



P855 Pressure Transducer with Serial (RS485) Interface



- RS485 and Voltage Output
- Digitally Compensated for High Accuracy
- Excellent Stability Over Wide Thermal Range
- 0.1% FS Accuracy, 0.25% Max Temperature Error
- Zero, Span Set by Push Button Switches
- For Liquid or Gas Service
- FS Ranges from 3.50 InH₂O

The Validyne model P855 is a digitally compensated differential pressure transducer designed for industrial pressure measurement applications. The variable reluctance sensing technology allows the P855 to be used in a wide variety of low pressure measurements where fast dynamic response, high resistance to vibration and superior signal stability through ambient temperature change is required. The P855 will accept both liquids and gases directly at the sensing diaphragm.

Push buttons are available for zero and full scale adjustments to zero the unit and fine tune full scale.

The P855 has 1/8 inch female NPT pressure connections and measures just 1.5 x 1.5 x 5 inches overall.

Sensor wetted parts include 410 steel, suitable for inert gases and hydrocarbons.

The P855 has a RS485 connection that allows communication with the unit to get pressure readings, temperature readings, calibrate date, model, serial and range of the P855. In addition the P855 is available in two output configurations: +/-5 VDC and 0 to +2.5 to +5 VDC with offset. The P855 will operate over a supply voltage of +7 to +55 VDC.

Wiring options for the P855 include a six-pin PT02A connector and pigtail leads. A 1/2 inch male NPT conduit thread connection for mounting a junction box is included with the pigtail lead option.

The P855 is Ideal for:

- Flow Measurements
- Level Measurements
- Hydraulic Systems
- Vehicle Testing
- Aircraft Cabin Pressure Testing

Specifications

General Specifications -

Ranges:

P855D: ± 0.125 PSID to ± 3200 PSID
P855A: 0 - 0.125 PSIA to 0 - 500 PSIA

Accuracy:

P855D: $\pm 0.1\%$ FS, includes non-linearity, hysteresis and non-repeatability
P855A/H: $\pm 0.25\%$ FS, as above

Overpressure:

P855D/H: 200% FS up to 4000 psi maximum with less than 0.5% FS output shift
P855A: 20 PSIA or 200% FS, whichever is greater, up to 1000 PSIA maximum, for less than 0.5% zero shift

Line Pressure:

P855D/H: 3200 psig maximum, with zero shift less than 1%/Kpsi

Pressure Ports:

P855D/H: 1/8" female NPT with 8-32 Bleed Screw & Gasket, STD
P855A: 5/16-24 UNF-2B with 1/8" male NPT adapter included

Environmental Specifications -

Operating Temp: -40°F to 230°F (-40 to 110°C)

Compensated Temp: 0 to +160 F
-40 F to +230 F Optional

Temperature Error: $\pm 0.25\%$ FS
Including non-linearity & hysteresis (0 to 160 F)

$\pm 0.5\%$ (-40 F to +230 F)

Sensor Physical Specifications -

Pressure Media: Liquids & gases compatible with 410 SST

O-Rings: Buna-N Standard, other compounds available

Pressure Cavity Volume: 0.012 cu in. each port

Volumetric Displacement: .0003 cu in. at FS

Weight: 16 Oz.

Power Requirements -

Power Supply: 7 to 55 VDC, unregulated

Current Draw: 3 mA, typ.

Signal Output -

Digital: RS485
DC Voltage Output: ± 5 VDC @ 0.5 mA

Zero Balance: Auto-zero with switch closure

Span: Set by Switch

Gain: 2.5X enabled by switch

Frequency Response: Low Pass Filter at 250 Hz, -3 db

Line Regulation: 0.02%

Output Noise: 2 mV RMS

Insulation Resistance: 100 M Ohms, any terminal to case

Ordering Information

MEASUREMENT

A = Absolute

D = Differential

H = Differential
(0.25% Accuracy for non STD sensor materials)

ELECTRICAL CONNECTORS

- 1 = PT02A-10-6P (STD)
- 2 = PT02E-10-6P (NEMA)
- 4 = 1/2" NPT 24" LEADS 24 Gage
- 5 = D38999 A35 (MIL-STD-1560)
- 6 = PT02A-12-10P

*Consult factory for other conn.

COMP. TEMP. RANGE

S = 0° to 160° F (STD)
[-17°C to 71°C]

W = -40° to 230° F
[-40 °C to 110°C]

*Other Temp. Ranges available.

SENSOR MATERIAL

- 3 = 316 SST
- 4 = 410 SST (STD)**
- 5 = 410 SST Nickel Plated
- 6 = 410 SST Gold Plated
- 8 = Inconel (Teflon Dia)

MODEL NUMBER

P855D - 1 - N - 1 - XX - S - 4 - A

O-RINGS

- L = Fluorosilicone
- N = BUNA-N (STD)**
- E = Ethylene Propylene
- V = Viton-A
- S = Silicone
- K = Kalrez
- T = Teflon

*Consult factory for other O-rings

CALIBRATED OUTPUT (DC):

	ISO	-FS	ZERO	+FS
1 =			0	+5v
2 =		-5v	0	+5v
3 =		0	+2.5v	+5v

PRESSURE RANGE

Two digit Range Dash Number
See Page 5

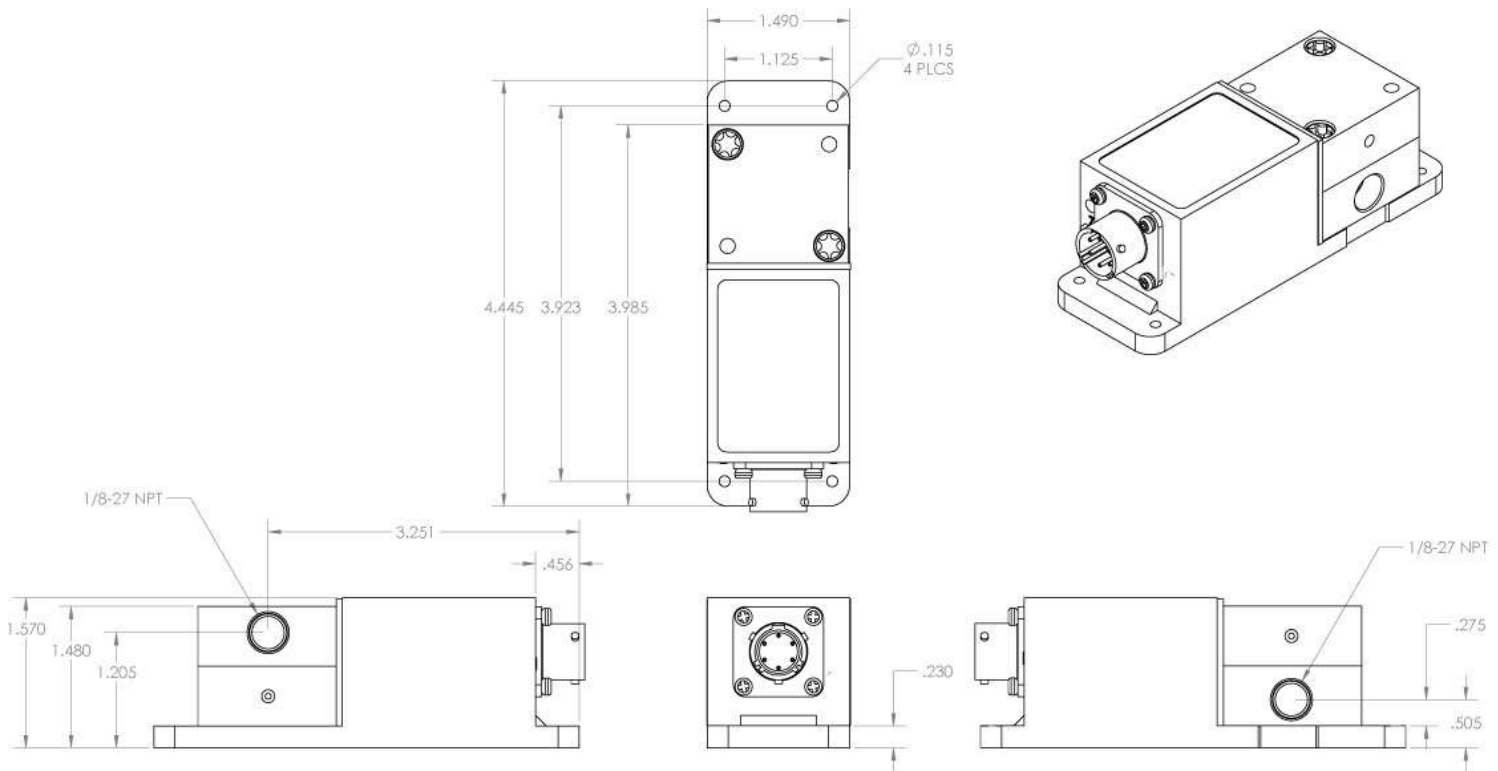
PRESSURE PORT OPTIONS PRESSURE PORT

- A = 1/8" NPT Female with 8-32" bleed port (STD) (90° from elec. Conn.)**
- B = 1/8" NPT Female with 1/8" female NPT bleed port (90° from elec. Conn.)
- E = 5/16" female port A.N.D 10050-2 (M.S. 33649 / SAE AS5202), No bleed port, 855A only
- F = 1/4" OD tube X 1" Long, No bleed port
- G = ZTA41 Adapters (1/16" Pressure Port)
- H = 5/16" female port A.N.D 10050-2 (M.S. 33649 / SAE AS5202), 8-32" bleed port, 855D

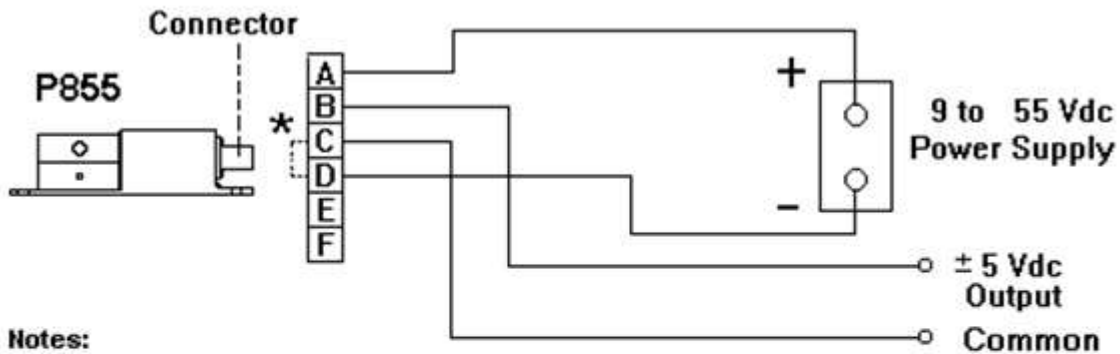
Special Requirements?

With over 3000 custom specifications already we are confident we can customize a solution to fit your needs. Form factor, housing, pressure ports, electrical connectors, outputs and calibrations are all customizable. Contact our factory via email or phone today!

Outline Drawing & Connections



Pressure port shown for option A – 1/8" NPT female with 8-32" bleed port.



Notes:

- Pin E (Pigtail Yel) is serial port TData
- Pin F (Pigtail Vio) is serial port RData
- Pin C (Pigtail Gry) is also the serial port common
- ★ Pins C and D are internally connected in non-isolated units only
- Pins E and F are used for factory calibration

Pigtail Color Code:
Red = + Power
Orn = + Signal
Gry = Output Common

Mating Connector and Cable (Optional)

11322-X PT06A-10-6S to 5 Lugs (A, B, C, D & Shield)
 X = Length of cable in feet.

Ordering Information – Range Chart

Range Code	Psi	In Hg	In H2O	KPa	Torr	CM H2O
20	0.125	0.25	3.5	0.86	6.5	8.8
22	0.20	0.41	5.5	1.40	10.3	14.0
24	0.32	0.65	8.9	2.2	16.5	22.5
26	0.50	1.02	14.0	3.5	25.8	35.0
28	0.80	1.6	22.2	5.5	41.4	56.0
30	1.25	2.5	35.0	8.6	65.0	88.0
32	2.0	4.1	55.0	14.0	103.0	140.0
34	3.2	6.5	89.0	22.0	165.0	225.0
36	5.0	10.2	140.0	35.0	258.0	350.0
38	8.0	16.0	222.0	55.0	414.0	560.0
40	12.5	25.0	350.0	86.0	650.0	880.0
42	20.0	41.0	550.0	140.0	1030.0	1400.0
44	32.0	65.0	890.0	220.0	1650.0	2250.0
46	50.0	102.0	1400.0	350.0	2580.0	3500.0
48	80.0	160.0	2220.0	550.0	4140.0	5600.0
50	125.0	250.0	3500.0	860.0	6500.0	8800.0
52	200.0	410.0	5500.0	1400.0	10300	14000
54	320.0	650.0	8900.0	2200.0	16500	22500
56	500.0	1020.0	14000	3500.0	28500	35000
58	800.0	1600.0	22200	5500.0	41400	56000
60	1250.0	2500.0	35000	8600.0	65000	88000
62	2000.0	4100.0	55000	14000	103000	140000
64	3200.0	6500.0	89000	22000	165000	225000

- Units can be calibrated in other engineering units as well. Contact the factory for details.
- For pressures in between range codes, pick the higher range code

Updated 4/1/21