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. And they are fully RoHS compliant.

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



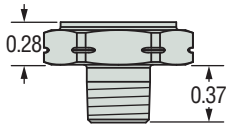
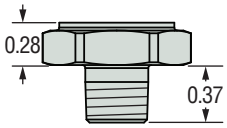
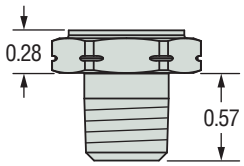
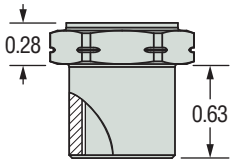
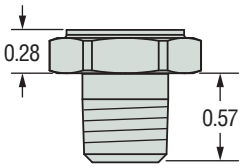
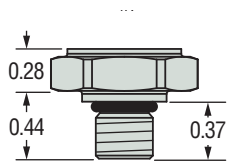
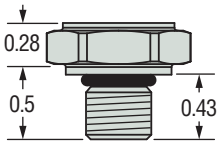
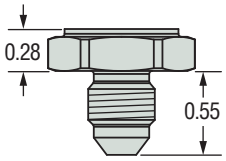
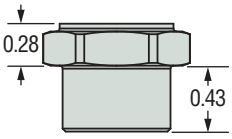
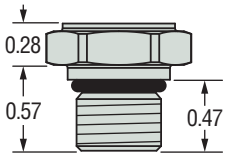
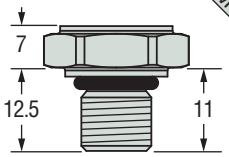
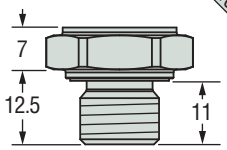
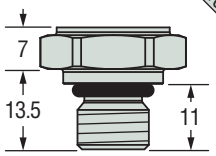
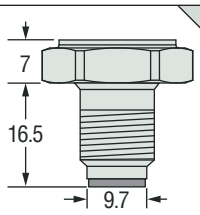
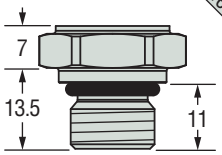
Individual Specifications

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)	2.00 x FS		20 x FS	
2,000-6,000 (160-400)			10 x FS	
7,500-9,000 (600)			4 x FS	10 x FS
10,000 (700)				>60,000 PSI (4,000 bar)
15,000 (1,000)		2.50 x FS		
25,000 (1,800)	1.40 x FS		1.8 x FS	
30,000 (2,200)		—	1.5 x FS	—

Pressure Ports

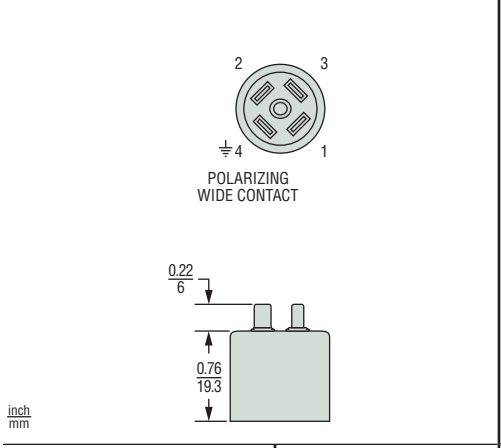
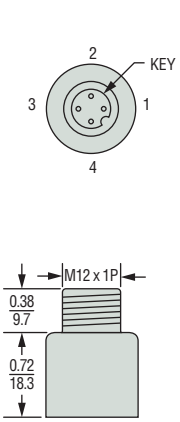
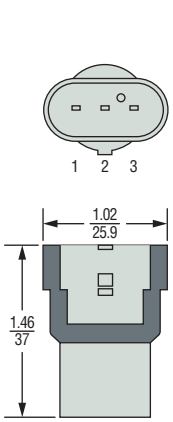
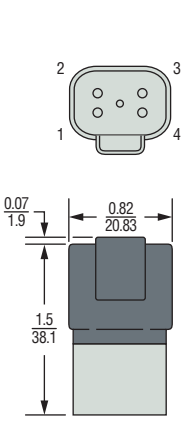
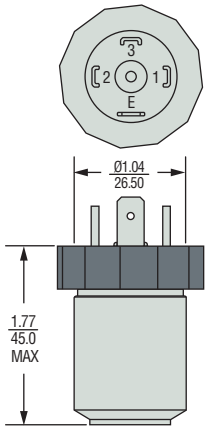
SAE Dimensions in Inches				
Fitting Code	**08** = 1/8˝-27 NPT	**4D** = 1/8˝-27 NPTF Dryseal	**02** = 1/4˝-18 NPT	**OE** = 1/4˝-18 NPT Internal
Torque	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*
				
Fitting Code	**4C** = 1/4˝-18 NPTF Dryseal	**4N** = SAE J1926/2:3/8-24	**1J** = 7/16˝-20 UNF with O-Ring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

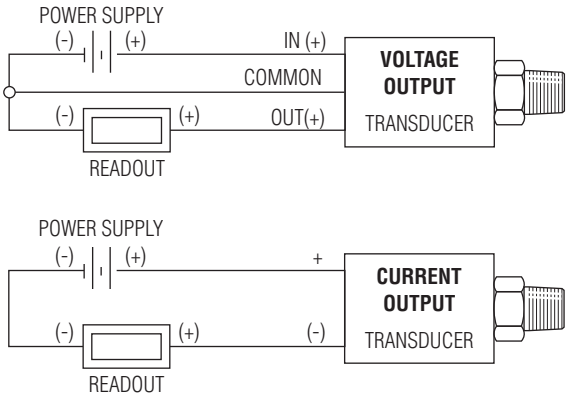
Visit www.GemsSensors.com for most current information.

Electrical Connector

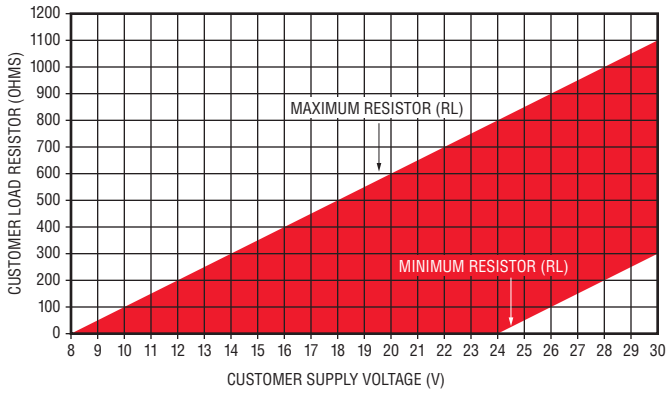
DIN 9.4 mm	M12 x 1P	Amp Superseal 1.5	Deutsch DT04-4P	DIN 43650A
				

	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



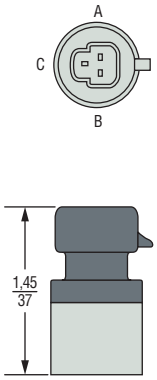
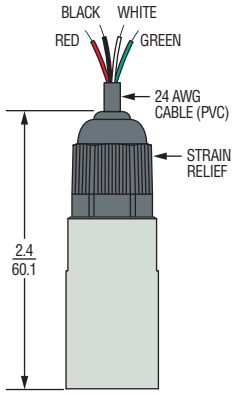
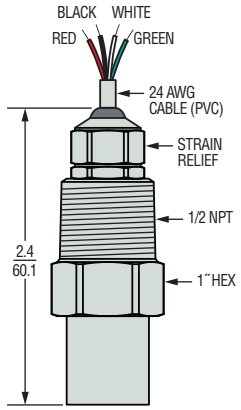
Current Output Mode (Load Resistor Range)



Minimum Resistor Value = 50*(+V – 24) for +V > 24V
Maximum Resistor Value = 50*(+V – 8) for +V > 8V

PRESSURE TRANSDUCERS

Cable-Out Types

Packard MetriPack	Cable	1/2˝ Conduit Connection
		

	Code 9		Code F		Code 3	
Pin ID / Wire Color	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode
C / **Red**	V_{out}	No Connect	Supply	Supply	Supply	Supply
A / **Black**	Ground	Return	Ground	Return	Ground	Return
B / **White**	V_{supply}	Supply	$V_{out}1$ (pressure)	No Connect	$V_{out}1$ (pressure)	No Connect
— / **Green**	—	—	$V_{out}2$ (temp)	No Connect	$V_{out}2$ (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

How to Order

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

3100 B 200PG 02 B R 01

Series
- **3100 / 3200** - Pressure Transducer – Combination Pressure and Temperature[1]
- **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

Output
- **B** - 4-20 mA
- **C** - 1-6 V
- **H** - 1-5 V
- **N** - 0.5-4.5 V
- **R** - 0-5 V[2]
- **S** - 0-10 V[2]
- **T** - 0.5-4.5 V Ratiometric

Pressure Range – psi

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 psiS[3]
200PG - 0-200 psiG	**20CPS** - 0-2,000 psiS	**20KPS** - 0-20,000 psiS[3]
300PG - 0-300 psiG	**25CPS** - 0-2,500 psiS	**25KPS** - 0-25,000 psiS[3]
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	

Pressure Range - bar

0007G - 0-7 barG	**0160S** - 0-160 barS	**1000S** - 1,000 barS[3]
0010G - 0-10 barG	**0250S** - 0-250 barS	**1600S** - 1,600 barS[3]
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		

Cable Length (For electrical connections F& 3 only)
- **00** - No Cable
- **01** - 1 meter
- **02** - 2 meters
- **03** - 3 meters
- **04** - 4 meters
- **05** - 5 meters

Optional Restrictor (3200 only)
- **R** - Restrictor
- **0** - No Restrictor

Electrical Connection[5]
- **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

Pressure Port[4]
- **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)

European Threads
- **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)

Notes:
1. 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 **-8**). Accuracy is 3.5% of temperature span. Requires additional 2mA of power.
2. For use with pull-up or pull-down resistors, contact factory.
3. Ranges 15,000 psi (1,000 bar) and above available with **-2T** pressure port only.
4. Pressure ports **0E** and **1G** are NOT available with the Restrictor option.
5. For electrical codes **F** & **3**, specify cable length in meters.



NOTES

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

Gems Sensors:

118128 156261 3500B0025A01B000 ULS200SA3YH0000 197093 3100S0025G01E000 3100S0100S01E000 3500S700MG05G000 020-3499 208997 251234 ULS200BA4YW0000 165900 197094 27106 29608 3100B0016G01E000 3500B0004A01G000 117712 155660 3100B0600S01E000 52100 PS61-20-4MGZ-B-SP 140620 171512 3100B0025G05E000 3100R0024V01B000 3500B0001G01E000 01901 3100B0060G01E000