# Клеммные платы серии TB-D5016-ABB. Технические характеристики

**TB-D5016 ABB-001**

## Termination Board 16 positions for ABB S800 (TU812, TU819) with DI cards DI810, DI818, DI830, DI840, DI880 and DO card DO814

## Characteristics:

**General description:**

This Termination Board (TB) provides direct connection between the I/O Card of the system and D5000 / D6000 Series modules.
The Intrinsically Safe protection and signal isolation between Safe and Hazardous Area, is provided by D5000 Series Associated Apparatus. 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.

***Supported ABB S800 I/O Cards:***

| *I/O Card Type* | *TU Type* | *I/O Card Model* | *Channels per I/O Card* | *TUs per board* | *Channels per board* | *Supported GM Modules(*)* |
|---|---|---|---|---|---|---|
| Digital In | TU812 | DI810 DI830 DI840 DI880 | 16 | 1 | 16 | D5031S, D5032S, D5037S, D5093S, D6001S, D6002S, D6031S, D6032S, D6037S |
| | | | | 2 | 32 | D5031D, D5032D, D5037D, D5093D, D6000D, D6001D, D6031D, D6032D, D6037D |
| | TU819 | DI818 | 32 | 1/2 | 16 | D5031S, D5032S, D5037S, D5093S, D6001S, D6002S, D6031S, D6032S, D6037S |
| | | | | 1 | 32 | D5031D, D5032D, D5037D, D5093D, D6000D, D6001D, D6031D, D6032D, D6037D |
| Digital Out | TU812 | DO814 | 16 | 1 | 16 | D5040S, D5048S, D5049S, D5090S, D5091S, D5094S, D5095S, D5096S, D5096S-100, D5097S, D5098S, D6001S, D6002S |
| | | | | 2 | 32 | D5040D, D5098D, D6000D, D6001D |

*(*)* Do not mix D5000 Intrinsically Safe barriers with D5000 Relay modules or D6000

***Termination Board general characteristics:***

| *Number of positions* | *Features* |
|---|---|
| 16 | 1) Power Supply voltage redundancy;<br>2) Abnormal supply voltage signaling;<br>3) Cumulative module fault signaling. |

## 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 $mm^2$.
***2 LEDs indication:*** green color, one for supply 1 and one for supply 2.
***Protection fuse:*** 4 A time lag (spare fuse provided on Termination Board).

**Fault detection:**

***1) Preventive - abnormal supply voltage:*** supply 1 or supply 2 is < 18 Vdc (Under Voltage, UV) or > 30 Vdc (Over Voltage, OV).
***2) Critical - abnormal supply voltages or cumulative fault:*** both supplies are in under (< 18 Vdc) or over (> 30 Vdc) voltage condition OR cumulative fault indication (about presence of short or open field circuit for any DO channel).
***LED fault signaling (for both case 1 and 2):*** 2 red LEDs (UV and OV of supply 1); 2 red LEDs (UV and OV of supply 2); a cumulative fault red LED.
***Relay fault signaling (one for each case 1 or 2):*** a voltage free NE SPDT - 1 Form C relay contacts (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.
***Coil status LED indication:*** yellow color, turn on when coil is energized.
***Connection:*** by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 $mm^2$.

**I/O card interface:**

***Connection:*** two 25 poles SUB-D male connectors (require female mating connectors).

**Environmental conditions:**

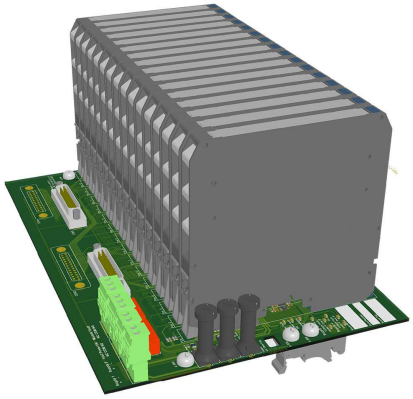
isolators on same termination board.

## Features:

- S800 DI and DO Cards board interfaces.
- 16 positions Termination Board for up to 32 channels.
- Lower cables installation and maintenance costs.
- Power supplies fault monitoring.
- Spare fuse provided.
- Mounting hardware provided for:
  - Wall mounting, M4 thread screw;
  - Wall mounting, M4 self tapping screw;
  - Single Din Rail mounting kit.

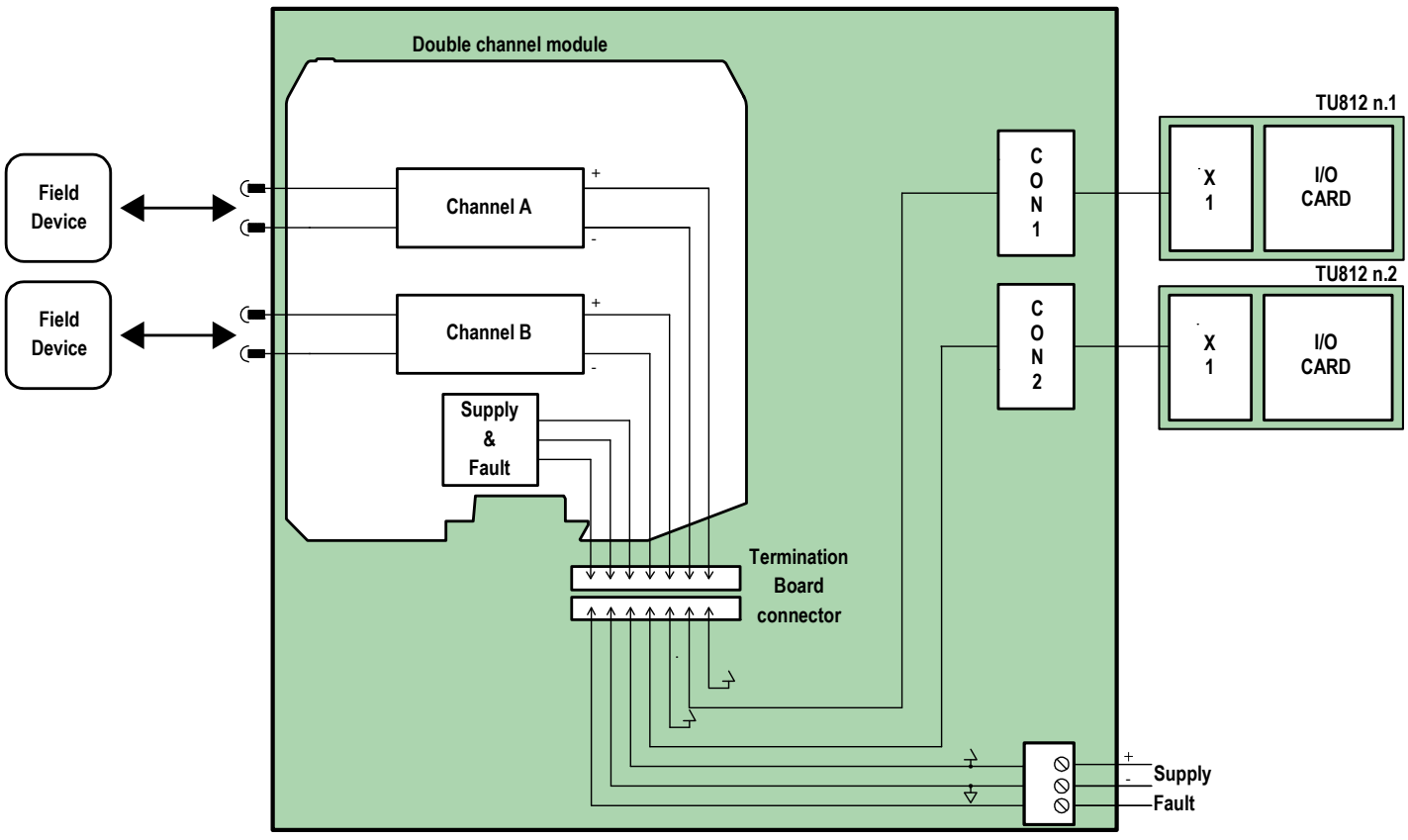
***Operating:*** temperature limits – 40 to + 70 °C,
relative humidity max 90 % non condensing, up to 35 °C.
***Storage:*** temperature limits – 45 to + 80 °C.

**Mounting:**
Hardware included for mounting on wall and single DIN rail.
***Weight:*** about 400 g (excluding modules and mounting options).
***Location:*** Safe Area / Ordinary locations.
***Dimensions:*** Width 267 mm, Depth 176 mm, Height 125 mm.



## Ordering Information:

| | |
|---|---|
| Model: | TB-D5016-ABB-001 |



**TB-D5016 ABB-002**

# Termination Board 16 positions for ABB S800 (TU812, TU819, TU852) with DI card DI814, and DO cards DO810, DO818, DO840, DO880

## Characteristics:

**General description:**

This Termination Board (TB) provides direct connection between the I/O Card of the system and D5000 / D6000 Series modules.
The Intrinsically Safe protection and signal isolation between Safe and Hazardous Area, is provided by D5000 Series Associated Apparatus. 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) Power Supply voltage redundancy;<br>2) Abnormal supply voltage signaling;<br>3) Cumulative module fault signaling. |

***Supported ABB S800 I/O Cards:***

| *I/O Card Type* | *TU Type* | *I/O Card Model* | *Channels per I/O Card* | *TUs per board* | *Channels per board* | *Supported GM Modules(*)* |
|---|---|---|---|---|---|---|
| Digital In | TU812 | DI814 | 16 | 1 | 16 | D5031S, D5032S, D5037S, D5093S, D6001S, D6002S, D6031S, D6032S, D6037S |
| | | | | 2 | 32 | D5031D, D5032D, D5037D, D5093D, D6000D, D6001D, D6031D, D6032D, D6037D |
| Digital Out | TU812 | DO810 | 16 | 1 | 16 | D5040S, D5048S, D5049S, D5090S, D5091S, D5094S, D5095S, D5096S, D5096S-100, D5097S, D5098S, D6001S, D6002S |
| | TU812<br>TU852 | DO840<br>DO880 | 16 | 1 | | |
| | TU812 | DO810 | 16 | 2 | 32 | D5040D, D5098D, D6000D, D6001D |
| | TU812<br>TU852 | DO840<br>DO880 | 16 | 2 | | |
| | TU819 | DO818 | 32 | 1/2 | 16 | D5040S, D5048S, D5049S, D5090S, D5091S, D5094S, D5095S, D5096S, D5096S-100, D5097S, D5098S, D6001S, D6002S |
| | | | | 1 | 32 | D5040D, D5098D, D6000D, D6001D |

*(*)* Do not mix D5000 Intrinsically Safe barriers with D5000 Relay modules or D6000 isolators on same termination board.

## Features:

- S800 DI and DO Cards board interfaces.
- 16 positions Termination Board for up to 32 channels.
- Lower cables installation and maintenance costs.
- Power supplies fault monitoring.
- Spare fuse provided.
- Mounting hardware provided for:
  - Wall mounting, M4 thread screw;
  - Wall mounting, M4 self tapping screw;
  - Single Din Rail mounting kit.

## Ordering Information:

Model: TB-D5016-ABB-002

## 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 $mm^2$.
***2 LEDs indication:*** green color, one for supply 1 and one for supply 2.
***Protection fuse:*** 4 A time lag (spare fuse provided on Termination Board).

**Fault detection:**

1) ***Preventive - abnormal supply voltage:*** supply 1 or supply 2 is < 18 Vdc (Under Voltage, UV) or > 30 Vdc (Over Voltage, OV).
2) ***Critical - abnormal supply voltages <u>or</u> cumulative fault:*** both supplies are in under (< 18 Vdc) or over (> 30 Vdc) voltage condition <u>OR</u> cumulative fault indication (about presence of short or open field circuit for any DO channel).

***LED fault signaling (for both case 1 and 2):*** 2 red LEDs (UV and OV of supply 1); 2 red LEDs (UV and OV of supply 2); a cumulative fault red LED.
***Relay fault signaling (one for each case 1 or 2):*** a voltage free NE SPDT - 1 Form C relay contacts (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.
***Coil status LED indication:*** yellow color, turn on when coil is energized.
***Connection:*** by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 $mm^2$.

**I/O card interface:**

***Connection:*** two 25 poles SUB-D male connectors (require female mating connectors).
***Maximum current per channel:*** 500 mA.

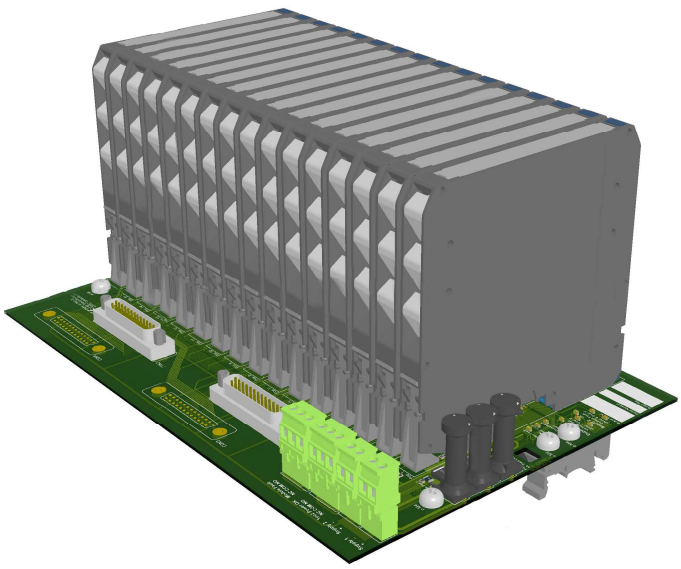
**Environmental conditions:**

***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 400 g (excluding modules and mounting options).
***Location:*** Safe Area / Ordinary locations.
***Dimensions:*** Width 267 mm, Depth 176 mm, Height 125 mm.

## Image:



**TB-D5016**
**ABB-003**

# Termination Board 16 positions for ABB S800 (TU852) with DI cards DI840, DI880

## Characteristics:

**General description:**

This Termination Board (TB) provides direct connection between the I/O Card of the system and D5000 / D6000 Series modules.
The Intrinsically Safe protection and signal isolation between Safe and Hazardous Area, is provided by D5000 Series Associated Apparatus. 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) Power Supply voltage redundancy;<br>2) Abnormal supply voltage signaling;<br>3) Cumulative module fault signaling. |

***Supported ABB S800 I/O Cards:***

| *I/O Card Type* | *TU Type* | *I/O Card Model* | *Channels per I/O Card* | *TUs per board* | *Channels per board* | *Supported GM Modules(*)* |
|---|---|---|---|---|---|---|
| Digital In | TU852 | DI840<br>DI880 | 16 | 1 | 16 | D5031S, D5032S, D5037S, D5093S, D6031S |
| | TU852 | DI840<br>DI880 | 16 | 2 | 32 | D5031D, D5032D D5037D, D5093D, D6031D |

***(*)*** Do not mix D5000 Intrinsically Safe barriers with D5000 Relay modules or D6000 isolators on same termination board.

## 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 $mm^2$.
***2 LEDs indication:*** green color, one for supply 1 and one for supply 2.
***Protection fuse:*** 4 A time lag (spare fuse provided on Termination Board).

**Fault detection:**

***1) Preventive - abnormal supply voltage:*** supply 1 or supply 2 is < 18 Vdc (Under Voltage, UV) or > 30 Vdc (Over Voltage, OV).
***2) Critical - abnormal supply voltages <u>or</u> cumulative fault:*** both supplies are in under (< 18 Vdc) or over (> 30 Vdc) voltage condition <u>OR</u> cumulative fault indication (about presence of short or open field circuit for any DO channel).
***LED fault signaling (for both case 1 and 2):*** 2 red LEDs (UV and OV of supply 1); 2 red LEDs (UV and OV of supply 2); a cumulative fault red LED.
***Relay fault signaling (one for each case 1 or 2):*** a voltage free NE SPDT - 1 Form C relay contacts (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.
***Coil status LED indication:*** yellow color, turn on when coil is energized.
***Connection:*** by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 $mm^2$.

**I/O card interface:**

***Connection:*** four 25 poles SUB-D male connectors (require female mating connectors).

**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.

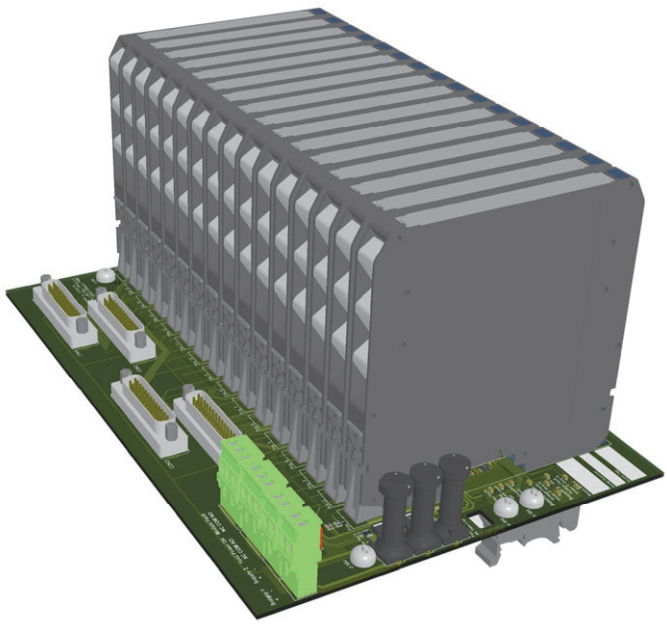
**Mounting:**

Hardware included for mounting on wall and single DIN rail.
***Weight:*** about 400 g (excluding modules and mounting options).
***Location:*** Safe Area / Ordinary locations.
***Dimensions:*** Width 267 mm, Depth 176 mm, Height 125 mm.

## Features:

- S800 DI Cards board interfaces.
- 16 positions Termination Board for up to 32 channels.
- Lower cables installation and maintenance costs.
- Power supplies fault monitoring.
- Spare fuse provided.
- Mounting hardware provided for:
  - Wall mounting, M4 thread screw;
  - Wall mounting, M4 self tapping screw;
  - Single Din Rail mounting kit.

## Image:



## Ordering Information:

| | |
|---|---|
| Model: | TB-D5016-ABB-003 |

**TB-D5016**
**ABB-004**

# Termination Board 16 positions for ABB S800 with DI cards on TU819+TU852 or TU812+TU852

## Characteristics:

**General description:**

This Termination Board (TB) provides direct connection between the I/O Card of the system and D5000 / D6000 Series modules.
The Intrinsically Safe protection and signal isolation between Safe and Hazardous Area, is provided by D5000 Series Associated Apparatus. 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) Power Supply voltage redundancy;<br>2) Abnormal supply voltage signaling;<br>3) Cumulative module fault signaling. |

***Supported ABB S800 I/O Cards:***

| *I/O Card Type* | *TU Type* | *I/O Card Model* | *Channels per I/O Card* | *TUs per board* | *Channels per board* | *Supported GM Modules(*)* |
|---|---|---|---|---|---|---|
| Digital In | TU819 | DI818 | 32 | 1/2 | 16 | D5031D, D5032D D6031D |
| | TU852 | DI840 DI880 | 16 | 1 | | |

| *I/O Card Type* | *TU Type* | *I/O Card Model* | *Channels per I/O Card* | *TUs per board* | *Channels per board* | *Supported GM Modules(*)* |
|---|---|---|---|---|---|---|
| Digital In | TU812 | DI810 DI830 DI840 DI880 | 16 | 1 | 16 | D5031D, D5032D D6031D |
| | TU852 | DI840 DI880 | 16 | 1 | | |

## Ordering Information:

Model: TB-D5016-ABB-004

## 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 $mm^2$.
***2 LEDs indication:*** green color, one for supply 1 and one for supply 2.
***Protection fuse:*** 4 A time lag (spare fuse provided on Termination Board).

**Fault detection:**

***1) Preventive - abnormal supply voltage:*** supply 1 or supply 2 is < 18 Vdc (Under Voltage, UV) or > 30 Vdc (Over Voltage, OV).
***2) Critical - abnormal supply voltages or cumulative fault:*** both supplies are in under (< 18 Vdc) or over (> 30 Vdc) voltage condition OR cumulative fault indication (about presence of short or open field circuit for any DO channel).
***LED fault signaling (for both case 1 and 2):*** 2 red LEDs (UV and OV of supply 1); 2 red LEDs (UV and OV of supply 2); a cumulative fault red LED.
***Relay fault signaling (one for each case 1 or 2):*** a voltage free NE SPDT - 1 Form C relay contacts (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.
***Coil status LED indication:*** yellow color, turn on when coil is energized.
***Connection:*** by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 $mm^2$.

**I/O card interface:**

***Connection:*** three 25 poles SUB-D male connectors (require female mating connectors).

**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 400 g (excluding modules and mounting options).
***Location:*** Safe Area / Ordinary locations.
***Dimensions:*** Width 267 mm, Depth 176 mm, Height 125 mm.

*(*)* Do not mix D5000 Intrinsically Safe barriers with D5000 Relay modules or D6000 isolators on same termination board.

## Features:

- S800 DI Cards board interfaces.
- 16 positions Termination Board for up to 16 channels with duplication or fault.
- Lower cables installation and maintenance costs.
- Power supplies fault monitoring.
- Spare fuse provided.
- Mounting hardware provided for:
  Wall mounting, M4 thread screw;
  Wall mounting, M4 self tapping screw;
  Single Din Rail mounting kit.