

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 Prosafe RS Cards:

I/O Card Type	I/O Card Model	Channels per I/O Card	I/O Cards per board	Channels per board	Supported GM Modules
DO	SDV541	16	1	16	D5290S, D5290S/SA, D5290S-078, D5291S, D5293S, D5294S, D5295S

Features:

- Prosafe RS DO Card SDV541 board interface.
- 16 positions Termination Board for up to 16 channels.
- Lower cables installation and maintenance costs.
- RS-485 interface terminals for Modbus communication.
- Power supplies fault monitoring.
- Spare fuse provided.
- Mounting hardware provided for single Din Rail mounting kit.

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 mm².

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 * 10⁶ / 1 * 10⁶ operation, typical.

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

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.

Modbus RS-485 interface:

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

Prosafe RS I/O card interface:

Connection: two 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 mm².

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:

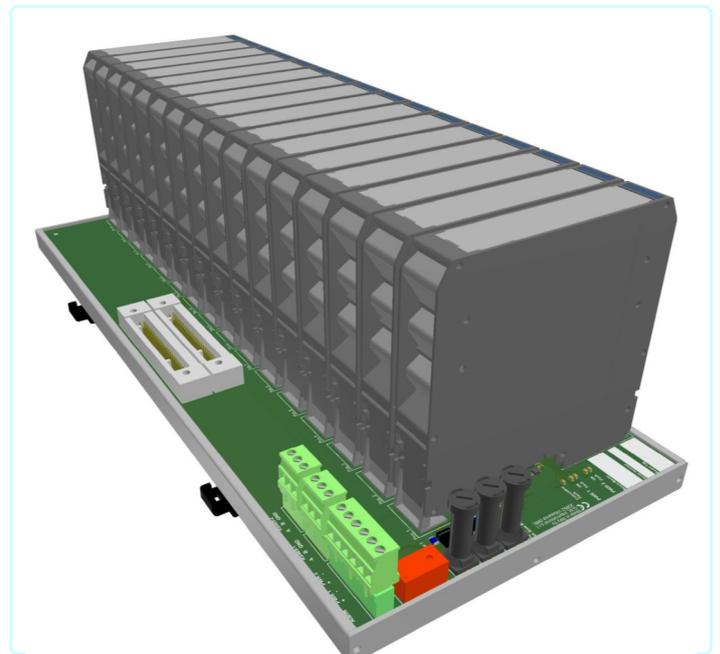
Hardware included for mounting on wall and single DIN rail.

Weight: about 800 g (excluding modules and mounting options).

Location: Safe Area / Ordinary locations.

Dimensions: Width 431 mm, Depth 180 mm, Height 154 mm.

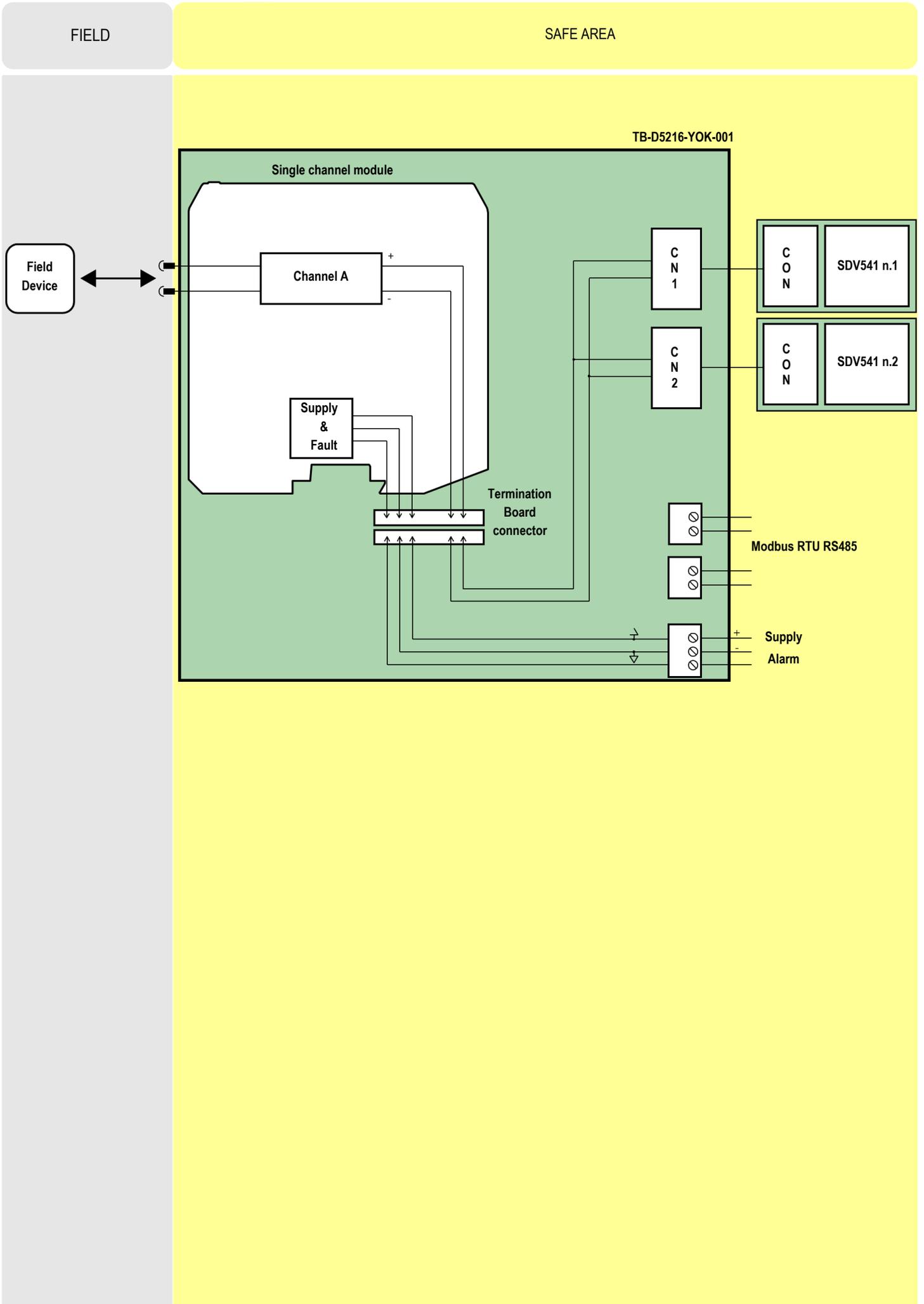
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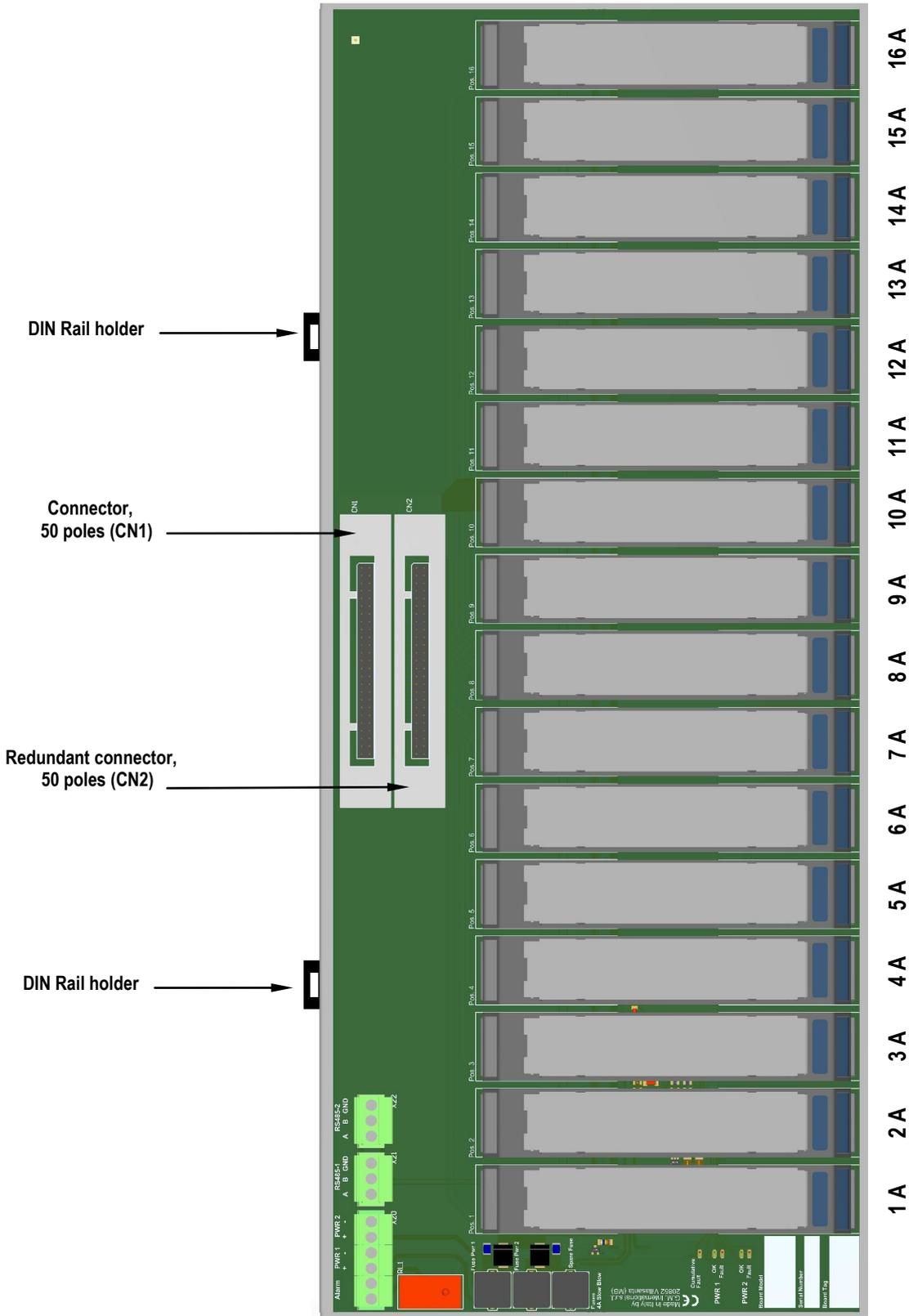
Ordering Information:

Model: TB-D5216-YOK-001

Loop Diagrams:



Termination Board Connections:

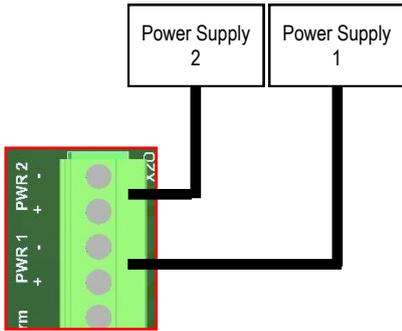


Connections table to Interface Cards:

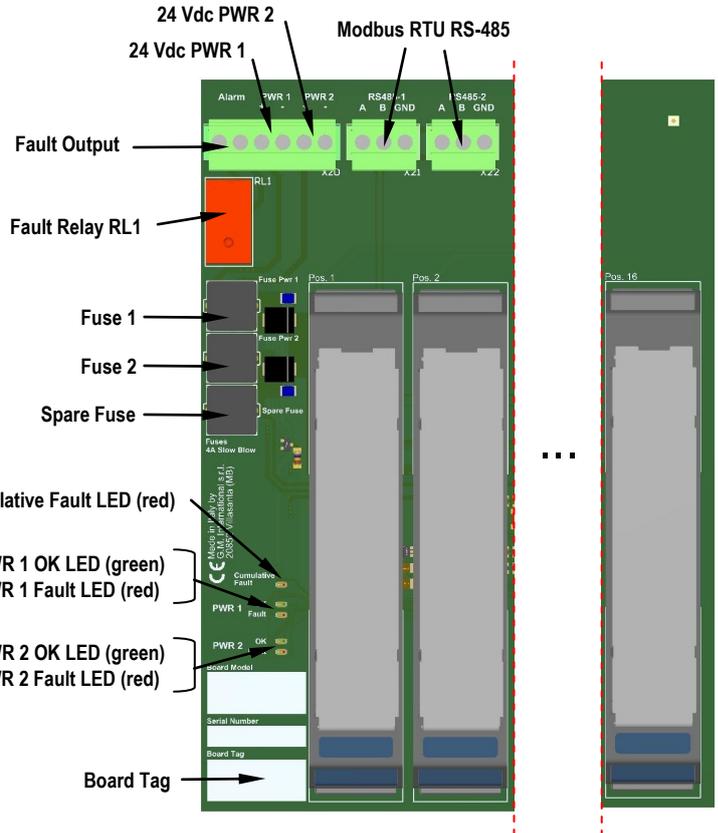
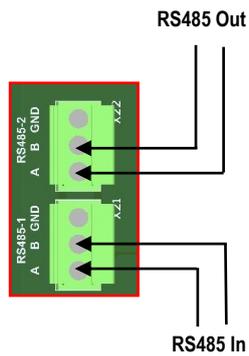
MODULE POSITION	MODULE CHANNEL NUMBER	INTERFACE CARD(S) CHANNEL NUMBER	MODULE CHANNEL POSITIVE (+) CONNECTION (CN1 & CN2)	MODULE CHANNEL NEGATIVE (-) CONNECTION (CN1 & CN2)	NOTES
1	1A	1	48	47	CN1 and CN2: • Ground available on poles: 9, 11, 12, 13, 14, 15, 16, 49 • +24 Vdc available on poles: 2, 3, 4,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

Termination Board description:

Power Supply redundancy:



Modbus RTU RS-485:



LED Signaling:

Meaning of LEDs on termination boards:

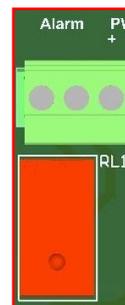
TAG	LED COLOR	MEANING
PWR 1 OK	GREEN	The LED is on when the Supply 1 is present ($18\text{ V} < V_1 < 30\text{ V}$)
PWR 1 Fault	RED	The LED is on when the Supply 1 is under or over-voltage
PWR 2 OK	GREEN	The LED is on when the Supply 2 is present ($18\text{ V} < V_2 < 30\text{ V}$)
PWR 2 Fault	RED	The 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 module/barrier reported a fault. Under regular conditions, the alarm contact is closed.



Termination Board size:

