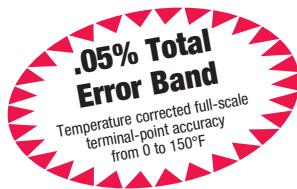


## Types 2089, 2086 & 2084 Precision Digital Test Gauge



LOOK FOR THESE AGENCY MARKS ON OUR PRODUCTS



### FEATURES

- **Industry Leading Accuracy**
- **Breakthrough Display Height**
- **Rugged & Portable Design**
- **Configurable Options Including:**
  - Twelve Engineering Units
  - Seven Languages
  - Adjustable Update and Dampen Modes
  - Field Calibration Capability
  - Disable Mode

### Is your digital gauge as accurate as you think?

Gauge accuracy can be dramatically impacted by changes in temperature, re-zeroing of gauges and other factors. Until now there has been no one single solution to address these concerns. The Ashcroft precision digital test gauge is that solution.

### What you should know about digital test gauge accuracy...“Terminal Point” versus “Best Fit Straight Line Accuracy.”

#### Ambient Temperature Changes

Other manufacturers of digital gauges may specify operating temperature range *without* specifying the additional error associated with changes in ambient temperature. Errors can range as high as .04%/°F. A 25°F change from an ambient of 70°F may add an additional 1% to the stated accuracy of the gauge! *The Ashcroft digital gauge with total error band ensures accuracy from 0-150°F.*

### PRODUCT SPECIFICATIONS

**Type:** 2089 (0.05% F.S. accuracy), 2086 (0.10% F.S. accuracy), 2084 (0.25% F.S. accuracy)

**Accuracy:** 0.05%, 0.10% or 0.25% all Full Scale, Terminal Point, Total Error Band (TEB) Including Hysteresis, Linearity, Repeatability and Temperature (0/150°F)

**Case Size:** 3"

**Case Material:** 300 Series Stainless Steel

**Case Finish:** Electropolished

**Case Rating:** Weatherproof, IP65, NEMA 4

**Case:** Available with Optional Protective Rubber Boot

**Wetted Parts:** 316 Stainless Steel

**Socket Size:** 1/4 NPT Male, (contact factory for other options)

**Socket Location:** Lower (6 o'clock) 3 and 9 o'clock

**Mounting:** Stem (standard), Panel (optional)

**Ranges:** Vac. thru 7000 psi (see engineering units below for other units of measurement) Non-cataloged available ranges on application.

**Operating Temp.:** 0/150°F (-18/63°C)

**Storage Temp.:** -40/180°F (-40/82°C)

**Temp. Corrected:** Yes

**Proof Pressure:** 200% of full scale

### DISPLAY

**Type:** LCD

**Display Digits:** 5, 99,999 counts

**Character Height:** .66"

**Backlite:** Off by default

**Bar Graph:** Yes

**Battery Life:** >1000 hrs. (3 AAA batteries included, NOT installed)

**Agency Approvals:** FM/CSA approval not available on vacuum ranges and compound ranges up to 15 psi

### KEYPAD FUNCTIONS

**On/Off:** Manually turns unit on and off (auto off options in configuration menu (CONFIG) )

**Backlite:** Manually turns backlight on and off (auto off options in configuration menu (CONFIG) )

**Min/Max:** Stores min. and max. values when displayed

**Zero/Clear:** Zeros display or clears min. and max. values when displayed

**Enter:** Selects items in configuration menu (CONFIG)

**Configuration Mode (CONFIG):** Allows scrolling through configuration menus to select available options

**Engineering Units:** psi, Hg, H<sub>2</sub>O, ftSW, Bar, mBar, kPa, mPa, mmHg, cmH<sub>2</sub>O, mmH<sub>2</sub>O, kg/cm<sup>2</sup>

**Update Rate:** Four Options: 10x/sec, 5x/sec, 2x/sec, 1x/sec

**Auto Off:** Five Options: Never, 2 min., 5 min., 15 min., 30 min.

**Dampening:** Five Options: None, average 2, 4, 6, 8 readings

**Language:** Seven Languages: English, Spanish, French, Italian, German, Portuguese, Dutch

**Backlite:** Five Options: On/off, 10 sec., 30 sec., 1 min., 5 min.

**Calibrate:** Zero and Span (password protected)

**Zero Disable:** Allows for disabling of Zero button

**Contrast:** Seven available options

**Disable:** Allows for "lock-out" of CONFIG options

**Calibration Chart:** 10 point individual calibration chart, standard for Type 2089, others optional

**Standard Features:** 300 Series SS Protective Cover, Protective Carrying Pouch

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## Types 2089, 2086 & 2084 Precision Digital Test Gauge

### IS YOUR DIGITAL GAUGE AS ACCURATE AS YOU THINK?

Gauge accuracy can be dramatically impacted by changes in temperature, re-zeroing of gauges and other factors. Until now there has been no one single solution to address these concerns. The Ashcroft precision digital test gauge is that solution.

#### Unmatched Accuracy Performance

- .05% Full Scale Total Error Band (TEB). Includes the effects of linearity, hysteresis, repeatability and temperature from 0 to 150°F
- Gauge also available with .1% or .25% full scale TEB accuracies
- Terminal point accuracy allows re-zeroing to eliminate sensor offset
- 12 units of measurement
- Inches of water range for three reference temperatures: 4°C, 20°C and 60°F

#### INDUSTRY LEADING FEATURES Rugged Design

- Stainless steel case and socket welded for strength
- Polyester window protects display from damage.
- Stainless steel cover protects keypad
- Weatherproof, NEMA 4, IP65 case
- Intrinsically safe, FM/CSA approval not available on vacuum ranges and compound ranges up to 15 psi
- Strain relief to protect wiring while replacing batteries
- Optional Protective Rubber Boot.

#### Industry Leading Display and Portable Size

- Industry's smallest case size (3")
- Largest display height of .66"
- Seven languages
- % of range bar graph

#### Safety

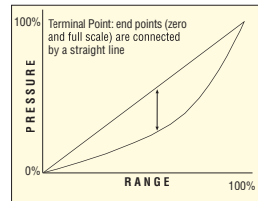
- The only portable digital test gauge that meets ASME B40.7
- Pressure range on keypad and bar graph reduces accidental overpressure
- Proof pressure = 2 x gauge range

### What you should know about digital test gauge accuracy... Terminal Point versus Best Fit Straight Line Accuracy.

#### Ambient Temperature Changes

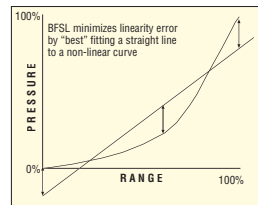
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#### Ashcroft Precision Digital Gauges with Terminal Point Accuracy BENEFIT



- All points between zero and full-scale will be within stated accuracy
- Allows zeroing of gauge at start-up to eliminate any sensor offset

#### Competitive Digital Gauges with Best Fit Straight Line (BFSL) Accuracy



- Linearity error minimized by "best" fitting a straight line to a non-linear curve.
- BFSL gauges have a zero offset at calibration that must be maintained to ensure accuracy throughout range

#### PROBLEM

- Re-zeroing gauge may invalidate published accuracy specification
- Zero offset at start-up may be the result of either:
  - BFSL Calibration
  - Zero Drift

### The Bottom Line...

| Ashcroft Digital Test Gauge Accuracy Includes |   |
|-----------------------------------------------|---|
| Linearity                                     | ✓ |
| Hysteresis                                    | ✓ |
| Repeatability                                 | ✓ |
| Temperature (0/150°F)                         | ✓ |
| Terminal Point Accuracy                       | ✓ |

Total Error Band (TEB)  
...An Ashcroft Exclusive

### INDUSTRY LEADING CONFIGURABLE OPTIONS

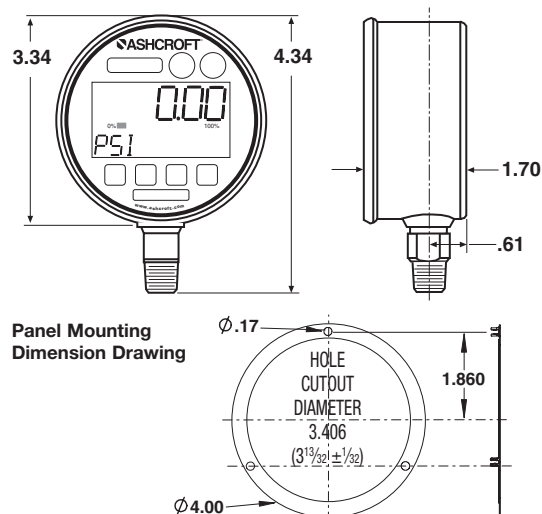
- **UNITS** of measurement – 12 options including "H<sub>2</sub>O with three temperature offerings"
- **LANGUAGES** – Seven available options
- **UPDATE RATE** – Four options
- **DAMPENING** – Five averaging options
- **PASSWORD PROTECTED** – Calibration, Zero & Span
- **DISABLE** – Password protected
- **BACKLITE** – Five options including NEVER
- **CONTRAST** – Seven available options
- **AUTO OFF** – Five options



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## Types 2089, 2086 & 2084 Precision Digital Test Gauge

### DIMENSIONS



### STANDARD PRESSURE RANGES:

| psi  | Compound (psi) | kPa    | Bar/ KSC | Compound (bar) |
|------|----------------|--------|----------|----------------|
| vac. | 15# & vac.     | -100/0 | 1        | -1 to 0        |
| 5    | 30# & vac.     | 25     | 1.6      | -1 to 1        |
| 10   | 60# & vac.     | 40     | 2.5      | -1 to 2        |
| 15   | 100# & vac.    | 60     | 4        | -1 to 3        |
| 30   |                | 100    | 6        | -1 to 30       |
| 60   |                | 160    | 10       |                |
| 100  |                | 250    | 16       |                |
| 160  |                | 400    | 25       |                |
| 200  |                | 600    | 40       |                |
| 300  |                | 1000   | 60       |                |
| 500  |                |        | 160      |                |
| 600  |                |        | 250      |                |
| 800  |                |        | 400      |                |
| 1000 |                |        | 500      |                |
| 2000 |                |        |          |                |
| 2500 |                |        |          |                |
| 3000 |                |        |          |                |
| 5000 |                |        |          |                |
| 7000 |                |        |          |                |

| mmH <sub>2</sub> O | MPa | mBar/ cmH <sub>2</sub> O | Absolute (psia) |
|--------------------|-----|--------------------------|-----------------|
| 3000               | 1   | 250                      | 15              |
| 5000               | 1.6 | 300                      | 25              |
| 10,000             | 2.5 | 400                      | 50              |
|                    | 6   | 500                      |                 |
|                    | 40  | 600                      |                 |
|                    |     | 1000                     |                 |
|                    |     | 1600                     |                 |
|                    |     | 2000                     |                 |
|                    |     | 2500                     |                 |
|                    |     | 4000                     |                 |
|                    |     | 5000                     |                 |
|                    |     | 6000                     |                 |
|                    |     | 10,000                   |                 |

### TYPICAL PRODUCT CODING

|                              | 1  | 2      | 3    | 4     | 5      |
|------------------------------|----|--------|------|-------|--------|
|                              | 30 | - 2089 | - SD | - 02L | - 100# |
| 1. Dial Size: 3"             |    |        |      |       |        |
| 2. Type: 2089                |    |        |      |       |        |
| 3. Wetted Parts: 316 SS      |    |        |      |       |        |
| 4. Connection: 1/4 NPT lower |    |        |      |       |        |
| 5. Range: 100 psi            |    |        |      |       |        |

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