

Remote I/O

IS1+ Remote I/O Digital output module valve

For Zone 1 pneu.

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



- 8 channels for pneumatic valves
- Pneumatic outputs with integrated 3/2-way valves and SIL2 shutdown input
- Module in Zone 1 can be replaced without having to disconnect the power supply (i.e. hot-swapped)

MY R. STAHL 9478A



The 9478 digital output module valve for Zone 1 has eight channels for controlling pneumatic valves. The integrated 3/2-way solenoid valves are monitored to check for wire breakage and short-circuiting regardless of the control 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 gas certificate	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
FMus certificate	FM17US0332X
cFM certificate	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
Certificates	ATEX (PTB), Canada (FM), China (NEPSI), IECEX (PTB), Korea (KTL), SIL (exida), USA (FM)
Ship approval	ABS, BVIS, EU RO MR (DNV), KR, LR
Declaration of Conformity	ATEX (EUK), China (CCC)

Safety Data

Max. voltage U_o	6.6 V
Max. current I_o	67 mA
Max. power P_o	110 mW
Internal capacitance	Negligible
Internal inductance	Negligible
Notes	Safety data for digital input for switching off all outputs ("Plant STOP")

Max. connectable inductance L_o /capacitance C_o

IIC	L_o [mH]	8.24
	C_o [μ F]	22

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IIB	L _o [mH]	31.4
	C _o [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 When pilot valves are actuated
Undervoltage monitoring	All outputs are depressurised

Galvanic Isolation

Test voltage for galvanic separation	Acc. 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	Shutdown up to SIL 2, low demand (IEC 61508)
Control input function	Plant STOP, outputs are depressurised
Supply voltage X3	5 V
Internal resistance X3	1.6 kOhm
Max. voltage for outputs in normal operation	1 V
Min. voltage for all depressurised outputs (Plant STOP)	3.5 V

Device Specific Data

No. 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
Retrievable parameters	Hardware revision Manufacturer Serial number Software revision Type
Media pneumatic data	Compressed air oiled Dry Neutral gases (5 µm filter recommended) Oil-free
Manual actuation pneumatic data	Yes
Switching times pneumatic data	Approx. 1000 c.p.m.
Qn value pneumatic data	300 l/min
Pneumatic data Qn value note	At an air temperature of 20 °C, 6 bar at the valve input and 1 bar of differential pressure
Pneumatic connections	P, R: Dia. 8 mm pluggable coupling Y0 to Y7: Dia. 6 mm pluggable coupling X: Standard sound absorber (included in delivery and preinstalled)
Min. pressure range	2.5 bar
Max. pressure range	7 bar

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Diagnostics

LED group error	"ERR" LED, red
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Ambient Conditions

Ambient temperature	0°C ... +60°C
Ambient temperature	32°F ... +140°F
Media temperature	0 °C ... +50 °C
Storage temperature	-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 to 13.2 Hz Amplitude 1 mm (peak value) Frequency range 13.2 to 100 Hz Acceleration amplitude 0.7 g
Electromagnetic compatibility	Tested to the following standards and regulations: EN 61326-1 (2006)

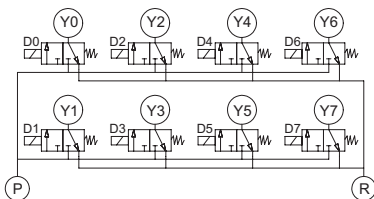
Mechanical Data

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
Valve block material	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	950 g
Weight	2.09 lb

Mounting / Installation

Mounting orientation	Horizontal Vertical
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Technical Drawings – Subject to Alterations



9478 connection diagram

Remote I/O

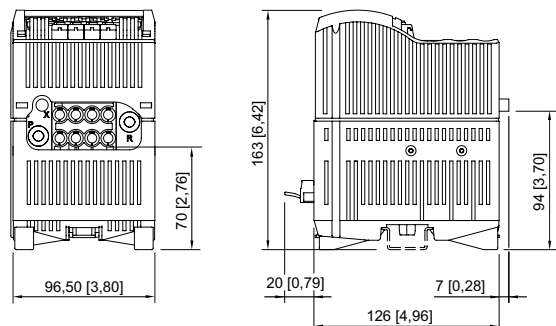
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Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



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