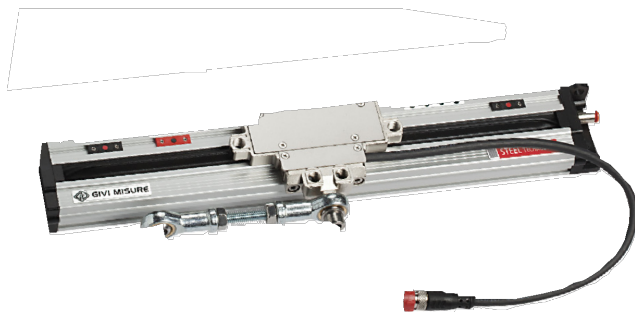


code **ST12** | project **A50** | release **B**



GENERAL FEATURES

- Incremental optical scale with stainless steel grating. 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.
- No contact reader head. No friction: high duration and tolerance against environmental dirty.
- Resolution up to 0.1 μm . Accuracy grade up to $\pm 3 \mu\text{m}$.
- 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 202 S

Measuring support	stainless steel grating
- Grating pitch	250 μm
- Linear thermal expansion coefficient	$10.6 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$
Resolution	10 - 5 - 1 - 0.5 - 0.1 μm
Accuracy grade	$\pm 5 \mu\text{m}$ standard version * $\pm 3 \mu\text{m}$ high-accuracy version *
Measuring length ML in mm	70 - 120 - 170 - 220 - 270 - 320 - 370 - 420 - 470 - ... max. 30000 mm in modular version
Reference indexes (I₀)	E = selectable (every 10 mm)
Max. traversing speed	up to 120 m/min **
Max. acceleration	30 m/s ²
Required moving force	$\leq 2.5 \text{ N}$
Vibration resistance (EN 60068-2-6)	$\leq 100 \text{ m/s}^2$ [55 ÷ 2000 Hz]
Shock resistance (EN 60068-2-27)	$\leq 150 \text{ m/s}^2$ [11 ms]
Protection class (EN 60529)	IP 54 standard IP 64 pressurized ***
Operating temperature	0 $^\circ\text{C}$ ÷ 50 $^\circ\text{C}$ (-10 $^\circ\text{C}$ ÷ 60 $^\circ\text{C}$ on request)
Storage temperature	-20 $^\circ\text{C}$ ÷ 80 $^\circ\text{C}$
Relative humidity	20% ÷ 80% (not condensed)
Reading block sliding	without contact
Power supply	5 Vdc $\pm 5\%$ or 10 ÷ 28 Vdc $\pm 5\%$
Current consumption	140 mA _{MAX} (with R = 120 Ω) 5 Vdc 100 mA _{MAX} (with R = 1200 Ω) 10 ÷ 28 Vdc
A, B and I₀ 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	850 g + 1800 g/m

* The declared accuracy grade of $\pm X \mu\text{m}$ is referred to a measuring length of 1 m.
 ** With 0.5 μm resolution, the maximum traversing speed becomes 60 m/min.
 *** With 0.1 μm resolution, the maximum traversing speed becomes 40 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 grating, made of special elastomer resistant to oil and wearing. Special self-blocking profile.
- Pressurizable **READER HEAD**, consisting of tie rod and reading block, with fully-protected place for electronic boards.
- **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.
- No contact **READER HEAD**.
- Die-cast **TIE ROD**, with nickel surface treatment.
- Stainless steel **GRATING**. 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 high-efficiency light emitter and single-field photodiode.
- A and B output signals with phase displacement of 90° (electrical).
- Reference indexes selectable every 10 mm.
- **CABLE**:
 - 8-wire shielded cable $\phi = 6.1 \text{ mm}$, PUR external sheath.
 - Conductors section: power supply 0.35 mm²; signals 0.14 mm².

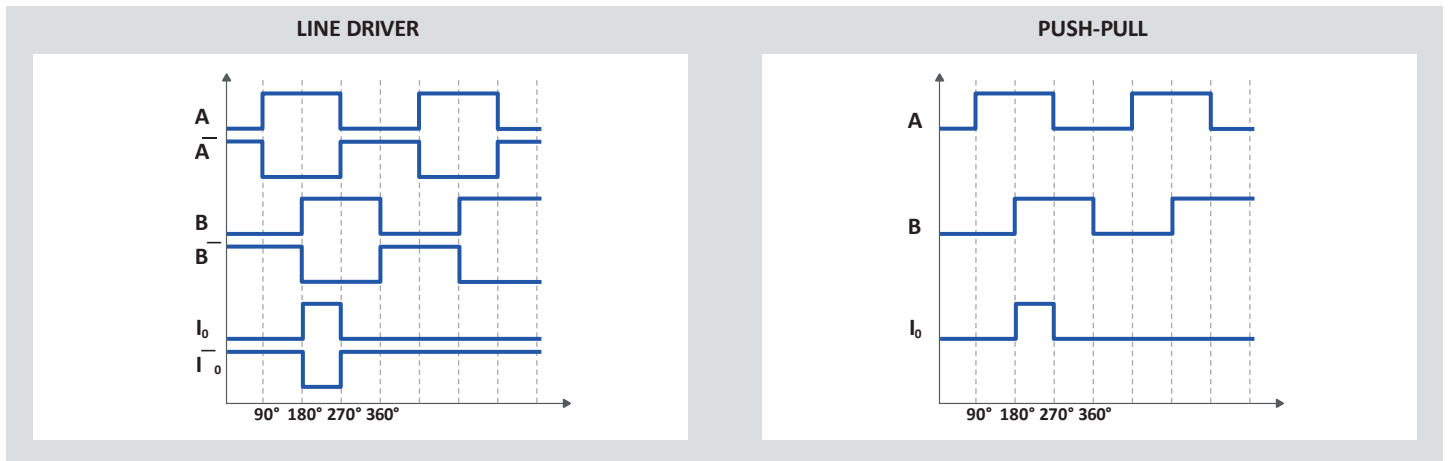
The cable's bending radius should not be lower than 80 mm.

The cable is suitable for continuous movements.

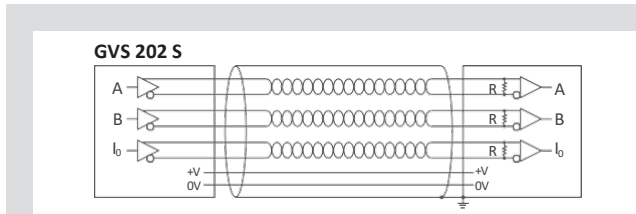
LINE DRIVER	PUSH-PULL	CONDUCTOR COLOR
+V	+V	Red
0V	0V	Blue
A	B	Green
\bar{A}	NC	Orange
B	A	White
\bar{B}	NC	Light-blue
I ₀	I ₀	Brown
\bar{I}_0	NC	Yellow
SCH	SCH	Shield

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OUTPUT SIGNALS



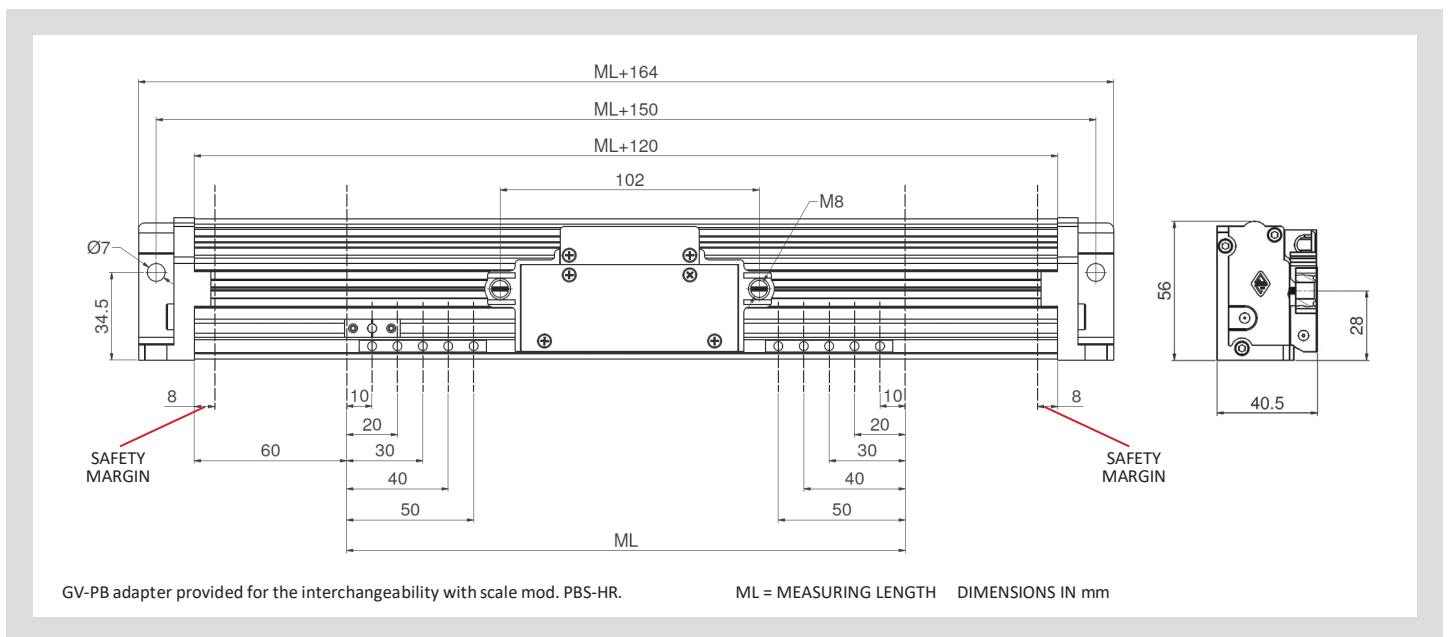
CABLE



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



ORDERING CODE

Example OPTICAL SCALE **GVS 202 S 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 202 S	T = TTL 10 = 10 µm 5 = 5 µm 1 = 1 µm 05 = 0.5 µm 01 = 0.1 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 C = OC PNP NC D = OC PNP NA E = TTL active low F = TTL active high	No cod. = standard SPnn = special nn PR = pressurized

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