

Data Sheet

2074, 2174 & 2274 Digital Pressure Gauges

FEATURES

- Multi-Functioning Digital Pressure Gauge with optional 4-20 mA output, 1 or 2 SPDT switches
- Optional FM and CSA Approval Intrinsically Safe, Class I, Div. 1
- Battery powered visual pressure indicator
- IP65 weatherproof case
- Easy to use menu options
- Large LCD display

TYPICAL USES

- Hydraulic and pneumatic equipment
- Test bench/gauge repair facilities
- Specialized OEM equipment
- Measurement and validation
- Weighing systems
- Pump control



2074, 2174, 2274
 3", 4½" dial size



SPECIFICATIONS

Accuracy:	±0.25% of span, terminal point
Input Power Requirements:	2074: Battery powered 2174: Loop powered 4-20 mA (12-36 Vdc) 2274: DC Line powered (12-36 Vdc)
Sizes:	3", 4½"
Inlet Fitting:	¼ or ½ NPT typical, see ordering code on page 3 for additional options
Ranges:	Vacuum to 20,000 psi
Process Connection Location:	Lower, top, left or right side
Electrical Connection for Loop or Line Power:	4½" case screw down terminals 3" case jacketed cable extended 3 feet Custom cable length available (OPT.)
Temperature Error (Zero & Span):	0.04% of span/°F, (from 70 °F/reference temperature)
Enclosure Rating:	Weatherproof, IP65

DISPLAY

Type:	LCD
Display Digits:	5
Character Height:	3" case: 0.60" 4½" case: 0.88"
Backlight:	Model 2174 requires battery backup as well to power the light (OPT.)
Bar Graph:	10 segment
Battery Life:	3" > 400 hours 4½" > 2,000 hours

KEY BENEFITS

- Replaces 3 instruments, local pressure indicator, 4-20 mA loop transmitter, pressure switch with one instrument
- Save cost and pipe cutouts (taps)
- Save space

WETTED COMPONENTS

Model	Diaphragm	Process Connection	Joints
2074, 2174, 2274	17-4 Stainless steel	316L Stainless steel	Laser weld

NON-WETTED COMPONENTS

Model	Case
3"	304 Stainless steel
4½"	Fiberglass reinforced thermoplastic or black epoxy coated aluminum

MIN/MAX TEMPERATURE LIMITS

Version	Process	Storage
2074, 2174, 2274	14 °F to 140 °F (10 °C to 60 °C)	-4 °F to 158 °F (-20 °C to 70 °C)

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PRESSURE RATINGS

Overpressure:	Proof:	Burst:
15 to ≤2,000 psi	2X Range	8X Range
≥3,000 to ≤5,000 psi	1.5X Range	3X Range
≥7,500 to ≤20,000 psi	1.2X Range	1.5X Range

AGENCY APPROVALS

Optional Intrinsically Safe, FM (Class I Div. I, Groups A-G) and CSA (Class I Div. I, Groups A-D, Class II Div. I, Groups E-G) 15,000 psi max full scale range 15,000 psi

MENU MODE

Engineering Units: Up to 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, in. Hg and mm Hg. Units available are based on full scale range of gauge.

Configuration Mode (Config): Allows for changes to default settings of gauge including zero disable 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 100 ms

Backlite: Five options: Never, 10 sec., 30 sec., 1 min., 5 min.

Field Recalibration: Allows for recalibration of zero, midscale and span (password protected)

Graph: Program bar graph and scale 4-20 mA output

Switch Setpoint (Swset): Programmable switch set and reset points

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 through menu items

Menu Key: Provides access to menu options

Enter: Selects items in the menu

Backlite (up) Arrow Key: Manually turns backlite on and off (auto off options in menu), arrow key allows for five menu options. (up) arrow key allows for scrolling through menu options

OPTIONAL FEATURES

Battery backup

Back light

4-20 mA output (model 2274 only)

One or two SPDT dry contact switches (max contact rating 1 amp at 30 Vdc, 0.5 amp at 125 Vac)

FM and CSA approved intrinsically safe (subject to some restrictions see ordering code)

Metal tagging

Cleaned for oxygen service

Traceable calibration certificate

Mercury free certificate

Throttle screw/plug

Custom cable length

Mini Hirschmann® connector (3" only) front flange for panel mount (3" only)

Protective front cover

Black or orange protective rubber boot (3" only)

Aluminum case (4½" only)

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ORDERING CODE	Example:	45	2074	S	D	04	L	1000#	XFM
Dial Size									
45 - 4½"		45							
30 - 3"									
Model									
2074 - Battery Power			2074						
2174 - 4-20 Loop									
2274 - 24 Vdc Line Power									
System									
S - Stainless steel				S					
Case Style									
D - Dry					D				
Process Connection Size									
4.5" Only									
04 - ½ NPT						04			
15 - G ½" B									
09 - ⅝-18 UNF 2B Female for pressure 15,000 psi or more									
LF - ⅞-20 w/ "O" ring seat									
3.0" Only									
FF - ⅞-20 UNJF 3B Female with ¼-28 UNF-2B									
RX - ⅞-18 LH w/ cone									
KJ - ¼ BSPF									
RH - ⅞-20 UNF 2B Female with 60° cone seal for pressure 15,000 psi or more									
SF - ¼ Female swivel compatible with VCR® fittings									
SM - ¼ Male swivel compatible with VCR® fittings									
09 - ⅞-18 UNF 2B Female with 60° cone seal for pressure 15,000 psi or more									
3.0" & 4.5"									
02 - ¼ NPT									
13 - G ¼" B									
Process Connection Location									
L - Lower							L		
E - Left (9 o'clock)									
D - Right (3 o'clock)									
T - Top									
Range (coding example, see range tables on page 4, for additional ranges)									
1000# - 0-1,000 psi								1000#	
Options (if choosing an option(s) must include an "X")									
BK - Battery backup									X
BL - Back light for display (Model 2174 also require BK option)									
AO - 4-20 mA output (2274 only) (See Note 1)									
U1 - 1 SPDT dry contact switch (2274 only) (max contact rating 1 amp at 30 Vdc, 0.5 amp at 125 Vac)									
U2 - 2 SPDT dry contact switches (2274 only) (max contact rating 1 amp at 30 Vdc, 0.5 amp at 125 Vac)									
FM - Factory Mutual Approval (FM not available with variation codes U1, U2, BL, AO, NH, MN, HN, AY), max pressure range 15,000 psi									FM
NH - Metal tag									
6B - Cleaned for oxygen service									
C4 - Traceable calibration certificate									
MF - Mercury free certificate									
JZ - Custom length cable									
3.0" Only									
HN - Mini Hirschmann® connector									
TU - Throttle plug									
FF - Front flange for panel mount									
PP - Protective front cover									
B1 - Black rubber protective boot									
B2 - Orange rubber protective boot									
4.5" Only									
EN - 3 feet jacketed cable									
AY - Aluminum case									
SU - Accu-Seal® sensor at end of process connection, 2000 psi Max, ½ NPT only)									
TS - Throttle screw (Please note that connection code 02 is required. Use only with connection code 02, ¼" NPT)									
56 - Flush mounting ring									
Note 1: Use option "AO" only if also selecting option U1 or U2 switch output. If only 4-20 mA output is required, select model 217X.									

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Standard psi ranges

RANGE CODE	psi		bar		in. Hg		mm Hg		kPa		MPa		kg/cm ²		ft. H ₂ O	
	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range
Vacuum																
0#&V*	-14.500	0	-0.9998	0	-29.52	0	-749.99	0	-99.97	0	-0.1000	0	-1.0195	0	-33.46	0
Compound																
15#&V*	-14.500	15.00	-0.9998	1.0342	-29.52	30.54	-749.9	775.5	-100.0	103.4	-0.1000	0.1034	-1.0195	1.0546	-33.46	34.62
30#&V*	-14.500	30.00	-1.000	2.068	-29.52	61.08	-749.9	1551.5	-100.0	206.8	-0.1000	0.2068	-1.019	2.109	-33.46	69.23
60#&V	-14.500	60.00	-1.000	4.137	-29.52	122.16	-750	3103	-100.0	413.7	-0.1000	0.4137	-1.019	4.219	-33.46	138.46
100#&V	-14.500	100.00	-1.000	6.895	-29.5	203.6	-750	5172	-100.0	689.5	-0.1000	0.6895	-1.019	7.031	-33.46	230.8
300#&V	-14.5	300.0	-1.000	20.685	-29.5	610.8	-750	1551	-100.0	2068.4	-0.1000	2.0684	-1.019	21.093	-33.46	692.3
Pressure																
15#*	0	15.000	0	1.0342	0	30.54	0.0	775.5	0	103.2	0	0.1034	0	1.0546	0	34.62
30#	0	30.00	0	2.0685	0	61.08	0.0	1551.5	0	206.4	0	0.2068	0	2.1093	0	69.23
60#	0	60.00	0	4.137	0	122.16	0	3103	0	413.7	0	0.4137	0	4.219	0	138.46
100#	0	100.00	0	6.895	0	203.60	0	5172	0	689.5	0	0.6895	0	7.031	0	230.77
200#	0	200.0	0	13.790	0	407.2	0	10343	0	1378.9	0	1.3789	0	14.062	0	461.5
300#	0	300.0	0	20.685	0	610.8	0	15515	0	2068.4	0	2.0684	0	21.093	0	692.3
500#	0	500.0	0	34.47	0	1018.0	-	-	0	3447	0	3.447	0	35.15	0	1153.8
1000#	0	1000.0	0	68.95	0	2036.0	-	-	0	6895	0	6.895	0	70.31	0	2307.7
1500#	0	1500.0	0	103.42	0	3054	-	-	0	10342	0	10.342	0	105.46	0	3462
2000#	0	2000	0	137.90	0	4072	-	-	0	13789	0	13.789	0	140.62	0	4615
3000#	0	3000	0	206.8	0	6108	-	-	-	-	0	20.684	0	210.93	0	6923
5000#	0	5000	0	344.7	0	10180	-	-	-	-	0	34.47	0	351.5	0	11538
10000#	0	10000	0	689.5	0	20360	-	-	-	-	0	68.95	0	703.1	0	23077
15000# ⁽¹⁾	0	15000	0	1034.2	-	-	-	-	-	-	0	103.42	0	1054.6	-	-
20000# ⁽¹⁾	0	20000	0	1379.0	-	-	-	-	-	-	0	137.89	0	1406.2	-	-

Standard bar ranges

RANGE CODE	bar		psi		in. Hg		mm Hg		kPa		MPa		kg/cm ²		ft. H ₂ O	
	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range
Vacuum																
0BR&V	-1.000	0	-14.50	0	-29.53	0	-750.1	0	-100.0	0	-0.10000	0	-1.0197	0	-33.52	0
Compound																
1BR&V	-1.000	1.0000	-14.50	14.50	-29.53	29.53	-750.1	750.1	-100.0	100.00	-0.1000	0.1000	-1.0197	1.0197	-33.52	33.52
1.6BR&V	-1.000	1.6000	-14.50	23.01	-29.53	47.25	-750.1	1200.1	-100.0	160.00	-0.1000	0.1600	-1.020	1.632	-33.52	53.63
4BR&V	-1.000	4.000	-14.50	58.01	-29.53	118.12	-750	3000	-100.0	400.0	-0.1000	0.4000	-1.020	4.079	-33.52	134.08
6BR&V	-1.000	6.000	-14.50	87.02	-29.5	177.18	-750	4500	-100.0	600.0	-0.1000	0.6000	-1.020	6.118	-33.5	201.1
16BR&V	-1.000	16.000	-14.50	232.10	-29.5	472.5	-750	12001	-100.0	1600.0	-0.1000	1.600	-1.020	16.315	-33.5	536.3
Pressure																
1BR*	0	1.0000	0	14.503	0	29.53	0.0	750.1	0	100.00	0	0.10000	0	1.0197	0	33.52
1.6BR*	0	1.6000	0	23.205	0	47.25	0.0	1200.1	0	160.00	0	0.16000	0	1.6315	0	53.63
2.5BR	0	2.500	0	36.25	0	73.83	0	1875	0	250.0	0	0.2500	0	2.549	0	83.80
4BR	0	4.000	0	58.01	0	118.12	0	3000	0	400.0	0	0.4000	0	4.079	0	134.08
6BR	0	6.000	0	87.02	0	177.18	0	4500	0	600.0	0	0.6000	0	6.118	0	201.12
10BR	0	10.000	0	145.03	0	295.3	0	7500	0	1000.0	0	1.0000	0	10.297	0	335.2
16BR	0	16.00	0	232.05	0	472.5	0	12001	0	1600.0	0	1.6000	0	16.315	0	536.3
25BR	0	25.00	0	362.5	0	738	0	18752	0	2500	0	2.5000	0	25.49	0	838.0
40BR	0	40.00	0	580.1	0	1181.2	-	-	0	4000	0	4.000	0	40.79	0	1340.8
60BR	0	60.00	0	870.2	0	1771.8	-	-	0	6000	0	6.000	0	61.18	0	2011.2
100BR	0	100.00	0	1450.3	0	2953	-	-	-	10000	0	10.000	0	101.91	0	3352
160BR	0	160.00	0	2320.5	0	4725	-	-	-	16000	0	16.000	0	163.15	0	5363
250BR	0	250.0	0	3626	0	7383	-	-	-	-	0	25.00	0	254.9	0	8380
400BR	0	400.0	0	5801	0	11812	-	-	-	-	0	40.00	0	407.9	0	13408
600BR	0	600.0	0	8702	0	17718	-	-	-	-	0	60.00	0	611.8	0	20112
1000BR	0	1000.0	0	14503	-	-	-	-	-	-	0	100.00	0	1019.7	-	-
1350BR ⁽¹⁾	0	1600.0	0	23205	-	-	-	-	-	-	0	160.00	0	1631.5	-	-

* 0.5% Accuracy only.

⁽¹⁾ Requires use of pressure connection 09 or RH

Note "-" in range table indicates unit of pressure is not included in this pressure range

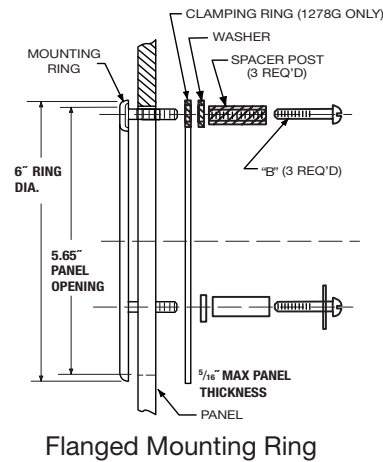
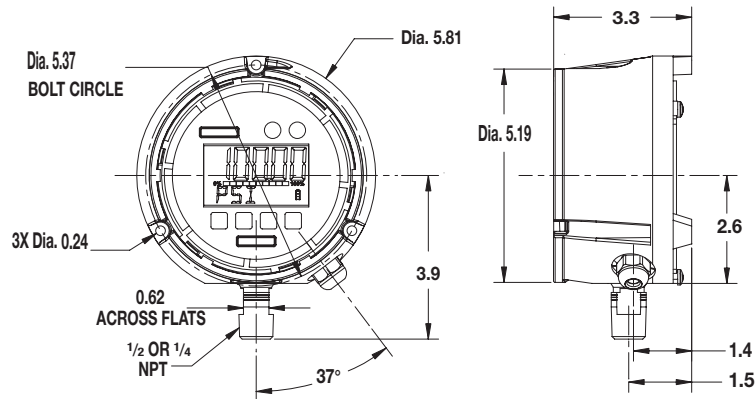
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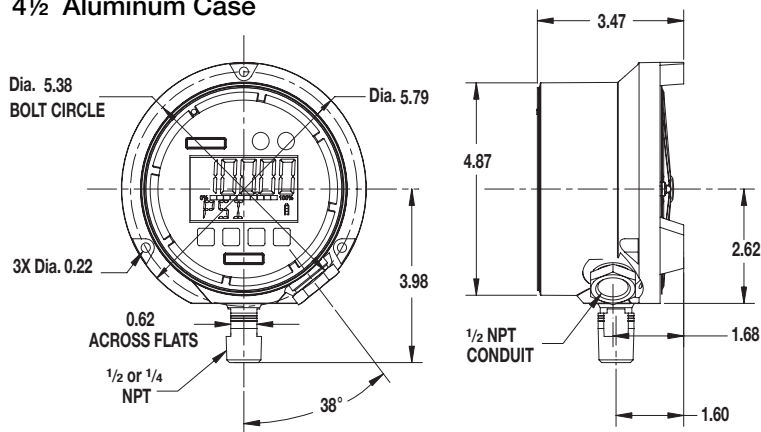
DIMENSIONS in inches

For reference only, consult Ashcroft for specific dimensional drawings

4½" Fiberglass Reinforced Thermoplastic Case



4½" Aluminum Case



HIRSCHMANN® CONNECTOR WIRING (option XHN)

MODEL 2174

Pin 1 Loop +

Pin 3 Loop -

MODEL 2274

Pin 1 DC +

Pin 3 DC -

3" Stainless Steel Case

