G3100 / 3200

Pressure Transmitter
Datasheet

At a Glance

- **Pressure Transmitter for gauge pressure measurement**
- **Small and compact package size**
- **Lifetime > 100 M cycles**
- **Measuring range up to 2,200 bar**
- **Process temperatures from – 40 … +125°C**
- **Wide range of pressure ports and electrical connectors**
- **Premium stainless steel housing and diaphragm**
- **Customised OEM versions available**

Overview

Application

For OEMs needing consistent high levels of performance, reliability and stability the 3100 and 3200 Series sputtered thin film units offer an unbeatable price performance ratio in a compact size unit. They feature 17-4 PH/1.4548 all-stainless steel wetted parts, a broad selection of electrical connections and pressure connection ports, and wide choice of output signal types to allow off-the-shelf configurations suitable for most applications without modification. At the heart of both these series is a sputter element that also provides exceptional temperature specifications. In addition, the 3100 and 3200 Series manufactured with the latest automation processes for consistency and the best price to performance sensor available on the market today. Additionally, 3200 Series transmitters feature thicker diaphragms and a pressure restrictor to withstand the rigors of cavitation or extreme pressure spikes, delivering years of reliable and stable performance in pulsating applications.

Typical applications: Hydraulic systems, compressed air, refrigeration and machinery and plant manufacture.

Function

Highly stable cermet strain gauges are deposited onto the sensor using thin film sputtering techniques in a class 100 clean room. Interconnection between the gauges is by tantalum and gold layers. No transmission liquids (e.g. oil) are needed for this measuring principle. A commitment to long term stability and measurement accuracy has resulted in a manufacturing process called TCAS which means ‘Thermal Compensation at Source’. TCAS goes hand-in-hand with Gems element technology called ThermotecTM to ensure that sensing elements leaving the clean room for final assembly have an accuracy of less than 0.005%/degree C. The benefits of a thermally compensated signal directly from the sensing element are improved accuracy and simplified conditioning electronics. It also eliminates the need for calibration over elevated temperatures as a transducer.

Technical Data

Measuring Range		0 … 2,200 bar
Long Term Drift		0.2% Full scale (FS)/year (non-cumulative)
Accuracy*:	**3100**	0.75% FS
	3200	1.5% FS <60 bar
Thermal Error:	**3100**	1.5% FS/100°C
	3200	2.0% FS/100°C<60 bar
Process Temperature		-40°C … +125°C
Ambient Temperature		-40…+70 °C (–40…+158 °F)
Storage Temperature		-40…+85 °C (–40…+185 °F)
Ambient Humidity		4 … 95% HR (non-condensing)
Response Time		1 ms
Lifetime		Designed >100M cycles

* including linearity, repeatability, zero point and span, hysteresis

Mechanical Configuration

Pressure Port	See under “Process Connections”
Wetted Parts	Stainless Steel 17-4PH/1.4548
Mounting Position	Any position
Electrical Connection	Fixed cable or plug connection
Mis-wire protection	Yes, for all versions
Protection	IP67 (IP65 connection plug type A and C)
Vibration	40G peak to peak sinusoidal, (Random Vibration: 20 to 1000 Hz @ approx. 40G, peak per MIL-STD-810E
Shock	Withstands free fall to IEC 68-2-32 procedure 1
Approvals	CE, conforms to European Pressure Directive, Fully RoHS compliant, UL recognized files # E219842 & E174228
Weight	35 grams

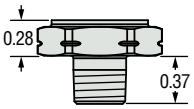
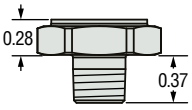
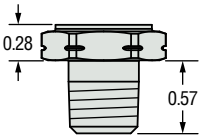
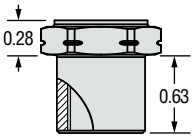
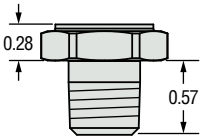
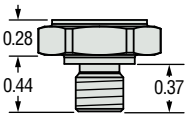
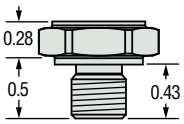
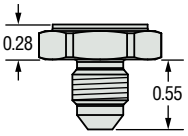
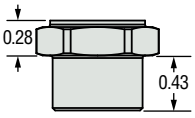
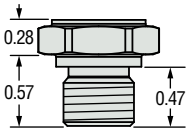
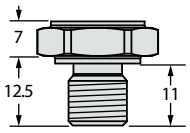
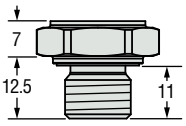
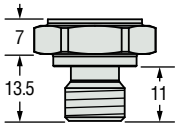
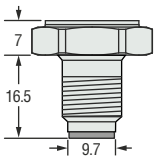
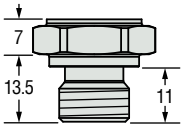
Output Signals

Voltage Output	0 … 5/10; 1 … 5/6V; 0.5 … 4.5V
Output Signal	3-wire, linear characteristic curve
Supply Voltage	2 Volts above full scale to 30 Vdc max
Current Consumption	4.5mA max
Max Burden	≥ 5kΩ
Current Output	4 … 20 mA
Output Signal	2-wire, linear characteristic curve
Signal on Error	3.5mA
Supply Voltage	8 … 30VDC
Max Burden	R = (U_S - 8V)/20mA when U_S≤24V
Min Burden	R = (U_S - 24V)/20mA when U_S>24V

Measuring Ranges

Measuring range bar	**Overload Limit (FS= Full scale)**		**Burst Pressure (FS= Full scale)**	
	3100	3200	3100	3200
7 … 25	3 x FS	3 x FS	40x FS	
40 … 100	2 x FS		20 x FS	
160 …400			10 x FS	
600			4 x FS	10 x FS
700				4.000 bar
1.000		2.5 x FS		
1.600	1.4 x FS		1.8 x FS	

Pressure Ports

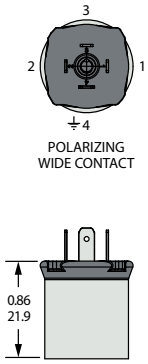
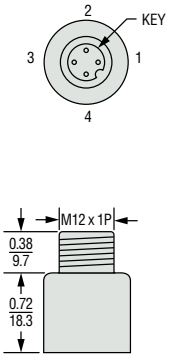
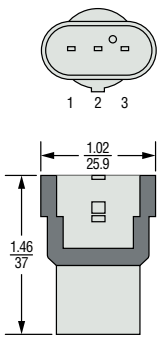
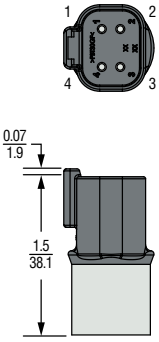
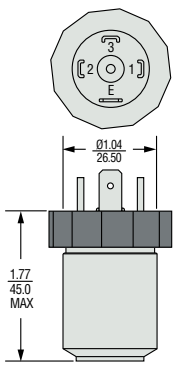
SAE Dimensions in Inches					
Fitting Code	08 = 1/8″-27 NPT	4D = 1/8″-27 NPTF Dryseal	02 = 1/4″-18 NPT	0E = 1/4″-18 NPT Internal	4C = 1/4″-18 NPTF Dryseal
Torque	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*
Thread Dimensions in Inches					
Fitting Code	4N = SAE J1926/2:3/8-24	1J = 7/16″-20 UNF	04 = 7/16″-20 UNF mit 37° Phase	1G = SAE 4 Female 7/16″ Schrader	1P = 9/16-18 “Heavy Duty”
Torque	18-20 Nm	18-20 Nm	15-16 Nm	18-20 Nm	18-20 Nm
Metric Dimensions in mm					
Fitting Code	01 = G1/4″ A	05 = G1/4″ A Integral Face Seal	OL = M12 x 1.5	2T = M12x1.5 HP Metal Washer Seal	OK = M14 x 1.5
Torque	30-35 Nm	30-35 Nm	28-30 Nm	30-35 Nm	2-3 TFFT*

*NPT Threads 2-3 turns from finger tight. Wrench tighten 2-3 turns.

General Notes:
1. The diameter of all cans is 19 mm (0.748″)
2. Hex is 22 mm (0.866″) Across Flats (A/F) for deep socket mounting
3. O-Ring material, where applicable, is Nitrile® unless otherwise specified.

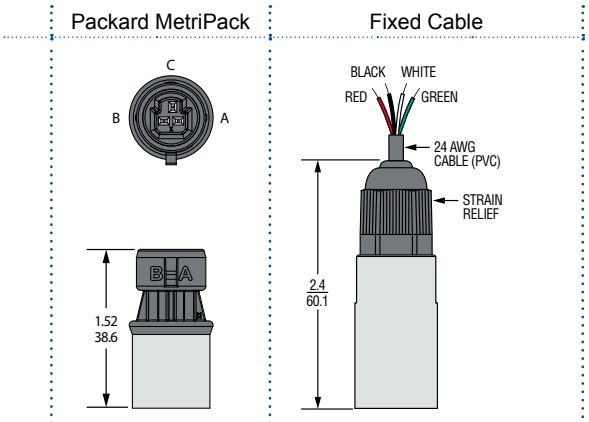
Other pressure ports available on request.

Electrical Connection

	Type C (DIN EN 175 301-803)	M12 x 1P	Amp Superseal 1.5	Deutsch DT04-4P	Type A (DIN EN 175 301-803)
Dimensions in inches / mm					

	Code B		Code R		Code E		Code 6		Code 8		Code G	
Pin #	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode
1	Signal	No Connect	V_{supply}	+	V_{supply}	+	Signal	No Connect	Ground	—	V_{supply}	+
2	V_{supply}	+	Ground	—	Signal	No Connect	Ground	—	V_{supply}	+	Ground	—
3	No Connect	No Connect	Signal	No Connect	Ground	—	V_{supply}	+	No Connect	No Connect	Signal	No Connect
4	Ground	—	No Connect	No Connect	No Connect	No Connect	—	—	Signal	No Connect	No Connect	No Connect

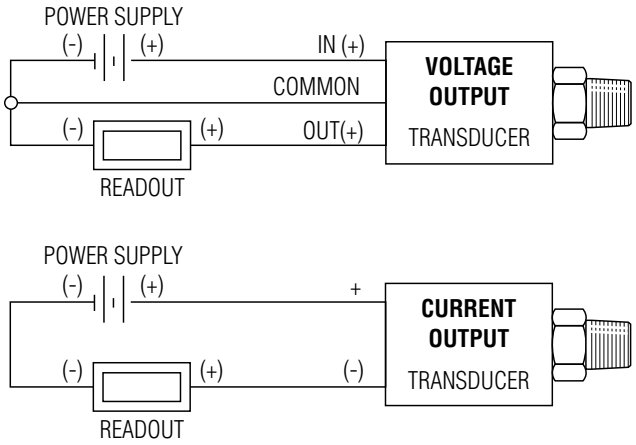
Wiring Diagram



	Code 9			Code F	
Pin ID	Voltage Mode	Current Mode	Wire Color	Voltage Mode	Current Mode
A	Signal	No Connect	Red	V_{supply}	+
B	Ground	—	Black	Ground	—
C	V_{supply}	+	White	Signal	No Connect
—	—	—	Green	No Connect	No Connect

Other pin assignments on request.

Wiring Diagram



Versions/Ordering Structure

G3x00 - x - xxxxx - xx - x - x - xx

Model
3100 / 3200 - Pressure Transmitter

Output Signal
B – 4 … 20 mA
C – 1 … 6 V
H – 1 … 5 V
N – 0.5 …4.5 V
R – 0 … 5 V
S – 0 … 10 V

Measuring Range
0007G - 0-7 bar
0010G - 0-10 bar
0016G - 0-16 bar
0025G - 0-25 bar
0040G - 0-40 bar
0060G - 0-60 bar
0100G - 0-100 bar
0160S - 0-160 bar
0250S - 0-250 bar
0400S - 0-400 bar
0600S - 0-600 bar
1000S - 1.000 barS[1]
1600S - 1.600 barS[1]
2200S - 2.200barS[1]

Process Connection/Pressure Port
08 - 1/8-27 NPT External
02 - 1/4-18 NPT External
04 - 7/16-20 External (SAE #4, J514)
1J - 7/16-20 External (SAE #4, J1926-2)
0E - 7/16-20 External (SAE #4, J1926-2)
0K - M14 x 1.5 Straight
1G - Schrader SAE #4, 7/16″ Internal
1P - SAE 6 (9/16″-18 UNF 2A)
4C - 1/4-18 NPTF External (Dryseal)
4D - 1/8-27 NPTF External (Dryseal)
4N - SAE 3 (3/8-24 UNF External)
01 - G1/4 External
05 - G1/4 External Soft Seal
OL - M12 x 1.5 (<1,000 bar, 15,000 psi)
2T - M12 x 1.5 (6g) (≥1,000 bar, 15,000 psi)

Electrical Connection
B - Type C (mating connector not supplied)
E - M12 x 1P (4-Pin)
F - Cable version[3]
G - Type A
R - Type A
6 - Amp - Superseal 1.5 Series
8 - Deutsch DT04-4P
9 - Packard MetriPack

Optional Restrictor (3200 only)
R - Restrictor
0 - No Restrictor[2]

Cable Length (only for fixed cable connection)
0 - No cable
1 - 1 m
2 - 2 m
3 - 3 m
4 - 4 m
5 - 5 m
10- 10 m

Notes:
1. Ranges 1,000 bar and above available with -2T pressure port only.
2. Pressure ports OE and 1G are NOT available with the Restrictor option.
3. For electrical code F specify cable length in meters.

Customised versions on request:
- Label sensor/packaging (w/o. barcode)
- Pressure port, output signal, electrical connection
- OEM blister packaging (25 pieces)

Accessories

Suitable accessories on request, also available as a kit plug with connected cable.

Contact

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