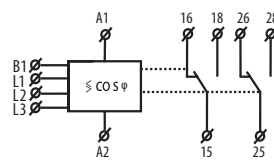




- ! relay monitors phase shift between current and voltage - $\cos\phi$ in 3-phase and also 1-phase mains for monitoring overload/unloading of motors
- ! supply set 3x400 V
- ! function "MEMORY" - manual reset - button on front panel
- ! it is possible to connect current transformer in front of the device. This enables increase of current range
- ! 2 output relays, independent for each level
- ! adjustable delay to eliminate short peak overloading
- ! adjustable range and bottom level $\cos\phi$, of power factor between 0.1 - 0.99 0.1 - 0.99
- ! adjustable delay to eliminate starting of motor
- ! selectable hysteresis 5 or 10%
- ! galvanically separated supply AC 230 V, AC 400 V or AC/DC 24 V
- ! output contact: 2x changeover 16 A / 250 V AC1
- ! 3-MODULE, DIN rail mounting

Technical parameters	COS-1
Supply	
Supply terminals:	A1 - A2
Supply voltage:	AC 230 V, AC 400 V or AC/DC 24 V
Consumption:	max. 4.5 VA
Supply voltage tolerance:	-15 %; +10 %
Measuring circuit	
Voltage set:	3x400 V
Terminals:	L1, L2, L3, B1
Upper level $\cos\phi$:	adjustable 0.1 - 0.99
Bottom level $\cos\phi$:	adjustable 0.1 - 0.99
Max. permanent voltage:	(input L1, L2, L3) AC 3x460 V
Current range:	0.1 - 16 A
Current overloading:	20 A (<3 sec.)
Hysteresis:	adjustable 5% or 10%
Time delay t1:	adjustable 0.5 - 30 s
Time delay t2:	adjustable 0 - 10 s
Accuracy	
Accuracy setting (mechanical):	5 %
Accuracy of repetition:	<1 %
Temperature dependence:	< 0.1 % / °C
Limit values tolerance:	5 %
Output	
Number of contacts:	2x changeover (AgNi)
Rated current:	16 A / AC1
Breaking capacity:	4000 VA / AC1, 384 W / DC
Inrush current:	20 A / < 3 s
Switching voltage:	250 V AC1 / 24 V DC
Min. breaking capacity DC:	500 mW
Output indication:	yellow LED
Mechanical life:	3×10^7
Electrical life (AC1):	0.7×10^5
Other information	
Operating temperature:	-20.. +55 °C
Storage temperature:	-30.. +70 °C
Electrical strength:	4 kV (supply - output)
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP 40 from front panel
Overvoltage category:	III.
Pollution degree:	2
Max. cable size (mm ²):	max.1x 2.5, max.2x1.5/ with sleeve max. 1x1.5
Dimensions:	90 x 52 x 65 mm, see page 157-159
Weight:	240 g
Standards:	EN 60255-6, EN 61010-1

Symbol

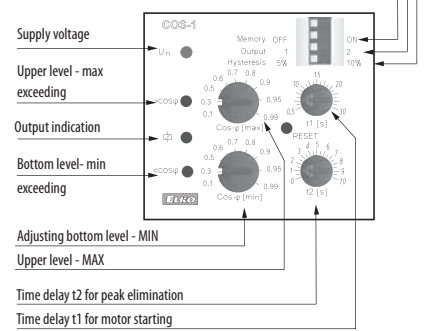


Description

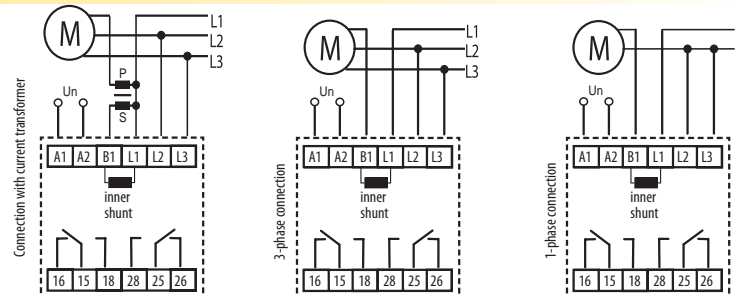
Hysteresis from faulty to normal state

2nd relay function (1-parallel, 2- independent)

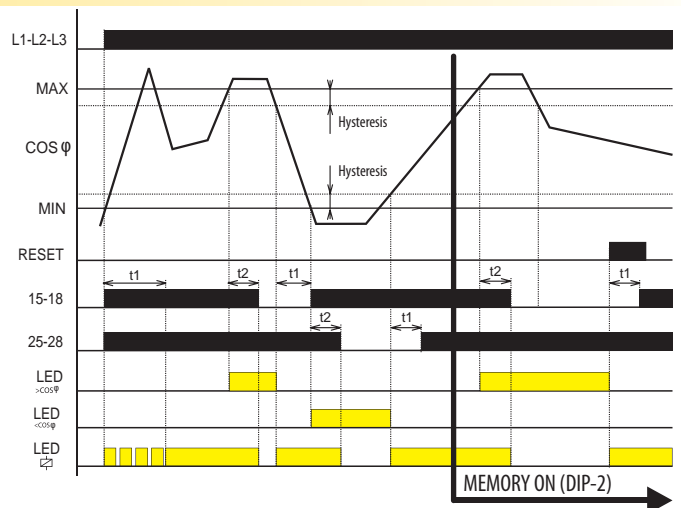
Sellection of function MEMORY



Connection



Function



After the device is switched on, the yellow LED flashes for time t and both relays are switched (state OK). This delay serves to eliminate a faulty state e.g. motor start-up. If the upper limit is exceeded ($\cos\phi > \cos\phi_{max}$) red LED shines $> \cos\phi$. After a time delay t2 the output relay opens (15-18). Equally, if it falls under bottom limit ($\cos\phi < \cos\phi_{min}$) red LED shines $< \cos\phi$ and after a time delay t2 the output relay opens (25-28). In case the load is disconnected (no current), red LED shines $> \cos\phi$ ($\cos\phi = 1$).