

Micro Power Inductive Proximity Sensor **LPS Series 3-Wire** **4 μ A Operating Current + 2.5V DC Industry's Lowest**

| Sensor Products Quick Selection Guide | | | |
|---------------------------------------|---|-----------------|--|
| Technology: | Inductive. Responsive to metal proximity. | Output Options: | Normally Closed (NC) or Normally Open (NO) |
| Output Type: | NPN | Connection: | Cable leads. 3-Wire |
| Sensing Distance: | 4 mm | Housing - Body: | Metal |
| Supply Voltage: | +2.5V to +27V | Package / Case | Cylinder, threaded, M18 |
| Supply Current: | 6 μ A max. | Interface: | None |
| Shielding | Shielded | Indicator: | None |

Description:

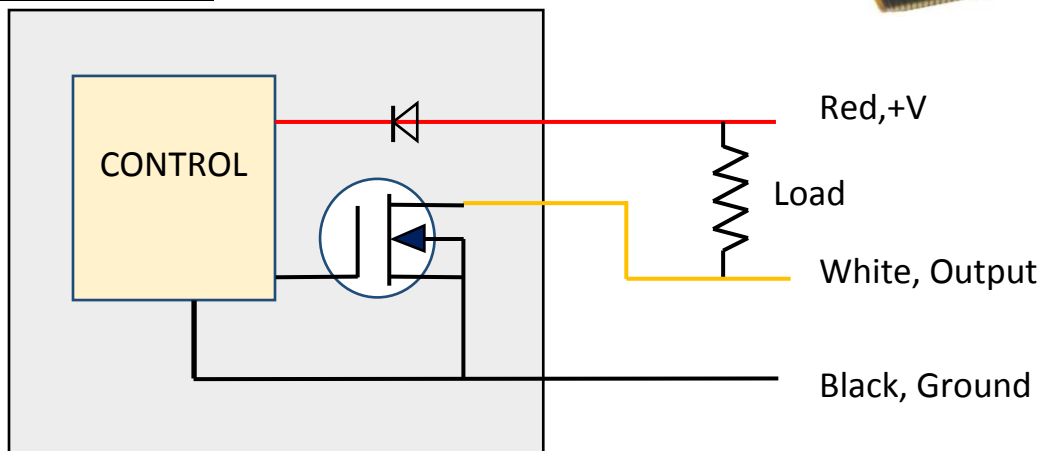
LPS(Inductive Proximity Sensor) series operates at the industry's lowest operating current (4 μ A) level and lowest power supply voltage levels (+2.5V to +27V), making it ideal for portable/battery operated applications. The low minimum operating voltage of +2.5V also makes this sensor directly compatible with most types of computers for portable robotics, motor controls, and automation. Utilizing CMOS IC sensor technology, this sensor provides excellent results, even with difficult-to-detect objects, e.g. small or thin parts, or bright metals. Normally Closed (NC) or Normally Open (NO) sensor output functions are available utilizing NMOS switching.

Features:

- Ultra-low power supply current consumption: 6 μ A max.
- Low power supply voltage: +2.5V to +27V
- Fast start up time: 20 μ sec.
- Fast response time: 200 μ sec.
- Patent No. USA 9,140,579



Wiring Diagram:



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Specifications: Ta= +25°C unless otherwise specified

| | | |
|---|--|---------------------------|
| Package / Case | Plastic Cylinder. Threaded. M18. | |
| Target | 24 x 24 x 1 mm Aluminum. See correction factor table below for other metals. Ferrous metal: The sensing distance decreases with ferrous or high permittivity metal. | |
| Correction Factors <small>Note 1</small> | Metal | Correction Factors |
| | Aluminum | 1.00 |
| | Copper | 0.89 |
| | Brass | 0.88 |
| | Stainless steel | 0.63 |
| | Iron | 0.40 |
| Power supply voltage (Operating Voltage Range) | +2.5 ~ +27 V D.C. | |
| Power Supply Current Consumption | 6 μ A max. | |
| Output Types <small>note 2</small> | NC (Normally Closed) or NO (Normally Open) | |
| Shielding | Shielded | |
| Output Voltage | 27V max. | |
| Output Leakage Current | 2 μ A max. | |
| Output Load Current | 250 mA max. | |
| Output Voltage Drop | 0.4 V max. | |
| Sensing Distance <small>note 3</small> | 4 mm \pm 10% at +25°C | |
| Response Frequency | 5 KHz (200 μ sec.) typical | |
| Start-up Time | 20 μ sec. typical | |
| Hysteresis | None | |
| Protection Circuit | Power source circuit reverse polarity protection | |
| Ambient Humidity | Operating: 35% to 95%, Storage: 35% to 95% | |
| Temperature Influence | \pm 5% typical over -25°C to +70°C Referenced to sensing distance at +23°C | |
| Supply Voltage Influence | \pm 1% max. of sensing distance in rated voltage range | |
| Operating Temperature Range | -25°C to +70°C | |
| Storage Temperature | -40°C to 85°C (with no icing or condensation) | |

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| | |
|---------------------------|---|
| Range | |
| Ingress Protection | IP65 |
| Termination Style | Pre-wired. 2 m cable leads. 3 conductors. 26 AWG. Conductor strand: 7/34. |
| Indicator | No indicator |

Note 1 Correction Factors -A percentage of the rated operating distance (AI) that represents the operating distance for targets constructed from materials other than Aluminum. Deviations maybe due to variations in the oscillator frequency, alloy compositions, purity & target geometry.

Note 2 Normally Closed (“NC”): The output is **OFF** when the target is detected by the sensor.
Normally Open (“NO”): The output is **ON** when the target is detected by the sensor.

Note 3 Sensing Distance: A distance at which the target approaching the sensing face, along the reference axis, causes the output signal to change.

Absolute Maximum Ratings

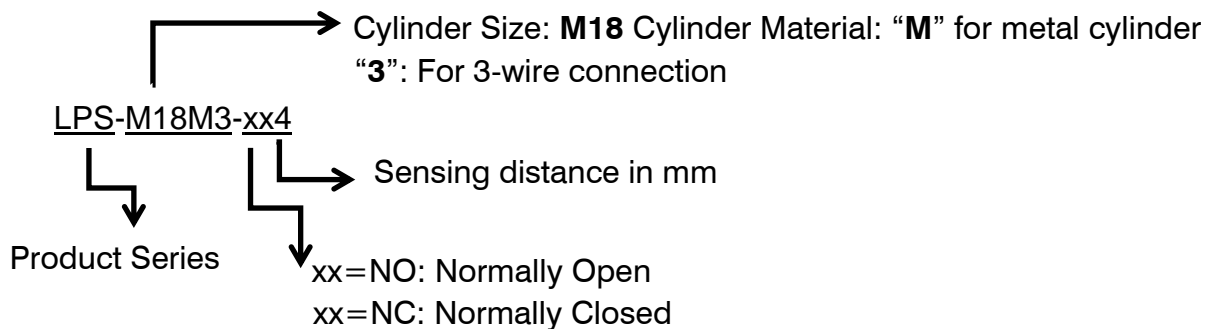
| | |
|---|---------------------------|
| Power Supply Voltage V_{DD} | 0 V min.; +30 V max. D.C. |
| Output Voltage | 0 V min.; +30 V max. |
| Output Current | 0.5 A max. |
| Temperature | -40°C min.; +85°C max. |

How to Order:

Part Number examples:

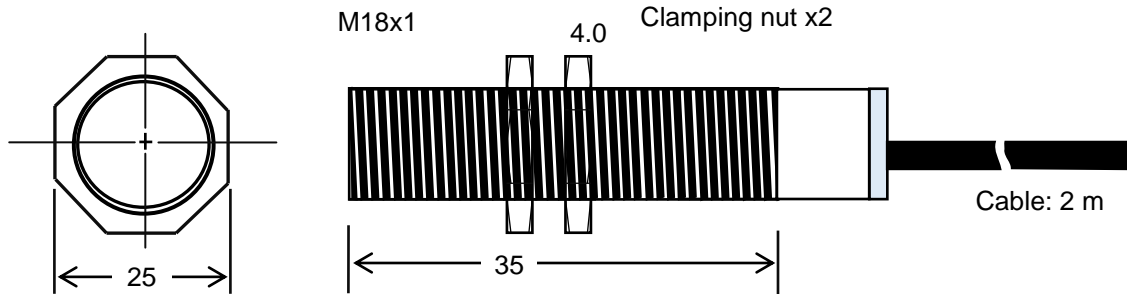
Normally Open:LPS-M18M3-NO4

Normally Closed:LPS-M18M3-NC4



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Outline Dimensions (mm)



Warranty

Micro Oscillator, Inc. does not assume any liability arising out of the application or use of any product or circuit described herein. Our products are not authorized for use as components in devices used for life support or other critical application where failure can cause death or bodily injury. In the case of this product being defective in manufacturing, labeling, and packaging or shipping, it will be replaced with a satisfactory unit or the purchase price refunded. This is the exclusive remedy, even if the defect or damage is caused by negligence or other fault.