IDM 341

Differential Pressure Transmitter for Gases and Compressed Air in Compact Version

Silicon Sensor

accuracy according to IEC 60770:
0.35 % / 1% / 2%

Differential pressure

from 0 ... 6 mbar up to 0 ... 1000 mbar

Output signals

2-wire: 4 ... 20 mA

3-wire: 0 ... 20 mA / 0 ... 10 V

Special characteristics

- aluminium housing
- suited for non-aggressive gases and compressed air

Optional versions

- customer specific versions

The IDM 341 is a differential pressure transmi t-ter for non-aggressive gases and compressed air. Because of its compact and robust alumini-um housing it is particularly suited for machine and plant engineering.

Basic element of the IDM 341 is a piezoresistive stainless steel silicon sensor, which features high accuracy and excellent long term stability.

Preferred areas of use are

Plant and Machine Engineering

Heating and Air Conditioning

Preferred used for

Compressed Air,
Non-Aggressive Gases

CE

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Input pressure range											
Nominal pressure P_N [mbar] (over, differential pressure)	0...6	0...10	0...20	0...40	0...60	0...100	0...160	0...250	0...400	0...600	0...1000
Nominal pressure P_N symmetric (differential pressure) [mbar]	± 6	± 10	± 20	± 40	± 60	± 100	±160	± 250	± 400	± 600	±1000
Overpressure [mbar]	100	100	200	350	350	1000	1000	1000	1000	3000	3000

Output signal / Supply		
Standard	standard pressure range:	2-wire: 4 ... 20 mA / V_S = 8 ... 32 V_{DC}
Options 3-wire	standard pressure range:	3-wire: 0 ... 20 mA / V_S = 14 ... 30 V_{DC} 0 ... 10 V / V_S = 14 ... 30 V_{DC}
Performance		
Accuracy [1]	P_N > 160 mbar: ≤ ± 0.35 % FSO 40 mbar ≤ P_N ≤ 160 mbar: ≤ ± 1 % FSO P_N < 40 mbar: ≤ ± 2 % FSO	
Permissible load	current 2-wire: $R_{max} = [(V_S - V_S \text{ min}) / 0.02 \text{ A}]$ Ω current 3-wire: R_{max} = 500 Ω voltage 3-wire: R_{min} = 10 kΩ	
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ	
Long term stability	≤ ± 0.2 % FSO / year at reference conditions	
Response time	< 5 msec	
[1] *accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)*		

Thermal effects (Offset and Span) / Permissible temperatures				
Nominal pressure P_N [mbar]	≤ 10	≤ 20	≤ 250	> 250
Tolerance band [% FSO]	≤ ± 2	≤ ± 1.5	≤ ± 1	≤ ± 0.5
TC, average [% FSO / 10 K]	± 0.3	± 0.25	± 0.15	± 0.08
in compensated range	0 ... 60 °C			
Permissible temperatures	medium: -25 ... 125 °C	electronics / environment: -25 ... 85 °C		storage: -40 ... 100 °C

Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
Mechanical stability	
Vibration	10 g RMS (20 ... 2000 Hz)
Shock	100 g / 11 msec
Materials	
Pressure port	G1/8“ internal: aluminium, silver anodized flexible tube connection Ø6.6 x 11: brass, nickel plated
Housing	aluminium, silver anodised
Seal (media wetted)	PUR, bonded
Sensor	silicon, glass, RTV, ceramics Al_2O_3, nickel
Media wetted parts	pressure port, housing, seal, sensor
Miscellaneous	
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 µH/m
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 250 g
Operational life	> 100 x 10^6 pressure cycles
CE-conformity	EMC Directive: 2004/108/EC

Pin configuration			
Electrical connection	ISO 4400	M12x1 (4-pin)	cable colours (DIN 47100)
Supply +	1	1	white
Supply –	2	2	brown
Signal + (only 3-wire)	3	3	green
Shield	ground pin	4	yellow / green

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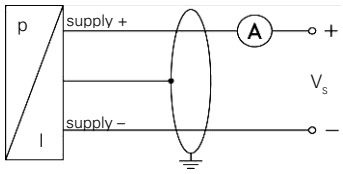
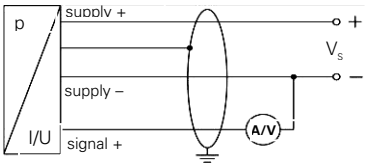
Wiring diagrams

2-wire-system (current)

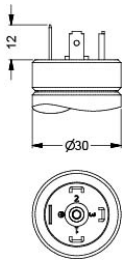


3-wire-system (current / voltage)



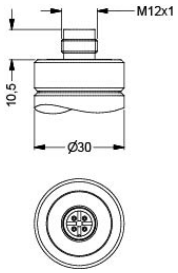
Electrical connections (dimensions in mm)

standard

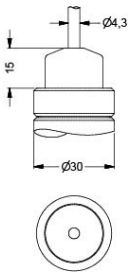


ISO 4400 (IP 65)

option



M12x1 4-pin (IP 67)

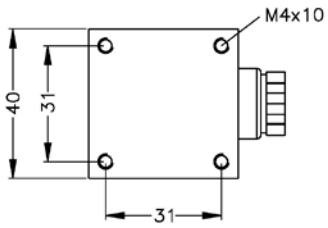


Cable outlet with PVC-cable (IP 67) [2]

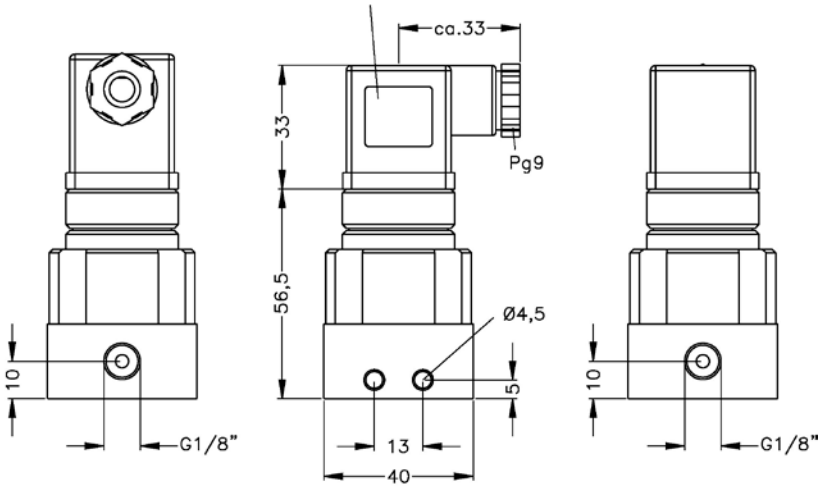
[2] *standard: 2 m PVC cable (without ventilation tube), optionally cable with ventilation tube*

Mechanical connection (dimensions in mm)

Standard



connector ISO 4400



G1/8“ internal

This data sheet contains product specification, properties are not guaranteed. Subject to change without notice.

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Ordering code IDM 341

IDM 341 □□□-□□□□-□-□-□□□-□□□-□-□□□

Pressure																									
differential pressure				3	3	0																			
gauge pressure				3	3	1																			
Input	**[mbar]**																								
6							0	0	6	0															
10							0	1	0	0															
20							0	2	0	0															
40							0	4	0	0															
60							0	6	0	0															
100							1	0	0	0															
160							1	6	0	0															
250							2	5	0	0															
400							4	0	0	0															
600							6	0	0	0															
1000							1	0	0	1															
-6 ... 6							S	0	0	6															consult
-10 ... 10							S	0	1	0															consult
-20 ... 20							S	0	2	0															consult
-40 ... 40							S	0	4	0															consult
-60 ... 60							S	0	6	0															consult
-100 ... 100							S	1	0	0															consult
-160 ... 160							S	1	6	0															consult
-250 ... 250							S	2	5	0															consult
-400 ... 400							S	4	0	0															consult
-600 ... 600							S	6	0	0															consult
-1000 ... 1000							S	1	0	2															consult
customer							9	9	9	9															consult
Output																									
4 … 20 mA / 2-wire											1														
0 … 20 mA / 3-wire											2														
0 … 10 V / 3-wire											3														
customer											9														consult
Accuracy																									
standard for P_N > 160 mbar	0,35 %											3													
Standard for 40 mbar ≤ P_N ≤ 160 mbar	1,0 %											8													
standard for P_N < 40 mbar	2,0 %											G													
customer												9													consult
Electrical connection																									
Male and female plug ISO 4400													1	0	0										
Male plug M12x1 (4-pin)													M	0	0										
Cable outlet with PVC cable [1]													T	A	0										
customer													9	9	9										consult
Mechanical connection																									
G1/8" internal thread																Q	0	0							
Ø 6.6 x 11 (for flex. tubes Ø 6)																Y	0	0							
customer																9	9	9							consult
Seals																									
PUR, bonded																			6						
Special version																									
standard																				0	0	0			
customer																				9	9	9			consult

[1] standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 … 70 °C)

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