READ THIS FIRST

Installation and Startup Guide

Digital Pressure Gauge & Switch

Version 1.4 Document 2052

ANDERSON-NEGELE

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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 transducer URL (30, 100, 200, 300, 500 psi) ±0.5% of transducer URL (5 psi) Complies with ASME B40.7-1998
Repeatability:	±0.06% of transducer URL (30, 100, 200, 300, 500 psi) ±0.2% of transducer URL (5 psi)
Temperature stability:	±0.10 psi / 10ºF change in process or ambient
Over-range Capacity:	2X URL

Operational

Process Temp Limits:	-4º to 127ºC (25º to 260ºF) continuous
Ambient Temp Limits:	4º to 49ºC (40º to 120ºF)
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 aand max R_a = 25 microinches for EN.
Housing:	304 Stainless Steel, welded
Lens:	Polysulphone

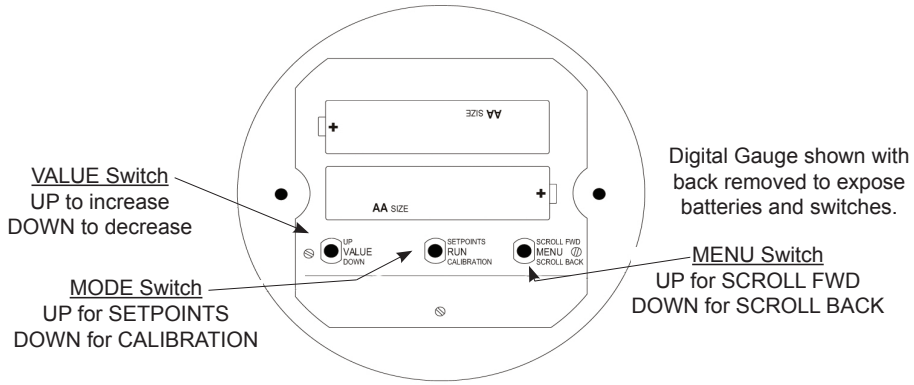
Approvals and Documentation

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

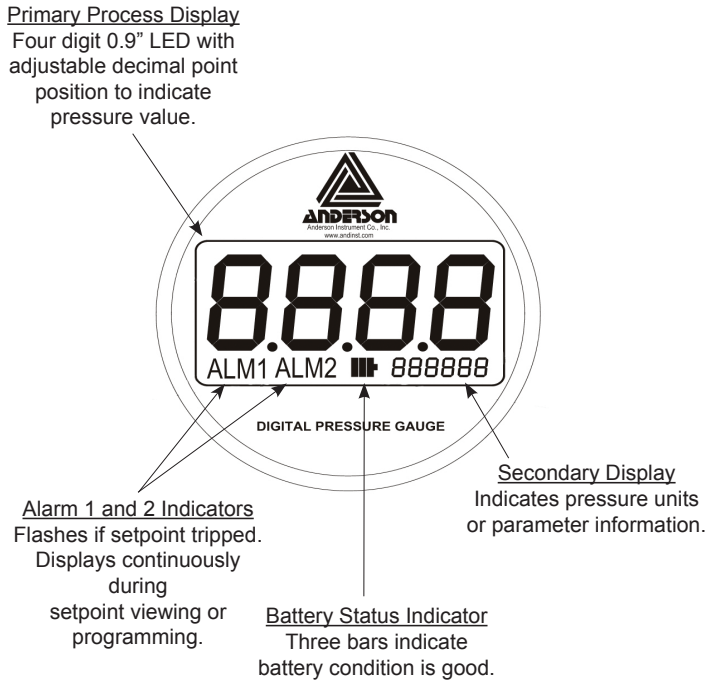
The Anderson Digital Pressure Gauge and Switch is factory calibrated and configured to the range and units specified by the order matrix number. Displayed pressure units, alarm setpoint, hysteresis and action values may be easily modified by the user. The calibrated range of the gauge, however, may not 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 switcheslocated 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.



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

USER DISPLAY



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	8888
Decreased Battery	8888
Low Battery (blinks between first and second)	8888 8888

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

ALARM SETPOINT PROGRAMMING

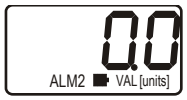
(MODE Switch in the UP Position)

Alarm 1 Setpoint

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

Pressure at which Relay 1 Closes

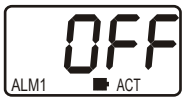
Alarm 2 Setpoint



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

Pressure at which Relay 2 Closes

Alarm 1 Action



Relay 1 Closed
Above Setpoint

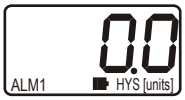
Relay 1 Closed
Below Setpoint

Alarm 2 Action

Relay 2 Closed
Above Setpoint

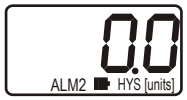
Relay 2 Closed
Below Setpoint

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

(MODE Switch in the DOWN Position)

Calibration Menus

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 H_20, Kg/cm^2, 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

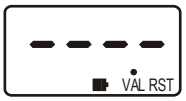
Digital Filter settable from 0.0 to 10.0
(no dampening = 0.0)

Decimal Position

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

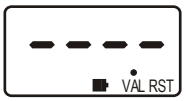
Maximum Pressure Captured

Hold UP switch for 3 seconds to reset.



Minimum Pressure Captured

Hold UP switch for 3 seconds to reset.



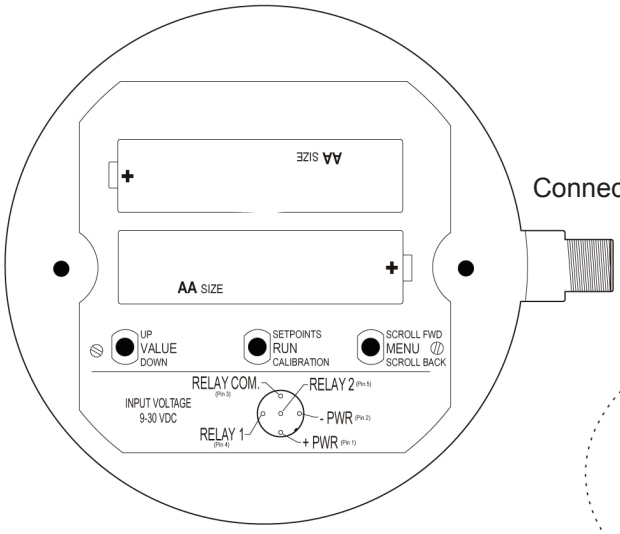
Restore Factory Defaults

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.

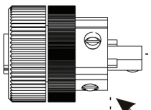
CABLE REQUIREMENTS
- 5 conductor, standard, 18-24 AWG,.
- 4-8 mm (0.16-0.31") Cable Sheath OD

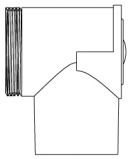


Connector

Retaining Ring

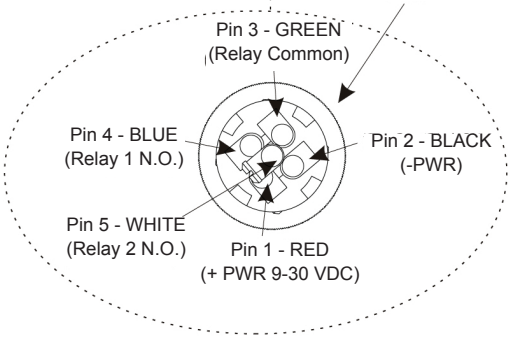
Connector p/n: 42119A0000
(Turck eurofast®, 5-wire, 5-pin, female)

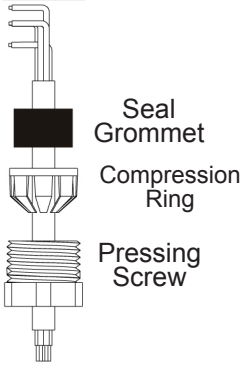




Connector Housing

Connector End





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