

FEATURES

- 0...4 to 0...600 bar, 0...50 to 0...8000 psi, gage or sealed gage
- For corrosive media
- 0.5...4.5 V, 4...20 mA, 1...6 V, 1...5 V, 0...50 mV output
- Field interchangeable
- For harsh environments (IP65 or better)

SERVICE

Material in contact with media:
Stainless steel and Haynes 214 alloy
(all equivalent or better than 300 series SS)

Housing material:
Black plastic Valox; HR426 - PTB polyester



SPECIFICATIONS

Maximum ratings

Supply voltage (reverse polarity protection)

| | |
|---------|--------------------------|
| MLH...A | 4.75...5.25 V , max. 6 V |
| MLH...B | 9.5...30 V |
| MLH...C | 8...30 V |
| MLH...E | 7...30 V |
| MLH...F | 5 V, max. 6 V |
| MLH...G | 8...30 V |

Maximum load current (MLH...A, C, E, G)

| | |
|--------|--------|
| Source | 1.0 mA |
| Sink | 1.0 mA |

Temperature limits

| | |
|------------------------------------|--------------|
| Compensated, operating and storage | -40 to 125°C |
|------------------------------------|--------------|

Vibration

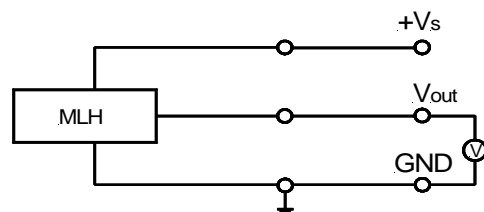
20.7 g_{RMS}

Mechanical shock

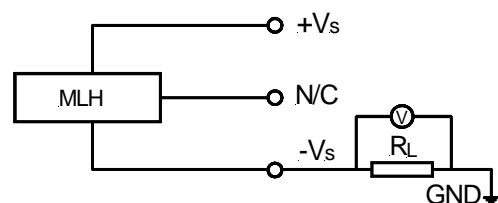
50 g (5 ms)
100 g (11 ms)

ELECTRICAL CONNECTION

Voltage output



Current output



PRESSURE SENSOR CHARACTERISTICS

| Part no. | Pressure range | Proof pressure ¹ | Burst pressure ² |
|------------|----------------|-----------------------------|-----------------------------|
| MLH004B... | 0...4 bar | 12 bar | 40 bar |
| MLH006B... | 0...6 bar | 18 bar | 60 bar |
| MLH010B... | 0...10 bar | 30 bar | 100 bar |
| MLH016B... | 0...16 bar | 48 bar | 160 bar |
| MLH025B... | 0...25 bar | 75 bar | 250 bar |
| MLH040B... | 0...40 bar | 80 bar | 400 bar |
| MLH060B... | 0...60 bar | 120 bar | 600 bar |
| MLH100B... | 0...100 bar | 200 bar | 1000 bar |
| MLH160B... | 0...160 bar | 320 bar | 1600 bar |
| MLH250B... | 0...250 bar | 500 bar | 2068 bar |
| MLH350B... | 0...350 bar | 700 bar | 2068 bar |
| MLH500B... | 0...500 bar | 1000 bar | 2068 bar |
| MLH600B... | 0...600 bar | 1100 bar | 2068 bar |
| MLH050P... | 0...50 psi | 150 psi | 500 psi |
| MLH100P... | 0...100 psi | 300 psi | 1000 psi |
| MLH150P... | 0...150 psi | 450 psi | 1500 psi |
| MLH200P... | 0...200 psi | 600 psi | 2000 psi |
| MLH250P... | 0...250 psi | 750 psi | 2500 psi |
| MLH300P... | 0...300 psi | 900 psi | 3000 psi |
| MLH500P... | 0...500 psi | 1500 psi | 5000 psi |
| MLH01KP... | 0...1000 psi | 2000 psi | 10000 psi |
| MLH02KP... | 0...2000 psi | 4000 psi | 20000 psi |
| MLH03KP... | 0...3000 psi | 6000 psi | 30000 psi |
| MLH05KP... | 0...5000 psi | 10000 psi | 30000 psi |
| MLH08KP... | 0...8000 psi | 16000 psi | 30000 psi |

ELECTROMAGNETIC CAPABILITY⁶

| | Test conditions | Criterion |
|--|---|-----------|
| Radiated, radio frequency electromagnetic field immunity (RFI) | EN61000-4-3: 0.01 to 800 MHz, 200 V/m 800 to 1000 MHz, 150 V/m 80 % AMC (1 kHz) | A |
| Electrical fast transient / burst immunity (EFT) | EN61000-4-4: Grade 3, ± 2 kV | A |
| Electrostatic discharge immunity test (ESD) | EN61000-4-2: Grade 2, ± 4 kV | A |
| Immunity to conducted disturbances induced by radio-frequency fields | EN61000-4-6: Grade 3, 0.15 to 80 MHz 10 V, 80 % AMC (1 kHz) | A |

Notes:

- ¹ Proof pressure is the maximum pressure which may be applied without causing durable shifts of the electrical parameters of the sensing element.
- ² Burst pressure is the maximum pressure which may be applied without causing damage to the sensing element or leaks from the housing.
- ³ Full scale span is the algebraic difference between the output voltage at full-scale pressure and the output at zero pressure.
- ⁴ Non-linearity refers to the **Best Straight Line** fit measured for offset pressure, full-scale pressure and $\frac{1}{2}$ full-scale pressure.
- ⁵ Total accuracy includes non-linearity, hysteresis, repeatability, zero offset and span error, thermal effect on zero offset and span.
- ⁶ Tests are in accordance with EN 61000-6-2, April 1999.

PERFORMANCE CHARACTERISTICS

MLH...A 0.5...4.5 V ratiometric output version ($V_s = 4.75...5.25$ V, $T_A = 25^\circ\text{C}$)

| Characteristics | | Min. | Typ. | Max. | Unit |
|--|--------------------------------|------|-------|------|------|
| Zero pressure offset | | | 0.5 | | V |
| Full scale span ³ | | | 4.0 | | |
| Non-linearity, hysteresis and repeatability ⁴ | MLH050P..., MLH00...B... | | ±0.5 | | %FSO |
| | all others | | ±0.25 | | |
| Total accuracy ⁵ | MLH050P..., 1...P..., 2...P... | | | ±3.0 | |
| | MLH00...B..., 01...B... | | | ±3.0 | |
| | all others | | | ±2.0 | |
| Response time | | | | 2.0 | ms |
| Supply current | | | 4 | 8 | mA |
| Power supply rejection | | | 90 | | dB |
| Output impedance | | | | 25 | Ω |

MLH...B 4...20 mA output version ($V_s = 9.5...30$ V, $T_A = 25^\circ\text{C}$)

| Characteristics | | Min. | Typ. | Max. | Unit |
|--|--------------------------------|------|-------|------|------|
| Zero pressure offset | | | 4 | | mA |
| Full scale span ³ | | | 16 | | |
| Non-linearity, hysteresis and repeatability ⁴ | MLH050P..., MLH00...B... | | ±0.5 | | %FSO |
| | all others | | ±0.25 | | |
| Total accuracy ⁵ | MLH050P..., 1...P..., 2...P... | | | ±3.0 | |
| | MLH00...B..., 01...B... | | | ±3.0 | |
| | all others | | | ±2.0 | |
| Response time | | | | 2.0 | ms |
| Power supply rejection | | | 90 | | dB |

Load limitation for MLH...B:

$$R_{\max} = \frac{V_s - 9.5\text{V}}{0.02\text{A}}$$

PERFORMANCE CHARACTERISTICS

MLH...C 1...6 V regulated output version ($V_S = 8...30\text{ V}$, $T_A = 25^\circ\text{C}$)

| Characteristics | | Min. | Typ. | Max. | Unit |
|--|--------------------------------|------|-------|------|------|
| Zero pressure offset | | | 1.0 | | V |
| Full scale span ³ | | | 5.0 | | |
| Non-linearity, hysteresis and repeatability ⁴ | MLH050P..., MLH00...B... | | ±0.5 | | %FSO |
| | all others | | ±0.25 | | |
| Total accuracy ⁵ | MLH050P..., 1...P..., 2...P... | | | ±3.0 | |
| | MLH00...B..., 01...B... | | | ±3.0 | |
| | all others | | | ±2.0 | |
| Response time | | | | 2.0 | ms |
| Supply current | | | 5 | 17 | mA |
| Power supply rejection | | | 90 | | dB |
| Output impedance | | | | 25 | Ω |

MLH...E 0.5...4.5 V regulated output version ($V_S = 7...30\text{ V}$, $T_A = 25^\circ\text{C}$)

| Characteristics | | Min. | Typ. | Max. | Unit |
|--|--------------------------------|------|-------|------|------|
| Zero pressure offset | | | 0.5 | | V |
| Full scale span ³ | | | 4.0 | | |
| Non-linearity, hysteresis and repeatability ⁴ | MLH050P..., MLH00...B... | | ±0.5 | | %FSO |
| | all others | | ±0.25 | | |
| Total accuracy ⁵ | MLH050P..., 1...P..., 2...P... | | | ±3.0 | |
| | MLH00...B..., 01...B... | | | ±3.0 | |
| | all others | | | ±2.0 | |
| Response time | | | | 2.0 | ms |
| Supply current | | | 5 | 17 | mA |
| Power supply rejection | | | 90 | | dB |
| Output impedance | | | | 25 | Ω |

PERFORMANCE CHARACTERISTICS

MLH...F 0...50 mV output version ($V_S = 5\text{ V}$, $T_A = 25^\circ\text{C}$)

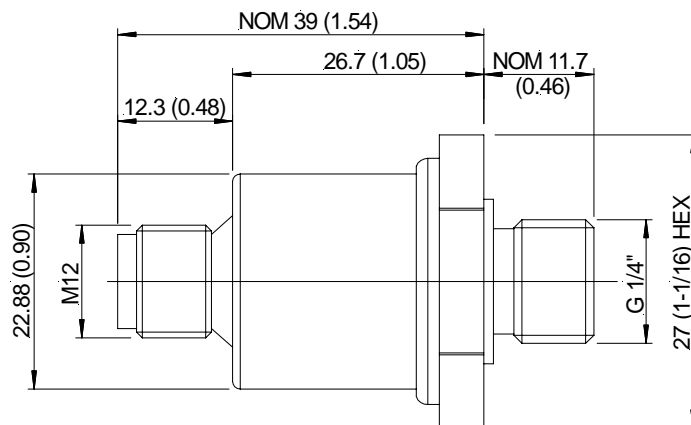
| Characteristics | | Min. | Typ. | Max. | Unit |
|--|--------------------------------|------|-------|------|------|
| Zero pressure offset | | -2.5 | 0 | 2.5 | mV |
| Full scale span ³ | | | 50 | | |
| Non-linearity, hysteresis and repeatability ⁴ | MLH050P..., MLH00...B... | | ±0.5 | | %FSO |
| | all others | | ±0.25 | | |
| Total accuracy ⁵ | MLH050P..., 1...P..., 2...P... | | | ±3.0 | |
| | MLH00...B..., 01...B... | | | ±3.0 | |
| | all others | | | ±2.0 | |
| Response time | | | | 2.0 | ms |
| Supply current | | | 8 | 17 | mA |
| Output impedance | | 2000 | | | Ω |

MLH...G 1...5 V regulated output version ($V_S = 8\text{...}30\text{ V}$, $T_A = 25^\circ\text{C}$)

| Characteristics | | Min. | Typ. | Max. | Unit |
|--|--------------------------------|------|-------|------|------|
| Zero pressure offset | | | 1.0 | | V |
| Full scale span ³ | | | 4.0 | | |
| Non-linearity, hysteresis and repeatability ⁴ | MLH050P..., MLH00...B... | | ±0.5 | | %FSO |
| | all others | | ±0.25 | | |
| Total accuracy ⁵ | MLH050P..., 1...P..., 2...P... | | | ±3.0 | |
| | MLH00...B..., 01...B... | | | ±3.0 | |
| | all others | | | ±2.0 | |
| Response time | | | | 2.0 | ms |
| Supply current | | | 5 | 17 | mA |
| Power supply rejection | | | 90 | | dB |
| Output impedance | | | | 25 | Ω |

OUTLINE DRAWING

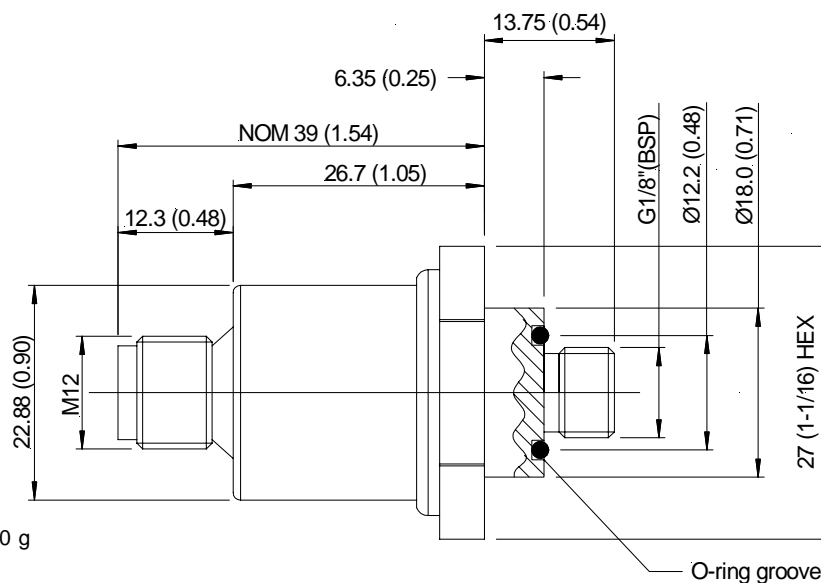
MLH...D14... (Electrical termination: **M12 x 1**, pressure connection: **G 1/4"-19**)



mass: approx. 60 g

dimensions in mm (inches)

MLH...D15... (Electrical termination: **M12 x 1**, pressure connection: **G 1/8"**)



mass: approx. 60 g

dimensions in mm (inches)

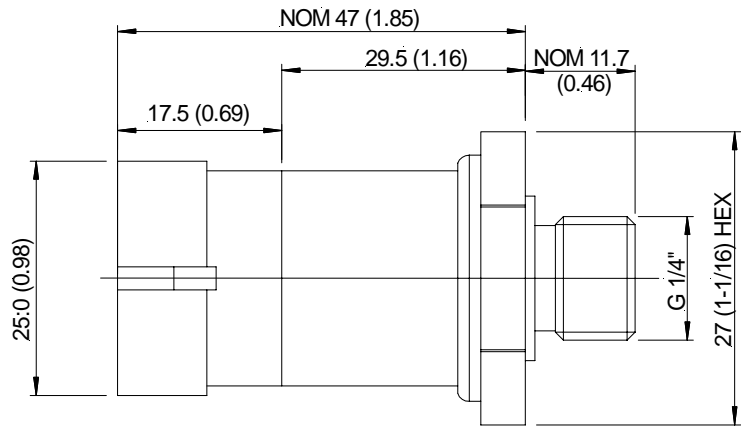
O-ring groove

O-Ring Ordering Information for MLH...15...

| Order No. | Material | Dimension |
|-----------|----------|----------------|
| ZA004026 | Viton | Ø 11.80 x 1.80 |
| ZA004022 | NBR | Ø 11.89 x 1.78 |
| ZA004076 | EPDM | Ø 11.89 x 1.78 |

OUTLINE DRAWING (cont.)

MLH...H14... (Electrical termination: **Amp Superseal 1.5**, pressure connection: **G 1/4"-19**)


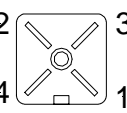
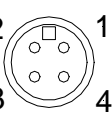
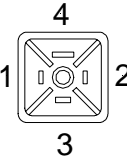
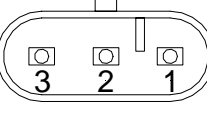
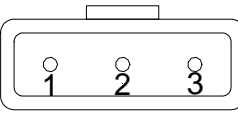


mass: approx. 60 g

dimensions in mm (inches)

Note: A variety of pressure ports and electrical termination options are available.
Please refer to the "Ordering Information".

ELECTRICAL CONNECTION (cont.)

| | | |
|--|---|---|
| <p>Packard MetriPak (MLH...B...)</p>  <p>Mating connector kit: Order No. ZP000125</p> | <p>Hirschman (MLH...C...)</p>  <p>Mating connector kit: Order No. ZP004065</p> | <p>M12 x 1 (MLH...D...)</p>  <p>Mating connector kit: Order No. ZP000112</p> |
| <p>DIN 43650-C (MLH...G...)</p>  <p>Mating connector kit: Order No. ZP004111</p> | <p>Amp Superseal 1.5 (MLH...H...)</p>  | <p>Deutsch DTM04-3P (MLH...T...)</p>  |

Note: Mating connector kits are not included in delivery! Please use order no.

ELECTRICAL CONNECTION (cont.)

Voltage output devices

| Electrical Termination | Pin Assignments | | | |
|------------------------|-----------------|------------|-----------|-------|
| | A | B | C | D |
| | 1 | 2 | 3 | 4 |
| Packard MetriPak | +Vs | Vout | GND | - |
| Hirschman | N / C | Vout | GND | +Vs |
| M12 x 1 | +Vs | GND | Vout | N / C |
| DIN 43650-C | +Vs | Vout | GND | N / C |
| Amp Superseal 1.5 | GND | Vout | +Vs | - |
| Cable (1 meter) | +Vs (RED) | Vout (WHT) | GND (BLK) | - |
| Deutsch DTM04-3P | +Vs | GND | Vout | - |

Current output devices

| Electrical Termination | Pin Assignments | | | |
|------------------------|-----------------|-----------|-------------|-------|
| | A | B | C | D |
| | 1 | 2 | 3 | 4 |
| Packard MetriPak | +Vs | -Vs | N / C | - |
| Hirschman | N / C | N / C | -Vs | +Vs |
| M12 x 1 | +Vs | -Vs | N / C | N / C |
| DIN 43650-C | +Vs | -Vs | N / C | N / C |
| Amp Superseal 1.5 | N / C | -Vs | +Vs | - |
| Cable (1 meter) | +Vs (RED) | -Vs (WHT) | N / C (BLK) | - |
| Deutsch DTM04-3P | +Vs | -Vs | N / C | - |

ORDERING INFORMATION

| MLH | | 100 | P | G | B | 01 | A |
|--|------------------------|-----|---|---|---|----|--|
| Pressure range | | | | | | | Output |
| PSI | BAR | | | | | | A = 0.5...4.5 V ratiometric |
| 050 500 | 004 060 | | | | | | B = 4...20 mA |
| 100 01K | 006 100 | | | | | | C = 1...6 V regulated |
| 150 02K | 010 160 | | | | | | E = 0.5...4.5 V regulated |
| 200 03K | 016 250 | | | | | | F = 0...50 mV |
| 250 05K | 025 350 | | | | | | G = 1...5 V regulated |
| 300 08K | 040 500 | | | | | | |
| | 600 | | | | | | |
| Unit | | | | | | | Pressure connection |
| P = psi | K = Kg/cm ² | | | | | | 01 = 1/4"-18 NPT |
| B = bar | M = MPa | | | | | | 02 = M12 x 1.5 |
| | | | | | | | 03 = M14 x 1.5 |
| | | | | | | | 06 = 1/8"-27 NPT |
| | | | | | | | 08 = M10 x 1 |
| | | | | | | | 09 = 7/16"-20 UNF (1/4" SAE) female Schrader opener |
| | | | | | | | 10 = 7/16"-20 UNF |
| | | | | | | | 14 = G 1/4"-19 (DIN 3852-2) |
| | | | | | | | 15 = G 1/8" (BSP) (O-ring groove) |
| | | | | | | | 16 = M16 x 1.5 |
| | | | | | | | 17 = G 1/4" (O-ring groove) |
| | | | | | | | 18 = G 1/8" (DIN 3852-2) |
| | | | | | | | <u>On request:</u> |
| | | | | | | | 04 = 3/8"-24 UNF |
| | | | | | | | 05 = M18 x 1.5 |
| | | | | | | | 07 = 1/2"-20 UNF |
| | | | | | | | 11 = 1/2" NPT |
| | | | | | | | 12 = 9/16"-18 UNF |
| | | | | | | | 13 = PT 1/4" tapered thread |
| Reference | | | | | | | |
| S = Sealed gage (psiS) > 250 psi / 16 bar | | | | | | | |
| G = Gage (psiG) < 300 psi / 25 bar | | | | | | | |
| Electrical termination | | | | | | | |
| B = Packard MetriPak 150 (IP65) | | | | | | | |
| C = Hirschman (mates with G4W1F) (IP65) | | | | | | | |
| D = M12 x 1 (Brad Harrison micro) (IP67) | | | | | | | |
| G = DIN 43650-C (IP65) | | | | | | | |
| H = Amp Superseal 1.5 (IP67) | | | | | | | |
| L = Cable (1 meter) (IP69K) | | | | | | | |
| M = Cable (3 meter) (IP69K) | | | | | | | |
| P = Flying leads (1 meter) (IP65) | | | | | | | |
| T = Deutsch DTM04-3P (integral) (IP67) (IP69K) | | | | | | | |
| <u>On request:</u> | | | | | | | |
| F = DIN 72585 (Cannon APD type) (IP69K) | | | | | | | |
| R = Deutsch DT06-W3S (on 15" cable) (IP69K) | | | | | | | |
| S = Deutsch DT06-W4S (on 15" cable) (IP69K) | | | | | | | |

Note:

A wide selection of different MLH part numbers are readily available from stock at Sensortektechnics. The specification options of these part numbers are highlighted in grey.

Minimum order quantity may apply for some MLH part numbers.

Please contact your nearest Sensortektechnics sales office for further information.

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