

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 guarantees 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 **EMSPA**

SERIES

STROKE

mm from 50 to 1500
see table for stroke availability

ENCLOSURE RATING

IP 67 **S**

OUTPUT SIGNAL

0 ... 10 VDC / 1 cursor (standard) **10S**
 0 ... 10 VDC / 1 cursor position/speed **10P**
 0 ... 10 VDC / 2 cursors (min. stroke 400 mm) **10D**
 4 ... 20 mA / 1 cursor **20S**
 4 ... 20 mA / 1 cursor position/speed **20P**
 4 ... 20 mA / 2 cursors (min. stroke 400 mm) **20D**

TRAVEL SPEED

max speed 10 m/s **10**

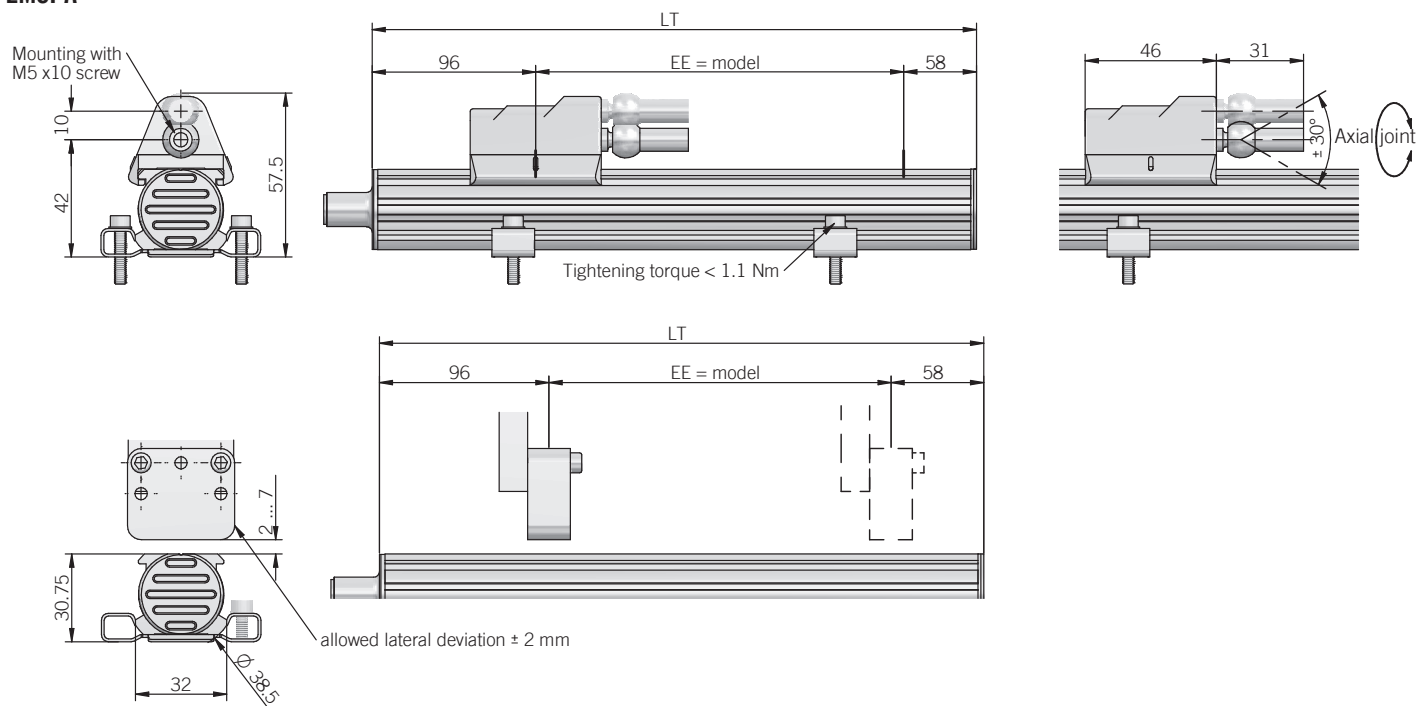
OUTPUT TYPE

cable (standard length 1 m) **P**
 M12 5 pin connector **S5**
 M12 8 pin connector **S8**
 M16 DIN 45322 6 pin connector **C6**
 M16 DIN 45326 8 pin connector **C8**

OUTPUT DIRECTION

axial **A**

EMSPA



dimensions in mm

- brackets, cursors and female connector not included, for ordering P/N please refer to Accessories section

ELECTRICAL SPECIFICATIONS

Resolution	16 bit (max electrical noise 5 mVpp)	
Output signal	0 ... 10 VDC	4 ... 20 mA
Output alarm value	10,5 VDC	21 mA
Output max value	12 VDC	30 mA
Power supply	19,2 ... 28,8 VDC	
Power ripple	1 Vpp max	
Current consumption	70 mA max	90 mA max
Output load	5 k Ω	< 500 Ω
Output ripple	< 5 mVpp	
Independent linearity	$\leq \pm 0,01$ % FS (min $\pm 0,060$ mm) typical with sliding cursor $\leq \pm 0,02$ % FS with floating cursor (working distance 2 ... 5 mm) $\leq \pm 0,04$ % 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 VDC	
Electromagnetic compatibility	according to 2014/30/EU directive	

MECHANICAL SPECIFICATIONS

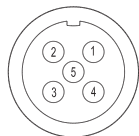
Stroke	50 - 100 - 150 - 200 - 250 - 300 - 350 - 400 - 450 - 500 - 600 - 700 - 800 - 900 - 1000 - 1100 - 1200 - 1300 - 1400 - 1500 mm
Electric stroke (EE)	see model (mm)
Overall dimension (LT)	EE + 154 mm
Enclosure rating	IP 67 (IEC 60529)
Detected measurement	displacement / speed
Travel speed	10 m/s max
Acceleration	100 m/s ² max
Speed measurement range	min 0 ... 0,1 m/s max 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	-30° ... +75°C (-22° ... +167°F)
Storage temperature	-40° ... +100°C (-40° ... +212°F)

CONNECTIONS

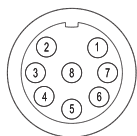
Function	Cable output	S5 5 pin M12 connector	S8 8 pin M12 connector	C6 6 pin M16 connector	C8 8 pin M16 connector
+ V DC	brown	5	7	5	7
0V	white	4	6	6	8
Output cursor 1 0 ... 10 V 4 ... 20 mA	grey	1	5	1	5 (1*)
0V cursor 1	pink	2	1	2	2
Inverse output cursor 1 Output cursor 2 Output speed 10 ... 0 V 20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

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.

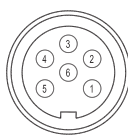
S5 connector (5 pin)
M12 A coded
solder side view FV



S8 connector (8 pin)
M12 A coded
solder side view FV



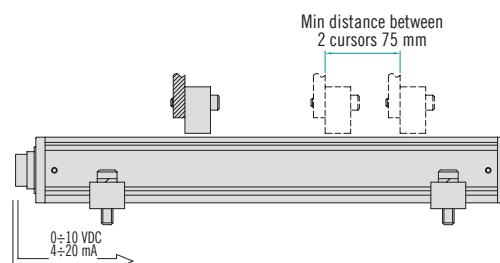
C6 connector (6 pin)
DIN 45322
solder side view FV



C8 connector (8 pin)
DIN 45326
solder side view FV



Installation example with two cursors



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.

Current output application example

