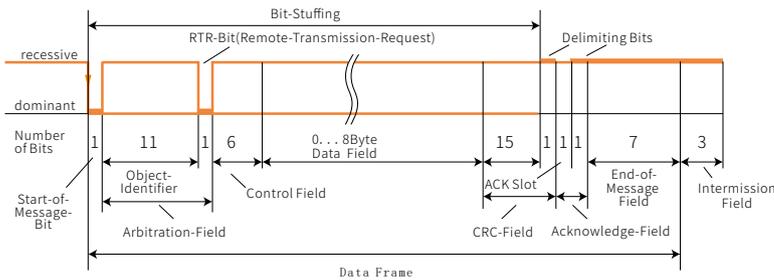




## T3D Split Type

T-Series III

**T3D -CANopen**



- + Updated new generation: stronger performance
- + Quick installation: split type design, adaptable with installation in rather tight space
- + Multi-magnets position measurement: max. three measured positions



## THE NEW III GENERATION



High precision



Double anti-interference



High performance chip



Wide operating voltage



Reverse polarity protection



Shock/vibration resistant

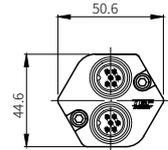
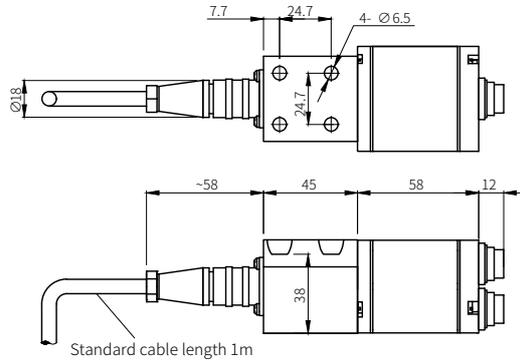
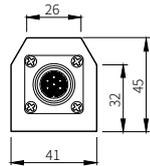
# TECHNICAL PARAMETER

TECHNOLOGY PERCEIVES THE FUTURE

<b>Input</b>	Measured data	Position/Velocity							
	Position measurement range	25mm...5600mm							
	Velocity measurement range	0.01...10m/s							
<b>Output</b>	Communication protocols	CAN bus system protocol, ISO11898 CAN open CIA standard DS-301 V3.0 encoder profile DS-406 V3.1							
	Transmission rate	Rate (kbit/s)	1000	800	500	250	125	50	20
		Cable length (meter)	< 25	< 50	< 100	< 250	< 500	< 1000	< 2500
<b>Resolution</b>	Position resolution	1/2/5/10/20/50/100µm							
	Velocity resolution	0.2mm/s							
	None-Linearity	< ±0.01%F.S. (min. ±25µm)							
	Repeatability	< ±0.001%F.S. (min. ±2.5µm)							
	Update time	Stroke length	≤ 1200mm	≤ 2400mm	≤ 4800mm	≤ 5600mm			
		Update time	0.5ms	1ms	2ms	2.3ms			
Temperature coefficient	< 15ppm/°C								
<b>Mounting</b>	Mounting position	Any							
	Electronics housing	Fixed with M6 screw							
	Pressure resistance outer tube	Embedded installation, thread metric M18×1.5, metric M16x1.5							
<b>Design/ Material</b>	Electronics housing	Aluminum alloy/zinc alloy							
	Measuring rod	Stainless steel 304/316L							
	Operating pressure	35MPa (continuous) ,70MPa (peak)							
<b>Electrical connection</b>	Wiring connection	6 pin M16 connector, double 6 pin M16 connector, single/dual straight out cable							
	Operating voltage	9VDC...36VDC							
	Polarity protection	Up to -36VDC							
	Overvoltage protection	Up to +36VDC							
	Power consumption	< 70mA (varies with range size)							
	Dielectric strength	500 VDC (DC ground to machine ground)							
	Terminal resistance	120Ω (Software-adjustable on and off)							
<b>Operating conditions</b>	Loop velocity	Any							
	Operating temperature	-40...85°C							
	Humidity	90 % relative humidity, no condensation							
	Ingress protection	Measuring rod IP68, Electronics housing IP67							
	Shock	100 g/11 ms, IEC standard 60068-2-27							
	Vibration	10 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							
<b>ITEM</b>	<b>CATEGORY</b>	<b>PARAMETER</b>							

**Double 6 pin M16 connector plug**

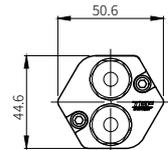
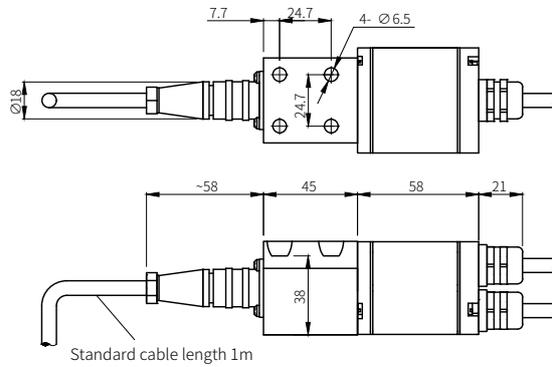
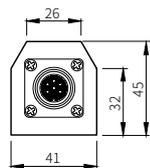
T3D- \_\_\_\_\_ - D6D6 - \_\_\_\_\_



**Dual straight out cable**

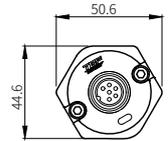
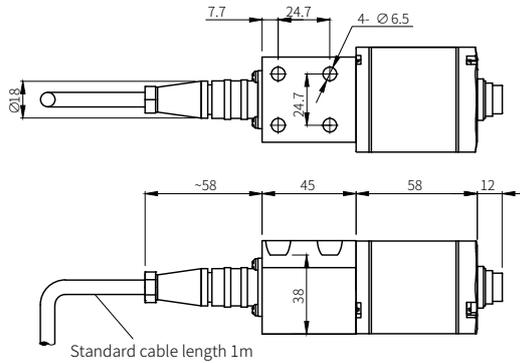
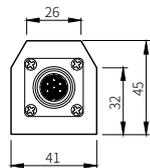
T3D- \_\_\_\_\_ - R2P - \_\_\_\_\_

T3D- \_\_\_\_\_ - R2T - \_\_\_\_\_



**M16 connector (6 pin)**

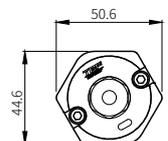
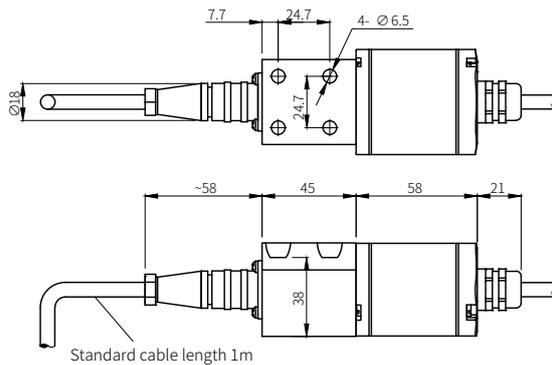
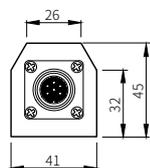
T3D- \_\_\_\_\_ - D616 - \_\_\_\_\_



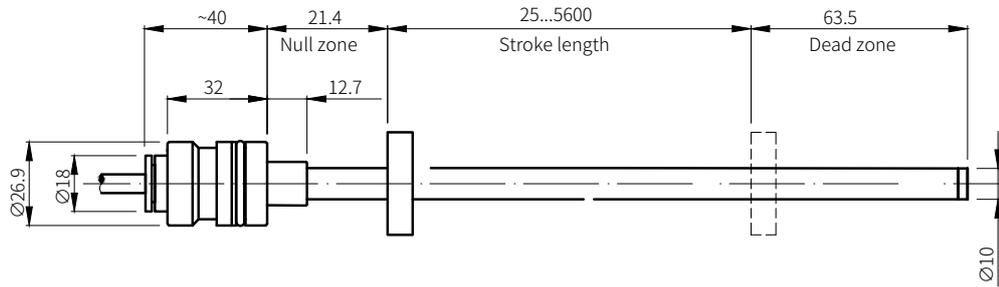
**Straight out cable**

T3D- \_\_\_\_\_ - RP - \_\_\_\_\_

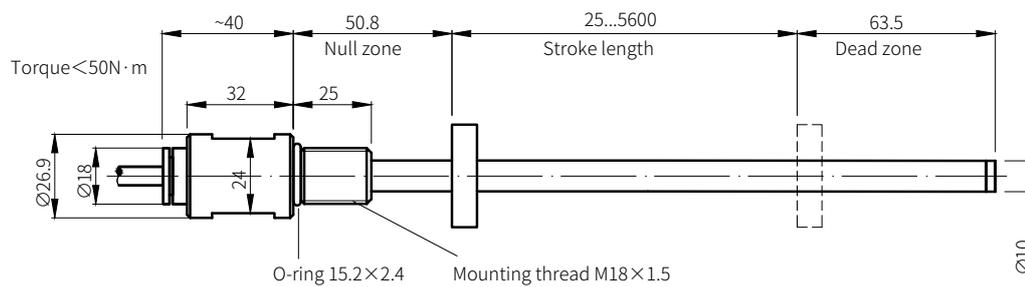
T3D- \_\_\_\_\_ - RT - \_\_\_\_\_



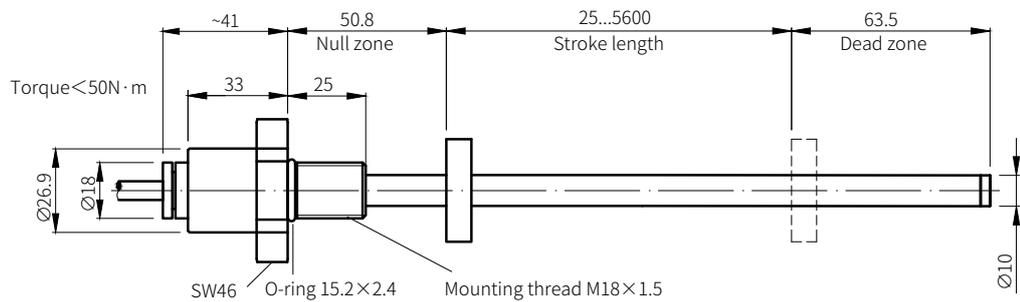
**S Type**



**M Type**



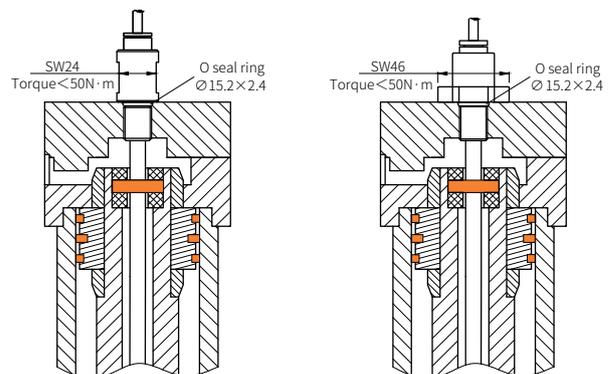
**C Type**



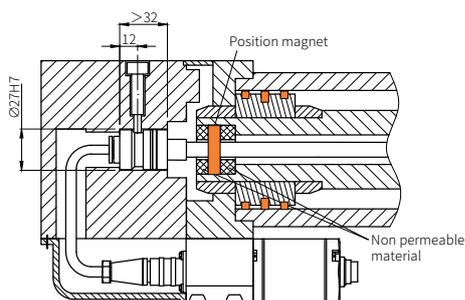
**MECHANICAL MOUNTING DIAGRAM**

- + Secure the magnet with non-permeable gasket.
- + The size of hole in the piston rod depends on factors such as hydraulic pressure and piston speed. The minimum hole size is  $\Phi 13.5$  ( $\Phi 10$  measuring rod).

**Mounting drawing for M and C Type**



**Mounting drawing for S Type**

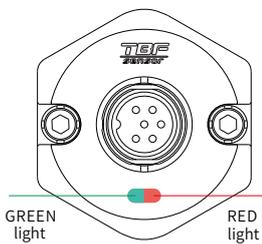


**FUNCTION**

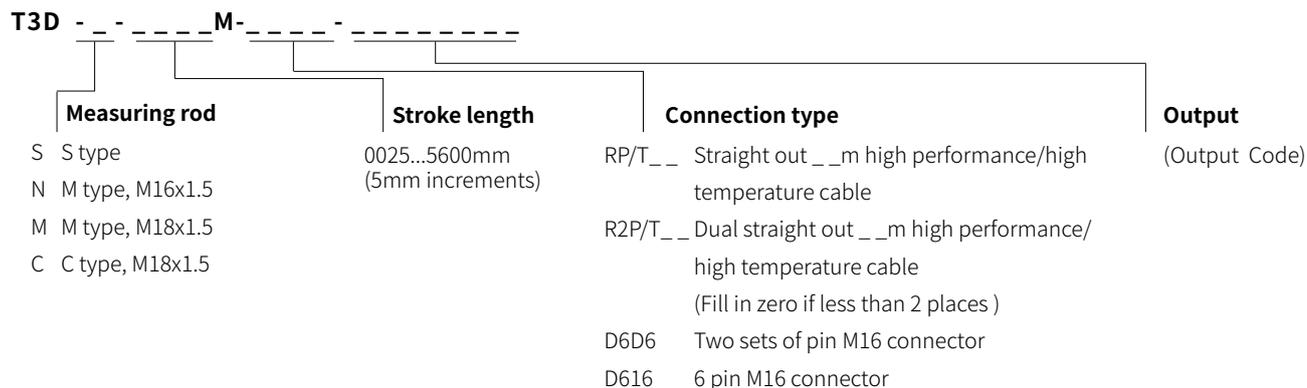
TECHNOLOGY PERCEIVES THE FUTURE

6 pin M16 connector	Double 6 pin M16 connector	D616/D6D6	PIN	Function
			1	CAN L
		View on sensor	2	CAN H
			3	NC
			4	NC
			5	9VDC...36VDC
			6	0 VDC(GND)
Straight out cable	Dual straight out cable	Color	Function	
		Brown	9VDC...36VDC	
		White	0 VDC(GND)	
		Yellow	CAN H	
		Green	CAN L	

**Enhanced monitoring and diagnostic functions**



Green light	Function	Red light	Function
Slow flash	Pre-operating mode	ON	No magnet or slider measured
Fast flash	LSS mode (parameter- setting mode)	OFF	Normal work
ON	Normal communication		



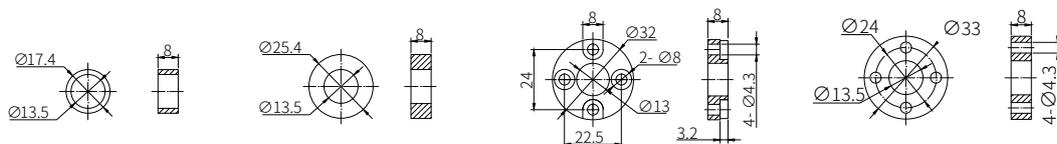
CANopen Output Code		[1]-C[2][3][4][5][6]-[7][8] Note: “*” as default				
[1]System	[2]Resolution ratio	[3]Baud rate	[4]PDO cycle	[5][6]Node-ID	[7][8]	
3 Standard*	1 5µm*	0 1000kBit/s	1 1ms	Hexadecimal	01 one magnet	
4 CANopen (Internal terminal resistance)	2 2µm	1 800kBit/s	2 10ms*	01...7F*	02 two magnets	
	3 10µm	2 500kBit/s	3 100ms		03 three magnets	
	4 50µm	3 250kBit/s*	4 Customizable (1-65535ms)			
	5 100µm	4 125kBit/s				
	7 20µm	5 100kBit/s				
	8 1µm	6 50kBit/s				
		7 20kBit/s				
		8 10kBit/s				

**K=Anti-vibration program(Note: for special request, fill in last digit)**

<b>Model selection</b>	Model: T3D-M-0600M-D616-3-C2327F-01
	Explanation: T series III generation, T3D split type sensor with measuring rod M type, mounting thread metric M18x1.5, stroke length 600mm, 6pin M16 aviation plug, standard, CANopen output, resolution 2µm, baud rate 250kBit/s, PDO cycle 10ms, node -ID 7F, single magnet.

■ Please contact us for more customized products.

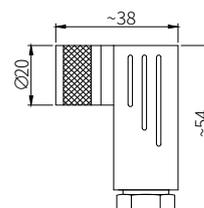
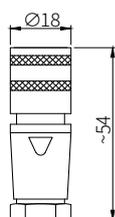
www.tbfsensor.com



Name	Ring magnet	Ring magnet	Ring magnet	Ring magnet
Operating temperature	-40...125°C			
<b>Order code</b>	<b>12-1032</b>	<b>12-1019</b>	<b>12-1024</b>	<b>12-1001</b>

Fitting non-permeable gasket				
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>12-1025</b>	<b>12-1008</b>



Name	6 pin M16 female connector	6 pin M16 female connector (90 degree angle)
End view drawing		
Material	Galvanized nickel	Galvanized nickel
Fitting diameter	8...10mm	6...8mm
Connection	Welding	Welding
<b>Order code</b>	<b>18-3007</b>	<b>18-3003</b>

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