

# Piezoresistive Pressure Sensor

Model: TPH500 (507; 508)

# Tosilon Automation



- Features**
- Advanced MEMS Technology
  - Rear Flush Pressure-Bearing
  - No Luminal Encapsulation
  - High Natural Frequency:
  - Compacted Design
  - Gauge Pressure Type & Sealed Gauge Pressure Type

Model TPH500 is a rugged, piezoresistive pressure transducer for high pressures which is available in ranges from 0 to 100 MPa.

Tosilon pressure transducers adopt four-arm strain gage bridge diffused into a sculptured silicon diaphragm for maximum sensitivity and wideband frequency response. Self-contained hybrid temperature compensation provides stable performance over the wide temperature range of -40°C ~125°C. The transducers also advanced in excellent linearity, high shock resistance, and high stability during temperature transients.

TPH500 is widely used for high pressure applications such as studies of structural loading by shock waves resulting from explosive blasts, pulsations in hydraulic and combustion systems.

## TPH507 Medium-Low Pressure Sensor

Medium Measured: Liquids or Gas that are compatible with silicon, glass, Stainless Steel, epoxy glue.

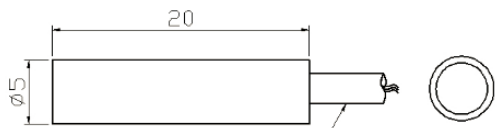
Model	Standard Measuring Range	Natural Frequency
TPH507GS	2 / 4 / 6 MPa	280KHz~400KHz
TPH507GM	2 / 4 / 6 / 8 / 10 / 15 / 25 MPa	280KHz~400KHz
TPH507GL	0.2 / 0.5 / 1 / 2 MPa	60KHz~240KHz

Rise Time: Microsecond Class

### Performance Index

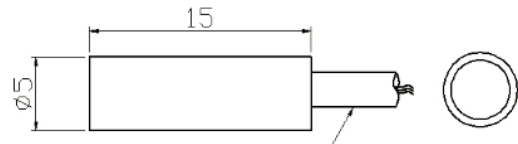
Non-linear Precision	0.2% F.S	Min.	30mV
Hysteresis Repeatability	0.1% F.S	<b>Full Scale Output:</b>	Normal 80mV
Zero Temperature Coefficient	2x10 <sup>-4</sup> F.S / Deg. C; 5x10 <sup>-4</sup> F.S / Deg. C	Max.	130mV
Sensitivity Temperature Coefficient	2x10 <sup>-4</sup> F.S / Deg. C; 5x10 <sup>-4</sup> F.S / Deg. C	Min.	4kΩ
Zero Time-Drift (<mV/8h)	0.1; 0.2	<b>Input / Output Impedance:</b>	Normal 5kΩ
Zero Position Output	0±5mV	Max.	6kΩ
<b>Storage Temp. (Deg. C)</b>	-55~130	<b>Working Temp. (Deg. C)</b>	-40~125 (Customized: 2000 Deg. C/20ms)
<b>Compensation Temp. (Deg. C)</b>	10~60; as required	<b>Overload</b>	2x F.S
<b>Output (Optional)</b>	0~5V		0~20kHz, 0~100kHz, 0~200kHz
	4~20mA		0~1kHz
<b>Input Working Current</b>	Constant-Current Source		1.2mA / 1.5mA
	Constant Voltage Source		12V DC
<b>Acceleration Sensitivity</b>	TPH507GS/GM		<0.0005%FS/g
	TPH507507GL		<0.001%FS/g

**Outline Structure**



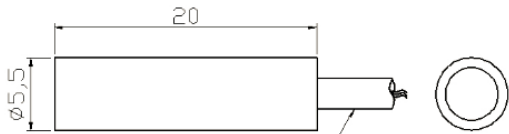
Ø3 Cable (Contain Airway Tube)

TPH 507GSL



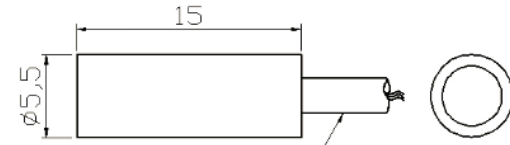
Ø3 Cable (Contain Airway Tube)

TPH 507GSM



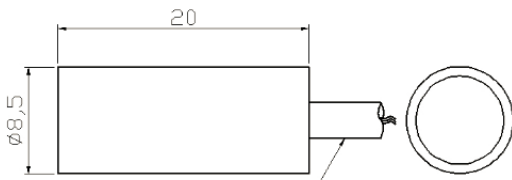
Ø3 Cable (Contain Airway Tube)

TPH 507GML



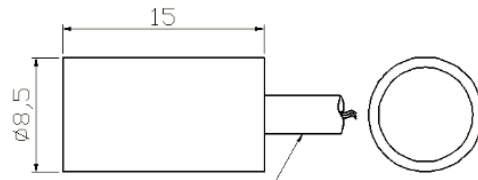
Ø3 Cable (Contain Airway Tube)

TPH 507GMM



Ø3 Cable (Contain Airway Tube)

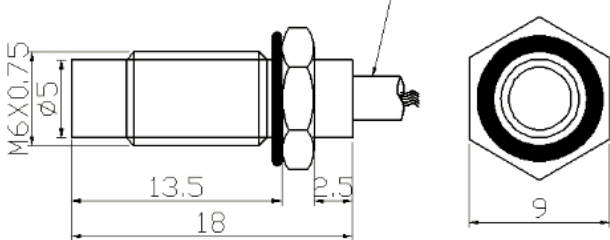
TPH 507GLL



Ø3 Cable (Contain Airway Tube)

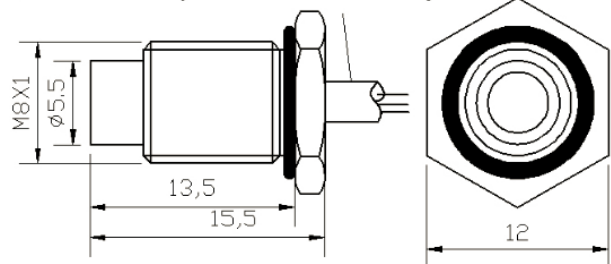
TPH 507GLM

Ø3 Cable (Contain Airway Tube)



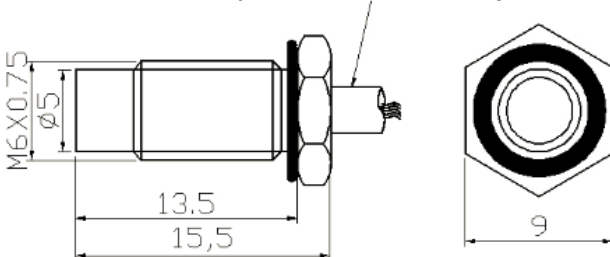
TPH 507GSL Threaded Type

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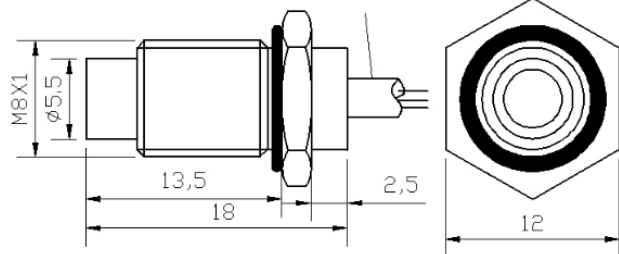
TPH 507GMM Threaded Type

Ø3 Cable (Contain Airway Tube)



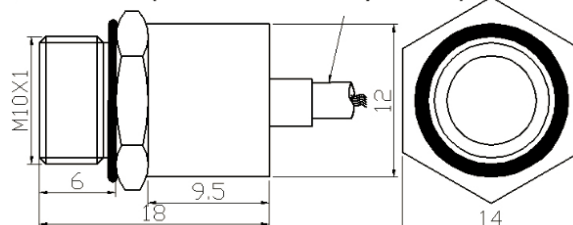
TPH 507GSM Threaded Type

Ø3 Cable (Contain Airway Tube)



TPH 507GML Threaded Type

Ø3 Cable (Contain Airway Tube)



TPH 507GLL Threaded Type

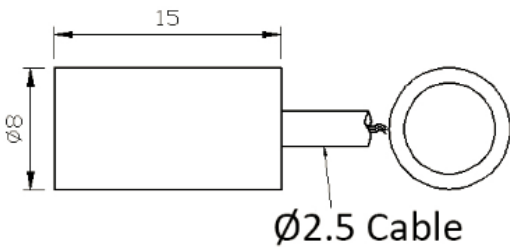
# TPH508 High Pressure Sensor

Medium Measured: Liquids or Gas that are compatible with silicon, glass, Stainless Steel, epoxy glue.

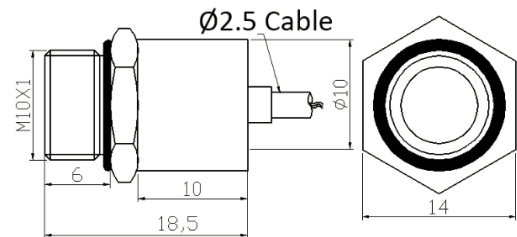
Measuring Range (MPa)	1	2	4	6	10	20	40	60
Natural Frequency (kHz)	180	240	320	250	320	450	600	800
Rise Time (μs)	1	1	0.5	0.5	0.5	0.3	0.3	0.2

## Performance Index

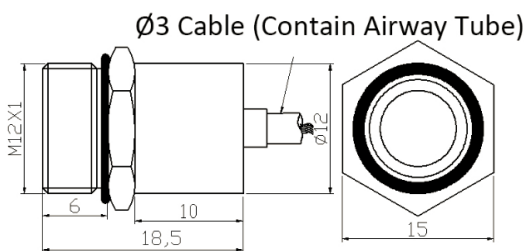
Non-linear Precision	0.2% F.S	Full Scale Output:	Min.	30mV
Hysteresis Repeatability	0.1% F.S		Normal	80mV
Zero Temperature Coefficient	2x10 <sup>-4</sup> F.S / Deg. C		Max.	130mV
Sensitivity Temperature Coefficient	2x10 <sup>-4</sup> F.S/Deg. C	Input / Output Impedance:	Min.	3kΩ
Zero Time-Drift (<mV/8h)	0.1		Normal	5kΩ
Zero Position Output	0±5mV		Max.	7kΩ
Nonlinearity	±0.2%~±1%	Working Tempt. (Deg. C)	-40~125 (Customized: 2000 Deg. C/20ms)	
Compensation Tempt. (Deg. C)	10~60; as required	Overload	3xRated Range (<10MPa); 2x Rated Range (>10MPa)	
Output (Optional)	0~5V		0~20kHz, 0~100kHz, 0~200kHz	
	4~20mA		0~1kHz	
Input Working Current	Constant-Current Source		1.2mA / 1.5mA	
	Constant Voltage Source		12V DC	
Acceleration Sensitivity	<0.0005%FS/g			



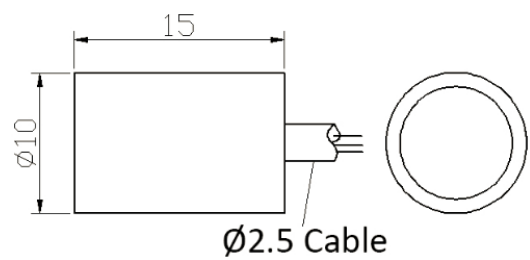
TPH 508GS



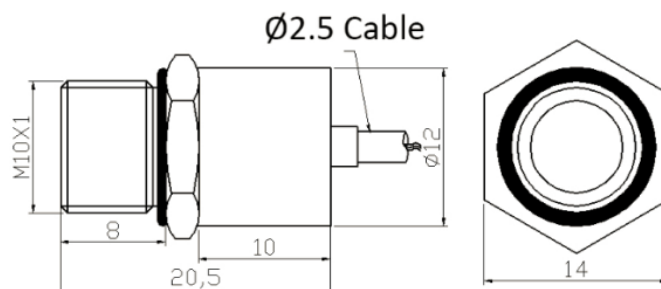
TPH 508GSS Threaded



TPH 508GL Threaded



TPH 508GL



TPH 508GSL Threaded