

2025

INDUSTRIAL SENSORS

SELECTED

Sensors for Industrial -Selected



Only part of TBF products are included. For more information, please contact us!



Technology perceives the future



Based on many industrial fields, with accurate perception as the core, it provides sensing support for intelligent upgrading of various industries.



Established in 2014, Beijing Tebeifu Electronic Technology Co., Ltd. is located in Beijing Economic and Technological Development Zone, focusing on the research and development and production of sensor precision measurement technology. It has 158 patented technologies, and the R&D team accounts for over 30%. It has passed many international certifications such as 16949, ISO9001, CE and UL.

With five technical platforms: magnetostrictive sensor, rotary encoder, pressure sensor, LVDT sensor and liquid level temperature sensor. Complete test platform, covering high and low temperature extreme environment simulation, temperature shock test, temperature and humidity comprehensive performance verification, electromagnetic compatibility defense barrier evaluation, strict waterproof performance verification, impact vibration test platform and other cutting-edge facilities.

National high-tech enterprise

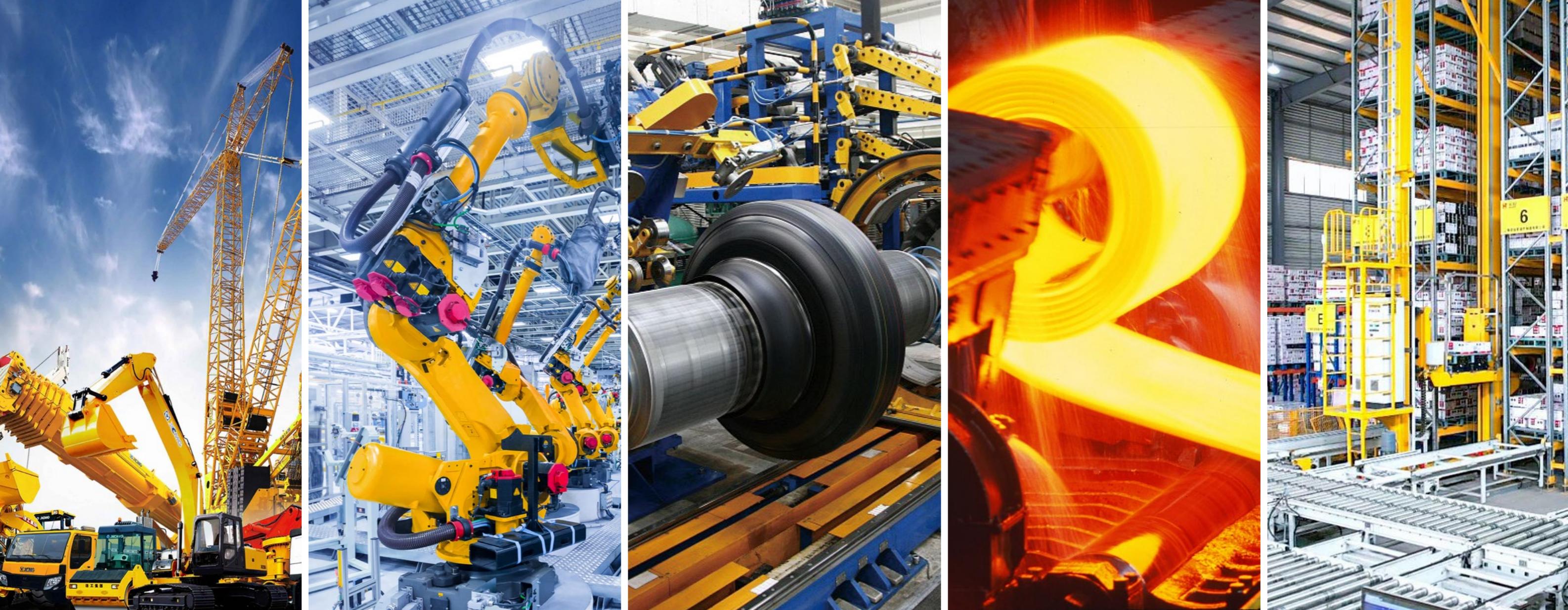
Complete technical platform

Million-level clean production workshop, and build a fully automatic production line, the key processes to achieve 100% automatic production and testing, monthly production capacity of 50,000 sensors, delivery cycle shortened to 7 working days.

Smart manufacturing

Set up a branch in Munich, Germany, and the products are exported to more than 30 countries, including the United States, France, Spain, Romania, Denmark, Germany, Austria, Italy, Netherlands, Hungary, Canada, Argentina, Russia, Israel, United Arab Emirates, Iran, Turkey, South Korea, India, Thailand, Malaysia, Vietnam and Indonesia.

Global market layout



National Specialized Little Giant in Sensor Industry

QUALIFICATIONS

State-level specialized and innovative "little giant" enterprise Beijing Enterprise Technology Center, a "specialized, refined, special and innovative" enterprise.

156 patents.



Dedicated to the research and development of sensors and detection technologies

Beijing Tebeifu Electronic Technology Co., Ltd. (located in Beijing Economic and Technological Development Zone) has been committed to the research and development of sensors and detection technology for many years, and is a national hightech enterprise with lots of sensor core technologies. The products produced by the TBF have been unanimously recognized by users all over the world for their advanced technology, complete categories, quick response and service ability.

Our company has five mature technology platforms: magnetostrictive sensor technology platform, rotary encoder technology platform, pressure sensor technology platform, and LVDT sensor technology platform and temperature sensor technology platform. Based on the technology platform and guided by customer demand, the company provides customers with all-round sensor technology product solutions through professional scheme design, excellent quality and quick response ability.



T-Series

Magnetostrictive displacement sensor

T-Series III is an upgraded product based on the second generation products. It has been innovated while maintaining our consistent high quality, and the new generation products are more reliable and stable, with strong performance.

- + High precision: highest resolution 0.1μm
- + Double anti-interference
- + Resistance to shock and vibration
- + Support 30 magnets online at the same time
- + Polarity protection, overvoltage protection
- + Enhanced monitoring and diagnosis functions
- + Wide operating voltage (9VDC~36VDC)

Type	T3H	T3P	T3D	T3F
Output	Position, speed			
Measuring length	25-7650	25-5600	25-5600	100-20000
Interface type	Analog Start-Stop	SSI CANopen	EtherCAT PROFINET IO-Link	PROFINET IO-Link
	Interface	Resolution	Nonlinear degree	Repeatability
	Analog	16 bit D/A	0.01%F.S.	0.001%F.S.
	SSI	0.1μm	0.01%F.S.	0.001%F.S.
	Start/Stop	**	0.02%F.S.	0.001%F.S.
	CANopen	1μm	0.01%F.S.	0.001%F.S.
	Profibus-DP	1μm	0.01%F.S.	0.001%F.S.
	Profinet	0.5μm	0.01%F.S.	0.001%F.S.
	IO-Link	5μm	0.01%F.S.	0.001%F.S.
	EtherCAT	0.5μm	0.01%F.S.	0.001%F.S.
	EtherNet/IP	1μm	0.01%F.S.	0.001%F.S.
	T3F Nonlinear degree 0.02%F.S.			
Operating voltage	9VDC~36VDC			
	*SSI: 24VDC(-15/+20%)			
Shock	T3H/T3P: 150 g/11 ms T3D : 100 g/11 ms T3F : 100 g/6 ms, IEC standard 60068-2-27			
Vibration resistance	T3H/T3P: 30 g/10~2000 Hz T3D : 10 g/10~2000 Hz T3F : 5 g/10~2000 Hz IEC standard 60068-2-6 (excluding resonance frequency)			
** Depending on the controller				



GB

Horizontal organization design,
flange installation

CH

All stainless steel shell, high
reliability is widely used in
metallurgical industry.

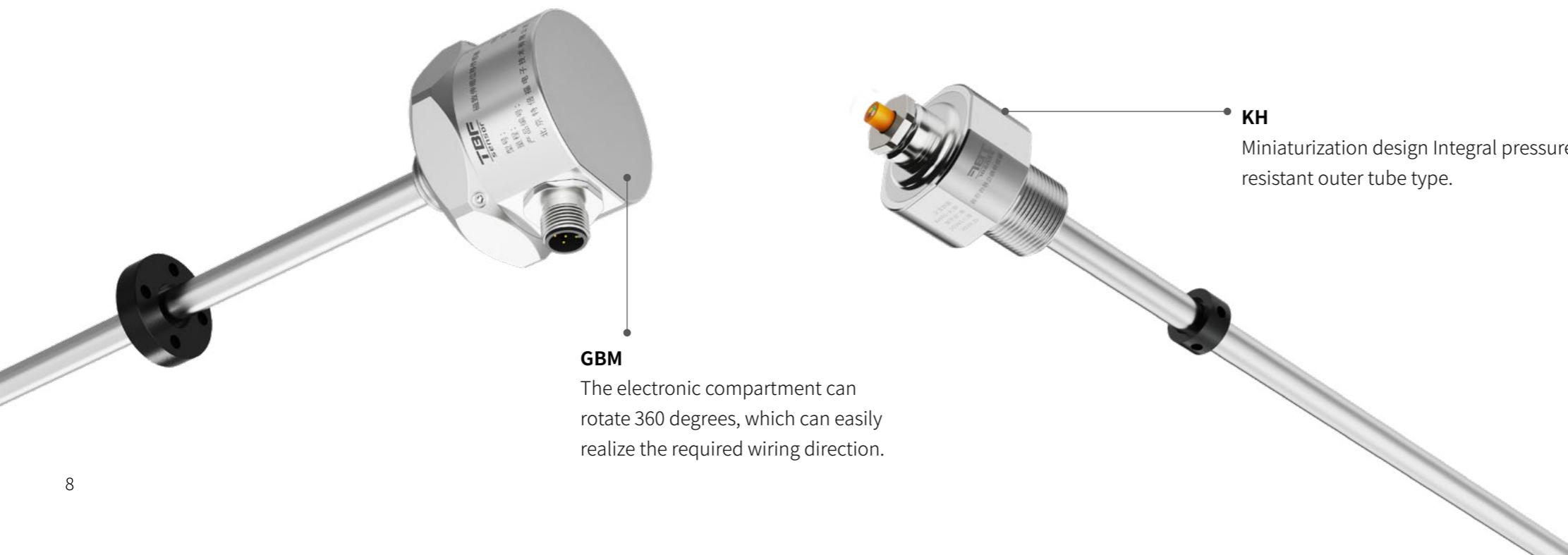
DH

Miniaturization designIntegral
pressure-resistant outer



GA

IO-Link interface sensor with
LED indication function



GBM

The electronic compartment can
rotate 360 degrees, which can easily
realize the required wiring direction.

Integral pressure-resistant outer tube type

Magnetostrictive displacement sensor

The compact or flat electronic component shell is
convenient for the sensor to be installed in a limited
space;

The integrated design makes the equipment have
higher durability and higher protection level(Max
IP68/IP69K);

The whole machine is made of 304/316L stainless
steel, which has excellent corrosion resistance and is
suitable for various harsh working environments.

Output (accuracy)

Resolution	GB/GBM	CH	DH	KH	GA
Analog	16 bit D/A				
Start/Stop	-	**	-	-	-
SSI	0.5μm	0.5μm	0.5μm	-	0.5μm
CANopen	2μm	-	2μm	-	-
IO-Link	-	1μm	-	-	1μm

Nonlinear
degree $\leq \pm 0.02\%F.S.$

*KH $\leq \pm 0.04\%F.S.$

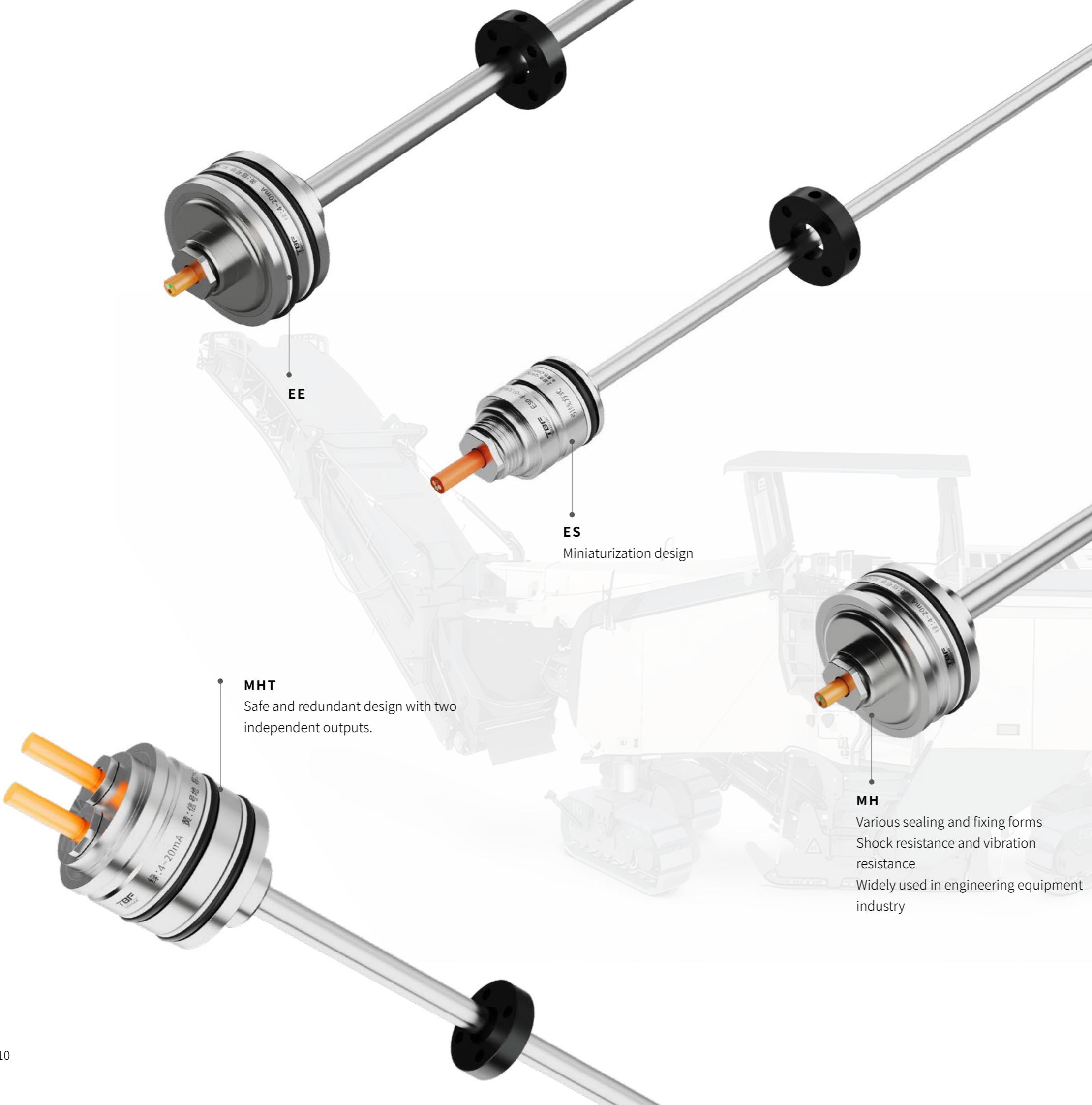
Working conditions

Operating voltage	9VDC~36VDC	*GA/GB/CH(SSI):24VDC(-15/+20%)
Temperature	-40~85°C	*CH(Start/Stop) : -40~120°C
Ingress protection	IP68(Direct-out cable) IP67(Aerial insertion type)	*CH: IP69K
Shock	100 g/6 ms, IEC standard 60068-2-27	
Vibration	15 g/10~2000 Hz IEC standard 60068-2-6 (excluding resonance frequency)	

Effective range

Effective range 50~4500mm

** Depending on the controller



Embedded type

Magnetostrictive displacement sensor

In order to meet the integrated application in the cylinder, the product can be embedded in the hydraulic cylinder, and the equipment provides a variety of installation and fixation methods such as thimble type, double seal type and single seal type.

Equipment is widely used in mobile machinery.

Output (accuracy)

Resolution	EE	ES	MH	MHT
Analog	16 bit D/A	16 bit D/A	16 bit D/A	16 bit D/A
Start/Stop	-	-	-	-
SSI	0.5μm	-	-	-
CANopen	-	100μm	0.5μm	0.5μm

Nonlinear degree	EE	≤ ±0.02%F.S.
	ES	≤ ±0.04%F.S.
	MH/MHT(Analog)	≤ ±0.04%F.S.
	MH/MHT(CANopen)	≤ ±0.02%F.S.

Working conditions

Operating voltage	9VDC~36VDC
Temperature	EE/ES -40~85°C MH/MHT -40~85°C (105°C customized)
Ingress protection	IP68(Direct-out cable) IP67(Aerial insertion type)
Shock	100 g/6 ms, IEC standard 60068-2-27
Vibration	15 g/10~2000 Hz IEC standard 60068-2-6 (excluding resonance frequency)

Effective range

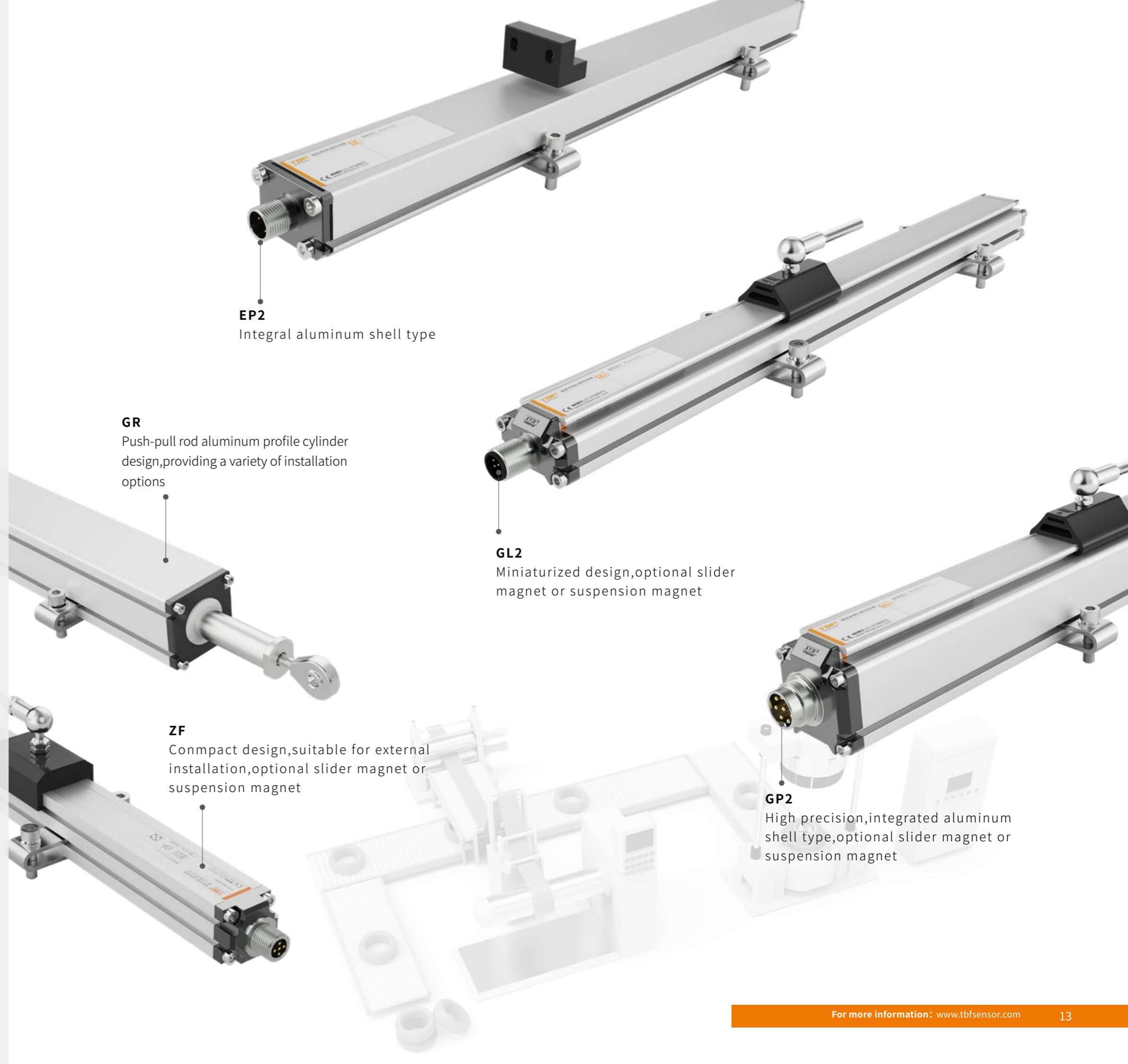
EE/MH/MHT	50~4500mm
ES	50~2500mm

Integral external profile type

Magnetostrictive displacement sensor

- + Convenient installation,integrated design,no prominent electronic warehouse.
- + Linear measurement,absolute output,no need to return to zero.
- + Application in forgin,building materials,rubber and plastic machinery and other fields.

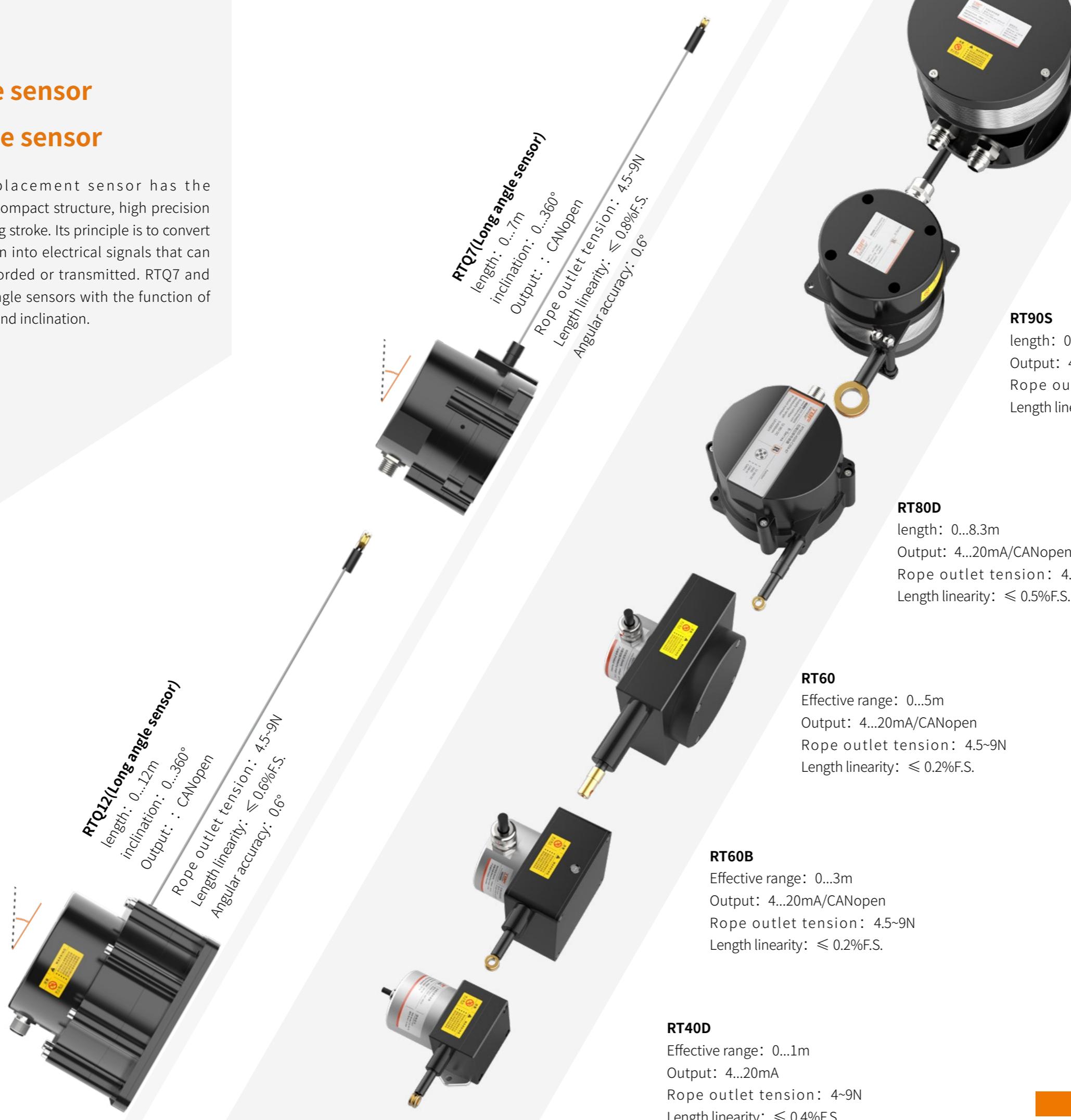
Type	EP2/GP2/GL2	GR	ZF
Output	Location、Speed	Location	Location
Measuring length	50~5600	50~1500	50~1500
Interface type	 Analog  SSI  EtherCAT  IO-Link  CANopen  Start/Stop	 Analog  CANopen  Analog	
Resolution	Analog 16 bit D/A 0.5μm -- 1μm 0.5μm 1μm	16 bit D/A -- 1μm -- 1μm	16 bit D/A -- -- -- -- -- 100 g (Single impact) 50 g/6 ms, IEC standard 60068-2-27
Shock	EP2/GP2/GL2/GR : 100 g (Single impact) ZF : 50 g/6 ms, IEC standard 60068-2-27		
Vibration	EP2/GP2/GL2/GR : 15 g/10~2000 Hz ZF : 5 g/10~2000 Hz IEC standard 60068-2-6 (excluding resonance frequency)		



Draw wire sensor

Long angle sensor

The cable displacement sensor has the characteristics of compact structure, high precision and long measuring stroke. Its principle is to convert mechanical motion into electrical signals that can be measured, recorded or transmitted. RTQ7 and RTQ12 are long-angle sensors with the function of measuring length and inclination.



RT120S

length: 0...4m
Output: 4...20mA, CANopen
Rope outlet tension: 12~55N
Length linearity: $\leq 0.2\%$ F.S.

RT90S

length: 0...3.5m
Output: 4...20mA
Rope outlet tension: 10~40N
Length linearity: $\leq 0.2\%$ F.S.

RT80D

length: 0...8.3m
Output: 4...20mA/CANopen(Redundant output)
Rope outlet tension: 4.5~9N
Length linearity: $\leq 0.5\%$ F.S.

RT60

Effective range: 0...5m
Output: 4...20mA/CANopen
Rope outlet tension: 4.5~9N
Length linearity: $\leq 0.2\%$ F.S.

RT60B

Effective range: 0...3m
Output: 4...20mA/CANopen
Rope outlet tension: 4.5~9N
Length linearity: $\leq 0.2\%$ F.S.

RT40D

Effective range: 0...1m
Output: 4...20mA
Rope outlet tension: 4~9N
Length linearity: $\leq 0.4\%$ F.S.

Rotary encoder

Universal encoder、Servo encoder、Heavy-duty encoder

Encoder is used to record the angle and rotation speed, so as to realize accurate control, facilitate real-time monitoring and adjustment of component state, and thus improve the automation degree and work efficiency of construction machinery.



BNMA36

Diameter: 36mm
Single lap resolution: 12...14bit
Number of pturns: 13bit
Interface: SSI、SSI+increment、CANopen、CANopen+increment



BNTI100, BNTI99

Diameter: 99mm
Resolution: 1024/5000PPR
Output: TTL/HTL



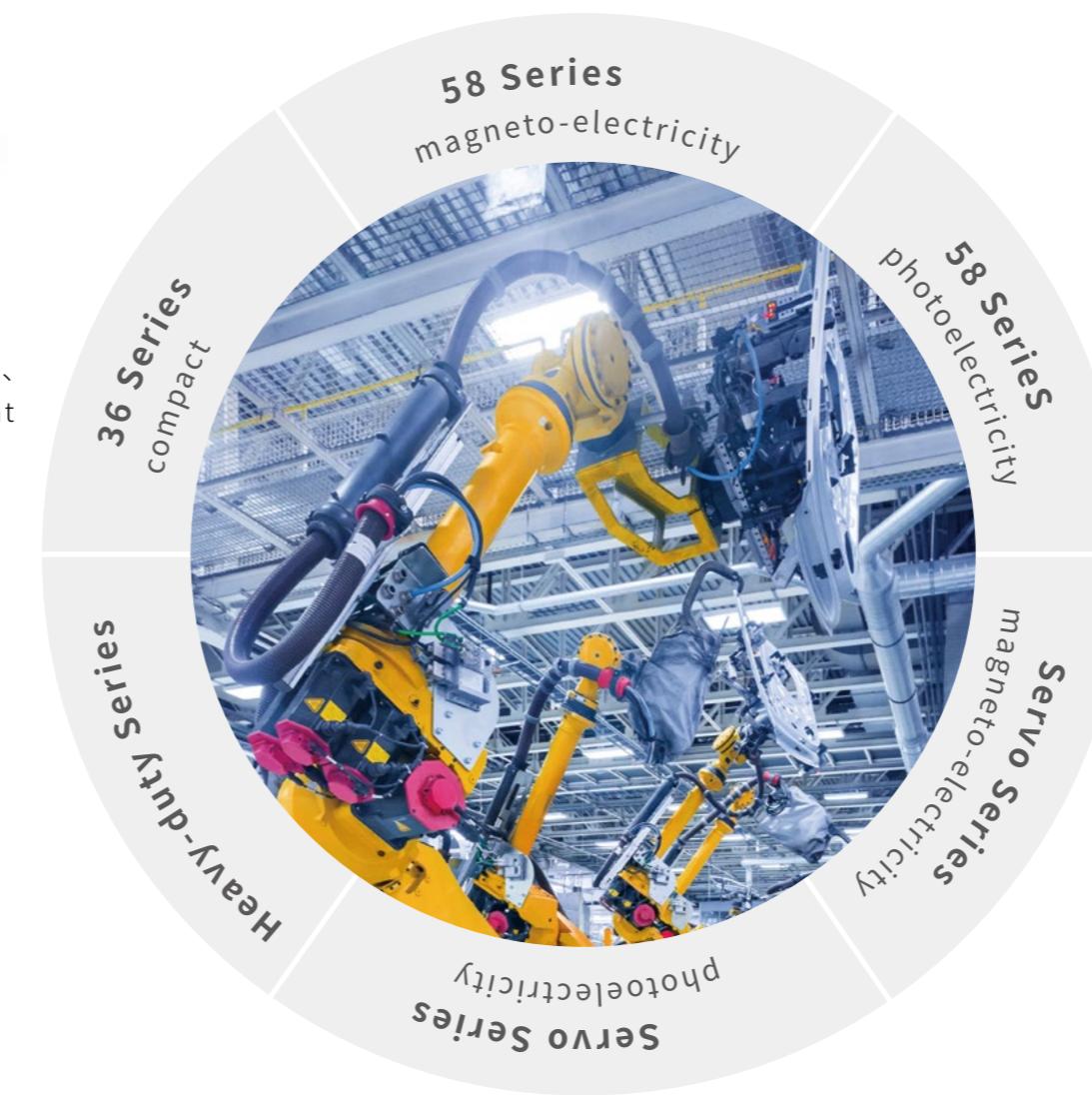
BNMA58

Diameter: 58mm
Single lap resolution: 8...16bit
Number of pturns: < 24bit
Interface: SSI/SSI+increment, CANopen/CANopen+increment, Profinet



BNTI58

Diameter: 58mm
Single lap resolution: 5000PPR
Output: TTL/HTL



Servo series-magneto-electricity

Absolute value

Outside diameter: 34/35mm
Single lap resolution: 17bit
Number of pturns: 16bit
Increment
Outside diameter: 35/44/46/79mm
Resolution: 1024/2500/5000 C/T



Servo series-photoelectricity

Absolute value

Outside diameter: 35/44/46/79mm
Single lap resolution: 17...23bit
Number of pturns: 16bit
Increment
Outside diameter: 35/44/46/79mm
Resolution: 1024/2500/5000 C/T

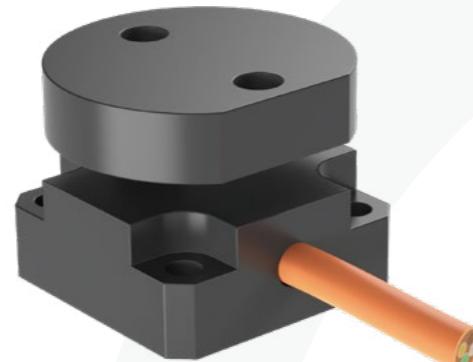
Inclination sensor

It can be used in the application field of pursuing safety and high stability under harsh environmental conditions. A 3-axis gyroscope and a high-performance microcontroller are integrated inside. It can measure the attitude angle of xyz axis at the position where the sensor is installed, and can achieve stability in harsh environment.Fixed sensing.

Angle sensor

The angle sensor is a device for measuring the rotation angle, which measures the change of the angle based on the physical principle. When there is a change between the rotating magnetic field and the Hall sensor, the Hall sensor can measure different magnetic field signals to determine the rotation angle.

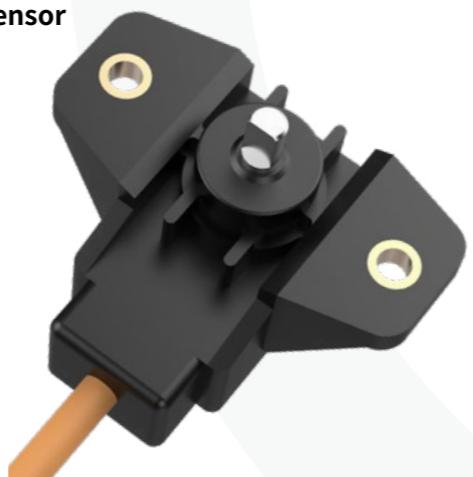
QM Angle sensor



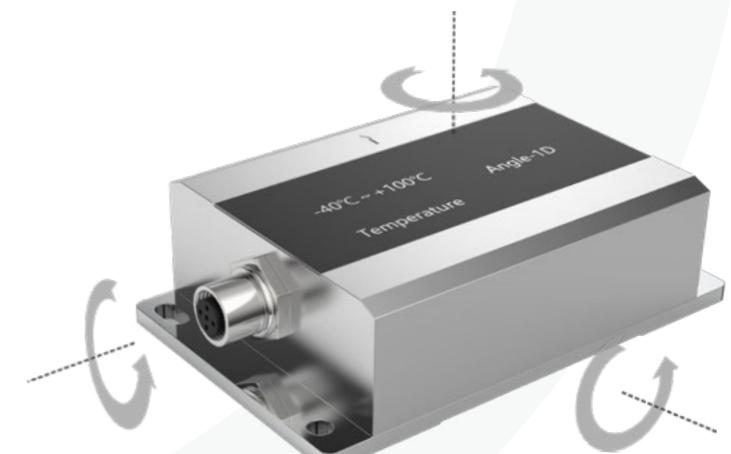
BNS74 Angle sensor



QF Angle sensor



DAT12076-1D Angle temperature sensor



Type	QM Angle sensor	DAT12076 Angle temperature sensor	QF Angle sensor	BNS74 Angle sensor
Measurement data	Angle	Inclination and temperature	Angle	Angle
Output	Analog	CANopen	Analog	CANopen
Measuring range	0° -360°	X-axis: -180° ...+180°, Y-axis: -90° ...+90°, Z-axis: 0...360° Temperature: -40°C ...+100°C	0° -90°	0~360°
Resolution	inclination: 0.09°	inclination: 0.1° Temperature: 0.1°C	Angle: 0.1°	0.1° /0.01° /0.001°

Pressure transmitter series

Pressure transmitter、digital display pressure、pressure switch

Adopting international advanced metal sputtering film pressure core, high-precision silicon pressure core and high-precision silicon flat film core, the equipment has high long-term stability, small temperature drift, wide temperature range, high precision and high pressure impact resistance.



Mechanical pressure switch

High precision, reliability and durability, and output alarm and control signals.



Digital pressure transmitter

The electronic compartment can rotate freely 330°
Analog+Two-way switch output



Hessman digital display pressure transmitter

Adapting hessman connector of pressure transmitter



PC-type pressure transmitter

High precision silicon pressure core

Measuring range:-1~600Bar



PE-type pressure transmitter

High precision diffusion silicon flat film core

Measuring range:-1~400Bar



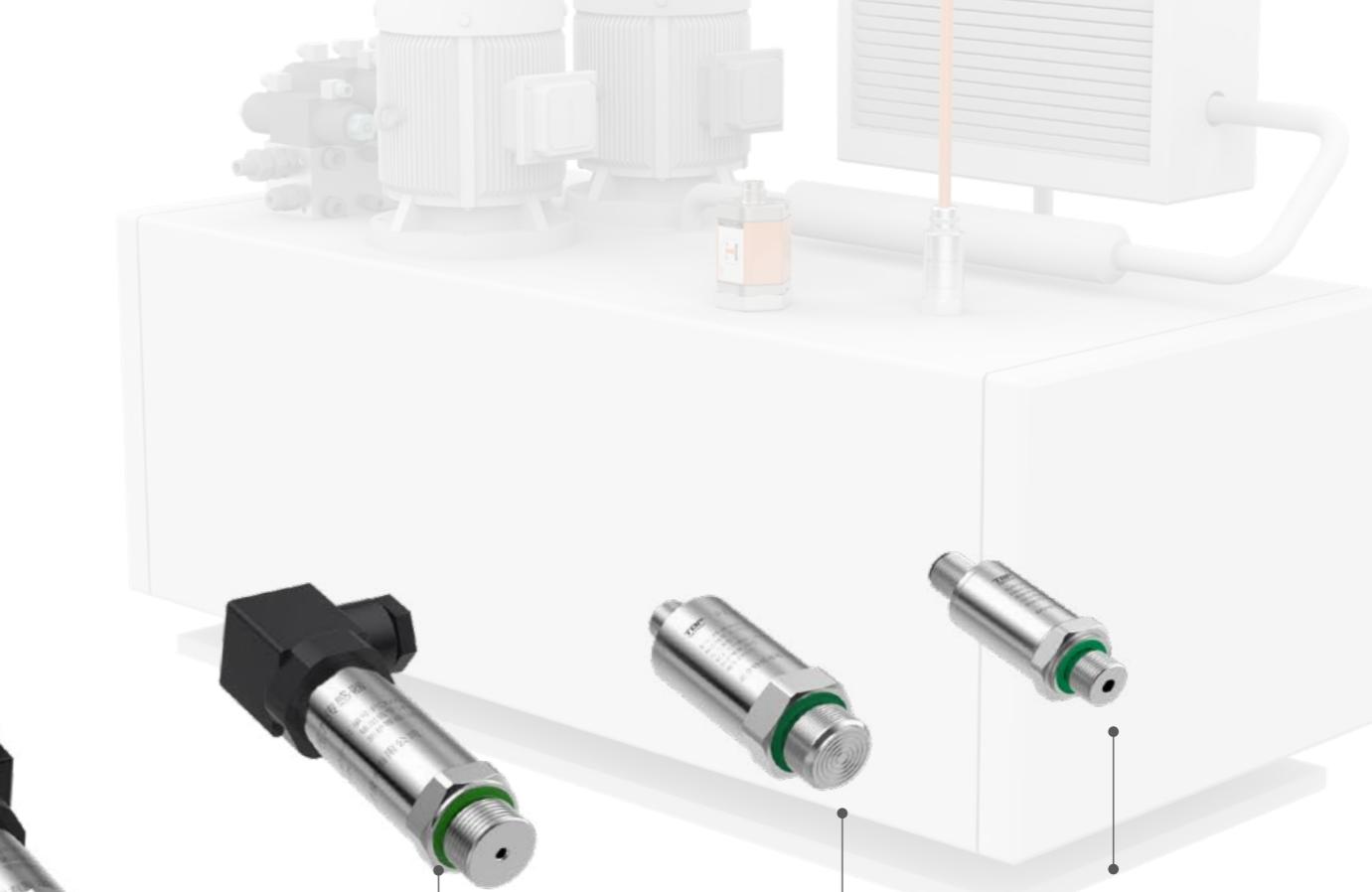
PC-J-type pressure transmitter

Metal sputtering film pressure core, compact design, small size

Measuring range:5~600Bar



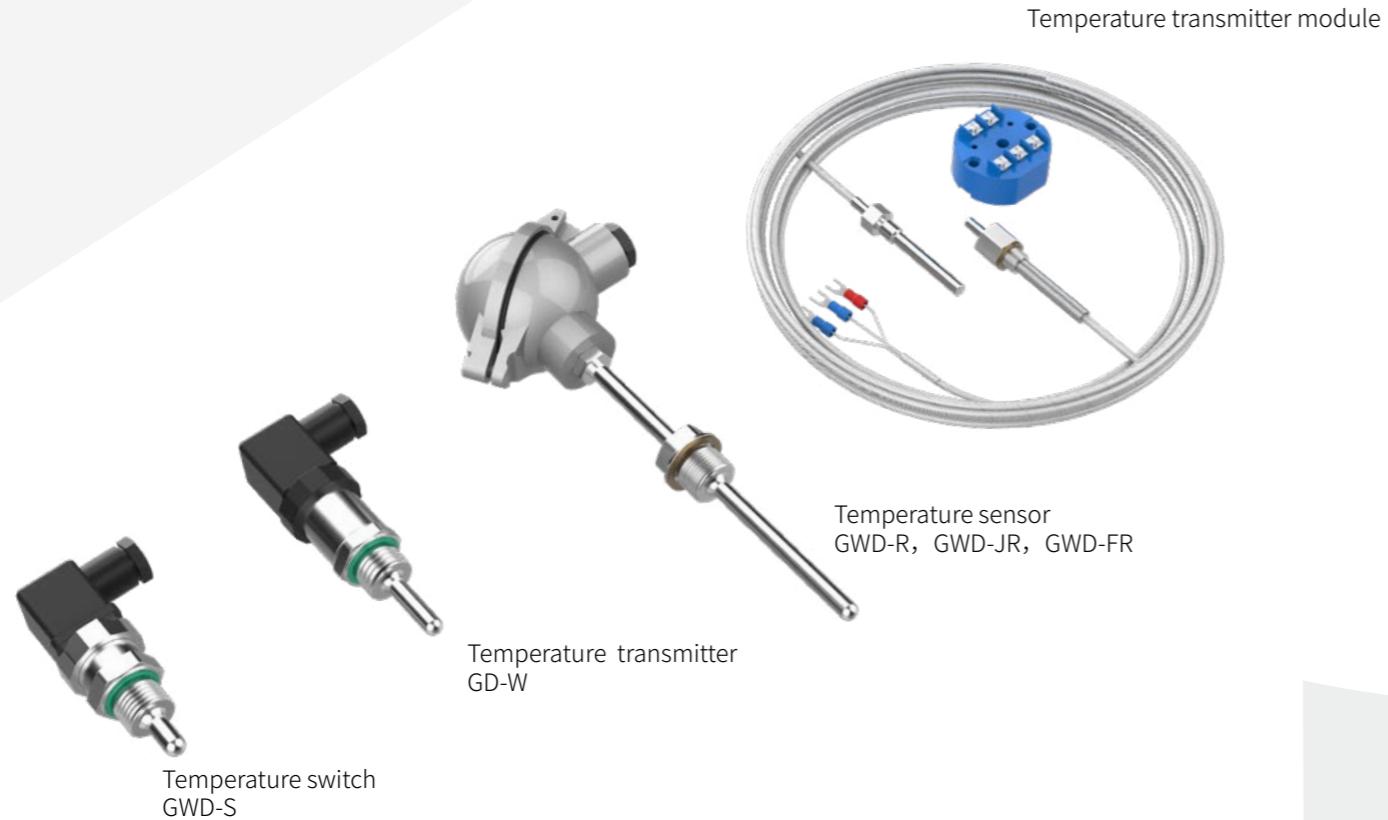
Type	PC-J	PE	PC
Pressure core	Metal sputtering film	Diffused silicon flat film	Diffused silicon
Measuring range	5~600Bar	-1~400Bar	-1~600Bar
Pressure Type	Gauge pressure	Gauge pressure and absolute pressure	Gauge pressure, absolute pressure and sealed gauge pressure



Type	PC-D	PC-T / PE-T	PC / PE / PC-J
Name	Mechanical pressure switch	Digital pressure transmitter	Hessman digital display pressure transmitter
Explain	When measuring the pressure value, the user can adjust it at will within the measuring range. Adjust the measured pressure by rotating the pressure regulating thumbwheel. After the pressure regulation is completed, the thumbwheel can be fixed to prevent the pressure from changing during use.	Digital display pressure transmitter with integrated display; The electronic compartment can rotate freely by 330 degrees.	Adapted to hessman connector of pressure sensor, it can set pressure unit, zero/full position correction point, upper/lower range and other functions.

Temperature Series

Temperature sensor/Transmitter/Switch Liquid level temperature sensor

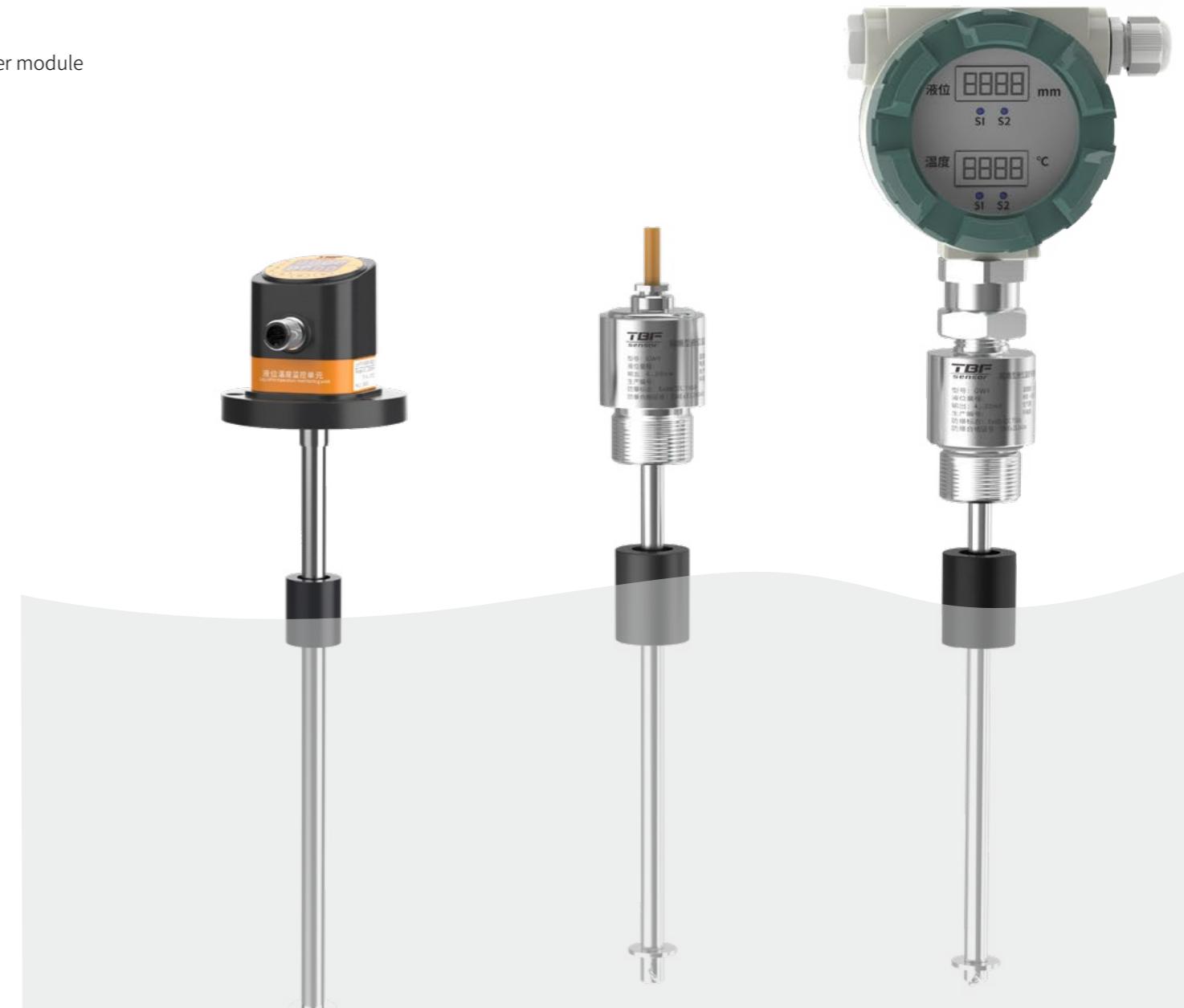


Temperature measuring range	-50~300°C (normal -50~250°C)				
Graduation number/resistance value	The standard resistance value R at 0°C		The standard resistance value R at 100°C		
PT100	100.00		138.51		
PT1000	1000.00		1385.1		
Measurement Error	Grade	Error of resistance at zero degree%		Temperature error °C	
	A	± 0.06		$\pm (0.15+0.002 t)$	
	B	± 0.12		$\pm (0.30+0.005 t)$	
Response time	Rod diameter mm	5	6	8	10
	Thermal response time s (T 0.5)	≤ 8	≤ 15	≤ 30	≤ 30

Liquid level temperature series

— Precise monitoring of liquid level and temperature, stable and reliable.

The float-type liquid level temperature sensor adopts the integrated design of float and temperature probe, which can measure liquid level height and liquid temperature at the same time, and has the characteristics of simple structure, corrosion resistance, strong antiinterference and long service life.



Type	LH-YT	YW	YW+ SSET
Liquid level range	40...2000mm	50...4500mm	50...4500mm
Temperature range	-40...125°C	-40...125°C	-40...125°C
Output	4 channels of NPN/PNP+2 channels of analog signals	Analog、CANopen	Analog、CANopen

Product overview

Construction machinery

- Magnetostrictive displacement sensor
- Rope displacement sensor
- Encoder
- Angle/inclination sensor
- Pressure transmitter

Position detection-magnetostrictive displacement sensor

Bild	Type	Range	Electrical interface
	T3H/T3P	50...7650	       
	T3D	50...5600	       
	T3F	100...20000	       
	CH2	50...4500	  
	DH2	50...5600	  
	K	50...5600	
	GB	50...4500	   
	GBM	50...4500	   
	GA	50...4500	  
	MH	50...4500	 
	ES	50...2500	 

	EE	50...4500	  
	MHT	50...4500	 
	EP2	50...5600	    
	GL2	50...5600	    
	GP2	50...5600	    
	GR	50...1500	 
	ZF	50...1500	

Position detection-Draw wire sensor

Draw wire sensor	Type	Range	Electrical interface
	RT40D	0..1m	Analog
	RT60	0...5m	Analog CANopen
	RT60B	0...3m	Analog CANopen
	RT120S	0...4m	Analog CANopen
	RT80D	0...8.3m	Analog CANopen
	RT90S	0...3.5m	Analog

Long angle sensor	Type	Range	Electrical interface
	RTQ7	Length: 0...7m Angle: 0...360°	CANopen
	RTQ12	Length: 0...12m Angle: 0...360°	CANopen

 Rotational position monitoring-encoder

Absolute value	Type	Output	Resolution
	BNMA36 (magneto-electricity)	CANopen	Single circle: 12-14bit Multi-circle: 13bit
	BNMA58 (magneto-electricity)	Profinet	Single circle: 12-16bit Multi-circle: ≤ 20bit
Increment	Type	Output	Resolution
	BNTI58 (photoelectricity)	TTL / HTL Channel: A A- B B-Z Z-	10000, 5000, 2500, 1250 8192, 4096, 2048, 1024 7200, 3600, 1800, 900 PPR
	BNTI99 (photoelectricity)	TTL / HTL Channel: A A- B B-Z Z-	5000 PPR
	BNTI100 (photoelectricity)	TTL / HTL Channel: A A- B B-Z Z-	1024 PPR
Absolute value+increment	Type	Output	Resolution
	BNMA58 (magneto-electricity)	SSI/SSI+increment CANopen/CANopen+increment increment Channel: A A- B B-	Single circle: 8-16bit, Multi-circle: ≤ 24bit increment : 512PPR, 1024PPR, 2048PPR, 4096 PPR (Other values can be customized)
	BNMA36 (magneto-electricity)	SSI/SSI+increment increment Channel: A A- B B-	Single circle: 12-14bit, Multi-circle: 13bit increment : 512PPR, 1024PPR, 2048PPR, 4096 PPR (Other values can be customized)

 Monitoring of angle/inclination

Angle sensor	Type	Range	Output
	QM	0...360°	Analog
	QF	0...90°	Analog
	BNS74	0...360°	CANopen
Inclination sensor	Type	Range	Output
	DAT12076 (uniaxial/biaxial/ triaxial)	Inclination: 0...360° Temperature: -40°C+100°C	CANopen

 Process state detection-Pressure

Liquid, Gas	Type	Range	Output
	PC-J	5...600Bar	Analog current/voltage output
	PE	-1...400Bar	Analog current/voltage output
	PC	-1...600Bar	Analog current/voltage output
	PC-T	-1...600Bar	Analog current/voltage output
	PC-D	0.014...12.40Mpa	SPDT

 Process state monitoring-Temperature

Temperature series	Name	Type	Range	Output
	Temperature switch	GWD-S	-20~120°C	SPST
	Temperature transmitter	GD-W	0~100°C	Analog
	Temperature sensor	GWD-JR	-50~300°C	Resistance signal
	Temperature sensor	GWD-R	-50~250°C	Resistance signal
	Temperature sensor	GWD-FR	-50~250°C	Resistance signal
	Liquid level temperature sensor	YW	Liquid level : 50...4500mm temperature : -40...125°C	Analog
	Liquid level temperature sensor	YW+digital display	Liquid level: 50...4500mm temperature : -40...125°C	Analog
	Liquid level temperature sensor	LH-YT	Liquid level: 40...2000mm temperature : -40...125°C	4-way switch value+2-way Analog



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