INSTRUCTION MANUAL

SIL 2 Switch/Proximity Detector Repeater Relay Output DIN-Rail Models D1032D, D1032Q

SIL Applications

For Safety Related System and SIL2, SIL3 Applications according IEC61508 & IEC61511 Standards refer to “Functional Safety Manual” document number ISM0071

Characteristics

General Description: The Switch/Proximity Detector Repeater type D1032 is a DIN Rail unit with two or four independent and isolated channels. The unit can be configured for contact or proximity detector, NO or NC and for NE or ND relay output. Each channel enables a Safe Area load to be controlled by a switch, or a proximity detector, located in Hazardous Area.
D1032Q quad channel type has four independent input channels and actuates the corresponding output relay. Two actuation modes can be independently DIP switch configured on each input channel: NO input/NE relay or NO input/ND relay. Contact or proximity sensor and its connection line short or open circuit fault detection is also DIP switch configurable: fault detection can be enabled (in case of fault it de-energizes the corresponding output relay and turns the fault LED on) or disabled (in case of fault the corresponding output relay repeats the input line open or closed status as configured).
D1032D dual channel type has two input channels and four output relays; the unit has two DIP switch configurable operating modes:
Mode A) input channel actuates in parallel the two output relays. Relay actuation mode can be independently configured for each output in two modes:
NO input/NE relay or NO input/ND relay.
Mode B) input channel actuates output relay A configurable in two modes as in mode A above. Output relay B operates as a fault output (in case of input fault, relay B actuates and the fault LED turns on while relay A repeats the input line as configured). Actuation can be DIP switch configured in two modes:
No input fault/energized relay (it de-energizes in case of fault) or No input fault/de-energized relay (it energizes in case of fault).

Function: 2 or 4 channels I.S. switch repeater for contact or EN60947-5-6 proximity. Provides 3 port isolation (input/output/supply). Line-fault detection, common to all input signals, available when using Power Bus enclosure.

Signalling LEDs: Power supply indication (green), output status (yellow), line fault (red).

Field Configurability: NO/NC input for contact/proximitor, NE/ND relay operation and fault detection enable/disable.

EMC: Fully compliant with CE marking applicable requirements.

Technical Data

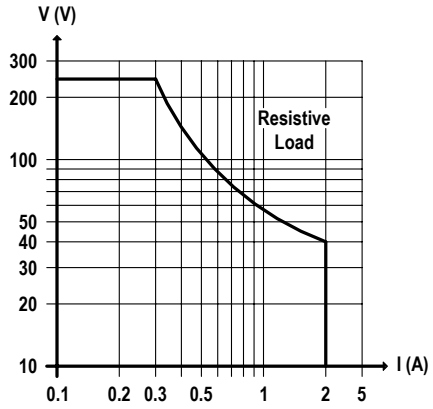
Supply: 24 Vdc nom (20 to 30 Vdc) reverse polarity protected, ripple within voltage limits ≤ 5 Vpp.
Current consumption @ 24 V: 75 mA for 4 channels D1032Q, 60 mA for 2 channels D1032D with input closed and relays energized.
Power dissipation: 1.8 W for 4 channels D1032Q, 1.4 W for 2 channels D1032D with 24 V supply voltage, input closed and relays energized.
Max. power consumption: at 30 V supply voltage, short circuit input and relays energized, 2.4 W for 4 channels D1032Q, 2.0 W for 2 channels D1032D.

Isolation (Test Voltage): I.S. In/Out 1.5 KV; I.S. In/Supply 1.5 KV; I.S. In/I.S. In 500 V; Out/Supply 1.5 KV; Out 1-3/Out 2-4 1.5 KV.

Input switching current levels: ON ≥ 2.1 mA, OFF ≤ 1.2 mA, switch current ≈ 1.65 mA ± 0.2 mA hysteresis.
Fault current levels: open fault ≤ 0.2 mA, short fault ≥ 6.8 mA
(when enabled both faults de-energize channel relay with quad channel unit D1032Q or actuate fault relay with dual channel unit D1032D).
Input equivalent source: 8 V 1 KΩ typical (8 V no load, 8 mA short circuit).

Output: voltage free SPST relay contact.
Contact material: AgNi90/10.
Contact rating: 2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W (resistive load).
Mechanical / Electrical life: 15 * 10^6 / 1 * 10^5 operation, typical.
Operate / Release time: 5 / 2 ms typical.
Bounce time NO / NC contact: 1 / 5 ms.
Response time: 20 ms.
Frequency response: 10 Hz maximum.

DC Load breaking capacity:



Compatibility:
CE mark compliant, conforms to 94/9/EC Atex Directive and to 2004/108/CE EMC Directive.
Environmental conditions:
Operating: temperature limits -20 to + 60 °C, relative humidity max 90 % non condensing, up to 35 °C.
Storage: temperature limits – 45 to + 80 °C.

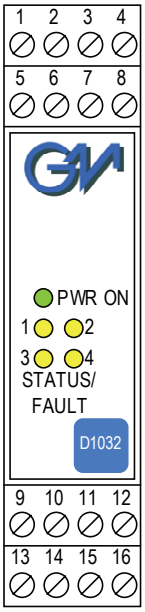
Safety Description:
II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I, II 3G Ex nA IIC T4, [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I associated electrical apparatus.
Uo/Voc = 9.6 V, Io/Isc = 10 mA, Po/Po = 24 mW at terminals13-14, 15-16, 9-10, 11-12.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals: DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26, EN61241-0, EN61241-11,
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-26, IEC61241-0, IEC61241-11, GM International CRR028 conforms to EN60079-0, EN60079-15,
UL & C-UL E222308 conforms to UL913 (Div.1), UL 60079-0 (General, All Zones), UL60079-11 (Intrinsic Safety “i” Zones 0 & 1) for UL and
CSA-C22.2 No.157-92 (Div.1), CSA-E60079-0 (General, All Zones), CSA-E60079-11 (Intrinsic Safety “i” Zones 0 & 1) for C-UL,
refer to control drawing ISM0130 for complete UL and C-UL safety and installation instructions,
FM & FM-C No. 3024643, 3029921C, conforms to Class 3600, 3610, 3611, 3810 and C22.2 No.142, C22.2 No.157, C22.2 No.213, E60079-0, E60079-11, E60079-15,
Russia according to GOST 12.2.007.0-75, R 51330.0-99, R 51330.10-99 [Exia] IIC X, Ukraine according to GOST 12.2.007.0,22782.0,22782.5 Exia IIC X,
EXIDA Report No. GM03/07-24 R001, SIL 2 according to IEC 61508. Please refer to Functional Safety Manual for SIL applications.
DNV and KR Type Approval Certificate for marine applications.

Mounting: T35 DIN Rail according to EN50022.
Weight: about 185 g D1032Q, 165 g D1032D.
Connection: by polarized plug-in disconnect screw terminal blocks to accomodate terminations up to 2.5 mm^2.
Location: Safe Area/Non Hazardous Locations or Zone 2, Group IIC T4, Class I, Division 2, Groups A, B, C, D Temperature Code T4 and Class I, Zone 2, Group IIC, IIB, IIA T4 installation.
Protection class: IP 20.
Dimensions: Width 22.5 mm, Depth 99 mm, Height 114.5 mm.

Ordering information

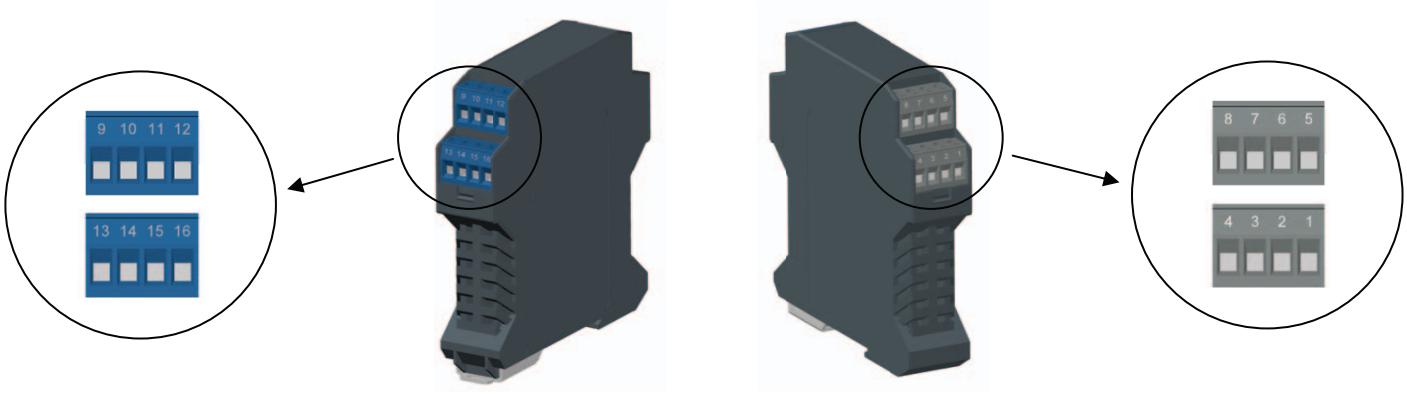
Model: D1032		
2 channels	D	
4 channels	Q	
Power Bus enclosure		/B

Front Panel and Features



- SIL 2 according to IEC 61508 for Tproof = 3 / 7 years (10 / 20 % of total SIF).
- PFDavg (1 year) 2.65 E-04, SFF 81.34 %.
- Input from Zone 0 (Zone 20), Division 1, installation in Zone 2, Division 2.
- NO/NC contact/proximity Detector Input.
- Four voltage free SPST Relay contact Output Signals.
- Relay Output for fault detection on dual channel version.
- Line fault detection with common signalling available when using Power Bus enclosure.
- Three port isolation, Input/Output/Supply.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- In-field programmability by DIP Switch.
- ATEX, IECEx, UL & C-UL, FM & FM-C, Russian and Ukrainian Certifications.
- Type Approval Certificate DNV and KR for marine applications.
- High Reliability, SMD components.
- High Density, four channels per unit.
- Simplified installation using standard DIN Rail and plug-in terminal blocks.
- 250 Vrms (Um) max. voltage allowed to the instruments associated with the barrier.

Terminal block connections



D1032Q

HAZARDOUS AREA		SAFE AREA	
9	+ Input Ch 3 for Proximity or Input Ch 3 for Voltage free Contact	1	Output Ch 1
10	- Input Ch 3 for Proximity or Input Ch 3 for Voltage free Contact	2	Output Common Ch 1 and Ch 3
11	+ Input Ch 4 for Proximity or Input Ch 4 for Voltage free Contact	3	+ Power Supply 24 Vdc
12	- Input Ch 4 for Proximity or Input Ch 4 for Voltage free Contact	4	- Power Supply 24 Vdc
13	+ Input Ch 1 for Proximity or Input Ch 1 for Voltage free Contact	5	Output Ch 2
14	- Input Ch 1 for Proximity or Input Ch 1 for Voltage free Contact	6	Output Common Ch 2 and Ch 4
15	+ Input Ch 2 for Proximity Input Ch 2 for Voltage free Contact	7	Output Ch 3
16	- Input Ch 2 for Proximity Input Ch 2 for Voltage free Contact	8	Output Ch 4

D1032D

HAZARDOUS AREA		SAFE AREA	
13	+ Input Ch 1 for Proximity or Input Ch 1 for Voltage free Contact	1	Output Ch 1-A
14	- Input Ch 1 for Proximity or Input Ch 1 for Voltage free Contact	2	Output Common Ch 1-A and Ch 1-B
15	+ Input Ch 2 for Proximity Input Ch 2 for Voltage free Contact	3	+ Power Supply 24 Vdc
16	- Input Ch 2 for Proximity Input Ch 2 for Voltage free Contact	4	- Power Supply 24 Vdc
		5	Output Ch 2-A
		6	Output Common Ch 2-A and Ch 2-B
		7	Output Ch 1-B
		8	Output Ch 2-B

Parameters Table

In the system safety analysis, always check the Hazardous Area/Hazardous Locations devices to conform with the related system documentation, if the device is Intrinsically Safe check its suitability for the Hazardous Area/Hazardous Locations and gas group encountered and that its maximum allowable voltage, current, power (Ui/Vmax, Ii/Imax, Pi/Pi) are not exceeded by the safety parameters (Uo/Voc, Io/Isc, Po/Po) of the D1032 series Associated Apparatus connected to it. Also consider the maximum operating temperature of the field device, check that added connecting cable and field device capacitance and inductance do not exceed the limits (Co/Ca, Lo/La, Lo/Ro) given in the Associated Apparatus parameters for the effective gas group. See parameters on enclosure side and the ones indicated in the table below:

D1032 Terminals		D1032 Associated Apparatus Parameters		Must be	Hazardous Area/ Hazardous Locations Device Parameters
Ch1	13 -14	Uo / Voc = 9.6 V		≤	Ui / Vmax
Ch2	15 -16				
Ch3	9 - 10				
Ch4	11 - 12				
Ch1	13 -14	Io / Isc = 10 mA		≤	Ii / Imax
Ch2	15 -16				
Ch3	9 - 10				
Ch4	11 - 12				
Ch1	13 -14	Po / Po = 24 mW		≤	Pi / Pi
Ch2	15 -16				
Ch3	9 - 10				
Ch4	11 - 12				

D1032 Terminals		D1032 Associated Apparatus Parameters		Must be	Hazardous Area/ Hazardous Locations Device + Cable Parameters
Ch1	13 -14	Co / Ca = 3.599 µF	(IIC-A, B)	≥	Ci / Ci device + C cable
Ch2	15 -16	Co / Ca = 25.999 µF	(IIB-C)		
Ch3	9 - 10				
Ch4	11 - 12	Co / Ca = 209.999 µF	(IIA-D)		
Ch1	13 -14	Lo / La = 379 mH	(IIC-A, B)	≥	Li / Li device + L cable
Ch2	15 -16	Lo / La = 1517 mH	(IIB-C)		
Ch3	9 - 10				
Ch4	11 - 12	Lo / La = 3035 mH	(IIA-D)		
Ch1	13 -14	Lo / Ro = 1530 µH/Ω	(IIC-A, B)	≥	Li / Ri device and L cable / R cable
Ch2	15 -16	Lo / Ro = 6150 µH/Ω	(IIB-C)		
Ch3	9 - 10				
Ch4	11 - 12	Lo / Ro = 12310 µH/Ω	(IIA-D)		

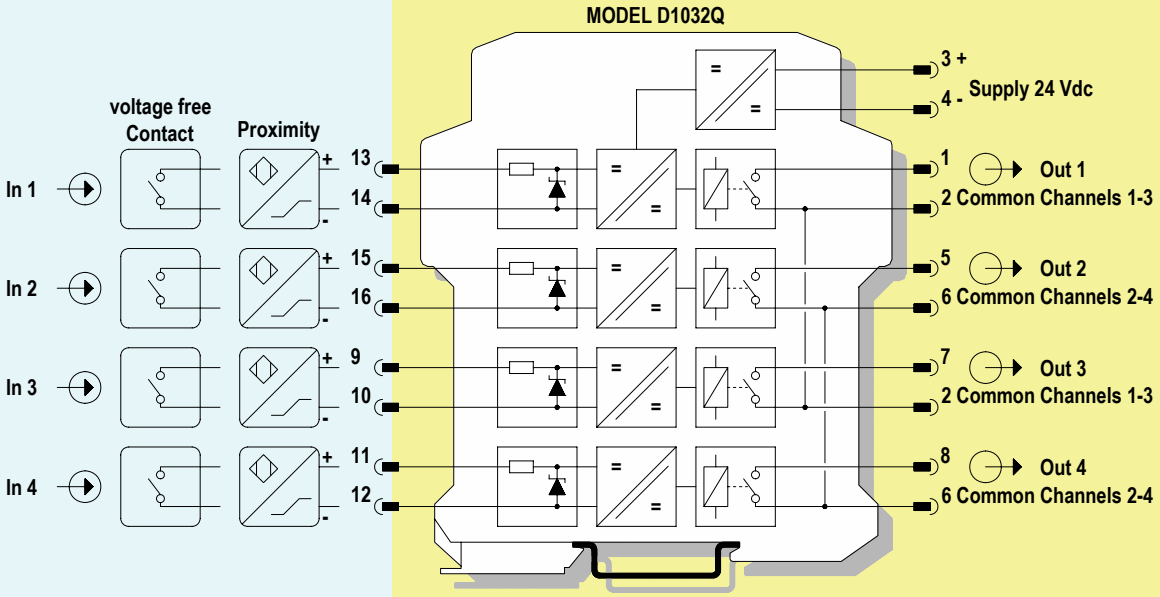
NOTE for USA and Canada:
IIC equal to Gas Groups A, B, C, D, E, F and G,
IIB equal to Gas Groups C, D, E, F and G,
IIA equal to Gas Groups D, E, F and G

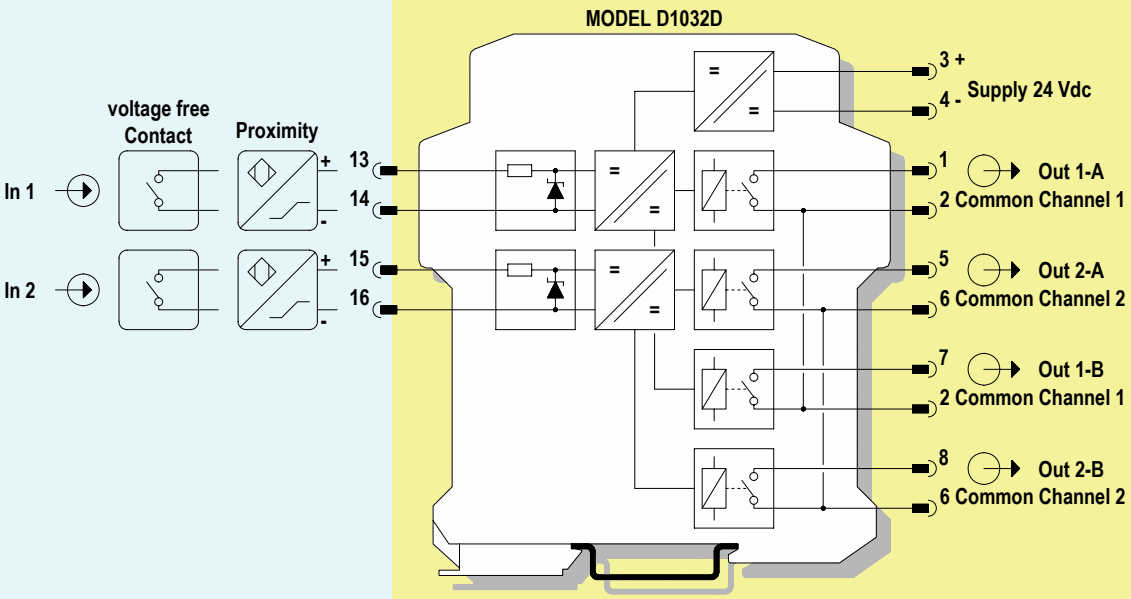
For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceed 1 % of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50 % of Co and Lo parameters are applicable and shall not be exceeded (50 % of the Co and Lo become the limits which must include the cable such that Ci device + C cable ≤ 50 % of Co and Li device + L cable ≤ 50 % of Lo).
If the cable parameters are unknown, the following value may be used: Capacitance 60pF per foot (180pF per meter), Inductance 0.20µH per foot (0.60µH per meter).
The Intrinsic Safety Entity Concept allows the interconnection of Intrinsically Safe devices approved with entity parameters not specifically examined in combination as a system when the above conditions are respected.
For Division 1 and Zone 0 installations, the configuration of Intrinsically Safe Equipment must be FM approved under Entity Concept (or third party approved);
for Division 2 installations, the configuration of Intrinsically Safe Equipment must be FM approved under non-incendive field wiring or Entity Concept (or third party approved).

Function Diagram

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC,
HAZARDOUS LOCATIONS CLASS I, DIVISION 1, GROUPS A, B, C, D,
CLASS II, DIVISION 1, GROUPS E, F, G, CLASS III, DIVISION 1,
CLASS I, ZONE 0, GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4,
NON HAZARDOUS LOCATIONS, CLASS I, DIVISION 2,
GROUPS A, B, C, D T-Code T4, CLASS I, ZONE 2, GROUP IIC T4

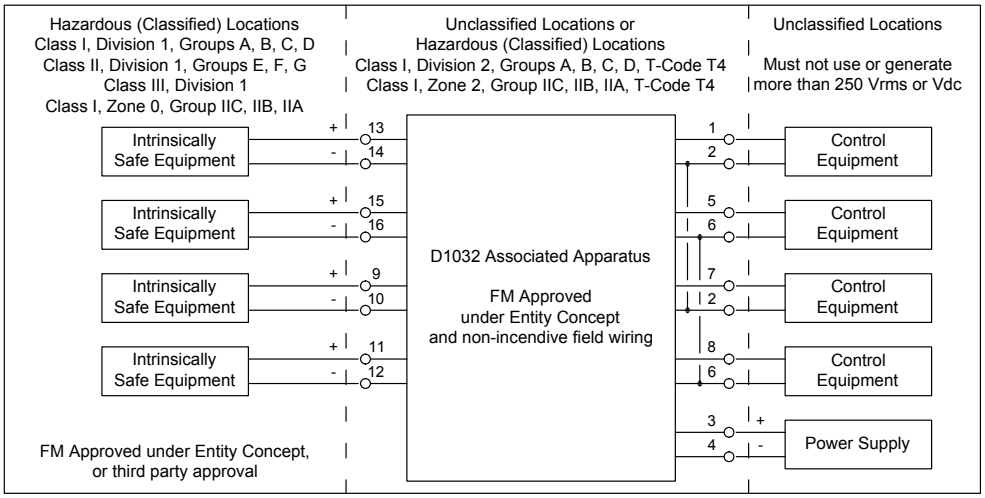


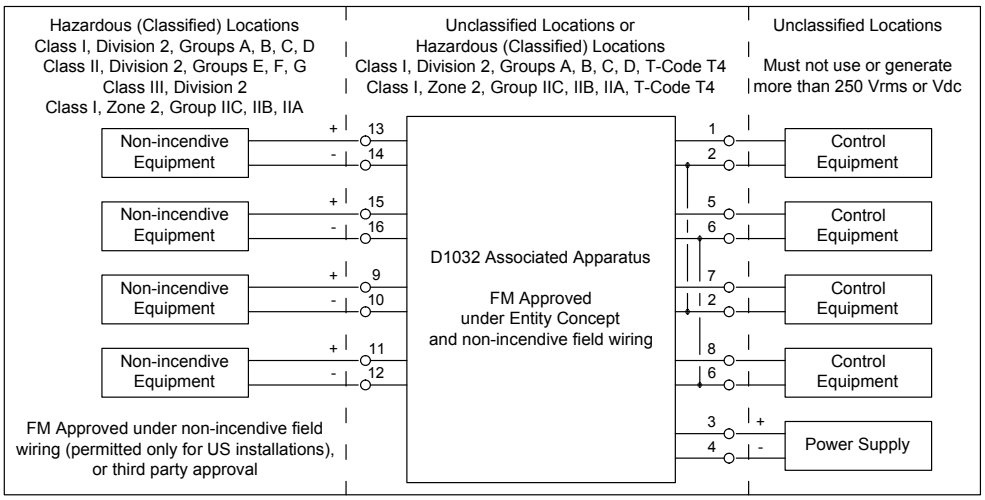


Relay contact shown in de-energized position

Warning:

D1032 series are isolated Intrinsically Safe Associated Apparatus installed into standard EN50022 T35 DIN Rail located in Safe Area/Non Hazardous Locations or Zone 2, Group IIC, Temperature Classification T4, Class I, Division 2, Groups A, B, C, D, Temperature Code T4 and Class I, Zone 2, Group IIC, IIB, IIA Temperature Code T4 Hazardous Area/Hazardous Locations (according to EN/IEC60079-15, FM Class No. 3611, CSA-C22.2 No. 213-M1987, CSA-E60079-15) within the specified operating temperature limits Tamb -20 to +60 °C, and connected to equipment with a maximum limit for AC power supply Um of 250 Vrms.





Non-incendive field wiring is not recognized by the Canadian Electrical Code, installation is permitted in the US only.
For installation of the unit in a Class I, Division 2 or Class I, Zone 2 location, the wiring between the control equipment and the D1032 associated apparatus shall be accomplished via conduit connections or another acceptable Division 2, Zone 2 wiring method according to the NEC and the CEC.
Not to be connected to control equipment that uses or generates more than 250 Vrms or Vdc with respect to earth ground.
D1032 series must be installed, operated and maintained only by qualified personnel, in accordance to the relevant national/international installation standards (e.g. IEC/EN60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines), BS 5345 Pt4, VDE 165, ANSI/ISA RP12.06.01 Installation of Intrinsically Safe System for Hazardous (Classified) Locations, National Electrical Code NEC ANSI/NFPA 70 Section 504 and 505, Canadian Electrical Code CEC) following the established installation rules, particular care shall be given to segregation and clear identification of I.S. conductors from non I.S. ones.
De-energize power source (turn off power supply voltage) before plug or unplug the terminal blocks when installed in Hazardous Area/Hazardous Locations or unless area is known to be nonhazardous.
Warning: substitution of components may impair Intrinsic Safety and suitability for Division 2, Zone 2.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.
Explosion Hazard: to prevent ignition of flammable or combustible atmospheres, disconnect power before servicing or unless area is known to be nonhazardous.
Failure to properly installation or use of the equipment may risk to damage the unit or severe personal injury.
The unit cannot be repaired by the end user and must be returned to the manufacturer or his authorized representative. Any unauthorized modification must be avoided.

Operation

D1032 accepts as an input from Hazardous Area/Hazardous Locations a proximity sensor or voltage free electrical contact and repeats their status to Safe Area/Non Hazardous Locations by a voltage free SPST relay contact. Presence of supply power and status of output (energized or de-energized), as well as integrity or fault condition of sensor and connecting line are displayed by signaling LEDs (green for power, yellow for status and red for fault condition). D1032Q (quad channel type) has four independent isolated input channels and actuates the corresponding output relay SPST contact; two actuation modes can be independently DIP switch configured for each input channel:
Normally open input / Normally energized relay or Normally close input / Normally energized relay Contact or proximity sensor and its connection line short or open circuit fault detection is also DIP switch configurable. Fault detection can be enabled (in case of fault de-energizes the corresponding output channel relay (open) and turns ON the fault LED) or be disabled (in case of fault the corresponding output channel relay repeats the input line open or close status as configured).
D1032D (dual channel type) has two isolated input channel and four output relays; the unit has two DIP switch configurable operating modes:

A) Input channel actuates in parallel output relays SPST contacts (providing a DPST type of output). Relay actuation can be independently configured for each output in two modes:
   Normally open input / Normally energized relay or Normally close input / Normally energized relay
B) Input channel actuates output relay (A) SPST contact configurable in two modes as above. Output relay B operates as fault output (in case of input fault, relay B actuates and the fault LED turns on while relay A repeats the input line as configured). Actuation can be configured in two modes:
   No input fault / Energized relay (it de-energizes in case of fault) or No input fault / De-energized relay (it energizes in case of fault).

Note: use of voltage free electrical contacts with fault detection enabled requires, near the switch at the end of the line, a 1 KΩ series connected resistor and a 10 KΩ parallel connected resistor in order to allow the fault detection circuit to distinguish between a condition of contact close/open and a line open/short circuit fault.

Installation

D1032 series are switch/proximity detector repeaters housed in a plastic enclosure suitable for installation on T35 DIN Rail according to EN50022.
D1032 unit can be mounted with any orientation over the entire ambient temperature range, see section “Installation in Cabinet” and "Installation of Electronic Equipments in Cabinet" Instruction Manual D1000 series for detailed instructions.
Electrical connection of conductors up to 2.5 mm² are accommodated by polarized plug-in removable screw terminal blocks which can be plugged in/out into a powered unit without suffering or causing any damage **(for Zone 2 or Division 2 installations check the area to be nonhazardous before servicing)**.
The wiring cables have to be proportionate in base to the current and the length of the cable.
On the section “Function Diagram” and enclosure side a block diagram identifies all connections and configuration DIP switches.
Identify the number of channels of the specific card (e.g. D1032D is a dual channel model and D1032Q is a quad channel model), the function and location of each connection terminal using the wiring diagram on the corresponding section, as an example:
Connect 24 Vdc power supply positive at terminal “3” and negative at terminal “4”.
For Model D1032Q connect common output of channel 1-3 at terminal “2” and voltage freecontact output at terminal “1” for channel 1 and “7” for channel 3.
For Model D1032Q connect common output of channel 2-4 at terminal “6” and voltage free contact output at terminal “5” for channel 2 and “8” for channel 4.
For Model D1032D connect proximity sensor or voltage free contact at terminal “13” positive and “14” negative for channel 1, connect at terminal “15” and “16” respectively for channel 2.
For Model D1032Q in addition to channel 1-2 connections above, connect terminal “9” positive and “10” negative for channel 3 and “11” positive and “12” negative for channel 4.

Intrinsically Safe conductors must be identified and segregated from non I.S. and wired in accordance to the relevant national/international installation standards (e.g. EN/IEC60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines), BS 5345 Pt4, VDE 165, ANSI/ISA RP12.06.01 Installation of Intrinsically Safe System for Hazardous (Classified) Locations, National Electrical Code NEC ANSI/NFPA 70 Section 504 and 505, Canadian Electrical Code CEC), make sure that conductors are well isolated from each other and do not produce any unintentional connection.
Connect SPST relay contacts checking the load rating to be within the contact maximum rating (2 A, 250 V, 500 VA 80 W resistive load).
The enclosure provides, according to EN60529, an IP20 minimum degree of mechanical protection (or similar to NEMA Standard 250 type 1) for indoor installation, outdoor installation requires an additional enclosure with higher degree of protection (i.e. IP54 to IP65 or NEMA type 12-13) consistent with the effective operating environment of the specific installation.
Units must be protected against dirt, dust, extreme mechanical (e.g. vibration, impact and shock) and thermal stress, and casual contacts.
If enclosure needs to be cleaned use only a cloth lightly moistened by a mixture of detergent in water.
Electrostatic Hazard: to avoid electrostatic hazard, the enclosure of D1032 must be cleaned only with a damp or antistatic cloth.
Any penetration of cleaning liquid must be avoided to prevent damage to the unit. Any unauthorized card modification must be avoided.
According to EN61010, D1032 series must be connected to SELV or SELV-E supplies.
Relay output contact must be connected to loads non exceeding category I, pollution degree I overvoltage limits.
Warning: de-energize main power source (turn off power supply voltage) and disconnect plug-in terminal blocks before opening the enclosure to avoid electrical shock when connected to live hazardous potential.

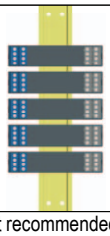
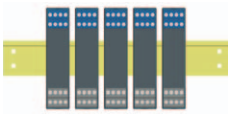
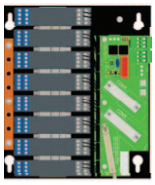
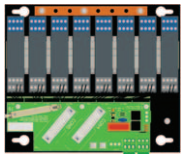
Start-up

Before powering the unit check that all wires are properly connected, particularly supply conductors and their polarity, input and output wires, also check that Intrinsically Safe conductors and cable trays are segregated (no direct contacts with other non I.S. conductors) and identified either by color coding, preferably blue, or by marking. Check conductors for exposed wires that could touch each other causing dangerous unwanted shorts. Turn on power, the “power on” green led must be lit, status and fault led on each channel must be in accordance with condition of the corresponding input line. If possible close and open input lines one at time checking the corresponding status and fault leds condition as well as output to be correct.

Installation in Cabinet

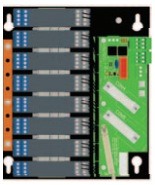
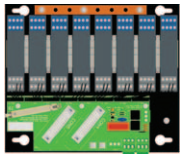
Power Dissipation of D1032 Isolators
Section “Technical Data” of D1032 isolator specifies the current consumption (maximum current from the nominal power supply, typical 24 Vdc, in normal operation); this data serves to dimension the current rating of the power supply unit. Section “Technical Data” indicates also the maximum power consumption (maximum power required from the power supply in the worst (abnormal) operating conditions like for example supply voltage at 30 Vdc, short circuit on the outputs and on the inputs terminals.
The power dissipated **Pd** inside the enclosure for analog signal isolators is: **Pd = Current Consumption (A) * Supply Voltage (V) - Power Dissipated into the input/output loads**
Digital signal isolators have lower dissipation than analog signal isolators, in addition 4 channels barriers (D1032Q) have higher dissipation than double channel units (D1032D).
Isolators are not running at the maximum current all at the same time, the average power consumption of a multitude of isolators can be considered to be only 70 % of the value obtained from the section “Technical Data”. Considering the 1/3 load power and the 70 % above discussed, the power effectively dissipated internally by the isolators can therefore become ½ of the actual power delivered by the power supply. Digital barriers dissipate all the supply power inside the enclosure consequently the total power dissipation into a cabinet, with mixed analog and digital barriers, is determined by the number of channels more than by the number of isolator enclosures. The following tables give advises for the DIN rail orientation (vertical or horizontal) of the barriers mounting, D1032Q (quadruple channel) and D1032D (double channel) isolators, installed on DIN rail, bus or custom board assembly.

A) Cabinet with Natural Ventilation
Maximum recommended ambient temperature in °C depending on barrier type and installation method:

Type of Isolator	Single unit Installation	Installation of Multiple units with DIN-rail Bus		Installation on Custom Boards	
	Any orientation	Vertical	Horizontal	Vertical	Horizontal
					
D1032D	60°C	Not recommended (1)	30°C	30°C	35°C
D1032Q	60°C	Not recommended (1)	30°C	30°C	35°C

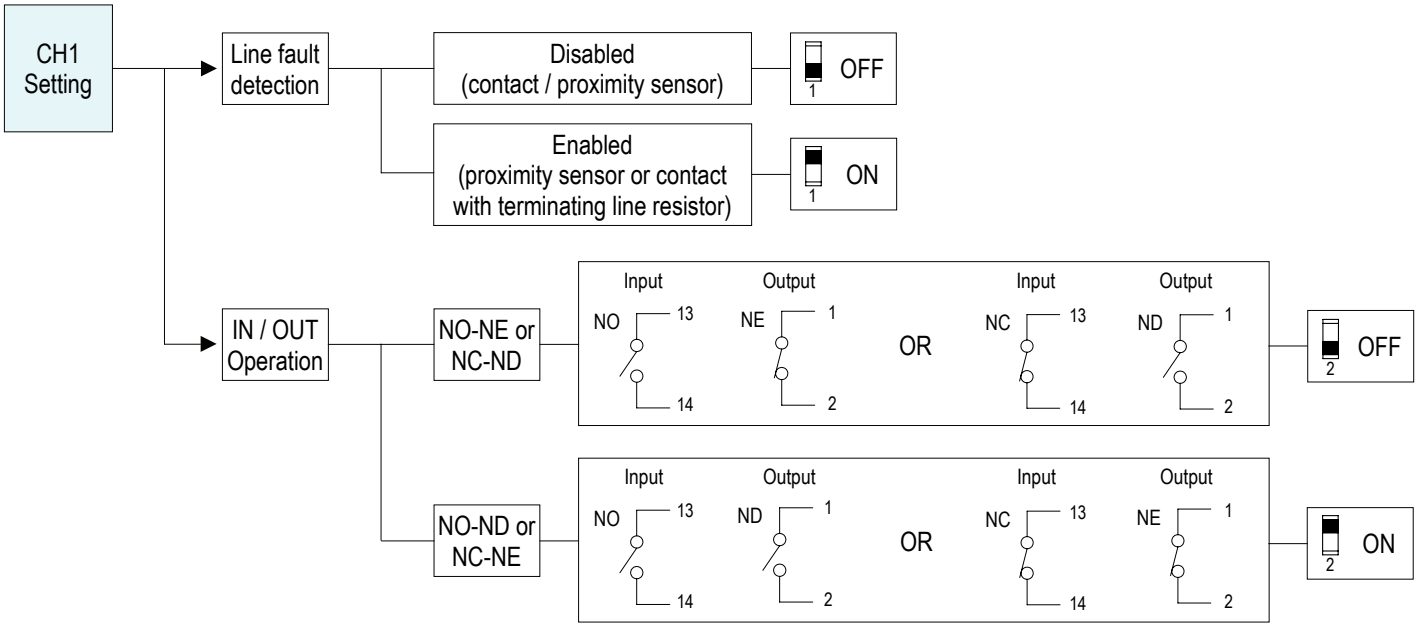
(1) Installation is not recommended since it would significantly shorten the units life and increase the probability of failures.

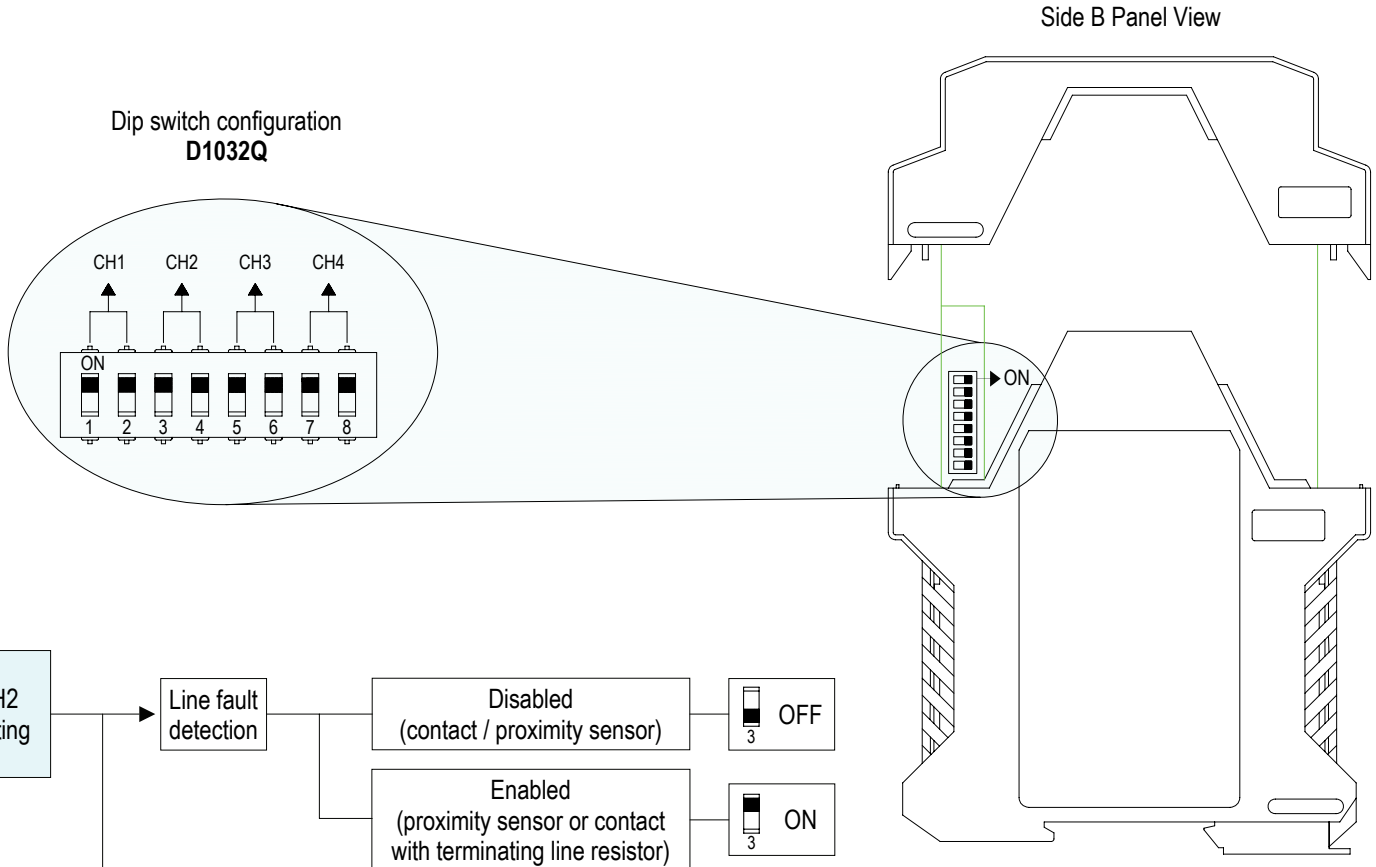
B) Cabinet with Forced Ventilation
Maximum recommended ambient temperature in °C depending on barrier type and installation method:

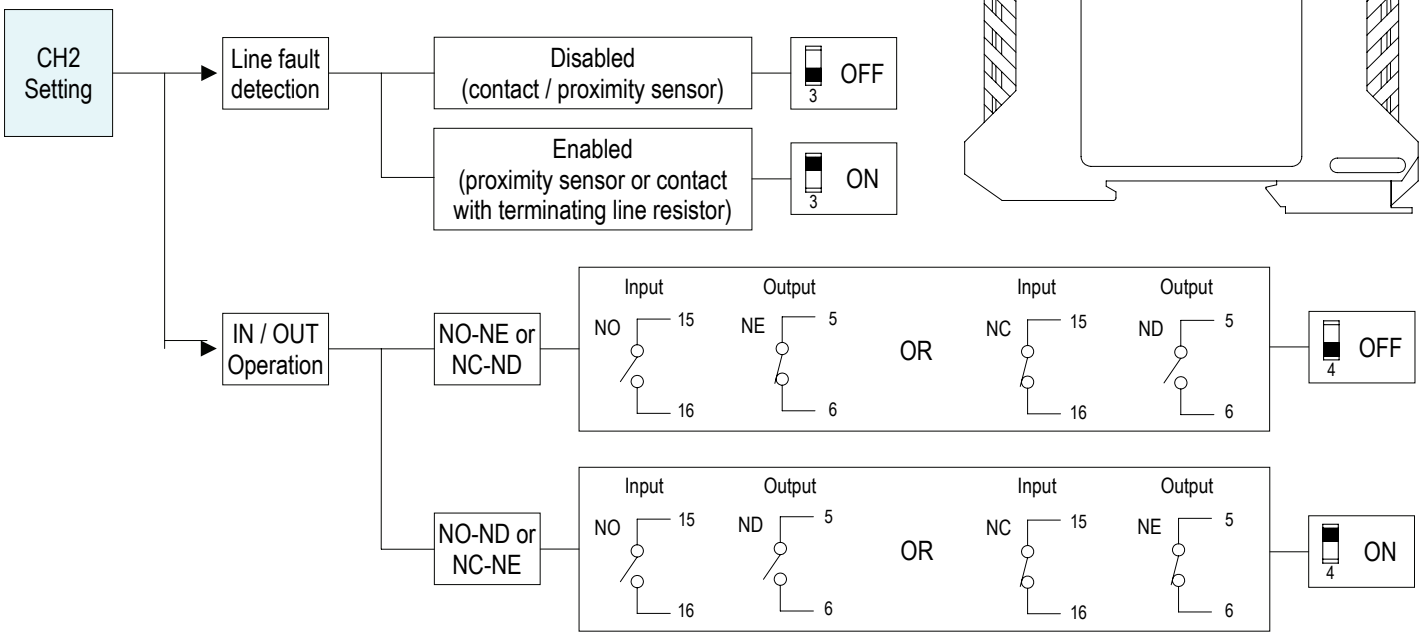
Type of Isolator	Single unit Installation	Installation of Multiple units with DIN-rail Bus		Installation on Custom Boards	
	Any orientation	Vertical	Horizontal	Vertical	Horizontal
					
D1032D	60°C	40°C	45°C	45°C	50°C
D1032Q	60°C	40°C	45°C	45°C	50°C

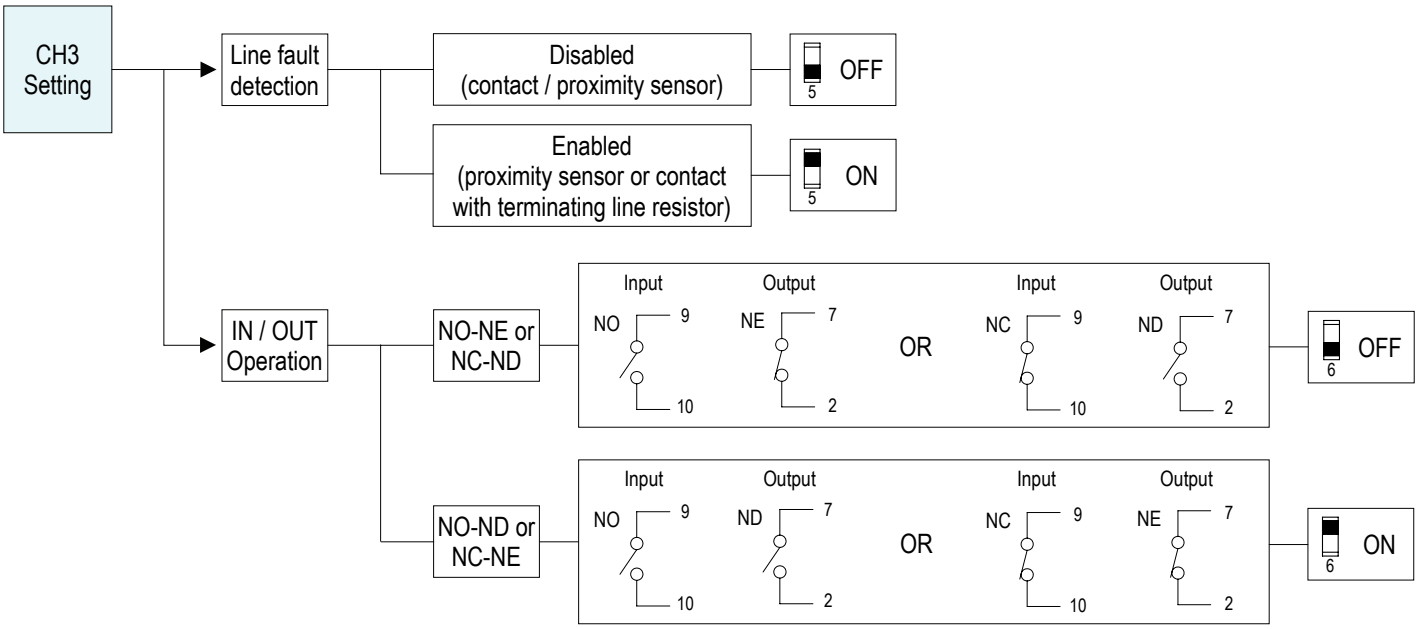
Configuration

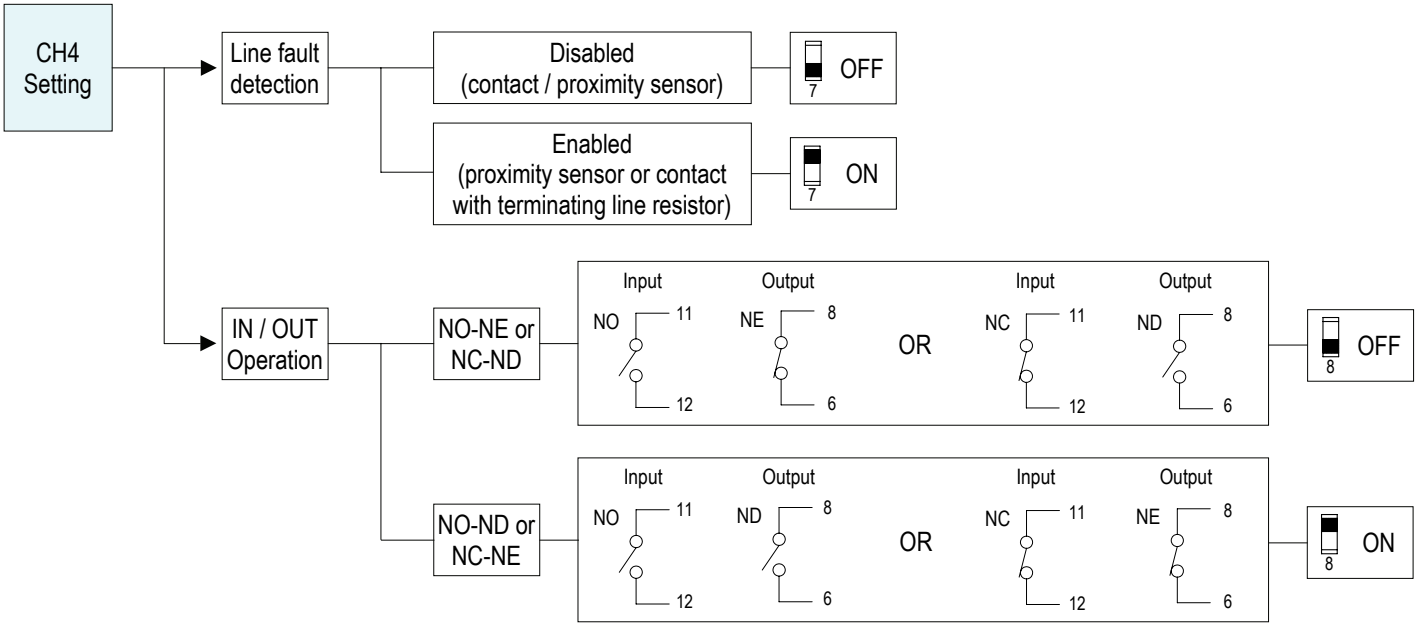
A configuration DIP Switch is located on component side of pcb. This switch allows the configuration of input/output relationship, fault detection functions and operating mode.







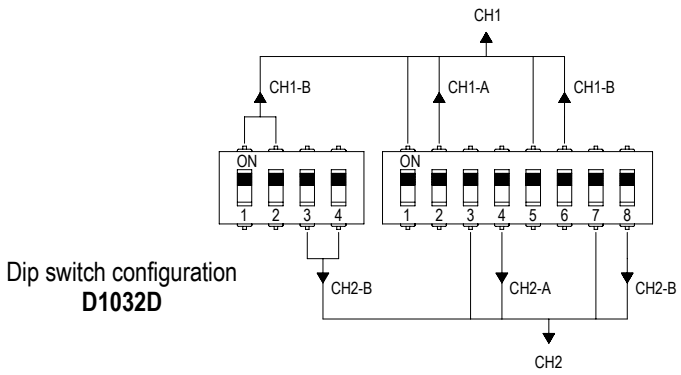




D1032Q Configuration Summary Table

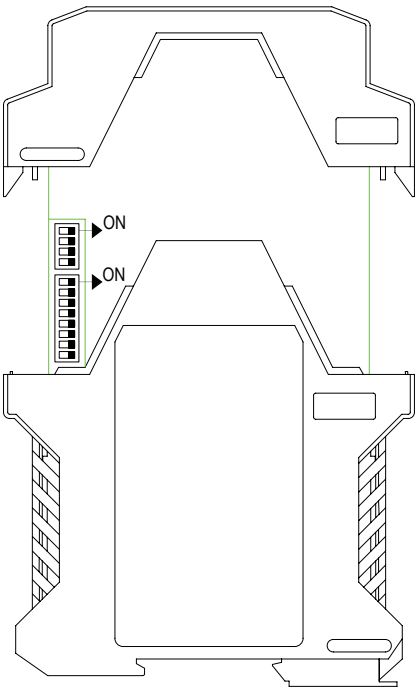
Channel	1	2	3	4
IN/OUT Operation	SW1-2	SW1-4	SW1-6	SW1-8
NO-NE or NC-ND	OFF	OFF	OFF	OFF
NO-ND or NC-NE	ON	ON	ON	ON

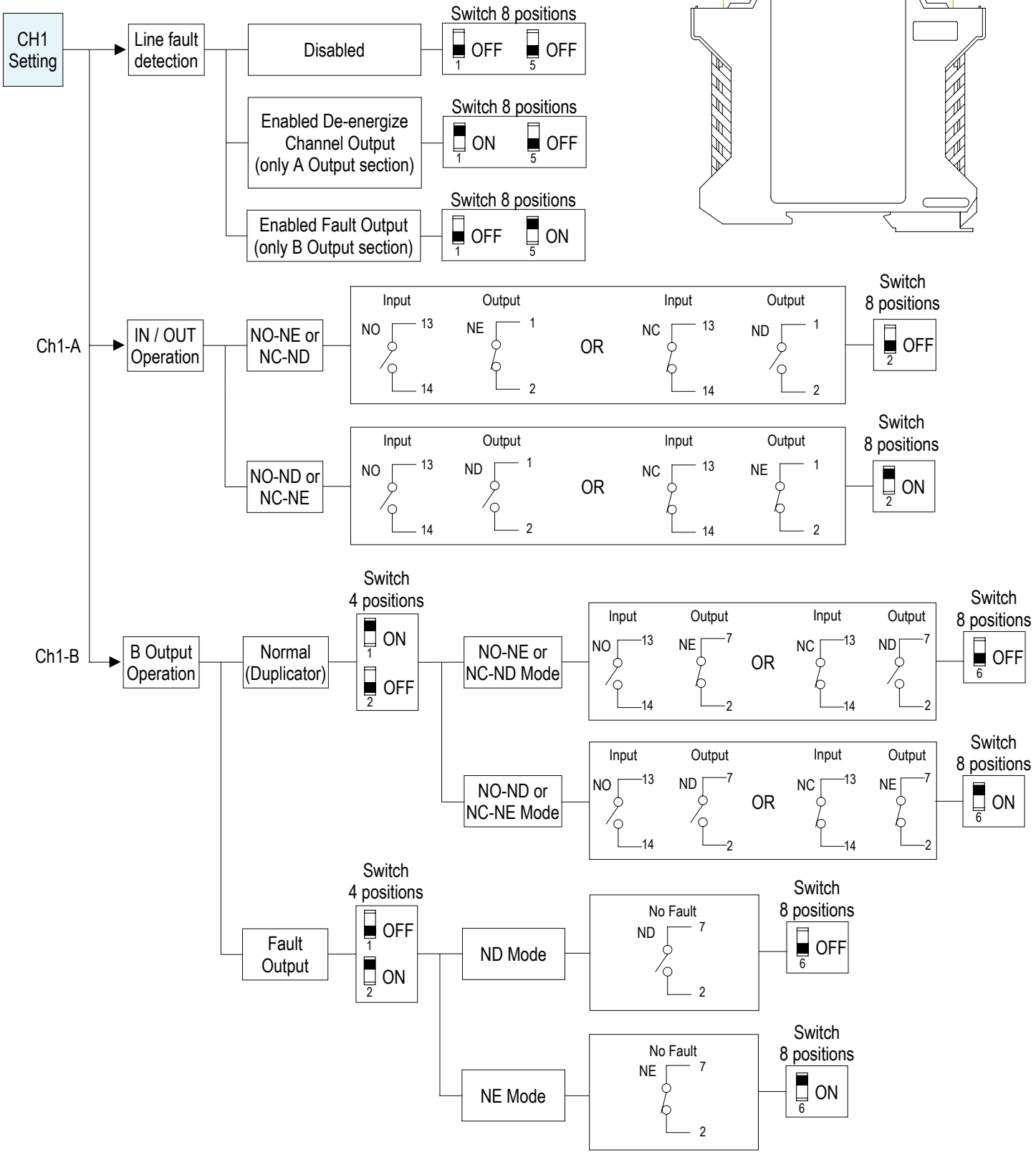
Channel	1	2	3	4
Line fault detection	SW1-1	SW1-3	SW1-5	SW1-7
Disabled (contact/proximity sensor)	OFF	OFF	OFF	OFF
Enabled (proximity sensor or contact with terminating line resistor)	ON	ON	ON	ON

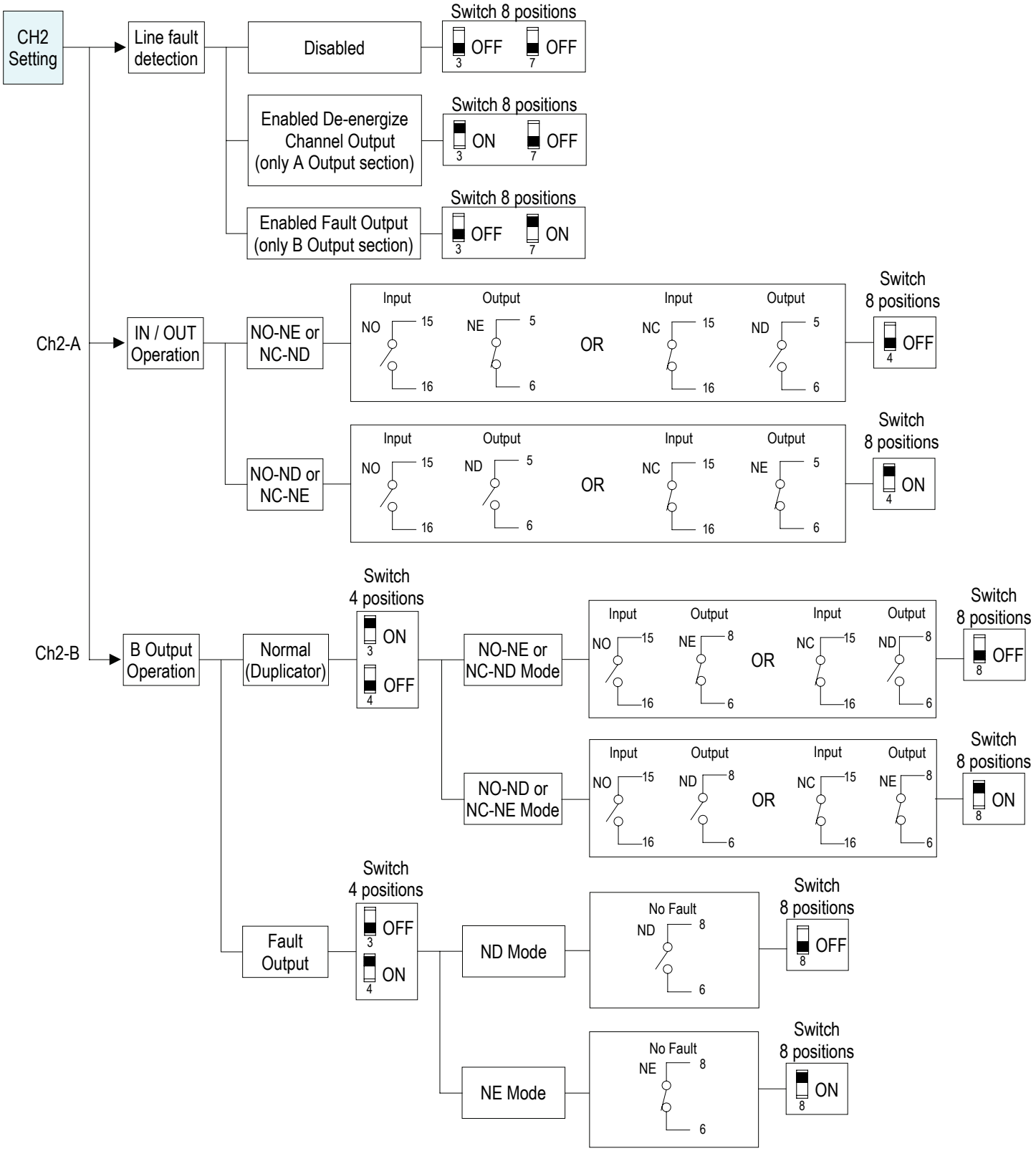


Dip switch configuration
D1032D

Side B Panel View







D1032D Configuration Summary Table

Channel	1A	2A
IN/OUT Operation	SW1-2	SW1-4
NO-NE or NC-ND	OFF	OFF
NO-ND or NC-NE	ON	ON

Channel	1B		2B		Mode	1B	2B
B Output Operation	SW2-1	SW2-2	SW2-3	SW2-4		SW1-6	SW1-8
Normal (Duplicator)	ON	OFF	ON	OFF	NO-NE or NC-ND	OFF	OFF
					NO-ND or NC-NE	ON	ON
Fault Output	OFF	ON	OFF	ON	ND	OFF	OFF
					NE	ON	ON

Channel	1		2	
Line fault detection	SW1-1	SW1-5	SW1-3	SW1-7
Disabled	OFF	OFF	OFF	OFF
Enabled De-energize Channel Output (only A Output section)	ON	OFF	ON	OFF
Enabled Fault Output (only B Output section)	OFF	ON	OFF	ON