

Code ST02	Project A48-A	Release A	TECHNICAL DATASHEET
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ABSOLUTE MAGNETIC SCALE MTB

GENERAL FEATURES

- Absolute magnetic scale, for applications on synchronized press brakes.
- Reader head guided by self-aligning translation carriage.
- Resolutions up to 1 μm , 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.
- The scale is **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. MTB	T
<ul style="list-style-type: none"> • Rugged and heavy sliding guide in anodized aluminum. • Supports that let the guide rotate in the proper position to facilitate installation. • Thermoplastic carriage with high-performance physical and mechanical characteristics. • Fully-protected place for the electronic boards. • Carriage sliding on liners made of special tecnopolymer. • Magnetic band protected by amagnetic stainless steel tape. • Adjustable connecting cable output. • Full possibility to disassemble and reassemble it. • Possibility of direct service. 	Measuring support Pole pitch Thermal expansion coefficient	plastoferrite on stainless steel tape 2+2 mm  $10.6 \times 10^{-6} \text{ }^\circ\text{C}^{-1}$
	Resolution absolute measure	500 - 100 - 50 - 10 - 5 - 1 μm
	Accuracy grade	$\pm 15 \mu\text{m}^*$
	Measuring length in mm	170, 220, 270, 320, 370, 420, 470, 520, 570, 620, ...
	Max. traversing speed	80 m/min
	Max. acceleration	30 m/s^2
	Required moving force	$\leq 15 \text{ N}$
	Vibration resistance (EN 60068-2-6)	100 m/s^2 [50 ÷ 2000 Hz]
	Shock resistance (EN 60068-2-27)	150 m/s^2 [11 ms]
	Protection class (EN 60529)	IP 67
	Operating temperature	0 $^\circ\text{C}$ ÷ 50 $^\circ\text{C}$
	Storage temperature	-20 $^\circ\text{C}$ ÷ 70 $^\circ\text{C}$
	Relative humidity	100%
	Carriage sliding	on liners made of special tecnopolymer
	Power supply	5 ÷ 28 Vdc $\pm 5\%$
	Current consumption	130 mA_{MAX} (with R = 120 Ω)
	Serial interface	CANbus
	Protocol	CANopen
	Electrical connections	see related table
	Electrical protections	inversion of polarity and short circuits
	Weight	700 g + 1260 g/m

ELECTRICAL

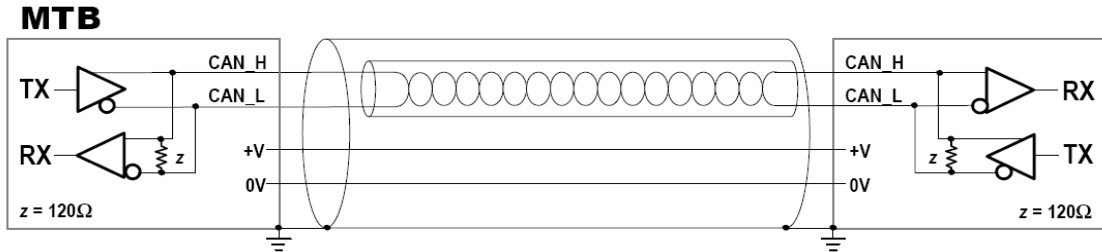
- 14 Bit reading device for absolute code.
- Serial protocol CANopen.
- Reading through positioning sensor based on magneto resistance, with AMR effect (Magnetic Anisotropy).
- Electrical protections against inversion of power supply polarity and short circuits on output ports.
- CABLE:
 - Ultraflex, 4 wires shielded cable, length 0.5 m.
 - The cable's bending radius should not be lower than 30 mm.
- CABLE EXTENSION:
 - Conductor section: supply 0.35 mm^2 ; signals 0.15 mm^2 .

SIGNALS	CONDUCTOR COLOR
CAN_H	Green
CAN_L	White
V+	Red
V-	Blue

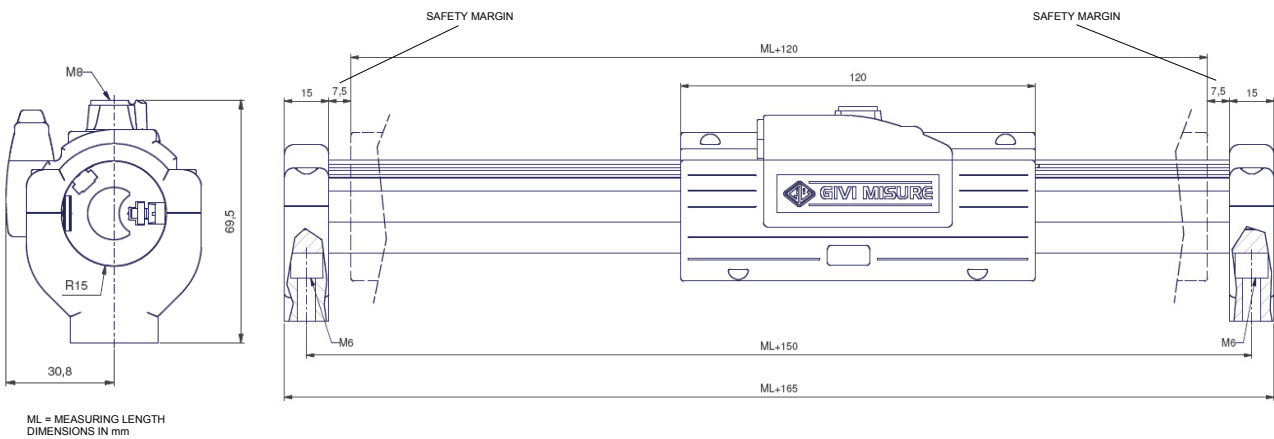
* The declared accuracy grade of $\pm X \mu\text{m}$ is referred to a measuring length of 1 m.

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CABLE



DIMENSIONS



ORDERING CODE

MODEL	SCALE TYPE, RESOLUTION	MEASURING LENGTH	POWER SUPPLY, OUTPUT SIGNALS	CABLE LENGTH, CABLE TYPE	CONNECTOR WIRING	SPECIAL
MTB	T 1 A	00270	528VC	M0.5 / U	C58	SPnn

1 = 1 μm Length in mm **528** = 5 ÷ 28 V **M0.5** = 0.5 m (standard) **Cnn** = progressive **No cod.** = standard
A = absolute **00270** = 270 mm **C** = CANopen **U** = ultraflex cable **SPnn** = special nn

Example  **ABSOLUTE MAGNETIC SCALE MTB T1A 00270 528VC M0.5/U C58**