

31IS Series and 32IS Heavy Duty Series Intrinsically Safe Industrial Pressure Transmitters

- ▶ Ex II 1G; Ex ia IIB T4 Ga
- ▶ The 31IS series is certified Intrinsically Safe for use in Group IIB Hazardous Areas, Zones 0, 1 and 2
- ▶ Certification: ATEX Certificate Baseefa10ATEX0196

For OEMs that need intrinsically safe pressure sensors with consistent high levels of performance, reliability and stability, the 31/32IS Series sputtered thin film units offer an 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 a wide choice of electrical outputs.

Our manufacturing process includes the latest automated equipment, producing consistent sensor performance.

Additionally the 32IS Series transmitters feature a thicker diaphragm and a pressure restrictor to withstand the rigors of cavitation 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.

These transmitters are also fully RoHS compliant.

Specifications

Performance	
Long Term Drift	0.2% FS/YR (non-cumulative)
Accuracy	0.25% FS
Thermal Error	
31IS	±1.5% max, ±1% typical / 212°F (100°C)
32IS	±2% max
Compensated Temperatures	-4°F to +176°F (-20°C to +80°C)
Operating Temperatures	-40°F to +176°F (-40°C to +80°C)
Zero Tolerance, Max.	0.5% of span
Span Tolerance, Max.	0.5% of span
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	BSEN 60068-2-6 (FC) Sine (20G) BSEN 60068-2-64 (FH) Random (14.1 Grms)
Shock	BSEN 60068-2-27 (Ea) (50G, 11ms)
Approvals	Ex II 1G; Ex ia IIB T4 Ga, -40°F ≤ Ta ≤ +176°F (-40°C ≤ Ta ≤ +80°C) When used in conjunction with a Zener safety barrier or Galvanic Isolation barrier
Weight	1.8 to 5.3 ounces (50-150 grams). Configuration dependant

EMC Specifications

Emissions Tests: EN61326-1:2006 and EN61326-2-3:2006

EN55011:2007 Radiated Emissions: 30-230MHz 30dB µV/M @10M
230-1000MHz 37dB µV/M @10M

Immunity Tests: EN61326-1:2006 and EN61326-2-3:2006

EN61000-4-2:2009 Electrostatic Discharge: ±4Kv contact
±8Kv air

EN61000-4-3:2006 Radiated Immunity: 10V/M 80-1000MHz
3V/M 1400-2000MHz
1V/M 2000-2700MHz

EN61000-4-4:2004 Fast Transients: ±0.25, 0.5, 1Kv

EN61000-4-6:2007 Conducted Immunity: 3V 0.15 to 80MHz 80% 1KHz modulation



Individual Specifications

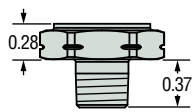
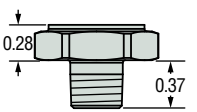
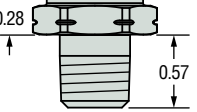
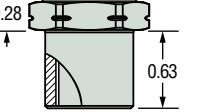
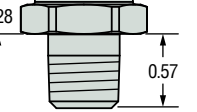
Voltage	
Output (3-wire)	0V min. to 10V max. See under "How to Order," last page
Supply Voltage	1 Volt above full scale to 30V max @ 4.5 mA
Source and Sinks	2 mA
Current	
Output (2-wire)	4-20 mA
Supply Voltage	8-24 Volts measured at the input to the transducer terminals (Supply Voltage - 8) x 50ohms
Maximum Loop Resistance	See Graph
Ratiometric Output	
Output	0.5 to 4.5V (Source and sink 2mA)
Supply Voltage	5 Vdc ±10% @ 4.5mA

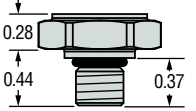
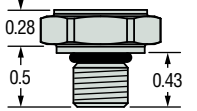
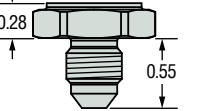
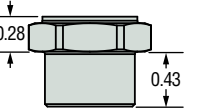
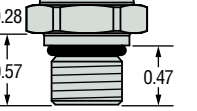
Pressure Capability

Pressure Range PSI (Bar)	Proof Pressure (x Full Scale)		Burst Pressure (x Full Scale)	
	31IS	32IS	31IS	32IS
100-300 (7-20)	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 (140-400)			10 x FS	
10,000 (700)			> 60,000 PSI (4,000 bar)	
15,000 (1,000)	2.50 x FS			
25,000 (1,800)	1.70 x FS			
30,000 (2,200)	1.40 x FS	—		

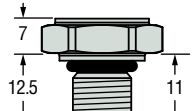
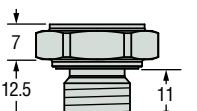
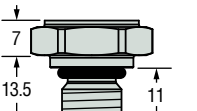
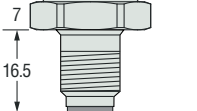
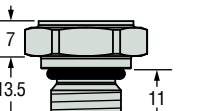
Pressure Ports

SAE

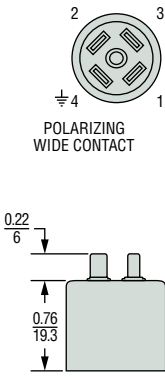
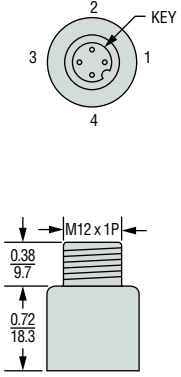
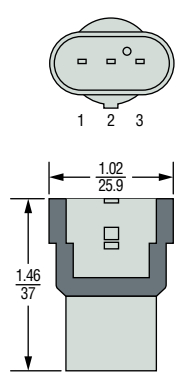
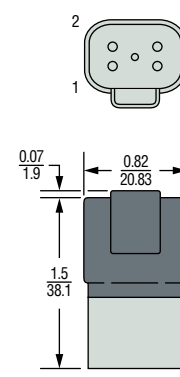
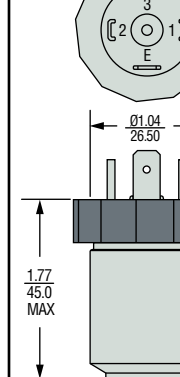
	1/8"-27 NPT	1/8"-27 NPTF Dryseal	1/4"-18 NPT	1/4"-18 NPT Internal	1/4"-18 NPTF Dryseal
Dimensions in Inches					
Fitting Code	08	4D	02	0E	4C
Torque	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*

	SAE J1926/2-3/8-24 w/O-Ring	7/16"-20 UNF w/O-Ring	7/16"-20 UNF with 37° Flare	SAE 4 Female 7/16" Schraeder	9/16-18 "Heavy Duty" w/O-Ring
Dimensions in Inches					
Fitting Code	4N	1J	04	1G	1P
Torque	18-20 NM	18-20 NM	15-16 NM	18-20 NM	18-20 NM

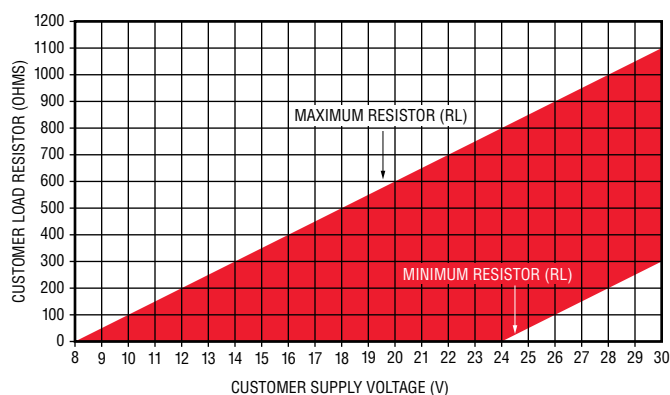
BSP & Metric

	G1/4"-19 External w/O-Ring	G1/4"-19 A Integral Face Seal	M12 x 1.5 w/O-Ring	M12x1.5 HP Metal Washer Seal	M14 x 1.5 w/O-Ring
Dimensions in MM					
Fitting Code	01	05	0L	2T	0K
Torque	30-35NM	30-35 NM	28-30 NM	30-35 NM	2-3 TFFT*

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

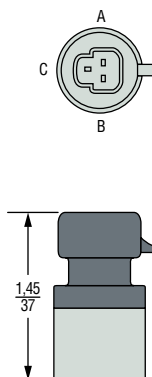
Current Output Mode (Load Resistor Range)



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

Cable-Out Types

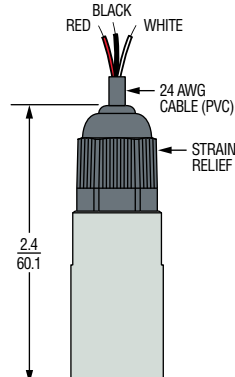
Packard MetriPack



Code 9

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

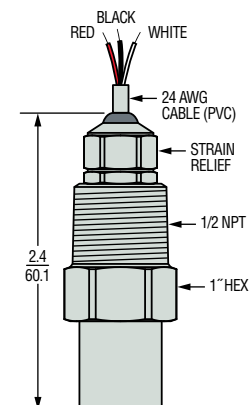
Cable



Code F

Wire Color	Voltage Mode	Current Mode
Red	Supply	Supply
Black	Ground	Return
White	V_{out}	No Connect

1/2" Conduit Connection



Code 3

Voltage Mode	Current Mode	Voltage Mode	Current Mode
Supply	Supply	Supply	Supply
Ground	Return	Ground	Return
V_{out}	No Connect	V_{out}	No Connect

How to Order

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

Series	31IS / 32IS - Pressure Transducer	B	200PG	02	B	R	01	Cable Length (For electrical connections F& 3 only)
Output	B - 4-20 mA N - 0.5-4.5 V T - 0.5-4.5 V Ratiometric	C - 1-6 V R - 0-5 V ¹	H - 1-5 V S - 0-10 V ¹					00 - No Cable 01 - 1 meter 02 - 2 meters 03 - 3 meters 04 - 4 meters 05 - 5 meters
Pressure Range - psi	100PG - 0-100 psiG 150PG - 0-150 psiG 200PG - 0-200 psiG 300PG - 0-300 psiG 500PG - 0-500 psiG 600PG - 0-600 psiG 750PG - 0-750 psiG 10CPG - 0-1,000 psiG	15CPS - 0-1,500 psiS 20CPS - 0-2,000 psiS 25CPS - 0-2,500 psiS 30CPS - 0-3,000 psiS 35CPS - 0-3,500 psiS 40CPS - 0-4,000 psiS 50CPS - 0-5,000 psiS 60CPS - 0-6,000 psiS 75CPS - 0-7,500 psiS	10KPS = 0-10,000 psiS 15KPS - 0-15,000 psiS ² 20KPS - 0-20,000 psiS ² 25KPS - 0-25,000 psiS ²					Optional Restrictor (32IS only) R - Restrictor 0 - No Restrictor
Pressure Range - bar	0007G - 0-7 barG 0010G - 0-10 barG 0016G - 0-16 barG 0025G - 0-25 barG 0040G - 0-40 barG 0060G - 0-60 barG	0100S - 0-100 barS 0160S - 0-160 barS 0250S - 0-250 barS 0400S - 0-400 barS 0600S - 0-600 barS	1000S - 1,000 barS ² 1600S - 1,600 barS ²					Electrical Connection ⁴ 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 ³ 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 (<15,000 psi, 1,000 bar) 2T - M12 x 1.5 (6g) (>15,000 psi, 1,000 bar)

Notes:

- 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.