

Code <b>ST08</b>	Project <b>A50-A</b>	Release <b>A</b>	<b>TECHNICAL DATASHEET</b>
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## ABSOLUTE MAGNETIC SCALE GVS 219

### GENERAL FEATURES

- 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  $\mu\text{m}$ .
- 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

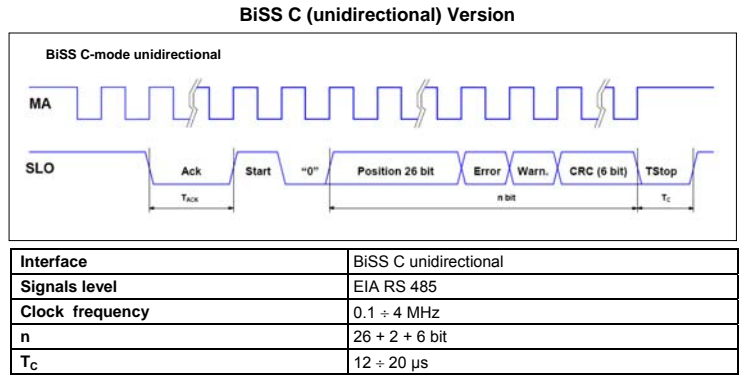
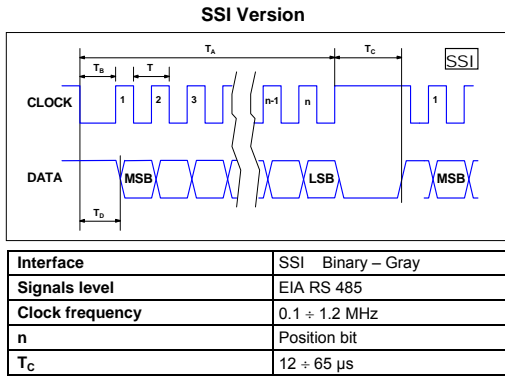
<b>MECHANICAL</b> <ul style="list-style-type: none"> <li>• Rugged and heavy PROFILE, made of anodized aluminium. Dimensions 55x28 mm.</li> <li>• Elastic COUPLING for misalignment compensation and self-correction of mechanical hysteresis.</li> <li>• SEALING LIPS for the protection of the magnetic band, made of special elastomer resistant to oil and wearing. Special self-blocking profile.</li> <li>• 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.</li> <li>• Die-cast TIE ROD, with nickel-plating surface treatment.</li> <li>• Absolute MAGNETIC BAND placed in the scale housing.</li> <li>• Elastomeric GASKETS which allow to reproduce the full protection in mechanical joints (in case of disassembling).</li> <li>• Adjustable CABLE output.</li> <li>• Various possibilities of application, with double-effect joint or steel wire. GV-PB adapter guarantees the compatibility with scale mod. PBS-HR.</li> <li>• Pressurization set up on request.</li> <li>• Full possibility to disassemble and reassemble the scale.</li> <li>• Possibility of direct service.</li> </ul> <b>ELECTRICAL</b> <ul style="list-style-type: none"> <li>• 14 Bit reading device, for absolute code.</li> <li>• Option: A and B 1 Vpp output signals with phase displacement of 90° (electrical).</li> <li>• Serial protocol SSI - BiSS.</li> <li>• Reading through positioning sensor based on magneto resistance, with AMR effect (Magnetic Anisotropy).</li> <li>• CABLE:               <ul style="list-style-type: none"> <li>- Shielded twisted pair for digital signals (SSI - BiSS).</li> <li>- The cable is suitable for continuous movements.</li> </ul> </li> </ul> <b>SERIAL OUTPUT VERSION</b> <ul style="list-style-type: none"> <li>- 6-wire shielded cable <math>\varnothing = 5.1</math> mm, PVC external sheath, with low friction coefficient, oil resistant.</li> <li>- Conductors section: power supply 0.14 mm<sup>2</sup>; signals 0.14 mm<sup>2</sup>.</li> </ul> <b>The cable's bending radius should not be lower than 90 mm.</b> <b>ANALOG + SERIAL OUTPUT VERSION</b> <ul style="list-style-type: none"> <li>- 10-wire shielded cable <math>\varnothing = 6.1</math> mm, PUR external sheath.</li> <li>- Conductors section: power supply 0.29 mm<sup>2</sup>; signals 0.14 mm<sup>2</sup>.</li> </ul> <b>The cable's bending radius should not be lower than 70 mm.</b>	<b>Cod. GVS</b>	<b>219</b>
	<b>Measuring support</b> plastoferrite on stainless steel tape	
<b>Pole pitch</b> 2+2 mm		
<b>Thermal expansion coefficient</b> $10.6 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$		
<b>Incremental signal</b> sine wave 1 Vpp (optional)		
<b>Resolution 1 Vpp</b> up to 1 $\mu\text{m}$ *		
<b>Signal period</b> 2 mm		
<b>Repeatability</b> $\pm 1$ increment		
<b>Serial interface</b> SSI - BiSS		
<b>Resolution absolute measure</b> 500 - 100 - 50 - 10 - 5 - 1 $\mu\text{m}$		
<b>Accuracy grade</b> $\pm 15 \mu\text{m}$		
<b>Measuring length ML in mm</b> 170, 220, 270, 320, 370, 420, 470, 520, 570, 620, 720, ...		
<b>Max. traversing speed</b> 120 m/min		
<b>Max. acceleration</b> 30 m/s <sup>2</sup>		
<b>Required moving force</b> $\leq 1.5$ N		
<b>Vibration resistance (EN 60068-2-6)</b> 100 m/s <sup>2</sup> [55 ÷ 2000 Hz]		
<b>Shock resistance (EN 60068-2-27)</b> 150 m/s <sup>2</sup> [11 ms]		
<b>Protection class (EN 60529)</b> IP 64 standard      IP 67 on request		
<b>Operating temperature</b> 0 °C ÷ 50 °C		
<b>Storage temperature</b> -20 °C ÷ 70 °C		
<b>Relative humidity</b> 20% ÷ 80% (not condensed)		
<b>Carriage sliding</b> without contact		
<b>Power supply</b> 5 + 28 Vdc		
<b>Current consumption</b> 150 mA <sub>MAX</sub> (with R = 120 $\Omega$ )    5 Vdc 100 mA <sub>MAX</sub> (with R = 1200 $\Omega$ )    24 Vdc		
<b>Max. cable length</b> 25 m **		
<b>Electrical connections</b> see related table		
<b>Electrical protections</b> inversion of polarity and short circuits		
<b>Weight</b> 900 g + 1850 g/m		

\* Depending on CNC division factor.

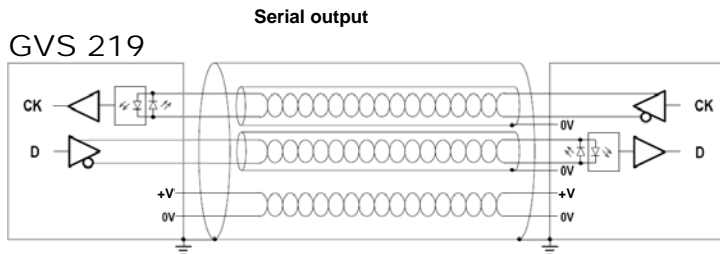
\*\* Ensuring the required power supply voltage to the transducer, the maximum cable length can be extended to 100 m.

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## OUTPUT SIGNALS



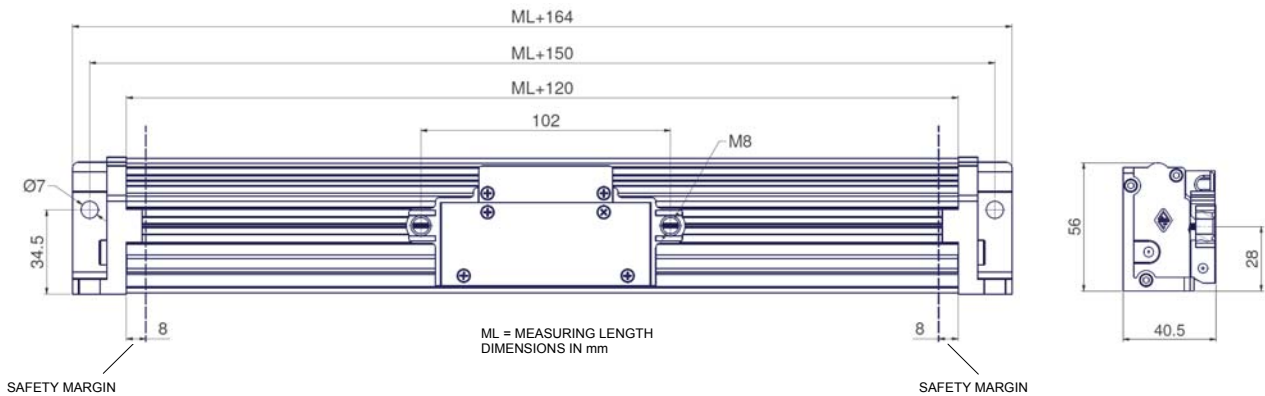
## CABLE



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

- the electrical connection between the body of the connectors and the cables shield;
- the required power supply to the transducer.

## DIMENSIONS



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

## ORDERING CODE

MODEL	RESOLUTION	MEASURING LENGTH	POWER SUPPLY	OUTPUT SIGNALS	INCREMENTAL SIGNAL	CABLE LENGTH, CABLE TYPE	CONNECTOR	SPECIAL, PRESSURIZATION
<b>GVS 219</b>	<b>1</b>	<b>0270</b>	<b>528V</b>	<b>S0</b>	<b>V</b>	<b>M0.5 / S</b>	<b>SC</b>	<b>PR</b>

<b>500</b> = 500 µm <b>100</b> = 100 µm <b>50</b> = 50 µm <b>10</b> = 10 µm <b>5</b> = 5 µm <b>1</b> = 1 µm	Length in mm <b>0270</b> = 270 mm	<b>528V</b> = 5÷28 Vdc	<b>S0</b> = SSI programmable <b>S1</b> = SSI binary <b>S2</b> = SSI binary+even parity <b>S3</b> = SSI binary+odd parity <b>S4</b> = SSI binary+error <b>S5</b> = SSI binary+even parity+error <b>S6</b> = SSI binary+odd parity+error <b>S7</b> = SSI Gray <b>B1</b> = BiSS binary	<b>V</b> = + 1 Vpp <b>No cod.</b> = no incremental signal	<b>Mnn</b> = length in m <b>M0.5</b> = 0.5 m (standard) <b>100</b> = 100 m  <b>R</b> = 6 wires (only serial) <b>S</b> = 10 wires (serial+analog)	<b>Cnn</b> = progressive <b>SC</b> = without connector	<b>No cod.</b> = standard <b>SPnn</b> = special nn <b>PR</b> = pressurized
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Example **ABSOLUTE MAGNETIC SCALE GVS219 1 0270 528V S0 V M0.5/S SC PR**