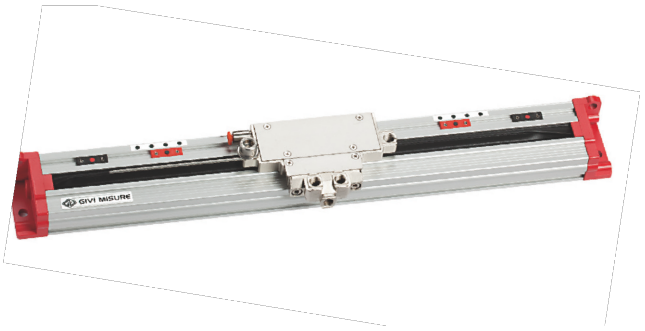
INCREMENTAL MAGNETIC SCALE GVS 215

code **ST04** | project **A50** | release **D**



GENERAL FEATURES

- Incremental magnetic scale with pole pitch 2+2 mm. High mechanical resistance and thermal expansion suitable for the application, for a constant accuracy at any temperature.
- Particularly suitable for synchronized press brakes.
- Reader head guided by a self-aligned and self-cleaning sliding carriage with spring system.
- Reading without contact.
- Resolutions up to 1 µm.
- 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.

Cod. GVS 215

Measuring support - Pole pitch - Linear thermal expansion coefficient	plastoferrite on stainless steel tape 2+2 mm P 10.6×10^{-6} °C^{-1}
Resolution	50 - 25 - 10 - 5 - 1 µm
Unidirectional repeatability	± 1 µm
Accuracy grade	± 15 µm *
Measuring length ML in mm	70 - 120 - 170 - 220 - 270 - 320 - 370 - 420 - 470 - ... max. 30000 mm in modular version
Reference indexes (I_0)	**E** = selectable (every 10 mm)
Max. traversing speed	up to 120 m/min **
Max. acceleration	30 m/s^2
Required moving force	≤ 2.5 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 pressurized ***
Operating temperature	0 °C ÷ 50 °C (-10 °C ÷ 60 °C on request)
Storage temperature	-20 °C ÷ 80 °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

* The declared accuracy grade of ± X µm is referred to a measuring length of 1 m.
** With 1 µm resolution, the maximum traversing speed becomes 60 m/min.
*** Pressurization set up on request.
**** Ensuring the required power supply voltage to the transducer, the maximum cable length can be extended to 100 m.

MECHANICAL CHARACTERISTICS

- Rugged and heavy **PROFILE**, made of anodized aluminum. 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 surface treatment.
- **MAGNETIC BAND** on stainless steel support. High mechanical resistance and linear thermal expansion suitable for the application.
- 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**.

ELECTRICAL CHARACTERISTICS

- 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 ø = 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

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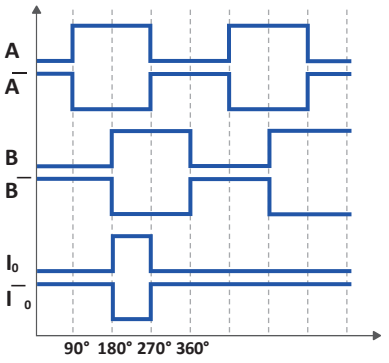
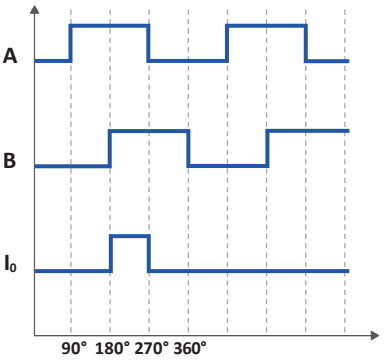
OUTPUT SIGNALS

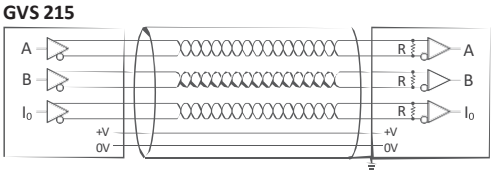
LINE DRIVER



PUSH-PULL



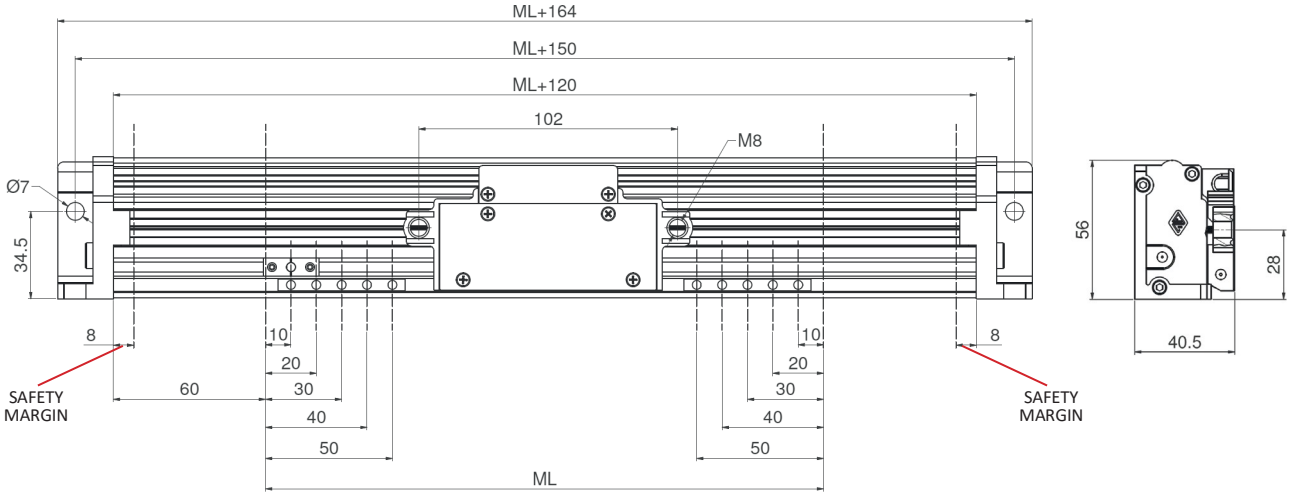
CABLE



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

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

DIMENSIONS



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

ML = MEASURING LENGTH DIMENSIONS IN mm

ORDERING CODE

Example MAGNETIC SCALE **GVS 215 T5E 0270 05VL M0.5/S CG1 A PR**

Model	Scale type, resolution, indexes	Measuring length	Power supply, output signals	Cable length, cable type	Connector, wiring	Limit switch option	Special, pressurization
GVS 215	T = TTL 50 = 50 µm 25 = 25 µm 10 = 10 µm 5 = 5 µm 1 = 1 µm E = selectable indexes	Measuring 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) M25 = 25 m S = PUR cable	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

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