

# KM15 Pressure Transmitter

Liquid and/or Gas  
measurement interface  
with stainless diaphragm

## Overview

KM15 is a pressure transmitter using a "vapor deposition semiconductor strain gauge type sensor" which is widely used in various industrial applications. Since the pressure sensor is welded to the fitting, durability is excellent.  
(Only available for Lot production)

## Features

- Available over wide temperature ranges
- All-welded construction
- High EMI/RFI rating
- Applicable to a wide range of applications from low pressure to high pressure
- IP 65 Ingress rating



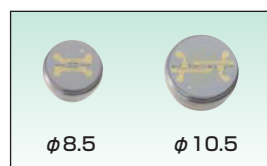
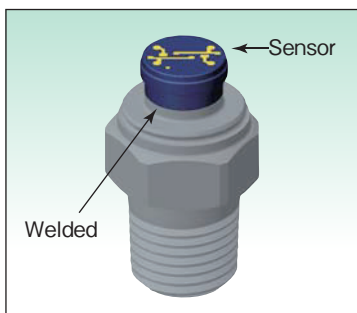
**RoHS**



(excluding high withstand voltage)

## Features of sensor

Since the sensor is electron beam welded to stainless steel fitting, it can be used for a variety of applications in condition include oil, air, and water measurement. Excellent in shock and vibration resistance under condition where good proof pressure and durability are necessary.



## Other KM series

	KM31	KM17
External appearance		
Quantities	Small lot	Large lot
Total error band	±1.0%F.S. (-20 to 85°C)	±2.0%F.S. (-40 to 125°C)
Output	<ul style="list-style-type: none"> <li>· 0.5 to 4.5V DC Ratio metric</li> <li>· 0 to 5V DC</li> <li>· 1 to 5V DC</li> <li>· 1 to 6V DC</li> <li>· 1 to 10V DC</li> <li>· 4 to 20mA</li> </ul>	<ul style="list-style-type: none"> <li>· 0.5 to 4.5V DC Ratio metric</li> <li>· 0.5 to 4.5V DC</li> <li>· 0 to 5V DC</li> <li>· 1 to 5V DC</li> <li>· 4 to 20mA</li> </ul>
Waterproof property	IP65	IP67

## Specifications

	Pressure range*1 (MPa)	Accuracy*2	Scope of specifications		Allowable maximum pressure
			Direct connector type Lead type (Sealed pressure)	Shielded cable type (Gauge pressure)	
Measuring range	-0.1 to 0	Room temperature: ±2.0%F.S. at constant temperature (23±2°C) Total Error Band: ±3.5%F.S. within compensated temp. range	—	○	200% of pressure range
	-0.1 to 0.1		—	○	
	0 to 0.1		—	○	
	0 to 0.2		—	○	
	0 to 0.3		—	○	
	0 to 0.5		—	○	
	-0.1 to 1	Room temperature: ±1.0%F.S. at constant temperature (23±2°C) Total Error Band: ±3.0%F.S. within compensated temp. range	○	○	
	-0.1 to 2		○	○	
	0 to 1		○	○	
	0 to 2		○	○	
	0 to 3.5		○	○	
	0 to 5		○	○	
	0 to 10		○	○	
	0 to 20		○	○	
	0 to 25		○	○	
	0 to 35		○	○	
	0 to 50		○	○	
	Output signal		Output range	Supply voltage	
0.5 to 4.5V DC Ratio metric		5.0±0.5V DC	16V DC maximum		
1 to 5V DC		10 to 30V DC	36V DC maximum		
Environmental specifications	Withstand voltage	Standard: 150V AC (1 minutes between case and all terminals tied) Option: 500V AC (1 minutes between case and all terminals tied) *When no through capacitor (Pressure range: 1MPa and over)			
	Insulation resistance	Greater than 100MΩ (50V DC between case and all terminals tied)			
	Response time	1 ms and under			
	Circuit protection	Reverse polarity protected. (Power supply +/-)			
		Pressure range 3.5 MPa and below	Pressure range 4 MPa and above		
	Compensated temp. range	-20 to 70°C	-30 to 120°C (Except cable type -30 to 105°C)		
	Operating temp.range	-20 to 70°C	-40 to 120°C (Except cable type -30 to 105°C)		
	Storage temp.range	-30 to 80°C	-40 to 140°C (Except cable type -40 to 120°C)		
	Shock resistance	Standard: 500m/s <sup>2</sup> (11ms or less, X, Y, Z 3 times for each at room temp.) Option: 1000m/s <sup>2</sup> (6ms or less, X, Y, Z 3 times for each at room temp.)			
	Vibration proof	Standard: 150m/s <sup>2</sup> (20 to 400Hz, X: 4h, Y: 2h, Z: 2h at room temp.) Option: 300m/s <sup>2</sup> (20 to 1000Hz, X: 4h, Y: 2h, Z: 2h at room temp.)			
Durability	More than 10,000,000 times. (10 to 100%F.S.)				
Protection rating	IP65 (Direct connector type must be mated to mating connector. Cable type and lead type excludes harness end, body only.)				
Material	Diaphragm	SUS630 (17-4PH) Welded to fitting			
	Fitting	SUS304			
	Case	SUS304			
Fittings	7/16-20UNF flared 37°, 7/16-20UNF flared 45°		Maximum working pressure: 5MPa		
	R1/8, R1/4, R3/8, G1/4A*3, G3/8A, 1/8NPT, 1/4NPT, G1/4A DIN3852 Form A, G1/4A DIN3852 Form E, 7/16-20UNF-2A SAE J1926-2*3, 9/16-18UNF-2A SAE J1926-2		Maximum working pressure: 50MPa		
Electrical connections	Direct connector type	HW090, EJ II (+), METRI-PACK 150, M12x1 (4pin), Deutsche DT04-3P			
	Lead type	Flying leads 0.3m (Standard) Econoseal J series (MARK II (+)) (Tyco Electronics Japan G.K.)			
	Shielded cable type	Shielded cable 1m (Standard) Econoseal J series (MARK II (+)) (Tyco Electronics Japan G.K.)			
Weight	Approx. 60g (Connector direct type, R1/4) Approx. 110g (Cable type, R1/4)				
CE marking	Applicable Directive: 2004/108/EC Applicable Standards: EN61326-2-3:2006 * Please connect supply of electric power net that doesn't receive the influence of the excess voltage by the thunder.				

\* 1 Units of psi and bar can also be manufactured. Note applications are limited to applications specified by Measurement Law. For more information, please contact us.

\* 2 Accuracy includes the effects of followings: ①Linearity ②Hysteresis ③Repeatability

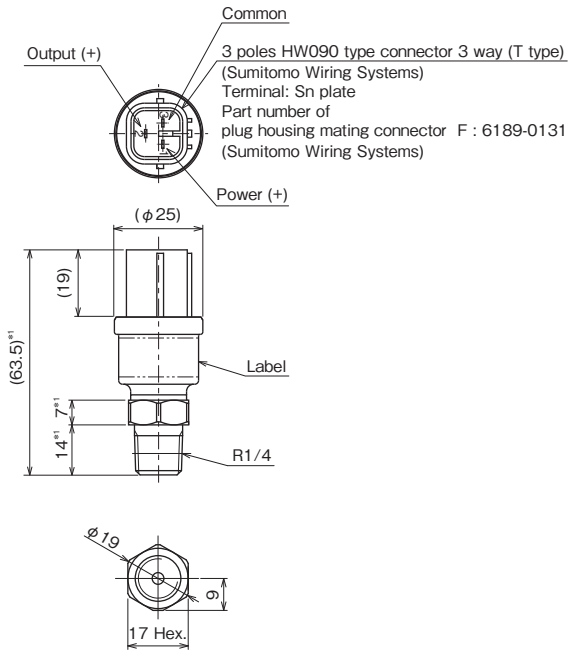
\* 3 G1/4A, 7/16-20UNF-2A SAE J1926-2 T threads are manufactured by SUS416 fitting with heat treatment for 10MPa range and above.

## Dimensions 1

Unit: mm

### Direct connector type

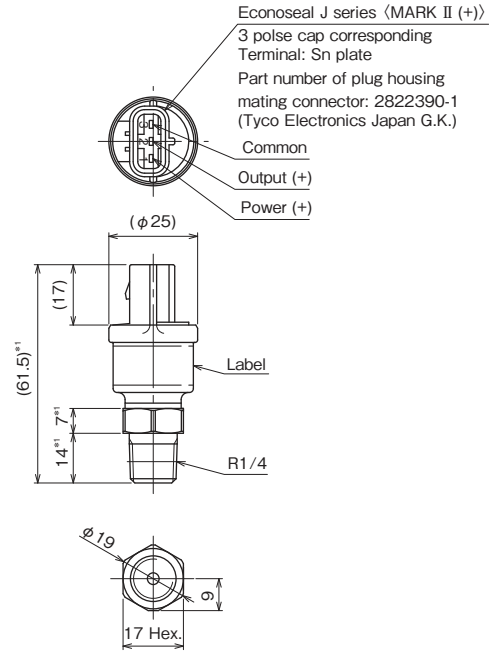
#### 3 poles HW090 type connector 3 way (T type) (Sumitomo Wiring Systems)



\*1 Picture shown for 1/4.  
Refer to Dimensions 3 for other therads.

KM15-17□

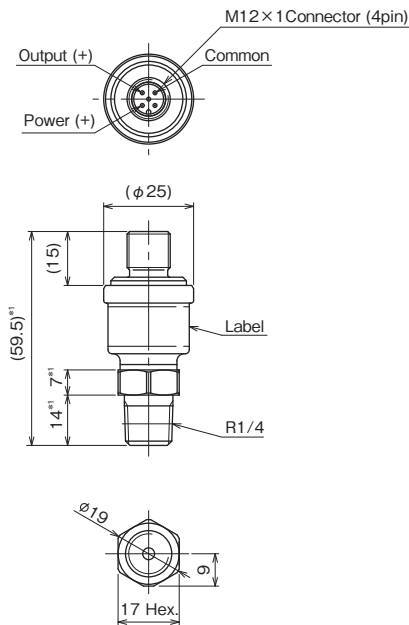
#### Econoseal J series (MARK II (+)) 3 pole cap corresponding



\*1 Picture shown for 1/4.  
Refer to Dimensions 3 for other therads.

KM15-57□

#### M12×1 Connector (4pin)



\*1 Picture shown for 1/4.  
Refer to Dimensions 3 for other therads.

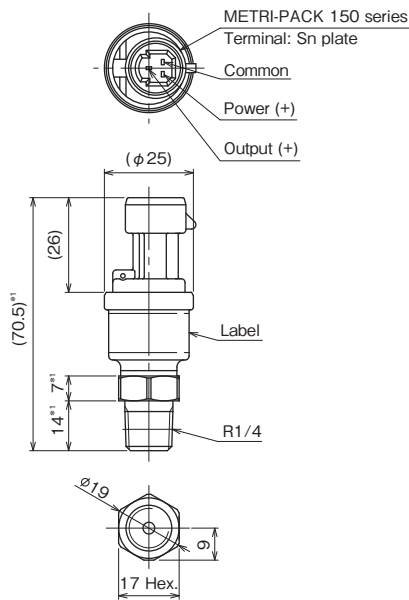
KM15-M7□

## Dimensions 2

Unit: mm

### Direct connector type

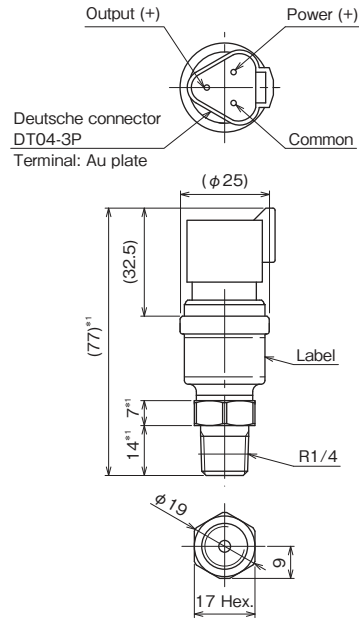
#### METRI-PACK 150 series



\*1 Picture shown for 1/4.  
Refer to Dimensions 3 for other threads.

KM15-87

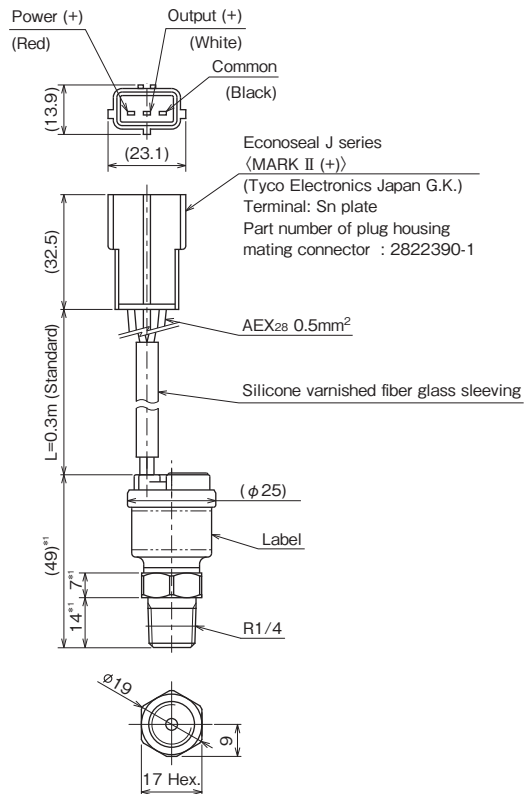
#### Deutsche DT04-3P



\*1 Picture shown for 1/4.  
Refer to Dimensions 3 for other threads.

KM15-47

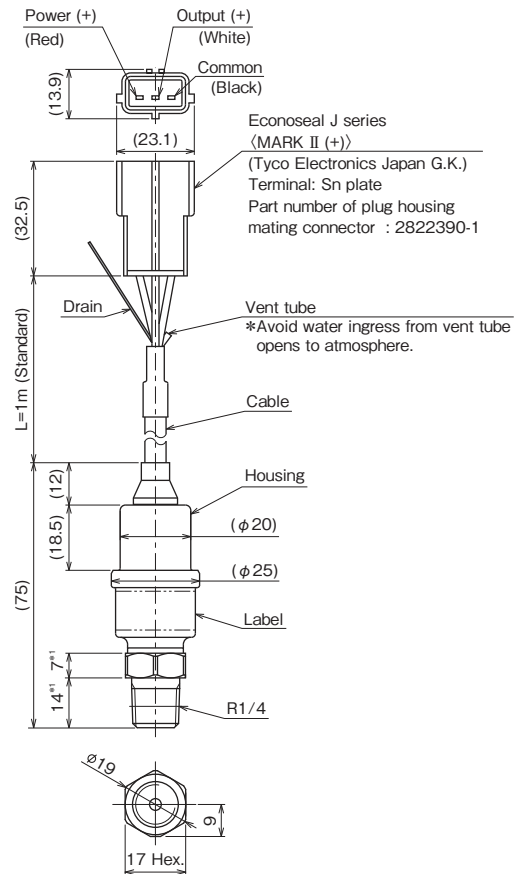
### Lead type



\*1 Picture shown for 1/4.  
Refer to Dimensions 3 for other threads.

KM15-27

### Shielded cable type



\*1 Picture shown for 1/4.  
Refer to Dimensions 3 for other threads.

KM15-37

\*The drain wire in the cable is not connected to the transducer body.

### Dimensions 3

Unit: mm

Fitting						
KM15-□4□	KM15-□5□	KM15-□6□	KM15-□7□		KM15-□8□	
<p>7/16-20UNF flared SAE J514</p>	<p>7/16-20UNF flared</p>	<p>R1/8</p>	<p>Without throttle</p>	<p>With throttle</p>	<p>Without throttle</p>	<p>With throttle</p>
Maximum working pressure: 5MPa (50bar, 750psi)			Maximum working pressure: 50MPa (500bar, 7500psi)			

KM15-□B□	KM15-□C□	KM15-□J□	KM15-□K□		
<p>Without throttle</p>	<p>With throttle</p>	<p>Without throttle</p>	<p>With throttle</p>	<p>Marking of NPT</p>	
<p>*1 JIS B 2401 Class 1 B NBR</p>		<p>*2 JIS B 2401 Class 1 B NBR</p>		<p>Without throttle</p>	<p>With throttle</p>
Maximum working pressure: 50MPa (500bar, 7500psi)					

KM15-□P□	KM15-□T□	KM15-□W□	KM15-□X□	
<p>Without throttle</p>	<p>With throttle</p>	<p>O-ring AS568 904 NBR 7/16-20UNF-2A SAE J1926-2</p>	<p>Without throttle</p>	<p>With throttle</p>
Maximum working pressure: 50MPa (500bar, 7500psi)				

Units of psi and bar can also be manufactured. Note applications are limited to applications specified by Measurement Law.

### Options

#### Protection from surge pressure: Throttle installed restricting orifice

Throttling effect is obtained by installing a restricting orifice into socket to be protected from surge pressure.

#### Improved vibration proof type

The sensor element section is covered with potting, and vibration proof is improved.

Shock proof: 1000m/s<sup>2</sup> (6ms and under, X, Y, Z 3 times for each at room temp.)

Vibration proof: 300m/s<sup>2</sup> (20 to 1000Hz, X: 4h, Y: 2h, Z: 2h at room temp.)

