



**Zakład Mechaniki i Elektroniki  
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### DESCRIPTION

The CAH-01 phase sequence sensor device is used to protect devices powered three-phase installation (e.g. a motor) from being damaged in case of phase voltage switch off or phase voltage asymmetry. The threshold value switch on is preset to 185 V and it can't be regulated by the user. The system does not protect from voltage drop asymmetry and it is powered from L1 phase. The switch off delay and voltage hysteresis cause the system is resistant to momentary voltage changes.

### FEATURES

- ☞ Phase fading protection,
- ☞ voltage asymmetry protection,
- ☞ optimum voltage switch on threshold 185 V,
- ☞ switch off delay and voltage hysteresis,
- ☞ resistance to momentary voltage changes,
- ☞ momentary voltage fading protection max 10 A capacity,
- ☞ separate input for relay output terminals,
- ☞ hermetic (IP 65 protection degree) enclosure.



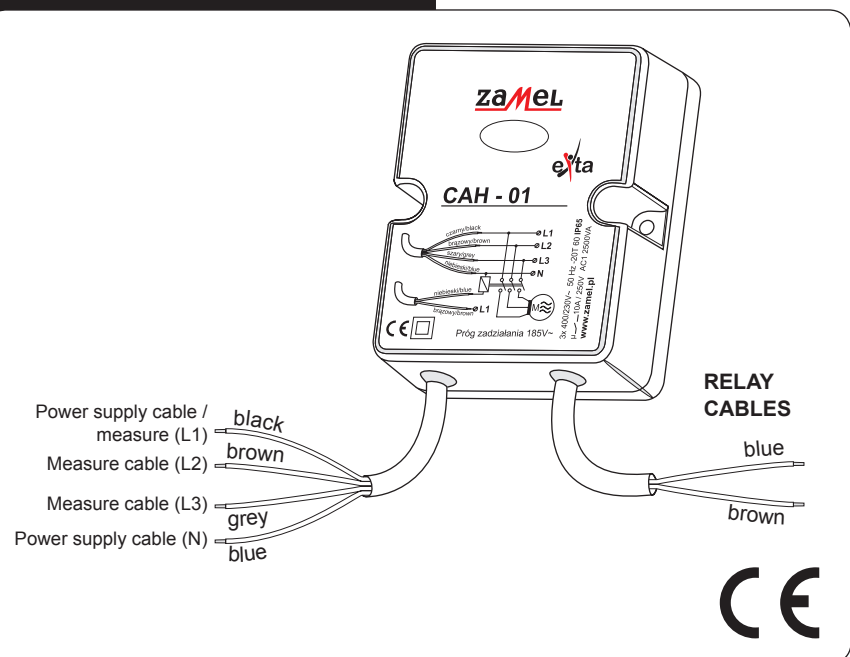
### CAUTION

The device is designed for three-phase installation and must be installed in accordance with standards valid in a particular country. The device should be connected according to the details included in this operating manual. Installation, connection and control should be carried out by a qualified electrician staff, who act in accordance with the service manual and the device functions. Before installation make sure the connection cables are not under voltage. The cruciform head screwdriver 3,5 mm should be used to install the device. Improper transport, storage, and use of the device influence its wrong functioning. It is not advisable to instal the device in the following cases: if any device part is missing or the device is damaged or deformed. In case of improper functioning of the device contact the producer.

### TECHNICAL PARAMETERS

CAH-01	
Supply cables:	L1 (black), N (blue)
Input rated voltage / supervised:	230/400 V~
Input voltage tolerance:	from -15 to +10 %
Rated frequency:	50 / 60 Hz
Rated current:	33 mA
Measure cables:	L1 (black), L2 (brown), L3 (grey)
Próg napięcia asymetrii:	185 V
Voltage hysteresis:	approx. 10 V
Switch on delay $t_1$ :	from 5 to 10 s
Switch off delay $t_2$ :	from 1 to 5 s
Output relay parameters:	1NO - 10 A / 250 V AC1 2500 VA
Number of switch cables:	6
Section of connecting cables:	4x 0,75 mm <sup>2</sup> and 2x 1,50 mm <sup>2</sup>
Connecting cable length:	0,5 m
Ambient temperature range:	from -20 to +60 °C
Operating position:	vertical, pointed down
Mounting:	2x stretcher 5x(3x30)
Protection degree:	IP65 (PN-EN 60529)
Protective class:	II
Overvoltage category:	II
Pollution degree:	2
Dimensions:	69x56x27 mm
Weight:	97 g
Reference standards:	PN-EN 60730-1; PN-EN 60730-2-1 PN-EN 61000-4-2,3,4,5,6,11

### APPEARANCE



## MOUNTING, FUNCTIONING

1. Disconnect the power supply from the mains by the phase fuse, the circuit-breaker or the switch-disconnector that are joined to the proper circuit/
2. **Check if there is no voltage on connection cables by means of a special measure equipment.**
3. Fasten the CAH-01 to the base with the screw.

**NOTICE! It is forbidden to bore fitting holes in the cover! It may result in the loss of containment of the cover and by this – the loss of guarantee!**

4. Connect the cables CAH-01 with the hermetic installation junction box according to installing diagram.
5. Switch on power supply from the mains.

After the power supply has been applied (supply from the phase L1) the sensor controls voltage value of particular phases. In case it is correct on every phase the sensor's relay switches on, and the load (motor) operates. In case there is a lack of any of the phases or there is a voltage drop below the adjusted asymmetry threshold (185 V) the relay is switched off (load switch off). There is a short time delay in switching off the relay ( $t_2$  from 1 to 5 sec). The device is resistant to momentary voltage drops. Another device switch on follows when the voltage on a particular phase is above 195 V and exceeds  $t_1$  time (from 5 sec to 10 sec). Voltage hysteresis (about 10 V) switch off delay make the system resistant to momentary voltage drops.

## PRODUCT FAMILY

The CAH-01 is a member of the CAX phase sequence sensor family.

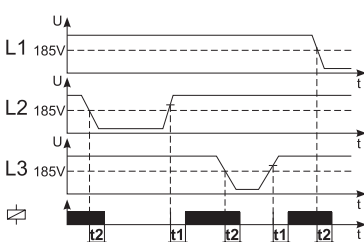
### CAX - xx

Device version:	01 - podstawowa
Type of casing:	M - monomodular (switch on threshold regulation) H - hermetical (constant threshold regulation)
Device symbol	

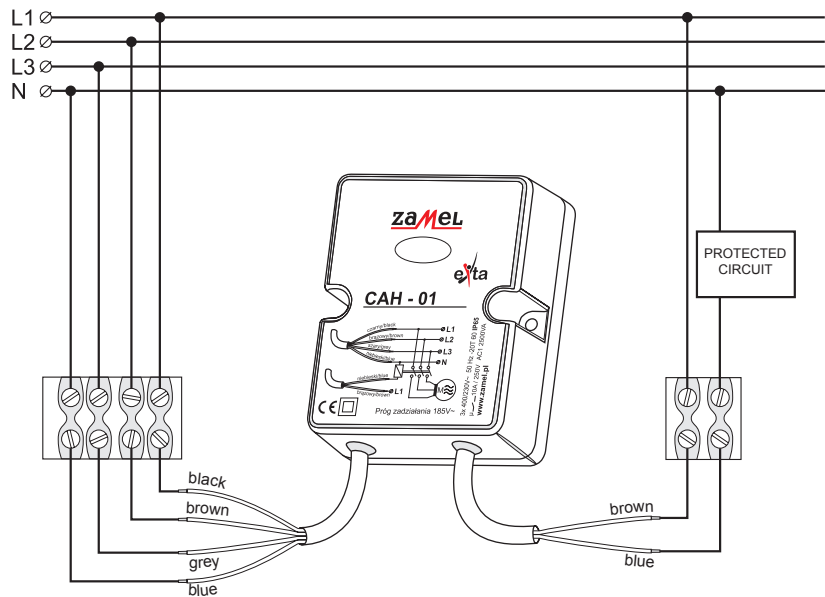
## WARNING!

The relay switch off delay depends on output's power connected to a three-phase power supply. The lack of two phases causes immediate sensor's operation.

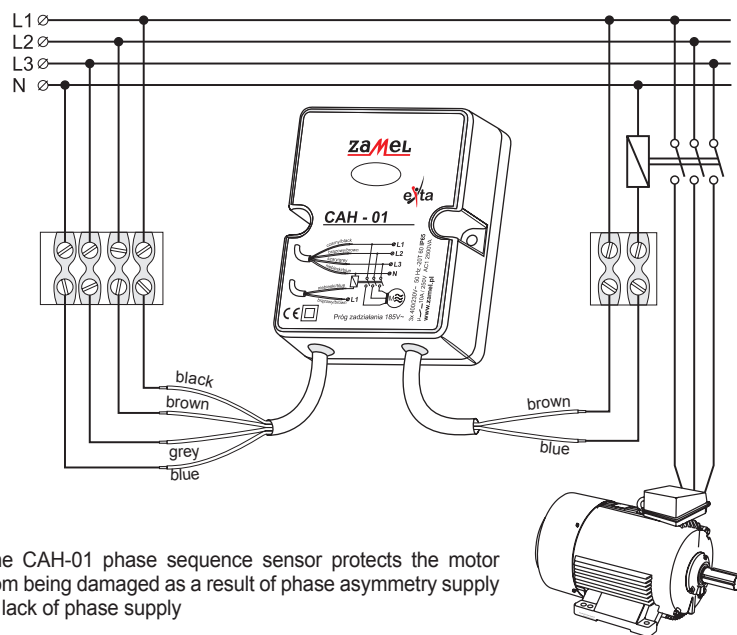
## TIME COURSE



## CONNECTING

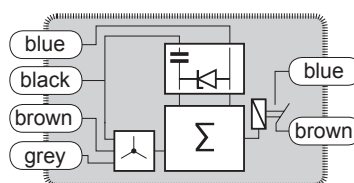


## EXAMPLE OF INSTALLATION



The CAH-01 phase sequence sensor protects the motor from being damaged as a result of phase asymmetry supply or lack of phase supply

## INNER DIAGRAM



## DIMENSIONS

