

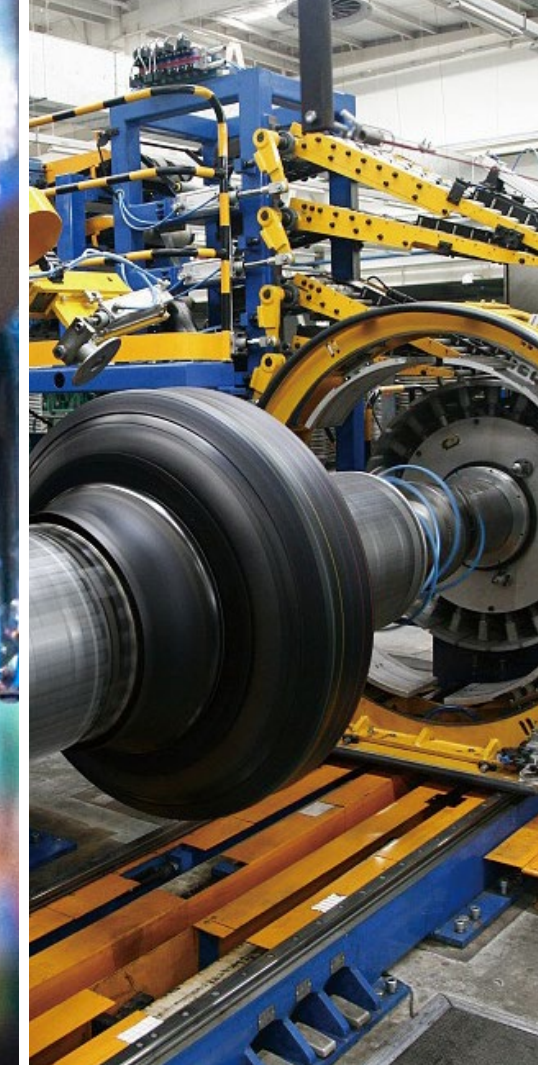
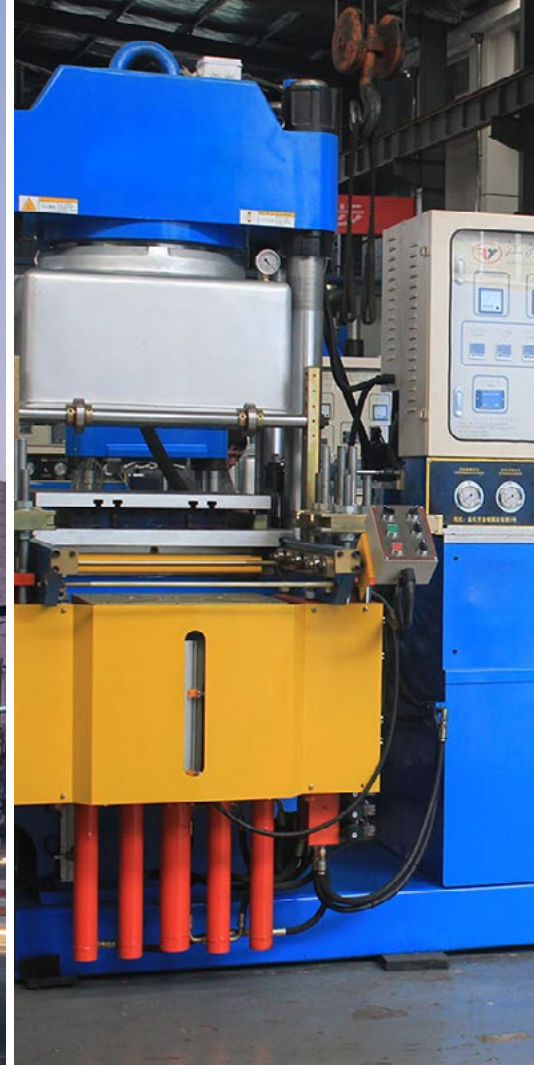
## Industrial application

Plastics & Rubber Industry & Tire



This sample only includes some TBF's products,for more information,please contact us !





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 level sensors and detection technologies for many years, and is a national high-tech enterprise with core technology, integrating production, R&D and sales as one of the intelligent technology solution providers.

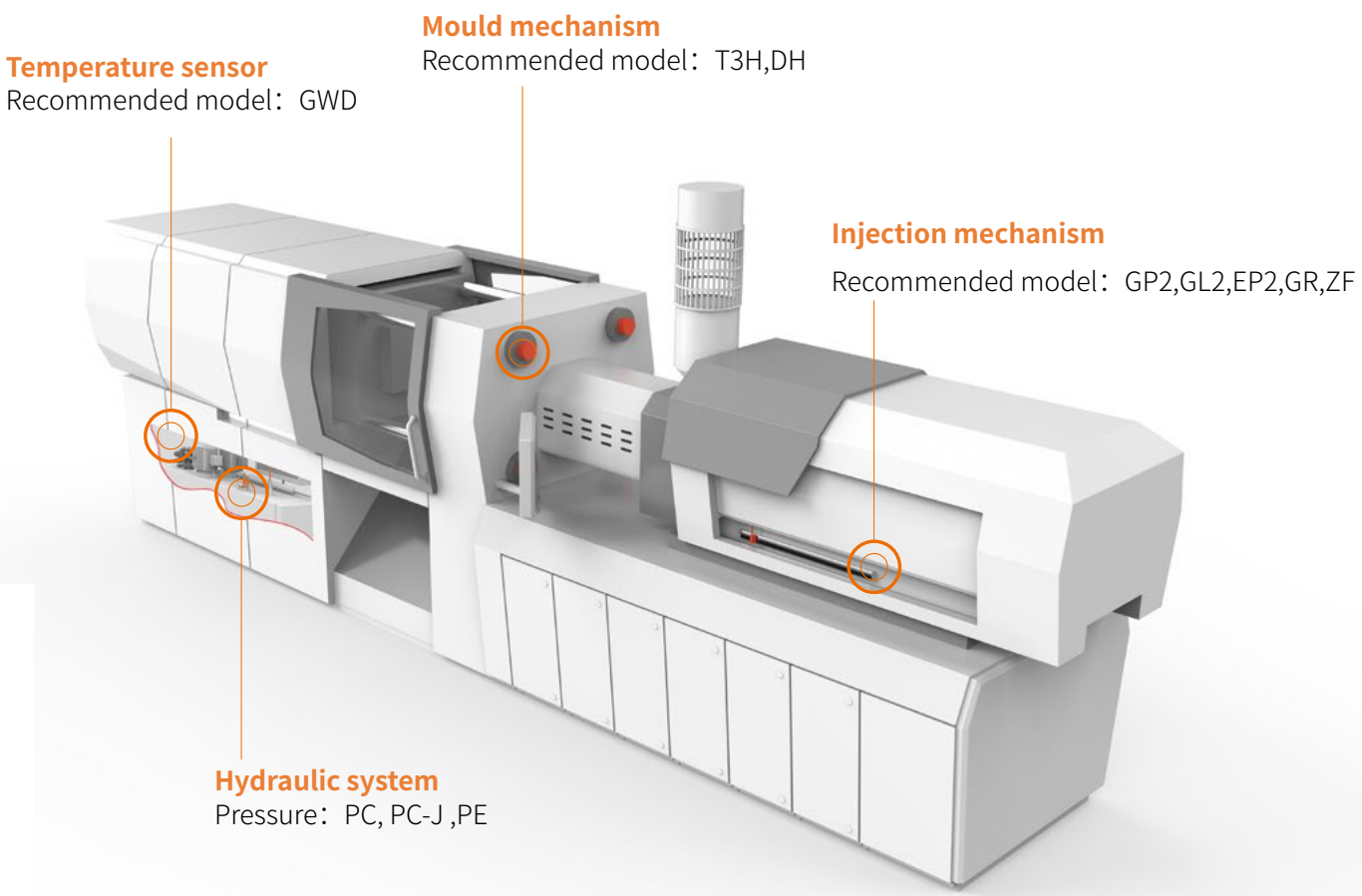
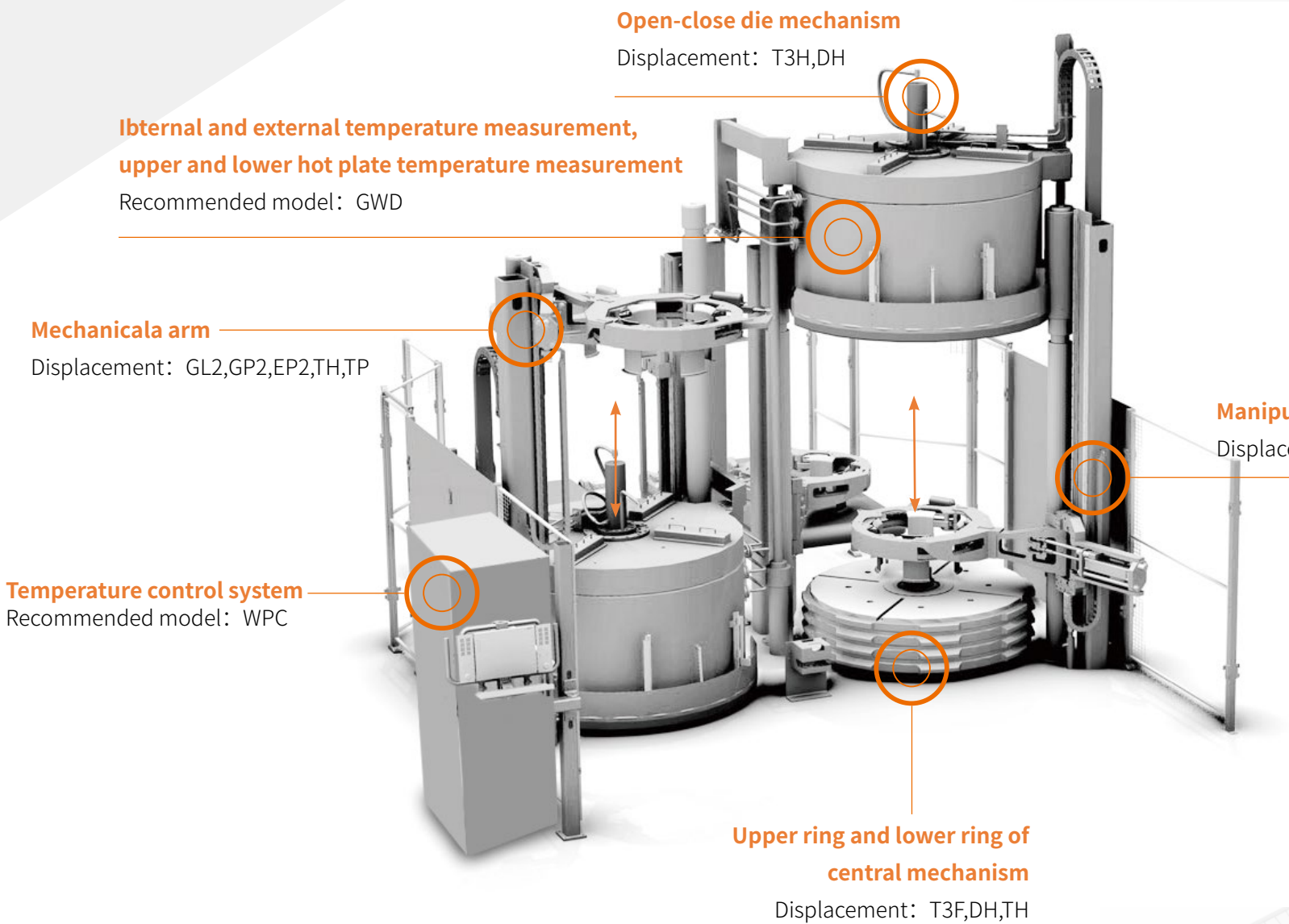
The company has four mature technology platforms: magnetostrictive sensor technology platform, rotary encoder technology platform, pressure transmitter technology platform and temperature sensor technology platform. Based on the technology platform and guided by customer needs, the company provides customers with a full range of sensing technology product solutions through professional program design, excellent quality and rapid response ability. The products have also been certified with GB/T19001-2016, CE, UL, ATEX and IECEx certificates, China National Coal mine safety certification, explosion-proof certification, 3C certification etc.



# Example of industrial application— Rubber、Plastic、Tire

**Produce:** With high precision,high reliablity and fast response,it can measure the mechanical displacement in real time and accurately,and ensure the quality and dimensional accuracy of rubber and plactic products.

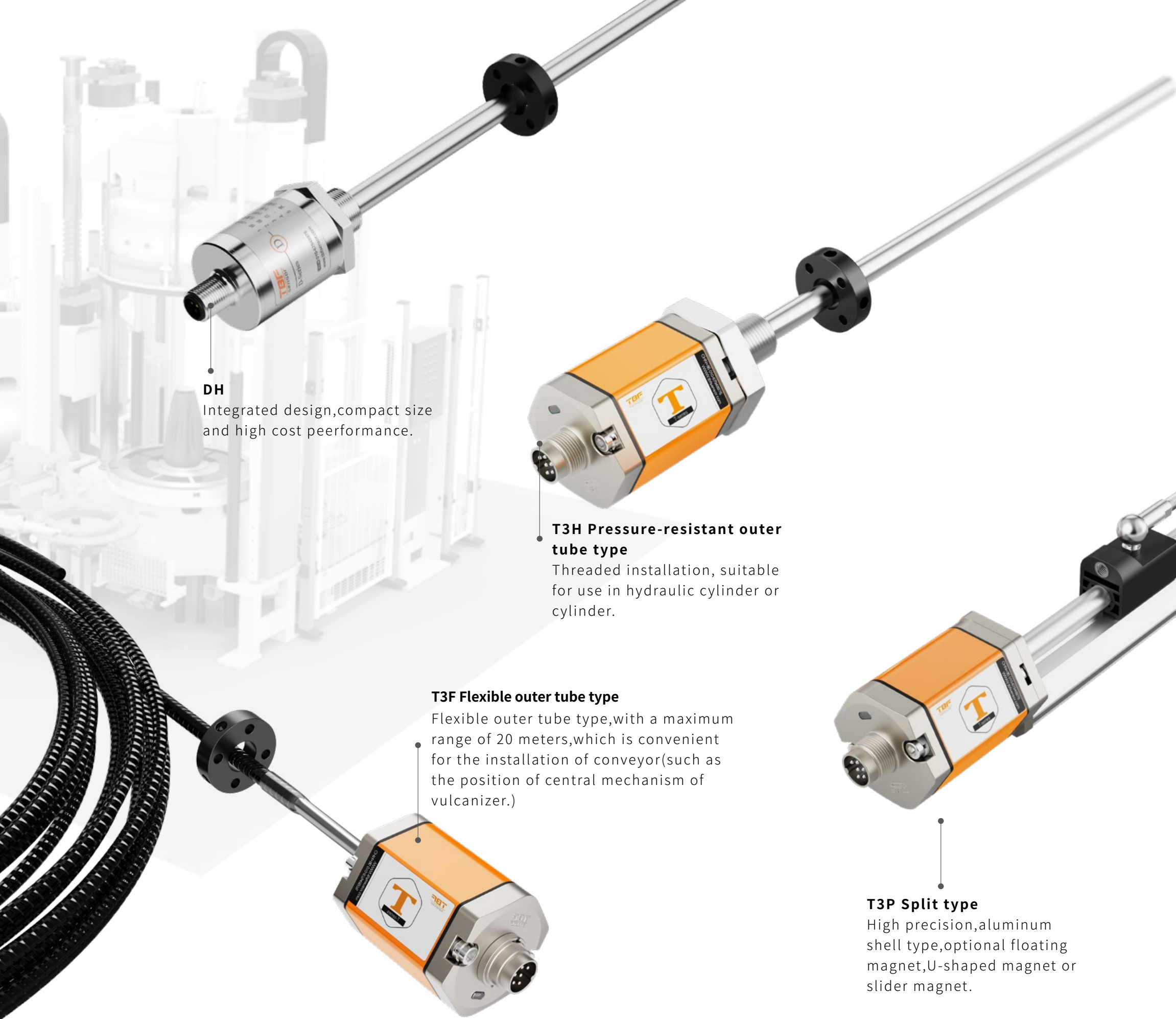
**Maintain:** By monitoring the mechanical displacement vaule,the operator can find the abnormal situation of the equipment in time,carry out preventive maintenance and avoid the influence of equipment failure on production.



**Manipulator lifting**  
Displacement: GL2,GP2,EP2,TH,TP

## Sensors are the guarantee of quality and efficiency

Grasp the key parameters in real time,make the production process under control,improve the utilization rate of equipment and create more value.



**DH**  
Integrated design,compact size  
and high cost peerformance.

**T3H Pressure-resistant outer  
tube type**  
Threaded installation, suitable  
for use in hydraulic cylinder or  
cylinder.

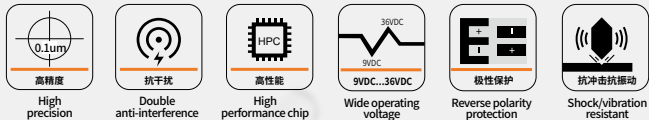
**T3F Flexible outer tube type**  
Flexible outer tube type,with a maximum  
range of 20 meters,which is convenient  
for the installation of conveyor(such as  
the position of central mechanism of  
vulcanizer.)













**T3P Split type**  
High precision,aluminum  
shell type,optional floating  
magnet,U-shaped magnet or  
slider magnet.

# T-Series

## Magnetostrictive displacement sensor

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












Type		T3H/T3P/T3F	DH
Output		Position, speed	Position, speed
Measuring length		T3H: 25-7650 T3P: 25~5600 T3F: 100-20000	25~5600
Interface type		<div> Analog</div> <div> SSI</div> <div> Start / Stop</div> <div> CANopen</div> <div> EtherNet/IP</div> <div> IO-Link</div> <div> Profibus-DP</div> <div> Profinet</div> <div> EtherCAT</div>	<div> Analog</div> <div> SSI</div> <div> CANopen</div>
Resolution	Analog	16 bit D/A	16 bit D/A
	SSI	0.1μm	0.5μm
	CANopen	1μm	2μm
	Start/Stop	Depending on the controller	--
	Profibus-DP	1μm	--
	Profinet	0.5μm	--
	EtherCAT	0.5μm	--
	EtherNET/IP	1μm	--
	IO-Link	1μm	--
Shock		T3H/T3P : 150 g/11 ms T3F/DH2 : 100 g/6 ms  IEC standard 60068-2-27	
Vibration		T3H/T3P: 30 g/10~2000 Hz T3F : 5 g/10~2000 Hz DH2 : 10 g/10~2000 Hz  IEC standard 60068-2-6 (excluding resonance frequency)	



# 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 plactic 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			
			
			
Resolution	Analog	16 bit D/A	16 bit D/A
	SSI	0.5μm	--
	CANopen	--	1μm
	EtherCAT	0.5μm	--
	IO-Link	1μm	--
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)		

EP2  
Integral aluminum shell type

GR  
Push-pull rod aluminum profile cylinder design,providing a variety of installation options

GL2  
Miniaturized design,optional slider magnet or suspension magnet

ZF  
Concompact design,suitable for external installation,optional slider magnet or suspension magnet

GP2  
High precision,integrated aluminum shell type,optional slider magnet or suspension magnet

# 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



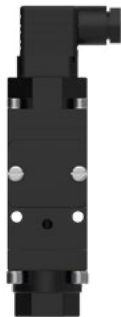
**PE -type pressure transmitter**  
High precision diffusion silicon flat film core  
Measuring range:-1~400Bar



**PC-J-type pressure transmitter**  
Metal sputtering film pressure core, compact design, small size  
Measuring range:5~600Bar



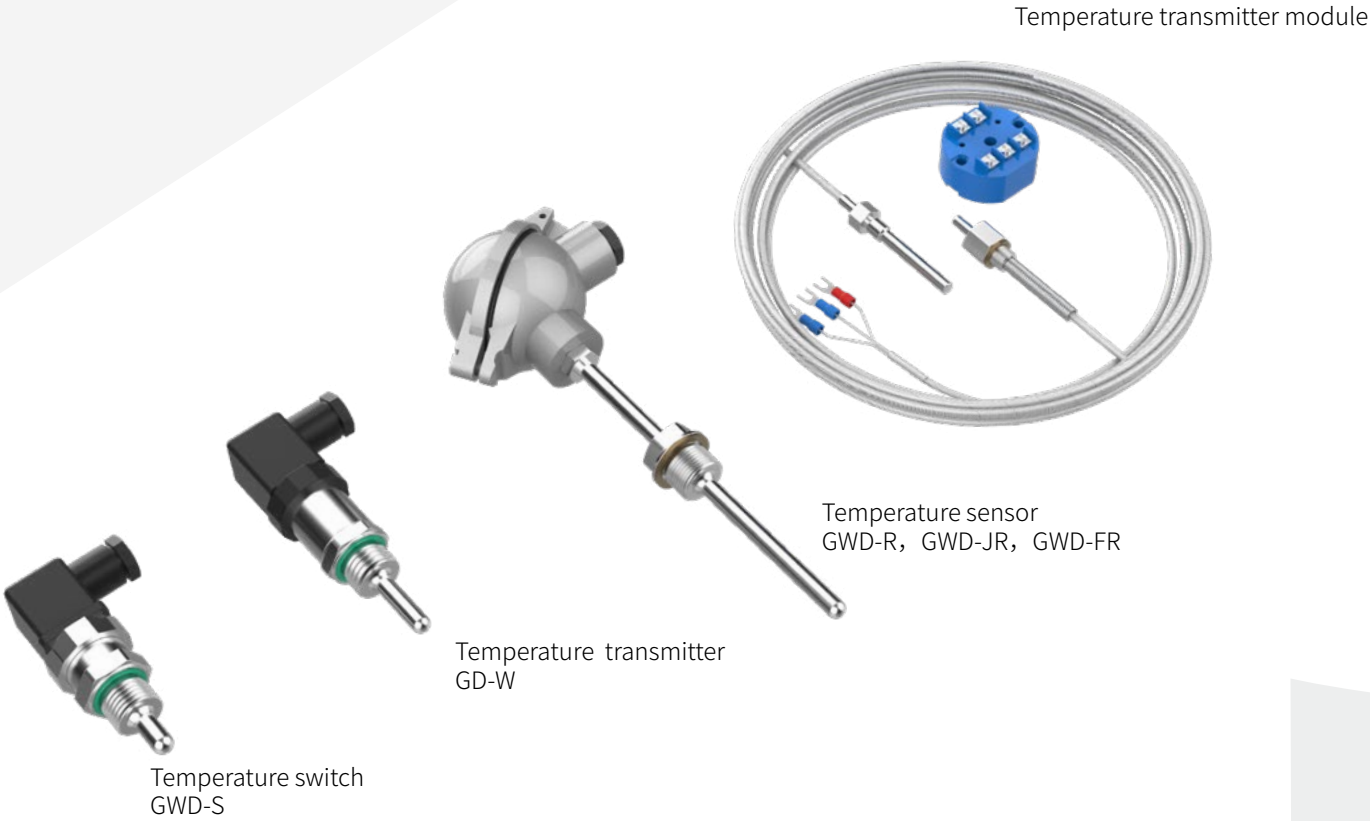
Type	PC-J	PE	PC
Pressure core	Metal sputtering film	Diffused silicon flat film	Diffused silicon
Measuring range	5~600Bar	-1~400Bar	-1~600Bar
Pressure Type	Manometer pressure	Gauge pressure and absolute pressure	Gauge pressure, absolute pressure and sealed gauge pressure



Type	PC-D	PC-T / PE-T	PC / PE / PC-J
Name	Machanical 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

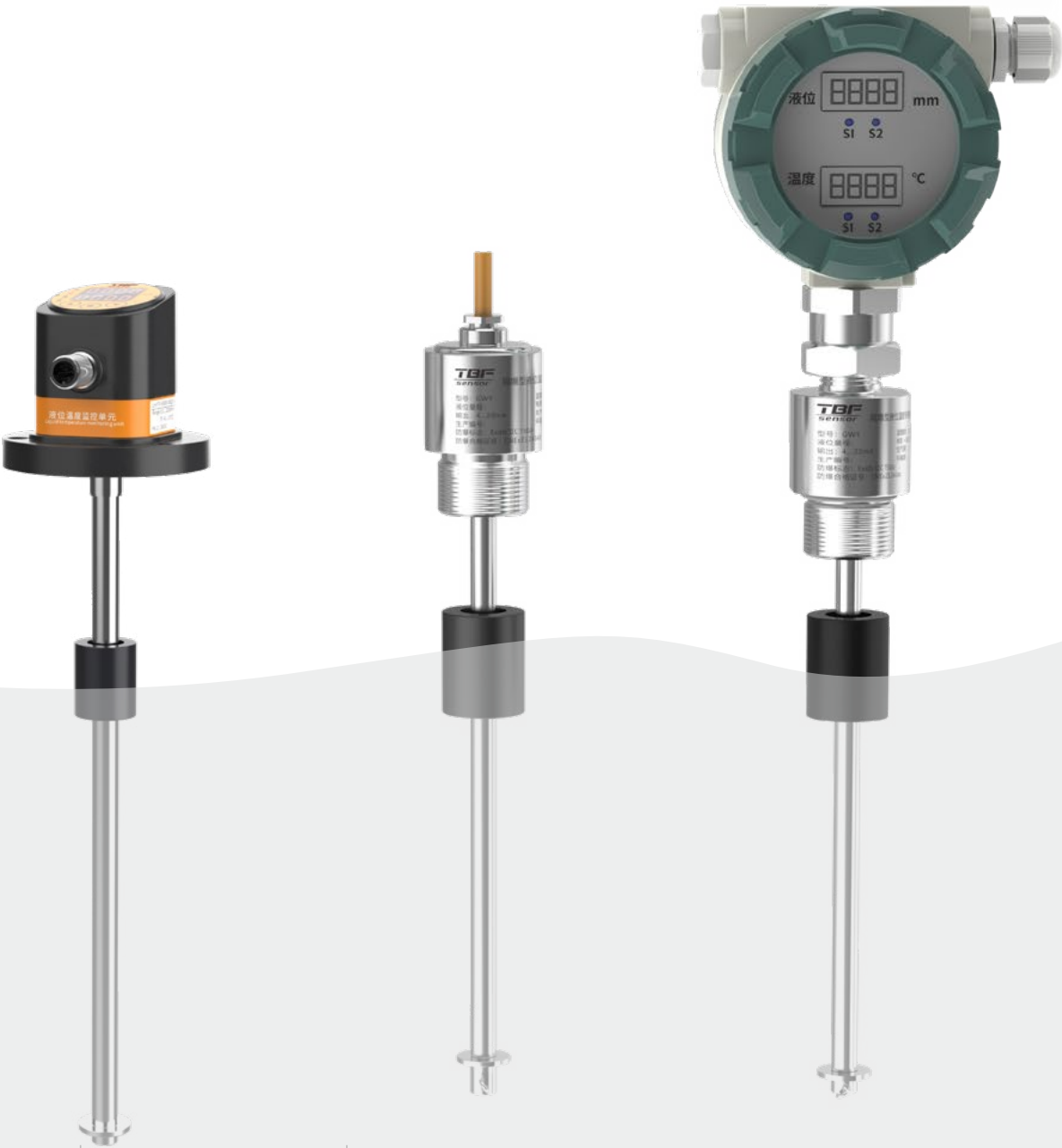


Temperature measuring range	-50~300℃ ( normal -50~250℃)					
Graduation number/resistance value		The standard resistance value R at 0℃		The standard resistance value R at 100℃		
	PT100	100.00		138.51		
	PT1000	1000.00		1385.1		
Measurement Error	Grade	Error of resistance at zero degree%		Temperature error °C		
	A	±0.06		± (0.15+0.002   t   )		
	B	±0.12		± (0.30+0.005   t   )		
Response time	Rod diameter mm	5	6	8	10	12
	Thermal response time s (T 0.5)	≤ 8	≤ 15	≤ 30	≤ 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℃	-40...125℃	-40...125℃
Output	4 channels of NPN/PNP+2 channels of analog signals	Analog、CANopen	Analog、CANopen



# 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



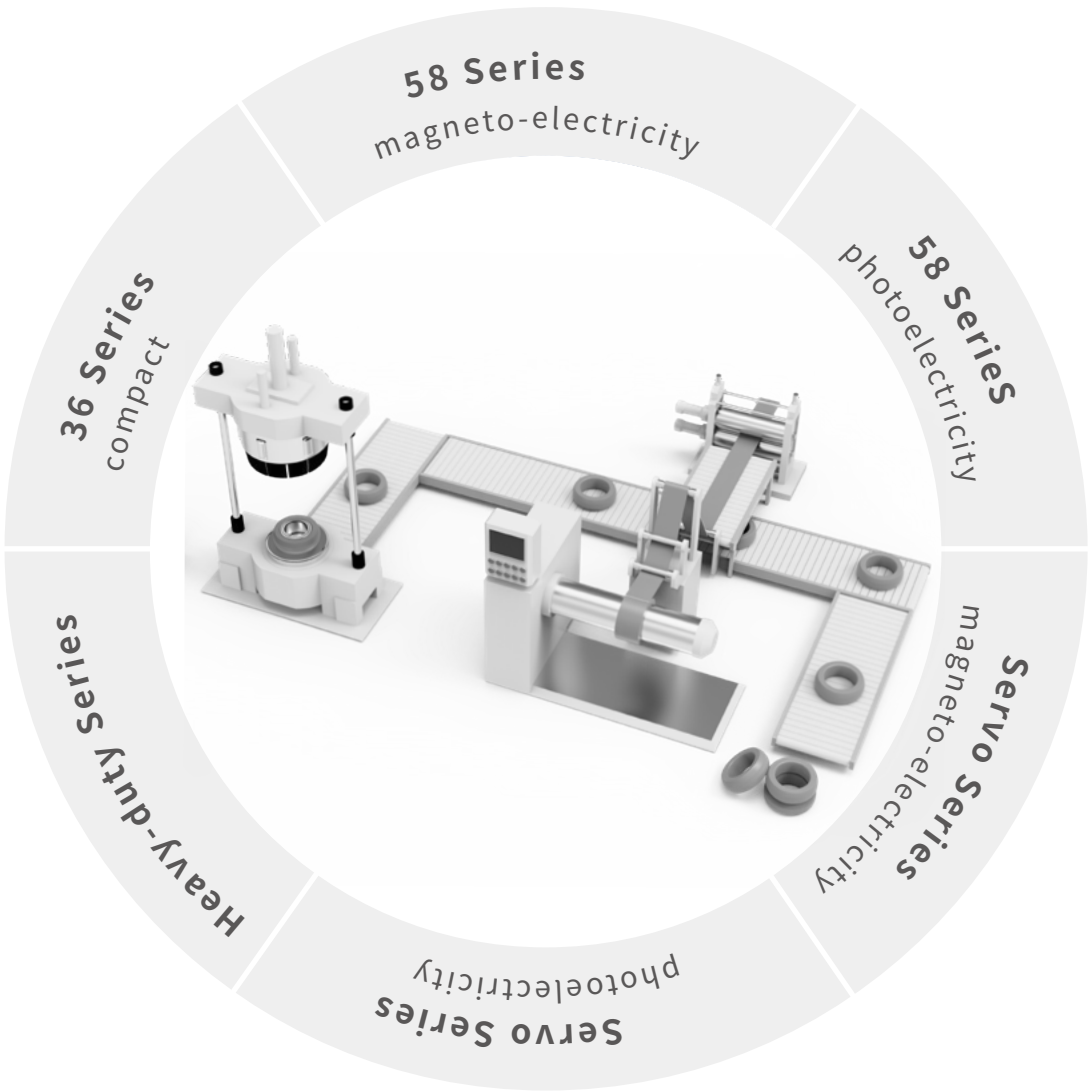
**BNTI58**  
Diameter: 58mm  
Single lap resolution: 5000PPR  
Output: TTL/HTL



**Servo Series-magneto-electricity Absolute value**  
Outside diameter: 34/35mm  
Single lap resolution: 17bit  
Number of pturns: 16bit  
**Increment**  
Outside diameter: 36mm  
Resolution: 1...4096C/T



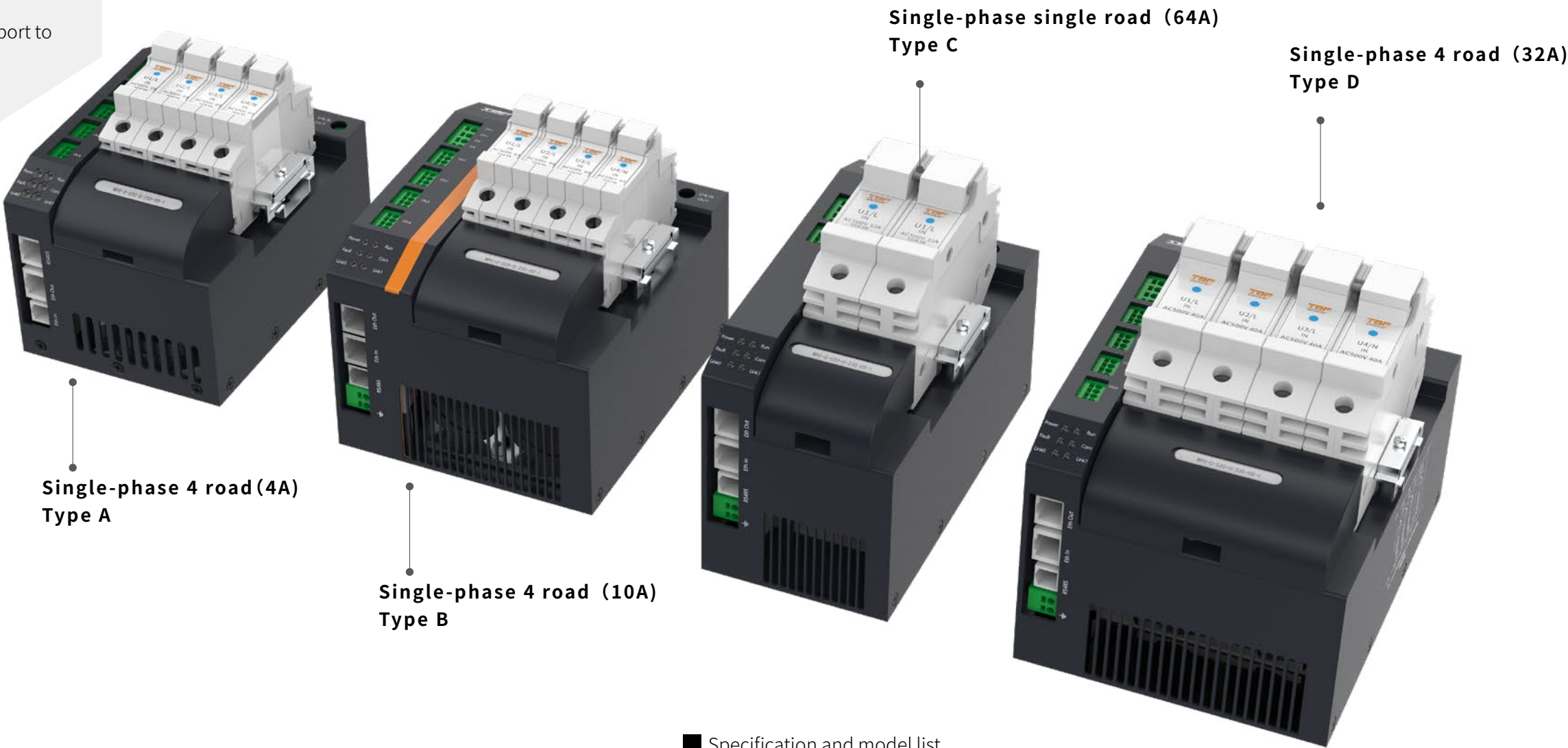
**Servo Series-photoelectricity Absolute value**  
Outside diameter: 35/44/46/79mm  
Single lap resolution: 17...23bit  
Number of pturns: 16bit  
**Increment**  
Outside diameter: 35/44/46/79mm  
Resolution: 1024/2500/5000 C/T





# WPC Power controllers

- + It communicates with the host computer through Ethernet port, RS485 and other interfaces.
- + Human-friendly interaction is achieved through the indication of OLED LCD screen and LED light.
- + Multi-channel signal input design, current signal, voltage signal, platinum resistance signal input can be.
- + A variety of control methods: constant voltage, constant current, constant power, open loop, frequency control.
- + Multiple protection functions: phase loss, overcurrent, overtemperature, disconnection protection, module breakdown alarm.
- + It can communicate with the PC through the USB port to realize parameter setting.



■ Specification and model list









Specifications and models	Circuit	Type	Measure (mm)			Fix	Rated power (kW)	Rated current (A)	Rated voltageAC (V)	Dissipate heat
			Length	Width	Height					
WPC-D-004-Z-230-EC-1	single-phase 4 road	A	160	106	136	DIN35	4	4	230	Natural cooling
WPC-D-010-Z-230-EC-1	single-phase 4 road	B	160	128	136	DIN35	10	10	230	Air blast cooling
WPC-D-032-Z-230-EC-1	single-phase 4 road	D	160	128	136	DIN35	30	32	230	Air blast cooling
WPC-D-010-Z-380-EC-1	single-phase 4 road	B	160	128	136	DIN35	16	10	380	Air blast cooling
WPC-A-050-Z-230-EC-1	single-phase single road	C	189	88	164	DIN35	11	50	230	Air blast cooling









# Product overview

## T Plastic, rubber and tires

For more information, please contact TBF

### Position detection

Basic information	<b>T3H</b> Position, speed measurement range: 25...7650mm	<b>T3P</b> Position, speed measurement range: 25...5600mm	<b>T3F</b> Position, speed measurement range: 100...20000mm	<b>DH</b> Position, speed measurement range: 25...5600mm
Application	Measure the mold clamping and stroke movement, and the position of core-pulling mechanism; Detect that positions of the upper re and the lower ring of the central mechanism, and the real-time positions of the open-close die and the movable die, Mechanical arm position detection, etc.			
Interface type	 Analog  SSI  Start/Stop  CANopen  EtherCAT			 Analog  SSI  Start/Stop
Authentication	CE、UL		CE、UL	

Basic information	<b>EP2</b> Position, speed measurement range: 50...5600mm	<b>GP2</b> Position, speed measurement range: 50...5600mm	<b>GL2</b> Position, speed measurement range: 50...5600mm	<b>GR</b> Position measurement range: 50...1500mm	<b>ZF</b> Position measurement range: 50...1500mm
Application	Measure the movement of the manipulator, open and close the real-time position of the mold, and detect the movement of the injection axis.				
Interface type	 Analog  SSI  Start/Stop  EtherCAT  IO-Link			 Analog  CANopen	 Analog
Authentication	CE	CE	CE	CE	CE

### Pressure detection

Basic information	<b>PC-J Series</b> Metal sputtering film 5~600Bar	<b>PE Series</b> Diffused silicon flat film -1~400Bar	<b>PC Series</b> Diffused silicon -1~600Bar	<b>PC-T Series</b> With integrated digital display -1~600Bar	<b>Mechanical pressure switch</b> Adjustable extent (Mpa) 0.014~12.4	<b>PC/PE/PC-J</b> Hessman digital display pressure transmitter
Application	Monitor the pressure on the hydraulic power unit and monitor the pressure in the vulcanizer					
Output	Current/voltage signal	Simulation current/voltage signal, RS485	Simulation current/voltage signal	Simulation current/voltage signal	SPDT	/
Pressure type	Gauge pressure	Gauge pressure, absolute pressure	Gauge pressure, absolute pressure and sealed gauge pressure	Gauge pressure, absolute pressure and sealed gauge pressure	/	Gauge pressure, absolute pressure and sealed gauge pressure

### Temperature detection

Basic information	<b>GWD-R/FR/JR</b> -50~250°C -50~300°C	<b>GD-W</b> Temperature transmitter -20~120°C	<b>GWD-S</b> Temperature switch 0~100°C	<b>LH-YT</b> -40~125°C 40...2000mm	<b>YW/YW+digital display</b> -40~125°C 50...4500mm
Output	Resistance signal	4...20mA	SPST	Analog	Analog
Application	Thermal pipeline, vulcanizing machine liquid or gas, hot plate temperature measurement, hydraulic station temperature detection				
Resistance model	PT100 A class, PT100 B class, PT1000 A class, PT1000 B class				

### Rotation measurement

Basic information	<b>BNMA36</b> Absolute value absolute value+increment	<b>BNMA58</b> Absolute value absolute value+increment	<b>BNTI99/BNTI100/BNTI58</b> Increment	<b>Servo encoder</b> Absolute value	<b>Servo encoder (Increment)</b> Increment
Application	Automatic control and angle measurement of production line			Electric vulcanizer, servo motor	

### Power control

Basic information	<b>WPC power controller</b> Current 10~32A
Application	By controlling the output power, the output power of the heating equipment is adjusted
Control model	U, U <sup>2</sup> /I, I <sup>2</sup> /Power P/Phase constant work/Frequency zero-crossing power adjustment/Fixed period zero-crossing power regulation
Protocol	RS485, PROFINET, EtherCAT, EtherNET, Modbus
Circuit	Single-phase single path、Single-phase double circuit、Single-phase 4 road





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