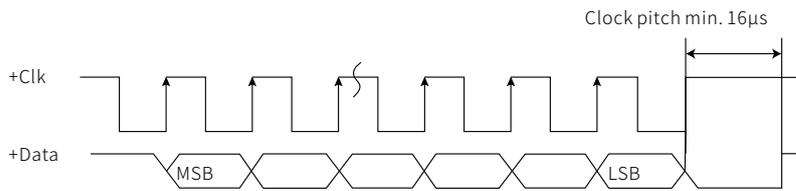




T3F - SSI

T-Series III Data Sheet



- + Updated new generation: stronger performance
- + Standard SSI signal can directly replace the encoder.
- + Stroke length up to 20 m



THE NEW GENERATION



High precision



Double anti-interference



High performance chip



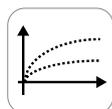
Reverse polarity protection



Shock/vibration resistant

TECHNICAL PARAMETER

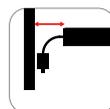
TECHNOLOGY PERCEIVES THE FUTURE



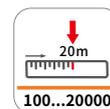
Linear/Curve measurement



Compact for transport and storage



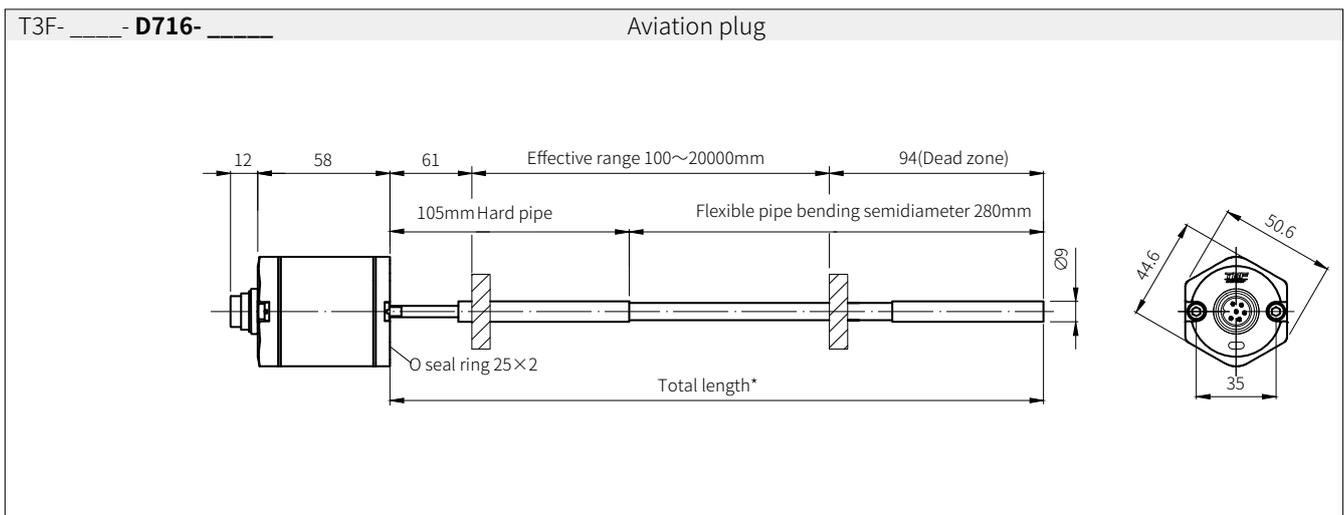
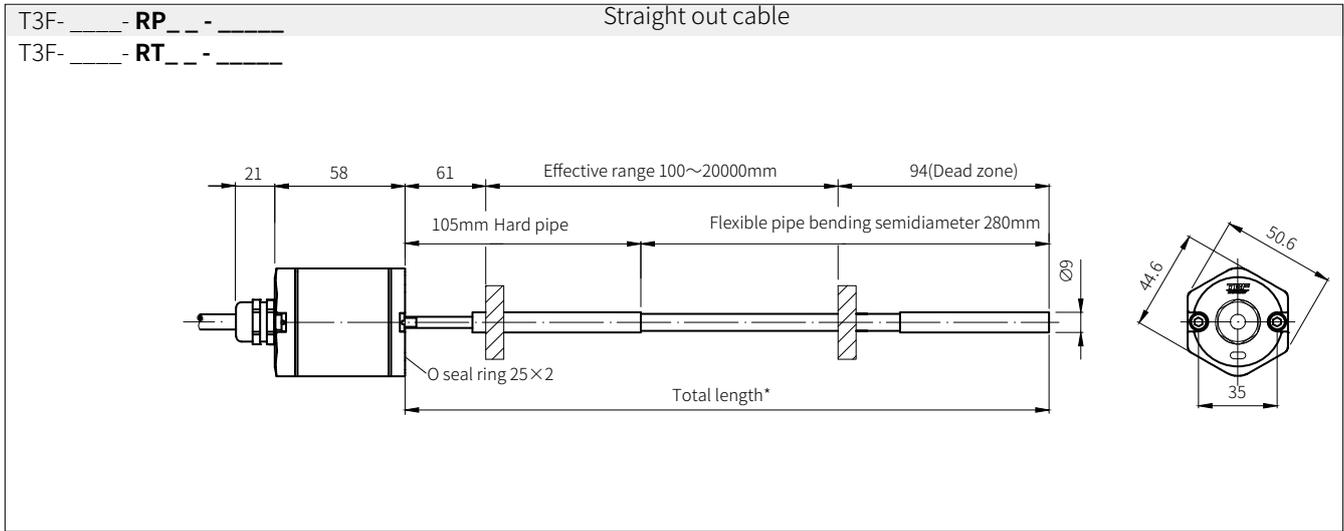
Confined space installation



Wider stroke length range

Input	Measured data	Position or Velocity															
	Position measurement range	100mm...20000mm															
	Velocity measurement range	0.01...10m/s															
Output	Interface	SSI synchronous serial interface															
	Data format	Binary or gray code, parity check and alarm bit optional															
	Data length	8...32 bit															
	Data speed	70kBd...1MBd depending on cable length: <table border="1"> <tr> <td>Cable length(m)</td> <td>< 3</td> <td>< 50</td> <td>< 100</td> <td>< 200</td> <td>≤ 400</td> </tr> <tr> <td>Baud rate(kBd)</td> <td>1000</td> <td>< 400</td> <td>< 300</td> <td>< 200</td> <td>< 100</td> </tr> </table>	Cable length(m)	< 3	< 50	< 100	< 200	≤ 400	Baud rate(kBd)	1000	< 400	< 300	< 200	< 100			
	Cable length(m)	< 3	< 50	< 100	< 200	≤ 400											
Baud rate(kBd)	1000	< 400	< 300	< 200	< 100												
Update frequency	<table border="1"> <tr> <td>Stroke length (mm)</td> <td>< 300</td> <td>< 750</td> <td>< 1000</td> <td>< 2000</td> <td>< 5600</td> <td>< 10000</td> <td>< 20000</td> </tr> <tr> <td>Update frequency (kHz)</td> <td>3.7</td> <td>3.0</td> <td>2.3</td> <td>1.2</td> <td>0.5</td> <td>0.24</td> <td>0.12</td> </tr> </table>	Stroke length (mm)	< 300	< 750	< 1000	< 2000	< 5600	< 10000	< 20000	Update frequency (kHz)	3.7	3.0	2.3	1.2	0.5	0.24	0.12
Stroke length (mm)	< 300	< 750	< 1000	< 2000	< 5600	< 10000	< 20000										
Update frequency (kHz)	3.7	3.0	2.3	1.2	0.5	0.24	0.12										
Resolution	Position resolution	0.1/0.5/1/2/5/10/20/50/100μm															
	Velocity resolution	0.001mm/s															
	None-Linearity	< ±0.02%F.S. (min. ±100μm)															
	Repeatability	< ±0.001%F.S. (min. ±2.5μm)															
	Temperature coefficient	< 15ppm/°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, M16 connector (7 pin)															
	Operating voltage	24VDC(-15/+20%)															
	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)															
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
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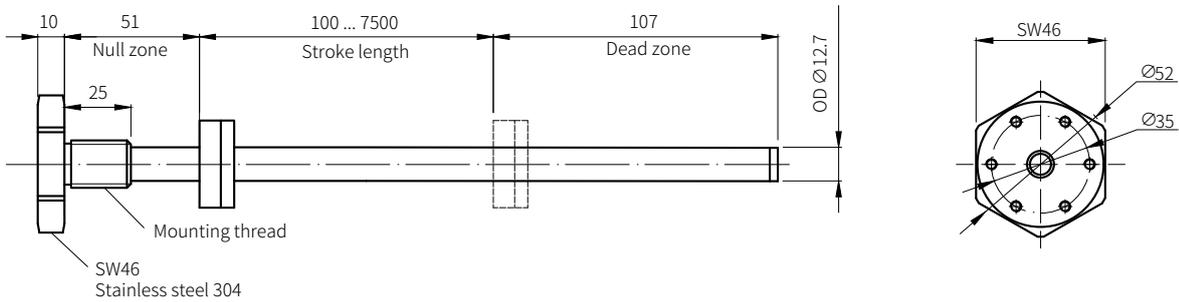
*Total length < 7600mm, error +8mm; > 7600mm, error +15mm /-5mm;
 Total length error has no impact on effective range.

DRAWING OF PRESSURE PIPE

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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

HD - --- M - ---

Stroke length	Thread
0100...7500mm (5mm increments)	M Metric M18x1.5
	V Metric M20x1.5
	S 3/4"-16UNF-3A
	W Metric M24x1

If not selected, thread M18x1.5 by default.

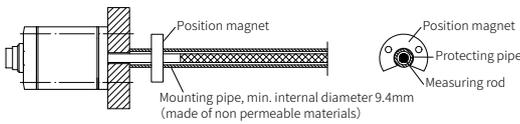
MOUNTING DRAWING

Electronics housing for T3F flexible sensor employs two M4x60 non permeable screws for installation.

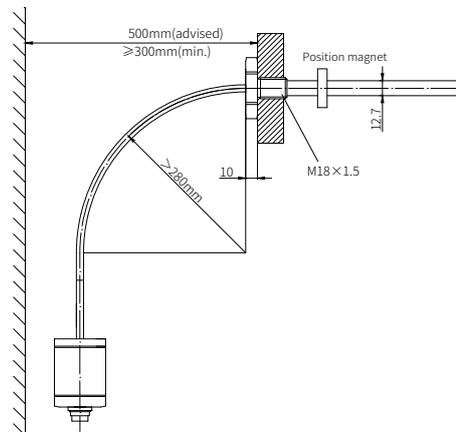
When arc measurement is adopted, the flexible pipe can be bended into required shape with min. bending semidiameter 280mm.

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.

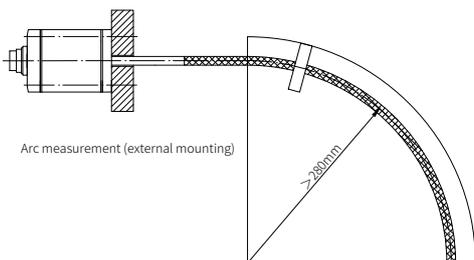
Linear measurement



Pressure pipe



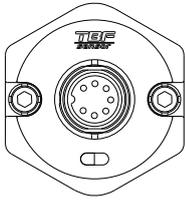
Arc measurement



FUNCTION

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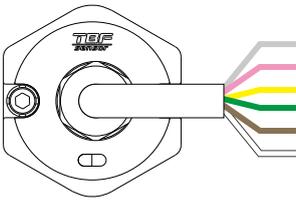
7 pin M16 connector D716 PIN Function



View on sensor

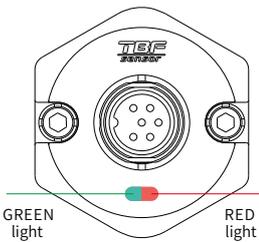
1	Data-
2	Data+
3	Clock+
4	Clock-
5	+24 VDC(-15%/+20%)
6	0 VDC(GND)
7	NC

Straight out cable Color Function

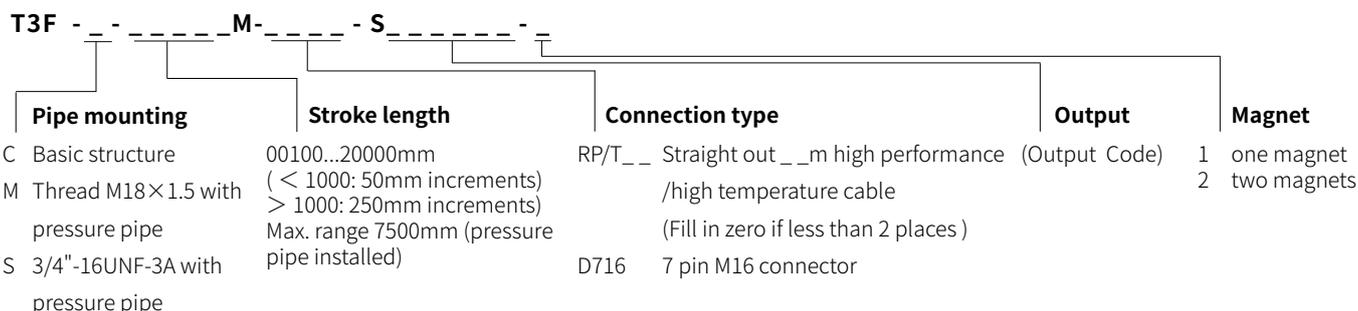


Gray	Data-
Pink	Data+
Yellow	Clock+
Green	Clock-
Brown	+24 VDC(-15%/+20%)
White	0 VDC(GND)

Enhanced monitoring and diagnostic functions



Green light	Red light	Function
ON	OFF	Normal work
ON	ON	Magnet is out of effective range, or magnet cannot be measured, nor magnet number is correct.
FLASH	ON	Enter programming status

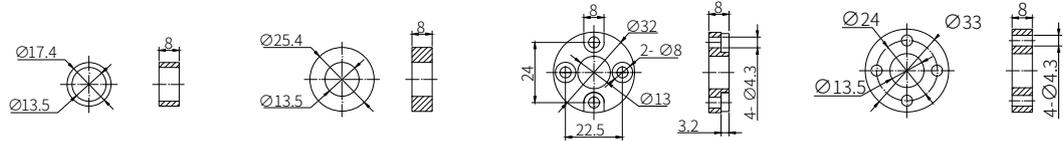


SSI Output Code		S [1][2][3][4][5][6]					
[1] Function	[2] Options	[3] Mode	[4] Data length	[5] Format	[6] Resolution		
1 Position	0 Standard	1 Forward, asynchronous mode	1 25 bit	B Binary	1 5µm		
2 Relative position (2 magnets and 1 output)	1 Internal linearization	2 Reverse, asynchronous mode	2 24 bit	G Gray	2 10µm		
3 Velocity		3 Forward, synchronous mode	3 26 bit		3 50µm		
4 Position and temperature inside the sensor electronics housing		4 Reverse, synchronous mode	A 24 bit + alarm bit + parity check bit		4 100µm		
					5 20µm		
					6 2µm		
					7 0.1µm		
					8 1µm		
					9 0.5µm		

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

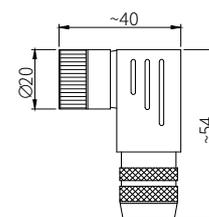
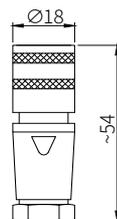
Model selection	Model: T3F-M-00600M-D716-S1011B1-1
	Explanation: T series III generation, T3F flexible sensor, installed inside pressure pipe, mounting thread metric M18x1.5, stroke length 600mm, 7 pin M16 aviation plug, position measurement, standard, forward, asynchronous mode, 25 bit, Binary, resolution 5µm, single magnet.

■ Please contact us for more customized products.



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



Name	7 pin M16 female connector	7 pin M16 female connector (90 degree angle)
End view drawing		
Material	Galvanized nickel	
Fitting diameter	6...8mm	
Connection	Welding	
Order code	18-4001	18-4002

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