

Code ST02	Project A50-A	Release A	TECHNICAL DATASHEET
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INCREMENTAL OPTICAL SCALE GVS 200

GENERAL FEATURES

- Optical scale with glass measuring support (grating pitch 20 μm). Particularly suitable for synchronized press brakes.
- Reader head guided by a self-aligned and self-cleaning sliding carriage with spring system.
- Resolutions up to 0.1 μm. Accuracy grade up to ± 1 μm.
- Adjustable cable output.
- Reference indexes at coded distance or selectable 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	Cod. GVS	200
<ul style="list-style-type: none"> • Rugged and heavy PROFILE, made of anodized aluminium. Dimensions 55x28 mm. • Elastic COUPLING for misalignment compensation and self-correction of mechanical hysteresis. Backlash error <0.2 μm. • SEALING LIPS for the protection of the grating, made of special elastomer resistant to oil and wearing. Special self-blocking profile. • 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. • Die-cast TIE ROD, with nickel-plating surface treatment. • GLASS SCALE 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. • Full possibility to disassemble and reassemble the scale. • Possibility of direct service. 	Measuring support Grating pitch Thermal expansion coefficient	glass scale 20 μm  $8 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$
	Reference indexes (I₀)	E = selectable (every 10 mm) C = coded distance
	Resolution	10 - 5 - 1 - 0.5 - 0.1 μm
	Accuracy grade	± 2.5 μm standard version ± 1 μm high-accuracy version
	Measuring length ML in mm	170, 220, 270, 320, 370, 420, 470, 520, 570, 620, 670, ...
	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 54 standard IP 64 pressurized **
	Operating temperature	0 °C ÷ 50 °C
	Storage temperature	-20 °C ÷ 70 °C
	Relative humidity	20% ÷ 80% (not condensed)
	Sliding block	by ball bearings ©
	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 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	900 g + 1850 g/m

LINE DRIVER	PUSH-PULL	CONDUCTOR COLOR
+ V	+ V	Red
0 V	0 V	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

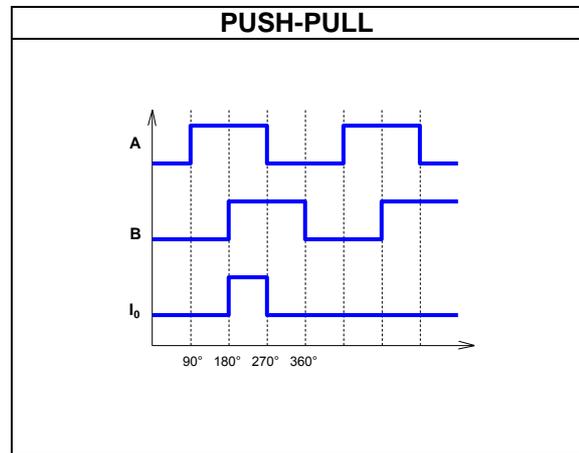
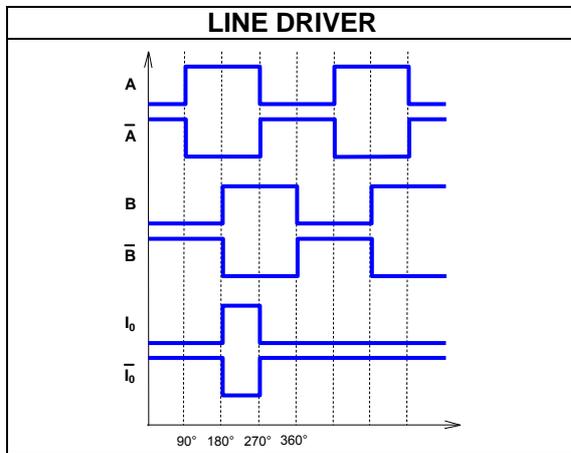
* With a 0.1 resolution, the maximum traversing speed becomes 45 m/min.

** Pressurization set up on request.

*** Ensuring the required power supply voltage to the transducer, the maximum cable length can be extended to 100 m.

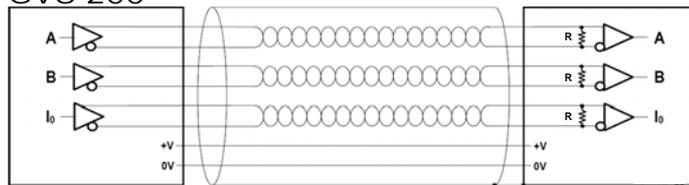
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OUTPUT SIGNALS



CABLE

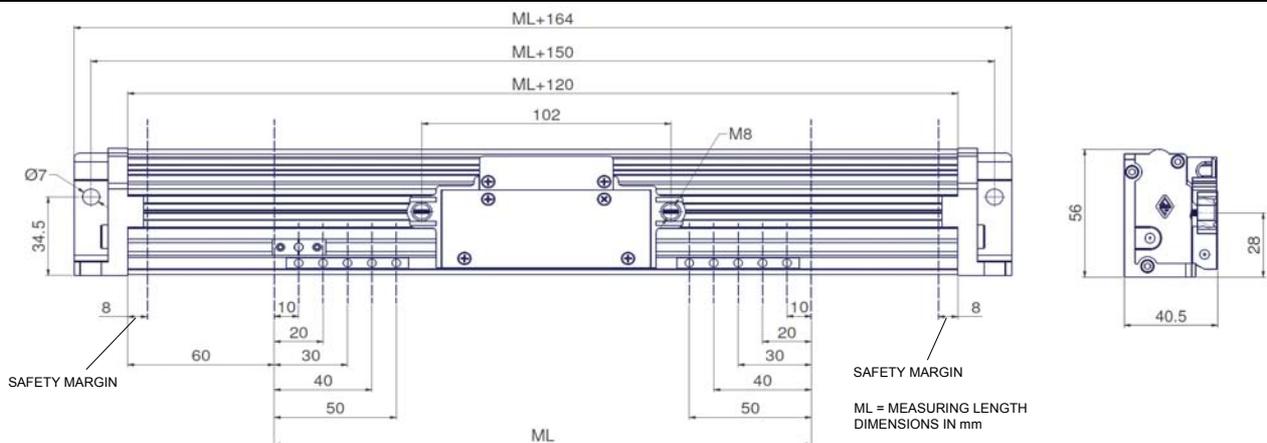
GVS 200



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



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 200	T 5 E	0270	05V L	M0.5 / S	CG1	A	PR

T = TTL
10 = 10 μ m
5 = 5 μ m
1 = 1 μ m
05 = 0.5 μ m
01 = 0.1 μ m
C = indexes at coded distance
E = selectable indexes
 Length in mm
0270 = 270 mm
1028 = 10 ÷ 28 Vdc
L = LINE DRIVER
Q = PUSH-PULL
05V = 5 Vdc
1028 = 10 ÷ 28 Vdc
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 = NPN
B = NPN OC
C = PNP
D = PNP OC
No cod. = standard
SPnn = special nn
PR = pressurized

Example  **OPTICAL SCALE GVS200 T5E 0270 05VL M0.5/S CG1 A PR**