Data Sheet
SS/53G/A_2

Field^IT

50T Series Transmitters

Model 53G/A gauge/absolute
flush diaphragm pressure transmitter
Ranges: -100 to 40000kPa
-1 to 400bar
-14.5 to 6000psi

Industrial^IT enabled

- **Base accuracy : ≤ 0.2% (BFSL)**
- **Piezoresistive thin film technology**
- **Process connection selection**
- **Wide choice of ranges**
- **Good overpressure performance without calibration change**
- **Excellent long term stability**
- **CE - conformity**

50T Series
Reliable sensors for pressure measurements

ABB

Description

50T series transmitter are suitable for liquid, gas and vapour application. An all stainless steel construction with flush diaphragm connection makes these trnsmitters ideally suited for measurements on viscous and heavy fluids such as paint, pulp and paper, and most uses in the refrigeration field. Those transmitters are based on a piezoresistive sensing element.

Functional Specifications

Range, span and pressure limits

METRIC RANGES				
Compound ranges (kPa/bar)	**Gauge ranges (kPa/bar)**	**Absolute ranges (kPa/bar)**	**Overpressure**	
			MPa	**bar**
-100 to 0 / -1 to 0 (1)	0 to 100 / 0 to 1 (1)	0 to 100 / 0 to 1 (1)	0.3	3
-100 to 60 / -1 to 0.6	0 to 160 / 0 to 1.6	0 to 160 / 0 to 1.6	0.6	6
-100 to 100 / -1 to 1			0.6	6
-100 to 150 / -1 to 1.5	0 to 250 / 0 to 2.5	0 to 250 / 0 to 2.5	0.6	6
-100 to 300 / -1 to 3	0 to 400 / 0 to 4	0 to 400 / 0 to 4	1.2	12
-100 to 500 / -1 to 5	0 to 600 / 0 to 6	0 to 600 / 0 to 6	1.2	12
-100 to 900 / -1 to 9	0 to 1000 / 0 to 10	0 to 1000 / 0 to 10	2.5	25
-100 to 1500 / -1 to 15	0 to 1600 / 0 to 16	0 to 1600 / 0 to 16	5	50
	0 to 2000 / 0 to 20	0 to 2000 / 0 to 20	5	50
-100 to 2400 / -1 to 24	0 to 2500 / 0 to 25	0 to 2500 / 0 to 25	5	50
-100 to 3900 / -1 to 39	0 to 4000 / 0 to 40		12	120
	0 to 6000 / 0 to 60		12	120
	0 to 10000 / 0 to 100		25	250
	0 to 16000 / 0 to 160		50	500
	0 to 25000 / 0 to 250		50	500
	0 to 40000 / 0 to 400		60	600

IMPERIAL RANGES			
Compound ranges (psi)	**Gauge ranges (psi)**	**Absolute ranges (psi)**	**Overpressure psi**
-14.5 to 0 (1)	0 to 15 (1)	0 to 15 (1)	43.5
-14.5 to 15	0 to 30	0 to 30	87
-14.5 to 30	0 to 40	0 to 40	87
-14.5 to 60	0 to 60	0 to 60	116
-14.5 to 100	0 to 100	0 to 100	174
	0 to 150	0 to 150	360
-14.5 to 200	0 to 200	0 to 200	464
-14.5 to 300	0 to 300	0 to 300	725
	0 to 400	0 to 400	725
	0 to 600		1160
	0 to 1000		1740
	0 to 1500		2900
	0 to 2000		4640
	0 to 3000		4640
	0 to 4000		7250
	0 to 6000		8700

Nota 1: G 3/4 A and G 1 A connections only.

Fatigue life

greater than 100 million cycles (full scale)

Vibration

10g peak sinusoidal from 20 to 2000Hz

Response time

≤1ms

Temperature limits °C (°F) :

Ambient

–20°C and +85°C (–4°F and +185°F)
(can be limited by intrinsically safe application)
Upper ambient limit for cables: +50°C (+122°F)

Process

–25°C and +125°C (–13°F and +257°F)

Compensated

–20°C and +80°C (–4°F and +176°F)

Power supply

The transmitter operates from 12 up to 36V dc and is protected against reverse polarity connection.
For intrinsically safe application power supply must not exceed 28V dc.

Load limitations

total loop resistance:

$$R(\Omega) \quad \frac{\text{Supply voltage} - 12}{0.02}$$

Output signal

4 to 20mA dc; 0 to 10V dc

Insulation resistance

> 100MΩ @ 50V dc

Performance specifications

Unless otherwise specified, errors are quoted as % of full scale

Accuracy rating

≤ 0.25% of BFSL, including combined effects of linearity, hysteresis and repeatability.

Operating influences

Ambient temperature

between the limits of –20°C to +80°C (–4 to +176°F)

Thermal error: 2% max

EMI/RFI

Meets EN50081-2 for emission and EN50082-2 for susceptibility

Stability

< 0.30% over a twelve-month period

Physical Specification

(Refer to ordering information sheets for variant availability related to specific model or versions code)

Materials

Process wetted parts (*)

- O-ring: Nitril (NBR) or Viton (FKM)
- Flush diaphragm: AISI 316L (1.4404) stainless steel

Housing

AISI 304 / 1.4301 stainless steel

Tagging

Printed label sticked to the housing

Filling oil

Silicone oil

Environmental protection

The transmitter is dust and sand tight

Enclosure class

- IP65 with 4-pin DIN 43650 connector
- IP67 with cable gland

Hazardous atmospheres (4-20mA only)

– INTRINSIC SAFETY/EUROPE:
ATEX/Baseefa approval
II 1 G EEx ia IIC T4 (–20°C ≤ Ta ≤+75°C)

Process connections

G 1/2in, G 3/4in, G 1in according to DIN 3852

Electrical connections

4-pin connector ISO4400 / DIN 43650
Cable gland (PG 9) + 2m cable

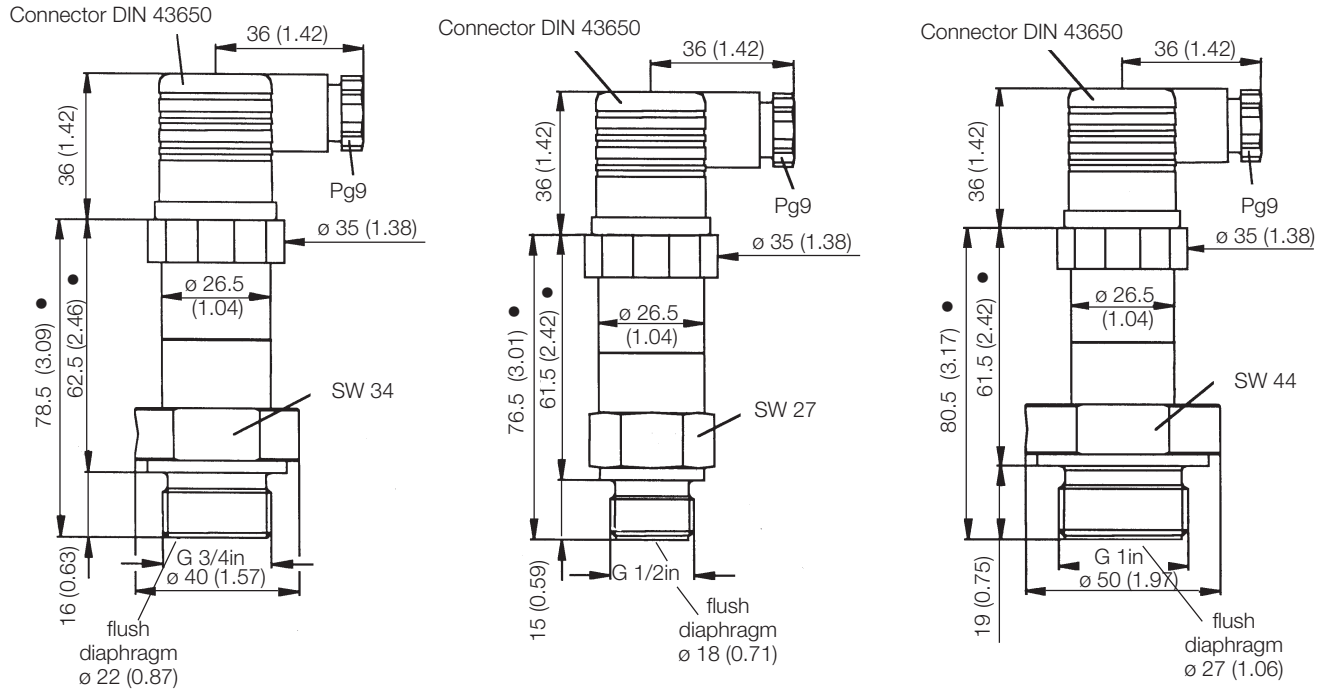
Mass

4-pin connector ISO 4400 / DIN 43650: 225g
Add 150g for PVC cable (2m) + cable gland (PG9)

Packing

Carton for connector version.
Plastic envelope for versions with cable.

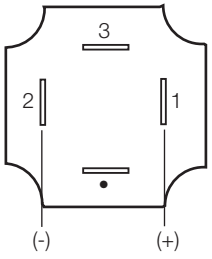
MOUNTING DIMENSIONS (not for construction unless certified) - dimensions in mm (in)



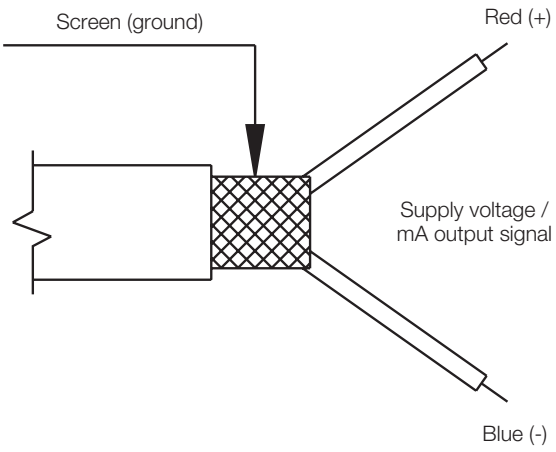
• Note: Intrinsically Safe version adds 27mm (1.06in) to length

Electrical connections

	4-20mA
1	+ supply
2	- supply
3	NC
⏚	ground



ISO 4400 / DIN 43650 connector



Cable outlet

BASIC ORDERING INFORMATION model 53G/A Transmitter

Select one character or set of characters from each category and specify complete catalog number.

BASE MODEL – 1st to 3nd characters				X	XX	X	X	X	X	X	X	X	X
Fixed Range Gauge Pressure Transmitter	**5**	**3**	**G**										
Fixed Range Absolute Pressure Transmitter	**5**	**3**	**A**										
Measuring units – 4th character													
kPa				K									
bar				B									
psi				E									
Range – 5th and 6th character													
-100 to 0kPa (Notes 1, 2)	–1 to 0bar (Notes 1, 2)	–14.5 to 0psi (Notes 1, 2)			11								
-100 to 60kPa (Note 2)	–1 to 0.6bar (Note 2)	–14.5 to 15psi (Note 2)			12								
-100 to 100kPa (Note 2)	–1 to 1bar (Note 2)				54								
-100 to 150kPa (Note 2)	–1 to 1.5bar (Note 2)	–14.5 to 30psi (Note 2)			13								
-100 to 300kPa (Note 2)	–1 to 3bar (Note 2)	–14.5 to 60psi (Note 2)			14								
-100 to 500kPa (Note 2)	–1 to 5bar (Note 2)	–14.5 to 100psi (Note 2)			15								
-100 to 900kPa (Note 2)	–1 to 9bar (Note 2)	–14.5 to 200psi (Note 2)			16								
-100 to 1500kPa (Note 2)	–1 to 15bar (Note 2)	–14.5 to 300psi (Note 2)			17								
-100 to 2400kPa (Note 2)	–1 to 24bar (Note 2)				18								
-100 to 3900kPa (Note 2)	–1 to 39bar (Note 2)				19								
		0 to 15psi (Note 1)			20								
		0 to 30psi			23								
0 to 100kPa (Note 1)	0 to 1bar (Note 1)	0 to 40psi			24								
0 to 160kPa	0 to 1.6bar	0 to 60psi			25								
0 to 250kPa	0 to 2.5bar	0 to 100psi			26								
0 to 400kPa	0 to 4bar	0 to 150psi			27								
0 to 600kPa	0 to 6bar	0 to 200psi			28								
0 to 1000kPa	0 to 10bar	0 to 300psi			29								
0 to 1600kPa	0 to 16bar	0 to 400psi (Note 2)			31								
0 to 2000kPa	0 to 20bar				53								
0 to 2500kPa	0 to 25bar	0 to 600psi (Note 2)			32								
0 to 4000kPa (Note 2)	0 to 40bar (Note 2)	0 to 1000psi (Note 2)			33								
0 to 6000kPa (Note 2)	0 to 60bar (Note 2)	0 to 1500psi (Note 2)			34								
0 to 10000kPa (Note 2)	0 to 100bar (Note 2)	0 to 2000psi (Note 2)			35								
0 to 16000kPa (Note 2)	0 to 160bar (Note 2)	0 to 3000psi (Note 2)			36								
0 to 25000kPa (Note 2)	0 to 250bar (Note 2)	0 to 4000psi (Note 2)			37								
0 to 40000kPa (Note 2)	0 to 400bar (Note 2)	0 to 6000psi (Note 2)			38								
Pressure connection - 7th character													
G 1/2in DIN 3852						3							
G 3/4in DIN 3852						B							
G 1in DIN 3852						D							
Gasket - 8th character													
NBR (Nitril)	(Not applicable with ranges equal or lower than 6000kPa, 60bar, 1000psi)						B						
FKM (Viton)	(Not applicable with ranges equal or greater than 10000kPa, 100bar, 1500psi)						V						
Output signal - 9th character													
4 - 20mA								3					
0 - 10V								2					
Electrical certification - 10th character													
General purpose									1				
ATEX Group II Category 1G - Intrinsic Safety EEx ia			(Note 3)						2				
Electrical connection - 11th character													
Cable gland + 2 meter cable										2			
4-pole connector ISO 4400/DIN43650										4			
Surge protection - 12th character													
Yes (fitted as standard)											2		
Calibration certificate - 13th character													
Yes (provided as standard)												2	
14th character													
Use code													2

Note 1: Not available with pressure connection code 3
Note 2: Not available with absolute transmitter, base model code 53A.
Note 3: Not available with 0-10V output signal code 2

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