



## Series 27

27 series includes electronic pressure transmitters available with piezoresistive (P series) or Ceramic (C series) sensor. Piezoresistive sensors are based on silicon chip resistive Wheatstone bridge while ceramic sensors are thick film sensors based on strain gauge principle with backplate and diaphragm in ceramic material. All 27 series versions has small sizes (typical housing  $\varnothing 27$  mm) and fixed ranges (when possible to adjust zero and span, this can be done within  $\pm 10\%$ )

### APPLICATION FIELDS

27 Series transmitters are used in industrial and marine applications detect pressure of liquids, gas and vapours. For versions not considered in the specification ask our technical office .

### TECHNICAL FEATURES

- Supply 12÷30Vdc
- Output 4÷20 mA 2 wire system (max 25 mA)  
0÷10 V (3 wires-Min. supply 16Vcc) (NO ATEX)  
0÷5 V (3 wires) (NO ATEX)
- Total Accuracy  $\pm 0,25$  % FS (\*)
- Hysteresis and repeatability  $< \pm 0,1$  % FS
- Accuracy range codes 41 and 42  $< \pm 0,4$  % FS
- Temperature zero drift  $< \pm 0,025$  % FS/°C (-10÷60° C) (\*)
- Span thermal drift  $< \pm 0,02$  % FS/°C (P series) (\*)  
 $< \pm 0,01$  % FS/°C (C series) (\*)

## Continue **TECHNICAL FEATURES**

- Max Load 600 ohm at 24Vdc supply
- Long term stability  $<\pm 0,15\%$  FS per year (P series) (\*)  
 $<\pm 0,12\%$  FS per year (C series) (\*)
- Vibration: according to IEC 60068-2-6
- Relative Humidity  $< 98\%$  RH
- Operating temperature range:  $-40\div 85^{\circ}\text{C}$
- Storage temperature :  $-55\div 90^{\circ}\text{C}$
- Protection against supply transient and built-in RFI/EMI filter
- Protection rating IP6(x) according to housing & cable gland type
- Response time 63% FS: P series =5 msec; C series:= 20 msec

### Notes (\*):

Unless otherwise stated, performance specifications are given at maximum span. Accuracy and drifts are given for instruments with integral sensor and diaphragm; they may vary according to sensor type and execution. Zero and Span factory setting  $\pm 0,3\%$  FS (max  $\pm 0,6\%$  FS) for non standard version.

## ORDERING CODE

**Tab. 1 - General characteristics**

CODE	DESCRIPTION
	<b>PRESSURE:</b>
A	- Absolute
B	- Barometric
R	- Relative
	<b>SENSOR:</b>
IC	- Integral (Ceramic)
IP	- Integral (piezo)
SC	- Remote (Ceramic)
SP	- Remote (piezo)
	<b>* MEASURING RANGE ( see table 2 )</b>
	<b>HOUSING MATERIAL:</b>
A	- AISI 316
M	- AISI 316 Ø 55
	<b>** PROCESS CONNECTIONS ( see table 3 a,b,c,d )</b>
	<b>DIAPHRAGM MATERIAL:</b>
A	- AISI 316 Ti (1.4571)
C	- Hastelloy C (HC)
D	- Tantalum (Ta)
E	- Ceramic
N	- None upset piezo-sensor (air or non corrosive gases)
	<b>GASKETS :</b>
N	- All welded
T	- TFE
V	- FPM
	<b>WETTED PARTS MATERIAL :</b>
1	- AISI 316 L
3	- Hastelloy C 276
5	- Flange TFE lined DN 50,2", 1 ½"
6	- Flange TFE lined DN 80,3"
	<b>ELECTRIC CONNECTIONS:</b>
A	- IP 67 Straight connector M12
B	- IP 67 Angle connector M12
C	- Connector DIN 43650-A PG9 (IP65) ATX3 only
E	- Connector MIL
P	- st.st. cable gland cable output
PG9	- st.st. cable gland PG9 cable ø 5÷7mm
PG13	- st.st. cable gland PG13 cable ø 8 ÷ 12 mm
R20	- st.st. nipple M20x1,5 F
R24	- st.st. nipple M24x1,5 F
	<b>OUTPUT SIGNAL:</b>
0	- 0÷10V 3 wire (Min. supply 16Vcc-NO ATEX)
4	- 4-20 mA 2 wire
9	- 0÷5 V 3 wire (NO ATEX)
	<b>INDICATOR:</b>
D	- Digital programmable indicator 4 digit in st. st. housing (NO ATEX)
D1	- Digital indicator 3 1/2 digit (NO ATEX-only connector code C)

\*Table 2 indicates codes and calibration limits

\*\* Tables 3a,3b,3c and 3d list codes of standard process connections.

**Tab. 2 – Measuring range**

CODE	RANGE [bar]
01*	0÷0,05...0,2
02*	0÷0,15...0,6
03	0÷0,4...1,6
04	0÷0,8...3,2
11	0÷1,5...6
12	0÷4...16
13	0÷8...32
31	0÷15...60
32	0÷20...80
33	0÷40...160
34	0÷100...400
35*	0÷250...1000
41**	0÷-1
42**	-1÷0
Z99	Other

\*Ranges not available with ceramic sensor diaphragm.

\*\* Codes 41 and 42 are not available with connections 00,01,02,04 if piezo sensor is required. Calibrations below 0,1 bar are to be considered not standard.

Calibration available with different measuring unit.

**Tab. 3a: SCREWED process connections**

CODE	DESCRIPTION
00	1/4" G/BSP/PF – M
00a	1/4" G – F
01	1/4" NPT – M
02	1/2" G/BSP/PF – M
02a	1/2" G – F
03	1" G- M ( flush diaphragm )
03a*	1" G – M ( front diaphragm ø 15 mm )
03c*	3/4" G-M ( flush diaphragm )
04	1/2" NPT – M
05*	1/2" G- M (diaphragm M44)
05a*	1/2" NPT- M (diaphragm M44)
06*	1/2" G – M (diaphragm M75)
06a*	1/2" NPT – M (diaphragm M75)
07*	1 1/2" G – M (flush diaphragm)
08*	2" G – M (flush diaphragm)
09*	1/2" G–M (flush diaphragm ø 18,5mm)
09a*	1/2" G – M (flush diaphragm ø 19 mm)
10*	1/2" G – M (welded diaphragm)
10a*	1/2" NPT – M (welded diaphragm)
10b*	1/4" G – M (welded diaphragm)
10c*	1/4" NPT – M (welded diaphragm)
11	3/8" G – M
11a	3/4" G – M
11b	M24x1,5 – M
11c	M22x1,5 – M
11d	M20x1,5 – M

\* Connections not available with ceramic diaphragm.

Codes 03,05,06,07,08 available with HC and TA diaphragm. Codes 03,05 available with HC diaphragm and Wetted parts. For more informations contact our technical office.

**Tab. 3b: FLANGED process connections**

CODE	DESCRIPTION
71	Flange DN 80 PN 10/25
71a	Flange DN 80 PN 10/25 est. ≤ 50 mm
71b	Flange DN 80 PN 10/25 est. ≤ 100 mm
71c	Flange DN 80 PN 10/25 est. ≤ 150 mm
71d	Flange DN 80 PN 10/25 est. ≤ 200 mm
73	Flange DN 3" ANSI 150RF
73c	Flange DN 3" ANSI 150RF est. ≤150 mm
74	Flange DN 2" ANSI 150RF
75	Flange DN 50 PN 10/25
75a	Flange DN 50 PN 10/25 est. ≤ 50 mm
75b	Flange DN 50 PN 10/25 est. ≤ 100 mm
75c	Flange DN 50 PN 10/25 est. ≤ 150 mm
76	Flange DN 40 PN 10/40
77	Flange DN 1 1/2" ANSI 150RF
78	Flange DN 25 PN 10/40
80	Flange DN 15 PN 10/40
82	Flange DN 65 PN 10/40
98	Flange ø=135mm ADM-401 (flush diaphragm)
98a	Flange ø=135mm ADM-401 (internal diaphragm)

Flanges with lower and higher ratings are available.  
For special versions contact our technical office.

**Tab. 3c: SANITARY connections**

CODE	DESCRIPTION
20	DIN nut DN 40
21	DIN nut DN 50
22	DIN nut DN 25
22a	DIN nut DN 32
23	DIN nut DN 65
25	SMS nut DN 38
26	SMS nut DN 51
40	Triclamp 2"
41	Triclamp 2 1/2"
42	Triclamp 1 1/2" diaphragm ø 26
42a	Triclamp 1 1/2" diaphragm ø 19
50	SO Flange
60*	Flange ø 79 mm

\* Code 60 available with HC and TA diaphragm.


**Tab. 3d: Process connections with WELDING RINGS**

CODE	DESCRIPTION
12	Welding ring ET 12
13	Welding ring ET 13
14	Welding ring ET 14
15	Welding ring ET 15
16	Welding ring ET 16
18	Welding ring ET 18
19	Welding ring ET 19
30	Welding ring ET 30
31	Welding ring ET 31
Z99	Other

Connections available with HC 276 diaphragm.

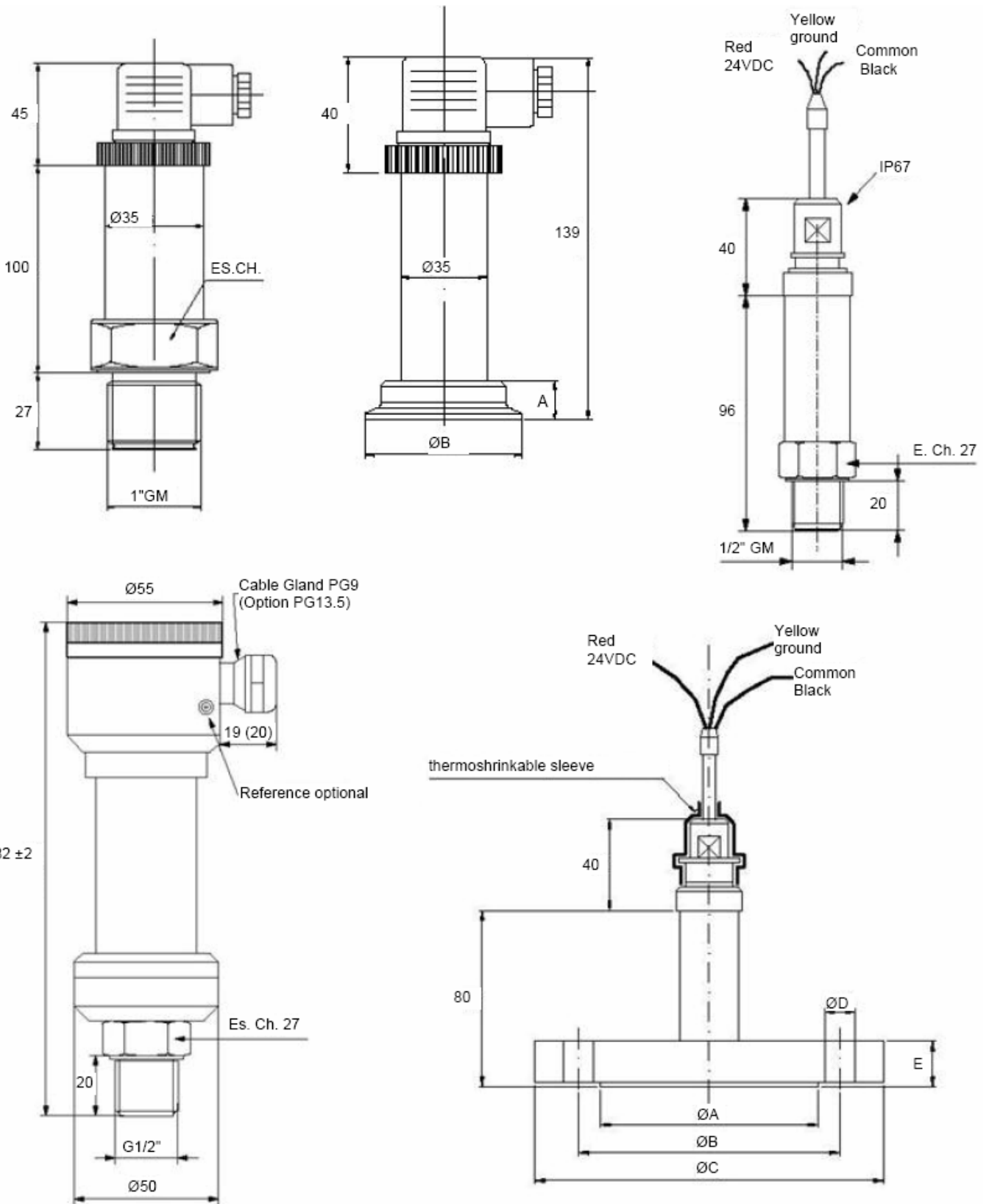
These connections are mainly used in the pulp and paper industry.

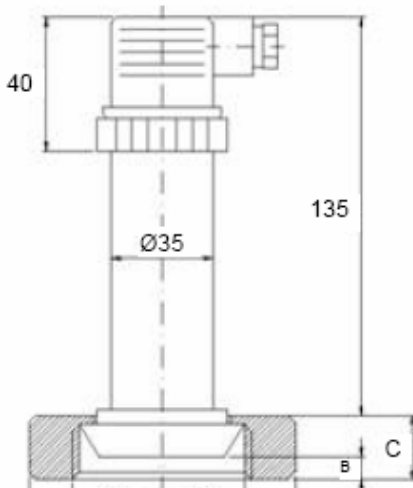
**Tab. 4: OPTIONS ACCESSORIES**

CODE	DESCRIPTION
ARI	Flexible st.st. armour ø10 mm
ATX1	Version ATEX Ex II 1G EExia IIC T6/T5
ATX2	Versione ATEX Ex II 1GD EExia IIC T5/T6
ATX3	Versione ATEX Ex II 1/2G EExia IIC T5/T6
CAA	Blue cable with reference for ATEX version
CAB	Special cable blue with reference
CAS	Standard cable without reference
CNB	Special cable black with reference
CNT	Special black cable with reference TPR sheet
DHT	Finned dissipator 1/2"G M/F for high temperature (<150°C)
E	TAG transcription
FLU	Fluorurate filling oil and degreasing
HT	Integral finned extension for high temperature (< 150°C)
N	Marine type approval
NAS	AISI 316 St.St. Welding nipple G 1/2"
NAS01	AISI 316 St.St. Welding nipple G-F 3/4"
NAS02	AISI 316 St.St. Welding nipple G-F 1"
R18	Cooling siphon L=180 mm. AISI316
R18a	Cooling siphon R18 Sch.80 Pmax=100bar; Tmax=450°C
S	Seal
SD	Housing welded on body
SGO	Degreasing for oxygen (only ceramic)
STAFF	Wall mounting bracket
TPA	Plastic plug for ET Series (12,13,14)
TPB	Plastic plug for ET Series (15,16,18)
TR60	Welding ring for ET Series L=60 mm
TRSA	Welding ring for ET Series (12,13,14)
TRSB	Welding ring for ET Series (15,16,18)
VAN	AISI 316 St.St. Root valve G 1/2"

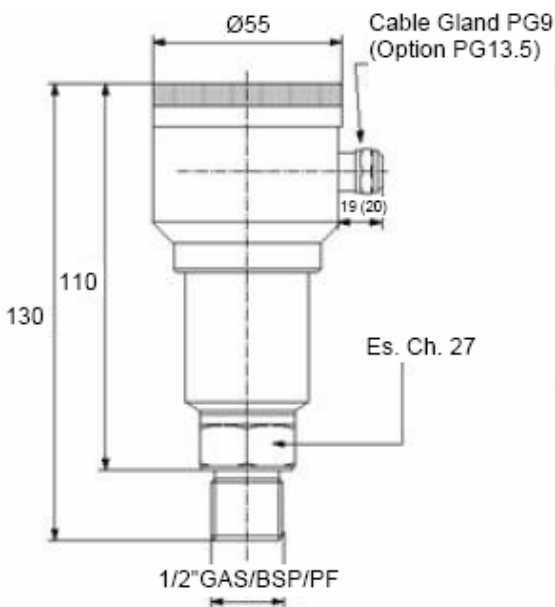
# ELECTRONIC PRESSURE TRANSMITTERS

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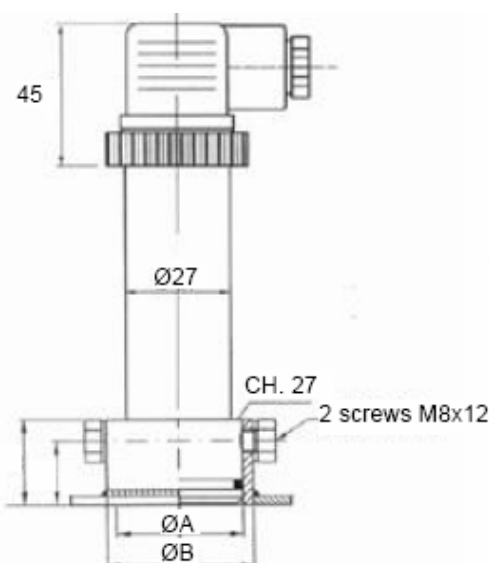




- A) Electronic transmitter for relative pressure measurement with integral ceramic sensor , calibration 0÷1 bar, AISI 316 st.st. housing, process connection DIN nut DN 65, ceramic diaphragm, FPM gasket, AISI 316 st.st. wetted parts, connector DIN 43650-A PG9 (IP65) , 4÷20 mA output  
Code = 27 R IC 03 A 23 EV 1 C 4



- B) Electronic transmitter for relative pressure measurement with integral piezoresistive sensor , calibration 0÷30 bar, AISI 316 st.st. housing ø 55, process connection screwed 1/2" G-M, AISI 316 st.st. diaphragm, no gasket (all welded), AISI 316 st.st. wetted parts, PG13 st.st. cable gland , 4÷20 mA output, version ATEX Ex II 1 G EEx ia IIC T5/T6  
Code = 27 R IP 31 M 02 A N 1 PG13 4 ATX



- C) Electronic transmitter for relative pressure measurement with integral piezoresistive sensor , calibration 0÷6000 mm H<sub>2</sub>O, AISI 316 st.st. housing, process connection ET13 welding ring, AISI 316 st.st. diaphragm, FPM gasket, AISI 316 st.st. wetted parts, connector DIN 43650-A PG9 (IP65) , 4÷20 mA output  
Code = 27 R IP 02 A 13 A V 1 C 4