~ 2017 EDITION ~

GP:50

RELIABLE & ACCURATE

PRESSURE, LEVEL & TEMPERATURE PRODUCTS

MARKETS

- UPSTREAM OIL & GAS
- AEROSPACE
- AUTOMOTIVE
- TEST STANDS
- WASTE WATER
- STEEL & ROLLING MILLS
- SUBSEA
- PROCESS CONTROL

Founded in 1986 in Grand Island, New York, GP:50 is an ISO9001 certified designer and manufacturer of reliable and accurate sensors, transducers and transmitters for the effective measurement of pressure, level and temperature. A unique core competency of GP:50 is its capability to customize specialty pressure sensors in both small and large volumes within relatively short lead times. All GP:50 pressure sensing instrumentation is rigorously tested and field-proven for its high-reliability within cryogenic, high-temperature, high corrosion, hazardous area, full submersion, flight qualified, space rated, subsea, and other extreme environments. New products are continuously added in response to customer needs.

Standard pressure transducers are offered in ranges from 0.5" WC to 100K PSI, with choices of analog and digital outputs, including mV/V, VDC, 4-20 mA, USB, HART, and CANBus. Typical materials of construction include 17-4 and 316 stainless steel, Monel, Inconel, Hastelloy, and various specialty housing and wetted part materials. We also offer comprehensive selections of process and electrical connections to retrofit most applications.

For customer convenience, the GP:50 standard product catalog is organized by market segment. Some models may be represented in more than one section, given their versatility across multiple applications. Please note that products contained within this catalog are current as of the date of printing. For a real-time, up-to-date list of available products, please visit our website at www.gp50.com or contact us any time with your application.

Core markets for GP:50 products include:

Oil & Gas: Rugged pressure sensors and transducers for upstream oil, well servicing, drilling, fracking, cementing, coil tubing, rig safety systems, natural gas compressors, pipeline, subsea, wellhead, casing pressures and control panels.

Aerospace Testing: Products to meet rigorous aerospace, defense, military and naval testing/program requirements. Typical applications include aircraft hydraulics, jet engine test stands, on-board flight test, rocket pressures, UAVs, satellites, spacecraft, avionics, launch vehicle, ground vehicle support, and ROV applications. Flight qualified and space rated models, optional Class S electronics, radiation hardened models, and MIL spec conformance are all available.

Industrial: Industrial grade pressure sensors and transmitters for OEM, hydraulic and pneumatic systems, steelworks, rolling mills, process control, mining, sprinkler systems, and general purpose requirements. FM, CSA, ATEX, IEC approved models.

Automotive Testing: Pressure sensors and transducers for automotive test stands, hydraulic and pneumatic controls, on-board vehicle testing, leak decay, emissions management, and automotive exterior paint systems. CANBus, USB and other automotive industry standard outputs are available.

Flush: Non-clogging pressure sensing instrumentation for food processing, dairy and beverage and pharmaceutical applications.

Water & Wastewater: Pressure sensors and transducers for lift stations, weirs, ponds, well or tank levels, pump and pipeline pressures and flow measurements.

Pressure, Level & Temperature Transmitters & Transducers
2770 Long Road, Grand Island, NY 14072 USA
Tel. (716) 773-9300 • Fax (716) 773-5019
Sales@GP50.com • www.GP50.com

CONTACTS

CHRIS BARTLETT
Eastern Regional Sales Manager

ME • VT • NH • MA • RI • CT
NJ • DE • MD • NY • PA • OH
VA • WV • MI • WI • IN • IL
KY • TN • NC • SC • MS • AL
GA • FL

Ext. 116
cbartlett@gp50.com

ANDREW O'DONNELL
Eastern US Tech Support
Ext. 112
aodonnell@gp50.com

MIKE RIOS
TX & OK Regional Sales Manager

Ext. 170
mrios@gp50.com

MARVIN NEWTON
Southern US Tech Support

TX • OK • LA • AK

Ext. 117
mnewton@gp50.com

BOB KATNER
Western Regional Sales Manager

WA • MT • MN • ND • SD • OR
CA • NV • ID • WY • NE • IA
UT • CO • KS • MO • AZ • NM
AR

Ext. 171
rkatner@gp50.com

DONNA HAGERTY
Western US Tech Support
Ext. 123
dhagerty@gp50.com

LUIS EZQUERRO
International Tech Support
Ext. 160
lezquerro@gp50.com

TONI MACKINNON
Customer Service
(Order Status & Expediting)
Ext. 118
tmackinnon@gp50.com

SERVICE & REPAIRS
Ext. 140
gp50service@gp50.com

BOB ATWOOD
VP of Sales
batwood@gp50.com

Visit
www.GP50.com
to find your local GP:50 sales representative

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PRESSURE RANGE CODES

PSI		in. wc		Bar	
PC	1.0	WT	5.0	UJ	1.0
PE	2.0	WV	7.5	UK	1.5
PG	3.0	WX	10	UL	2.0
PJ	5.0	WZ	15	UM	3.0
PL	7.5	XB	20	UN	5.0
PN	10	XC	25	UP	7.5
PP	15	XD	30	UQ	10
PQ	3-15	XF	50	UR	15
PR	20	XH	75	US	20
PS	3-27	XK	100	UT	30
PO	25	XM	150	UV	50
PT	30	XO	200	UX	75
PV	50	XQ	300	UY	100
PX	75	XS	500	UZ	150
PZ	100	XU	750	VA	200
RB	150	XW	1000	VB	300
RD	200	XY	1500	VC	350
RE	250	YA	2000	VD	500
RF	300			VE	700
RH	500			VF	750
RJ	600			UA	1000
RK	501			UH	1400
RM	1000			UB	1500
RO	1500			UC	2000
RR	2000			UD	3000
RS	2500			UE	5000
RT	3000			UF	7500
RV	5000			UG	10k
RW	6000				
RX	7500				
RZ	10K				
SB	15K				
SD	20K				
SF	30K				
SH	50K				
SK	75K				
SM	100K				
SO	150K				
SZ	Non-Stand.				

Miscellaneous		**Mpa**	
TA	760 mm Hg	YG	0.05
TC	30 in Hg	YH	0.10
JK	23 - 35inHgA	YJ	0.15
		YK	0.20
Model 311		YL	0.25
Option GR Only		YM	0.50
TG	0-5 through 0-15	YN	1.0
TJ	O-6 through 0-30	YO	1.5
TL	0-20 through 0-100	YP	2.0
TN	0-60 through 0-300	YR	2.5
TP	0-200 through 0-1000	YS	5.0
TR	0-600 through 0-3000	YT	10.0
TT	0-1000 through 0-5000	YU	15.0
TV	0-4000 through 0-20000	YV	25.0
		YX	60.0
		YY	100.0
		YZ	140.0

Pressure Type Codes

2	Gauge
3	Absolute
4	Vacuum
5	Differential
6	Sealed Gauge (≤500 PSI)
7	Gauge (>500 PSI)
8	Elevated (Suppressed Zero)
10	Compound (Vacuum to Gauge)
11	Compound (Equal Vacuum/Gauge e.g. ±10 PSI)

INDUSTRIAL GRADE PRESSURE TRANSDUCER

MODEL 111 / 211 / 311

Model 111 / 211 / 311
Industrial Grade Pressure Transducer

FEATURES:

- Available ranges from 0 to 30" WC thru 0 to 15K PSI (75 MBAR to 1,034 BAR)
- Choice of mV/V, Vdc & 4-20 mA output
- Rugged, welded, stainless steel construction
- High proof pressure
- Economically priced

APPLICATIONS:

- Hydraulic & pneumatic controls
- Die casting
- Rolling & steel mills
- Compression skids
- Irrigation pumps pressure
- Oilfield truck pressures
- Skidded process systems

PRODUCT OVERVIEW:

The Model 111/211/311 from GP:50 is a family of industrial grade pressure transducers. These strain gauge-based sensors are expressly designed to withstand the shock, vibration and pressure spikes common to most hydraulic and pneumatic control systems.

The highly rugged, all-welded stainless steel design of the Model 111/211/311 offers high corrosion resistance, making the sensors an ideal choice for demanding oil & gas, steelworks, rolling mills and process control applications. Units are further available with optional 10X proof pressure for extended worry-free service life within challenging environments.

FIELD OPTIONS:

- Zero and span adjustments
- 80% and 100% shunt calibration
- Alternate connectors and pressure ports
- For Intrinsically Safe and Explosion Proof approvals, see specially designated datasheet for Model 111/211/311 hazardous location

 | 2770 Long Road, Grand Island, NY 14072 USA

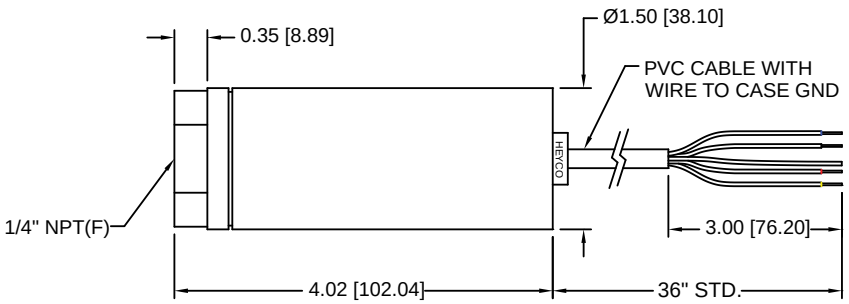
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 111	MODEL 211	MODEL 311
1/RED	+EXC	+EXC	+EXC/SIG
2/GRN	+SIG	+SIG	N/C
3/WHT	-SIG	N/C	N/C
4/BLK	-EXC	-EXC/SIG	-EXC/SIG
5/BLU	+SHUNT (OPT)	+SHUNT (OPT)	+SHUNT (OPT)
6/BRN	-SHUNT (OPT)	-SHUNT (OPT)	-SHUNT (OPT)



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**

(Model 111) 3.5 to 15 Vdc

(Model 211) 9.0 to 36 Vdc

(Optional outputs may affect excitation)

(Model 311) 9.0 to 36 Vdc

- **Output Signal:**

(Model 111) 1 to 3 mV/V (range and accuracy dependent)

(Model 211) 0 to 5 Vdc, 0 to 10 Vdc (other outputs available)

(Model 311) 4-20 mA, 9.0 to 36 Vdc excitation

- **Input Impedance:** (Model 111) 5K or 350 Ω nominal
- **Input Current:** (Model 211) 8 mA nominal
- **Circuit Protection:**

(Model 211/311) RFI & EMI

(Model 211/311) Reverse polarity protected

- **Response Time:** <3 ms 10% to 90%
- **Connection:** 36" long PVC Jacketed cable, 4-conductor

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**

Ranges ≤100 PSI: 316L stainless steel

Ranges >100 PSI: 17-4 PH stainless steel

- **Housing:** 300 series stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO

Improved: ±0.2% FSO or ±0.1% FSO

- **Zero Balance and FSO:** ±1% FSO at +70 °F (+21.1 °C) for each

MECHANICAL

- **Process Connection:** 1/4" NPT (F)
- **Proof Pressure:** 2X FSO or 22.5K PSI (1,551 BAR), whichever is less
- **Burst Pressure:** 5X FSO or 23K PSI (1,586 BAR), whichever is less, Vacuum 5X FSO in gauge pressure
- **Approximate weight:** 10 oz. (0.3 kg) nominal (options may increase weight)

PRESSURE RANGES

- 0 to 30" WC thru 0 to 15K PSI (0 to 1,034 BAR) PSIG, PSIS, PSIA, PSIV & compound ranges available.

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-17.7 °C to +82 °C)
- **Operating:** -20 °F to +190 °F (-29 °C to +88 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±1.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

 2770 Long Rd, Grand Island, NY 14072 USA

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INTRINSICALLY SAFE PRESSURE TRANSDUCER

Model 311Z, I, GI, AI
Intrinsically Safe Pressure Transducer

MODEL 311Z, I, GI, AI

FEATURES:

- 0 to 5 PSI thru 0 to 75K PSI (75 MBAR to 1,034 BAR)
- FM, CSA, ATEX & IEC approvals
- Welded, rugged construction
- Optional high overpressure protection

APPLICATIONS:

- Rig safety systems
- Well head control
- Gas pipeline
- Control panels
- On-board transmission & engine monitoring

PRODUCT OVERVIEW:

GP:50's Model 11 series provides a rugged solution in hazardous approved areas. The all welded, stainless steel design provides years of reliable service in some of the harshest applications.

FIELD OPTIONS:

- FM, CSA ATEX, IEC Intrinsically Safe
- Zero & Span adjust
- Alternate connectors & pressure ports
- For Explosion-proof see model 311X/P

 2770 Long Road, Grand Island, NY 14072 USA

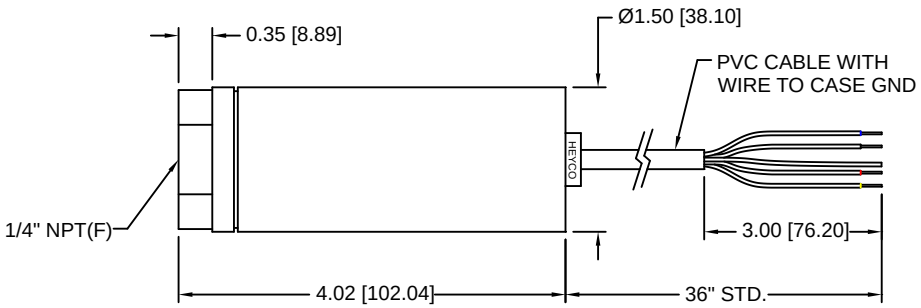
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 311Z/I/GI/AI
1/RED	+EXC/SIG
2/GRN	CASE GND
3/WHT	N/C
4/BLK	-EXC/SIG



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**

(311Z) 9 to 36 Vdc excitation

(311I, GI, AI) 10 to 28 Vdc excitation

- **Output Signal:** 4-20 mA output
- **Circuit Protection:** RFI and EMI
- **Load Impedance:** 750 Ω max. to 24 Vdc
- **Insulation Resistance:** >10 MΩ @ 50 Vdc, +70 °F
- **Response Time:** <5 ms 10% to 90%
- **Connection:** 36" long PVC Jacketed, 18 AWG, 4 conductor cable (or equivalent)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316 or 17-4 PH stainless steel (options available consult factory)
- **Housing:** 316 stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard ±0.5%

Improved ±0.2% and ±0.1%

MECHANICAL

- **Zero Balance and FSO:** ±1% FSO at +70 °F
- **Process Connection:** 1/4" NPT (F) for ranges <20 KPSI (1.4 BAR)
  High pressure coned fittings for ranges 20K to 75K PSI (1,379 to 5,171 BAR)
- **Proof Pressure:** 2X FSO or 22,500 PSI (1,551 BAR), whichever is less
- **Burst Pressure:** 5X FSO or 22,500 PSI (1,551 BAR), whichever is less
- **Approximate Weight:** 10 oz (0.3 kg) nominal, options may increase weight

PRESSURE RANGES

- 0 to 5 thru 0 to 75K PSI (0 to 0.3 thru 0 to 5,171 BAR) (PSIG, PSIS, PSIA, PSIV & Compound ranges available)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-18 °C to +82 °C)
- **Operating Process:** -40 °F to +176 °F (-40 °C to +80 °C)
- **Storage:** -65 °F to +250°F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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EXPLOSION PROOF & ZONE 2 / DIV 2 PRESSURE TRANSMITTER

Model 111X/P, 211X/P, 311X/P
& 311N//AN//GN
Intrinsically Safe Pressure Transducer

MODEL 111X/P, 211X/P, 311X/P/N/AN/GN

FEATURES:

- 0 to 5 PSI thru 0 to 75K PSI (75 MBAR to 1,034 BAR)
- FM, CSA, ATEX & IEC approvals
- Welded, rugged construction
- Optional high overpressure protection

APPLICATIONS:

- Rig safety systems
- Well head control
- Gas pipeline
- Control panels
- On-board transmission & engine monitoring

PRODUCT OVERVIEW:

GP:50's Model 11 series provides a rugged solution in hazardous approved areas. The all welded, stainless steel design provides years of reliable service in some of the harshest applications.

APPROVALS:

- **FM, FM/CSA:** Class I/II/III, Div 1, Grps A-G, T6 at Ta=40C
- **Zone 2 / Division 2:**
- **FM:** Class I, Zone 2 AEx nC IIC T5, Class I, Div. 2, Grp. A, B, C, D Class II, Grp. E, F, G, Class III T5, Ta = 80C
- **CSA:** Ex nA IIC T5, Ex nL IIC T5, Class I Div. 2 Grp. A, B, C, D Class II Div. 2 Grp. E, F, G Class III T5, Ta=80C
- **ATEX:** CE0575 II 3 G Ex nA IIC, Ex ic IIC T5, Ta=80C
- **IEC:** Ex na IIC, Ex ic IIC T5, Ta=80C
  (all Zone 2/Div 2 approvals are electrical connector dependent)
  For Intrinsically Safe Approval see 311Z, I, GI, AI Data Sheet (A5SL-024)

 | 2770 Long Road, Grand Island, NY 14072 USA

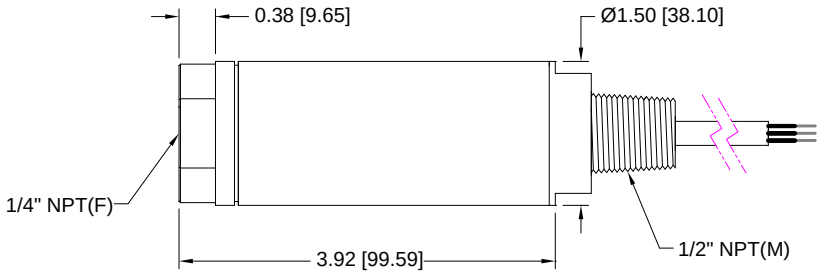
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 111X/P	MODEL 211X/P	MODEL 311X/P/N/AN/GN
RED	+EXC	+EXC	+EXC/SIG
GRN	+SIG	CASE GND	N/C
WHT	-SIG	+SIG	N/C
BLK	-EXC	-EXC/SIG	-EXC/SIG
GRN/YEL	CASE GND	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**
  (Model 111X/P) 3.5 to 15 Vdc
  (Model 211X/P) 10.5 to 32 Vdc
  (Model 311X/P) 9 to 36 Vdc
  (Model 311 N/AN/GN) 10 to 28 Vdc
- **Output Signal:**
  (Model 111) 3 mV/.V
  (Model 211) 0 to 5 Vdc, 0 to 10 Vdc (alternate outputs available)
  (Model 311) 4-20 mA
- **Load Impedance:**
  (Model 211) 50 Ω max. 24 Vdc
  (Model 311) 750 Ω max. 24 Vdc
- **Input Impedance:**
  (Model 111) 5K or 350 Ω nominal
- **Input Current:**
  (Model 211) 8mA nominal
- **Insulation Resistance:** >10 MΩ at 50 Vdc and +70 °F
- **Response Time:** <5 ms 10% to 90%
- **Connection:** 1/2" NPT M conduit w/ 6ft 18 AWG multi-conductor cable

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH stainless steel (Hastelloy C-276 and Inconel available, consult factory)
- **Housing:** 316 stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard ±0.5%

Improved ±0.2% and ±0.1%

Zero Balance and FSO: ±1% FSO at +70 °F

MECHANICAL

- **Process Connection:** 1/4" NPT (F) for ranges <20 KPSI (1.4 BAR) High pressure coned fittings for ranges 20K to 75K PSI (1,379 to 5,171 BAR)
- **Proof Pressure:** 1.5X FSO ≤30K PSI, 1.2X FSO >30K PSI
- **Burst Pressure:** 2.5X FSO ≤10K PSI, 5X FSO >10K PSI and ≤30K PSI, 1.5X ≤75K PSI
- **Approximate Weight:** 1 lb (0.5 kg) nominal, options may increase weight
- **Unit designed** to meet or exceed IP67 Rating. (Some options may affect rating, consult factory)

PRESSURE RANGES

- 0 to 5 PSI thru 0 to 75K PSI (0 to 0.3 BAR thru 0 to 5,171 BAR) (PSIG, PSIS, PSIA, PSIV & compound ranges available)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-17.7 °C to +82 °C)
- **Operating:** -40 °F to +176 °F (-40 °C to +80 °C)
- **Storage:** -65 °F to +250 °F (-53°C to +121 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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MODEL 210 / 310

Model 210 / 310
Low Range Pressure
Transducer / Transmitter

FEATURES:

- Ranges from 0 to 5" WC thru 0 to 200 PSI, PSIA (64 mm WC to 14 BAR)
- 500 PSI proof pressure for all ranges (35 BAR)
- Welded 316 stainless steel wetted parts, no seals
- Optional improved accuracy $< \pm 0.05\%$ FSO
- Gauge, vacuum or absolute format
- Wet-wet gauge design

APPLICATIONS:

- Laboratory
- Pressure decay systems
- Engine test stands
- Emission test stands
- HVAC

PRODUCT OVERVIEW:

The GP:50 Model 210/310 series provides a high accuracy, low pressure sensor with high proof pressure. With ranges as low as 0 to 5" WC the standard unit provides proof pressures to 500 PSI with an optional $\pm 0.05\%$ FSO static accuracy.

FIELD OPTIONS:

- Improved static accuracy to $\pm 0.05\%$ FSO
- Optional process and electrical connections
- Zero and span adjust
- Shunt calibration

 2770 Long Rd, Grand Island, NY 14072 USA

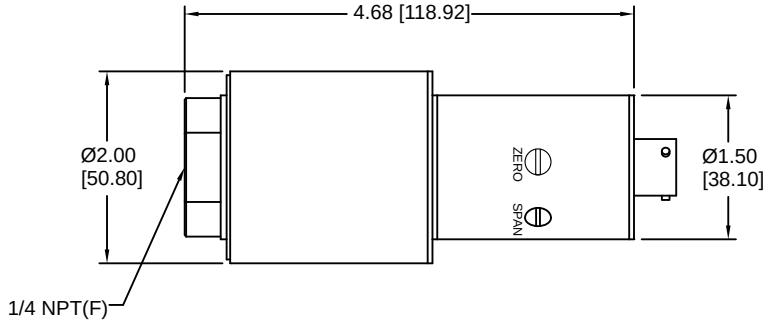
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 210	MODEL 310
1/RED	+EXC	+EXC/SIG
2/GRN	+SIG	N/C
3/WHT	N/C	N/C
4/BLK	-EXC/SIG	-EXC/SIG
5/BLU	N/C	N/C
6/BRN	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** (Models 210/310) 8.0 to 32 Vdc
- **Output Voltage** @ +70 °F: (Model 210) 0 to 5 Vdc, 0 to 10 Vdc (Model 310) 4-20 mA
- **Load Impedance:** (Model 210) ≤10K Ω (Model 310) 750 Ω max.
- **Response Time:** Typ 35 ms for 90% FSO
- **Frequency Response:** flat to 100 Hz
- **Resolution:** infinite
- **Zero/Span:** Adjustable to ±20%
- **Connection:** 36" long PVC jacketed cable, 4 conductor, 22 AWG with strain relief

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316 stainless steel (Hastelloy optional)
- **Housing:** 300 series stainless steel

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO

Improved: ±0.2% FSO, ±0.1% FSO, ±0.05% FSO

MECHANICAL

- **Process Connection:** Pressure 1/4" NPT (F) (options available)
- **Approximate Weight:** <1 lb (0.5 kg)
- **Proof Pressure:** 500 PSI (35 BAR)
- **Burst Pressure:** 2K PSI (138 BAR) Optional 5K PSI optional (345 BAR)
- **Orientation Shift (90°):** Zero - Typ 10-20%, Range Dependent Silicon oil filled (Krytox and other options available)

PRESSURE RANGES

5" WC thru 200 PSI, PSIA (14 BAR)

THERMAL SPECIFICATION

- **Compensated Range:** +32 °F to +180 °F (0 °C to +82 °C)
- **Effect on Zero/Span:** ±1.0% FSO/100 °F (Improved options: ±0.5 to ±0.25% FSO/100 °F)
- **Operating Range:** 0 °F to +185 °F (-17 °C to +85 °C) (Unit will operate to -40 °F with delayed response time)

Standard configurations shown.
Please consult factory for other options.

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MODEL 112 / 212 / 312

Model 112 / 212 / 312
Ultra High-Pressure Transducer

FEATURES:

- 0 to 20K PSI thru 0 to 100K PSI (1,079 BAR to 6,895 BAR)
- mV/V, Vdc & 4-20 mA outputs
- All welded, stainless steel construction
- Single piece sensor design has no welds or seals

APPLICATIONS:

- Water-jet cutting
- Oilfield wellheads
- Aseptic food processing
- Laboratory R&D
- Test stands

PRODUCT OVERVIEW:

The Model 112/212/312 from GP:50 is an ultra high-pressure transducer, offered in a single piece sensor design with no welds or seals. All stainless steel construction and industry standard high-pressure coned process connections are available in both English and Metric sizes.

FIELD OPTIONS:

- mV/V, Vdc & 4-20 mA output
- Zero & span adjustments
- 80% and 100% shunt calibration
- Alternate connectors & pressure ports

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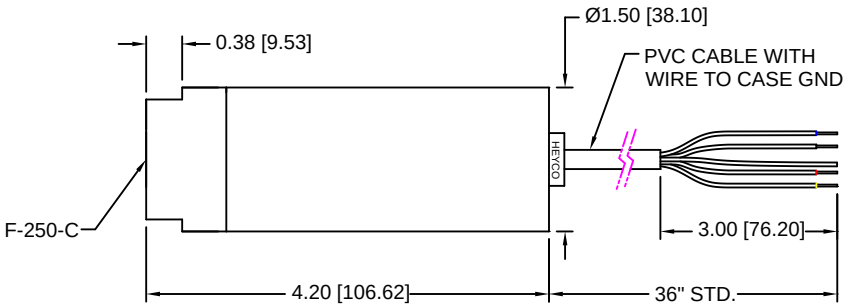
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 112	MODEL 212	MODEL 312
RED	+EXC	+EXC	+EXC/SIG
GRN	+SIG	+SIG	N/C
WHT	-SIG	N/C	N/C
BLK	-EXC	-EXC/SIG	-EXC/SIG
BLU	+SHUNT (OPT)	+SHUNT (OPT)	+SHUNT (OPT)
BRN	-SHUNT (OPT)	-SHUNT (OPT)	-SHUNT (OPT)



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**

(Model 112) 3.5 to 15 Vdc excitation

(Model 212) 0 to 5 Vdc: 9.0 to 40 Vdc

0 to 10 Vdc: 13 to 40 Vdc

(Model 312) 9.0 to 36 Vdc

- **Output Signal:**

(Model 112) 3 mV/V

(Model 212) 0 to 5 Vdc, 0 to 10 Vdc (alternate outputs available)

(Model 312) 4-20 mA

- **Zero Balance and FSO:** ±1% FSO at +70 °F (+21.1 °C) for each
- **Load Impedance:**

(Model 212) 50K Ω min. for <0.1% FSO attenuation

(Model 312) 1,350 Ω max. at 37 Vdc, 750 Ω at 24 Vdc

- **Input Current:** (Model 212) 8 mA nominal
- **Circuit Protection:** RFI and EMI
- **Response Time:** <5 ms 10% to 90%
- **Connection:** 36" long, 4 conductor with 24 AWG, PVC jacketed cable.

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**

20K PSI to 60K PSI (1,379 to 4,137 BAR): 17-4 PH stainless steel

61K to 150K (4,206 to 10,342 BAR): Vascomax 300

- **Housing:** 300 series stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO
Improved: ±0.2% FSO

MECHANICAL

- **Process Connection:**

20K to 60K PSI (1,379 to 4,137 BAR): autoclave type F-250-C

75K to 100K PSI (5,171 to 6,895 BAR): autoclave type F312-C150

- **Proof Pressure:** 1.2X FSO or 120K PSI (8,274 BAR), whichever is less
- **Burst Pressure:** 2X FSO or 120K PSI (8,274 BAR), whichever is less
- **Approximate weight:** 12 oz. (0.3 kg) nominal

PRESSURE RANGES

- 0 to 20K thru 0 to 100K PSI (1,079 thru 6,895 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-17.7 °C to +82 °C)
- **Operating:** -20 °F to +190 °F (-29 °C to +88 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±1.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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M-SPIKE, V-SPIKE, C-SPIKE

Model M-Spike, V-Spike, C-Spike Series Pressure Transducers

FEATURES:

- 0 to 100 PSI thru 0 to 15K PSI (7 BAR to 1,034 BAR)
- 3X FSO proof pressure or 22.5K (1,551 BAR), whichever is less
- mV/V, Vdc & 4-20 mA outputs
- Ruggedized, welded, stainless steel construction
- Standard accuracy of ±0.20 % FSO

APPLICATIONS:

- Die casting
- Injection molding
- Stamping presses
- Hydraulic test stands
- Compressors and pumps

PRODUCT OVERVIEW:

The Spike Series from GP:50 is a family of pressure transducers, specifically designed to withstand high-amplitude, high-frequency spikes that commonly occur in hydraulic pressure sensing applications. A proprietary sensor design provides increased over pressure protection as high as 10x.

FIELD OPTIONS:

- mV/V, Vdc & 4-20 mA outputs
- Zero & span adjustments
- 80% and 100% shunt calibration
- Alternate connectors & pressure ports

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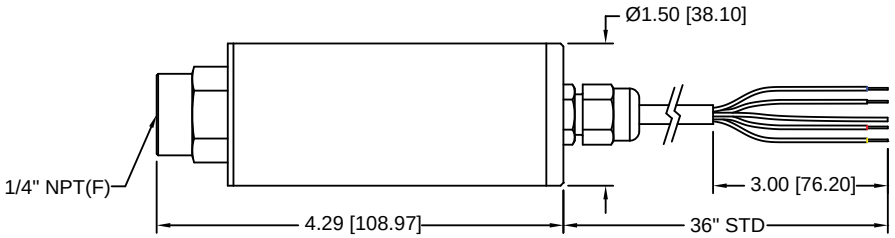
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	M-SPIKE	V-SPIKE	C-SPIKE
1/RED	+EXC	+EXC	+EXC/SIG
2/GRN	+SIG	+SIG	N/C
3/WHT	-SIG	N/C	N/C
4/BLK	-EXC	-EXC/SIG	-EXC/SIG
5/BLU	N/C	N/C	N/C
6/BRN	N/C	N/C	N/C
SHIELD	OPEN	OPEN	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**
  (M-Spike) 3.5 to 15 Vdc excitation
  (C-Spike) 4-20 mA , 9.0 to 36 Vdc excitation
- **Output Signal:**
  (M-Spike) 3 mV/V
  (V-Spike) 0 to 5 Vdc, 0 to 10 Vdc (alternate outputs available)
  (C-Spike) 4-20 mA, 9.0 to 36 Vdc excitation
- **Load Impedance:**
  (M-Spike) 50K Ω min. for <0.1% FSO attenuation
  (C-Spike) 1200 Ω max. at 37 Vdc, 600 Ω at 24 VDC
  (V-Spike) 2.0 mA max. for <0.1% FSO attenuation
- **Connection:** 36" Long, 24 AWG, 4 conductor PVC jacketed cable.
- **Circuit Protection:** RFI and EMI
- **Input Current:**
  (V-Spike) 8mA nominal
- **Input Impedance:**
  (M-Spike) 5,000 Ω nominal, full bridge
- **Output Current:**
  (V-Spike) 2.0 mA max. for <0.1% FSO attenuation
- **Response Time:** <5 ms 10% to 90%

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH stainless steel (options available consult factory)
- **Housing:** 316 stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Standard:** ±0.2% FSO
- **Zero Balance and FSO:** ±1% FSO at +70 °F for each

MECHANICAL

- **Process Connection:** 1/4" NPT (F)
- **Proof Pressure:** 3X FSO or 22.5K PSI (1,551 BAR), whichever is less
- **Burst Pressure:** 5X FSO or 23.5K PSI (1,620 BAR), whichever is less
- **Weight:** 10 oz. (0.3 kg) nominal

PRESSURE RANGES

0 to 100 PSI thru 0 to 15K PSI (0 to 7 BAR thru 0 to 1,034 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-17.7 °C to +82 °C)
- **Operating:** -20 °F to +190 °F (-29 °C to +88 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±1.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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MINIATURE FLUSH DIAPHRAGM PRESSURE TRANSDUCER

Model 188

Model 288 / 388
Miniature Flush Diaphragm
Pressure Transducer

MODEL 188 / 288 / 388

FEATURES:

- Flush diaphragm eliminates port plugging
- Compact, lightweight design <2 oz (56.7 gm)
- All-welded stainless steel construction
- Designed to eliminate any zero installation effect
- Rated for high shock and vibration applications
- -65 °F to +250 °F (-53.8 °C to +121.1 °C) operating temperature range (Optional -320 °F to +385 °F)
- Optional high-frequency response (>3 kHz)

APPLICATIONS:

- Adhesive, sealants & paint systems
- Food processing
- Extrusion
- Test stands
- Hydraulic systems

PRODUCT OVERVIEW:

Model 188/288/388 from GP:50 is a family of all-welded stainless steel miniature flush diaphragm pressure transducers. Their unique design incorporates a specialty flush process connection. This allows the transducer to effectively support higher viscosity fluid pressure measurements without port clogging or plugging. Their compact size allows for ease of installation within space constrained environments.

FIELD OPTIONS:

- 7/16-20 UNF flush pressure port
- 6-pin Bendix PTIH-10-6P standard (other connectors available)
- Temperature output, RTD, Type J & Type K thermocouples
- Hastelloy, Inconel wetted parts
- Extended temperature range of -65 °F to +350 °F (-54 °C to +177 °C)

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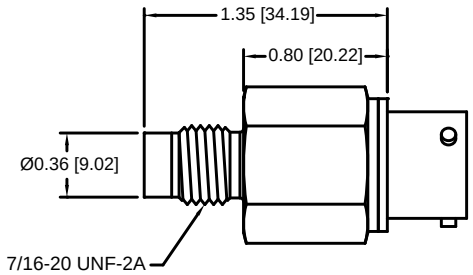
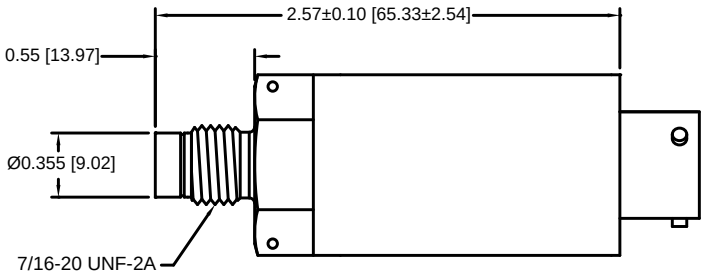
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



MODEL 188



MODEL 288/388

STANDARD WIRING

PIN	MODEL 188	MODEL 288	MODEL 388
A/1	+EXC	+EXC	+EXC/SIG
B/2	+SIG	+SIG	N/C
C/3	-SIG	N/C	N/C
D/4	-EXC	-EXC/SIG	-EXC/SIG
E/5	N/C	N/C	N/C
F/6	N/C	N/C	N/C

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**
  (Model 188) 5 to 15 Vdc maximum
  (Model 288/388) 8 to 32 Vdc
- **Output Signal:**
  (Model 188) 2 mV/V
  (Model 288) 0 to 5 Vdc, 0 to 10 Vdc
  (Model 388) 4-20 mA
- **Zero and Span Balance:**
  ± 1% FSO each
- **Bridge Impedance:**
  (Model 188) 5000 Ω standard (350 Ω optional)
- **Circuit Protection:**
  (Model 288/388)
  Reverse polarity & Over voltage protection
- **Response Time:**
  (Model 188) 3 to 5 KHz
  (Model 288/388) <1m Sec

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  Pressure port: 17-4 PH stainless steel
  (Inconel, Hastelloy optional)
- **Housing:**
  300 series stainless steel

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

(Model 188) ±0.5% FSO <4000 PSI (276 BAR)
±0.25% FSO ≥5000 PSI (345 BAR)
(Model 288/388) ±0.25%
(optional ±0.10% or ±0.05% FSO)

MECHANICAL

- **Process Connection:** 7/16-20 UNF
- **Electrical:** PTIH-10-6P (consult factory for other options)
- **Proof Pressure:** 2X range or 22.5K PSI max. (1,551 BAR)
- **Burst Pressure:** 4X range or 25K PSI max. (1,723 BAR)
- **Weight:**
  (Model 188) <2 oz. (57 gm)
  (Model 288/388) <2.5 oz. (70 gm)

PRESSURE RANGES

300 PSI to 20K PSI (21 to 1,379 BAR)
(consult factory for other ranges)

THERMAL SPECIFICATIONS

- **Compensated:** -30 °F to +170 °F (-34 °C to +77 °C)
- **Operating:** -65 °F to +250 °F (-54 °C to +121 °C)
  Optional extended range 188: -65 °F to +350 °F (-54 °C to +177 °C)
- **Storage Ambient:** -65 °F to +250 °F (-54 °C to +121 °C)
- **Effect on Zero/Span:**
  (Model 188) ±2%/100 °F (Zero/Span)
  (Model 288/388) ±0.5%/100 °F (Zero/Span)
  Optional ±0.25%/100 °F

OPTIONAL VARIATIONS

- Consult factory

Standard configurations shown.
Please consult factory for other options.

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MODEL 313L

Model 313L
Submersible Level Transmitter

FEATURES:

- Available ranges of 0-20" WC thru 300 PSI (50 MBAR to 21 BAR)
- Case rated to 900 feet WC (275 meters WC)
- Up to ±0.10% FSO accuracy
- 316L stainless steel housing with optional titanium
- Hytrel jacketed cable with optional Tefzel®
- Lightning suppression as standard

APPLICATIONS:

- Wet wells, ponds, rivers and tank level measurements
- Water treatment
- Ground water monitoring
- Dredging levels
- Shipboard level control

PRODUCT OVERVIEW:

The Model 313L from GP:50 is a line of highly accurate and reliable submersible level transmitters. The corrosion-resistant 316L stainless steel construction, and an integrated hydrophobic breather vent help provide years of maintenance-free service.

FIELD OPTIONS:

- Slim 0.69" (1.74 cm) diameter (Model 313S)
- Titanium construction (Model 313L-NI)
- Additional Hytrel cable and Tefzel® jacketed cable lengths
- Tapered inlet with stand-off plate for wastewater
- Remote zero and span adjustments

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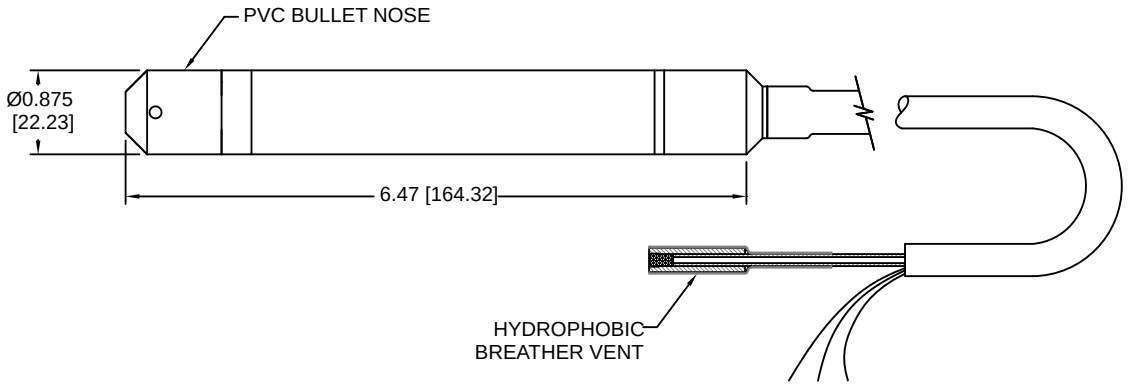
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313L
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** 9 to 36 Vdc
- **Output Signal:** 4-20 mA
- **Circuit Protection:** Short circuit or reversed wired – Indefinite
- **Load Resistance:** 1400 Ω max. at 40 Vdc excitation
- **Response Time:** ≤5 ms to 90%
- **Connection:** Hytrel jacketed, 4-conductor, 18 AWG with vent tube and hydrophobic filter, 8' long, other lengths available.

MATERIALS OF CONSTRUCTION

- **Housing:** 316L stainless steel, optional titanium
- **Pressure Cavity:** 316L stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO, ±0.2% FSO, and ±0.1% FSO

MECHANICAL

- **Zero Balance and FSO:** ±1.0% FSO @ +70 °F
- **Process Connection:** PVC bullet nose
- **External Pressure:** Rated to 900 ft WC (274 meters) max.
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 4X FSO
- **Approximate Weight:** 10 oz (0.3 kg) nominal, options may increase weight
- **Diameter:** 0.875" (2.22 cm)

PRESSURE RANGES

- 0-20" WC thru 300 PSI (50 MBAR to 21 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-32 °C to +60 °C)
- **Operating:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Storage:** -40 °F to +195 °F (-40 °C to +90.6 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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TITANIUM SUBMERSIBLE LEVEL TRANSMITTER

Model 313L-NI
Titanium Submersible Level Transmitter

MODEL 313L-NI

FEATURES:

- 0 to 20" WC thru 0 to 300 PSI (692 feet WC)
- 4-20 mA output
- Rugged, welded, leak-proof construction
- Slim 1.0" (2.5 cm) diameter titanium housing
- Up to 0.10% FSO accuracy

APPLICATIONS:

- Deep well and borehole
- Groundwater monitoring
- Reservoirs / dams
- Rig ballast control
- Weirs, wells, pond, reservoir, and dam level

PRODUCT OVERVIEW:

Model 313L-NI utilizes an all-titanium design to provide long term stability and continued performance under the harshest conditions, including corrosive and hazardous chemical applications. The slim design and high media resistance perform exceptionally well in down-hole applications that often have tight space constraints and caustic environmental conditions.

FIELD OPTIONS:

- 1.0" and 0.69" (1.74 cm) housing diameter
- Remote zero-span adjust
- Lightning suppression
- Additional lengths, Tefzel® or Hytrel jacketed cable

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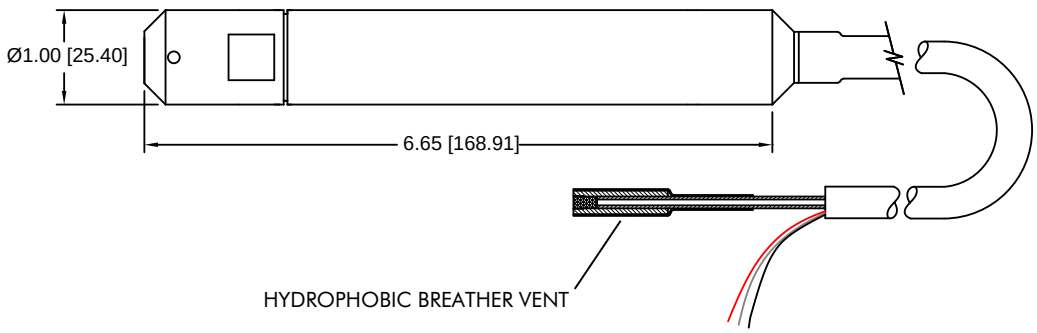
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313L/NI
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 8 to 36 Vdc
- **Output Signal:** 4-20 mA output
- **Circuit Protection:** Short circuit or reversed wired – Indefinite
- **Load Resistance:** 1400 Ω max. at 40 Vdc excitation
- **Response Time:** ≤5 ms to 90%
- **Connection:** Molded Hytrel jacketed, 6-conductor with breather tube, 24 AWG, 8' long, optional lengths available, Tefzel jacketed cable optional

MATERIALS OF CONSTRUCTION

- **Housing:** Titanium
- **Wetted Material:** Titanium / Ceramic and Viton

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO, ±0.2% FSO, and ±0.1% FSO

MECHANICAL

- **Zero Balance and FSO:** ±1.0% FSO @ +70 °F
- **Process Connection:** PVC bullet nose
- **External Pressure:** Rated to 500 PSI (1,153 ft WC) max.
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 4X FSO
- **Approximate Weight:** 10 oz (0.3 kg) nominal, options may increase weight
- **Diameter:** 0.875" (2.22 cm)

PRESSURE RANGES

- 0-20" WC thru 300 PSI (50 MBAR to 35 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-32 °C to +60 °C)
- **Operating:** -40 °F to +150 °F (-40 °C to +65.5 °C)
- **Storage:** -40 °F to +150 °F (-40 °C to +65.5 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F at full scale

Standard configurations shown.
Please consult factory for other options.

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LOW-COST SUBMERSIBLE LEVEL TRANSMITTER

MODEL 1102 / 1103

Model 1102 / 1103
Submersible Level Transmitter

FEATURES:

- Low-cost, high-reliability
- Submersible to 700 feet WC (213.4 meters WC)
- 1" (2.5 cm) diameter
- Up to ±0.2 % FSO accuracy
- All 316L stainless steel construction (optional titanium)

APPLICATIONS:

- Wet wells, ponds, rivers and tank level measurements
- Water and waste water treatment
- Ground water monitoring
- Irrigation

PRODUCT OVERVIEW:

The Model 1102/1103 from GP:50 is a family of submersible level transmitters, designed to provide high-accuracy measurements at a competitive price point. They are offered with an all 316L stainless steel construction for extended corrosion-free service life. An optional sludge screen is available for viscous media or wastewater applications.

FIELD OPTIONS:

- Lightning and surge protection
- Optional sludge screen for viscous media or wastewater
- Cable lengths to more than 3,000 ft with optional Tefzel® jacketed cable
- Optional Titanium construction

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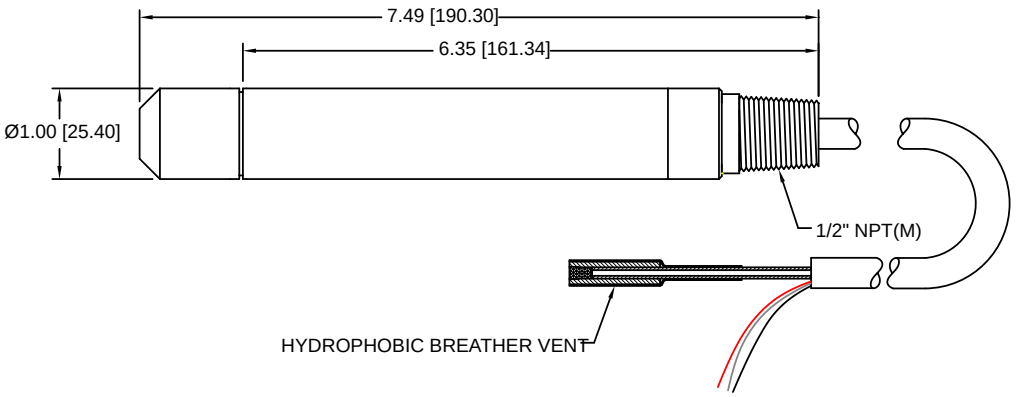
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 1102	MODEL 1103
RED	+EXC	+EXC/SIG
GRN	+SIG	N/C
WHT	N/C	N/C
BLK	-EXC/SIG	-EXC/SIG
BLU	N/C	N/C
BRN	N/C	N/C
SHIELD	OPEN	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9 to 36 Vdc
- **Output Signal:**

(1102) 0 to 5 Vdc

(1103) 4-20 mA

- **Circuit Protection:** Lightning and surge protection optional
- **Response Time:** <5 ms
- **Connection:** 1/2" NPT (M) conduit with 8.5' of 18 AWG, 4 conductor, shielded, Hytrel jacketed cable with integral vent tube and hydrophobic filter

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO

Improved: ±0.2% FSO

Zero & Span Balance: ±2.0% FSO

MATERIALS OF CONSTRUCTION

- **Housing and Pressure Cavity:**

316 stainless steel (Optional Titanium)

- **Cable:** Hytrel (Optional Tefzel)

MECHANICAL

- **Process connection:** 7/16-20 (M) with PVC bullet nose
- **Proof Pressure:** 1.5X FSO
- **Burst Pressure:** 3X FSO
- **Weight:** <12 oz (340 g)
- **Diameter:** 1" (25.4 mm)

PRESSURE RANGES

- 0 to 5 PSI thru 0 to 300 PSI (344 mBAR thru 21 BAR)
- 0 to 12 ft WC thru 0 to 700 ft WC (762 mm thru 213 m WC)

THERMAL SPECIFICATIONS

- **Compensated:** 0° F to +140 °F (-7 °C to +60 °C)
- **Operating Temperature:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Storage:** -40 °F to +195 °F (-40 °C to +90.6 °C)
- **Effect on Zero/Span:** < ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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MODEL 1002 / 1003

1002 / 1003
Low-Cost OEM Pressure Transducer

FEATURES:

- Low-cost, high reliability
- Up to 0.25% FSO accuracy
- Compact 0.870" diameter
- Rugged, all welded construction
- NEMA - 4X/IP65 rated
- CE Approved: EN 50 081-1

APPLICATIONS:

- Automotive
- Industrial OEM
- On-board vehicle
- Compressor controls
- Pneumatic/hydraulic controls
- Pump controls

PRODUCT OVERVIEW:

The Model 1002/1003 from GP:50 is a family of lower cost, industrial grade OEM pressure transducers, featuring corrosion-resistant, all stainless steel wetted parts and housings. Series transducers are ideal for higher volume pressure monitoring applications, particularly where lower costs are required, yet where the need for precision measurement accuracy remains. Units are available with choice of 4-20 mA, 0 to 5 Vdc or 0 to 10 Vdc output, as well as various electrical connection and pressure port options. Typical applications for the Model 1002/1003 include off-road vehicle, HVAC/R, hydraulic and pneumatic control systems, pumps and compressors, and industrial engine pressure monitoring.

FIELD OPTIONS:

- Vdc & 4-20 mA output
- Alternate connectors & pressure ports

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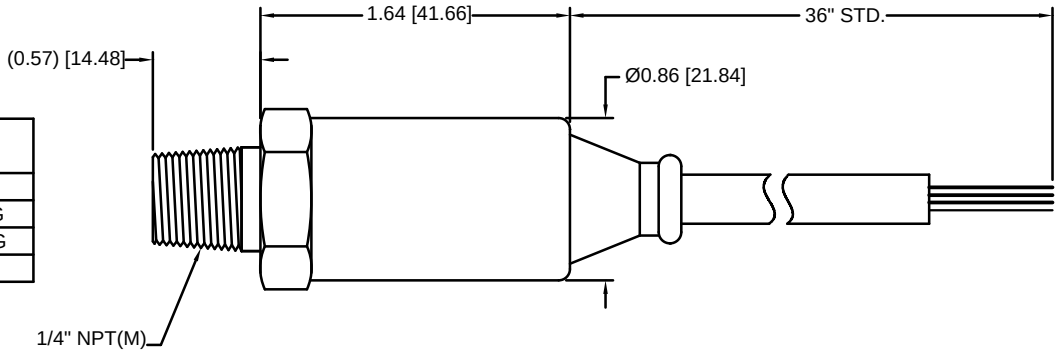
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

WIRE	MODEL 1002	MODEL 1003
1/WHT	+SIG	N/C
2/BLK	-EXC/SIG	-EXC/SIG
3/RED	+EXC	+EXC/SIG
4/SHIELD	N/C	N/C

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9 to 36 Vdc
- **Output Signal:**

(1002) 0 to 5 Vdc, 0 to 10 Vdc optional

(1003) 4-20 mA

- **Load Resistance:** 3.5 mA nominal 6 mA max.
- **Approvals:** CE EN 50 081-1
- **Response Time:** <5 ms
- **Connection:** 36" long Belden 8723, 24 AWG, 4 conductor cable

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO

Improved: ±0.2% FSO

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316 stainless steel and 17-4 stainless steel
- **Housing:** 316 stainless steel

MECHANICAL

- **Process connection:** ¼" NPT (M) standard (other options available)
- **Proof Pressure:** 1.5X FSO
- **Burst Pressure:** 3X FSO or 17,500 PSIG (1,207 BAR), whichever is less
- **Weight:** <4 oz (113 g)

PRESSURE RANGES

- 0 to 5 thru 0 to 10K PSI (0.3 thru 689 BAR), gauge, vacuum, and absolute pressure reference available

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-17.7 °C to +82 °C)
- **Operating Temperature:** -40 °F to +180 °F (-40 °C to +82 °C)
- **Storage:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Effect on Zero/Span:** < ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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MODEL 241 / 341

Model 241 / 341
High-Accuracy Pressure Transducer

FEATURES:

- High accuracy to ±0.05% FSO
- High thermal stability +/-0.25% FSO/100 °F
- -40 to +250 °F compensation
- Compact, lightweight, all stainless steel design
- Less than 4 millisecond response time

APPLICATIONS:

- Dynamometer testing
- Transmission testing
- Brake testing
- Hydraulic & Pneumatic valve testing
- Jet engine testing
- Emission test stands

PRODUCT OVERVIEW:

Model 241/341 from GP:50 is our most accurate pressure transducer. It is designed specifically for aerospace and automotive test stand applications. More than 25 years of field expertise went into the design of a pressure transducer for exceptional reliability. The compact, corrosion-resistant, all-welded stainless steel design of the Model 241/341 offers ease of installation within space constrained environments. Static accuracy is available to ±0.05% FSO, with a total thermal error of 0.20% FSO over the compensated temperature range.

FIELD OPTIONS:

- Optional zero and span adjustment
- Shunt calibration for active line testing without a pressure source
- Comprehensive list of process and electrical connections for existing application retrofits

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DIMENSIONAL DRAWING

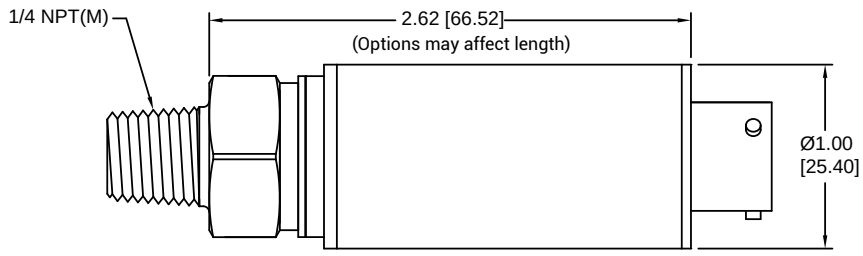
All dimensions are in inches (mm)

MODEL 241 WIRING

PIN/WIRE	DESCRIPTION
A/1/RED	+EXC
B/2/GRN	+SIG
C/3/-	N/C
D/4/BLK	-EXC/SIG
E/5/BRN	N/C or SHUNT
F/6/ORG	PROGRAM

MODEL 341 WIRING

PIN/WIRE	DESCRIPTION
A/1/RED	+EXC
B/2/BLK	-EXC/SIG
C/3/-	N/C
D/4/BLU	PROGRAM GND
E/5/BRN	N/C or SHUNT
F/6/ORG	PROGRAM



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9 to 32 Vdc (some options may affect this)
- **Output Signal:**
  (Model 241) 0 to 5 Vdc
  (Model 341) 4-20 mA
- **Load Resistance:**
  (Model 241) 100K Ω min.
  (Model 341) 1150 Ω max. at 32 Vdc
- **Circuit Protection:**
  Reverse polarity protected
  Output may be grounded indefinitely
  Over voltage protection to 1kV for <1ms
- **Response Time:** <4 msec typical
- **Connection:** PTIH-10-6P

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  ≤2,000 PSI: 316L SST w/silicon oil fill (Other fill available), Hastelloy optional
  >2,000 PSI: 17-4 PH SST, Inconel 718, 316L SS optional
- **Housing:** 300 series SST

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- ±0.10% and ±0.05% FSO
- Zero Balance and FSO: ±0.5% FSO @ 70 °F

MECHANICAL

- **Process Connection:** 1/4" NPT (M)
  (consult factory for complete list of options)
- **Proof Pressure:** 2X FSO or 22.5K PSI max. (1,551 BAR)
  (varies by pressure range)
- **Burst Pressure:** 5X FSO or 22.5K PSI max. (1,551 BAR)
- **Random Vibration:** 25 G RMS (20 to 2000 Hz)
- **Shock:** 100G peak for 11 msec, ½ Sine

PRESSURE RANGES

- 0-30" WC thru 20K PSI (1,379 BAR) Gauge, Vacuum, Absolute, Sealed Gauge (both hermetic and non-hermetic)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-18 °C to +82 °C)
- **Effect on Zero/Span:** ±0.5% FSO/100 °F each
  (±1.0% FSO/100 °F from -40 to 185 °F / (-40 °C to +85 °C)
- **Operating Temp:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Storage Temp:** -40 °F to +250 °F (-40 °C to +121 °C)

Improved performance options:
- **Expanded Ranges:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Improved Performance:**
  ±0.20% FSO/100 °F (-40 °F to +250 °F (-40 °C to +121 °C))

Standard configurations shown.
Please consult factory for other options.

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VEHICLE TEST PRESSURE TRANSDUCER / TRANSMITTER

Model 142 / 242 / 342
Vehicle Test Pressure Transducer / Transmitter

MODEL 142 / 242 / 342

FEATURES:

- Ranges 0 to 50 thru 0 to 15K PSI
- Broad operating temperature range of -40 °F to +250 °F (-40 °C to +121 °C)
- Accurate up to ±0.1% FSO
- All-welded, hermetically sealed, stainless steel
- Compact size

APPLICATIONS:

- On-board vehicle testing
- Ground support systems
- Military flight testing
- Hydraulic test stands
- Jet engine test stands

PRODUCT OVERVIEW:

Developed from +20 years of aerospace experience, the 42 series was designed with aerospace criteria for industrial applications. The compact all welded construction offers higher accuracies and a broad thermally compensated range. The 42 series has all the performance and durability of an aerospace grade unit, but in industrial grade pricing.

FIELD OPTIONS:

- Exotic wetted materials
- Optional process and electrical connections

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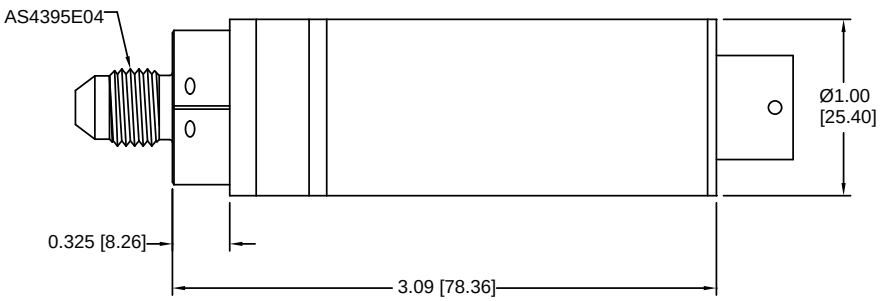
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 142	MODEL 242	MODEL 342
A/1	+EXC	+EXC	+EXC/SIG
B/2	+SIG	+SIG	N/C
C/3	-SIG	N/C	N/C
D/4	-EXC	-EXC/SIG	-EXC/SIG
E/5	N/C	N/C	N/C
F/6	N/C	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**

(142) 3.5 to 15 Vdc

(242) 9 to 40 Vdc

(342) 9 to 36 Vdc

- **Output Signal:**

(142) 3.0 mV/V: 0.5% FSO at +70 °F

(242) 0 to 5.0 Vdc: ±0.5% FSO at +70 °F

(342) 4-20 mA: ±0.5% FSO at +70 °F

- **Input Impedance:** (142) 5K Ω nominal, 350 Ω optional
- **Input Current:** (242) 10 mA, nominal
- **Output Current:** (242) 2.0 mA, max. for <0.1% FSO attenuation
- **Circuit Protection:** Reverse polarity, output may be grounded indefinitely
- **Response Time:** 1 millisecond typical
- **Connection:** Bendix PTIH-10-6P connector or equivalent

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
15-5 PH and 316 stainless steel
- **Housing:**
316 stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- Zero Balance and FSO: ±0.5% FSO at +70 °F

Standard: ±0.2% FSO
Improved: ±0.1% FSO

MECHANICAL

- **Process Connection:** AS4395E04 standard, optional ports available
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 5X FSO or 22.5K PSI (1,551 BAR), whichever is less
- **Weight:** 3 oz nominal (85 grams)

PRESSURE RANGES

- 0 to 15 thru 0 to 15K PSI (1 thru 1,034 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Operating Ambient:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Storage:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Effect on Zero/Span:** ±0.75% FSO/100 °F standard

Standard configurations shown.
Please consult factory for other options.

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USB OUTPUT PRESSURE TRANSDUCER

611 / 612
USB Output Pressure Transducer

MODEL 611 / 612

FEATURES:

- USB 1.0 and 2.0 compatible output
- Ranges from 0 to 1 thru 100K PSI (6,895 BAR)
- Improved accuracy to ±0.05% FSO
- Field configurable
- Multi-drop compatible
- Added functionality with Digi-Stand™ software

APPLICATIONS:

- Portable test stands
- Laboratory research
- Hydrostatic test stands
- Calibration stands

PRODUCT OVERVIEW:

The Model 611/612 from GP:50 is a USB output pressure transducer. This model features an intuitive and user-friendly interface that allows for field configuration. For customer convenience, an easy-to-use data acquisition and analysis software is available and fully compatible with any Windows-based terminal program.

FIELD OPTIONS:

- Adjustable response time (1 Hz to 500 Hz)
- Adjustable baud rate
- Adjustable station numbers
- Optional continuous output streaming
- Field re-zero function
- Digital shunt calibration
- Free downloadable Digi-Stand™ software

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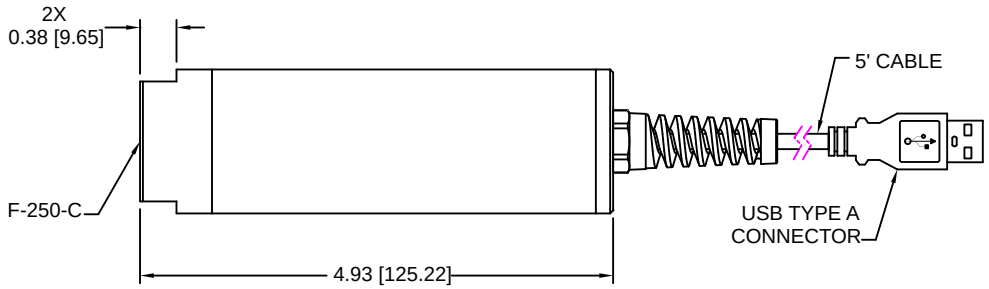
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 611/612
RED	VCC
WHT	USBDM
GRN	USBDP
BLK	CASE GND
SIL	SHIELD



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation voltage:** 4.5 to 5.25 Vdc (from USB port)
- **Output:** Pressure and temperature
- **Current draw:** 70 mA
- **Resolution:** 18 Bit USB 2.0 and below compatible
- **Internal Measuring Rate:** 4.8 KHz
- **Response time:** 10 Hz standard (Field adjustable to 500 Hz)
- **Connection:** USB Output

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  (0 to 100 thru 0 to 60K PSIG) (7 thru 4,137 BAR)
  316 & 17-4 PH stainless steel
  (0 to 61K thru 0 to 150K PSIG) (4,206 thru 10,342 BAR)
  Vascomax 300
- **Housing:** 316 stainless steel

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Standard:** +/-0.5% FSO BFSL
  Improved options:
  Ranges 0-1 thru 0-40K PSI: +/-0.25%, +/-0.15%, and +/-0.05% FSO
  Ranges 0-50K thru 0-100K PSI: +/-0.25%, +/-0.15% FSO
- **Zero Balance:** +/-0.15% FSO
- **Span:** +/-0.15% FSO

MECHANICAL

- **Standard Process Connection:**
  (Model 611) 1/4" NPT (F)
  (Model 612) Autoclave Type (High Pressure Cone)
- **Electrical Connection:**
  Standard 5 ft. (1.5 M) USB Type A connector
  (15 ft. (4.6 m) max.)
  Type B connector available
- **Proof Pressure:** 2X FSO or 22.5K PSI (1,551 BAR), whichever is less (Higher options available)
- **Burst Pressure:** 5X FSO or 23K PSI (1,586 BAR), whichever is less, Vacuum 5X FSO in gauge pressure
- **Approximate Weight:** 10 oz. (0.3 kg) nominal (options may increase weight)

PRESSURE RANGES

- **(Model 611)** 0 to 1 thru 0 to 15K PSIG
  (0-0.069 thru 0-1,034 BAR)
- **(Model 612)** 0 to 20k thru 0 to 100K PSIG
  (0-1,379 thru 0-6,895 BAR)

THERMAL SPECIFICATIONS

- ±1.0 % FSO shift from 0 °F to +185 °F (-17 °C to +85 °C)
- Improved thermal compensation: ±0.25% FSO/100 °F

FORMATS

Absolute, Gauge, Sealed Gauge, Vacuum
(Special option- Differential Pressure)

Standard configurations shown.
Please consult factory for other options.

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CRYOGENIC & HIGH TEMPERATURE PRESSURE TRANSDUCER

Model 311
Cryogenic or High Temperature
Pressure Transducer

Model 311-HD (Cryogenic)
Model 311-QX (High Temperature)

FEATURES:

- Cryogenic service down to -320 °F (-195 °C) process (HD)
- High temperature operation to +350 °F (+177 °C) process (QX)
- Remote electronics via stainless armored flex cable
- ATEX & CSA hazardous area approvals
- Remote electronics provide analog or digital output
- Pressure ranges from 0-150 thru 0-15K PSI (10 thru 1020 BAR)
- Corrosion-resistant, all stainless steel housings and wetted parts
- Economically priced
- Available in 0-5 Vdc (model 211-HD and 211-QX)

APPLICATIONS:

- CNG/LNG processing, transportation, dispensing & storage
- Oil field and well service nitrogen pumping equipment
- High Temperature Reactor pressures

PRODUCT OVERVIEW:

The Model 311-HD & 311-QX series from GP:50 offer reliable pressure sensing in cryogenic or high temperature applications. Remote mounted electronics provide a high-level 4-20 mA or 0-5 Vdc (model 211) output with optional CANbus, RS485 Modbus, USB or RS232 digital protocols. The SST, armor jacketed cable provides flexibility in mounting the electronics away from the process temperature. 18"-36" remote flex lengths are available.

FIELD OPTIONS:

- ATEX, CSA approvals
- 18"-36" armor jacketed cable lengths
- Zero and span adjustments
- Inconel, Monel and Hastelloy ports/sensors
- 0-5 Vdc output (model 211), CANbus, RS485 Modbus, USB, or RS232 digital protocols

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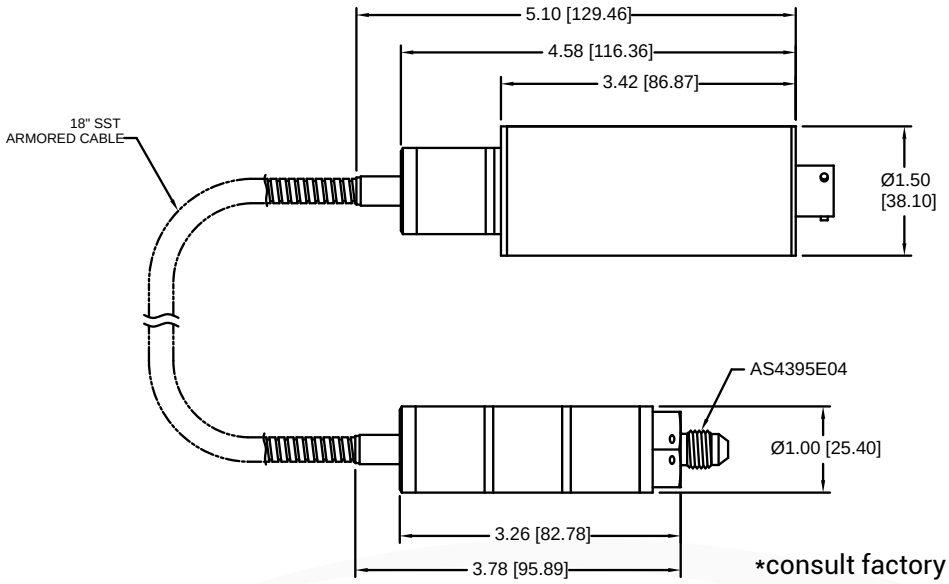
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	MODEL 311 SERIES
A/1	+EXC/SIG
B/2	CASE GND
C/3	N/C
D/4	-EXC/SIG
E/5	N/C
F/6	N/C

*consult factory for optional output wiring

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:**
  Model 311: 4-20 mA
  Model 211: 0 to 5 Vdc
- **Excitation Voltage:**
  Model 311: 10 to 28 Vdc
  Model 211: 14.5 to 32 Vdc
- **Response Time:** <4 ms
- **Zero & FSO Balance:** ±1% FSO
- **Connection:** PTIH-10-6P (6-Pin Amphenol)

MATERIALS OF CONSTRUCTION

- Port/Sensor: 17-4PH stainless steel (Inconel, Hastelloy, Monel optional)
- Armored cable: 316L
- Housing: 316/316L

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: 0.5% FSO
Improved: 0.2% FSO

MECHANICAL

- **Process Connection:** AS4395E04 pressure port
- **Proof Pressure:** 1.5X Pressure Range
- **Burst Pressure:** 2X Pressure Range
- **Approximate Weight:** 1 lb (0.5 kg)

PRESSURE RANGES

- **Cryogenic Ranges:** 150 PSI thru 6K PSIG (10 thru 345 BAR)
- **High Temperature Ranges:** 150 PSI thru 15K PSIG (10 thru 1,020 BAR)
- Sealed gauge or absolute formats

THERMAL SPECIFICATIONS

Cryogenic Unit (HD):

- **Compensated:** -320 °F to +70 °F (-195 °C to +21.1 °C)
- **Operating Range:**
  (Ambient) -40 °F to +250 °F (-40 °C to +122 °C)
- **Effect on Zero/Span:**
  ±1.0% FSO/100 °F for ranges ≥ 1K PSI (69 BAR)
  ±2.0% FSO/100 °F for ranges < 1K PSI (69 BAR)

High Temperature Unit (QX):

- **Compensated:** +70 °F to +350 °F (+21.1 °C to +177 °C)
- **Operating Range:**
  (Ambient) -40 °F to +250 °F (-40 °C to +122 °C)
- **Effect on Zero/Span:**
  ±1.0% FSO/100 °F for ranges ≥ 1K PSI (69 BAR)
  ±2.0% FSO/100 °F for ranges < 1K PSI (69 BAR)

Units are optimized to run at the extreme temperature.
Cryogenic Units: -320 °F
High Temperature Units: +350 °F

Standard configurations shown.
Please consult factory for other options.

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SERIAL / DIGITAL INTERFACE SUBMERSIBLE LEVEL TRANSMITTER

Model 913
Serial / Digital Interface
Submersible Level Transmitter

MODEL 913

FEATURES:

- SDI-12 interface
- 0-30" WC to 0-700 feet WC (762 mm to 213 meters WC)
- Welded, leak-proof, 316L stainless steel construction
- Optional 0.685" (1.7 cm) diameter
- Up to ±0.05% FSO accuracy
- Optional Tefzel® jacketed cable

APPLICATIONS:

- Remote well monitoring (Wet wells, ponds, rivers)
- Ground water monitoring
- Tank level measurements
- Water treatment
- Irrigation systems

PRODUCT OVERVIEW:

The Model 913 from GP:50 is a high-accuracy submersible level transmitter. It features an asynchronous serial communication output (SDI-12-v 1.3), typically used to monitor environmental data. This also allows for communication with compatible data loggers or data acquisition systems. The incorporation of a hydrophobic breather vent ensures extended trouble-free service within demanding applications. These features, combined with the low power requirements of the Model 913, make it particularly ideal for remote well monitoring applications.

FIELD OPTIONS:

- Available in 0.875 or 0.685" (2.2 or 1.7 cm) diameter
- Hytrel or Tefzel® jacketed cable
- Titanium construction

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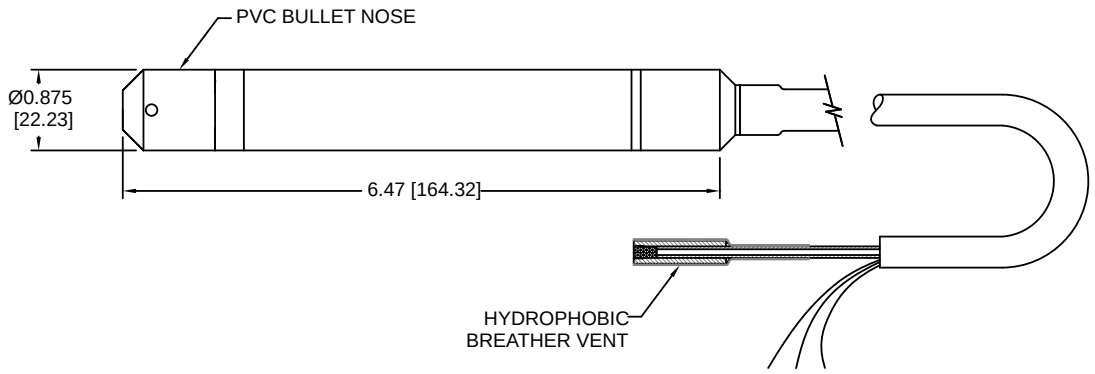
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 913
RED	+EXC
BLK	-EXC
GRN	SDI-12 DATA
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 6.0 to 36 Vdc
- **Output Signal:** SDI-12- standard version 1.3
- **Input Impedance:** >10 MΩ
- **Resolution:** 24 BIT
- **Baud Rate:** 1200 baud
- **Circuit Protection:** Short circuit or reversed wired – Indefinite Input protection and EMC filtering
- **Response Time:** 1 sec.
- **Idle Current:** <50 μA, <15 mA consumption during measurement
- **Connection:** Hytrel jacketed, 4-conductor, 18 AWG with vent tube and hydrophobic filter, 8′ long, additional lengths available

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- Standard: ±0.5% FSO
- Improved: ±0.2% FSO, ±0.1% FSO, ±0.05% FSO
- Zero Balance and FSO: ±1.0% FSO

MATERIALS OF CONSTRUCTION

- **Housing:** 316L stainless steel (Optional titanium)
- **Pressure Cavity:** 316L stainless steel (Optional titanium)

MECHANICAL

- **Process connection:** PVC bullet nose
- **External Pressure:** Case rated to 900 feet WC (275 meters WC)
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 3X FSO
- **Weight:** <10 oz (284 g)
- **Diameter:** 0.875" (2.2 cm) standard, 0.685" (1.7 cm) optional

PRESSURE RANGES

- 0-30" WC to 0-700 feet WC (762 mm to 213.4 meters WC)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-7 °C to +60 °C)
- **Operating Temperature:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Storage:** -40 °F to +195 °F (-40 °C to +90.6 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F
- **Temperature Resolution:** ±0.1 °C

Standard configurations shown.
Please consult factory for other options.

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BLUETOOTH WIRELESS PRESSURE TRANSDUCER

iDucer™

iDucer™
Bluetooth Wireless Pressure Transducer

FEATURES:

- Bluetooth 4.0 wireless output
- Self contained, battery powered (short range, low energy)
- Connects with smart phone, tablets and PC
- Pressure ranges 0 to 1 PSI thru 0 to 30K PSI (70 mBAR thru 2,068 BAR)
- Standard accuracy of 0.5% FSO
- Power save mode

APPLICATIONS:

- Irrigation
- HVAC
- Hydraulic test stands
- Marine

PRODUCT OVERVIEW:

GP:50's iDucer is an innovative design that allows for wireless pressure measurement in almost any location. Its unique design allows for those remote applications where conventional pressure transducers will not be practical.

IOS APPLICATION:

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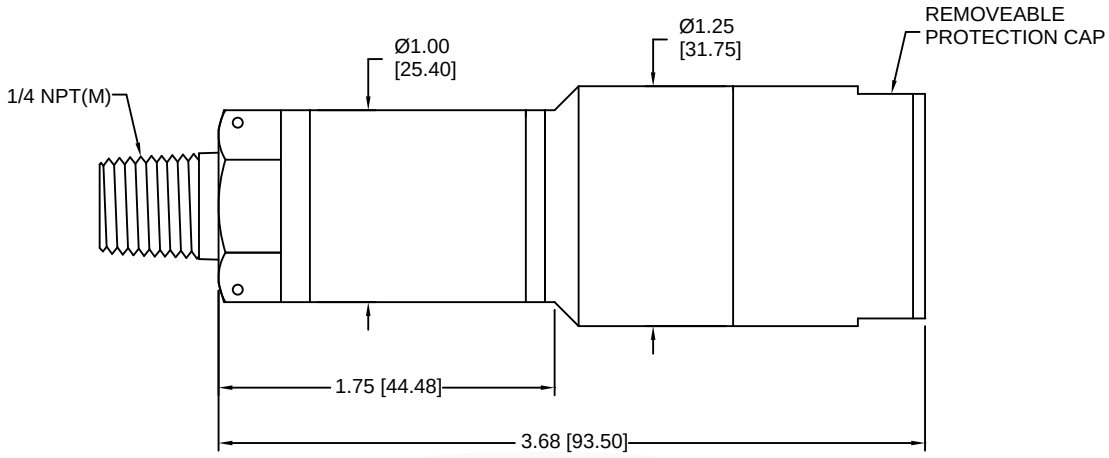
A5SL-031
REV-B

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



REFERENCE SPECIFICATIONS

ELECTRICAL

- **3-volt battery:** standard CR2032 coin cell
- **Vdc Range:** 2.0 V to 3.6 V
- **Output signal:** Bluetooth Smart 4.0
- **Connection:** Wireless

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  ≤2000 PSI 316L SST w/silicon oil fill (Other fill available)
  >2000 PSI 17-4 PH SST
- **Housing:** 316 stainless steel

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- ±0.5% FSO standard. (±0.25% available)
- ±0.1% FSO Noise Floor

MECHANICAL

- Process Connection: ¼" NPT (M)

PRESSURE RANGES

- 0 to 1 PSI thru 0 to 30K PSI (0.1 thru 2,068 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** +32 °F to +125 °F (0 °C to +50 °C)
- **Operating process:** -4 °F to +185 °F (-20 °C to +85 °C)
- **Storage:** -60 °F to +250 °F (-50 °C to +125 °C)
- **Effect on zero/span:** <±1.5% FSO

BATTERY LIFE

- 1 Reading/SEC continuously for 8 hrs.
  Life can be extended wtih slower update rate

Standard configurations shown.
Please consult factory for other options.

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MODEL 240/340 AI/AN

Model 240/340 AI/AN
Hazardous Locations Pressure Transmitter

Current Approval:

Pending Approval:

FEATURES:

- Compact design for easier installation
- All stainless steel welded construction
- ATEX & IEC Approvals
- Improved accuracy and thermally compensated
- Ranges 0 to 1 PSI thru 0 to 50K PSI (69 Mbar to 3447 Bar)
- FM, & CSA Approvals pending

APPLICATIONS:

- Natural Gas Compression
- Rig safety systems
- Well head control
- Control panels
- On-board transmission & engine monitoring

PRODUCT OVERVIEW:

GP:50's Model 40 series incorporates over 25 years of oil field proven design in a 1" diameter package. The 40 series provides a rugged solution for hazardous approved areas, especially where space constraints are a concern. Its all welded stainless steel design will provide years of reliable service in some of the harshest environments.

APPROVALS:

Currently Available:

- ATEX/IEC Intrinsically Safe: II 1 G Ex ia IIC T5 Ga
- ATEX/IEC Zone 2: II 3 G Ex nA/ic IIC T5 Gc

Pending:

- FM/CSA: Intrinsically Safe: Class I, Division 1, Groups A-G, T5, Ex ia IIC T5
- FM/CSA: Division/ Zone 2: Class I Division 2, Groups A-G, T5, Ex nC/nA/nL T5

 2770 Long Road, Grand Island, NY 14072 USA

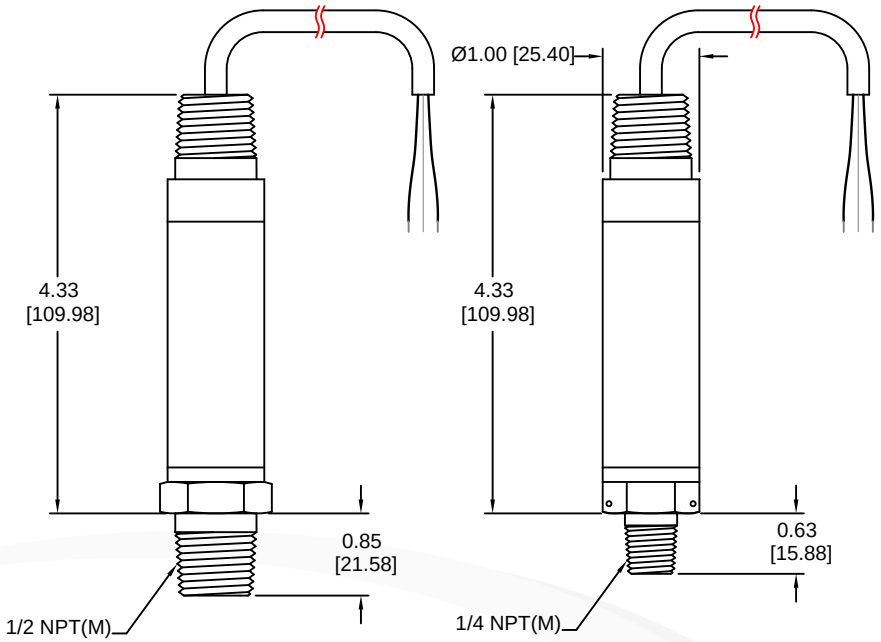
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 240	MODEL 340
RED	+EXC	+EXC/SIG
GRN	+SIG	CASE GND
WHT	CASE GND	N/C
BLK	-EXC/SIG	-EXC/SIG
GRN/YEL	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**
  (Model 240) 9 to 28 Vdc
  (Model 340) 10 to 28 Vdc
- **Output Signal:**
  (Model 240) 0-5 Vdc, 1-5Vdc, and 0-10Vdc
  (Model 340) 4-20 mA
- **Load Impedance:**
  (Model 240) 50K Ω max. 24 Vdc
  (Model 340) 750 Ω max. 24 Vdc
- **Input Current:**
  (Model 240) 8 mA nominal
- **Insulation Resistance:** >10 MΩ at 50 Vdc and +70 °F
- **EMI Specs:** EMC directive 2004/108/EC, EN 61326 emission
- **Connection:** 1/2" NPT M conduit w/ 6ft 18 AWG multi-conductor cable

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  ≤2000 PSI 316L SST w/silicon oil fill (Fomblin oil fill available)
  >2000 PSI 17-4 PH SST (Hastelloy and Inconel available)
- **Housing:** 316 stainless steel

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Standard** ±0.20% FSO
- **Optional** ±0.10%

Zero Balance and FSO: ±1% FSO at +70 °F

MECHANICAL

- **Process Connection:** 1/4" NPT (M), options available
- **Proof Pressure:** 2X FSO up to 20K PSI,1.2X > 20K PSI
- **Burst Pressure:** 5X FSO up to 20K PSI, 1.5X > 20K PSI
- **Approximate Weight:** 0.5 lb nominal, options may increase weight
- **Environmental:** Design to meet IP67 (Some options may affect this. Consult factory if critical.)

PRESSURE RANGES

- 0 to 1 PSI thru 0 to 50K PSI, some options may affect range (PSIG, PSIS, PSIA, PSIV & compound ranges available)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +250 °F (-40 °C to +121 °C)
- **Operating:** -40 °F to +176 °F (-40 °C to +80 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±1.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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1171-LDPE
High-Pressure, High-Temperature
Process Transmitter

MODEL 1171-LDPE

FEATURES:

- One piece sensor design
- External G¾, G½ & G⅜ process connections
- Magnetically coupled adjustment
- Hermetically sealed
- Process temperature rated to +350 °F (+175 °C)

APPLICATIONS:

- Low-density polyethylene (LDPE)
- Steam cracking furnaces
- Ethylene gas production
- High-pressure reactors

PRODUCT OVERVIEW:

Model 1171-LDPE from GP:50 is a high-pressure, high-temperature process transmitter. Its process connections are directly compatible with all G-type threads or lens seals, as well as high pressure coned connections. A highly robust transmitter design incorporates an integral high-temperature sensor that further offers minimal thermal shift over a broad temperature range. Its single piece, non-welded construction eliminates weld failure risks.

APPROVALS:

- **Hazardous Location FM/CSA Explosion Proof:**
  Class I, II, III Division I / Groups A, B, C, D, E, F, G
  (FM Standard / CSA requires P option code)
- **FM/CSA Intrinsically Safe:**
  Class I, II, III Division I / Groups A, B, C, D, E, F, G

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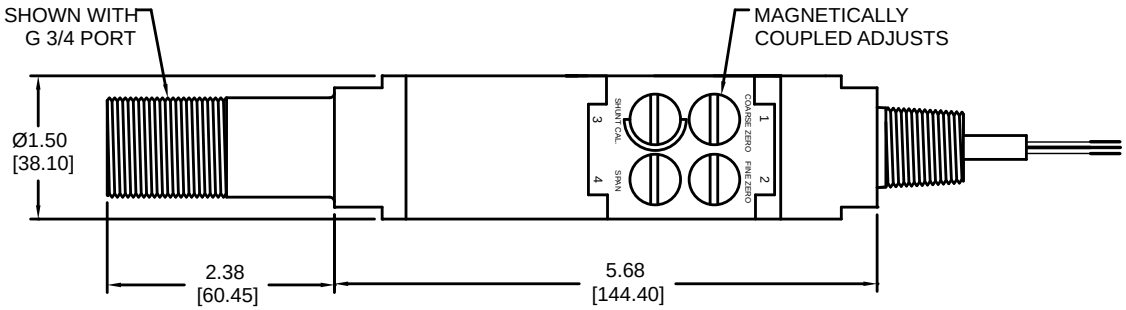
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 1171-LDPE
1/RED	+EXC/SIG
2/BLK	-EXC/SIG
3/GRN	CASE GND



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Voltage Input:** 9 to 36 Vdc
- **Output Signal:** 4-20 mA, two-wire loop powered
- **Load Impedance:** 500 Ω
- **Insulation Resistance:** Better than 10 MΩ at 50 Vdc
- **Circuit Protection:** Reverse polarity
- **Response Time:** 5 ms, 10 to 90% FSPR
- **Connection:** 1/2" NPT (M) with 72" leads

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- <0.25% FSO

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**

Inconel 718, K12X, or 13-8 Monel

- **Housing:**

300 series stainless steel

MECHANICAL

- **Process connection:** G ¾", G1½" or G⅜" (M) metal-to-metal "Lens" seal
- **Proof Pressure:** 1.2X full-scale or 108K PSI (7,446 BAR) whichever is less
- **Burst Pressure:** 1.5X full-scale or 108K PSI (7,446 BAR) whichever is less
- **Weight:** 2 lbs (0.9 kg) nominal

PRESSURE RANGES

- 0 to 1,000 PSI thru 0 to 90K PSI (69 thru 6,100 BAR)

THERMAL SPECIFICATIONS

- **Operating Ambient:** -40 °F to +200 °F (-40 °C to +100 °C)
- **Operating Process:** -40 °F to -350 °F (-40 °C to +175 °C)
- **Storage Ambient:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** <±1.0% FSO/100 °F
- **Zero Balance:** Adjustable

Standard configurations shown.
Please consult factory for other options.

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DUAL PRESSURE & TEMPERATURE TRANSDUCER

Model 243 / 343
Dual Pressure & Temperature
Transducer

MODEL 243 / 343

FEATURES:

- Pressure and temperature in a single device
- Dual 4-20mA, 0 to 5 Vdc or RTD Temperature outputs
- Maximum process temperatures from -65 °F to +300°F (-54 °C to +159 °C)
- Probe lengths from 3/4" to 7" (19mm to 178mm)
- Compact 1-inch (25.4 mm) diameter
- Rugged all-welded stainless steel design
- Standard ranges from 0-50 PSI thru 0-10K PSI (3.5 thru 690 bar)
- Calibrated Temperature ranges from -40°F to +350°F (-40°C to 176.6°C)

APPLICATIONS:

- Vehicle, engine and transmission oil monitoring
- Oil rig topside controls
- Automotive test stands
- Process skids
- Medical equipment
- Laboratory R&D

PRODUCT OVERVIEW:

The Model 243 / 343 series from GP:50 is an all-stainless steel, dual pressure and temperature transducer with 4-20 mA and 0-5 V output. Its compact design reduces I/O and insertion points where size and weight are considerations. Units are available in a variety of pressure and temperature ranges.

FIELD OPTIONS:

- Alternate probe lengths, process ports and electrical connections
- Optional improved temperature specifications available
- Dual 0-5 Vdc or 4-20 mA outputs
- 0-5 Vdc or 4-20 mA pressure and RTD temperature output options

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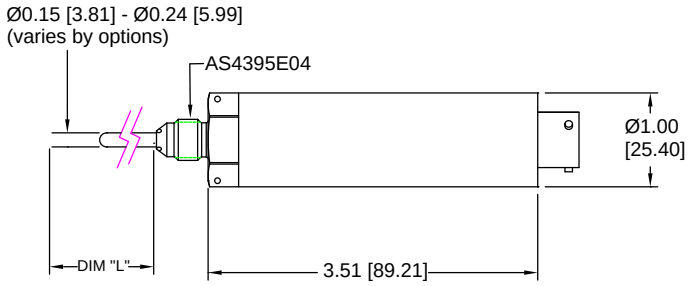
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 243	MODEL 343
A	+EXC (PRESS.)	+EXC (PRESS.)
B	-EXC (PRESS.)	-EXC (PRESS.)
C	+SIG (PRESS.)	+EXC (TEMP.)
D	+EXC (TEMP.)	-EXC (TEMP.)
E	-EXC (TEMP.)	N/C
F	+SIG (TEMP.)	N/C

L = 0.50 TO 7.00 INCH PROBE LENGTH



Shown with 4-20mA pressure & RTD temperature output
(Dual 4-20mA or 0-5Vdc may affect length)

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9.0 to 36 Vdc
- **Output Signal:**
  (243) 0 to 5 Vdc
  (343) 4-20 mA
- **100 or 1000 Ohm Platinum** RTD output options for Temperature
- **Output Current:** 2.0 mA max. for <0.1% FSO attenuation
- **Load Impedance:** 1,350 Ω max. at 36 Vdc and 750 Ω max. Vdc
- **Insulation Resistance:** >100 MΩ at 50 Vdc and +70 °F (+21 °C)
- **Connection:** 6-pin bendix PT1H-10-6P stainless steel options available

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316L or 17-4PH SST
- **Housing:** 300 series stainless steel

ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Temperature:** ±3.0 °F
- **Zero Balance:** ±1% FSO
- **Pressure:** Standard: ±0.5% FSO
  Improved: Optional ±0.2% FSO or ±0.1% FSO

MECHANICAL

- **Process Connection:** 1/4" NPT (M) (other ports available)
- **Probe Length:** 3/4" thru 7"
- **Proof Pressure:** 2X FSO (optional 5X)
- **Burst Pressure:** 5X FSO
- **Approximate Weight:** 5 ounces

Optional ports and probe lengths available

PRESSURE RANGES

- 0-50 thru 0-10K PSI (3.5 thru 690 BAR) gauge, sealed gauge, absolute

TEMPERATURE RANGES

- Calibrated ranges from -40 °F to +350 °F (-40 °C to +176.6 °C)
  (Consult factory for other ranges - Electronics rated to 250 °F)

THERMAL SPECIFICATIONS

- **Thermal Response Time:** <2 secs
- **Compensated Pressure:** +30 °F to -185 °F (-1 °C to -120 °C)
- **Operating Ambient:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Operating Process:** -40 °F to +300 °F (-40 °C to +150 °C)
- **Storage:** -65 °F to +250 °F (-55 °C to +120 °C)
- **Effect on zero/span pressure:** <±0.5 % FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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Model 540
CANbus Digital Output
Pressure Transducer

MODEL 540

FEATURES:

- CANbus SAE J1939 or CANopen protocol
- Compact 1-inch (25.4 mm) diameter
- Rugged all-welded stainless steel design
- Standard ranges from 0-1 PSI thru 0-10K PSI (3.5 thru 690 bar)
- Up to 0.05% FSO accuracy
- Field programmable options

APPLICATIONS:

- Automotive test stands
- Areospace testing
- Laboratory R&D
- Oilfield vehicles
- Oil rig controls

PRODUCT OVERVIEW:

GP:50 model 540 CAN bus digital output pressure transducer provides high resolution, accuracy, and improved thermal performance to meet the demands of the automotive, medical and laboratory test markets. The CAN open protocol allows for multiple devices on a single bus reducing installation time and cost.

FIELD OPTIONS:

- Field adjustable zero & span
- Adjustable message addresses, bit rate and custom streaming
- Optional extended CAN 2.0B 29-bit CAN identifiers
- Dual temperature & pressure output available (Model 543)

 2770 Long Road, Grand Island, NY 14072 USA

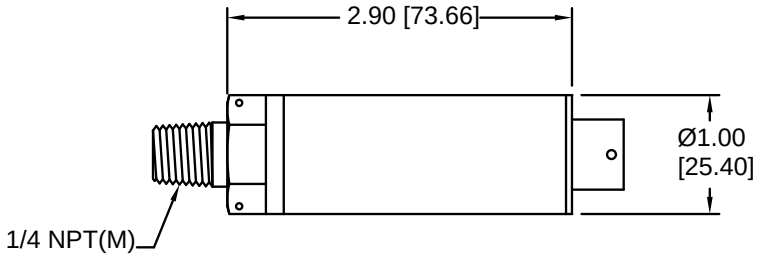
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 540
A/1	+EXC
B/2	-EXC
C/3	CASE GND
D/4	CANBUS HI
E/5	CANBUS LOW
F/6	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**
  Standard: 9-36 Vdc
  Optional Expanded: 4.5 to 37 Vdc
- **Output Signal:** CANbus SAE J1939 or CANopen
- **Current Draw:** 40 mA
- **Standard Resolution:** 18-bit
- **Zero Balance:** ±0.2% FSO @ 70 °F
- **Standard Messaging:**
  Pressure, temperature & raw sensor signals
  (Up to four messages can be streamed)
- **Standard CAN Protocol:** 11-bit CAN identifiers
  (Optional Extended CAN 2.0B 29-bit CAN identifiers)
- **Connection:** PTIH-10-6P

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH stainless steel or 316L Stainless Steel
- **Housing:** 300 series stainless steel
- ≤ 300psi contains silicon oil / optional Fomblin

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO

Improved: Optional ±0.2% FSO, ±0.1% FSO, or 0.05% FSO accuracy

MECHANICAL

- **Process connection:** 1/4" NPT (M)
  (consult factory for other options)

PRESSURE RANGES

- 0-1 PSI thru 0-10K PSI (3.5mBAR to 344 BAR)
  gauge, sealed gauge, absolute

THERMAL SPECIFICATIONS

- **Compensated:** +30 °F to -185 °F (-1 °C to -120 °C)
- **Operating Ambient:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Operating Process:** -40 °F to +250 °F (-40 °C to +120 °C)
- **Storage:** -65 °F to +250 °F (-55 °C to +120 °C)
- **Effect on zero/span:** <±0.5 % FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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ULTRA HIGH DIFFERENTIAL PRESSURE TRANSMITTER

MODEL 114 / 214 / 314

Model 114 / 214 / 314
Ultra High Differential Pressure Transducer

FEATURES:

- Ranges from 500 to 20K PSID (35 to 1,379 BAR D)
- mV/V, Vdc and 4-20 mA output
- Compact welded, stainless steel construction
- Non-filled strain gauge technology
- Up to 0.20% FSO accuracy
- Intrinsically Safe (4-20 mA output only)

APPLICATIONS:

- Pump and compressors
- High pressure valve test
- Hydraulic test stand
- High pressure control systems
- High cyclic applications

PRODUCT OVERVIEW:

The Model 114/214/314 from GP:50 is a family of ultra-high range differential pressure transducers. The series offers +0.50% (BFSL) static accuracy over its standard ranges of 500 to 20K PSID (35 to 1,379 BAR D). Improved accuracy is available to +0.20%. Their rugged, compact design incorporates a unique, non-filled strain gauge sensing technology. These attributes allow the Model 114/214/314 to effectively support high-cycle pressure measurement requirements, even in space constrained environments. An all stainless steel construction, without seals or o-rings, provides high-corrosion resistance. Optional intrinsically safe versions are also available for extreme applications.

FIELD OPTIONS:

- mV/V, Vdc & 4-20 mA output
- Zero and span adjustment
- 80% and 100% shunt calibration
- Submersible option available
- Alternate connectors and pressure ports
- Intrinsically safe

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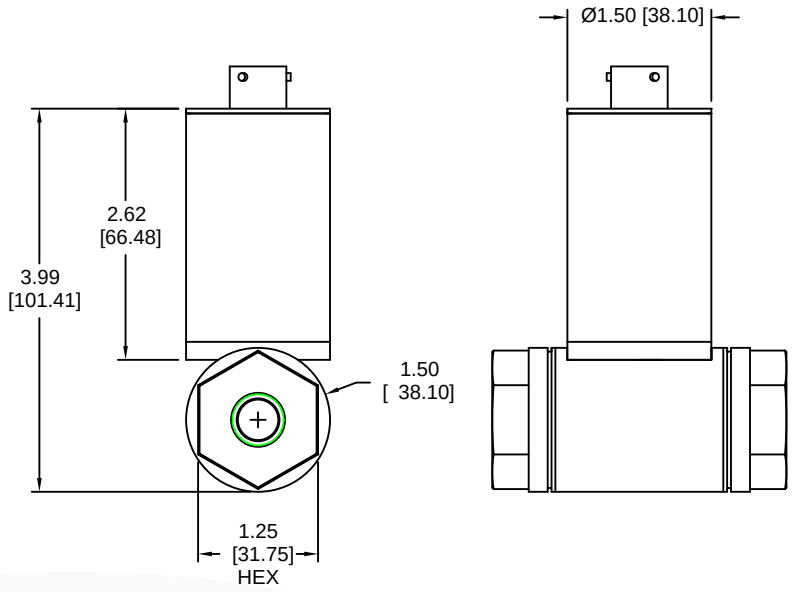
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 114	MODEL 214	MODEL 314
1/RED	+EXC	+EXC	+EXC/SIG
2/GRN	+SIG	+SIG	N/C
3/WHT	-SIG	N/C	N/C
4/BLK	-EXC	-EXC/SIG	-EXC/SIG
5/BLU	N/C	N/C	N/C
6/BRN	N/C	N/C	N/C
SHIELD	OPEN	OPEN	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**
  (Model 114) 3.5 to 15 Vdc excitation
  (Model 214) 9.0 to 36 Vdc excitation
  (0 to 10 Vdc: 13 to 40 Vdc excitation)
  (Model 314/314Z) 9.0 to 36 Vdc excitation
- **Output Signal:**
  (Model 114) 3 mV/V
  (Model 214) 0 to 5 Vdc, 0 to 10 Vdc (alternate outputs available)
  (Model 314) 4-20 mA
- **Zero Shift with Line Pressure:** <±1.0% FSO/1K PSID
- **Circuit Protection:** RFI and EMI
- **Response Time:** <5 ms 10% to 90%
- **Connection:** 36" long Belden 8723, 22 AWG, 4 conductor cable (or equivalent)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  17-4 PH stainless steel (options available consult factory)
- **Housing:**
  316 stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Standard:** ±0.5% FSO
  (Improved: ±0.2% FSO)
- **Zero Balance and FSO:** ±1% FSO at +70 °F

MECHANICAL

- **Process Connection:** 1/4" NPT (F)
- **Proof Pressure:** 5X FSO or 22.5K PSI (1,551 BAR), whichever is less
- **Burst Pressure:** 10X FSO or 22.5K PSI (1,551 BAR), whichever is less
- **Static Line Pressure:** 5X differential pressure range or 22,500 psi, whichever is less
- **Approximate weight:** <1.5 lbs (0.7 kg), some options may affect weight

PRESSURE RANGES

- 500 PSID to 20K PSID (35 BAR D to 1,379 BAR D)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-17.7 °C to +82 °C)
- **Operating:** -20 °F to +190 °F (-29 °C to +88 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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HIGH RANGE DIFFERENTIAL PRESSURE TRANSMITTER

MODEL 115 / 215 / 315

Model 115 / 215 / 315
High Range Differential
Pressure Transmitter

FEATURES:

- Ranges from 30 PSID (2 BAR D) to 7,500 PSID (317 BAR D)
- Line pressure to 10K PSI (690 BAR)
- Rugged, all welded, 316L construction
- No seals or o-rings
- Compact size
- Bi-directional operation
- Optional FM & CSA Explosion-proof approval
- Optional FM, CSA or ATEX Intrinsically safe approval

APPLICATIONS:

- Pump and compressor skids
- Hydraulic test stands
- Drilling Rig top drive controls

PRODUCT OVERVIEW:

The Model 115/215/315 from GP:50 is a family of compact, high-range differential pressure transducers. Series units are offered in ranges as low as 0 to 30 PSID (0 to 2 BAR D), with a line pressure range to 10K PSI (690 BAR). Their all-welded, corrosion-resistant, 316L stainless steel construction is without seals or o-rings, helping to ensure their continued reliability within demanding environments. Optional FM, CSA, ATEX intrinsic safety approvals are also available.

FIELD OPTIONS:

- mV/V, Vdc and 4-20 mA output
- Zero & span adjustments
- Alternate process and electrical connections
- Bi-directional operation
- Line pressure to 10K PSI (690 BAR)

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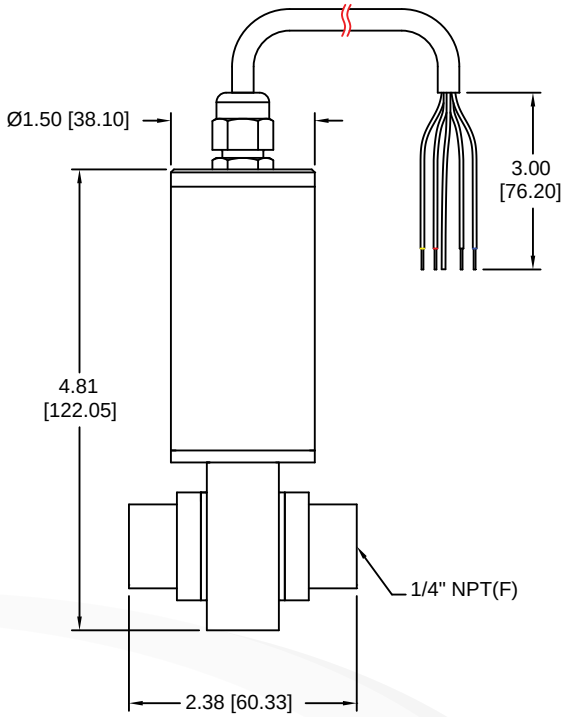
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

WIRE	MODEL 115	MODEL 215	MODEL 315
1/RED	+EXC	+EXC	+EXC/SIG
2/GRN	+SIG	+SIG	N/C
3/WHT	-SIG	N/C	N/C
4/BLK	-EXC	-EXC/SIG	-EXC/SIG
5/BLU	+SHUNT (OPT)	+SHUNT (OPT)	+SHUNT (OPT)
6/BRN	-SHUNT (OPT)	-SHUNT (OPT)	-SHUNT (OPT)
SHIELD	OPEN	OPEN	OPEN

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**

(Model 115) 3.5 to 15 Vdc excitation

(Model 215) 9.0 to 40 Vdc excitation
0 to 10 Vdc output requires 13 to 40 Vdc excitation

(Model 315/315Z) 9.0 to 36 Vdc excitation

- **Zero Balance and FSO:** ±2% FSO at +70 °F
- **Output Signal:**

(Model 115) 3 mV/V

(Model 215) 0 to 5 Vdc (alternate outputs available)

(Model 315) 4-20 mA

- **Input Impedance:** (Model 115) 5K Ω nominal
- **Load Impedance:**

(Model 115) 50K Ω min. for <0.1% FSO attenuation

(Model 215) 750 Ω max. at 24 Vdc and 1,350 Ω at 36 Vdc

- **Circuit Protection:** RFI and EMI
- **Connection:** 36" long PVC jacketed, 24 AWG, 4 conductor cable with shield

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**

316 stainless steel (options available consult factory)

- **Housing:** 316 stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±1.0% FSO
Improved: ±0.5% FSO or ±0.2% FSO

MECHANICAL

- **Process Connection:** 1/4" NPT (F)
- **Static Line Pressure:** 2000 PSI (10,000 PSI optional with flange girdle)
- **Zero shift with line pressure:** <±1.0% FSO/1K PSID
- **Proof Pressure:** 10X FSO or 3K PSI (207 BAR) whichever is less, 10K PSI (690 BAR) optional
- **Burst Pressure:** 15X FSO or 4K PSI (276 BAR) whichever is less, 10.5K PSI (724 BAR) optional
- **Approximate Weight:** <1.5 lbs (0.7 kg) (some options may affect weight)

PRESSURE RANGES

- 30 PSID (2 BAR D) to 7,500 PSID (317 BAR D)

THERMAL SPECIFICATIONS

- **Compensated:** +70 °F to +180 °F (+21 °C to +82 °C)
- **Operating:** -20 °F to +190 °F (-29 °C to +88 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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LOW RANGE HIGH LINE DIFFERENTIAL PRESSURE TRANSDUCER

Model 216 / 316
Low Range High Line
Differential Pressure Transducer
(Shown with LB option)

MODEL 216 / 316

FEATURES:

- 2.5" WCD thru 200 PSID (14 BAR)
- Up to 5K PSI (345 BAR) line pressure options available
- Up to ±0.05% FSO accuracy
- Unidirectional and bidirectional outputs
- Wet/wet design
- All welded 316L stainless steel wetted parts
- Compact size

APPLICATIONS:

- Automotive test stands
- Leak decay
- In-laboratory R&D
- Energy management
- Emissions management
- HVAC

PRODUCT OVERVIEW:

The Model 216/316 from GP:50 is a family of low range, high line, differential pressure transducers. Their compact design incorporates GP:50's own digital correction circuit technology, for high accuracy and extended service life across a variety of applications.

FIELD OPTIONS:

- Wide selection of process and electrical connections
- Submersible options (Meets IP67)
- Alternate wetted materials
- Custom calibrations

2770 Long Road, Grand Island, NY 14072 USA

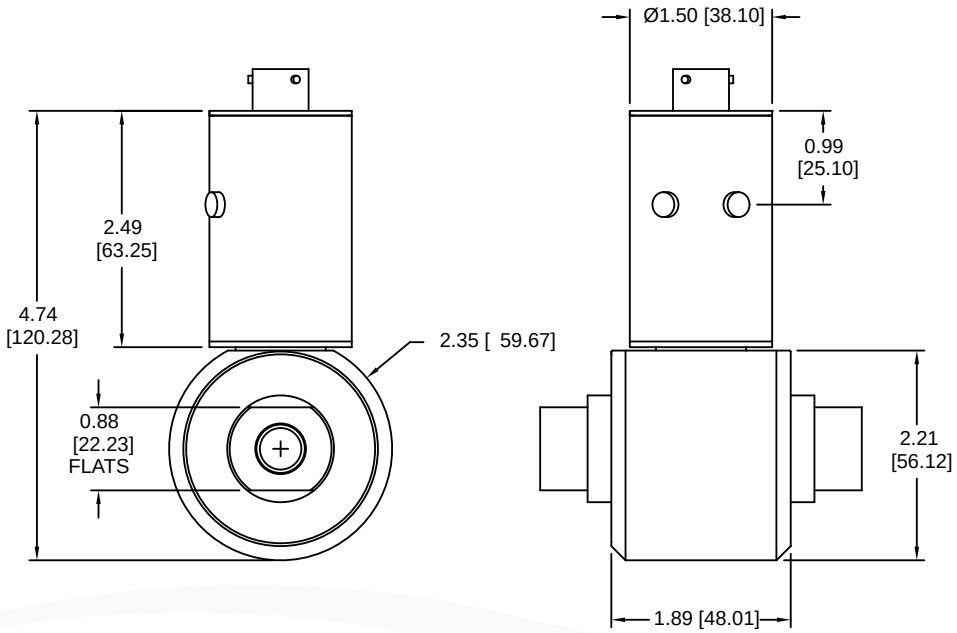
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 216	MODEL 316
1/RED	+EXC	+EXC/SIG
2/GRN	+SIG	N/C
3/WHT	N/C	N/C
4/BLK	-EXC/SIG	-EXC/SIG
5/BLU	N/C	N/C
6/BRN	N/C	N/C
SHIELD	OPEN	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** 8.0 to 32 Vdc

- **Output Signal (at +70 °F):**

(Model 216) 0 to 5 Vdc, 0 to 10 Vdc

(Model 316) 4-20 mA

- **Load Impedance:**

(Model 316) 750 Ω maximum

(Model 216) ≤ 10K Ω

- Zero/span adjustable to ±10%
- Connection: 36" long PVC jacketed, 18 AWG, 4 conductor cable (or equivalent)
- **Response Time:** Typ 35 ms for 90% FSO
- **Resolution:** infinite

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**

316 stainless steel (Hastelloy available)

- **Housing:**

316L stainless steel

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

±0.5% FSO standard
Improved ±0.2, ±0.1, or ±0.05% FSO

Standard configurations shown.
Please consult factory for other options.

MECHANICAL

- **Process Connection:** 1/4" NPT (F)
- **Proof Pressure:** 500 PSI (35 BAR) single ended
- **Burst Pressure:** 750 PSI (52 BAR) for welded port; 2.5K PSI (172 BAR) w/Flanges
- **Static Line Pressure:**
  Std Flanges: 2K PSI (138 BAR)
  Optional Flanges: 5K PSI (345 BAR) Model 7450
  Welded Ports: 500 PSI (35 BAR)
- **Orientation shift (90°):** Typ 10-20%, Range Dependent
- **Silicone oil filled** (Krytox and other options available)
- **Approximate weight:** 2.0 lbs (0.06 kg)
- **Environmental:** Designed to IP67 (some options may affect this)

PRESSURE RANGES

- 2.5" WCD thru 200 PSID (alternate ranges available)

THERMAL SPECIFICATIONS

- **Compensated Range: +32 °F to +180 °F (0 °C to +82 °C)**
- **Operating (ambient):** 0 °F to +185 °F (-17 °C to +85 °C)
  (Unit will operate to -40 deg F with delayed response time)
- **Zero Balance and Span:** Adjustable
- **Zero & Span shift:** (Based on Accuracy)
  Std on 0.50% & 0.20%: ±1.0% FSO/100 °F
  Std on 0.10%: ±0.50% FSO/100 °F
  Std on 0.05%: ±0.30% FSO/100 °F

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COMPACT, HIGH-ACCURACY DIFFERENTIAL PRESSURE TRANSDUCER

MODEL 136 / 236 / 336

Model 136 / 236 / 336
Compact, High-Accuracy
Differential Pressure Transducer

FEATURES:

- Compact design
- Up to ±0.05% FSO accuracy
- 1 PSID thru 500 PSID (0.1 thru 35 BAR D)
- Line pressure up to 1000 PSI (69 BAR)
- All-welded 316L stainless steel wetted parts
- High shock and vibration resistance
- Fast response time

APPLICATIONS:

- Liquefied natural gas (LNG) transport and storage
- Automotive test stands
- Aircraft engine test stands
- Flow measurements
- Filtration
- Tank level
- Leak testing

PRODUCT OVERVIEW:

The Model 136/236/336 from GP:50 is a family of highly accurate, digitally compensated differential pressure transducers. Model 136/236/336 measures differential pressure ranges as low as 20" WCD and line pressures up to 1000 PSID (69 BAR) in a compact size. Customers may also choose from among multiple accuracy, digital output, process and electrical connections. Please consult the factory for details.

FIELD OPTIONS:

- Accuracy options to ±0.05% FSO
- Digital output options; CANbus, USB, RS-485 &
- Comprehensive selection of process and electrical connections

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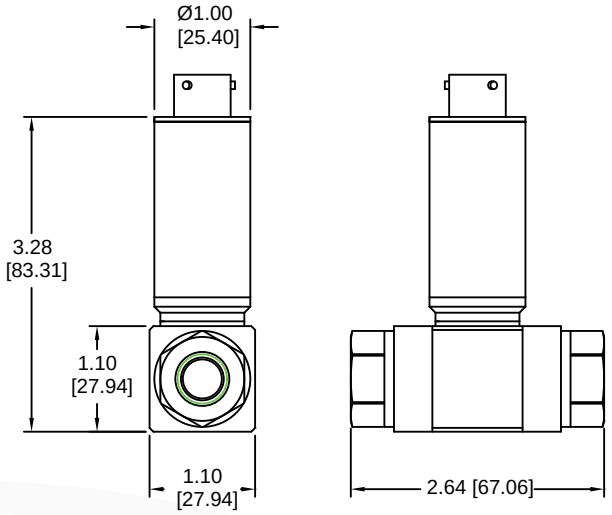
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 136	MODEL 236	MODEL 336
A/1	+EXC	+EXC	+EXC/SIG
B/2	+SIG	+SIG	N/C
C/3	-SIG	N/C	N/C
D/4	-EXC	-EXC/SIG	-EXC/SIG
E/5	N/C	N/C	N/C
F/6	N/C	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**
  (Model 136) 5.0 to 15 Vdc
  (Models 236, 336) 9.0 to 32 Vdc
- **Output Signal:**
  (Model 136) 3, 5, 10 mV/V
  (Model 236) 0 to 5 Vdc, 0 to 10 Vdc option
  (Model 336) 4-20 mA
- **Response Time:** 2 ms typical
- **Connection:** PTIH-10-6P (consult factory for other options)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  316L stainless steel
- **Housing:**
  300 series stainless steel
- **Internal Fill:**
  Silicon Oil (Fomblin Oil Available)

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- ±0.25% FSO (±0.10%, ±0.05% FSO optional)

OPTIONAL VARIATIONS

Zero & span, shunt calibration, alternate connectors, pressure ports

MECHANICAL

- **Process Connection:** 1/4" NPT (F)
  (Consult factory for other options)
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 5X FSO
- **Line Pressure:** 1000 PSI (69 BAR)
- **Approximate Weight:** 8 oz (254 gm)

PRESSURE RANGES

- 1 PSID thru 500 PSID (0.1 thru 35 BAR D)
  (Other ranges available)

THERMAL SPECIFICATIONS

- **Compensated Range:** 0 °F to +185 °F (-18 °C to +77 °C)
  (Other ranges available)
- **Operating Ambient:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Operating Process:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Storage Ambient:** -50 °F to +260 °F (-46 °C to +127 °C)
- **Effect on Zero/Span:**
  (Model 136) ±1.0% FSO/100 °F
  (Models 236/336)
  Standard: ±0.50% FSO/100 °F
  Improved: ±0.25% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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COMPACT INDUSTRIAL PRESSURE TRANSDUCER

MODEL 140, 240, 340

Model 140/240/340
Compact Industrial
Pressure Transducer

FEATURES:

- Compact design for ease of installation
- Rugged, all stainless, welded construction
- Ranges 0 to 1 PSI thru 0 to 30K PSI (69 Mbar to 2068 Bar)
- 4-20mA, Vdc or MV/V output
- Optional process and electrical connections

APPLICATIONS:

- Automotive
- Industrial OEM
- On-board vehicle
- Compressor Controls
- Pneumatic/ Hydraulic Controls

PRODUCT OVERVIEW:

The model 40 series provide a compact, rugged design to meet the demands of hydraulic and pneumatic applications found in process automation, test stand, and OEM applications. Its rugged stainless steel design offers high corrosion resistance in pressure ranges from 0-25" WC (69 Mbar) to 30K PSI (2068 bar).

FIELD OPTIONS:

- Shunt calibration for active line testing without a pressure source
- Comprehensive list of process and electrical connections for existing application retrofits
- Exotic materials available
- For Hazardous locations see model 240-AI/340-AI

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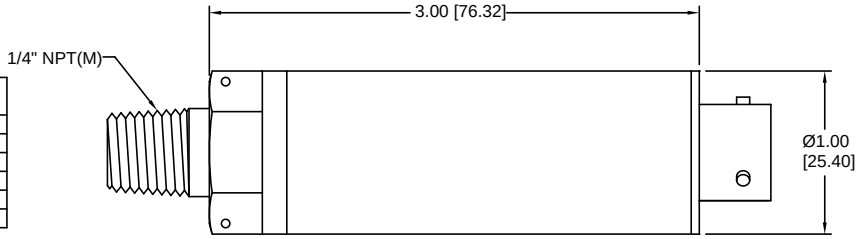
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 140	MODEL 240	MODEL 340
A/1/RED	+EXC	+EXC	+EXC/SIG
B/2/GRN	+SIG	+SIG	N/C
C/3/WHT	-SIG	N/C	N/C
D/4/BLK	-EXC	-EXC/SIG	-EXC/SIG
E/5/BLU	N/C	N/C	N/C
F/6/BRN	N/C	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**
  (Model 140) 5.0 to 15 Vdc typical
  (Model 240) 9 to 36 Vdc
  (Model 340) 9 to 36 Vdc
- **Output Signal: (Optional outputs also available)**
  (Model 140) Varies by range and accuracy:
  ≤ 1 PSI: 3.0 mV/V
  2 PSI: 8.0 mV/V
  3 PSI - 2,000 PSI: 7-10 mV/V
  2,500 - 15,000 PSI: 2 to 3 mV/V
  >15K: 2 to 2.5 mV/V
  (Model 240) 0-5Vdc, 0-10Vdc
  (Model 340) 4-20mA
- **Load Impedance:**
  (Model 240) 50K Ω max. 24 Vdc
  (Model 340) 750 Ω max. 24 Vdc
- **Input Impedance:** 2.5K to 8K Ω
- **Input Current:**
  (Model 240) 8 mA nominal
- **Insulation Resistance:** >10 MΩ at 50 Vdc and +70 °F
- **EMI Specs:** EMC directive 2004/108/EC, EN 61326 emission
- **Connection:** Bendix PT1H-10-6 stainless steel or equivalent standard, options available

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  ≤2000 PSI 316L SST w/silicon oil fill (Fomblin oil fill available, consult factory)
  >2000 PSI 17-4 PH SST (Inconel available, consult factory)
- **Housing:** 316 stainless steel

STATIC ACCURACY (BFSL - HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Standard** ±0.25% FSO
- **Optional** ±0.10% or ±0.05% FSO
- **Zero Balance and FSO:** ±1.0% FSO at +70 °F

MECHANICAL

- **Process Connection:** 1/4" NPT (M), options available
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 5X FSO
- **Approximate Weight:** 0.5 lb nominal, options may increase weight
- **Environmental:** Design to meet IP67 (Some options may affect this. Consult factory if critical.)

PRESSURE RANGES

- 0 to 1 PSI thru 0 to 30K PSI, some options may affect range (PSIG, PSIS, PSIA, PSIV & compound ranges available)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-17.7 °C to +82 °C)
- **Operating:** -40 °F to +176 °F (-40 °C to +80 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±1.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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MODEL GPIDP

Model GPIDP
Smart Differential Pressure Transmitter

FEATURES:

- High accuracy up to ±0.075% FSO
- Static Line and single-sided overpressure protection up to 3,625 PSI (250 BAR)
- 4-20 mA output, available with or without HART® communication
- 30:1 turn down
- Optional LCD display with push button adjustment
- Differential pressure ranges from 0 to 0.5" WC thru 0-3K PSID (207 BAR)

APPLICATIONS:

- Chemical processing
- Sanitary tank level
- Pulp and paper
- Marine
- Food and beverage

PRODUCT OVERVIEW:

GP:50 Model GPIDP is a rugged, low range / high line process differential pressure transmitter that provides precise measurement in a 4-20 mA output with optional HART communication. Ranges as low as 0.5" WCD are available with 3,625 PSI of line and single sided proof pressure. Internal push button adjustments for rangeability and configuration are available as well as an integral LCD display.

FIELD OPTIONS:

- 30:1 turn down
- Push button adjust with LCD display
- Exotic wetted parts available
- 1 to 5 Vdc Low-power option

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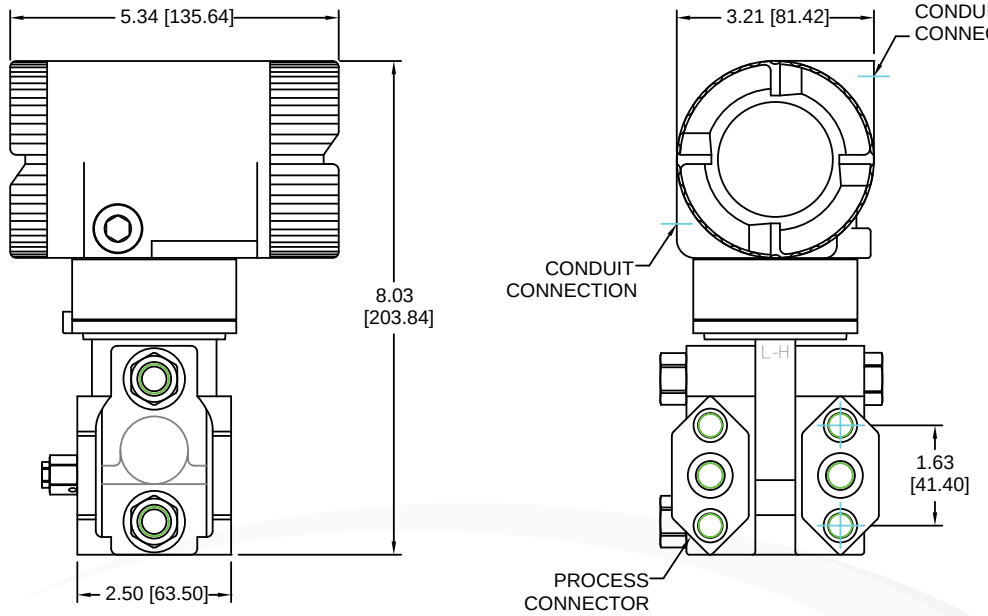
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 11.5 to 40 Vdc
  (Optional low power: 7 to 36 Vdc)
- **Output Signal:** 4-20 mA, 4-20 mA with HART, 1 to 5 Vdc
- **Response Time:** <750 milliseconds
- **Connection:** ½" NPT (F) on aluminum alloy, epoxy coated housing with internal terminal block

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**

316L stainless steel (optional exotic materials)

- **Housing:**

Epoxy coated aluminum alloy

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Standard:** ±0.2% FSO
- **Improved:** ±0.075% FSO
- **Static line pressure effect:**

0.5" WC thru 30 PSI: ±0.60% FSO/1000 PSI

50 PSI thru 3000 PSI: ±1.0% FSO/1000 PSI

MECHANICAL

- **Process Connection:** ¼" NPT (F) with optional ½" NPT (F)
- **Line Pressure Rating:** 3,625 PSI (250 BAR)
- **Proof Pressure Rating:** 3,625 PSI (250 BAR)
- **Approximate Weight:** 8.5 lb (3.9 kg)

PRESSURE RANGES

0 to 0.5" WC thru 0 to 3K PSID (12 MBAR to 207 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** -40 °F to +350 °F (-40 °C to +177 °C)
- **Operating Process:** -50 °F to +360 °F (-45 °C to +182 °C)
- **Operating Ambient:** -50 °F to +120 °F (-45 °C to +49 °C)
- **Storage:** -60 °F to +190 °F (-51 °C to +87 °C)

OPTIONAL

- **Optional LCD Indicator:** Operative limits of the standard indicator are -20 °F to +185 °F (-29 °C to +85 °C), normal operating limits are -4 °F to +185 °F (-20 °C to +82 °C)

Standard configurations shown.
Please consult factory for other options.

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INTRINSICALLY SAFE PRESSURE TRANSDUCER

Model 311Z, I, GI, AI
Intrinsically Safe Pressure Transducer

MODEL 311Z, I, GI, AI

FEATURES:

- 0 to 5 PSI thru 0 to 75K PSI (75 MBAR to 1,034 BAR)
- FM, CSA, ATEX & IEC approvals
- Welded, rugged construction
- Optional high overpressure protection

APPLICATIONS:

- Rig safety systems
- Well head control
- Gas pipeline
- Control panels
- On-board transmission & engine monitoring

PRODUCT OVERVIEW:

GP:50's Model 11 series provides a rugged solution in hazardous approved areas. The all welded, stainless steel design provides years of reliable service in some of the harshest applications.

FIELD OPTIONS:

- FM, CSA ATEX, IEC Intrinsically Safe
- Zero & Span adjust
- Alternate connectors & pressure ports
- For Explosion-proof see model 311X/P

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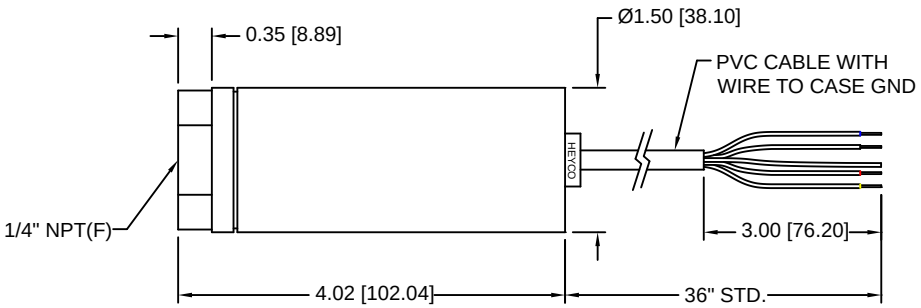
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 311Z/I/GI/AI
1/RED	+EXC/SIG
2/GRN	CASE GND
3/WHT	N/C
4/BLK	-EXC/SIG



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**

(311Z) 9 to 36 Vdc excitation

(311I, GI, AI) 10 to 28 Vdc excitation

- **Output Signal:** 4-20 mA output
- **Circuit Protection:** RFI and EMI
- **Load Impedance:** 750 Ω max. to 24 Vdc
- **Insulation Resistance:** >10 MΩ @ 50 Vdc, +70 °F
- **Response Time:** <5 ms 10% to 90%
- **Connection:** 36" long PVC Jacketed, 18 AWG, 4 conductor cable (or equivalent)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316 or 17-4 PH stainless steel (options available consult factory)
- **Housing:** 316 stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard ±0.5%

Improved ±0.2% and ±0.1%

MECHANICAL

- **Zero Balance and FSO:** ±1% FSO at +70 °F
- **Process Connection:** 1/4" NPT (F) for ranges <20 KPSI (1.4 BAR)
  High pressure coned fittings for ranges 20K to 75K PSI (1,379 to 5,171 BAR)
- **Proof Pressure:** 2X FSO or 22,500 PSI (1,551 BAR), whichever is less
- **Burst Pressure:** 5X FSO or 22,500 PSI (1,551 BAR), whichever is less
- **Approximate Weight:** 10 oz (0.3 kg) nominal, options may increase weight

PRESSURE RANGES

- 0 to 5 thru 0 to 75K PSI (0 to 0.3 thru 0 to 5,171 BAR) (PSIG, PSIS, PSIA, PSIV & Compound ranges available)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-18 °C to +82 °C)
- **Operating Process:** -40 °F to +176 °F (-40 °C to +80 °C)
- **Storage:** -65 °F to +250°F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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EXPLOSION PROOF & ZONE 2 / DIV 2 PRESSURE TRANSMITTER

Model 111X/P, 211X/P, 311X/P
& 311N//AN//GN
Intrinsically Safe Pressure Transducer

MODEL 111X/P, 211X/P, 311X/P/N/AN/GN

FEATURES:

- 0 to 5 PSI thru 0 to 75K PSI (75 MBAR to 1,034 BAR)
- FM, CSA, ATEX & IEC approvals
- Welded, rugged construction
- Optional high overpressure protection

APPLICATIONS:

- Rig safety systems
- Well head control
- Gas pipeline
- Control panels
- On-board transmission & engine monitoring

PRODUCT OVERVIEW:

GP:50's Model 11 series provides a rugged solution in hazardous approved areas. The all welded, stainless steel design provides years of reliable service in some of the harshest applications.

APPROVALS:

- **FM, FM/CSA:** Class I/II/III, Div 1, Grps A-G, T6 at Ta=40C
- **Zone 2 / Division 2:**
- **FM:** Class I, Zone 2 AEx nC IIC T5, Class I, Div. 2, Grp. A, B, C, D Class II, Grp. E, F, G, Class III T5, Ta = 80C
- **CSA:** Ex nA IIC T5, Ex nL IIC T5, Class I Div. 2 Grp. A, B, C, D Class II Div. 2 Grp. E, F, G Class III T5, Ta=80C
- **ATEX:** CE0575 II 3 G Ex nA IIC, Ex ic IIC T5, Ta=80C
- **IEC:** Ex na IIC, Ex ic IIC T5, Ta=80C
  (all Zone 2/Div 2 approvals are electrical connector dependent)
  For Intrinsically Safe Approval see 311Z, I, GI, AI Data Sheet (A5SL-024)

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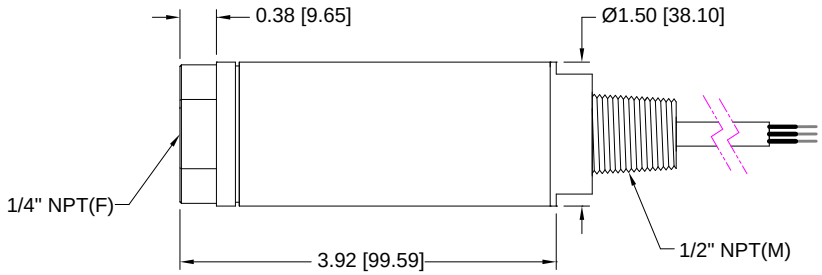
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 111X/P	MODEL 211X/P	MODEL 311X/P/N/AN/GN
RED	+EXC	+EXC	+EXC/SIG
GRN	+SIG	CASE GND	N/C
WHT	-SIG	+SIG	N/C
BLK	-EXC	-EXC/SIG	-EXC/SIG
GRN/YEL	CASE GND	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**
  (Model 111X/P) 3.5 to 15 Vdc
  (Model 211X/P) 10.5 to 32 Vdc
  (Model 311X/P) 9 to 36 Vdc
  (Model 311 N/AN/GN) 10 to 28 Vdc
- **Output Signal:**
  (Model 111) 3 mV/.V
  (Model 211) 0 to 5 Vdc, 0 to 10 Vdc (alternate outputs available)
  (Model 311) 4-20 mA
- **Load Impedance:**
  (Model 211) 50 Ω max. 24 Vdc
  (Model 311) 750 Ω max. 24 Vdc
- **Input Impedance:**
  (Model 111) 5K or 350 Ω nominal
- **Input Current:**
  (Model 211) 8mA nominal
- **Insulation Resistance:** >10 MΩ at 50 Vdc and +70 °F
- **Response Time:** <5 ms 10% to 90%
- **Connection:** 1/2" NPT M conduit w/ 6ft 18 AWG multi-conductor cable

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH stainless steel (Hastelloy C-276 and Inconel available, consult factory)
- **Housing:** 316 stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard ±0.5%

Improved ±0.2% and ±0.1%

Zero Balance and FSO: ±1% FSO at +70 °F

MECHANICAL

- **Process Connection:** 1/4" NPT (F) for ranges <20 KPSI (1.4 BAR) High pressure coned fittings for ranges 20K to 75K PSI (1,379 to 5,171 BAR)
- **Proof Pressure:** 1.5X FSO ≤30K PSI, 1.2X FSO >30K PSI
- **Burst Pressure:** 2.5X FSO ≤10K PSI, 5X FSO >10K PSI and ≤30K PSI, 1.5X ≤75K PSI
- **Approximate Weight:** 1 lb (0.5 kg) nominal, options may increase weight
- **Unit designed** to meet or exceed IP67 Rating. (Some options may affect rating, consult factory)

PRESSURE RANGES

- 0 to 5 PSI thru 0 to 75K PSI (0 to 0.3 BAR thru 0 to 5,171 BAR) (PSIG, PSIS, PSIA, PSIV & compound ranges available)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-17.7 °C to +82 °C)
- **Operating:** -40 °F to +176 °F (-40 °C to +80 °C)
- **Storage:** -65 °F to +250 °F (-53°C to +121 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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SMART RANGEABLE HAZARDOUS LOCATION PRESSURE TRANSMITTER

Model 411, 411X/P
Smart Rangeable Pressure Transmitter

MODEL 411, 411X/P

FEATURES:

- 4-20 mA with digital HART protocol
- 0-15 PSI thru 0-100K PSI (0-1 thru 6,895 BAR)
- 5:1 turndown ratio
- Secondary containment for oil services
- Submersible version
- FM, CSA explosion-proof versions

APPLICATIONS:

- Offshore rigs and pumping platforms
- Oil and gas/chemical pipeline and processing
- Marine and shipboard service
- Submersible level

PRODUCT OVERVIEW:

The Model 411, 411X/P from GP:50 is a SMART rangeable pressure transmitter incorporating a 4-20 mA output with digital HART protocol. Units are offered with both CSA and FM approval options, as well as a variety of process and electrical connections. Improved accuracy provides for a stable measurement throughout the total compensated temperature range.

FIELD OPTIONS:

- 5:1 turndown ratio for most ranges
- Multiple pressure and temperature outputs
- Exotic wetted materials
- Submersible level option
- Alternate process connections
- Optional 4-20 mA temperature output

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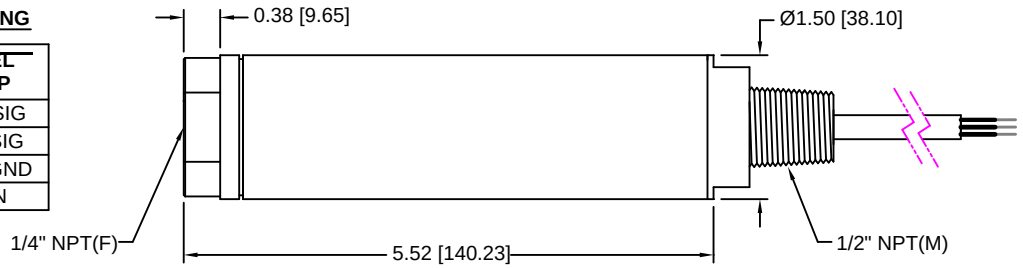
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 411X/P
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	CASE GND
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 12-36 Vdc
- **Output Signal:** Two wire 4-20 mA with digital HART protocol (optional 4-20 mA temperature output)
- **Input Impedance:** 250 Ω at 17 Vdc
- **Insulation Resistance:** Better than 10 MΩ at 50 Vdc
- **Circuit Protection:** RFI/EMI, reverse polarity (voltage transients above 45 V to 20 A at 0.02 milliseconds)
- **Resolution:** 12-bit
- **Frequency Response:** From 0.07 to 40 sec (software adjustable)
- **Connection:** 1/2" NPT M conduit with 6-ft 18 AWG multi conductor cable

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH stainless steel (Optional Inconel 718, K12X, or 13-8 Monel)
- **Housing:** 316 stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.25% FSO

Improved: ±0.1% FSO

Zero Balance and FSO: ±0.5% FSO at +70 °F

PRESSURE RANGES

- 0-15 PSI thru 0-100K PSIS, PSIA, PSIV, PSIG (1 BAR V thru 6,895 BAR)
- **Range Adjustments:** 5:1 for ranges 0-5 PSI thru 0-100K PSI (0.3 BAR thru 6,895 BAR)

MECHANICAL

- **Process Connection:**
  0-5 thru 0-15K PSI (0-0.3 thru 0-1,035 BAR), PSIV: 1/4" NPT (F)
  0-20K thru 0-50K PSI (0-1,380 thru 0-3,450 BAR): Autoclave type F-250-C
  0-60K thru 0-75K PSI (0-4,135 thru 0-5,170 BAR): Autoclave type F-312-C150
- **Proof Pressure:**
  0-15K (1,035 BAR) PSI 1.5X FSO
  20K-100K (6,894 BAR) PSIG 1.2X FSO
- **Burst Pressure:**
  0-15K 3X FSO
  20K-100K (6,894 BAR) PSIG 1.5X FSO or 125K PSIG (8,618 BAR), whichever is less
- **Long-term Stability:** 0.25% FSPR over six months
- **Approximate Weight:** <24 oz (0.7 kg)
- **Enclosure:** IP67

THERMAL SPECIFICATIONS

- **Compensated:** 0 to +170 °F (-18 °C to +77 °C)
- **Operating Ambient:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Effect on Zero/Span (1:1):** ±0.25% FSO/100 °F
- **At 5:1 Ranging:** ±0.50% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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FIELD RANGEABLE PROCESS PRESSURE TRANSMITTER

Model 1171
Field Rangeable Process Pressure Transmitter

MODEL 1171

FEATURES:

- Magnetic coupling provides field calibration with 5:1 turndown ratio
- 0 to 15 PSIV thru 0-100K PSISG, PSIA (1 BAR V thru 6895 BAR)
- 4-20 mA (loop powered) output
- FM, CSA intrinsically safe and explosion proof ratings
- IP67 & NEMA 6 rated housing

APPLICATIONS:

- Offshore rigs and pumping platforms
- Pipelines and processing
- Shipboard and marine
- Plastics and polymer processing
- Pulp and paper

PRODUCT OVERVIEW:

The Model 1171 series from GP:50 is a rugged, hermetically sealed pressure transmitter which features magnetic coupling adjusts for full field calibration with 5:1 turndown ratio. Their compact, corrosion-resistant, all-welded stainless steel construction provides reliable, maintenance-free service life within harsh marine and offshore oil and gas environments.

FIELD OPTIONS:

- Magnetically-coupled zero and span adjusts
- 5:1 turndown ratio, both fine and coarse
- Shunt calibration
- Hermetically sealed design

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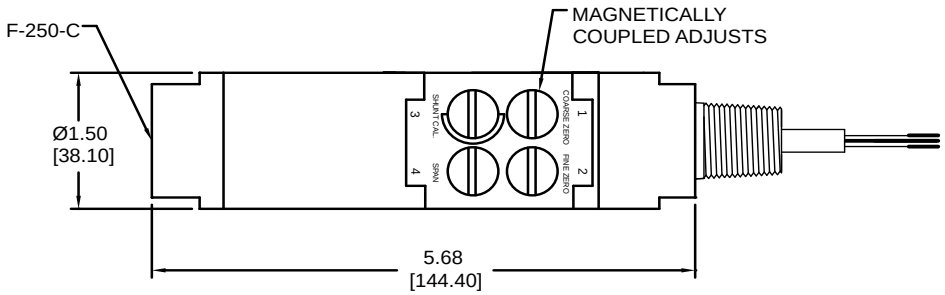
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 1171
1/RED	+EXC/SIG
2/BLK	-EXC/SIG
3/GRN	CASE GND



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9 to 36 Vdc
- **Output Signal:** 4-20 mA, two-wire loop powered
- **Load Impedance:** 500 Ω
- **Insulation Resistance:** Better than 10 MΩ at 50 Vdc
- **Circuit Protection:** Reverse polarity above 45 V to 20 A at 0.02 milliseconds
- **Response Time:** 5 ms, 10 to 90% FSPR
- **Connection:** 1/2" NPT (M) conduit with 6 ft 18 AWG multi-conductor cable
- **Enclosure Classification:** IP67

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- >0.25% FSO

APPROVALS

- FM/CSA Explosion Proof:
  Class I, II, III Division I / Groups A, B, C, D, E, F, G
  (FM Standard / CSA requires P option code)
- FM/CSA Intrinsically Safe:
  Class I, II, III Division I / Groups A, B, C, D, E, F, G
- CE Compliant
- EMC 89/336/EEC
- PED 97/23/EC

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH stainless steel (other options available)
- **Housing:** 316L stainless steel
- **Bonded foil strain gauge**

MECHANICAL

- **Process connection:**
  0 thru 15K PSI: 1/4" NPT (F)
  20K thru 50K PSI: Autoclave type F-250-C
  60K thru 75K PSI: Autoclave type F-312-C150
- **Proof Pressure:**
  (0 thru 15K PSI) 2X FSO or 20K PSI (1,379 BAR), whichever is less
  (20K to 100K PSISG,A) 1.2X FSO or 125K PSI (8,618 BAR), whichever is less
- **Burst Pressure:**
  15 thru 50 PSI: 250 PSI (17 BAR)
  75 thru 15K PSIS: 5X FSO or 22.5K PSIG (1,551 BAR), whichever is less
  20K thru 100K PSIS: 1.5X FSO or 125K PSIG (8,618 BAR), whichever is less
- **Longterm Stability:** 0.25% FSPR over six months
- **Weight:** <28 oz (0.8 kg)

PRESSURE RANGES

- 0 to 15 PSIV, 0 to 2 PSIG, A thru 0 to 100K PSISG, PSIA (1 BAR V thru 6,895 BAR)
- 5:1 on ranges >5 PSI (0.3 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 to +185 °F (-17.8 °C to +85 °C)
- **Operating Ambient:** -10 °F to +185 °F (-23 °C to +85 °C)
- **Effect on Zero/Span:** <±1.0% FSO/100 °F
- **At 5:1 Ranging:** <3.5% FSO/100 °F
- **Zero Balance:** Fine and course adjustable

Standard configurations shown.
Please consult factory for other options.

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FLUSH MOUNT PRESSURE TRANSMITTER

MODEL 240/340-IM

Model 340-IM
Flush Mount Design

FEATURES:

- Flush faced sensor minimizes media plugging and damage
- Compact 1" diameter
- Rugged, all-welded stainless steel design
- No zero offset from installation
- 5X proof pressure

APPLICATIONS:

- Wastewater treatment
- Onboard vehicles
- Skidded systems
- Sludge and slurries
- Adhesives and paints
- Pump suction and discharge lines of blender and Frack trucks
- Corrosive and higher viscosity media

PRODUCT OVERVIEW:

The Model 40-IM series from GP:50 is a flush face mounted industrial pressure transmitter. It is expressly designed for higher viscosity media, particularly where such media can otherwise clog or damage traditional non-flush port sensor designs. The rugged, all-welded, Inconel design of the 40-IM series allows for greater compatibility with corrosive media. No zero offset is caused during sensor installation.

FIELD OPTIONS:

- Direct NPT or flanged process mounting
- Select electrical connectors
- 4-20 mA or 0-5Vdc output

AVAILABLE APPROVALS:

- ATEX & IEC Hazardous approvals
- FM & CSA Pending

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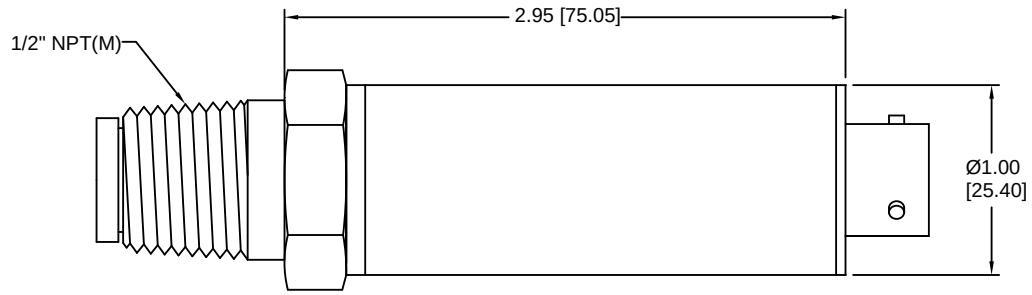
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 340IM
A/1/RED	+EXC/SIG
B/2/GRN	N/C
C/3/WHT	N/C
D/4/BLK	-EXC/SIG
E/5/BLU	N/C
F/6/BRN	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9.0 to 40 Vdc
- **Output Signal:** 4-20 mA
- **Load Impedance:** 1,350 Ω max. at 36 Vdc and 750 Ω max. Vdc
- **Zero Balance:** ±2% FSO at 70 °F
- **Insulation Resistance:** > 10 MΩ at 50 Vdc and 70 °F
- **Connection:** 1/2" NPT (M) conduit with 36" cable leads or 6-pin Bendix connector

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** Inconel 718
- **Housing:** 316 stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO
Improved: ±0.2% FSO

MECHANICAL

- **Process Connection:** 1/2" NPT (M)
- **Proof Pressure:** 5X FSO or 2K PSI (138 BAR), whichever is less
- **Burst Pressure:** 7X FSO 3.5K PSI (242 BAR), whichever is less
- **Burst Pressure:** 0-50 thru 0-500 PSI (3.5 thru 35 BAR) gauge, sealed gauge, absolute
- **Environmental:** Design to meet IP67 (Some options may affect this. Consult factory if critical.)

TEMPERATURE

- **Compensated:** 0 °F to +180 °F (-18 °C to +82 °C)
- **Operating Ambient:** -20 °F to +190 °F (-29 °C to +88 °C)
- **Maximum Operating Process:** +250 °F (+121 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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WECO® "HAMMER" UNION PRESSURE TRANSMITTER

MODEL 170 / 270 / 370

Model 170 / 270 / 370
WECO® "Hammer" Union
Pressure Transmitter

FEATURES:

- Reduced zero offset due to installation
- High-accuracy option of ±0.10% FSO
- Corrosion resistant, high strength fasteners eliminate housing breakage
- Hazardous location approvals
- 0 to 1000 thru 0 to 20K PSI (69 thru 1,379 BAR)
- Compatible with 2" 1502, 2002, 2202, and 602 wing union fittings

APPLICATIONS:

- Fracking, cementing, coil tubing and acidizing
- Mud pumps / Measure While Drilling
- Choke and kill manifolds
- Standpipe pressure
- Wellhead measurement

PRODUCT OVERVIEW:

The industry exclusive Model 170/270/370 WECO® Hammer Union Pressure Transmitter from GP:50 is ruggedly designed and engineered to effectively address demanding shock and vibration and installation challenges within the oilfield environment. Units are directly compatible with WECO® 2"-1502, 2202, 2002 or 602 wing union fittings. They are also available in multiple outputs, ranges, electrical connections, and area approvals to meet specific requirements.

FIELD OPTIONS:

- Internal, isolated shunt calibration
- Temperature output options
- 3 mV/V, 0 to 5 Vdc, 4-20 mA, CANbus outputs
- 'Connector Guard' eliminates connector breakage
- High temperature option to +350 °F (+177 °C)
- Comprehensive list of electrical connections

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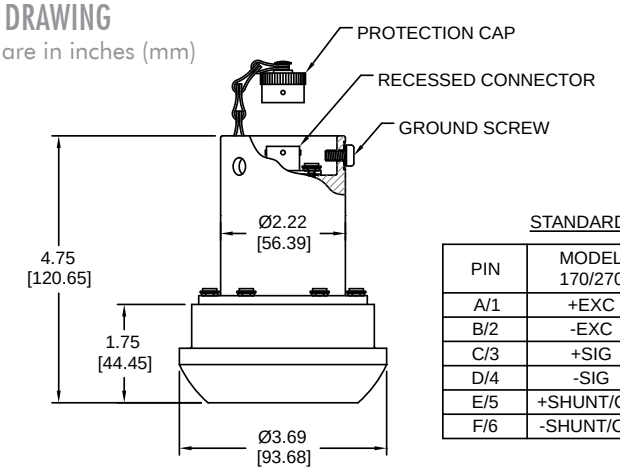
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

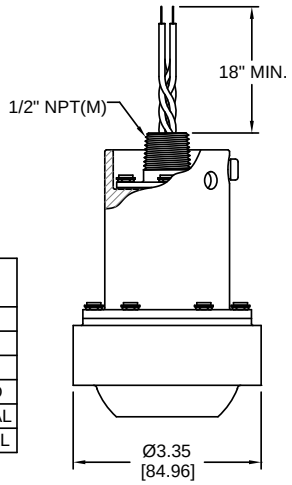
All dimensions are in inches (mm)



2" #1502 CONFIGURATION
(SHOWN WITH "CA" CONNECTOR)

STANDARD WIRING

PIN	MODEL 170/270	MODEL 370
A/1	+EXC	+EXC/SIG
B/2	-EXC	-EXC/SIG
C/3	+SIG	N/C
D/4	-SIG	CASE GND
E/5	+SHUNT/CAL	+SHUNT/CAL
F/6	-SHUNT/CAL	-SHUNT/CAL



2" #2002/2202 CONFIGURATION
(SHOWN WITH "CF" CONNECTOR)

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**

(Model 170) 5 to 16 Vdc max
(Model 270) 9 to 36 Vdc
(Model 370) 9 to 36 Vdc (10 to 28 Vdc for IS approvals)

- **Output Signal:**

(Model 170) 1.6 mV/V typical
(Model 270) 0 to 5 Vdc
(Model 370) 4-20 mA
(Model 570) CANbus J1939

- **Load Resistance:**

(Model 170) >100K Ω
(Model 270) >10K Ω

- **Connection:** Bendix PTO2E-10-6P

- **Input Current:**

(Model 170) 1 mA
(Model 270) 8 mA
(Model 370) 23 mA max.

- **Shunt Calibration:**

(Model 170/270) 100% FSO ±0.2% shorting E + F
(Model 370) 100% FSO ±0.2% exciting E + F

MATERIALS OF CONSTRUCTION

- **Sensor:** 17-4 PH stainless steel standard
  Optional Inconel X750 or 718
- **Housing:** 300 series stainless steel

ACCURACY

Static Accuracy (Hysteresis, Non-Linearity & Repeatability @ +70 °F)

- Standard: ≤±0.25% FSO (BFSL)
- Improved: ≤±0.10% FSO (BFSL)
- Zero Balance: ±0.50% FSO typ / ± 1.0% FSO max
- Span: ±0.50% FSO typ / ± 1.0% FSO max

MECHANICAL

- **Process Connection:** WECO® 2"- 1502, 2002/2202 or 602
- **Proof Pressure:** 1.5X FSO or 22.5K PSI, whichever is less
- **Burst Pressure:** 3.0X FSO
- **Approximate weight:** <6 lbs (2.7 kg) (options may affect weight)
- **Ingress Protection:** IP67 (some options may effect rating)

PRESSURE RANGES

0 to 1000 PSI thru 0 to 20K PSI (69 thru 1,379 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** -40 °F to +180 °F (-40 °C to +80 °C)
- **Operating:** -50 °F to +190 °F (-45 °C to +85 °C)
  Optional high-temperature version to +350 °F (+177 °C)
- **Zero/ Span:** <1.0% FSO/100 °F

APPROVALS (370 SERIES ONLY, OTHERS PENDING)

- FM/CSA/ATEX/IEC Class 1 Div 1/Zone 0 Intrinsic Safety
- FM/CSA/ATEX/IEC Class 1 Div 2/Zone 2
- CE marked

Standard configurations shown.
Please consult factory for other options.

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HAZARDOUS LOCATION TEMPERATURE TRANSMITTER

Model 340T
Temperature Transmitter

MODEL 340T/AI/AN

FEATURES:

- Compact, welded design
- 4-20 mA or 0 to 5 Vdc output
- Maximum process temperatures from -65 °F to +300 °F (-54 °C to +149 °C) maximum ambient temperature 185 °F (85 °C)
- Probe lengths from 3/4" to 7" (19 mm to 178 mm)
- Accuracy ±1.0 %
- Probe pressure rated up to 10,000 PSI
- ATEX & IEC Approvals

APPLICATIONS:

- Oil and gas
- Chemical industries
- Automotive test stand
- Power generation
- Medical and laboratory R&D

PRODUCT OVERVIEW:

The Model 340T temperature transducer is essential where reliable and accurate process temperatures are required. With a large range of temperatures ranges and probe lengths available the model 340T is adaptable for most temperature applications or processes. The compact size provides easy installation for on-board vehicles used in the oil and gas industry.

APPROVALS:

- ATEX/IEC
- ATEX Zone 2: II 3 G Ex nA/ic IIC T5 Gc

FIELD OPTIONS:

- Probe lengths from ¾" to 7"
- Temperature ranges from -40 °F to +300 °F (-40 °C to +149 °C)
- Alternate electrical connectors and cable

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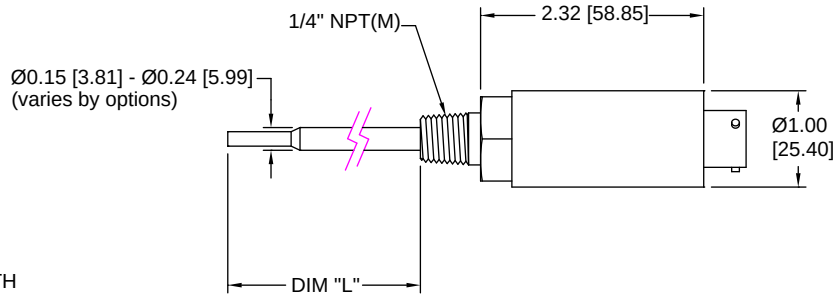
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 340T
1/RED	+EXC/SIG
2/GRN	N/C
3/WHT	N/C
4/BLK	-EXC/SIG
5/BRN	N/C
6/SHIELD	CASE GND

L = 0.50 TO 7.00 INCH PROBE LENGTH



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9.0 to 36 Vdc, 10-28 Vdc for approved models
- **Output Signal:** 4-20 mA ±1% FSO
- **Output Current:** 2.0 mA max. for <0.1% FSO attenuation
- **Load Impedance:** 1,350 Ω max. at 36 Vdc and 750 Ω max. Vdc
- **Insulation Resistance:** >100 MΩ at 50 Vdc and +70 °F (+21 °C)
- **Connection:** 6-pin bendix PT1H-10-6P stainless steel or equivalent standard, options available

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316L stainless steel
- **Housing:** 300 series stainless steel

ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- 1.0% FSO
- **Zero Balance:** 4.0 mA ±1% FSO

MECHANICAL

- **Process Connection:** 1/4" NPT (M) (other ports available)
- **Probe Length:** 3/4" thru 7"
- **Approximate Weight:** 5 ounces
- **Probe Pressure Rating:** 3,000 PSI, optional 10K PSI

TEMPERATURE RANGES

- 0 °F to +250 °F (-18 °C to +121 °C)
- 0 °F to +300 °F (-18 °C to +149 °C)
- -40 °F to +180 °F (-40 °C to +82 °C)
- -40 °F to +250 °F (-40 °C to +121 °C)

(consult factory for other ranges)

THERMAL SPECIFICATIONS

- **Thermal Response Time:** <2 secs
- **Operating Ambient:** max. +185 °F (+85 °C)
- **Operating Process:** max. +300 °F (+149 °C)

Standard configurations shown.
Please consult factory for other options.

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FLUSH MOUNT CANBUS PRESSURE TRANSMITTER

MODEL 540-IM

Model 540-IM
Flush Mount CAN Bus Pressure Transmitter

FEATURES:

- Flush sensor eliminates media plugging
- Compact size
- Rugged welded design
- No zero offset from installation
- CAN bus J1939 Protocol or CANopen

APPLICATIONS:

- Oil field vehicle controls
- Off-shore platforms
- Dredging
- Automotive test stands
- Medical equipment
- Laboratory R&D

PRODUCT OVERVIEW:

GP:50's model 540-IM series offers CANbus protocol in a flush faced sensor design. GP:50's CANbus protocol provides high resolution, reduced noise and improved thermal performance. The flush Inconel diaphragm provides maximum corrosion resistance and limits plugging associated with viscous media.

FIELD OPTIONS:

- Field adjustable zero
- Adjustable message addresses, bit rate and message streaming
- Optional extended CAN 2.0B 29-bit CAN identifiers

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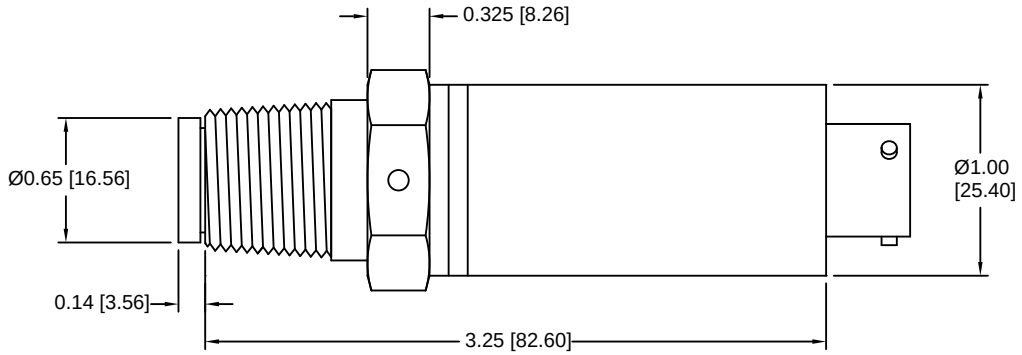
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 540-IM
A/1	+EXC
B/2	-EXC
C/3	CASE GND
D/4	CANBUS HI
E/5	CANBUS LOW
F/6	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**
  Standard: 5.6 to 18 Vdc
  Optional Expanded: 4.5 to 37 Vdc
- **Output Signal:** CAN bus SAE J1939 (consult factory)
- **Current Draw:** 40 mA
- **Standard Resolution:** 18 Bit
- **Zero Balance:** ±1% FSO at 70 °F
- **Standard Messaging:**
  Pressure, temperature & mV/V sensor
  (Up to four messages can be streamed)
- **Standard CAN Protocol:** 11 Bit CAN identifiers
  Optional Extended CAN 2.0B-29 Bit CAN identifiers
- **Connection:** 1/2" NPT (M) conduit with 36" cable leads or 6-Pin Bendix connector

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** Inconel
- **Housing:** 300 series stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Standard:** ±0.5% FSO
  ±0.2 % FSO and ±0.1% FSO available

MECHANICAL

- **Process connection:** ½" NPT (M)
- **Proof Pressure:** 2X FSO (optional 5X)
- **Burst Pressure:** 5X FSO

PRESSURE RANGES

- 0 to 50 thru 0 to 1000 PSI (3.5 thru 69 BAR)
  gauge, sealed gauge, absolute

THERMAL SPECIFICATION

- **Compensated:** +30 °F to -185 °F (-1 °C to -120 °C)
  expanded and improved available
- **Operating Ambient:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Operating Process:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Storage:** -65 °F to +250 °F (-54 °C to +121 °C)
- **Effect on zero/span:** <±0.5 % FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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DUAL PRESSURE & TEMPERATURE CAN busTRANSMITTER

MODEL 543

Model 543
Dual Pressure & Temperature
CANbus Transmitter

FEATURES:

- Pressure and temperature in a single device
- Reduces I/O points
- Compact 1-inch (25.4 mm) diameter
- Rugged all-welded stainless steel design
- CANbus SAE J1939 or CANopen protocol
- Standard ranges from 0-50 PSI thru 0-10K PSI (3.5 thru 690 bar)
- Temperature ranges from -40°F to +300°F (-40°C to 150°C)

APPLICATIONS:

- Oilfield vehicle engine oil and transmission monitoring
- Oil rig topside controls
- Automotive test stands
- Process skids
- Medical equipment
- Laboratory R&D

PRODUCT OVERVIEW:

The Model 543 series from GP:50 is an all-stainless steel, dual pressure and temperature CANbus output transmitter. Its compact design reduces I/O and insertion points where size and weight are considerations. Units are available in a variety of pressure and temperature ranges, with support for both CANbus J1939 and CANopen protocols.

FIELD OPTIONS:

- Field adjustable zero & span
- Adjustable message addresses, bit rate and custom streaming
- Optional extended CAN 2.0B 29-bit CAN identifiers
- Alternate probe lengths, process ports and electrical connections
- Optional improved temperature specifications available. Please consult factory.

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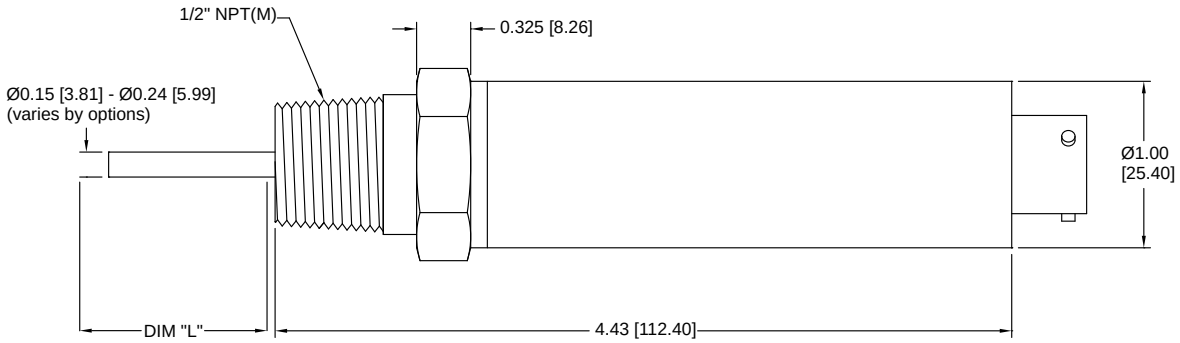
A5SL-037
REV-A

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	MODEL 543
A/1	+EXC
B/2	-EXC
C/3	CASE GND
D/4	CANBUS HI
E/5	CANBUS LOW
F/6	N/C

L = 0.50 TO 7.00 INCH PROBE LENGTH

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**
  Standard: 9-36 Vdc
  Optional Expanded: 4.5 to 37 Vdc
- **Output Signal:** CANbus SAE J1939
- **Current Draw:** 40 mA
- **Standard Resolution:** 18-bit
- **Zero Balance:** ±0.2% FSO at +70 °F
- **Standard Messaging:**
  Pressure, temperature & raw sensor signals
  (Up to four messages can be streamed)
- **Standard CAN Protocol:** 11-bit CAN identifiers
  (Optional Extended CAN 2.0B 29-bit CAN identifiers)
- **Connection:** 6-pin Bendix connector

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH stainless steel
- **Housing:** 300 series stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO
Improved: Optional ±0.2% FSO or ±0.1% FSO

MECHANICAL

- **Process connection:** ½" NPT (M) with 0.75" temperature probe
- **Proof Pressure:** 2X FSO (optional 5X)
- **Burst Pressure:** 5X FSO

Optional ports and probe lengths available

PRESSURE RANGES

- 0-50 thru 0-10K PSI (3.5 thru 690 BAR)
  gauge, sealed gauge, absolute

THERMAL SPECIFICATIONS (FOR PRESSURE OUTPUT)

- **Compensated:** +30 °F to -185 °F (-1 °C to -120 °C)
- **Operating Ambient:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Operating Process:** -40 °F to +250 °F (-40 °C to +120 °C)
- **Storage:** -65 °F to +250 °F (-55 °C to +120 °C)
- **Effect on zero/span:** <±0.5 % FSO/100 °F

TEMPERATURE MEASUREMENT

- **Ranges:** -40 °F to +300 °F (-40 °C to +150 °C)
- **Standard Accuracy:** ±0.5 °C from -70 °F to +260 °F (-55° to +125°C)
- **Expanded Accuracy:** ±1.0 °C from -40 °F to +400° F (-40 °C to +205 °C)
- **Standard Resolution:** 32 °F (0.06 °C), 33 °F (0.5 °C) expanded

Standard configurations shown.
Please consult factory for other options.

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DOWNHOLE PRESSURE TRANSDUCER

MODEL 120

Model 120
Downhole Pressure Transducer

FEATURES:

- Rated to +400 °F (+204 °C) and 30K PSI (2,068 BAR)
- Compact design, ½" diameter
- Welded, hermetic construction
- Pressure and temperature outputs
- 10mV/V output

APPLICATIONS:

- Oil & gas exploration and production
- MWD, PWD & LWD tools
- Geothermal
- Wellhead monitoring
- Coil tubing

PRODUCT OVERVIEW:

The Model 120 from GP:50 is a high-pressure, high-temperature pressure sensor for oil & gas downhole tool applications. Its highly compact and corrosion-resistant design allows for ease of installation within challenging exploration environments, particularly where space is at a premium. The sensor is designed to withstand high shock and vibration inputs, with further inclusion of an optional temperature output for expanded measurement capabilities.

FIELD OPTIONS:

- Temperature output
- Optional electrical connections
- Alternate wetted materials and pressure ports
- Custom design available

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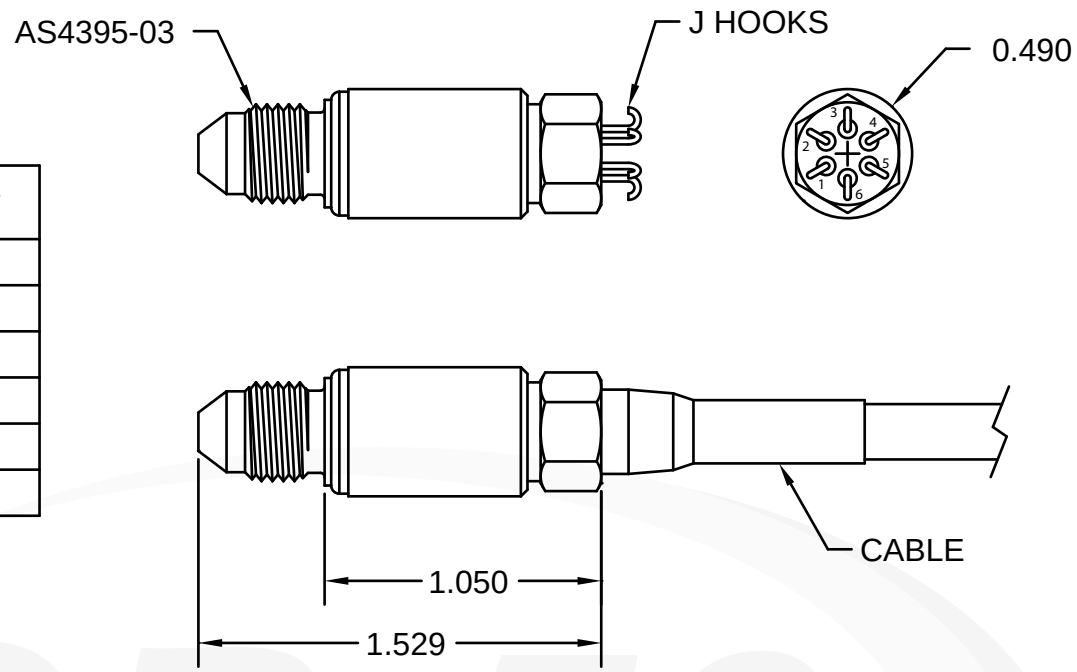
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

PIN / COLOR	MODEL 120
1 / RED	+EXE
2 / BLK	+SIG
3 / BLUE	-SIG
4 / WHT	-EXE
5	N/C
6	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** 5.0 to 15 Vdc

- **Output Signal:** 10mV/V at 10V excitation
- **Load Impedance:** 50K Ω
- **Bridge Resistance:** 4000 Ω typical
- **Connection:** Solder connection via J-Hooks

MATERIALS OF CONSTRUCTION

- Titanium (Inconel 718 optional)

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

±0.25% FSO standard, 0.1% available (consult factory)

MECHANICAL

- **Process connection:** AS4395-03
- **Proof Pressure:** 1.5X range
- **Burst Pressure:** 3.0X range on ranges less than 25K PSI (1,724 BAR)

PRESSURE RANGES

- 0 to 250 PSI thru 0 to 30K PSI (345 thru 2,068 BAR)

THERMAL SPECIFICATION

- **Compensated:** -65 °F to +392 °F (-54 °C to +200 °C)
- **Operating:** -320 °F to +410 °F (-195 °C to +210 °C)
- **Zero:** ±0.5% FSO/100 °F
- **Span:** ±1.5% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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HIGH-PRESSURE HIGH-TEMPERATURE (HPHT) WECO® UNION PRESSURE TRANSMITTER

MODEL 170 / 270 / 370 QX

Model 170 / 270 / 370 QX
High-Pressure High-Temperature (HPHT)
WECO® "Hammer" Union
Pressure Transmitter

FEATURES:

- 2"-1502, 2002 and 2202 WECO® Union compatible
- Process temperature rated to +350 °F (+177 °C)
- 0 to 5K thru 0 to 20K PSI (345 thru 1,379 BAR)
- Corrosion resistant materials
- Optional improved accuracy specifications
- Hazardous area location approvals

APPLICATIONS:

- High-pressure, high-temperature (HPHT) wells
- Choke and kill manifolds
- Blowout preventer (BOP)
- Hydraulic fracturing

PRODUCT OVERVIEW:

GP:50's Model 370-QX series is designed for High Pressure High Temperature (HPHT) well applications. This series is designed to fit the standard WECO® 2"- 1502 or 2"- 2002/2202 unions and operates at a continuous process temperature to +350 °F (+177 °C). It offers reliable service in high shock and vibration applications such as cementing, fracturing and drilling mud pressure measurement.

FIELD OPTIONS:

- WECO® 2" 1502 or 2" 2002 wing union fitting
- Stainless steel or Inconel X750/ X718 construction
- Shunt calibration signal
- 3 mV/V, 0 to 5 Vdc, 4-20 mA or CANbus output
- Comprehensive list of electrical connections including shipboard rated cable

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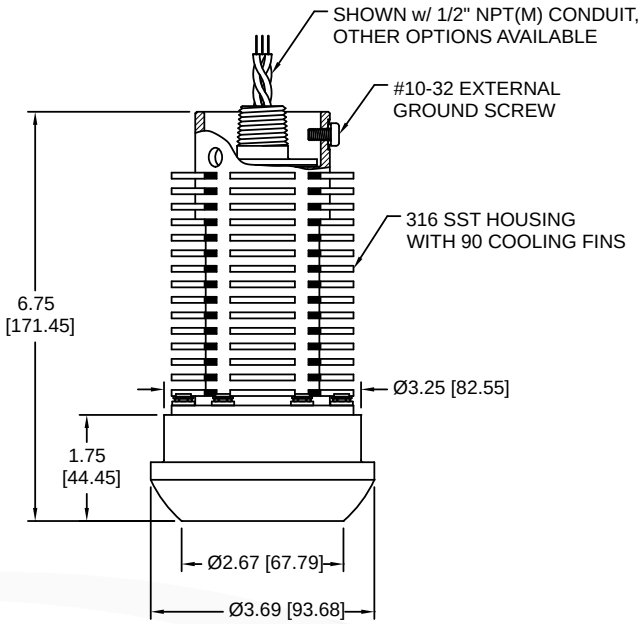
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 170QX	MODEL 270QX	MODEL 370QX
A/1/RED	+EXC	+EXC	+EXC/SIG
B/2/BLK	-EXC	-EXC	-EXC/SIG
C/3/BLU	+SIG	+SIG	+SHUNT (ALT)
D/4/WHT	-SIG	-SIG	N/C
E/5/ORG	+SHUNT (OPT)	+SHUNT (OPT)	+SHUNT (OPT)
F/6/BRN	-SHUNT (OPT)	-SHUNT (OPT)	-SHUNT (OPT)
G/7/GRN	CASE GND	CASE GND	CASE GND



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**

(Model 170) 15 Vdc max

(Model 270) 9 to 36 Vdc

(Model 370) 9 to 36 Vdc (10 to 28 Vdc for GI/AI/I approvals)

- **Output Signal:**

(Model 170) 3 mV/V

(Model 270) 0 to 5 Vdc

(Model 370) 4-20 mA

(Model 570) CANbus / SAE J1939

- **Load Resistance:**

(Model 170) >100K Ω
(Model 270) >10K Ω

- **Connection:** Bendix PTO2E-10-6P standard
- **Input Current:**

(Model 170) 1 mA

(Model 270) 8 mA

(Model 370) 23 mA max.

- **Shunt Calibration:**

(Model 170/270) 100% FSO by shorting 2 pins, non-isolated version

(Model 370) 100% FSO by powering 2 pins, fully isolated

MATERIALS OF CONSTRUCTION

- **Sensor:** 17-4 PH stainless steel standard Inconel X750 and Inconel 718 optional
- **Housing:** 300 series stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- Standard: ≤±0.25% FSO
- Zero Balance/Span: <±1.0% FSO/100 °F

MECHANICAL

- **Process Connection:** WECO® 2"- 1502 or 2002/2202
- **Proof Pressure:** 1.5X FSO
- **Burst Pressure:** 3.0X FSO
- **Ingress Protection:** IP67 (some options may effect rating)

PRESSURE RANGES

0 to 1000 PSI thru 0 to 20K PSI (69 thru 1,379 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** -40 °F to +350 °F (-40 °C to +177 °C)
- **Operating Process:** -50 °F to +360 °F (-45 °C to +182 °C)
- **Operating Ambient:** -50 °F to +120 °F (-45 °C to +49 °C) Assumes a +350 °F (+177 °C) process temp, otherwise -50 °F to +185 °F (-45 °C to +85 °C)
- **Storage:** -60 °F to +190 °F (-51 °C to +87 °C)

APPROVALS (370 SERIES ONLY, OTHERS PENDING)

- FM/CSA/ATEX/IEC Intrinsic Safety
- FM/CSA/ATEX/IEC Zone 2
- CE Marked

Standard configurations shown.
Please consult factory for other options.

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice. Please contact GP:50 for assistance with your application.

WECO® is a federally registered trademark of FMC Technologies

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WECO® HAMMER UNION TEMPERATURE TRANSDUCER

MODEL 271 / 371

Model 271 / 371
WECO® "Hammer" Union
Temperature Transducer

Current Approval:

Pending Approval:

FEATURES:

- 2"- 1502, 2002 or 2202 WECO® Sizes
- Rated to 22,500 PSI (1,551 BAR)
- Corrosion resistant materials
- 0 to 5 Vdc or 4-20 mA outputs
- Calibrated temperature range from -40 °F (-40 °C) up to +250 °F (+121 °C)

APPLICATIONS:

- Drilling and well servicing
- Choke and kill operations
- Hydraulic fracturing

PRODUCT OVERVIEW:

GP:50 Model 71 series is specifically designed to provide accurate temperature measurement in a WECO® union configuration. Optional WECO® union sizes, electrical connections and RTD, 0 to 5 Vdc or 4-20 mA outputs available.

FIELD OPTIONS:

- Optional electrical connections
- Inconel wetted parts
- Digital outputs RS232, CANbus or RS485
- ATEX Intrinsically Safe Approval

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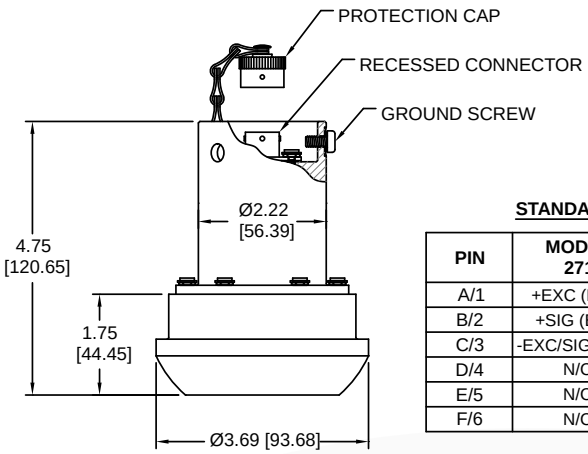
A5SL-043
REV-A

DIMENSIONAL DRAWING

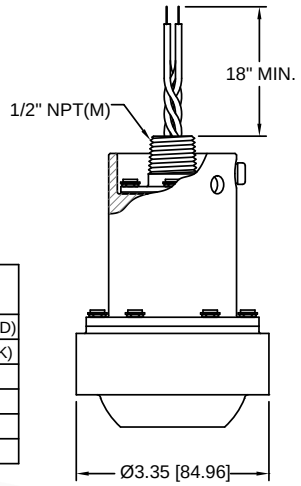
All dimensions are in inches (mm)



2" #1502 CONFIGURATION
(SHOWN WITH "CA" CONNECTOR)

STANDARD WIRING

PIN	MODEL 271	MODEL 371
A/1	+EXC (RED)	+EXC/SIG (RED)
B/2	+SIG (BLU)	-EXC/SIG (BLK)
C/3	-EXC/SIG (BLK)	N/C
D/4	N/C	N/C
E/5	N/C	N/C
F/6	N/C	N/C



2" #2002/2202 CONFIGURATION
(SHOWN WITH "CF" CONNECTOR)

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**
  (Model 271) 9 to 36 Vdc
  (Model 371) 9 to 36 Vdc
- **Output Signal:**
  (Model 271) 0 to 5 Vdc
  (Model 371) 4-20 mA
- **Insulation Resistance:**
  (Model 271 & 371) ≥100 MΩ at 50 Vdc
- **Connection:** Bendix PTO2E-10-6P

MATERIALS OF CONSTRUCTION

- **Sensor:** 17-4 PH stainless steel
- **Housing:** 300 series stainless steel

MECHANICAL

- **Process Connection:** 2" 1502, 2002 or 2202 WECO®
- **Maximum Operating Pressure:** 22,500 PSI (1,551 BAR)
- **Approximate weight:** <5 lbs (2.3 kg)

ACCURACY

- Standard: ±3 °F (±1.41 °C)
- Zero Balance (@ 70 °F): ±0.5% FSO

CALIBRATED TEMPERATURE RANGES

0 °F to +250 °F (-18 °C to +121 °C)
-40 °F to +250 °F (-40 °C to +121 °C)

APPROVALS (370 SERIES ONLY, OTHERS PENDING)

Currently Available:
- ATEX/IEC Intrinsically Safe: II 1 G Ex ia IIC T5 Ga
- ATEX Zone 2: II 3 G Ex nA/ic IIC T5 Gc

Pending:
- IEC Zone 2: II 3 G Ex nA/ic IIC T5 Gc
- FM/CSA: Intrinsically Safe: Class I, Division 1, Groups A-G, T5, Ex ia IIC T5
- FM/CSA: Division/ Zone 2: Class I Division 2, Groups A-G, T5, Ex nC/nA/nL T5

Standard configurations shown.
Please consult factory for other options.

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SUBSEA DIFFERENTIAL PRESSURE TRANSDUCER

Model 7540
Subsea Differential Pressure Transducer

MODEL 7540

FEATURES:

- Ranges from 30 thru 7,500 PSID (2 thru 517 BAR)
- Up to 10K PSI (689 BAR) line and proof pressure
- Depths to 30K ft WC (9,144 meters)
- Compact, seawater rated design
- Manufactured to MIL-spec requirements
- NIST traceable
- Optional improved accuracy to ±0.05% FSO (BFSL)

APPLICATIONS:

- Submarine hydraulic systems
- Submarine propulsion systems
- Subsea oil wellhead pressures
- BOP control systems

PRODUCT OVERVIEW:

The Model 7540 from GP:50 is a highly rugged differential pressure transducer, designed to address the tough environmental challenges of subsea and other marine service environments. It is manufactured and tested to stringent MIL and MIL-spec standards for high-reliability within extreme environments.

FIELD OPTIONS:

- 0-5 Vdc, 0-10 Vdc or 4-20 mA output
- Optional digital output (CANbus, RS485, USB)
- 316L stainless steel, Inconel or Hastelloy construction
- 10K PSI (689 BAR) static line pressure
- Wide selection of subsea rated connectors
- Bidirectional or unidirectional output
- RS232 and CANbus options available, consult factory

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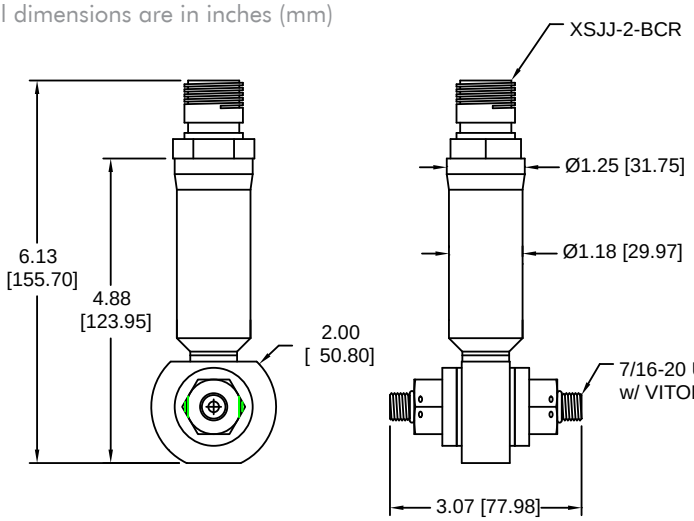
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	4-20mA	4-WIRE VDC ISOLATED	4-WIRE VDC NON-ISOLATED	3-WIRE VDC
A/1	+EXC/SIG	+EXC	+EXC	+EXC
B/2	N/C	+SIG	+SIG	+SIG
C/3	N/C	-SIG	-SIG*	N/C
D/4	-EXC/SIG	-EXC	-EXC*	-EXC/SIG
E/5	N/C	N/C	N/C	N/C
F/6	N/C	N/C	N/C	N/C

*COMMONS JUMPERED

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0-5 Vdc, 0-10 Vdc and 4-20 mA (CANBus RS485 and USB)
- **Supply Voltage:** 18 to 36 Vdc (Vdc output) 9 to 36 Vdc (4-20 mA output)
- **Load Impedance (4-20 mA):**
  1,350Ω max. at 36 Vdc
  750Ω max. at 24 Vdc
  300Ω max. at 18 Vdc
- **Output Current** (0 to 5 Vdc): 2 mA max for ± 0.1% FSO attenuation
- **Input Current:** 10 mA nominal
  4-wire isolated Vdc output - 45 mA nominal
- **Response Time:** <4 ms
- **Connection:** XSJJ-2-BCR (Seacon 2-pin) standard, other options available, consult factory

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Static Accuracy:** <±0.3% FSO, ±0.10% FSO or ±0.05% FSO
- **Zero balance/span balance:** ±0.5% FSO
- **Non-repeatability:** <±0.1% FSO
- **Hysteresis:** <±0.2% FSO
- **Non-linearity:** <±0.2% FSO
- **Thermal Error:** ±0.5% FSO/100 °F
- **Total Error Band:** ±1.3% FSO (includes all 5 parameters)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316L stainless steel
- **Housing:** 316L stainless steel (optional Inconel, Hastelloy or Monel)

MECHANICAL

- **Process connection:** 7/16-20 UNJF-3A (AS4320-04) For ranges >10K PSI: High pressure coned per Autoclave Engineers F-250C
- **Proof Pressure:** 1.5X Pressure Range or 10K PSI (689 BAR), whichever is less (10X optional)
- **Burst Pressure:** 3X Pressure Range or 10.5K PSI (724 BAR), whichever is less (15X optional)
- **Line Pressure:** 3K PSI (207 BAR), optional 10K PSI (689 BAR)
- **Line Pressure Effect (Zero):**
  <±1% FSO at 1K PSI (69 BAR)
  <±2.5% FSO at 3K PSI (207 BAR)
  <±5% FSO at 10K PSI option (689 BAR)
- **Approximate Weight:** 2 lb (0.9 Kg some options may affect weight)

PRESSURE RANGES

- 30 thru 7,500 PSID (2.1 thru 517.1 BAR) bidirectional or unidirectional

THERMAL SPECIFICATION

- **Compensated Ambient:** -30 °F to +160 °F (-34 °C to +71 °C)
- **Operating Ambient:** -40 °F to +190 °F (-40 °C to +88 °C)

- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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WELLHEAD SUBSEA PRESSURE & TEMPERATURE TRANSMITTER

Model 7500-9000
Wellhead Subsea
Pressure & Temperature Transmitter

MODEL 7500-9000

FEATURES:

- Provides both pressure and temperature outputs
- API flanged process connections up to 4-1/16”
- Seawater submersible to 30K ft (9,144 M)
- ±0.20% FSO accuracy
- NIST traceability and calibration
- Optional HART communications protocol

APPLICATIONS:

- BOP controls
- Subsea wellhead & riser controls
- Subsea lubricator systems
- Offshore oil platforms

PRODUCT OVERVIEW:

The Model 7500-9000 Series from GP:50 is a high-accuracy pressure and temperature transmitter, offering more than 15 years of field-proven pedigree within subsea wellhead applications. The Series features a robust design with all stainless steel housings and wetted parts, full seawater submersibility to 30K ft (9,144 M) and an API flanged process connection. An optional redundant sensor provides backup pressure and temperature outputs, in the case of prime element failures or cabling issues. Optional HART communication protocols are available for remote measurements.

FIELD OPTIONS:

- Redundant sensors and outputs
- Inconel or Hastelloy wetted material
- Subsea rated electrical connectors
- API rated flanges from 2-1/6 to 4-1/16”
- HART communications protocol

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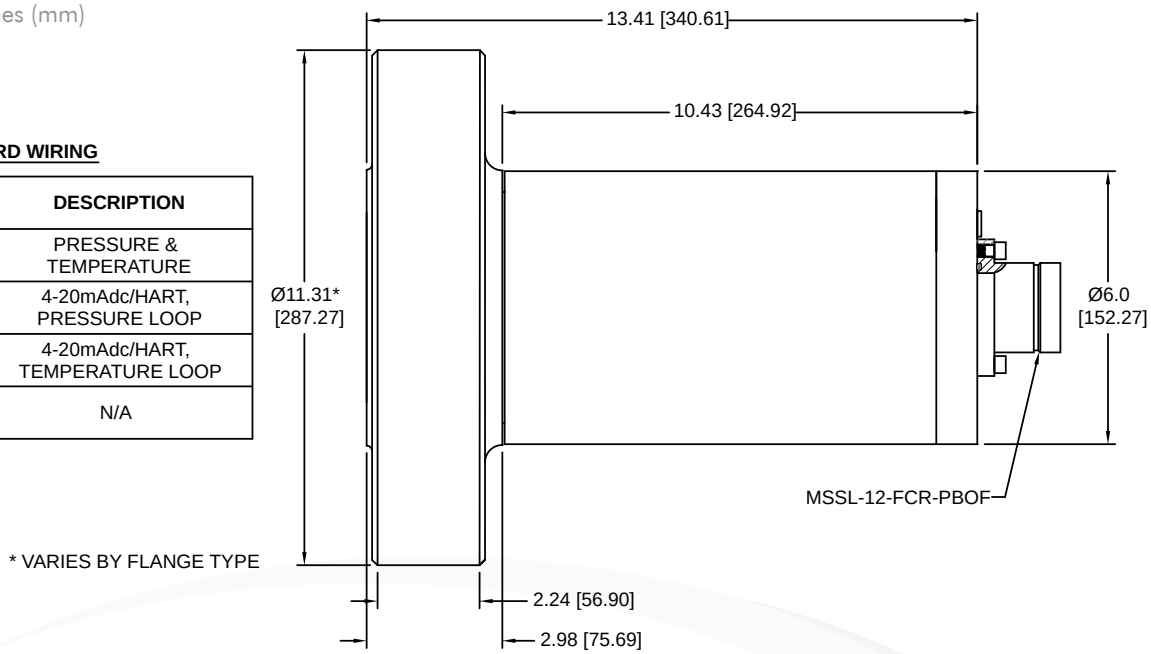
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 7500-9000	DESCRIPTION
1	+EXC/SIG	PRESSURE & TEMPERATURE
2	-EXC/SIG	4-20mAdc/HART, PRESSURE LOOP
8	-EXC/SIG	4-20mAdc/HART, TEMPERATURE LOOP
3,4,5,6,7, 9, 10, 11, 12	N/C	N/A



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**
  12 to 36 Vdc
  18 to 36 Vdc for HART communication (250 Ω load required)
- **Output Signal:**
  4-20 mA both pressure and temperature
  HART optional
- **Zero Balance:**
  ±0.5% FSO pressure and temperature
- **Span:**
  ±0.5% FSO pressure and temperature
- **Stability:**
  ±0.5% FSO/year
- **Connection:**
  MSSL-12-FCR-PBOF

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  718 Inconel & 4130
  (optional Inconel or Hastelloy inlay)

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

±0.2% FSO
(optional ±0.1% FSO)

MECHANICAL

- **Proof Pressure:** 1.5X pressure range
- **Burst Pressure:** 2.5X pressure range
- **API Flange:**
  2-1/16" thru 4-1/16"
  Flush or extended nose versions

PRESSURE RANGES

0 to 5K thru 0 to 25K PSI (345 thru 1,724 BAR)

THERMAL SPECIFICATION

- **Compensated:**
  +32 °F to +392 °F (0 °C up to +200 °C)
- **Operating:**
  Electronics: +15 °F to +185 °F (-10 °C to +85 °C)
  HART: +15 °F to +160 °F (-10 °C to +70 °C)
- **Process:** +15 °F to +392 °F (-10 °C to +200 °C)
- **Effect on Zero/Span:** ±0.5% FSO per CTR

OPTIONAL VARIATIONS

- Consult factory

Standard configurations shown.
Please consult factory for other options.

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ROV SUBSEA PRESSURE TRANSDUCER

MODEL 7500-M254

Model 7500-M254
ROV Subsea Pressure Transducer

FEATURES:

- Subsea depth rated to 30K ft WC (9,144 meters)
- Differential design for sea depth reference
- ±0.2% FSO accuracy
- Operating ranges to 10K PSI (689 BAR)

APPLICATIONS:

- ROV
- AUV
- Submarine
- Oil & gas subsea wellhead control systems

PRODUCT OVERVIEW:

The 7500-M254 from GP:50 is a subsea pressure transducer, designed for use within remote or unmanned vehicles. Its open reference provides for sea depth pressure. When used in a non-conductive fluid bladder, the transducer also provides a gauge process pressure. In addition to ROV applications, the compact size and sea rated construction of the 7500-M254 make it ideal for the effective monitoring of subsea oilfield wellhead control systems.

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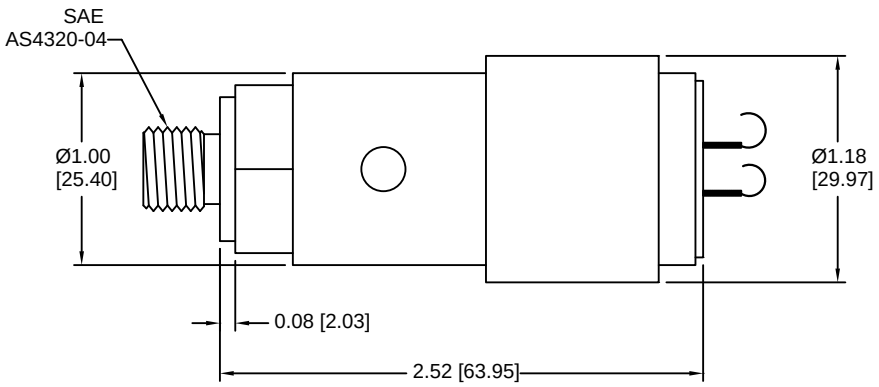
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 7500-M254
A/1	+EXC/SIG
B/2	N/C
C/3	N/C
D/4	-EXC/SIG
E/5	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** 9 to 36 Vdc
- **Output Signal:** 4-20 mA
  Optional mV/V or 0 to 5 Vdc
- **Connection:** High-temperature solder J-hook connection

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** Inconel 718
- **Housing:** 316L stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

±0.2% FSO

MECHANICAL

- **Process connection:** SAE AS4320-04 (M) (7/16-20 UNF)
- **Proof Pressure:** 2X range
- **Burst Pressure:** 3X range
- **Approximate Weight:** 0.3 lb (127 gm)

PRESSURE RANGES

- 500 PSI to 10K PSI (34 to 689 BAR)

THERMAL SPECIFICATION

- **Zero balance and span:** ±0.5% FSO
- **Compensated (ambient):** +35 °F to +170 °F (+23 °C to +205 °C)
- **Operating (ambient):** -20 °F to +190 °F (-4 °C to +205 °C)
- **Storage:** -65 °F to +250 °F (-54 °C to +121 °C)*

*condensation free environment

Standard configurations shown.
Please consult factory for other options.

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MODEL 240/340 AI/AN

Model 240/340 AI/AN
Hazardous Locations Pressure Transmitter

Current Approval:

Pending Approval:

FEATURES:

- Compact design for easier installation
- All stainless steel welded construction
- ATEX & IEC Approvals
- Improved accuracy and thermally compensated
- Ranges 0 to 1 PSI thru 0 to 50K PSI (69 Mbar to 3447 Bar)
- FM, & CSA Approvals Pending

APPLICATIONS:

- Natural Gas Compression
- Rig safety systems
- Well head control
- Control panels
- On-board transmission & engine monitoring

PRODUCT OVERVIEW:

GP:50's Model 40 series incorporates over 25 years of oil field proven design in a 1" diameter package. The 40 series provides a rugged solution for hazardous approved areas, especially where space constraints are a concern. Its all welded stainless steel design will provide years of reliable service in some of the harshest environments.

APPROVALS:

Currently Available:

- ATEX/IEC Intrinsically Safe: II 1 G Ex ia IIC T5 Ga
- ATEX Zone 2: II 3 G Ex nA/ic IIC T5 Gc

Pending:

- IEC Zone 2: II 3 G Ex nA/ic IIC T5 Gc
- FM/CSA: Intrinsically Safe: Class I, Division 1, Groups A-G, T5, Ex ia IIC T5
- FM/CSA: Division/ Zone 2: Class I Division 2, Groups A-G, T5, Ex nC/nA/nL T5

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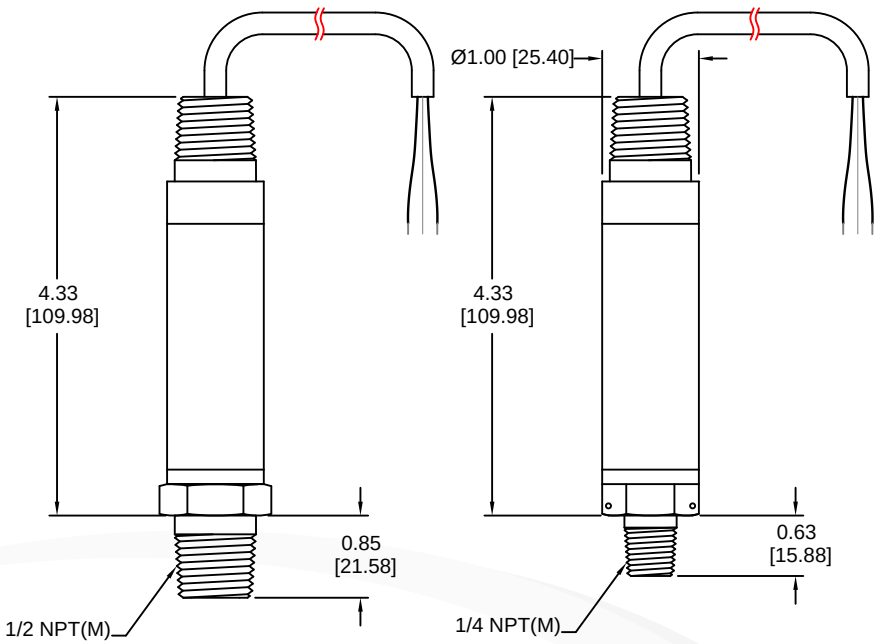
DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 240	MODEL 340
RED	+EXC	+EXC/SIG
GRN	+SIG	CASE GND
WHT	CASE GND	N/C
BLK	-EXC/SIG	-EXC/SIG
GRN/YEL	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**
  (Model 240) 9 to 28 Vdc
  (Model 340) 10 to 28 Vdc
- **Output Signal:**
  (Model 240) 0-5 Vdc
  (Model 340) 4-20 mA
- **Load Impedance:**
  (Model 240) 50K Ω max. 24 Vdc
  (Model 340) 750 Ω max. 24 Vdc
- **Input Current:**
  (Model 240) 8 mA nominal
- **Insulation Resistance:** >10 MΩ at 50 Vdc and +70 °F
- **EMI Specs:** EMC directive 2004/108/EC, EN 61326 emission
- **Connection:** 1/2" NPT M conduit w/ 6ft 18 AWG multi-conductor cable

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  ≤2000 PSI 316L SST w/silicon oil fill (Fomblin oil fill available)
  >2000 PSI 17-4 PH SST (Hastelloy and Inconel available)
- **Housing:** 316 stainless steel

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Standard** ±0.20% FSO
- **Optional** ±0.10%

Zero Balance and FSO: ±1% FSO at +70 °F

MECHANICAL

- **Process Connection:** 1/4" NPT (M), options available
- **Proof Pressure:** 2X FSO up to 20K PSI,1.2X > 20K PSI
- **Burst Pressure:** 5X FSO up to 20K PSI, 1.5X > 20K PSI
- **Approximate Weight:** 0.5 lb nominal, options may increase weight
- **Environmental:** Design to meet IP67 (Some options may affect this. Consult factory if critical.)

PRESSURE RANGES

- 0 to 1 PSI thru 0 to 50K PSI, some options may affect range (PSIG, PSIS, PSIA, PSIV & compound ranges available)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +250 °F (-40 °C to +121 °C)
- **Operating:** -40 °F to +176 °F (-40 °C to +80 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±1.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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HIGH-ACCURACY PRESSURE TRANSDUCER

MODEL 241 / 341

Model 241 / 341
High-Accuracy Pressure Transducer

FEATURES:

- High accuracy to ±0.05% FSO
- High thermal stability +/-0.25% FSO/100 °F
- -40 to +250 °F compensation
- Compact, lightweight, all stainless steel design
- Less than 4 millisecond response time

APPLICATIONS:

- Dynamometer testing
- Transmission testing
- Brake testing
- Hydraulic & Pneumatic valve testing
- Jet engine testing
- Emission test stands

PRODUCT OVERVIEW:

Model 241/341 from GP:50 is our most accurate pressure transducer. It is designed specifically for aerospace and automotive test stand applications. More than 25 years of field expertise went into the design of a pressure transducer for exceptional reliability. The compact, corrosion-resistant, all-welded stainless steel design of the Model 241/341 offers ease of installation within space constrained environments. Static accuracy is available to ±0.05% FSO, with a total thermal error of 0.20% FSO over the compensated temperature range.

FIELD OPTIONS:

- Optional zero and span adjustment
- Shunt calibration for active line testing without a pressure source
- Comprehensive list of process and electrical connections for existing application retrofits

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DIMENSIONAL DRAWING

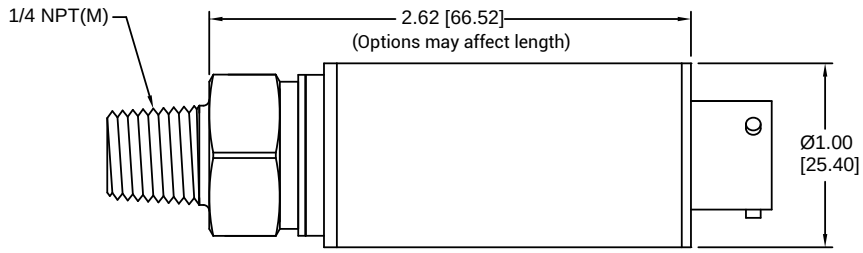
All dimensions are in inches (mm)

MODEL 241 WIRING

PIN/WIRE	DESCRIPTION
A/1/RED	+EXC
B/2/GRN	+SIG
C/3/-	N/C
D/4/BLK	-EXC/SIG
E/5/BRN	N/C or SHUNT
F/6/ORG	PROGRAM

MODEL 341 WIRING

PIN/WIRE	DESCRIPTION
A/1/RED	+EXC
B/2/BLK	-EXC/SIG
C/3/-	N/C
D/4/BLU	PROGRAM GND
E/5/BRN	N/C or SHUNT
F/6/ORG	PROGRAM



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9 to 32 Vdc (some options may affect this)
- **Output Signal:**
  (Model 241) 0 to 5 Vdc
  (Model 341) 4-20 mA
- **Load Resistance:**
  (Model 241) 100K Ω min.
  (Model 341) 1150 Ω max. at 32 Vdc
- **Circuit Protection:**
  Reverse polarity protected
  Output may be grounded indefinitely
  Over voltage protection to 1kV for <1ms
- **Response Time:** <4 msec typical
- **Connection:** PTIH-10-6P

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  ≤2,000 PSI: 316L SST w/silicon oil fill (Other fill available), Hastelloy optional
  >2,000 PSI: 17-4 PH SST, Inconel 718, 316L SS optional
- **Housing:** 300 series SST

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- ±0.10% and ±0.05% FSO
- Zero Balance and FSO: ±0.5% FSO @ 70 °F

MECHANICAL

- **Process Connection:** 1/4" NPT (M)
  (consult factory for complete list of options)
- **Proof Pressure:** 2X FSO or 22.5K PSI max. (1,551 BAR)
  (varies by pressure range)
- **Burst Pressure:** 5X FSO or 22.5K PSI max. (1,551 BAR)
- **Random Vibration:** 25 G RMS (20 to 2000 Hz)
- **Shock:** 100G peak for 11 msec, ½ Sine

PRESSURE RANGES

- 0-30" WC thru 20K PSI (1,379 BAR) Gauge, Vacuum, Absolute, Sealed Gauge (both hermetic and non-hermetic)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-18 °C to +82 °C)
- **Effect on Zero/Span:** ±0.5% FSO/100 °F each
  (±1.0% FSO/100 °F from -40 to 185 °F / (-40 °C to +85 °C)
- **Operating Temp:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Storage Temp:** -40 °F to +250 °F (-40 °C to +121 °C)

Improved performance options:
- **Expanded Ranges:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Improved Performance:**
  ±0.20% FSO/100 °F (-40 °F to +250 °F (-40 °C to +121 °C))

Standard configurations shown.
Please consult factory for other options.

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FLIGHT QUALIFIED LOW LEVEL PRESSURE TRANSDUCER

MODEL 7100

Model 7100
Flight Qualified Low Level
Pressure Transducer

GP:50 Cage Code: ON8Y7

FEATURES:

- Aircraft and space flight heritage
- Compact, lightweight all-stainless steel design
- High accuracies up to ±0.1% FSO
- Wide operating temperature range from -65 °F to +250 °F (-54 °C to +121 °C)
- Meets MIL-STD-810F shock and vibration specification
- J-001/NASA 8739.3 workmanship standards for soldered electrical connections
- Secondary containment ≥4,500 PSI (310 BAR)

APPLICATIONS:

- Commercial and defense satellites
- Launch vehicles
- Unmanned aerial vehicles
- Military and civilian aircraft
- Ground support and engine test stands
- Ground and engine testing

PRODUCT OVERVIEW:

The Model 7100 from GP:50 is a flight-qualified, low level pressure transducer, designed to provide high-accuracy measurements of up to ±0.1% FSO. Its flight heritage, spanning 25 years, makes it ideal for use within demanding aerospace and defense applications, including those in which higher shock and vibration levels may be present. Its compact and lightweight design facilitates ease of installation within space constrained environments.

FIELD OPTIONS:

- "B+ and S Class" electronics
- Temperature output
- Inconel, Hastelloy, and Monel wetted parts
- Wide selection of pressure ports and electrical connections

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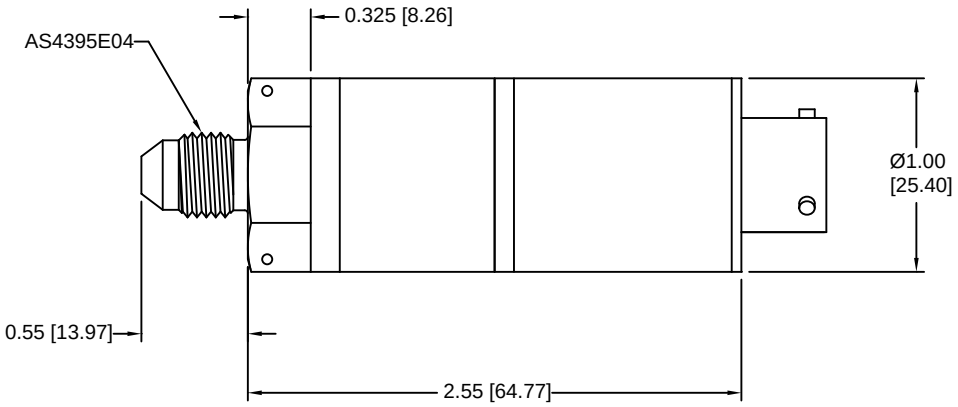
A5SL-048
REV-A

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 7100
A/1	+EXC
B/2	+SIG
C/3	-SIG
D/4	-EXC
E/5	N/C
F/6	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 1 to 3 mV/V (depending upon selected range) (optional 10 mV/V)
- **Supply Voltage:** 3.5 to 15 Vdc
- **Load Impedance:** 230K Ω min. for <0.1% FSO attenuation
- **Output Impedance:** 5K Ω standard, 350 Ω optional
- **Input Current:** 4-wire isolated Vdc output - 45 mA nominal, non-isolated Vdc -10 mA nominal
- **Response Time:** 2 ms typical
- **Connection:** PTIH-10-6P (MIL D38999 series) standard

ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Static Accuracy (RSS):** <±0.3% FSO, ±0.10% FSO
- **Zero/span balance:** ±0.5% FSO
- **Non-repeatability:** < ±0.1% FSO
- **Hysteresis:** < ±0.2% FSO
- **Non-linearity:** < ±0.2% FSO
- **Thermal Error:** ±0.5% FSO/100 °F (±0.25% FSO improved)
- **Total Error Band:** ±1.3% FSO, 1.0% FSO optional (includes all 5 parameters)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH stainless steel (Inconel, Hastelloy and Monel available)
- **Housing:** 316L stainless steel

MECHANICAL

- **Process connection:** AS4395E04 standard, AS5202-04, ¼" NPT (M) available
- **Proof Pressure:** 1.5X FSO with 25 PSIA min.,10X optional
- **Burst Pressure:** 3.0X FSO, 15X optional
- **Secondary containment:** Rated at 4,500 PSI (310 BAR) for ranges ≥50 PSI; 2,400 PSI (166 BAR) for ranges <50 PSI
- **Random Vibration:** >25 G RMS (20 Hz to 2,000 Hz)
- **Sinusoidal Vibration:** 7.5 G's from 5 Hz to 100 Hz
- **Pyroshock:** >3,500 G's / 12 g
- **Constant Acceleration:** 5 G's for 30 minutes
- **Approximate Weight:** 4 oz (0.1 kg) some options may affect weight

PRESSURE RANGES

- 0 to 5 thru 0 to 15K PSIA, PSIG, PSIV, PSISG options (0.3 thru 1,034 BAR)

(Certain lower ranges may be oil-filled, consult factory)

THERMAL SPECIFICATION

- **Compensated:** -10 °F to +180 °F (-23 °C to +82 °C)
- **Operating:** -20 °F to +190 °F (-29 °C to +88 °C)
  Optional -65 °F to +250 °F (-54 °C to +121 °C)

- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice. Please contact GP:50 for assistance with your application.

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FLIGHT QUALIFIED PRESSURE TRANSDUCER

Model 7200
Flight Qualified Pressure Transducer

MODEL 7200

FEATURES:

- Up to ±0.1% FSO accuracy (RSS)
- "B+" and "S Class" electronics available
- Secondary containment rating up to 4,500 PSI (310 BAR)
- Optional 10X proof pressure
- 0 to 1 thru 0 to 15K PSI (69 MBAR to 1,034 BAR)
- High shock and vibration rated per MIL-STD-810F
- Full NIST traceability
- J-001/NASA 8739.3 standard workmanship

APPLICATIONS:

- Aviation and suborbital spacecraft
- Unmanned aerial vehicles
- Helicopter and rotorcraft
- Commercial and military satellites
- Launch vehicles

* Ground and engine testing

PRODUCT OVERVIEW:

The Model 7200 series from GP:50 is a flight qualified static pressure transducer, designed to provide high-accuracy pressure measurements within commercial aviation, military, aerospace, UAV, satellite, and defense applications. This highly rugged pressure transducer is designed and tested to both MIL-STD-461 and MIL-STD-810G standards. It is available in both test and program volumes to suit a variety of requirements.

FIELD OPTIONS:

- 0 to 5 Vdc, 0 to 10 Vdc and 4-20 mA outputs
  (Optional 4-wire isolated grounds on Vdc Units)
- "B+ and S Class" electronics
- Temperature output
- Inconel, Hastelloy, and Monel wetted parts
- Wide selection of pressure ports and electrical connections

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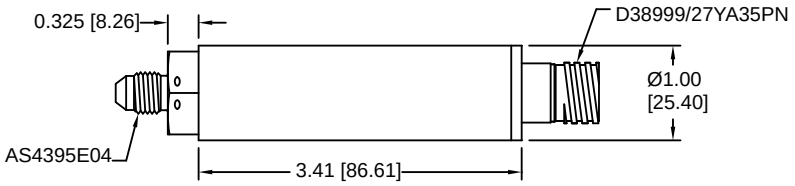
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

NOTE: LENGTH MAY VARY ON RANGES BELOW 50 PSI

PIN	4-20mA	4-WIRE VDC ISOLATED	4-WIRE VDC NON-ISOLATED	3-WIRE VDC
A/1	+EXC/SIG	+EXC	+EXC	+EXC
B/2	N/C	+SIG	+SIG	+SIG
C/3	N/C	-SIG	-SIG*	N/C
D/4	-EXC/SIG	-EXC	-EXC*	-EXC/SIG
E/5	N/C	N/C	N/C	N/C
F/6	N/C	N/C	N/C	N/C

*COMMONS JUMPERED

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc and 4-20 mA
- **Supply Voltage:** 18 to 36 Vdc (Vdc output)
  9 to 36 Vdc (4-20 mA output)
- **Load Impedance:**
  1,350 Ω max. at 36 Vdc
  750 Ω max. at 24 Vdc
  300 Ω max. at 18 Vdc
- **Output Current** (0 to 5 Vdc): 2 mA max for <0.1% FSO attenuation
- **Input Current:** 4 wire isolated Vdc output - 45 mA nominal, non-isolated Vdc -10 mA nominal
- **Response Time:** <2 ms typical
- **Connection:** PTIH-10-6/P (MIL D38999 series) standard, options available

ACCURACY

- **Static Accuracy (RSS):** <±0.3 FSO and ±0.10 FSO and ±0.05% FSO available on model 8200
- **Zero/span balance:** ±0.5% FSO
- **Non-repeatability:** < ±0.1 FSO
- **Hysteresis:** < ±0.2 FSO
- **Non-linearity:** < ±0.2 FSO
- **Thermal Error:** ±0.5% FSO/100 °F (±0.25% FSO improved)
- **Total Error Band:** ±1.3% FSO (includes all 5 parameters)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH sensor (<50 PSI 316L stainless steel) (Inconel, Hastelloy, and Monel optional)
- **Housing:** 316L stainless steel
- **Pressure ranges** < 50 PSI contain silicon or fomblin oil

MECHANICAL

- **Process connection:** AS4395E04 standard. Consult factory for other options
- **Proof Pressure:** 1.5X FSO,10X optional
- **Burst Pressure:** 3.0X FSO, 15X optional
- **Secondary containment:** Rated at 4,500 PSI (310 BAR) for ranges ≥50 PSI; 2,400 PSI (166 BAR) for ranges <50 PSI
- **Random Vibration:** >25 G RMS (20 Hz to 2,000 Hz)
- **Sinusoidal Vibration:** 7.5 G's from 5 Hz to 100 Hz
- **Pyroshock:** >2,500 G's / 12 g
- **Constant Acceleration:** 5 G's for 30 minutes
- **Weight:** <8 oz (<0.2 kg) some options may affect weight

PRESSURE RANGES

- 0 to 1 thru 0 to 15K PSIA, PSIG, PSIV, PSISG options (0.1 thru 1,034.2 BAR)

THERMAL SPECIFICATION

- **Operating:** -40 °F to +190 °F (-40 °C to +88 °C)
- **Compensated:** -10 °F to +180 °F (-23 °C to +82 °C)
- **Thermal Error:** ±0.5% FSO/100 °F (±0.25% FSO improved)
- **Expanded Option:** -65 to +250 °F (±2.3% FSO/100 °F)
- **Thermal Error:** ±0.5% FSO/100 °F (±0.25% FSO improved)

- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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FLIGHT QUALIFIED DIFFERENTIAL PRESSURE TRANSDUCER

Model 7300
Flight Qualified
Differential Pressure Transducer

MODEL 7300

FEATURES:

- Digital correction provides an optional 0.05% FSO accuracy
- Extremely lightweight, <8 oz (0.2 kg)
- 0 to 5 Vdc, 0 to 10 Vdc, or 4-20mA output
- Line pressure shift <1% FSO/1000 PSI
- 1000 PSI line pressure rating
- Ranges from 0-1 thru 0-500 PSID

APPLICATIONS:

- Aviation and suborbital spacecraft
- Space heritage flight
- Commercial and military satellites
- Launch vehicles
- Test stand applications
- Ground and engine testing

PRODUCT OVERVIEW:

The Model 7300 series from GP:50 is a flight qualified, differential pressure transducer digitally corrected to provide high-accuracy pressure measurement. The compact, proprietary sensor design provides added zero stability required for commercial aviation, military, aerospace, UAV, satellite, and defense applications.

FIELD OPTIONS:

- 0 to 5 Vdc, 0 to 10 Vdc isolated output
- Bi-directional operation
- Fomblin Oil fill for O2 applications

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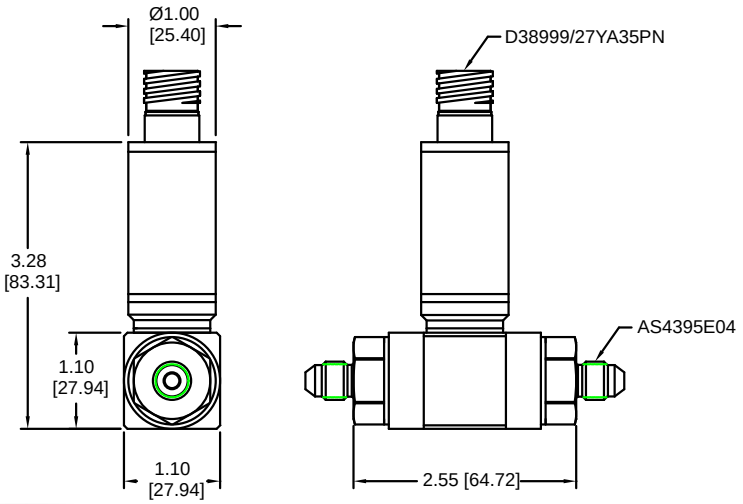
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	4-20mA	4-WIRE VDC ISOLATED	4-WIRE VDC NON-ISOLATED	3-WIRE VDC
1/RED	+EXC/SIG	+EXC	+EXC	+EXC
2/GRN	N/C	+SIG	+SIG	+SIG
3/WHT	N/C	-SIG	-SIG*	N/C
4/BLK	-EXC/SIG	-EXC	-EXC*	-EXC/SIG
5/BLU	N/C	N/C	N/C	N/C
6/BRN	N/C	N/C	N/C	N/C

* COMMONS JUMPERED



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc digitally corrected
- **Supply Voltage:** 18 to 36 Vdc (unregulated)
- **Response Time:** ~500 Hz
- **Circuit Protection:** Meets MIL-STD-461 EMI/RFI, Reverse polarity
- **Connection:** PTIH-10-6P standard, options available

ACCURACY

- **Static Accuracy:** <±0.10% FSO, ±0.05% FSO available
- **Zero-repeatability:** <±0.04% FSO
- **Hysteresis:** <±0.05% FSO
- **Zero/Span Balance:** ±0.1% FSO
- **Line Pressure Effect (Zero):** <±1.0% FSO/100 PSI

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316L stainless steel
- **Housing:** 300 series stainless steel
- **Internal Fill:** Silicon Oil (Fomblin Oil Available)

Standard configurations shown.
Please consult factory for other options.

MECHANICAL (Other options available)

- **Process connection:** AS5202-04 standard
- **Proof Pressure:** 3X pressure range (Higher available)
- **Burst Pressure:** 5X pressure range
- **Static Line Pressure:** 1000 PSI
- **Random Vibration:** >25 G RMS (20 Hz to 2,000 Hz)
- **Approximate Weight:** 8 oz (0.2 kg)
  (some options may affect weight)

PRESSURE RANGES

- 0 to 1 thru 0 to 500 PSID (0.07 Bar thru 34.5 BAR)
  Bi-directional or uni-directional

THERMAL SPECIFICATION

- **Compensated Range:** 0 °F to +180 °F (- 18°C to + 83°C)
  (other available)
- **Operating Range:** -40 °F to +250 °F (-40 °C to +121 °C)
- **Storage Ambient:** -65 °F to +250 °F (-54 °C to +121 °C)
- **Effect on Zero/Span:**
  Standard: ±0.50% FSO/100 °F
  Improved: ±0.25% FSO/100 °F
- **NIST Traceability**
- **Workmanship:** J-001
- **Quality System:** ISO 9001:2008

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice. Please contact GP:50 for assistance with your application.

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HIGH LINE AEROSPACE DIFFERENTIAL PRESSURE TRANSDUCER

Model 7400
High Line Aerospace
Differential Pressure Transducer

GP:50 Cage Code: ON8Y7

MODEL 7400

FEATURES:

- High static line option to 10K PSI (689 BAR)
- True wet-wet design
- All stainless steel wetted parts
- High-accuracy to ±0.3% FSO
- Meets MIL-STD-810F shock and vibration specification
- J-001/NASA 8739.3 workmanship standards for soldering

APPLICATIONS:

- Ground support systems
- Aircraft engine test stands
- Hydraulic test stands
- Launch vehicles
- Ground and engine testing

PRODUCT OVERVIEW:

The Model 7400 from GP:50 is a high-line, high-pressure, aerospace grade differential pressure transducer. Its true wet-wet all stainless steel design allows it to effectively measure both corrosive fluid and industrial gas pressures to high degrees of accuracy and repeatability. Its optional 10X proof pressure and 10K PSI (689 BAR) line rating also facilitates its use within demanding aircraft engine and hydraulic systems. In addition to expanded ranges, a variety of pressure ports, electrical connections, outputs, and wetted part materials are available. Please consult the factory for details.

FIELD OPTIONS:

- 4-20 mA, 0-5 and 0-10 Vdc isolated and non-isolated outputs
- Optional 10X proof and 10K PSI line rating
- RTD temperature output
- Inconel, Hastelloy, and Monel wetted parts
- Wide selection of pressure ports and electrical connections

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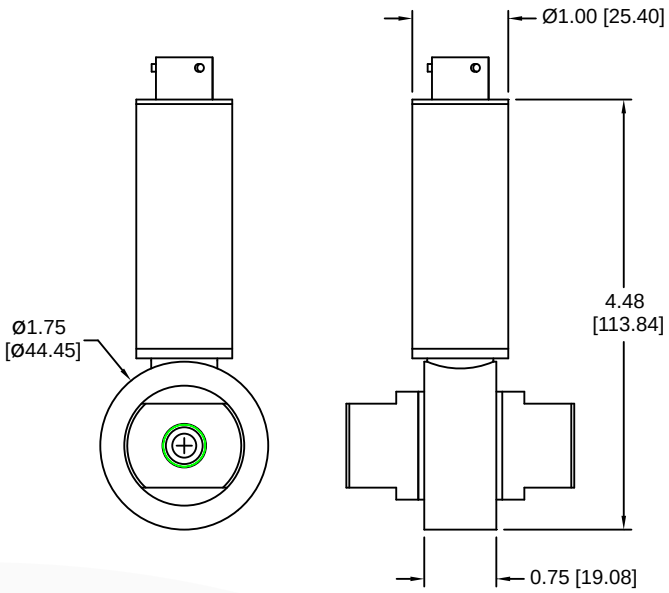
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	4-20mA	4-WIRE MV/V & VDC ISOLATED	4-WIRE VDC NON-ISOLATED	3-WIRE VDC
A/1	+EXC/SIG	+EXC	+EXC	+EXC
B/2	N/C	+SIG	+SIG	+SIG
C/3	N/C	-SIG	-SIG*	N/C
D/4	-EXC/SIG	-EXC	-EXC*	-EXC/SIG
E/5	N/C	N/C	N/C	N/C
F/6	N/C	N/C	N/C	N/C

*COMMONS JUMPERED

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 4-20 mA, 0 to 5 Vdc or 0 to 10 Vdc (3-wire or optional 4-wire isolated)
- **Supply Voltage:** 18 V to 36 Vdc (others available)
- **Load Impedance (4-20 mA):** 1,350 Ω max. at 36 Vdc, 750 Ω max. at 24 Vdc, 300 Ω max. at 18 Vdc
- **Output Current (Vdc):** 2 mA max. for <0.1% FSO attenuation
- **Input Current:** 4 -wire isolated Vdc options - 45 mA nominal, non-isolated Vdc -10 mA nominal
- **Response Time:** 4 ms typical
- **Connection:** PTIH-10-6P (MIL D38999 series) standard (please consult factory for other options)

ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Static Accuracy (RSS):** <±0.3% FSO
- **Zero/span balance:** ±0.5% FSO
- **Non-repeatability:** < ±0.1% FSO
- **Hysteresis:** < ±0.2% FSO
- **Non-linearity:** < ±0.2% FSO
- **Thermal Error:** ±1.0% FSO/100 °F
- **Total Error Band:** ±2.3% FSO (includes all 5 parameters)
- **Line Pressure Effect (Zero):** <±1% FSO at 1,000 PSI (69 BAR), <±2.5% FSO at 3,000 PSI (207 BAR), <±5% FSO at 10K PSI (689 BAR) optional

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316L stainless steel
- **Housing:** 300 series stainless steel
- **Internal Fill:** Silicon Oil (Fomblin Oil Available)

MECHANICAL

- **Process connection:** AS5202-04 (Other ports available)
- **Proof Pressure:** (high & low side) 2X pressure range or 10K PSI (689 BAR) max, whichever is less
- **Burst Pressure:** (high & low side) 3X pressure range or 4,500 PSI (310 BAR) max, whichever is less
- **Static Line Pressure:** 3K PSI (207 BAR), optional 10K PSI (689 BAR)
- **Random Vibration:** >25 G RMS (20 Hz to 2,000 Hz)
- **Approximate Weight:** 1.5 lbs (0.7 kg) (some options may affect weight)

PRESSURE RANGES

- 0 to 30 thru 0 to 7,500 PSID (2 thru 517 BAR) (bidirectional or unidirectional)

THERMAL SPECIFICATION

- **Compensated:** 0 °F to +180 °F (-18 °C to +82 °C)
- **Operating:** -20 °F to +190 °F (- °C to +88 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F (Improved to +/-0.5%/100 °F available)

- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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SUB SEA PRESSURE / LEVEL TRANSDUCER

Model 7500
Sub Sea Pressure / Level Transducer

MODEL 7500

FEATURES:

- Depth rated to 30K ft WC (9,144 meters)
- Pressure ranges up to 20K PSI (1,379 BAR)
- High accuracy 0.3% RSS (0.1% RSS available)
- Compact, sea water rated design
- Manufactured to MIL-spec requirements ANSI-Z540-1
- 316L, Inconel and Hastelloy material options

APPLICATIONS:

- Military and commercial ROV's
- Subsea oil and gas
- Naval exploration
- Ground and engine testing

PRODUCT OVERVIEW:

The Model 7500 from GP:50 is a rugged, sub-sea rated pressure transducer, tested to 30,000 FT sea water. The highly corrosion resistant design meets the tough environmental challenges of offshore oil and gas, Naval and ROV applications. Manufactured and tested to stringent MIL-spec standards the Model 7500 provides years of highly accurate, reliable use.

FIELD OPTIONS:

- 0 to 5 Vdc, 0 to 10 Vdc or 4-20 mA output
- RS232, RS485 and Can protocols available
- Inconel, 316L or Hastelloy wetted parts
- Temperature output options
- Wide selection of subsea rated electrical and process connections

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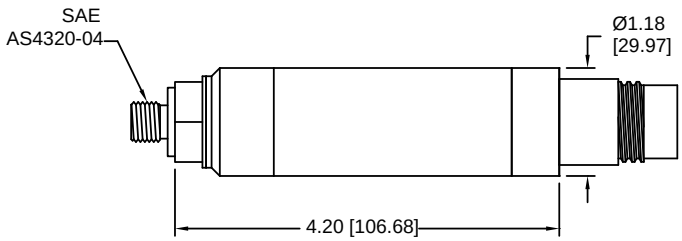
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	4-20mA	4-WIRE VDC ISOLATED	4-WIRE VDC NON-ISOLATED	3-WIRE VDC
A/1	+EXC/SIG	+EXC	+EXC	+EXC
B/2	N/C	+SIG	+SIG	+SIG
C/3	N/C	-SIG	-SIG*	N/C
D/4	-EXC/SIG	-EXC	-EXC*	-EXC/SIG
E/5	N/C	N/C	N/C	N/C
F/6	N/C	N/C	N/C	N/C

*COMMONS JUMPERED

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc or 4-20 mA (optional digital protocols)
- **Supply Voltage:** 18 V to 36 Vdc (others available)
- **Load Impedance (4-20 mA):** 1,350 Ω max. at 36 Vdc, 750 Ω max. at 24 Vdc, 300 Ω max. at 18 Vdc
- **Output Current (Vdc):** 2 mA max. for <0.1% FSO attenuation
- **Input Current:** 4 -Wire isolated Vdc options - 45 mA nominal, non-isolated Vdc -10mA nominal
- **Response Time:** 2 ms typical
- **Connection:** XSJJ-2-BCR (Seacon 2-pin) standard, options available

ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Static Accuracy (RSS):** <±0.3 FSO, ±0.1 FSO and 0.05% FSO available
- **Zero/span balance:** ±0.5% FSO
- **Non-repeatability:** < ±0.1 FSO
- **Hysteresis:** < ±0.2 FSO
- **Non-linearity:** < ±0.2 FSO
- **Thermal Error:** ±0.5% % FSO/100 °F
- **Total Error Band:** ±1.3% FSO (includes all 5 parameters)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 PH stainless steel (Inconel, Hastelloy and Monel available)
- **Housing:** 316L stainless steel

MECHANICAL

- **Process connection:** SAE AS4320-04 (M) (7/16-20 UNF) (options available)
- **Proof Pressure:** 1.5X pressure range or 22.5K PSI (1,551 BAR), whichever is less
- **Burst Pressure:** 3.0X pressure range or 23.5K PSI (1,620 BAR), whichever is less
- **Random Vibration:** >25 G RMS (20 Hz to 2,000 Hz)
- **Sinusoidal Vibration:** >7.5 G's 5 Hz to 100 Hz
- **Constant Acceleration:** 5 G's for 30 minutes
- **Approximate Weight:** 12 oz (0.3 kg) (some options may effect weight)

PRESSURE RANGES

- 0 to 50 thru 0 to 20K PSI (3.4 thru 1,379 BAR)

THERMAL SPECIFICATION

- **Compensated:** -30 °F to +160 °F (-34 °C to +71 °C)
- **Operating:** -50 °F to +190 °F (-54 °C to +88 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±1.0% FSO/100 °F (Improved to +/-0.5%/100 °F available)

- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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ROV SUBSEA PRESSURE TRANSDUCER

MODEL 7500-M254

Model 7500-M254
ROV Subsea Pressure Transducer

FEATURES:

- Subsea depth rated to 30K ft WC (9,144 meters)
- Differential design for sea depth reference
- ±0.2% FSO accuracy
- Operating ranges to 10K PSI (689 BAR)

APPLICATIONS:

- ROV
- AUV
- Submarine
- Oil & gas subsea wellhead control systems

PRODUCT OVERVIEW:

The 7500-M254 from GP:50 is a subsea pressure transducer, designed for use within remote or unmanned vehicles. Its open reference provides for sea depth pressure. When used in a non-conductive fluid bladder, the transducer also provides a gauge process pressure. In addition to ROV applications, the compact size and sea rated construction of the 7500-M254 make it ideal for the effective monitoring of subsea oilfield wellhead control systems.

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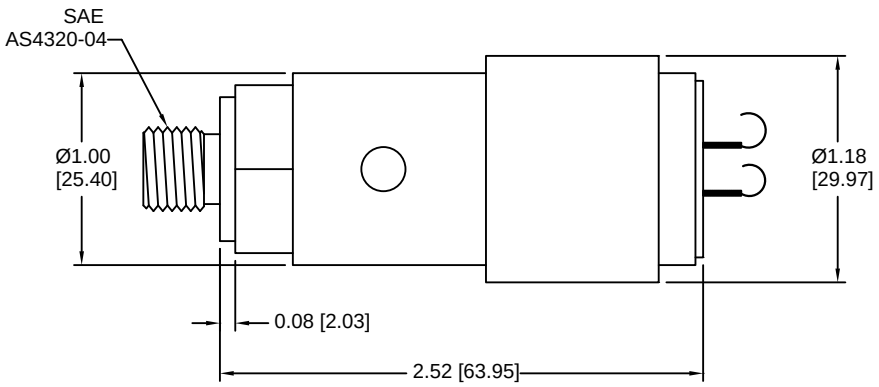
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 7500-M254
A/1	+EXC/SIG
B/2	N/C
C/3	N/C
D/4	-EXC/SIG
E/5	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** 9 to 36 Vdc
- **Output Signal:** 4-20 mA
  Optional mV/V or 0 to 5 Vdc
- **Connection:** High-temperature solder J-hook connection

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** Inconel 718
- **Housing:** 316L stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

±0.2% FSO

MECHANICAL

- **Process connection:** SAE AS4320-04 (M) (7/16-20 UNF)
- **Proof Pressure:** 2X range
- **Burst Pressure:** 3X range
- **Approximate Weight:** 0.3 lb (127 gm)

PRESSURE RANGES

- 500 PSI to 10K PSI (34 to 689 BAR)

THERMAL SPECIFICATION

- **Zero balance and span:** ±0.5% FSO
- **Compensated (ambient):** +35 °F to +170 °F (+23 °C to +205 °C)
- **Operating (ambient):** -20 °F to +190 °F (-4 °C to +205 °C)
- **Storage:** -65 °F to +250 °F (-54 °C to +121 °C)*

*condensation free environment

Standard configurations shown.
Please consult factory for other options.

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SUBSEA DIFFERENTIAL PRESSURE TRANSDUCER

Model 7540
Subsea Differential Pressure Transducer

MODEL 7540

FEATURES:

- Ranges from 30 thru 7,500 PSID (2 thru 517 BAR)
- Up to 10K PSI (689 BAR) line and proof pressure
- Depths to 30K ft WC (9,144 meters)
- Compact, seawater rated design
- Manufactured to MIL-spec requirements
- NIST traceable
- Optional improved accuracy to ±0.05% FSO (BFSL)

APPLICATIONS:

- Submarine hydraulic systems
- Submarine propulsion systems
- Subsea oil wellhead pressures
- BOP control systems

PRODUCT OVERVIEW:

The Model 7540 from GP:50 is a highly rugged differential pressure transducer, designed to address the tough environmental challenges of subsea and other marine service environments. It is manufactured and tested to stringent MIL and MIL-spec standards for high-reliability within extreme environments.

FIELD OPTIONS:

- 0-5 Vdc, 0-10 Vdc or 4-20 mA output
- Optional digital output (CANbus, RS485, USB)
- 316L stainless steel, Inconel or Hastelloy construction
- 10K PSI (689 BAR) static line pressure
- Wide selection of subsea rated connectors
- Bidirectional or unidirectional output
- RS232 and CANbus options available, consult factory

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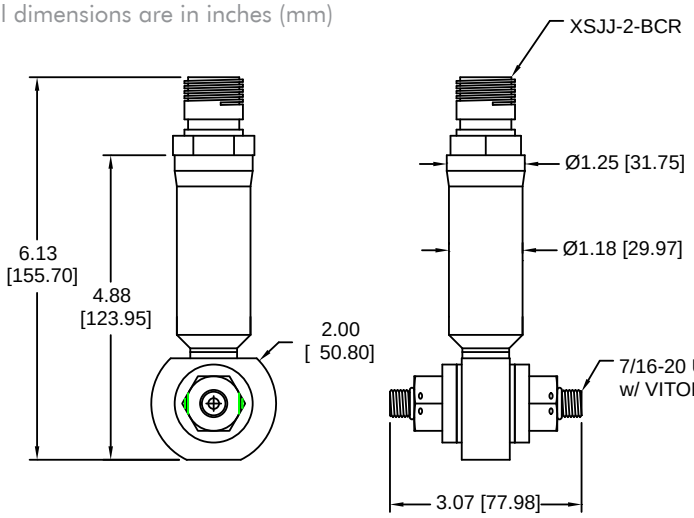
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	4-20mA	4-WIRE VDC ISOLATED	4-WIRE VDC NON-ISOLATED	3-WIRE VDC
A/1	+EXC/SIG	+EXC	+EXC	+EXC
B/2	N/C	+SIG	+SIG	+SIG
C/3	N/C	-SIG	-SIG*	N/C
D/4	-EXC/SIG	-EXC	-EXC*	-EXC/SIG
E/5	N/C	N/C	N/C	N/C
F/6	N/C	N/C	N/C	N/C

*COMMONS JUMPERED

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0-5 Vdc, 0-10 Vdc and 4-20 mA (CANBus RS485 and USB)
- **Supply Voltage:** 18 to 36 Vdc (Vdc output) 9 to 36 Vdc (4-20 mA output)
- **Load Impedance (4-20 mA):**
  1,350Ω max. at 36 Vdc
  750Ω max. at 24 Vdc
  300Ω max. at 18 Vdc
- **Output Current** (0 to 5 Vdc): 2 mA max for ± 0.1% FSO attenuation
- **Input Current:** 10 mA nominal
  4-wire isolated Vdc output - 45 mA nominal
- **Response Time:** <4 ms
- **Connection:** XSJJ-2-BCR (Seacon 2-pin) standard, other options available, consult factory

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Static Accuracy:** <±0.3% FSO, ±0.10% FSO or ±0.05% FSO
- **Zero balance/span balance:** ±0.5% FSO
- **Non-repeatability:** <±0.1% FSO
- **Hysteresis:** <±0.2% FSO
- **Non-linearity:** <±0.2% FSO
- **Thermal Error:** ±0.5% FSO/100 °F
- **Total Error Band:** ±1.3% FSO (includes all 5 parameters)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316L stainless steel
- **Housing:** 316L stainless steel (optional Inconel, Hastelloy or Monel)

MECHANICAL

- **Process connection:** 7/16-20 UNJF-3A (AS4320-04) For ranges >10K PSI: High pressure coned per Autoclave Engineers F-250C
- **Proof Pressure:** 1.5X Pressure Range or 10K PSI (689 BAR), whichever is less (10X optional)
- **Burst Pressure:** 3X Pressure Range or 10.5K PSI (724 BAR), whichever is less (15X optional)
- **Line Pressure:** 3K PSI (207 BAR), optional 10K PSI (689 BAR)
- **Line Pressure Effect (Zero):**
  <±1% FSO at 1K PSI (69 BAR)
  <±2.5% FSO at 3K PSI (207 BAR)
  <±5% FSO at 10K PSI option (689 BAR)
- **Approximate Weight:** 2 lb (0.9 Kg some options may affect weight)

PRESSURE RANGES

- 30 thru 7,500 PSID (2.1 thru 517.1 BAR) bidirectional or unidirectional

THERMAL SPECIFICATION

- **Compensated Ambient:** -30 °F to +160 °F (-34 °C to +71 °C)
- **Operating Ambient:** -40 °F to +190 °F (-40 °C to +88 °C)

- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice. Please contact GP:50 for assistance with your application.

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CRYOGENIC TEMPERATURE TRANSDUCER

MODEL 7710

Model 7710
Cryogenic Temperature Transducer

FEATURES:

- Cryogenic service down to -320 °F (-196 °C)
- Accuracy of ±1% FSO
- Hydrogen and LOX compatibility
- Remote electronics provide high-level output
- Rugged all-stainless steel design

APPLICATIONS:

- Aerospace ground support
- Rocket propulsion systems
- Military and defense
- Fuel test stands
- Cryogenic custody transfer

PRODUCT OVERVIEW:

The Model 7710 from GP:50 is a cryogenic temperature transducer, designed to provide high-reliability low-temperature measurements to -320°F (-196 °C) within a rugged, all-stainless steel package. Remotely mounted electronics provide a high-level signal output of either 4-20 mA; 0 to 5 Vdc; or 0 to 10 Vdc, as well as choice of RS232, RS485 or CAN protocol, for improved cryogenic measurement accuracy and higher resolution. Stainless steel armor jacketed cabling provides added protection from extreme environmental conditions.

FIELD OPTIONS:

- Custom temperature probe lengths
- 0 to 5 Vdc, 0 to 10 Vdc or 4-20 mA output
- RS232, RS485 or CAN protocol
- Cleaned for oxygen service
- Alternate remote cable lengths
- MIL-STD-810F conformance
- Hastelloy, Monel or Inconel wetted parts
- ISO Class 5 cleanroom compliance

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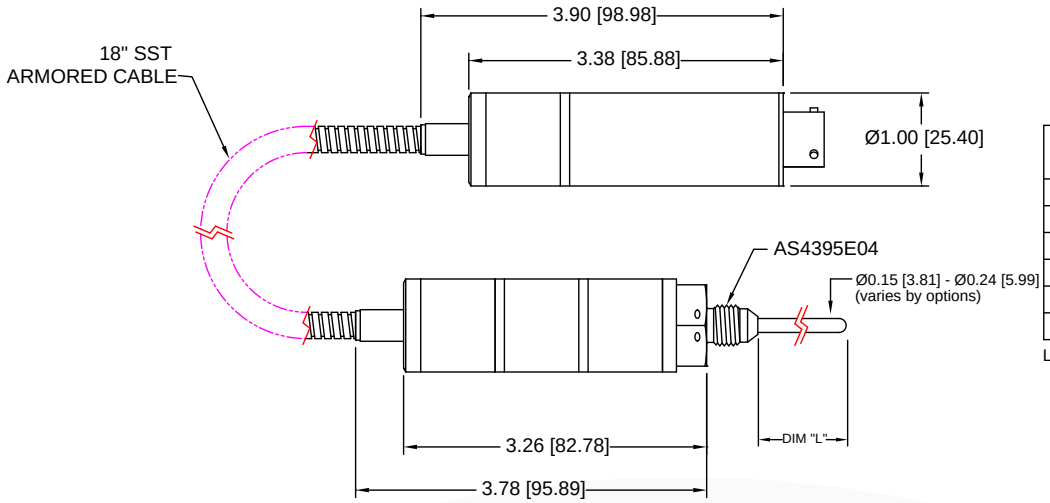
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	-SIG	N/C
D/4	-EXC	-EXC/SIG
E/5	N/C	N/C
F/6	N/C	N/C

L = 0.50 TO 7.00 INCH PROBE LENGTH

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc (isolated or non-isolated) or 4-20 mA
- **Supply Voltage:** 18 to 36 Vdc
- **Temperature Output:** 100 Ω 2-wire platinum RTD standard 1,000 Ω 2 wire platinum RTD optional
- **Response Time:** <2 sec
- **Connection:** MIL PTIH-10-6P, D38999 series III optional
- **Circuit Protection:** meets MIL-STD-461/462 EMI/RFI, some options will affect EMI/RFI rating

MATERIALS OF CONSTRUCTION

- Probe: 17-4 stainless steel (Inconel, Hastelloy and Monel optional)
- Housing: 316 stainless steel
  Tubing 18" Flexible metal hose

ACCURACY

Static Accuracy: ±3% FSO, ±1% optional

MECHANICAL

- **Process Connection:** AS4395E04 pressure port
- **Probe Length:** 1.55" (custom lengths available)

TEMPERATURE RANGES

-320 °F to +70 °F (-200 °C to +20 °C)

SYSTEM PRESSURE

- Designed for up to 2000 PSI (138 BAR), higher system pressures also available

OPTIONAL

- NIST Traceability/Calibration: ANSI-Z540-1
- Workmanship: J-001/NASA 8739.3 standard
- Quality System: ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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CRYOGENIC PRESSURE TRANSDUCER

MODEL 7720

Model 7720
Cryogenic Pressure Transducer

FEATURES:

- Reliable cryogenic performance to -320 °F (-196 °C)
- Hydrogen and LOX compatible
- Isolated remote electronics via stainless steel armored flex tubing
- Standard accuracy to +0.3% FSO (Optional +0.1% FSO)
- Lightweight, all stainless steel construction (8 oz.; 0.2 kg)
- Meets MIL-STD-810 vibration and shock requirements
- Choice of 4-20 mA, 0-5 Vdc, 0-10 Vdc or optional digital output

APPLICATIONS:

- LNG pressures
- Aerospace propulsion systems
- Military and defense programs
- Liquid gas custody transfer

PRODUCT OVERVIEW:

The Model 7720 Series from GP:50 is a family of cryogenic pressure transducers, offering consistent measurement accuracy in temperatures as low as -320 °F (-196 °C). The Series features a lightweight, all stainless steel construction with choice of either 4-20 mA, 0 to 5 Vdc, or 0 to 10 Vdc output; or optional digital protocols. On-board isolated transducer electronics are remotely mounted via stainless steel armor jacketed flex tubing. The high-reliability of the Model 7720 Series has been successfully field-proven over 25 years and hundreds of critical applications.

FIELD OPTIONS:

- 0 to 5 Vdc, 0 to 10 Vdc or 4-20 mA output
- RS232, RS485 and CAN outputs
- Zero and span adjustments
- Optional electrical connections
- High-temperature version to +350 °F (+177 °C) (see Model 7780)

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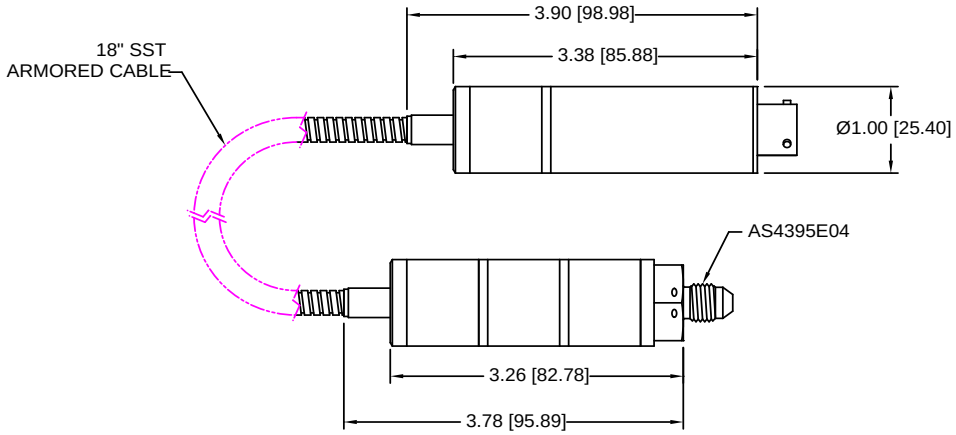

STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	-SIG	N/C
D/4	-EXC	-EXC/SIG
E/5	SHUNT (OPT.)	SHUNT (OPT.)
F/6	SHUNT (OPT.)	SHUNT (OPT.)

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc (3- and 4-wire isolated or non-isolated) and 4-20 mA
- **Supply Voltage:** 18 to 36 Vdc, 9 to 36 Vdc (unregulated)
- **Response Time:** 4 ms
- **Connection:** MIL PTIH-10-6P, (Optional D38999 series III)
- **Circuit Protection:** meets MIL-STD-461/462 EMI/RFI, some options will affect EMI/RFI rating

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 stainless steel
(Optional Inconel, Hastelloy and Monel)
- **Housing:** 316 stainless steel
Tubing 18" Flexible metal hose

ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Static Accuracy(RSS): <±0.3% FSO, ±0.10% FSO
Non-repeatability: <±0.1% FSO
Hysteresis: <±0.2% FSO
Non-linearity: <±0.2% FSO

MECHANICAL

- **Process connection:** AS4395E04 pressure port
- **Proof Pressure:** 1.5X range
- **Burst Pressure:** 2X range

PRESSURE RANGES

- Ranges 0 to 150 thru 0 to 5K PSIA or PSISG
(10 thru 207 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** -320 °F to +70 °F (-196 °C to +21.1 °C)
- **Operating Temperature Range:**

Ambient: -40 °F to +185 °F (-40 °C to +85 °C)
Process: -320 °F to +265 °F (-196 °C to +129 °C)

- **Effect on Zero/Span:**

±1.0% FSO/100 °F for ranges ≥1K PSI (69 BAR)
±2.0% FSO/100 °F for ranges <1K PSI (69 BAR)

OPTIONAL

- NIST Traceability/Calibration: ANSI-Z540-1
- Workmanship: J-001/NASA 8739.3 standard
- Quality System: ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DUAL CRYOGENIC PRESSURE & TEMPERATURE TRANSDUCER

MODEL 7730

Model 7730
Dual Cryogenic Pressure &
Temperature Transducer

FEATURES:

- Cryogenic service down to -320 °F (-196 °C)
- Isolated electronics provide 4-20 mA, 0-5 Vdc or digital outputs
- Remote electronics via stainless steel armored cable
- High accuracy, 0.3% RSS standard (0.1% available)
- Lightweight, 8 oz. (0.2 kg)
- Hydrogen and LOX compatibility
- Designed to meet vibration and shock per MIL-STD-810
- Platinum RTD

APPLICATIONS:

- Liquefied fuel pressures
- Manifolds, propulsion systems
- Military and defense programs
- Liquid gas custody transfer

PRODUCT OVERVIEW:

GP:50's 7730 cryogenic series provides pressure and temperature measurement in one device down to -320 °F (-196 °C). The remote mounted electronics offers a high level output of 4-20 mA, 0 to 5 Vdc or various digital protocols at high accuracies. 100 or 1,000 Ω platinum RTD is available as well as dual analog outputs.

FIELD OPTIONS:

- 0 to 5 Vdc, 0 to 10 Vdc or 4-20 mA output
- RS232, RS485 and Can outputs
- Custom probe lengths
- Zero and span adjustments
- Optional electrical connections
- High-temp version to +350 °F (+177 °C) (see Model 7780)

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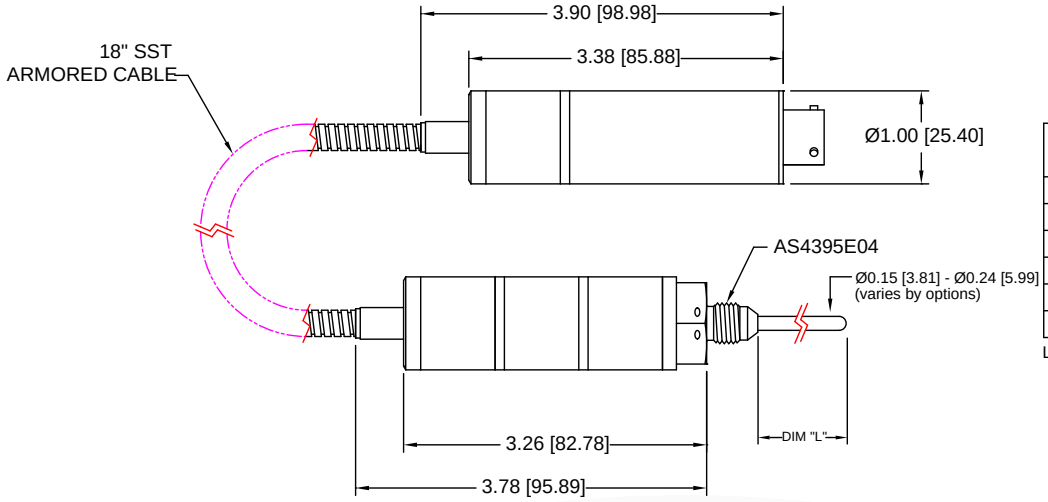
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	-SIG	N/C
D/4	-EXC	-EXC/SIG
E/5	RTD	RTD
F/6	RTD	RTD

L = 0.50 TO 7.00 INCH PROBE LENGTH

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc (3 and 4 wire isolated or non-isolated) and 4-20 mA
- **Supply Voltage:** 18 to 36 Vdc
- **Temperature Output:** 100 Ω 2 wire platinum RTD standard, 1,000 Ω 2 wire platinum RTD optional
- **Response Time:**
  Pressure: <4 ms
  Temperature: <2 seconds
- **Connection:** MIL PTIH-10-6P, D38999 series III optional
- **Circuit Protection:** meets MIL-STD-461/462 EMI/RFI, some options will affect EMI/RFI rating

MATERIALS OF CONSTRUCTION

- Wetted Parts: 17-4 stainless steel (Inconel, Hastelloy and Monel available)
- Housing: 316 stainless steel
  Tubing 18" Flexible metal hose

ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- **Static Accuracy:**
  Pressure (RSS): <±0.3 FSO, ±0.10 FS0 available
  Temperature: 3% FSO, 1% optional
- **Non-repeatability:** <± 0.1 FSO
- **Hysteresis:** <±0.2 FSO
- **Non-linearity:** <±0.2 FSO

Standard configurations shown.
Please consult factory for other options.

MECHANICAL

- **Process connection:** AS4395E04 pressure port
- **Probe length (temp):** 1.55" (custom lengths available)
- **Proof Pressure:** 1.5X pressure range
- **Burst Pressure:** 2X pressure range

PRESSURE RANGES

- 0 to 15 thru 0 to 15K PSIA, PSIG or PSISG options (1 thru 1,034 BAR)

TEMPERATURE RANGES

- -320 °F to +70 °F (-200 °C to +20 °C)

THERMAL SPECIFICATIONS

- **Compensated:** -320 °F to +70 °F (-196 °C to +21.1 °C)
- **Operating Range:**
  (Ambient) -40 °F to +185 °F (-40 °C to +85 °C)
  (Process) -320 °F to +265 °F (-196 °C to +129 °C)
- **Effect on Zero/Span:**
  ±1.0% FSO/100 °F for ranges≥ 1K PSI (69 BAR)
  ±2.0% FSO/100 °F for ranges <1K PSI (69 BAR)

OPTIONAL

- NIST Traceability/Calibration: ANSI-Z540-1
- Workmanship: J-001/NASA 8739.3 standard
- Quality System: ISO 9001:2008

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice. Please contact GP:50 for assistance with your application.

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EXTREME HIGH-TEMPERATURE TRANSDUCER

Model 7770
Extreme High-Temperature Transducer

MODEL 7770

FEATURES:

- Rated to +500 °F (+260 °C) process temperatures
- Designed to 2000 PSI (138 BAR) system pressure
- Lightweight, 8 oz. (0.2 kg)
- Hydrogen and LOX compatibility
- Platinum RTD
- Remote electronics via stainless steel armored flex

APPLICATIONS:

- High temperature gas measurement
- Propulsion Systems
- Military and Defense Applications

PRODUCT OVERVIEW:

The Model 7770 Series from GP:50 is a family of extreme high-temperature transducers, offering consistent measurement accuracy in temperatures up to +500 °F (+260 °C). Their lightweight, all stainless steel construction incorporates on-board isolated electronics, which are remotely mounted via stainless steel armor jacketed flex tubing. The onboard electronics are designed to offer a high-level 4-20 mA, 0 to 5 Vdc, or 0 to 10 Vdc output. Direct transducer mounting can also provide greater process media measurement accuracy. The high-reliability of the Model 7770 Series has been field-proven over 25 years and hundreds of applications.

FIELD OPTIONS:

- Custom temperature probe lengths
- 0 to 5 Vdc, 0 to 10 Vdc (3-wire and 4-wire isolated or (non-isolated or 4-20 mA output available)
- Cleaned for oxygen service
- Alternate remote electronic cable lengths

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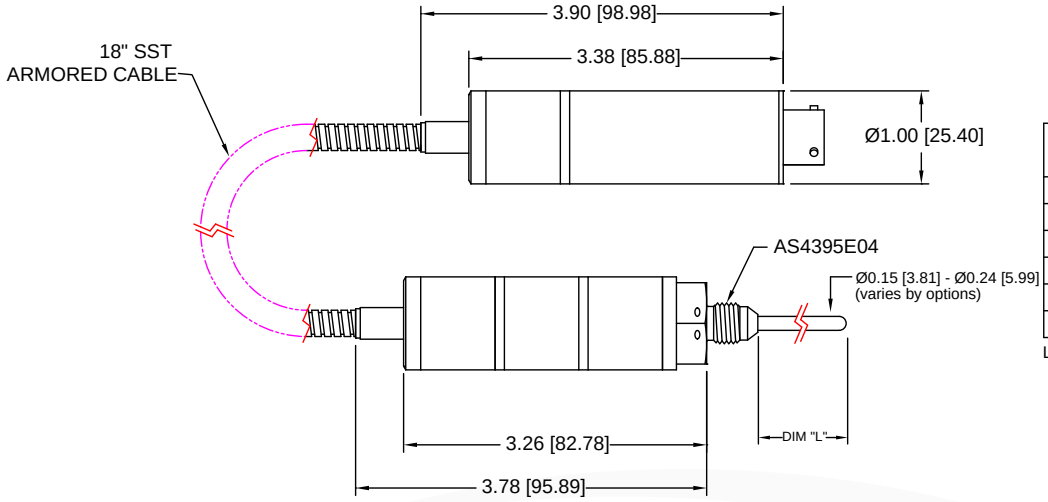
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	-SIG	N/C
D/4	-EXC	-EXC/SIG
E/5	N/C	N/C
F/6	N/C	N/C

L = 0.50 TO 7.00 INCH PROBE LENGTH

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc (isolated or non-isolated) and 4-20 mA
- **Supply Voltage:** 18 to 36 Vdc
- **Temperature Output:** 100 Ω 2-wire platinum RTD standard (Optional 1,000 Ω 2-wire platinum RTD)
- **Response Time:** <2 sec
- **Connection:** MIL PTIH-10-6P (optional D38999 series III)
- **Circuit Protection:** meets MIL-STD-461/462 EMI/RFI, some options will affect EMI/RFI rating

MATERIALS OF CONSTRUCTION

- **Probe:** 17-4 stainless steel (Optional Inconel, Hastelloy and Monel)
- **Housing:** 316 stainless steel
- **Flex Tubing:** 18" armored capillary tube

ACCURACY

Static Accuracy: ±3% FSO (Optional +1% FSO)

MECHANICAL

- **Process connection:** AS4395E04 pressure port
- **Probe Length:** 1.55" (custom lengths available)

TEMPERATURE RANGES

+70 °F to +500 °F (+20 °C to +260 °C)

SYSTEM PRESSURE

Up to 2000 PSI (138 BAR)

OPTIONAL

- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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HIGH-TEMPERATURE PRESSURE TRANSDUCER

Model 7780
High-Temperature Pressure Transducer

MODEL 7780

FEATURES:

- Process temperature rated to +350 °F (+177 °C)
- Onboard remote electronics via stainless steel armored flex cable
- Standard accuracy to +0.3% RSS (Optional +0.1%)
- Lightweight all stainless steel design weighs just 8 oz (0.2 kg)
- Hydrogen and LOX compatibility
- Designed to meet MIL-STD-810 vibration and shock requirements

APPLICATIONS:

- Fuel and propulsion systems
- Military and defense
- High-temperature process media
- Aircraft engine test stands
- R&D laboratory research

PRODUCT OVERVIEW:

The Model 7780 Series from GP:50 is a family of high-temperature pressure transducers, offering consistent measurement accuracy in temperatures up to +350 °F (+177 °C). The Series features a lightweight, all stainless steel construction with choice of either 4-20 mA, 0 to 5 Vdc, or 0 to 10 Vdc output; or optional digital protocols. On-board isolated transducer electronics are remotely mounted via stainless steel armor jacketed flex tubing. The high-reliability of the Model 7780 Series is field-proven over 25 years and hundreds of applications, including higher shock and vibration environments.

FIELD OPTIONS:

- Choice of 0 to 5 Vdc, 0 to 10 Vdc (also 4-wire isolated version), 4-20 mA, CANBus, RS485 or USB output
- Alternate remote electronic cable lengths
- Zero and span adjustments
- Cryogenic service down to -320 °F (-196 °C) (see GP:50 Model 7720)

 2770 Long Road, Grand Island, NY 14072 USA

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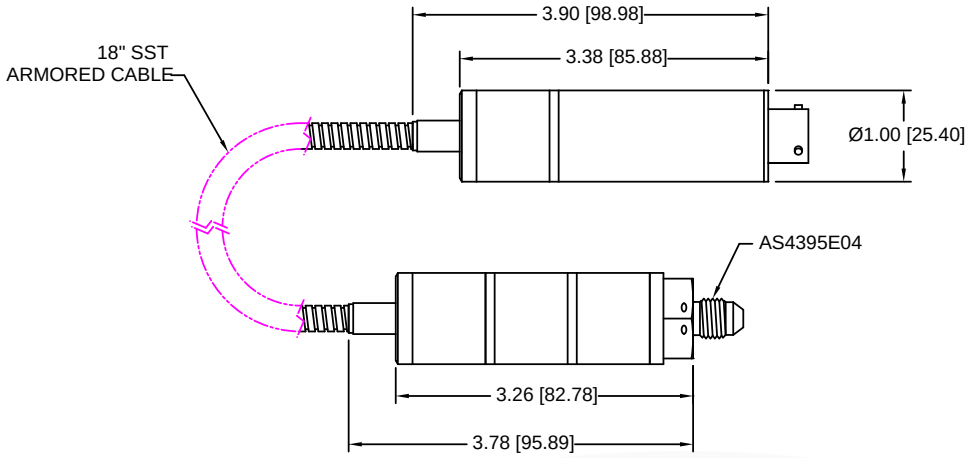
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	-SIG	N/C
D/4	-EXC	-EXC/SIG
E/5	SHUNT (OPT.)	SHUNT (OPT.)
F/6	SHUNT (OPT.)	SHUNT (OPT.)

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc (also 4-wire isolated version), 4-20 mA, CANBus, RS485 or USB output
- **Supply Voltage:** 18 to 36 Vdc, 9 to 36 Vdc unregulated
- **Response Time:** 4 ms
- **Connection:** MIL PTIH-10-6P, D38999 series III optional
- **Circuit Protection:** meets MIL-STD-461/462 EMI/RFI, some options may affect EMI/RFI rating

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 17-4 stainless steel (Optional Inconel, Hastelloy and Monel available)
- **Housing:** 316 stainless steel
  Flex Tubing 18" armored capillary tube

ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Static Accuracy (RSS): <±0.3% FSO, ±0.10% FSO available
Non-repeatability: <±0.1% FSO
Hysteresis: <±0.2% FSO
Non-linearity: <±0.2% FSO

MECHANICAL

- **Process connection:** AS4395E04 pressure port
- **Proof Pressure:** 1.5X pressure range
- **Burst Pressure:** 2X pressure range

PRESSURE RANGES

- Ranges 0 to 150 thru 0 to 15K PSIA, PSIG or PSISG options (10 thru 1,034 BAR)

THERMAL SPECIFICATION

- **Compensated:** 70 °F to +385 deg F (21°C to +197 °C)
- **Operating process:** -50 °F to +400 °F (-54 °C to +204 °C)
- **Operating ambient:** -50 °F to +195 °F (-54 °C to +91 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F
  (Improved to +/-1.0%/100 °F available)

OPTIONAL

- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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MODEL 7790

Model 7790
High Temperature-Pressure
& Temperature Transducer

FEATURES:

- +70 °F to +350 °F (+20 °C to +177 °C) Process temperature
- High accuracy temperature output to ±1% FSO
- High accuracy pressure output to ±0.1% FSO
- Lightweight, 8 oz (0.2 kg)
- Hydrogen and LOX compatibility
- Designed to meet shock and vibration per MIL-STD-810

APPLICATIONS:

- High temperature gas measurement
- Propulsion Systems
- Military and Defense Applications

PRODUCT OVERVIEW:

GP:50's 7790 High Temperature series transducer provides pressure and temperature measurement up to +350 °F (+177 °C). The remote electronics provides a high level output of 4-20 mA or 0 to 5 Vdc while reducing the overall footprint by integrating pressure and temperature measurement in one device.

FIELD OPTIONS:

- Custom temperature probe lengths
- 0 to 5 Vdc, 0 to 10 Vdc (4-wire isolated output options) or 4-20 mA output
- Alternate remote cable lengths
- Cryogenic version rated to -320 °F (-196 °C) see Model 7730

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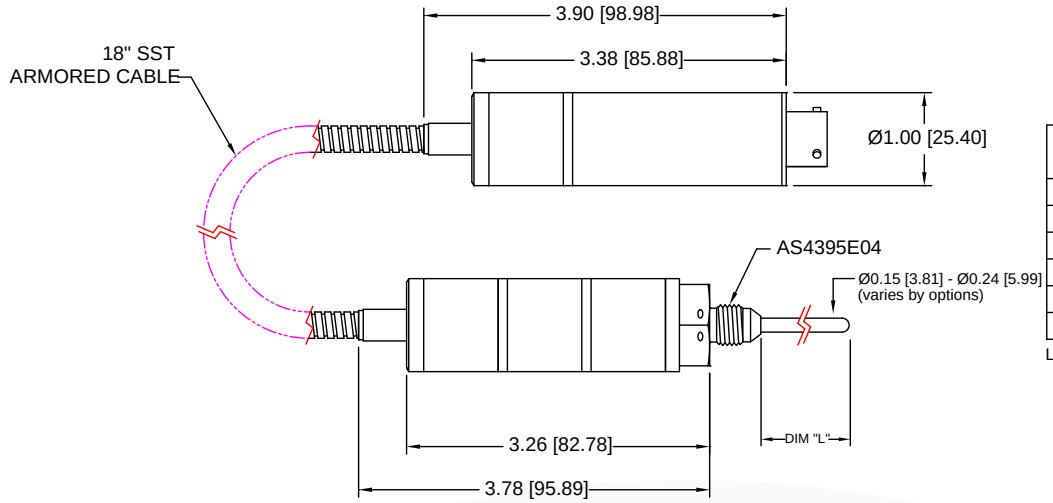
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	-SIG	N/C
D/4	-EXC	-EXC/SIG
E/5	RTD	RTD
F/6	RTD	RTD

L = 0.50 TO 7.00 INCH PROBE LENGTH

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc (isolated or non-isolated) and 4-20 mA
- **Supply Voltage:** 18 to 36 Vdc
- **Temperature Output:** 100 Ω 2 wire platinum RTD standard 1,000 Ω 2 wire platinum RTD optional
- **Response Time:**
  Pressure: <4 ms
  Temperature: <2 sec
- **Connection:** MIL PTIH-10-6P, D38999 series III optional
- **Circuit Protection:** meets MIL-STD-461/462 EMI/RFI, some options may affect EMI/RFI rating

MATERIALS OF CONSTRUCTION

- **Probe:** 17-4 stainless steel (Inconel, Hastelloy and Monel available)
- **Housing:** 316 stainless steel
  Flex Tubing 18" Armored Capillary Tube

ACCURACY

- **Static Accuracy:**
  Pressure (RSS): <±0.3 FSO, ±0.10 FS0 available
  Temperature: ±3% FSO, ±1% optional
- **Non-repeatability:** <±0.1 FSO
- **Hysteresis:** <±0.2 FSO
- **Non-linearity:** <±0.2 FSO

MECHANICAL

- **Process Connection:** AS4395E04 pressure port
- **Probe Length:** 1" From port end (custom lengths available)

PRESSURE RANGES

- **Ranges:** 0 to 150 thru 0 to 15K PSIA, PSIG or PSISG options (10 thru 1,034 BAR)

THERMAL SPECIFICATION

- **Compensated:** +70 °F to +350 deg F (+21°C to +177 °C)
- **Operating process:** -50 °F to +400 °F (-54 °C to +204 °C)
- **Operating ambient:** -50 °F to +195 °F (-54 °C to +91 °C)
- **Effect on Zero/Span Pressure output:** ±2.0% FSO/100 °F (Improved to +/-1.0%/100 deg F available)

OPTIONAL

- NIST Traceability/Calibration: ANSI-Z540-1
- Workmanship: J-001/NASA 8739.3 standard
- Quality System: ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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TEMPERATURE TRANSDUCER

MODEL 7800

Model 7800
Temperature Transducer

FEATURES:

- High accuracy temperature output up to 1% FSO
- -100 °F to +250 °F (-73 °C to +120 °C) standard medium
- Lightweight, 8 oz (0.2 kg)
- Hydrogen and LOX compatibility
- Rated to 2000 PSI (138 BAR) process pressure
- Up to 0.5 second temperature response time
- 100 Ω platinum RTD

APPLICATIONS:

- Propulsion systems
- Military and defense applications
- Space flight vehicles
- Military vehicles

PRODUCT OVERVIEW:

GP:50's 7800 aerospace grade temperature transducer provides reliable temperature measurement from -100 °F to +250 °F (-73 °C to +121 °C) while withstanding the harsh conditions associated with space exploration. The compact size and rugged design are an excellent choice for on-board space flight or military vehicle applications.

FIELD OPTIONS:

- Custom temperature probe lengths
- 0 to 5 Vdc, 0 to 10 Vdc (4-wire isolated output options) or 4-20 mA output
- Oxygen service options
- Remote electronics for 500 °F operation (see 7770)
- 1000 Ω 2 wire platinum RTD

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Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

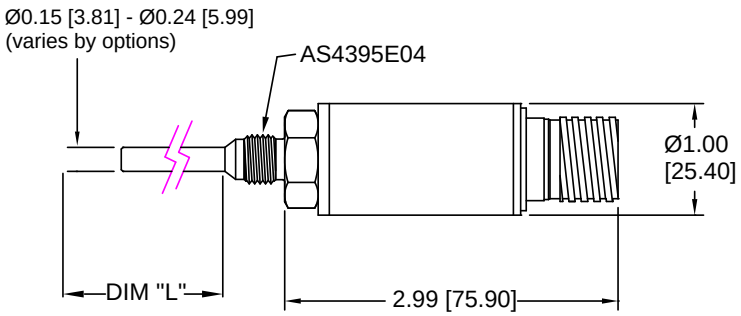
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	-SIG	N/C
D/4	-EXC	-EXC/SIG
E/5	N/C	N/C
F/6	N/C	N/C

L = 0.50 TO 7.00 INCH PROBE LENGTH



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc (isolated or non-isolated) and 4-20 mA
- **Supply Voltage:** 18 to 36 Vdc
- **Temperature Output:** 100 Ω 2 wire platinum RTD standard 1,000 Ω 2 wire platinum RTD optional
- **Response Time:** <2 sec, 0.5 sec optional
- **Circuit Protection:** meets MIL-STD-461/462 EMI/RFI, some options may affect EMI/RFI rating
- **Connection:** MIL PTIH-10-6P, D38999 series III optional

MATERIALS OF CONSTRUCTION

- Probe: 17-4 stainless steel (Inconel, Hastelloy and Monel available)
- Housing: 316 stainless steel

ACCURACY

Static Accuracy: ±3% FSO, ±1% optional

MECHANICAL

- **Process connection:** AS4395E04 pressure port
- **Probe Length:** 1" From port end (custom lengths available)

TEMPERATURE RANGES

-100 °F to +250 °F (-73 °C to +155 °C)

SYSTEM PRESSURE

Up to 2000 PSI (138 BAR) Optional 10k PSI available

OPTIONAL

- NIST Traceability/Calibration: ANSI-Z540-1
- Workmanship: J-001/NASA 8739.3 standard
- Quality System: ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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SUB SEA TEMPERATURE TRANSDUCER

Model 7850
Sub Sea Temperature Transducer

MODEL 7850

FEATURES:

- Depth rated to 30K ft WC (9,144 meters)
- -100 °F to +392 °F (-73 °C to +200 °C) standard medium
- High accuracy temperature output up to 1% FSO
- Compact, sea water rated design
- Up to 0.5 second temperature response time
- 100 Ω platinum RTD

APPLICATIONS:

- Military and commercial ROV's
- Subsea oil and gas
- Naval exploration
- Ground and engine testing

PRODUCT OVERVIEW:

The Model 7850 from GP:50 is a rugged, sub-sea temperature transducer, tested to 30,000 FT sea water. The highly corrosion resistant design meets the tough environmental challenges of offshore oil and gas, Naval and ROV applications.

FIELD OPTIONS:

- 0 to 5 Vdc, 0 to 10 Vdc or 4-20 mA output
- RS232, RS485 and Can protocols available
- Inconel, 316L or Hastelloy wetted parts
- Wide selection of subsea rated electrical and process connections
- Custom temperature probe lengths
- 100 or 1,000 Ω platinum RTD, J or K type thermocouple

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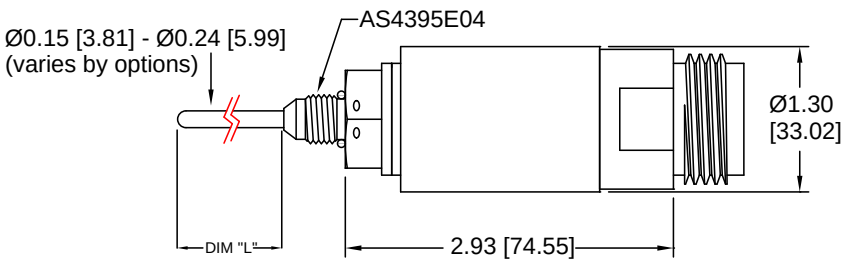
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	-SIG	N/C
D/4	-EXC	-EXC/SIG
E/5	N/C	N/C
F/6	N/C	N/C

L = 0.50 TO 7.00 INCH PROBE LENGTH



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc (isolated or non-isolated) and 4-20 mA
- **Supply Voltage:** 18 to 36 Vdc
- **Temperature Output:** 100 Ω 2 wire platinum RTD standard 1,000 Ω 2 wire platinum RTD optional
- **Response Time:** <2 sec, 0.5 sec optional
- **Circuit Protection:** meets MIL-STD-461/462 EMI/RFI, some options will affect EMI/RFI rating
- **Connection:** XSJJ-2-BCR (Seacon 2-pin) standard, options available

MATERIALS OF CONSTRUCTION

- **Probe:** 316 stainless steel (Inconel, Hastelloy and Monel available)
- **Housing:** 316 stainless steel

ACCURACY

Static Accuracy: ±3% FSO, ±1% optional

MECHANICAL

- **Process connection:** AS4395E04 pressure port
- **Probe Length:** 1" From port end (custom lengths available)

TEMPERATURE RANGES

-100 °F to +392 °F (-73 °C to +200 °C)

SYSTEM PRESSURE

Up to 2000 PSI (138 BAR) (Optional 0-10,000 psi available)

OPTIONAL

- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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DUAL - PRESSURE & TEMPERATURE TRANSDUCER

Model 7880
Dual-Pressure & Temperature Transducer

MODEL 7880

FEATURES:

- Dual pressure and temperature outputs
- -65 °F to +250 °F (-59 °C to +120 °C) operating temperature
- Lightweight, 8 oz (0.2 kg)
- Hydrogen and LOX compatible designs
- Designed to meet shock and vibration per MIL-STD-810
- 100 or 1000 Ω platinum RTD

APPLICATIONS:

- Propulsion systems
- Military and defense applications
- Space flight vehicles
- Military vehicles

PRODUCT OVERVIEW:

GP:50's 7880 aerospace grade pressure and temperature transducer provides reliable measurements from -65 °F to +250 °F (-59 °C to +121 °C) while withstanding the harsh conditions associated with space exploration. The compact size and rugged design are an excellent choice for on-board space flight or military vehicle applications where space and weight constraints are critical.

FIELD OPTIONS:

- Custom temperature probe lengths
- 0 to 5 Vdc, 0 to 10 Vdc (4-wire isolated output options) or 4-20 mA output
- 100 Ω platinum RTD
- 1000 Ω platinum RTD
- 0-15 to 0-15K PSI, PSIA, PSIS pressure ranges

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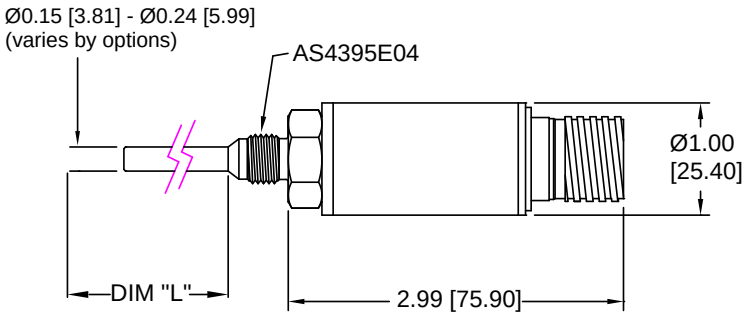
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	-SIG	N/C
D/4	-EXC	-EXC/SIG
E/5	RTD	RTD
F/6	RTD	RTD

L = 0.50 TO 7.00 INCH PROBE LENGTH



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal Pressure:** 0 to 5 Vdc, 0 to 10 Vdc or 4-20 mA (isolated or non-isolated options available)
- **Supply Voltage:** 10 to 36 Vdc
- **Temperature Output:** 100 Ω 2 wire platinum RTD standard (1,000 Ω platinum RTD optional, 3 or 4 wire also)
- **Response Time:**
  Pressure: <4 ms
  Temperature: <2 sec
- **Connection:** PTIH-10-6P std
- **Circuit Protection:** meets MIL-STD-461/462 EMI/RFI, some options may affect ratings

MATERIALS OF CONSTRUCTION

- Probe: 17-4 stainless steel (Inconel, Hastelloy and Monel available)
- Housing: 316 stainless steel

ACCURACY

- **Static Accuracy:**
  Pressure: <±0.3 FSO (RSS), (±0.10 FSO optional)
  Temperature: ±3% FSO (±1% optional)
  Repeatability: <±0.1 FSO
  Hysteresis: <±0.2 FSO
  Non-linearity: <±0.2 FSO

MECHANICAL

- **Process connection:** per AS4395E04
- **Probe Length:** 1" from end of port standard
  (Optional lengths and ports available)

PRESSURE RANGES

Ranges 15 thru 15K PSIA, PSIG or PSISG options (1 thru 1,034 BAR)

OPERATING / ENVIRONMENT TEMPERATURE:

65°F to +250 °F (-58 °C to +155 °C)

OPTIONAL

- NIST Traceability/Calibration: ANSI-Z540-1
- Workmanship: J-001/NASA 8739.3 standard
- Quality System: ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

FLIGHT QUALIFIED FLOW-THRU PRESSURE TRANSDUCER

MODEL 7900

Model 7900
Flight Qualified Flow-thru
Pressure Transducer

FEATURES:

- Lightweight, compact size <55 grams
- Flight qualified
- High accuracy, <0.1% FSO RSS
- "S" Class electronics available
- Full traceability
- Shock and vibration tested to MIL-STD-810C&E requirements

APPLICATIONS:

- Miniature propulsion platforms
- Space vehicles
- Satellite propulsion
- Launch vehicles
- Life support systems

PRODUCT OVERVIEW:

Model 7900 series is a light weight flow-thru pressure transmitter designed for flight propulsion systems. The flow thru design is engineered to measure up to 0.1% of full scale pressure flow across the sensor and will stand up to the rigorous conditions associated with propulsion applications.

FIELD OPTIONS:

- mV/V, 0 to 5 Vdc, 0 to 10 Vdc (4-wire isolated output options) or 4-20 mA output
- Temperature (RTD) output
- Improved temperature compensation
- B+ and "S" Class electronics
- D38999/27YB98PN, D38999/27YA35PN electrical connectors

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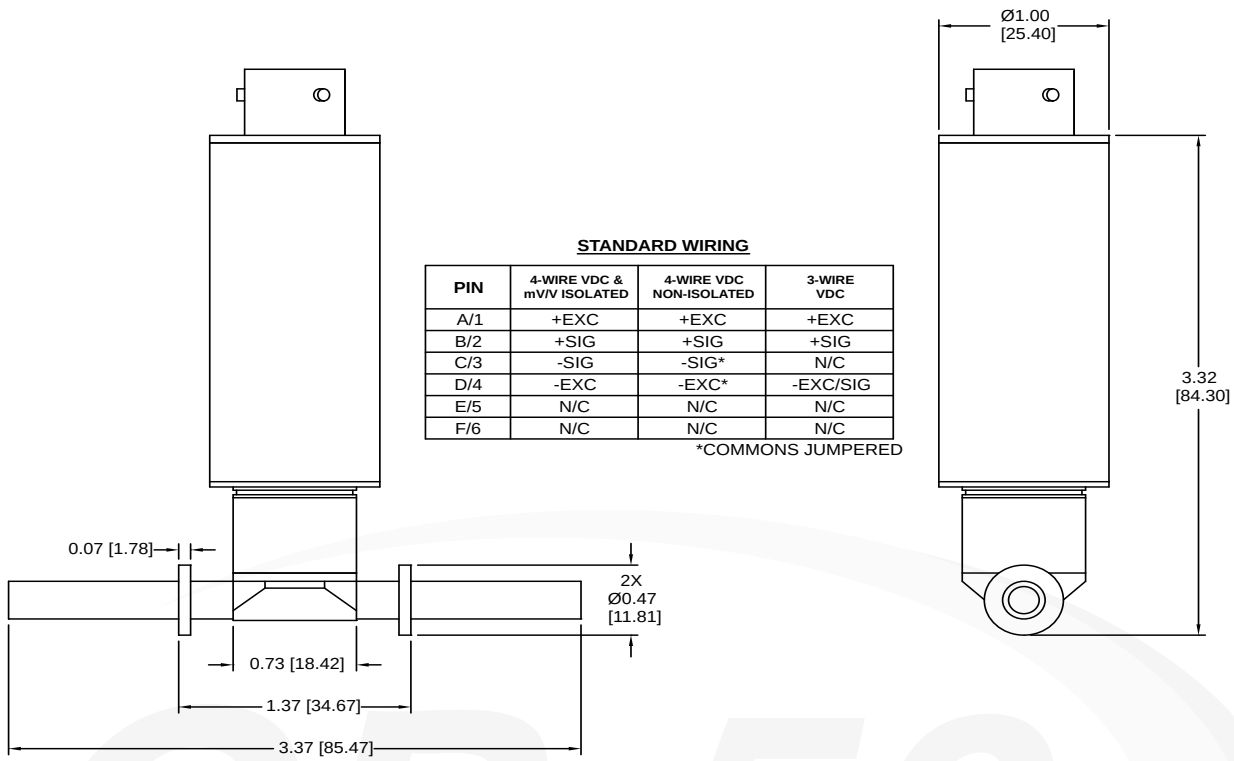
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

PIN	4-WIRE VDC & mV/V ISOLATED	4-WIRE VDC NON-ISOLATED	3-WIRE VDC
A/1	+EXC	+EXC	+EXC
B/2	+SIG	+SIG	+SIG
C/3	-SIG	-SIG*	N/C
D/4	-EXC	-EXC*	-EXC/SIG
E/5	N/C	N/C	N/C
F/6	N/C	N/C	N/C

*COMMONS JUMPERED

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 3mV/V, 0 to 5 Vdc and 0 to 10 Vdc isolated and non isolated
- **Supply Voltage:** 5 Vdc, 12 Vdc, and 18 to 36 Vdc isolated
- **Response Time:** <4 ms
- **Connection:** MIL-PTIH-10-6 standard, other options available
- **Circuit Protection:** Reverse polarity protection design meets MIL-STD-461/EMI/RFI (some options may affect rating)

MATERIALS OF CONSTRUCTION

- Wetted Parts: 316 stainless steel
- Housing: 316L stainless steel

ACCURACY

Static Accuracy (RSS): <±0.3% FSO, ±0.1 % FSO optional
Non-repeatability: <± 0.1% FSO
Hysteresis: <±0.2% FSO
Non-linearity: <±0.2% FSO
Total Error Band: ± 0.1% FSO

MECHANICAL

- **Process connection:** Welded 1/4" ID stainless steel tube, flow through, in-line design (other ports available)
- **Proof Pressure:** 1.5X FSO
- **Burst Pressure:** 2.0X FSO
- Weight: <55 grams

PRESSURE RANGES

0 to 50 thru 0 to 5,000 PSIA, PSIG or PSISG (3.4 thru 345 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** -20 °F to +120 °F (-29 °C to +49 °C) expanded range available
- **Operating:** -100 °F to +250 °F (-73 °C to +121 °C)
- **Effect on Zero/Span:** ±1.0% FSO/100 °F

OPTIONAL

- NIST Traceability/Calibration: ANSI-Z540-1
- Workmanship: J-001/NASA 8739.3 standard
- Quality System: ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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GP:50

COMPACT FLIGHT HERITAGE TRANSDUCER

MODEL 7202

Model 7202
Compact Flight Heritage Transducer

FEATURES:

- Compact and lightweight design
- ±0.10% static accuracy option
- Temperature output options
- Ranges up to 0-15K PSIA
- Designed meets MIL-STD-810F and MIL-STD-461

APPLICATIONS:

- Commercial and defense flight
- Launch vehicles
- Ground support systems
- Unmanned vehicles
- Ground and engine testing

PRODUCT OVERVIEW:

The Model 7202 is one of the smallest and light weight aerospace designs GP:50 offers. It provides very high accuracy and improved thermal performance and is manufactured and tested to meet MIL-STD-461E and MIL-STD-810F. The 7202 will withstand some of the most severe aerospace or military applications.

FIELD OPTIONS:

- Improved thermal compensated temperature from -65 °F to +250 °F
- Temperature output options
- Inconel or Hastelloy wetted parts

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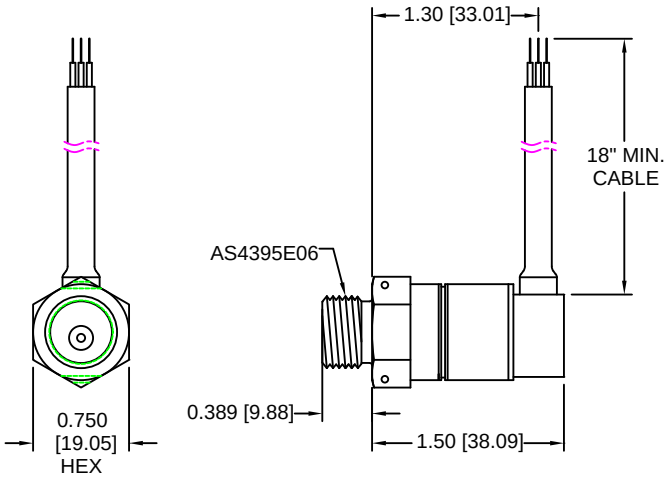
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	DESCRIPTION
RED	+INPUT
BLK	-INPUT
GRN	+OUTPUT
BLU	+RTD
WHT	-RTD
ORG	PROGRAM
SHLD	CASE GND



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0.1 to 5.1 Vdc (other optional outputs available)
- **Supply Voltage:** 16.5 to 32 Vdc (28 Vdc nominal)
- **Connection:** 24 AWG, 5 conductor, Teflon insulated, braided shield and Viton jacketed cable
- **Temperature output option:**

RTD: 100Ω or 1000 Ω at 0 °C Alpha 0.00385 Ω/Ω/°C

ACCURACY

- **Static Accuracy (BFSL):** <±0.3% FSO, ±0.10% FSO available
- **Zero/span balance:** ±0.1% V
- **Thermal Error:** ±1.0% FSO over CTR

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 15-5 sensor (Inconel, Hastelloy optional)
- **Housing:** 316L stainless steel

MECHANICAL

- **Process connection:** AS4395E06
- **Proof Pressure:** 1.5X FSO
- **Burst Pressure:** 2.5X FSO
- **Secondary containment:** Up to 4500 PSI (310 BAR)
- **Environmental:** MIL-STD-810F
- **EMC:** MIL-STD-461
- **Weight:** <5 oz

PRESSURE RANGES

- 0 to 1000 thru 0 to 15K PSIA, PSIG, PSIV, PSISG (0-69 thru 0-1034 BAR), other ranges available

THERMAL SPECIFICATION

- **Compensated:** -30 °F to +170 °F (-34 °C to +77 °C)
- **Optional Expanded Range:** -65 to 250°F (±2.3% FSO/100 °F)
- **Operating:** -75 °F to +270 °F (-59 °C to +133 °C)

- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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HIGH LINE / LOW RANGE AEROSPACE DIFFERENTIAL PRESSURE TRANSDUCER

MODEL 7450

Model 7450
High Line / Low Range Aerospace
Differential Pressure Transducer

FEATURES:

- Ranges of 2.5" WCD thru 100 PSID (6.9 BAR)
- Up to 5,000 PSI line pressure option (345 BAR)
- ±0.1% FSO accuracy
- True Wet-Wet design
- High shock and vibration rated per MIL-STD-810F
- J-001/NASA 8739.3 standard workmanship
- Subsea rated option

APPLICATIONS:

- Ground support systems
- Engine testing
- Launch vehicles
- Naval subsea testing
- Ground and engine testing

PRODUCT OVERVIEW:

Model 7450 is a high accuracy aerospace grade, high line - low range differential pressure transducer available with static line pressure to 5,000 PSI. Differential ranges as low as 0-2.5" WCD and a 500 PSI proof pressure are standard on all ranges. A custom subsea rated design allows operation to 23,000 FT SW.

FIELD OPTIONS:

- Wide selection of process and electrical connections
- Bi-directional operation
- Line pressure to 5K PSI (345 BAR)
- Zero and span adjustment
- Subsea rated version

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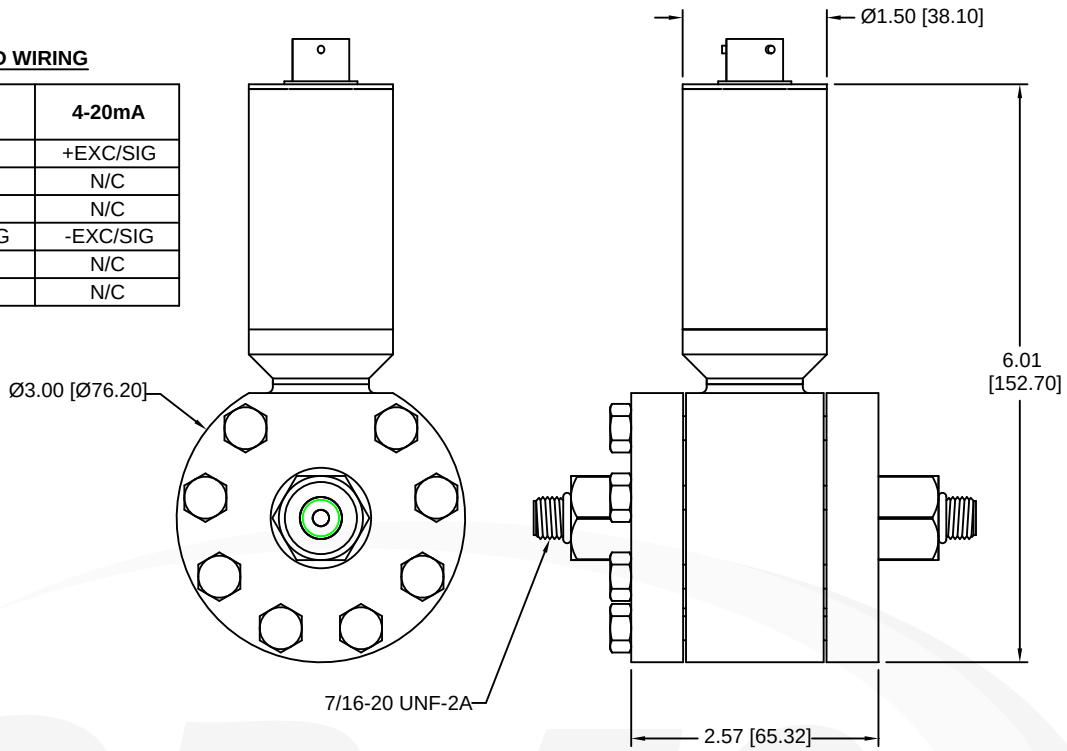
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

PIN	VDC	4-20mA
A/1	+EXC	+EXC/SIG
B/2	+SIG	N/C
C/3	N/C	N/C
D/4	-EXC/SIG	-EXC/SIG
E/5	N/C	N/C
F/6	N/C	N/C



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc or 4-20 mA
- **Excitation Voltage:** 13 to 32 Vdc
- **Connection:** PTIH-10-6P standard
  Other options available including subsea versions
- **Load Impedance:** ≤10K Ω

ACCURACY

- **Static Accuracy (BFSL):** <±0.1% FSO
- **Zero/span balance:** ±0.5% FSO

(For ranges <10 PSI (0.7 BAR) we recommend zero and span adjustment option)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** 316 stainless steel (exotic materials available)
- **Housing:** 316 SST, DC-200 Silicon oil filled sensor

Standard configurations shown.
Please consult factory for other options.

MECHANICAL

- **Process connection:** AS4395E04 standard
- **Proof Pressure:** 500 PSI (34.5 BAR)
- **Burst Pressure:** 2500 PSI (172 BAR) Single Ended
- **Line Pressure:** 5,000 PSI (345 BAR)
- **Line Pressure Effect (Zero):** <1% FSO/1,000 PSI
- **Response Time:** Typ 30ms for 90% FSO
- **Weight:** <3 lbs

PRESSURE RANGES

- 2.5" WCD thru 100 PSID

THERMAL SPECIFICATION

- **Compensated:** +32 °F to +180 °F (0 °C to +82 °C)
- **Effect on Zero/Span:** ±0.50% FSO/100 °F
  (Improved option: ±0.25% FSO/100 °F)
- **Operating (ambient):** 0 °F to +185 °F (-17 °C to +85 °C)
  (Unit will operate to -40 deg F with delayed response time)
- **NIST Traceability**
- **Workmanship:** J-001
- **Quality System:** ISO 9001:2008

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice. Please contact GP:50 for assistance with your application.

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FLIGHT QUALIFIED DIGITALLY CORRECTED PRESSURE TRANSDUCER

Model 8200
Flight Qualified Digitally Corrected
Pressure Transducer

MODEL 8200

FEATURES:

- High accuracy, up to 0.05% available
- 10X overload option
- 0 to 5 Vdc, or 0 to 10 Vdc or 4-20mA output
- 4 wire Isolated output option
- Secondary containment rated at 4,500 PSI (310 BAR) for ranges ≥300 PSI

APPLICATIONS:

- Aviation and suborbital spacecraft
- Unmanned aerial vehicles
- Helicopter and rotorcraft
- Commercial and military satellites
- Launch vehicles
- Ground and engine testing

PRODUCT OVERVIEW:

The Model 8200 series from GP:50 is a flight qualified, high level pressure transducer. Digitally corrected to provide high-accuracy pressure measurements with a proprietary sensor design for added zero stability for commercial aviation, military, aerospace, UAV, satellite, and defense applications.

FIELD OPTIONS:

- 0 to 5 Vdc, 0 to 10 Vdc and 4-20 mA outputs (Isolated output options available)
- Temperature output
- Optional wetted materials available
- O2 cleaning to MIL-STD-1246 available

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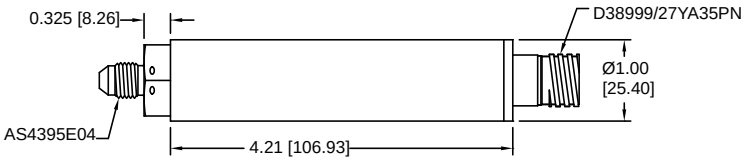
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

>50 PSI CONFIGURATION



STANDARD WIRING

PIN	4-20mA	4-WIRE VDC ISOLATED	4-WIRE VDC NON-ISOLATED	3-WIRE VDC
A/1	+EXC/SIG	+EXC	+EXC	+EXC
B/2	N/C	+SIG	+SIG	+SIG
C/3	N/C	-SIG	-SIG*	N/C
D/4	-EXC/SIG	-EXC	-EXC*	-EXC/SIG
E/5	N/C	N/C	N/C	N/C
F/6	N/C	N/C	N/C	N/C

*COMMONS JUMPERED

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Output Signal:** 0 to 5 Vdc, 0 to 10 Vdc digitally corrected
- **Supply Voltage:** +12 V, +15 V (regulated), 18 to 36 Vdc (unregulated)
- **Response Time:** 500 Hz
- **Connection:** PTIH-10-6P standard, Other options available

ACCURACY

- **Static Accuracy:** ±0.1% FSO with ±0.05% available
- **Non-repeatability:** <±0.04 FSO
- **Hysteresis:** <±0.05 FSO
- **Thermal Error:** ±0.225% FSO/100 °F
- **Total Error Band:** ±0.5% FSO

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** Ranges ≤100 PSI: 316L SST; >100 PSI: 17-4 PH SST (Inconel, Hastelloy optional)
- **Housing:** 316L stainless steel

PRESSURE RANGES

- 0 to 3 thru 0 to 15K PSIA, PSIG, PSIV, PSISG options (0.2 thru 1,034 BAR)

MECHANICAL

- **Process connection:** AS5202-04 standard. Other available, consult factory.
- **Proof Pressure:** 1.5X FSO (25 PSIA min.) 10X optional
- **Burst Pressure:** 3.0X FSO
- **Secondary containment:** Rated at 4,500 PSI (310 BAR) for ranges ≥300 PSI
- **Random Vibration:** >25 G RMS (20 Hz to 2,000 Hz)
- **Sinusoidal Vibration:** 7.5 G's from 5 Hz to 100 Hz
- **Pyroshock:** >3,500 G's / 12 g
- **Shock:** 100 G's Peak to peak
- **Constant Acceleration:** 12 g
- **Approximate Weight:** <5 oz (0.1 kg) some options may affect weight

THERMAL SPECIFICATION

- **Compensated:** -10 °F to +180 °F (-23 °C to +82 °C)
- **Operating Ambient:** -20 °F to +190 °F (-29 °C to +88 °C)
- **NIST Traceability/Calibration:** ANSI-Z540-1
- **Workmanship:** J-001/NASA 8739.3 standard
- **Quality System:** ISO 9001:2008

Standard configurations shown.
Please consult factory for other options.

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SUBMERSIBLE PUMP LIFT STATION / SLUDGE LEVEL TRANSMITTER

MODEL 311-M351

Model 311-M351
Submersible Pump Lift Station /
Sludge Level Transmitter

(Approvals Optionally Available)

FEATURES:

- 3-inch diameter sensing diaphragm resists clogging
- Protective baffle plate reduces risk of sensor damage
- Corrosion-resistant, all stainless steel construction
- Submersible to 1,100 feet (335 meters) WC
- Surge protection from lightning strikes and voltage spikes
- Ranges from 0 to 10 thru 0 to 1,100 feet WC
  (0 to 3 thru 0 to 335 meters WC)

APPLICATIONS:

- Submersible pump lift station level monitoring
- Wet wells
- Process sumps
- Water tanks and reservoirs
- Process sludge (including heavy sludge)
- Water and wastewater level monitoring

PRODUCT OVERVIEW:

The Model 311-M351 from GP:50 is a submersible lift station and sludge level transmitter. Its all stainless-steel design incorporates a 3-inch diameter clog-resistant sensing diaphragm and corrosion-resistant protective baffle plate. These features facilitate high-accuracy level measurements, even in heavy sludge conditions. This combination of durability and accuracy, along with over 25 years of proven field service, have helped make the GP:50 Model 311-M351 an industry gold standard for water and wastewater level monitoring.

FIELD OPTIONS:

- Optional FM/CSA hazardous approvals
- External lightning / surge protection package optional
- 4-20 mA or 0 to 5 Vdc output
- Optional temperature output

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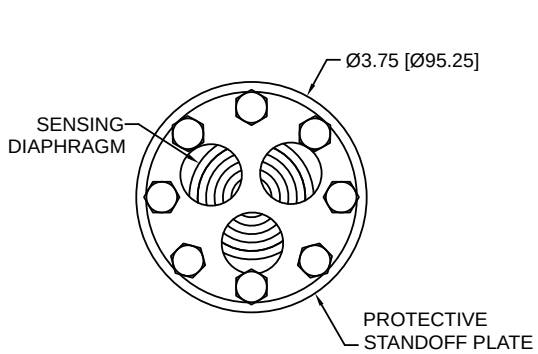
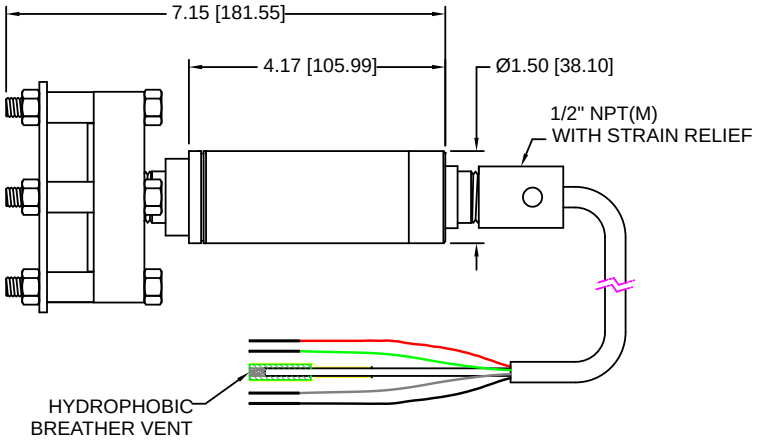
DIMENSIONAL DRAWING

All dimensions are in inches (mm)





STANDARD WIRING

WIRE	MODEL 211-M351	MODEL 311/I-M351
1/RED	+EXC	+EXC/SIG
2/GRN	+SIG	N/C
3/WHT	N/C	N/C
4/BLK	-EXC/SIG	-EXC/SIG
5/BLU	N/C	N/C
6/BRN	N/C	N/C
SHIELD	OPEN	OPEN

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**

(Model 211-M351) 10.5 to 42 Vdc

(Model 311/I-M351) 9 to 36 Vdc

- **Output Signal:**

(Model 211-M351) 0 to 5 Vdc

(Model 311/I-M351) 4-20 mA

- **Circuit Protection:** RFI and EMI surge protection
- **Load Impedance:**

(Model 211-M351) 50K Ω min. for <0.1% FSO attenuation

(Model 311/I-M351) 1,350 Ω max. at 36 Vdc and 750 Ω at 24 Vdc

- **Input Current:**

(Model 211-M351) 8 mA, nominal

- **Insulation Resistance:** >10 MΩ at 50 Vdc and +70 °F
- **Connection:** 1/2" NPT (M) conduit with 40 feet of 3-conductor, 18 AWG Hytrel jacketed cable (optional Tefzel jacketing)

MATERIALS OF CONSTRUCTION

All 316 stainless steel construction of sensor, baffle plate and housing

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard ±0.5%

Optional ±0.2%

- **Zero Balance and FSO:** ±1% FSO at +70 °F

MECHANICAL

- **Process Connection:** Oil filled diaphragm
- **Proof Pressure:** 2X FSO or 22,500 PSI (1,551 BAR), whichever is less
- **Burst Pressure:** 5X FSO or 22,500 PSI (1,551 BAR), whichever is less
- **External Pressure:** 500 PSI max. (35 BAR)
- **Weight:** 5.5 lb (2.5 kg)

PRESSURE RANGES

0 to 5 thru 0 to 500 PSI (0 to 10 feet thru 0 to 1,153 feet WC)

(0 to 3 thru 0 to 335 meters WC)

THERMAL SPECIFICATIONS

- **Compensated:** -0 °F to +140 °F (-17.7 °C to +60 °C)
- **Operating Ambient:** -40 °F to +150 °F (-40 °C to +66 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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MODEL 313L

Model 313L
Submersible Level Transmitter

FEATURES:

- Available ranges of 0-20" WC thru 300 PSI (50 MBAR to 21 BAR)
- Case rated to 900 feet WC (275 meters WC)
- Up to ±0.10% FSO accuracy
- 316L stainless steel housing with optional titanium
- Hytrel jacketed cable with optional Tefzel®
- Lightning suppression as standard

APPLICATIONS:

- Wet wells, ponds, rivers and tank level measurements
- Water treatment
- Ground water monitoring
- Dredging levels
- Shipboard level control

PRODUCT OVERVIEW:

The Model 313L from GP:50 is a line of highly accurate and reliable submersible level transmitters. The corrosion-resistant 316L stainless steel construction, and an integrated hydrophobic breather vent help provide years of maintenance-free service.

FIELD OPTIONS:

- Slim 0.69" (1.74 cm) diameter (Model 313S)
- Titanium construction (Model 313L-NI)
- Additional Hytrel cable and Tefzel® jacketed cable lengths
- Tapered inlet with stand-off plate for wastewater
- Remote zero and span adjustments

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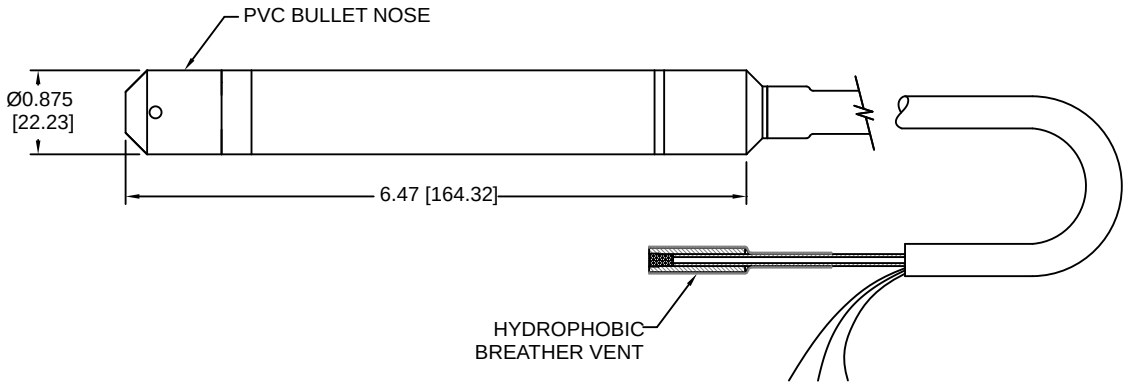
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313L
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** 9 to 36 Vdc
- **Output Signal:** 4-20 mA
- **Circuit Protection:** Short circuit or reversed wired – Indefinite
- **Load Resistance:** 1400 Ω max. at 40 Vdc excitation
- **Response Time:** ≤5 ms to 90%
- **Connection:** Hytrel jacketed, 4-conductor, 18 AWG with vent tube and hydrophobic filter, 8' long, other lengths available.

MATERIALS OF CONSTRUCTION

- **Housing:** 316L stainless steel, optional titanium
- **Pressure Cavity:** 316L stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO, ±0.2% FSO, and ±0.1% FSO

MECHANICAL

- **Zero Balance and FSO:** ±1.0% FSO @ +70 °F
- **Process Connection:** PVC bullet nose
- **External Pressure:** Rated to 900 ft WC (274 meters) max.
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 4X FSO
- **Approximate Weight:** 10 oz (0.3 kg) nominal, options may increase weight
- **Diameter:** 0.875" (2.22 cm)

PRESSURE RANGES

- 0-20" WC thru 300 PSI (50 MBAR to 21 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-32 °C to +60 °C)
- **Operating:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Storage:** -40 °F to +195 °F (-40 °C to +90.6 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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SLIM SUBMERSIBLE LEVEL TRANSMITTER

Model 313S
Slim Submersible Level Transmitter

MODEL 313S

FEATURES:

- Slim 0.685" (17.4mm) diameter housing
- 0 to 20" WC thru 300 PSI (211 meters WC)
- 4-20 mA output
- Rugged, welded, leak-proof stainless steel construction
- Silicon sensor technology
- Up to 0.10% FSO accuracy
- Hydrophobic breather filter

APPLICATIONS:

- Sewage lift and pump stations
- Deep well and borehole
- Groundwater monitoring
- Shipboard level control
- Weirs, wells, pond, reservoir, and dam level

PRODUCT OVERVIEW:

Model 313S has all the same features as our popular 313L but with a slim 0.685" (17.4 mm) diameter housing for those applications that have limited installation space. All GP:50 submersible level transmitters are built with a rugged leak-proof stainless steel construction, lightning surge protection and an integrated hydrophobic filter to provide accurate level measurement with years of corrosion free service for all types of level applications.

FIELD OPTIONS:

- Tapered inlet with stand-off plate for wastewater
- Remote zero and span adjustments
- Lightning suppression
- Additional Hytrel cable and Tefzel® jacketed cable lengths

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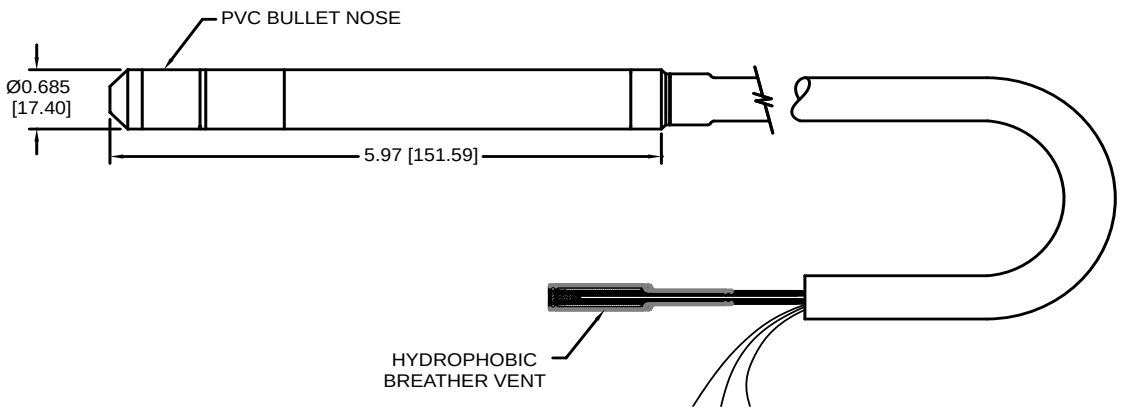
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313S
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** 9 to 36 Vdc
- **Output Signal:** 4-20 mA output
- **Circuit Protection:** Short circuit or reversed wired – Indefinite
- **Load Resistance:** 1400 Ω max. at 40 Vdc excitation
- **Response Time:** ≤5 ms to 90%
- **Connection:** Molded Hytrel jacket, 6-conductor with breather tube, 24 AWG, 8′ long, optional lengths available, Tefzel cable optional

MATERIALS OF CONSTRUCTION

- **Housing:** Type 316 stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO, ±0.2% FSO, and ±0.1% FSO

MECHANICAL

- **Zero Balance and FSO:** ±1.0% FSO @ +70 °F
- **Process Connection:** PVC bullet nose
- **External Pressure:** Rated to 500 PSI (35 BAR) max.
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 4X FSO
- **Approximate Weight:** 10 oz (0.3 kg) nominal, options may increase weight
- **Diameter:** 0.685″ (17.4 mm)

PRESSURE RANGES

- 0-20″ WC thru 500 PSI (50 MBAR to 35 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-32 °C to +60 °C)
- **Operating:** -40 °F to +150 °F (-40 °C to +65.5 °C)
- **Storage:** -40 °F to +150 °F (-40 °C to +65.5 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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TITANIUM SUBMERSIBLE LEVEL TRANSMITTER

Model 313L-NI
Titanium Submersible Level Transmitter

MODEL 313L-NI

FEATURES:

- 0 to 20" WC thru 0 to 300 PSI (692 feet WC)
- 4-20 mA output
- Rugged, welded, leak-proof construction
- Slim 1.0" (2.5 cm) diameter titanium housing
- Up to 0.10% FSO accuracy

APPLICATIONS:

- Deep well and borehole
- Groundwater monitoring
- Reservoirs / dams
- Rig ballast control
- Weirs, wells, pond, reservoir, and dam level

PRODUCT OVERVIEW:

Model 313L-NI utilizes an all-titanium design to provide long term stability and continued performance under the harshest conditions, including corrosive and hazardous chemical applications. The slim design and high media resistance perform exceptionally well in down-hole applications that often have tight space constraints and caustic environmental conditions.

FIELD OPTIONS:

- 1.0" and 0.69" (1.74 cm) housing diameter
- Remote zero-span adjust
- Lightning suppression
- Additional lengths, Tefzel® or Hytrel jacketed cable

 2770 Long Road, Grand Island, NY 14072 USA

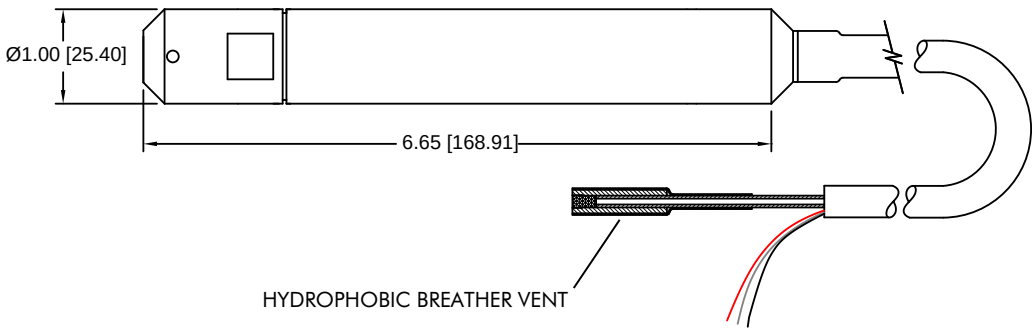
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 313L/NI
RED	+EXC/SIG
BLK	-EXC/SIG
GRN	N/C
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 8 to 36 Vdc
- **Output Signal:** 4-20 mA output
- **Circuit Protection:** Short circuit or reversed wired – Indefinite
- **Load Resistance:** 1400 Ω max. at 40 Vdc excitation
- **Response Time:** ≤5 ms to 90%
- **Connection:** Molded Hytrel jacketed, 6-conductor with breather tube, 24 AWG, 8' long, optional lengths available, Tefzel jacketed cable optional

MATERIALS OF CONSTRUCTION

- **Housing:** Titanium
- **Wetted Material:** Titanium / Ceramic and Viton

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO, ±0.2% FSO, and ±0.1% FSO

MECHANICAL

- **Zero Balance and FSO:** ±1.0% FSO @ +70 °F
- **Process Connection:** PVC bullet nose
- **External Pressure:** Rated to 500 PSI (1,153 ft WC) max.
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 4X FSO
- **Approximate Weight:** 10 oz (0.3 kg) nominal, options may increase weight
- **Diameter:** 0.875" (2.22 cm)

PRESSURE RANGES

- 0-20" WC thru 300 PSI (50 MBAR to 35 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-32 °C to +60 °C)
- **Operating:** -40 °F to +150 °F (-40 °C to +65.5 °C)
- **Storage:** -40 °F to +150 °F (-40 °C to +65.5 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F at full scale

Standard configurations shown.
Please consult factory for other options.

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LOW-COST SUBMERSIBLE LEVEL TRANSMITTER

MODEL 1102 / 1103

Model 1102 / 1103
Submersible Level Transmitter

FEATURES:

- Low-cost, high-reliability
- Submersible to 700 feet WC (213.4 meters WC)
- 1" (2.5 cm) diameter
- Up to ±0.2 % FSO accuracy
- All 316L stainless steel construction (optional titanium)

APPLICATIONS:

- Wet wells, ponds, rivers and tank level measurements
- Water and waste water treatment
- Ground water monitoring
- Irrigation

PRODUCT OVERVIEW:

The Model 1102/1103 from GP:50 is a family of submersible level transmitters, designed to provide high-accuracy measurements at a competitive price point. They are offered with an all 316L stainless steel construction for extended corrosion-free service life. An optional sludge screen is available for viscous media or wastewater applications.

FIELD OPTIONS:

- Lightning and surge protection
- Optional sludge screen for viscous media or wastewater
- Cable lengths to more than 3,000 ft with optional Tefzel® jacketed cable
- Optional Titanium construction

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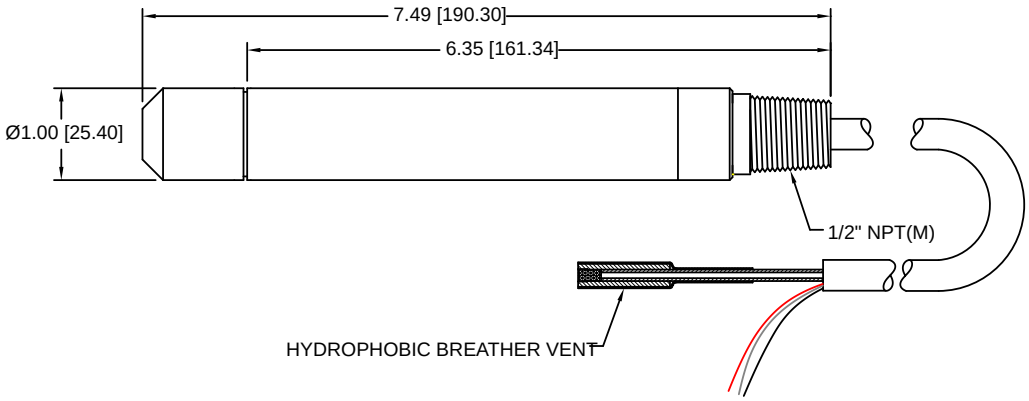
Tel: +1.716.773.9300 **Fax:** +1.716.773.5019 **Email:** sales@gp50.com **Web:** www.gp50.com

DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 1102	MODEL 1103
RED	+EXC	+EXC/SIG
GRN	+SIG	N/C
WHT	N/C	N/C
BLK	-EXC/SIG	-EXC/SIG
BLU	N/C	N/C
BRN	N/C	N/C
SHIELD	OPEN	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 9 to 36 Vdc
- **Output Signal:**

(1102) 0 to 5 Vdc

(1103) 4-20 mA

- **Circuit Protection:** Lightning and surge protection optional
- **Response Time:** <5 ms
- **Connection:** 1/2" NPT (M) conduit with 8.5' of 18 AWG, 4 conductor, shielded, Hytrel jacketed cable with integral vent tube and hydrophobic filter

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5% FSO

Improved: ±0.2% FSO

Zero & Span Balance: ±2.0% FSO

MATERIALS OF CONSTRUCTION

- **Housing and Pressure Cavity:**

316 stainless steel (Optional Titanium)

- **Cable:** Hytrel (Optional Tefzel)

MECHANICAL

- **Process connection:** 7/16-20 (M) with PVC bullet nose
- **Proof Pressure:** 1.5X FSO
- **Burst Pressure:** 3X FSO
- **Weight:** <12 oz (340 g)
- **Diameter:** 1" (25.4 mm)

PRESSURE RANGES

- 0 to 5 PSI thru 0 to 300 PSI (344 mBAR thru 21 BAR)
- 0 to 12 ft WC thru 0 to 700 ft WC (762 mm thru 213 m WC)

THERMAL SPECIFICATIONS

- **Compensated:** 0° F to +140 °F (-7 °C to +60 °C)
- **Operating Temperature:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Storage:** -40 °F to +195 °F (-40 °C to +90.6 °C)
- **Effect on Zero/Span:** < ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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SERIAL / DIGITAL INTERFACE SUBMERSIBLE LEVEL TRANSMITTER

Model 913
Serial / Digital Interface
Submersible Level Transmitter

MODEL 913

FEATURES:

- SDI-12 interface
- 0-30" WC to 0-700 feet WC (762 mm to 213 meters WC)
- Welded, leak-proof, 316L stainless steel construction
- Optional 0.685" (1.7 cm) diameter
- Up to ±0.05% FSO accuracy
- Optional Tefzel® jacketed cable

APPLICATIONS:

- Remote well monitoring (Wet wells, ponds, rivers)
- Ground water monitoring
- Tank level measurements
- Water treatment
- Irrigation systems

PRODUCT OVERVIEW:

The Model 913 from GP:50 is a high-accuracy submersible level transmitter. It features an asynchronous serial communication output (SDI-12-v 1.3), typically used to monitor environmental data. This also allows for communication with compatible data loggers or data acquisition systems. The incorporation of a hydrophobic breather vent ensures extended trouble-free service within demanding applications. These features, combined with the low power requirements of the Model 913, make it particularly ideal for remote well monitoring applications.

FIELD OPTIONS:

- Available in 0.875 or 0.685" (2.2 or 1.7 cm) diameter
- Hytrel or Tefzel® jacketed cable
- Titanium construction

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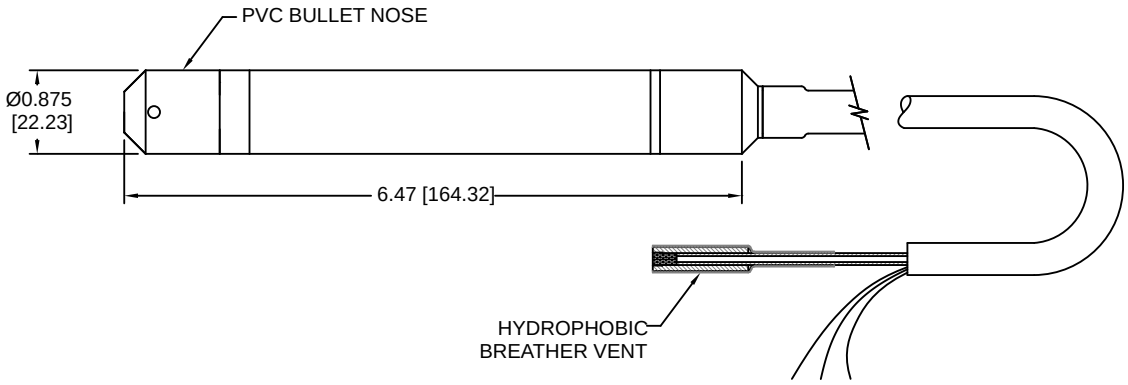
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 913
RED	+EXC
BLK	-EXC
GRN	SDI-12 DATA
WHT	N/C
SHIELD	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:** 6.0 to 36 Vdc
- **Output Signal:** SDI-12- standard version 1.3
- **Input Impedance:** >10 MΩ
- **Resolution:** 24 BIT
- **Baud Rate:** 1200 baud
- **Circuit Protection:** Short circuit or reversed wired – Indefinite Input protection and EMC filtering
- **Response Time:** 1 sec.
- **Idle Current:** <50 μA, <15 mA consumption during measurement
- **Connection:** Hytrel jacketed, 4-conductor, 18 AWG with vent tube and hydrophobic filter, 8′ long, additional lengths available

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- Standard: ±0.5% FSO
- Improved: ±0.2% FSO, ±0.1% FSO, ±0.05% FSO
- Zero Balance and FSO: ±1.0% FSO

MATERIALS OF CONSTRUCTION

- **Housing:** 316L stainless steel (Optional titanium)
- **Pressure Cavity:** 316L stainless steel (Optional titanium)

MECHANICAL

- **Process connection:** PVC bullet nose
- **External Pressure:** Case rated to 900 feet WC (275 meters WC)
- **Proof Pressure:** 2X FSO
- **Burst Pressure:** 3X FSO
- **Weight:** <10 oz (284 g)
- **Diameter:** 0.875″ (2.2 cm) standard, 0.685″ (1.7 cm) optional

PRESSURE RANGES

- 0-30" WC to 0-700 feet WC (762 mm to 213.4 meters WC)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +140 °F (-7 °C to +60 °C)
- **Operating Temperature:** -40 °F to +185 °F (-40 °C to +85 °C)
- **Storage:** -40 °F to +195 °F (-40 °C to +90.6 °C)
- **Effect on Zero/Span:** <±2.0% FSO/100 °F
- **Temperature Resolution:** ±0.1 °C

Standard configurations shown.
Please consult factory for other options.

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INDUSTRIAL GRADE FLUSH DIAPHRAGM PRESSURE TRANSMITTER

Model 117 / 217 / 317 / 317Z
Industrial Grade Flush Diaphragm
Pressure Transmitter

MODEL 117 / 217 / 317 / 317Z

FEATURES:

- Flush diaphragm eliminates plugging
- Pressure ranges from 0 to 50 thru 0 to 10K PSI (3.4 to 689 BAR)
- Operating temperature range from -20 °F to +250 °F (-29 °C to +121 °C)
- Installs flush to tank wall
- 316L stainless steel wetted parts with optional Hastelloy C alloy alternative

APPLICATIONS:

- Adhesives and sealants
- Paint and oils
- Food processing
- Petrochemical
- Wastewater
- Viscous, corrosive or sticky media

PRODUCT OVERVIEW:

The 17 series flush diaphragm eliminates clogging of the process port in applications where a viscous or sticky media is used. The 316L wetted parts with optional Hastelloy-C make this impervious to corrosive medias and provide standard operating temperatures to +250 °F (+121 °C), with a +350 °F (+177 °C) option.

FIELD OPTIONS:

- FM / CSA Intrinsically Safe approval (317Z)
- Zero and span adjustments
- IP67 / NEMA 6 rating
- Comprehensive list of alternative electrical and process connections
- mV/V, 0 to 5 Vdc, 0 to 10 Vdc, 4-20 mA output
- Hastelloy C alloy wetted parts

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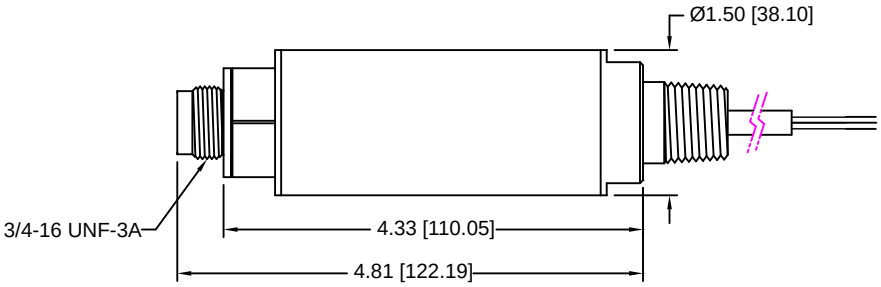
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 117	MODEL 217	MODEL 317(Z)
1/RED	+EXC	+EXC	+EXC/SIG
2/GRN	+SIG	+SIG	N/C
3/WHT	-SIG	N/C	N/C
4/BLK	-EXC	-EXC/SIG	-EXC/SIG
5/BLU	+SHUNT (OPT)	+SHUNT (OPT)	+SHUNT (OPT)
6/BRN	-SHUNT (OPT)	-SHUNT (OPT)	-SHUNT (OPT)
SHIELD	OPEN	OPEN	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**

(Model 117) 3.5 to 15 Vdc max.

(Model 217/317) 9 to 40 Vdc

- **Output Signal (@ +70 °F):**

(Model 117) 3 mV/V

(Model 217) 0 to 5 Vdc, 0 to 10 Vdc

(Model 317) 4-20 mA

- **Input Current:** (Model 217) 8 mA nominal
- **Output Current:** (Model 317) 2.0 mA max. for <0.1% FSO attenuation
- **Input Impedance:** (Model 117) 350 Ω nominal
- **Load Resistance:**

(Model 117) 50K Ω min. for <0.1% FSO attenuation

(Model 317) 1,350 Ω max. at 36 Vdc and 750 Ω max. at 24 Vdc

- **Circuit Protection:** RFI and EMI
- **Insulation Resistance:** >10 MΩ at 50 Vdc and +70 °F
- **Connection:** 36" long PVC jacketed, 24 AWG, 4-conductor cable

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**

316 stainless steel (Optional Hastelloy C alloy)

- **Housing:**

316 stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±1.0 % FSO

Improved: ±0.5% and ±0.2% FSO

- Zero Balance and FSO: ±2.0% FSO @ +70 °F

MECHANICAL

- **Process Connection:** 3/4" - 16 UNF-3A thread with Teflon O-ring and retaining rim
- **Proof Pressure:** 1.5X full scale pressure range or 12K PSI (827 BAR), whichever is less
- **Burst Pressure:** 5X full scale pressure range or 15K PSI (1,034 BAR), whichever is less
- **Approximate weight:** 8 oz. (0.2 kg) nominal

PRESSURE RANGES

- From 0 to 50 thru 0 to 10K PSI (3.4 to 689 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-17.7 °C to +82 °C)
- **Operating Process:** -20 °F to +250 °F (-29 °C to +121 °C)
- **Effect on Zero/Span:** <±2% FSO/100 °F
- **Orientation Shift:** ±1" WC, option GJ or JH is recommended on ranges ≤ 200" WC

Standard configurations shown.
Please consult factory for other options.

All specifications are for reference purposes only. In the interests of continuous product improvement, all specifications are subject to change without notice. Please contact GP:50 for assistance with your application.

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SANITARY FLUSH DIAPHRAGM PRESSURE TRANSMITTER

Model 218 / 318
Sanitary Flush Diaphragm
Pressure Transmitter

MODEL 218 / 318

FEATURES:

- Flush process diaphragm eliminates process plugging
- Complies with 3A standard 74-06
- Ranges from 0 to 30" WC thru 0 to 1000 PSI (150 mBAR to 59 BAR)
- Rugged, all-welded, 316 stainless steel construction
- Vented cable or quick disconnect option for low range gage reference eliminates water intrusion
- Flush to tank wall installation

APPLICATIONS:

- Food processing
- Dairy and beverage
- Pharmaceutical
- Medical laboratory

PRODUCT OVERVIEW:

GP:50's model 18 series provides a thread on flush process connection that meets 3A sanitary design standards. The NEMA 4X all welded stainless steel provides protection from water ingress and is designed for the extremes associated with food and beverage processing. An optional high temperature version provides reliable operation in CIP processes to +250 °F (+121 °C).

FIELD OPTIONS:

- Zero and span adjustment
- IP-67 NEMA 6
- Expanded process temperature range -65 °F to +250 °F (-54 °C to +121 °C)
- Wide selection of process and electrical mating accessories

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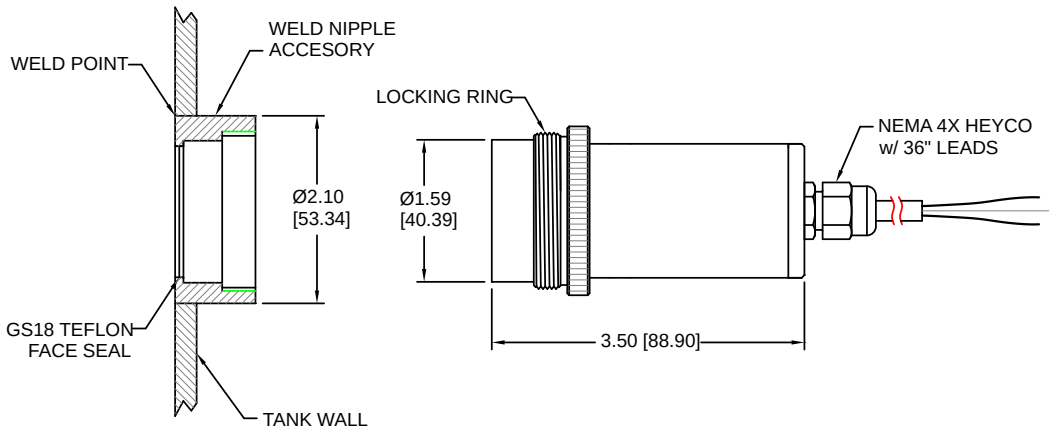
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



STANDARD WIRING

WIRE	MODEL 218	MODEL 318
1/RED	+EXC	+EXC/SIG
2/GRN	+SIG	N/C
3/WHT	N/C	N/C
4/BLK	-EXC/SIG	-EXC/SIG
5/BLU	N/C	N/C
6/BRN	N/C	N/C
SHIELD	OPEN	OPEN

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**
  (Model 218) 10.5 to 32 Vdc
  (Model 318) 9 to 40 Vdc
- **Output Signal (@ 70 °F):**
  (Model 218) 5.0 Vdc ±2% FSO
  (Model 318) 4-20 mA ±2% FSO
- Input Current:
  (Model 218) 8 mA
  (Model 318) 23 mA max.
- **Load Resistance:** (Model 218) 3K Ω min.
- **Circuit Protection:** Reverse polarity protected and RFI & EMI protection
- **Connection:** 8 foot, 6 conductor, 18 AWG Hytrel jacketed cable. Barometric vent provided where needed on ranges <300 PSI (21 BAR)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  Type 316 stainless steel, Inconel and Hastelloy available (3A 74-06 compliant) rated
- **Housing:**
  316 stainless steel, NEMA-4X

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- ±0.5% FSO, ±0.2% FSO, ±0.1% FSO
- Zero Balance and FSO: ±2.0% FSO (Horizontal position)

MECHANICAL

- **Process Connection:** 1-3/4" - 20 UNF thread to 316 stainless steel weld nipple (weld nipple not included)
- **Proof Pressure:** 3X FSO
- **Burst Pressure:** 5X FSO
- **Approximate weight:** 12 oz. (0.3 kg) nominal

PRESSURE RANGES

- 0 to 30" WC thru 0 to 1K PSI (150 mBAR to 59 BAR)

THERMAL SPECIFICATIONS

- **Compensated:** 30 °F to +170 °F (-1 °C to +77 °C)
- **Operating Process:** 0 °F to +185 °F (-18 °C to +85 °C)
- **Effect on Zero/Span:** <±2% FSO/100 °F
- **Orientation Shift:** ±1" WC, option GJ or JH is recommended on ranges ≤ 200" WC

Standard configurations shown.
Please consult factory for other options.

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MINIATURE FLUSH DIAPHRAGM PRESSURE TRANSDUCER

Model 188

Model 288 / 388
Miniature Flush Diaphragm
Pressure Transducer

MODEL 188 / 288 / 388

FEATURES:

- Flush diaphragm eliminates port plugging
- Compact, lightweight design <2 oz (56.7 gm)
- All-welded stainless steel construction
- Designed to eliminate any zero installation effect
- Rated for high shock and vibration applications
- -65 °F to +250 °F (-53.8 °C to +121.1 °C) operating temperature range (Optional -320 °F to +385 °F)
- Optional high-frequency response (>3 kHz)

APPLICATIONS:

- Adhesive, sealants & paint systems
- Food processing
- Extrusion
- Test stands
- Hydraulic systems

PRODUCT OVERVIEW:

Model 188/288/388 from GP:50 is a family of all-welded stainless steel miniature flush diaphragm pressure transducers. Their unique design incorporates a specialty flush process connection. This allows the transducer to effectively support higher viscosity fluid pressure measurements without port clogging or plugging. Their compact size allows for ease of installation within space constrained environments.

FIELD OPTIONS:

- 7/16-20 UNF flush pressure port
- 6-pin Bendix PTIH-10-6P standard (other connectors available)
- Temperature output, RTD, Type J & Type K thermocouples
- Hastelloy, Inconel wetted parts
- Extended temperature range of -65 °F to +350 °F (-54 °C to +177 °C)

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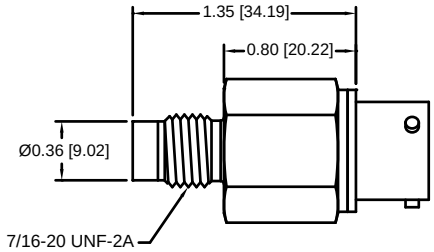
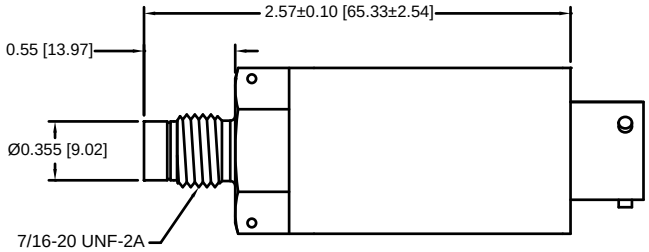
DIMENSIONAL DRAWING

All dimensions are in inches (mm)



MODEL 188



MODEL 288/388

STANDARD WIRING

PIN	MODEL 188	MODEL 288	MODEL 388
A/1	+EXC	+EXC	+EXC/SIG
B/2	+SIG	+SIG	N/C
C/3	-SIG	N/C	N/C
D/4	-EXC	-EXC/SIG	-EXC/SIG
E/5	N/C	N/C	N/C
F/6	N/C	N/C	N/C

REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:**
  (Model 188) 5 to 15 Vdc maximum
  (Model 288/388) 8 to 32 Vdc
- **Output Signal:**
  (Model 188) 2 mV/V
  (Model 288) 0 to 5 Vdc, 0 to 10 Vdc
  (Model 388) 4-20 mA
- **Zero and Span Balance:**
  ± 1% FSO each
- **Bridge Impedance:**
  (Model 188) 5000 Ω standard (350 Ω optional)
- **Circuit Protection:**
  (Model 288/388)
  Reverse polarity & Over voltage protection
- **Response Time:**
  (Model 188) 3 to 5 KHz
  (Model 288/388) <1m Sec

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**
  Pressure port: 17-4 PH stainless steel
  (Inconel, Hastelloy optional)
- **Housing:**
  300 series stainless steel

STATIC ACCURACY (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

(Model 188) ±0.5% FSO <4000 PSI (276 BAR)
±0.25% FSO ≥5000 PSI (345 BAR)
(Model 288/388) ±0.25%
(optional ±0.10% or ±0.05% FSO)

MECHANICAL

- **Process Connection:** 7/16-20 UNF
- **Electrical:** PTIH-10-6P (consult factory for other options)
- **Proof Pressure:** 2X range or 22.5K PSI max. (1,551 BAR)
- **Burst Pressure:** 4X range or 25K PSI max. (1,723 BAR)
- **Weight:**
  (Model 188) <2 oz. (57 gm)
  (Model 288/388) <2.5 oz. (70 gm)

PRESSURE RANGES

300 PSI to 20K PSI (21 to 1,379 BAR)
(consult factory for other ranges)

THERMAL SPECIFICATIONS

- **Compensated:** -30 °F to +170 °F (-34 °C to +77 °C)
- **Operating:** -65 °F to +250 °F (-54 °C to +121 °C)
  Optional extended range 188: -65 °F to +350 °F (-54 °C to +177 °C)
- **Storage Ambient:** -65 °F to +250 °F (-54 °C to +121 °C)
- **Effect on Zero/Span:**
  (Model 188) ±2%/100 °F (Zero/Span)
  (Model 288/388) ±0.5%/100 °F (Zero/Span)
  Optional ±0.25%/100 °F

OPTIONAL VARIATIONS

- Consult factory

Standard configurations shown.
Please consult factory for other options.

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SANITARY TRI-CLAMP PRESSURE TRANSMITTER

Model 280/283 & 380/383
Sanitary Tri-Clamp
Pressure Transmitter

MODEL 280/380 & 283/383

FEATURES:

- Standard tri-clamp fitting sizes from 3/4" to 3"
- Complies with 3A standard 74-06
- Flush process connection eliminates plugging
- All 316L stainless steel or Inconel wetted parts
- Pressure ranges from 0 to 30" WC thru 0 to 1,000 PSI (150 mBAR to 59 BAR)

APPLICATIONS:

- Food and beverage manufacturing
- Dairy and beverage processing
- Pharmaceutical
- Sanitary

PRODUCT OVERVIEW:

Models 280/380 & 283/383 from GP:50 are a family of food and beverage grade tri-clamp process connection pressure transmitters. Their rugged design also meets 3A sanitary standards for dairy applications. Tri-clamp fitting sizes as small as 3/4" are available to provide reduced surface area exposure. The Model 383 is also available with optional high-temperature compensation to +400 °F (+204 °C). Standard models feature all 316L stainless steel construction. Optional Inconel or Hastelloy wetted parts may be substituted for improved corrosion resistance. An optional vented quick disconnect cable provides a barometric reference on lower ranges while providing a NEMA 4X rating.

FIELD OPTIONS:

- Vented quick disconnect cable
- Standard tri-clamp fitting sizes from 3/4" to 3"
- High-temperature compensation to +400 °F (+204 °C)
- Inconel and Hastelloy wetted parts
- FM, CSA Explosion Proof option available

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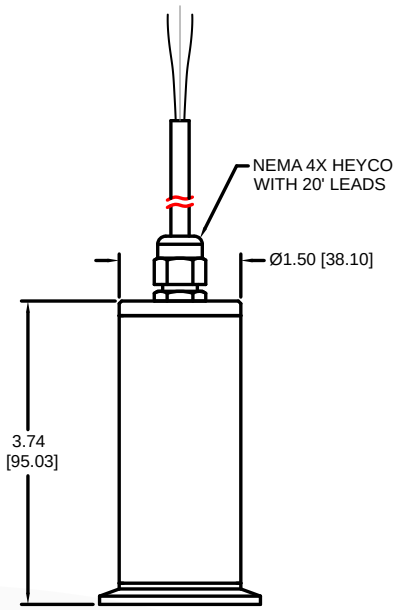
DIMENSIONAL DRAWING

All dimensions are in inches (mm)

STANDARD WIRING

WIRE	MODEL 280/283	MODEL 380/383
1/RED	+EXC	+EXC/SIG
2/GRN	+SIG	N/C
3/WHT	N/C	N/C
4/BLK	-EXC/SIG	-EXC/SIG
5/BLU	N/C	N/C
6/BRN	N/C	N/C
SHIELD	OPEN	OPEN



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Supply Voltage:**

(Models 280/283) 10.5 to 42 Vdc

(Models 380/383) 13 to 37 Vdc

- **Output Signal (@ +70 °F):**

(Models 280/283) 0 to 5 Vdc ±2% FSO

(Models 380/383) 4-20 mA ±2% FSO

- **Input Current:**

(Models 280/283) 6.2 mA nominal

- **Output Current:**

(Models 280/283) 2.0 mA max. for <0.1% FSO attenuation

- **Load Resistance:**

(Models 380/383) 1200Ω max. at 37 Vdc, 550Ω max. at 24 Vdc

- **Circuit Protection:** RFI & EMI
- **Connection:** 20 ft 6-conductor vented Hytrel jacketed cable

MATERIALS OF CONSTRUCTION

- **Wetted Parts:**

316 stainless steel, NEMA-4X (3A 74-03 compliant) rated
Inconel and Hastelloy optional

- **Housing:** 316 stainless steel

STATIC ACCURACY (BFSL) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

- ±0.5% FSO standard, ±0.2% FSO, ±0.1% FSO optional
- Zero Balance and FSO: ±2.0% FSO at +70 °F

MECHANICAL

- **Process Connection:** Tri-Clamp 1/2" thru 3"
- **Proof Pressure:** 3X FSO
- **Burst Pressure:** 6X FSO
- **Approximate weight:** 14 oz. nominal, dependent on pressure fitting

PRESSURE RANGES

- From 0 to 30" WC thru 0 to 1000 PSI
- 2", 2-1/2" and 3" tri-clamp fitting (≥2 to 300 PSI)
- 1", 1-1/2" tri-clamp fitting (≥2 to 1,000 PSI)
- 1/2" and ¾" tri-clamp fitting (≥50 to 1000 PSI)

THERMAL SPECIFICATIONS

- **Compensated:**

(Model 80) 0 °F to +180 °F (-17 °C to +82 °C)

(Model 83) 0 °F to +400 °F (-17 °C to +204 °C)

- **Operating Process:**

(Model 80) -20 °F to 200 °F (-29 °C to +93 °C)

(Model 83) -20 °F to +400 °F (-29 °C to +204 °C)

- **Effect on Zero/Span:** <±2% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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HAZARDOUS LOCATION FLUSH MOUNT PRESSURE TRANSDUCER

MODEL 311-IM

Model 311-IM
Hazardous Location Flush Mount
Pressure Transducer

FEATURES:

- Flush sensor eliminates media plugging
- 0-50 thru 0-750 PSI (4 thru 50 BAR)
- No zero offset due to installation
- FM, CSA, ATEX, and IEC approvals
- Rugged, all-welded stainless steel design
- Optional 5X proof pressure
- Optional tri-clamp adapter

APPLICATIONS:

- Blender discharge
- Frack pump suction pressure
- Wellhead control
- Sludge and slurries
- Adhesives and paints

PRODUCT OVERVIEW:

The Model 311-IM from GP:50 is a flush mounted, hazardous location approved pressure transducer, designed to provide added reliability within slurry or thick process media applications. Their rugged, all-welded flush mounted design facilitates accurate measurements of corrosive or higher viscosity media, in applications where non-flush port sensors are otherwise prone to clogging or damage. No zero offset is caused during sensor installation.

APPROVALS:

- **FM, FM/CSA:** Class I/II/III, Div 1, Grps A-G, T6 at Ta=40C
- **FM:** Class I, Zone 2 AEx nC IIC T5, Class I, Div. 2, Grp. A, B, C, D Class II, Grp. E, F, G, Class III T5, Ta = 80C
- **CSA:** Ex nA IIC T5, Ex nL IIC T5, Class I Div. 2 Grp. A, B, C, D Class II Div. 2 Grp. E, F, G Class III T5, Ta=80C
- **ATEX:** CE0575 II 3 G Ex nA IIC, Ex ic IIC T5, Ta=80C
- **IEC:** Ex na IIC, Ex ic IIC T5, Ta=80C
  (all Zone 2/Div 2 approvals are electrical connector dependent)

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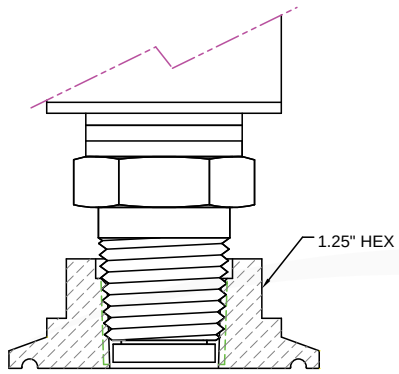
DIMENSIONAL DRAWING

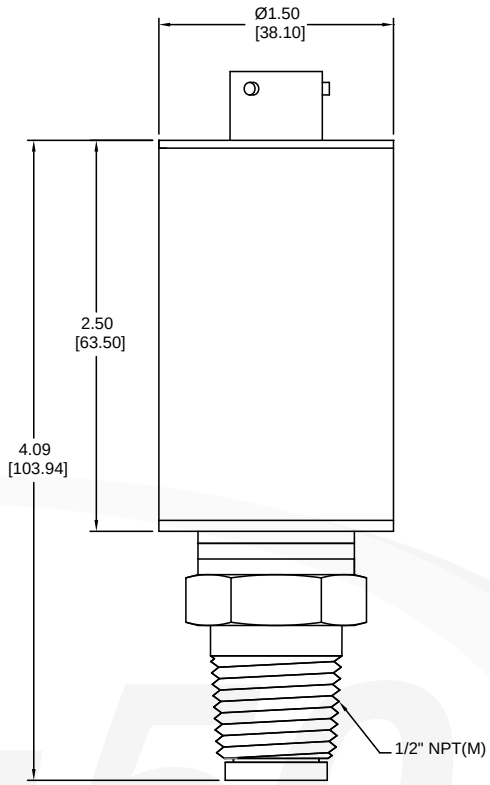
All dimensions are in inches (mm)

STANDARD WIRING

PIN	MODEL 311-IM
A/1/RED	+EXC/SIG
B/2/GRN	CASE GND
C/3/WHT	N/C
D/4/BLK	-EXC/SIG
E/5/BLU	+SHUNT (OPT.)
F/6/BRN	-SHUNT (OPT.)



PORT DETAIL:
SHOWN WITH OPT. TRI-CLAMP FITTING



REFERENCE SPECIFICATIONS

ELECTRICAL

- **Excitation Voltage:** 10 to 28 Vdc
- **Output Signal:** 4-20 mA
- **Circuit Protection:** RFI and EMI
- **Load Impedance:** 750 Ω max. to 24 Vdc
- **Insulation Resistance:** >10 MΩ @ 50 Vdc, +70 °F
- **Response Time:** <5 ms 10% to 90%
- **Connection:** 6-pin Bendix connector (other options available)

MATERIALS OF CONSTRUCTION

- **Wetted Parts:** Inconel 718 and 316 stainless steel (optional Hastelloy, consult factory)
- **Housing:** 316 stainless steel

STATIC ACCURACY (RSS) (HYSTERESIS, NON-LINEARITY & REPEATABILITY @ +70 °F)

Standard: ±0.5%, ±0.2%

Zero Balance and FSO: ±1% at +70 °F

MECHANICAL

- **Process Connection:** 1/2" NPT (M)
- **Proof Pressure:** 2X FSO (5X optional)
- **Burst Pressure:** 5X FSO
- **Approximate Weight:** 0.7 lb (260 g) nominal, options may increase weight

PRESSURE RANGES

- 0 to 50 PSI thru 0 to 750 PSI (0 to 3 thru 0 to 50 BAR) , some options may affect range
  (PSIG, PSIS, PSIA, PSIV compound ranges available)

THERMAL SPECIFICATIONS

- **Compensated:** 0 °F to +180 °F (-18 °C to +82 °C)
- **Operating Process:** -40 °F to +176 °F (-40 °C to +80 °C)
- **Storage:** -65 °F to +250 °F (-53 °C to +121 °C)
- **Effect on Zero/Span:** ±2.0% FSO/100 °F

Standard configurations shown.
Please consult factory for other options.

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LOOP POWERED LOCAL INDICATOR

LD1001
Loop Powered Local Indicator

LD1001

FEATURES:

- 3 1/2 digit display
- Dual relay outputs
- DIN electrical connection
- Internal push button adjust

INPUT:

- 4-20 mA loop powered
- 13 VDC min input

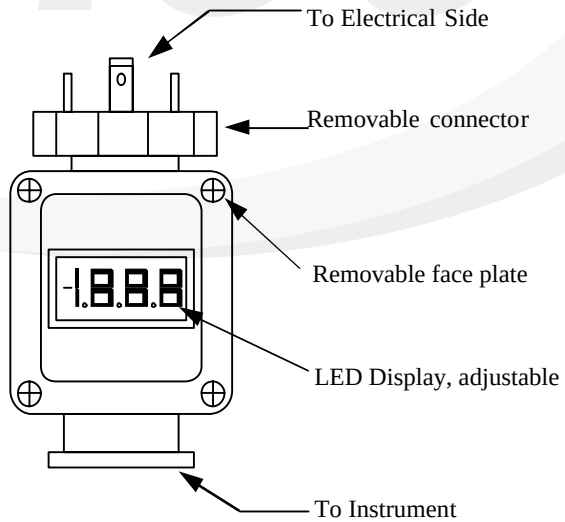
INTERFACE:

- DIN 43650 (Direct mount to GP:50 4-20mA output transmitter with connector option CJ)

APPLICATION:

- The LD1001 plug-on display is a local pressure display with an adjustable set point for use with any GP:50 4-20mA 2 wire transmitter.
- The LD1001 comes factory set* when ordered with an acceptable GP:50 transmitter for easy field installation.

* Includes internal push buttons to manually adjust zero and span, as well as decimal placement and relay set points.



Standard configurations shown.
Please consult factory for other options.

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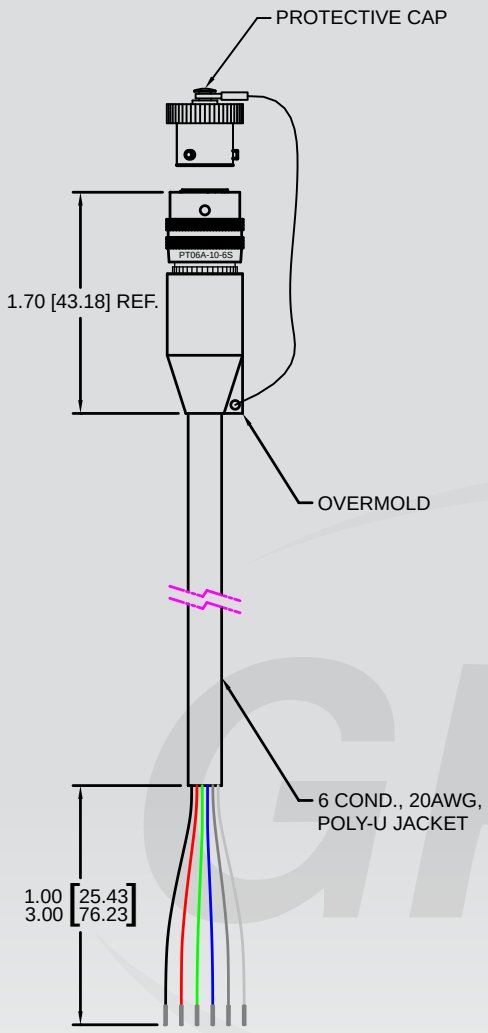
CABLE ASSEMBLY 8V5-20



FEATURES:

- Polyurethane jacketed cable with water tight over-mold protection
- 6 Conductor, 18 awg with foil & drain
- 6 Pin Amphenol PT06A-10-6S connector with protective cap

SPECIFICATIONS:

Jacket:
Pressure Extruded Black Polyurethane (PU)
Wall thickness nominal .050 inches
Outside diameter (OD) nominal .290 inches, ±.010 inches

Conductor (6 x 20 AWG Singles):
20 Gauge Tinned Copper Wire
10/30 Stranding

Insulation:
Polypropylene (PP)
Wall thickness nominal .010 inches
Outside diameter (OD) nominal .059 inches

Conductor Color Code:
Black, Brown, Red, Green, Blue, White

Rating:
600 Volts
+80 °C

RoHS – This product complies with Article 4 (1) of Directive 2002/95/ EC on the restriction of use of certain hazardous substances in electrical and electronic equipment.

STANDARD WIRING

PIN	WIRE
A	RED
B	BLACK
C	WHITE
D	GREEN
E	BLUE
F	BROWN

Standard configurations shown.
Please consult factory for other options.

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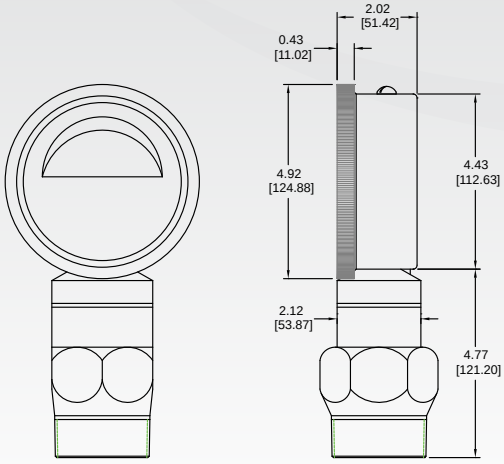
MUD GAUGE DIAPHRAGM TYPE

GPMG Series
Mud Gauge Diaphragm Type



GPMG SERIES

FEATURES:

- Pressure range from 5K PSI to 15K PSI (345 to 1,034 BAR)
- Socket and case welded for high vibration and corrosive service
- Fixed pointer and moveable dial
- 4″ glycerin filled dial
- Weather proof/anti-corrosive gun metal casting
- Easy-to-read analog display

APPLICATIONS:

- Mud pump pressure
- Stand pipe pressure
- Oil and gas well head pressures

TECHNICAL SPECS:

- Bourdon tube: 316 stainless steel
- Movement: 304 stainless steel
- Diaphragm: 316L stainless steel
- Casing: Anti-corrosion treated carbon steel
- Process connection: Bottom mount 2″ NPT
- Static accuracy: 2.5% FSO
- Pressure ranges: 0 to 10K PSI thru 0 to 15K PSI (690 thru 1,034 BAR)
- Dial: 4″ Glycerin filled plexiglass
- Neoprene rubber pad for mud protection

Standard configurations shown.
Please consult factory for other options.

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BLUE RIBBON CORP.

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PUMP CONTROLLER
MODEL BD300

Features:

- 0-20 mA, 4-20 mA, 0-5 V, 1-5 V, and ±10 V Inputs
- Large Dual-Line 6-Digit Display, 0.60" & 0.46"
- NEMA 4X, IP65 Front
- Universal 85-265 VAC, or 12/24 VDC Input Power Models
- Programmable Display & Function Keys
- 32-Point, Square Root, or Exponential Linearization
- Multi-Pump Alternation Control
- USB, RS-232, RS-485 Serial Communication Options
- Modbus® RTU Communication Protocol Standard
- Free BULLDOG Pro Software for Operation, Monitoring, and Programming
- Standard 1/8 DIN (45mm x 92mm)

Optional Features:

- 4 Relays + Isolated 4-20 mA Output Options
- External 4-Relay & Digital I/O Expansion Modules
- Sunlight Readable Display Models - Optional

BLUE RIBBON

A GP:50 Company

GP:50 Provides Blue Ribbon Pressure Gauges

Pressure gauges for the

PROCESS

GENERAL PURPOSE TEST

SANITARY &

INDUSTRIAL MARKETPLACE.

- Ruggedized versions for high shock & vibration applications
- Ranges from 0-10" WC thru 1-20K PSI
- Vacuum and differential formats
- Sizes from 1" thru 10" diameter
- ±0.1% accuracy versions

Contact GP:50 with your gauge application
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COMMON OPTION CODES

Please Consult factory for other options

OUTPUT PER MODEL#

1xx	mV/V
2xx	Vdc
3xx	mA
4xx	HART
5xx	CANbus
6xx	USB
7xx	RS485
8xx	RS232
9xx	SDI-12
1002/1102	Vdc
1003/1103	mA
M-Spike	mV/V
V-Spike	Vdc
C-Spike	mA

APPROVALS

AI	ATEX/IEC Intrinsic Safety
AN	ATEX/IEC Zone 2 (311 only)
EC	CE marking
GI	ATEX/IEC/FM/CSA Intrinsic Safety
GN	ATEX/IEC/FM/CSA Div/Zone 2
I	FM/CSA Intrinsic Safety
N	FM/CSA Div/Zone 2
P	FM/CSA Explosion Proof
Z	FM/CSA Intrinsic Safety
X	FM Explosion Proof

ACCURACY

B	±0.5% FSO
C	±0.2% FSO
D	±0.1% FSO
E	±0.05% FSO

PRESSURE REFERENCE

2	Gauge
3	Absolute
4	Vacuum
6	Sealed Gauge (hermetic)
7	Sealed Gauge (non-hermetic)
8	Elevated / Suppressed
10	Compound (vacuum to positive range)

ELECTRICAL CONNECTIONS

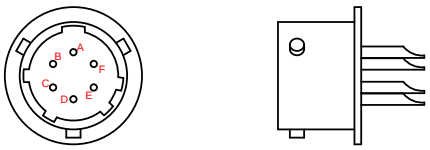
AA	36" Wire lead standard
CA	PTIH-10-6P, 6-Pin Bendix
CF	1/2" NPT (M) with 36" leads
CJ	DIN 43650 Form A with mate
DA	DIN43650 Form C (Mini Din) w/mate
DC	Turck 4-Pin M12, Eurofast
DR4	Turck 4-Pin, 7/8-16 THD
DT4	Mini Fast, 4-Pin, 7/8-16 THD
HK	36" Non-Vented Poly Cable NEMA-4x Rating

PRESSURE PORTS

AA	1/4" NPT (F) standard
FA	AS5202-04 (F) 7/16"-20 UNF-3A
FD	AS4395E04 (M) 7/16"-20 UNF-3A
FH	1/8" NPT (F)
FJ	1/4" NPT (M)
FL	1/8" NPT (M)
FM	Autoclave F250C (F) 1/4" Tube 9/16-18 Thd
FN	1/2" NPT (M)
HK	36" Non-Vented Poly Cable NEMA 4X Rating
IC	F375C (F), 3/4-16 (F) 3/8" Tube 3/4-16
ID	F312C150 (F), 5/16" Tube 5/8-18
LG	SAE-4 (F) [7/16"-20 UNF (F)]
LH	SAE-6(M) with O-ring, 9/16"-18 (M)

MISCELLANEOUS

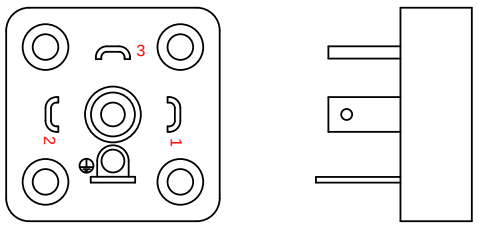
GE	Improved Temperature Compensation
GF	Expanded Process Temp (-40 °F to 250 °F)
GH	100% Internal Shunt Cal
GJ	Zero & Shunt Adjustments
GK	Inconel x750 wetted parts
GL	Cleaned for oxygen service
GP	Hastelloy C-276 wetted parts
GS	0-10 Vdc FSO
GA	Improved FSO (±0.5% FSO)
GB	Alternate electronic output
GD	10X over-pressure of 22,500 psi, (whichever is less)
MA	1-5 Vdc Output
ME	80% Shunt Cal
MR	Alternate Pin out / wiring (specify on sales order)



CONNECTOR OPTION CA
PTIH-10-6P, 6-PIN BENDIX OR EQUIV.

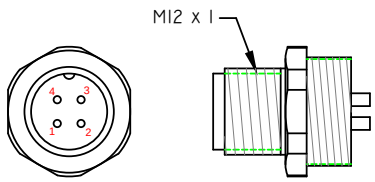
PIN	TRANSDUCER OUTPUT				MDL 370
	MV/V	3-WIRE VOLTAGE	4-WIRE VOLTAGE	4-20MA	4-20MA
A	+EXC	+EXC	+EXC	+EXC/SIG	+EXC/SIG
B	+SIG	+SIG	+SIG	N/C	-EXC/SIG
C	-SIG	N/C	-EXC/SIG **	N/C	N/C
D	-EXC	-EXC/SIG	-EXC/SIG	-EXC/SIG	N/C
E	N/C *	N/C *	N/C *	N/C *	+SHUNT
F	N/C *	N/C *	N/C *	N/C *	-SHUNT

N/C * = ALSO USED FOR OPTIONAL SHUNT CALIBRATION OR RTD OHM OUTPUT
** = JUMPERED TO PIN D



CONNECTOR OPTION CJ
GSA 3000 N, 4-PIN, HIRSCHMANN OR EQUIV.
DIN 43650 FORM A

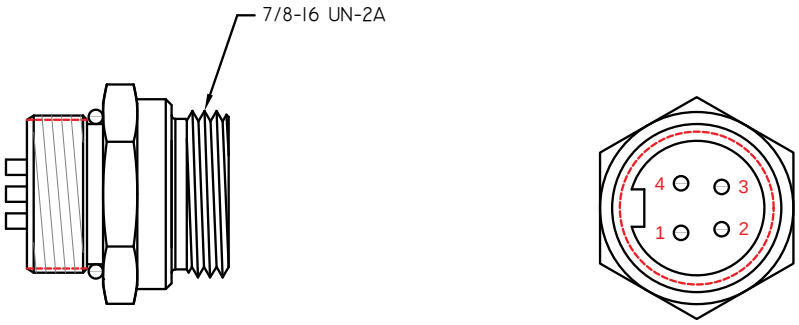
PIN	TRANSDUCER OUTPUT			
	MV/V	3-WIRE VOLTAGE	4-WIRE VOLTAGE	4-20MA
1	N/A	+EXC	N/A	+EXC/SIG
2		+SIG		-EXC/SIG
3		-EXC/SIG		N/C
GND		CASE GROUND		CASE GROUND



CONNECTOR OPTION DC4
IP-67, 4-PIN, TURCK FS 4.4 OR EQUIV.

WIRE COLOR	PIN	TRANSDUCER OUTPUT			
		MV/V	3-WIRE VOLTAGE	4-WIRE VOLTAGE	4-20MA
BROWN	1	+EXC	+EXC	+EXC	+EXC/SIG
DRAIN/WHITE	2	+SIG	+SIG	+SIG	CASE GND
BLUE	3	-SIG	N/C	-EXC/SIG **	N/C
BLACK	4	-EXC	-EXC/SIG	-EXC/SIG	-EXC/SIG

** = JUMPERED TO PIN 4

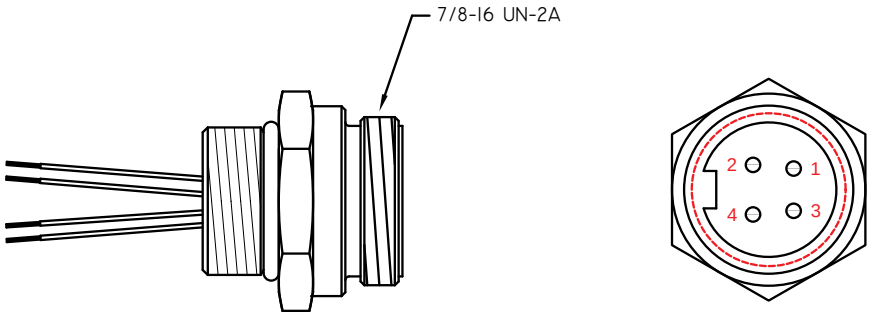


CONNECTOR OPTION DR4

RSFL 46, 4-PIN, TURCK OR EQUIV.

PIN	TRANSDUCER OUTPUT			
	MV/V	3-WIRE VOLTAGE	4-WIRE VOLTAGE	4-20MA
1/BLACK	-EXC	-EXC/SIG	-EXC/SIG*	-EXC/SIG
2/WHITE	+SIG	+SIG	+SIG	+EXC/SIG
3/RED	+EXC	+EXC	+EXC	-SHUNT/ NC**
4/GREEN	-SIG	CASE GND	-SIG/EXC*	+SHUNT/CASE GND**

* JUMPERED TOGETHER
** SHOWN WITH OPTIONAL SHUNT CAL



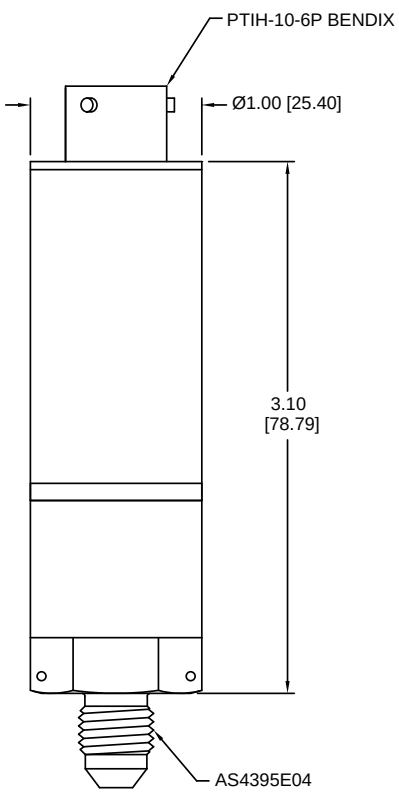
CONNECTOR OPTION DT4

P-RSF 40D-.03, 4-PIN, TURCK OR EQUIV.

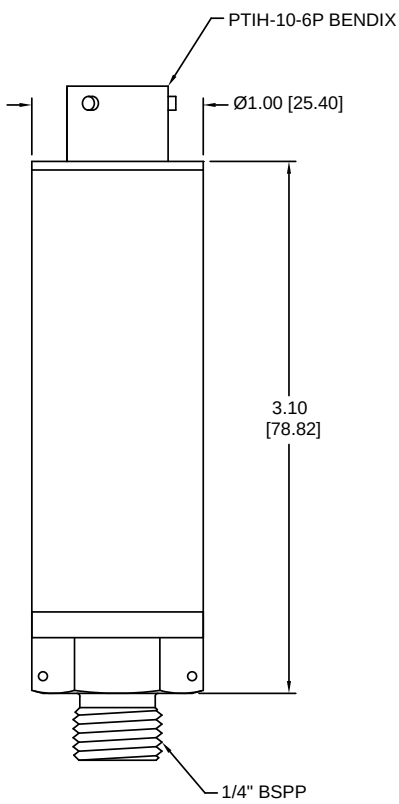
PIN	TRANSDUCER OUTPUT			
	MV/V	3-WIRE VOLTAGE	4-WIRE VOLTAGE	4-20MA
1/BLUE	-EXC	-EXC/SIG	-EXC/SIG*	-EXC/SIG
2/BROWN	+EXC	+EXC	+EXC	+EXC/SIG
3/GRAY	+SIG	+SIG	+SIG	-SHUNT/ NC**
4/GRN/YEL	-SIG	CASE GND	-SIG/EXC*	+SHUNT/CASE GND**

* JUMPERED TOGETHER
** SHOWN WITH OPTIONAL SHUNT CAL

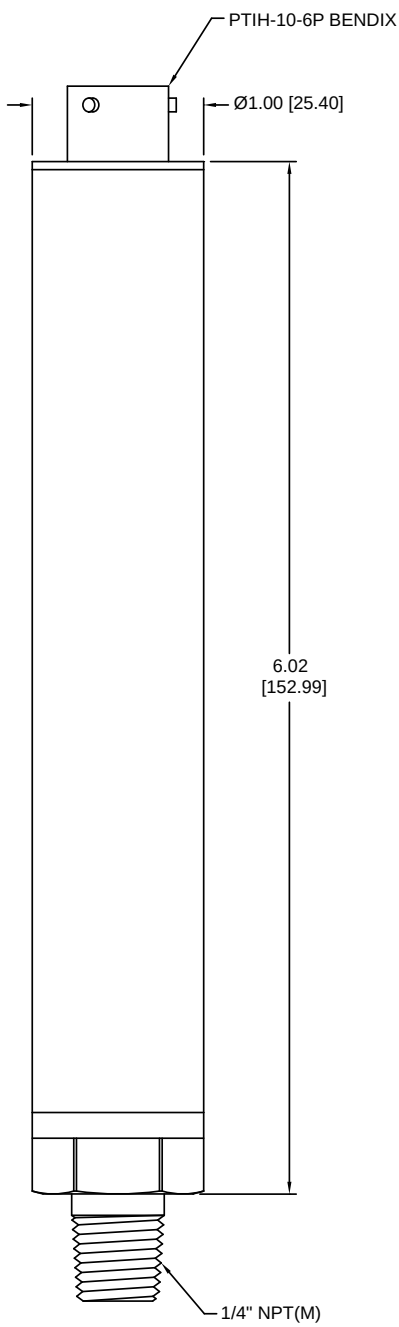
MODEL 540
CANBUS



MODEL 741
RS485



MODEL 841
RS232



THE ELECTRONICS REQUIRED FOR RS232 WILL CAUSE THE OVERALL LENGTH TO INCREASE; SEE EXAMPLE DRAWINGS FOR REFERENCE.

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Tel. (716) 773-9300 • Fax (716) 773-5019
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LEVEL MEASUREMENT UTILIZING A PRESSURE TRANSMITTER

Technical Note #1

One method of determining level in a tank, pond, weir or well is to utilize a pressure transmitter. There is a direct relationship between liquid level and "head" pressure. Depending on the installation requirements, pressure transmitters are available in submersible, screw on, flange mount, flush mount and many other installation configurations.

Pressure & Level Relationship

The pressure at the bottom of an open tank or body of liquid is related to the height of the liquid. This level pressure is called hydrostatic head pressure. Typical units of measure for hydrostatic pressure are inches of water column or feet of water column. (in WC / ft WC)

27.679 inches of water column is approximately equivalent to 1 PSI at 40º C. The volume of water will not affect the hydrostatic head pressure, it is the height that affects the pressure. Whether 27.679 inches deep in the middle of a large body of water or small bucket of water the head pressure is the same.

When measuring liquid level with a pressure transmitter, specific gravity must also be taken into account.
P=SG • H (H = P/SG) shows the relationship between the height of the liquid, specific gravity and hydrostatic pressure.

H – Height of the liquid being measured
P – Hydrostatic head pressure at the bottom of the tank
SG – Media's specific gravity. (A dimensionless number)

If the media's specific gravity is unknown it can be calculated from the density of the liquid being measured.
SG = Density of media ÷ Density of water at 40° C. Density of water is 1.00 g/cm3. The density of gasoline equals 0.82 g/cm3. Therefore, the SG of gasoline is 0.82 g/cm3 ÷ 1.00 g/cm3 = 0.82

Example:

Calculating hydrostatic head of 240 inches of gasoline in a vessel is as follows:

Height (H) = 240" of Gasoline
Specific Gravity (SG) = 0.82 P=SG • H therefore
P=0.82 x 240 inches = 196.8 in WC.

The hydrostatic pressure (P) at the bottom of this vessel is equivalent to 196.8 in of water column.

To convert this level measurement to pressure (PSI) the following conversion is used:

- 1 inch of water column = 0.03613 PSI (≈27.679 inches of water column = 1 PSI).
- 196.8 in WC x 0.03613 = 7.110 PSI
- 240 Inches of Gasoline = 7.110 PSI of hydrostatic pressure at the bottom of this container.

Specific gravity can have a significant effect on the level measurement. If this same vessel were filled with water to the same depth there would be a 22% increase in head pressure.

INSTALLATION TYPES

Open Tank / Pond / Weir Level Measurement

When utilizing a pressure transmitter for level measurement the installation must carefully be considered. In an open tank or body of water where the liquid being measured is open to atmospheric pressure, there are a variety of installation options.

Tank Mounted Level Sensor

Fig. 1

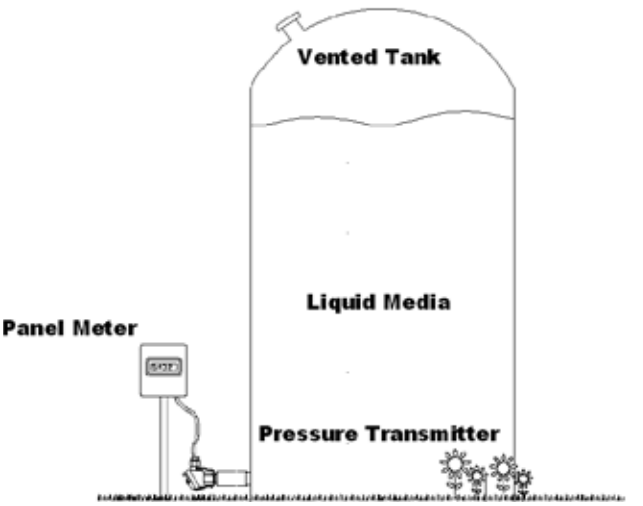

Figure 1: Shows a pipe mount style pressure transmitter. This style transmitter is typically plumbed to the base or side of a vessel & the signal sent to a panel meter or other reading device. This can be utilized where a pipe tap or other mechanical process connection can easily be accessed. A shut-off valve should be utilized for ease of removal.

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LEVEL MEASUREMENT UTILIZING A PRESSURE TRANSMITTER

Technical Note #1

This type of transmitter can also be installed using a flanged or flush mount connection. Flush mount transmitters are typically found in sanitary applications or where the media being measured can plug a recessed process connection.

Figure 2: Shows a submersible pressure or level transmitter. This style of transmitter is lowered into the well or tank via its integral cable. Installation is easier than the pipe mount style especially where a plumbed connection is not readily available, like on a fiberglass tank, underground tank or in an open well or pond.

For both installations the transmitter should be of gauge format to eliminate any barometric effects.

Submersible transmitters typically come with an integral vent tube in the cable, which is terminated in the panel meter or junction box topside. The pipe mount version transmitter is also available with a vented cable option so as to provide ingress protection when mounted outdoors.

Fig. 2

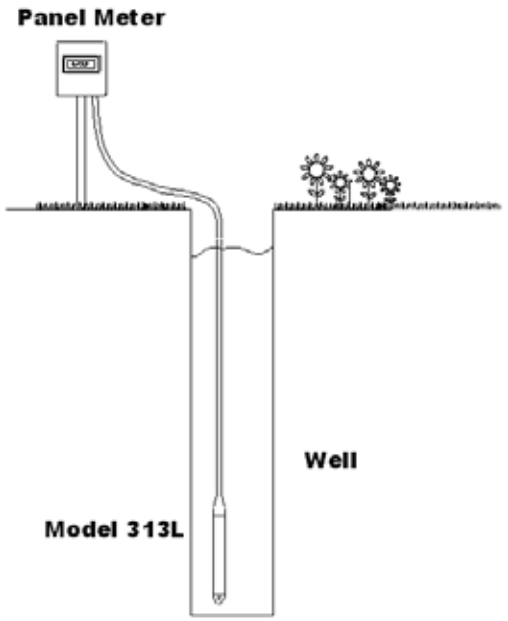

Figure 3: Shows a pipe-mounted transmitter with a zero suppression option. Zero suppression allows for level measurement of just the upper bowl and cancels out the tower pipe level / head pressure.

Fig. 3

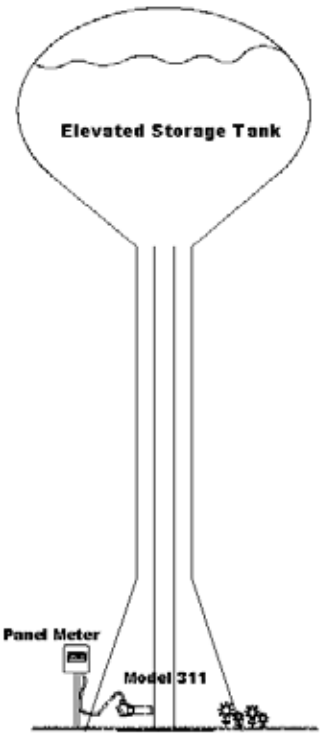

Figure 4: – Pressurized Tank level

Sometimes media is stored in a tank under a pressurized gas blanket. This gas blanket can vary from a fraction of a PSI to many PSI. This pressurized gas blanket has an additive effect on the total media head pressure. The total head pressure is now equivalent to the blanket gas pressure plus the hydrostatic head pressure.

If a standard pressure sensor is attached to the base of the tank as shown in Fig 4 it would provide a signal equivalent to the media's head pressure and the pressure of the gas blanket combined.

For example, if the gas blanket was 1 PSI and the media had 10 ft of head pressure, a bottom or side mounted gauge transmitter would read 5.335 PSI or 12.31 FT WC since 1PSI = 2.306 FT WC +10FT WC = 5.335 PSI.

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LEVEL MEASUREMENT UTILIZING A PRESSURE TRANSMITTER

Technical Note #1

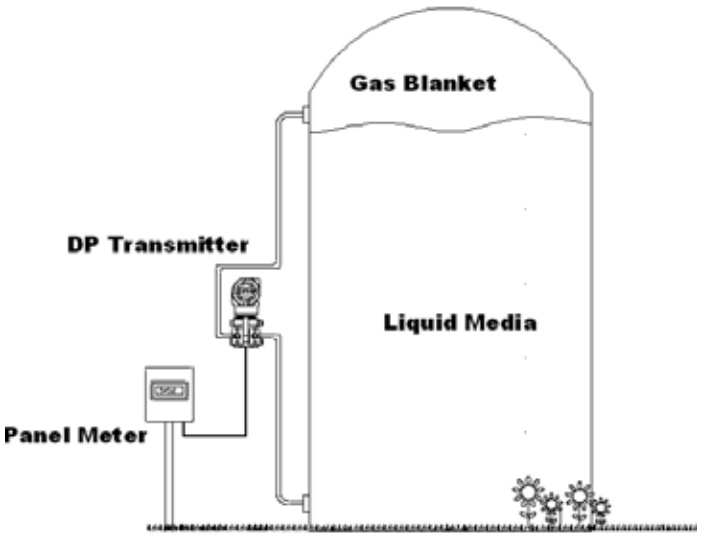
Utilizing this style of pressure transmitter will work if the blanket pressure can be measured and subtracted from the readings of the transmitter. This can be difficult to accomplish and total accuracy is affected.

The most common method of getting an accurate level measurement in this application is to utilize a Differential Pressure Transmitter (DP). Fig 4 shows a DP transmitter installed with the High side plumbed to the base of the tank and the Low side is plumbed to the air blanket on top. Typically stainless steel, oil-filled capillary tubing is attached to remote diaphragm seals and coupled to each side of the DP transmitter, as shown in Fig 4. This provides a flanged or clamped style fitting for tank mounting purposes.

The High side then senses the media head pressure combined with the air blanket pressure. The low side senses just the air blanket pressure.

The low side air blanket reading then offsets the high side combined reading and provides an accurate level measurement.

Fig. 4



For example, assume this tank is 10 feet tall and has 9 feet of water level inside and 1 PSI of an air blanket.

Knowing that water has a specific gravity of 1.00, the hydrostatic head pressure and gas pressure reading at the base of the tank or on the high side of the DP would total: 9 FT WC + 1 PSI = (2.307 FT WC) = 11.307 FT WC TTL.

The low side of the DP is measuring the gas blanket pressure of 1 PSI which is then subtracted from the High side reading. 11.307 FT WC – 1 PSI = 9 FT WC level.

9 FT WC is the corrected media level in this tank example. Changes in the gas pressure blanket or level are all corrected via the DP measurement.

There can be a number of variables to consider with this type of installation.

- What is the media and ambient temperature?
- Are the capillaries exposed to the same temperature?
- Mounting location of the DP transmitter
- Will the system be exposed to vacuum?

Whatever your level or pressure application requirements, GP:50 has a technical staff willing to assist you with your needs.

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DETECTING LEAKS

Technical Note #2

Pressure vessels, valves, tanks, heat exchangers, radiators, drums, welds, and gasket integrity are just a few products that require high seal integrity to insure a reliable leak free product. There are a few ways to insure this integrity, pressure decay or leak testing is the most common. Helium or Ion leak detection systems work very well but require expensive equipment and may exceed the requirements necessary.

Pressure decay utilizing a pressure transmitter is simple to use, cost effective and can be more efficient in a production environment, especially if higher pressures are required to test the integrity of the vessel.

Pressurizing the vessel or test piece and monitoring pressure output from the transmitter will indicate any subsequent loss of pressure due to a leak in the vessel.

There are two methods,utilizing either a gauge or differential pressure transmitter to measure pressure decay.

Setup 1: (Single Ended - Gauge Pressure)

Diagram 1 shows a container being tested utilizing a 150 PSI gauge type transmitter. If the container is pressurized to 150 PSI and then the valve is closed, the transducer will sense a leak in pressure via a drop in output.

Small leaks may be detected with this setup but the process can be time consuming.

Percent error of the transmitter, and pressure range of the transmitter greatly affect the decay resolution.

If the gauge transmitters total error band is 1%FSO a 1.5 PSI (41.52" WC) error may be present. (150 PSI x 1% TTL Error band = 1.5 PSI). This may be too large of an error if small leak rates need to be detected.

Diagram 1

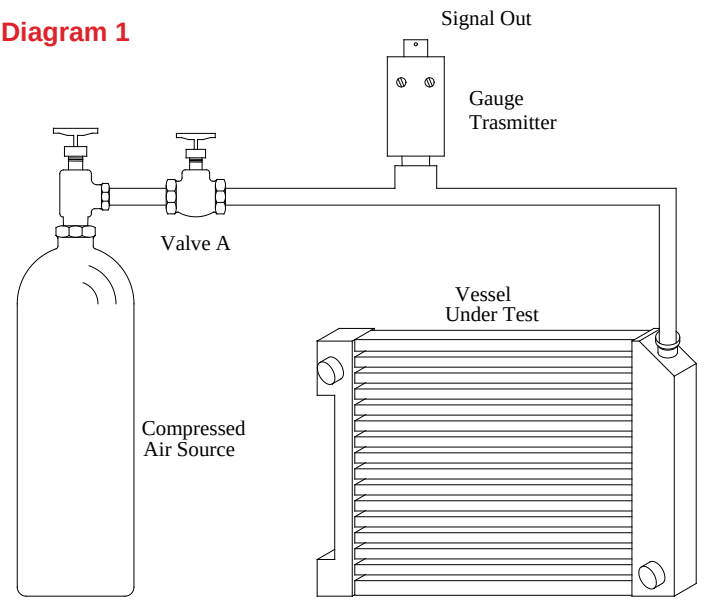
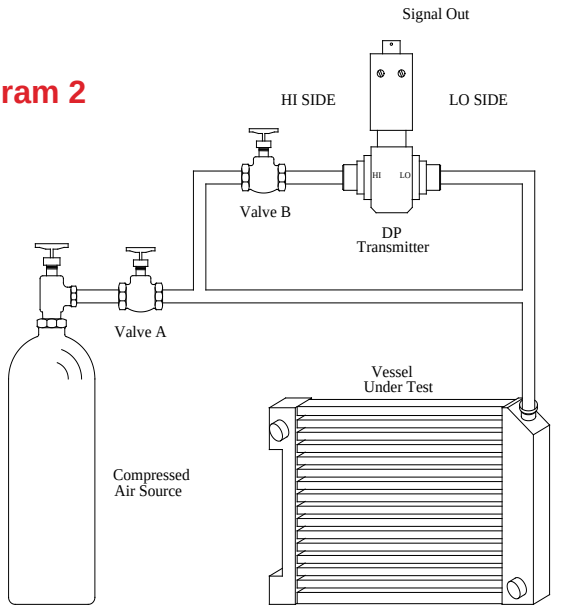


Diagram 2



Setup 2: (Differential Pressure)

Diagram 2 shows a container being tested utilizing a Differential Pressure Transmitter.

In this example the container and system is pressurized to 150 PSI with all valves open but now we utilize a 5 in WC Differential Pressure (DP) transmitter. Once the system is stabilized valve A is then closed. The DP transmitter will read Zero output because of a zero differential pressure. (150 PSI on both the Low & Hi sides)

Valve B is then closed. This isolates the 150 PSI in the vessel under test to the Low side of the DP. If a leak is present the Low side will sense this pressure decay as indicated by a drop in output from the DP transmitter.

Lets assume this 5" WC transmitter has a 1% FSO error spec like the gauge transmitter. The pressure drop or decay can then be accurately detected at 0.050" WC. (5" WC x 1% TTL Error Band = 0.05"WC)

As you can see from the first gauge pressure example, utilizing a differential pressure system produces more accurate and faster results. The decay measurement is more than 800 times better utilizing the DP transmitter.

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GAUGE OR SEALED PRESSURE REFERENCE FORMAT

Technical Note #3

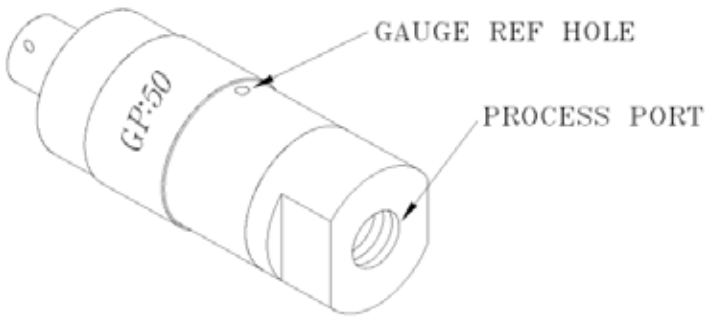
When selecting a pressure transmitter, the pressure reference format is critical so as to provide an accurate device. Pressure reference may be gauge, sealed gauge, vacuum, absolute or differential. Gauge and sealed gauge format are the most commonly supplied and what we address below.

A pressure sensor has both a reference and process side. The process side is where the media being measured is applied, typically a pipe, flanged or other threaded connection. The reference side or back side is not visible from the outside and is enclosed inside the transmitters housing. There are many parameters to consider when selecting gauge or sealed gauge format. Below we define and provide guidelines in selecting these formats.

Gauge Pressure (PSIG)

Gauge pressure transducers provide a vent path to the reference or backside of the sensor. As shown in Fig 1, gauge format is typically provided for by adding a vent hole in the housing of the device. This provides an atmospheric reference to the reference of the sensor.

Fig. 1



This vent hole insures both sides of the sensor are exposed to the local altitude and barometric pressure. This gauge reference hole equalizes these pressures and provides a stable zero reading regardless of barometric pressure or altitude. Therefore true gauge format provides a pressure measurement relative to local altitude and atmospheric conditions.

Gauge reference is very critical in ranges <300 PSI. It can affect ranges above or equal to 300 PSI but depending on accuracy required may or may not be a consideration. This is explained below under the Sealed gauge definition.

Sealed Gauge (PSIS or PSISG)

Sealed gauge transducers on the other hand, do not provide a vent hole to the sensors reference side. This reference or backside of the sensor is sealed from atmosphere at the factory.

GP:50 offers two sealed gauge formats designated as hermetic and non-hermetic, option codes 6 & 7 respectfully. A hermetically sealed gauge (6) device has the reference side of the sensor evacuated and sealed via a special header. This hermetic header helps reduces the effects of temperature due to internal air expansion trapped in the housing assembly. The unit is then zeroed to 1 atmosphere or approximately 14.7 PSIA.

The non-hermetic version (7) does not provide a hermetic header. The sensors reference side is sealed inside the housing at local atmospheric pressure. This non-hermetic version typically isn't a factor in higher ranges, typically 1,000 PSI or higher, or where ambient temperature changes can be minimized.

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GAUGE OR SEALED PRESSURE REFERENCE FORMAT

Technical Note #3

Affect of Local Pressure:

CHART A

FT	in Hg	PSI
0	29.921	14.7
500	29.38	14.43
1,000	28.86	14.18
1,500	28.33	13.9
2,000	27.82	13.67
2,500	27.31	13.41
3,000	26.81	13.19
3,500	26.32	12.92
4,000	25.84	12.7
4,500	25.36	12.45
5,000	24.89	12.23
10,000	20.58	10.1
15,000	16.88	8.28
20,000	13.75	6.75
30,000	8.88	4.36

Sealed gauge readings can be drastically affected by barometric pressure and altitude changes depending on the sensor range. Chart A shows the relationship between altitude and absolute pressure. The altitude at which the transmitter is installed can greatly affect the zero reading.

For example, sealed gauge units are calibrated at the factory at 591 ft above Sea level or ~29.40 in. Hg. Calgary, Canada is at 3,533FT or ~26.30 in. Hg, a 3.1 in. Hg difference or 1.52 PSI. This translates to a -0.51% difference on a 300 PSI sensor or a zero reading drop as much as -0.081 mA. On a 100 PSI sensor this is a -1.52% change which could potentially produce a zero reading of 3.856 mA or lower depending on the initial zero setting called Zero balance.

On this same 100 PSI transmitter, if the standard zero balance spec is +/-1% FSO, the zero could potentially be as low as 3.84mA (16mA span +/-1% = +/-0.16mA) compounded with the additional -1.52 PSI altitude change, a 2.52 PSI or -2.5% lower zero could result. Barometric effects can lower the zero even further.

Barometric pressure also affects the zero reading. Barometric pressure could potentially swing as much as 1 PSI, (typical high -30.6 in. Hg to typical low -28.5 in. Hg) depending on weather conditions. For example a 1.02 in. Hg drop in barometric pressure would result in a 0.48% zero offset error on a 100-PSI sensor.

As mentioned above, gauge pressure format negates effects from changes in local atmospheric pressure and altitude.

All these effects need to be considered when selecting what format you require. Finally, consider the ambient conditions where the transmitter is being installed. Wet, oily, dirty, harsh environments may require a sealed gauge format to reduce the chances of contamination. To provide gauge format in these harsh environments an optional vented cable is offered to remotely vent the reference side away from the potential contaminated area.

Selecting the correct pressure format, either gauge or sealed gauge will provide you the best, most accurate pressure solution for your application.

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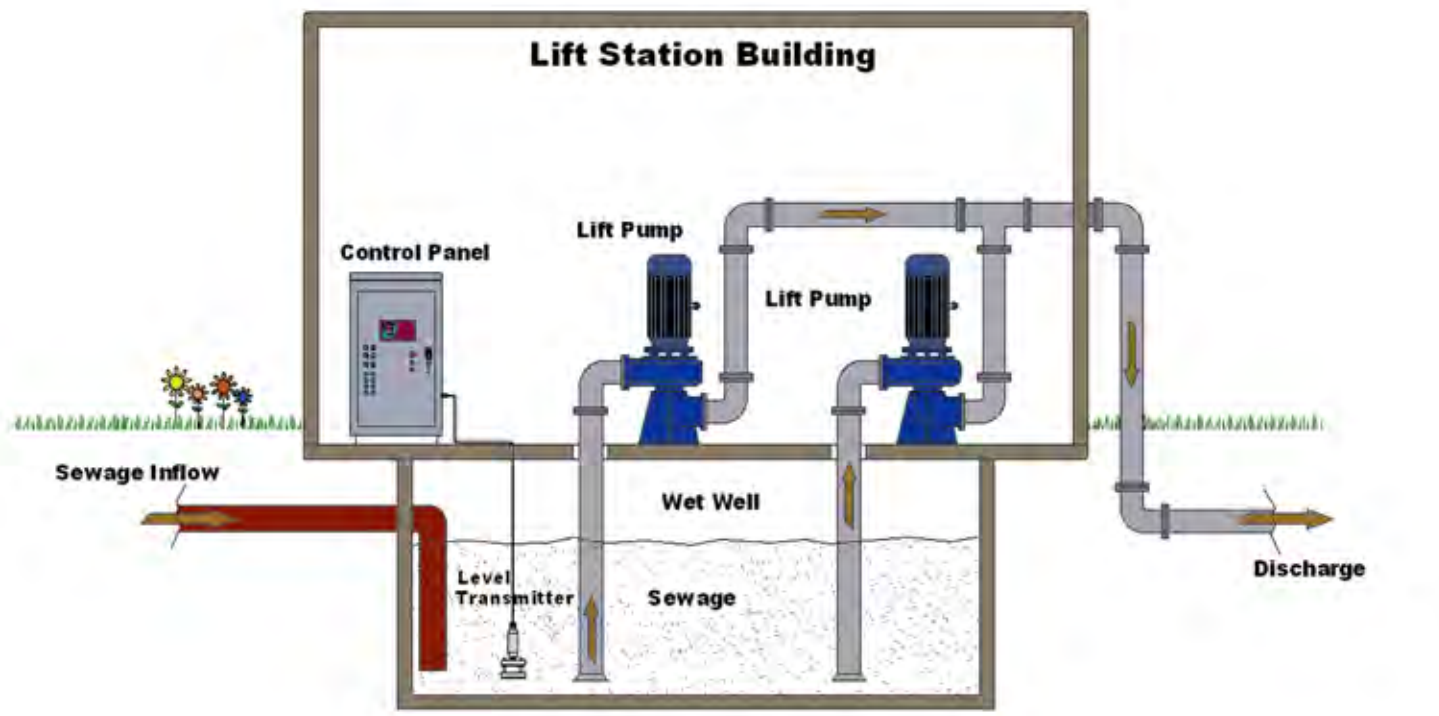
PUMPING OR LIFT STATION LEVEL CONTROL

Application Note

The purpose of a lift station is to raise or lift the sewage to a higher elevation where it can then flow downhill via gravity to the wastewater treatment plant. Raw sewage flows by gravity to the lift station into what is called a wet well. This wet well acts as a holding tank for the raw sewage. When a set level in the wet well is reached, a pump will automatically start to pump down the well to a consistent level. If the first pump cannot maintain the set level a second pump will start and run until a low level set point is reached. Some pump stations have as many as 4 pumps to maintain level. With millions of lift or pump stations throughout the US a reliable, accurate level transmitter is required to avoid overflow.

A typical sewage lift station layout is shown here.



The purpose of the level transmitter is to provide feedback to the pump allowing them to turn on and off when the level reaches a set height. Floats, bubbler systems, radar and ultrasonic are all ways to indicate level. However these methods can have installation difficulties, maintenance issues, high costs or reliability issues due to the environment.

GP:50 has developed the Model 311-M351, a submersible, hydrostatic level transmitter that can withstand the environmental conditions and provide a reliable, accurate level control. The large diameter sensing element is designed to resist clogging which is critical due to the level of fats, oil and grease found in the wet well. This design provides low maintenance, installation and initial purchase cost.

The Model 311-M351 provides a heavy duty baffle plate, some times known as a Birdcage design, to protect the sensing element from installation issues or debris found floating in the effluent. The transmitters construction provides a weighted advantage to keep the transmitter in place at the bottom of the wet well. The all stainless steel body provides a corrosion resistant design with an integral Polyurethane or Tefzel cable to resist compatibility issues. The cable also provides an integral breather tube that allows for barometric reference.

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PUMPING OR LIFT STATION LEVEL CONTROL

Application Note

Installation is simple due to the transmitters design. The transmitter is inserted in the wet well from the top and lowered to the bottom of the well. The reinforced cable doesn't require additional support, but in severe applications or for ease of retrieving the cable if dropped into the wet well an external support cable is recommended.

Typically the transmitter is terminated in a control panel where the signal is feed into a pump controller. GP:50 also provides a 2 or 4 channel pump controller that provides programmable pump rotation, level indication, alarms, seal leakage indication and other features required for pump station control.

Model 311-M351

Features
- Non-Clogging 3-1/2" Diameter sensor face
- All 316 Stainless Steel construction to resist corrosion
- ½" NPT Male electrical conduit connection for rigid installation support
- Integral lightning protection
- ~6lbs in weight to limit cavitation and movement

Critical Specification Overview:
(see data sheet for full specs)
Pressure Ranges: 0-30" WC thru 0-300 PSI
Accuracy: +/-0.5% FSO (+/-.25% FSO available
Output: 4-20mA (0-5 VDC available)
Wetted Materials: 316 Stainless Steel, Polyurethane & Neoprene.
Temperature compensated: 0-140° F

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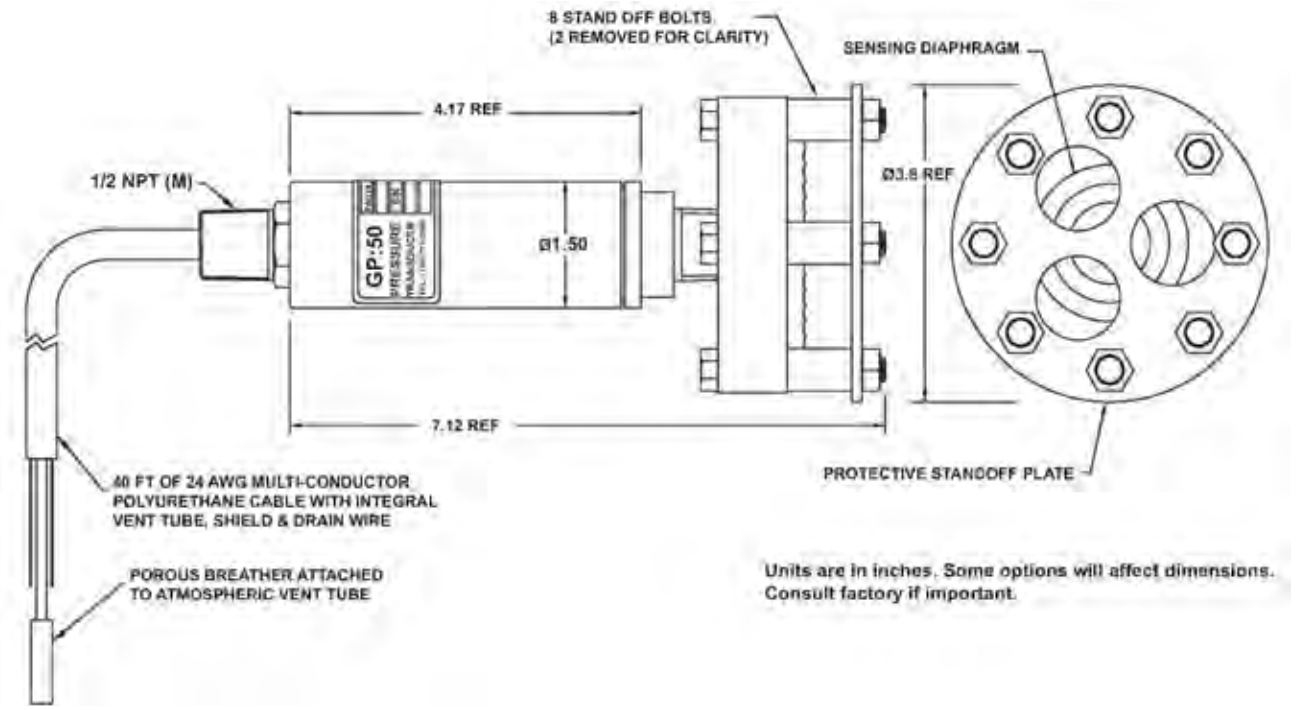

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WARRANTY

GP:50 warrants goods it manufactures as being free of defective material and faulty workmanship for a period of 1 year from ship date. For further information on our warranty statement please visit our site at

http://www.gp50.com/wp-content/uploads/2014/07/warranty.pdf

REPAIRS

If you are experiencing trouble with a GP:50 product, it would be best to contact one of our inside sales engineers to determine if return is necessary. A short list of troubleshooting tips can also be found at:

http://www.gp50.com/repair-policy/

An RMA number can be obtained by either contacting our Customer Service Department at:

(716) 773-9300 / email: gp50service@gp50.com

or you can fill out our RMA Request Form online at:

http://www.gp50.com/request-authorization-form/

and one will be issued to you via email.

In order to service you more quickly and accurately packages being returned to GP:50 should be marked with the RMA number on the outside of the return package. Please include as much of the following as possible:

Purchase Order, Invoice Number, Return Address, Telephone and Fax Numbers, Manufacturer, Model Number, and Serial Number.

Also, please note the reason for return or repair.

APPLICATION ASSISTANCE

For application assistance, current specifications, or local representative information feel free to contact us direct at:

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Direct: (716) 773-9300
Fax: (716) 773-5019
Email: Sales@GP50.com
Web: www.GP50.com

While GP:50 and its affiliates provide application assistance through our literature, web site or personally, the final secision is up to the customer as to selecting the correct product suitable for their application.

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PROCESS CONTROL
AEROSPACE
AUTOMOTIVE
TEST STANDS
PLASTICS
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& **OEM** MARKETPLACE

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Grand Island, NY 14072

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