

READ THIS FIRST

Installation and Startup Guide

Digital Pressure Gauge & Switch

Version 1.2 Document 2052



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PRODUCT DESCRIPTION

The Anderson Digital Pressure Gauge platform is designed specifically for monitoring critical pressures in sanitary applications. The product line was developed to address several trends relative to performance, safety, and readability criteria of our core customers. The Anderson Digital Pressure Gauge provides a battery-powered, local display of pressure that is 6 times more accurate than its mechanical counter-part. Additionally, this product has 3 times the over-range capacity and 5-10 times the resolution of traditional mechanical pressure indicators. The switch version includes 2 fully adjustable switches with low-voltage relay outputs for simple control and/or alarming applications.

SPECIFICATIONS

Performance

Accuracy: ±0.2% of URL (upper range limit)
Complies with ASME B40.7-1998

Repeatability: ±0.06% URL

Hysteresis: ±0.07% URL

Linearity: ±0.07% URL

Temperature stability: ±0.16% / 10°F change in process or ambient

Over-range Capacity: 2X URL

Operational

Process Temp Limits: -4° to 127°C (25° to 260°F) continuous

Ambient Temp Limits: 4° to 49°C (40° to 120°F)

Engineering Units: Programmable by user, see matrix for selections.

Compound ranges: Full Vacuum to selected positive pressure. If set to "HG, display reads in "HG when in the vacuum range and PSIG when there is positive pressure.

Min / Max Pressure: Captured and stored in non-volatile memory, may be cleared via tamper-resistant toggle.

Electrical

Power: 2 "AA" replaceable batteries with one-year minimum expected life with industrial grade batteries (gauge only); 9-30 Volts external DC power (with switches) with battery back-up of non-volatile programmed values.

Relay Outputs (Switch only): Two (2) independent, adjustable setpoint relays: One amp contact rating at 24 volts DC, SPST; Contacts open with no power to unit (failsafe) each programmable to close above or below setpoint.

Mechanical

Display: LCD, with 0.9" height

Wetted Material: 316 "L" Stainless Steel, welded and polished to max R_a = 8 microinches (0.2 microns) for EP and max R_a = 25 microinches for EN.

Housing: 304 Stainless Steel, welded

Lens: Polysulphone

Approvals and Documentation

Sanitary: Meet current ASME BPE-2002 standards; Authorized to display the 3-A Symbol, Third Party Verified.

PED: Complies with the Pressure Equipment Directive relative to Sound Engineering Practices.

Electrical: Tested to IEC 61326 Standard for Emissions and Immunity in Industrial locations.

Enclosure: Meets or exceeds requirements for NEMA 4X.

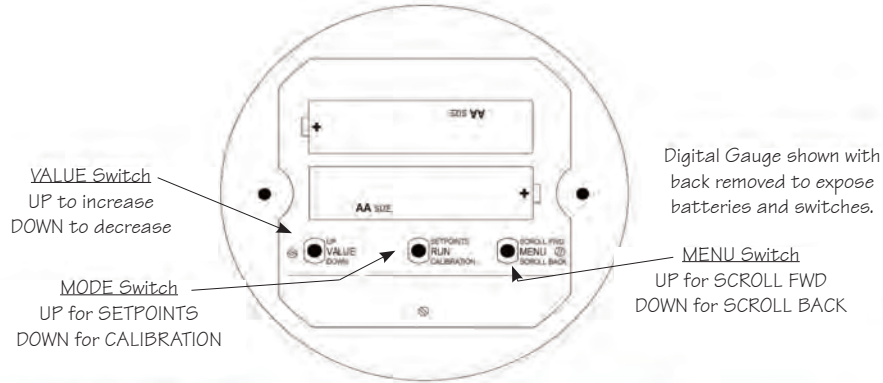
Hazardous Locations: UL for Intrinsically Safe requirements pending.

Material, Conformance and Calibration: Certificates provided with product also available on-line using serial number (applies to EP only).

USER INTERFACE GUIDE

The Anderson Digital Pressure Gauge and Switch is factory calibrated and configured to the range and units specified by the order matrix number. Displayed pressure units, alarm setpoint, hysteresis and action values may be easily modified by the user. The calibrated range of the gauge, however, may not be modified in the field. Gauge calibration may be performed through the following User Interface Guide.

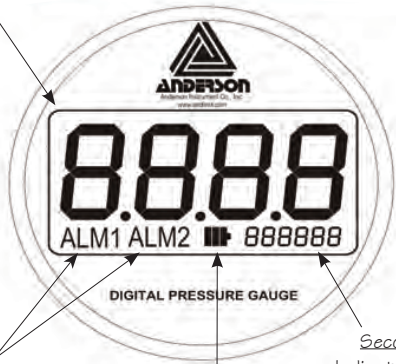
The Digital Pressure Gauge configuration parameters are sorted into three different user modes, and are accessible via the three switches located under the protection of the removable gauge back. To access the switches simply remove the two screws, and the cover with gasket. While the cover is removed, do not allow moisture to enter the gauge housing.



<p>RUN Mode (read values only)</p> <p>Normal Display: Pressure & Units Alarm Setpoint and Action Alarm 1 Hysteresis Alarm 2 Setpoint and Action Alarm 2 Hysteresis Low Range Limit Upper Range Limit Dampening Factor Maximum Captured Pressure Minimum Captured Pressure Calibration Offset Value Calibration Gain Value</p>	<p>SETPOINTS Mode (modify alarm values)</p> <p>Alarm 1 Setpoint Value Alarm 1 Action Alarm Hysteresis Alarm 2 Setpoint Value Alarm 2 Action Alarm 2 Hysteresis</p>	<p>CALIBRATE Mode (modify field calibration parameters)</p> <p>Calibration Offset Calibration Gain Pressure Units Displayed Dampening Factor Decimal Point Position Maximum Pressure Captured Minimum Pressure Captured Restore Factory Configuration</p>
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USER DISPLAY

Primary Process Display
Four digit 0.9" LED with adjustable decimal point position to indicate pressure value.



Alarm 1 and 2 Indicators
Flashes if setpoint tripped. Displays continuously during setpoint viewing or programming.

Battery Status Indicator
Three bars indicate battery condition is good.

Secondary Display
Indicates pressure units or parameter information.

BATTERY REPLACEMENT

A three segment battery indicator allows the operator to monitor battery life of the DPG, and plan ahead for a battery change. When a low threshold is reached, the final indicator bar blinks on and off. Internal circuitry regulates battery voltages to ensure all factory specifications are met, even with a decrease in battery voltage. When an unacceptable level is reached, the DPG will shut down. Internal flash memory retains all prior calibration, and only replacement of the batteries is required to resume operation. Units with optional AC switch module do not require batteries.

Full Battery	
Decreased Battery	
Low Battery (blinks between first and second)	

NOTE: When removing batteries, wait a minimum of (2) two minutes before re-installing.

ALARM SETPOINT PROGRAMMING

(MODE Switch in the UP Position)

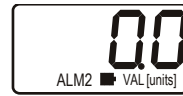
Alarm 1 Setpoint



Alarm 1 Setpoint
0 - 100% of Range
(in pressure units)

Pressure at which
Relay 1 Closes

Alarm 2 Setpoint



Alarm 2 Setpoint
0 - 100% of Range
(in pressure units)

Pressure at which
Relay 2 Closes

Alarm 1 Action



Relay 1 Closed
Above Setpoint

Relay 1 Closed
Below Setpoint

Alarm 2 Action



Relay 2 Closed
Above Setpoint

Relay 2 Closed
Below Setpoint

Alarm 1 Hysteresis



Alarm 1 Hysteresis
0 - 100% of Range
(in pressure units)

Alarm 2 Hysteresis



Alarm 2 Hysteresis
0 - 100% of Range
(in pressure units)

CALIBRATION / CONFIGURATION PROGRAMMING

MOD Switch in the DOWN Position

Calibration Menu



Calibration mode.
MENU SCROLL BACK
to proceed

Calibration Offset



Offset calibration
adjustment.
Adds to reading.
Range +/- 10% of Span

Calibration Span



Span calibration
adjustment.
Multiplies reading.
Range: 0.90-1.10

Displayed Units



PSI Gau, PSI ABS, in
H₂O, Kg/cm², mmHg,
inHg, MPa, kPa, Bar

Compound Ranges with
units set to inHG, or
mmHG will read PSIG if
measuring positive pressure.

Gauge (G, M, B, C) and Absolute
(A) pressure units may not be
interchanged, and must match
original hardware configuration.

Dampening Factor



Digital Filter settable
from 0.0 to 10.0
(no dampening = 0.0)

Decimal Position



Decimal point position.
(Setting is not stored in non-
volatile memory)

Maximum Pressure
Captured



Hold UP switch for 3
seconds to reset.



Minimum Pressure
Captured



Hold UP switch for 3
seconds to reset.



Restore Factory
Defaults



Hold UP switch for 3
seconds to reset all
factory defaults.

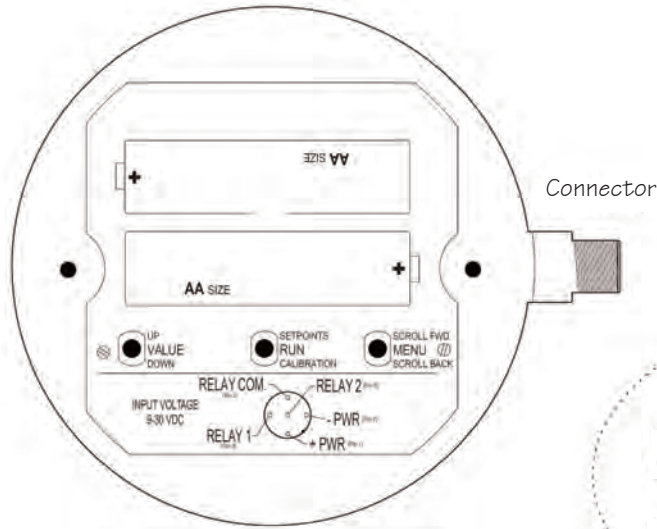


RELAY WIRING (DIGITAL PRESSURE SWITCH ONLY)

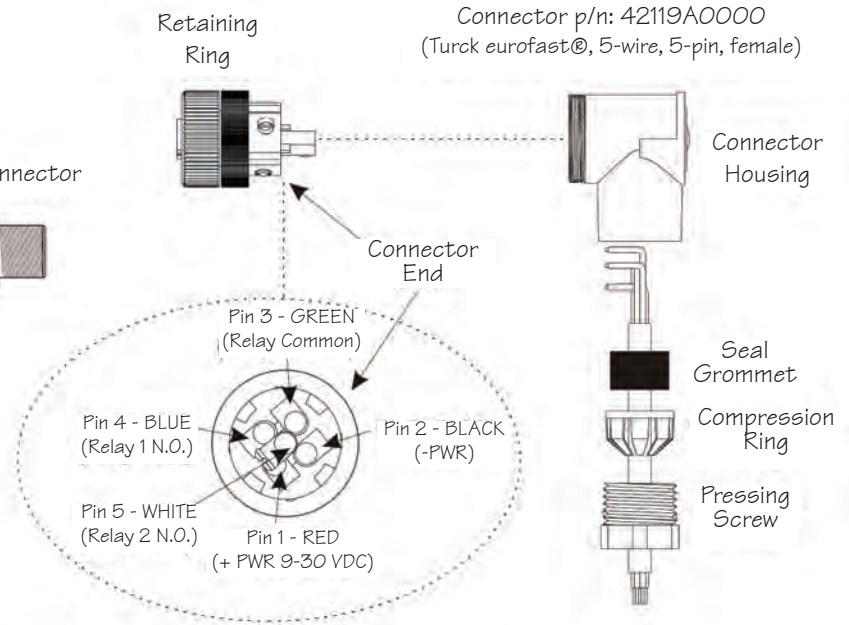
9-30 VDC, 250 mA typical external power required to energize relays.

- CABLE REQUIREMENTS**
- 5 conductor, standard, 18-24 AWG,.
 - 4-8 mm (0.16-0.31") Cable Sheath OD

Connector p/n: 42119A0000
(Turck eurofast®, 5-wire, 5-pin, female)



Normally Open relay contacts rated for 1 amp max. at 24 VDC. (Not suitable for AC voltage)



Digital Pressure Switch must be externally powered to utilize relays.

DIMENSIONAL DRAWINGS

