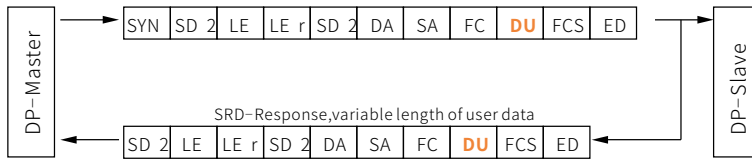




# T3H、 T3P - Profibus-DP

## T-Series III Data Sheet



- + Updated new generation: stronger performance
- + Resolution highest up to 1µm
- + The sensor address is set by dialing code, which is convenient and reliable without manual operator.

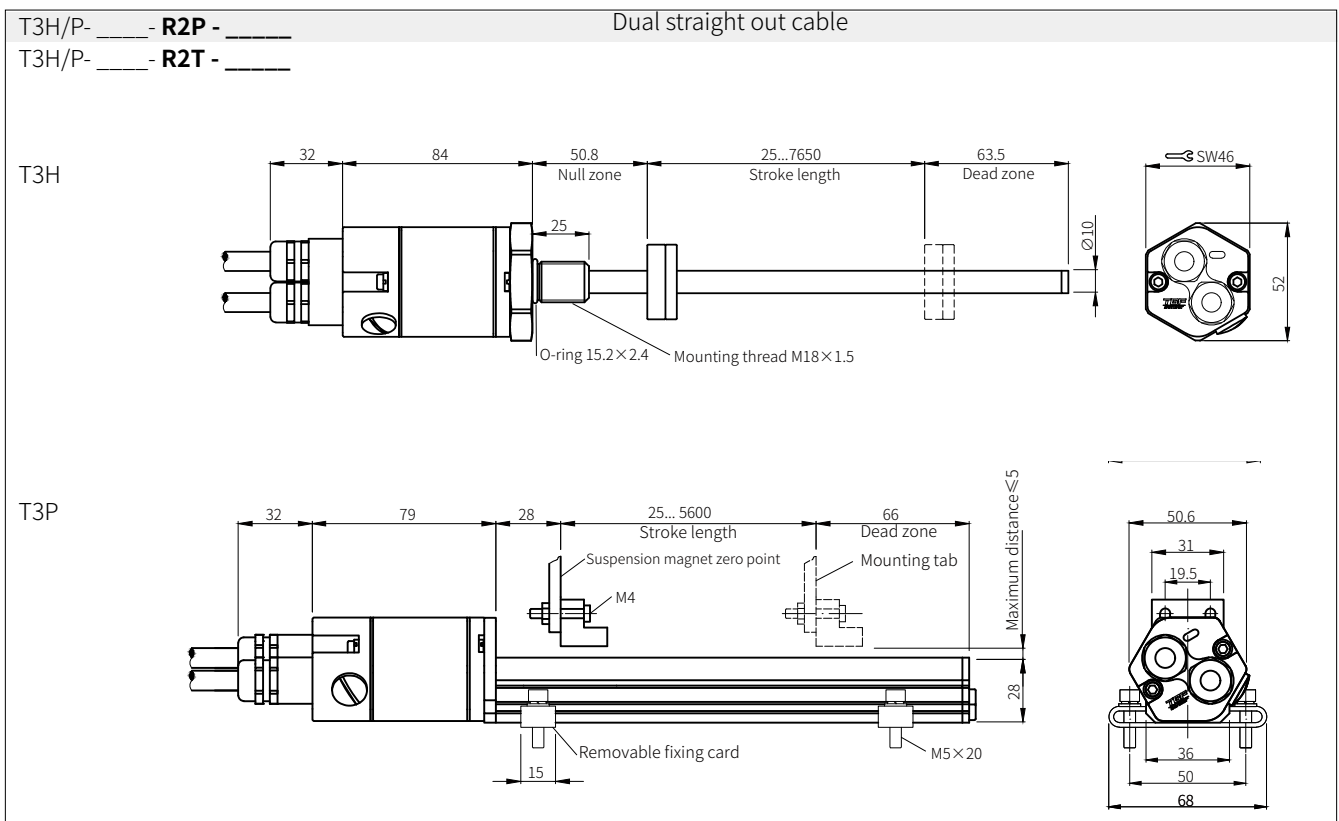
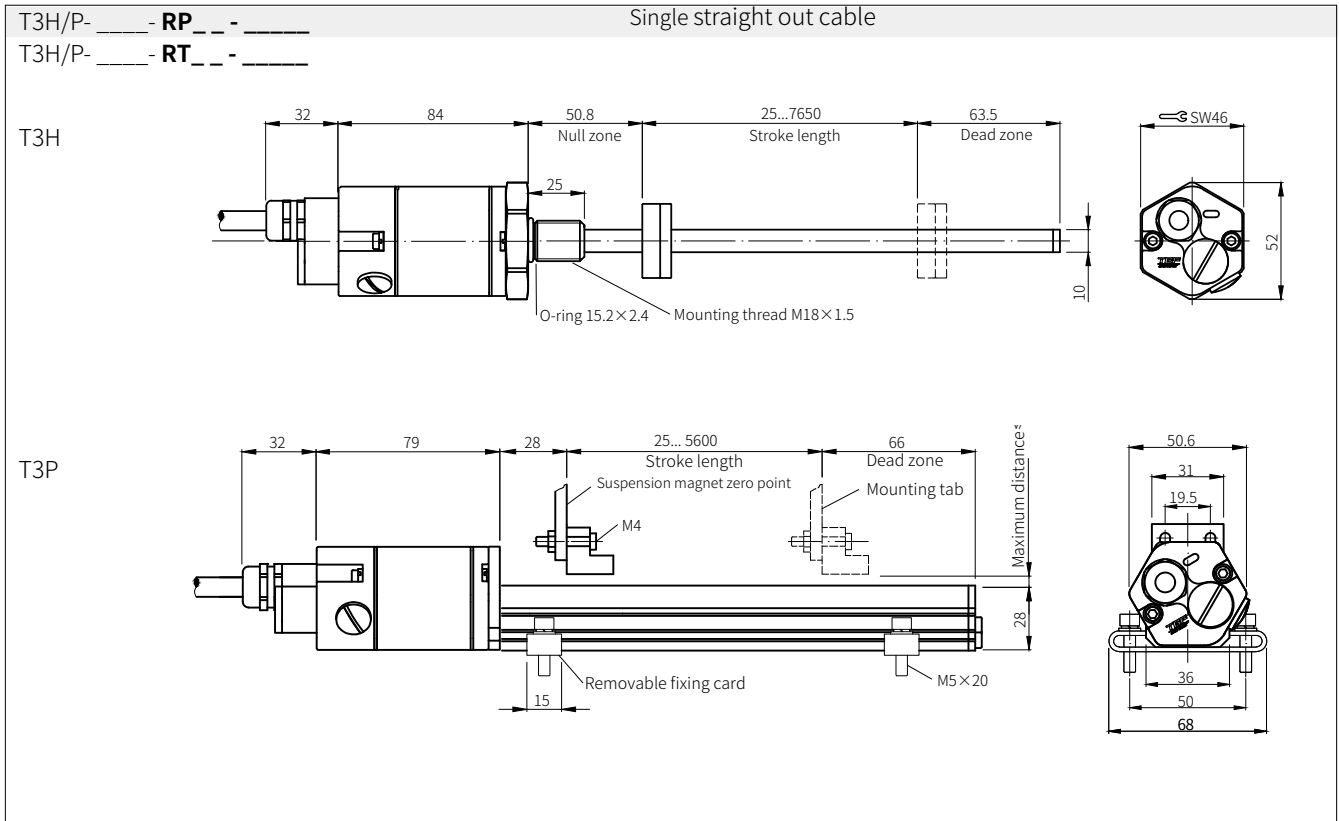


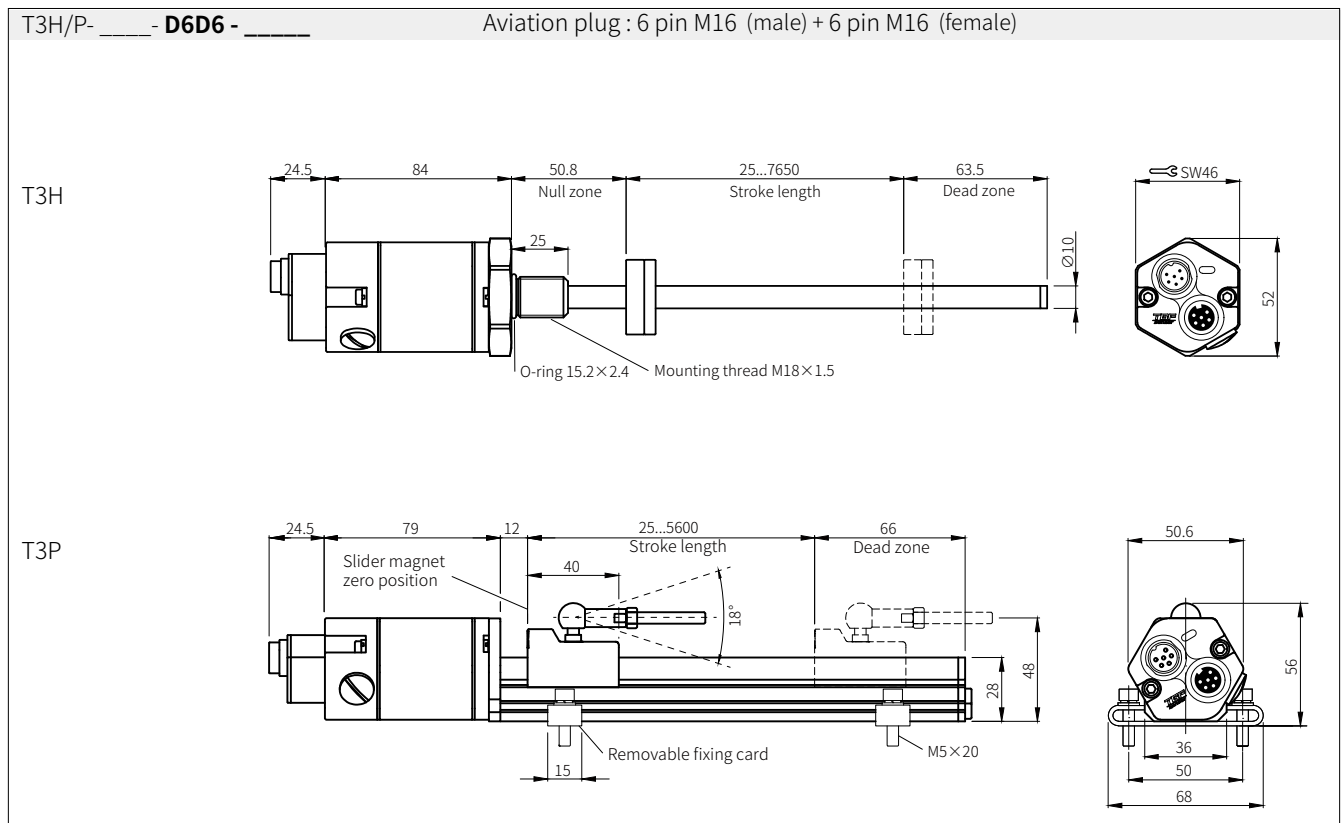
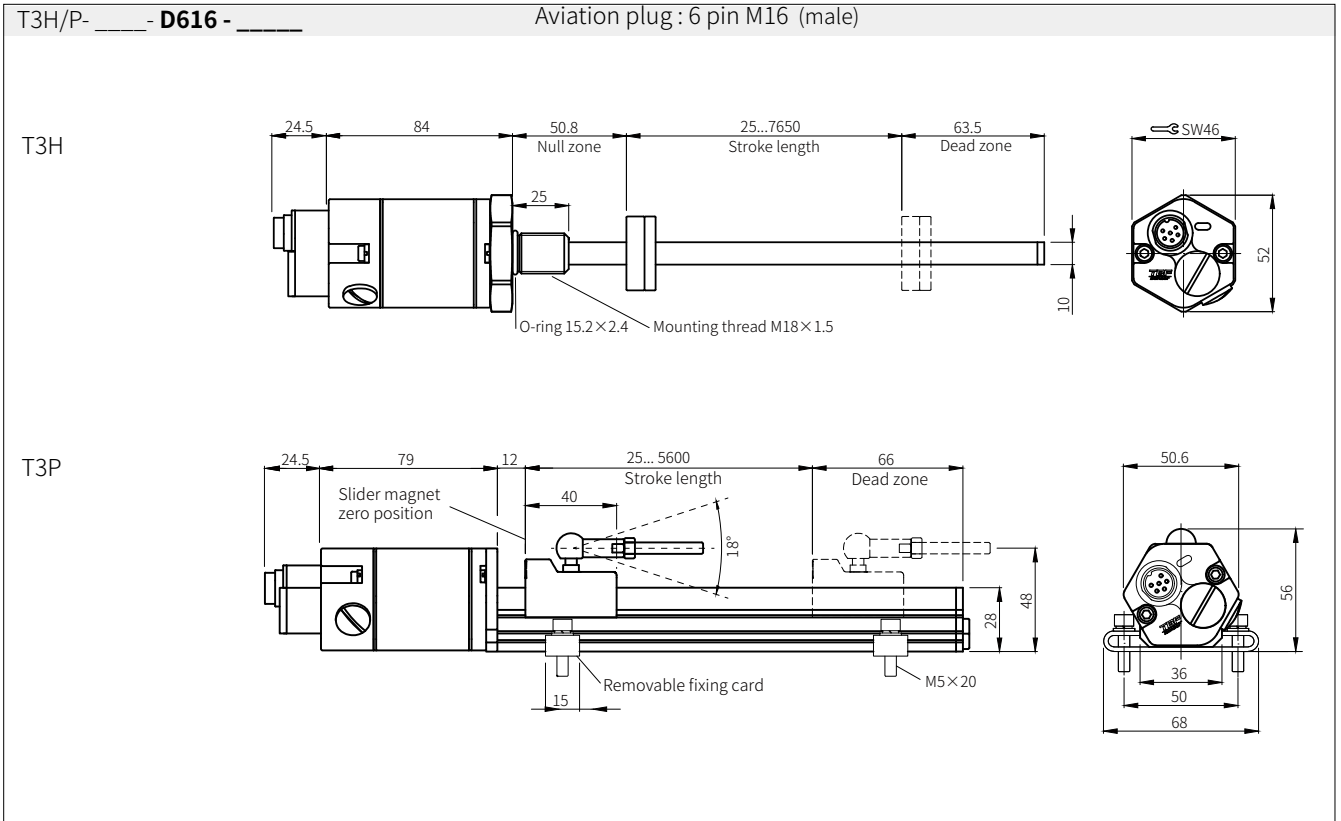
### THE NEW III GENERATION

High precision	Double anti-interference	High performance chip	Wide operating voltage	Reverse polarity protection	Shock/vibration resistant

<b>Input</b>	Measured data	Position/Velocity
	Position measurement range	T3H 25mm...7650mm T3P 25mm...5600mm
<b>Output</b>	Interface	IEC 61158 CPF3 PROFIBUS
	Date format	Profibus-DP subordinating station
	Data transmission rate	Max. 12Mbit/s
<b>Resolution</b>	Position resolution	1...1000μm, users can select by using GSD file
	None-Linearity	< ±0.01%F.S. (min. ±25μm)
	Repeatability	< ±0.001%F.S. (min. ±2.5μm)
	Update time	Single magnet Stroke length   ≤ 1200mm   ≤ 2400mm   ≤ 4800mm   ≤ 7650mm Update time   0.5ms   1ms   2ms   4ms
	Temperature coefficient	< 15ppm/°C
<b>Mounting</b>	Mounting position	Any
	T3P aluminum profile	Removable fixing card
	T3H pressure resistant outer tube	Threaded: metric M18x1.5, metric M20x1.5, metric M24x1, 3/4"-16UNF-3A
<b>Design/ Material</b>	T3H	Electronics housing: aluminum alloy/zinc alloy Measuring rod: stainless steel 304/316L Magnet: standard magnet/open magnet
	T3P	Electronics housing: aluminum alloy/zinc alloy Profile: aluminum alloy Magnet: slider magnet/suspension magnet/U-magnet
	Operating pressure	35MPa (continuous) ,70MPa (peak)
<b>Electrical connection</b>	Wiring connection	6 pin M16 connector, double 6 pin M12 connector , two 5 pin M12 connectors and one 4 pin M8 connector, straight out cable
	Operating voltage	9VDC...36VDC
	Polarity protection	Up to -36VDC
	Overvoltage protection	Up to +36VDC
	Power consumption	< 90mA (varies with range size)
<b>Operating conditions</b>	Dielectric strength	500 VDC (DC ground to machine ground)
	Magnet velocity	Slider magnet ≤ 10m/s; magnetic ring, any; suspension magnet, any.
	Operating temperature	-40...85°C
	Humidity	90 % relative humidity, no condensation
	Ingress protection	IP68 T3H (Pressure resistant outer tube type) IP67 T3P (Aluminum outer tube)
	Shock	150 g/11 ms, IEC standard 60068-2-27
	Vibration	30 g/10...2000 Hz, IEC standard 60068-2-6 (resonant frequencies excluded)
EMC	Electromagnetic emission according to EN 61000-6-3 Electromagnetic immunity according to EN 61000-6-2	

**ITEM      CATEGORY      PARAMETER**

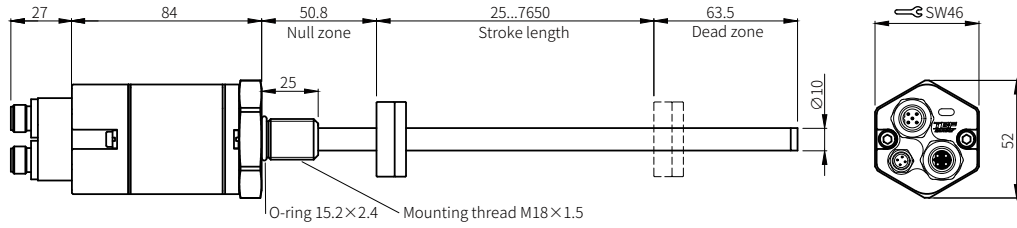




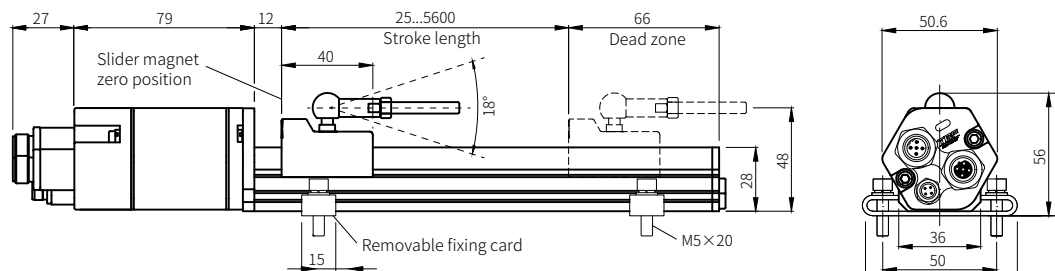
T3H/P- \_\_\_\_\_ - **D5D48** - \_\_\_\_\_

Aviation plug : 5 pin M12 (male) + 5 pin M12 (female) + 4 pin M8(male)

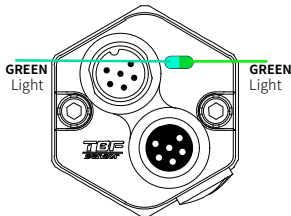
T3H



T3P

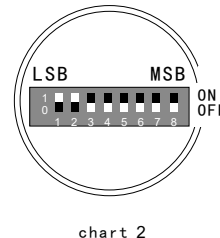
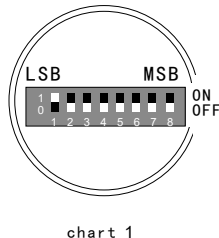
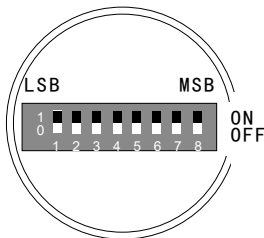


### Enhanced monitoring and diagnostic functions



Green light	Green light	Function
ON	OFF	Power on normally
ON	ON	Communication normal
OFF	OFF	No power

### Address dialing position description



1. When the needle at position "1" is dialed from "0" to "1", the address is "0000001" (decimal 1), see chart1.
2. When the needles at position "1" and "2" are dialed from "0" to "1", the address is "0000011" (decimal 3), see chart2.
3. By parity of reasoning, when the needle at position "3" is dialed from "0" to "1", the address is "0000111" (decimal 7).
4. When the needle at position "4" is dialed from "0" to "1", the address is "0001111" (decimal 15).
5. When the needle at position "5" is dialed from "0" to "1", the address is "0011111" (decimal 31).
6. When the needle at position "6" is dialed from "0" to "1", the address is "0111111" (decimal 63).
7. When the needle at position "7" is dialed from "0" to "1", the address is "1111111" (decimal 127)

**FUNCTION**

TECHNOLOGY PERCEIVES THE FUTURE

6 pin M16 male connector	Double 6 pin M16 (male , female) connector	D616/D6D6	PIN	Function
		<p>D616 (male) D616 (female) View on sensor</p>	1 2 3 4 5 6	RxD/TxD-N (Bus) RxD/TxD-P (Bus) DGnd (Bus termination only)* VP (Bus termination only)* 9VDC...36VDC 0 VDC (GND)
5 pin M12 (male, female) connector (B-coded) , 4 pin M8 male connector	D5D48	PIN	Function	
	<p>D512 (male) D512 (female) View on sensor</p>	1 2 3 4 5	VP+5N (Bus termination only)* RxD/TxD-N (Bus) DGnd (Bus termination only)* RxD/TxD-P (Bus) Mechanical grounding of cable shield wire	
	<p>D408 (male) View on sensor</p>	PIN 1 2 3 4	Function 9VDC...36VDC NC 0 VDC (GND) NC	
Single/dual straight out cable	Color	Function		
	Brown White Yellow Green	9VDC...36VDC 0 VDC(GND) RxD/TxD-P (Bus) RxD/TxD-N (Bus)		

\*Female connector only

**ORDER CODE**

TECHNOLOGY PERCEIVES THE FUTURE

**T3H** - - - - **M**- - - - - **1-P** - - - -

	Thread	Stroke length	Connection type	Output
M	Metric M18x1.5	0025...7650mm (5mm increments)	R2P/T__ Dual straight out cable__m high performance / high temperature cable	(Output Code)
V	Metric M20x1.5			
S	3/4"-16UNF-3A		RP/T__ Single straight out cable__m	
W	Metric M24x1		high performance / high temperature cable	
R	Metric M18x1.5, with M4x6 thread at tail end		(Fill in zero if less than 2 places ) D6D6 Two sets of M16 female and male connectors ( 6pin) D5D48 Two sets of M12 female and male connectors (5 pin), one M8 male connector (4 pin) D616 One M16 male connector ( 6pin)	

**T3P** - - - - **M**- - - - - **1-P** - - - -

	Magnet	Stroke length	Connection type	Output
S	Magnet slider joint at top	0025...5600mm (5mm increments)	(Same as above)	(Output Code)
V	Magnet slider joint at front			
F	Suspension magnet			
U	U- magnet			

Profibus-DP Output Code		[1]-P[2][3][4]-[5][6]
[1]System	[2][3][4] Output	[5][6]Magnet number
1 Standard	101 Profibus-DP, 1...20 magnet, displacement 102 Profibus-DP, single magnet, displacement 105 Profibus-DP, 1...15 magnet, position and velocity, internal linearization (The specified error is valid for single magnet.)	01 one magnet 02 two magnets ... .. 20 twenty magnets

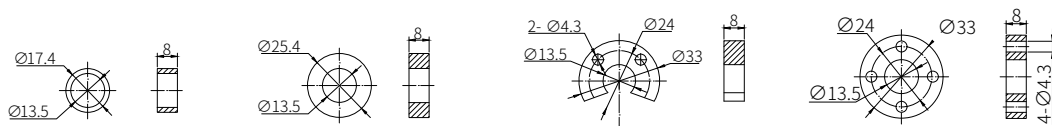
**Model selection** | Model: T3H-M-0600M-D616-1-P102-01

Explanation: T series III generation, T3H pressure resistance outer tube type, mounting thread metric M18x1.5, stroke length 600mm, 6pin M16 aviation plug, standard, Profibus-DP output, displacement, single magnet.

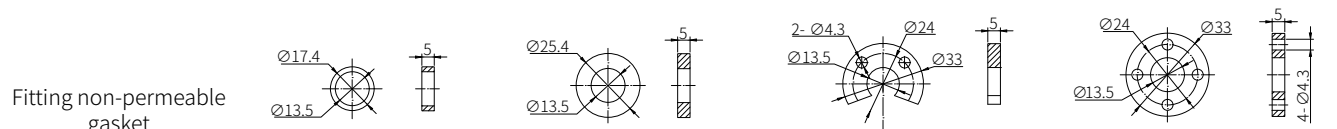
■ Please contact us for more customized products.  
www.tbfsensor.com

# PARTS SELECTION

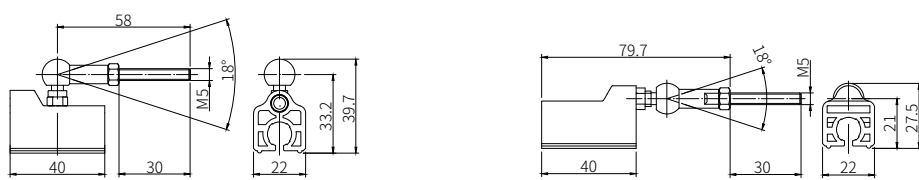
TECHNOLOGY PERCEIVES THE FUTURE



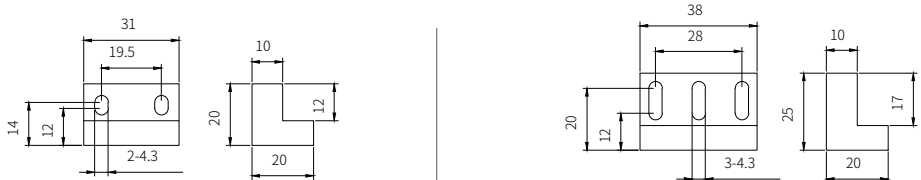
Name	Ring magnet	Ring magnet	U-magnet	Ring magnet
Operating temperature	-40...125°C			
<b>Order code</b>	<b>12-1032</b>	<b>12-1019</b>	<b>12-1017</b>	<b>12-1001</b>



Name	Non-permeable gasket	Non-permeable gasket	Non-permeable gasket	Non-permeable gasket
Operating temperature	-40...125°C			
<b>Order code</b>	<b>12-1037</b>	<b>12-1021</b>	<b>12-1018</b>	<b>12-1008</b>



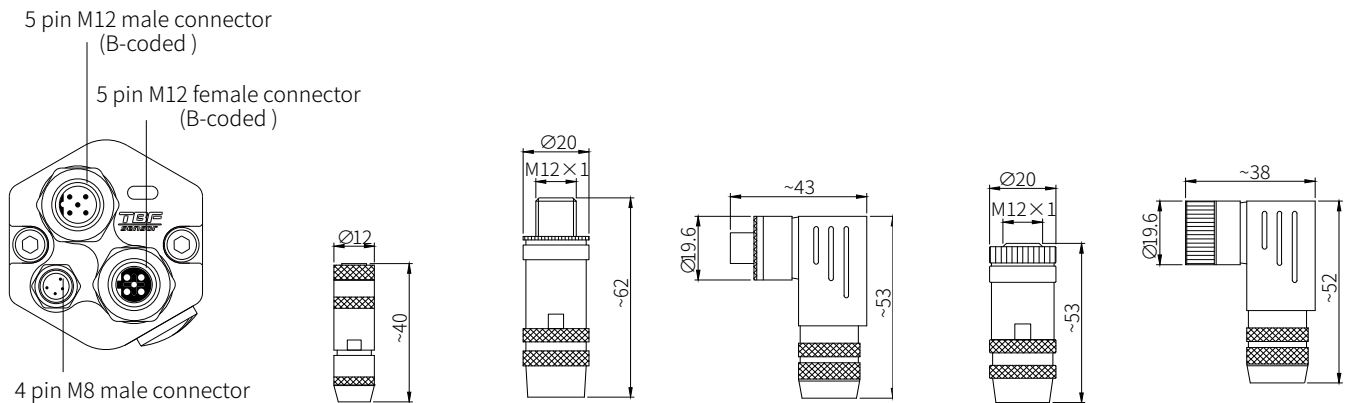
Name	Magnet slider S, joint at top	Magnet slider V, joint at front
Operating temperature	-40...105°C	
<b>Order code</b>	<b>12-1114</b>	<b>12-1115</b>



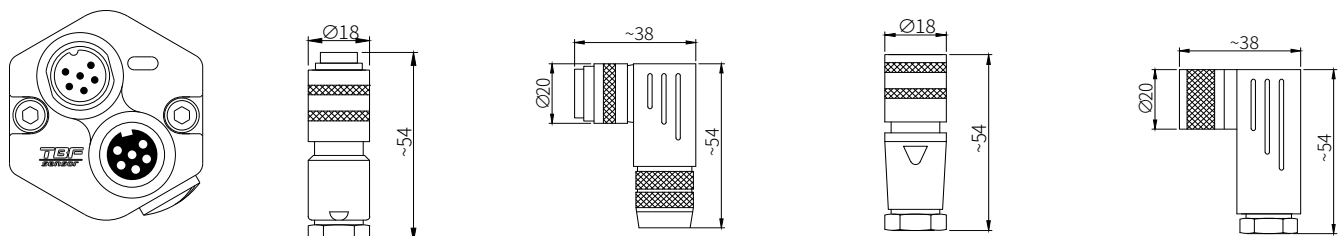
Name	Suspension magnet 31x20	Suspension magnet 38x25
Operating temperature	-40...105°C	
<b>Order code</b>	<b>12-1010</b>	<b>12-1009</b>



Name	Removable fixing card	Removable fixing card
<b>Order code</b>	<b>11-1003</b>	<b>11-1004</b>



Name	4 pin M8 female connector	5 pin M12 male connector	5 pin M12 male connector (90 degree angle)	5 pin M12 female connector	5 pin M12 female connector (90 degree angle)
End view drawing		(B-coded) 		(B-coded) 	
Material	Galvanized nickel				
Fitting diameter	3.5...5mm	6...8mm			
Connection	Welding	Threaded			
<b>Order code</b>	<b>18-1001</b>	<b>18-2002</b>	<b>18-2004</b>	<b>18-2001</b>	<b>18-2003</b>



Name	6 pin M16 male connector	6 pin M16 male connector (90 degree angle)	6 pin M16 female connector	6 pin M16 female connector (90 degree angle)
End view drawing				
Material	Galvanized nickel			
Fitting diameter	6...8mm	6...8mm	4...6mm	6...8mm
Connection	Welding			
<b>Order code</b>	<b>18-3002</b>	<b>18-3004</b>	<b>18-3001</b>	<b>18-3003</b>

Building 6, Dazu Enterprise Bay,  
8th yard of Liangshuihe 2nd street, BDA P.R.China

Tel: +86 10-67948976 67948916  
Fax: +86 10-67948979

Beijing Tebeifu Electronic Technology Co., Ltd.

www.tbfsensor.com