

## Remote I/O

### Remote I/O IS1+ Digital output module valve

For Zone 1 Pneu.

9478/22-08-51 Art. No. 203599



- 8 channels for pneumatic valves
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- Pneumatic outputs with integrated 3/2-way valves and SIL 2 shutdown input
- Module in Zone 1, CI I, Div. 1 can be hot swapped

WebCode 9478A



The 9478 series digital output module valve for Zone 1, CI I, Div. 1 has eight channels for actuating pneumatic valves. The integrated 3/2-way solenoid valves are monitored to check for internal wire breakage and short-circuiting regardless of the drive status. An additional Ex i control input is suitable for safe shutdown up to SIL 2. Operation in combination with Ex i I/O modules is permissible.

## Technical Data

### Explosion Protection

Application range (Zones)	1 2
IECEX certificate Gas	IECEX PTB 06.0001X
IECEX gas explosion protection	Ex ib IIC T4
ATEX gas certificate	PTB 10 ATEX 2030
ATEX gas explosion protection	Ex II 2 G Ex ib IIC T4
Certificate FMus	FM17US0332X
Certificate cFM	FM16CA0134X
Marking cFMus	IS, Class I, Div. 1, Groups A,B,C,D; Class I, Zone 1, [AEx ia]/[Ex ia] IIC AIS Class I,II,III, Div. 1, Groups A,B,C,D,E,F,G; T4 at Ta = 60 °C See Doc. 9478 6 031 001 1
EAC certificate	TS RU S-DE.GB04.B.00448
EAC gas explosion protection	Ex 1 Ex ib IIC T4 Gb X
Certificates	ATEX (PTB), Brazil (ULB), Canada (FM), EAC (STV), IECEX (PTB), Korea (KTL), SIL (exida), USA (FM)
Ship approval	EU RO MR
Notes	CCC certificate available from 2021 onward

### Safety Data

Max. voltage $U_o/V_{oc}$	6.6 V
Max. current $I_o/I_{sc}$	67 mA
Max. power $P_o$	110 mW
Internal capacitance $C_i$	Negligible
Internal inductance $L_i$	Negligible
Notes	Safety data for digital input for switching off all outputs ("Plant STOP")

Max. connectable inductance  $L_o$  / capacity  $C_o$

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IIC	L <sub>o</sub> [mH]	8.24
	C <sub>o</sub> [μF]	22
IIB	L <sub>o</sub> [mH]	31.4
	C <sub>o</sub> [μF]	500

#### Auxiliary Power

Power supply connection	BusRail types 9494
Auxiliary power version	Intrinsically safe Ex ia via BusRail
Current consumption	240 mA
Max. power consumption	5.75 W with activated pilot valves
Undervoltage monitoring	All outputs are depressurized

#### 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

#### Input

Control input	Ex ib control input X3
Control input suitability	Switch-off up to SIL 2, low demand (IEC61508)
Control input function	System OFF, outputs are depressurized
Supply voltage X3	5 V
Internal resistance X3	1.6 kOhm
Max. voltage for outputs in normal outputs	1 V
Min. voltage for all outputs depressurised (System OFF)	3.5 V

#### Device Specific Data

Number of pneumatic valves	8 x 3/2-valves
Diagnostics message module	OFF ON
Output behaviour in case of error	OFF ON Keep last value
LED operating conditions	"RUN" LED, green
LED group error	"ERR" LED, red
Retrievable parameters	Hardware revision Manufacturer Serial number Software revision Type
Pneumatic data media	Compressed air oiled Dry Neutral gasses (5 μm filter received) Oil-free
Pneumatic data manual actuation	Yes
Pneumatic data switching times	Approx. 1000 c.p.m.
Pneumatic data Qn value	300 l/min
Pneumatic data Qn value note	at 20 °C air temperature, 6 bar at the valve inlet and 1 bar of differential pressure

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#### Device Specific Data

Pneumatic connections	P, R: plug connector Ø 8 mm Y0 ... Y7: plug connector Ø 6 mm X: standard silencer (included in the delivery and already fitted)
Pressure range min.	2.5 bar
Max. pressure range	7 bar

#### Ambient Conditions

Ambient temperature °C	0°C ... +60°C
Ambient temperature °F	32°F ... +140°F
Media temperature	0 °C ... +50 °C
Storage temperature °C	-20°C ... +60°C
Max. operating altitude	< 2000 m
Max. relative humidity	95% (without condensation)
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 in accordance with the following standards and regulations: EN 61326-1 (2006)

#### Mechanical Data

Degree of protection IP (IEC 60529)	IP20
Fire resistance (UL 94)	V2
Pollutant class	Corresponds to G3
Enclosure material	Polyamide 6GF
Sealing material	FPM, NBR
Material of valve block	PPS, PA
Width	96.5 mm
Width inches	3.8 in
Height	163 mm
Length	128 mm
Length inches	5.04 in
Mounting depth inches	6.42 in
Weight	0.95 kg
Weight	2.09 lb

#### Mounting / Installation

Mounting position	Horizontal Vertical
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# Remote I/O

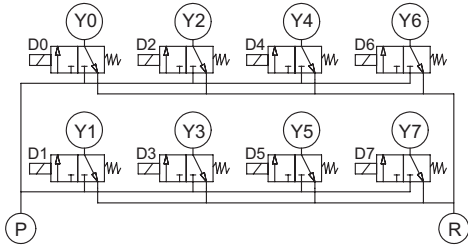
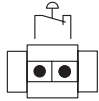
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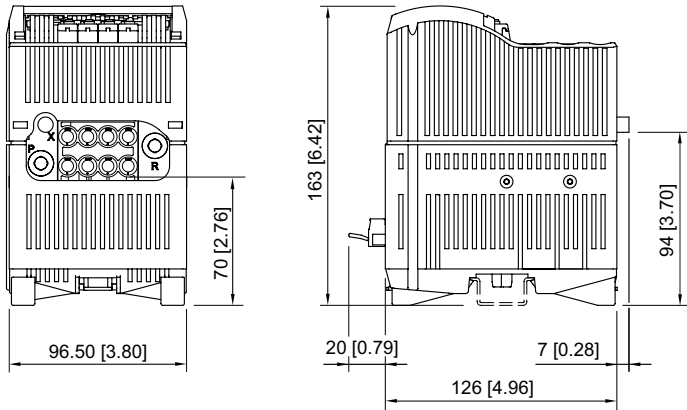


### Technical Drawings – Subject to Alterations



Connection diagram 9478

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



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.