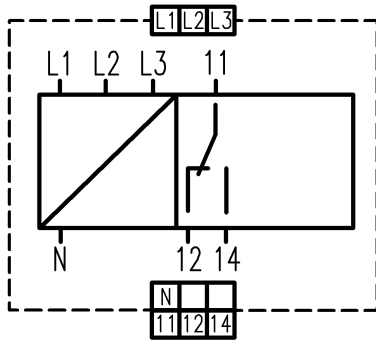


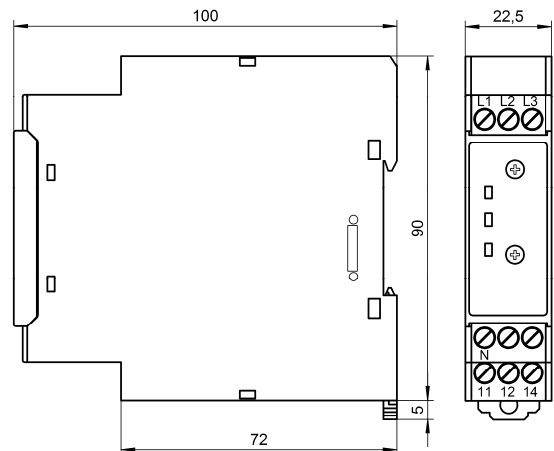


flare CONTROL P3-LTN
Three-phase monitoring relays
81.030.0021.1

- 3-phase monitoring relays
- 3- or 4-wire monitoring
- Phase loss detection
- Monitoring of phase sequence
- Monitoring of unbalanced phase voltage
- Nominal voltage selectable
- Monitoring voltage used as power supply
- Output: relay switching contact 5 A
- Mounting width 22.5 mm



Block diagram



Dimensional diagram

Technical Data

flare CONTROL P3-LTN	Order no. 81.030.0021.1
Function (see Fig. 4 Phase loss/Phase sequence, Fig. 3 Voltage asymmetry)	- phase loss detection - phase sequence monitoring (rotation field) - monitoring of unbalanced phase voltage
Operating modes	
Operating modes (selectable via DIP switch)	3 phases / 3 wires and 3 phases / 4 wires
Asymmetry (ASY.)	Asymmetry rate 2 ... 22 % Asymmetry value Nominal voltage x asymmetry rate
Reset (Hysteresis, HYS.)	Hysteresis 5% of response val. Reset type automatic reset
Response time ('T')	Asymmetry 0.1 ... 30 s phase sequence and phase loss 0.1 s max.
Power-on lock time	1 or 5 sec
Setting accuracy	± 0,5 % of full scale
Time error	± 50 ms
Input / Measuring circuit	
3 phass / 3 wires	380; 400; 415; 480 V AC
3 phases / 4 wires	220; 230; 240; 277 V AC
Voltage range	85 ... 110 % of nominal voltage
Input frequency	50/60 Hz

Technical Data

flare CONTROL P3-LTN		Order no. 81.030.0021.1
Output / Switching contact		
Contacts		1 changeover contact (SPDT)
Max. current	Ohmic load	5 A, 250 V AC / 30 V DC
	Inductive load	1 A, 250 V AC (cos phi = 0.4) / 30 V DC(L/R = 7 ms)
Minimum load		10 mA at 5 V DC
Contact voltage		250 V AC
Max. contact current		5 A
Switching capacity		1,250 VA max.
Contact material		AgNi
Mechanical life cycle		10 x 10 ⁶ cycles
Electrical life cycle		50.000 cycles
Functional display		
(see Fig. 1 Display and control elements)		
LED 'PWR' (green) (Fig. 1 - 1)		lit when power is supplied (module supplied via L1-L3)
LED 'RY' (yellow) (Fig. 1 - 2)		lit when relay is on
LED 'ALM' (red) (Fig. 1 - 3)		Lit at asymmetry, at phase loss or phase sequence error. Flashing during response time at phase asymmetry.
Insolation properties		
Insolation resistance input/output		20 MOhm (at 500 V)
Approvals and Safety standard		
Application/EMC		EN 60947-5-1
UL		cURus
Operation / Dimensions / Connection		
Operating temperature range		-20 ... +60 °C (no condensing or icing)
Storage temperature range		-25 ... +65 °C (no condensing or icing)
Humidity		25 - 85 %
Operating altitude		2,000 m AMSL max.
Dimensions (W x H x D)		22.5 x 95 x 100 mm
Weight		ca. 130 g
Housing material		PC and ABS plastic; UL94-V0
Installation		35 mm rail acc. EN 60715
Cooling		free convection
IP rating		Terminals: IP20
Terminal type		screw clamp
Connector cross section (min.)	solid/stranded	0.2 mm ² (AWG24)
Connector cross section (max.)	solid	4 mm ² (AWG10)
	stranded with ferrule	2.5 mm ² (AWG14)
Strip length		7...8 mm max.
Recommended torque		0.49 Nm max.
Terminal assignments		
(see also block diagram above)		
L1, L2, L3; N		monitoring / supply voltage (L1-L3)
11, 12, 14		switching output (relay changeover contacts)
Control elements		
(see Fig. 1 Display and control elements)		
Fig. 1 - 4 - 'ASY' - rotary potentiometer		Asymmetry rate (2 ... 22 %)
Fig. 1 - 5 - 'T' - rotary potentiometer		Response time to alarm (0,1 ... 30 s)
SW1 ... SW4 - DIP-switch		Power-on lock time; 3-/4-wire connection; nominal voltage
(see Fig. 2 DIP switches)		

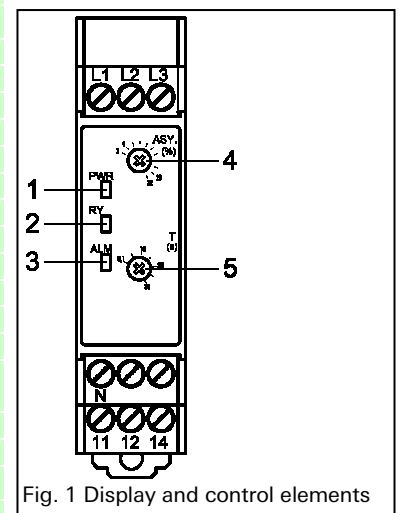


Fig. 1 Display and control elements

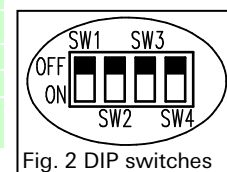


Fig. 2 DIP switches

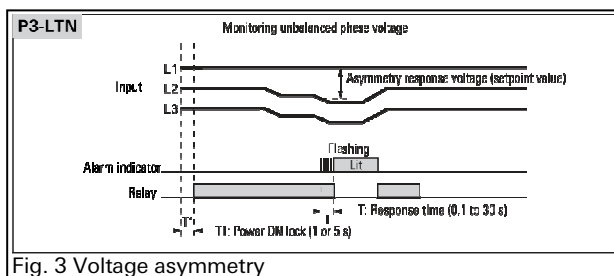


Fig. 3 Voltage asymmetry

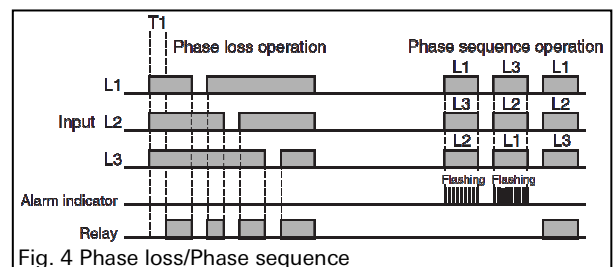


Fig. 4 Phase loss/Phase sequence