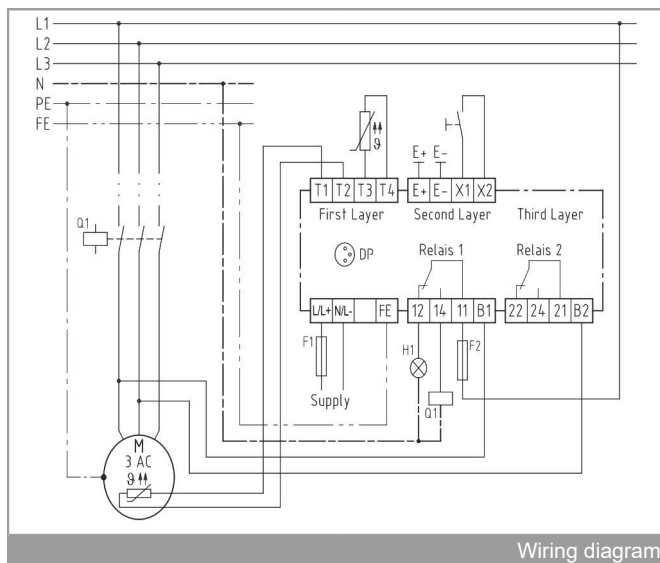


INT69® F Diagnose

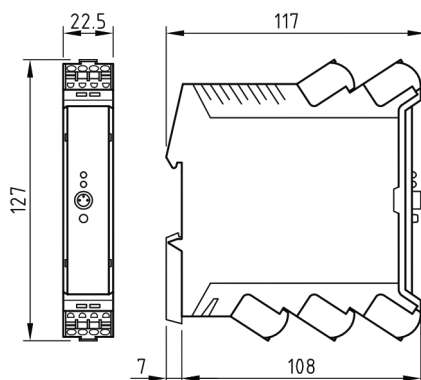


INT69 F Diagnose

Illustration similar. Scope of delivery may deviate.



Wiring diagram



Dimensions in mm

Application

The INT69 F Diagnose is a universal and versatile protection relay. 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 ground
B1, B2	Run detection motor
X1, X2	External reset
12, 14, 11	Relay 1 (temperature*)
22, 24, 21	Relay 2 (leakage*)

* Setting ex works

Parametrization enables protection functions and response settings to be adapted flexibly to suit the application.

The INT69 F Diagnose saves operating and fault data in a non-volatile memory. This data can be read out and evaluated for diagnostic purposes.

This protection relay device is used primarily for the protection of pumps and agitators.

Functional description

All monitoring functions are configurable via simple parameterization using the INTspector app.

The following operating states of the inputs are described as active, but can be deactivated via parameterization.

Temperature monitoring of the motor temperature and Temperature 1 is performed according to the evaluation method of a PTC, Pt100 or Pt1000. The monitoring of a PTC sensor switches off Relay 1 without delay when the nominal response temperature is reached. The monitoring of a Pt100 and Pt1000 switches off when the adjustable temperature limits are reached after the adjustable tripping delay of Relay 1 has elapsed. A short circuit or an interruption at a temperature input also causes Relay 1 to de-energize. The temperature monitoring can additionally be carried out according to the evaluation procedure of a bimetal switch. When the bimetal switch is released, Relay 1 is switched off without delay. The relay disconnection 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.

Reconnection after a lockout is only possible after a **reset**. The different possibilities are indicated in the technical data.

Leakage monitoring is based on the evaluation method of an ohmic resistor. The monitoring switches off when the adjustable limits are reached after the adjustable tripping delay of Relay 2 has elapsed. Relay 2 is switched on again automatically. An interlocked shutdown 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. Restarting the service interval loads the adjustable interval

time. After the time has expired, the service is indicated by the LED or additionally by switching off a relay (parameterisable).

The **LEDs** indicate the current status of the protection relay (see the flashing code). In fault-free operation, the installed LEDs light up. Both **relays** are energized. If a fault or warning is detected, the respective relay drops out. By parameterization, the relays can be flexibly adjusted to all detectable errors or warnings. Both relays operate according to the closed-circuit current principle.

Adjustable **parameters** (see parameter table) 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 a non-volatile internal 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 ground (FG) must be connected and the supply voltage must be permanently present.

Safety notices



Installation, maintenance and operation must be carried out by a qualified electrician.

The applicable European and country-specific standards for the connection of electrical equipment must be observed.

Outgoing connected sensors and connecting cables from the terminal box must have at least basic insulation.

Fittings

INTspector app

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



INT600 DU gateway

02 S 365 S21

USB gateway, direct connection between INT69 F Diagnose and the PC, smartphone or tablet

Ordering information

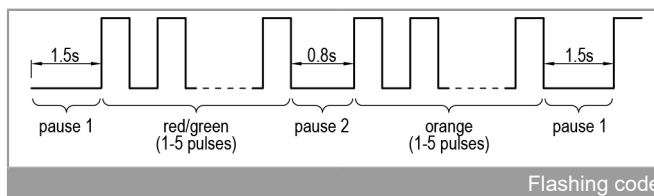
INT69 F Diagnose (100-240 V ~ 50/60 Hz)	22 A 712 P081
INT69 F Diagnose (24 V ~ 50/60 Hz)	20 A 712 P081
Further product information	See www.kriwan.com

Flashing code

The KRIWAN flashing code is used for quick and easy status indication and troubleshooting.

The flashing code consists of a cyclic flashing sequence. In the event of a fault, the flashing 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 flashing pulses.

The status of temperature and leakage is signaled on separate LEDs with "Temp." and "Leak".



Overview of flashing code

LEDs	Status	Description
Temp./Leak.	Steady green	No error, machine is at standstill
	Flashing green	Machine in operation
	Steady orange	No error, machine stopped, service expired
	Orange flashing	No error, machine running, service expired
	Green / orange flashing	Warning, see the description below
	Red / orange flashing	Fault, machine is shut down, see the description below
Temp.	Red lit	Protection relay is in parameterization mode
Temp. and Leak.	Red flashing	Internal error, protection relay defective
Temp.	Red flashing quickly	Bootloader is active/missing firmware

LEDs	1. Flashing sequence	2. Flashing sequence	Description
Temp.			Motor temperature:
Warning	1x green	1x orange	Permissible winding
Fault	1x red	1x orange	temperature exceeded
Temp.			Motor temperature:
Warning	1x green	4x orange	sensor input detected an
Fault	1x red	4x orange	open or short circuit
Temp.			Temperature input 1:
Warning	3x green	1x orange	Permissible temperature
Fault	3x red	1x orange	exceeded
Temp.			Temperature input 1:
Warning	3x green	4x orange	sensor input detected an
Fault	3x red	4x orange	open or short circuit
Leak			Leakage:
Warning	4x green	1x orange	Permissible limit value
Fault	4x red	1x orange	Undershot/exceeded

Technical data

Supply voltage 22 A 712 P081 20 A 712 P081	100-240 V ~ 50/60 Hz 5 VA 24 V ~ 50/60 Hz 5 VA / 3 W
Permissible ambient temperature T_a	$-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$
Permissible humidity	0- 95% r.h., non-condensing
Maximum usage height	2000 m
Temperature measuring circuit, bimetal	
– Type	for an NC contact
– Contact suitable for	24 V – 20 mA
– Max. line length	100 m
PTC temperature measuring circuit	
– Type	1-9 PTC sensors according to DIN 44081, DIN 44082 in series
– $R_{25, \text{total}}$	<1.8 k Ω
– $R_{\text{Triggering, static}}$	4.5 k Ω $\pm$ 20%
– R_{Reset}	2.75 k Ω $\pm$ 20%
– Short circuit monitoring	<20 Ω
– Break monitoring	>20 k Ω
– Applied voltage	
– Motor temperature	24 V –
– Temperature 1	24 V –
– Max. line length	100 m
Pt100 temperature measuring circuit	
– Measuring range	- 50... +300 $^{\circ}\text{C}$
– Resolution	1 K
– Accuracy	5% of the ohmic value
– Short circuit monitoring	<20 Ω
– Break monitoring	>400 Ω
– Applied voltage	
– Motor temperature	24 V –
– Temperature 1	24 V –
– Max. line length	100 m
Pt1000 temperature measuring circuit	
– Measuring range	- 50... +300 $^{\circ}\text{C}$
– Resolution	1 K
– Accuracy	5% of the ohmic value
– Short circuit monitoring	<20 Ω
– Break monitoring	>2.3 k Ω
– Applied voltage	
– Motor temperature	24 V –
– Temperature 1	24 V –
– Max. line length	100 m
Leakage measuring circuit	
– Type	Resistance measurement between electrode pairs
– Measuring range	10 k to 1 M Ω
– Resolution	1 k Ω
– Accuracy	$\pm$ (1 k Ω + 10% of the MV)
– Applied voltage	Approx. 24 V ~
– Max. line length	100 m
Input of internal reset	
– Type	For one normally open contact
– Contact suitable for	5 V – 1 mA
– Max. line length	30 m

Interface	Diagnostic port (DP)
Run detection input	
– Operation with FC	Suitable
– Clock frequency range	2-16 kHz
– Operating frequency range	20-100 Hz
– Phase-phase detection range	60-480 V ~ +10%
– Phase zero detection range	60-277 V ~ +10%
– Max. line length	3 m
Reset of lock or restart delay	
– Option 1	Mains reset >5 s (not for temperature inputs)
– Option 2	Reset button >1 s leakage Reset button >5 s temperature
– Option 3	External reset >1 s leakage External reset >5 s temperature Only possible once any errors have been rectified
Alarm/warning relay	
– Contact	Min. 24 V ~ 20 mA
– Rating data (UL/CSA)	Max. 240 V ~ 2.5 A C300 (NO contact)
– Nominal load (ohmic)	240 V ~ 10 A
– Mechanical service life	Approx. 1 million cycles
Degree of protection as per EN 60529	IP20
Connection type	
– General	Tension spring connection (push- in) 0.2-2.5 mm ²
Housing material	PA 66 GF 30
Fixing	Control cabinet housing (basic grid 22.5 mm), clippable on to 35 mm standard rail as per EN 60715
Dimensions	See dimensions in mm
Weight	
– 22 A 712 P081	Ca. 250 g
– 20 A 712 P081	Ca. 200 g
Test regulations	EN 61000-6-2 EN 61000-6-3 EN 61010-1 Overvoltage category II Degree of pollution 2
Approval	UL File No. E473026 cURus

