

27A SERIES



27A series includes electronic level, pressure and vacuum transmitters.

All 27A series versions have analogue electronics, small sizes (typical housing Ø 27 mm) and fixed ranges (when possible to adjust zero and span, this can be done within $\pm 10\%$).

The transmitters are, as standard, installed on and supported by the process pipe or flanged on mating flange. For remote sensor version and when remote seal and capillary are supplied, a stainless steel bracket for wall mounting is also available.

APPLICATION FIELDS

27A Series transmitters are used in industrial and marine applications to detect pressure of liquids, gas and vapors.

TECHNICAL FEATURES

Electrical parameters

Supply:

2 wires: 11 ÷ 30 Vdc

3 wires: 16 ÷ 26 Vdc

Output signal:

2 wires: 4 ÷ 20 mA

3 wires: 0 ÷ 10 Vdc (min 30 mVdc)

0 ÷ 5 Vdc (min 30 mVdc)

Current consumption:

2 wires: 4 ÷ 20 mA

3 wires: < 5mA @10 KΩ carico \ load

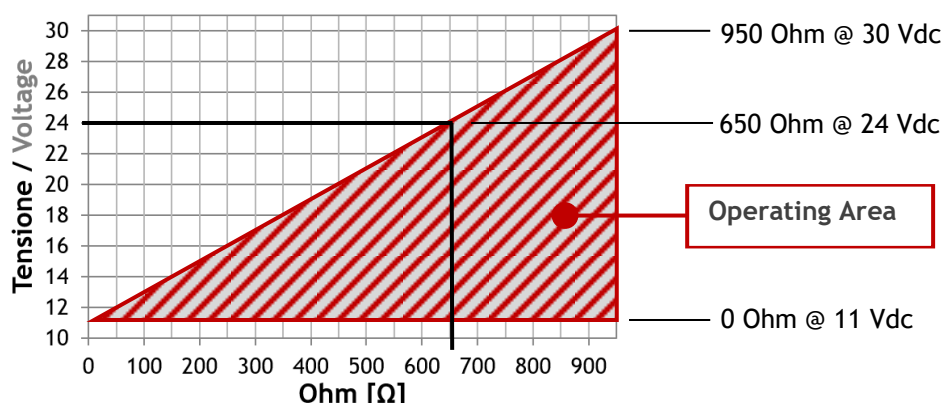
Load resistance:

 2 wires: $R_{\Omega} = (U_{supply} - 12 V) / 0.02 A$

 3 wires: $R_{\Omega} \geq 10 K\Omega$

Max load:

As per chart



Measurement performance

Total accuracy (*):

< ± 0.25 % FS

Zero offset:

< ± 1 % FS

Temperature zero drift:

< ± 0.025 % FS / °C (-10 ÷ 60 °C)

Span thermal drift:

Piezo: < ± 0.02 % FS / °C

Ceramic: < ± 0.01 % FS / °C

Long term stability:

Piezo: < ± 0.15 % FS / year Ceramic:

< ± 0.12 % FS / year

Response time (63% FS):

Piezo: 10 ms

Ceramic: 5 ms

Allowable de-range:

 Piezo Sensors: down to 4 times the Nominal Range
 Ceramic Sensors: down to 2.5 times the Nominal Range

Notes

(*) Including hysteresis, non-linearity and non-repeatability (IEC 60770) Accuracy and drifts are given for instruments with integral sensor and diaphragm; they may vary according to sensor type and diameter, thickness and material of the diaphragm. Zero and Span factory setting < ± 0.6 % FS for not standard versions. Calibrations below 0.1 bar are to be considered not standard. Calibration available with different measuring units.

ENVIRONMENTAL FEATURES

Environmental Conditions

Ambient temperature:	-40 ÷ +85 °C ATEX T6, T85 °C: -40 °C ≤ Tamb ≤ 55 °C ATEX T5, T100 °C: -40 °C ≤ Tamb ≤ 70 °C
Process temperature:	-40 ÷ +85 °C Finned body: -40 ÷ 130 °C Capillary: -40 ÷ 280 °C
Storage temperature:	-40 ÷ +90 °C
Ingress protection degree:	Ø 27 and Ø 50 Housing: IP65 Ø 35 and Ø 55 Housing: IP67
Vibration Test:	in accordance with IEC 60068-2-6
Shock Test:	In accordance with MIL-STD-202F Method 213B
Relative Humidity:	< 98% RH not condensing

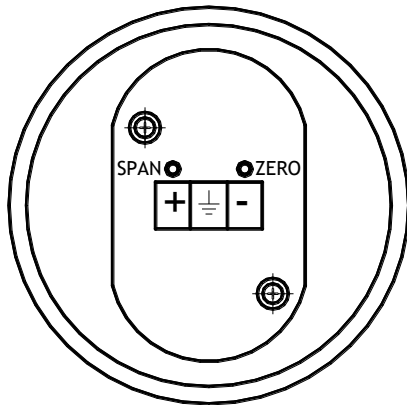
APPROVALS

Type approvals

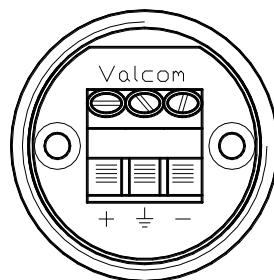
Directive 2014/34/EU (ATEX)	 II 1G Ex ia IIC T6, T5 Ga  II 1D Ex ia IIIC T85 °C, T100 °C Da or  and II 1G Ex ia IIC T6, T5
Directive 2014/68/EU (PED)	Up to Category II, for fluids in Group 1
Directive 2014/30/EU (EMC)	Adequate level of electromagnetic compatibility
Functional Safety	SIL2 SFF = 75.00 % PFH [Hours⁻¹] = 9.8059·10⁻⁸ DC = λ_{DD} / (λ_{DD} + λ_{DU}) = 82.5 %
Marine type approval	In compliance with applicable requirements of DNV GL type approval system

ELECTRICAL WIRING

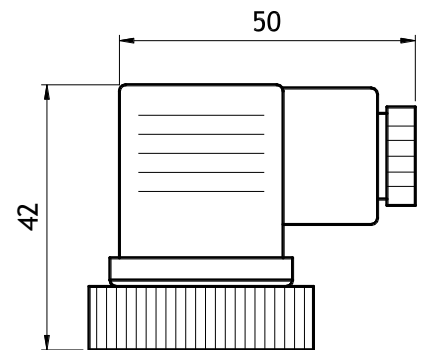
Transmitters are protected against reverse polarity. The recommended wiring cable is a twisted and screened signal cable, with wires of minimum section area of 0.2 mm² (AWG24) and shielding > 80 %.



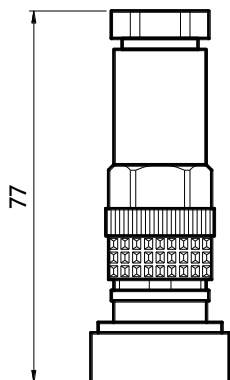
Code 10
For Ø50 and 55 housing IP65/IP67



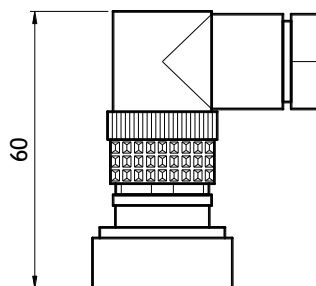
Code 10
For Ø35 housing IP67



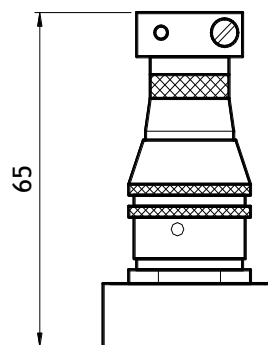
Code 04
DIN 175301 PG9/PG13 3+1 poles IP65



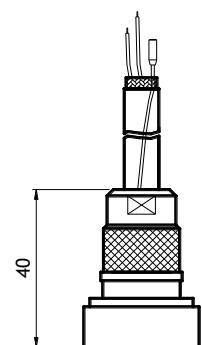
Code 01
Plug connector M12
IP67 straight



Code 02
Plug connector M12 IP67
90° angle

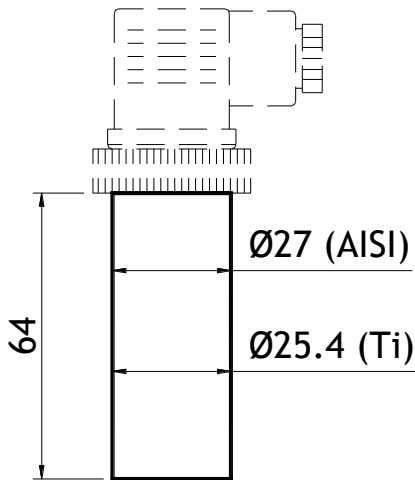


Code 08
MIL connector



Code 16
AISI 316 Cable gland for output
standard sealing IP67

HOUSING MATERIAL AND TYPE

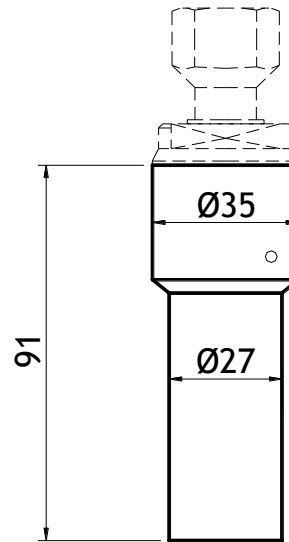


Code A04 - AISI 316

- **Material:** AISI 316 (Ø 27)
- **Zone:**  II 1G
- **Protection Degree:** IP65

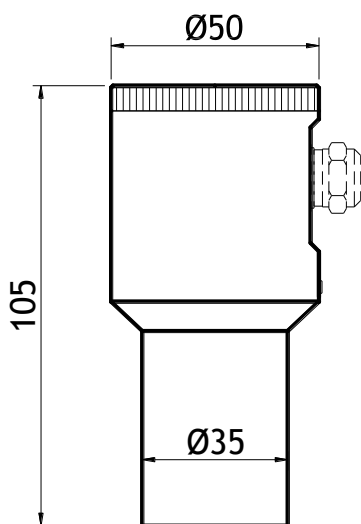
Code T04 - Titanium

- **Material:** Titanium (Ø 25,4)
- **Zone:**  II 2G
- **Protection Degree:** IP65

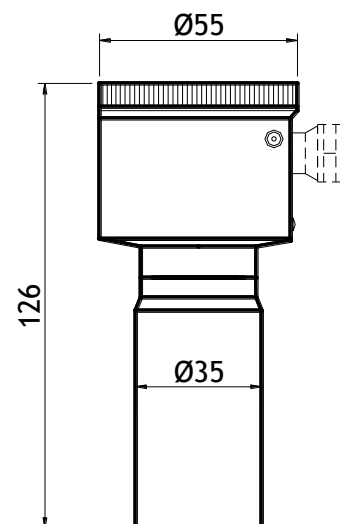


Code A05 - AISI 316

- **Material:** AISI 316 \ AISI 316 (Ø 35)
- **Zone:**  II 1GD
- **Protection Degree:** IP67



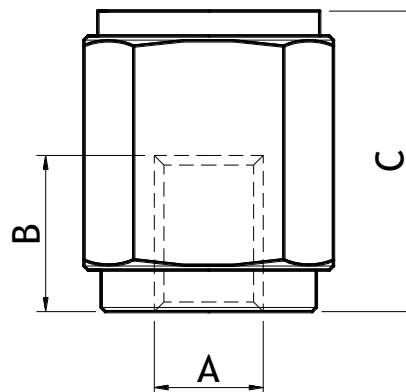
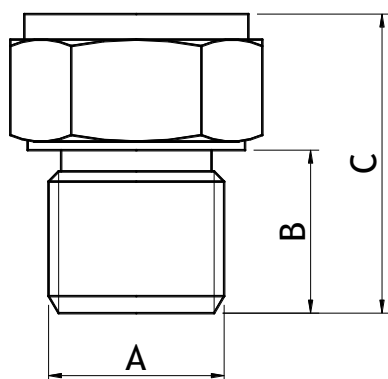
- **Code A06 - AISI 316**
- **Material:** AISI 316 (Ø 50)
- **Protection Degree:** IP65



- **Code A08 - AISI 316**
- **Material:** AISI 316 (Ø 55)
- **Zone:**  II 1GD
- **Protection Degree:** IP67

PROCESS CONNECTIONS

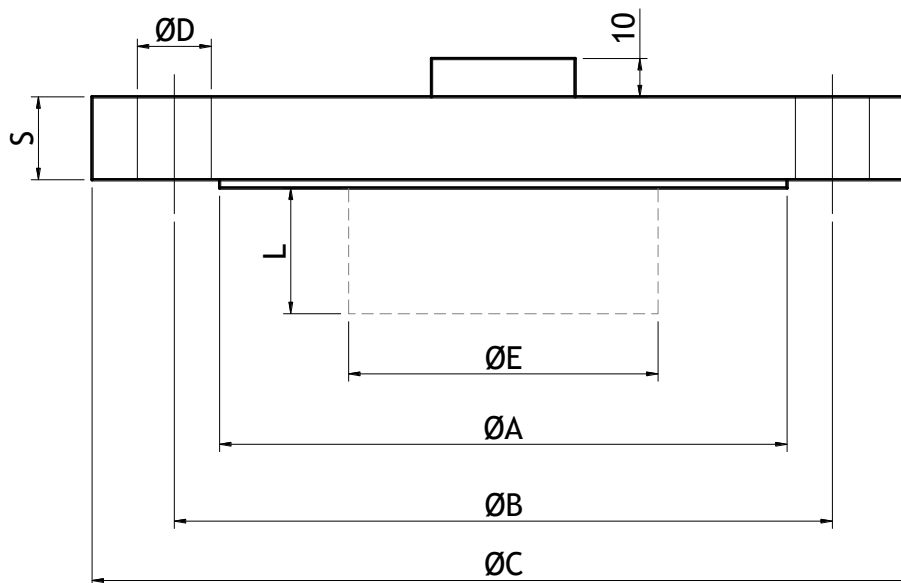
Standard screws



Code	A	B [mm]	C [mm]	Ex. Ch.
S06	1/4" G-M	14	38	27
S07	1/4" G-F	14	35	27
S08	1/4" NPT-M	14	39	27
S09	1/4" NPT-F	14	35	27
S22	3/8" G-M	16	41	27
S25	1/2" G/BSP/PF-M in PVDF	20	52	32
S26	1/2" G-M	18	45	27
S28	1/2" G-F	20	41	27
S30	1/2" NPT-M	20	45	27
S31	1/2" NPT-F	20	43	27
S39	1/2" G-M Flush diaphragm Ø18.5	16	32	27
S51	3/4" G-M	20	48	32
S54	3/4" NPT-M	20	54	32
S56	1" G-M Flush diaphragm	20	33.5	41
S58	1" G-M	20	32	41
S81	2" G-M	25	44	41

PROCESS CONNECTIONS

Standard flanges



Code	DN	PN	ØA [mm]	ØB [mm]	ØC [mm]	ØD [mm]	S [mm]
F21	15	10/16	45	65	95	14	14
F22	15	25/40	45	65	95	14	16
F23	20	10/40	58	75	105	14	18
F24	25	10/16	68	85	115	14	16
F26	25	25/40	68	85	115	14	18
F29	40	10/16	88	110	150	18	16
F32	40	25/40	88	110	150	18	18
F33	50	10/16	102	125	165	18	18
F35	50	25/40	102	125	165	18	20
F36	50	10/25	102	125	165	18	20
F41	65	10/40	122	145	185	18	22
F42	80	6	128	150	190	18	16
F43	80	10	138	160	200	18	20
F44	80	10/16	138	160	200	18	20
F49	80	25/40	138	160	200	18	24
F71	1"	ANSI 150	51	79.5	108	16	14.5
F73	1" 1/2	ANSI 150	73	98.5	127	16	17.5
F75	2"	ANSI 150	92	120.5	152	19	19
F79	3"	ANSI 150	127	152.5	191	19	24
F83	3"	ANSI 300	127	168.3	210	22	28.6

ORDERING CODE

27A Electronic pressure, level, vacuum transmitter

01 Type of measure				
	A	Absolute Pressure		
	B	Barometric Pressure		
	C	Relative Pressure		
02 Sensor type				
	CI	Ceramic Integral		
	CR	Ceramic Remote		
	PI	Piezoresistive Integral		
	PR	Piezoresistive Remote		
03 Measuring range				
	M01	0,35 bar	Piezo	Overpressure: 0.7 bar
	M02	1 bar	Piezo	Overpressure: 2 bar
	M03	2 bar	Piezo	Overpressure: 4 bar
	M04	3.5 bar	Piezo	Overpressure: 7 bar
	M05	10 bar	Piezo	Overpressure: 20 bar
	M06	35 bar	Piezo	Overpressure: 70 bar
	M07	100 bar	Piezo	Overpressure: 150 bar
	M08	350 bar	Piezo	Overpressure: 700 bar
	M09	1000 bar	Piezo	Overpressure: 1500 bar
	C01	1 bar	Ceramic	Overpressure: 2 bar
	C02	2 bar	Ceramic	Overpressure: 4 bar
	C03	5 bar	Ceramic	Overpressure: 10 bar
	C04	10 bar	Ceramic	Overpressure: 15 bar
	C05	20 bar	Ceramic	Overpressure: 35 bar
	C06	50 bar	Ceramic	Overpressure: 100 bar
	C07	100 bar	Ceramic	Overpressure: 200 bar
	C08	400 bar	Ceramic	Overpressure: 650 bar
	N01	0.35 bar	Piezo	Overpressure: 0.7 bar
	N02	1 bar	Piezo	Overpressure: 2 bar
	N03	3.5 bar	Piezo	Overpressure: 7 bar
	N04	10 bar	Piezo	Overpressure: 20 bar
	N05	35 bar	Piezo	Overpressure: 70 bar
	P51	0.01bar	Piezo	No overpressure
	P52	0.055 bar	Piezo	No overpressure
P53	0.206 bar	Piezo	No overpressure	
ZZZ	Special			
04 Filling oil				
	8	Siliconic Oil -40/+200°C		
	N	No filling		
	Z	Special		
05 Process temperature limits				
	B	-40 ÷ 85°C Standard		
	D	-40 ÷ 120°C Finned body for piezoresistive sensor		
	F	-40 ÷ 130°C Finned body for ceramic sensor		
	H	-40 ÷ 280°C Capillary		
06 Housing material and type				
	A04	AISI 316 Ø 27 mm		
	A05	AISI 316 Ø 35 mm		
	A06	AISI 316 Ø 50 mm		
	A08	AISI 316 Ø 55 mm		
	T04	Titanium Ø 25,4 mm		
	Z99	Special		
07 Process connection				
	...	See section "Process connections"		
	Z99	Special		

NOTES

1) Negative or compound ranges are possible

08 Extension length

- ☐ L04 Diaphragm extension < 200 mm
☐ L10 Diaphragm extension < 500 mm
☐ Z99 Special

09 Sensor material (diaphragm)

- ☐ A AISI 316
☐ B AISI 316L
☐ E Ceramic
☐ Z Special

10 Process gasket material

- ☐ C EPDM
☐ D FKM Viton
☐ F Silicon
☐ T All welded
☐ Z Special

11 Wetted parts material

- ☐ A AISI 316
☐ B AISI 316L
☐ V PTFE coating
☐ Z Special

12 Electrical connection

- ☐ 01 Plug connector M12 IP67 straight
☐ 02 Plug connector M12 IP67 90° angle
☐ 04 Connector DIN 175301 PG9/PG13 3+1 poles IP65
☐ 08 MIL Connector
☐ 09 RSF Lumberg Connector 4 poles
☐ 19 AISI 316 Cable gland PG9 IP67 for cable $\varnothing$ 5 ÷ 7 mm
☐ 20 AISI 316 Cable gland PG13 IP67 for cable $\varnothing$ 8 ÷ 12 mm
☐ 36 I 316 nipple 1/2" G-F
☐ 37 I 316 nipple 1/ 2" NPT-F
☐ 39 AISI 316 nipple M20x1.5-F
☐ 99 Special

13 Electrical output

- ☐ 1 Current output 4÷20 mA 2 wires
☐ 6 Voltage output 0÷5 V 3 wires (No Atex)
☐ 7 Voltage output 0÷10 V 3 wires (No Atex)

14 Ex type approval

- ☐ A1  II 1G Ex ia IIC T6, T5 Ga and  II 1D Ex ia IIIC T85°C, T100°C Da
☐ A2  II 1G Ex ia IIC T6, T5 Ga
☐ N0 No Ex certification

15 Options and accessories

- ☐ 02 Marine type approval
☐ 22 PED Certificate
☐ 21 SIL Certificate
☐ 10 5 points calibration report
☐ 01 Test and material report according to EN 10204
☐ R4 Finned pipe HTx4 (T<150°C)
☐ R5 Finned pipe HTx11 (T<280°C)
☐ R7 Cooling syphon Sch Std in AISI 316 Tmax=235°C
☐ R8 Cooling syphon Sch 80 in AISI 316 Pmax=100bar or Tmax=450°C
☐ NN No options

ACCESSORIES



Cod. R7/R8
Cooling Syphon



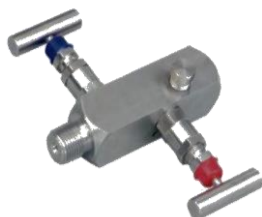
Cod. S3
Pulsation dampener



Cod. OV
Overpressure protection



Cod. N0/N1/N2
Welding nipple



Cod. M2
2 ways and 1 or 2 valves manifold



Cod. Z9
Clamp bracket for wall mounting



Cod. D20
Universal local display

and MORE

- Wall mounting bracket
- SS 316 capillary L=...m
- Armoured capillary




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