



# MU2300

## Features

- Multifunction numerical voltage protection relay
- Low-set undervoltage stage (U<) with definite-time or inverse-time characteristic
- High-set undervoltage stage (U<<) with definite-time
- Low-set overvoltage stage (U>) with definite-time or inverse-time characteristic
- High-set overvoltage stage (U>>) with definite-time
- Negative sequence overvoltage protection (U<sub>2</sub>>) with definite-time or inverse-time characteristic
- Neutral displacement / residual overvoltage protection (U<sub>0</sub>>) with definite-time or inverse-time characteristic
- Can be used in single-phase or three-phase operation
- Multi-function isolated digital input with wide input voltage range
- Fault record and event code recording
- Five programmable voltage-free output contacts
- Isolated RS485 Modbus - RTU communication
- ANSI Code : 27, 47, 59, 60

## Introduction

The MU2300 is a microprocessor based numerical relay for voltage protection functions in electrical distribution network.

## Technical Data

### INPUTS

#### Measuring input:

Rated voltage input	: 57 ~ 130 V
Rated frequency	: 50 / 60 Hz

#### Rated auxiliary voltage:

Model MU2300-150D	: 24 ~ 150 V DC
Model MU2300-240AD	: 85 ~ 265 V AC
	110 ~ 340 V DC

#### Power consumption:

AC auxiliary voltage	: 6 ~ 10 VA typical
DC auxiliary voltage	: 5 ~ 9 W typical

#### Binary Input:

External binary input	: 85 ~ 265 V AC/DC
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### COMMUNICATION

RS485 Modbus - RTU

### OUTPUT CONTACTS

#### 5 programmable contacts + 1 IRF contact:

Rated voltage	: 250 V AC / DC
Continuous carry	: 5 A
Make and carry for 0.2 s	: 30 A
Expected electrical life	: 100,000 operations at rated current
Expected mechanical life	: 5 x 10 <sup>6</sup> operations

### UNDER-VOLTAGE ELEMENT

Low set setting U<	: 5 - 130 V
High set setting U<<	: 5 - 130 V
Time multiplier, TMS	: 0.5 - 100
Low set Definite time tU<	: 0 - 600 s
High set Definite time tU<<	: 0 - 600 s

### OVER-VOLTAGE ELEMENT

Low set setting U>	: 5 - 200 V
High set setting U>>	: 5 - 260 V
Time multiplier, TMS	: 0.5 - 100
Low set definite time tU>	: 0 - 600 s
High set definite time tU>>	: 0 - 600 s

### NEGATIVE SEQUENCE OVER-VOLTAGE ELEMENT

Negative sequence over-voltage setting, U <sub>2</sub> >	: 5 - 200 V
Time multiplier, TMS	: 0.5 - 100
Negative sequence over-voltage definite time tU <sub>2</sub> >	: 0 - 600 s

### RESIDUAL OVER-VOLTAGE ELEMENT

Residual over-voltage setting, U <sub>0</sub> >	: 0.5 - 130 V
Time multiplier, TMS	: 0.5 - 100
Residual over-voltage definite time tU <sub>0</sub> >	: 0 - 600 s

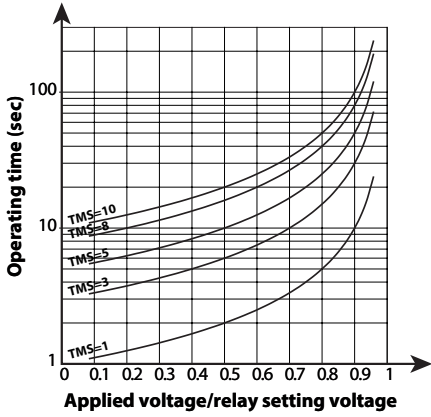
### ENVIRONMENTAL CONDITIONS

Temperature	: -5°C to +55°C
Humidity	: 56 days at 93% RH and 40°C non-condensing

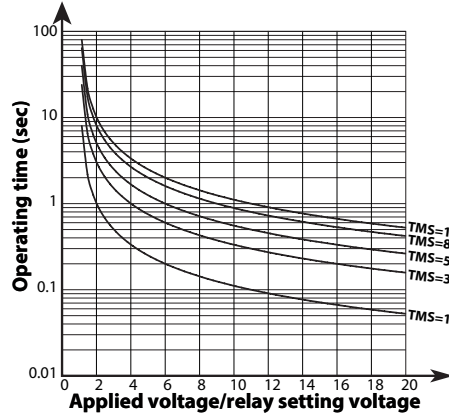
### MECHANICAL

Mounting	: Panel mounting
Dimension (mm)	: 142(w) x 165(h) x 198(d)
Enclosure protection	: IP54 at the panel
Approximate weight	: 2.7 kg

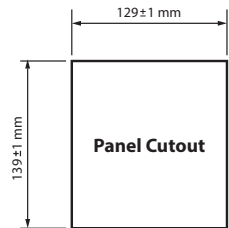
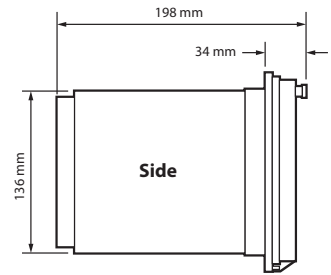
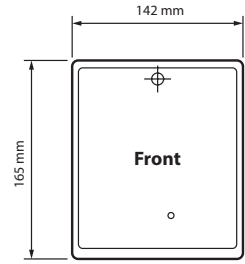
### Undervoltage Characteristic



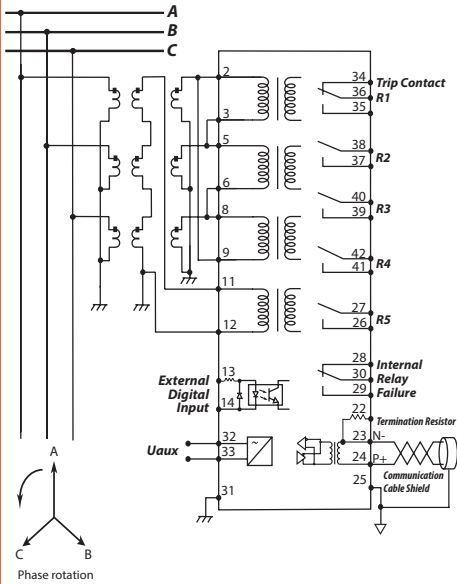
### Overvoltage Characteristic



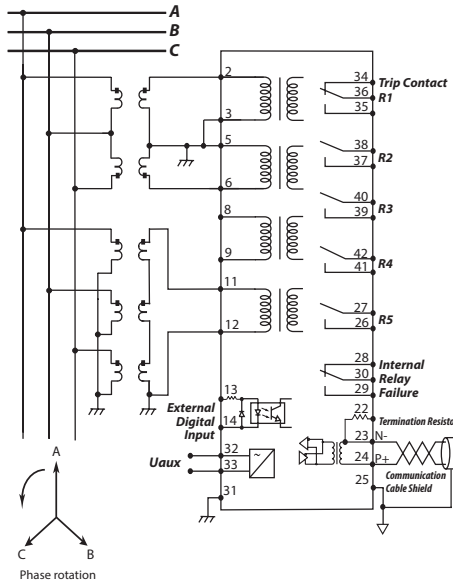
### Case Dimensions



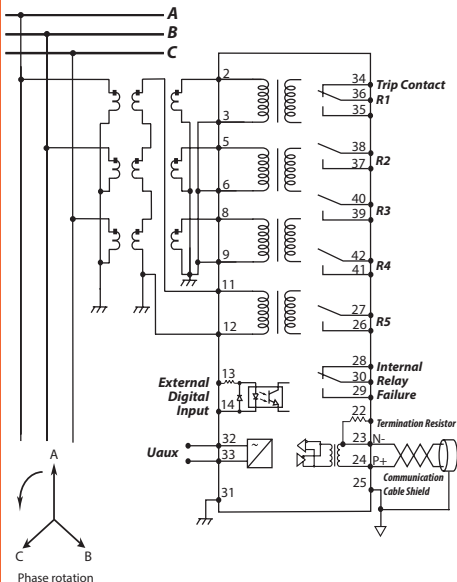
### Typical Application Diagrams



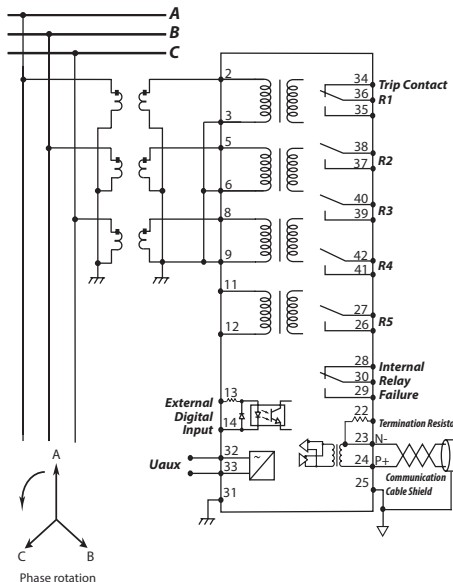
3V<sub>p-p</sub> + V<sub>residual</sub> connection



2V<sub>p-p</sub> + V<sub>residual</sub> connection



3V<sub>p-n</sub> + V<sub>residual</sub> connection



3V<sub>p-n</sub> connection

### Ordering Information

MODEL	DESCRIPTION
MU2300-150D	For 50 / 60 Hz system, auxiliary voltage 24 ~ 150 V DC
MU2300-240AD	For 50 / 60 Hz system, auxiliary voltage 85 ~ 265 V AC or 110~340 V DC