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Модули релейного выхода D5291S, D5293S, D5294S, D5295S. Технические характеристики

D5291

SIL3 Relay Out Module for 10 A ND Loads

The D5291 is a relay module suitable for switching safety related circuits, up to SIL 3 level, for high risk industries. It provides isolation between input and output contacts. It makes available a NO and a NC contact for Normally De-energized (ND) loads, with either Normally De-energized or Normally Energized coil, and a contact for service purpose. A wide compatibility towards different DCS/PLC is guaranteed: driving pulse testing is permitted by a dedicated internal circuit, which prevents contact and LED flickering. This relay module is not suitable for low-current consumption applications (system-to-system signalling, driving LEDs, etc.).

FEATURES

- SIL 3 / SC 3 for ND loads with ND/NE driver
- Installation in Zone 2/Div. 2
- Up to 10 A functional / 16 A inrush current
- Compatible with DCS/PLC pulse testing
- Service contact available
- Input/Output isolation

ORDERING INFORMATION

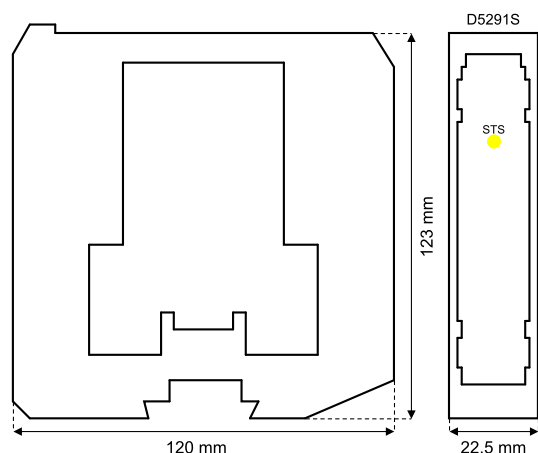
Ordering codes

D5291S: 1 channel

Accessories

DIN-Rail stopper MCHP196.

OVERALL DIMENSIONS



TECHNICAL DATA

Input

24 Vdc nom (21.6 to 27.6 Vdc), reverse polarity protected. Relay coils are internally protected with suppressor diodes.

Current consumption: 60 mA @ 24 Vdc, typical.

Power dissipation: 1.5 W @ 24 Vdc, typical.

Output

Voltage free SPDT relay contact. Terminals 13-14, open when relay de-energized, close in energized condition. Terminals 13-15, close when relay de-energized, open in energized condition.

Contact material: Ag Alloy (Cd free) or AgSnO2.

Contact rating: 10 A 250 Vac 2500 VA, 10 A 250 Vdc 300 W (resistive load).

Contact inrush current: 16 A @ 24 Vdc, 250 Vac.

Contact min. switching current: 100 mA.

DC and AC load breaking capacity: refer to Instruction Manual.

Mechanical / electrical life: 10 * 10⁶ / 5 * 10⁴ operation, typical.

Operate / release time: 40 / 25 ms, typical.

Isolation

In/Out 2.5 kV.

Environmental conditions

Operating temperature: temperature limits -40 to +60 °C.

Storage temperature: temperature limits -45 to +80 °C.

Mounting

DIN-Rail 35 mm, or on custom Term. Board.

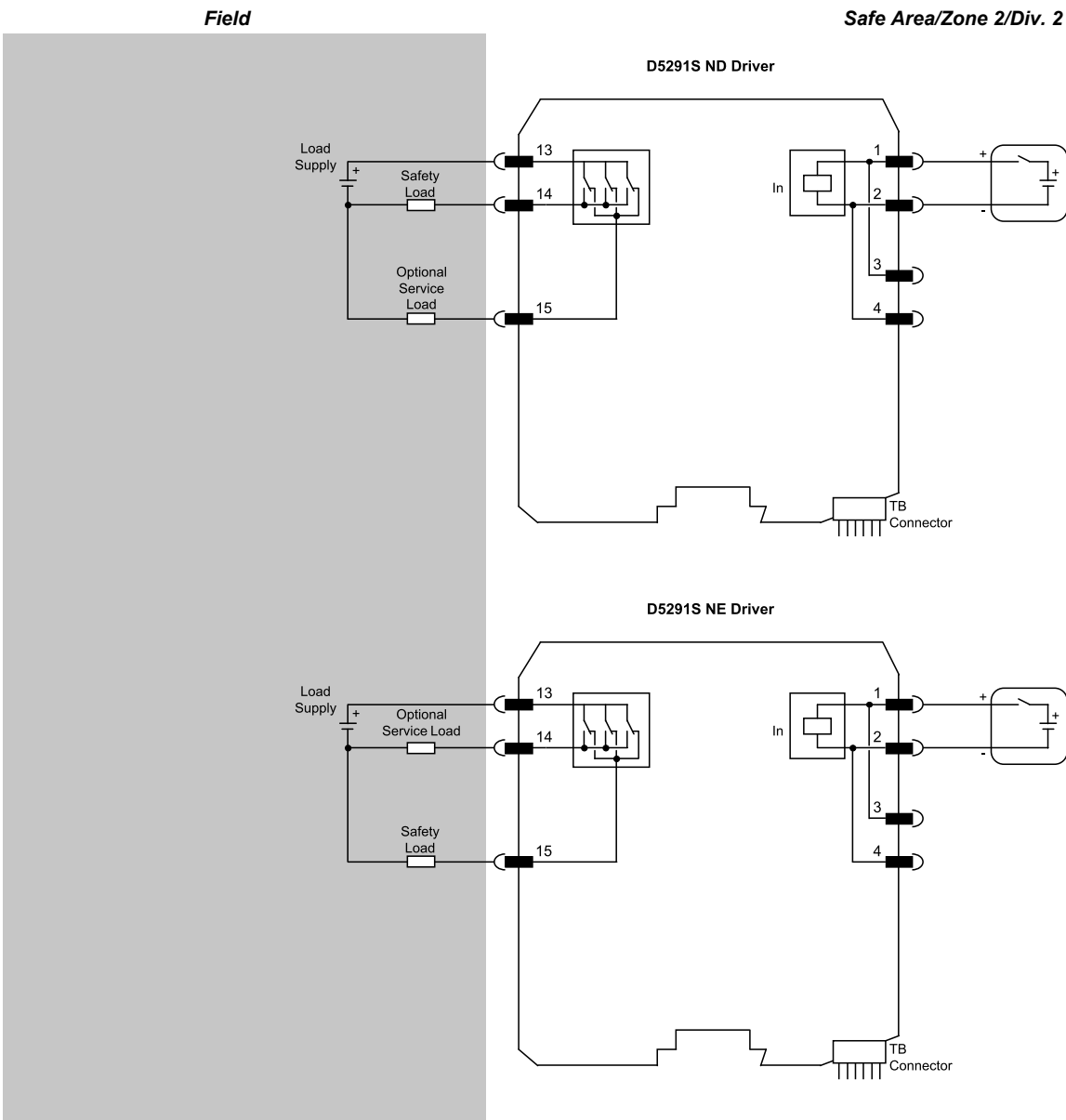
Weight: about 165 g.

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm² (13 AWG).

Dimensions: Width 22.5 mm, Depth 123 mm, Height 120 mm.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.



D5291-097

SIL3 48 Vdc Relay Out Module for 10 A ND Loads

The D5291-097 is a relay module suitable for switching safety related circuits, up to SIL 3 level, for high risk industries. It provides isolation between input and output contacts. It makes available a NO and a NC contact for Normally De-energized (ND) loads, with Normally Energized coil, and a contact for service purpose. Compatibility with specific DO cards with pulse testing needs to be verified. This relay module is not suitable for low-current consumption applications (system-to-system signalling, driving LEDs, etc.).

FEATURES

- SIL 3 / SC 3 for ND loads with NE driver
- Up to 10 A functional / 16 A inrush current
- Service contact available
- Input/Output isolation

ORDERING INFORMATION

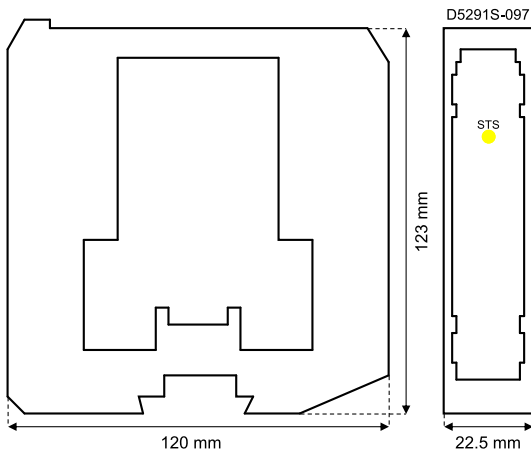
Ordering codes

D5291S-097: 1 channel

Accessories

DIN-Rail stopper MCHP196.

OVERALL DIMENSIONS



TECHNICAL DATA

Input

48 Vdc nom (42 to 54 Vdc), reverse polarity protected. Relay coils are internally protected with suppressor diodes.

Current consumption: 30 mA @ 48 Vdc, typical.

Power dissipation: 1.5 W @ 48 Vdc, typical.

Output

Voltage free SPDT relay contact. Terminals 13-15, open in normally energized condition, closed when relay is de-energized (safe state). Service load output (not SIL) at terminals 13-14 is normally open when relay is de-energized, closed in energized relay condition.

Contact material: Ag Alloy (Cd free) or AgSnO₂.

Contact rating: 10 A 250 Vac 2500 VA, 10 A 250 Vdc 300 W (resistive load).

Contact inrush current: 16 A @ 24 Vdc, 250 Vac.

Contact min. switching current: 100 mA.

DC and AC load breaking capacity: refer to Instruction Manual.

Mechanical / electrical life: 10 * 10⁶ / 5 * 10⁴ operation, typical.

Operate / release time: 15 ms / 5 ms, typical.

Isolation

In/Out 2.5 kV.

Environmental conditions

Operating temperature: temperature limits -40 to +60 °C.

Storage temperature: temperature limits -45 to +80 °C.

Mounting

DIN-Rail 35 mm, or on custom Term. Board.

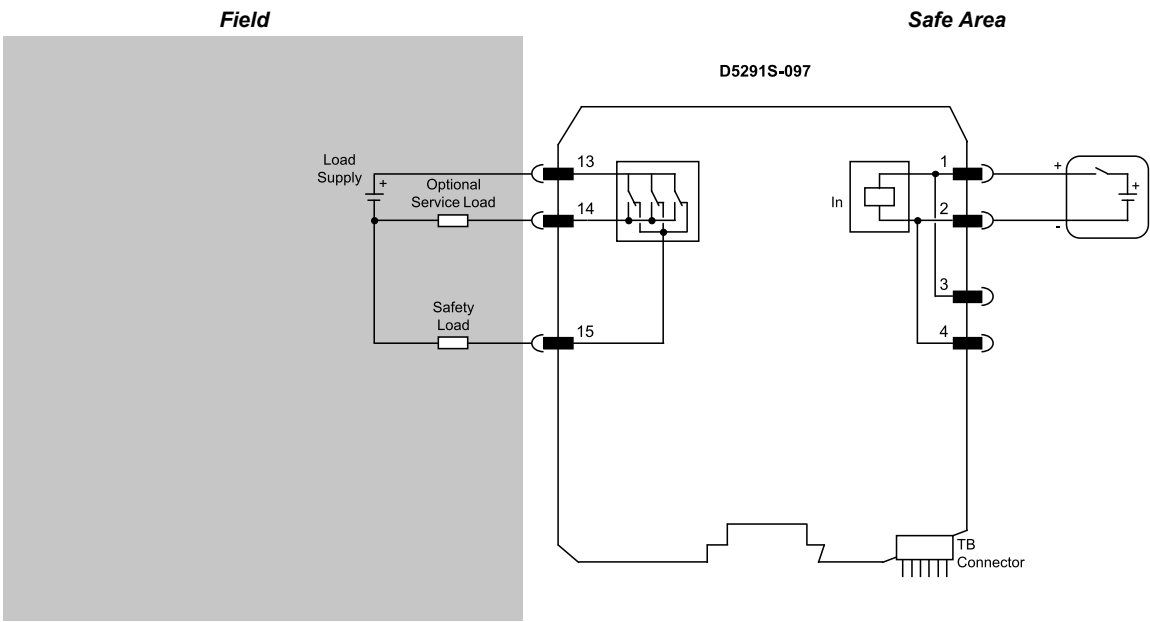
Weight: about 165 g.

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm² (13 AWG).

Dimensions: Width 22.5 mm, Depth 123 mm, Height 120 mm.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.



D5293

SIL3 Relay Out Module for 5 A NE Loads with LFD

The D5293 is a relay module suitable for switching safety related circuits, up to SIL 3 level, for high risk industries. It provides isolation between input and output contacts. It makes available two NO contacts for Normally Energized (NE) loads, in order to disconnect the load on both supply lines, and a NC contact for service purpose. Load can be isolated from supply on both polarities. A wide compatibility towards different DCS/PLC is guaranteed: driving pulse testing is permitted by a dedicated internal circuit, which prevents contact and LED flickering. Line and load short/open circuit detection and load voltage monitoring are provided, both when the load is off and when the load is on. The fault in the field is directly mirrored to the PLC DO and it is also reported by opening the fault output. Diagnostic parameters are programmable and can also be monitored/configured through Modbus.

FEATURES

- SIL 3 / SC 3 for NE loads with NE driver
- SIL 2 / SC 3 for FAULT OUTPUTS
- Installation in Zone 2/Div. 2
- Up to 5 A functional / 6 A inrush current
- Load disconnection on both supply lines available
- Compatible with DCS/PLC pulse testing
- Line & Load short/open circuit detection
- Load voltage monitoring
- Field fault mirroring to the PLC DO
- Modbus RTU RS-485 for monitor & configuration
- Service contact available
- Input/Output/Supply isolation

ORDERING INFORMATION

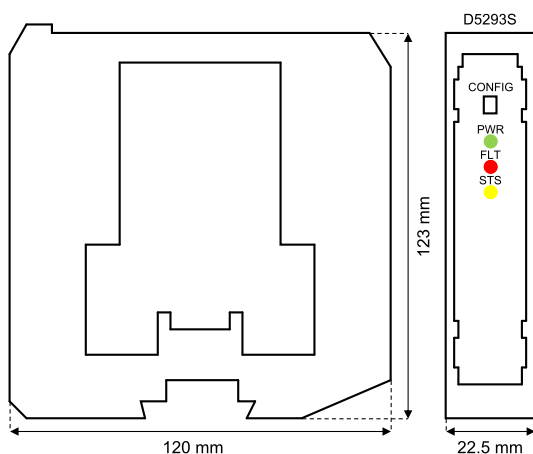
Ordering codes

D5293S: 1 channel

Accessories

Bus Connector JDFT050, Bus Mounting Kit OPT5096.
Programmable USB serial line Kit PPC5092 + SWC5090.

OVERALL DIMENSIONS



TECHNICAL DATA

Supply

24 Vdc nom (18 to 30 Vdc), reverse polarity protected.
Current consumption: 40 mA @ 24 V (no fault), typical.
Power dissipation: 1.0 W @ 24 V (no fault), typical.

Input

24 Vdc nom (21.6 to 27.6 Vdc), reverse polarity protected. Relay coils are internally protected with suppressor diodes.
Current consumption: 40 mA @ 24 Vdc (no fault), typical.
Power dissipation: 1.0 W @ 24 Vdc (no fault), typical.

Output

Voltage free 1 + 1 SPST relay contact at terminals 13-15 and 14-16, opens when relay is de-energized (fail safe state), close in energized condition.
Contact material: Ag Alloy (Cd free), gold plated.
Contact rating: 5 A 250 Vac 1250 VA, 5 A 250 Vdc 140 W (resistive load).
Contact min. switching current: 1 mA.
Contact inrush current: 6 A @ 24 Vdc, 250 Vac.
DC and AC load breaking capacity: refer to Instruction Manual.
Contact current derating: refer to Instruction Manual.
Mechanical / electrical life: 5 * 10⁶ / 3 * 10⁴ operation, typical.
Operate / release time: 30 ms / 30 ms, typical.

Fault

Load & line short/open circuit, supply voltage monitoring.
Line + load resistance: programmable up to 50 kΩ.
Load current: programmable up to 5 A.
Load supply voltage: programmable up to 250 Vdc/Vac.
Fault signaling: voltage free DPST contact.
Fault 1 rating: 0.5 A 30 Vac 15 VA, 0.5 A 50 Vdc 25 W (resistive load).
Fault 2 rating: 3 A 250 Vac 750 VA, 3 A 125 Vdc 120 W (resistive load).
Response time: 4 s, typical.

Modbus interface

Modbus RTU RS-485 up to 115.2 kbps for monitor/configuration/control.

Isolation

Out/In 2.5 kV; Out/Supply 2.5 kV; Out/Fault Outs 2.5 kV; Out/RS485 Modbus 2.5 kV; In/Supply 500 V; In/Fault Out 1 500 V; In/Fault Out 2 2.5 kV; In/RS485 Modbus 500 V; Supply/Fault Out 1 500 V; Supply/Fault Out 2 2.5 kV; Supply/RS485 Modbus 500 V.

Environmental conditions

Operating temperature: temperature limits -40 to +70 °C.
Storage temperature: temperature limits -45 to +80 °C.

Mounting

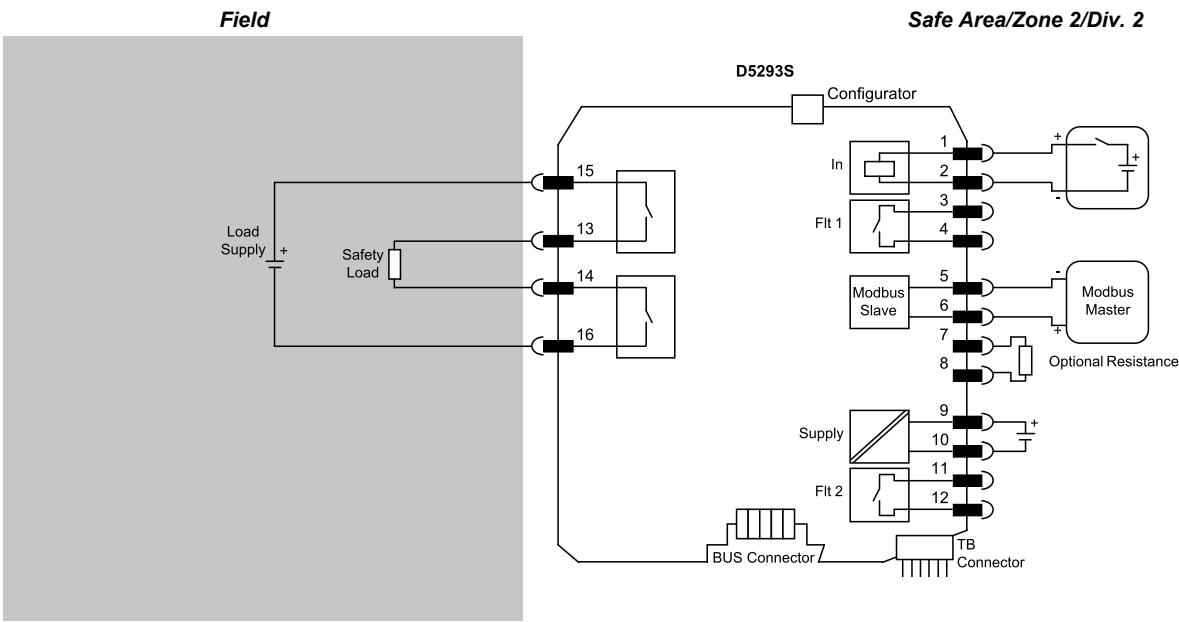
DIN-Rail 35 mm, with or without Power Bus or on custom Term. Board.
Weight: about 230 g.

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm² (13 AWG).

Dimensions: Width 22.5 mm, Depth 123 mm, Height 120 mm.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.



D5294

SIL3 Relay Out Module for 5 A NE/ND Loads with LFD

The D5294 is a relay module suitable for switching safety related circuits, up to SIL 3 level, for high risk industries. It provides isolation between input and output contacts. It makes available 2+2 NO relay contacts connected in parallel and then in series to avoid spurious trip and to increase process availability. High process availability SIL 3 Safety Function for both Normally Energized (NE) and Normally De-energized (ND) / F&G loads is available. Load can be isolated from supply on both polarities. A wide compatibility towards different DCS/PLC is guaranteed: driving pulse testing is permitted by a dedicated internal circuit, which prevents contact and LED flickering. Line and load short/open circuit detection and load voltage monitoring are provided, both when the load is off and when the load is on. The fault in the field is directly mirrored to the PLC DO and it is also reported by opening the fault output. Diagnostic parameters are programmable and can also be monitored/configured through Modbus.

FEATURES

- SIL 3 / SC 3 for NE/ND loads with NE/ND driver
- SIL 2 / SC 3 for FAULT OUTPUTS
- Installation in Zone 2/Div. 2
- Up to 5 A functional / 6 A inrush current
- Load disconnection on both supply lines available
- High process availability to avoid spurious trips
- Compatible with DCS/PLC pulse testing
- Line and Load short/open circuit detection
- Load voltage monitoring
- Earth leakage monitoring
- Internal coil integrity monitoring
- Field fault mirroring to the PLC DO
- Modbus RTU RS-485 for monitor & configuration
- Service contact available
- Input/Output/Supply isolation

ORDERING INFORMATION

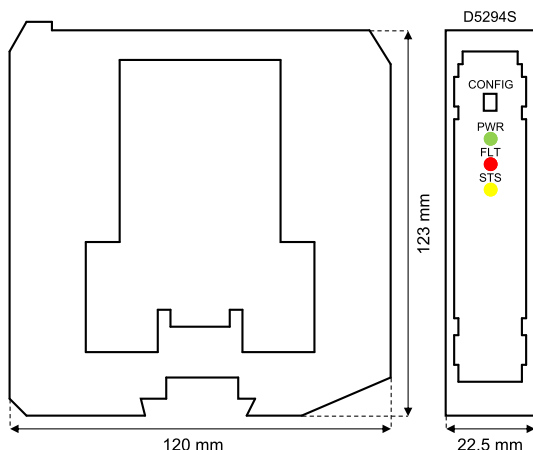
Ordering codes

D5294S: 1 channel

Accessories

Bus Connector JDFT050, Bus Mounting Kit OPT5096.
Programmable USB serial line Kit PPC5092 + SWC5090.

OVERALL DIMENSIONS



TECHNICAL DATA

Supply

24 Vdc nom (18 to 30 Vdc), reverse polarity protected.

Current consumption: 45 mA @ 24 Vdc (no fault), typical.

Power dissipation: 1.1 W @ 24 Vdc (no fault), typical.

Input

24 Vdc nom (21.6 to 27.6 Vdc), reverse polarity protected. Relay coils are internally protected with suppressor diodes.

Current consumption: 40 mA @ 24 Vdc (no fault), typical.

Power dissipation: 1.0 W @ 24 Vdc (no fault), typical.

Output

Voltage free 2+2 SPST relay contact (2 paralleled contacts in series) at terminals 13-15 and 14-16, close when relay energized, open in de-energized condition.

Contact material: Ag Alloy (Cd free), gold plated.

Contact rating: 5 A 250 Vac 1250 VA, 5 A 250 Vdc 140 W (resistive load).

Contact min. switching current: 1 mA.

Contact inrush current: 6 A @ 24 Vdc, 250 Vac.

DC and AC load breaking capacity: refer to Instruction Manual.

Contact current derating: refer to Instruction Manual.

Mechanical / electrical life: 5 * 10⁶ / 3 * 10⁴ operation, typical.

Operate / release time: 30 ms / 30 ms, typical.

Fault

Load & line short/open circuit, supply voltage and earth leakage monitor.

Diagnostics equivalent source: when the load is off, the diagnostic circuit forces a sensing signal: 5.5 V open circuit, 10 mA short circuit, typical.

Line + load resistance: programmable up to 50 kΩ.

Load current: programmable up to 5 A.

Load supply voltage: programmable up to 250 Vdc/Vac.

Load earth leakage: programmable up to 3 MΩ.

Fault signalling: voltage free DPST contact.

Fault 1 rating: 0.5 A 30 Vac 15 VA, 0.5 A 50 Vdc 25 W (resistive load).

Fault 2 rating: 3 A 250 Vac 750 VA, 3 A 125 Vdc 120 W (resistive load).

Response time: 4 s, typical.

Modbus interface

Modbus RTU RS-485 up to 115.2 kbps for monitor/configuration/control.

Isolation

Output/Input 2.5 kV; Output/Supply 2.5 kV; Output/Fault Outputs 2.5 kV;

Output/RS485 Modbus 2.5 kV; Input/Supply 500 V; Input/Fault Output 1

500 V; Input/Fault Output 2 2.5 kV; Input/RS485 Modbus 500 V;

Supply/Fault Output 1 500 V; Supply/Fault Output 2 2.5 kV; Supply/RS485

Modbus 500 V.

Environmental conditions

Operating temperature: temperature limits -40 to +70 °C.

Storage temperature: temperature limits -45 to +80 °C.

Mounting

DIN-Rail 35 mm, with or without Power Bus or on custom Term. Board.

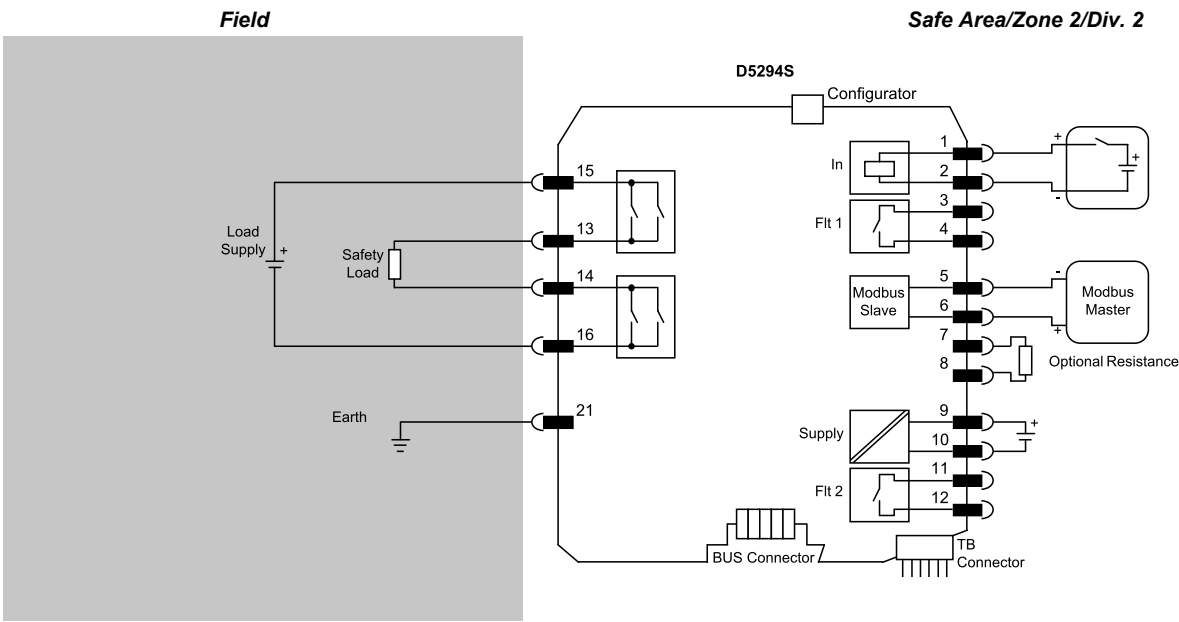
Weight: about 195 g.

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm² (13 AWG).

Dimensions: Width 22.5 mm, Depth 123 mm, Height 120 mm.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.



D5295

SIL3 Relay Out Module for 5 A NE/ND Loads with LFD

The D5295 is a relay module suitable for switching safety related circuits, up to SIL 3 level, for high risk industries. It provides isolation between input and output contacts. It makes available 2+2 NC relay contacts connected in parallel and then in series to avoid spurious trip and to increase process availability. High process availability SIL 3 Safety Function for both Normally Energized (NE) and Normally De-energized (ND) / F&G loads is available. Load can be isolated from supply on both polarities. A wide compatibility towards different DCS/PLC is guaranteed: driving pulse testing is permitted by a dedicated internal circuit, which prevents contact and LED flickering. Line and load short/open circuit detection and load voltage monitoring are provided, both when the load is off and when the load is on. The fault in the field is directly mirrored to the PLC DO and it is also reported by opening the fault output. Diagnostic parameters are programmable and can also be monitored/configured through Modbus.

FEATURES

- SIL 3 / SC 3 for NE/ND loads with ND/NE driver
- SIL 2 / SC 3 for FAULT OUTPUTS
- Installation in Zone 2
- Up to 5 A functional / 6 A inrush current
- Load disconnection on both supply lines available
- High process availability to avoid spurious trips
- Compatible with DCS/PLC pulse testing
- Line & Load short/open circuit detection
- Load voltage monitoring
- Earth leakage monitoring
- Internal coil integrity monitoring
- Field fault mirroring to the PLC DO
- Modbus RTU RS-485 for monitor & configuration
- Service contact available
- Input/Output/Supply isolation

ORDERING INFORMATION

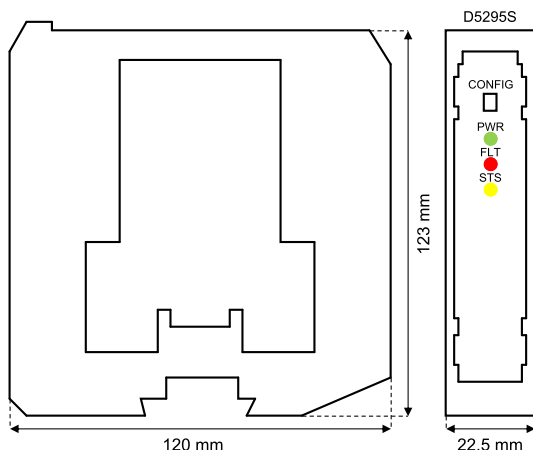
Ordering codes

D5295S: 1 channel

Accessories

Bus Connector JDFT050, Bus Mounting Kit OPT5096.
Programmable USB serial line Kit PPC5092 + SWC5090.

OVERALL DIMENSIONS



TECHNICAL DATA

Supply

24 Vdc nom (18 to 30 Vdc), reverse polarity protected.
Current consumption: 45 mA @ 24 V (no fault), typical.
Power dissipation: 1.1 W @ 24 V (no fault), typical.

Input

24 Vdc nom (21.6 to 27.6 Vdc), reverse polarity protected. Relay coils are internally protected with suppressor diodes.
Current consumption: 40 mA @ 24 Vdc (no fault), typical.
Power dissipation: 1.0 W @ 24 Vdc (no fault), typical.

Output

Voltage free 2+2 SPST relay contact (2 paralleled contacts in series) at terminals 13-15 and 14-16, open when relay energized, close in de-energized condition.
Contact material: Ag Alloy (Cd free), gold plated.
Contact rating: 5 A 250 Vac 1250 VA, 5 A 250 Vdc 140 W (resistive load).
Contact min. switching current: 1 mA.
Contact inrush current: 6 A @ 24 Vdc, 250 Vac.
DC and AC load breaking capacity: refer to Instruction Manual.
Contact current derating: refer to Instruction Manual.
Mechanical / electrical life: 5 * 10⁶ / 3 * 10⁴ operation, typical.
Operate / release time: 30 ms / 30 ms, typical.

Fault

Load & line short/open circuit, supply voltage and earth leakage monitor.
Diagnostics equivalent source: when the load is off, the diagnostic circuit forces a sensing signal: 5.5 V open circuit, 10 mA short circuit, typical.
Line + load resistance: programmable up to 50 kΩ.
Load current: programmable up to 5 A.
Load supply voltage: programmable up to 250 Vdc/Vac.
Load earth leakage: programmable up to 3 MΩ.
Fault signalling: voltage free DPST contact.
Fault 1 rating: 0.5 A 30 Vac 15 VA, 0.5 A 50 Vdc 25 W (resistive load).
Fault 2 rating: 3 A 250 Vac 750 VA, 3 A 125 Vdc 120 W (resistive load).
Response time: 4 s, typical.

Modbus interface

Modbus RTU RS-485 up to 115.2 kbps for monitor/configuration/control.

Isolation

Output/Input 2.5 kV; Output/Supply 2.5 kV; Output/Fault Outputs 2.5 kV; Output/RS485 Modbus 2.5 kV; Input/Supply 500 V; Input/Fault Output 1 500 V; Input/Fault Output 2 2.5 kV; Input/RS485 Modbus 500 V; Supply/Fault Output 1 500 V; Supply/Fault Output 2 2.5 kV; Supply/RS485 Modbus 500 V.

Environmental conditions

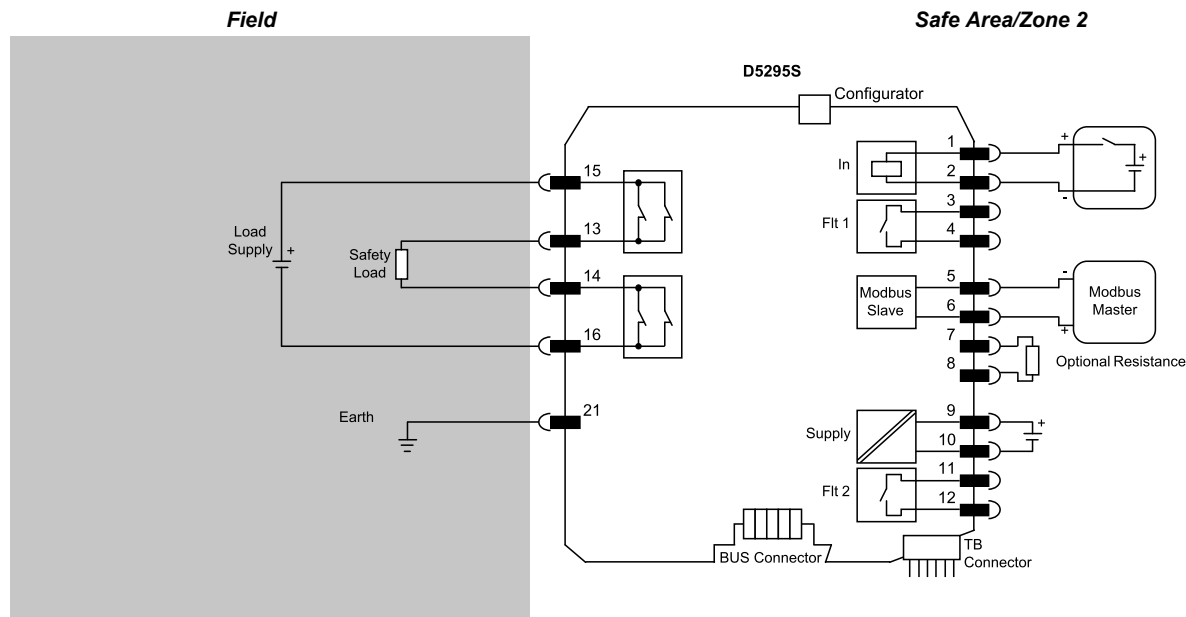
Operating temperature: temperature limits -40 to +70 °C.
Storage temperature: temperature limits -45 to +80 °C.

Mounting

DIN-Rail 35 mm, with or without Power Bus or on custom Term. Board.
Weight: about 235 g.
Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm² (13 AWG).
Dimensions: Width 22.5 mm, Depth 123 mm, Height 120 mm.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.



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