

Description

The AD-LW 110 GS monitors the load condition of inductive loads. The main application is asynchronous motors in the 1- or 3-phase network, the load of which is greatly changed. The device makes an evaluation of the cos-phi value and an undervoltage monitoring. Exceeding the set limit values triggers a contact. The switching states are indicated on the front side by LEDs. The measuring principle for the cos-phi is based on the evaluation of the phase shift between voltage and current in one phase. The actual measured variable is therefore the phase angle between voltage and current. The setting value of the cos-phi or of the phase angle is therefore only correct for sinusoidal quantities. The phase shift is almost inverse to the load. A cos-phi of 0 (= 90 °) thus corresponds to a low load while a cos-phi of 1 (= 0 °) corresponds to a large load. An external current transformer can be connected to the current input of the device. Thanks to the integrated, efficient switching power supply, operation is possible in a wide supply voltage range.

Application

Load monitoring of asynchronous machines, e.g. Pumps and drives.

**Specific characteristics**

- Connection of external current transformer possible
- Wide range power supply
- Limits can be set via potentiometer
- 2 potential-free normally open contacts
- LED display of the relay states

Business data

Order number AD-LW 110 GS

Technical specifications**Current input (L1)**

Measuring range	0 ... 1/5 A AC (alternatively)
Permanent overload	50 %
Short-term overload 3 s	100 %

Voltage input (L1, L2, L3)

Measuring range	180 ... 253 V
Input resistance	1 MOhm

Relay outputs

Maximum switching load AC	230 V, 1 A
Maximum switching load DC	50 V, 1 A
Contact construction	closing contact
Switching operations mechanical	10000000
At 230V/1 A AC, cos(phi)=1	600000
At 230V/1 A AC, cos(phi)=0,4	200000
At 24V/1 A DC	200000
Switching hysteresis	3 % of the measuring range

Supply

Voltage range AC	50 ... 253 V AC, 50/60 Hz
Nominal voltage AC	230 V AC
Voltage range DC	20 ... 253 V DC
Nominal voltage DC	24 V DC
Power consumption AC / DC	4 VA / 2,5 W

Transmission behaviour

Basic accuracy	< 2 %
Temperature influence	100 ppm/K
Response time	~ 50 ms

Housing

Dimensions (WxHxD)	23x78x103 mm
Type of protection	IP 20
Connection method	detachable terminal clamp
Terminals, wire cross section	2,5 mm ² flex wire / 4 mm ² one wire
Bolting torque terminals	0,5 Nm
Weight	~ 120 g
Manner of fastening	35 mm DIN rail 35mm

Environmental conditions

Ambient temperature	0 ... 50 °C
Storage and transport	-10 ... 70 °C (no bedewing)

EMC

Product family standard	EN 61326 ¹⁾
Emitted interference	EN 55011, CISPR11 Cl. B

Electrical safety requirements

Product family standard	EN 61010-1
Overvoltage category	II
Pollution degree	2

Galvanic isolation, test voltages

Input / relay output	4 kV, 50 Hz (1 min.)
Power supply / relay output	4 kV, 50 Hz (1 min.)
Relay 1 / relay 2	2 kV, 50 Hz (1 min.)

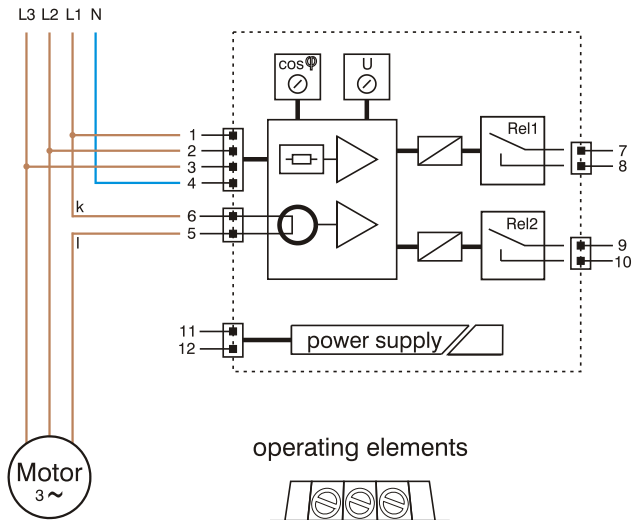
Protection circuits

Input	electrical surge protection
Power supply	electrical surge protection

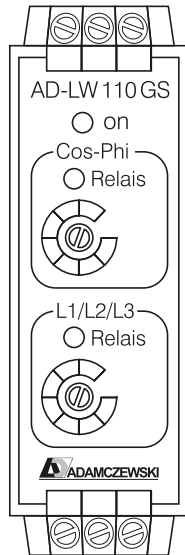
¹⁾ During checking, slight signal deviations are possible.



Block and wiring diagram



operating elements



Dimensions

