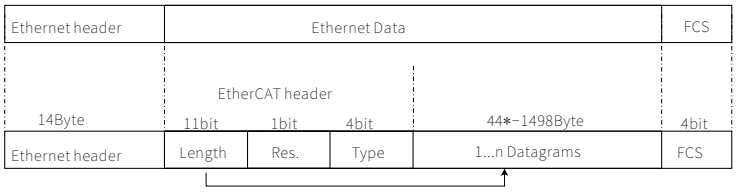
T-Series

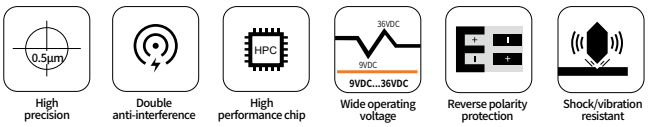
T3D Split Type

T-Series Ⅲ T3D -EtherCAT



+ Updated new generation: stronger performance
+ Quick installation: split type design, adaptable with installation in rather tight space
+ EtherCAT output: position and velocity
+ Resolution highest up to 0.5μm

THE NEW Ⅲ GENERATION



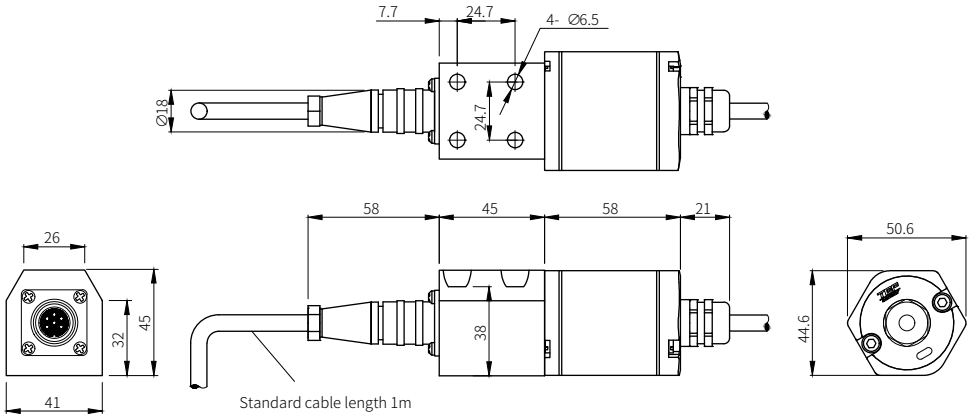
High precision | Double anti-interference | High performance chip | Wide operating voltage | Reverse polarity protection | Shock/vibration resistant

Input	Measured data	Position/Velocity
	Position measurement range	25mm...5600mm
Output	Interface	EtherCAT
	Data protocol	EtherCAT 100 Base-Tx, high speed Ethernet
	Data transmission rate	Max. 100Mbit/s
Resolution	Position resolution	0.5...1000μm optional
	None-Linearity	＜ ±0.01%F.S. (min. ±25μm)
	Repeatability	＜ ±0.001%F.S. (min. ±2.5μm)
	Update time	Depends on stroke length
	Temperature coefficient	＜ 15ppm/°C
Mounting	Mounting position	Any
	Electronics housing	Fixed with M6 screw
	Pressure resistance outer tube	Embedded installation, thread metric M18×1.5, metric M16x1.5
Design/ Material	Electronics housing	Aluminum alloy/zinc alloy
	Measuring rod	Stainless steel 304/316L
	Operating pressure	35MPa (continuous) ,70MPa (peak)
Electrical connection	Wiring connection	6 pin M16 connector, two 5 pin M12 connectors and one 4 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	＜ 120mA (varies with range size)
	Dielectric strength	500 VDC (DC ground to machine ground)
Operating conditions	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

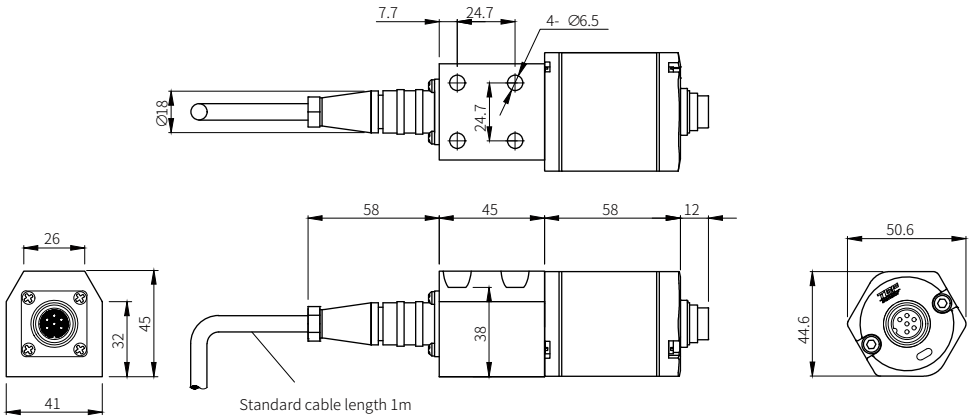
Straight out cable

T3D- ____- **RP_ _ - _____**



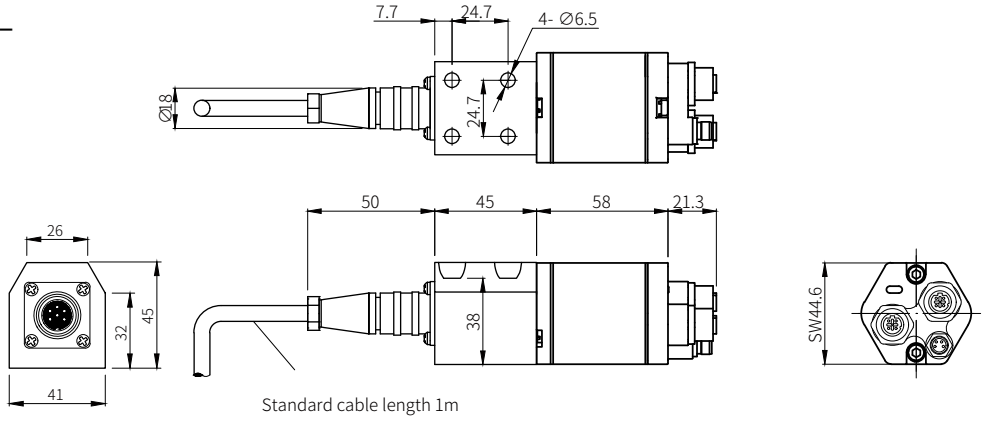
Aviation plug : 6 pin M16 (male)

T3D- ____- **D616 - _____**



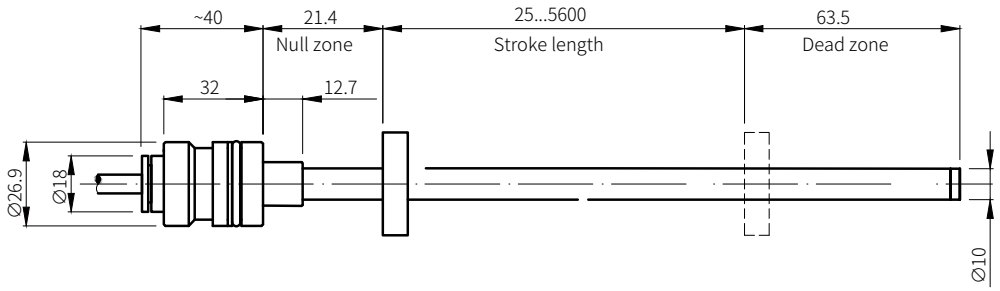
Aviation plug : Two 5 pin M12 (female) + One 4 pin M12 (male)
Aviation plug : Two 5 pin M12 (female) + One 4 pin M8 (male)

T3D- ____- **D5D42 - _____**
T3D- ____- **D5D48 - _____**

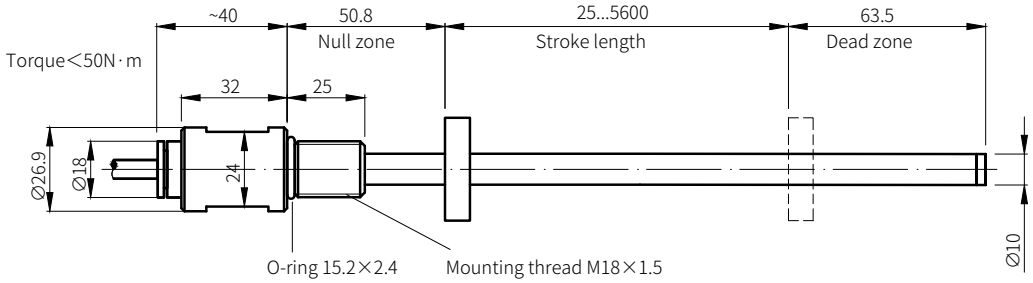


MEASURING ROD DRAWING

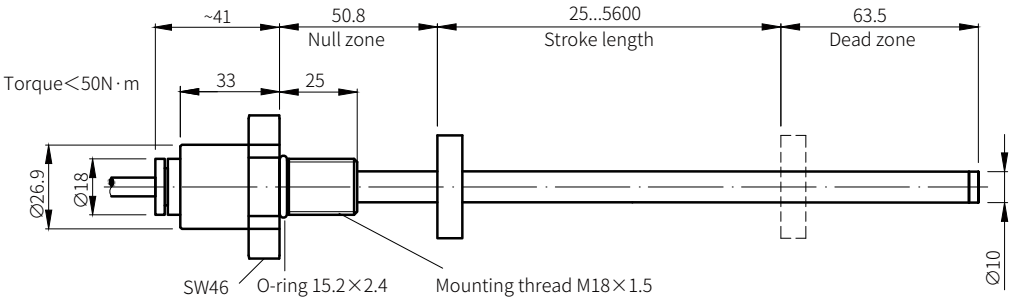
S Type



M Type



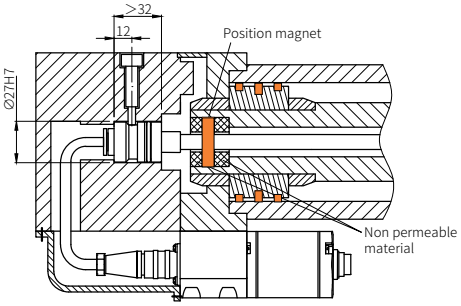
C Type



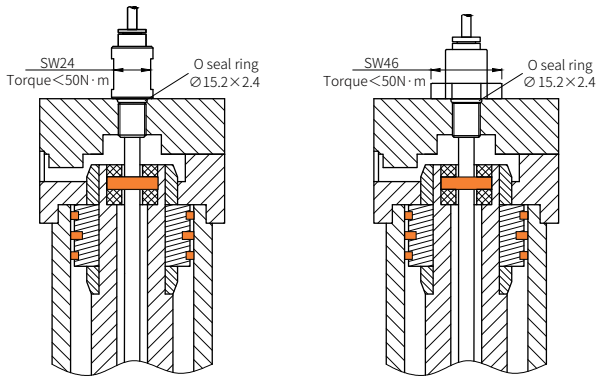
MECHANICAL MOUNTING DIAGRAM

+ 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 Φ13.5 (Φ10 measuring rod) .

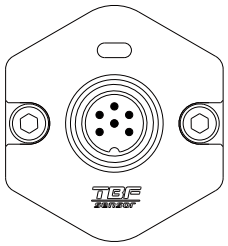
Mounting drawing for S Type



Mounting drawing for M and C Type



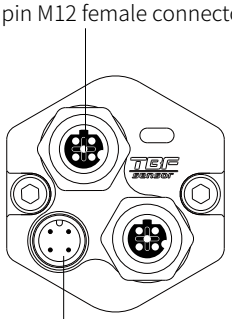
6 pin M16 male connector



D616	PIN	Function
 View on sensor	1	TX+
	2	RX+
	3	TX-
	4	RX-
	5	9VDC...36VDC
	6	0 VDC(GND)

Two 5 pin M12 female connectors (D-coded), One 4 pin M12 male connector

5 pin M12 female connector (D-coded)

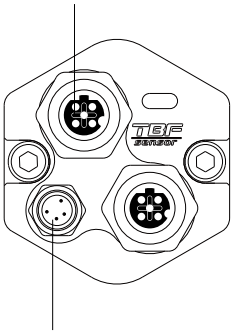


4 pin M12 male connector

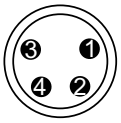
D5D42	PIN	Function
 D512 (female) View on sensor	1	TX+
	2	RX+
	3	TX-
	4	RX-
	5	NC
D412(male)	PIN	Function
 View on sensor	1	9VDC...36VDC
	2	NC
	3	0 VDC(GND)
	4	NC

Two 5 pin M12 female connectors (D-coded), One 4 pin M8 male connector

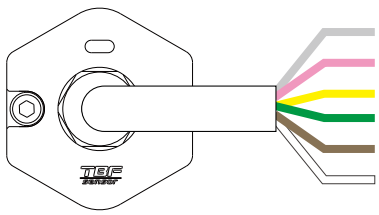
5 pin M12 female connector (D-coded)



4 pin M8 male connector

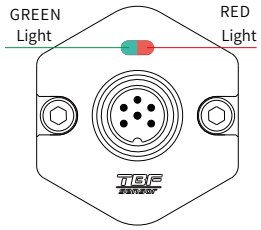
D5D48	PIN	Function
 D512 (female) View on sensor	1	TX+
	2	RX+
	3	TX-
	4	RX-
	5	NC
D408(male)	PIN	Function
 View on sensor	1	9VDC...36VDC
	2	NC
	3	0 VDC(GND)
	4	NC

Straight out cable



Color	Function
Gray	TX-
Pink	TX+
Yellow	RX+
Green	RX-
Brown	9VDC...36VDC
White	0 VDC(GND)

Enhanced monitoring and diagnostic functions



Green light	Red light	Function
ON	OFF	View on sensor
ON	ON	Magnet cannot be measured, nor magnet number is correct.
OFF		Communication exception

ORDER CODE

T3D - _ - _ _ _ _M-_ _ _ _ - 1 - E _ _ _ _

Measuring rod

- S S type
- N M type, M16x1.5
- M M type, M18x1.5
- C C type, M18x1.5

Stroke length

0025...5600mm
(5mm increments)

Connection type

- RP_ _ Straight out _ _m high performance cable (Fill in zero if less than 2 places)
- D616 M16 male connector (6 pin)
- D5D42 Two sets of M12 female connectors (D-coded), One set of M12 male connector
- D5D48 Two sets of M12 female connectors (D-coded), One set of M8 male connector

Output

(Output Code)

EtherCAT Output Code	**[1]-E**[2][3][4]-[5][6]	
[1] System	**[2][3][4] Output**	**[5][6] Magnet number**
1 Standard	101 Position, update in high speed, 1-5 magnet 102 Position, 1-20 magnet 103 Position and velocity, update in high speed, 1-5 magnet, linear correction optional 105 Position and velocity, 1-20 magnet, linear correction optional	01 one magnet 02 two magnets ... ... 20 twenty magnets

Model selection	Model: T3D-M-0600M-D616-1-E101-01
	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, EtherCAT output, position measurement, update in high speed, single magnet.

Please contact us for more customized products.

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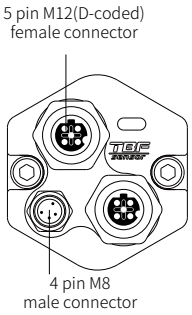
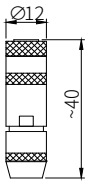
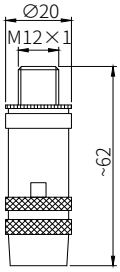
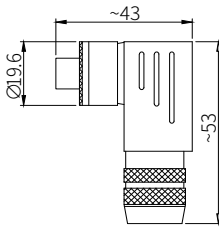
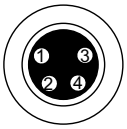
PARTS SELECTION

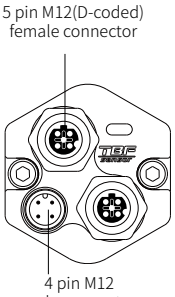




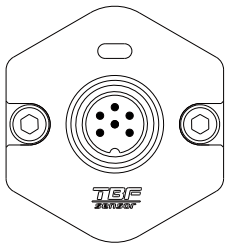


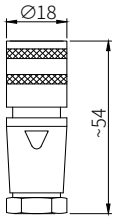


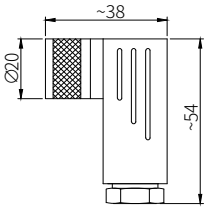
Name	4 pin M8 female connector	4 pin M12(D-coded) male connector	4 pin M12(D-coded) male connector (90 degree angle)
End view drawing			
Material	Galvanized nickel		
Fitting diameter	3.5...5mm	6...8mm	
Connection	Welding	Threaded	
Adaptive	4 pin M12 (Power connector)	5 pin M12(D-coded)	
Order code	**18-1001**	**18-1011**	**18-1012**



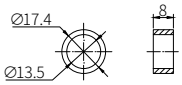
Connector	5 pin M12 female connector	5 pin female connector (90 degree angle)	4pin M12(D-coded) male connector
Name	Integral cable	Integral cable	Integral cable
Cable	5 wire 0.25mm² shielded cable	5 wire 0.25mm² shielded cable	4 wire 0.25mm² shielded cable
Color/Diameter	Orange/ ∅ 6	Orange/ ∅ 6	Green/ ∅ 6
Plug surface	 1-Brown 2-Green 3-White 4-Gray 5-Yellow	 1-Brown 2-Green 3-White 4-Gray 5-Yellow	 1-Yellow 2-White 3-Orange 4-Blue
Length	5...30M	5/10/15/20/30M	5...30MM
Adaptive	4 pin M12 (Power connector)	4 pin M12 (Power connector)	5 pin M12(D-coded)
Order code	**16-1035**	**16-1040**	**16-1045**

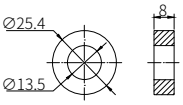


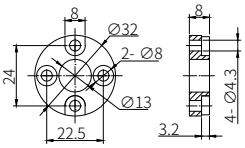


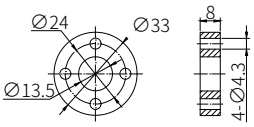


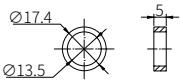
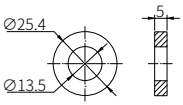
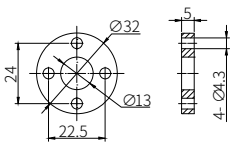
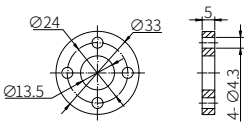
Name	6 pin M16 female connector	6 pin M16 female connector (90 degree angle)
End view drawing		
Material	Galvanized nickel	Galvanized nickel
Fitting diameter	6...8mm	6...8mm
Connection	Welding	Welding
Order code	**18-3001**	**18-3003**









Name	Ring magnet	Ring magnet	Ring magnet	Ring magnet
Operating temperature	-40...125°C			
Order code	**12-1032**	**12-1019**	**12-1024**	**12-1001**
Fitting non-permeable gasket				
Name	Non-permeable gasket	Non-permeable gasket	Non-permeable gasket	Non-permeable gasket
Operating temperature	-40...125°C			
Order code	**12-1037**	**12-1021**	**12-1025**	**12-1008**

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