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FOR
TECHNOLOGY
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GIVI MISURE

Measuring and control systems

为每一台 CNC 数控机
床提供定制化服务。

Customized innovation
for any CNC machine.

GVS 808

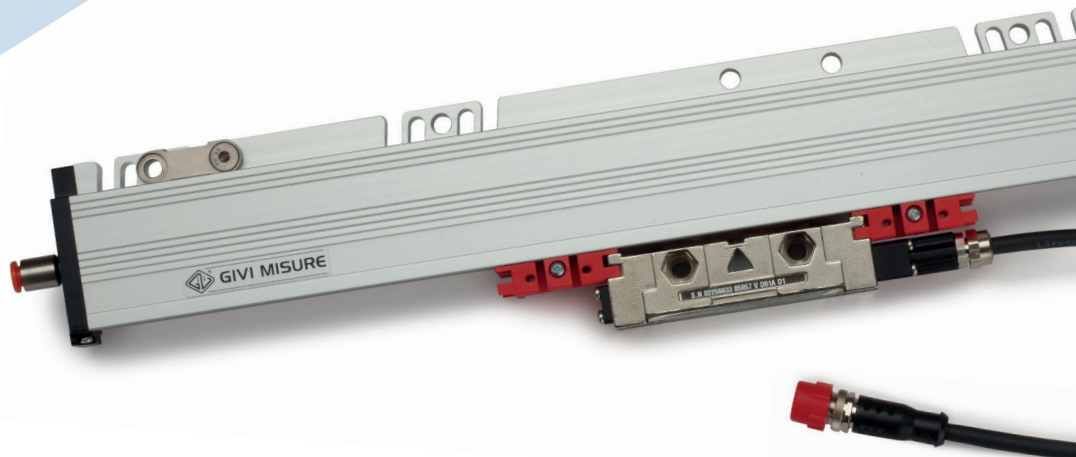
封闭式绝对值编码器，可在任何条
件下发挥出色性能。

Encapsulated absolute encoder,
engineered to excel in any condition.

创新设计

FEP

膨胀固定点



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GVS 808 可确保最强的防护性以抵御极端工作环境带来的恶劣影响。

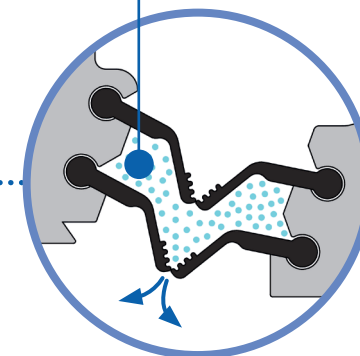
GVS 808 ensures maximum protection against extreme environmental conditions.

可靠精准，成就卓越性能与长效稳定。

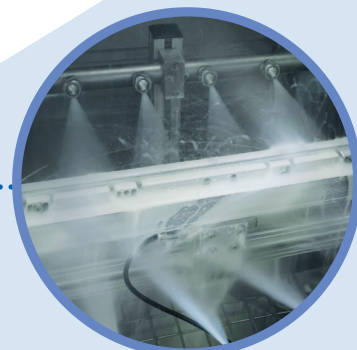
Reliability and accuracy for high performance and long-lasting results.

来自过滤系统的压缩空气
Compressed air from the filtering system

双层密封唇设计 通过压缩空气形成动态屏障，增强密封可靠性，即使过滤系统失效也能维持防护功能。
Compressed air directed inside the double sealing lips to prevent liquid intrusion even in case of obstructed or faulty filtering systems.



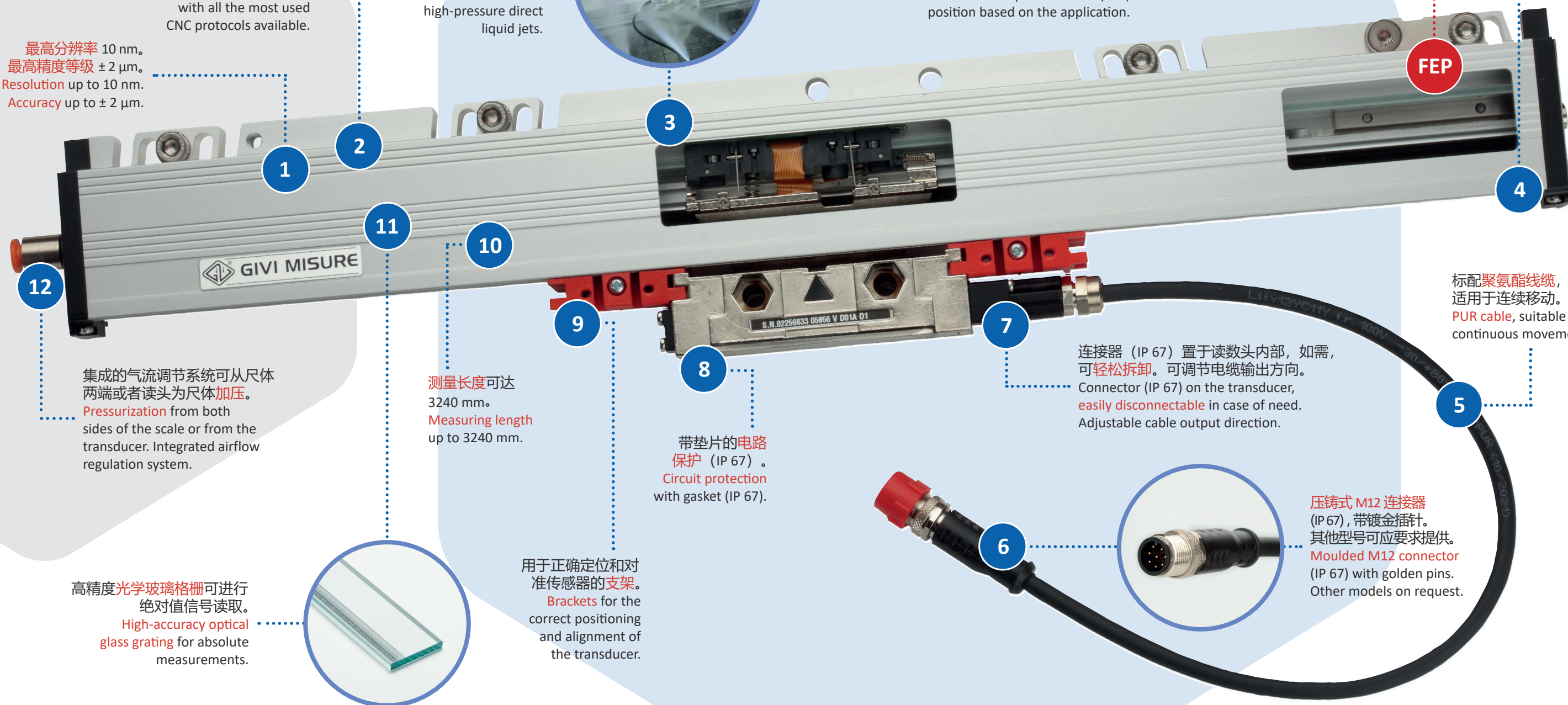
尖端光电复合电路可承受高压液体直射冲击。
Cutting-edge optical/electronic circuit to withstand even high-pressure direct liquid jets.



选项：创新的 FEP 系统。
可根据应用灵活选择膨胀固定点 (FEP) 位置。
OPTION: innovative FEP system.
Flexibility to select the Fixed Expansion Point (FEP) position based on the application.

集成主流CNC通讯协议的绝对式串行接口。
Absolute serial interface with all the most used CNC protocols available.

最高分辨率 10 nm。
最高精度等级 $\pm 2 \mu\text{m}$ 。
Resolution up to 10 nm.
Accuracy up to $\pm 2 \mu\text{m}$.



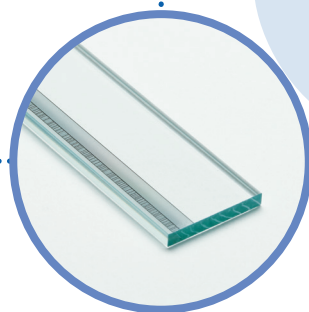
集成的气流调节系统可从尺体两端或者读头为尺体加压。
Pressurization from both sides of the scale or from the transducer. Integrated airflow regulation system.

测量长度可达 3240 mm。
Measuring length up to 3240 mm.

带垫片的电路保护 (IP 67)。
Circuit protection with gasket (IP 67).

用于正确定位和对准传感器的支架。
Brackets for the correct positioning and alignment of the transducer.

高精度光学玻璃格栅可进行绝对值信号读取。
High-accuracy optical glass grating for absolute measurements.



连接器 (IP 67) 置于读数头内部，如需，可轻松拆卸。可调节电缆输出方向。
Connector (IP 67) on the transducer, easily disconnectable in case of need. Adjustable cable output direction.

标配聚氨酯线缆，适用于连续移动。
PUR cable, suitable for continuous movements.

压铸式 M12 连接器 (IP 67)，带镀金插针。其他型号可应要求提供。
Moulded M12 connector (IP 67) with golden pins. Other models on request.



总体性能 MAIN CHARACTERISTICS

测量基体 Measuring support	玻璃格栅 glass scale
栅距 Grating pitch	20 μm 
线性热膨胀系数 Linear thermal expansion coefficient	$\lambda = 8 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$
串行接口 Serial interface	所有常用数控系统通讯协议均可支持 all the most used CNC protocols available
绝对测量分辨率 Resolution absolute measure	1 - 0.1 - 0.05 - 0.01 μm
精度等级 Accuracy grade	± 5 μm * 标准版 standard version ± 3 μm * 高精度版 (± 2 μm 测量长度小于 640 mm) high-accuracy version (± 2 μm for ML up to 640 mm)
插值误差 (SDE) Interpolation error (SDE)	± 70 nm **
滞后现象 Hysteresis	90 nm **
测量长度 ML 单位 mm 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}
膨胀固定点 (FEP) Fixed expansion point (FEP)	中心或可定位在右侧 (RT) 或左侧 (LT) central or positionable on the right (RT) or on the left (LT)
最大移动速度 Max. traversing speed	180 m/min
最大加速度 Max. acceleration	50 m/s ² 测量方向 in measuring direction
牵引力 Required moving force	≤ 2.5 N
抗震性 Vibration resistance (EN 60068-2-6)	100 m/s ² [55 ÷ 2000 Hz]
抗冲击性 Shock resistance (EN 60068-2-27)	150 m/s ² [11 ms]
防护等级 Protection class (EN 60529)	IP 54 标准 standard IP 64 加压 pressurized
工作温度 Operating temperature	0 °C ÷ 50 °C
储存温度 Storage temperature	-20 °C ÷ 70 °C
相对湿度 Relative humidity	20% ÷ 80% (无凝结状态 not condensed)
读头移动 Reading block sliding	通过滚珠轴承 by ball bearings ◎
电源 Power supply	5 Vdc ± 10%
电流消耗 Current consumption	255 mA _{MAX} (带 with R = 120 Ω)
最大电缆长度 Max. cable length	高达 up to 70 m
连接器 Connector	置于传感器内, 输出方向可调 on the transducer, with adjustable output
电器防护 Electrical protections	反极性和短路保护 inversion of polarity and short circuits
重量 Weight	0.55 kg + 2.8 kg/m

* 声明的精度等级± X μm是指1米的测量长度。The declared accuracy grade of ± X μm is referred to a measuring length of 1 m.

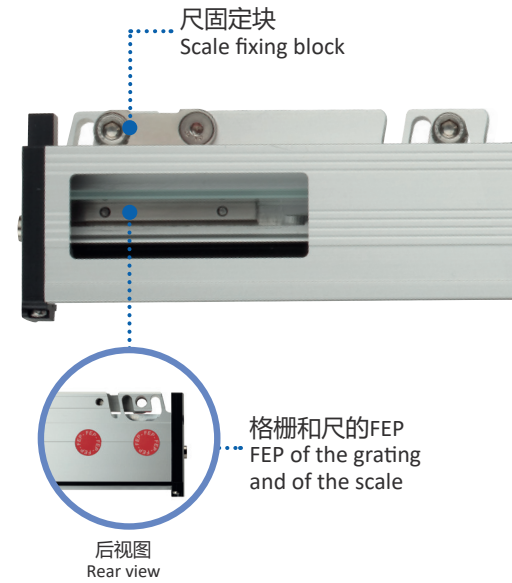
** 所声明的误差值是在遵守安装对齐公差情况下测得的。The error declared is subject to the respect of the alignment tolerances.

可选: 创新性可选择的FEP OPTION: INNOVATIVE SELECTABLE FEP

创新设计 FEP 膨胀固定点

线性编码器通常将**膨胀固定点** (FEP) 置于中间。GVS 808 系列通过灵活设定FEP位置 (中央或两侧), 适配不同机床轴的热膨胀特性, 用户可根据实际需求选择最优方案。通过定向控制热膨胀方向, 可显著降低温度波动对加工精度与重复定位精度的影响。

Linear encoders are generally supplied with the **Fixed Expansion Point (FEP)** positioned in the middle. GVS 808 has been designed to offer the customer the flexibility to determine the FEP position (central or lateral) most suitable to each axis of the machine. Selecting the linear thermal expansion direction allows to minimize the impact of temperature variations on the machining accuracy and repeatability.



总体性能 GENERAL FEATURES

- 测量基体为玻璃的绝对值线性编码器。
Absolute linear encoder, with glass measuring support.
- 分辨率高达 10 nm, 精度等级高达 ± 2 μm, 测量长度可达 3240 mm。Resolutions up to 10 nm, accuracy grade up to ± 2 μm and measuring length up to 3240 mm.
- 绝对串行接口, 可直接读取绝对测量值, 涵盖主流 CNC 通讯协议。Absolute serial interface with direct reading of the absolute measure and all the most used CNC protocols available.
- 集成气流调节系统可从尺体两端或者从读数头上加压。Pressurization from both sides of the scale or from the transducer. Integrated airflow regulation system.

机械性能 MECHANICAL CHARACTERISTICS

- 重型结构型材, 由阳极氧化铝制成, 尺寸36.7*58.5 mm。Rugged and heavy profile of considerable section, made of anodized aluminum. Dimensions 36.7x58.5 mm.
- 弹簧系统用于偏差补偿和机械滞后自校正。Spring system for misalignment compensation and self-correction of mechanical hysteresis.

- 可加压读数头,由拉杆和读数模块组成, 电路板可以受到充分的保护。Pressurizable reader head, consisting of tie rod and reading block, with fully-protected place for electronic boards.
- 双层线性密封唇, 具备耐油耐磨特性, 可为光栅提供极高防护。特殊自锁型结构设计。Double pair of linear sealing lips, resistant to oil and wear, for a very high protection of the grating. Special self-blocking profile.
- 读数头 沿滚珠轴承滑动。Reading block sliding through ball bearings.
- 压铸 拉杆, 表面镀镍处理。Die-cast tie rod, with nickel surface treatment.
- 弹性垫片在机械连接处 (在拆卸时可以充分的保护读头)。Elastomeric gaskets which allow to reproduce the full protection in mechanical joints (in case of disassembling).

电气性能 ELECTRICAL CHARACTERISTICS

- 前沿设计的光学/电子电路, 具有极强的防污能力。Forefront-design optical/electronic circuit for a very high protection against environmental dirt.
- 传感器上的连接器, 需要时可轻松断开。可调节电缆输出方向。Connector on the transducer, easily disconnectable in case of need. Adjustable cable output direction.
- 带有红外光发射器与接收光电二极管的读取装置。Reading device with an infra-red light emitter and receiving photodiodes.
- PUR电缆摩擦系数低, 耐油, 适合连续运动。PUR cable with low friction coefficient, resistant to oil and suitable for continuous movements.



绩伟测量的产品均经过严格的控制程序, 所有的尺子都提供了在严格的环境和气候条件下进行的计量检验证书。GIVI MISURE's products undergo strict control procedures. All scales are supplied with a certificate of metrological inspection performed in rigorous environmental and climatic conditions.

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