

## Trip amplifier

### 2231



- AC/DC trip amplifier
- 2 adjustable alarm limits
- Galvanically isolated 3.75 kVAC
- Front-programmable
- 3-digit LED display
- 24 VDC or universal supply



#### Advanced features

- The front-operated push buttons are used for programming the different standard functions.
- A password can prevent access for changing parameters.

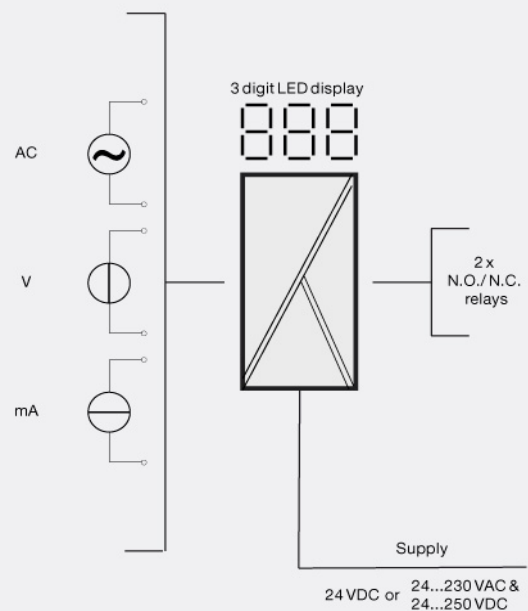
#### Application

- Alarm detector in connection with measurement of AC/DC current or voltage signals.
- The unit is used where accurate setpoint setting and different alarm functions are required.
- The unit can be used as a single or dual trip amplifier.
- Used in applications where programmable parameters such as hysteresis, setpoint, reset, active relay for increasing or decreasing signal, delay and input signal need to be set.

#### Technical characteristics

- 3-digit display showing the input signal in %.
- Two LED indicating relay status.
- 3 pushbuttons for programming.
- Standard DC current input signals in the range 0...20 mA.
- DC voltage signals in the range 0...250 VDC.
- AC current signals up to 1 A.
- True RMS measurement of AC voltage signals in the range 0...250 VAC.
- Mounting for a standard 11-pole socket which can be adapted for DIN rail or plate use with PR's 7023 adaptor and 7024 mounting keying.

#### Applications



**Order:**

Type	Supply
2231	24 VDC : D 24...230 VAC / : P 24...250 VDC

**Environmental Conditions**

Operating temperature.....	-20°C to +60°C
Calibration temperature.....	20...28°C
Relative humidity.....	< 95% RH (non-cond.)
Protection degree.....	IP50

**Mechanical specifications**

Dimensions (HxWxD).....	80.5 x 35.5 x 84.5 mm (D is without pins)
Weight DC / universally supplied.....	125 g / 175 g

**Common specifications****Supply**

Supply voltage.....	19.2...28.8 VDC
Supply voltage, universal.....	21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Internal power dissipation.....	1.5 W (2231D)
Internal power dissipation.....	2 W (2231P)

**Isolation voltage**

Isolation voltage, test / working.....	3.75 kVAC / 250 VAC
PELV/SELV.....	IEC 61140

**Response time**

Response time (programmable).....	0.25...60 s (DC)
Response time (programmable).....	0.75...60 s (AC)
Updating time.....	100 ms
Accuracy.....	Better than 0.1% of sel. range
Signal dynamics, input.....	16 bit
Effect of supply voltage change.....	< ±0.002% of span / %V
Temperature coefficient.....	< ±0.01% of span /°C (DC signals)
Temperature coefficient.....	< ±0.02% of span /°C (AC signals)
Linearity error.....	< 0.1% of span
Linearity error.....	< ±0.35% of span 50...1000 Hz (AC sine wave signals)
EMC immunity influence.....	< ±0.5%

**Input specifications****Common input specifications**

Max. offset.....	50% of selected max. value
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**Current input**

Measurement range.....	0...20 mA
Min. measurement range (span).....	10 mA
Input resistance.....	50 Ω

**AC current input**

Measurement range.....	0...1 ARMS
Min. measurement range (span).....	0.5 ARMS
Input resistance.....	1 Ω / 2 W

**Voltage input**

Measurement range.....	0...250 VDC
Min. measurement range (span).....	0.5 VDC
Input resistance.....	Nom. 5 MΩ

**AC voltage input**

AC voltage input.....	0...250 VRMS
Min. measurement range (span).....	0.5 VRMS
Input resistance.....	Nom. 5 MΩ

**Output specifications****Relay output**

Hysteresis.....	0...99.9% of span
ON and OFF delay.....	0.0...99.9 s
Max. voltage.....	250 VRMS
Max. current.....	2 AAC
Max. AC power.....	500 VA
Max. load at 24 VDC.....	1 A

**Common output specifications**

Updating time.....	100 ms
Relay outputs: Setpoint setting.....	0...99.9% of span
of span.....	= of the presently selected range

**Observed authority requirements**

EMC.....	2014/30/EU
LVD.....	2014/35/EU
RoHS.....	2011/65/EU
EAC.....	TR-CU 020/2011

**Approvals**

DNV Marine.....	TAA0000101
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