Type: Z115

Single Phase, Under and Over Voltage Relay plus Time Delay

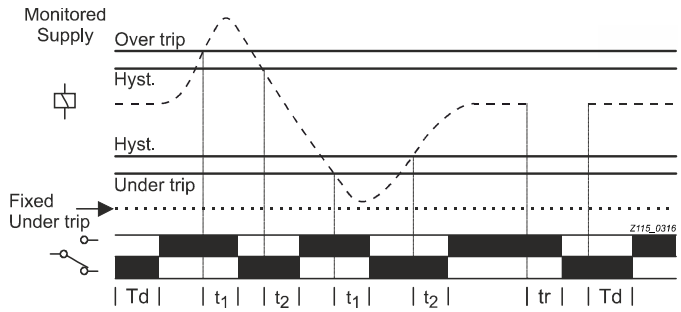
Terminal Protection to IP20

Dims: to DIN 43880 W. 17.5mm

- ❑ ***NEW* 17.5mm DIN rail housing**
- ❑ **Microprocessor based**
- ❑ **True R.M.S. monitoring**
- ❑ **Monitors own supply**
- ❑ **Detects if the supply exceeds the set Under or Over voltage trip levels**
- ❑ **Adjustment for Under and Over voltage trip levels**
- ❑ **Adjustment for Time delay (Delay to relay re-energising)**
- ❑ **Single Phase operation**
- ❑ **1 x SPDT relay output 8A**
- ❑ **Green LED indication for supply status**
- ❑ **Red LED indication for relay status**

FUNCTION DIAGRAM

Under and Over Voltage Monitoring



INSTALLATION AND SETTING

Installation work must be carried out by qualified personnel.

- BEFORE INSTALLATION, ISOLATE THE SUPPLY.
- Connect the unit as required. The Connection Diagram below shows a typical installation whereby the supply to a load is being monitored by the Phase monitoring relay. If a fault should occur (i.e. fuse blowing), the relay will de-energise and assuming control of the external Contactor, de-energise the Contactor as well.

Applying power.

- Set the "Over %" ❸ adjustment to maximum and the "Under %" ❺ adjustment to minimum. Set the "Delay (t_2)" ❹ adjustment to minimum.
- Apply power and the green "Power supply" ❶ LED will illuminate. After a short delay (<1s), the red "Relay" ❷ LED will illuminate and relay will energise. Contacts 15 and 18 will close. Refer to the troubleshooting table if the unit fails to operate correctly.

Setting the unit.

- Set the "Over %" and the "Under %" adjustments to give the required monitoring range.
- If large supply variations are anticipated, the adjustments should be set further from the nominal voltage.
- Set the adjustment "Delay (t_2)" as required to delay the relay from re-energising when the voltage returns from either an under voltage or over voltage trip condition.

Note: If the supply voltage increases above the maximum "Over %" trip setting by approx. 5% or more, the relay will de-energise immediately.

Troubleshooting.

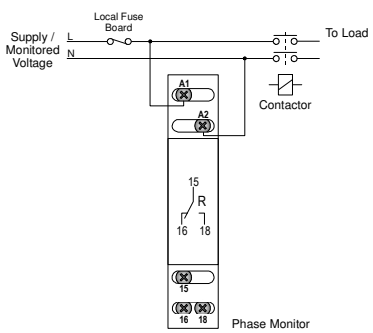
The table below shows the status of the unit during various conditions.

Example	Green LED	Red LED	Relay
No supply	Off	Off	De-energised
Under or Over Voltage condition (after delay "t_1")	On	Off	De-energised
Return from Under or Over voltage condition	On	Flashing	De-energised (for delay "t_2")
Supply below 70% of Un (fixed under trip level [2])	On	Off	De-energised

TECHNICAL SPECIFICATION

Supply/monitoring voltage			
Un **(A1, A2):**	230V AC		
Frequency range:	48 – 63Hz		
Supply variation:	70 – 130% Un		
Overvoltage category:	III (IEC 60664)		
Rated impulse withstand voltage:	4kV (1.2/50µS) IEC 60664		
Power consumption (max.):	8VA		
Monitoring mode:	Under and Over voltage		
Trip levels:			
Under [2]:	70% of Un (fixed) ± 2%		
Under:	75 – 95% of Un		
Over:	105 – 125% of Un		
Measuring ranges:	Under [2]	Under	Over
230V:	161V	173 – 218V	242 – 288V
Hysteresis:	≈ 2% of trip level (factory set)		
Setting accuracy:	± 3%		
Repeat accuracy:	± 0.5% at constant conditions		
Immunity from micro power cuts:	<50ms		
Response time:	≈ 50ms		
Power on delay (Td):	≈ 1s (worst case = Td x 2)		
Delay to relay de-energising (tr):	≈ 100ms (worst case = tr x 2)		
Delay to relay de-energising (t_1):	≈ 750ms		
Delay to relay re-energising (t_2):	0.2 – 10s (± 5%)		
	Note: actual delay (t_2) = adjustable delay + response time		
Power on indication:	Green LED		
Relay status indication:	Red LED		
Ambient temperature:	-20 to +60°C		
Relative humidity:	+95%		
Output **(15, 16, 18)**:	SPDT relay		
Output rating:	AC1	250V 8A (2000VA)	
	AC15	250V 5A (no), 3A (nc)	
	DC1	25V 8A (200W)	
Electrical life:	≥ 150,000 ops at rated load		
Dielectric voltage:	2kV AC (rms) IEC 60947-1		
Rated impulse withstand voltage:	4kV (1.2/50µS) IEC 60664		
Housing:	Orange flame retardant UL94		
Weight:	75g		
Mounting option:	On to 35mm symmetric DIN rail to BS EN 60715 or direct surface mounting via 2 x M3.5 or 4BA screws using the black clips provided on the rear of the unit.		
Terminal conductor size	≤ 2 x 2.5mm² solid or stranded		
Approvals:	Conforms to IEC. CE, and RoHS Compliant. EMC: Immunity: EN 61000-6-2 (EN 61000-4-3 15V/m 80MHz - 2.7GHz) Emissions: EN 61000-6-4		

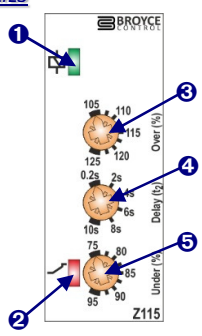
CONNECTION DIAGRAM



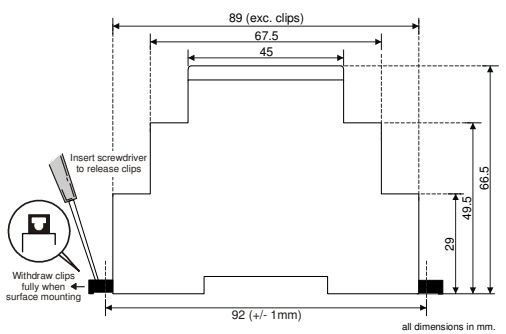
SETTING DETAILS

1. Power supply status (Green) LED
2. Relay output / Timing status (Red) LED
3. "Over %" trip level adjustment^
4. "Delay (t_2)" to relay re-energising adjustment
5. "Under %" trip level adjustment^

^scaled as % of the nominal voltage "Un"



DIMENSIONS



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