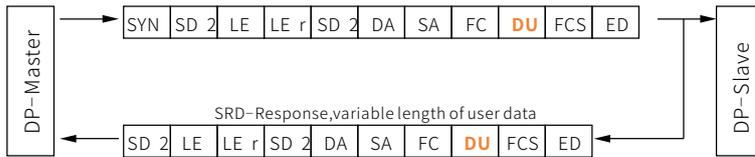




## T3D Split Type

T-Series III T3D -Profibus-DP



- + Updated new generation: stronger performance
- + Quick installation: split type design, adaptable with installation in rather tight space
- + 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

**TECHNICAL PARAMETER**

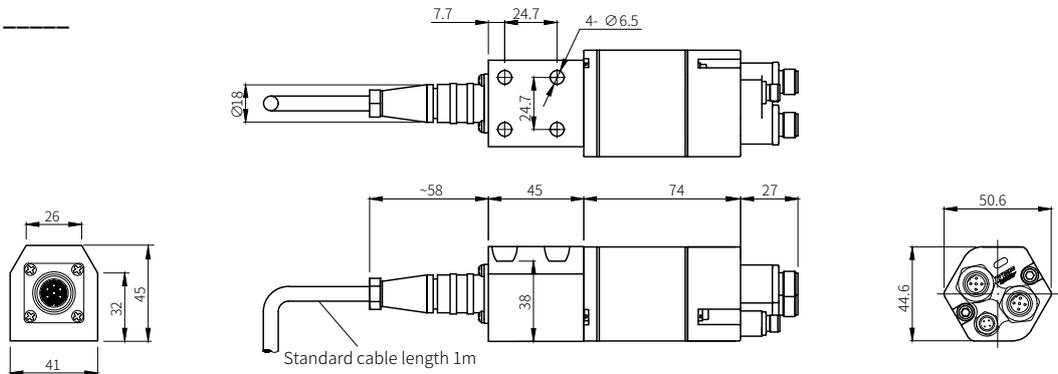
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<b>Input</b>	Measured data	Position/Velocity										
	Position measurement range	25mm...5600mm										
<b>Output</b>	Interface	IEC 61158 CPF3 PROFIBUS										
	Date format	Profibus-DP subordinating station										
	Data transmission rate	Max. 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 <table border="1"> <tr> <td>Stroke length</td> <td>≤ 1200mm</td> <td>≤ 2400mm</td> <td>≤ 4800mm</td> <td>≤ 5600mm</td> </tr> <tr> <td>Update time</td> <td>0.5ms</td> <td>1ms</td> <td>2ms</td> <td>3.1ms</td> </tr> </table> Multi magnets: For each additional position magnet, update time is extended by 0.05ms.	Stroke length	≤ 1200mm	≤ 2400mm	≤ 4800mm	≤ 5600mm	Update time	0.5ms	1ms	2ms	3.1ms
	Stroke length	≤ 1200mm	≤ 2400mm	≤ 4800mm	≤ 5600mm							
Update time	0.5ms	1ms	2ms	3.1ms								
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 M12 connector , two 5 pin M16 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)										
	Dielectric strength	500 VDC (DC ground to machine ground)										
<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										

**ITEM      CATEGORY      PARAMETER**

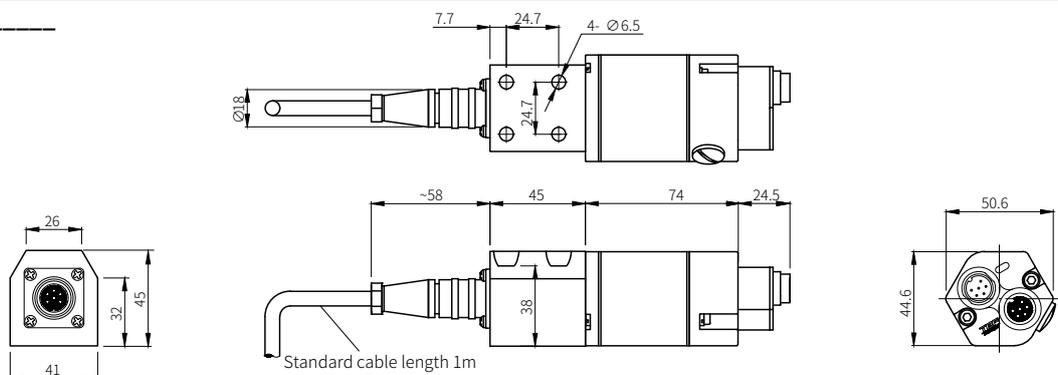
**Aviation plug : 5 pin M12 (male) + 5 pin M12 (female) + 4 pin M8(male)**

T3D- \_\_\_\_\_ - **D5D48** - \_\_\_\_\_



**Aviation plug : 6 pin M16 (male) + 6 pin M16 (female)**

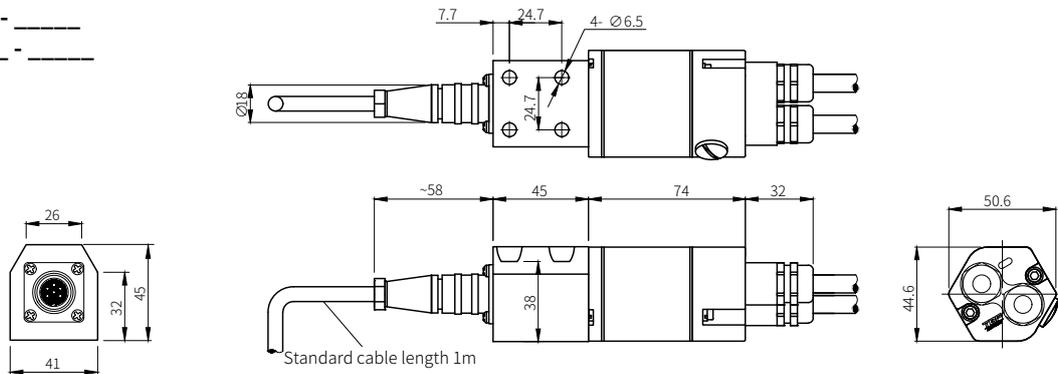
T3D- \_\_\_\_\_ - **D6D6** - \_\_\_\_\_



**Single/dual straight out cable**

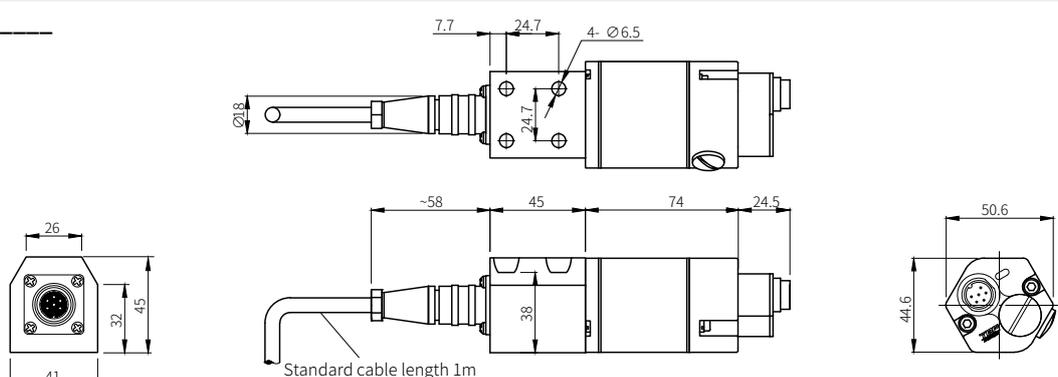
T3D- \_\_\_\_\_ - **RP/T** - \_\_\_\_\_

T3D- \_\_\_\_\_ - **R2P/T** - \_\_\_\_\_

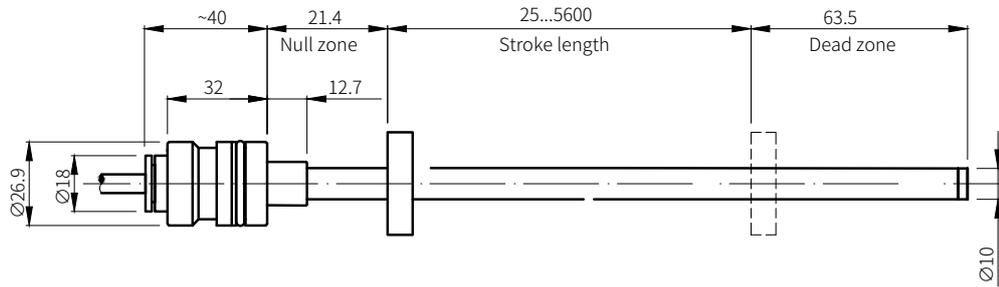


**Aviation plug : 6 pin M16 (male)**

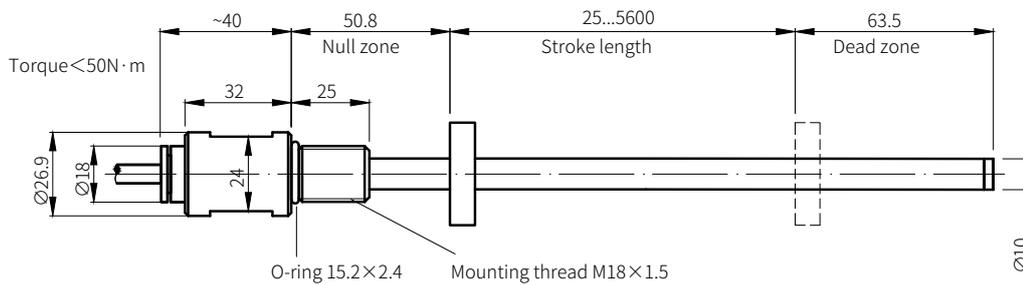
T3D- \_\_\_\_\_ - **D616** - \_\_\_\_\_



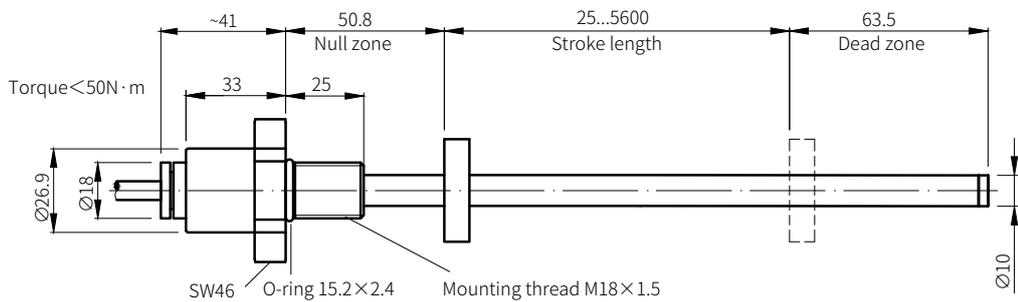
**S Type**



**M Type**



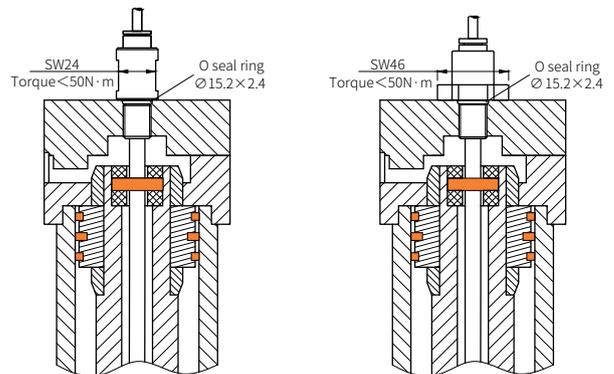
**C Type**



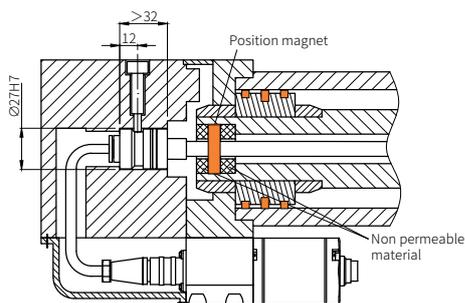
**MECHANICAL MOUNTING DIAGRAM**

- + 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**

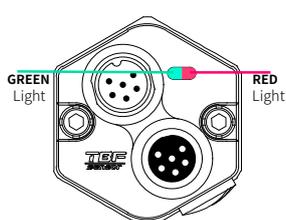


**FUNCTION**

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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 (A-coded)		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
		D408 (male)	PIN	Function
			1 2 3 4	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)		
<b>*Female connector only</b>				

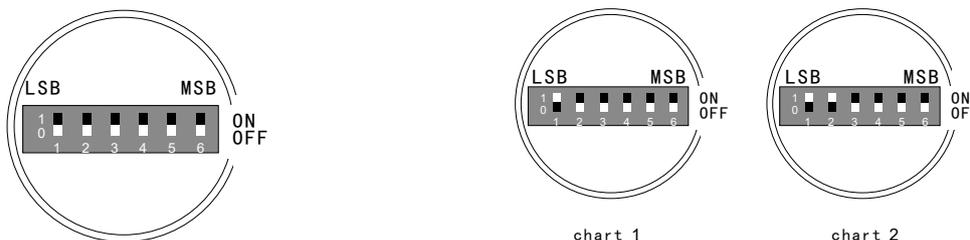
**Enhanced monitoring and diagnostic functions**



Green light	Red light	Function
ON	OFF	Normal work
ON	ON	Magnet cannot be measured, nor magnet number is correct.
Flash	OFF	Parameter from control machine awaits
Flash	ON	Enter programming status

# Address dialing position description

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1. When the needle at position "1" is dialed from "0" to "1", the address is "000001" (decimal 1), see chart 1.
2. When the needles at position "1" and "2" are dialed from "0" to "1", the address is "000011" (decimal 3), see chart2.
3. By parity of reasoning, when the needle at position "3" is dialed from "0" to "1", the address is "000111" (decimal 7).  
 When the needle at position "4" is dialed from "0" to "1", the address is "001111" (decimal 15).  
 When the needle at position "5" is dialed from "0" to "1", the address is "011111" (decimal 31).  
 When all needles are dialed from "0" to "1", the address is "111111" (decimal 63).

## ORDER CODE

T3D - - - - M- - - - 1-P - - - -				
Measuring rod	Stroke length	Connection type		Output
S S type	0025...5600mm	R2P/T__	Dual straight out cable__m	(Output Code)
N M type, M16x1.5	(5mm increments)		high performance / high temperature cable	
M M type, M18x1.5		RP/T__	Single straight out cable__m	
C C type, M18x1.5			high performance / high temperature cable	
			(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)	

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	01	one magnet
	102 Profibus-DP, single magnet, displacement	02	two magnets
	105 Profibus-DP, 1...15 magnet, position and velocity, internal linearization	...	...
	(The specified error is valid for single magnet.)	20	twenty magnets

**Model selection** | Model: T3D-M-0600M-D616-1-P102-01

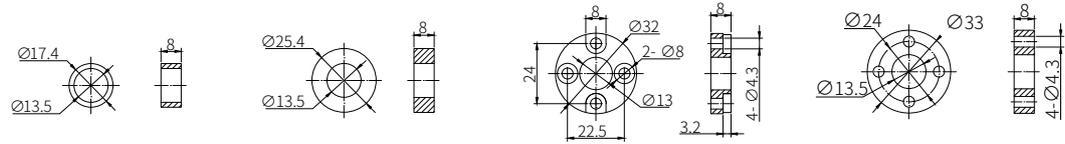
Explanation: T series III generation, T3D split type sensor with measuring rod M type, mounting thread metric M18x1.5, stroke length 600mm, 6pin M16 aviation plug, standard, Profibus-DP output, displacement, single magnet.

■ Please contact us for more customized products.

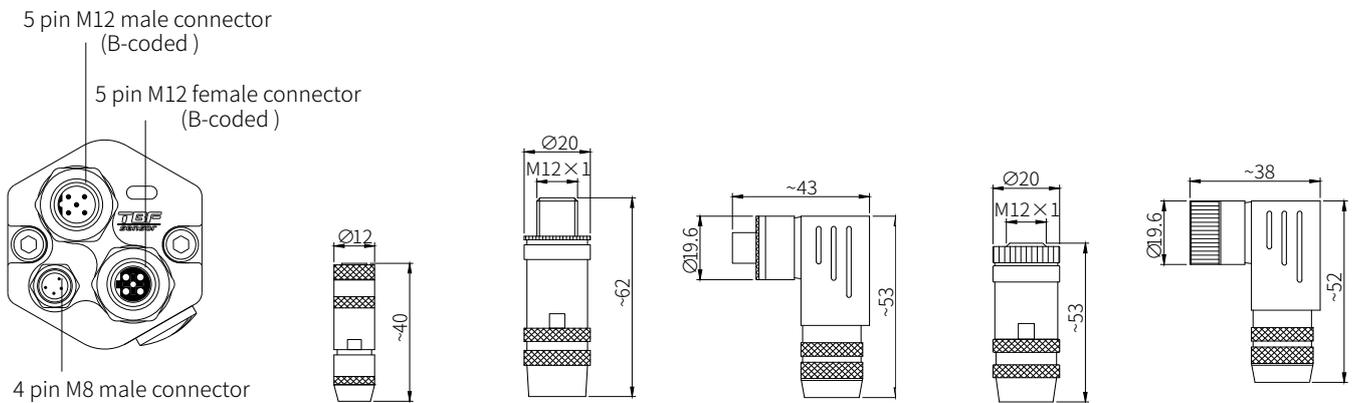
www.tbfsensor.com

**PARTS SELECTION**

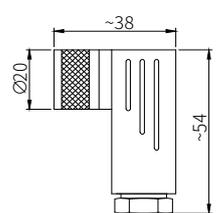
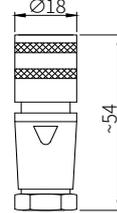
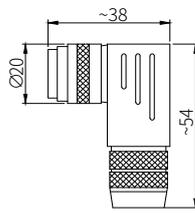
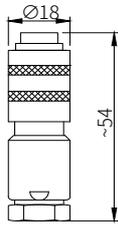
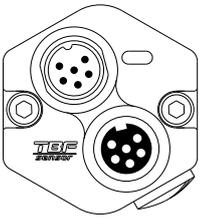
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Name	Ring magnet	Ring magnet	Ring magnet	Ring magnet
Operating temperature	-40...125°C			
<b>Order code</b>	<b>12-1032</b>	<b>12-1019</b>	<b>12-1024</b>	<b>12-1001</b>
Fitting non-permeable gasket				
Name	Non-permeable gasket	Non-permeable gasket	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	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			
Connection	Welding			
<b>Order code</b>	<b>18-3002</b>	<b>18-3004</b>	<b>18-3001</b>	<b>18-3003</b>

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