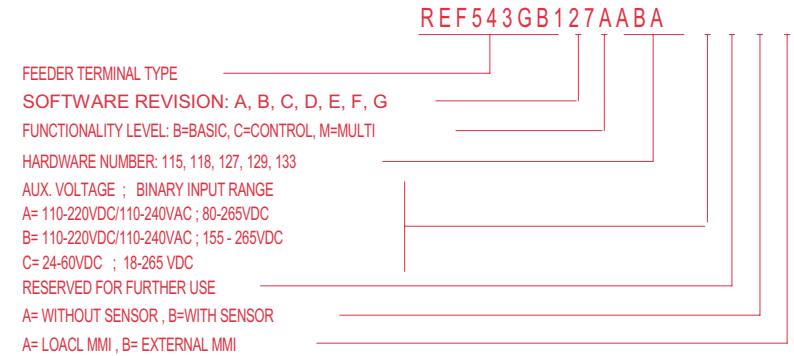


DECISION TABLE FOR SHEETS INCLUDED DEPENDING ON HARDWARE VARIANT

REF 54_ HARDWARE VARIANTS

		REF541_115AAA/BAAA/CAAA	REF541_115ABA/BABA/CABA	REF541_115AAB/BAAB	REF541_115ABB/BAAB	REF541_118AAA/BAAA/CAAA	REF541_118ABA/BABA/CABA	REF541_118AAB/BAAB	REF541_118ABB/BAAB	REF543_127AAA/BAAA/CAAA	REF543_127ABA/BABA/CABA	REF543_127AAB/BAAB	REF543_127ABB/BAAB	REF543_129AAA/BAAA/CAAA	REF543_129ABA/BABA/CABA	REF543_129AAB/BAAB	REF543_129ABB/BAAB	REF545_133AAA/BAAA/CAAA	REF545_133ABA/BABA/CABA	REF545_133AAB/BAAB	REF545_133ABB/BAAB	SHEETS INCLUDED	
SELECTED VARIANT (X) ->																							2,3
MODULES INCLUDED																							
MIM	CT 1/5 A	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	CT 0.2/1 A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	VT 100V	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	Sensor Inputs	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
		SEE TABLE 1																					
CPU		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	
PS1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					3,8	
PS2																		1	1	1	1	3,9	
BIO1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	10,11*)	
BIO2										1	1	1	1	1	1	1	1	1	1	1	1	12	
RTD1						1	1	1	1					1	1	1	1					13	
MMI, LOCAL		1	1			1	1			1	1			1	1			1	1			3	
MMI, EXTERNAL				1	1			1	1			1	1			1	1			1	1	3	



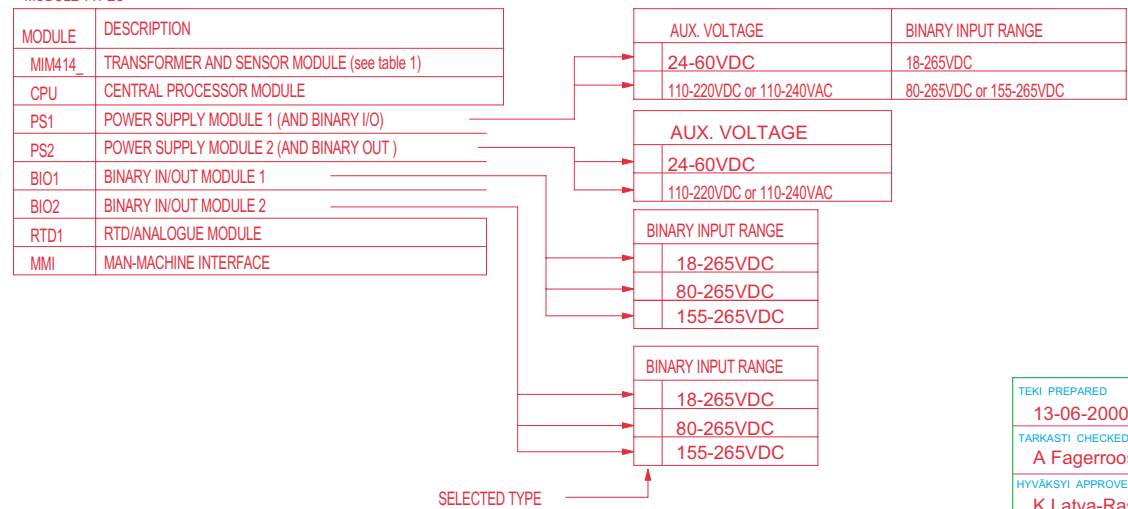
TRANSFORMER AND SENSOR MODULE	SHEETS INCLUDED
MIM4140	4
MIM4149	5
MIM4140 + RTXP 24	6 *)
MIM4149 + RTXP 24	7 *)

TABLE 1
SELECTED TYPE

*) NOTE!
IF AUXILIARY VOLTAGE SWITCH IS USED, INCLUDE SHEET 4

*) SHEET 11 INCLUDED IN REF 545

MODULE TYPES

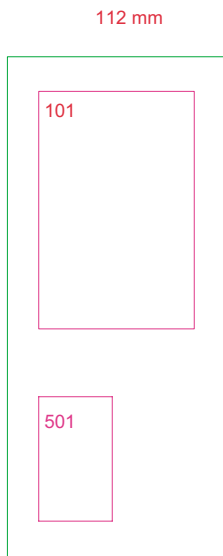


MIUTOS REVISION	C	
	B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTYY CONCERNING	NIMITYS NAME GENERAL OVERVIEW FEEDER TERMINAL REF 54_		LEHTI SHEET 1 / 13
TARKASTI CHECKED A Fagerroos	TOLERANSIT TOLERANCES			
HYVAKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ 	OSASTO DEPT. RSG	PAINOS REVISION B
ABB Oy Substation Automation		PIIRUSTUS NO DRAWING NO 1MRS010244-AAA		

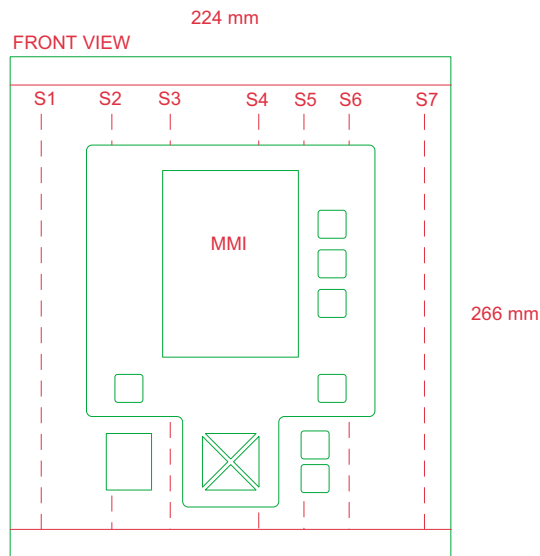
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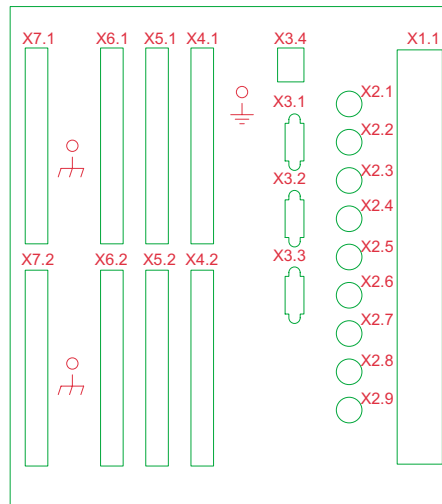


101 RTXP 24
RK 926 315-AG

501 AUXILIARY VOLTAGE SWITCH
(IF USED)



REAR VIEW



DESIGNATION CORRESPONDING TO CASING		
MODULE	FRONT	REAR CONNECTOR
MIM	S1,S2	X1.1 and X2.1 ... X2.9
CPU	S3	X3.1 ... X3.4
PS1 or PS2	S4	X4.1 and X4.2
BIO1	S5	X5.1 and X5.2
RTD1 or BIO1	S6	X6.1 and X6.2
BIO2	S7	X7.1 and X7.2

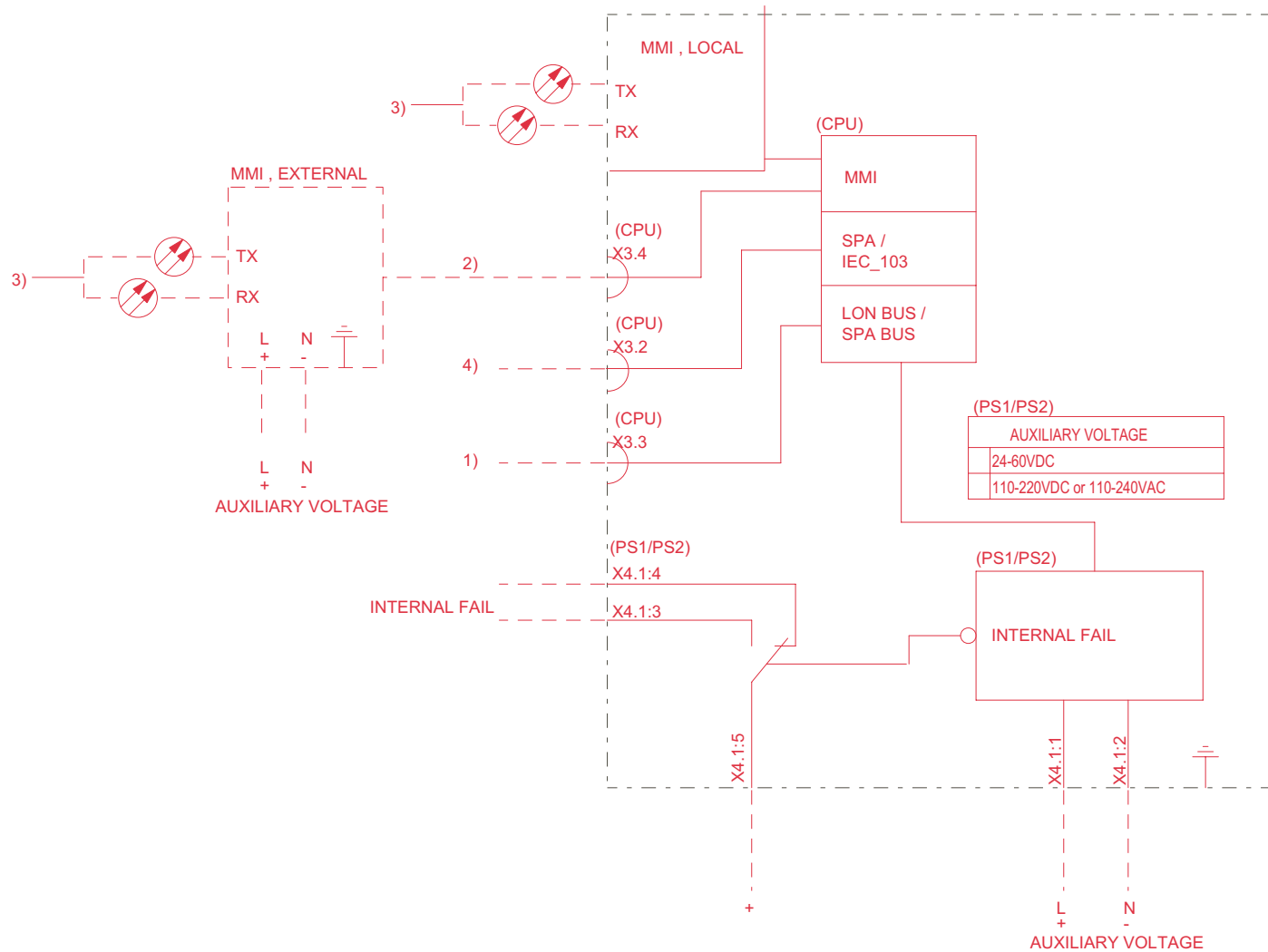
MUUTOS
REVISION

C
B

Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTYVÄN NIMI TOLERANSIT TOLERANCES		NIMITYS NIMI TERMINAL DIAGRAM FEEDER TERMINAL REF 54_ , FRONT AND REAR VIEW	LEHTI SHEET 2 / 13
TARKASTI CHECKED A Fagerroos	SUHDE SCALE	PROJ 	OSASTO DEPT. RSG	PAINOS REVISION B
HYVÄKSYI APPROVED K.Latva-Rasku	PIRUSTUS NO DRAWING NO 1MRS010244-AAA			
ABB Oy Substation Automation				

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MODULE	POSITION	
	FRONT	REAR
CPU	S3	X3.3 and X3.4
PS1	S4	X4.1 and X4.2
PS2	S4	X4.1 and X4.2

<-- USED IN REF 545

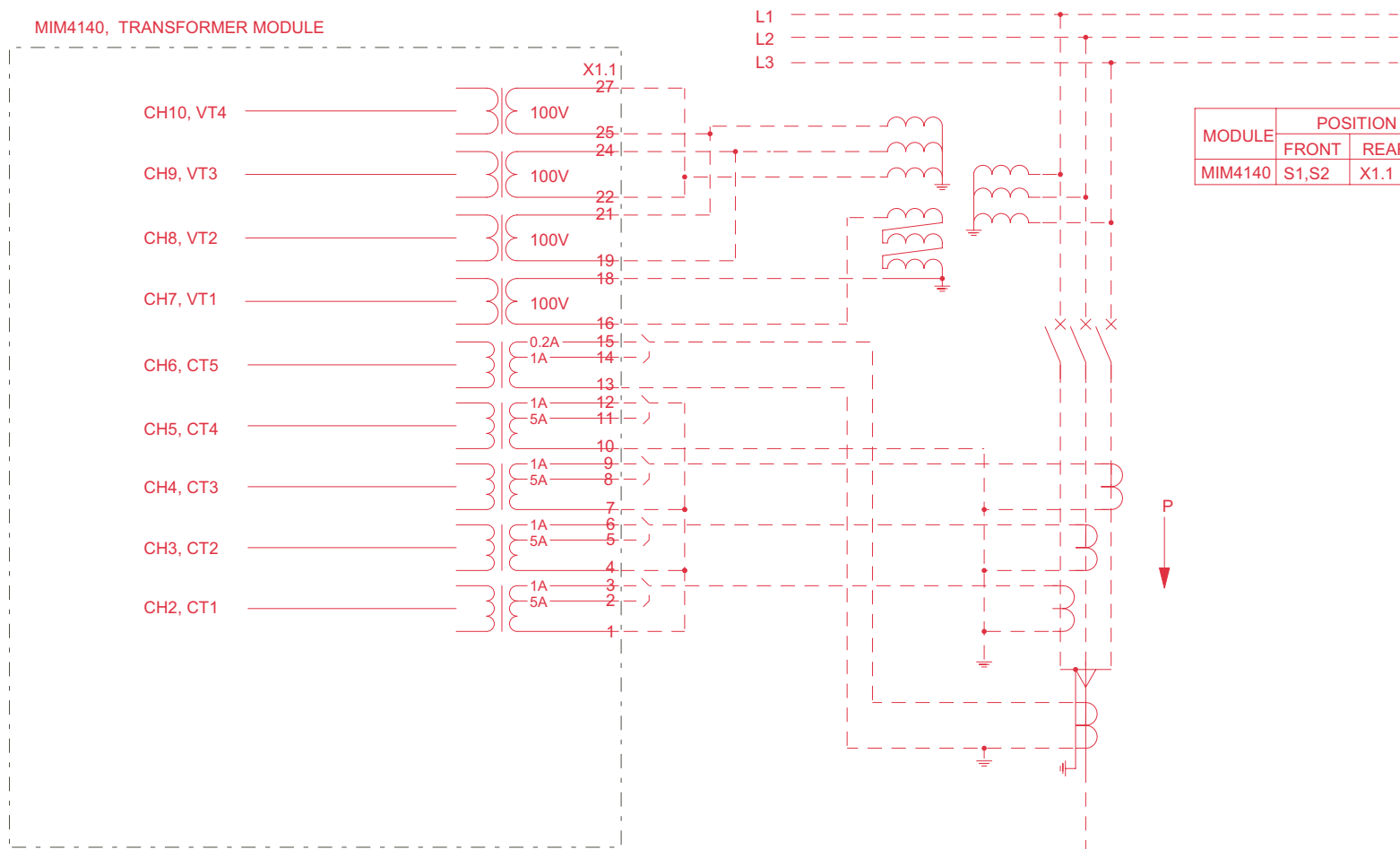
- 1) DATA COMMUNICATION , RS485 LON BUS OR SPA BUS, SELECTABLE. USE THE FIBRE-OPTIC INTERFACE MODULE RER 103 FOR GALVANIC ISOLATION.
- 2) CABLE TO EXTERNAL MMI, IF USED.
- 3) OPTICAL PORT FROM MMI (LOCAL OR EXTERNAL) CONNECTION MADE WITH A SPECIAL OPTICAL INTERFACE CABLE.
- 4) DATA COMMUNICATION , RS232 IEC OR SPA BUS, SELECTABLE. USE THE FIBRE-OPTIC INTERFACE MODULE RER 123 FOR GALVANIC ISOLATION.

MUUTOS
REVISION

C	
B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTY CONCERNING	NIMITYS NAME TERMINAL DIAGRAM FEEDER TERMINAL REF 54_ , DATA COMMUNICATION	
TARKASTI CHECKED A Fagerroos	TOLERANSSIT TOLERANCES		
HYVAKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ 	LEHTI SHEET 3 / 13
OSASTO DEPT. ABB Oy Substation Automation		RSG	PIIRUSTUS NO DRAWING NO 1MRS010244-AAA PAINOS REVISION B

MIM4140, TRANSFORMER MODULE



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MUUTOS
REVISION

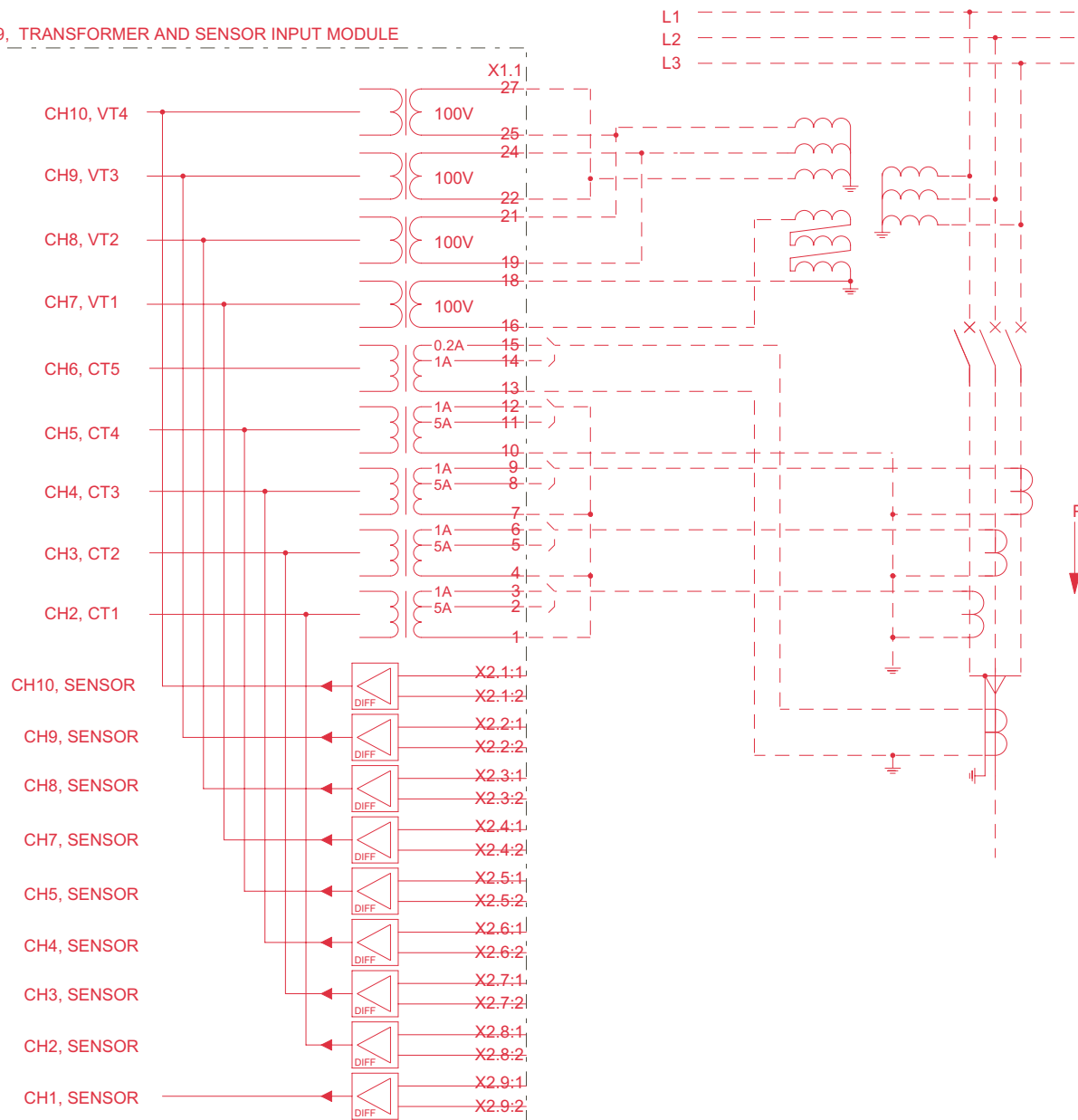
C	
B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTYVÄN NIMI TARKASTI CHECKED A Fagerroos	LIITTYVÄN NIMI TOLERANSIT TOLERANCES	NIMITYS NIMI TERMINAL DIAGRAM FEEDER TERMINAL REF 54_ , MIM4140		LEHTI SHEET 4 / 13
HYVÄKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ RSG	OSASTO DEPT. RSG	PIRUSTUS NO DRAWING NO 1MRS010244-AAA	PAINOS REVISION B
ABB ABB Oy Substation Automation					

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Q-FLEX OY

MIM4149, TRANSFORMER AND SENSOR INPUT MODULE

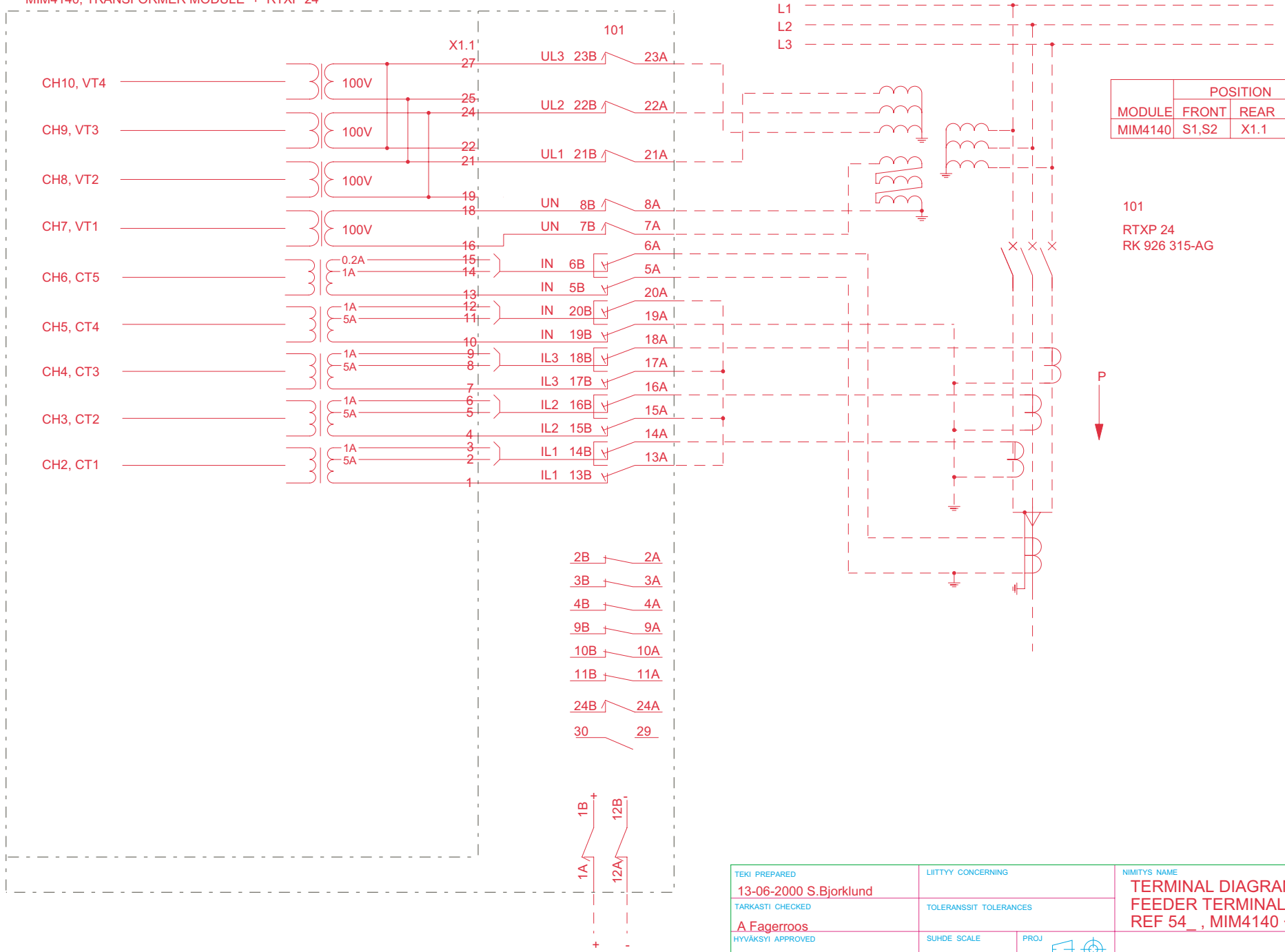


MODULE	POSITION	
	FRONT	REAR
MIM4149	S1,S2	X1.1 and X2.1 ... X2.9

MIUOTOS
REVISION

C	
B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTYVÄN NIMI LIITTYVÄN SUKUNIMI	NIMITYS NIMI TERMINAL DIAGRAM FEEDER TERMINAL REF 54_ , MIM4149		LEHTI SHEET 5 / 13
TARKASTI CHECKED A Fagerroos	TOLERANSIT TOLERANCES	SUHDE SCALE	PROJ 	
HYVÄKSYI APPROVED K.Latva-Rasku			OSASTO DEPT. RSG	PIRUSTUS NO DRAWING NO 1MRS010244-AAA
ABB ABB Oy Substation Automation				PAINOS REVISION B



MODULE	POSITION	
	FRONT	REAR
MIM4140	S1,S2	X1.1

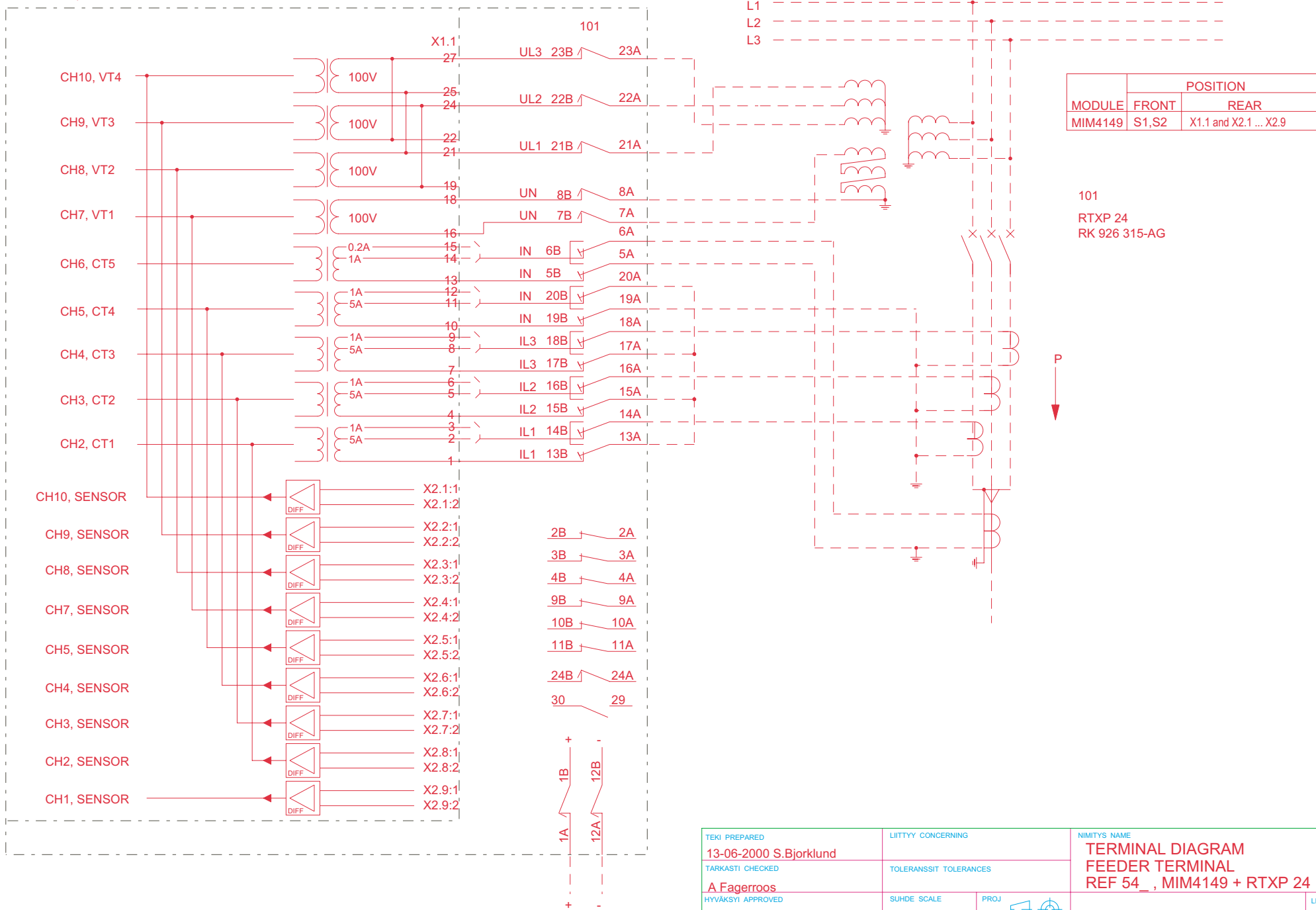
101
RTXP 24
RK 926 315-AG

P
↓

TEKI PREPARED 13-06-2000 S.Bjorklund	LITTY CONCERNING	NIMITYS NAME TERMINAL DIAGRAM FEEDER TERMINAL REF 54_ , MIM4140 + RTXP 24	
TARKASTI CHECKED A Fagerroos	TOLERANSSIT TOLERANCES	OSASTO DEPT. RSG	LEHTI SHEET 6 / 13
HYVAKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ 	PIIRUSTUS NO DRAWING NO 1MRS010244-AAA
ABB Oy Substation Automation		PAINOS REVISION B	

MUUTOS REVISION	C	
	B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

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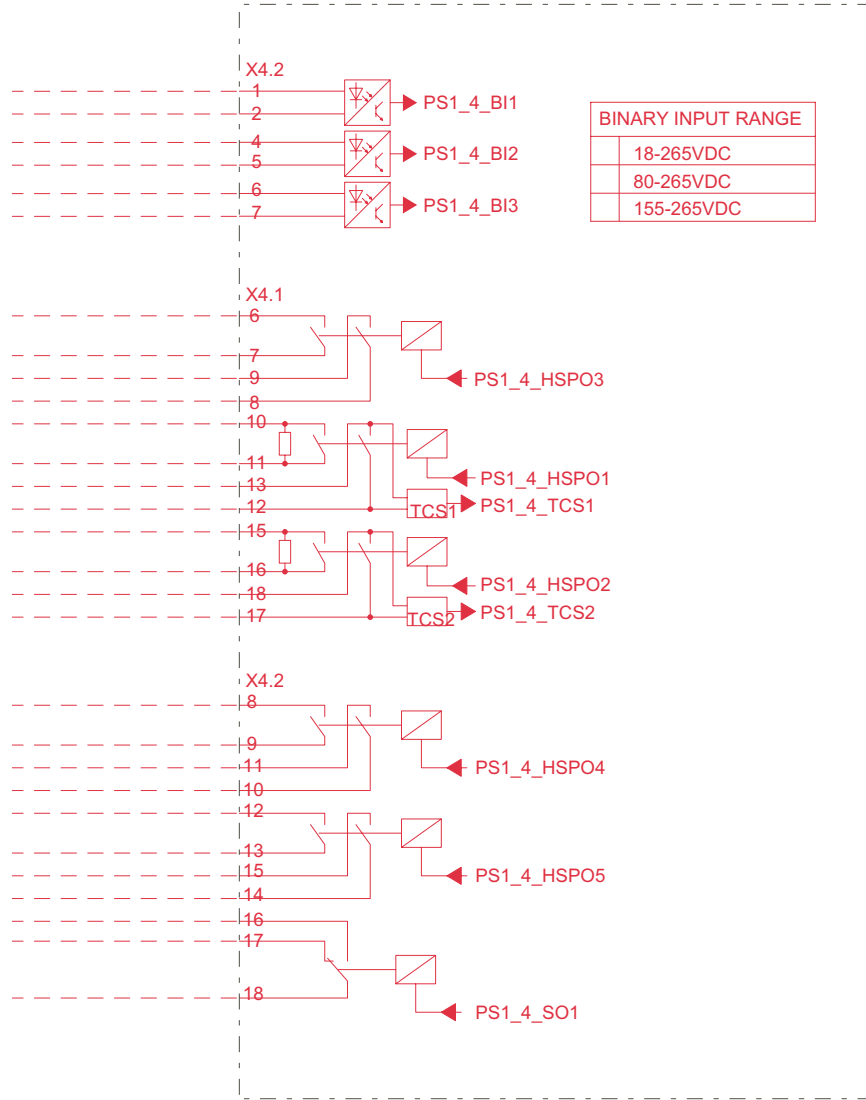
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MUUTOS REVISION	C	
	B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTYVÄ CONCERNING	NIMITYS NIMI TERMINAL DIAGRAM FEEDER TERMINAL REF 54_ , MIM4149 + RTXP 24	
TARKASTI CHECKED A Fagerroos	TOLERANSSIT TOLERANCES	OSASTO DEPT. RSG	PIIRUSTUS NO DRAWING NO 1MRS010244-AAA
HYVÄKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ 	LEHTI SHEET 7 / 13
ABB Oy Substation Automation			PAINOS REVISION B

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PS1 , POWER SUPPLY MODULE 1, BINARY IN/OUT



BINARY INPUT RANGE	
	18-265VDC
	80-265VDC
	155-265VDC

MODULE	POSITION	
	FRONT	REAR
PS1	S4	X4.1 and X4.2

MUUTOS REVISION

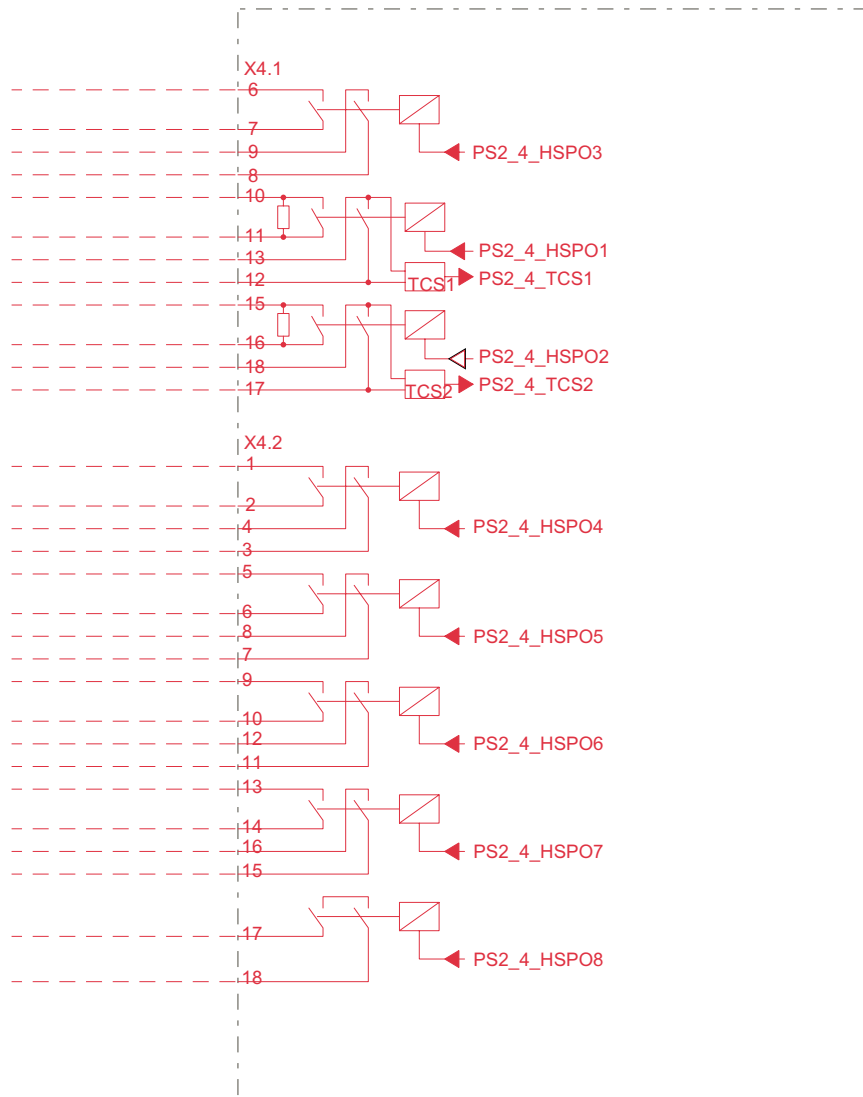
C	
B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITYY CONCERNING	NIMITYY NAME TERMINAL DIAGRAM FEEDER TERMINAL REF 54_ , PS1-MODULE, BINARY IN/OUT	
TARKASTI CHECKED A Fagerroos	TOLERANSSIT TOLERANCES		
HYVAKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ	LEHTI SHEET 8 / 13
OSASTO DEPT. RSG		PIIRUSTUS NO DRAWING NO 1MRS010244-AAA	PAINOS REVISION B

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Substation Automation

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PS2 , POWER SUPPLY MODULE 2, BINARY OUT



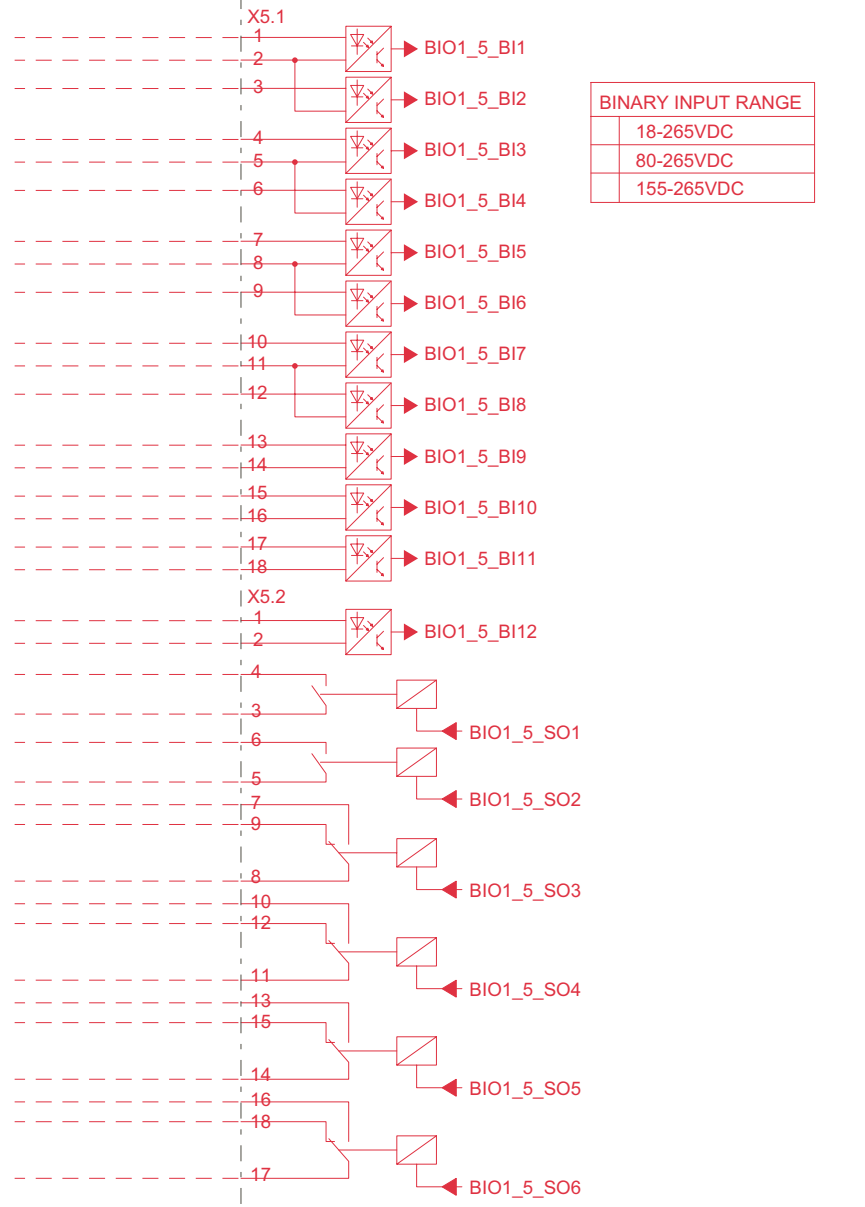
MODULE	POSITION	
	FRONT	REAR
PS2	S4	X4.1 and X4.2

MUUTOS
REVISION

C	
B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTYVÄ CONCERNING	NIMITYS NÄME TERMINAL DIAGRAM FEEDER TERMINAL REF 545 , PS2-MODULE , BINARY OUT	
TARKASTI CHECKED A Fagerroos	TOLERANSSIT TOLERANCES	LEHTI SHEET 9 / 13	
HYVÄKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ	PAINOS REVISION B
OSASTO DEPT. RSG		PIIRUSTUS NO DRAWING NO 1MRS010244-AAA	
ABB Oy Substation Automation			

BIO1, BINARY IN/OUT MODULE 1

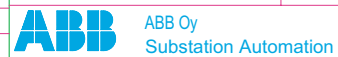


BINARY INPUT RANGE	
	18-265VDC
	80-265VDC
	155-265VDC

MODULE	POSITION	
	FRONT	REAR
BIO1	S5	X5.1 and X5.2

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTYY CONCERNING		NIMITYS NAME TERMINAL DIAGRAM FEEDER TERMINAL REF 54_ , BIO1-MODULE, BINARY IN/OUT	
TARKASTI CHECKED A Fagerroos	TOLERANSSIT TOLERANCES			
HYVAKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ 		
OSASTO DEPT. RSG		PIRUSTUS NO DRAWING NO 1MRS010244-AAA		LEHTI SHEET 10 / 13 PAINOS REVISION B

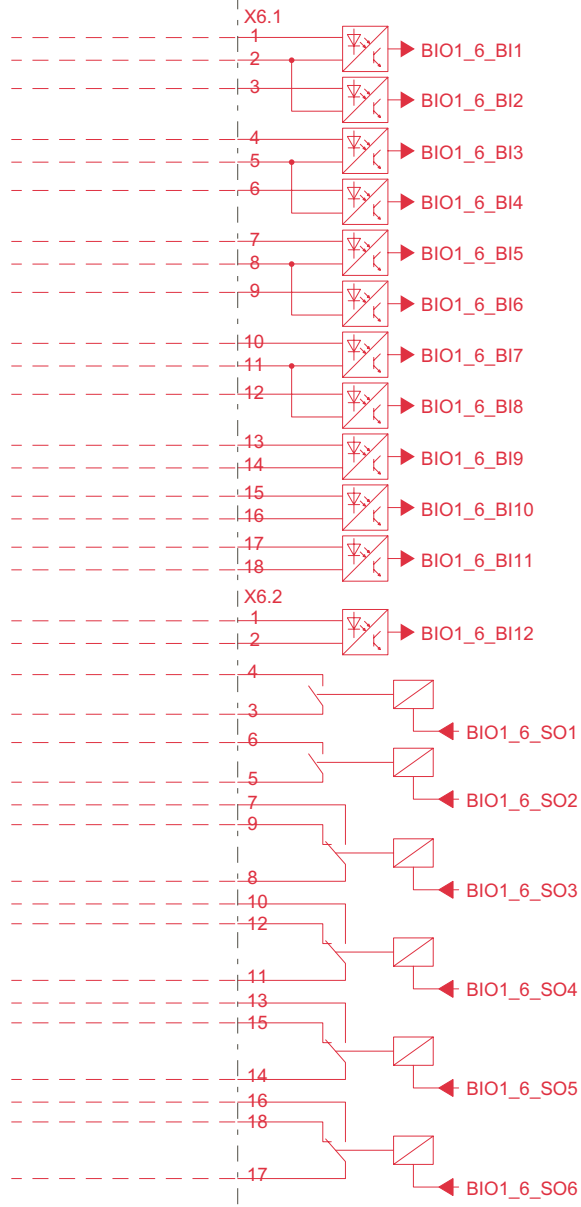
MUUTOS REVISION	C B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV
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BIO1, BINARY IN/OUT MODULE 1



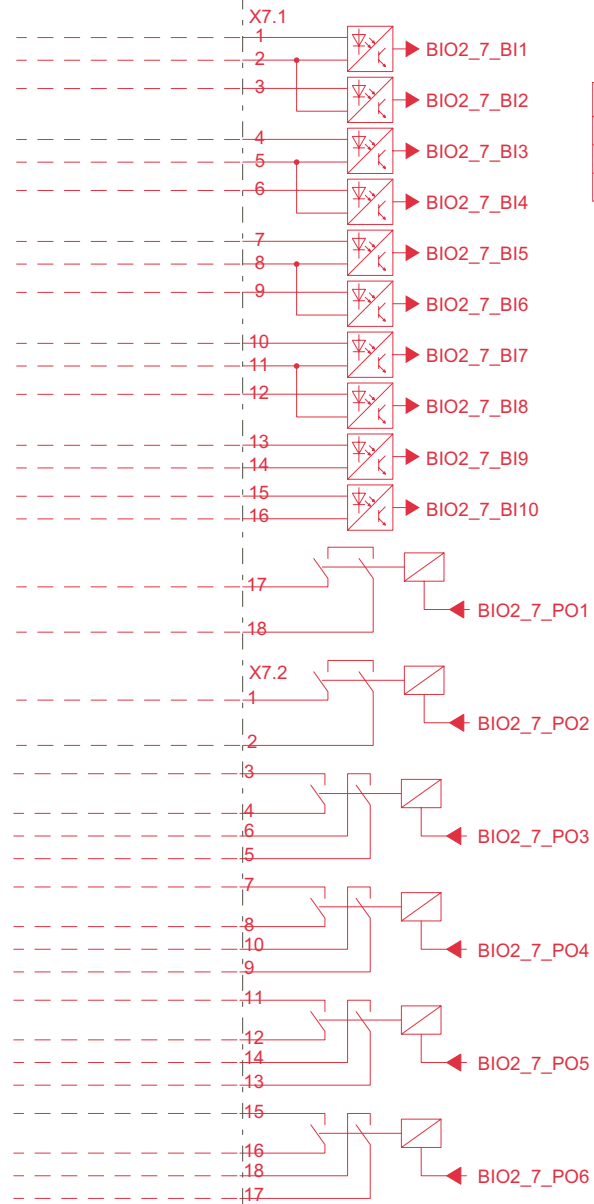
BINARY INPUT RANGE	
	18-265VDC
	80-265VDC
	155-265VDC

MODULE	POSITION		←-- USED IN REF 545
	FRONT	REAR	
BIO1	S6	X6.1 and X6.2	

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITYY CONCERNING	NIMITYS NAME TERMINAL DIAGRAM FEEDER TERMINAL REF 545, BIO1-MODULE, BINARY IN/OUT	
TARKASTI CHECKED A Fagerroos	TOLERANSSIT TOLERANCES		
HYVÄKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ	LEHTI SHEET 11 / 13
ABB ABB Oy Substation Automation		OSASTO DEPT. RSG	PIRUSTUS NO DRAWING NO 1MRS010244-AAA PAINOS REVISION B

MIUUTOS REVISION	C B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV
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BIO2, BINARY IN/OUT MODULE 2



BINARY INPUT RANGE	
	18-265VDC
	80-265VDC
	155-265VDC

MODULE	POSITION	
	FRONT	REAR
BIO2	S7	X7.1 and X7.2

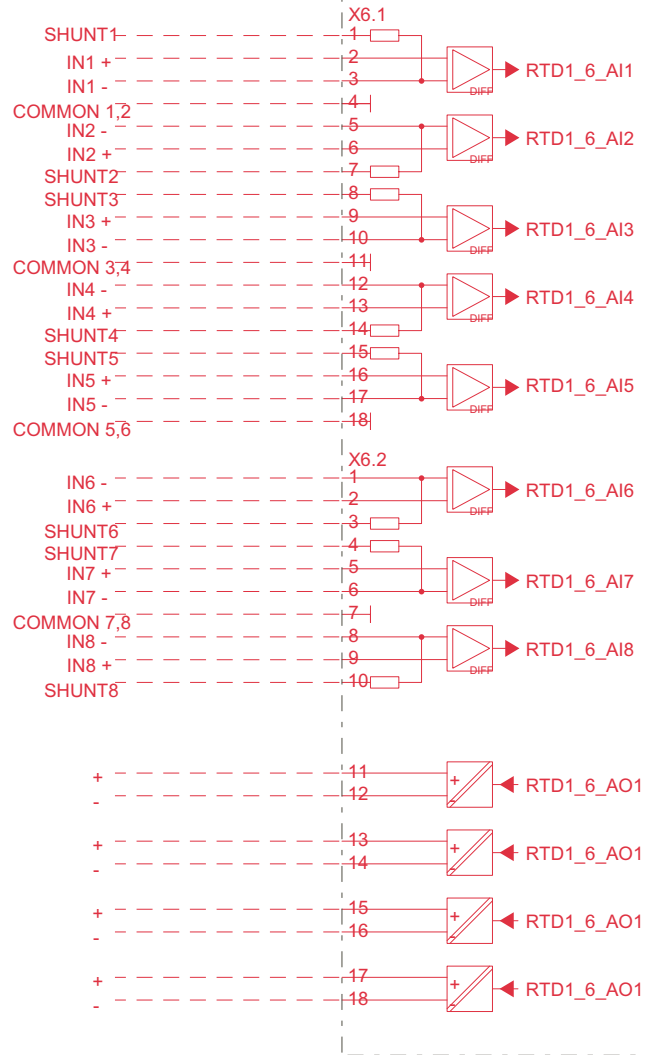
TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTYVÄ CONCERNING		NIMITYS NAME TERMINAL DIAGRAM FEEDER TERMINAL REF 54_ , BIO2-MODULE, BINARY IN/OUT	
TARKASTI CHECKED A Fagerroos	TOLERANSSIT TOLERANCES		LEHTI SHEET 12 / 13 PAINOS REVISION B	
HYVÄKSYI APPROVED K.Latva-Rasku	SUHDE SCALE	PROJ		
OSASTO DEPT. RSG		PIIRUSTUS NO DRAWING NO 1MRS010244-AAA		

MIUTOS REVISION	C B	Added binary treshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV
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RTD1, ANALOGUE IN/OUT MODULE



MODULE	POSITION	
	FRONT	REAR
RTD1	S6	X6.1 and X6.2

MULTOS REVISION	C	
	B	Added binary threshold voltage 155-265 VDC (sheet 1) and IEC communication (sheet 3) 21.11.03 *SV

TEKI PREPARED 13-06-2000 S.Bjorklund	LIITTYVÄ CONCERNING	NIMITYS NAME TERMINAL DIAGRAM FEEDER TERMINAL REF 54_, RTD1-MODULE, ANALOGUE I/O	
TARKASTI CHECKED A Fagerroos	TOLERANSSIT TOLERANCES	PROJ	LEHTI SHEET 13 / 13
HYVÄKSYI APPROVED K.Latva-Rasku	SUHDEN SUKKA	OSASTO DEPT. RSG	PIIRUSTUS NO DRAWING NO 1MRS010244-AAA
ABB ABB Oy Substation Automation			PAINOS REVISION B