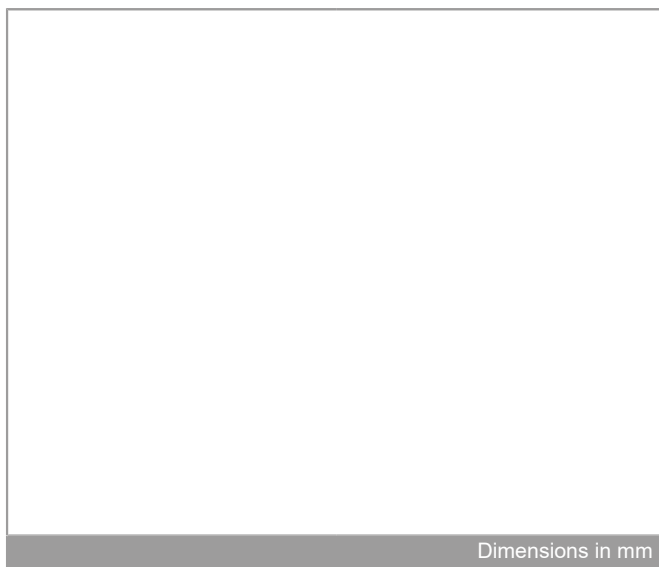


INT69[®] F Diagnose



INT69 F Diagnose

Illustration similar. Scope of delivery may deviate.



Dimensions in mm

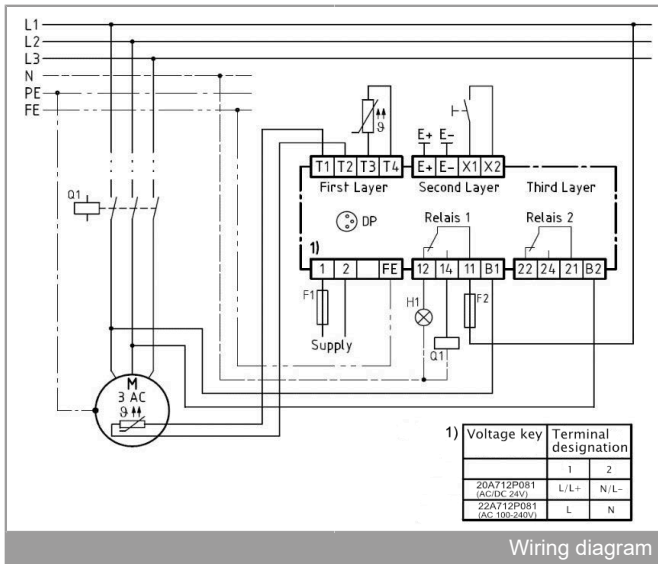
Application

The INT69 F Diagnose is a universal and versatile protection unit. The following inputs and outputs are available for monitoring electrical components:

Terminals	Inputs and outputs
L/L+, N/L-	Supply voltage
T1, T2	Motor temperature (PTC*, Pt100, Pt1000, Bimetal)
T3, T4	Temperature 1 (PTC, Pt100, Pt1000, Bimetal)
E+, E-	Leakage (Resistance measurement*)
FE	Functional earth
B1, B2	Running recognition Motor
X1, X2	external Reset
12, 14, 11	Relais 1 (Temperature*)
22, 24, 21	Relais 2 (Leakage*)

*Factory setting

Protection functions and behavior can be flexibly adjusted to the application by parameterization. The INT69 F Diagnose stores operating and fault data in a non-volatile memory. This data can be read out and evaluated for diagnostics. The protective relay is mainly used to protect pumps and agitators.



The **LEDs** signal the current status of the protective relay (see blink code). During fault-free operation, the built-in LEDs light up green. Both **relays** are energized. If an error or warning is detected, the corresponding relay switches off. By parameterization, the relays can be flexibly adjusted to all detectable errors or warnings. The two relays operate according to the closed-circuit current principle.

Adjustable **parameters** (see parameter table, separate document) can be set via the diagnostic port (DP) using the INTspector app with separately available accessories. A password query is possible for parameterization.

All detected events such as warnings, errors or messages are stored in non-volatile memory and can be read out via the diagnostic port (DP) and the INTspector app. The event memory contains the last 100 events with time and date.

For proper operation, the functional earth (FE) must be connected and the supply voltage must be permanently present.

Functional description

All monitoring functions can be configured by simple parameterization via the INTspector app. The following operating statuses of the inputs are described as active, but can be deactivated via parameterization.

The **temperature monitoring** of the motor temperature and temperature 1 is carried out according to the evaluation procedure of a PTC, a Pt100 or a Pt1000.

The monitoring of a PTC sensor switches relay 1 off without delay when the nominal response temperature is reached. The monitoring of a Pt100 and Pt1000 switches relay 1 off after the adjustable tripping delay when the adjustable temperature limits are reached. A short-circuit or an interruption at a temperature input also causes relay 1 to switch off (only for PTC, Pt100 and Pt1000, tripping delay for interruption 30 min, for short circuit 2 s). The temperature monitoring can additionally be carried out according to the evaluation procedure of a bimetal switch, when the bimetal switch is opened, relay 1 switches off without delay.

The switch-off of the relay is interlocked. The error message is retained even if the supply voltage fails in the meantime (zero-voltage safety). An automatic restart can be parameterized.

Restarting after an interlock is only possible after a **reset**. The various possibilities are given in the technical data.

The **leakage monitoring** is carried out according to the evaluation method of an ohmic resistor. The monitoring switches off relay 2 when the adjustable limits are reached after the adjustable tripping delay has elapsed.

The relay is switched on again automatically. An interlocked switch-off can be parameterized.

By connecting the **run detection** to the protection relay, operating times and switching operations of the motor are recorded and stored in the internal memory. This also makes the **Service Interval** function available.

By restarting the service interval, the adjustable interval time is loaded. After the time has elapsed, the service is signaled via the LEDs or additionally by switching off a relay (parameterizable).

Safety instructions



Installation, maintenance, and operation are to be carried out by an electrician.

The applicable European and national standards for connecting electrical equipment must be observed.

Connected sensors and connection lines that extend from the switching cabinet must feature at least a basic insulation.

Accessories

INTspector App

The INTspector app is required for parameterization and diagnostics with the protective relay.



02 S 365 S21

INT600 DU Gateway

USB Gateway, direct connection between INT69 F Diagnose and PC, SmartPhone or tablet

Order data

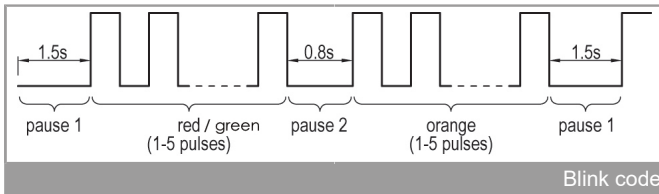
INT69 F Diagnose	20A712P081 (AC/DC 50/60Hz 24V) 22A712P081 (AC 50/60Hz 100-240V)
Further product information	See www.kriwan.com

Blink code

The KRIWAN Blink code enables fast and simple status display and troubleshooting.

The blink code consists of a cyclical blinking sequence. In the event of an error, the blinking sequence consists of red and orange pulses. If warnings are pending, the sequence consists of green and orange pulses. The current status can be determined from the number of blinking pulses.

The status of temperature and leakage is signaled on separate LEDs with Temperature and Leakage.



General Blink code overview

LEDs	Status	Description
Temp. / Leak.	Green lit	No error, motor stopped
	Green blinking	Motor running
	Orange lit	Motor stopped, Service expired
	Orange blinking	Motor running, Service expired
	Green / Orange blinking	Warning, description see below
	Red / Orange blinking	Error, description see below
Temp.	Red lit	Protection relay is in parameterization mode
Temp.	Red fast blinking	Bootloader is active / missing firmware
Temp. and Leak.	Red blinking	Internal error, protection relay defective

LEDs	1. Blinking sequence	2. Blinking sequence	Description
Temp.			Motor temperature:
Warning	1x Green	1x Orange	Permissible winding temperature exceeded
Error	1x Red	1x Orange	
Temp.			Motor temperature:
Warning	1x Green	4x Orange	Sensor input has detected interruption or short circuit
Error	1x Red	4x Orange	
Temp.			Temperature input 1:
Warning	3x Green	1x Orange	Permissible temperature exceeded
Error	3x Red	1x Orange	
Temp.			Temperature input 1:
Warning	3x Green	4x Orange	Sensor input has detected interruption or short circuit
Error	3x Red	4x Orange	
Leak.			Leakage:
Warning	4x Green	1x Orange	Permissible limit value undercut / exceeded
Error	4x Red	1x Orange	

Technical specifications

Supply voltage 22 A 712 P081	AC 50/60 Hz 100-240 V $\pm 10\%$ 5 VA	Input run detection – Operation with frequency converter	Suitable
20 A 712 P081	AC/DC 50/60 Hz 24 V $\pm 10\%$ 5 VA	– Clock frequency range – Working frequency range – Detection range Phase - Phase	2...16 kHz 20...100 Hz $\pm 10\%$ AC 60...400 V
Permissible ambient temperature T_A	-20...+60 °C	– Detectionrange Phase - Zero – Max. cable length	AC 60...230 V 3 m
Permissible humidity	0...95 % r.F., not condensing	Interface	Diagnostics port (DP)
Maximum operating height	2000 m	Reset of the lock or the reset delay	
Temperature measuring circuit Bimetal		– Option 1	Power reset >5 s (not for temperature inputs)
– Type	for a normally closed contact	– Option 2	Reset button >1 s Leakage >5 s Temperature
– Contact suitable for	DC 24 V, 20 mA	– Option 3	external Reset >1 s Leakage >5 s Temperature
– Max. cable length	100 m		only possible when error no longer present
Temperature measuring circuit PTC		Relay Alert/Warning	
– Type	1-9 PTC sensors due to DIN 44081, DIN 44082 in series	– Contact	AC 250 V, 8 A Min. AC/DC 24 V, 20 mA
– R_{25} , total	<1,8 k Ω	– Mechanical service life	Approx. 1 million switching operations
– $R_{activated}$	4,5 k Ω $\pm 20\%$	Protection class according to EN 60529	IP20
– R_{reset}	2,75 k Ω $\pm 20\%$	Connection type	
– Short circuit monitoring	<20 Ω	– General	Tension spring connection (Push-in) 0,2-2,5 mm ²
– Open circuit monitoring	>20 k Ω	Housing material	PA 66 GF 30
– Max. cable length	100 m	Mounting	Switching cabinet housing (basic grid 22,5 mm), can be snapped onto 35 mm standard rail according to EN 60715
Temperature measuring circuit Pt100		Dimensions	See dimensions in mm
– Measuring range	- 50...+300 °C	Weight	
– Resolution	1 K	– 22 A 712 P081	Ca. 210 g
– Accuracy	5 % from ohmic value	– 20 A 712 P081	Ca. 195 g
– Short circuit monitoring	<20 Ω	Testing basis	EN 61000-6-2 EN 61000-6-3 EN 61010-1 Overvoltage category II Pollution level 2
– Open circuit monitoring	>400 Ω	Approval	UL tbd
– Max. cable length	100 m		
Temperature measuring circuit Pt1000			
– Measuring range	- 50...+300 °C		
– Resolution	1 K		
– Accuracy	5 % from ohmic value		
– Short circuit monitoring	<20 Ω		
– Open circuit monitoring	>2,3 k Ω		
– Max. cable length	100 m		
Leakage measuring circuit			
– Type	Resistance measurement between electrode pair		
– Measuring range	10 k Ω ...1 M Ω		
– Resolution	1 k Ω		
– Accuracy	$\pm(1\text{ k}\Omega + 10\% \text{ vom MW})$		
– Max. cable length	100 m		
Input external reset			
– Type	for one normally open contact		
– Contact suitable for	DC 5 V, 1 mA		
– Max. cable length	30 m		

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