

3100 Series and 3200 Heavy Duty Series Compact OEM Pressure Transmitters

- ▶ 0–100 psi to 0-30,000 psi ranges (0-7 bar to 0-2,200 bar)
- ▶ High Proof Pressures
- ▶ Broad Choice of Outputs
- ▶ RoHS Compliant

For OEMs that need consistent high levels of performance, reliability and stability the 3100 and 3200 Series sputtered thin film units offer unbeatable price performance ratio in a small package size. They feature all-stainless steel wetted parts, a broad selection of electrical and pressure connections, and wide choice of electrical outputs to allow stock configurations suitable for most applications without modification. At the heart of both these series is a sputter element that also provides exceptional temperature specifications. Plus, our manufacturing process for the 3100 and 3200 Series include the latest automated equipment, producing the most consistent and best price to performance sensor on the market today.

Additionally, 3200 Series transmitters feature thicker diaphragms and a pressure restrictor to withstand the rigors of cavitations or extreme pressure spikes, delivering years of reliable and stable performance in pulsating applications.

The compact construction of both these series makes them ideal for installation where space is at a premium.

Specifications

Performance	
Long Term Drift	0.2% FS/YR (non-cumulative)
Accuracy	
3100	0.25% FS
3200	0.5% FS for <1000 psi (60 bar)
Thermal Error	
3100	0.83% FS/100°F (1.5% FS/100°C)
3200	2% FS/100°C for <1000 psi (60 bar)
Compensated Temperatures	-40°F to +257°F (-40°C to +125°C)
Operating Temperatures	-40°F to +257°F (-40°C to +125°C)
Zero Tolerance	
3100	0.5% of span
3200	1% FS for <1000 psi (60 bar)
Span Tolerance	
3100	0.5% of span
3200	1% FS for <1000 psi (60 bar)
Response Time	1 ms
Fatigue Life	Designed for more than 100 M cycles
Mechanical Configuration	
Pressure Port	See under "How to Order," last page
Wetted Parts	17-4 PH Stainless Steel
Electrical Connection	See under "How to Order," last page
Enclosure	IP67 (IP65 for electrical code G)
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
EMC (Radiated Immunity)	100 V/m
Approvals	CE, conforms to European Pressure Directive, Fully RoHS compliant, UL recognized files # E219842 & E174228
Weight	35 grams



Individual Specifications

Voltage	
Output (3-wire)	0 V min. to 10 V max. See under "How to Order," last page
Supply Voltage	2 Volts above full scale to 30 Vdc max @ 4.5 mA (6.5 mA on dual output version)
Source and Sinks	2 mA
Current	
Output (2-wire)	4-20 mA
Supply Voltage	8-30 Vdc
Maximum Loop Resistance	(Supply Voltage-8) x 50 ohms
Ratiometric	
Output	0.5 to 4.5 Vdc @ 4 mA (6.5 mA on dual output version)
Supply Voltage	5 Vdc ±10%

Pressure Capability

Pressure Range PSI (Bar)	Proof Pressure (x Full Scale)		Burst Pressure (x Full Scale)	
	3100	3200	3100	3200
100-300 (7-25)	3.00 x FS	3.00 x FS	40 x FS	
500-1,500 (40-100)			20 x FS	
2,000-6,000 (160-400)			10 x FS	
7,500-9,000 (600)			10 x FS	
10,000 (700)	2.50 x FS	4 x FS	>60,000 PSI (4,000 bar)	
15,000 (1,000)				
25,000 (1,800)				
30,000 (2,200)	1.40 x FS	—	1.8 x FS	—
			1.5 x FS	—

Pressure Ports

SAE Dimensions in Inches				
	Fitting Code Torque	08 = 1/8"-27 NPT 2-3 TFFT*	4D = 1/8"-27 NPTF Dryseal 2-3 TFFT*	02 = 1/4"-18 NPT 2-3 TFFT*
Fitting Code Torque	4C = 1/4"-18 NPTF Dryseal 2-3 TFFT*	4N = SAE J1926:2/3/8-24 18-20 NM	1J = 7/16"-20 UNF 18-20 NM	04 = 7/16"-20 UNF with 37° Flare 15-16 NM
			Metric Dimensions in MM →	
Fitting Code Torque	1G = SAE 4 Female 7/16" Schraeder 18-20 NM	1P = 9/16-18 "Heavy Duty" 18-20 NM		01 = G1/4"-27 External 30-35NM
Fitting Code Torque	05 = G1/4" A Integral Face Seal 30-35 NM	0L = M12 x 1.5 28-30 NM	2T = M12x1.5 HP Metal Washer Seal 30-35 NM	0K = M14 x 1.5 2-3 TFFT*

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

General Notes:

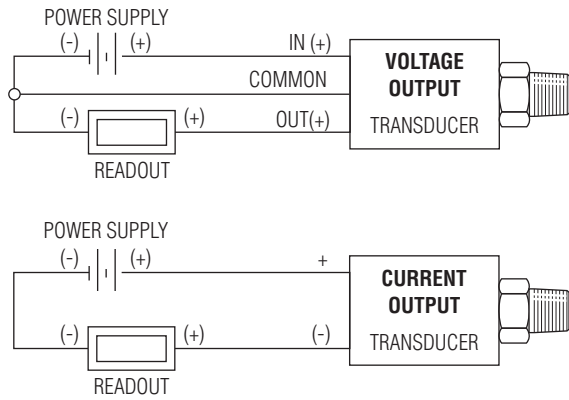
1. The diameter of all cans is 19 mm (0.748")
2. Hex is 22 mm (0.866") Across Flats (A/F) for deep socket mounting
3. O-Ring material, where applicable, is Nitrile[®] unless otherwise specified.

Electrical Connector

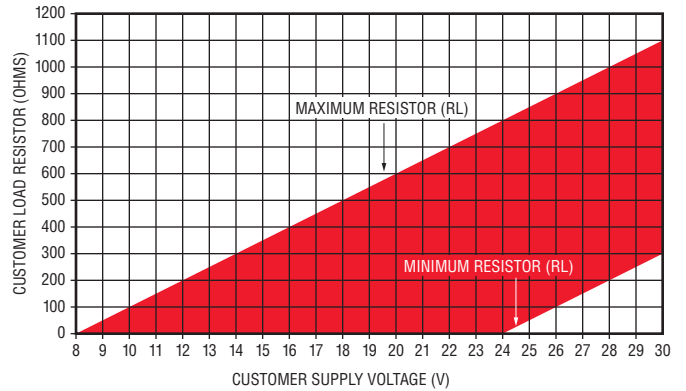
DIN 9.4 mm		M12 x 1P		Amp Superseal 1.5		Deutsch DT04-4P		DIN 43650A	

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	V _{out 1} (pressure)	No Connect	V _{supply}	Supply	V _{supply}	Supply	V _{out}	No Connect	Ground	Return	V _{supply}	Supply
2	V _{supply}	Supply	Ground	Return	V _{out}	No Connect	Ground	Return	V _{supply}	Supply	Ground	Return
3	V _{out 2} (temp)	No Connect	V _{out}	No Connect	Ground	Return	V _{supply}	Supply	No Connect	No Connect	V _{out}	No Connect
4	Ground	Return	No Connect	No Connect	No Connect	No Connect	—	—	V _{out}	No Connect	No Connect	No Connect

Wiring Diagram



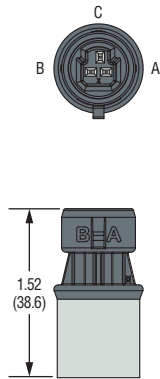
Current Output Mode (Load Resistor Range)



Minimum Resistor Value = $50 \cdot (+V - 24)$ for $+V > 24V$
 Maximum Resistor Value = $50 \cdot (+V - 8)$ for $+V > 8V$

Cable-Out Types

Packard MetriPack



Code 9		
Pin ID	Voltage Mode	Current Mode
C	V_{out}	No Connect
A	Ground	Return
B	V_{supply}	Supply
—	—	—

Cable		1/2" Conduit Connection		
Code F		Code 3		
Wire Color	Voltage Mode	Current Mode	Voltage Mode	Current Mode
Red	Supply	Supply	Supply	Supply
Black	Ground	Return	Ground	Return
White	V_{out1} (pressure)	No Connect	V_{out1} (pressure)	No Connect
Green	V_{out2} (temp)	No Connect	V_{out2} (temp)	No Connect

Mating Connectors

Part Number	Description	For Use on Elect. Code #
557230	MINI DIN Connector, Strain Relief (with drive screw & gasket)	B and R
557703-01M0	M12 Cord Set – 1 Meter (Red 1, Green 2, Blue 3, Yellow 4)	E
557703-03M0	M12 Cord Set – 3 Meters (Red 1, Green 2, Blue 3, Yellow 4)	E
557703-04M0	M12 Cord Set – 4 Meters (Red 1, Green 2, Blue 3, Yellow 4)	E
557703-05M0	M12 Cord Set – 5 Meters (Red 1, Green 2, Blue 3, Yellow 4)	E
	Recommended Mating Parts (AMP p/n: Housing 282087-1; Contacts 3X 183025-1; Seal 281934-1; Boot 880811-2)	6
557701	AMP Superseal Mate Kit	6
210729	AMP 3.5' Cable Cord Set – Clear Pos 1, Black Pos 2, Red Pos 3	6
210730	AMP 12" Flying Leads Cord Set – White Pos 1, Black, Red Pos 3	6
	Recommended Mating Parts (AMP p/n: Socket Conn 1-967325-1. Consult AMP for Contacts, Wire Seal and Strain Relief options)	7
557702	DIN 72585 Twist Lock Mate Kit	7
	Recommended Mating Parts (Deutsch p/n: Housing Plug DT064S-P012; Wedge W4S-P012; Sockets 4X 0462-201-1631)	8
224153	Deutsch Cord Set 3' Long (18 AWG PVC Cable – Black 1, Red 2, Green 3, White 4)	8
	Recommended Mating Parts (Delphi Packard MetriPack p/n: Body 12065286; Seal 12052893. Consult Delphi for Contacts)	9
218760	Packard Mate Kit	9
223974	Packard Cord Set 3' Long (24 AWG PVC Cable – White 1, Black 2, Red 3)	9
223975	Packard Cord Set 6' Long (24 AWG PVC Cable – White 1, Black 2, Red 3)	9
227987	Packard Cord Set 14.75' Long (22 AWG PVC Cable - White 1, Black 2, Red 3)	9
220492	Packard Mate - 12" Flying Leads – 3 Conductor PVC 18 AWG	9
222976	Packard Mate - 18" Flying Leads – 3 Conductor PVC 18 AWG	9
220797	Packard Mate - 24" Flying Leads – 3 Conductor PVC 18 AWG	9

PRESSURE TRANSDUCERS

How to Order

Use the **bold** characters from the chart below to construct a product code

			3100	B	200PG	02	B	R	01	
Series	<p>3100 / 3200 - Pressure Transducer – Combination Pressure and Temperature¹ 3101 / 3201 - Temp. Output Range -40°C to 125°C 3102 / 3202 - Temp. Output Range 0°C to 100°C 3103 / 3203 - Temp. Output Range 0°C to 80°C</p>									Cable Length (For electrical connections F& 3 only)
Output	<p>B - 4-20 mA C - 1-6 V H - 1-5 V N - 0.5-4.5 V R - 0-5 V² S - 0-10 V² T - 0.5-4.5 V Ratiometric</p>									Optional Restrictor (3200 only)
Pressure Range – psi	<p>100PG - 0-100 psiG 10CPG - 0-1,000 psiG 10KPS = 0-10,000 psiS 150PG - 0-150 psiG 15CPG - 0-1,500 psiG 15KPS - 0-15,000 psiS³ 200PG - 0-200 psiG 20CPS - 0-2,000 psiS 20KPS - 0-20,000 psiS³ 300PG - 0-300 psiG 25CPS - 0-2,500 psiS 25KPS - 0-25,000 psiS³ 500PG - 0-500 psiG 30CPS - 0-3,000 psiS 600PG - 0-600 psiG 35CPS - 0-3,500 psiS 750PG - 0-750 psiG 40CPS - 0-4,000 psiS 50CPS - 0-5,000 psiS 60CPS - 0-6,000 psiS 75CPS - 0-7,500 psiS</p>									Electrical Connection ⁵
Pressure Range - bar	<p>0007G - 0-7 barG 0160S - 0-160 barS 1000S - 1,000 barS³ 0010G - 0-10 barG 0250S - 0-250 barS 1600S - 1,600 barS³ 0016G - 0-16 barG 0400S - 0-400 barS 0025G - 0-25 barG 0600S - 0-600 barS 0040G - 0-40 barG 0060G - 0-60 barG 0100G - 0-100 barG</p>									Pressure Port ⁴

Notes:

- Temperature outputs are for voltage output pressure sensors only (applies to codes **-C**, **-H**, **-N**, and **-T** only) and limited to connections that have 4 pins (Electrical codes **-B**, **-E** and **-S**). Accuracy is 3.5% of temperature span. Requires additional 2mA of power.
- For use with pull-up or pull-down resistors, contact factory.
- Ranges 15,000 psi (1,000 bar) and above available with **-2T** pressure port only.
- Pressure ports **0E** and **1G** are NOT available with the Restrictor option.
- For electrical codes **F** & **3**, specify cable length in meters.

- 00** - No Cable
- 01** - 1 meter
- 02** - 2 meters
- 03** - 3 meters
- 04** - 4 meters
- 05** - 5 meters
- R** - Restrictor
- 0** - No Restrictor
- B** - Industrial DIN 9.4 mm (mating connector not supplied)
- E** - M12 x 1P (4-Pin)
- F** - Cable version
- G** - Large DIN
- R** - Industrial DIN 9.4 mm (alternate pin out)
- 3** - 1/2" NPT Male Conduit
- 6** - Amp - Superseal 1.5 Series
- 8** - Deutsch DT04-4P
- 9** - Packard MetriPack
- 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** - 1/4"-18 NPT Internal
- 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
- 0L** - M12 x 1.5 (<1,000 bar, 15,000 psi)
- 2T** - M12 x 1.5 (6g) (≥1,000 bar, 15,000 psi)

