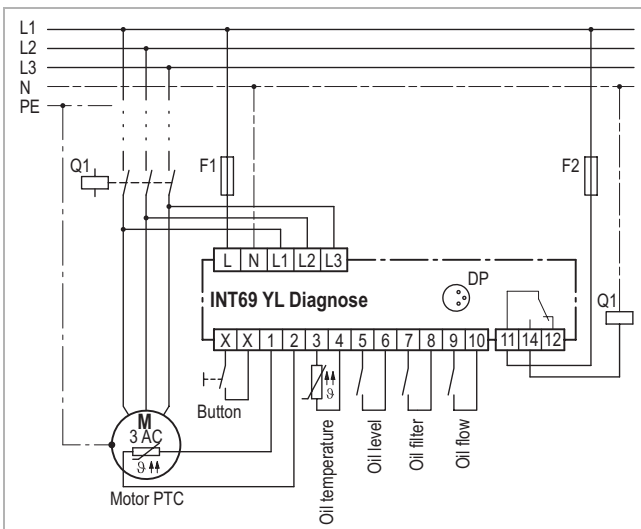


INT69 YL[®] Diagnose

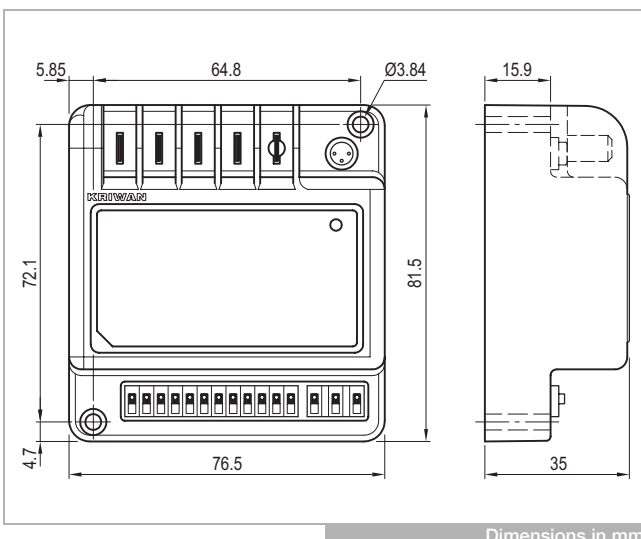
INT69 YL[®] Diagnose



INT69 YL Diagnose



Wiring diagram



Dimensions in mm

Application

The compressor protection INT69 YL Diagnose is a further development of the reliable KRIWAN motor protectors. Additional inputs for phase monitoring, oil temperature, oil flow, oil level and oil filter soiling as well as supplementary flexible-response protective functions help to improve the availability and extend the service life of a refrigeration system. The INT69 YL Diagnose automatically saves operational and error data in a non-volatile memory. This data can be retrieved and analysed for diagnosis. The full scope of the diagnosis is achieved by using a KRIWAN-specific AMS sensor.

This motor protector is mainly employed on compressors of which, in addition to the motor's direction of rotation, the oil management is also essential for the function.

Functional description

The temperature monitoring of the motor winding is done with two evaluation processes:

- **Static:** Switch-off is immediate if the nominal response temperature of the built-in AMS or PTC sensors is reached.
- **Dynamic:** If the temperature increases unusually quickly, the motor is switched off immediately even if the temperature is still far below the nominal response temperature. This prevents excess temperatures from occurring.

The oil temperature is evaluated statically.

If no oil temperature sensor is installed, a 100 ohm resistor has to be installed at the input.

A short circuit at an AMS or PTC input also leads to a switch-off. A short cycling leads to a reset delay.

If the contact of the oil level sensor (e.g. INT276) is open for more than 3s, the motor protector will lock switch off.

If the contact of the oil filter sensor is open for more than 10s while the motor is running, the motor protector will lock switch off.

The start-up time of 10s begins when the motor starts. If after this start-up time has elapsed, the contact of the oil flow sensor for 3s is open while the motor is running, the motor protector switches off. The motor protector also switches off if the contact of the oil flow sensor is open on expiry of the start-up time.

Following cooling off and/or error rectification and subsequent restart delay, the compressor may be restarted. Restart after a lock-out is only possible after a reset.

If an oil level, oil flow or oil filter sensor is not needed, a jumper needs to be connected at the respective input.

The phase monitoring of the motor voltage is active 1s after the start of the motor. The correct phase sequence is monitored for 5s; the phase asymmetry is monitored for the total motor running time. If a wrong phase sequence is detected or there is a phase failure, the motor protector will lock switch off.

After motor stop, the phase monitoring and the operating recognition is deactivated for approx. 10s, to prevent unintended locking due to brief reverse running of the compressor.

For operation in the specified manner, the supply voltage has to be on permanently on the INT69 YL Diagnose.

The built-in LED signals the current status of the motor protector (see flash code).

- ⚠ The mounting, maintenance and operation are to be carried out by an electrician. The valid European and national standards for connecting electrical equipment and cooling installations have to be observed. Connected sensors and connection lines that extend from the terminal box have to feature at least a basic insulation. The electric circuit in which the sensor is located does not feature any safe electrical isolation from electric circuits with dangerous voltages, but is only separated by a basic insulation.

See back side for further specifications

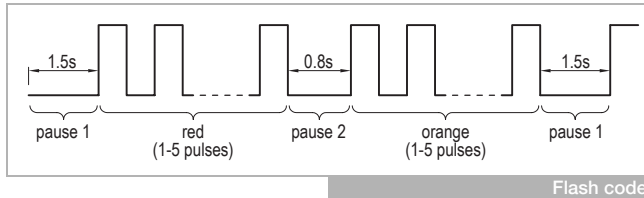
Technical changes reserved

INT69 YL[®] Diagnose

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Flash code

The KRIWAN flash code allows for a quick and easy status display and troubleshooting. The flash code consists of a cyclical red and orange flash sequence. The current status can be determined from the number of pulsing flashes.



Overview flash code

Green lit	Compressor operational
Green flashing	Compressor running
Red/Orange flashing	Error, compressor is switched off; for description see table below

1st flashing sequence (LED red)	2nd flashing sequence (LED orange)	Description
1	1	Motor temperature: Static switch-off, Permissible winding temperature exceeded
	2	Motor temperature: Dynamic switch-off, Temperature rise in the motor winding unusually fast
	3	Motor temperature: Reset delay after static switch-off
	4	Motor temperature: Sensor input detected open circuit or short circuit
	5	Motor temperature: Reset delay after dynamic switch-off
2	1	Motor voltage: Incorrect phase sequence
	2	Motor voltage: Phase failure/asymmetry
	4	Motor voltage: Reset delay after "Motor voltage" error
3	5	General: Reset delay after "General" error
4	2	Oil: level too low
	3	Oil: Reset delay after "Oil" error
5	1	Permissible oil temperature exceeded
	3	Oil temperature sensor input detected open circuit or short circuit
	4	Oil flow too low
	5	Oil filter soiled

Order data

INT69 YL Diagnose	25 A 497
Accessories and application information	see www.kriwan.com

Technical specifications

Supply voltage	AC/DC 50/60Hz 24-240V (UL: 24-230V) ±10% 3VA
Permitted ambient temperature	-30...+70°C
Temperature measuring circuits	
- Type	1-2 AMS sensors in series alternative 1-9 PTC sensors acc. to DIN 44081, DIN 44082 in series
- R _{25,total}	<1.8kΩ
- R _{trip,static}	4.5kΩ ±20%
- R _{reset}	2.75kΩ ±20%
- Max. length connection line	30m
Short circuit monitoring system PTC	Typically <30Ω
Input oil flow, oil level and oil filter soiling	
- Designed for	Potential-free normally open contact (typ. 3.3V, 1mA)
- Max. length connection line	30m
Motor voltage	3 AC 20-100Hz 80-690V ±10%
Phase monitoring	
- Phase sequence	Active about 1s after motor start for about 5s
- Phase asymmetry	Active about 1s after the motor start until the motor stop
- Inactive	After motor stop for approx. 10s
Switching frequency overstepping	3 switch-offs in 60s or 10 switch-offs in 1h
Operation with frequency converters	Suitable
Reset delay	
- Motor temperature static	5min ±1min
- Motor temperature dynamic	1./24h 10min ±2min 2./24h 60min ±12min 3./24h Locked
- Oil temperature	Undelayed
- Switching frequency overstepping	5min ±1min 30min ±6min Locked
- Incorrect phase sequence	
- Phase asymmetry	1. - 3./20min 4./20min 1.-9./24h 10./24h
- Oil flow	1.-2./24h 5min ±1min 3./24h Locked
- Oil filter	Locked
- Oil level	Locked
Resetting the lock or the reset delay	Main reset >5s or reset by keyboard only possible if there is no error current
External button	
- Designed for	Potential-free normally open contact (typ. 3.3V, 1mA)
- Max. length connection line	1m
Relay	
- Contact	AC 240V 2.5A C300 at least AC/DC 24V 20mA
- Mechanical service life	Approx. 1 million switching cycles
Interface	Diagnose port (DP)
Protection class acc. to EN 60529	IP00
Connection type	6.3mm flat plugs (L1-L3, L and N), push-in spring terminals, 0.25-0.75mm ²
Housing material	PA glass-fibre-reinforced
Mounting	Screw mounted
Dimensions	Refer to dimensions in mm
Weight	Approx. 150g
Check base	EN 61000-6-2, EN 61000-6-3 EN 61010-1 Overvoltage category II Pollution level 2
Approval	UL File No. E75899 cUR _{us}

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