

Types 2074, 2174 & 2274 Digital Industrial Gauge

FEATURES

- **A Multi-Functional Digital Gauge with Optional:**
 - 4-20mA Output
 - (1) or (2) SPDT Switches
- **¼% Full Scale Terminal Point Accuracy (.13% BFSL)**
- **IP 65 Weatherproof Case**
- **Three Case Options:**
Stainless Steel, Fiberglass Reinforced Thermoplastic or Aluminum
- **Extra Large Display**
- **Intrinsically Safe, Class 1, Div. 1**
- **Easy-to-Use Menu Options: (all password protected)**
 - Five Backlite Display Options
 - Twelve Engineering Units
 - Menu Configure Feature
 - Update Rate
 - Dampen Rate
 - Auto-Off

At last, a multi-functional gauge from the experts in pressure measurement. When any combination of local indication, a 4-20mA signal and switching are required to meet your needs, the Ashcroft® digital industrial gauge provides the solution.

PRODUCT SPECIFICATIONS

- Type:** 2074 (battery), 2174 (loop), 2274 (line)
- Accuracy:** .25% Full Scale, terminal point
- Case Size:** 3", 4½"
- Case Material:** 3" SS, 4½" fiberglass reinforced thermoplastic or black epoxy coated aluminum
- Case Encl. Rating:** Weatherproof, IP65
- Wetted Materials:** 17-4 SS (sensor), 316SS (socket)
- Socket Size:** ¼ or ½ NPT, JIS, DIN, SAE, (½ NPT only with 4½" case, others on application)
- Socket Location:** Lower, 3, 9 and 12 o'clock
- Ranges:** Vac. thru 20,000 psi (see engineering units below for other units)
- Operating Temp.:** 14/140°F (-10/60°C)
- Temp. Error (Zero & Span):** .04%/°F (<.02%/°F Typical)
- Storage Temp.:** -4/158° (-20/70°F)

HOW TO ORDER (Typical example)

TYPICAL PRODUCT CODING	1	2	3	4	5
	45	- 2074	- SD	- 02L	- 100#
1. Case Size: 4½"	_____				
2. Type: 2074	_____				
3. Wetted Parts: 316 SS Socket, 17-4SS Sensor	_____				
4. Connection: ¼ NPT lower	_____				
5. Range: 100 psi	_____				

DISPLAY

- Type:** LCD
- Display Digits:** Five (5)
- Character Height:** 3" case: .60", 4½" case: .88"
- Backlite:** Optional
- Bar Graph:** Yes
- Battery Life:** 3" >1000 hrs., 4½" >3600 hrs.
- Agency Approvals:** (FM, CSA optional), CE, FM (Intrinsically Safe Class 1, Div. 1 optional), CSA and CENELEC

KEYPAD FUNCTIONS

- On/Off:** Manually turns unit on and off (auto off options in menu)
- Zero/Clear:** Zeros display or clears min. and max. values when displayed
- Min/Max ▼ (down) Arrow Key:** Stores min and max values, arrow key allows for scrolling thru menu items
- Menu Key:** Provides access to menu options
- Backlite ▲ (up) Arrow Key (Backlite optional):** Manually turns backlite on and off (auto off options in menu), arrow key allows for five menu options. ▲ (up) arrow key allows for scrolling thru menu options
- Enter:** Selects items in the menu

MENU MODE

- Engineering Units:** 10 units of measurement are available: psi, in. H₂O (with three temp. options: 20°C, 60°F, 4°C*), Ft. H₂O, mPa, mBar, kPa, kg/cm², Bar, inHg and mmHg
- Configuration Mode (Config):** Allows for changes to default settings of gauge including zero disable feature
- Bar Graph (Graph):** Allows for adjustment of bargraph and 4-20 (optional feature)
- Auto Off (Off):** Allows for changes to auto off of gauge, five options: Never, 2 min., 5 min., 15 min., 30 min.
- Update Rate (Update):** Four options: 100 ms, 200 ms, 500 ms, 1 sec
- Dampening (Damp):** Six options: None, average, 2, 4, 6, 8 times per 100ms
- Backlite:** Five options: Never, 10 sec., 30 sec., 1 min., 5 min.
- Field Recalibration:** Allows for recalibration of zero, mid-scale and span (password protected)

OPTIONS

- 4-20mA Display:** 12-36 Vdc, mA with unlimited turn-down (within gauge range)
- Line Powered:** 12-36 Vdc, 2VA max.
- Switching*:** (1) or (2) SPDT switches, (max. contact 30Vdc, 1 amp, 125Vac .5 Amp), Switches adjustable to 100% of range



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THE MULTI-FUNCTIONAL SOLUTION SAVES MONEY, TIME AND SPACE...

- ▶ Battery powered local indication standard
 - ▶ Optional 4-20mA output with turndown adjustable within range of gauge*
 - ▶ Optional line powered (12-36 Vdc)
 - ▶ Optional (1) or (2) SPDT switches with dead-band adjustable to pressure range of gauge
- *Accuracy based on full scale range of gauge

The benefit, one digital pressure gauge replaces three instruments... mechanical pressure gauge, transducer and switch

- ▶ Saves installation costs
- ▶ Saves on instrument costs
- ▶ Save on additional pipe cut-out(s)
- ▶ Save space

INDUSTRY LEADING FEATURES

Rugged design

- ▶ Three case styles: all welded stainless steel, fiberglass reinforced thermoplastic or cast aluminum case
 - Weatherproof, NEMA4 (pending), IP 65 case
 - SS and aluminum case offered with FM certification, Class 1, Div. 1 (pending)
- ▶ Polyester window protects display from damage
- ▶ Strain relief to protect wiring while replacing batteries

Industry leading display

- ▶ Extra large display height of .88" (4½" case)
- ▶ Five digit display
- ▶ 12 units of measure
- ▶ % of range bar graph

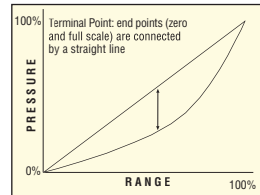
Safety

- ▶ Meets ASME B40.7
- ▶ Pressure range on keypad and bar graph reduces accidental overpressure
- ▶ Proof pressure = 2X gauge range

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

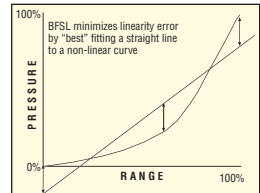
Ashcroft Type 2070 Digital Gauge with Terminal Point Accuracy

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 may 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

OPTIONS		
Description	Code	Case Size
Case Options		
Aluminum Case (black epoxy coated)	AY	4½" only
(Glass reinforced thermoplastic case standard)		
Electropolished Case	EC	3" only
(Brushed SS case standard)		
Switch Options		
(1) SPDT Switch (12-36Vdc)	U1	3", 4½"
(2) SPDT Switch (12-36Vdc)	U2	3", 4½"
Line Power with 4-20mA output	A0	3", 4½"
(Line power (Type 2274) required for switching options.)		
(Terminal blocks standard with 4½" case.)		
(Flying leads standard with 3")		
Wiring Options		
Flying leads (Terminal blocks standard with 4½" case.)	EN	4½"
Flying leads standard with 3" case.		
Keypad Options		
Backlite	BL	3", 4½"
Miscellaneous Options		
Battery Backup	BK	3", 4½"
(Battery standard with Type 2074)		
(Available with Types 2174 & 2274)		
Weatherproof ABS Gauge Carrying Case	S7	3" only
Protective Rubber Boot (black)	B1	3" only
Protective Rubber Boot (orange)	B2	3" only
Protective Front Cover	PP	3" only
AccuSeal™ (½ NPT lower only)	SU	4½" only

.88" high digital display (4½" case)

Bar graph % of full scale range

Press to display minimum or maximum pressure gauge measured by

Breakthru AccuSeal™ Gauge Isolator*

- ▶ Integral to gauge
- ▶ Virtually eliminates process dead-leg
- ▶ Eliminates need for standard diaphragm seal
- ▶ Eliminating seal reduces temperature error



Range on keypad, complies with ASME B40.7 to reduce the possibility of accidental overpressure

Battery level indicator

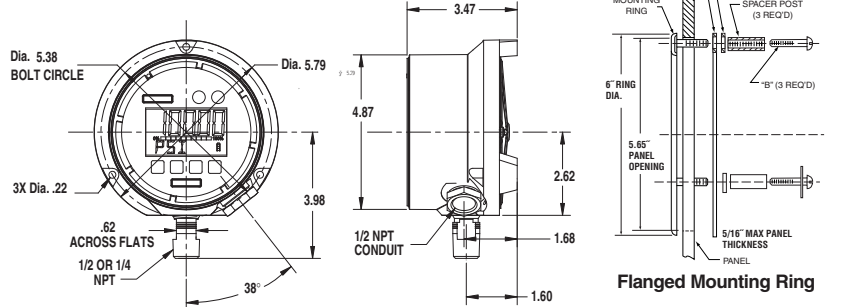
Optional:

- 4-20mA output (adjustable within pressure range)
- Line power (12/36Vdc, 1 amp)
- (1) or (2) SPDT switch(es) (adjustable to 100% of pressure range)

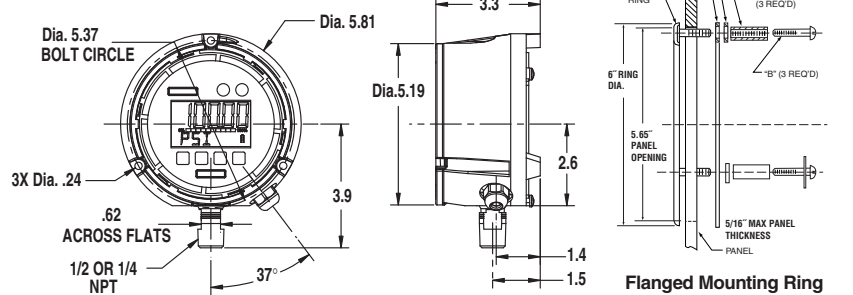
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DIMENSIONS

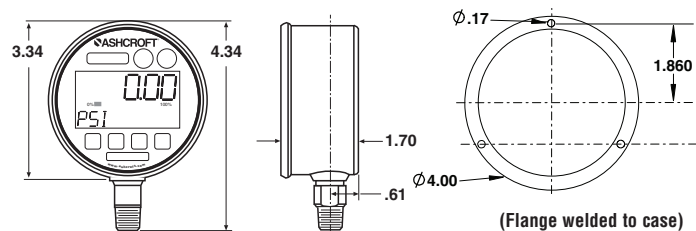
Type 2074 (battery), 2174 (loop), 2274 (line), 4½" aluminum case



Type 2074 (battery), 2174 (loop), 2274 (line), 4½" fiberglass reinforced thermoplastic case



Type 2074 (battery), 2174 (loop), 2274 (line), 3" stainless steel case



PRESSURE RANGES

psi	in. Hg (vacuum)	Comp. (psi)	mmHg (pressure)	in. Hg (pressure)	in. H ₂ O	mBar	ft. H ₂ O	mPa	kPa	Bar/ KSC
15	30	-15/0/15	800	30	400	1000	60	1	100	1
30		-15/0/30	1000	60	800	1500	160	1.6	160	1.6
60		-15/0/60	2000	100	1000	2000	200	2.5	250	2.5
100		-15/0/100	3000	160		2500	300	4	400	4
160			5000	200		4000	400	6	600	6
200			10,000	300		5000	600	10	1000	10
300				400		6000	1000	16	1600	16
600				600		10,000		25	2500	25
800				800		15,000		40	4000	40
1000						20,000		60	6000	60
1500								100	10,000	100
2000								140	16,000	160
3000									25,000	250
5000									40,000	400
8000									60,000	600
10,000									100,000	1000
15,000									140,000	1400
20,000										