GIVI MISURE
Via Assunta, 57 - 20834 Nova Milanese (MB) - ITALY
Tel. +39 0362 366126 Fax +39 0362 366876 www.givimisure.it sales@givimisure.it

Code	Project	Release	
ST04	***A50-A***	***C***	***TECHNICAL DATASHEET***

INCREMENTAL MAGNETIC SCALE GVS 215

GENERAL FEATURES

- Incremental magnetic scale with pole pitch 2+2 mm. Particularly suitable for synchronized press brakes.
- Reader head guided by a self-aligned and self-cleaning sliding carriage with spring system.
- Resolutions up to 1 µm.
- Reading without contact.
- Adjustable cable output.
- Selectable reference indexes, every 10 mm along the entire measuring length, with Zero Magneto Set device.
- The adjustable cable output and the selectable zero references make the scale SYMMETRIC and applicable, in the same version, to both columns of the press brake.
- Various possibilities of application, with double-effect joint or steel wire.
- Option: safety limit switches, positionable at both ends.

MECHANICAL AND ELECTRICAL CHARACTERISTICS

MECHANICAL

- Rugged and heavy PROFILE, made of anodized aluminium. Dimensions 55x28 mm.
- Elastic COUPLING for misalignment compensation and self-correction of mechanical hysteresis.
- SEALING LIPS for the protection of the magnetic band, made of special elastomer resistant to oil and wearing. Special self-blocking profile.
- CARRIAGE guided by ball bearings with gothic arch profile sliding on tempered and grinded guides, to guarantee the system accuracy and the absence of wearing.
- Die-cast TIE ROD, with nickel-plating surface treatment.
- MAGNETIC BAND placed in the scale housing.
- Elastomeric GASKETS which allow to reproduce the full protection in mechanical joints (in case of disassembling).
- Adjustable CABLE output.
- Various possibilities of application, with double-effect joint or steel wire. GV-PB adapter guarantees the compatibility with scale mod. PBS-HR.
- Pressurization set up on request.
- Full possibility to disassemble and reassemble the scale.
- Possibility of direct service.

ELECTRICAL

- Reading device with positioning sensor based on magneto resistance, with AMR effect (Magnetic Anisotropy).
- A and B output signals with phase displacement of 90° (electrical).
- Selectable reference indexes every 10 mm.
- CABLE:
  - 8-wire shielded cable ∅ = 6.1 mm, PUR external sheath.
  - Conductors section: power supply 0.35 mm^2; signals 0.14 mm^2.

The cable's bending radius should not be lower than 80 mm.
The cable is suitable for continuous movements.

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

Cod. GVS	**215**
Measuring support	plastoferrite on stainless steel tape
Pole pitch	2+2 mm 
Thermal expansion coefficient	10.6 x 10^{-6} °C^{-1}
Reference indexes (I_0)	**E** = selectable (every 10 mm)
Resolution	50 - 25 - 10 - 5 - 1 µm
Repeatability	± 1 increment
Accuracy grade	± 15 µm
Measuring length ML in mm	170, 220, 270, 320, 370, 420, 470, 520, 570, 620, 720, …
Max. traversing speed	120 m/min *
Max. acceleration	30 m/s^2
Required moving force	≤ 1.5 N
Vibration resistance (EN 60068-2-6)	100 m/s^2 [55 ÷ 2000 Hz]
Shock resistance (EN 60068-2-27)	150 m/s^2 [11 ms]
Protection class (EN 60529)	IP 64 standard IP 67 on request
Operating temperature	0 °C ÷ 50 °C
Storage temperature	-20 °C ÷ 70 °C
Relative humidity	20% ÷ 80% (not condensed)
Carriage sliding	without contact
Power supply	5 Vdc ± 5% or 10 ÷ 28 Vdc ± 5%
Current consumption	140 mA_{MAX} (with R = 120 Ω) 5 Vdc 100 mA_{MAX} (with R = 1200 Ω) 10 ÷ 28 Vdc
A, B and I_0 output signals	LINE DRIVER PUSH-PULL 
Max. cable length	25 m **
Electrical connections	see related table
Electrical protections	inversion of polarity and short circuits
Weight	900 g + 1850 g/m

* With a 1 µm resolution, the maximum traversing speed becomes 60 m/min.
** Ensuring the required power supply voltage to the transducer, the maximum cable length can be extended to 100 m.

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV = ISO 9001 =

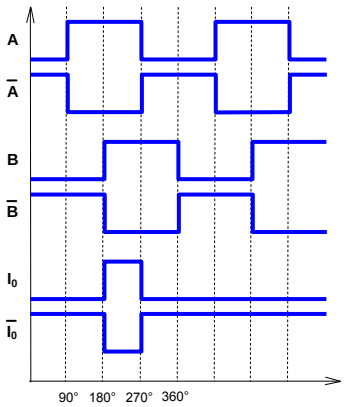
GIVI MISURE S.R.L. A SOCIO UNICO
C.F. e Iscrizione al Reg. Imprese di Monza e Brianza n° 04355540156 - Cap. Soc. € 51.480,00 I.V.

GIVI MISURE
Via Assunta, 57 - 20834 Nova Milanese (MB) - ITALY
Tel. +39 0362 366126 Fax +39 0362 366876 www.givimisure.it sales@givimisure.it

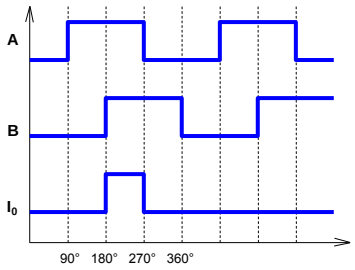
Code	Project	Release	
ST04	***A50-A***	***C***	***TECHNICAL DATASHEET***

OUTPUT SIGNALS

LINE DRIVER

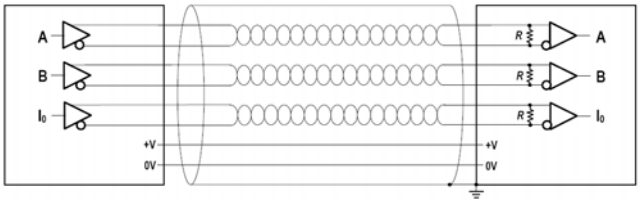


PUSH-PULL



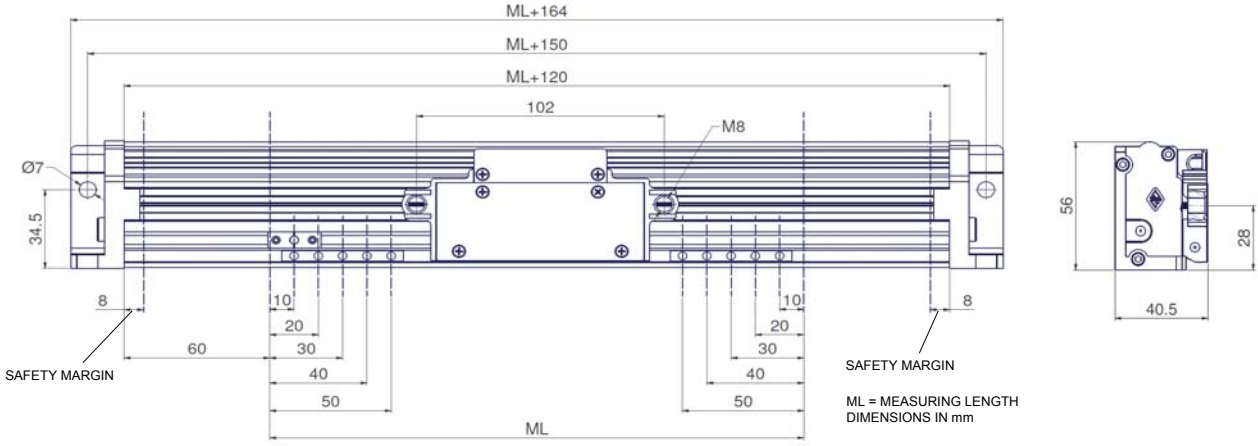
CABLE

GVS 215



In case of cable extension, it is necessary to guarantee:
- **the electrical connection between the body of the connectors and the cables shield;**
- **the required power supply to the transducer.**

DIMENSIONS



ML = MEASURING LENGTH
DIMENSIONS IN mm

GV-PB adapter provided for the interchangeability with scale mod. PBS-HR.

ORDERING CODE

MODEL	SCALE TYPE, RESOLUTION, INDEX	MEASURING LENGTH	POWER SUPPLY, OUTPUT SIGNALS	CABLE LENGTH, CABLE TYPE	CONNECTOR WIRING	LIMIT SWITCH OPTION	SPECIAL, PRESSURIZATION
GVS 215	**T 5 E**	**0270**	**05V L**	**M0.5 / S**	**CG1**	**A**	**PR**

T = TTL **50** = 50 µm **25** = 25 µm **10** = 10 µm **5** = 5 µm **1** = 1 µm **E** = selectable indexes	Length in mm **0270** = 270 mm	**05V** = 5 Vdc **1028V** = 10 ÷ 28 Vdc **L** = LINE DRIVER **Q** = PUSH-PULL	**Mnn** = length in m **M0.5** = 0.5 m (standard) **100** = 100 m **S** = PUR cable for continuous movements	**Cnn** = progressive	**No cod.** = standard **A** = OC NPN NC **B** = OC NPN NA **E** = TTL active low **F** = TTL active high	**No cod.** = standard **SPnn** = special nn **PR** = pressurized

Example ☞ **INCREMENTAL MAGNETIC SCALE GVS215 T5E 0270 05VL M0.5/S CG1 A PR**

Without prior notice, the products may be subject to modifications that the Manufacturer reserves to introduce as deemed necessary for their improvement.