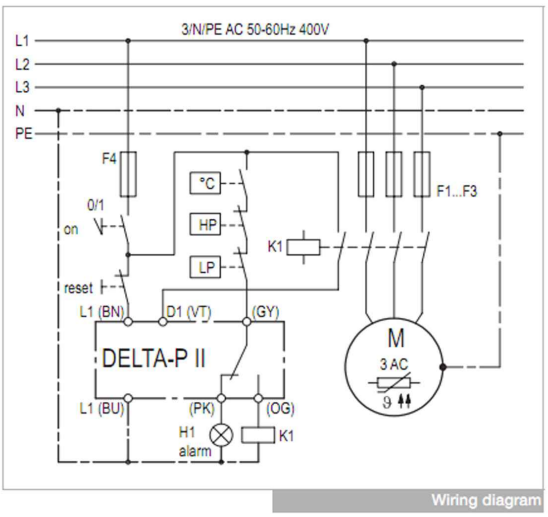
DELTA-P® II Differential oil pressure sensor

KRIWAN

DELTA-P® II

DELTA-P II



Wiring diagram

Application

The DELTA-P II serves to monitor the oil differential pressure of oil pumps in refrigeration compressors.
For this a screw-in part that is mounted directly in the pump housing is evaluated for differential pressure measurement. The screw-in part is thereby connected by internal channels with the suction and high pressure side of the pump. Supplementary pipe connections are not needed.
The evaluation unit is fastened by a coupling ring in the screw-in part and can be removed without opening the oil/refrigeration circuit.
Once the supply voltage has been switched on, the relay trips after a 3 second delay.
With the operating recognition signal, which is applied to D1 via an auxiliary contactor of motor contactor, the differential pressure monitoring is activated after the expiration of a starting transition time of 5 seconds. A missing differential pressure leads to a locked switch off after 90 seconds; with differential pressure fluctuation appropriately later (time integration).
The lock of the relay can be lifted by a disconnection of the supply voltage (about 5 seconds).
The monitoring of internal errors is always active. Any faults that occur in any operational phase lead to a locked switch off of the relay after 5 seconds.
The potential-free, contact can be looped into a safety circuit without an auxiliary relay. An installation check monitors the proper assembly.
The built-in LED indicates the operating state.

Flash code of the red LED:

10Hz flashing:	Internal error
	Voltage supply too low
	Not screwed into screw-in part
Continuous light:	No differential pressure available
Off:	Differential pressure OK, no error

Installation instructions

Mounting: The proper sealing at the change-over point depends on the application case and needs to be ensured by the user. The maximum torque of the screw-in unit is about 75Nm and has to be ensured by a ring spanner or a socket key.
Insert the evaluation unit in the screw-in unit and screw tight by hand with the coupling ring (torque about 10Nm. Make sure that the cable outlet points down. The electrical connection needs to be carried out according to the wiring diagram. After mounting, check the seal. Follow the rules when working on refrigeration systems!

⚠ The unit must be connected by trained electrical personell.
All valid standards for connecting electrical equipment must be observed.

Product group S

Edition: 710.00297.0

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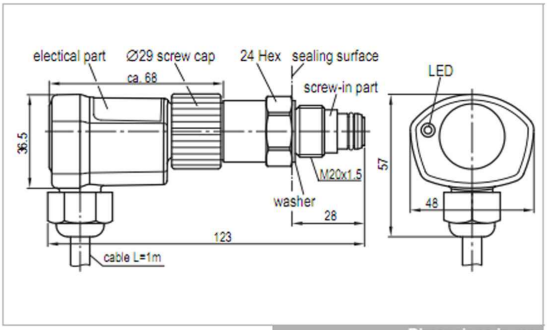

Dimensions in mm

Technical specifications

Screw-in unit

Permitted media temperature	-30…+85°C
Differential pressure	0.65bar ±0.15bar
Operating pressure	30bar
Housing material	Brass
Connection thread	M20 x 1.5mm
Weight	About 110g

Evaluation unit

Connection:	
- Dual voltage	AC 50/60Hz 115/230V -15…+10%
Connection operating recognition (D1) dual voltage	AC 50/60Hz 115/230V -15…+10% L-potential at connection D1
Permitted ambient temperature	-30...+70°C
Delays:	
- Relay On after applying the supply voltage	3s ±1s
- Starting transition time after D1 active	5s ±2s
- Relay Off (error)	5s ±2s
- Relay off (differential pressure missing)	90s ±5s (time integration)
- Reset by interrupting the supply voltage	About 5s
Output relay	AC 240V 2,5A C300
Mechanical service life	Approx. 10^6 switching cycles
Protection class acc. to EN 60529	IP54
Connection type	6xAWG-18 cable, L=1m, colour coded
Housing material	PA66/PA6, glass-fibre-reinforced
Mounting	Union nut
Weight	About 80g
Approval	UL File E222056

Order data

DELTA-P II	**22 D 570**
consisting of: DELTA-P II Evaluation unit 115V/230V	**22 S 570**
DELTA-P Screw-in part M20 x 1.5mm 0.65bar	**02 D 555**

Technical changes reserved

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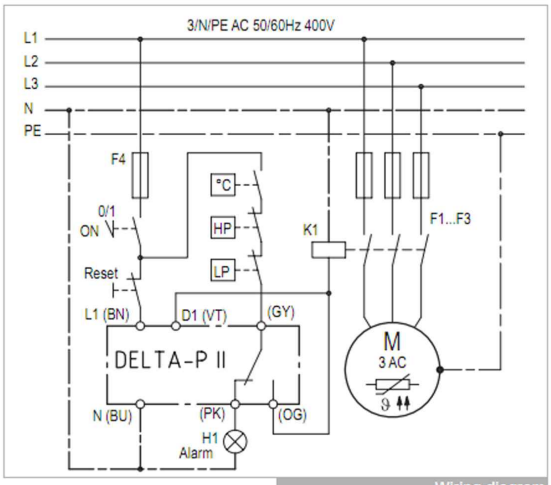
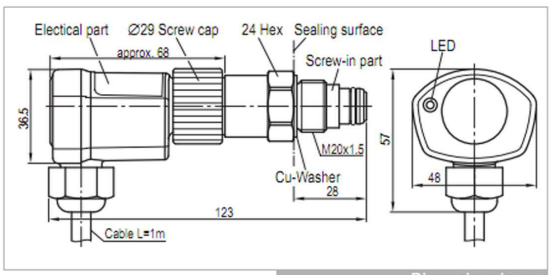


Wiring diagram



Dimensions in mm

Installation instructions

Mounting: The maximum torque of the screw-in unit is about 75Nm and has to be ensured by a ring spanner or a socket key. After mounting, check the seal. Follow the rules when working on refrigeration systems!

Insert the evaluation unit in the screw-in unit and screw tight by hand with the coupling ring (torque about 10Nm). Make sure that the cable outlet points down. The electrical connection needs to be carried out according to the proposal in the wiring diagram.

⚠ The unit must be connected by trained electrical personnel. All valid European and national standards for connecting electrical equipment and cooling installations must be observed.

Application

DELTA-P II serves to monitor the oil differential pressure of oil pumps in refrigeration compressors. For this a screw-in part that is mounted directly in the pump housing is evaluated for differential pressure measurement. The screw-in part is thereby connected by internal channels with the suction and high pressure side of the pump. Supplementary pipe connections are not needed. The evaluation unit is fastened by a coupling ring in the screw-in part and can be removed without opening the oil/refrigeration circuit. Once the supply voltage has been switched on, the relay trips after a 3 second delay time. With the operating recognition signal, which is applied to D1 of motor contactor (see wiring diagram), the differential pressure monitoring is activated after the expiration of a starting transition time. A missing differential pressure leads to a locked switch off after 90 seconds; with differential pressure fluctuation appropriately later (time integration). The monitoring of internal errors is always active. Any faults that occur in any operational phase lead to a locked switch off of the relay after 5 seconds. The potential-free, contact can be looped into a safety circuit without an auxiliary relay. An installation check monitors the proper assembly. The built-in LED indicates the operating state.

Flash code of the red LED:

10Hz flashing:	Internal error Voltage supply too low Not screwed into screw-in part
Continuous light:	No differential pressure available
Off:	Differential pressure OK, no error

Technical specifications

Screw-in unit	
Permitted medium temperature	-30…+90°C
Differential pressure	0.65bar ±0.15bar
Operating pressure	30bar
Housing material	Brass
Connection thread	M20x1.5mm
Weight	Approx. 130g
Evaluation unit	
Supply voltage	AC 50/60Hz 115-230V -15…+10%
Operating recognition (D1)	AC 50/60Hz 115-230V -15…+10% L-potential at connection D1
Permitted ambient temperature	-30…+70°C
Delays:	
- Relay On after applying the supply voltage	3s ±1s
- Starting transition time D1 active	5s ±2s
- Relay off (error)	5s ±2s
- Relay off (diff.-pressure missing)	90s ±5s (time integration)
- Reset by interrupting the supply voltage	Approx. 5s
Output relay	Max. AC 240V 2,5A C300 Min. AC/DC >24V, >20mA
Mechanical service life	Approx. 1 million switching cycles
Connection type	Cable 6xAWG-18 (0.75mm²), L=1m, colour coded
Protection class acc. to EN 60529	IP54 in built-in status
Housing material	PA66/PA6, glass-fibre-reinforced
Mounting	Union nut
Weight	Approx. 160g
Check base	EN 61000-6-2, EN 61000-6-3 EN 61010-1
Approval	UL File No. E222056

Order data

DELTA-P II	**22 D 571**
Consisting of:	
DELTA-P II Evaluation unit	**22 S 571**
DELTA-P Screw-in part	**02 D 555**

Technical changes reserved

Product group S

Edition: 710.00368.0