

# Load and Current-Monitor COSFI100V

Active current with direction, over- and underload and  $\cos\varphi$

## COSFI 100V



Part numbers: **P222534**

ER4  **T224384**

**Load monitors** protect motors in 1- or 3-phase mains from over- or underload. They are simply switched into the supply-line of the motor and monitor the phase angle between voltage and current and/or the true current.

The power factor  $\cos\varphi$  has its greatest alteration at small loads at the motor. Therefore monitoring this parameter is suitable to recognize underload.

The current of the motor increases most at high loads. Provided that the motor is not oversized, the current is more suitable for monitoring overload.

The COSFI100V can monitor both values. It is even possible to monitor the power factor with alarm 1 for underload and protect the drive from overload by monitoring the current with alarm 2. This allows detection of a breaking V-belt or clogging of a filter or a valve. A local sensor near the motor is not necessary.

As **monitor for current direction**, value and direction of active current in one phase is measured. Thus it can be used for the direction dependent monitoring of AC-current.

With its digital display and many setting options, it can be individually adapted to the application. The resolution of the measuring input is 0.1 A. When using a current transformer, multiply this by the transformer factor.

Application  $\cos\varphi$  / active current:

- Monitoring of V-belt (slip and destruction)
- Fan-monitoring
- Pump-monitoring
- Conveyor systems
- Agitators
- excessive wear
- wear-out of tools
- Protection of motors, drives and plants from overload

Application current direction:

- Optimizing of own consumption of energy in photovoltaik plants. Consumers can be switched on or off depending on power available. By measuring current at the feed point it can be detected, whether there is enough power available to start heat pumps, cooling units or other consumers.
- Warning or shut-down when a generator is consuming energy instead of producing.

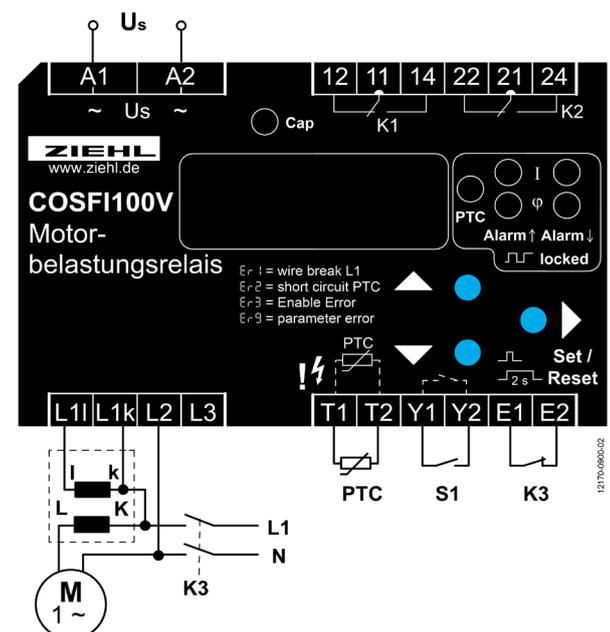
Function and features:

At an AC-motor (inductive load) the phase of the current is retarded to the voltage by the phase angle  $\varphi$ . With decreasing load, this angle increases and the  $\cos\varphi$  decreases. Thus the load at the shaft of the motor can be measured.

The load monitor COSFI100V can measure sinusoidal signals.

- for networks AC and 3 AC
- Digital display for  $\cos\varphi$  and true current
- 2 limits / alarms
- min, max or min/max for each alarm
- Monitoring of 2 x  $\cos\varphi$ , 2 x true current or 1 x  $\cos\varphi$  and 1 x true current

- Scaling of display (factor of current-transformer)
- Hysteresis and switching-delay programmable
- Auto-reset or interlocked switching
- Programmable attempts (1...10) for restart
- Auto-enable (current) or external signal
- Start-up delay programmable 0...99 s
- Current input max. 10A, more with transformers
- Detection of breaks
- Input for PTC-thermistors
- Housing for mounting in fuse-boxes or switchboards
- Accessory: [Installation frame ER4 for panel mount](#)



## Technical Data COSFI100V

Rated supply voltage $U_s$	AC 230 V, +10%/-15%, 3VA, 50 Hz
Power factor ( $\cos\varphi$ )	-0,99...+0,99
Hysteresis ( $\cos\varphi$ )	0,05...0,20
Nominal current of motor	0,2...10 A (higher currents with current-transformers)
Overload capacity	10 A continuously, 15 A max. 3 s
Resolution active current	Current factor x 0.1 A
Input Voltage L1-L2-L3	AC 100...400 V, 48...62 Hz
Relay	2 change-over contacts (co)
Type of contact	<b>Type 2</b> (see "general technical informations")
Test conditions	see "general technical informations"
Rated ambient Temp. Range	-20°C...+55°C
Housing / Installation Frame	Design V4/ Front mounting kit Type ER4
Dimensions (H x W x D) mm	90 x 70 x 58 mm, mounting height 55 mm
Attachment	on rail 35 mm according to EN 60 715 or with screws M4 (option)
Protection Housing/Terminals	IP 30/IP 20
Weight	