



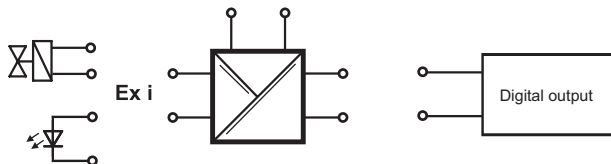
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Digital Output Type 9175

- For intrinsically safe operation of I.S. solenoid valves and indicators
- Intrinsically safe output [EEx ia] IIC / [EEx ib] IIC
- 1 and 2 channels
- Galvanic isolation between input, output and power supply
- Open-circuit and short-circuit monitoring (can be switched off)
- Installation possible in Zone 2 and Div. 2
- Can be used up to SIL 3 (IEC 61508)



Basic function: digital output, 1 and 2 channels.
The digital output is used for intrinsically safe operation of I.S. solenoid valves or indicators.



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Selection table					
Version	Channels	No-load voltage U_A	Max. output current $I_{A \max}$	Internal resistance R_L	Ordering code
Digital output type 9175	1	25 V	60 mA	150 Ω	9175/10-12-11.
			45 mA	130 Ω	9175/10-14-11.
			35 mA	250 Ω	9175/10-16-11.
	2	25 V	60 mA / 120 mA *)	150 Ω / 75 Ω *)	9175/20-12-11.
			45 mA / 90 mA *)	130 Ω / 65 Ω *)	9175/20-14-11.
			35 mA / 70 mA *)	250 Ω / 125 Ω *)	9175/20-16-11.
Add. to ordering code					
	Screw terminal				9175/.....s
	Spring clamp terminal				9175/.....k
	Insulation displacement connectors				9175/.....q
*) Parallel interconnection of the outputs possible; double output current by that.					

Technical Data				
Certificates	DMT 03 ATEX E 043 X			
Other certificates	USA (FM), Canada (CSA), Russia (VNIIEF), Belarus (Promatomnadzor), Brazil (UL do Brasil), Shipping (DNV)			
Explosion protection	Ⓔ II (1) GD [EEx ia] IIC/IIB and Ⓔ II 3 G EEx nAC II T4			
Installation	In Zone 2, Div. 2 and in the safe area			
Safety data (GENELEC)				
Maximum values each output		9175/0-12-11.	9175/0-14-11.	9175/0-16-11.
	Max. voltage U_o	11.3 V	19.6 V	27.6 V
	Max. current I_o [EEx ia] / [EEx ib] *)	75 mA / - -	150 mA / 60 mA	110 mA / 50 mA
	Max. power P_o	210 mW	732 mW	760 mW
	Max. connectable capacitance IIC / IIB	1.79 μ F / 12.1 μ F	235 nF / 1470 nF	85 nF / 667 nF
	Max. connectable inductance IIC / IIB	6.3 mH / 25 mH	1.5 mH / 6 mH	1.2 mH / 9 mH
	Internal capacitance C_i	1.1 nF	1.1 nF	1.1 nF
	Internal inductance L_i	negligible	negligible	negligible
	Insulation voltage U_m	250 V	250 V	250 V
) The digital outputs 9176 can be used for operation with devices marked EEx ib IIC/IIB T. Here the I_o values for [EEx ib] are valid.			
Maximum values for two outputs connected in parallel		9175/20-12-11.	9175/20-14-11.	9175/20-16-11.
	Max. voltage U_o	11.3 V	19.6 V	27.6 V
	Max. current I_o [EEx ia] / [EEx ib] *)	150 mA / - -	300 mA / 120 mA	220 mA / 100 mA
	Max. power P_o	420 mW	1464 mW	1520 mW
	Max. connectable capacitance IIC / IIB	1.79 μ F / 12.1 μ F	235 nF / 1471 nF	- - / 665 nF
	Max. connectable inductance IIC / IIB	1.5 mH / 6 mH	0.3 mH / 1.5 mH	- - / 1.8 mH
	Internal capacitance C_i	2.2 nF	2.2 nF	2.2 nF
	Internal inductance L_i	negligible	negligible	negligible
	Insulation voltage U_m	250 V	250 V	250 V
) The digital outputs 9175 can be used for operation with devices marked EEx ib IIC/IIB T. Here the I_o values for [EEx ib] are valid.			
Power supply	Nominal voltage U_N	24 V DC		
	Voltage range	18 V ... 31.2 V		
	Residual ripple within voltage range	\leq 3.6 V_{pp}		
	Nominal current ($U_N, I_{A \max}$) 1 / 2 channels	100 mA / 170 mA		
	Power consumption ($U_N, I_{A \max}$) 1 / 2 channels	2.4 W / 4.1 W		
	Power losses ($U_N, I_{A \max}$) 1 / 2 channels	1.8 W / 3 W		
	Indication	LED green „PWR“		
	Polarity reversal protection	yes		
	Undervoltage monitoring	yes (no faulty module / output states)		



Technical Data

Galvanic isolation

Test voltage under regulations EN 50020	
I.S. output to input	1.5 kV AC
I.S. output to power supply	1.5 kV AC
I.S. outputs to each other	--
I.S. outputs to error-contact	1.5 kV AC
Test voltage under regulations EN 50178	
Input to power supply	350 V AC
Inputs to each other	350 V AC
Error-contact to power supply and inputs	350 V AC

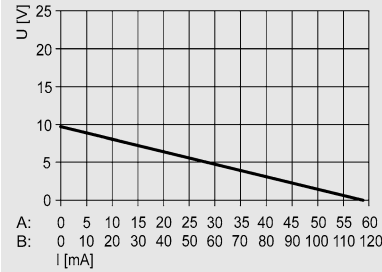
Input

Switching voltage according to EN 61131-2	
Voltage for ON / OFF	15 V ... 31.2 V / 0 V ... 5 V
Control current	< 5 mA

I.S. output

Output characteristic curves (at U_N ; -20 °C ... +60 °C)
(more information see instructions)

9175/0-12-11.

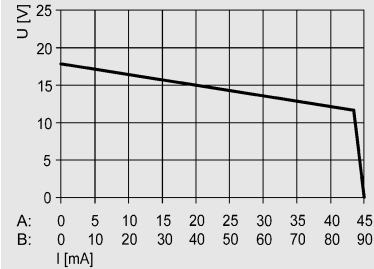


X-axis (I [mA])

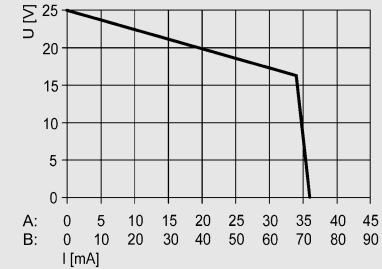
A: characteristic curve each channel
B: characteristic curve channel 1 parallel channel 2 (only types 9175/20-...)

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9175/0-14-11.



9175/0-16-11.



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	9175/0-12-11.	9175/0-14-11.	9175/0-16-11.
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One output:			
No-load voltage U_A	10 V	17.5 V	25 V
Max. output current $I_{A \max}$	60 mA	45 mA	35 mA
Internal resistance R_i	150 Ω	130 Ω	250 Ω
Two outputs parallel:			
No-load voltage U_A	10 V	17.5 V	25 V
Max. output current $I_{A \max}$	120 mA	90 mA	70 mA
Internal resistance R_i	75 Ω	65 Ω	125 Ω
Residual ripple output	≤ 50 mV	≤ 50 mV	≤ 50 mV
Switching delay OFF \leftrightarrow ON	≤ 1 ms	≤ 1 ms	≤ 1 ms
Operating frequency	≤ 200 Hz	≤ 200 Hz	≤ 200 Hz
Indication	LED yellow „OUT“ each channel		

Note

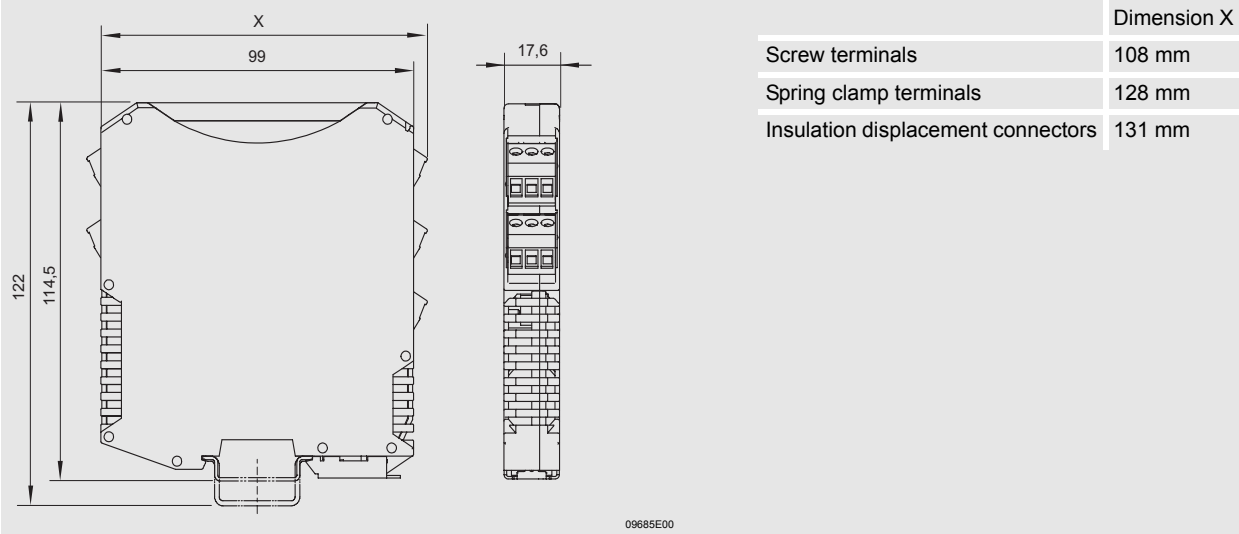
You may find a list of compatible I.S. solenoid valves on our homepage www.ispac.info.

Technical Data

Error detection I.S. output	9175/0-12-11.	9175/0-14-11.	9175/0-16-11.
Open-circuit (each output)	> 7 kΩ	> 10 kΩ	> 15 kΩ
Open-circuit (2 outputs parallel)	> 3.5 kΩ	> 5 kΩ	> 7.5 kΩ
Short-circuit (each output), at 23 °C	40 Ω ... 60 Ω ± 3 Ω / 10 K	40 Ω ... 80 Ω ± 6 Ω / 10 K	50 Ω ... 90 Ω ± 8 Ω / 10 K
Short-circuit (2 outputs parallel), at 23 °C	20 Ω ... 30 Ω ± 3 Ω / 10 K	20 Ω ... 40 Ω ± 6 Ω / 10 K	25 Ω ... 45 Ω ± 8 Ω / 10 K
Settings (switch LF) Error detection Error messaging and power supply	activated / deactivated LED red „LF“ each channel - Contact (30 V / 100 mA), closed to ground in case of error - pac-Bus, floating contact (30 V / 100 mA)		
Electromagnetic compatibility	Tested under the following standards and regulations: EN 61326 (IEC/EN 61000-4-1...6 and 11; EN 55022 Class B); NAMUR NE 21 (IEC/EN 61000-4-1...6, 8 and 11; EN 55022 Class B)		
Ambient conditions	Ambient temperature - 20 °C ... + 60 °C / + 70 °C (watch instructions) Storage temperature - 40 °C ... + 80 °C Relative humidity (no condensation) ≤ 95 %		
Connection diagram			
Mechanical data	Screw terminals	Spring clamp terminals	Insulation displacement connectors
Connection one wire			
- rigid	0.2 ... 2.5 mm ²	0.2 ... 2.5 mm ²	--
- flexible	0.2 ... 2.5 mm ²	0.2 ... 2.5 mm ²	0.5 ... 1 mm ²
- flexible, end covering sleeves (without / with plastic sleeving)	0.25 ... 2.5 mm ²	0.25 ... 2.5 mm ²	--
Connection two wires			
- rigid	0.2 ... 1 mm ²	--	--
- flexible	0.2 ... 1.5 mm ²	--	--
- flexible, end covering sleeves	0.25 ... 1 mm ²	0.5 ... 1 mm ²	--
Weight	approx. 160 g		
Mounting type	on DIN rail acc. to EN 50022 (NS35/15; NS35/7.5) or in pac-Carrier		
Mounting position	horizontal or vertical		
Casing protection class	IP 30		
Terminal protection class	IP 20		
Casing material	PA 6.6		
Fire protecting class (UL-94)	V0		

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Dimension drawings (all dimensions in mm) - subject to alterations



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