Optical Scale - optical absolute

GVS 608 F – FANUC $\alpha i/\alpha$ Interface

Datasheet

General Features

Linear optical measuring system based on a high quality glass scale with optical scaling, particularly suitable for CNC machine tools.

- Serial interfaces FANUC $\alpha i/\alpha$.
- Resolutions up to 0.01 µm.
- Accuracy grade up to $\pm 2 \mu m$.
- Innovative device inside the scale for the disposal of liquids coming from inefficient filtering systems.
- Adjustable connecting cable output.
- Connector incorporated into the transducer.
- Direct reading of absolute measure.
- Small size, to allow installation in narrow spaces.



Technical Characteristics



Measuring support Grating pitch Linear thermal expansion coefficient Serial interface Resolution absolute measure Accuracy grade \$\frac{\text{tan}}{\text{curacy}}\$ \text{grad} \text{ms} \text{standard version} \\ \$\frac{\text{tan}}{\text{tan}}\$ \text{ms} \text{tandard version} \\ \$\frac{\text{tan}}{\text{tan}}\$ \text{ms} \text{tandard version} \\ \$\frac{\text{tan}}{\text{tan}}\$ \text{ms} \text{tandard version} \\ \$\frac{\text{tan}}{\text{tan}}\$ \text{version} \\ \$\frac{\text{tan}}{\text{tan}}\$ \\ \$\frac{\text{tan}}{\text{tan}}\$									
Serial interface FANUC αi- FANUC α	3 11								
Serial interface FANUC αi- FANUC α	5 1	20 μm P							
Resolution absolute measure Accuracy grade \$\text{		8 x 10 ⁻⁶ °C ⁻¹							
Accuracy grade	Serial interface	FANUC $lpha$ i- FANUC $lpha$							
#3 µm * high-accuracy version	Resolution absolute measure								
Measuring length ML in mm 70, 120, 170, 220, 270, 320, 370, 420, 470, 520, 570, 620, 720, 770, 820, 920, 1020, 1140, 1240, 1340, 1440, 1540, 1640, 1740, 1840, 2040, 2240, 2440, 2640, 2840, 3040, 3240 (max. Measuring length) Max. traversing speed 120 m/min Max. acceleration 30 m/s² Required moving force ≤ 2.5 N Vibration resistance (EN 60068-2-6) 100 m/ s² [55 ÷ 2000 Hz] Shock resistance (EN 60068-2-27) 150 m/s² [11 ms] Protection class (EN 60529) IP 54 standard IP 64 pressurized Operating temperature 0 °C ÷ 50 °C Storage temperature -20 °C ÷ 70 °C Relative humidity 20% ÷ 80% (not condensed) Reading block sliding by ball bearings ® Power supply 5 VDC ± 5% Current consumption 300 mA _{MAX} Power supply 5 VDC ± 5% Max. cable length 30 m ** Connector inside the transducer Electrical protections inversion of polarity and short circuits	Accuracy grade	· ·							
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$\begin{array}{c} 1640,\ 1740,\ 1840,\ 2040,\ 2240,\ 2440,\ 2640,\ 2840,\ 3040,\ 3240\\ (max.\ Measuring length) \\ \hline \text{Max. traversing speed} & 120\ \text{m/min} \\ \hline \text{Max. acceleration} & 30\ \text{m/s}^2 \\ \hline \text{Required moving force} & \leq 2.5\ \text{N} \\ \hline \text{Vibration resistance (EN 60068-2-6)} & 100\ \text{m/s}^2 & [55 \div 2000\ \text{Hz}] \\ \hline \text{Shock resistance (EN 60068-2-7)} & 150\ \text{m/s}^2 & [11\ \text{ms}] \\ \hline \text{Protection class (EN 60529)} & IP\ 54 & \text{standard} \\ IP\ 64 & \text{pressurized} \\ \hline \text{Operating temperature} & 0\ ^\circ\text{C} \div 50\ ^\circ\text{C} \\ \hline \text{Storage temperature} & -20\ ^\circ\text{C} \div 70\ ^\circ\text{C} \\ \hline \text{Relative humidity} & 20\% \div 80\% \ (\text{not condensed}) \\ \hline \text{Reading block sliding} & \text{by ball bearings} \ \textcircled{1} \\ \hline \text{Power supply} & 5\ \text{VDC} \pm 5\% \\ \hline \text{Current consumption} & 300\ \text{mM}_{\text{Max}} \\ \hline \text{Power supply} & 5\ \text{VDC} \pm 5\% \\ \hline \text{Max. cable length} & 30\ \text{m}\ ^{**} \\ \hline \text{Connector} & \text{inside the transducer} \\ \hline \text{Electrical protections} & \text{inversion of polarity and short circuits} \\ \hline \end{array}$	Measuring length ML in mm	70, 120, 170, 220, 270, 320, 370, 420, 470, 520, 570, 620,							
$\begin{array}{c} \text{(max. Measuring length)} \\ \text{Max. traversing speed} & 120 \text{ m/min} \\ \text{Max. acceleration} & 30 \text{ m/s}^2 \\ \text{Required moving force} & \leq 2.5 \text{ N} \\ \text{Vibration resistance (EN 60068-2-6)} & 100 \text{ m/s}^2 & [55 \div 2000 \text{ Hz}] \\ \text{Shock resistance (EN 60068-2-27)} & 150 \text{ m/s}^2 & [11 \text{ ms}] \\ \text{Protection class (EN 60529)} & \text{IP 54} & \text{standard} \\ \text{IP 64} & \text{pressurized} \\ \text{Operating temperature} & 0 \text{ °C} \div 50 \text{ °C} \\ \text{Storage temperature} & -20 \text{ °C} \div 70 \text{ °C} \\ \text{Relative humidity} & 20\% \div 80\% \text{ (not condensed)} \\ \text{Reading block sliding} & \text{by ball bearings} @ \\ \text{Power supply} & 5 \text{ VDC} \pm 5\% \\ \text{Current consumption} & 300 \text{ mA}_{\text{MAX}} \\ \text{Power supply} & 5 \text{ VDC} \pm 5\% \\ \text{Max. cable length} & 30 \text{ m **} \\ \text{Connector} & \text{inside the transducer} \\ \text{Electrical protections} & \text{inversion of polarity and short circuits} \\ \end{array}$									
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Vibration resistance (EN 60068-2-6) 100 m/ s^2 $[55 \div 2000 \text{ Hz}]$ Shock resistance (EN 60068-2-27) 150 m/s^2 $[11 \text{ ms}]$ Protection class (EN 60529)IP 54 IP 64 IP 64 IP 64standard pressurizedOperating temperature $0 \text{ °C} \div 50 \text{ °C}$ Storage temperature $-20 \text{ °C} \div 70 \text{ °C}$ Relative humidity $20\% \div 80\%$ (not condensed)Reading block slidingby ball bearings \textcircled{o} Power supply $5 \text{ VDC} \pm 5\%$ Current consumption $300 \text{ mA}_{\text{MAX}}$ Power supply $5 \text{ VDC} \pm 5\%$ Max. cable length $30 \text{ m} **$ Connectorinside the transducerElectrical protectionsinversion of polarity and short circuits	Max. acceleration	30 m/s ²							
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Protection class (EN 60529) IP 54 standard IP 64 pressurized Operating temperature O °C ÷ 50 °C Storage temperature -20 °C ÷ 70 °C Relative humidity 20% ÷ 80% (not condensed) Beading block sliding Power supply 5 VDC ± 5% Current consumption 300 mA _{MAX} Power supply 5 VDC ± 5% Max. cable length 30 m ** Connector inside the transducer Electrical protections IP 54 standard pressurized 5 °C Storage temperature -20 °C ÷ 70 °C 20% ÷ 80% (not condensed) by ball bearings ® 5 VDC ± 5% 300 mA _{MAX} Fower supply 5 VDC ± 5% Inside the transducer Inside the transducer	Vibration resistance (EN 60068-2-6)	100 m/ s ² [55 ÷ 2000 Hz]							
IP 64 pressurized Operating temperature O °C ÷ 50 °C Storage temperature -20 °C ÷ 70 °C Relative humidity 20% ÷ 80% (not condensed) Beading block sliding Power supply 5 VDC ± 5% Current consumption 300 mA _{MAX} Power supply 5 VDC ± 5% Max. cable length 30 m ** Connector inside the transducer Electrical protections IP 64 pressurized 0 °C ÷ 50 °C 20% ÷ 80% (not condensed) by ball bearings ® 5 VDC ± 5% 300 m × ** Current consumption 300 m × ** Connector inside the transducer	Shock resistance (EN 60068-2-27)	150 m/s ² [11 ms]							
Operating temperature Storage temperature -20 °C ÷ 70 °C Relative humidity 20% ÷ 80% (not condensed) Beading block sliding Power supply 5 VDC ± 5% Current consumption 300 mA _{MAX} Power supply 5 VDC ± 5% Max. cable length 30 m ** Connector Electrical protections 0 °C ÷ 50 °C Corc ÷ 70 °C 100 × ÷ 80% (not condensed) 8 × VDC ± 5% 100 × × × × × × × × × × × × × × × × × ×	Protection class (EN 60529)	IP 54 standard							
Storage temperature -20 °C ÷ 70 °C Relative humidity 20% ÷ 80% (not condensed) Reading block sliding by ball bearings ⊚ Power supply 5 VDC ± 5% Current consumption 300 mA _{MAX} Power supply 5 VDC ±5% Max. cable length 30 m ** Connector inside the transducer Electrical protections inversion of polarity and short circuits		IP 64 pressurized							
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Max. cable length 30 m ** Connector inside the transducer Electrical protections inversion of polarity and short circuits	Current consumption	300 mA _{MAX}							
Connector inside the transducer Electrical protections inversion of polarity and short circuits	Power supply	5 VDC ±5%							
Electrical protections inversion of polarity and short circuits	Max. cable length	30 m **							
	Connector	inside the transducer							
	Electrical protections	inversion of polarity and short circuits							
	Weight	435 g + 1290 g/m (per m measuring length)							

- The declared accuracy grade of $\pm X \mu m$ is referred to a measuring length of 1 m.
- Ensuring a minimum power supply voltage of 5 V to the transducer.

GVS608F_DB_2023-12-14_EN

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Sensors

Optical Scale - optical absolute

GVS 608 F – FANUC $\alpha i/\alpha$ Interface

Datasheet

Electrical Characteristics

- Reading device with an infra-red light emitter and receiving photodiodes.
- Serial interface FANUC αi .
- Electrical protection against polarity inversion and short circuits on output ports.

Cable

GVS 608 F absolute optical scale is at INTERFACE FANUC αi supplied with a 7-wire shielded cable, $\varnothing = 7.4$ mm, PUR external sheath, suitable for continuous movements.

Conductors section:

0.50 mm² Power supply: Signals: 0.18 mm² Connector: CU1 PCR 15 Pin

GVS 608 F absolute optical scale is at INTERFACE FANUC α supplied with a 8-wire shielded cable, $\varnothing=7.4$ mm, PUR external sheath, suitable for continuous movements.

Conductors section:

0.50 mm² Power supply: Signals: 0.18 mm² Connector: CY8 PCR 20 Pin

Notice

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

Mechanical Characteristics

- Rugged and heavy PROFILE made of anodized aluminum.
- Dimensions 40 x 24 mm.
- Elastic COUPLING for misalignment compensation and self-correction of mechanical hysteresis. Backlash error $< 0.2 \mu m$.
- Non-extendible SEALING LIPS along the sliding side of the reader head, fixed at the lateral ends.
- 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.
- Possibility of direct service.

GVS608F DB 2023-12-14 EN

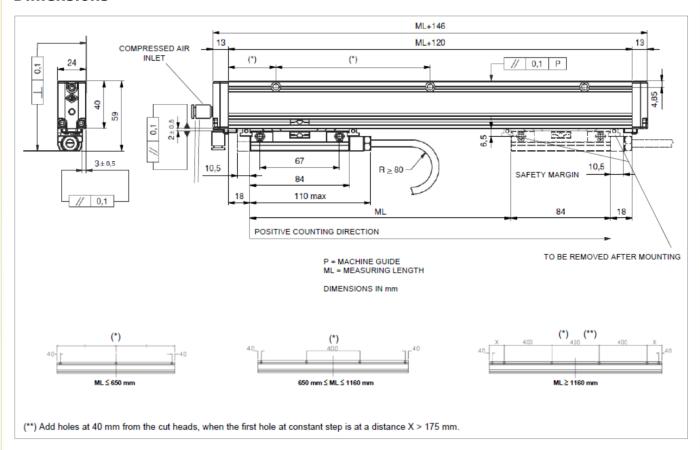
Optical Scale – optical absolute

GVS 608 F – FANUC $\alpha i/\alpha$ **Interface**



Datasheet

Dimensions



GVS608F_DB_2023-12-14_EN

Indicate



Datasheet

Ordering Code

FANUC

Туре	GVS608 - F1A	-	03240	-	V	-	F1	-	M04/F1	-	CU1	-	PR
Resolu	ution												
F1 F01 F001 A													
Measi	ıring length												
XXXXX	= length in mm	eng	jth)										
Power	r supply												
V	= 5 VDC												
-	t signal												
F1	= FANUC αi												
F2	= FANUC α												
Cable	length												
Mxx	= length in m												
M04													
30	= 30 m												
Cable	type												
F1 F2	= 7-wire shielded cable= 8-wire shielded cable												
Conne	ector, wiring												
CU1	= connector FANUC $lpha i$												
CY8	= connector FANUC $lpha$												
Option	n												
X SPxx PR	= no specifications (standard)= special version (on request)= pressurized												

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

Control