

Universal Measuring and Regulating Device

GIR 2002

easy operability - high accuracy - economic price

Temperature regulator, pressure control, tachometer, flow meter, etc., etc.



- Universal inputs for normalized signals, frequency, Pt100, Pt1000 and thermocouples
- 2 integrated switching outputs
- integrated isolated power supply for meas. transducer (24V / 20mA)
- Configurable as display or controller (5 switching functions)
- Quick regulating and controlling stage (up to 100 meas. / sec.)
- extensive self-monitoring and diagnostic system
- Serial interface (max. 240 devices can be combined)
- Limit functions, digital filter, min-/max value memory

Specification:

Measuring input: universal input for

- **Normalized signal:** 4-20mA, 0-20mA, 0-1V, 0-2V, 0-10V, 0-50mV
- **Resistance thermometer:** Pt100 (3-wire), Pt1000 (2-wire)
- **Thermocouples:** types J, K, N, S, T
- **Frequency, Rotational speed:** TTL-signal, switching contact
- **Counter up / down:** TTL-signal, switching contact
- **Serial interface**

Measuring rate: approx. 100 meas. / sec. (for norm. signal) resp. approx. 4 meas. / sec. (for temperature and frequency)

Measuring resp. display ranges, resolution:

Temperature: (display unit selectable: °C or °F)

- Pt100:** -200 ... + 850°C or - 50.0 ... +200.0°C
- Pt1000:** -200 ... + 850°C
- type J:** -170 ... + 950°C or - 70.0 ... +300.0°C
- type K:** -270 ... +1372°C or - 70.0 ... +250.0°C
- type N:** -270 ... +1350°C or -100.0 ... +300.0°C
- type S:** - 50 ... +1750°C
- type T:** -270 ... + 400°C or - 70.0 ... +200.0°C

Norm. signals: -1999 ... 9999 digit, scale freely adjustable

- **recommended range:** ≤ 2000 digit

Frequency: 0.000 Hz ... 10 kHz, display freely scaleable

Rotational speed: 0.000 U/min ... 9999 U/min, selectable prescaler: 1-1000

Counter up/down: counter value remains on power loss
0 ... 9999 (10 Mio. with prescaler), pulse frequency: ≤ 10kHz, selectable prescaler: 1-1000

Serial interface: Displaying and controlling from values coming via the serial interface.

Accuracy: (at nominal temperature = 25°C)

- **Norm. signal:** < 0.2 % f.s. ±1 digit (at 0-50mV: < 0.3% f.s. ±1 digit)
- **Resistance thermometer:** < 0.3 % f.s. ±1 digit
- **Thermocouples:** < 0.3 % f.s. ±1 digit (at type S: < 0.5% f.s. ±1 digit)
- Point of comparison:** ± 1 °C
- **Frequency, rotational speed, counter:** < 0.1 % f.s. ±1 digit

Outputs: 2 voltage free relays outputs (standard)

Output 1: normally-open-contact, switching power: 5A (ohmic load), 250VAC
- option: control output for semiconductor relay, freely scaleable analogue output 0-20mA/4-20mA or 0-10V

Output 2: change-over-contact, switching power: 10A (ohmic load), 250VAC
- option: control output for semiconductor relay

Controller state: 2-point, 3-point, 2-point with alarm, min/max alarm to 1 output, min/max alarm to 2 outputs

Switching point, hysteresis: freely adjustable

Response time: ≤ 25 msec. at normalized signals
≤ 0.5 sec. at temperature and frequency

Display: approx. 13 mm high, 4-digit red LED-display

Min-/max-value memory: the max- and min value will be stored.

Interface: serial interface, elect. isolated, **EASYbus** compatible

Power supply for sensor: integrated isolated power supply for measuring transducer: 24 V DC ±5%, 20mA (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)
optionally other supply voltages are possible

Power consumption: approx. 6 VA

Operating temperature: -20 to +50 °C

Relative humidity: 0 to 80 %RH (non condensing)

Storage temperature: -30 to +70 °C

Housing: standard rack type housing 48 x 96 mm (front frame)
installation depth: approx. 115 mm (incl. screw-type/plug-in terminals)

Panel mounting: by 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 0.14² to 1.5².

Protection class: front side IP54, with optional sealing IP65

Electromagnetic immunity (EMC): EN61326 (appendix A, class B)

Options: (upon upcharge)

- **12VDC** voltage supply = 12 V_{DC} ¹⁾
- **24VDC** voltage supply = 24 V_{DC} ¹⁾
- **24VAC** voltage supply = 24 V_{AC}
- **115VAC** voltage supply = 115 V_{AC}
- **AAG0(4)20** output 1 = analog output 0 (4) - 20 mA ¹⁾
- **AAG010** output 1 = analog output 0 - 10 V ¹⁾
- ¹⁾ For analog output with option 12VDC o. 24VDC add. upcharge
- **HLR1** output 1 = control output for external semiconductor relay (6 V_{DC})
- **HLR2** output 2 = control output for external semiconductor relay (6 V_{DC})

Accessories:

GGD4896 additional sealing for panel mounting IP65

EAK 36 Unit stickers (black with white text) for 36 different units for lettering of display devices.
(units: °C, °F, %, pH, bar, mbar, bar abs, Pa, kPa, MPa, psi, mmHg, mmWS, % RH, µs/cm, ms/cm, mm, cm, m, inch, kg, t, l, m³/h, l/s, l/min, l/h, rpm, gal, N, Nm, 1/min, 1/sec., m/s, mV)

EBW1 interface converter GIA20EB => RS232 (p.r.t. page 66)

EBS 9M software for recording and archiving of the measuring values (p.r.t. page 36).

Temperature probes

p.r.t. page 85 - 94

for other accessories p.r.t. page 52, 53, 67