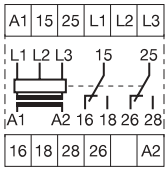
Phase unbalance relay ASN mecotron®

- Monitors three phase supply voltage for phase unbalance
- Phase failure, even in case of 95% phase regeneration
- Phase sequence
- Adjustable delay on operate from 0.1...10 s
- Adjustable switching threshold from 5...15 % unbalance
- 2 SPDT contacts
- 4 LEDs to indicate all operational states
- 3 three-phase voltage ranges:
  220 V, 400 V, 500 V
- Several supply voltage versions

Operation

The ASN monitors three phase supply voltages for phase unbalance, failure of one of the phases, and incorrect phase sequences. In case of a fault, the output relay will de-energize. Status of the fault will be indicated by one of the LEDs.
The output relay is energized as long as phases are balanced and phase sequence is correct (rotary switch right-handed polarized). It will de-energize as soon as unbalance exceeds the set threshold (adjustable between 5% and 15% unbalance).
A response time delay of 0.1 secs to 10 secs can be set on a potentiometer to prevent erroneous tripping of the relay during motor start.
Phase failure and phase sequence are indicated without delay.
With motors running on two phases, return voltage (of more than 95%) may be produced so that the output relay cannot de-energize despite failure of a phase.

- Approvals: UL, CSA, GL



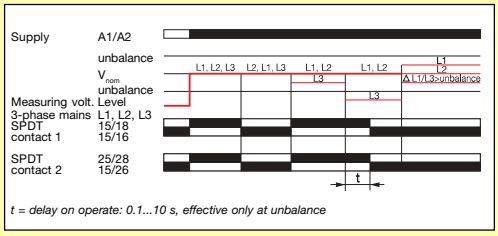
Supply voltage/ 50...60 Hz	Monitoring voltage (3-phase), special measuring ranges, frequencies and voltages on request P/N: 220...240 V/50 Hz	P/N: 220...240 V/60 Hz	P/N: 380...415 V/50 Hz	P/N: 380...415 V/60 Hz	P/N: 440 V/60 Hz	P/N: 480...500 V/50 Hz	P/N: 480...500 V/60 Hz	P/N: 600 V/60 Hz
110...130 V AC	2 450 320 02	--	2 450 320 05	--	--	2 450 320 07	--	--
220...240 V AC	2 450 321 02	2 450 421 02	2 450 321 05	--	--	2 450 321 07	--	--
380...415 V AC	2 450 322 02	--	2 450 322 05	2 450 422 05	--	2 450 322 07	--	--
440 V AC	--	--	--	--	2 450 423 06	--	--	--
480...500 V AC	--	--	--	--	--	--	2 450 424 07	--
500...550 V AC	--	--	--	2 450 322 07	--	2 450 932 01	--	--
600 V AC	--	--	--	--	--	--	--	2 450 426 08

Accessories	P/N:
Sealable transparent cover	3 440 005 01
Adapter for screw mounting	3 430 029 01

Technical data

Input circuit		
Supply voltage - power consumption	**A1-A2**	all voltage ranges -3 VA
Tolerance of supply voltage		-15 % ... +10 %
Supply voltage frequency		50...60 Hz
Duty time		100 %
Time circuit		message: unbalance error
Delay on operate time adjustable		0.1...10 s
Timing error within tolerance of supply voltage		≤ 0.5 %
Timing error within temperature range		≤ 0.06 % / °C
Measuring circuit		
Monitoring voltage Vnom.	**L1, L2, L3**	220...240 V AC 380...415 V AC 440 V AC 480...500 V AC
Frequency		50 Hz
Unbalance adjustable		5...15 %
Switching hysteresis (referred to set unbalance)		20 %
Measuring cycle max.		< 100 ms
Temperature error		≤ 0.06 % / °C
Error within tolerance of supply voltage		≤ 0.5 %
Display of operating status		
Supply voltage		V LED, green
Output relay energized		R LED, yellow
Unbalance		A LED, red
Phase failure and phase sequence error		P LED, red
Output circuit	**15-16/18, 25-26/28**	Relay, 2 SPDT contacts, closed-circuit principle
Rated voltage	VDE 0110, IEC 947-1	400 V
Rated switching voltage max.		400 V AC
Rated switching current	AC 12 (resistive)	5 A (at 230 V)
Rated switching current	AC 15 (inductive)	3 A (at 230 V)
Rated switching current	DC 12 (resistive)	5 A (at 24 V)
Rated switching current	DC 13 (inductive)	2.5 A (at 24 V)
Maximum mechanical life		30 x 10^6 operations
Maximum electrical life (acc. to AC 12 / 230 V / 5 A)		1 x 10^5 operations
Short-circuit proof, max. fuse rating		5 A / fast, operating class gL
General data		
Rated impulse withstand voltage Vimp		4 kV
Operating temperature		-25°C ... +65°C
Storage temperature		-40°C ... + 85°C
Mounting position		any
Mounting to DIN rail (EN 50022)		Snap-on mounting/Screw mounting by adapter
Cable size stranded with wire end ferrule		2 x 14 AWG (2 x 2.5 mm^2)
Weight		approx. 0.66 lb (300)
Dimensions (W x H x D)		45 x 78 x 101 mm

1 Function



t = delay on operate: 0.1...10 s, effective only at unbalance