

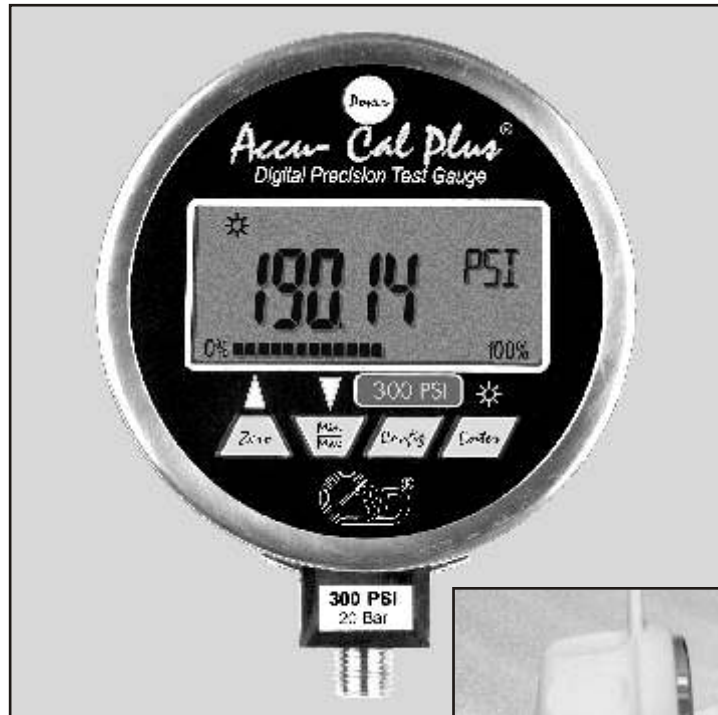


INSTRUMENTS, LLC
Direct Drive Difference
SIERRA PRECISION

Accu-Cal Plus Digital Test Gauge

Features

- **Intrinsically Safe** - Canadian Standards Association (CSA) approval for use in Class 1, Division 2, Groups A, B, C and D hazardous area locations
- **Precise Measurements** - 0.05% FS accuracy. Vacuum accuracy: 0.25% FS for ranges 0-500 psi and below-high accuracy version available
- **Temperature Compensation** - accuracy not de-rated over the temp. range of 32-122 deg F with rigorous 3 temperature calibration
- **Rugged enclosure** - 300 Series Stainless Steel case with NEMA-4 waterproof rating
- **Security** - Password protected "through the keypad" Zero and Calibration information
- **Analog/Digital Display** - Large, backlit, 5 digit display with 0.65" high digits and complimentary 20 segment bar graph
- **Low Power consumption** - 2000 hours battery life @ slow sample rate from three (3) size AA alkaline batteries; adjustable sample rates
- **Versatile** - 11 pressure ranges available. Displays to 21 standard plus a fully custom Engineering Unit
- **Communication** - RS-232 output of ASCII data (optional cable required)
- **Peak/Valley measurements** - MIN/MAX function permits storage and retrieval of MIN and MAX pressure values
- **Tare** - allows re-zeroing of the gauge anywhere across the span of the gauge
- **Options** - 24 vdc power, mounting flanges, RS-232 output chemical/sanitary seals and .05% FS accuracy vacuum gauge.



*Pictured with
Optional Boot*

Product Description

The Accu-Cal Plus Digital Test Gauge from 3D Instruments incorporates the ultimate in pressure measurement technology to address the calibration requirements of current process monitoring and control instrumentation. The Accu-Cal Plus combines the accuracy of digital technology with the simplicity of an analog gauge and achieves performance, ease-of-use and a feature set unmatched in the pressure measurement world!

Outstanding SS pressure sensors from 0-15 to 0-10,000 psig provide for an accuracy of 0.05% full scale. Temperature compensation circuitry coupled with a rigorous multi-temperature calibration routine maintains this astounding accuracy over a temperature range of 32° to 122° F!!

A 5 digit LCD with oversized 0.65" digits, high contrast, rotatable display and backlighting provides for superior resolution and excellent readability...even at a distance or in poor light or at a bad viewing angle!! As the perfect complement to the digital display, the Accu-Cal Plus offers a 20 segment bar graph scaled to 0-100% FS. This safety oriented feature gives the user a visual reference of their process pressure relative to scale of the gauge.

The Accu-Cal Plus is housed in a polished 300 Series Stainless Steel case, which is rated waterproof according to NEMA-4/IP-65 specifications. All device controls including: POWER, ZERO, MIN/MAX and CONFIGURATION are selectable via a Lexan keypad for reliable operation in adverse weather conditions. To reduce maintenance, low power circuitry provides for a 2000 hour battery life at a sample rate of 0.5/sec with no backlighting.

This high-end pressure instrument provides for numerous user-configurable features such as: adjustable sample rates, damping (smoothing of data on LCD), Tare (re-zero across span of the gauge), custom Engineering Units, MIN/MAX and "password protected" field calibration. Other features include ambient temperature measurement and an optional RS-232 cable for streaming real-time ASCII data.

The combination of sophisticated precision pressure measurement technology; robust design, ease-of-use, feature set, and a wide array of pressure ranges makes the Accu-Cal Plus from 3D Instruments the ideal choice for your demanding pressure monitoring or test and calibration applications.

3D The "Direct Drive Difference" in Digital Gauges

GENERAL SPECIFICATIONS

FEATURES

Accuracies:

Positive Pressure: 0.05% of Full Scale (FS)

Vacuum: ±0.25% of FS* for ranges to 500 psi and 2% FS for ranges > 500 psi

High Accuracy Vacuum: Series 75114 and 76114 - vacuum accuracy is ±0.05% FS, where FS = 30 PSI

All accuracies include all variations due to: non-linearity, hysteresis, repeatability and temperature over the compensated temperature range.

Ranges/Resolutions/Proof Pressure:

Range (Bar)	Resolution	Proof Pressure
-5-0-15 psi (1 Bar)	.001	90 psi
-5-0-30 psi (2 Bar)	.001	90 psi
-14.7-0-30 (2Bar) -Vac gauge	.001	90 psi
-14.5-0-100 psi (7 Bar)	.01	300 psi
-14.5-0-300 psi (20 Bar)	.01	3000 psi
-14.5-0-500 psi (35 Bar)	.01	3000 psi
-14.5-0-1,000 psi (70 Bar)	.1	3000 psi
-14.5-0-2,000 psi (140 Bar)	.1	10000 psi
-14.5-0-3,000 psi (200 Bar)	.1	10000 psi
-14.5-0-5,000 psi (350 Bar)	.1	10000 psi
-14-0-10,000 psi (700 Bar)	1	15,000 psi

Environmental:

Operating range: -10 °C-55 °C (14 °F-131 °F)

Compensated range: 0-50 °C (32 °F-122 °F)

Storage range: -20 °C-70 °C (-4 °F-158 °F)

Agency Approvals: (75514 Battery Power versions only)

Built to comply with requirements for Class 1,

Division 2, Groups A, B, C & D operation

- CSA and ATEX (pending) Intrinsic Safety Approvals
- CE Mark

Power:

3 x AA alkaline batteries. Delivers 1500 hours service @ 3 samples/sec @ 72 °F without backlight or 2000 hours at the 1 sample/2 secs w/o backlight @ 72 °F

Display:

High contrast - LED backlight 5 digit, 0.65" high; 20 segment analog bargraph scaled to 0-100% of FS. LCD includes: Engr. Unit indication, MIN/MAX icons, low battery icon and backlight icon

Case:

Polished 304 Stainless Steel, NEMA-4/IP-65 waterproof rated

Mounting flanges (optional):

Front or back 300 series SS welded to case ANSI bolt pattern for 4 1/2" gauge

RS-232 (optional):

Custom cable - ASCII data

Graphic Overlay:

Polycarbonate

Pressure Sensors:

316 SS - wetted parts are 316SS

Process Connection:

1/4" NPT male 316SS

Dimensions (w/o flange):

4.375" x 5.0" x 1.5"

Weight (w/o flange):

1.09 lbs (495 gms)

Standard Engineering Units:

PSI, Bar, Kg/cm², inH₂O(4 °C, 20 °C or 60°F), ftH₂O(4 °C, 20 °C or 60°F), cmH₂O(4 °C & 20 °C), mH₂O(4 °C & 20 °C), kPa, MPa, mBar, inHg, mmHg, Torr ftSw, mSw and custom Engineering Units
*Not all Engineering Units enabled for all ranges

Password Protection:

"Tamper-proof" password protection of Zero and Calibration data is easily achieved via the keypad

LCD Bargraph:

20 segment bargraph is scaled at: 0-100% FS Provides a convenient visual reference of pressure readings relative to the pressure range of the gauge

Sample Rates:

User configurable 0.5/sec, 1/sec, 3/sec & 10/sec. 10/sec sampling good for QA/QC destructive tests

Power Management:

Adjustable auto power shut-off: 1-30 minutes - shutoff feature when enabled extends battery life

Damping:

Damping can be enabled to integrate readings and "smooth" LCD display: good for pulsation sources

MIN/MAX:

Capture & query MIN/MAX values: many applications in process monitoring and control

Tare:

0-100% FS zero offset: when used with custom Engr. Units, the gauge can be used in liquid level, volume and weighing applications.

ORDERING INFORMATION

PART NUMBER: **① XXXX - ② XX ③ B ④ XX ⑤ XXX**

Example:

75514-33B55 Battery Powered Accu-Cal Plus with 300 series SS case, 3000 psig sensor, bottom 1/4" NPT male fitting without mounting flange

① **Product Description:** **75514** - Accu-Cal Plus: 3 x AA battery powered (Batteries Included)

76514 - Accu-Cal Plus: 24 VDC version (**does not include a 24 VDC adapter**)

75114 - High Accuracy Vacuum Accu-Cal Plus: 3 x AA battery powered version

76114 - High Accuracy Vacuum Accu-Cal Plus: 24 VDC version (**does not include 24 volt adapter**)

② **Pressure Ranges Codes:** (all ranges include vacuum measurement)

15: -5-0-15 psig **23:** -14.5-0-100 psig **27:** -14.5-0-500 psig **32:** -14.5-0-2,000 psig **35:** -14.5-0-5,000 psig

21: -5-0-30 psig **26:** -14.5-0-300 psig **29:** -14.5-0-1,000 psig **33:** -14.5-0-3,000 psig **38:** -14-0-10,000 psig

48: -14.7-0-30 psig High Accuracy Vacuum Gauge - 0.05% FS VAC/P+ Pressure Accuracy (FS = 30 PSI) use only with models 75114 and 76114

③ **Process connection:** **B:** 1/4" NPT male

④ **Connection Position and Mounting Flange Codes:** (Codes 35 and 45 not available on 76114 and 76514 series)

15: Flange front, bottom fitting **35:** Flange back, bottom fitting **55:** Flange none, bottom fitting

25: Flange front, back fitting **45:** Flange back, back fitting **65:** Flange none, back fitting

⑤ **Option Codes:** leave blank if no options are required

PNO: Accu-Cal Plus Cal Kit #1 includes an Accu-Cal Plus Digital Test Gauge, Model 8110-300: 0-300 psi Pneumatic Handpump, Hose Kit and Series-200 ABS waterproof case

PRO: Accu-Cal Plus Cal Kit #2 includes an Accu-Cal Plus Digital Test Gauge, Model 8111-300: Vac/0-300 psi Duplex Handpump, Hose Kit and Series-200 ABS waterproof case

PUO: Accu-Cal Plus Cal Kit #3 includes an Accu-Cal Plus Digital Test Gauge, Model 8112-3000: 0-3000 psi Hydraulic Handpump, Hose Kit and Series-200 ABS waterproof case

GCO1: Calibration Certificate Level #1 - 10 readings done in descending pressure at room temperature

GCO2: Calibration Certificate Level #2 - 13 readings in both ascending and descending pressures at room temperature

GCO3: Calibration Certificate Level #3 - 13 readings in both ascending and descending pressures done at three distinct temperatures...typically: 22° C, 5° C and 45° C

⑥ **Accessories:**

- Custom RS-232 Cable - Part Number: 2025-0004
- 110 VAC to 24 VDC power adapter wall mount style; 6 foot cable - Part Number: 2001-0090
- Protective yellow rubber boot for gauge - Part Number: 2023-0005

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