

## GAE953 Electrical Alarm Unit 19" with Indicator



The electrical alarm unit GAE953 gives a signal when one or two set alarm values have been exceeded. Input signals from 0/4 to 20 mA, from 0 to 10 V, from 1 to 5 V, from 0/0.2 to 1 V can be processed as input variables. The device has two inputs with min. (= low) or max. (= high) monitoring, but they can also be switched together for min. and max. monitoring of a single input or of a difference between 2 inputs. The digital display at the front plate permits the control of the inputs as well as the set alarm values.

### FEATURES

- Use as
  - double alarm unit for 1 input signal or as
  - double alarm unit for differential signal between 2 inputs or as
  - 2 single alarm units for 2 separate inputs
- 3 1/2 position LED digital display at front plate to indicate input and alarm values
- Input or alarm value display from channels 1 and 2
- Minimum or maximum value monitoring can be selected
- Normally closed or normally open circuit can be selected
- Alarm value setting by means of a potentiometer at front plate
- Alarm indication by means of red LEDs
- Alarm monitoring by means of relay outputs with double contacts
- Line break detection
- Galvanic separation between input, power supply and output
- EMC in accordance with the latest NAMUR-recommendations and international standards and laws

**TECHNICAL DATA****Operating mode**

Min. (= low)/max. (= high) and normally closed/normally open<sup>1)</sup> selection via jumpers

**Input**

Inputs ..... 1 or 2 (galvanically connected)  
 Differential input ..... selectable  
 Difference forming<sup>2)</sup> .....  $0.5(E2-E1)+50\%$   
 Line break detection ..... disconnectible  
 Sensitivity .....  $\leq 0.2$  mA  
 Number of alarm values ..... 2<sup>3)</sup>

**Input signal**

Current ..... 0/4 to 20 mA  
 Input resistance ..... 50 Ohm  
 Voltage ..... 0 to 10 V/1 to 5 V/  
 0 to 1 V/0.2 to 1 V  
 Input resistance .....  $>250$  kOhm

**Display**

Input or alarm value ..... 3 1/2 position, consists of 7-segment LED, 3-digit digit-height 5 mm and 2 LEDs (green)<sup>4)</sup>  
 Scaling ..... in %  
 Input or alarm value ..... selection via switch

Alarm value exceed indication ..... LED (red) lights up  
 Line break indication ..... LED (red) lights up<sup>5)</sup>

**Output**

Alarm value monitoring ..... 2 relays each with 2 isolated changeover contacts  
 Line break monitoring<sup>5)</sup> ..... relay with isolated changeover contact

**Relay data**

Switching capacity ..... max. 30 W  
 Switching voltage ..... max. 30 V  
 Switching current ..... max. 1 A  
 Response time ..... approx. 25 ms  
 OFF delay in the event of mains interruption ..... approx. 25 ms

**Response characteristics**

Alarm values ..... 0 to 100%, continuously adjustable  
 Hysteresis ..... 1% F.S., optionally 2, 5, 10% F.S.  
 Accuracy .....  $\leq 0.5\%$  F.S.  
 Reproducibility at 20°C and nominal voltage .....  $\leq 0.5\%$  F.S.  
 Alarm value change resulting from power supply change in entire tolerance range .....  $\leq 0.2\%$  F.S.  
 resulting from temperature change per 10 K. .....  $\leq 0.1\%$  F.S.

**Galvanic separation** ..... between input, power and output

**Electromagnetic compatibility EMC**

Immunity as per EN 50 082-2 ..... fulfilled  
 Emission as per EN 50 081-2 ..... fulfilled  
 Operating conditions ..... industrial environment  
 NAMUR-recommendation ..... fulfilled

**Power supply**

AC voltage ..... AC 24 V  
 Tolerance ..... +15%, -20%  
 Nominal frequency range ..... 50 to 60 Hz  
 Tolerance .....  $\pm 2$  Hz  
 Power consumption .....  $<3$  VA  
 DC voltage ..... DC 24 V  
 Tolerance ..... +30%, -25%  
 Residual ripple .....  $<15\%$  within the tolerance range  
 Power consumption .....  $<3$  W  
 Start up current .....  $<15 \times I_{nom}$   
 Operating conditions as per IEC 654-2 ..... The device can be operated on a class a.c.4 or d.c.4 power supply

**Ambient conditions**

Ambient temperature (Device) ..... 0°C to +60°C  
 Relative humidity ..... 10 to 75%  
 Condensation ..... none  
 Operating conditions as per IEC 654-1 ..... The device can be operated at a class B2 location  
 Transport- and storage temperature ..... -25°C to +70°C

**Design**

19"-device (nest mounted) ..... Euro format 100 x 160 mm  
 Front ..... 4 TE, 3 HE, Color RAL 7032  
 Connector ..... male multipoint DIN 41 612 type F, 32 poles, series z and d  
 Weight ..... approx. 0.25 kg

**Safety requirements**

as per IEC 1010-1 ..... protection class III  
 Built-in fuse ..... DIN 41 571 - T0,2A

- 1) Normally closed: relay coil energized within the positive range/ normally open: relay coil not energized within the positive range
- 2) For input with life zero (e.g. 4 to 20 mA) only
- 3) 1 alarm value per input with 2 input signals (G1/E1 resp. G2/E2), 2 alarm values with single input signal or with differential input
- 4) For indicating values  $\geq 100\%$  resp.  $<0\%$
- 5) If line break detection is connected

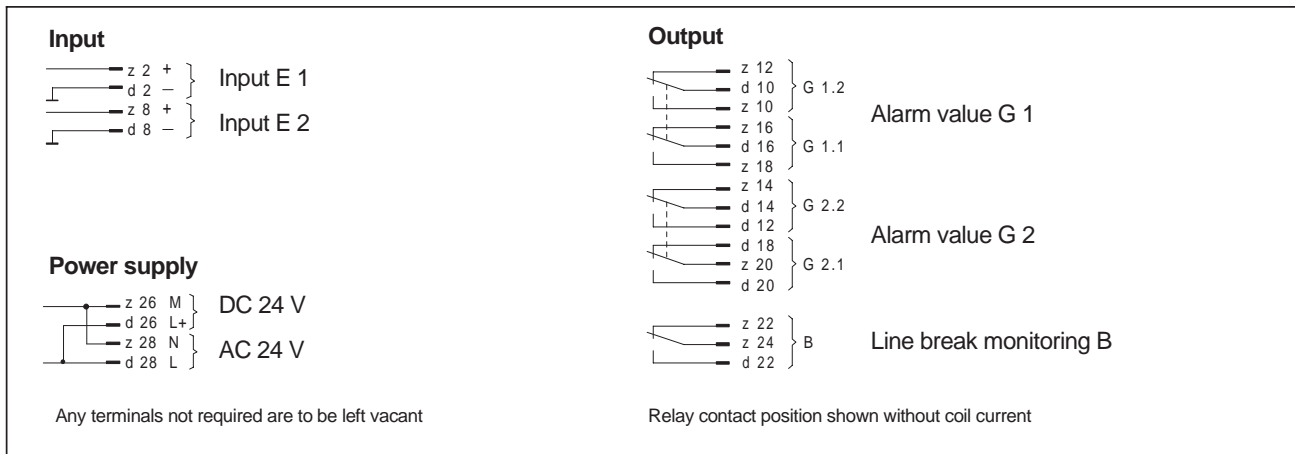
**MODEL CODE**

<b>GAE953 Alarm Unit with Indicator</b>	
<b>Version</b>	
-M	Nest-Mounted Module with relay for line break detection for signal range 4-20 mA, 1-5 V, 0.2-1 V
<b>Input</b>	
1	0 to 20 mA
2	4 to 20 mA
3	0 to 10 V
4	1 to 5 V
5	0 to 1 V
6	0.2 to 1 V
<b>Number of Input Signals</b>	
1	1 Input E1
2	2 Inputs E1 and E2
3	Differential input E2–E1 (for input with code 2, 4, 6 only)
<b>Relay Action for all Outputs</b>	
A	Normally closed (Circuit opens on alarm)
B	Normally open (Circuit closes on alarm)
<b>Alarm Configurations</b>	
1	Alarm G1 low/G2 high
2	Alarm G1 low/G2 low
3	Alarm G1 high/G2 high
4	Alarm G1 high/G2 low
<b>Electrical Classification</b>	
ZZZ No Certification/approval	
<b>Optional Features</b>	
-N	Nameplate Inscription (b)
-Q	Hysteresis 2% (Standard = 1%)
-R	Hysteresis 5% (Standard = 1%)
-S	Hysteresis 10% (Standard = 1%)
<b>Accessory Connector with</b>	
-1	Solder connections (a)
-2	Wire wrap connections (a)
-3	Screw terminals (a)
-4	Crimping connections (a)
-5	Au clip pin 0.8 x 1.6 connection (a)
-6	Sn clip pin 0.8 x 1.6 connection (a)
-7	Au clip pin 0.8 x 2.4 connection (a)
-8	Sn clip pin 0.8 x 2.4 connection (a)
-9	Flat push on connections 2.8 x 0.8 (a)
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GAE953	
Example Model Code:	
GAE953-M 2 1 A 1 ZZZ -N1	
(a)	Female multipoint connector DIN 41 612 type F, 32 poles, series z and d, for external mounting
(b)	Location label with inscription: max. 6 characters per line, max. 3 lines in font IBM Courier 12 or max. 6 characters per line, max. 2 lines in font IBM Orator 10

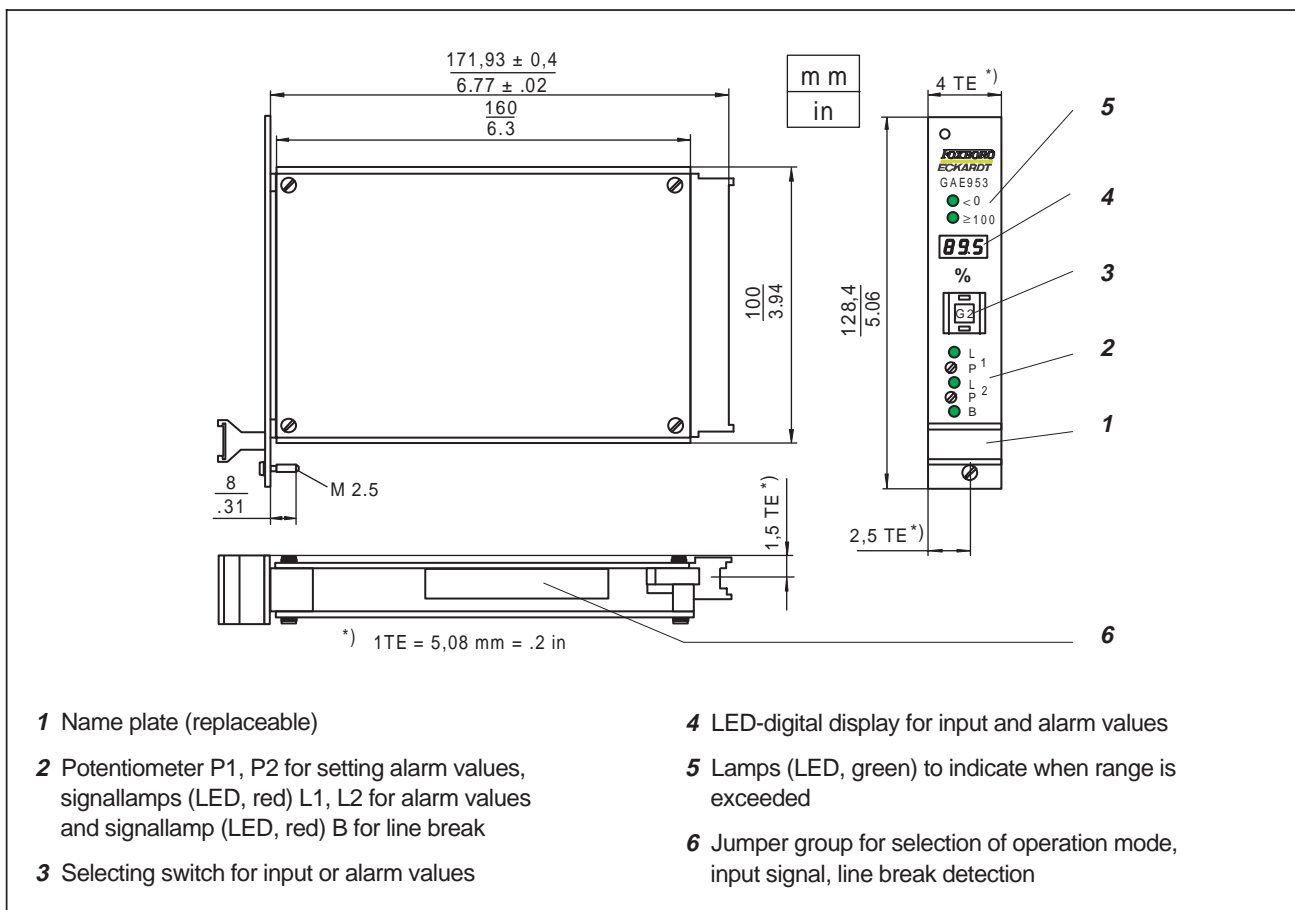
**Data Sheets 19"-Racks, Single Housings, Field Housings**

7 118 100	FG 118	Field housing for 19"-moduls
7 119 100	WG 119	Single housing for 19"-moduls
7 123 100/200	BGT 123	19"-Rack unit with female multipoint connectors/ ...with front connections
7 124 000	BGT 124	19"-Rack unit with backside terminal board
7 124 160	BGT 124N	19"-Rack unit with backside terminal board and with power supply unit

## CONNECTION DIAGRAM



## DIMENSIONS



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