

Remote I/O

Remote I/O IS1 Digital output module relay

For Zone 2 Ex n

9477/15-08-12 Art. No. 168694



- With 8 zero-potential relay contacts
- Ex nA outputs with a high switching capacity up to 100 VA
- Module in Zone 2 can be hot swapped

WebCode 9477B



The 9477/15 series digital output module relay for Zone 2 has eight channels for operating non-intrinsically safe solenoid valves with a high switching capacity. Zero-potential relay contacts (normally open contacts) are available as outputs in Ex nA connection technology. Operation in combination with Ex i I/O modules is permissible.

Technical Data

Explosion Protection

Application range (Zones)	2 22
Ex interface zone	2 22
IECEX certificate Gas	IECEX PTB 06.0001X
IECEX gas explosion protection	Ex nA nC ic [ib Gb] IIC T4 Gc
ATEX gas certificate	PTB 01 ATEX2187
ATEX gas explosion protection	⊕ II 3 (2) G Ex nA nC ic [ib Gb] IIC T4 Gc
Certificate FMus	FM17US0332X
Certificate cFM	FM16CA0134X
Marking cFMus	NI, Class I, Div. 2, Groups A,B,C,D; Class I, Zone 2, Group IIC T4 at Ta = 65 °C See Doc. 9477 6 031 002 1
EAC certificate	TS RU S-DE.GB04.B.00448
EAC gas explosion protection	⊕ 2 Ex nA nC ic [ib Gb] IIC T4 Gc X
Certificates	ATEX (PTB), Canada (CSA), Canada (FM), EAC (STV), IECEX (PTB), USA (FM)
Ship approval	EU RO MR
Installation	Zone 2, Zone 22, CI I, Div. 2
Further information	see operating instructions and certificate

Electrical Data

Number of channels	8 Ex nA outputs
Connection Ex nA field signals	Pluggable terminals, 16-pin, 2.5 mm ² , screw or cage clamp version with lock

Remote I/O

Remote I/O IS1 Digital output module relay

For Zone 2 Ex n

9477/15-08-12 Art. No. 168694



Electrical Data

Engineering note	<p>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.</p> <p>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).</p>
------------------	--

Auxiliary Power

Power supply connection	BusRail types 9494
Auxiliary power version	Intrinsically safe Ex ia via BusRail
Behaviour during undervoltage	All outputs "OFF"
Current consumption	200 mA
Max. power consumption	4.8 W
Max. power dissipation outputs	4.8 W

Galvanic Isolation

Test voltage for gal. separation	According to standard EN 60079-11
Auxiliary power/system components	1500 V AC
I/O module / I/O module	500 V AC
I/O channels/system components	375 V AC
I/O channels / I/O channels	250 V AC

Output

Contact version	NO			
Max. switching voltage	250 V AC			
Min. switching voltage	5 V AC / DC			
Max. switching current	2 A			
Min. switching current	2 mA			
Switching capacity				
Max. switching voltage	250 V AC	30 V DC	110 V DC	220 V DC
Max. switching current	2 A	2 A	0.3 A	0.12 A
Max. switching capacity	100 VA	60 W	33 W	26 W
Service life	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 flexible			
Maximum signal delay from internal bus to outputs	10 ms			

Device Specific Data

Diagnostics message module	ON OFF
----------------------------	-----------

Remote I/O

Remote I/O IS1 Digital output module relay

For Zone 2 Ex n

9477/15-08-12 Art. No. 168694



Device Specific Data

Output behaviour in case of error	Keep last value ON OFF
LED operating conditions	"RUN" LED, green
LED group error	"ERR" LED, red
Retrievable parameters	Type Software revision Serial number Manufacturer Hardware revision
Module status and alarms	Primary internal bus error Redundant internal bus error No response Configuration different from module Hardware error

Ambient Conditions

Ambient temperature °C	-20°C ... +65°C
Ambient temperature °F	-4°F ... +149°F
Storage temperature °C	-40°C ... +70°C
Storage temperature °F	-40°F ... +158°F
Max. operating altitude	< 2000 m
Max. relative humidity	95% (without condensation)
Shock (semi-sinusoidal)	(IEC EN 60068-2-27) 15 g (3 shocks per axis and direction)
Vibration (sinusoidal)	(IEC EN 60068-2-6) Frequency range 2 ... 13.2 Hz Amplitude 1 mm (peak value) Frequency range 13.2 ... 100 Hz Acceleration amplitude 0.7 g
Electromagnetic compatibility	Tested to the following standards and regulations: EN 61326-1 (2006) IEC 61000-4-1 to 61000-4-6, NAMUR NE 21

Mechanical Data

Degree of protection IP (IEC 60529)	IP20
Module enclosure	Polyamide 6GF
Fire resistance (UL 94)	V2
Pollutant class	Corresponds to G3
Width	96.5 mm
Width inches	3.8 in
Depth	67 mm
Length	128 mm
Length inches	5.04 in
Mounting depth inches	2.64 in
Contacts	NO
Weight	0.321 kg
Weight	0.71 lb

Mounting / Installation

Mounting position	Vertical Horizontal
-------------------	------------------------

Remote I/O

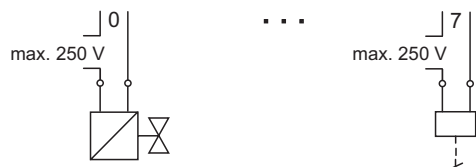
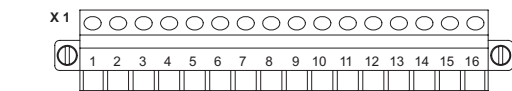
Remote I/O IS1 Digital output module relay

For Zone 2 Ex n

9477/15-08-12 Art. No. 168694

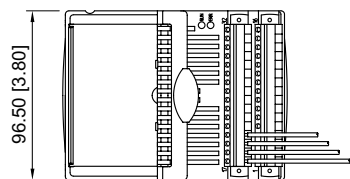
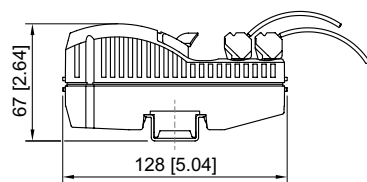


Technical Drawings – Subject to Alterations





Connection

Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations

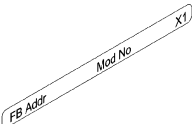


Accessories and Spare Parts


Pluggable terminal

		Art. No.
	2.5 mm ² with screw lock, 16-pole, screw connection, black, for connecting the field signals to I/O modules, for non-intrinsically safe field circuits Version with warning sign Labelling: 1 ... 16	162704
	2.5 mm ² with screw lock, 16-pole, spring connection, black, for connecting the field signals to I/O modules, for non-intrinsically safe field circuits including test jacks Version with warning sign Labelling: 1 ... 16	162706

Labelling strips

		Art. No.
	"FB Addr ... Mod No ..." for pluggable terminal, 26 pieces on the sheet	162788

DIN A4 sheet

		Art. No.
	For the label plate on I/O modules, 6 labels per sheet Print IS Wizard, packaging unit = 20 sheets	162832

Remote I/O

Remote I/O IS1 Digital output module relay

For Zone 2 Ex n

9477/15-08-12 Art. No. 168694



Partition

Art. No.



For mounting between intrinsically safe and non-intrinsically safe connections of the I/O modules, in order to adhere to the required 50 mm distance

220101

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.