




General Features

- Absolute magnetic scale with direct reading of the absolute position.
- Particularly suitable for synchronized press brakes.
- High-speed SSI-BISS C (unidirectional) serial interface.
- Reader head guided by a self-aligned and self-cleaning sliding carriage with spring system.
- Resolutions up to 1 μm .
- Repeatability ± 1 increment.
- Accuracy grade $\pm 15 \mu\text{m}$
- Reading without contact.
- Measuring length up to 30000 mm in modular version.
- Adjustable cable output.
- Symmetric mechanical mounting.
- Various possibilities of application, with double-effect joint or steel wire.
- Option: 1 Vpp analog signal.



Technical Characteristics

Measuring method	plastoferrite on stainless steel tape / absolute	
Pole pitch	2+2 mm	
Linear thermal expansion coefficient	$10.6 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$	
Incremental signal	Sin wave 1 Vpp (optional)	
Resolution 1 Vpp	up to 1 μm *	
Repeatability	± 1 increment	
Serial interface	SSI-BISS C (unidirectional)	
Resolution absolute measure	500 - 100 - 50 - 10 - 5 - 1 μm	
Accuracy grade	$\pm 15 \mu\text{m}$ **	
Measuring length ML in mm	170, 220, 270, 320, 370, 420, 470, 520, 570, 620, 720, ... 30000 mm _{MAX} (in modular version)	
Max. traversing speed	60 m/min	
Max. acceleration	20 m/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 (EN 60068-2-27)	150 m/s ² [11 ms]	
Protection class (EN 60529)	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 $\pm 5\%$	
Current consumption	150 mA _{MAX} (with R = 120 Ω) 5 VDC 100 mA _{MAX} (with R = 120 Ω) 28 VDC	
Max. cable length	20 m ***	
Electrical connections	see related table	
Electrical protections	inversion of polarity and short circuits	
Weight	900 g + 1850 g/m (per m measuring length)	

* Depending on CNC division factor.

** The declared accuracy grade of $\pm X \mu\text{m}$ is referred to a measuring length of 1 m.

*** Ensuring a minimum power supply voltage of to the transducer, the maximum cable length can be extended to 50 m.

Mechanical Characteristics

- Rugged and heavy PROFILE made of anodized aluminum.
- Dimensions 55 x 28 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-plating surface treatment.
- MAGNETIC BAND 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 it.
- Possibility of direct service.

Electrical Characteristics

- Option: A and B 1 Vpp output signals with phase displacement of 90° (electrical)
- Serial protocol SSI - BiSS C (unidirectional)
- Reading device with positioning sensor based on magnetic resistance, with AMR effect (Magnetic Anisotropy)

Serial Output

GVS 219 incremental magnetic scale is supplied with a 6-wire shielded cable, $\varnothing = 7$ mm, PUR external sheath, with low friction coefficient, oil-resistant and suitable for continuous movements.

Conductors section:

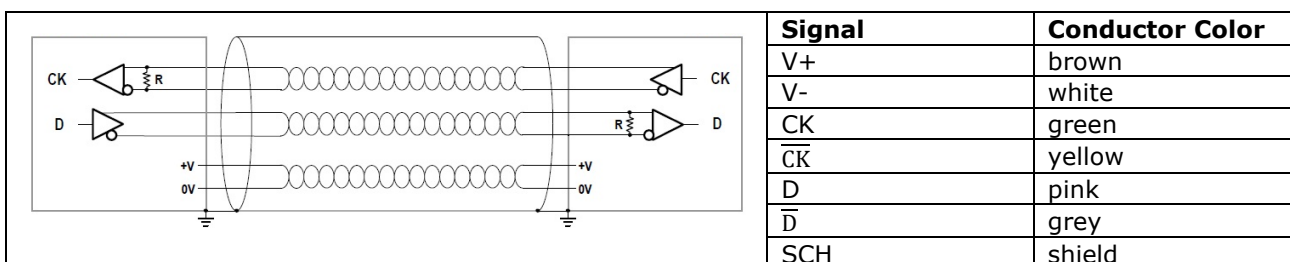
- power supply: 0.25 mm²
- signals: 0.25 mm²

Notice

The cable's bending radius should not be lower than 70 mm.

Serial Output 6-wire cable

The following output signals are available:



Datasheet

Analog Output + Serial Output

GVS 219 incremental magnetic scale is supplied with a 10-wire shielded cable, $\varnothing = 7.1 \text{ mm}$, PUR external sheath, with low friction coefficient, oil-resistant and suitable for continuous movements.

Inside the cable, a further shield for the twisted pair of the digital signals (SSI-BiSS) is present.

Conductors section:

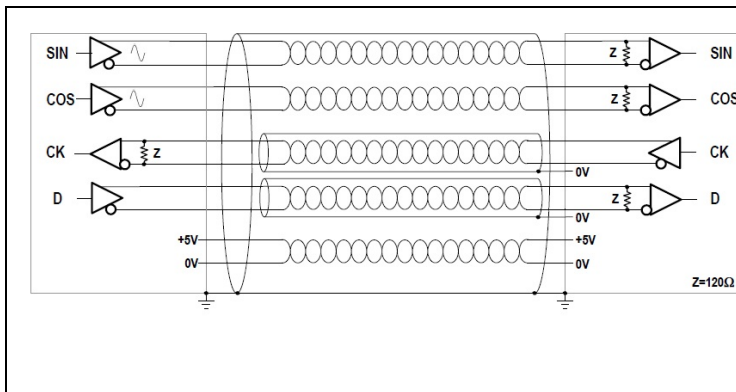
- power supply: 0.35 mm²
- signals: 0.10 mm²

Notice

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

Analog Output + Serial Output 10-wire cable

The following output signals are available:



Signal	Conductor Color
V+	red
V-	blue
A	green
\overline{A}	orange
B	white
\overline{B}	light-blue
CK	brown
\overline{CK}	yellow
D	pink
\overline{D}	grey
SCH	shield

Complying to DIN 47100.

Notice

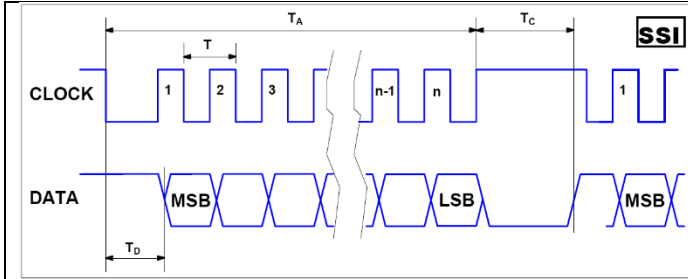
In case of cable extension, it is necessary to guarantee:

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

Datasheet

Output Signals

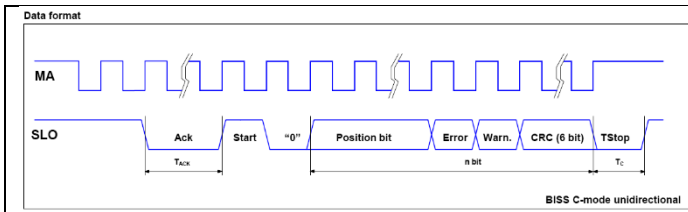
Serial signals SSI version:



Interface	SSI (Synchronous Serial Interface) Binary - Gray
Signals level	EIA RS 422
Clock frequency	0.1 + 1.2 MHz*
n	26 bit
T_C	max. 25 µs
T₀	max. 7 µs

* The maximum frequency is guaranteed with a cable length up to 10 m.

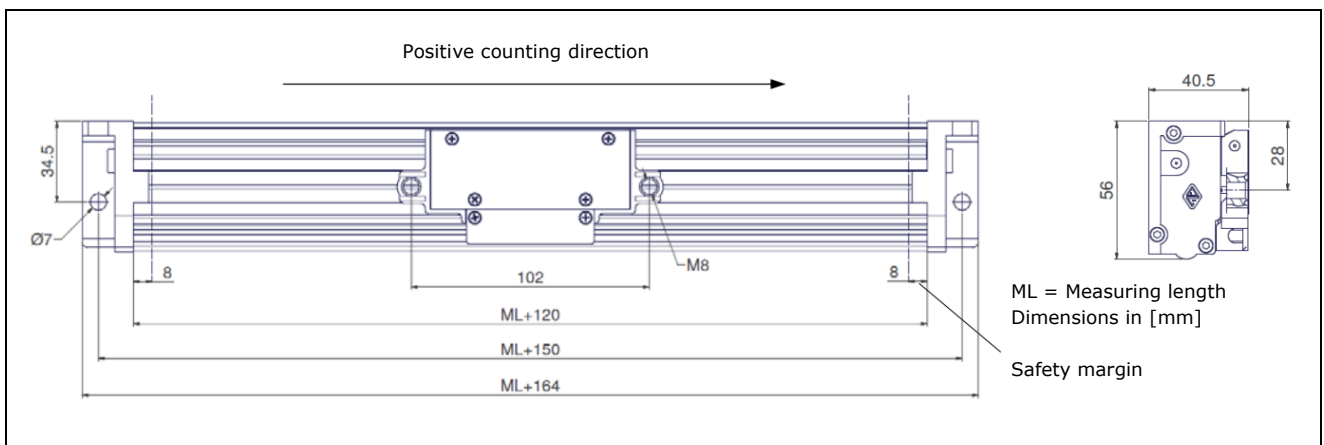
BiSS-C (unidirectional) version:



Interface	BiSS-C unidirectional
Signals level	EIA RS 485 / RS 422
Clock frequency	0.1 + 8 MHz*
n	26 + 2 + 6 bit
T_C	max. 8 µs
TACK	max. 28 µs

* The maximum frequency is guaranteed with a cable length up to 2 m.

Dimensions



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

Datasheet

Ordering Code

Type **GVS 219** - **1** - **0270** - **528V** - **S0** - **V** - **M0.5/S** - **SC** - **PR**

Resolution

500 = 500 µm
100 = 100 µm
50 = 50 µm
25 = 25 µm
10 = 10 µm
5 = 5 µm
1 = 1 µm

Measuring length

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
X = no incremental signal

Cable length

Mxx = length in m
M0.5 = 0.5 m (standard)
50 = 50 m

Cable type

R = 6-wire cable (serial output)
S = 10-wire cable (analog output + serial output)

Connector

Cxx = progressive
SC = without connector, open cable end

Option

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

Manufacturer:



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