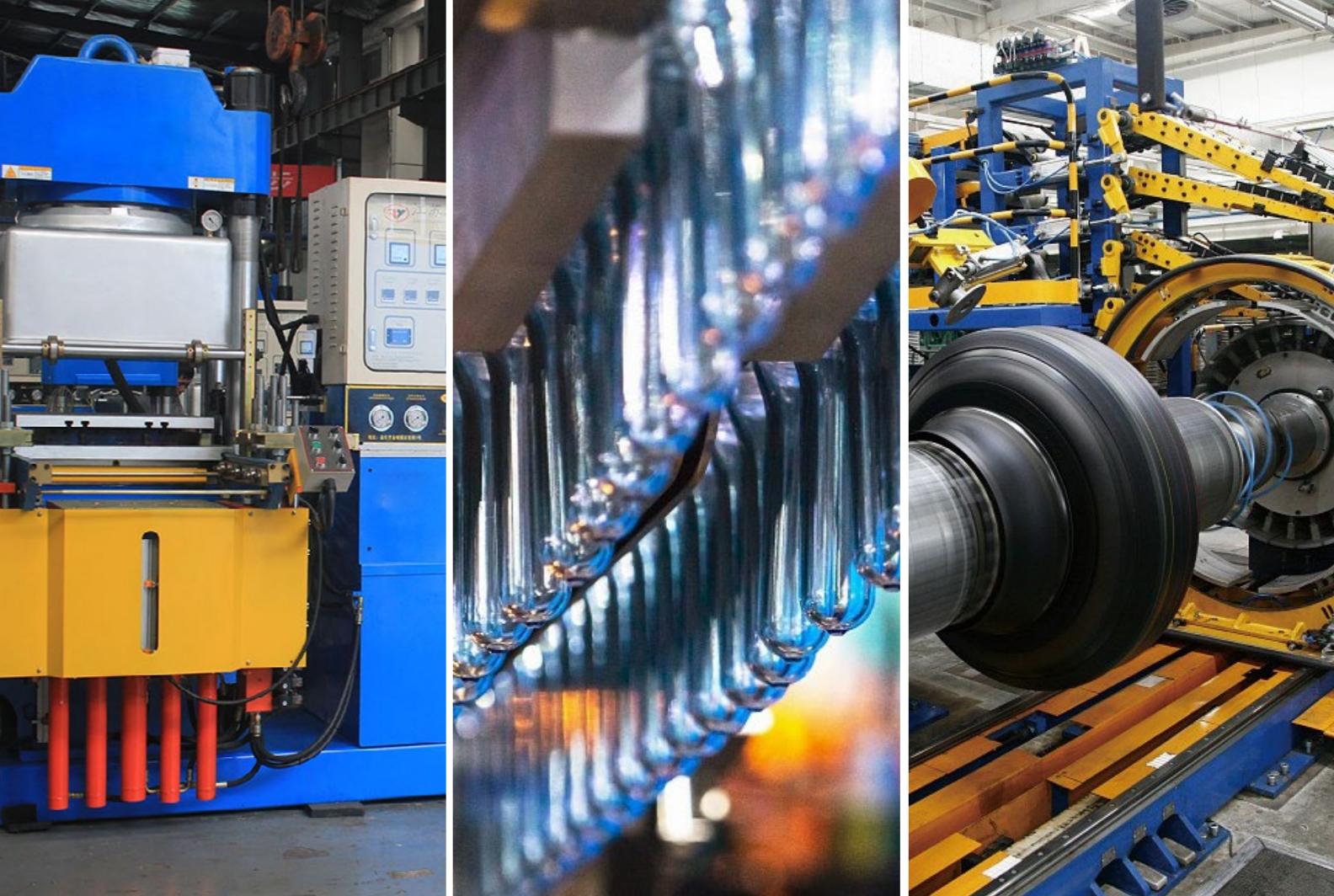


## Industrial application

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



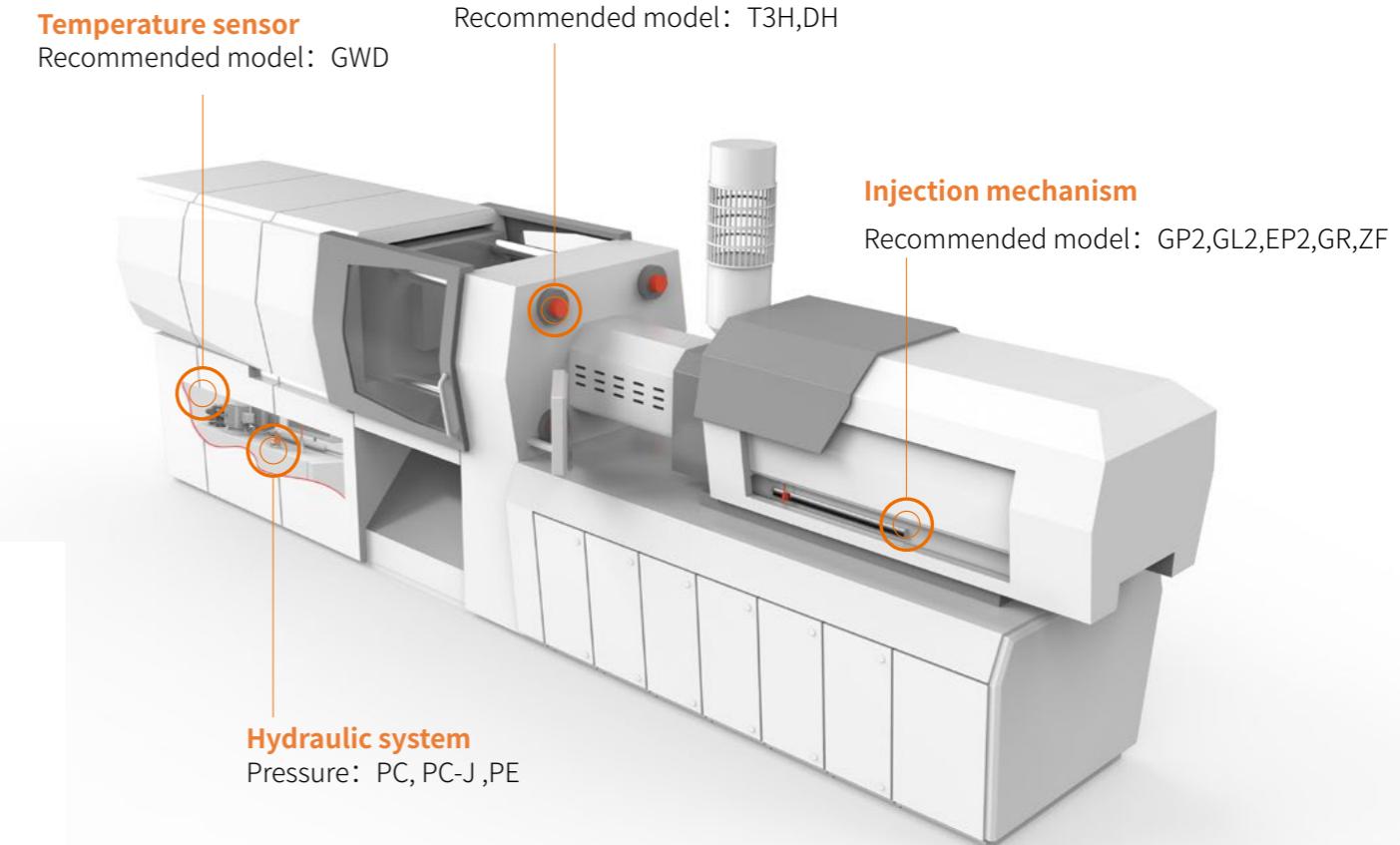
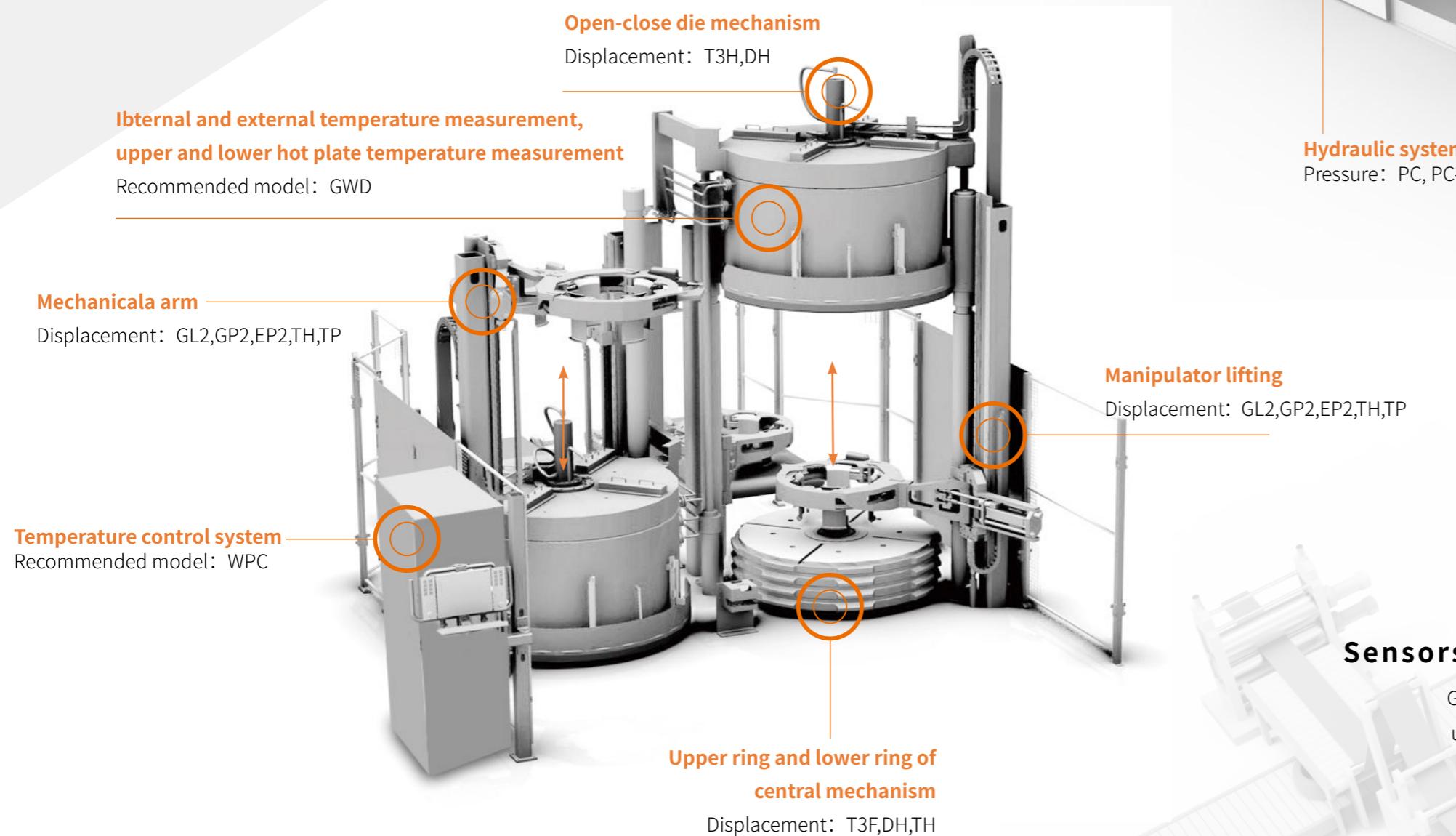
Beijing Tebeifu Electronic Technology Co., Ltd. (located in Beijing Economic and Technological Development Zone) has been committed to the research and development of level sensors and detection technologies for many years, and is a national high-tech enterprise with core technology, integrating production, 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

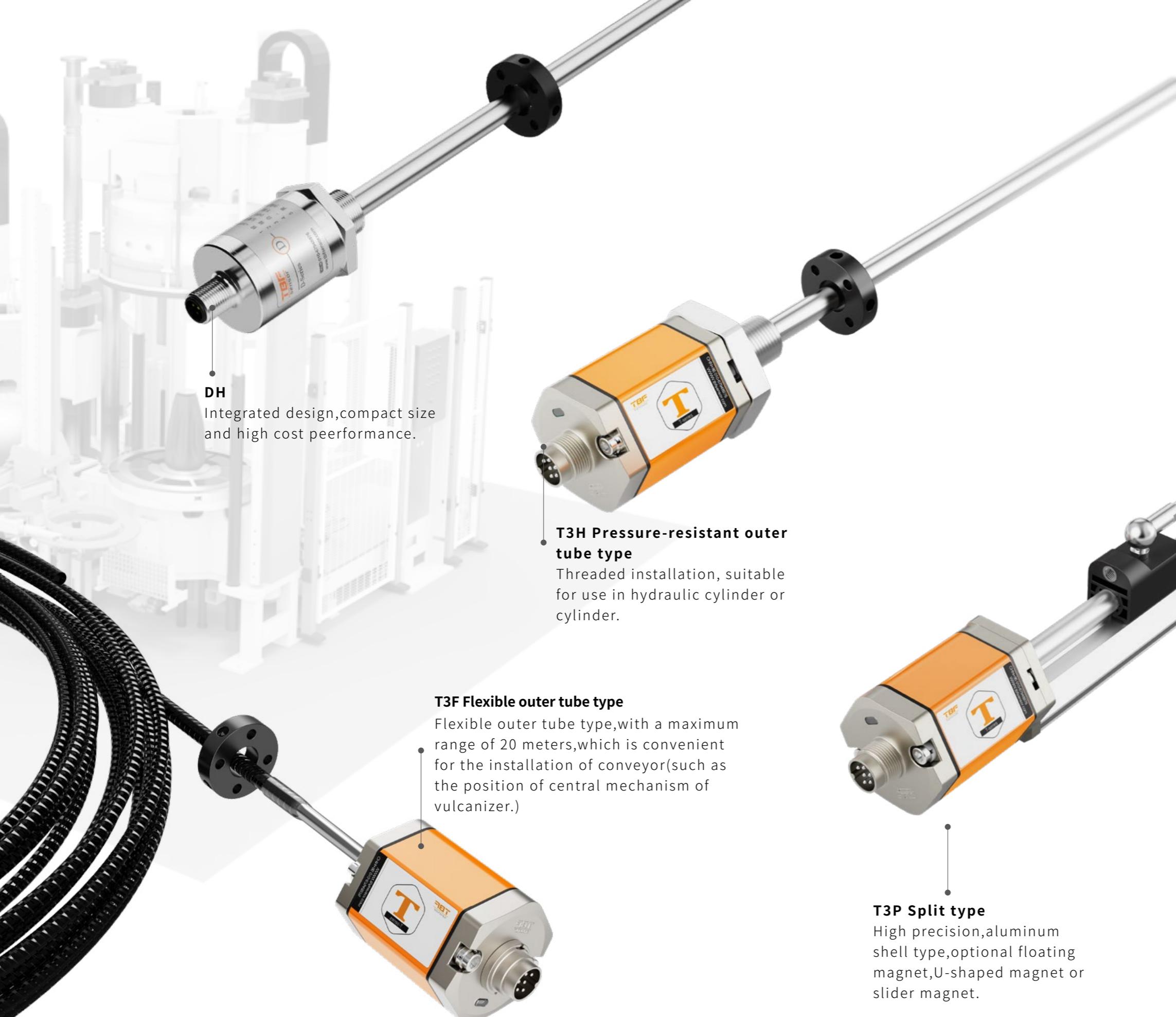
**Produce:** With high precision, high reliability and fast response, it can measure the mechanical displacement in real time and accurately, and ensure the quality and dimensional accuracy of rubber and plastic products.

**Maintain:** By monitoring the mechanical displacement value, 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.



## 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.



## 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	Analog SSI Start/Stop CANopen  EtherNet/IP IO-Link Profinet EtherCAT	Analog SSI 
Resolution	Analog SSI CANopen Start/Stop Profibus-DP Profinet EtherCAT EtherNET/IP IO-Link	16 bit D/A 0.1μm 1μm Depending on the controller 1μm 0.5μm 0.5μm 1μm 1μm 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 plastic machinery and other fields.

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



## 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.

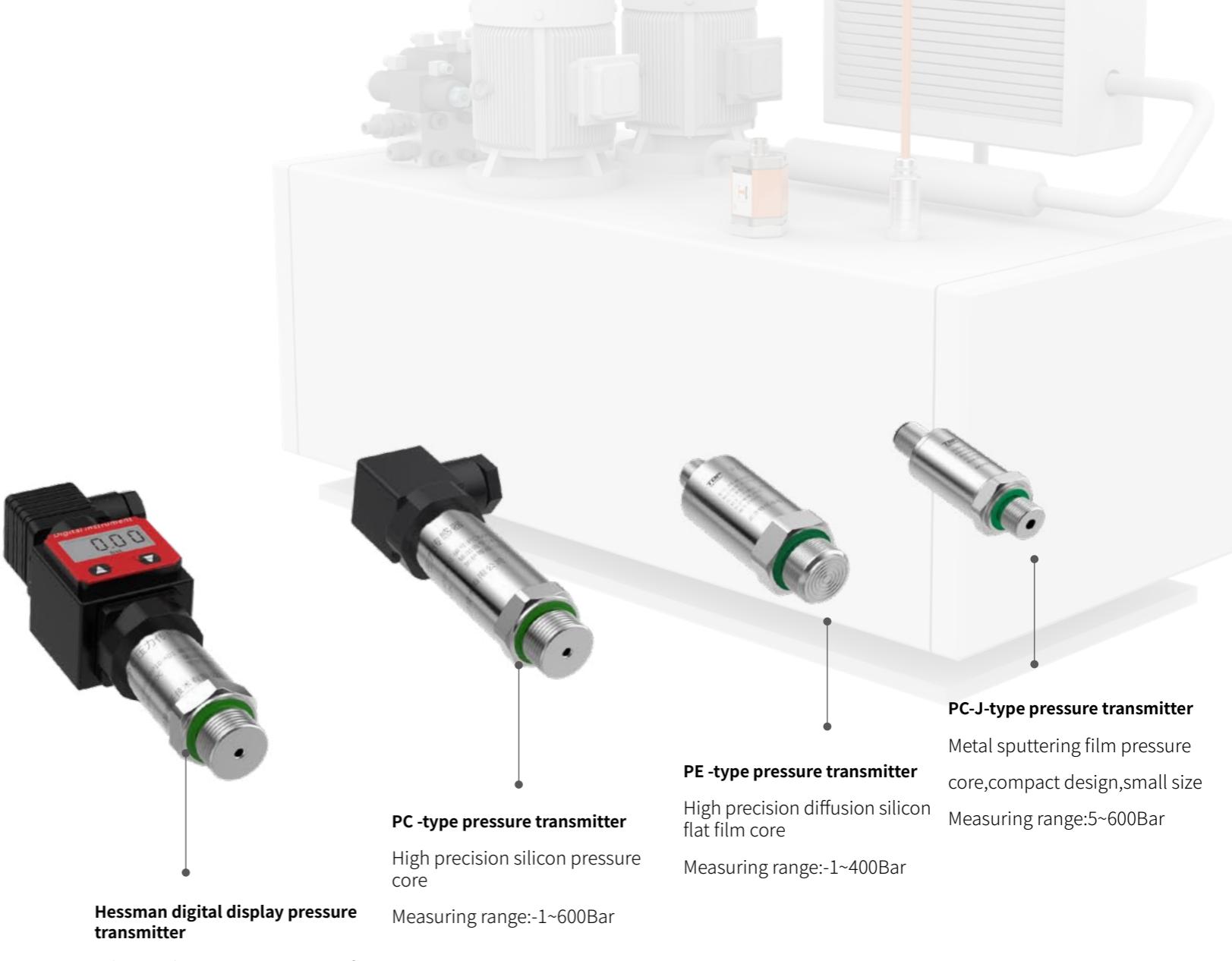


**Digital pressure transmitter**

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



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



**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

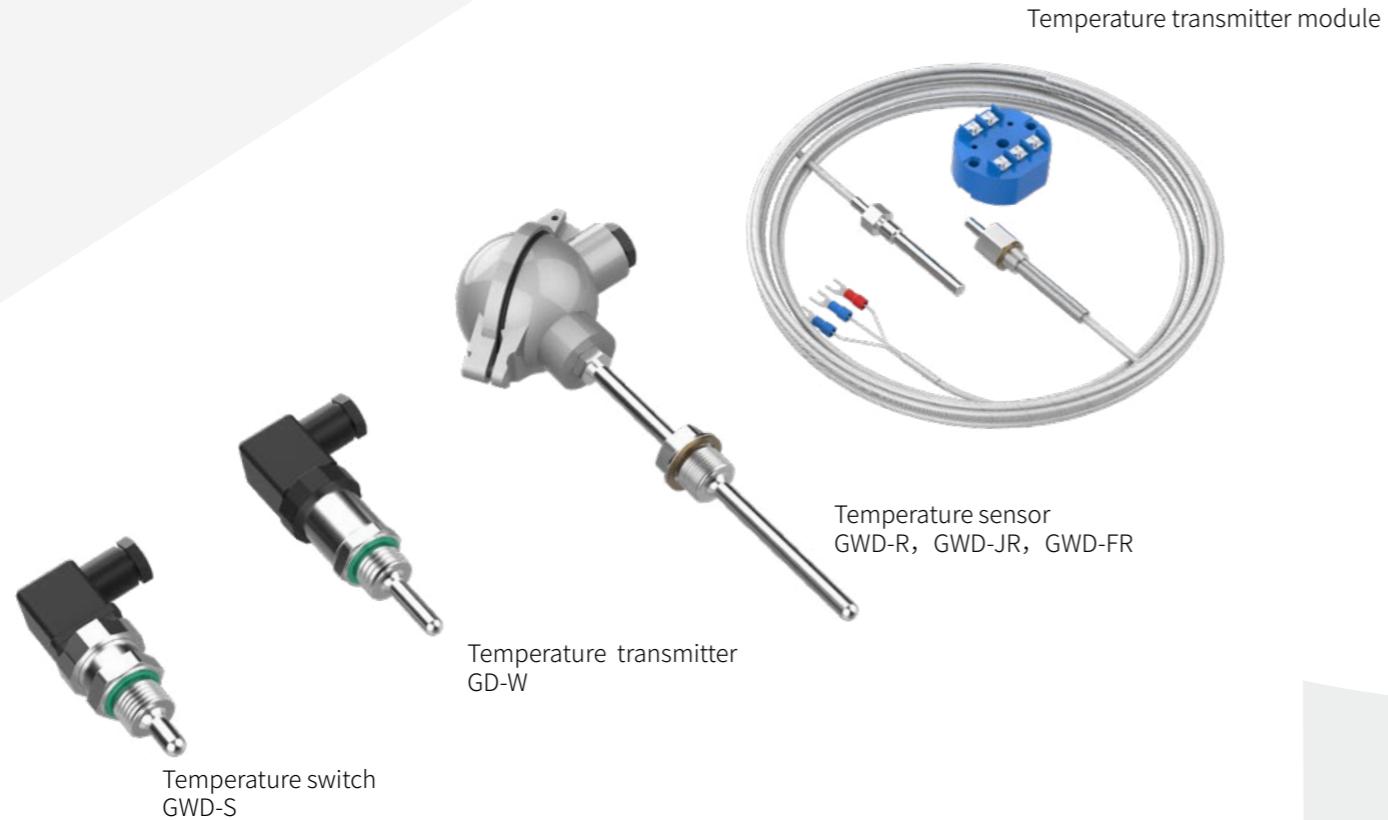
Measuring range:5~600Bar



Type	PC-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

Measurement Error	Grade	Error of resistance at zero degree%		Temperature error °C	
	A	±0.06	± (0.15+0.002 t )	B	±0.12

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°C	-40...125°C	-40...125°C
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



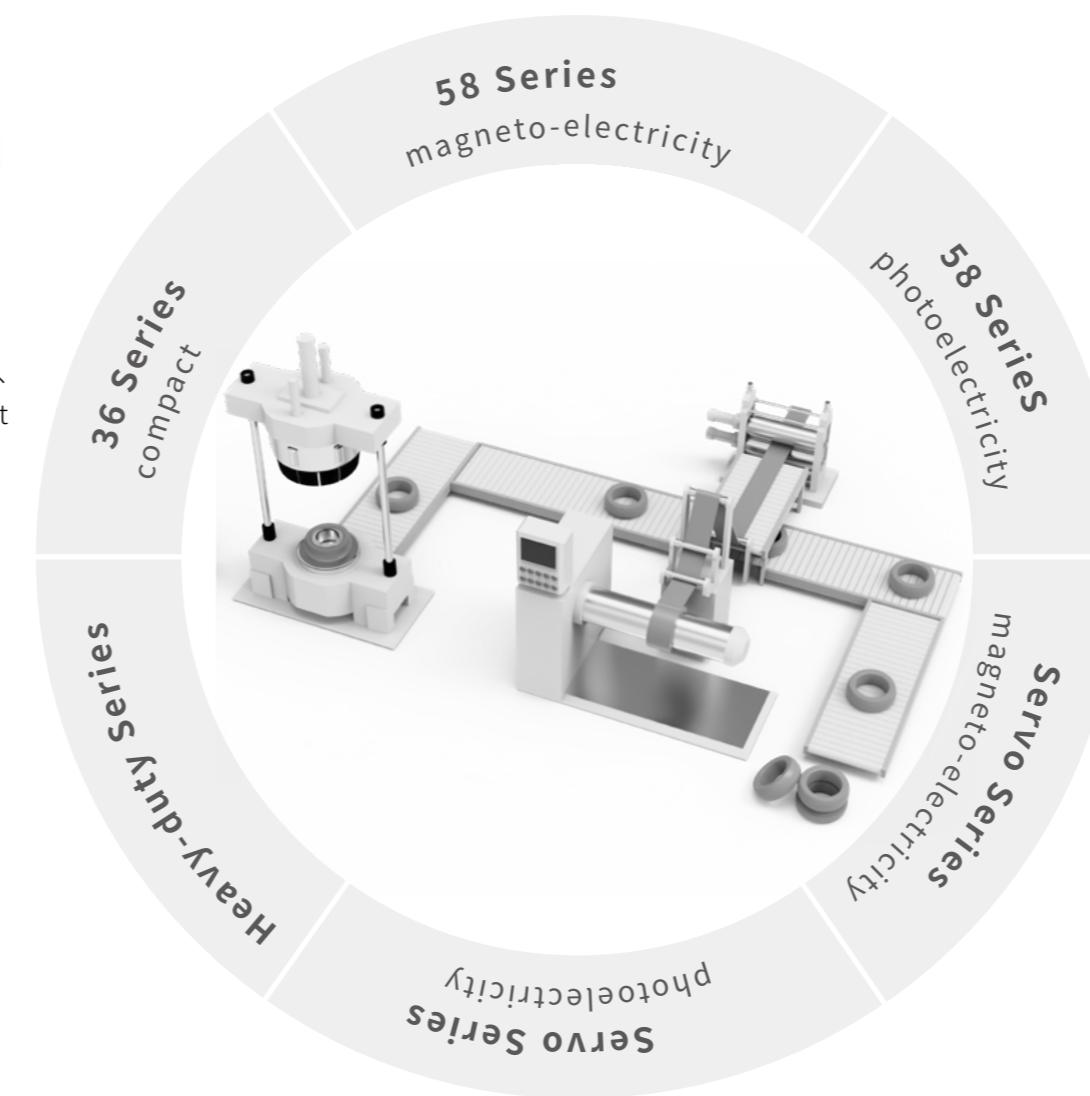
**BNMA58**

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: 35/44/46/79mm  
Resolution: 1024/2500/5000 C/T

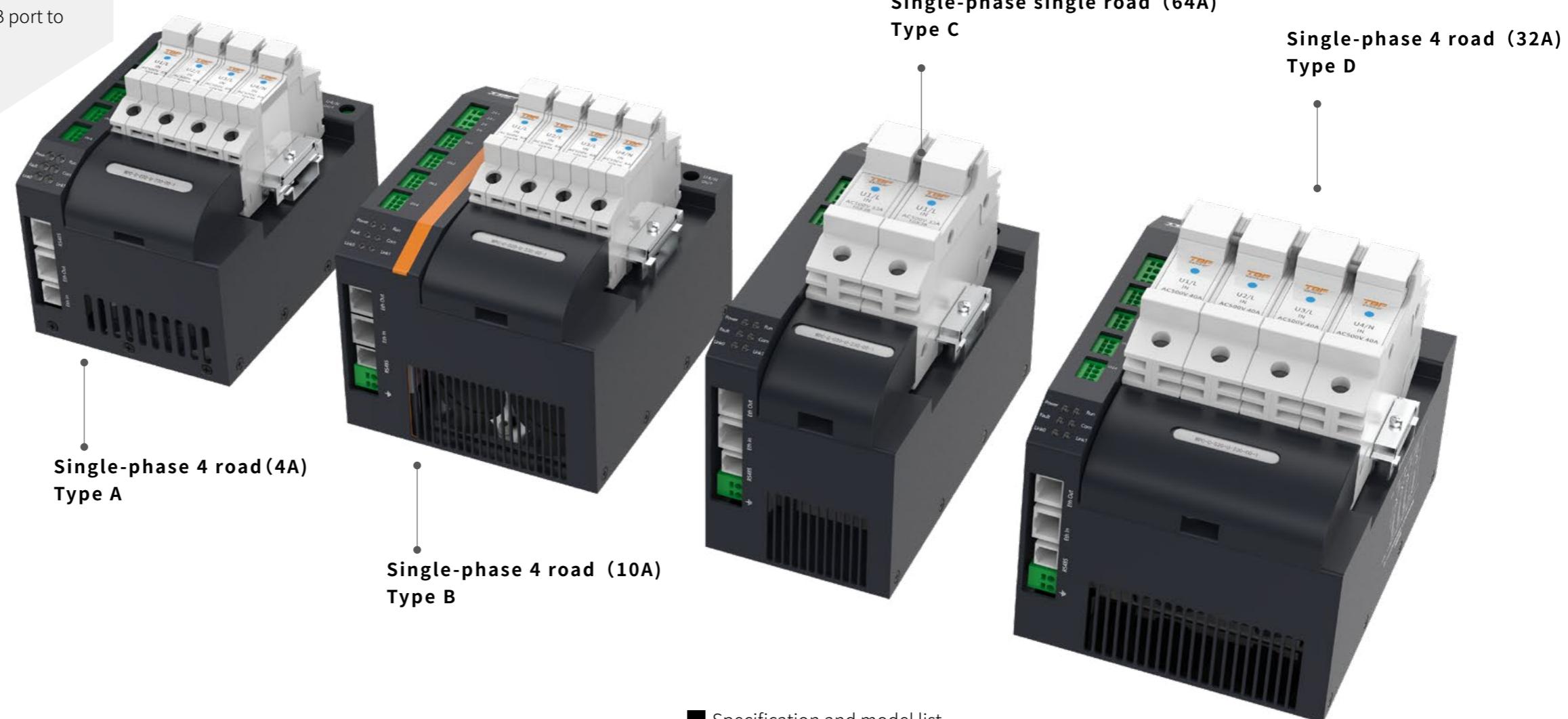


**SERVO Series-photoelectricity  
Absolute value**

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

## 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 voltage AC (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

<b>Basic information</b>	<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
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<b>Application</b>	Measure the mold clamping and stroke movement, and the position of core-pulling mechanism; Detect the positions of the upper ring 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.
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<b>Interface type</b>	  		
<b>Authentication</b>	CE、UL	CE、UL	CE、UL

<b>Basic information</b>	<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
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<b>Application</b>	Measure the movement of the manipulator, open and close the real-time position of the mold, and detect the movement of the injection axis.
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<b>Interface type</b>	  		
<b>Authentication</b>	CE	CE	CE

## ■ Pressure detection

<b>Basic information</b>	<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
<b>Application</b>	Monitor the pressure on the hydraulic power unit and monitor the pressure in the vulcanizer					
<b>Output</b>	Current/voltage signal	Simulation current/voltage signal, RS485	Simulation current/voltage signal	Simulation current/voltage signalz	SPDT	/
<b>Pressure type</b>	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

<b>Basic information</b>	<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
<b>Output</b>	Resistance signal	4...20mA	SPST	Analog	Analog
<b>Application</b>	Thermal pipeline, vulcanizing machine liquid or gas, hot plate temperature measurement, hydraulic station temperature detection				
<b>Resistance model</b>	PT100 A class, PT100 B class, PT1000 A class, PT1000 B class				

## ■ Rotation measurement

<b>Basic information</b>	<b>BNMA36</b> Absolute value	<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
<b>Application</b>	Automatic control and angle measurement of production line				

## ■ Power control

<b>Basic information</b>	<b>WPC power controller</b> Current 10~32A				
<b>Application</b>	By controlling the output power, the output power of the heating equipment is adjusted				
<b>Control model</b>	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				
<b>Protocol</b>	RS485, PROFINET, EtherCAT, EtherNET, Modbus				
<b>Circuit</b>	Single-phase single path, Single-phase double circuit, Single-phase 4 road				



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