

## APPLICATION

To monitor a 3 phase supply and provide protection against incorrect phase sequence or loss of one or more phases.

## DESCRIPTION

A DIN rail electronic measuring relay to monitor the phase voltages in a 3 phase system and initiate contacts in the event of incorrect phase sequence or loss of phase. No auxiliary supply is required.



Model M169

## PRINCIPLE OF OPERATION

The three phases are connected to terminals L1, L2 and L3. When the contacts are in position 11-14/21-24 the circuit is healthy. When the contacts are in position 11-12/21-22 the circuit is unhealthy.

Phase Failure/Sequence Detection		
Model	Article No.	Description
M169 x 01	07200300	Standard

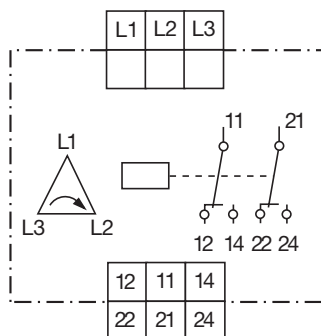
## DUTY FUNCTION

The relay energises with the rated voltage connected in all three phases and the correct L1-L2-L3 phase sequence. The contacts change to 11-14/21-24 the green LED is on. Should an incorrect phase sequence occur or a phase fail then the relay will de-energise. The contacts revert to 11-12/21-22 and the green LED is off.

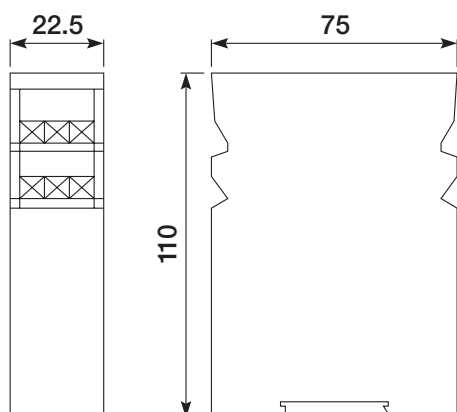
## SPECIAL NOTE

This relay will not respond to phase loss if voltage feedback is the failed phase exceeds approximately 70% of nominal setting. In situations where back EMF may exceed this figure we recommend using the Model PNDA or M170x1.

## CONNECTION DETAILS



## DIMENSIONS



## SPECIFICATIONS

Nominal voltage range	380 to 440V ac
	50/60Hz $\pm 5\%$
Nominal power consumption	9VA/2W
Temperature range	-5 to +60°C
Contacts	2 Changeover
Response Time	Actuation approx 250ms
	Release approx 500ms
Reset Time	< 1s
Switching Capacity	Maximum Switching voltage
	250V ac
	Maximum Continuous Current
	3A
Switching Power	220VA, 50W
Mechanical Service Life	20x10 <sup>6</sup> operations
Rated Insulation Voltage	250V
Test Voltage	2kV 50Hz/1 min

### Information Required With Order

• Model reference • System voltage • Article number  
 Example: Phase Failure Relay Type M169 x 01, 400Vac,  
 Article No. 07200300