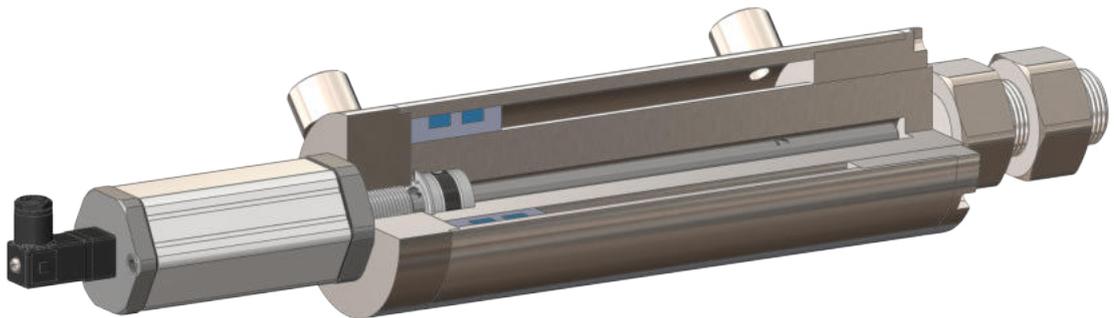


MST

Non-Contact Magnetostrictive Position Sensor
In Cylinder Applications

ANALOG mA/V



2. TECHNICAL SPECIFICATIONS

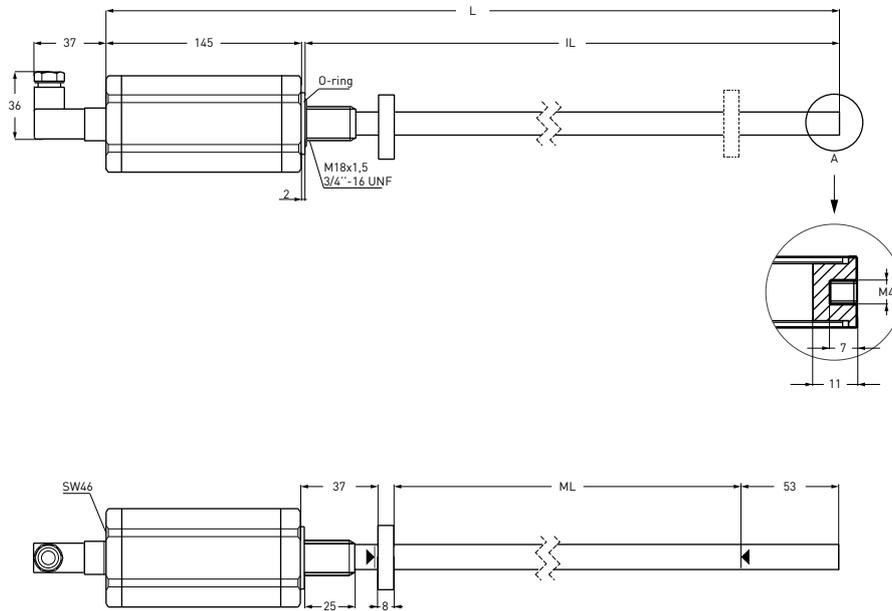


Measurement stroke	50 - 5.000 mm
Pressure rating	<500 bar
Output	0-10V, 10-0V, 0-20 mA, 20-0 mA, 4-20 mA, 20-4 mA (Speed information can be provided optionally.)
Resolution	12 - 16 bit DAC output
Update time	0-600 mm, 0.5 ms 600-1.500 mm, 1 ms 1.501-3.000 mm, 2 ms 3.001-5.000 mm, 3 ms
Linearity	50-100 mm < %0.5 100-500 mm < %0.2 500-1.000 mm < %0.1 1.000-5.000 mm < %0.05
Repeatability	100 µm
Power supply	24 VDC (22-26 VDC)
Displacement speed	max. <5 m/s
Sampling rate	Up to 2 kHz (depending on stroke length)
Reverse polarity protection	Up to -30 VDC
Overvoltage protection	Up to +30 VDC
Max. consumption	<50 mA - 90 mA (depending on stroke length)
Max. output noise	<5 mVpp
Protection level	IP 65 - EN 60529
Vibration	EN 60068-2-6, 5-200 Hz 200 m/s ² (20g), 2h 30min each axis (x,y,z)
Shock	EN 60068-2-2:2007 500 m/s ² (50g) 11ms (x,y,z axis)
Mounting	M18 x 1.5 or 3/4" - 16 UNF O-ring or Flat
Case material	Profile : Anodized aluminium Body : Stainless steel Caps : Stainless steel
Operating temperature	-10°C ... +70°C
Storage temperature	-30°C ... +90°C

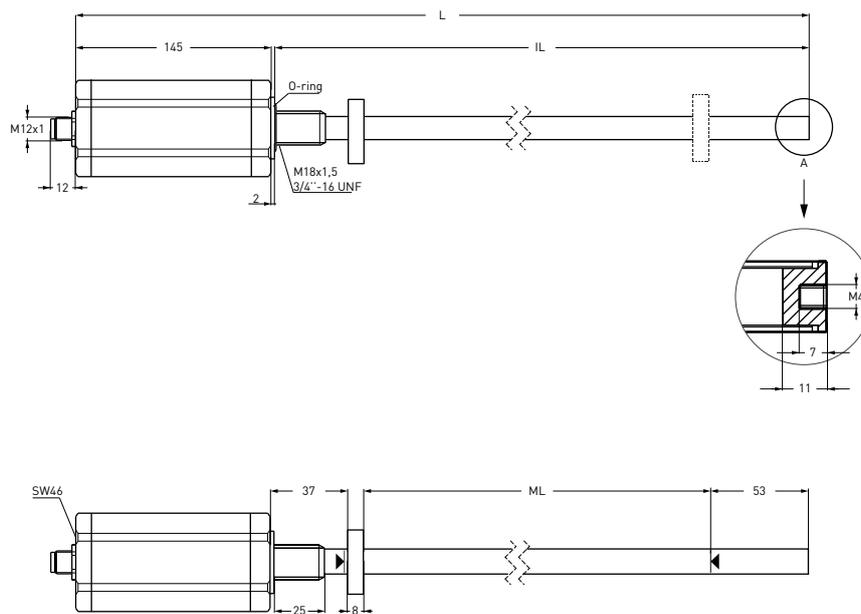
3.MECHANICAL DRAWING



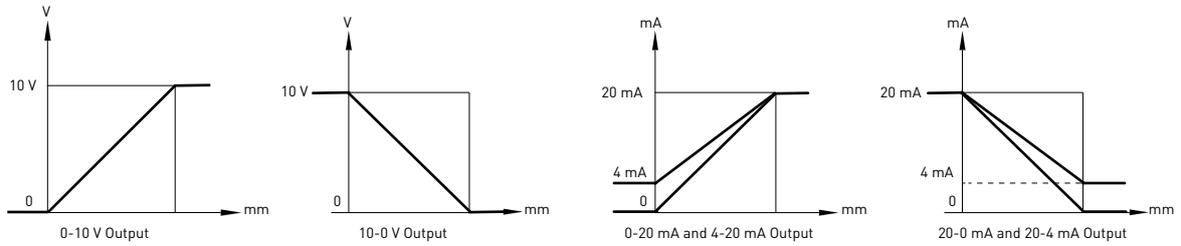
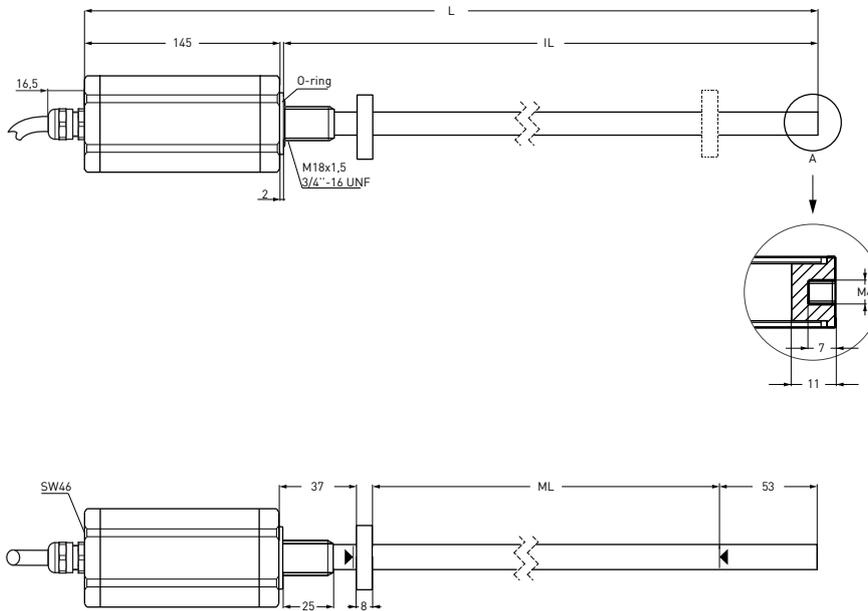
CH2: Hydraulic type, 4 pin connector output (standard)



CN5A (M12) or CN5B (M16), 5 pin connector output (optional)



Cable output (optional)



MST (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000	1100	1200	1300	1400	1500	1750	2000	2250	2500	3000	4000	5000
ML (Measuring Length)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000	1100	1200	1300	1400	1500	1750	2000	2250	2500	3000	4000	5000
IL (Installation Length)	146	196	246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1096	1196	1296	1396	1496	1596	1846	2096	2346	2596	3096	4096	5096
L (Total Length)	293	343	393	443	493	543	593	643	693	743	793	843	893	943	993	1043	1093	1143	1243	1343	1443	1543	1643	1743	1993	2243	2493	2743	3243	4243	5243
Dead Zone Calculation	37/53																														

4. CONNECTORS AND CABLE



5 pin Connector Configuration
CN5 M12 (A) / M16 (B)
5 pin

6 pin Connector Configuration
CN6 M12 (A) / M16 (B)
6 pin

8 pin Connector Configuration
CN8 M12 (A) / M16 (B)
8 pin

Voltage Output	
+V	Brown
0V	Blue
0V Sense	Black
Output1	White (0-10V)
Output2	Orange (10-0V)
Earth	Shield

Current Output	
+V	Brown
0V	Blue
0V Sense	Black
Output1	White (Iout1)
Output2	Orange (Iout2)
Earth	Shield

Cable Length	
1M	1 meter (standard) (Different cable length optional.)

5. HYDRAULIC TYPE CONNECTOR

CH2

0-10V or 10-0V Output

CH2

0-10V and 10-0V Output

CH2

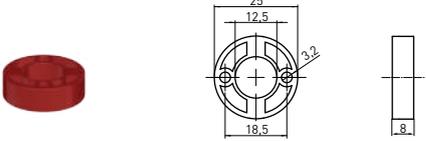
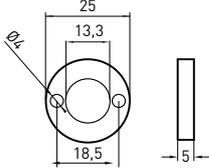
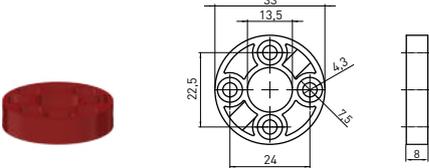
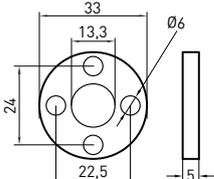
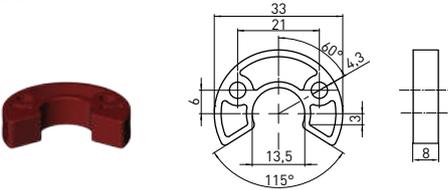
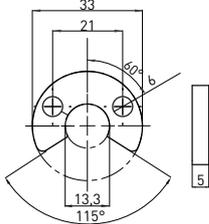
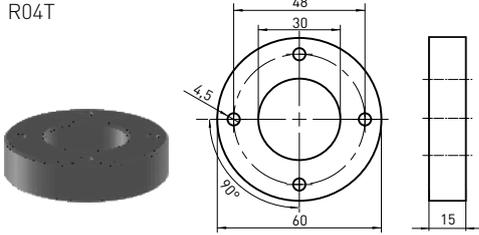
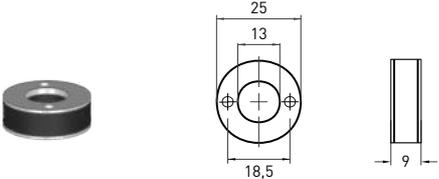
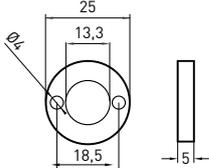
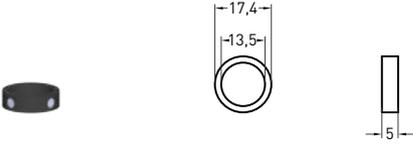
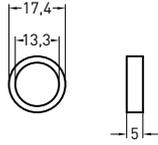
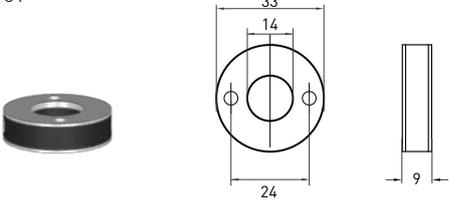
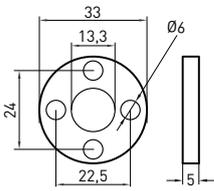
0-20mA or 4-20mA Output

CH2

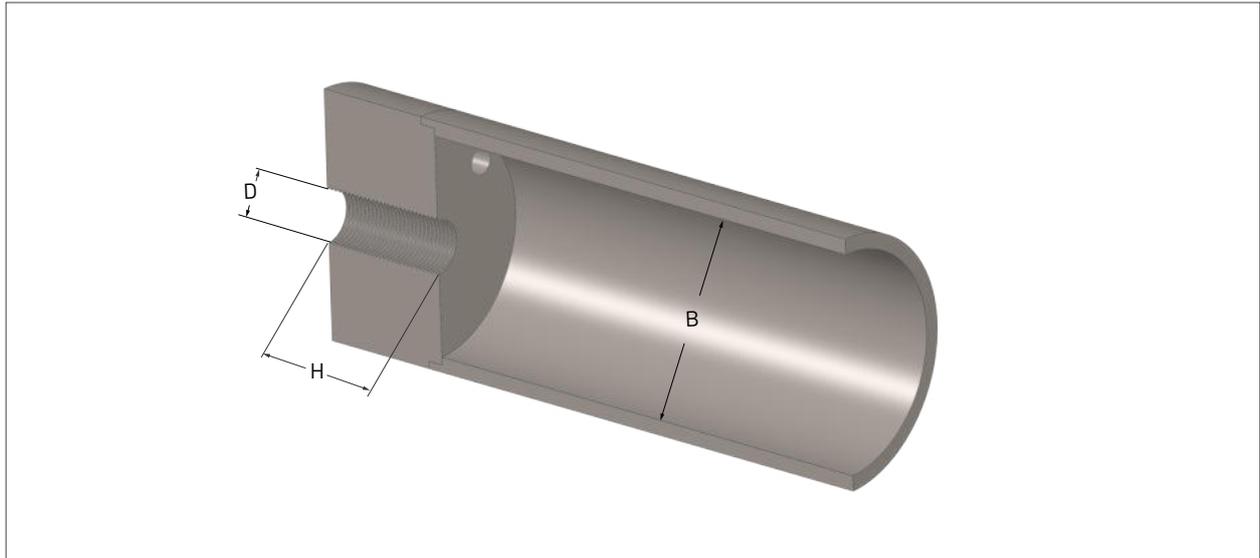
0-20mA and 4-20mA Output

6.CURSORS AND ACCESSORIES



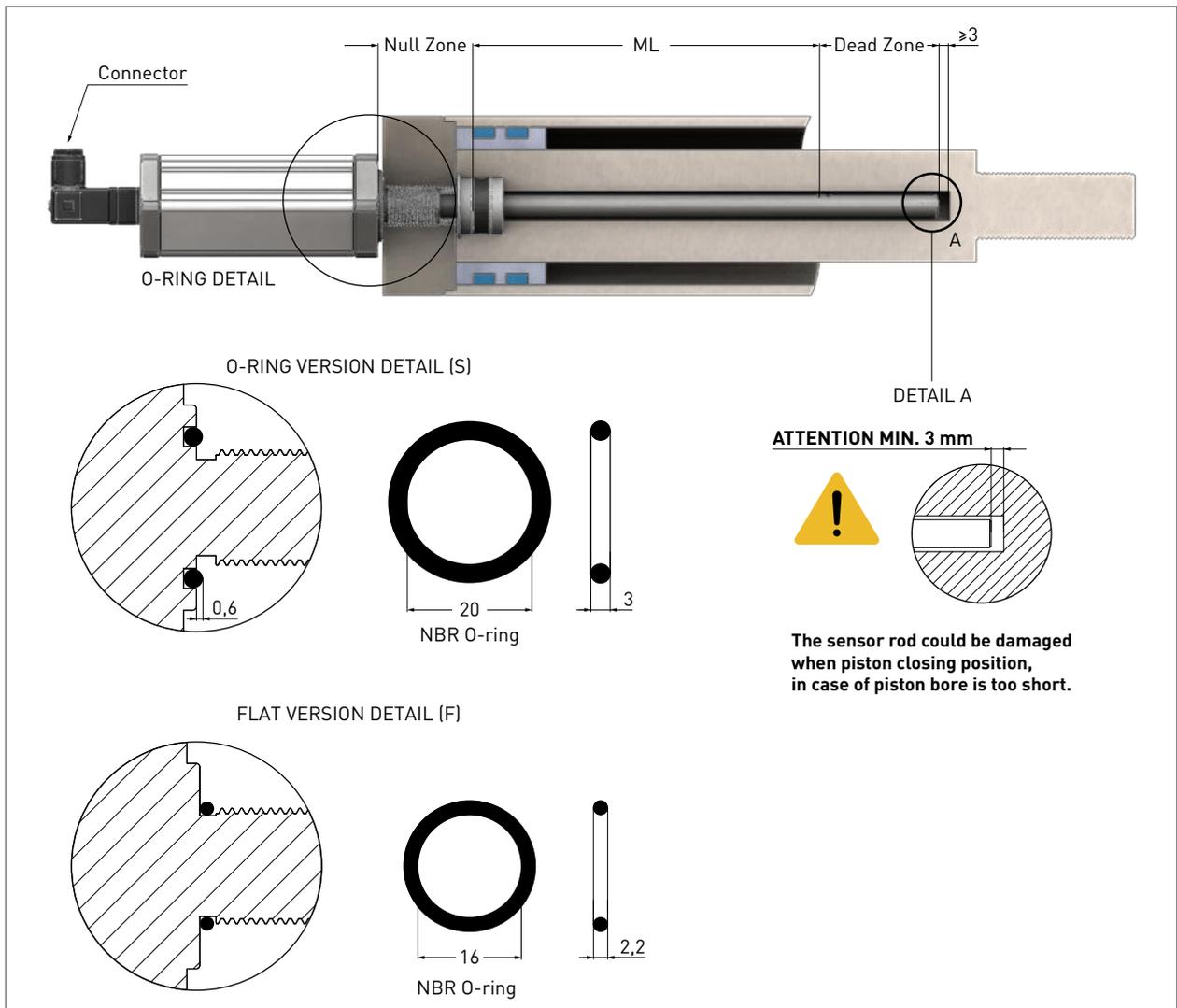
Cursor	Spacer	Screw
<p>R01T</p> 	<p>S01</p> 	<p>M3x20</p> <p>Stainless steel 316L screw</p> <p>2 units</p>
<p>R02T</p> 	<p>S02</p> 	<p>M3x20</p> <p>Stainless steel 316L screw</p> <p>2 units</p>
<p>R03T</p> 	<p>S02</p> 	<p>M4x20</p> <p>Stainless steel 316L screw</p> <p>2 units</p>
<p>R04T</p> 	<p>-</p>	<p>M4x20</p> <p>Stainless steel 316L screw</p> <p>4 units</p>
<p>R05T</p> 	<p>S01</p> 	<p>M3x20</p> <p>Stainless steel 316L screw</p> <p>2 units</p>
<p>R06T</p> 	<p>S03</p> 	<p>-</p>
<p>R10T</p> 	<p>S02</p> 	<p>M4x20</p> <p>Stainless steel 316L screw</p> <p>2 units</p>

7. SPACE REQUIREMENTS

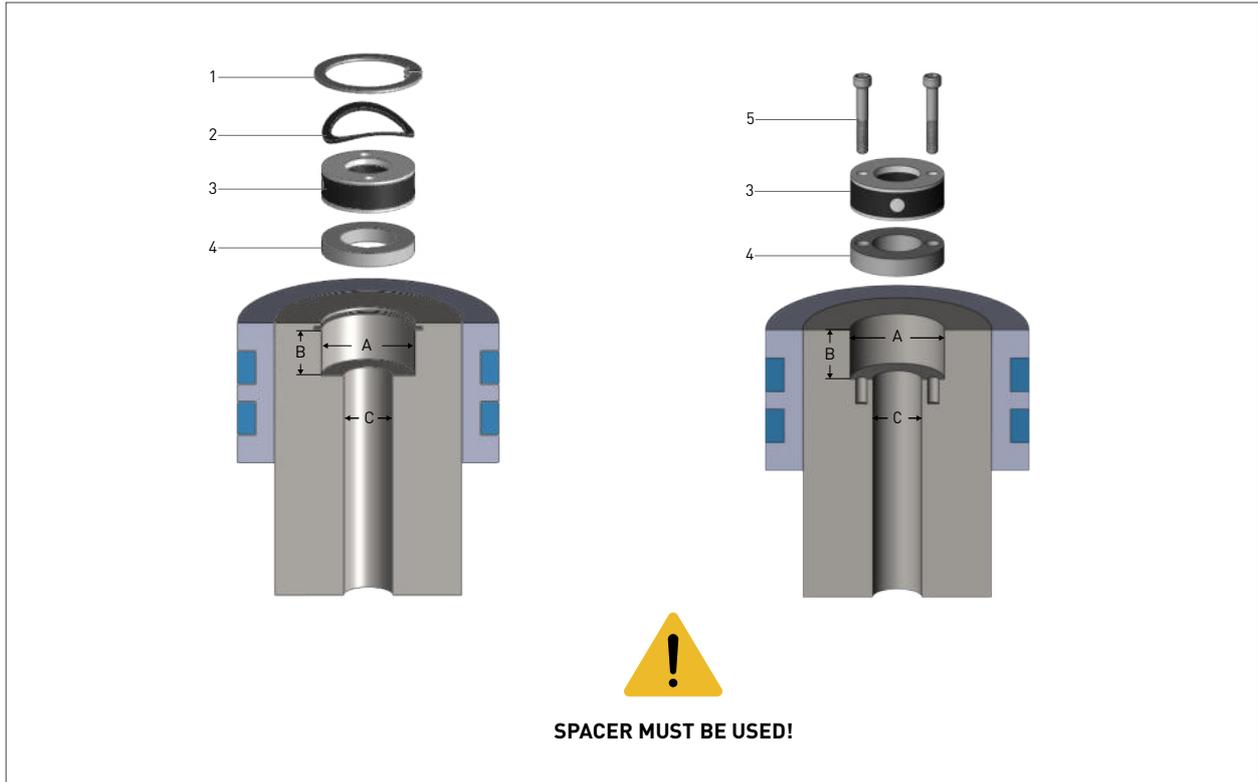


Type	B Ø Cylinder	D Ø min.	H Depth
MST	≥ 70 mm	M18 x 1,5	28 mm

8. PISTON ROD BORE AND DEPTH

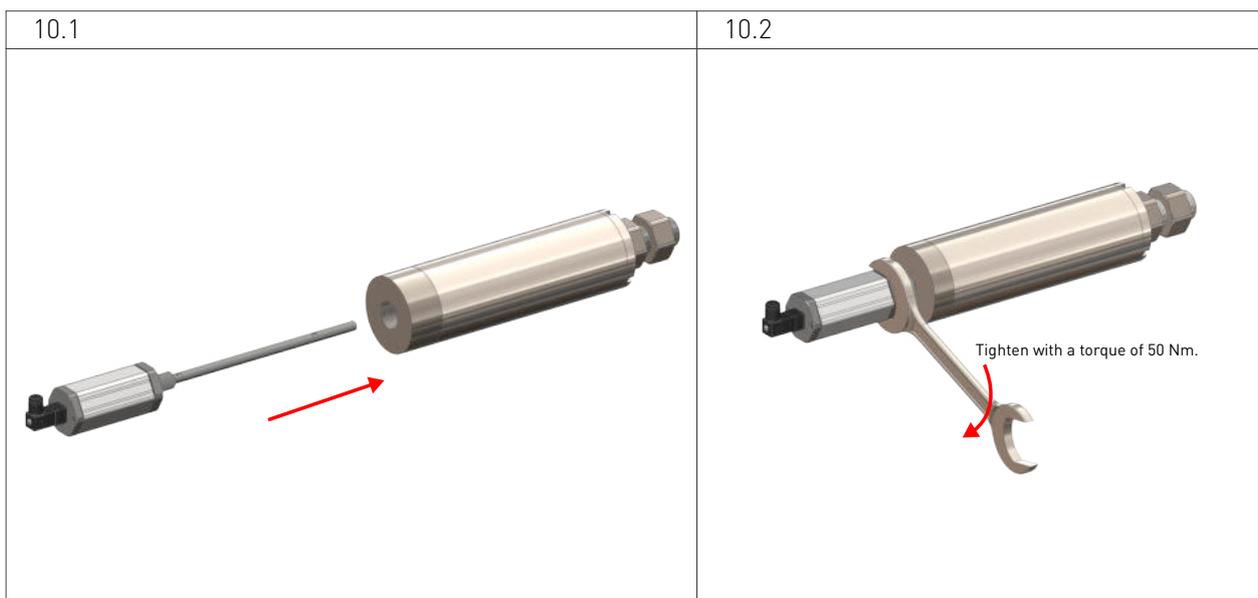


9. INSTALLING THE MAGNET

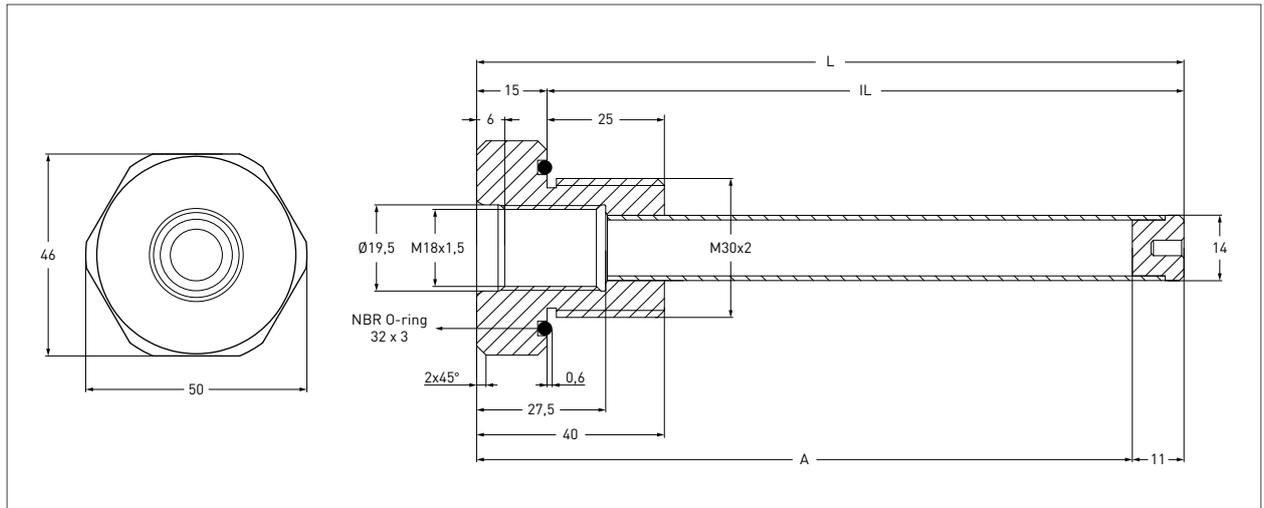


	1	2	3	4	5	A	B	C
Non-magnetic spacer	Circlip	Corrugated washer	Cursor (R05T)	Non-magnetic spacer	-	Ø25 mm	≥14 mm	Ø10 mm rod for Ø13 mm
Screwing	-	-	Cursor (R05T)	Non-magnetic spacer	Screw	Ø25 mm	≥14 mm	Ø10 mm rod for Ø13 mm

10. ASSEMBLY DIRECTLY



11.SLEEVE MECHANICAL DRAWING



MST (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000	1100	1200	1300	1400	1500	1750	2000	2250	2500	3000	4000	5000
A	166	216	266	316	366	416	466	516	566	616	666	716	766	816	866	916	966	1016	1116	1216	1316	1416	1516	1616	1866	2116	2366	2616	3116	4116	5116
IL (Installation Length)	162	212	262	312	362	412	462	512	562	612	662	712	762	812	862	912	962	1012	1112	1212	1312	1412	1512	1612	1862	2112	2362	2612	3112	4112	5112
L (Total Length)	177	227	277	327	377	427	477	527	577	627	677	727	777	827	877	927	977	1027	1127	1227	1327	1427	1527	1627	1877	2127	2377	2627	3127	4127	5127

12.ASSEMBLY WITH SLEEVE

<p>12.1</p>	<p>12.2</p>
<p>12.3</p>	<p>12.4</p>

13. ORDERING PROCEDURE



1	Model		
	MST: Non-Contact Magnetostrictive Position Sensor In Cylinder Applications		
2	Measuring range		
	50 - 5.000 mm		
3	Rod & Thread		
	E10 : Ø10, M18x1,5 E12 : Ø12, M18x1,5 U10 : Ø10, 3/4"-16 UNF U12 : Ø12, 3/4"-16 UNF		
4	Sealing surface		
	S : O - ring F : Flat		
5	Resolution		
	A : 16 bit B : 15 bit C : 14 bit D : 13 bit E : 12 bit		
6	Cursor and Spacer (T- coded sensors are used with T-coded cursors)		
	1R01T: 25 mm (S01: 25 mm)	1R05T: 25 mm (S01: 25 mm)	S02: 33 mm
	1R02T: 33 mm (S02: 33 mm)	1R06T: 17.4 mm (S03: 17.4 mm)	S03: 17.4 mm
	1R03T: 33 mm (S02: 33 mm)	1R10T: 33 mm (S02: 33 mm)	1R01T: 1 cursor
	1R04T: 48 mm	S01: 25 mm	2R01T: 2 cursor
7	Output		
	V10: 0-10V	2V10: 0-10V/0-10V	V01: 10-0V
	2V01: 10-0V/10-0V	V11: 0-10V/10-0V	V50: 0-5V
	V05: 5-0V	2V05: 5-0V/5-0V	V51: 0-5V/5-0V
	I40: 4-20mA	2I40: 4-20mA/4-20mA	I04: 20-4mA
	2I04: 20-4mA/20-4mA	I41: 4-20mA/20-4mA	I20: 0-20mA
	2I20: 0-20mA/0-20mA	I02: 20-0mA	2I02: 20-0mA/20-0mA
	I21: 0-20mA/20-0mA	I02: 20-0mA	
8	Output2 (optional)		
	Sxxx → S: Hz, xxx: max. speed (mm/s)		
9	Connector / Cable		
	CH2 : 4 pin, hydraulic type connector (standard) CN5A : 5 pin, M12 connector CN5B : 5 pin, M16 connector CN6A : 6 pin, M12 connector CN6B : 6 pin, M16 connector CN8A : 8 pin, M12 connector CN8B : 8 pin, M16 connector 1M : 1 meter cable (standard), Different cable lengths available (optional)		
10	Dead zone		
	≤ 2.000 mm : 30/53, 37/53, 47/53, 57/53, 67/53, 77/53, 30/60, 51/63 > 2.000 - 3.000 mm : 130/53 mm > 3.000 - 5.000 mm : 150/53 mm		

For example:

MST	750	E10	S	B	1R05T	I40	Sxxx	CN5A	30/53
1	2	3	4	5	6	7	8	9	10

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