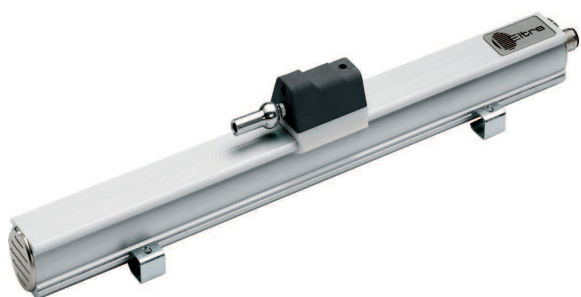




EMSPS

LINEAR MAGNETOSTRICTIVE TRANSDUCER WITH SSI OUTPUT



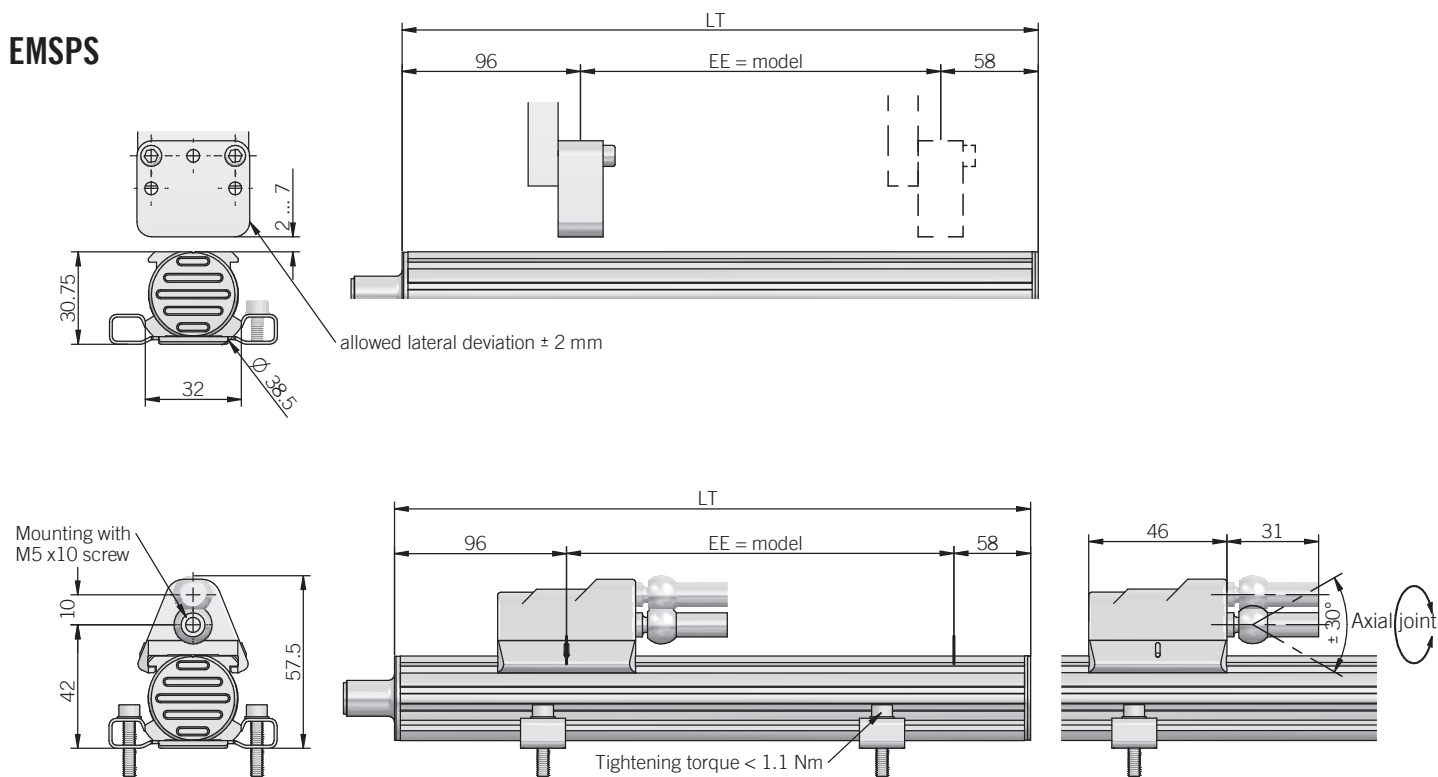
Specifications

EMSPS is an absolute linear magnetostrictive transducer featuring a digital RS-422 SSI compliant output. The main characteristic of magnetostrictive transducers is the absence of electric contact on the enclosure there is no issue of wear and deterioration during working life guaranteeing high displacement speed and precision. 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	EMSPS	500	S	25	G	10	R5	P	A
	SERIES linear magnetostrictive transducer with SSI output	EMSPS							
	STROKE mm from 50 to 1500 <i>see table for stroke availability</i>								
	ENCLOSURE RATING IP 67		S						
	DATA LENGTH (FM357) 21+1 bit 24 bit 25 bit			21					
	CODE TYPE binary gray				B				
	TRAVEL SPEED max speed					10			
	RESOLUTION 0,002 mm 0,005 mm 0,010 mm 0,020 mm 0,040 mm						R2		
	OUTPUT TYPE cable (standard length 1 m) DIN 45322 M16 6 pin connector DIN 45326 M16 8 pin connector M12 8 pin connector							P	
	OUTPUT DIRECTION axial								A



EMSPS



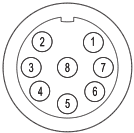
ELECTRICAL SPECIFICATIONS		MECHANICAL SPECIFICATIONS	
Resolution	2 - 5 - 10 - 20 - 40 μ m	Stroke	50 - 100 - 150 - 200 - 250 - 300 - 350 - 400 -450 - 500 - 600 - 700 - 800 - 900 - 1000 -1100 - 1200 - 1300 - 1400 - 1500 mm
Independent linearity	$\leq \pm 0,01\%$ FS (min $\pm 0,060$ mm) typical with sliding cursor $\leq \pm 0,02\%$ FS typical with floating cursor	Electric stroke (EE)	see model (mm)
Repeatability	< 0,01 mm	Overall dimensions (LT)	EE + 154 mm
Hysteresis	$\leq \pm 0,005\%$ FS (min 0,010 mm)	Enclosure rating	IP 67 (IEC 60529)
Power supply	10 ... 32 VDC	Detected measurement	displacement
Power ripple	1 Vpp max	Scale orientation	increasing
Max load current	50 mA max	Travel speed	10 m/s max
Output type	RS-422	Acceleration	100 m/s ² max
SSI output code	binary or gray	Shock	100 G, 11 ms, single shot (IEC 68000-2-27)
Clock frequency	50 kHz ... 1 MHz	Vibration	12 G, 10 ... 2000 Hz (IEC 68000-2-6)
SSI monostable time (Tm)	16 μ s	Housing material	anodized aluminium / Nylon 66 G 25
SSI frame	21 / 24 / 25 bit data length	Cursor type	sliding or floating cursor
Counting direction	increase	Temperature coefficient	20 ppm FS / °C
Protection against overvoltage	yes	Operating temperature	-30° ... +90°C (-22° ... +194°F)
Protection against polarity inversion	yes		
Self-resetting internal fuse	yes		
Electrical insulation	500 VDC (+VDC / earth)		
Electromagnetic			

CONNECTIONS

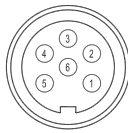
Function	Cable output	S8 8 pin M12 connector	C6 6 pin M16 connector	C8 8 pin M16 connector
+ V DC	blue / white	7	5	7
0V	blue	6	6	6
data +	orange / white	2	2	2
data -	orange	5	1	5
clock +	green / white	3	3	1
clock -	green	1	4	3

The transducer enclosure and cable shield have to be connected to ground on both sides.

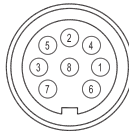
S8 connector (8 pin)
M12 A coded
solder side view FV



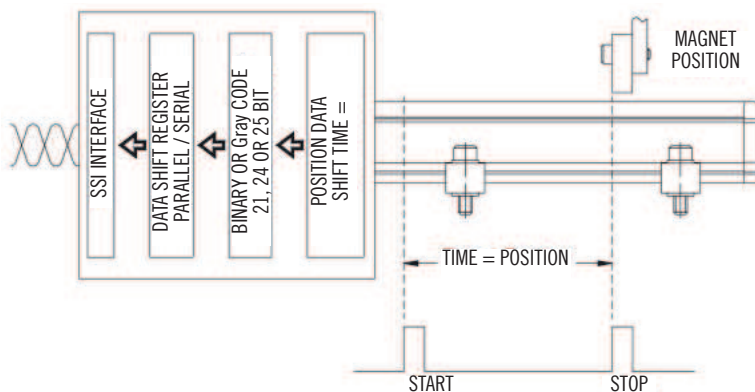
C6 connector (6 pin)
DIN 45322
solder side view FV



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



SSI BLOCK DIAGRAM

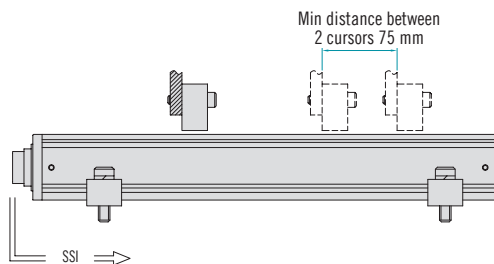


SSI output goes to 0 if the echo is absent (magnet out of measurement range or internal device error)

SSI CABLE LENGTH

Cable length	< 3 m	< 50 m	< 100 m	< 200 m	< 400 m
Baud rate	1 Mbaud	400 kbaud	300 kbaud	200 kbaud	100 kbaud

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.