


Characteristics

- Magnetic scale with direct reading of the absolute position
- Particularly suitable for synchronized press brakes
- High-speed serial interface
- Reader head guided by a self-aligned and self-cleaning sliding carriage with spring system
- Resolutions up to 1 μm ; accuracy grade 15 μm
- Reading without contact
- Adjustable cable output
- SYMMETRIC mechanical mounting
- Various possibilities of application, with double-effect joint or steel wire
- Option: 1 Vpp analog signal



Mechanical and electrical characteristics

Mechanical	Electrical																
<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. • SEALING LIPS for the protection of the magnetic scale, 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. • Absolute MAGNETIC 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. • Pressurization set up on request • Full possibility to disassemble and reassemble the scale. • Possibility of direct service. 	<ul style="list-style-type: none"> • 14 Bit reading device, for absolute code • Option: A and B 1 Vpp output signals with phase displacement of 90° (electrical). • Serial protocol SSI-BiSS • Reading through positioning sensor based on magneto resistance, with AMR effect (Magnetic Anisotropy) • CABLE: <ul style="list-style-type: none"> - Shielded twisted pair for digital signals (SSI-BiSS) - The cable is suitable for continuous movements <p>SERIAL OUTPUT VERSION</p> <ul style="list-style-type: none"> - 6-wire shielded cable $\varnothing= 5,1$ mm, PVC external sheath, with low friction coefficient, oil resistant - Conductors section: power supply 0.14 mm²; signals 0.14 mm². <p>The cable's bending radius should not be lower than 90 mm.</p> <p>ANALOG+SERIAL OUTPUT VERSION</p> <ul style="list-style-type: none"> - 10-wire shielded cable $\varnothing=6,1$ mm, PUR external sheath - Conductors section: power supply 0.29 mm²; signals 0.14 mm². <p>The cable's bending radius should not be lower than 70 mm.</p> <table border="1"> <thead> <tr> <th>Signals</th> <th>Conductor colour</th> </tr> </thead> <tbody> <tr> <td>+V</td> <td>brown</td> </tr> <tr> <td>0 V</td> <td>white</td> </tr> <tr> <td>CK</td> <td>green</td> </tr> <tr> <td>$\overline{\text{CK}}$</td> <td>yellow</td> </tr> <tr> <td>D</td> <td>pink</td> </tr> <tr> <td>$\overline{\text{D}}$</td> <td>grey</td> </tr> <tr> <td>SCH</td> <td>shield</td> </tr> </tbody> </table>	Signals	Conductor colour	+V	brown	0 V	white	CK	green	$\overline{\text{CK}}$	yellow	D	pink	$\overline{\text{D}}$	grey	SCH	shield
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Measuring support	plastoferrite on stainless steel tape
Pole pitch	2+2 mm 
Thermal expansion coefficient	$10,6 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$
Incremental signal	sine wave 1 Vpp (optional)
Resolution 1 Vpp	up to 0,1 μm^*
Signal period	2 mm
Repeatability	± 1 increment
Serial interface	SSI-BiSS
Resolution absolute measure	500; 100; 50; 10; 5; 1 μm
Accuracy	$\pm 15 \mu\text{m}$
Measuring length ML [mm]	170, 220, 270, 320, 370, 420, 470, 520, 570, ... 3240
Max. traversing speed	120 m/min
Max. acceleration	30m/s ²
Required moving force	$\leq 1,5 \text{ N}$
Vibration resistance (EN 60068-2-6)	100 m/s ² [55-2000 Hz]
Shock resistance (EN60068-2-27)	150 m/s ² [11 ms]
Protection class (EN60529)	IP 64 standard IP 67 on request
Operating temperature	0 $^\circ\text{C}$ - 50 $^\circ\text{C}$
Storage temperature	-20 $^\circ\text{C}$ - 70 $^\circ\text{C}$
Relative humidity	20% - 80% (not condensed)
Carriage sliding	without contact
Power supply	5 - 28 VDC
Current consumption	150 mA _{MAX} (with R=120 Ω) 5 VDC 100 mA _{MAX} (with R=120 Ω) 24 VDC
Max. cable length	25 m**
Electrical connections	see related table
Electrical protections	inversion of polarity and short circuits
Weight	900 g + 1850 g/m

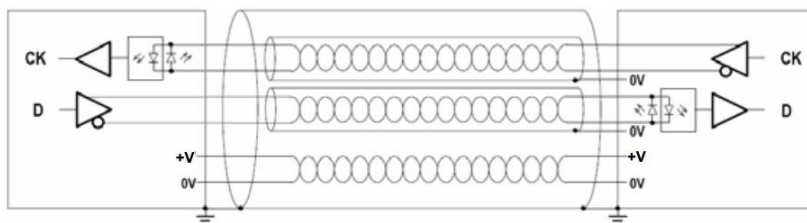
* Depending on CNC division factor

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

Cable

Serial output

GVS 219



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

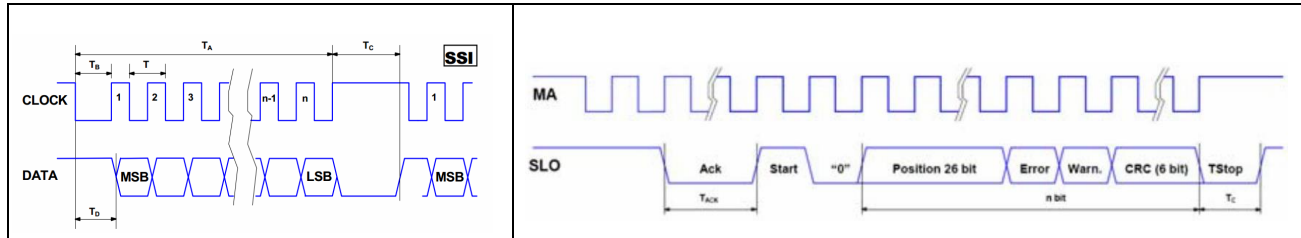
- the electrical connection between the body of the connectors and the cabled shield
- the required power supply to the transducer

Datasheet

Output signals

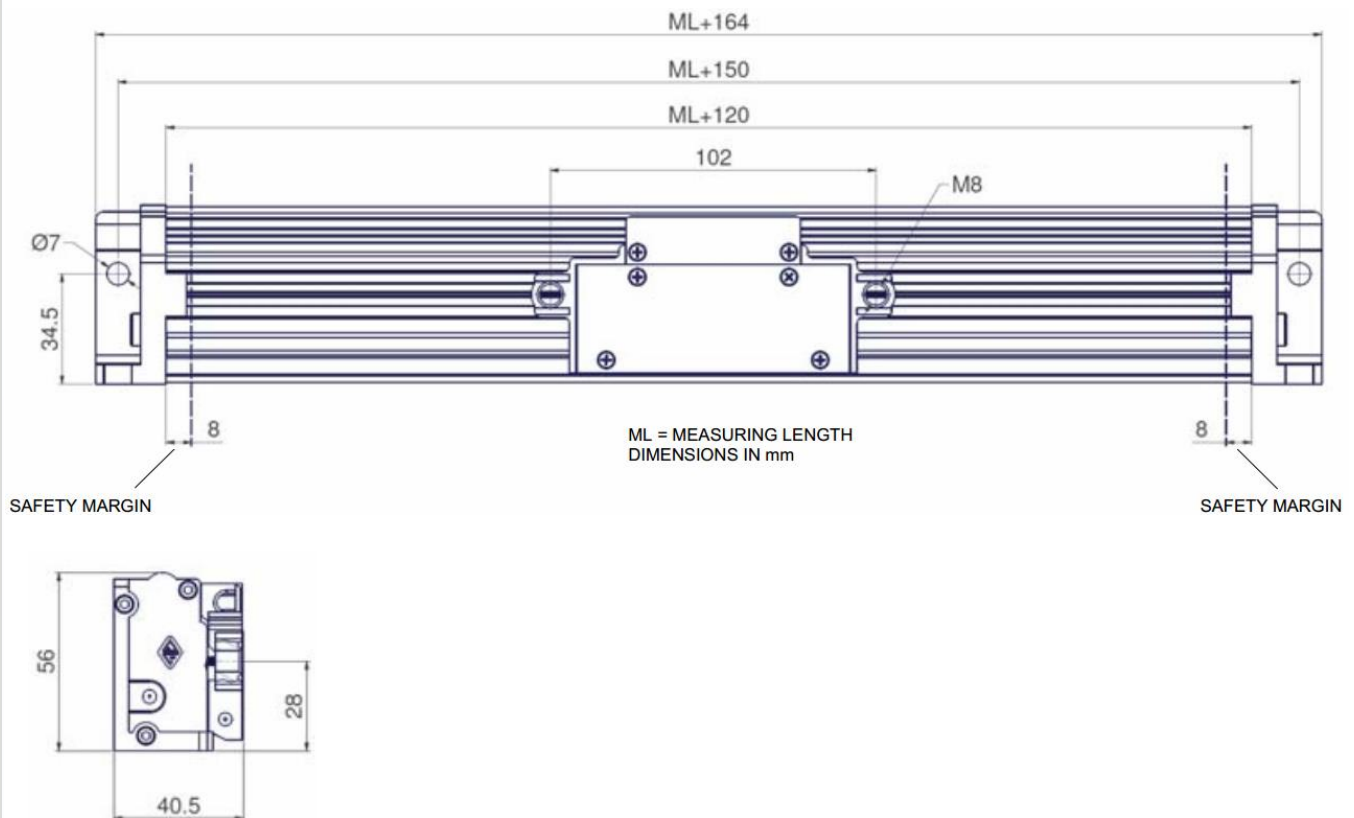
SSI version

BiSS C (unidirectional) version



Interface	SSI binary-gray	Interface	BiSS C unidirectional
Signals level	EIA RS 485	Signal level	EIA RS 485
Clock frequency	0,1 - 1,2 MHz	Clock frequency	0,1 - 4 MHz
n	Position bit	n	26+2+6 Bit
T _c	12 - 65 μs	T _c	12 - 20 μs

Dimensions



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

Datasheet

Ordering example

GVS 219 - 1 - 0270 - 528V - S0 - V - M0,5/S - SC - PR

Type

GVS219

Resolution

500= 500 µm

100= 100 µm

50= 50 µm

10= 10 µm

5= 5 µm

1= 1µm

Measuring length

Length in mm

0270= 270 mm

Power supply.

528V= 5 - 28 VDC

Output signals

S0= SSI programmable

S1= SSI binary

S2= SSI binary+even parity

S3= SSI binary+odd parity

S4= SSI binary+error

S5= SSI binary+even parity+error

S6 =SSI binary+odd parity+error

S7= SSI Gray

B1= BiSS binary

Incremental signal

V= +1 Vpp

No cod.= no incremental signal

Cable length, cable type

Mnn= length in m

M0,5= 0,5 m (standard)

100= 100 m

R= 6 wires (only serial)

S= 10 wires (serial+analog)

Connector

Cnn= progressive

SC= without connector

Special, pressurization

No cod. = standard

SPnn= special nn

PR= pressurized