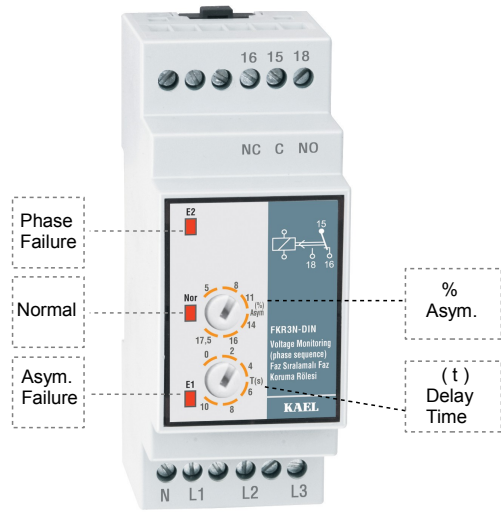


FKR3N-DIN

PHASE FAILURE and PHASE SEQUENCE DEVICE

- ▶ Asymmetry % Adjustment (Phase-phase : % 5 – 17,5)
- ▶ Delay Time Adjustment (1 – 10 sec.)

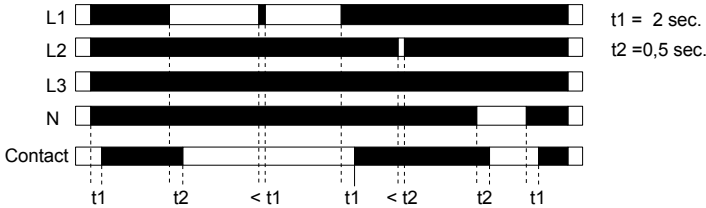


General:

In three phase systems, when phase sequence is correct and there is no asymmetry between phases, **normal** LED is turned on and relay contact is energised. Protection functions of FKR3N-DIN are given below.

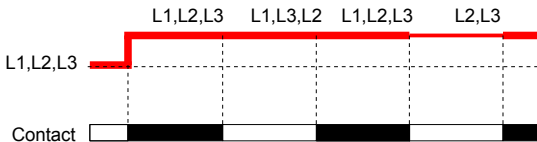
Phase Failure:

In case of absence of at least one phase, relay immediately de-energises its contact and **E2** LED is turned on.



Phase Sequence:

In case of wrong phase order, both of **E1** and **E2** LEDs are turned on at the same time and relay does not energise its contact. If phase order is corrected, both of **E1** and **E2** LEDs are turned off and relay energises its contact.



Voltage Asymmetry (asym. %): (5 -17,5 %)

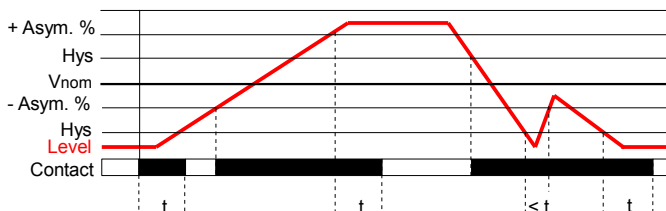
Phase to phase asymmetry is adjusted using the adjustment knob in the range of (5-17.5%). If asymmetry exceeds adjusted value, LED **E1** starts to flash and at the end of delay time (1-10s) **E1** LED is turned on continuously and relay contact is de-energised. To return normal state, voltage asymmetry value must be under 20% of adjusted value (hysteresis). If phase – phase asymmetry value returns to normal region in a shorter time then adjusted delay time, relay does not deenergise its contact and LED **E1** stops flashing.

Example: Let's say that asymmetry value is set to 15% for a 3 x 380VAC. In this case, relay contact is deenergised at $(380 - (380 \times 0.15)) = 323$ V.

Re-energising the contact is performed at $323 + (380 \times 15\% \times 20\%) = 334$ V. (20% is the hysteresis).

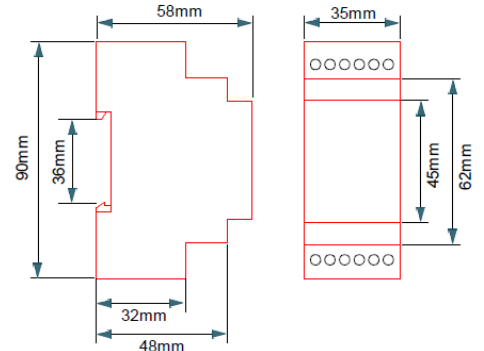
$$\text{Asym. \%} = \frac{(V_{\max} - V_{\min})}{380} \times 100$$

$$\text{Hys} = 380 \times (\text{Asym. \%}) \times (20 \%)$$



TECHNICAL DATA:

| | |
|-----------------------------|--|
| Rated Voltage | : 3 Phase and 1 Neutral (VL-N; 220 Vac and VL-L; 380Vac) |
| Operating Range | : (0,8 – 1,2) x Un (Un nominal voltage) |
| Frequency | : 50/60 Hz. |
| Delay Time | : 1 – 10 sec. |
| Contact current | : Max.5 A/ 240 Vac |
| Power Consumption | : < 8 VA |
| Device Protection Class | : IP20 |
| Connector Protection Class: | IP00 |
| Ambient Temperature | : - 5 °C...+ 50 °C |
| Connection Type | : To connection rail in electrical panel |
| Dimensions | : 35x90x58 mm |



Connection Scheme

