



09892E02

Digital Output Module Relay Ex nA / NI Outputs, 8 Channels Series 9477/15

- 8 channels with output: volt-free relay contact, normally open
- Outputs Ex nA and Non Incendive (non-sparking)
- Galvanic isolation between outputs and system
- Module can be replaced in operation (hot swap)

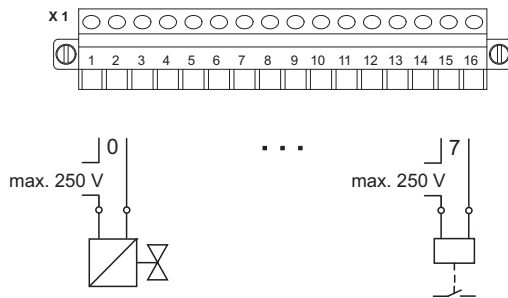
Zone	0	1	2	20	21	22
Class	I			II / III		
Zone	0	1	2	20	21	22
Ex interface			X			X
Installation in			X			X ^{*)}

Class	I		II / III	
Division	1	2	1	2
Ex interface		X		
Installation in		X		

^{*)} suitable enclosure necessary



The Digital Output Module Relay is used for the control of non-intrinsically safe solenoid valves or indicators. Each output is an individual volt-free “normally open” contact per channel. The interface of the Digital Output Module with the internal data bus of the BusRail is designed with redundancy.



06309E00

Selection Table

Version	Description	Order number	Weight kg / lbs
Digital Output Module Relay	8 channels with output: volt-free relay contact, normally open	9477/15-08-12	0.321 / 0.708

Explosion Protection

Certificates	
IECEX	PTB 06.0001X
Europe (ATEX)	PTB 01 ATEX 2187 + 2188
USA (NEC)	3007532 (FM)
Russia (GOST-R)	04.B00806 (CTB)
Other countries	Canada (CSA), Brazil (INMETRO), Belarus (Promatomnadzor)
Marking	
IECEX	Ex nAC IIC T4
Europe (ATEX)	Ⓔ II (2) G [EEx [ib/ia] IIC T4, Ⓔ II 3 G EEx nACL IIC T4
USA (NEC)	NI/I/2/ABCD/T4 Ta = 65 °C, NI/I/2/IIC/T4 Ta = 65 °C, IS/I,II,III/1/ABCDEFGH, IS/I/1/[AEx ia, ib]/IIC
Russia (GOST-R)	[Exib/ia]IIC, 2ExnACLIIC T4
Other certificates	Marine (DNV, ABS, GL)






Technical Data

Ex nA / NI outputs	
Number of channels	8
Contact	NO
Maximum switching voltage	250 V AC 30 V DC 110 V DC 220 V DC
Maximum switching current	2 A 2 A 0.3 A 0.12 A
Maximum switching capacity	100 VA 60 W 33 W 26 W
Minimum switching voltage	5 V AC / DC
Minimum switching current	2 mA
Lifetime	
electrical	at max. 2 A
AC 1 - load	≥ 0.6 x 10 ⁶ switching cycles
DC 1 - load (resistive load)	≥ 100 x 10 ³ switching cycles
mechanical	≥ 10 x 10 ⁶ switching cycles
Maximum contact load without damage to gold plating	at 24 V / 1.5 W
Safe contact operation with damaged gold plating	from 12 V / 1.5 W
Connections	2.5 mm ² / 14 AWG flexible
Galvanic isolation	
between power supply and system components	1500 V AC
between two input / output modules	500 V AC
between inputs and system components	375 V AC
Outputs interconnected	250 V AC

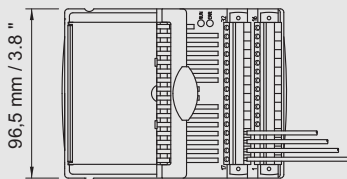
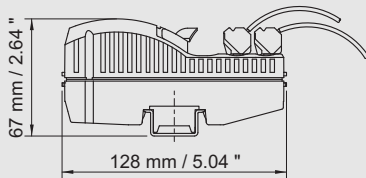


Technical Data

Characteristic values	
Maximum signal delay from internal bus to outputs	10 ms
MTBF acc. to MIL	76.2 years (at +40 °C / 104 °F)
Settings	
Safety position (output with communication error)	ON, OFF, hold last value
Retrievable parameters	Manufacturer, type, version, serial number
Diagnostics	
Module faults	<ul style="list-style-type: none"> • Internal primary bus faults • Internal redundant bus faults • No response • Module does not correspond to configuration • Hardware fault
Power supply	
Behaviour with undervoltage	Output = OFF
Maximum power consumption	4.8 W
Maximum power dissipation	4.8 W
Mechanical data	
Module enclosure	Polyamide 6GF
Fire protection class (UL 94)	V2
Degree of protection (IEC 60529)	
Modules	IP30
Connections	IP20
Electrical connection	
Ex nA / NI field signals	Plug-in terminals 16-pole with catch, 2.5 mm ² / up to 14 AWG, screw or spring type
Operator interface	
Operation	LED green "RUN"
Fault	LED red "ERR"
Installation conditions	
Mounting type	on 35 mm DIN rail NS 35/15
Installation position	horizontal and vertical
Ambient conditions	
Ambient temperature	- 20 ... + 65 °C / - 4 ... + 149 °F
Storage temperature	- 40 ... + 70 °C / - 40 ... + 158 °F
Maximum relative humidity	95 % (no condensation)
Vibration, sinusoidal (IEC EN 60068-2-6)	1 g in frequency range between 10 ... 500 Hz 2 g in frequency range 45 ... 100 Hz
Shock, semi-sinusoidal (IEC EN 60068-2-27)	15 g (3 shocks per axis and direction)
Electromagnetic compatibility	Tested according to the following standards and regulations: EN 61326-1 (1998) IEC 1000-4-1...6, NAMUR NE 21
Engineering notes	
	<ul style="list-style-type: none"> • The module is intended for I.S. 1 field stations and may only be installed in Zone 2 / Division 2 or in the safe area. For use in Zone 2, an enclosure with degree of protection of at least IP54 is required. The module is plugged onto the BusRail of the I.S. 1 system. • It is recommended to position the module 9477/15 next to the CPM (9440). In order to maintain the distance of ≥ 50 mm / 2 in to the connection terminals of the I.S. module, a partition (162740) is required. • Non-intrinsically safe circuits may be connected to the module, provided that the maximum values of current, voltage and power (refer to technical data) are adhered to. The switching current of the contacts must be limited to 2 A (e.g. fuse or current limitation).

Accessories and Spare Parts			
Designation	Illustration	Description	Order number
Plug-in terminal	 09898E00	2.5 mm ² / 14 AWG with catch, 16-pole, screw connection, black, for connecting the field signals to I/O modules, for non-intrinsically safe field circuits Attention: Only for I/O module 9477/15 Version with warning sign Labelling: 1 ... 16	162704
	 09899E00	2.5 mm ² / 14 AWG with catch, 16-pole, spring connection, black, for connecting the field signals to I/O modules, for non-intrinsically safe field circuits including test jacks Attention: Only for I/O module 9477/15 Version with warning sign Labelling: 1 ... 16	162706
Labelling strips	 05869E00	„FB No ... Mod No ...“ for plug-in terminals, sheet with 26 labels	162788
DIN A4 sheet	 09900E00	For I/O module labels; 6 labels each sheet; print out with IS Wizard software; packaging unit = 20 sheets	162832
Partition	 02078E00	For assembly between intrinsically safe and non-intrinsically safe connectors of the I/O modules, in order to adhere to the required 50 mm / 2 in distance	162740

Dimensional Drawings (All Dimensions in mm / inches) - Subject to Alterations



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We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.

