

MIP SERIES

32346591
Issue B

Heavy Duty, Media-Isolated Pressure Transducers 1 bar to 60 bar | 15 psi to 870 psi

DESCRIPTION

The MIP Series offers a heavy duty, media-isolated pressure transducer in a compact, stainless steel construction for use with a wide range of media including aggressive fluids and water. The MIP Series provides a cost-competitive solution for wide-ranging potential applications in tough environments.

VALUE TO CUSTOMERS

- Total Error Band (TEB) ± 0.75 %FSS (Full Scale Span) from -40°C to 125°C : Provides true measurement performance over the compensated temperature range; small error promotes system uptime and efficiency (see Figure 4).
- EMC performance: Operates reliably in the presence of electromagnetic fields, such as wireless signals, RF communication, and electrical devices.
- Hermetically welded design supports almost any media without the use of an internal seal. The sensors are designed to be used in harsh environments that see aggressive media.

DIFFERENTIATION

- Diagnostics: Beneficial in applications where the sensor functionality and the need to know internal or external failure modes is critical.
- Great customer value: Multiple configuration possibilities provide flexibility of use in the application with no up front NRE or tooling charges.
- Durable: Provides the tough environmental capabilities needed, including long-term stability, insulation resistance and dielectric strength, external freeze-thaw resistance and EMC performance.



Certified to
NSF/ANSI/CAN 61



FEATURES

- Rugged, stainless steel construction
- Ratiometric output: 0.5 Vdc to 4.5 Vdc
- Operating temperature: -40°C to 125°C
- Total Error Band up to ± 0.75 %FSS (-40°C to 125°C)
- Industry-leading accuracy: ± 0.15 %FSS BFSL
- Long term stability: ± 0.25 %FSS
- Radiated immunity: 100 V/m
- High burst pressure: 207 bar [3000 psi]
- Drinking water approval: NSF/ANSI/CAN 61
- CE, RoHS, REACH compliant
- Mis-wiring protection
- Over voltage protection ± 40 Vdc

TABLE 1. POTENTIAL APPLICATIONS

INDUSTRY	MEDIA
Industrial: pumps compressors process	water, hydraulic fluids compressed air food, beverage, oil, gas, steam
HVAC/R	refrigerants (butane, propane, ammonia, CO_2 , R134A, R407C, R410A, R448A/Solstice [®] N40, R32 and R1234ze, R1234yf, glycol + water
Transportation	gasoline, diesel fuel, engine oil, brake fluid, coolants, CNG
Medical	O_2 , N_2 , CO_2 , N_2O , air



PORTFOLIO

Honeywell offers a variety of heavy duty pressure transducers for potential use in industrial and transportation applications. To view the entire product portfolio, click here.

Honeywell

HEAVY DUTY, MEDIA-ISOLATED PRESSURE TRANSDUCERS, MIP SERIES

TABLE 2. ELECTRICAL SPECIFICATIONS (AT 25°C [77°F] AND UNDER UNLESS OTHERWISE NOTED.)

CHARACTERISTIC	PARAMETER
Supply voltage	5.0 ±0.25 Vdc
Nominal output transfer function (5 Vdc supply)	0.5 Vdc to 4.5 Vdc
Over/reverse voltage	±40 Vdc
Current consumption	6.5 ±1 mA
Short circuit protection	yes

TABLE 3. PERFORMANCE SPECIFICATIONS (AT 25°C [77°F] AND UNDER UNLESS OTHERWISE NOTED.)

CHARACTERISTIC	PARAMETER
Operating temperature range	-40°C to 125°C [-40°F to 257°F]
Total Error Band ¹ (-40°C to 125°C [-40°F to 257°F])	±1.0 %FSS (≤10 bar) ² ±0.75 %FSS (>10 bar)
Accuracy BFSL ³	±0.15 %FSS
Long term stability (1000 hr, 25°C [77°F])	±0.25 %FSS
Minimum output resolution	0.03 %FSS
Response time	1 ms (10% to 90% step change in pressure)
Startup time ⁴	<7ms
EMC rating (CE Conformity): surge immunity (all leads) electrostatic discharge radiated immunity fast transient burst immunity to conducted disturbances radiated emissions	±1 kV line to ground per IEC 61000-4-5 ±4 kV contact, ±8 kV air per IEC 61000-4-2 10 V/m (80 MHz to 1000 MHz) per IEC 61000-4-3 ±1 kV per IEC 61000-4-4 3 V (150 kHz to 80 MHz) per IEC 61000-4-6 40 dBµV (30 MHz to 230 MHz), 47 dBµV (230 MHz to 1000 MHz) per CISPR 11
Radiated immunity	100 V/m (200 MHz to 2 GHz) per ISO 11452-2
Insulation resistance	>100 MΩ at 1 kVdc (60 s)
Dielectric strength	<1 mA at 500 Vac (60 s)
Load resistance	≥2 kΩ (pull up or pull down)
Life	>10 million full scale pressure cycles

¹**Total Error Band:** The maximum deviation from the ideal transfer function over the entire compensated temperature and pressure range. Includes all errors due to offset, full scale span, pressure non-linearity, pressure hysteresis, pressure non-repeatability, thermal effect on offset, thermal effect on span, and thermal hysteresis (see Figure 4).

²**TEB:** ±1.5 % FSS above 100°C [212°F] for pressure ratings less than 4 bar [58 psi].

³**Accuracy:** The maximum deviation in output from a Best Fit Straight Line (BFSL) fitted to the output measured over the pressure range at 25°C [77°F]. Includes all errors due to pressure non-linearity, pressure hysteresis, and pressure non-repeatability.

⁴**Startup time:** The time needed to receive valid output after power up.

TABLE 4. ENVIRONMENTAL AND MECHANICAL SPECIFICATIONS

CHARACTERISTIC	PARAMETER
Shock	100 G per MIL-STD-202, Method 213, Cond. C (at 25°C [77°F])
Vibration	20 G sweep, 10 Hz to 2000 Hz (at 25°C [77°F])
Ingress protection	IP67
External freeze/thaw resistance	>6 cycles from -30°C to 50°C [-22°F to 122°F]
Wetted materials: port diaphragm external seal for ports	stainless steel 304L stainless steel 316L nitrile (-30°C to 100°C [-22°F to 212°F]) (other materials available)
Electrical connector material	PBT 30%GF (UL V-0)