

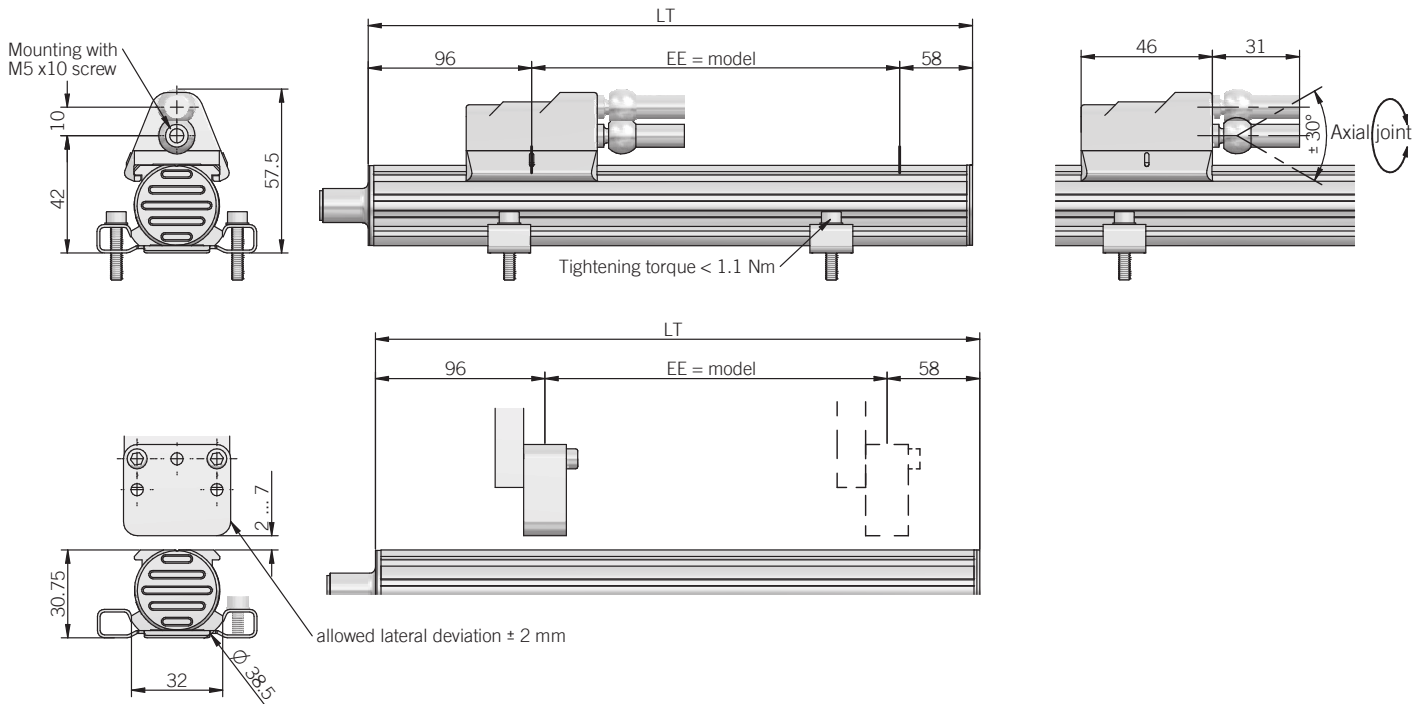
MAIN CHARACTERISTICS

EMSPA is an absolute linear magnetostrictive transducer with analog interface.
 Thanks to the absence of electrical contact on the enclosure there is no issue of wear and deterioration during working life.
 Magnetostrictive technology guaranties great performances of speed and accuracy. High reliability and simple installation even for applications with mechanical stresses, shocks or high contamination are assured by the compact size and the rugged enclosure.



ORDERING CODE	EMSPA	500	S	20D	10	P	A
linear magnetostrictive transducer with analogue output	SERIES EMSPA						
	STROKE mm from 50 to 1500 see table for stroke availability						
	ENCLOSURE RATING IP 67	S					
	OUTPUT SIGNAL 0 ... 10 V DC / 1 cursor (standard) 0 ... 10 V DC / 1 cursor position/speed 0 ... 10 V DC / 2 cursors (min. stroke 400 mm) 4 ... 20 mA / 1 cursor 4 ... 20 mA / 2 cursors (min. stroke 400 mm)	10S	10P	10D	20S	20P	20D
	TRAVEL SPEED max 10 m/s	10					
	OUTPUT TYPE cable (standard length 1 m) M12 5 pin connector M12 8 pin connector M16 DIN 45322 6 pin connector M16 DIN 45326 8 pin connector	P	S	S	C	C	C
	OUTPUT DIRECTION axial	A					

EMSPA



dimensions in mm

brackets, cursors and socket connector not included, please refer to Accessories

ELECTRICAL SPECIFICATIONS	
Resolution	16 bit (max electrical noise 5 mVpp)
Output signal	0 ... 10 V DC 4 ... 20 mA
Output alarm value	10,5 V DC 21 mA
Output max value	12 V DC 30 mA
Power supply¹	19,2 ... 28,8 V DC
Power ripple	1 Vpp max
Current consumption	70 mA max 90 mA max
Output load	5 kΩ < 500 Ω
Output ripple	< 5 mVpp
Independent linearity	≤ ± 0,01 % FS (min ± 0,060 mm) typical with sliding cursor ≤ ± 0,02 % FS with floating cursor (working distance 2 ... 5 mm) ≤ ± 0,04 % FS with floating cursor (working distance 5 ... 7 mm)
Repeatability	< 0,01 mm
Hysteresis	< 0,01 mm
Sampling time	0,5 ms (50 ... 300) 1 ms (350 ... 1100) 1,5 ms (1200 ... 1500)
Protection against overvoltage	yes
Protection against polarity inversion	yes
Protection against power supply on output	yes
Electrical insulation	500 V DC
Cable type	shielded - fixed installation conductors section 0,25 mm ² / AWG 24 bending radius min 40 mm
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU directive

MECHANICAL SPECIFICATIONS	
Stroke	50 - 100 - 150 - 200 - 250 - 300 - 350 - 400 - 450 - 500 - 600 - 700 - 800 - 900 - 1000 - 1100 - 1200 - 1300 - 1400 - 1500 mm
Electric stroke (EE)	see stroke (mm)
Overall dimension (LT)	EE + 154 mm
Enclosure rating	IP 67 (IEC 60529)
Detected measurement	displacement / speed
Travel speed	10 m/s max
Acceleration	100 m/s ² max
Speed measurement range	0 ... 10 m/s
Speed accuracy	< 2 %
Shock	100 G, 11 ms, single shock (IEC 60068-2-27)
Vibration	12 G, 10 ... 2000 Hz (IEC 680068-2-6)
Housing material	anodized aluminium / Nylon 66 G 25
Cursor type	sliding or floating cursor
Temperature coefficient	0,005 % FS / °C
Operating temperature^{2,3}	-30° ... +75°C (-22° ... +167°F)
Storage temperature³	-40° ... +100°C (-40° ... +212°F)

¹ as measured at the transducer without cable influences

² measured on transducer

³ condensation not allowed

CONNECTIONS

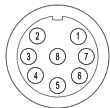
Function	Cable P	5 pin M12 S5	8 pin M12 S8	6 pin M16 C6	8 pin M16 C8
+ V DC	brown	5	7	5	7
0 V	white	4	6	6	8
Output cursor 1 0 ... 10 V 4 ... 20 mA	grey	1	5	1	5 (1*)
0V cursor 1	pink	2	1	2	2
Inverse output cursor 1 Output cursor 2 Output speed 10 ... 0 V 20 ... 4 mA	yellow	3	3	3	3
0 V Output cursor 1 Output cursor 2 Output speed	pink	2	2	4	6
NC	/	/	4	/	4
NC	/	/	8	/	/

* only with 4 ... 20 mA output

S5 connector (5 pin)
M12 A coded
front view



S8 connector (8 pin)
M12 A coded
front view



C6 connector (6 pin)
DIN 45322
front view

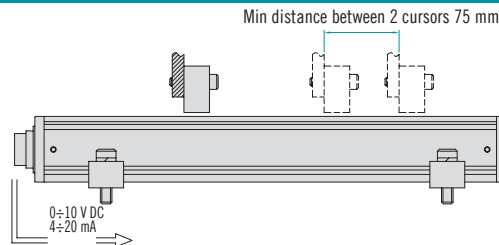


C8 connector (8 pin)
DIN 45326
front view



The transducer enclosure has to be connected to ground only on the control system side by the cable shield.
To guarantee the correct electrical insulation of the transducer from the machine, always assemble the brackets using the plastic washers included.

INSTALLATION EXAMPLE



For multi-cursor model, the cursors have to work in the same conditions of distance and temperature. Cursors must be installed on a support made of non-magnetic material (like brass, aluminium or AISI316 stainless steel).
The installation kit provides two screws, two nuts and two washers (all made of brass).
The cursor must be installed with maximum attention to horizontal alignment with the transducer axis (maximum tolerance is ± 2 mm), distance from the transducer surface has to be within the range from 2 to 7 mm.

APPLICATION EXAMPLE (CURRENT OUTPUT)

