

## MLH Series

### All Metal Pressure Sensors



#### DESCRIPTION

MLH Series pressure sensors combine Application Specific Integrated Circuit (ASIC) technology with a media isolated, metal diaphragm design. This digitally compensated sensor offers value and performance, making it the ideal pressure sensing solution for demanding applications. Fully temperature compensated, calibrated and amplified, the MLH is available in 50 psi to 8,000 psi pressure ranges.

MLH sensors deliver  $\pm 0.25\%$  full scale accuracy Best Fit Straight Line (BFSL) and as low as 2% total error over a temperature range of  $-40\text{ }^{\circ}\text{C}$  to  $125\text{ }^{\circ}\text{C}$  [ $-40\text{ }^{\circ}\text{F}$  to  $257\text{ }^{\circ}\text{F}$ ]. Industry standard connectors and process ports are offered for enhanced reliability and user flexibility.

#### FEATURES

- All metal wetted parts for use in wide variety of fluid applications
- No internal elastomeric seals mean no o-ring compatibility issues
- Amplified outputs eliminate cost of external amplifiers
- Input reverse voltage protection guards against mis-wiring
- Less than 2 ms response time provides accurate, high speed measurement
- Rated IP65 or better for protection from harsh environments

The MLH has six standard output options:

- A. 0.5 Vdc to 4.5 Vdc ratiometric from 5 Vdc excitation
- B. 4 mA to 20 mA
- C. 1 Vdc to 6 Vdc regulated
- D. 0.25 Vdc to 10.25 Vdc regulated
- E. 0.5 Vdc to 4.5 Vdc regulated
- G. 1 Vdc to 5 Vdc regulated

#### POTENTIAL APPLICATIONS

- Compressors
- Refrigeration and HVAC/R
- General industrial
- General hydraulics
- Multiple transportation applications including braking and alternate fuels
- Medical

# MLH Series

**Table 1. Pressure Range Specifications<sup>1</sup> (At 25 °C [77 °F] and at rated excitation unless otherwise specified.)**

psi												
Pressure	50	100	150	200	250	300	500	1000	2000	3000	5000	8000
Proof pressure	150	300	450	600	750	900	1500	2000	4000	6000	7500	12000
Burst pressure	500	1000	1500	2000	2500	3000	5000	10000	20000	30000	30000	30000
bar												
Pressure	6	10	16	25	40	60	100	160	250	350	500	550
Proof pressure	18	30	48	75	80	120	200	320	500	700	750	825
Burst pressure	60	100	160	250	400	600	1000	1600	2068	2068	2068	2068

**Note:**

1. Comparable metric units follow same proof and burst specifications.

**Table 2. Physical and Environmental Specifications**

Parameter	Characteristic
Material in contact with media	port: stainless steel 304L; diaphragm: Haynes 214 alloy
Housing material	black plastic – Amodel AS-4133 HS – PPA
Weight	57.0 g [2.0 oz] (typical for Delphi Metri-Pack 150 and 1/8 NPT port)
Shock	100 g peak [11 ms]
Vibration	MIL-STD-810C, Figure 514.2-5, Curve AK, Table 514.2-V, Random Vibration Test [overall g rms = 20.7 min.]
Compensated and operating temperature range: 0.5 Vdc to 4.5 Vdc ratiometric output all regulated and 4 mA to 20 mA outputs	-40 °C to 125 °C [-40 °F to 257 °F] -40 °C to 125 °C [-40 °F to 257 °F] See Figures 2 and 3 for operating area details.
Storage temperature range	-40 °C to 125 °C [-40 °F to 257 °F]
Approvals	UL Component Recognition for USA and Canada: File No. E258956

**Table 3. Electrical Specifications (At 25 °C [77 °F] and at rated excitation unless otherwise specified.)**

Parameter	Ratiometric (A)	Current (B)	Regulated (C)	Regulated (D)	Regulated (E)	Regulated (G)
Zero output	0.5 Vdc	4 mA	1 Vdc	0.25 Vdc	0.5 Vdc	1 Vdc
Full scale span (FSS)	4 Vdc (0.5 Vdc to 4.5 Vdc)	16 mA (4 mA to 20 mA)	5 Vdc (1 Vdc to 6 Vdc)	10 Vdc (0.25 Vdc to 10.25 Vdc)	4 Vdc (0.5 Vdc to 4.5 Vdc)	4 Vdc (1 Vdc to 5 Vdc)
Excitation	5 Vdc (6 Vdc max.) <sup>1</sup>	9.5 Vdc to 30 Vdc <sup>2</sup>	8 Vdc to 30 Vdc <sup>2</sup>	14 Vdc to 30 Vdc <sup>2</sup>	7 Vdc to 30 Vdc <sup>2</sup>	8 Vdc to 30 Vdc <sup>2</sup>
Supply current	4 mA typ. (8 mA max.)	N/A	5 mA typ. (17 mA max.)	5 mA typ. (17 mA max.)	5 mA typ. (17 mA max.)	5 mA typ. (17 mA max.)
Source (nominal)	1 mA	N/A	1 mA	1 mA	1 mA	1 mA
Sink (nominal)	1 mA at zero output	N/A	1 mA at zero output	1 mA at zero output	1 mA at zero output	1 mA at zero output
Supply rejection ratio	90 dB	90 dB	90 dB	90 dB	90 dB	90 dB
Output impedance	25 Ω max.	N/A	25 Ω max.	25 Ω max.	25 Ω max.	25 Ω max.

**Notes:**

1. Maintains ratiometricity at 5 ±0.25 Vdc excitation. Product can tolerate 6 Vdc excitation without damage.
2. See Figures 2 and 3 for more information regarding maximum excitation voltage vs. operating temperature.

# All Metal Pressure Sensors

**Table 4. Performance Specifications (At 25 °C [77 °F] and at rated excitation unless otherwise specified.)**

Parameter	Characteristic
Response time	<2 ms
Accuracy <sup>1</sup> : ≥100 psi <100 psi	±0.25% FSS ±0.50% FSS
Total error band <sup>2</sup> : Gage: <300 psig ≥300 psig Seal gage: ≥300 psig Seal gage <u>without</u> L, M, P termination: 100 psig to 299 psig (-40 °C to 85 °C [-40 °F to 185 °F]) 100 psig to 299 psig (>85 °C to 125 °C [>185 °F to 257 °F]) ≥300 psig (-40 °C to 125 °C [-40 °F to 257 °F]) Seal gage <u>with</u> L, M, P termination: 100 psig to 299 psig (-40 °C to 65 °C [-40 °F to 149 °F]) 100 psig to 299 psig (>65 °C to 125 °C [>149 °F to 257 °F]) ≥300 psig (-40 °C to 65 °C [-40 °F to 149 °F]) ≥300 psig (>65 °C to 125 °C [>149 °F to 257 °F])	±3% FSS ±2% FSS ±2% FSS ±3% FSS ±10% FSS ±2% FSS ±10% FSS ±15% FSS ±5% FSS ±15% FSS

**Notes:**

1. Includes pressure non-linearity (BFSL), pressure hysteresis and non-repeatability. Thermal errors are not included.
2. Includes zero error, span error, thermal effect on zero, thermal effect on span, thermal hysteresis, pressure-non-linearity, pressure hysteresis and non-repeatability.

**Figure 2. Operating and Temperature Compensated Area for All Regulated Output Options**



**Figure 3. Operating and Temperature Compensated Area for 4 mA to 20 mA Output**



**Figure 4. Mounting Dimensions (For reference only. mm/(in.))**

Not Intended for Customer use

Dimensions: 40 (1.58), 15 (0.60), 19 (0.73), 22 (0.85), 22.88 (0.90), 27 (1.06), 27 (1-1/16) HEX, 1/8-27 NPT\*

Pin and Wire Codes (Option B – Packard)		
Pin	Voltage	Current
a	+ excitation	+ excitation
b	output	- excitation
c	common	no connection

A variety of pressure ports and electrical termination connection options are available. Refer to the "How to Order" on previous page for possible combinations. Contact your Honeywell representative for details.

## Nomenclature and Order Guide<sup>1</sup>

<p style="text-align: center;"><b>MLH</b></p> <p><b>Series</b> _____</p>		<p style="text-align: right;"><b>Output Signal</b></p> <p>A = 0.5 Vdc to 4.5 Vdc ratiometric from 5 Vdc excitation          B = 4 mA to 20 mA          C = 1 Vdc to 6 Vdc regulated          D = 0.25 Vdc to 10.25 Vdc regulated          E = 0.5 Vdc to 4.5 Vdc regulated          G = 1 Vdc to 5 Vdc regulated</p>	<p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>Not all combinations are available. Minimum quantity orders apply. Additional pressure ranges, port styles and special calibration versions are available. Contact your local sales representative for assistance.</li> <li>Available with "A" output only.</li> <li>Supplied with O-ring.</li> <li>Sealed gage devices are not available for pressure ranges below 100 psi.</li> </ol>																																				
<p><b>Pressure Range</b></p> <table border="1"> <thead> <tr> <th>psi</th> <th>bar</th> </tr> </thead> <tbody> <tr><td>050</td><td>006</td></tr> <tr><td>100</td><td>01K</td></tr> <tr><td>150</td><td>02K</td></tr> <tr><td>200</td><td>03K</td></tr> <tr><td>250</td><td>05K</td></tr> <tr><td>300</td><td>08K</td></tr> <tr><td></td><td>010</td></tr> <tr><td></td><td>016</td></tr> <tr><td></td><td>025</td></tr> <tr><td></td><td>040</td></tr> <tr><td></td><td>050</td></tr> <tr><td></td><td>060</td></tr> <tr><td></td><td>100</td></tr> <tr><td></td><td>160</td></tr> <tr><td></td><td>250</td></tr> <tr><td></td><td>350</td></tr> <tr><td></td><td>500</td></tr> <tr><td></td><td>550</td></tr> </tbody> </table>	psi	bar		050	006	100	01K	150	02K	200	03K	250	05K	300	08K		010		016		025		040		050		060		100		160		250		350		500		550
psi	bar																																						
050	006																																						
100	01K																																						
150	02K																																						
200	03K																																						
250	05K																																						
300	08K																																						
	010																																						
	016																																						
	025																																						
	040																																						
	050																																						
	060																																						
	100																																						
	160																																						
	250																																						
	350																																						
	500																																						
	550																																						
<p><b>Unit</b></p> <p>P = psi          B = bar</p>																																							
<p><b>Measurement Type</b></p> <p>G = Gage (psi)          S = Sealed gage (psi)<sup>4</sup></p>																																							
<p><b>Electrical Termination</b></p> <p>B = Delphi Metri-Pack 150          C = Hirschmann (mates with G4W1F)          D = M12 x 1 (Brad Harrison micro)          G = DIN 43650-C, 8 mm-male          H = Amp Superseal 1.5<sup>2</sup>          L = Cable (1 m)          M = Cable (3 m)          P = Flying leads (20 AWG – 6 in)          T = Deutsch DTM04-3P (integral)</p> <p><i>(Mating connectors are not supplied.)</i></p>																																							

**⚠ WARNING**

**MISUSE OF DOCUMENTATION**

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

**WARRANTY/REMEDY**

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

**⚠ WARNING**

**PERSONAL INJURY**

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

**SALES AND SERVICE**

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

**E-mail:** [info.sc@honeywell.com](mailto:info.sc@honeywell.com)

**Internet:** [www.honeywell.com/sensing](http://www.honeywell.com/sensing)

**Phone and Fax:**

Asia Pacific	+65 6355-2828
	+65 6445-3033 Fax
Europe	+44 (0) 1698 481481
	+44 (0) 1698 481676 Fax
Latin America	+1-305-805-8188
	+1-305-883-8257 Fax
USA/Canada	+1-800-537-6945
	+1-815-235-6847
	+1-815-235-6545 Fax



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Industrial Pressure Sensors](#) category:*

*Click to view products by [Honeywell](#) manufacturer:*

Other Similar products are found below :

[75380-05](#) [76053-00000300-01](#) [76053-00000300-05](#) [76061-00000015-01](#) [76062-B00000350-01](#) [76063-00000350-05](#) [76083-05000500-01](#)  
[76311-05](#) [76577-00000070-01](#) [76584-M00000100-24](#) [77343-24.0H2-01](#) [77343-25.0H2-01](#) [78291-B00000060-01](#) [78303-B00000400-01](#)  
[78303-B00000400-05](#) [78316-B00000030-01](#) [78353-B00000020-05](#) [78665-00000014-05](#) [78677-B00000070-05](#) [78678-00000040-01](#) [79279-](#)  
[00000060-01](#) [79296-B00000350-01](#) [79322-00250035-01](#) [79614-30.0H2-14](#) [79670-00000090-15](#) [79700-00002750-01](#) [79917-B00000280-01](#)  
[80569-00700100-01](#) [81509081](#) [81739-B00000900-01](#) [81807-B00000020-01](#) [MLH010BST01A](#) [MLH010BST14A](#) [MLH025BGC13B](#)  
[MLH025BSCDJ1292](#) [MLH025BSCDJ1303](#) [MLH750PSCDJ1245](#) [82903-B00000020-01](#) [83250-02500600-05](#) [83271-00000040-04](#) [83278-](#)  
[B00000200-21](#) [83286-00000150-01](#) [83299-00000150-05](#) [83303-00000600-01](#) [83305-00001350-01](#) [83330-00000100-01](#) [83349-00001470-24](#)  
[83350-04.0HG-05](#) [83350-15.0H2-05](#) [83357-00000030-21](#)