



INSTALLATION AND OPERATION MANUAL

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1 • MAIN FEATURES

- Optically-isolated I/O
- 8 configurable digital outputs 24VDC $\pm 25\%$
- 4 analog inputs, configurable via software (V, I, TC, RTD, potentiometer strain-gauge) 16 bit A/D conversion
- 2 CT inputs 16 bit A/D conversion
- Protected against polarity inversion, overload and overtemperature
- LED power supply diagnostics, I/O, module status and alarm
- Extractable connectors supplied

2 • INSTALLATION AND CONNECTION



This section contains the instructions necessary for correct installation of the GILOGIK II into the machine control panel or the host system and for correct connection of the system power supply, inputs, outputs and interfaces.



Before proceeding with installation read the following warnings carefully!
Remember that lack of observation of these warnings could lead to problems of electrical safety and electromagnetic compatibility, as well as invalidating the warranty.

Qualified staff

the installation and use of the system and components are only reserved at qualified staff.

Conform use

the system and relative components are usable exclusively to the use previewed in the manual
 In order to guarantee a correct and sure operation are indispensable that the product comes transported, stored correctly, installed, and controlled second the previewed modalities.
 Suitable for use in pollution degree 2 environment.
 Open type equipment.

Notes Concerning Electrical Safety and Electromagnetic Compatibility:

- **CE MARKING: EMC Conformity (electromagnetic compatibility)** in accordance with EEC Directive 2004/108/CE.
 The GILOGIK II system is mainly designed to operate in industrial environments, installed on the switchboards or control panels of productive process machines or plants.
 Norm of applicable product EN 61131-2
 The Declaration of conformity is available on GEFRAFAN web: www.gefran.com

- **BT Conformity (low tension)** in accordance with Directive LVD 2006/95/CE.
 Advice for Correct Installation for EMC

Inputs and outputs connection

- The externally connected circuits must be doubly isolated.
- To connect the analogue inputs the following is necessary:
 - physically separate the input cables from those of the power supply, the outputs and the power connections.
 - use woven and screened cables, with the screen earthed in one point only.



GEFRAN S.p.A. declines all responsibility for any damage to persons or property caused by tampering, neglect, improper use or any use which does not conform to the characteristics of the controller and to the indications given in these Instructions for Use.

3 • TECHNICAL DATA

DIGITAL OUTPUTS

- 8 optically-isolated PNP outputs at 24VDC $\pm 25\%$ with > 2KV isolation
- Organization: 1 group of 8 outputs
- Output power supply: 24VDC $\pm 25\%$
- Max. current for 8 outputs: 6A
- Max. current for group of 4 contiguous outputs (1...4 / 5...8): 3A
- Maximum current per output: 1A
- Output overload protection trips at 1.2A.
- Overvoltage on output for 1ms max.1kV
- Outputs 1 and 2 configurable in PWM (10 bit resolution) and in frequency (32 bit resolution).

- Selectable PWM period: 10s 5s, 2s, 1s,10ms, 4ms, 2ms, 1ms.
- Independent frequency generator for each channel, max. frequency 10kHz, min. frequency 0.1Hz settable in steps of 0.01Hz

ANALOG INPUTS

- 4 optically-isolated inputs with >2KV isolation and 16 bit A/D conversion. Inputs are configurable via software as follows:
 - Linear 0..10V (input impedance >1M Ω)
 - Linear 0..2.5V (input impedance >1M Ω)
 - Linear 0..20mA (input impedance 125 Ω)
 - Potentiometer (input impedance >1M Ω)
 - Differential 0..60mV (input impedance >1M Ω)

3 • TECHNICAL DATA

- Differential for strain-gauge 0..25mV (input impedance >1MΩ)
 - Differential for strain-gauge 0..100mV (input impedance >1MΩ)
 - Thermocouple (J,K,R,S,T) with internal software compensation of cold junction. (input impedance >1MΩ)
 - Resistance thermometer PT100 (input impedance >100KΩ)
 - Resistance thermometer PT1000 (input impedance >100KΩ)
- Note: if one of the four input channels is set as Pt1000, Pt100 and strain-gauge 0..25mV cannot be used on the other channels.*
- 2 inputs 0..50mA for current transformer (CT) with > 2KV isolation, 16 bit A/D conversion and input impedance of 50Ω
 - Linearity greater than 0.5%

POWER SUPPLIES

- Power supply of module via backplane R-BUS(x) 3.3V
 - Power supply I/O 24Vdc ± 25% max 200mA + load current of outputs (external, to be supplied on terminals).
- Power supply is distributed internally to the various channels.
- Power supply for strain-gauge supplied by module 10V max 150mA (total for all channels). Becomes 3.3V if a Pt1000 is configured.
 - Power supply for potentiometer supplied by module 10V max 150mA (total for all channels). Becomes 3.3V if a Pt1000 is configured.

DIAGNOSTICS

- Yellow LED: presence of 24VDC external power supply

- Green LED: digital output ON
- Green RUN LED flashing:
 - Low frequency module awaiting configuration (not operative)
 - High frequency module operative
- Red LED: module in alarm.

The alarm is active if at least one of the following occurs:

- Short circuit or overload on digital outputs.
- Malfunction of microprocessor.

With the red LED ON, the digital and analog outputs are reset and the module fault is signaled to the master.

MECHANICAL CHARACTERISTICS

Dimensions: 92x90x25.4mm

Weight: 120g.

Fastening: snaps on R-BUS(x)

Protection level: IP20

Connector: 36 pin female with spring lock

AMBIENT CONDITIONS

Working temperature: 0...50°C

Storage temperature: -20...70°C

Humidity: max. 90% Ur non-condensing

4 • INSTALLATION AND CONNECTIONS

The connections of the module call for:

External power supplies:

- 24VDC ±25% 200mA max. plus the current needed to load the outputs. Use unipolar cable with max section 1 mm². Do not attach lug.
- Potentiometer: use 3-pole shielded cable with max section 0.5 mm². Do not attach lug. Connect shield directly to ground plate and as close as possible to the module.
- Thermocouple: In case of isolated thermocouples, ground the negative pole of the input as close as possible to the module. Do not attach lug.
- Strain-gauge: use 4 or 6-pole shielded cable with max section 0.5 mm². Do not attach lug. Connect shield directly to ground plate and as close as possible to the module. Use external calibration wires to calibrate the transducer.
- Current transformer (CT)
- Use 2-pole cable with max section 0.5 mm². Do not attach lug
- Amplified inputs, use 2 or 3-pole shielded cable with max section 0.5 mm². Do not attach lug. Connect shield directly to ground plate and as close as possible to the module.
- Linear analog input: use 2-pole shielded cable with max section 0.5 mm². Do not attach lug. Connect shield directly to ground plate and as close as possible to the module.
- Digital outputs: use cable max 0.1mm². Do not attach lug.

NOTE:

The shield of the analog inputs / outputs must be connected near the module and directly to the ground plate.



