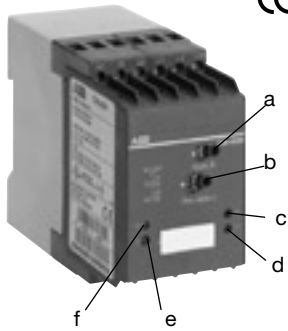


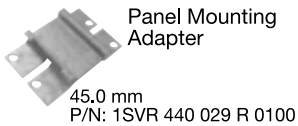
Phase Unbalance, Phase Loss Monitors CM-ASN DPDT Relay Output



- a Unbalance threshold
- b Timer adjustment
- c A: red LED - unbalanced
- d P: red LED - phase loss and phase sequence fault
- e U: green LED - supply voltage
- f R: yellow LED - relay status
- Phase loss, unbalanced voltage, phase reversal monitoring
- Adjustable trip-delay from 0.1...10 s
- Adjustable unbalance: 5...15 %
- 5 monitored three-phase voltages
- DPDT contacts
- LEDs for status indication

Approvals: c LISTED

Accessories



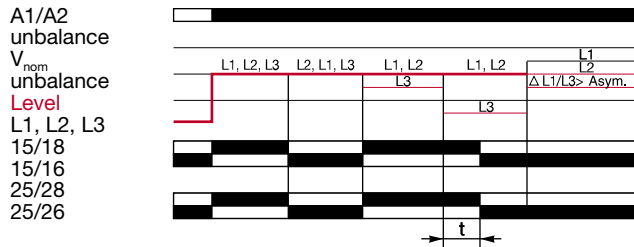
See accessory pages for specifications.

Description

The phase monitor CM-ASN is used to monitor three-phase supply voltages for phase unbalance, phase loss (even if 95 % of the phase voltage is regenerated) and phase sequence.

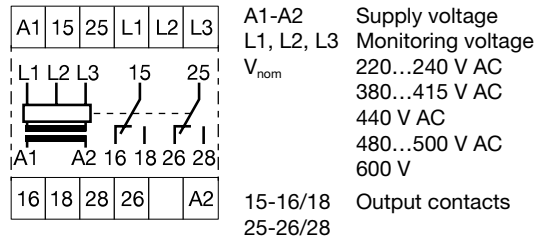
CM-ASN: The output relay is energized as long as the phases are balanced and the phase sequence is correct (clockwise rotating field). If the unbalancing exceeds the set threshold (5 to 15 %), the output relay de-energizes and the fault is indicated by the LEDs. For the unbalance monitoring function, a trip time delay of 0.1 to 10 s can be set with a potentiometer, to prevent nuisance tripping, (e.g. in case of short unbalance during motor starting). In the case of motors which continue running with only two phases, regenerated voltage of more than 95% may be produced. The output relay may not de-energize on the loss of a phase.

Function



t = Trip-delay: 0.1-10 s, effective only for unbalanced voltages

Connection



Ordering Table

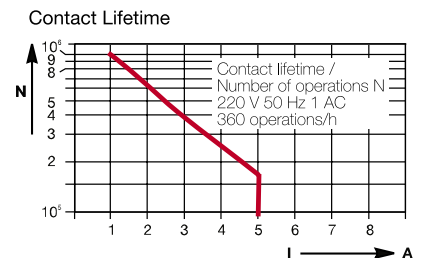
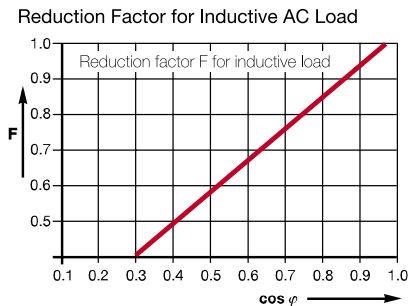
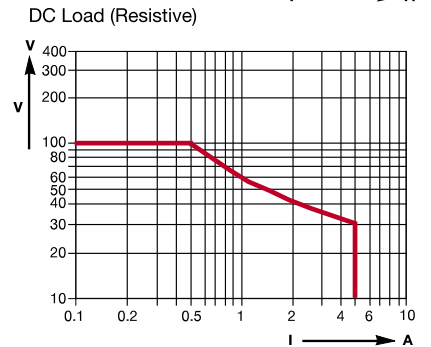
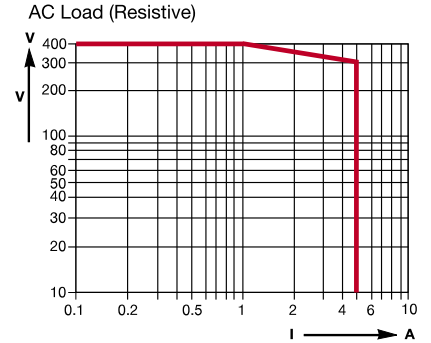
Type	Supply voltage = monitoring voltage	Monitoring frequency	Part Number
Monitoring voltage: 3 x 220-240 V AC 50 Hz; 3 x 220-240 V AC 60 Hz			
CM-ASN	110-130 V AC	50 Hz	1SVR 450 320 R 0200
	220-240 V AC	50 Hz	1SVR 450 321 R 0200
	380-415 V AC	50 Hz	1SVR 450 322 R 0200
	220-240 V AC	60 Hz	1SVR 450 421 R 0200
Monitoring voltage: 3 x 380-415 V AC 50 Hz; 3 x 380-415 V AC 60 Hz			
CM-ASN	110-130 V AC	50 Hz	1SVR 450 320 R 0500
	220-240 V AC	50 Hz	1SVR 450 321 R 0500
	380-415 V AC	50 Hz	1SVR 450 322 R 0500
	220-240 V AC	60 Hz	1SVR 450 422 R 0500
Monitoring voltage: 3 x 440 V AC 60 Hz			
CM-ASN	440 V AC	60 Hz	1SVR 450 423 R 0600
Monitoring voltage: 3 x 480-500 V AC 50 Hz; 3 x 480-500 V AC 60 Hz			
CM-ASN	110-130 V AC	50 Hz	1SVR 450 320 R 0700
	220-240 V AC	50 Hz	1SVR 450 321 R 0700
	380-415 V AC	50 Hz	1SVR 450 322 R 0700
	500-550 V AC	50 Hz	1SVR 450 932 R 0100
	480-500 V AC	60 Hz	1SVR 450 424 R 0700
Monitoring voltage: 3 x 600 V AC 50 Hz			
CM-ASN	600 V AC	60 Hz	1SVR 450 426 R 0800

Phase Unbalance, Phase Loss Monitors CM-ASN DPDT Relay Output

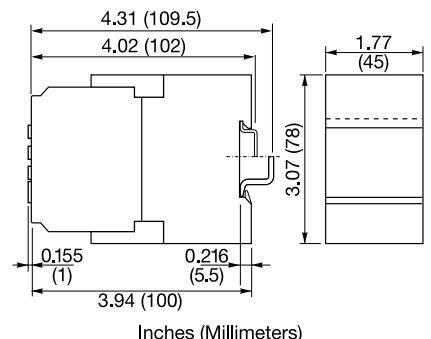
Technical Data

Input		
Supply voltage - power consumption	A1-A2	All voltage ranges - 3 VA
Tolerance of supply voltage		-15 % ... +10 %
Supply voltage frequency		50 or 60 Hz (See ordering table)
Time Delay		Message: unbalance error
Trip delay time adjustable		0.1...10 s
Timing over the supply voltage range		≤ 0.5 %
Timing over the 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, 600 V AC
Frequency		50 or 60 Hz (See ordering table)
Unbalance adjustable % of trip point		5...15 %
Unbalance hysteresis		20 %
Measuring cycle max.		< 100 ms
Temperature error over the temperature range		≤ 0.06 % / °C
Error over the supply voltage range		≤ 0.5 %
Display of Operating Status		
Supply voltage	U	LED, green
Output relay energized	R	LED, yellow
Unbalanced voltages	A	LED, red
Phase failure and phase sequence error	P	LED, red
Output		Relay, 2 SPDT contacts, normally energized
Rated voltage	15-16/18, 25-26/28 VDE 0110, IEC 60947-1	400 V
Rated switching voltage max.		400 V AC
Rated switching current	AC 12 (resistive)	5 A (at 230 V)
	AC 15 (inductive)	3 A (at 230 V)
	DC 12 (resistive)	5 A (at 24 V)
	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 acting
General Data		
Rated impulse withstand voltage Vimp		4 kV
Operating temperature		-25°C ... +65°C
Storage temperature		-40°C ... +85°C
Mounting to DIN rail (EN 50022)		Snap-on mounting/Screw mounting using an adapter
Cable size stranded with wire end ferrule		2 x 14 AWG (2 x 2.5 mm ²)
Weight		Approx. 0.66 lb (300)

Load Limit Curves



Mechanical View



7