

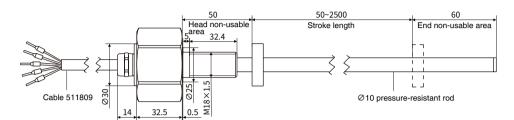


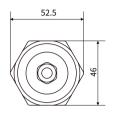
Technical characteristics

- Non-contact measurement
- Linear measurement, absolute position High vibration resistance and impact resistance output
- Adapt to harsh environment, IP67 protection level
- Multiple signal (analog and digital signal) output modes
- Specially designed for construction machinery
- Low power consumption design effectively reduces system heating
- · Quick assembly through external threads

Structural Shape

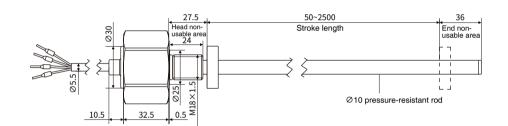
External dimensions of cable outlet (fastening mode DE)

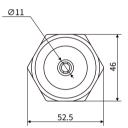




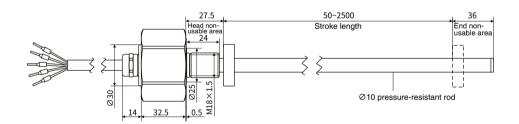
Custom flange: TEC-0204-G3-SC1962_V1.0

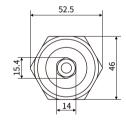
External dimensions of cable outlet (fastening method QM)



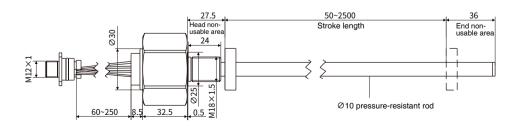


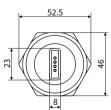
External dimensions of cable outlet (fastening mode DM)





Connector external dimensions (standard type)

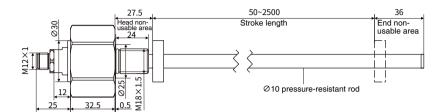


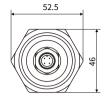




Structural Shape

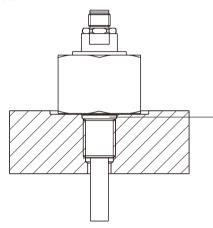
Connector external dimensions (customized type)





Assembly mode

To seal the flange contact surface by assembling 15.4x2.1 mmO rings in the cut, threaded holes conforming to ISO6149-1 standard must be provided.



Seal by O-ring in flange cut

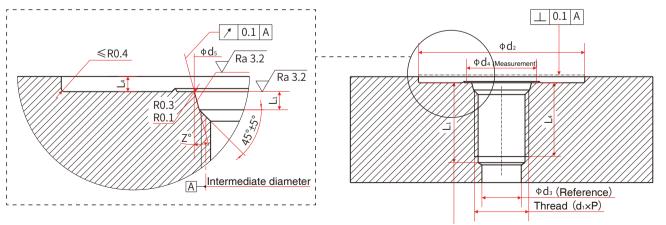
Note::

- 1.The fastening torque is50Nm;
- The flange contact surface must be located on the Cylinder assembly surface as a whole;
- 3. The positioning magnet should not contact with the sensor measuring rod;
- 4.Do not exceed the peak pressure of equipment;
- 5.Protect the stell rod from wear.

Threaded holes conforming to ISO6149-1 (for pressure-resistant rods with a diameter of 10mm)

unit: mm

Thread (d1 xP)	d₂	d₃	d ₄	d₅	L ₁	L ₂	L ₃	L ₄	Z°
M18×1.5	55	13	24.5	19.8	2.4	28.5	2	14.5	15°



This size is suitable for blind holes

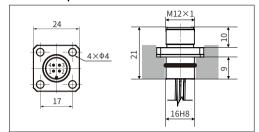
MHA-Analog Output

Electrical connections

Analog (connector)

M12-4Pin Definition	No.	PA	РВ	PC
4 3	1	Power supply	Do not connect	Power supply
	2	Signal	Power supply	Do not connect
	3	Ground	Ground	Ground
1/ 2	4	Do not connect	Signal	Signal

• M12-4 pin socket



Analog output (line color definition of female connector)

M12-5 pin female connector		Line color		
48	Definition	PA	РВ	PC
34.5	Power supply	Brown	White	Brown
000	Ground	Blue	Blue	Blue
	Signal	White	Black	Black

Analog output (scattered output)

Scattered output	PT		
	Definition	Line color	
	Power supply	Brown	
	Ground	White	
	Signal	Green	

Analog output (line color definition of right angle female connector)

M12-5pin right angle female connector		Line color		
39	Definition	PA	РВ	PC
81	Power supply	Brown	White	Brown
	Ground	Blue	Blue	Blue
ф14.5	Signal	White	Black	Black

Analog output (cable outlet)

Cable code:511806	Definition	Line color	
	Power supply	Brown	
W. Comments of the Comments of	Ground	White	
	Signal	Green	
Oakla aada: 511000	- a		
Cable code:511809	Definition	Line color	
Cable code.511809	Power supply	Line color Brown	
Cable code. 511809			



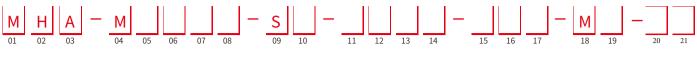
Product Parameters-Analog Output

Input	
Measurement data	Position (Vernier magnet)
Stroke length	50~2500 mm
Output	
Current	4 ~ 20mA (load resistance ≤ 250Ω)
Voltage	$0.5 \sim 4.5 V dc$ or $0.25 \sim 4.75 V dc$ (load resistance $\geq 10 K \Omega$)
Resolution	±0.1mm (range<500mm)
riosolution	range÷4096 (range>500mm)
Nonlinearity	± 0.1 mm (≤ 250 mm) or 0.04% F.S (>250 mm)
Repetition accuracy	±0.1mm
Update time	2ms
Operating condition	ns
Magnet velocity	Arbitrary
Protection level	IP67
Operating temperature	-40 C ~ +105 C
Humidity/dew point	Humidity 90%, no condensation
Temperature drift coefficient	<30ppm /°C
Shock index	GB/T2423.5 100g (11ms)
Vibration index	GB/T2423.10 25g/10~2000Hz
	GB/T17626.2 Electrostatic Discharge Anti-interference, Grade 3, Class A
	GB/T17626.3 Radio Frequency Electromagnetic Field Radiation Anti-interference, Grade 3, Class A
EMC test	GB/T17626.4 Electric Fast Transient Pulse Group Anti-interference, Grade 3, Class B
LIVIO (63)	GB/T17626.5 Surge (Impact) Anti-interference, Grade 3, Class B
	GB/T17626.6 Radio Frequency Field Induced Conducted Disturbance Anti-interference, Grade 3, Class A
	GB/T17626.8 Power Frequency Magnetic Field Anti-interference, Grade 4, Class A

• Electrical connections			
Input voltage	9~ 32Vdc		
Power consumption	<1W		
Polarity protection	Maximum-30Vdc		
Overvoltage protection	Maximum36Vdc		
Insulation resistance	$>$ 10M Ω		
Insulation strength	500V		
Outgoing mode	Cable outlet or connector		

Construction and materials				
Electronic compartment	304Lstainless steel			
Measuring rod	304Lstainless steel			
Operating pressure grade	Rated pressure Pn: 35MPa maximum pressure Pmax: 45MPa for stell rod with diameter of 10mm			
Assembly	Any direction			
Position magnet	Various ring magnets			

Selection Guide-Analog Output



01 - 03	Sensor shell form	Q M 3-pin cable outlet (internal thread fastening)
МНА	Hexagon flange shell	Q M 0 1 1m cable
		Q M R 1 0.1m cable, ordering method within 1 m
04 - 08	Measuring range	D E 3-pin cable outlet (511809 cable is used)
	0050~2500 mm, step length 1mm	D E 0 1 1m cable
09 - 10	Mounting thread form	
		D E R 1 0.1m cable, ordering method within 1 m
SA	Standard flange, pressure-resistant rod, diameter 10mm	D M 3-pin cable outlet
S B	Custom flange: TEC-0204-G3-SC1962_V1.0,	D M 0 6 1m cable
	pressure-resistant rod, diameter 10mm	D M 2 5 0.1m cable, ordering method within 1 m
11 - 14	Connection form	15 17 0 1 1 1
P A 0	0 Custom, M12 IP69K, 4 pins (1-3-2)	15 - 17 Signal output mode
P A	3 wires, M12 IP69K, 4 pins (1-3-2)	A 0 1 Current output, 4~20mA
P A 0	6 60mm, minimum length of wiring harness	A 1 1 Current output, 20~4mA
P A 2	5 250mm, maximum length of wiring harness	V 0 1 Voltage output, 0.5~4.5V
P B 0	0 Custom, M12 IP69K, 4 pins (2-3-4)	V 1 1 Voltage output, 4.5~0.5V
P B	3 wires, M12 IP69K, 4 pins (2-3-4)	V 0 2 Voltage output, 0.25~4.75V
P B 0	6 60mm, minimum length of wiring harness	V 1 2 Voltage output, 4.75~0.25V
P B 2	5 250mm, maximum length of wiring harness	V 0 3 Voltage output, 0~10V
F D Z	5 250mm, maximum length of willing namess	V 1 3 Voltage output, 10~0V
P C 0	0 Custom, M12 IP69K, 4 pins (1-3-4)	
P C	3 wires, M12 IP69K, 4 pins (1-3-4)	18- 19 Non-usable area at head and end, customizable
P C 0	6 60mm, minimum length of wiring harness	M 2 27.5mm+36mm
P C 2	5 250mm, maximum length of wiring harness	M 3 50mm+60mm
РТ	3 scattered, brown-white-green	
P T 0	6 60mm, minimum length of wiring harness	20-21 Country
P T 2	5 250mm, maximum length of wiring harness	Refer to the country list
	200mm, maximum longer or willing names	

Selection example

For example: MHA-M0300-SA-PA08-A01-M2-CN

Indicates: MHA structure hexagonal flange shell, 300mm stroke length, 10mm diameter pressure-resistant rod, M12 connector 4-pin male connector, current output of $4\sim20$ mA, non-usable area at head and end of 27.5+36.





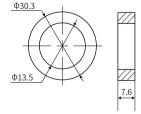
Accessory name/model **Dimensions Description** <u>4-Ф4.3</u> Ф33 Magnetic isolation gasket: size same as Ф24 magnet ring, thickness 5mm Screws: GB/T70.1, M4X18, material304 Spring gasket: GB/T 93, φ 4, material304 Includes: 1 magnet ring, 1 gasket, 4 screws with elastic gasket Magnet ring kit Order No.: 288501 Magnetic isolation gasket: size same as magnet ring, thickness 5mm Retaining ring: GB/T893,264 Includes: 1 magnet ring, 2 gaskets, 1 retaining ring Magnet ring kit Order No.: 288506 Magnetic isolation gasket: size same as magnet ring, thickness 5mm Retaining ring: GB/T 893, 18 Includes: 1 magnet ring, 2 gaskets, 1



Magnet ring kit

Order No.: 288507

Magnet ring kit Order No.: 288509



Magnetic isolation gasket: size same as magnet ring, thickness 5mm Retaining ring: GB/T893, 18 Includes: 1 magnet ring, 2 gaskets, 1 retaining ring

retaining ring

Cable selection

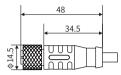
Accessory name/model

Dimensions

Description



5-pin M12 female connector Order No.: 521801-2/3/5/10/15



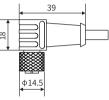
 $5 \times 0.25 \text{mm}^2$ ϕ 5.6 \pm 0.2mm Conductor: 5-pin, brown/white/blue/black/gray Sheath color: Black

Shielding layer: tinned copper woven mesh

Sheath material: PUR Temperature: (-40~80°C) Line length: 2m/3m/5m/10m/15m



5-pin M12 right angle female connector Order No.: 521804-2/3/5/10/15



 $5 \times 0.25 \text{mm}^2$ $\phi 5.6 \pm 0.2 mm$ Conductor: 5-pin,

brown/white/blue/black/gray Sheath color: Black

Shielding layer: tinned copper woven mesh

Sheath material: PUR Temperature: (-40~80°C) Line length: 2m/3m/5m/10m/15m



MH Analog Special Cable (M) Order No.: 511806

 $3C \times 0.5SQ$ φ 5.5±0.2mm Conductor: 3-pin, brown/white/green

Sheath color: grey

Shielding layer: tinned copper woven

mesh

Sheath material: 105°C polyvinyl

chloride (PVC)

Temperature: (-40~105°C)



PUR Black Cable Order No.: 511809 5×0.25mm² ϕ 5.6 \pm 0.2mm Conductor: 5-pin, brown/white/blue/black/gray Sheath color: Black

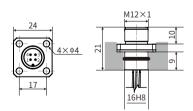
Shielding layer: tinned copper woven

mesh

Sheath material: PUR Temperature: (-40~80°C)

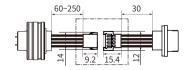


MH 4-pin wire socket Order No.: 600000





MH adapter harness Order No.: 522007



When the Cylinder threading hole is less than 16H8, This harness switching can be used, Plastic shell

thickness: 2.8 mm