

# Ziegler

Redefine Innovative Metering

## AC Current Relay

Protector Trip Relay Series

ANSI No. 37/51



© Ziegler Instruments Order No. AC Current Relay Data sheet-E.1.R0-920826-46-2013-EN



### Models available

Function / System	Product Type
Single Phase Under Current:	252-PAU
Single Phase Over Current:	252-PAO
Single Phase Combined Under & Over Current (2 relays, 2 setpoints)	253-PAD
3Phase 3 or 4 wire Under Current	253-PAV
3 Phase 3 or 4 wire Over Current	253-PAP

### Application

The Protector can be used to protect for:-

- Over current
- Under current
- Load detection
- Monitoring of electric heating systems
- General application - for any electrical load, monitoring for under load and over load conditions
- Motors - monitoring for conditions such as overload, locked rotor and short circuit.
- Gensets - to ensure load current is within generator capacity.
- Machinery - detecting broken drive belt on machinery.

### Features

- Adjustable setpoint
- Adjustable time delay
- Internal differential (factory Settable)
- LED trip indication
- 2 pole relay contacts
- Energize/De-energize function swapping
- Auto Reset

### Introduction

Current Protectors provide continuous surveillance of the monitored circuit. When the measured current moves outside the set point limit, the relay will operate. An adjustable time delay is provided to prevent the relay from tripping for a predetermined period to prevent nuisance tripping. An illuminated LED indicates when the relay is energised. For 3 phase systems, the sequence of connection is not important.

### Specifications

#### Input

Nominal current	: 1A or 5A from C.T. secondary 2,3,4,6,8 or 10A (min 0.2A)
Frequency	: 50/60/400 Hz
Burden per phase	: 0.5VA per phase
Overloads	: 2 x rating continuously 10 x rating for 10 seconds acc. to Bs6253

#### Set Point

Repeatability	: >0.5% of full span
Differential	: Present at 1% (factory setting) other values 1 to 10% (available on request)

Range	: 40 to 120% of nominal current
Time Delay	: Up to 10s adjustable. Max 30s.

#### Auxiliary Supply

A.C.: 50/60Hz	: 120, 230, 240, 400 or 415 +/-20% (57 to 480V)
D.C.	: 12, 24, 48, 110 or 120V +/- 15% maximum ripple 15%
Burden	: 4VA maximum

#### Output relay

Type	: D.P. Changeover
Rating A.C.	: 24V, 5A non - inductive
D.C.	: 24V 5A resistive
Operations	: 0.2 million at the above loads
Reset	: Automatic

#### Other Specifications

Operating temperature	: 0°C to +60°C
Storage temperature	: -20°C to +70°C
Temp. co-efficient	: 0.05% per°C
Interference immunity	: Electrical stress surge withstand and non function to ANS/IEEE C 37 90a

Enclosure style	: DIN-rail with wall mounting facility
Material	: Flame retardant polycarbonate / ABC

Enclosure integrity	: IP 50
Model 252 dimensions	: 55mm (2.2") wide x 70mm (2.8") high x 112mm (4.4") deep

Model 253 dimensions	: 75mm (2.9") wide x 70mm (2.8") high x 112mm (4.4") deep
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Weight	: 252 case approx 0.4kg 253 case approx 0.6kg
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### Product Function

#### 1. Over Current models :

When the monitored Current exceeds the setpoint, the relay will energise and the red LED will illuminate to indicate the trip condition. The relay will automatically reset once the monitored current falls below the setpoint minus the differential. When reset, the LED will extinguish and the relay de-energises.

#### 2. Under Current models :

When the monitored Current falls below the setpoint, the relay will de-energise and the red LED will extinguish to indicate the trip condition. The relay will automatically reset once the monitored current rises above the setpoint plus the differential. When reset, the LED will illuminate and the relay energises.

#### 3. On request, any product can be manufactured with the energize / de - energize functions swapped.

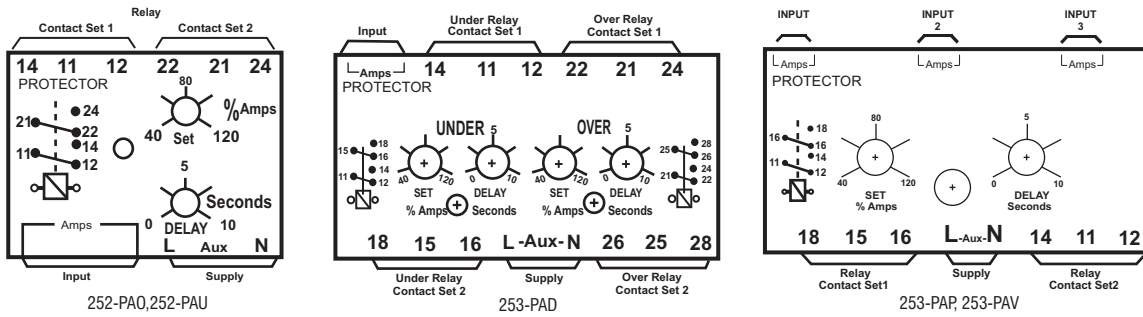
The combined under / over trip unit is supplied with two independent high and low set point relays.

#### 4. Single-Phase & Three Phase Products are available. Three-Phase products monitor the current level for each phase and are not phase sequence sensitive.

### Options

- Adjustment ranges – different adjustment ranges are possible for the set point and time delay controls.
- Relay operation – standard models are fail safe, but the relays can be customised to energise or de-energise on trip.

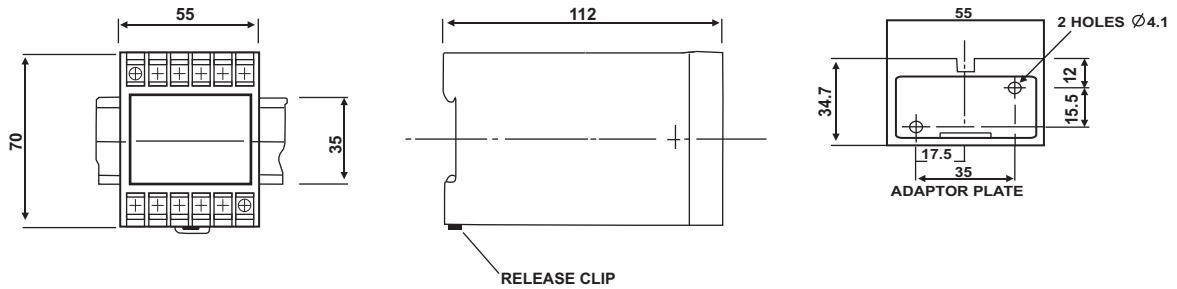
### Connection diagrams



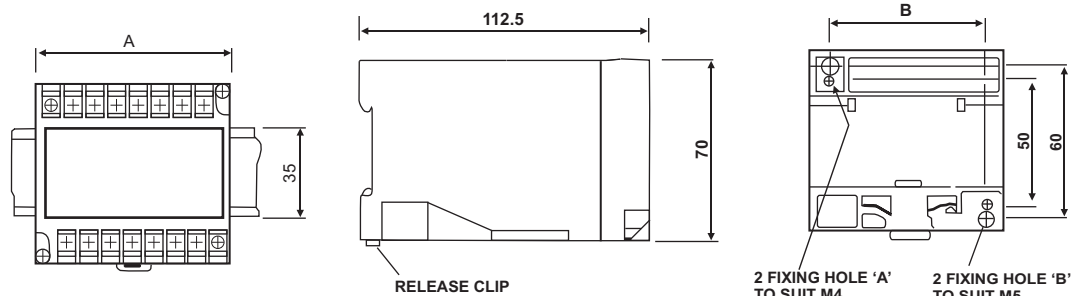
**Note :**  
for 3 phase system the sequence of connection is not important

### Dimensions

#### Model 252



#### Model 253



Model	A	B
253	75	60

### Ordering Information

**Please quote :**

1. Product Type.
2. Function i.e. Under or Over.
3. Relays normally de - energise on under trip and energise on over trip.
4. Please specify standard or non standard trip. An energised relay is indicated by a "Lit" red LED. Setpoint can be factory adjusted to your requirements.
5. System Voltage and/or Current where applicable.
6. System Frequency.
7. Auxiliary Voltage where required.
8. Preset Differential where required.
9. Time delay where applicable.

## ZIEGLER INSTRUMENTS

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