

UNIVERSAL DISPLAYING AND REGULATING DEVICE



FRONT
48 x 96

E.A.S.Y.Bus - Modul

FUNCTIONS:



**UNIVERSAL INPUT FOR
NORMALIZED SIGNALS, FREQUENCY, PT100,
PT1000, THERMOCOUPLE**

GIR 2002

Product-ID: 600948 (Standard model)

Universal displaying and regulating device with on/off-control mode

GIR 2002 PID

Product-ID: 600951 (Standard model)

Universal displaying and regulating device with PID-control mode

Anwendungen:

- process regulating
- temperature controller
- pressure monitoring
- rotation speed display
- flow counter, etc.

General:

The universal controller GIR 2002 is the ideal device for simple control systems (on/off switching, relay outputs, ...), because of its compact construction and its high ease of use. The GIR 2002 PID (basic version) supplies one control output for a 2-point-control the types of control P, I, PI, PD or PID and a second control output for on/off switching. The device can also be configured as a 3-point motorized valve controller or as controller with continuous output (optionally).

Due to the universal input and the various switching functions the controller can be optimally adapted to the requirements of the system. The structured menu navigation allows a straightforward handling and a fast adjustment of the parameters.

A LED switching position display gives information to the user about the current status of the switching outputs. The automatic self-test and diagnostic system ensures maximum operational safety and reports systems errors by conclusive error codes. The parameters are automatically saved, so that all data will be maintained even in case of a power blackout.

Among others most of the GREISINGER transmitters, rpm sensors and flow rate sensors can be connected directly to the integrated transmitter power supply (24 VDC/22 mA) of the controller.

If the device is used as a thermocouple or resistance thermometer, the measuring value can be alternatively displayed in °C or °F. By means of an offset correction the measured value can be scaled i.e. to the resistivity of the wires. The current and voltage inputs can be arbitrarily scaled in the range of -1999 ... +9999.

The GIR 2002 has a serial, bus-compatible interface by default, by which a comfortable adjustment of the parameters as well as recording of measured values is possible. With the optionally available Windows library EASYBUS.dll up to 240 devices can be integrated into own programs (i.e. LabView).

Specifications:

Measuring input	Measuring / display ranges:	Accuracy (at nominal temperature):
Thermocouples (4 measurings / s)		
FeCu-Ni: (type J, IEC 584)	-70.0 ... +300.0 °C or -170 ... +950 °C	< 0.3 % FS ±1 digit *
NiCr-Ni: (type K, IEC 584)	-70.0 ... +250.0 °C or -270 ... +1372 °C	< 0.3 % FS ±1 digit *
NiCrSi-NiSi: (type N, IEC 584)	-100.0 ... +300.0 °C or -270 ... +1350 °C	< 0.3 % FS ±1 digit *
Pt10Rh-Pt: (type S, IEC 584)	-50 ... +1750 °C	< 0.5 % FS ±1 digit *
Cu-CuNi: (type T, IEC 584)	-70.0 ... +200.0 °C or -270 ... +400 °C	< 0.3 % FS ±1 digit *
* = Point of comparison: ± 1 °C		
Resistance thermometer (4 measurings / s)		
Pt 100: (3-wire, DIN EN 60751)	-50.0 ... +200.0 °C or -200 ... +850 °C	< 0.3 % FS ±1 digit

HIGHLIGHTS:

- 2 relay switching outputs
- 1 analog output (0(4)-20 mA or 0-10 V) (optional)
- 5 programmable switching modes
- electrical isolated power supply for a transmitter (24 V / 22 mA)
- serial interface, bus operation
- Configurable via PC using GIR 2002 configuration software (EBW 3 required)

ADDITIONAL FUNCTIONS GIR 2002 PID:

- P, I, PI, PD or PID control mode
- 3-point motorized valve control
- continuous regulating output (optional)

Pt1000: (2-wire, DIN EN 60751)	-200 ... +850 °C	< 0.3 % FS ±1 digit
Action signals / normalized signal (100 measurings / s)		
0 ... 1 V, 0 ... 2 V, 0 ... 10 V:	-1999 ... +9999 digit, scale freely adjustable	< 0.2 % FS ±1 digit
0 ... 20 mA, 4 ... 20 mA:	-1999 ... +9999 digit, scale freely adjustable	< 0.2 % FS ±1 digit
0 ... 50 mV:	-1999 ... +9999 digit, scale freely adjustable	< 0.3 % FS ±1 digit
Frequency		
TTL-signal:	0.000 Hz ... 10 kHz, scale freely adjustable	< 0.1 % FS ±1 digit
Switching contact NPN:	0.000 Hz ... 3 kHz, scale freely adjustable	< 0.1 % FS ±1 digit
Switching contact PNP:	0.000 Hz ... 1 kHz, scale freely adjustable	< 0.1 % FS ±1 digit
Rotational speed:	0.000 ... 9999 U/min.	selectable prescaler: 1-1000, pulse frequency: max. 600 000 Imp./min. at TTL
Flow:	0 ... 9999 l/s, 0 ... 9999 l/min or 0 ... 9999 l/h	
Counter up / down		
TTL-signal, switching contact (NPN, PNP):	0 ... 9999 or 0 ... 999 000 (with prescaler) selectable prescaler: 1-1000, pulse frequency: max. 10 000 Imp./s at TTL	< 0.1 % FS ±1 digit
Serial interface:	displaying and controlling from values coming via the serial interface	
Outputs: Please note: Not all options are available for both device types and not all options can be combined with each other. Please see therefore the matrix.		
Output 1 R1: (standard version)	voltage free relay output (standard) normally-open contact, switching power: 5 A (ohmic load), 250 VAC	
Optional:	H1: control output for semiconductor relay (6 VDC / 15 mA) AAG..1: freely scalable analog output 0(4)-20 mA or 0-10 V ST..1: continuous output 0(4)-20 mA or 0-10 V	
Output 2 R2: (standard version)	voltage free relay output (standard) change-over contact, switching power: 10 A (ohmic load), 250 VAC	
Optional:	H2: control output for semiconductor relay (6 VDC / 15 mA)	
Output 3:	(not available at standard device type)	
Optional:	R3: voltage free relay output (chance-over contact) switching power: 1 A / 40 VAC or 30 VDC H3: control output for semiconductor relay (14 VDC / 15 mA) N3: electrical isolated NPN-switching contact (max. 1 A / 30 VDC) AA3: freely scalable analog output 0(4)-20 mA or 0-10 V SA3: continuous output 0(4)-20 mA SV3: continuous output 0-10 V	
Controller states:	5 or 6, selectable (e.g. 2-point regulator, 3-point regulator, ...)	
Switching point, hysteresis:	freely adjustable	
Response time:	≤ 25 ms at normalized signals ≤ 0.5 s at temperature and frequency	
Display:	approx. 13 mm high, 4-digit red LED-display	

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Interface:	serial interface, electrical isolated, EASYBus compatible
Power supply for sensor:	24 V DC ±5 %, 22 mA (for DC-supply 18 V DC)
Miscellaneous:	permanent self-monitoring, digital filter function, measuring range boundary (limit)
Voltage supply:	230 V AC, 50/60 Hz (standard)
optional:	012D: voltage supply: 12 VDC (11-14 V) ¹⁾ 024D: voltage supply: 24 VDC (22-27 V) ¹⁾ 024A: voltage supply: 24 VAC ±5 % 115A: voltage supply: 115 VAC ±5 %
Power consumption:	approx. 6 VA
Operating conditions:	-20 ... +50 °C, 0 ... 80 % RH (non condensing)
Housing:	standard rack type housing 48 x 96 mm (front frame) installation depth: approx. 115 mm (incl. screw-type/plug-in terminals)
Panel mounting:	with fixing clamps panel cutout: 43.0 ^{+0.5} x 90.5 ^{+0.5} mm (H x W)
Electrical connection:	via screw-type/plug-in terminals cable diameters from 0.14 ... 1.5 mm ² .
Protection class:	front side IP54, with optional sealing IP65
Electromagnetic immunity (EMC):	EN61326 (appendix A, class B)
Scope of supply:	device, fixing clamps, manual

Accessories and spare parts:

GGD4896 Product-ID: 603042 additional sealing for panel mounting IP65	
EAK 36 Product-ID: 603227 Unit stickers (black with white text) for 36 different units for lettering of display devices (p.r.t. page 89)	
Temperature probes	p.r.t. page 145 - 159

for other accessories p.r.t. page 76, 112

Ordering code:

GIR2002- 1 - 2 - 3 - 4 - 5 - 6

Greisinger	
1. Supply voltage	
230A	230 V AC
012D	12V DC
012DA	12V DC for analog output or NPN or REL3 or HLR3
024A	24V AC
024D	24V DC
024DA	24V DC
115A	115 V AC
2. Output 1	
-R1	Relay, NO switch
-H1	Solid-State-Relais
-AA1	Analog output 0(4)..20mA
-AV1	Analog output 0-10V
3. Output 2	
-R2	Relay, NO switch
-H2	Solid-State-Relais
4. Output 3	
-00	No third output
-R3	Relay, NO switch
-H3	Solid-State-Relais
-N3	NPN switch output
-AA3	Analog output 0(4)..20mA
-AV3	Analog output 0-10V
5. Option	
-00	Without option
6. Option	
-IP	Protection IP65

Outputs	GIR 2002			GIR 2002 PID		
	out 1	out 2	out 3	out 1	out 2	out 3
Standard type:	normally-open contact	chance-over contact	--	normally-open contact	chance-over contact	--
available output options						
output 1 = control output	H1:	•		•		
output 2 = control output	H2:		•		•	
output 3 = relay (chance-over contact)	R3:		•			•
output 3 = control output	H3:		•			•
output 3 = NPN-switching output	N3:		•			•
output 1 = analog output 0(4) - 20 mA	AA1:	•				
output 1 = analog output 0 - 10 V	AV1:	•				
output 3 = analog output 0(4) - 20 mA	AA3:		•			•
output 3 = analog output 0 - 10 V	AV3:		•			•
output 1 = continuous output 0(4) - 20 mA	SA1:			•		
output 1 = continuous output 0 - 10 V	SV1:			•		
output 3 = continuous output 0(4) - 20 mA	SA3:					•
output 3 = continuous output 0 - 10 V	SV3:					•

Ordering code:

GIR2002PID- 1 - 2 - 3 - 4 - 5 - 6

Greisinger	
1. Supply voltage	
230A	230 V AC (Standard)
012D	12V DC
012DA	12V DC for analog output or NPN or REL3 or HLR3
024A	24V AC
024D	24V DC
024DA	24V DC for Stetig / Analog; NPN
115A	115 V AC
2. Output 1	
-R1	Relay, NO switch (Standard)
-H1	Solid-State-Relais
-SA1	Continuous output 0(4)..20 mA, no out3 possible
-SV1	Continuous output 0 to 10V, no out3 possible
3. Output 2	
-R2	Relay, NO switch (Standard)
-H2	Solid-State-Relais
4. Output 3	
-00	No third output (Standard)
-R3	Relay, NO switch
-H3	Solid-State-Relais
-N3	NPN switch output
-AA3	Analog output 0(4)..20mA
-AV3	Analog output 0-10V
-SA3	Continuous output 0 (4) .. 20 mA
-SV3	Continuous output 0 to 10 V free scalable
5. Option	
-00	Without option
-SW	Setpoint controller
6. Option	
-IP	Protection IP65