



# MK231A

## Features

- Microprocessor based numerical relay
- Current measurement based on fundamental frequency
- Low-set earth-fault
- High-set earth-fault
- Local display of measured and set values
- Definite time for low-set and high-set
- Non-volatile fault value recording
- Programmable relay outputs
- Complies with IEC 60255-26 standard

## Technical Data

### RATINGS

Rated current ( $I_n$ )	: 5 A
Rated frequency	: 50 or 60 Hz
Burden	: < 0.3 VA at $I_n$
Thermal withstand	: 4 x $I_n$ continuous

### AUXILIARY SUPPLY

Model MK231A-240A (6)	: 198 ~ 265 V AC
Model MK231A-110A (6)	: 94 ~ 127 V AC
Supply frequency	: 50 or 60 Hz
VA rating	: 3 VA typical

### SETTING RANGES

Low-set ( $I >$ )	: 0.1 A to 5.0 A, step 0.05 A / 2% to 100%, step 1%
Low-set definite time ( $t >$ )	: 0.05 to 99 sec, step 0.01 (0.05 to 1.0) / 0.1 (1.1 to 99)
High-set ( $I >>$ )	: 0.1 A to 50 A or disable, step 0.1 A / 2% to 1000%, step 2%
High-set delay time ( $t >>$ )	: 0.05 sec to 2.5 sec, step 0.01

### ACCURACY

Protection thresholds	: $\pm 5\%$
Time delay	: $\pm 5\%$ with a minimum of 50 ms

### CONTACTS (R1 & R2)

Contact arrangement	: Change-over
Contact rating	: 5 A, 250 V AC ( $\cos\phi = 1$ )
Contact material	: Silver alloy
Expected electrical life	: 100,000 operations at rated current
Expected mechanical life	: $5 \times 10^6$ operations

### INDICATORS

Auxiliary supply	: Green indicator
Pick-up	: Red indicator
Trip	: 7-segment display and red indicators

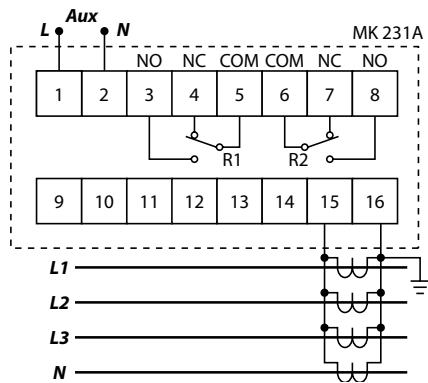
### MECHANICAL

Mounting	: Panel mounting
Front panel	: Standard DIN 96 mm x 96 mm
Approximate weight	: 0.6 kg

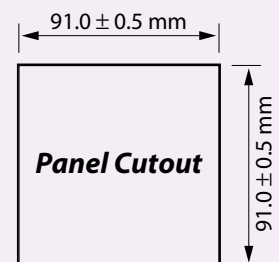
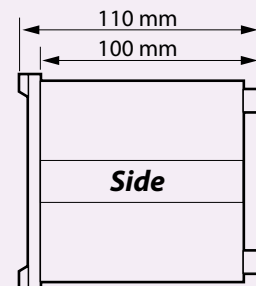
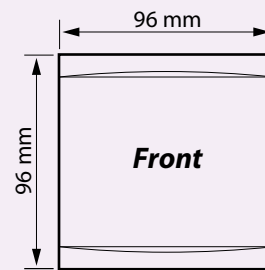
### ENVIRONMENTAL CONDITIONS

Temperature	: $-5^\circ\text{C}$ to $+55^\circ\text{C}$
Humidity	: 56 days at 93% RH and $40^\circ\text{C}$ non-condensing

**TYPICAL APPLICATION DIAGRAM**



**CASE DIMENSIONS**



**Ordering Information**

MODEL	DESCRIPTION
MK231A - 240A	For 50 Hz system, auxiliary voltage 198 ~ 265 V AC
MK231A - 110A	For 50 Hz system, auxiliary voltage 94 ~ 127 V AC
MK231A - 240A6	For 60 Hz system, auxiliary voltage 198 ~ 265 V AC
MK231A - 110A6	For 60 Hz system, auxiliary voltage 94 ~ 127 V AC