

code **ST02** | project **A84** | release **A**

DRIVE-CLiQ

GENERAL FEATURES

- Absolute optical scale with glass measuring support.
- DRIVE-CLiQ serial interface, for a direct connection to Siemens CNCs.
- Resolutions up to 10 nm. Accuracy grade up to $\pm 2 \mu\text{m}$.
- Fixed expansion point (FEP) in the middle, positionable on the right (RT) or on the left (LT), for a linear expansion consistent with the type of application.
- Direct reading of the absolute measure.
- Rugged and heavy profile of considerable section.
- Adjustable cable output, through double connector.
- Pressurization from both sides of the scale or from the transducer.

Cod. GVS 808

D

| | | |
|--|--|--|
| Measuring support | glass scale | |
| - Grating pitch | 20 μm | |
| - Linear thermal expansion coefficient | $8 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$ | |
| Serial interface | Siemens DRIVE-CLiQ | |
| Resolution absolute measure | 0.1 - 0.01 μm | |
| Accuracy grade | $\pm 5 \mu\text{m}$ * standard version $\pm 3 \mu\text{m}$ * high-accuracy version ($\pm 2 \mu\text{m}$ for ML up to 640 mm) | |
| Interpolation error (SDE) | $\pm 70 \text{ nm}$ ** | |
| Hysteresis | 90 nm ** | |
| Measuring length ML in mm | 140, 240, 340, 440, 540, 640, 740, 840, 940, 1040, 1140, 1240, 1340, 1440, 1540, 1640, 1740, 1840, 2040, 2240, 2440, 2640, 2840, 3040, 3240 _{MAX} | |
| Fixed expansion point (FEP) | central or positionable on the right (RT) or on the left (LT) | |
| Max. traversing speed | 180 m/min | |
| Max. acceleration | 50 m/s ² in measuring direction | |
| Required moving force | $\leq 2.5 \text{ N}$ | |
| 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 54 standard IP 64 pressurized | |
| 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) | |
| Reading block sliding | by ball bearings | |
| Connector | on the transducer, with adjustable output | |
| Electrical protections | inversion of polarity and short circuits | |
| Weight | 0.55 kg + 2.8 kg/m | |

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

** The error declared is subject to the respect of the alignment tolerances.

MECHANICAL CHARACTERISTICS

- Rugged and heavy **PROFILE** of considerable section, made of anodized aluminum. Dimensions 36.7x58.5 mm.
- **SPRING SYSTEM** for misalignment compensation and self-correction of mechanical hysteresis.
- Double pair of linear **SEALING LIPS** for a very high protection of the grating.
- Pressurizable **READER HEAD**, consisting of tie rod and reading block, with fully-protected place for electronic boards.
- **READING BLOCK** sliding through ball bearings.
- Die-cast **TIE ROD**, with nickel surface treatment.
- Absolute glass **GRATING**, placed in the scale housing.
- Elastomeric **GASKETS** which allow to reproduce the full protection in mechanical joints (in case of disassembling).

- **FULL POSSIBILITY** to disassemble and reassemble it.

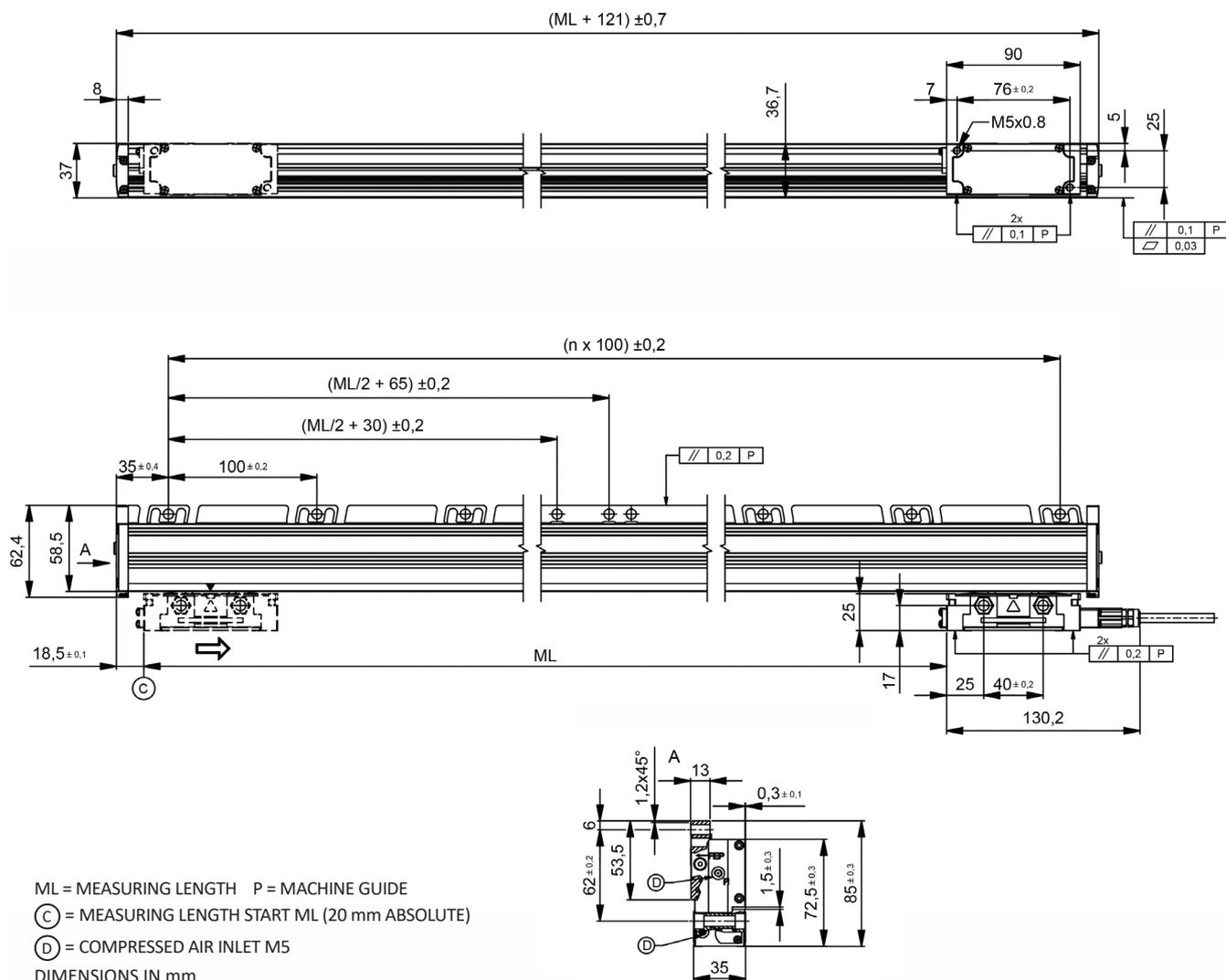
ELECTRICAL CHARACTERISTICS

- Connector on the transducer, easily disconnectable in case of need.
- Reading device with an infra-red light emitter and receiving photodiodes.
- Serial protocol Siemens DRIVE-CLiQ.
- Electrical protection against polarity inversion and short circuits on output ports.
- **CABLE:**
 - PUR cable with low friction coefficient, resistant to oil and suitable for continuous movements, 0.5 m standard length.
 - M12 8 Pin connector.

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

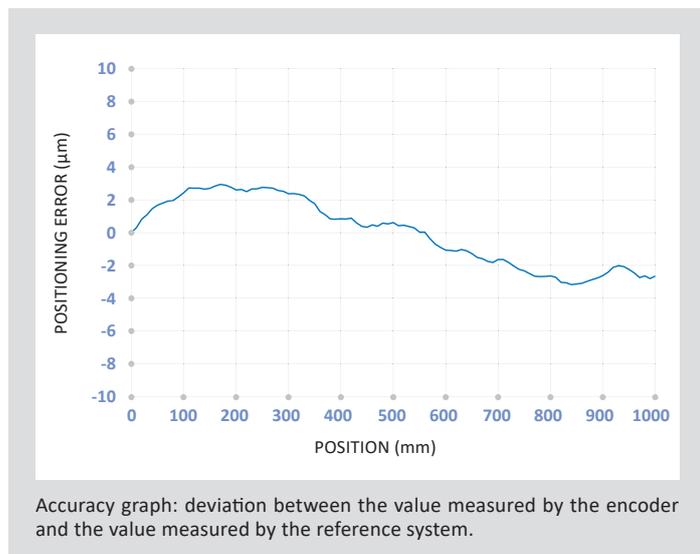
code **ST02** | project **A84** | release **A**

DIMENSIONS

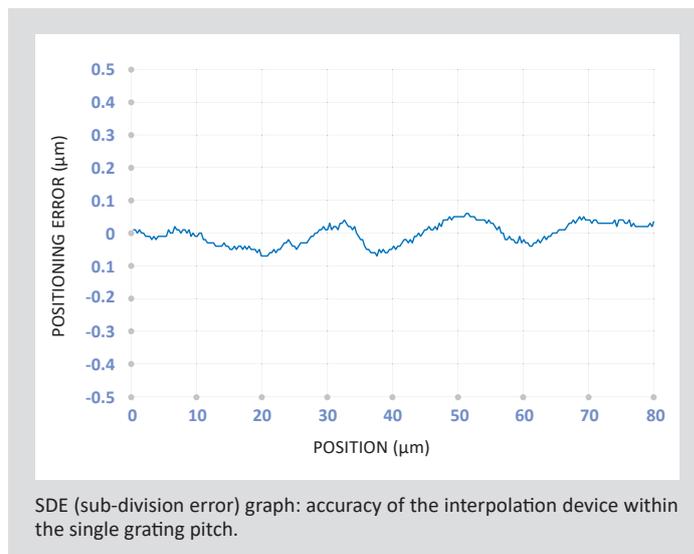


code **ST02** | project **A84** | release **A**

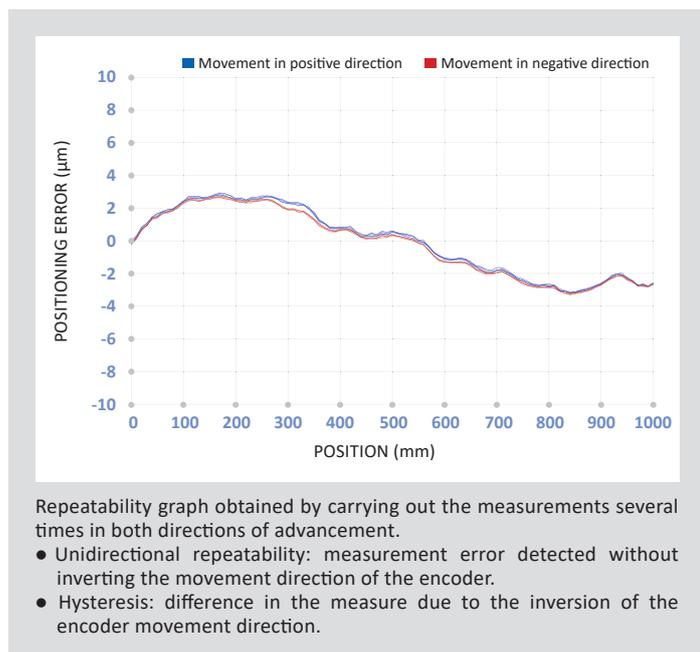
ACCURACY



INTERPOLATION - SDE



REPEATABILITY



The graphs show tests carried out in a metrological room under controlled climatic conditions: $T = 20\text{ °C} \pm 0.1\text{ °C}$ and $R.H. = 45 \div 55\%$. The reference system for the comparison of position measurements is interferometric with 1 nm resolution and equipped with an environmental compensation device.

INNOVATIVE SYSTEM FEP

FixedExpansionPoint

GVS 808 is supplied with a Fixed Expansion Point (FEP) positioned in the middle (standard). On request it is possible to supply scales with FEP positionable on the left (LT) or on the right (RT). Based on the application, the customer can determine the linear thermal expansion direction, so as to maximize the machining accuracy and repeatability even in the presence of significant temperature changes.

ORDERING CODE

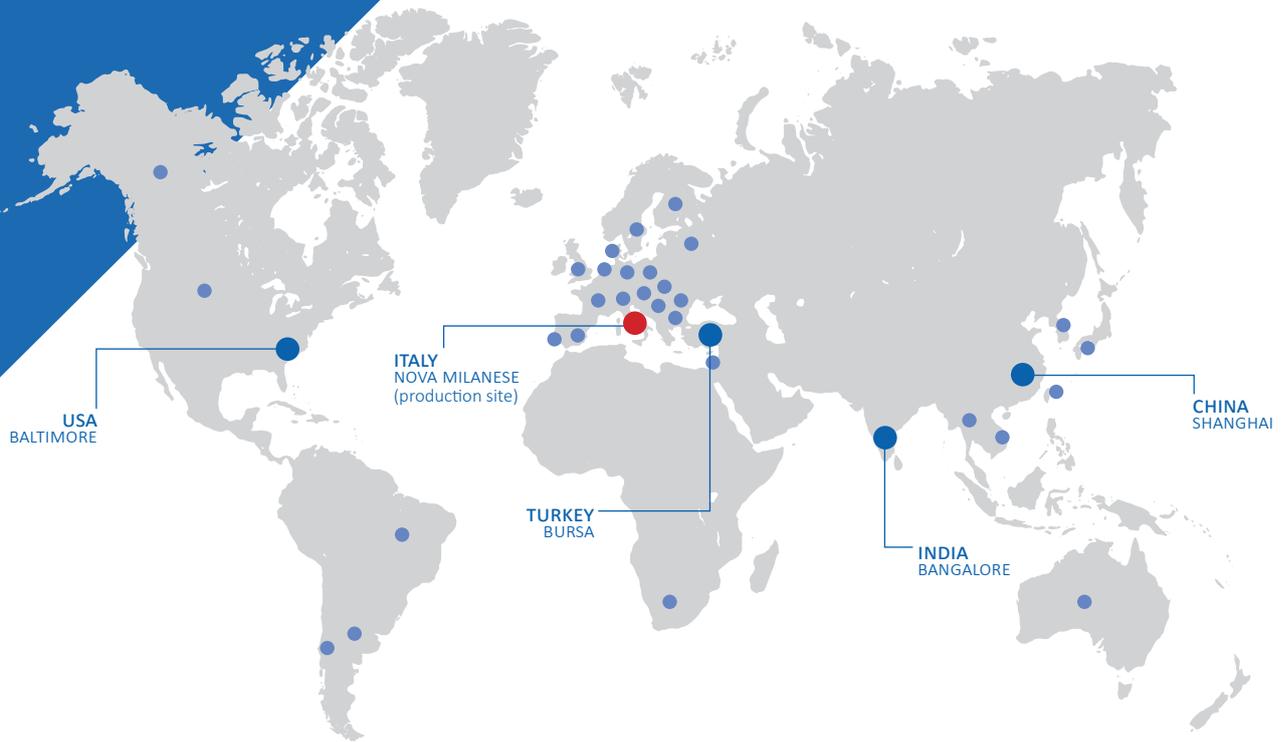
Example OPTICAL SCALE **GVS 808 D01A 03240 V D1 M0.5/S SLT PR**

| Model | Scale type, resolution | Measuring length | Power supply | Output signals | Cable length, cable type | FEP (Fixed Expansion Point) | Special, pressurization |
|---------|--|--|--------------|-----------------|--|--|---|
| GVS 808 | D01 = 0.1 µm D001 = 0.01 µm A = absolute | Measuring length in mm 03240 = M_{L_MAX} | V | D1 = DRIVE-CLiQ | Mnn = length in m M0.5 = 0.5 m S = PUR cable | No cod. = central FEP (standard) SLT = selectable FEP | No cod. = standard SPnn = special nn PR = pressurized |

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

WORLDWIDE BRANCHES AND SERVICE CENTERS

Our branches in China, India, Turkey and USA are completely independent in providing a before and after sales service and a fast and qualified technical assistance.



DISTRIBUTORS AND SERVICE CENTERS AROUND THE WORLD

- ARGENTINA
- AUSTRALIA
- BRAZIL
- BULGARIA
- CANADA
- CHILE
- CHINA
- CZECH REPUBLIC
- DENMARK
- FINLAND
- FRANCE
- GERMANY
- GREAT BRITAIN
- HUNGARY
- INDIA
- ISRAEL
- ITALY
- JAPAN
- MALAYSIA
- NEW ZEALAND
- POLAND
- PORTUGAL
- ROMANIA
- SLOVAKIA
- SOUTH AFRICA
- SOUTH KOREA
- SPAIN
- SWEDEN
- SWITZERLAND
- TAIWAN
- THAILAND
- THE NETHERLANDS
- TURKEY
- USA
- VIETNAM



Optical scales



Magnetic systems



Rotary encoders



Digital readouts



Position controllers



GIVI MISURE S.r.l. A SOCIO UNICO

Via Assunta, 57 - 20834 Nova Milanese (MB) - Italy
Tel.: +39 0362 366126 - Fax: +39 0362 366876
www.givimisure.it - info@givimisure.it

Applications

- CNC machines
- Press brakes
- Traditional machines
- Automation
- Wood, glass and marble processing machines
- Renewable energies
- Special applications