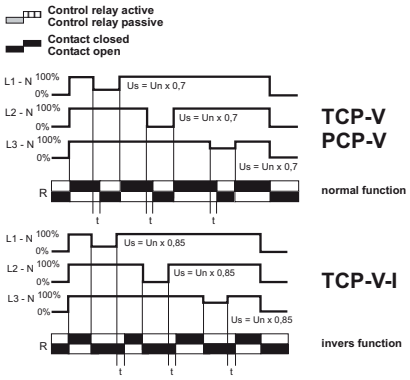
TCP-V/PCP-V

overview

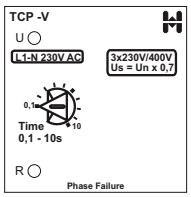
- **detects phase failure or reduction of phase voltage**
- **DPCO output max. 6A**
- **normal or inverted function available**
- **constant measuring**
  - **TCP-V $U_s=U_n$ x 0.7**
  - **PCP-V $U_s=U_n$ x 0.7**
  - **TCP-V-I $U_s=U_n$ x 0.85**
- **will not trip with regenerated voltage present**
- **requires neutral connection (3-phase 4-wire)**
- **adjustable reaction timer 0.1 - 10s**
- **LED indicators for power supply, relay and reaction timer**
- **45mm DIN rail mount housing or 11pin plug in housing**

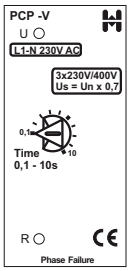


Function

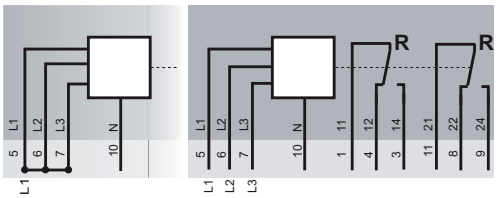


Phase failure relay 3-phase and neutral
The TCP-V is a phase failure relay for monitoring 4-wire, 3-phase systems for phase failure or phase voltage reduction down to Vn x 0.7 or less. When the control relay detects all 3 phases within the correct range, the output relay **R** energises.
At a loss of one phase (> 30% under nominal voltage) the reaction time **t** starts. At the end of time **t** the output relay **R** de-energises. Time **t** is adjustable between 0.1s and 10s, and is used to time out short transients which would otherwise cause nuisance tripping.
The relay energises again, when phase L1, L2 and L3 return to the correct range.
The TCP-V may be used for monitoring a 1-phase system, in which case L1, L2 & L3 must be connected together (see below).





1-phase connection **3-phase connection**



specification

supply voltage variation	nominal voltage +10% / -20%
frequency range	48 - 63 Hz
duty cycle	100%
reaction timer	0,1 - 10s
reset time	< 100ms
output relay specification	max. 6A 230V~
Ue/Ie AC-15	120V/4A 240V/3A
Ue/Ie DC-13	24V/2A
expected life time	DPCO SPCO
mechanical	2 x 10^6 resp. 1 x 10^7 operations
electrical	1 x 10^5 resp. 1 x 10^5 operations
screws	pozidrive 1
screw tightening torque	0,6..0,8Nm
operating conditions	-20 to +60°C non condensing

* EN 60947-5-1 VDE 0435

ordering information

part no	supply	output	sup. galv. iso*	cULus	housing types
TCP-V 3x440Vac	3x 250/440V~ 2,5VA	DPCO	yes	no	C
TCP-V 3x400Vac	3x 230/400V~ 2,5VA	DPCO	yes	yes	C
PCP-V 3x400Vac	3x 230/400V~ 2,5VA	DPCO	yes	no	G
TCP-V 3x230Vac	3x 115/230V~ 2,5VA	DPCO	yes	yes	C
TCP-V-I 3x440Vac	3x 250/440V~ 2,5VA	DPCO	yes	no	C
TCP-V-I 3x400Vac	3x 230/400V~ 2,5VA	DPCO	yes	no	C
TCP-V-I 3x230Vac	3x 115/230V~ 2,5VA	DPCO	yes	no	C

* The measurement input is galvanically isolated from the power supply

3 phase monitoring relay (phase to neutral measurement)