TB-D5016 YOK-008

Termination Board 16 positions for Yokogawa Prosafe RS with DI Card SDV144 & DO Card SDV541

Characteristics:

General description:

This Termination Board (TB) provides direct connection between the I/O Card of the system and D5000 Series modules.
Signal isolation is provided by the D5000 Series modules. The 24 Vdc Power Supply of the TB is connected to two plug-in terminal blocks, for a redundant power supply.
The power supply for modules is given by TB power bus.

Termination Board general characteristics:

Number of positions	*Features*
16	1) I/O Card redundancy 2) Power Supply voltage redundancy; 3) Abnormal supply voltage signaling; 4) Cumulative module fault signaling.

Supported Yokogawa Prosafe RS I/O Cards:

* with possibility of I/O Card redundancy.

I/O Card Type	*I/O Card Model*	*Channels per I/O Card*	*I/O Cards per board*	*Channels per board*	*Supported GM Modules*
DI	SDV144	16	1+(1)*	16	D5031S, D5032S, D5037S, D5038S, D5039S, D5093S
			2+(2)*	32	D5031D, D5032D, D5037D, D5038D, D5039D, D5093D
DO	SDV541	16	1+(1)*	16	D5040S, D5048S, D5049S, D5090S, D5091S, D5094S, D5095S, D5096S, D5096S-100, D5097S, D5098S
			2+(2)*	32	D5040D, D5098D

Technical Data:

Supply:

24 Vdc nom (20 to 30 Vdc) reverse polarity protected, double terminal blocks for redundant power supply, with OR diodes to mix supply voltages.
Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm^2.
Protection fuse: 4 A slow blow (spare fuse provided on Termination Board).

Fault detection: (for more information see Fault Logic section)

Abnormal supply voltages or module cumulative fault: PWR 1 or PWR 2 is in under (< 18 Vdc) or over (> 30 Vdc) voltage condition *OR* module cumulative fault indication.
Relay fault signaling: a voltage free NE SPST-1 Form A relay contact (de-energized in fault condition), with the following characteristics:
Contact material: AgCdO.
Contact rating: 2 A 36 Vac 72 VA, 2 A 48 Vdc 80 W (resistive load).
Mechanical / Electrical life: 30 * 10^6 / 1 * 10^5 operation, typical.
Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm^2.
LED fault signaling: 1 green LED (PWR 1 OK); 1 green LED (PWR 2 OK); 1 red LED (UV or OV of PWR 1); 1 red LED (UV or OV of PWR 2); a cumulative fault red LED.

Prosafe RS I/O card interface:

Connection: four 50 poles male connectors (require female mating connectors).

Field signal:

Connection: directly to module by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm^2.

Environmental conditions:

Operating: temperature limits – 40 to + 70 °C, relative humidity max 90 % non condensing, up to 35 °C.
Storage: temperature limits – 45 to + 80 °C.

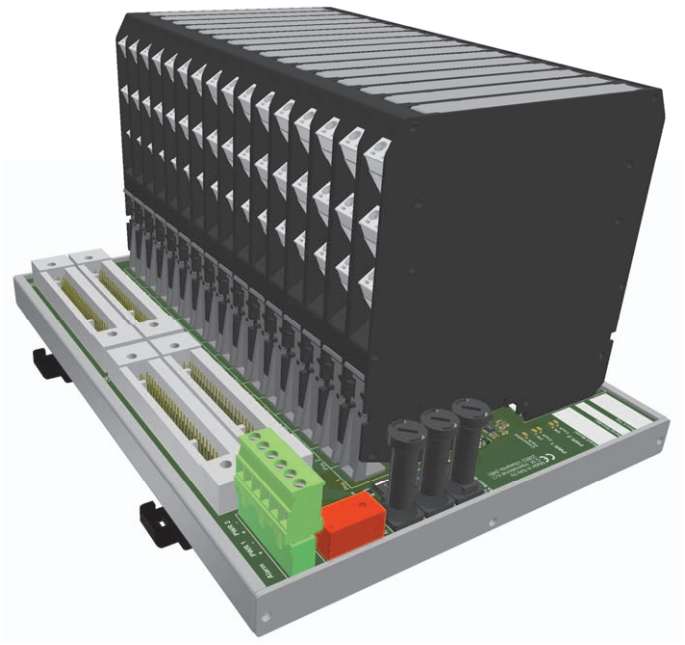
Mounting:

Hardware included for mounting on wall and single DIN rail.
Weight: about 750 g (excluding modules)
Location: Safe Area / Ordinary locations.
Dimensions: Width 238 mm, Depth 180 mm, Height 154 mm.

Features:

- Prosafe RS DI Card SDV144 board interface.
- Prosafe RS DO Card SDV541 board interface.
- 16 positions Termination Board for up to 16 channels.
- Lower cables installation and maintenance costs.
- Power supplies fault monitoring.
- Spare fuse provided.
- Mounting hardware provided for single Din Rail mounting kit.

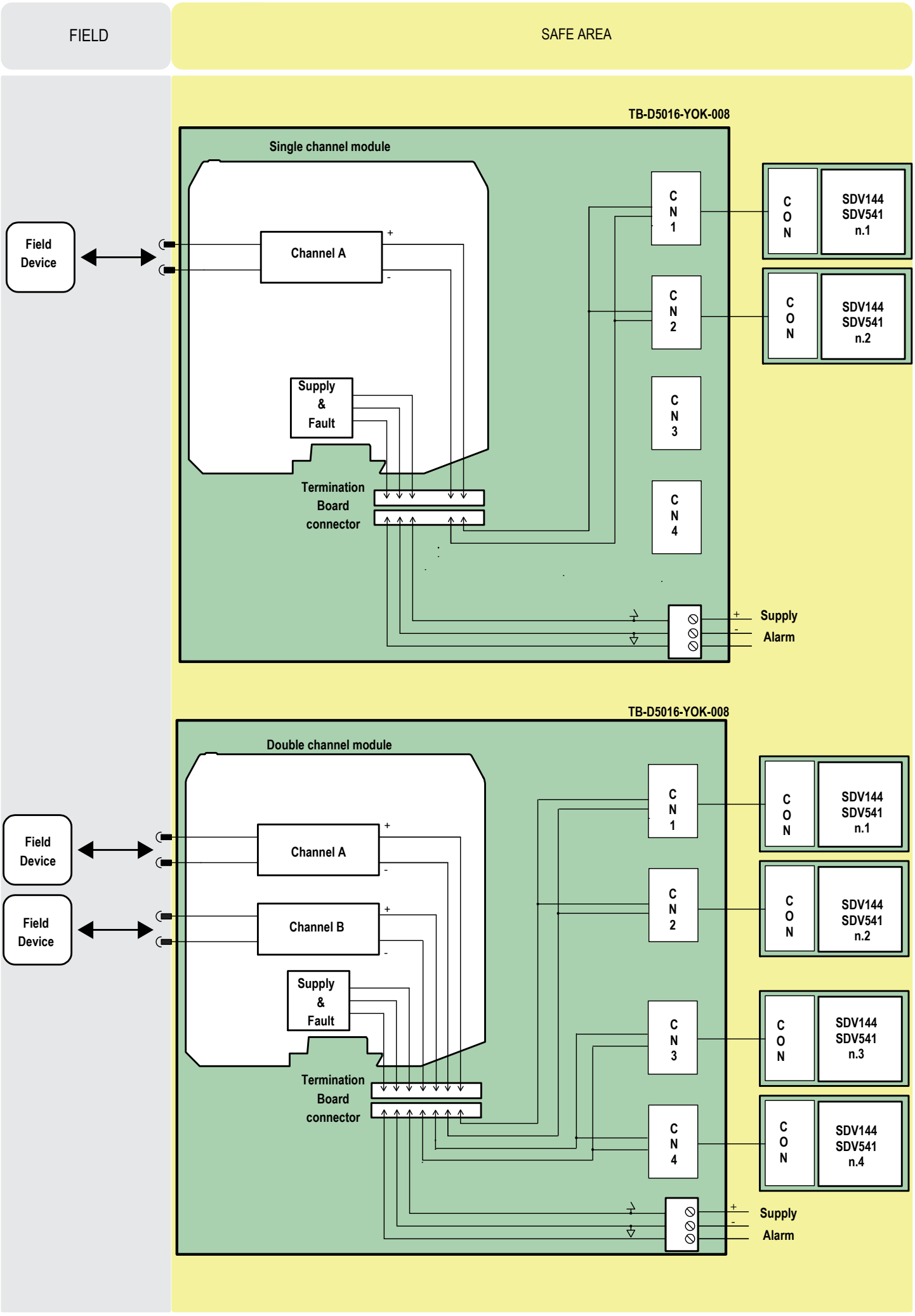
Image:



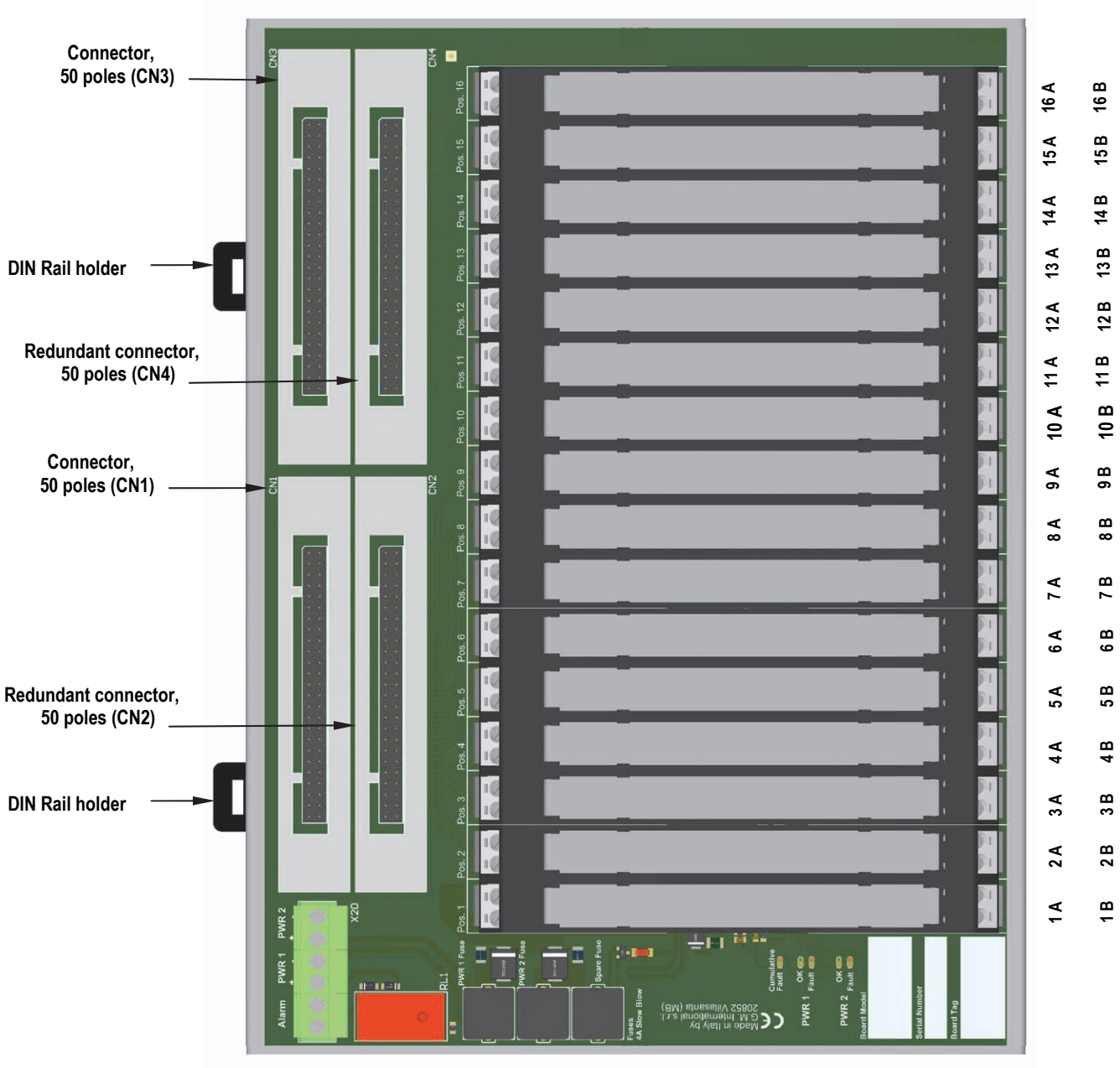
Ordering Information:

Model: TB-D5016-YOK-008

Loop Diagrams:



Termination Board Connections:

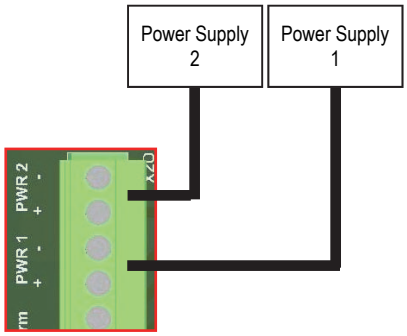


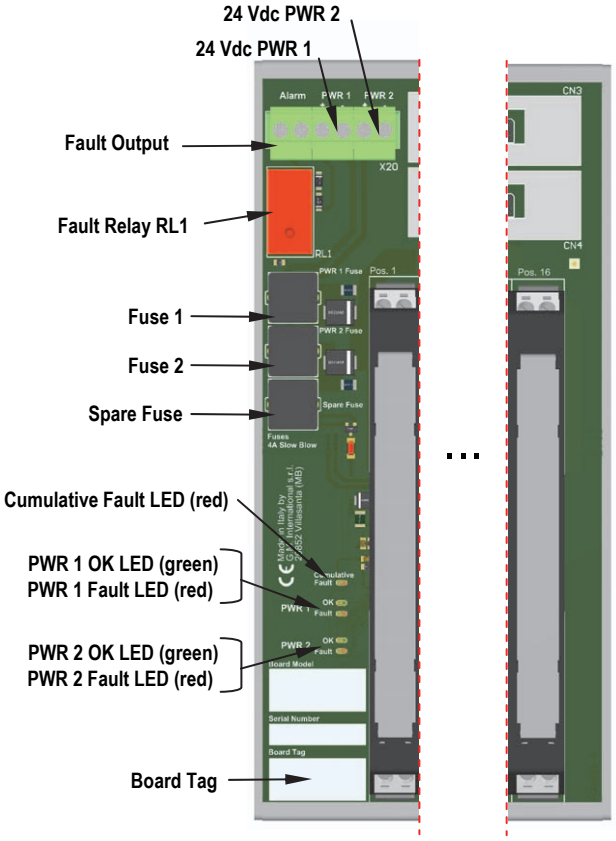
Connections table to Interface Cards:

MODULE POSITION	MODULE CHANNEL NUMBER	INTERFACE CARD(S) CHANNEL NUMBER	MODULE CHANNEL POSITIVE (+) CONNECTION (CN1 & CN2)	MODULE CHANNEL NEGATIVE (-) CONNECTION (CN1 & CN2))	MODULE CHANNEL POSITIVE (+) CONNECTION (CN3 & CN4)	MODULE CHANNEL NEGATIVE (-) CONNECTION (CN3 & CN4)	NOTES
1	1A	1 Card n.1	48	47	-	-	CN1, CN2, CN3 and CN4: • Ground available on poles: 9, 11, 12, 13, 14, 15, 16, 49 • +24 Vdc available on poles: 2, 3, 4, 5, 6, 7, 8, 10 • Poles 1 and 50 are shorted.
	1B	1 Card n.2	-	-	48	47	
2	2A	2 Card n.1	46	45	-	-	
	2B	2 Card n.2	-	-	46	45	
3	3A	3 Card n.1	44	43	-	-	
	3B	3 Card n.2	-	-	44	43	
4	4A	4 Card n.1	42	41	-	-	
	4B	4 Card n.2	-	-	42	41	
5	5A	5 Card n.1	40	39	-	-	
	5B	5 Card n.2	-	-	40	39	
6	6A	6 Card n.1	38	37	-	-	
	6B	6 Card n.2	-	-	38	37	
7	7A	7 Card n.1	36	35	-	-	
	7B	7 Card n.2	-	-	36	35	
8	8A	8 Card n.1	34	33	-	-	
	8B	8 Card n.2	-	-	34	33	
9	9A	9 Card n.1	32	31	-	-	
	9B	9 Card n.2	-	-	32	31	
10	10A	10 Card n.1	30	29	-	-	
	10B	10 Card n.2	-	-	30	29	
11	11A	11 Card n.1	28	27	-	-	
	11B	11 Card n.2	-	-	28	27	
12	12A	12 Card n.1	26	25	-	-	
	12B	12 Card n.2	-	-	26	25	
13	13A	13 Card n.1	24	23	-	-	
	13B	13 Card n.2	-	-	24	23	
14	14A	14 Card n.1	22	21	-	-	
	14B	14 Card n.2	-	-	22	21	
15	15A	15 Card n.1	20	19	-	-	
	15B	15 Card n.2	-	-	20	19	
16	16A	16 Card n.1	18	17	-	-	
	16B	16 Card n.2	-	-	18	17	

Termination Board description:

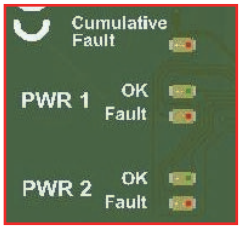
Power Supply redundancy:





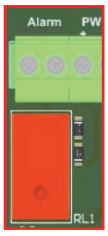
LED Signaling:
Meaning of LEDs on termination boards:

TAG	LED COLOR	MEANING
PWR 1 OK	GREEN	The LED is on when the Supply 1 is present (18 V < V1 < 30 V)
PWR 1 Fault	RED	The LED is on when the Supply 1 is under or over-voltage
PWR 2 OK	GREEN	The LED is on when the Supply 2 is present (18 V < V2 < 30 V)
PWR 2 Fault	RED	The LED is on when the Supply 2 is under or over-voltage
Cumulative Fault	RED	The LED is on when at least one module/barrier reported a fault

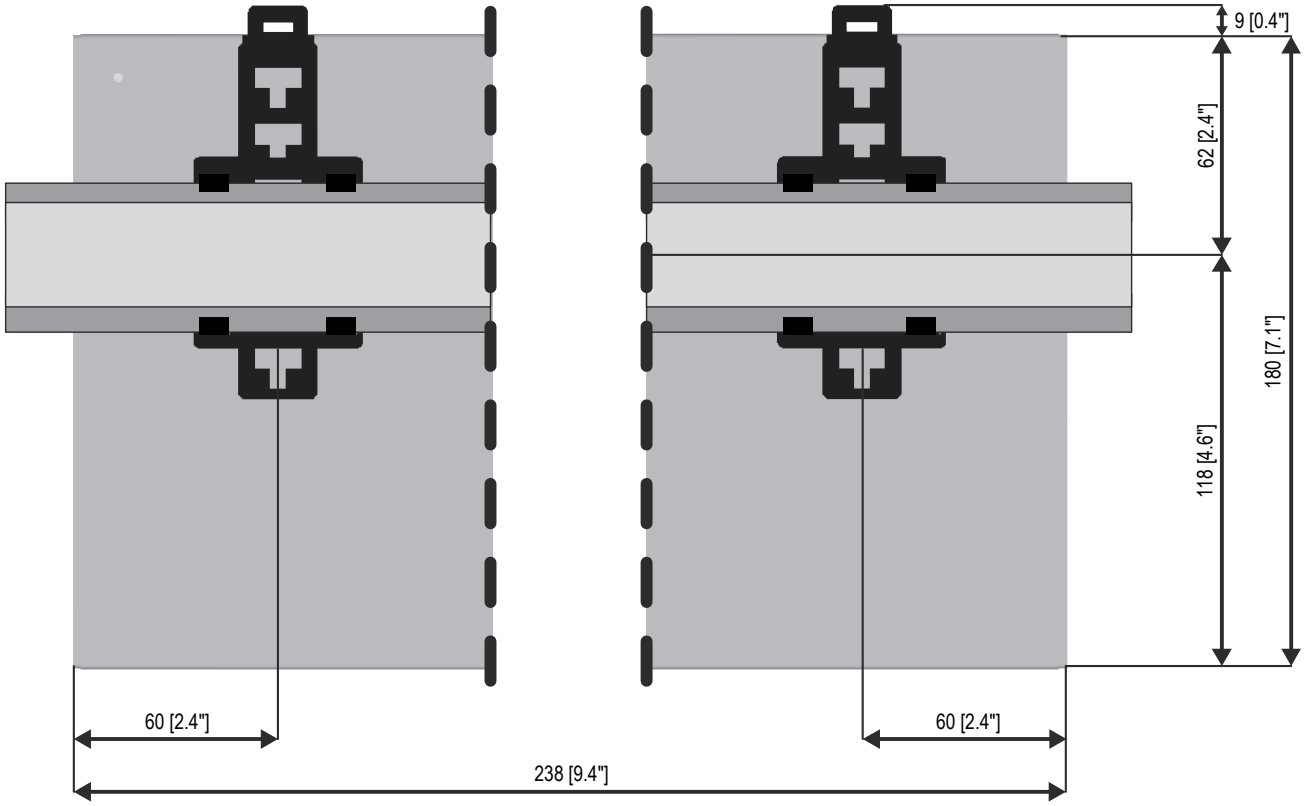


Relay Activation Conditions:
The relay RL1 is activated according to the following condition:

TAG	ACTIVATION
Alarm	The relay is de-energized (open contact) when at least one mod le/barrier reported a fault. Under regular conditions, the alarm contact is closed.



Termination Board size:



All dimensions are expressed in millimeters [inches]