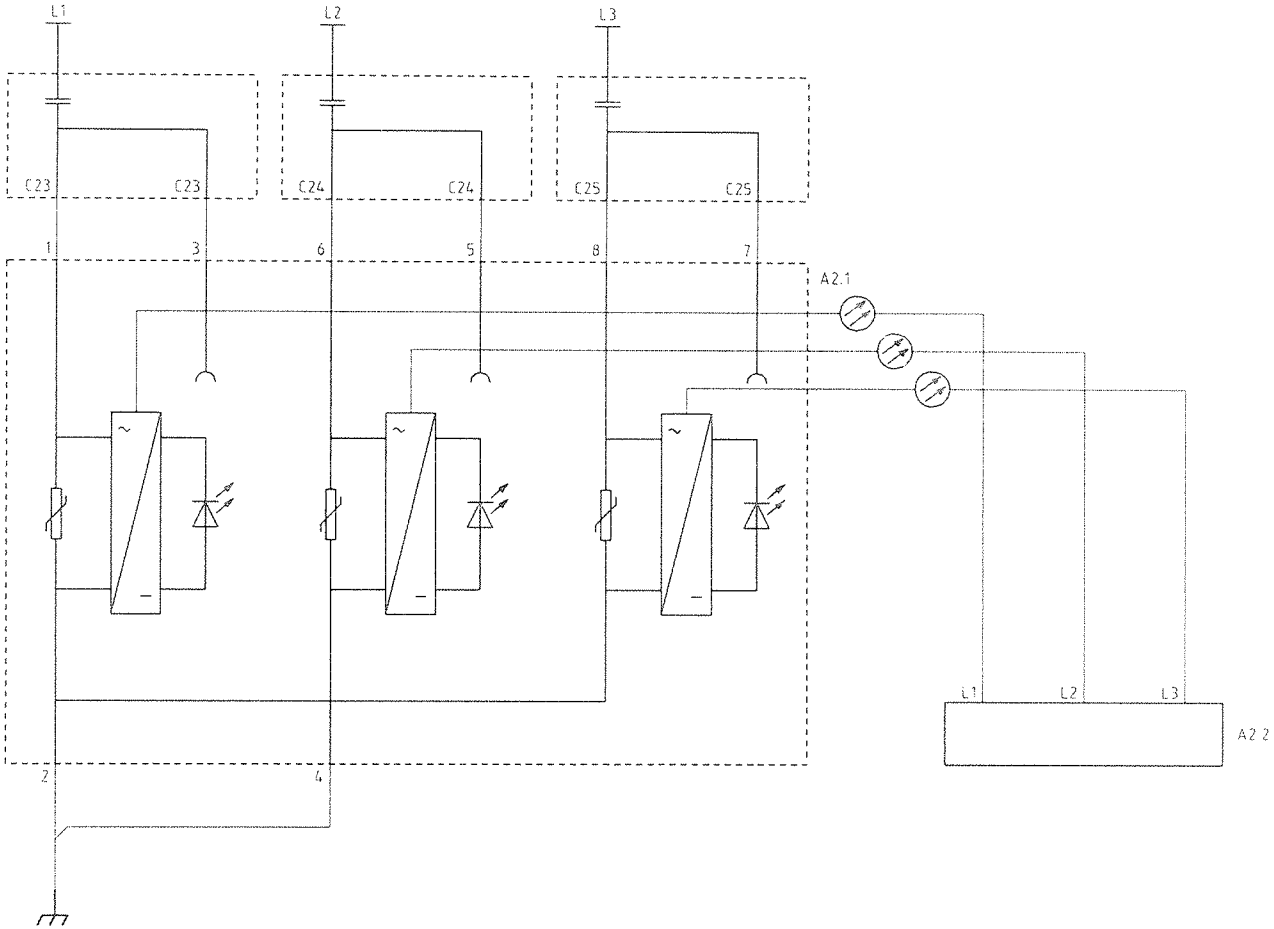
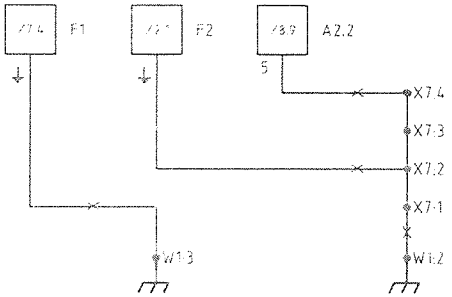
CIRCUIT VOLTAGE INDICATOR

OPTICAL VOLTAGE DETECTION



CASE EARTHING



A2.2		
NO	NC	CO
		/4.3
		/4.4
		/4.4
		–

rev	rev. description	date	by

CIRCUIT DIAGRAM

MR SUMPERK, SWITCHBOARD 22kV
SIGNALBAU - CZECH REPUBLIC

Project 304201
Inst. type: SVS-08

EATON | Holec
Eaton Holec Medium Voltage, part of Eaton Electric B.V.

drw	08.05.2009	L.W.
chec	08.05.2009	V. THIEL
appr	08.05.2009	G.E. JONG

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drawing no
R3-C-304201 VI

sheet 8
14 sh.

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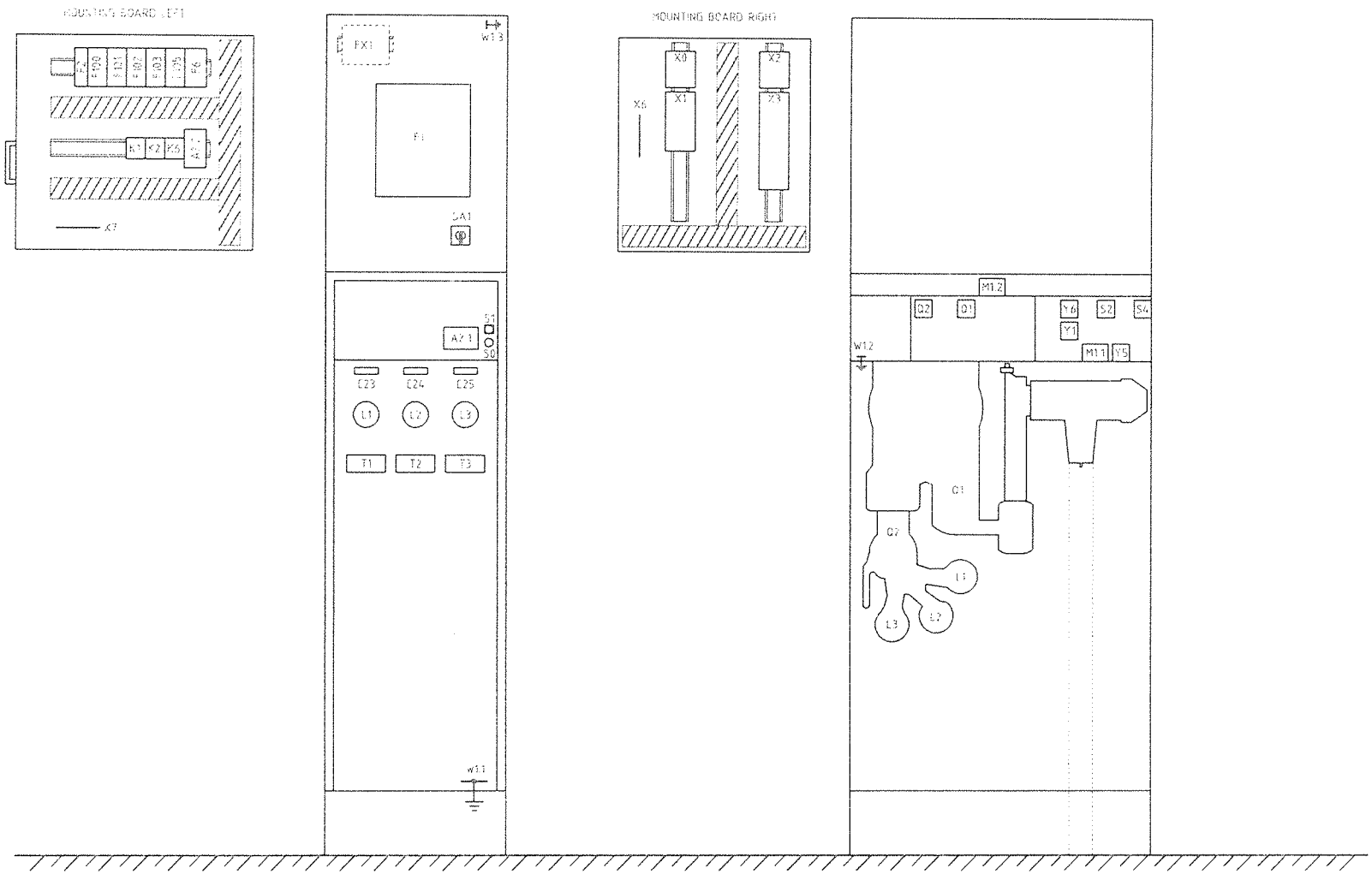

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				SPACE ALLOCATION	Project 304201	EATON | Holec	drw. 08.05.2009	L. W.	drawing nr. R3-C-304201 VI
				MR SUMPERK, SWITCHBOARD 22kV	Inst. type: SVS-08		chec 08.05.2009	V. THIEL	sheet 9
				SIGNALBAU - CZECH REPUBLIC			appr 08.05.2009	DE JONG	14 sh
rev	rev. description	date	by			Eaton Holec Medium Voltage, part of Eaton Electric B.V.	Ref.		Replacing

CODE	DESCRIPTION	MAKE	TYPE	ART. NR.	CIRCUIT NR	UNIT WIRING DIAGRAM
A2.1	LED VOLTAGE INDICATOR	EATON HOLEC	VDS JB5005 OPT	E569986	/1.3	
A2.2	VOLTAGE INDICATOR INTERFACE WITH OPTICAL INPUTS	EATON HOLEC	INT JB OPT	E569991	/8.9	R3-C-304201 I/7
C23	CAPACITOR	EATON HOLEC			/1.3	
C24	CAPACITOR	EATON HOLEC			/1.3	
C25	CAPACITOR	EATON HOLEC			/1.3	
F1	PROTECTION RELAY	SIEMENS	7SJ6321-5EB92-3FA0-L0R		/7.4	
F2	OVERVOLTAGE RELAY	DEHN / BLITZDUCTOR	BCT MOD BE 110		/2.1	
F6	NO-VOLTAGE RELEASE COIL MEASURINGSET	EATON HOLEC	110V DC		/3.6	
F100	MINIATURE CIRCUIT-BREAKER	MOELLER	FAZ-C2/2-DC, 2A	E6035801	/2.1	
F101	MINIATURE CIRCUIT-BREAKER	MOELLER	FAZ-C2/2-DC, 2A	E6035801	/2.2	
F102	MINIATURE CIRCUIT-BREAKER	MOELLER	FAZ-C2/2-DC, 2A	E6035801	/2.4	
F103	MINIATURE CIRCUIT-BREAKER	MOELLER	FAZ-C4/2-DC, 4A	E6035803	/2.5	
F105	MINIATURE CIRCUIT-BREAKER	MOELLER	FAZ-C2/2-DC, 2A	E6035801	/2.7	
K1	AUXILIARY RELAY	SIEMENS	3RH11 22-1BF40, 110V DC	E569651	/3.6	
K2	AUXILIARY RELAY	SIEMENS	3RH11 22-1BF40, 110V DC	E569651	/3.1	
K6	AUXILIARY RELAY	SIEMENS	3RH11 22-1BF40, 110V DC	E569651	/3.8	
M1.1	SPRING-CHARGING AND CLOSING MOTOR	GEFEG	NH8060-20/85-RL, 1,2A, 110V DC	E670367	/1.1	
M1.2	AUXILIARY CONTACTS SPRING CHARGING MOTOR	SCHALTBAU	S 800 E/20	E313196	/1.1	
	11-12, 21-22 CLOSED ONLY WHEN SPRING IS CHARGED					
	13-14; 23-24 OPENED ONLY WHEN SPRING IS CHARGED					
Q1	CIRCUIT-BREAKER	EATON HOLEC	NVS20AA-2406		/1.4	
	AUXILIARY CONTACTS CIRCUIT-BREAKER	SANTON	SBC-1106/54FG	E616364		
	11-12, 21-22, .. CLOSED ONLY WHEN THE CIRCUIT-BREAKER IS OPEN					
	13-14; 23-24; .. CLOSED ONLY WHEN THE CIRCUIT-BREAKER IS CLOSED					
Q2	CHANGEOVER SWITCH	EATON HOLEC			/1.5	
	AUXILIARY CONTACTS CHANGEOVER SWITCH	SCHALTBAU	S 800 E/20	E313196		
	11-12; 21-22 OPENED ONLY IN THE EARTHING POSITION					
	13-14; 23-24 CLOSED ONLY IN THE EARTHING POSITION					
	51-52, 61-62 CLOSED ONLY IN THE OPERATING POSITION					
	53-54; 63-64 OPENED ONLY IN THE OPERATING POSITION					
S0	PUSH-BUTTON "OFF" (WHITE)	MOELLER	M22S-D-X &M22-XD-W-X0		/9.3	
S1	PUSH-BUTTON "ON" (GREEN) - PADLOCKABLE	MOELLER	M22S-D-G-X1/M22-AK11		/3.6	
S2	AUXILIARY CONTACT CONTROLLED BY THE EARTHING LOCK.	SCHALTBAU	S 800 E/20	E313196	/3.5	
	11-12 OPENED ONLY WHEN THE CIRCUIT-BREAKER IS USED FOR EARTHING					
	AND IS LOCKED BY KEY					

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A	FOR REVIEW	17.06.2009	IB

CODE DESCRIPTION

MR SUMPERK, SWITCHBOARD 22kV
SIGNALBAU - CZECH REPUBLIC

Project 304201
Inst. type: SVS-08

EATON | Holec
Eaton Holec Medium Voltage, part of Eaton Electric B.V.

drw	08.05.2009	L.W.
chec	19.06.2009	V. THIEL
appr	19.06.2009	DE JONG

Ref.:

drawing nr R3-C-304201 VI

Replaces

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A 14 sh

CODE	DESCRIPTION	MAKE	TYPE	ART. NR	CIRCUIT NR.	UNIT WIRING DIAGRAM
S4	AUXILIARY CONTACT CONTROLLED BY THE SELECTOR. 11-12 CLOSED ONLY WHEN THE SELECTOR IS IN THE LEFT POSITION 13-14 OPENED ONLY WHEN THE SELECTOR IS IN THE LEFT POSITION	SCHALTBAU	S 800 E/20	E313196	/3.3	
SA1	SELECTOR SWITCH	KRAUS & NAIMER	CHR10-4		/5.7	R3-C-304201 I/8
T1	CURRENT TRANSFORMER	EATON HOLEC	CTS		/1.3	
T2	CURRENT TRANSFORMER	EATON HOLEC	CTS		/1.3	
T3	CURRENT TRANSFORMER	EATON HOLEC	CTS		/1.3	
W1	EARTH CONNECTION					
X0	TERMINAL STRIP	PHOENIX	UK5-TWIN		/12.1	
X1	TERMINAL STRIP	PHOENIX	UK5-TWIN		/12.4	
X2	TERMINAL STRIP	PHOENIX	UGSK 6		/13.1	
X3	TERMINAL STRIP	PHOENIX	UK5-TWIN		/13.2	
X6	EARTH STRIP					
X7	EARTH STRIP					
FX1	TERMINAL STRIP	PHOENIX	UK5-TWIN		/14.1	
Y1	TRIP COIL	KENDRION	HBMX6060.01.A10, 1,2A, 110V DC	E310592	/1.3	
Y5	LOCKING COIL ON OPERATING SHAFT OF THE CIRCUIT-BREAKER MECHANICAL CLOSING OF THE CIRCUIT-BREAKER IS ONLY POSSIBLE WITH ENERGISED COIL	KENDRION	DBMX6040.01.N010, 0,14A, 110V DC	E310592	/1.0	
Y6	NO-VOLTAGE RELEASE COIL	INTROCOM	2,5/0,077A, 110V DC	E651619	/1.2	

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CODE DESCRIPTION

MR SUMPERK, SWITCHBOARD 22kV
SIGNALBAU - CZECH REPUBLIC

Project 304201
Inst. type SVS-08

EATON | Holec

Eaton Holec Medium Voltage, part of Eaton Electric B.V.

drw	08.05.2009	L.W.
chec	08.05.2009	V. THIEL
appr	08.05.2009	CE JONG

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drawing nr. R3-C-304201 VI

sheet 11
14 sh.

Right to

0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

| | | |

REMOTE END DESIGNATION	CABLE NO. AND NO. OF CORES							
		T1 :S1	T1 :S2	T2 :S1	T2 :S2	T3 :S1	T3 :S2	X6 :2
TERMINAL STRIP	X2	1	2	3	4	5	6	7
		F1 :Q2	F1 :Q1	F1 :Q4	F1 :Q3	F1 :Q6	F1 :Q5	

REMOTE END DESIGNATION	CABLE NO. AND NO. OF CORES

X3		
1	F1 :R6	
2	F1 :R5	
3	F1 :R8	
4	F1 :R7	
5	F1 :R1	
6	F1 :R4	
7	F1 :R2	
8	F1 :R3	
9		
10		
11		
12		
13		
14		
21	F1 :K2	
22		
23		
24		
25		
26	SA1 :1	
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41	F1 :K4	
42	F1 :K6	
43	F1 :K7	
44	F1 :K8	
45		
46		
47	F1 :K10	
48	F1 :K11	
49	F1 :K12	
50	F1 :K13	
51	F1 :F17	
52		
53		
54		
55		
56		
57		
58		

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TERMINAL STRIP

MR SUMPERK, SWITCHBOARD 22kV
SIGNALBAU - CZECH REPUBLIC

Project 304201
Inst. type: SVS-08

EATON | Holec
Eaton Holec Medium Voltage, part of Eaton Electric B.V.

drw	08.05.2009	L.W.	drawing nr R3-C-304201 VI
chec	08.05.2009	V. THIEL	
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sheet 13
14 sh

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REMOTE END DESIGNATION	CABLE NO. AND NO. OF CORES	TERMINAL STRIP FX1	REMOTE END DESIGNATION	CABLE NO. AND NO. OF CORES
F1 : F14	/ F102 4	1		
F1 : K5		2		
		3		
F1 : K14		4		
F1 : F18		5		
		6		
		7		
		8		
		9		
		10		
F1 : K15	/ F103 2	11	F1 : F5	
F1 : J12	/ S1 : 13	12		
F1 : K16	/ F103 4	13		
K1 : A2	/ Y1 : d	14		
		15		

rev	rev. description	date	by

TERMINAL STRIP

MR SUMPERK, SWITCHBOARD 22kV
SIGNALBAU - CZECH REPUBLIC

Project: 304201
Inst. type: SVS-08

EATON | Holec
Eaton Holec Medium Voltage, part of Eaton Electric B.V.

drw	08.05.2009	L.W.	
chec	08.05.2009	V. THIEL	
appr	08.05.2009	GF JONG	
Ref			Replaces

drawing nr: R3-C-304201 VI

sheet 14
14 sh