

Code <b>ST02</b>	Project <b>A46-A</b>	Release <b>A</b>	<b>TECHNICAL DATASHEET</b>
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## MAGNETIC SCALE MTT

### GENERAL FEATURES

- Incremental magnetic scale, for applications on synchronized press brakes.
- Reader head guided by self-aligning translation carriage.
- Resolutions up to 1  $\mu\text{m}$ , accuracy grade  $\pm 15 \mu\text{m}$ .
- Linear thermal expansion coefficient  $\lambda = 10.6 \times 10^{-6} \text{ }^\circ\text{C}^{-1}$ , suitable for the application.
- Selectable reference indexes with Zero Magneto Set device.
- The adjustable cable output and the selectable zero references make the scale **SYMMETRIC** and applicable, in the same version, both to the right and left column of the press brake.
- Protected against inversion of power supply polarity and short circuits on output ports.
- Possibility to connect the scale to the machine with a double-effect joint or a steel wire.



### MECHANICAL AND ELECTRICAL CHARACTERISTICS

MECHANICAL	Cod. MTT	T10	T5	T1
<ul style="list-style-type: none"> <li>• Rugged and heavy sliding guide in anodized aluminum.</li> <li>• Supports that let the guide rotate in the proper position to facilitate installation.</li> <li>• Thermoplastic carriage with high-performance physical and mechanical characteristics.</li> <li>• Fully-protected place for the electronic boards.</li> <li>• Carriage sliding on liners made of special tecnopolymer.</li> <li>• Magnetic band protected by amagnetic stainless steel tape.</li> <li>• Adjustable connecting cable output.</li> <li>• Full possibility to disassemble and reassemble it.</li> <li>• Possibility of direct service.</li> </ul>	<b>Measuring support</b>  Pole pitch  Thermal expansion coefficient	plastoferrite on stainless steel tape  2+2 mm   $10.6 \times 10^{-6} \text{ }^\circ\text{C}^{-1}$		
	<b>Reference indexes (I<sub>0</sub>)</b>	E = selectable (every 10 mm)		
	<b>Resolution</b>	10 $\mu\text{m}$	5 $\mu\text{m}$	1 $\mu\text{m}$
	<b>Accuracy grade</b>	$\pm 15 \mu\text{m}^*$		
	<b>Measuring length ML in mm</b>	170, 220, 270, 320, 370, 420, 470, 520, 570, 620, ...		
	<b>Max. traversing speed</b>	80 m/min		
	<b>Max. acceleration</b>	30 m/s <sup>2</sup>		
	<b>Required moving force</b>	$\leq 15 \text{ N}$		
	<b>Vibration resistance (EN 60068-2-6)</b>	100 m/s <sup>2</sup> [50 ÷ 2000 Hz]		
	<b>Shock resistance (EN 60068-2-27)</b>	150 m/s <sup>2</sup> [11 ms]		
	<b>Protection class (EN 60529)</b>	IP 67		
	<b>Operating temperature</b>	0 $^\circ\text{C}$ ÷ 50 $^\circ\text{C}$		
	<b>Storage temperature</b>	-20 $^\circ\text{C}$ ÷ 70 $^\circ\text{C}$		
	<b>Relative humidity</b>	100%		
	<b>Carriage sliding</b>	on liners made of special tecnopolymer		
	<b>Power supply</b>	5 V $\pm$ 5%		
	<b>Current consumption</b>	130 mA <sub>MAX</sub> (with R = 120 $\Omega$ )		
	<b>A, B and I<sub>0</sub> output signals</b>	LINE DRIVER PUSH-PULL 		
	<b>Max. cable + extension length</b>	40 m		
	<b>Electrical connections</b>	see related table		
	<b>Electrical protections</b>	inversion of polarity and short circuits		
	<b>Weight</b>	700 g + 1260 g/m		

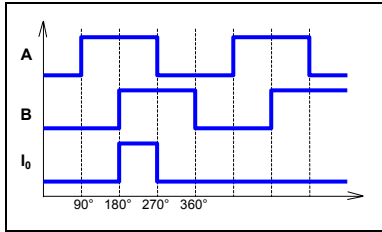
  

LINE DRIVER	PUSH-PULL	CONDUCTOR COLOR
A	B	Green
$\overline{A}$	NC	Orange
B	A	White
$\overline{B}$	NC	Light-blue
I <sub>0</sub>	I <sub>0</sub>	Brown
$\overline{I_0}$	NC	Yellow
SCH	SCH	Shield
5V	5V	Red
0V	0V	Blue

\* The declared accuracy grade of  $\pm X \mu\text{m}$  is referred to a measuring length of 1 m.

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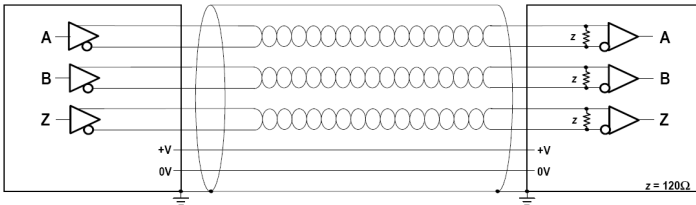
### OUTPUT SIGNALS



Signal amplitude	LINE DRIVER ( $V_{OH} \geq 2.5 V$ $V_{OL} \leq 0.5 V$ ) TTL
Load per channel	$R = 120 \Omega$ $I_L = \pm 20 mA_{MAX}$
A and B phase displacement	$90^\circ \pm 5^\circ$ electrical

### CABLE

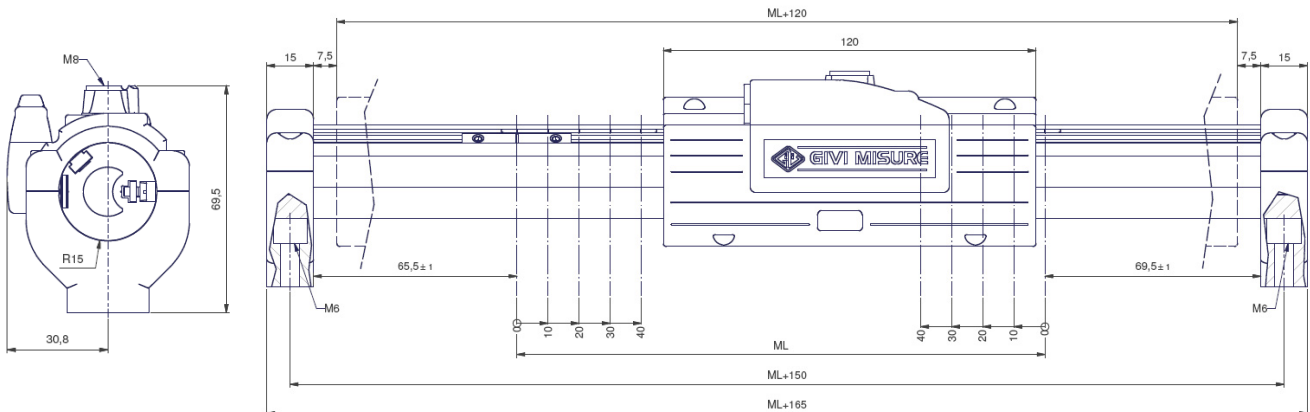
#### MTT



In case of cable extension, it is necessary to guarantee:

- the electrical connection between the body of the connectors;
- a minimum power supply voltage of 5 V to the transducer.

### DIMENSIONS



ML = MEASURING LENGTH  
DIMENSIONS IN mm

### ORDERING CODE

MODEL	SCALE TYPE, RESOLUTION, INDEX (OPTIONAL)	MEASURING LENGTH	POWER SUPPLY, OUTPUT SIGNALS	CABLE LENGTH, CABLE TYPE	CONNECTOR WIRING	SPECIAL
<b>MTT</b>	<b>T 5 E</b>	<b>00270</b>	<b>05VL</b>	<b>M0.5 / U</b>	<b>C58</b>	<b>SPnn</b>

**T** = TTL  
**10** = 10  $\mu m$   
**5** = 5  $\mu m$   
**1** = 1  $\mu m$   
**E** = selectable index  
 Length in mm  
**00270** = 270 mm  
**05V** = 5 V  
**L** = LINE DRIVER  
**M0.5** = 0.5 m (standard)  
**U** = ultraflex cable  
**Cnn** = progressive  
**No cod.** = standard  
**SPnn** = special nn

Example  **MAGNETIC SCALE MTT T5E 00270 05VL M0.5/U C58**