

# XSA

## PRESSURE TRANSMITTERS FOR APPLICATIONS IN HAZARDOUS AREAS



### Main Features

- Ranges: from 0...0.25bar to 0...60bar (0...5 to 0...1000psi)
- Accuracy:  $\pm 0.15\%$  FSO typical
- Current output signal
- Protection: IP65/IP67
- Wetted parts: AISI304, AISI316, NBR
- Ambient / process temperature T4 (-40°...+80°C)

Series XSA transmitters are based on silicon piezoresistive sensing element in wheatstone bridge configuration.

The mechanical structure makes the sensor insensitive during the tightening phase.

This transmitter is suitable for all those applications which require robustness as well as a high accuracy.

The series can be used in applications characterized by the presence of explosive atmosphere.

For this reason the probes are designed and manufactured according to the ATEX 94/9/CE Directive.

### Main intrinsic safety characteristics

Transmitter designed and produced in compliance with Directive 94/9/CE ATEX and according to European standards for the Second group (II-surfaces), category 1, explosive atmosphere with presence of gases, fumes or mists (G) protection mode Ex ia T6, T5, T4.



EC-Type Examination Certificate number: CESI 04 ATEX 075  
Type of protection: II 1G Ex ia IIC T6/T5/T4

### TECHNICAL DATA

	Output signal	<b>CURRENT</b>
Accuracy (1)		$\pm 0.15\%$ FSO typical; $\pm 0.2\%$ FSO max
Resolution		Infinite
Overpressure (without degrading performance) (2)		See table
Pressure containment (Burst test) (3)		See table
Pressure media		Fluid compatible with AISI 316 Stainless steel, AISI 304, NBR
Body materials		AISI 304 Stainless steel and Nylon 66GF35V0
Power supply		10...30Vdc
Supply sensitivity		$< 0.0015\%$ FSO/V
Insulation resistance		$> 1000 \text{ M}\Omega$ @ 50Volt
Zero output signal		4mA
Full scale output signal		20mA
Max allowed load		see diagram
Long term stability		$< 0.1\%$ FSO/year
Operating temperature range (process/ambient)		-40...+80°C (-40...+176°F)
Compensated temperature range		-10...+70°C (+14...+158°F)
Storage temperature range		-40...+90°C (-40...+194°F)
Temperature effects over compensated range (zero-span)		$\pm 0.02\%$ FSO/°C typical range $> 1$ bar $\pm 0.04\%$ FSO/°C typical range $\leq 1$ bar
Response time (10...90%FSO)		$< 1$ msec.
Start-up time		$< 500$ msec.
Mounting position effects		Negligible
Humidity		Up to 100%RH non condensing
Weight		110 gr. nominal
Mechanical shock		100 g / 1 msec. according to IEC 68-2-6
Vibrations		20 g max a 15-2000Hz according to IEC68-2-6
Ingress protection		IP65/IP66/IP67
Output short circuit and reverse polarity protection		YES
Voltage spike protection		$> 2\text{kV}$ burst test, according to EN61000-4-4
CE Conformity (89/336 Directive)		EMC Emissions EN61000-6-3 EMC Immunity EN61000-6-2 (10V/m)

FSO = Full Scale Output

1 Includes combined effects of Non-Linearity BFSL (Best Fit Straight Line), Hysteresis and Repeatability.

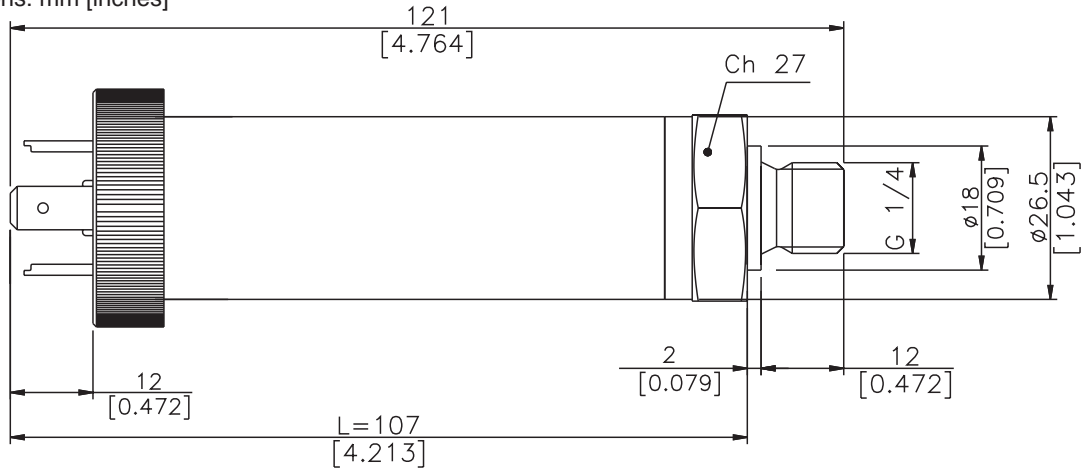
2 tested for more than 1000 strokes with single duration  $< 2$ msec.

3 tested for more than 100 strokes with single duration  $< 2$ msec.

MEASUREMENT RANGE (Bar)	0,25	0,5	1	2	2,5	4	5	6	7	10	16	20	25	30	40	50	60
Overpressure	2	4	5	10	12,5	20	20	35	35	40	80	80	90	90	90	90	90
Burst test	2,5	5	10	20	25	40	50	50	70	100	120	120	120	120	120	120	120

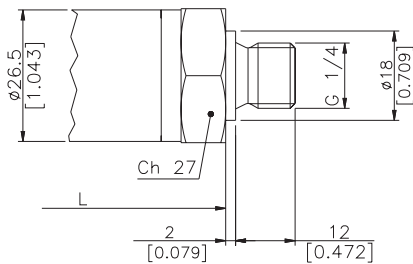
# INSTALLATION DRAWINGS

Dimensions: mm [inches]

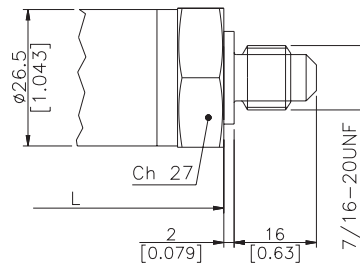


## PRESSURE CONNECTION

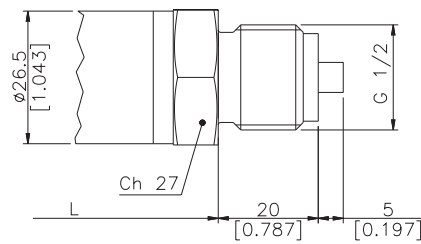
(1) G 1/4 MALE (DIN 3852-A)



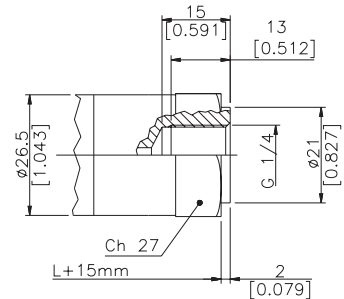
(2) SAE 04 AS4395-E



(3) G 1/2 A (DIN 16288)

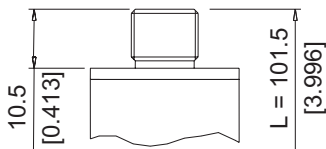


(4) G 1/4 FEMALE



## ELECTRICAL CONNECTION

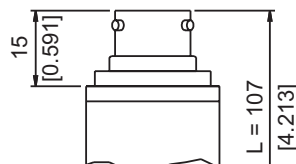
Z-4 pole connector  
M12x1



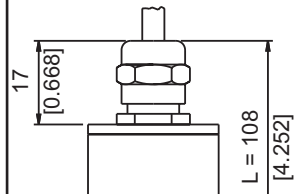
P-7 pole connector



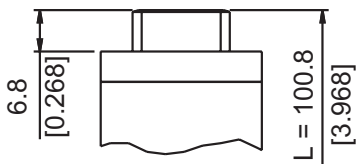
V-6 pole connector



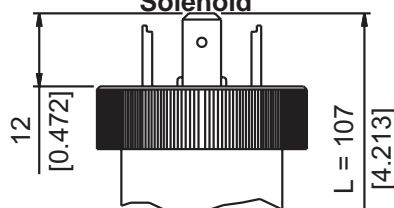
F-2 pole cable



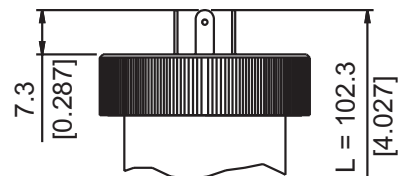
H-G4A1M 4 pole male connector



E-4 pole connector  
Solenoid



M-4 pole connector  
Microsolenoid



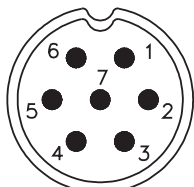
# INTRINSIC SAFETY CHARACTERISTICS

		II 1G Ex ia IIC T6	II 1G Ex ia IIC T5	II 1G Ex ia IIC T4
Maximum voltage	Ui	30Vdc	30Vdc	30Vdc
Maximum current	Ii	100mA	100mA	100mA
Maximum power	Pi	0.75W	0.75W	0.75W
Maximum inductance (*)	Li	0.25 mH	0.25 mH	0.25 mH
Maximum capacity (*)	Ci	26nF	26nF	26nF
Temperature of the fluid		-40...+60°C	-40...+70°C	-40...+80°C
Ambient temperature		-40...+60°C	-40...+70°C	-40...+80°C

(\*) includes inductance levels and capacity of a cable: (typical L 1μH/m and typical C 100 pF/m) with maximum length 15mt.

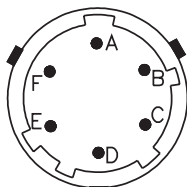
## ELECTRICAL CONNECTION - Connectors

### P - 7-pole connector



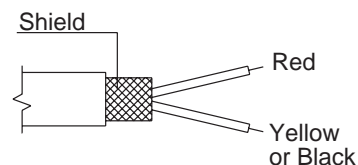
Male connector 09-127-09-07  
Protection IP67

### V - 6-pole connector



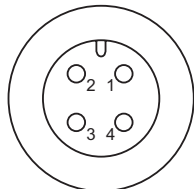
Male connector VPT02A10-6PT2  
Protection IP66

### F - 2 pole cable



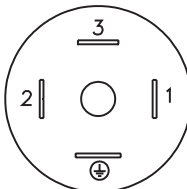
Shielded cable 2x0.25 - 2m.  
Protection IP65

### Z - 4 pole male connector M12 x 1



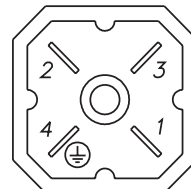
4 pole series 713 male connector  
Protection IP67

### E - 4 pole solenoid connector M - 4 pole microsolenoid connector



Solenoid DIN 43650A - ISO4400  
Protection IP65  
Microsolenoid DIN 43650C - ISO4400  
Protection IP65

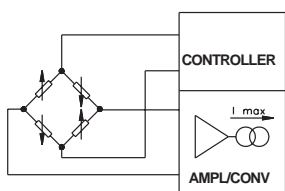
### H - 4-pole connector



Male connector G4A1M  
Protection IP65

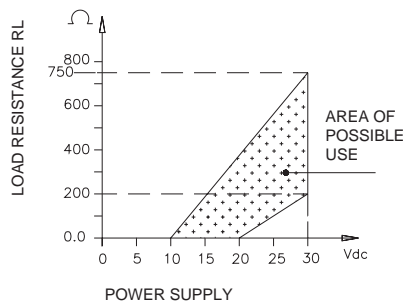
## ELECTRICAL CONNECTION - Connection diagrams

### CURRENT AMPLIFIED OUTPUT - mod. E



	cod. V	cod. P	cod. F	cod. E/M	cod. H	cod. Z
POWER SUPPLY +	A	3	Red	1	1	1
SIGNAL -	B	4	Yellow or Black	2	2	2
⊥	Case	Case	Shield	⊥	4	Case

### LOAD DIAGRAM (Current output)



## ACCESSORIES ON REQUEST

### Connectors

#### Connection E

3 poles Connector + ground DIN43650A ISO4400  
Prot. IP65

#### Connection M

3 poles Connector + ground DIN43650C ISO4400  
Prot. IP65

#### Connection Z

4 pole female cable connector M12x1  
Prot. IP67

#### Connection Z

4 pole female cable connector, 90° M12x1  
Prot. IP67

**CON 006**

#### Connection P

7 pole female cable connector  
Prot. IP67

**CON 008**

#### Connection P

7 pole female cable connector  
Prot. IP40

**CON 293**

#### Connection P

7 pole female cable connector, 90°  
Prot. IP40

**CON 050**

#### Connection V

6 pole female cable connector  
Prot. IP66

**CON 321**

**CON 320**

**CON 322**

**CON 300**

## ORDERING INFORMATION

Pressure transmitter

**XSA**

OUTPUT SIGNAL	
Standard	
4 .. 20 mA	<b>E</b>

PRESSURE CONNECTION	
Standard	
G 1/4 gas male	<b>1</b>
On request	
7/16-20UNF-2A male (SAE4 per AS4395-E)	<b>2</b>
G 1/2A (DIN 16288)	<b>3</b>
G 1/4 gas female	<b>4</b>

ELECTRICAL CONNECTIONS	
4-pole connector solenoid	<b>E</b>
Shielded cable	<b>F</b>
4 pole connector	<b>H</b>
4-pole connector microsolenoid	<b>M</b>
7 pole connector	<b>P</b>
6 pole connector	<b>V</b>
M12x1 - 4 pole connector	<b>Z</b>

CALIBRATION STANDARDS
Instruments manufactured are calibrated against precision pressure calibration equipment which is traceable to International Standards.



#### GOST-R CERTIFICATION

XSA pressure transmitter is available with GOST-R certification.  
The request of this version must be specified on the order.

Mechanical and/or electrical characteristics differing from standard may be arranged on request.

TEMPERATURE CLASS	
<b>4</b>	T4 (-40...+80°C)
<b>5</b>	T5 (-40...+70°C)
<b>6</b>	T6 (-40...+60°C)

RESPONSE TIME	
<b>V</b>	Fast (< 1msec)

ACCURACY	
<b>T</b>	± 0.15% FSO Typical

RANGE			
bar		psi	
<b>BV25</b>	0..0.25	<b>P05U</b>	0..05
<b>BV50</b>	0..0.5	<b>P15U</b>	0..15
<b>B01U</b>	0..1	<b>P03D</b>	0..30
<b>B02U</b>	0..2	<b>P05D</b>	0..50
<b>B2V5</b>	0..2.5	<b>P75U</b>	0..75
<b>B04U</b>	0..4	<b>P01C</b>	0..100
<b>B05U</b>	0..5	<b>P15D</b>	0..150
<b>B06U</b>	0..6	<b>P25D</b>	0..250
<b>B07U</b>	0..7	<b>P03C</b>	0..300
<b>B01D</b>	0..10	<b>P05C</b>	0..500
<b>B16U</b>	0..16	<b>P75D</b>	0..750
<b>B02D</b>	0..20	<b>P01M</b>	0..1000
<b>B25U</b>	0..25		
<b>B03D</b>	0..30		
<b>B04D</b>	0..40		
<b>B05D</b>	0..50		
<b>B06D</b>	0..60		

Ex.: **XSA - E - 1 - E - B03D - T - V - 4**

Intrinsically safe pressure transmitter, with 4 to 20mA signal output, G 1/4 male pressure connection, DIN43650A solenoid electrical connector, 0...30 bar measurement range, ± 0.15% FSO accuracy, 1msec response time, T4 temperature class (-40...+80°C).

Manufacturer reserves the right to make any kind of design or functional modification at any moment without prior notice

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