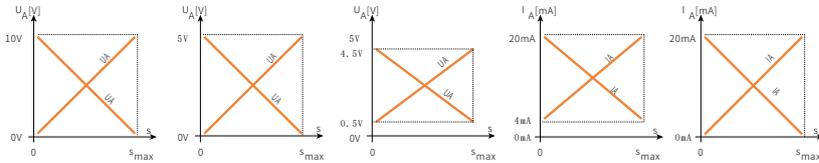




T3F - Analog

T-Series III Data Sheet



- + Updated new generation: stronger performance
- + Direct analog output, position and velocity
- + Resolution highest up to $0.1\mu\text{m}$
- + Stroke length up to 20m



THE NEW GENERATION



High precision



Double anti-interference



High performance chip



Wide operating voltage



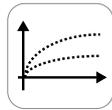
Reverse polarity protection



Shock/vibration resistant

TECHNICAL PARAMETER

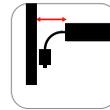
TECHNOLOGY PERCEIVES THE FUTURE



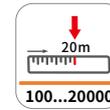
Linear/Curve measurement



Compact for transport and storage



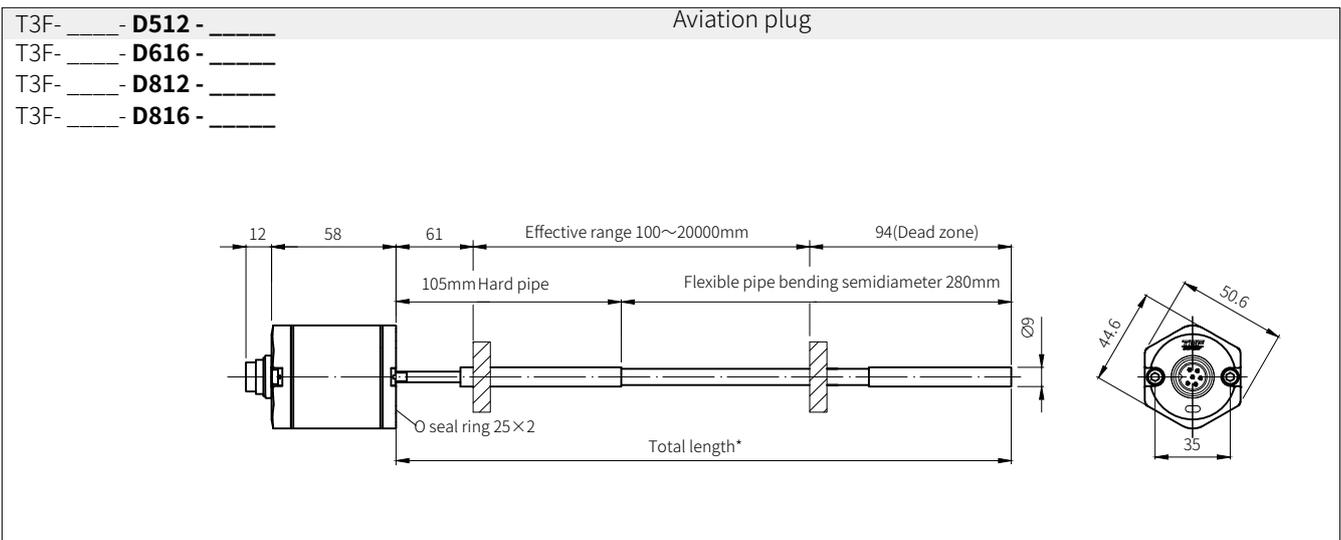
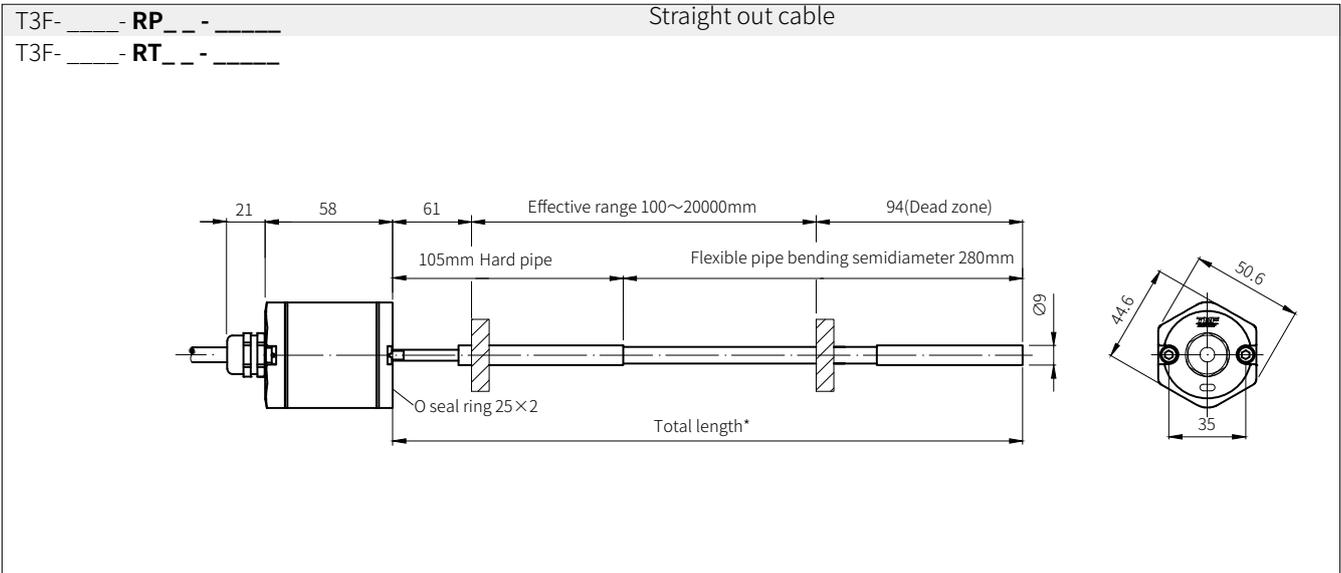
Confined space installation



Wider stroke length range
100...20000

Input	Measured data	Position/Velocity	
	Position measurement range	100...20000mm	
	Velocity measurement range	0.01...10m/s	
Output	Voltage	0...10VDC, 10...0VDC, 0...5VDC, 5...0VDC, 0.5...4.5VDC, 4.5...0.5VDC (Controller min. load impedance >5KΩ)	
	Current	4...20mA, 20...4mA, 0...20mA, 20...0mA (min./max. load 0/750Ω)	
Resolution	Position resolution	16 bit D/A (internal resolution 0.1 μm)	
	Velocity resolution	16 bit D/A (min. 0.01mm/s)	
	None-Linearity	< ±0.02%F.S. (min. ±100μm)	
	Repeatability	< ±0.001%F.S. (min. ±2.5μm)	
	Update time	Stroke length(mm)	≤ 1200 ≤ 2400 ≤ 4800 ≤ 7600 ≤ 10000 ≤ 20000
		Update time	0.5ms 1ms 2ms 5ms 7.5ms 15ms
Temperature coefficient	<30ppm/°C		
Mounting	Mounting position	Any	
	Pressure resistance outer tube	Thread metric M18×1.5, 3/4"-16UNF-3A etc.	
Design/ Material	Electronics housing	Aluminum alloy/Zinc alloy	
	Magnet	Stainless soft pipe (Teflon skin), min. bending semidiameter 280mm, shipping semidiameter 500mm	
Electrical connection	Wiring connection	Straight out cable, M12 connector (5 pin) , M16 connector (6 pin) , M12 connector (8 pin) , M16 connector (8 pin)	
	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)	
Operating conditions	Loop velocity	Any	
	Operating temperature	-40...85°C (105°C customizable)	
	Humidity	90 % relative humidity, no condensation	
	Ingress protection	IP67 installed into pressure pipe (top IP68)	
	Shock	100 g/11 ms, IEC standard 60068-2-27	
	Vibration	5 g/10...2000 Hz, IEC standard 60068-2-6 (resonant frequencies exclusive)	
	EMC	Flexible sensor installed into pressure pipe Electromagnetic emission according to EN 61000-6-3 Electromagnetic immunity according to EN 61000-6-2	

ITEM CATEGORY PARAMETER



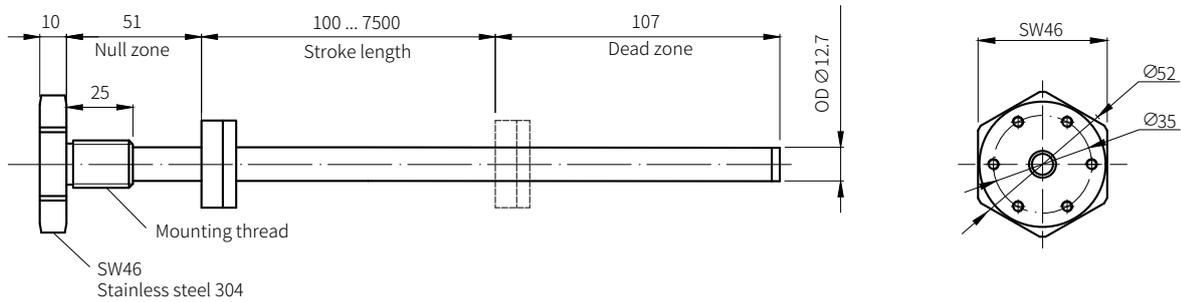
*Total length < 7600mm, error +8mm; > 7600mm, error +15mm /-5mm;
 Total length error has no impact on effective range.

DRAWING OF PRESSURE PIPE

TECHNOLOGY PERCEIVES THE FUTURE

Continuous pressure tolerance of the pressure pipe is 35MPa (70MPa peak).

T3F flexible sensor is installed into pressure pipe, straight out cable IP68, aviation plug IP67.



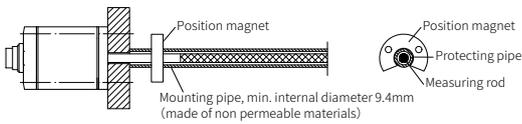
ORDER CODE

<p>HD - - - - - M - -</p> <p style="margin-left: 40px;">Stroke length</p> <p style="margin-left: 40px;">0100...7500mm (5mm increments)</p>	<p>Thread</p> <p>M Metric M18x1.5</p> <p>V Metric M20x1.5</p> <p>S 3/4"-16UNF-3A</p> <p>W Metric M24x1</p> <p>If not selected, thread M18x1.5 by default.</p>
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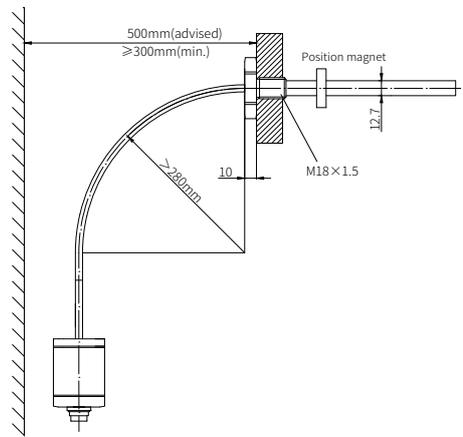
MOUNTING DRAWING

Electronics housing for T3F flexible sensor employs two M4x60 non permeable screws for installation. When arc measurement is adopted, the flexible pipe can be bended into required shape with min. bending semidiameter 280mm. With long range sensor, pipes made of non permeable materials can be used as support. In addition, pressure pipe with flange can also be ordered to support and protect the sensor.

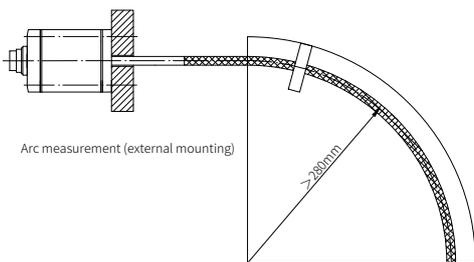
Linear measurement



Pressure pipe



Arc measurement

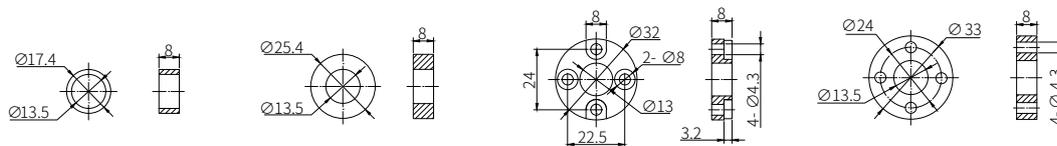


FUNCTION

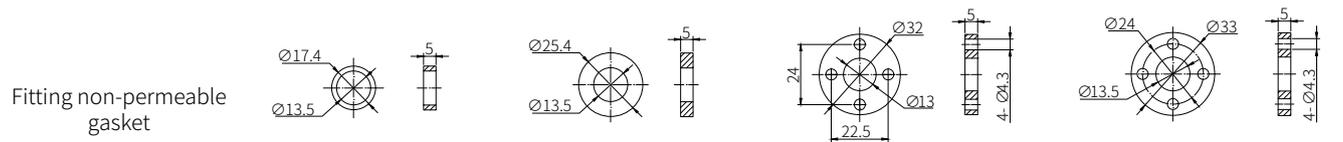
TECHNOLOGY PERCEIVES THE FUTURE

5 pin M12 connector	D512	PIN	Function	
	<p>View on sensor</p>	1	9 VDC...36 VDC	
		2	Signal output 1	
		3	0 VDC (GND)	
		4	Signal output 2*	
		5	Signal ground	
6 pin M16 connector	D616	PIN	Function	
	<p>View on sensor</p>	1	Signal output 1	
		2	Signal ground 1	
		3	Signal output 2 *	
		4	Signal ground 2 *	
		5	9 VDC...36 VDC	
		6	0 VDC (GND)	
8 pin M12 connector	D812	PIN	Function	
	<p>View on sensor</p>	1	Signal ground 2 *	
		2	Signal ground 1	
		3	Signal output 2 *	
		4	NC	
		5	Signal output 1	
		6	0 VDC (GND)	
		7	9 VDC...36 VDC	
		8	NC	
8 pin M16 connector	D816	PIN	Current	Voltage
	<p>View on sensor</p>	1	Current signal (output 1)	NC
		2	Signal ground	Signal ground
		3	Current signal (output 2) *	Voltage signal (output 2) *
		4	NC	NC
		5	NC	Voltage signal (output 1)
		6	0 VDC (GND)	0 VDC (GND)
		7	9 VDC...36 VDC	9 VDC...36 VDC
		8	NC	NC
Straight out cable		Color	Function	
	Brown	9 VDC...36 VDC		
	White	0 VDC (GND)		
	Yellow	Signal ground1		
	Green	Signal output 1		
	Gray	Signal ground2 *		
	Pink	Signal output 2 *		

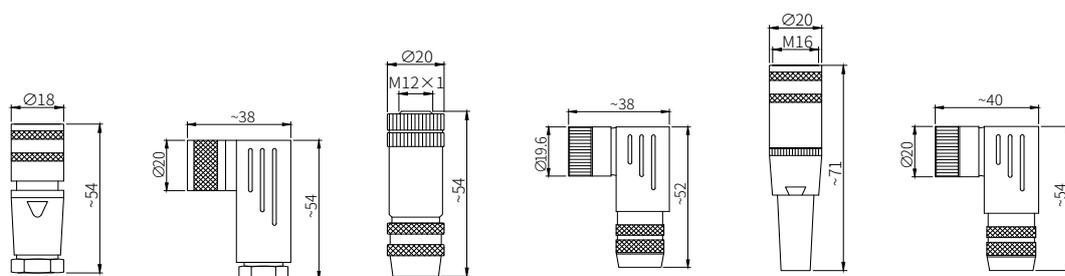
****"adaptable for dual output signal connection**



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



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



Name	6 pin M16 female connector	6 pin M16 female connector (90 degree angle)	8 pin M12 female connector	8 pin M12 female connector (90 degree angle)	8 pin M16 female connector	8 pin M16 female connector (90 degree angle)
End view drawing						
Material	Galvanized nickel					
Fitting diameter	6...8mm	6...8mm	8...10mm	6...8mm	6...9mm	6...8mm
Connection	Welding		Threaded		Welding	
Order code	18-3001	18-3003	18-5004	18-5005	18-5002	18-5003



Connector	5 pin M12 female connector	5 pin female connector (90 degree angle)
Name	Integral cable	Integral cable
Cable	5 wire 0.25mm ² shielded cable	5 wire 0.25mm ² shielded cable
Color/Diameter	Orange/ Ø 6	Orange/ Ø 6
Plug surface	 <ul style="list-style-type: none"> 1-Brown 2-Green 3-White 4-Gray 5-Yellow 	 <ul style="list-style-type: none"> 1-Brown 2-Green 3-White 4-Gray 5-Yellow
Length	5...30M	5/10/15/20/30M
Order code	16-1035	16-1040

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