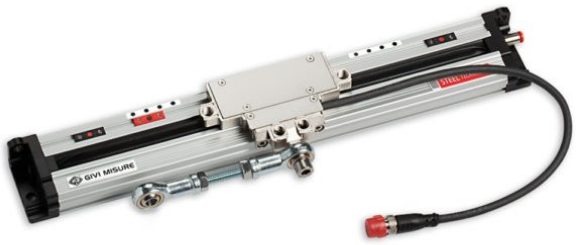
General Features

Small-size incremental optical scale with stainless steel grating. High mechanical resistance and thermal expansion suitable for the application, for a constant accuracy at any temperature.

- Grating pitch 250 µm. Particularly suitable for synchronized press brakes.
- Transducer 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.
- Resolutions up to 0.1 µm.
- Accuracy grade up to ± 1 µm.
- Selectable reference indexes every 10 mm along the entire measuring length, with Zero Magneto Set device.
- Option: safety limit switches, positionable at both ends.



Technical Characteristics

Measuring method Grating pitch Linear thermal expansion coefficient	stainless steel grating / incremental 250 µm 10.6 x 10^{-6} °C^{-1}
Reference indexes (I_0)	**E** = selectable (every 10 mm)
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	70, 120, 170, 220, 270, 320, 370, 420, … mm max. 30000 mm in modular version
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 (-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 = 120 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	850 g + 1800 g/m (per m measuring length)

* With a 0.5 µm resolution, the maximum traversing speed becomes 60 m/min.
With a 0.1 µm resolution, the maximum traversing speed becomes 40 m/min.

** Pressurization set up on request.

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

Willtec Messtechnik ek, Eschenweg 4, 79232 March-Hugstetten, Fon:07665/93465-0 Fax:07665/93465-22
info@willtec.de www.willtec.de

Mechanical Characteristics

- Rugged and heavy enclosure PROFILE made of anodized aluminum.
- Dimensions 55 x 28 mm.
- Elastic COUPLING for misalignment compensation and self-correction of mechanical hysteresis. Backlash error <0.2 µm.
- SEALING LIPS for the protection of the magnetic scale, made of special elastomer resistant to oil and wearing. Special self-blocking profile.
- TRANSDUCER, 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-plating surface treatment.
- Stainless steel GRATING.
- Elastomeric GASKETS which allow to reproduce the full protection in mechanical joints (in case of disassembling).
- 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.

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.

8-wire cable

GVS 202 S incremental optical scale is supplied with an 8-wire shielded cable, ∅ = 6.1 mm, PUR external sheath.

Conductors section:
- power supply: 0.35 mm^2
- signals: 0.14 mm^2

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

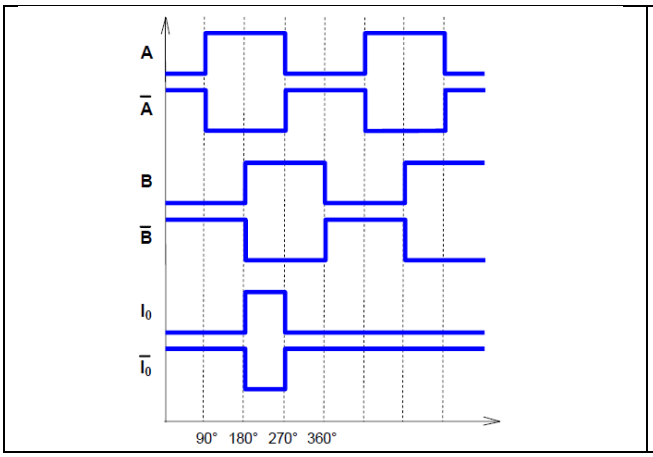
The following output signals are available:

Line Driver	Push-Pull	Conductor Color
V+	V+	red
V-	V-	blue
A	B	green
$\overline{A}$	NC	orange
B	A	white
$\overline{B}$	NC	light-blue
I_0	I_0	brown
$\overline{I0}$	NC	yellow
SCH	SCH	shield

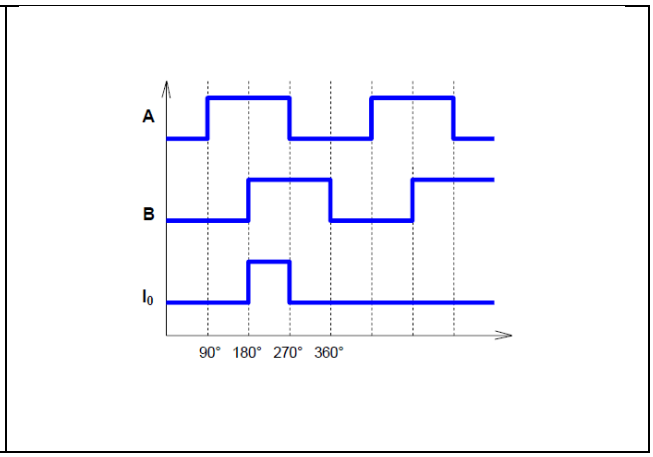
Willtec Messtechnik ek, Eschenweg 4, 79232 March-Hugstetten, Fon:07665/93465-0 Fax:07665/93465-22
info@willtec.de www.willtec.de

Output Signals

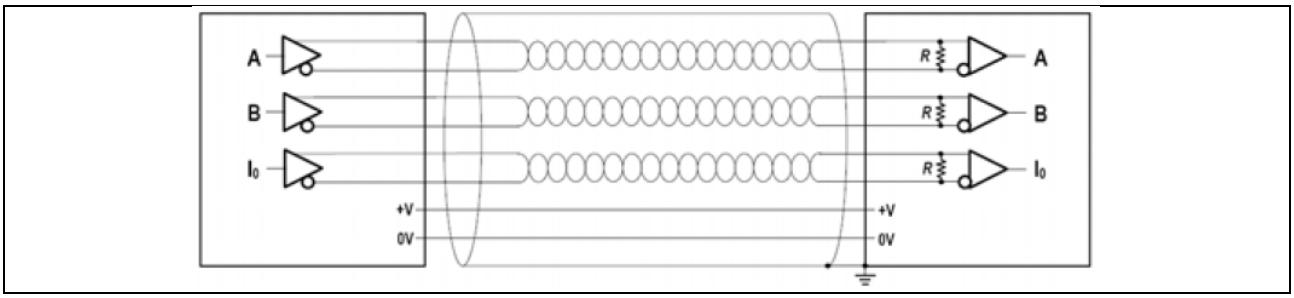
Line Driver version:



Push-Pull version:



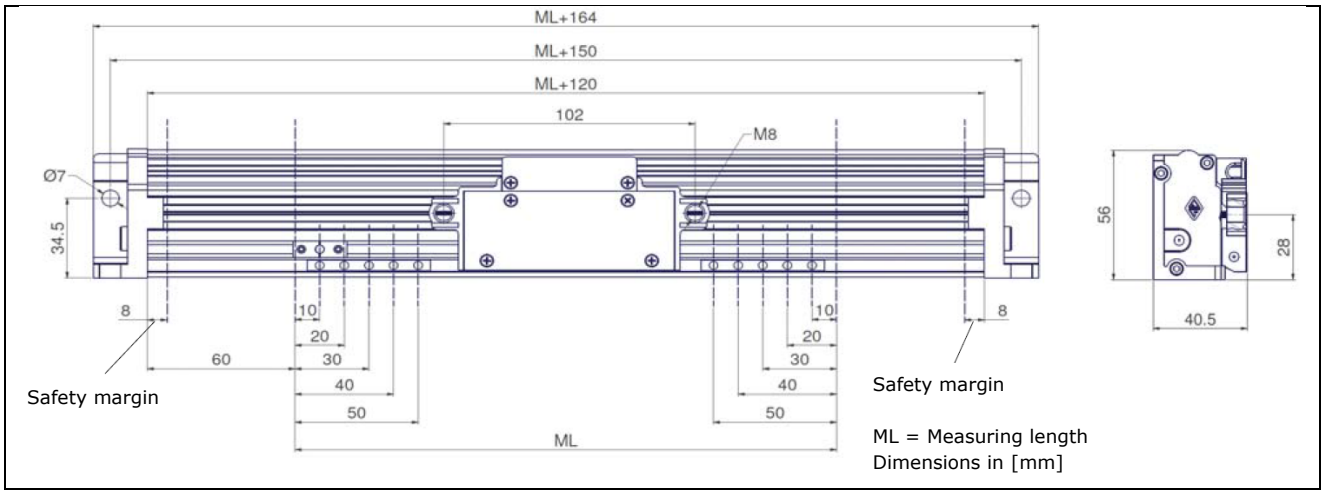
Cable



Notice

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 to the transducer

Dimensions



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

Willtec Messtechnik ek, Eschenweg 4, 79232 March-Hugstetten, Fon:07665/93465-0 Fax:07665/93465-22
info@willtec.de www.willtec.de

Ordering Code

Type	GVS 202 S	-	T 5 E	-	0270	-	05V L	-	M0.5/S	-	CG1	-	A	-	PR

Scale Type
T = TTL

Resolution
5 = 5 µm
1 = 1 µm
05 = 0.5 µm
01 = 0.1 µm

Index
E = selectable indexes

Measuring length [mm]
0270 = 270 mm

Power supply
05V = 5 VDC
1028V = 10 ÷ 28 VDC

Output signal
L = Line Driver
Q = Push-Pull

Cable length
Mxx = length in m
M0.5 = 0.5 m (standard)
100 = 100 m

Cable type
S = PUR cable for continuous movements

Connector
Cxx = progressive
SC = without connector, open cable end

Limit switch (option)
X = no specifications (standard)
A = OC NPN NC
B = OC NPN NO
E = TTL active low
F = TTL active high

Option
X = no specifications (standard)
SPxx = special version (on request)
PR = pressurized enclosure profile

Manufacturer: GIVI MISURE

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

Willtec Messtechnik ek, Eschenweg 4, 79232 March-Hugstetten, Fon:07665/93465-0 Fax:07665/93465-22
info@willtec.de www.willtec.de