ENGINEERING TOMORROW

Data sheet

Modular pressure transmitters for harsh environments
DST P500, DST P507 and DST P550

The P500 / P507 / P550 utilizes the thin film strain gauge sensing technology, incorporating an hermetically sealed design with no internal sealing required. Designed for harsh environments, a rugged 304 stainless

steel housing surrounds the P500 / P507 / P550 transducer.

The P500 / P507 /P550 small, compact design as well as its low overall weight makes it ideal for applications with spacing and weight limitations. This easy-to-use sensor is media resistant, which allows it to be used for a broad range of liquid and gaseous media. It can be used at high operating temperatures and has internal temperature compensation.

Highly reliable, the P500 / P507 / P550 provides accurate, high pressure measurements every time.

P507 is suitable in applications where cleanliness is a must. All transmitter parts in contact with the medium fulfil the cleanliness according to the

ISO 15001 standard.

P550 with integrated pulse-snubber is suitable in applications with severe medium influences like cavitation, liquid hammer or pressure peaks.

Features

- Designed for use in harsh industrial environments
- For media and ambient temperatures from -30° – 100 °C
- Reverse polarity protected
- Excellent shock and vibration performance
- Outstanding long-term stability and repeatability
- Compact and light-weight design
- Hermetically sealed to the application
- RoHS conformity

Approvals

CE Compliance:

EMC directive 2014/30/EU, EN61000-6-2:2005 and EN61326-1:2006

Other:

2011/65/EU ROHS Directive

UL - E494625

Technical data

Performance (EN 60770)

Accuracy @ 25 °C (incl. non-linearity, hysteresis and non-repeatability)	± 0.5% FS
Non-linearity BFSL (conformity)	≤ ± 0.2% FS
Thermal zero point shift	≤ 0.2% FS / 10° K @ 0-80 °C
Thermal span shift	≤ 0.2% FS / 10° K @ 0-80 °C
Non-repeatability	≤ ± 0.1% FS
Durability, P: 10 – 90% FS	> 10 × 10^6 cycles

Overload and burst pressure

Nominal pressure [bar]	6	10	16	25	40	60	100	160	250	400	600
Overload pressure	12	20	32	50	80	120	200	320	500	800	1200
Burst pressure	60	100	160	200	320	480	600	960	1000	1600	2400

Electrical specifications

Nom. output signal (short-circuit protected)	4 – 20 mA	0.5-4.5 V DC Ratiometric	0-5 V DC/0-10 V DC
Supply voltage [U_B], polarity protected	8 – 30 V DC	5 V DC ± 0.25 V	8-30/14-30 V DC
Supply – power consumption	≤ 600 mW	≤ 25 mW	≤ 600 mW
Overvoltage protection	min. 33 V DC	min. 6 V DC	min. 33 V DC
Short-circuit protection	N/A	Yes [1]	Yes [1]
Insulation voltage	500 V DC	500 V DC	500 V DC
Reverse polarity protection	Yes [2]	Yes [2]	Yes [2]
Load	≤ (V_{sup} - 8 V DC)/0.02 A[Ω]	≥ 4.7 kΩ	≥ 4.7 kΩ
Response time	≤5 ms max. to 63% of FS pressure with step change on input		

[1] for min. 3 intervals at 5 minutes each
[2] for min. 10 sec. on assigned pins

Environmental conditions

Media temperature range			-30 – 120 °C
Ambient temperature range			-30 – 100 °C
Storage temperature			-30 – 100 °C
Vibration stability	Random	20 PSD	IEC 60068-2-64
Shock resistance	Shock	25 g	IEC 60068-2-27
	Free fall	1 m	IEC 60068-2-3-1
Enclosure (depending on electrical connection)			IP 65 or IP 67, depending on electrical connection

Mechanical characteristics

Materials	304 stainless steel (1.4301 / 1.4307)
Net weight (depending on pressure connection)	<0.05 kg

Ordering

DST P 5 [ ] [ ] – [ ] [ ] [ ] [ ] – [ ] [ ] [ ] [ ] [ ] [ ] [ ]

External O-ring

0	None
1	Fluorocarbon FKM>-20 °C (Viton)

Standard	00
Cleanliness according to ISO 15001	07
With pulse-snubber	50

Measuring range

0 – 6 bar	18
0 – 10 bar	20
0 – 16 bar	22
0 – 25 bar	24
0 – 40 bar	26
0 – 60 bar	28
0 – 100 bar	30
0 – 160 bar	32
0 – 250 bar	34
0 – 400 bar	36
0 – 600 bar	38

Pressure connection

GB04	G ¼ A DIN 3852-E
AD10	7/16 - 20 UNF-2B (female)
AD08	7/16 - 20 UNF-2A (male)
GB06	G ¼ A DIN 3852-A
99	Others, please specify

Electrical connection
Figures refer to plug and standard Pin figuration - see page 5

A0	EN 175301-803-A - male (18 mm) [1]
C5	EN 175301-803-C-male (9.4 mm) [2]
E3	M12 - 4 pin
C2	Packard Metri-Pack 150

Gauge (relative)	1

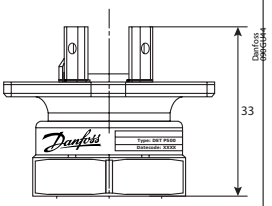
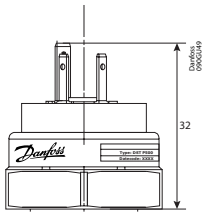
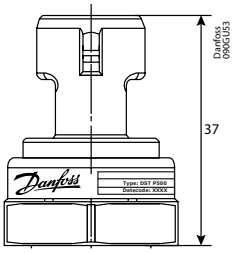
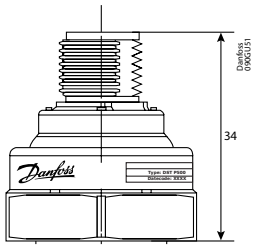
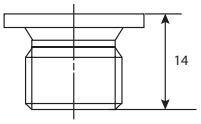
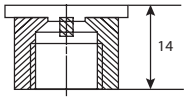
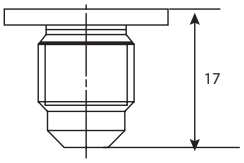
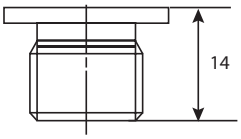
Output signal

1	4 – 20 mA
6	0.5 – 4.5 V DC Ratio Metric
2	0 – 5 V DC
5	0 –10 V DC
9	Others, please specify

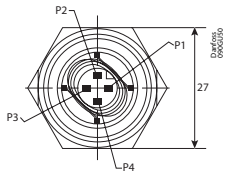
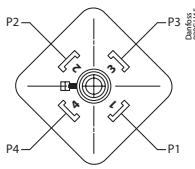
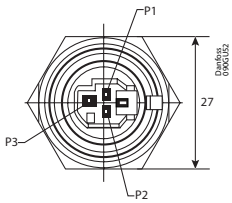
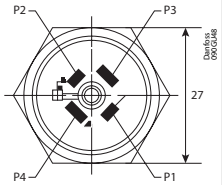
[1] Mating connector can be ordered, code no.: 060G0008
[2] Mating connector can be ordered, code no.: 063G0306

For other variants please contact Danfoss

Dimensions/Combinations

Type code	A0	C5	C2	E3
Electrical connection	18 mm DIN 175301-803A	9.4 mm DIN 175301-803C	Round Packard Metri-Pack	M12
				
	 G¼ – DIN 3852-E External thread	 $^{7}/_{16}$ – 20 UNF-2B SAE J1926-1 Internal thread	 $^{7}/_{16}$ – 20 UNF-2A SAE J1926-2 External thread	 G¼ – DIN 3852-A External thread
Type code	GB04	AD10	AD08	GB06
Recommended torque	20 Nm	20 Nm	20 Nm	20 Nm

Electrical connections

Type code		E3	A0	C2	C5
		 M12, 4 pin	 EN 175301-803-A, 18 mm	 Round Packard Metri-Pack	 EN 175301-803-C 9.4 mm
Ambient temperature	4 – 20 mA	-30 – 100 °C			
	0.5-4.5 V DC Ratiometric				
	0-5 V DC				
	0-10 VDC				
Enclosure (IP protection fulfilled together with mating connector)		IP67	IP65	IP67	IP65
Materials		Tin plated on Nickel, Nylon 66, 40% Glass	Tin plated on Nickel, Nylon 66, 40% Glass	Tin plated on Nickel, Zytel 33% Glass	Tin plated on Nickel, Nylon 66, 40% Glass
Electrical connection	4 – 20 mA (2 wire)	Pin1: + supply Pin 2: not used Pin 3:÷ supply Pin 4: not used	Pin 1: + supply Pin 2: ÷ supply Pin 3: not used Pin 4: not used	Pin1: ÷ supply Pin 2: + supply Pin 3: not used	Pin 1: + supply Pin 2: ÷ supply Pin 3: not used Pin 4: not used
	0.5-4.5 V DC Ratiometric	Pin 1: + supply Pin 2: not used Pin 3: + output Pin 4: - common	Pin 1: + supply Pin 2: + output Pin 3: - common Pin 4: not used	Pin 1 ÷ common Pin 2: + supply Pin 3: + output	Pin 1: + supply Pin 2: + output Pin 3: - common Pin 4: not used
	0-5 V DC, 0-10 V DC	Pin 1: + supply Pin 2: not used Pin 3: + output Pin 4: - common	Pin 1: + supply Pin 2: + output Pin 3: - common Pin 4: not used	Pin 1 ÷ common Pin 2: + supply Pin 3: + output	Pin 1: + supply Pin 2: + output Pin 3: - common Pin 4: not used