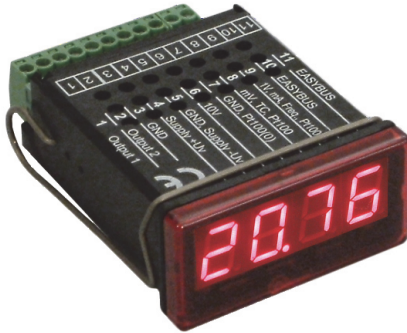


Universal Measuring and Controlling Device GIA 20 EB



- Universal inputs for standard signals, frequency, Pt100 / Pt1000 and thermocouples
- 2 integrated switching outputs
- Self-monitoring and diagnostic system
- Interface

Characteristics

The GIA 20 EB is a microprocessor-controlled displaying, monitoring and controlling device for universal use.

It has a universal input for standard signals (0..20 mA, 4..20 mA, 0..50 mV, 0..1 V, 0..2 V and 0..10 V), resistance thermometers (Pt100 and Pt1000), thermocouples (type J, K, N, S and T) and frequency (TTL and switch contact). Additionally it provides functions like rotation speed measurement or counter.

The GIA 20 EB is equipped with switching outputs. The output functions can be configured as 2-point controller, min/max alarm, 3-point controller, 2-point controller with min/max alarm, etc. The relay state is indicated by 2 additional LEDs below the 7-segment display.

The device identifies impermissible operating states like display or system errors and displays a corresponding error code.

Technical data

Measuring inputs

Design type	Input signal	Measuring range	Note
Voltage signal	0..10 V	0..10 V	Ri ≥ 300 kOhm
	0..2 V	0..2 V	Ri ≥ 10 kOhm
	0..1 V	0..1 V	Ri ≥ 10 kOhm
	0..50 mV	0..50 mV	Ri ≥ 10 kOhm
Current signal	4..20 mA	4..20 mA	Ri = ~ 125 Ohm
	0..20 mA	0..20 mA	Ri = ~ 125 Ohm
Resistance	Pt100	-50.0.. +200.0 °C	3-wire connection
		-200.. +850 °C	
	Pt1000	-200.. +850 °C	2-wire connection

Thermocouple	NiCr-Ni type K	-270.0.. +1350 °C	
	Pt10Rh-Pt type S	-50.. +1750 °C	
	NiCrSi-NiSi type N	-270.. +1300 °C	
	Fe-CuNi type J	-170.. +950 °C	
	Cu-CuNi type T	-270.. +400 °C	
Frequency	TTL signal	0..10 kHz	
	Switching contact NPN	0..3 kHz	internal pull-up-re- sistor is switched on
	Switching contact PNP	0..1 kHz	internal pull-down- resistor is switched on
Rotation speed	TTL signal switching con- tact NPN, PNP	0..9999 U/min	switchable predis- tributor (1..1000), pulse frequency: max. 600000 pulses/min.
Up / down counter	TTL signal switching con- tact NPN, PNP	0..9999 U/min	switchable predis- tributor (1..1000), pulse frequency: max. 10000 pulses/min.

Switching outputs : 2 switch. outputs, not electrically isolated
Switching behavior : selectable: low-side, high-side or push-pull
Connection data : low-side: 28 V / 1 A
high-side: Uv / 200 mA

Output functions

Description	Function	
	Output 1	Output 2
2-point controller	digital 2-point controller	---
3-point controller	digital 2-point controller	digital 2-point controller
2-point controller with min/max alarm	digital 2-point controller	min/max alarm
Min/max alarm, together	---	min/max alarm
Min/max alarm, individual	max alarm	min alarm

Accuracy

Standard signal : < 0.2 % FS ±1digit
(for 0..50 mV: < 0.3 % FS ±1digit)
Resistance thermometer : < 0.5 % FS ±1digit
Thermocouple : < 0.3 % FS ±1digit
(for type S: < 0.5 % FS ±1digit)
Frequency : < 0.2 % FS ±1digit

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Measuring rate
 Standard signal : 100 measurements / second
 Temperature : 4 measurements / second
 Frequency : 100 measurements / second

Power supply : 9..28 V DC
 Power consumption : max. 30 mA (without switching output)
 Working temperature : -20..+50 °C

Display
 Display : red LED display
 Height : 10 mm
 Display range : -1999..+9999 digit
 initial / final value and decimal point
 freely adjustable

Electric connection : via screw / clamp terminals:
 2-pole for interface and 9-pole for
 remaining connections
 wire cross section from 0.14..1.5 mm²

Protection class : front IP54

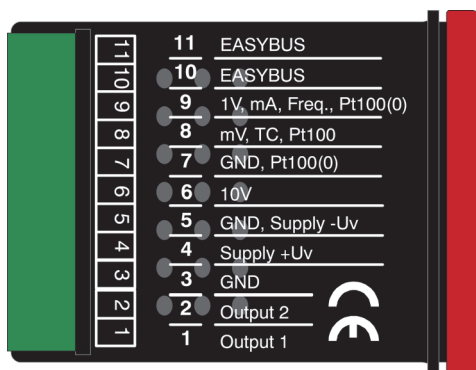
Dimensions

Housing : glass fibre reinforced Noryl
 front panel: polycarbonate

Size : 24 x 48 mm (H x W)
 Mounting depth : approx. 65 mm
 (incl. screw / clamp terminals)

Panel mounting : by VA fixing clamps
 Allowed panel thickness: from 1..10 mm
 Panel cutout : 21.7 x 45.0 mm [±0.5 mm] (H x W)

Connection diagram



Supply voltages

028	Supply voltage: 9..28 V DC (Standard)
G12	Design type with electrically isolated supply: 11..14 V
G24	Design type with electrically isolated supply: 22..27 V

Ordering code

1. 2.
GIA20EB - -

1. Supply voltage	
028	9..28 V DC (standard)
G12	electrically isolated supply: 11..14 V
G24	electrically isolated supply: 22..27 V
2. Option	
00	without option

Special design types (upon request)

- SA1 Tare and hold function**
 (only for 4..20 mA input)
 If the external switch gets closed the display is set to 0 (tare function).
 As long as the switch stays closed the display is updated.
 Once the switch is opened the display is frozen (hold function).
- SA2 Max value display**
 (only for 4..20 mA input)
 The currently measured value is displayed if the external switch is closed.
 The highest measured value is displayed if the external switch is opened.
- SA3 Frequency input for 10..100 mV**
 The device provides a frequency input with connection possibility for:
 frequency (10..100 mV signals)
- SA4 Measuring input 0..30V**
 The original measuring input 0..10 V is changed to a measuring input for 0..30 V signals. All adjustments for this input have to be done at the menu point 0..10 V.
- SA5 Delayed measured value displaying**
 This special design type can be used to suppress short-term perturbations of signal normally changing very slowly.
 This special design type influences only standard signal measurements.

Accessories

- FS3T**
 Front panel with 3 operating buttons: for comfortable configuration, if switching points have to be consistently adjusted, for calling the min and max values, etc.
- GNR 10**
 Power supply and relay module for supplying a GIA 20 EB (input: 230VAC, power supply for device and transmitter, 2 relay outputs)