

Honeywell

P7650A/B/U

DIFFERENTIAL PRESSURE SENSORS

SPECIFICATION DATA



APPLICATION

The P7650 sensor can measure either air pressure or velocity. Measuring air velocity requires the use of the P7650L velocity pick-up probe. The P7650 is available in three installation configurations: duct, panel or universal. Duct and panel models have two pressure and velocity options: 0-1" WC / 0-3,000 FPM or 1-10" WC / 3,000-6,000 FPM with four field-selectable sub-ranges.

The universal model comes in one pressure/velocity range: 0-10" WC / 0-7,000 FPM with seven field-selectable sub-ranges. All variants are available with and without display. The P7650 has an IP65/NEMA 4 environmental rating and a 5-year limited warranty.

- Duct static pressure (Pressure mode)
- Building or room pressure (Pressure mode)
- Filter status (Pressure mode)
- Air flow measurement (Velocity mode)

FEATURES

- **Reduce field failures**
 - Excellent tolerance to overpressure & vibration reduces field failures
- **Reduce setup**
 - Selectable ranges and scales reduce setup time and number of models to stock
- **High accuracy**
 - High accuracy digital sensor with seven selectable sub-ranges maintains calibration and reduces callbacks
- **Water-resistant housing**
 - IP65/NEMA 4 housing allows for mounting in wash-down locations
- **Maintenance free**
 - High reliability sensor technology for long-term, maintenance-free operation
- **Circuit protection**
 - Circuit protection avoids damage due to incorrect input wiring

PRODUCT IDENTIFICATION

New Part Number	Mounting	Selectable w.c. Pressure Range, Uni or Bi-Directional	Velocity Mode	Display	Output	Supply Voltage
P7650A1000	Panel	+/-0-1", 0-25", 0-5", 0-1" w.c. or +/-25, 50, 100, 250 Pa Selectable	500/1,000/2,000/3,000 FPM 2.5/5/10/15MS	Yes	0-10Vdc, 0-5Vdc, and 4-20mA Selectable	12-30Vdc or 24Vac
P7650A1018				No		
P7650A1026		+/-0-1", 0-2", 0-5", 0-10" or +/-0.250, 0.500, 1.00, 2.50 kPa Selectable	3,000/4,000/5,000/6,000 FPM 15/20/25/30MS	Yes		
P7650A1034				No		
P7650B1008	Duct	+/-0-1", 0-25", 0-5", 0-1" w.c. or +/-25, 50, 100, 250 Pa Selectable	500/1,000/2,000/3,000 FPM 2.5/5/10/15MS	Yes		
P7650B1016				No		
P7650B1024		+/-0-1", 0-2", 0-5", 0-10" or +/-0.250, 0.500, 1.00, 2.50 kPa Selectable	3,000/4,000/5,000/6,000 FPM 15/20/25/30MS	Yes		
P7650B1032				No		
P7650U1040	Universal	+/-0-1", 0-25", 0-5", 0-1", 0-2", 0-5", 0-10" in. w.c. or +/-0.25, 0.5, 1.0, 2.5 kPa; or +/-25, 50, 100, 250 Pa Selectable	500/1,000/2,000/3,000/4,000/5,000/6,000/7,000 FPM 2.5/5/10/15/20/25/30/35 MS	No		
P7650U1052				Yes		



31-00139-02

SPECIFICATIONS

GENERAL

Media Compatibility: Dry air or inert gas

Input Power:

Three-wire Volt mode: 24 Vac or 12-30 Vdc¹
Two-wire mA mode: 12-30 Vdc¹

Output Power:

Field-selectable:

2-wire, loop-powered 4-20 mA² (DC only, clipped and capped),
24 Vac/dc or
3-wire 0-5V/0-10V³

PRESSURE RANGES

Table 1. 0-1 Inch Range Models, Field Selectable (WC/FPM or Pa/MS).

	WC / FPM		Pa / MS
0	0 to 0.1 in. WC	0	0 to 25 Pa
1	0 to 0.25 in. WC	1	0 to 50 Pa
2	0 to 0.5 in. WC	2	0 to 100 Pa
3	0 to 1 in. WC	3	0 to 250 Pa
4	0 to 500 FPM	4	0 to 2.5 ms
5	0 to 1000 FPM	5	0 to 5 ms
6	0 to 2000 FPM	6	0 to 10 ms
7	0 to 3000 FPM	7	0 to 15 ms

Table 2. 0-10 Inch Range Models, Field Selectable (WC/FPM or Pa/MS).

	WC / FPM		Pa / MS
0	0 to 1 in. WC	0	0 to 250 Pa
1	0 to 2.5 in. WC	1	0 to 500 Pa
2	0 to 5 in. WC	2	0 to 1000 Pa
3	0 to 10 in. WC	3	0 to 2500 Pa
4	0 to 3000 FPM	4	0 to 15 ms
5	0 to 4000 FPM	5	0 to 20 ms
6	0 to 5000 FPM	6	0 to 25 ms
7	0 to 6000 FPM	7	0 to 30 ms

Table 3. P7640U Universal Model, Field Selectable (P) Pressure or (V) Velocity Mode, Field Selectable (WC/FPM or Pa/MS).

	(P) Pressure Mode		(V) Velocity Mode
0	0 to 0.1 in. WC (0 to 25 Pa)	0	0 to 500 FPM (0 to 2.5 MS)
1	0 to 0.25 in. WC (0 to 50 Pa)	1	0 to 1000 FPM (0 to 5 MS)
2	0 to 0.5 in. WC (0 to 100 Pa)	2	0 to 2000 FPM (0 to 10 MS)
3	0 to 1 in. WC (0 to 250 Pa)	3	0 to 3000 FPM (0 to 15 MS)
4	0 to 2.5 in. WC (0 to 500 Pa)	4	0 to 4000 FPM (0 to 20 MS)
5	0 to 5 in. WC (0 to 1000 Pa)	5	0 to 5000 FPM (0 to 25 MS)
6	0 to 10 in. WC (0 to 2500 Pa)	6	0 to 6000 FPM (0 to 30 MS)
7	0 to 10 in. WC (0 to 2500 Pa)	7	0 to 7000 FPM (0 to 35 MS)

SENSOR

Response Time:

Standard: T95 in 20 sec
Fast: T95 in 2 sec, DIP switch selectable

Mode:

Unidirectional or bidirectional, DIP switch selectable

Display (option):

Pressure mode: Signed 3-1/2 digit LCD, indicates pressure, overrange indicator
Velocity mode: Signed 4-1/2 digit LCD, indicates velocity, overrange indicator

Proof Pressure:

3 psid (20.6 kPa)

Burst Pressure:

5 psid (34.5 kPa)

Pressure Mode Accuracy:

±1% F.S. (combined linearity and hysteresis)

Velocity Mode Accuracy:

±90 FPM (±0.45 MS) plus 5% of measured value⁴

Temperature Effect:

1" (250 Pa) models: 0.05%/°C; 10" (2.5 kPa) models: 0.01%/°C
(Relative to 25 °C) 0 to 50 °C (32 to 122 °F)

Zero Drift (1-year):

1" (250 Pa) models: 2.0% max.; 10" (2.5 kPa) models: 0.5% max.

Zero Adjust:

Pushbutton auto-zero and digital input (2-pos terminal block)

Operating Environment:

0 to 60 °C (32 to 140 °F)

Altitude of Operation:

0 to 3000 m

Pollution Deg.:

2

Humidity Range:
100% RH, non-condensing

Mounting Location:
For indoor use only.

Fittings:
Brass barb; 0.24" (6.1 mm) o.d.

Environmental Rating:
IP65, NEMA 4

Flammability Rating:
Plastic enclosure is UL 94 5VA fire retardant ABS

Accessories:
32003169-001 4 in. Duct Pressure Pick-up Probe.
P7650L6, P7650L8, P7650L10, P7650L12, or P7650L14,
Velocity Pick-up Probes. (Last number is probe length,
i.e., P7650L6 has 6 inch probe, etc)

WARRANTY

Limited Warranty:
5 years

AGENCY APPROVALS

CE
EMC Conformance: EN 61000-6-3:2007 and A1:2011
Class B, EN 61000-6-1:2007

- 1 Class 2 power source.
- 2 Minimum input voltage for 4 to 20 mA operation: 250 Ω loop = 12 Vdc; 500 Ω loop = 19 Vdc.
- 3 Minimum load resistance for Volt operation: 5 k Ω .
- 4 For measured values between 200 and 7000 FPM (1 and 35 MS).

WIRING DIAGRAMS

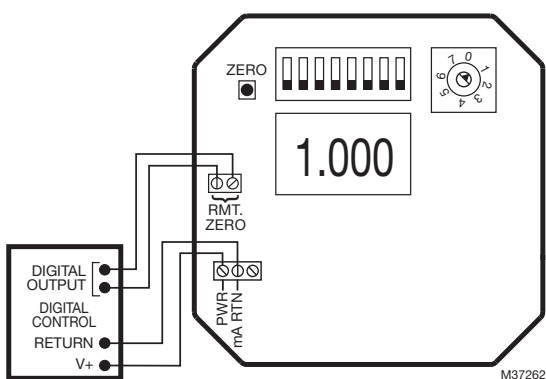


Fig. 1. 2-wire, 4-20 mA Current Loop Output.

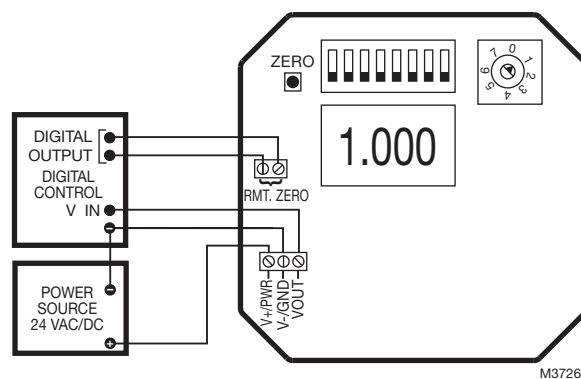


Fig. 2. 3-wire, 0-5 V/0-10 V Voltage Output.

DIMENSIONS

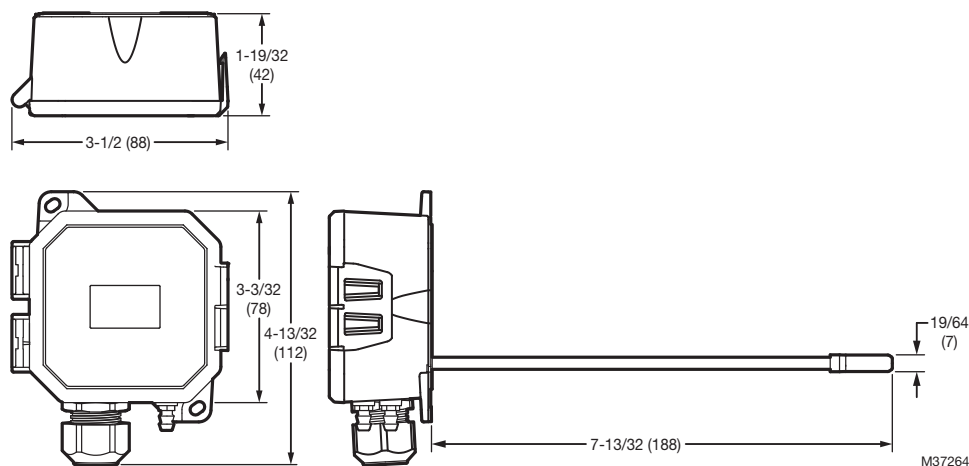


Fig. 3. Dimensions in in. (mm).

REGULATORY INFORMATION

FCC REGULATIONS

§ 15.19 (a)(3)

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

IC REGULATIONS

RSS-GEN

This device complies with Industry Canada's license-exempt RSSs.

Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage;
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

FCC Warning (Part 15.21) (USA only)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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