Fault Indicator System ENQ4

Operating Instructions

English translation

Errors and technical changes reserved

Correct Use

The ENQ4 offers a complete fault indicator unit for recording unapproved operating conditions such as excessive pressure or excessive temperature in a compact design. The devices are successfully used with compressors, automatic production machines, vehicles, heating systems and air-conditioners.



Features

- Simplify maintenance
- Report faults
- Avoid damages
- Reduce service costs

Function

During normal operation (all external contacts on the inputs S1..S4 are closed) the internal contact A1-14 is closed.

The alarm contact A1-14 (NC) opens as soon as a fault alarm input S1..S4 opens. The machine is switched off until the fault is acknowledged.

Each input channel has a storage function so that faults occurring even sporadically are recognised. The acknowledgment takes place with the interruption of the power supply of the ENQ4 system.

There are 4 fault-detection-inputs and one additionel test input, which operates directly to the output contact of the unit.

Each fault (input signal-contact open) will be indicated by a red LED at the front panel, the fault free operation is shown by a green LED. The report is made through NC-contacts so that separate cable monitoring is assured.

Various operating/reporting voltages up to AC 230V are available.

Special function test operation (input S5):

The closing of the input S5 activates the opening of the contact A1-14 without storage function. The contact will close with the opening of S5 provided that an input S1-S4 do not have a fault report.

Additionally each input is equipped with a signal delay of about 200 ms for the purpose of filtering out any possible current interruptions occurring momentarily. Therefore the switching on of the connected machine by A1-14 and the simultanous closing of the contacts S1..S4 do not lead to a fault report.

These measures permit the use of the equipment with unshielded input cables up to 100 m in length.

Installation

ENQ4 is a panel-mounting device for 45 x 45 mm cutout.

It has a plastic front panel IP54 with identification panel for the fault messages. A paperstrip for inscriptions is enclosed at each item. This strip can easily be pushed into the considered side pocket.

In addition to each fault report display, space for text for customer specific formatting of the reports is provided. We will supply the devices with the appropriate text as per your text documentation for mass production requirements.

All electronic components are integrated in a panel-mounting housing 48 x 48 mm. The front of the device is water and dust proof. Several modules can be arranged next to one another in the form of a tableau.

A plastic front frame with external dimensions of 55 x 55 mm is available as an accessory.

Safety Precautions



- The installation and operation must be carried out by qualified personnel only,
  - who is familiar with the professional handling of machine equipment,
  - who is familiar with the valid rules of industrial safety and accident prevention,
  - who read and understood the operating instructions and the system manual.
- The safe function of the device during machine operation cannot be guaranteed in case of wrong connection or improper operation. This may lead to fatal injuries.
- Pay attention to country specific regulations.
- The electrical installation must be performed after disconnecting the device and the machine from the mains supply.
- The wiring must be carried out according to the instructions of this operating manual.
- The person who programs the device must be protected against electrostatic discharge (ESD protection).
- Opening the device, any manipulation of the device and the avoidance of the safety facilities are not permitted.
- All relevant safety regulations and standards must be attended to.
- Non-observance of the safety regulations may cause death, severe injuries or substantial damage to property.
- Before use, please, read the operating instructions and keep it in a safe place. Make sure that the operating instructions are always available for installation, initial operation and maintenance.

Non-observance of the instructions above will cause the loss of warranty.

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Electrical Connection

- At A1-A2 connect the supply voltage
- The internal alarm contact switches the voltage from A1 to terminal 14.
- The voltage on the fault alarm inputs S1-S5 ist the same as the supply voltage.
- External fusing (6 A) of the output contact 14 must be provided.
- A line cross section of 2.5 mm^2 must not be exceeded
- If the 24 V version is used, a safety transformer according to EN 61558-2-6 or a power supply unit with electrical isolation from the mains must be connected.

If the device does not function after commissioning, it must be returned to the manufacturer unopened. Opening the device will void the warranty.

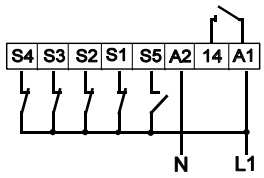


Fig. 1: Electrical Connection

A1: *Power supply (+ 24 V at DC24 V version)*
A2: *Power supply (0V at DC 24 V version)*
S1-S4 : *Fault alarm inputs*
S5: *Test input*
14 : *Alarm contact*

Maintenance

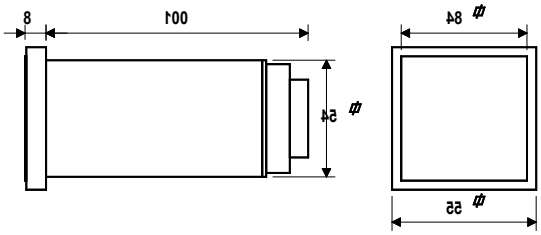
The device must be checked once per month for proper-function and for signs of tampering.

The device is otherwise maintenance free, provided that it was installed properly.

Techn. Data

Operating voltage U_N	AC 230 V, 50-60 Hz, AC 115 V, 50-60 Hz, DC 24 V
Voltage tolerance	+ 10% / - 15%
Residual ripple (type DC)	5%
Power consumption	AC 1.5 VA; DC 2 W
Inputs	4 fault alarm inputs, reporting on opening, 1 additional test function
Function	S1, S2, S3, S4 switching, reporting, storing S5 inverted switching without storage function
Alarm input voltage	same as operating voltage
Input current	< 10 mA
Signal delay	approx. 200 ms for each reporting input and additional 200 ms for relay contact
Acknowledgement/reset	by interruption of power supply
LED´s	green: Normal Operation, Contact A1-14 closed red: Alarm on Input S1..S4, Contact A1-14 open
Protection	front IP54
Switching capacity	1 NC, max. AC250 V, max. 8 A, max. 2000 VA DC: 2 A at 24 VDC
Contact life	mechanical 5x10^7 operations
Contact fuses	6A
Max. line cross section	2.5 mm^2
Max. cable length inputs	100 m
Test voltage	2.5 kV (control voltage/contacts)
Rated impulse withstand voltage	4 kV DIN VDE 0110-1
Rated insulation voltage	250 V
Temperature range	0^0 - +50^0C
Weight	approx. 180 g
Installation position	any

Dimensions



55mm with additional front frame

Variants

Order-No. 583000	ENQ4 AC230 V
Order-No. 583001	ENQ4 AC115 V
Order-No. 583002	ENQ4 DC24 V
Order-No. 583010	Plastic front frame 55 x 55 mm

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CE Konformitätserklärung
EC Declaration of Conformity

Hersteller: H. ZANDER GmbH & Co. KG
Producer: Am Gut Wolf 15 • 52070 Aachen • Deutschland

Produktgruppe: Störmeldesystem
Product Group: Fault Indicating System

Produkt Name
Product Name

ENQ4

Die Produkte stimmen mit den Vorschriften folgender Europäischer Richtlinien überein:
The products conform with the essential protection requirements of the following European directives:

2014/35/EU : Niederspannungsrichtlinie
2014/35/EU : Low-voltage directive

2011/65/EU : RoHS Richtlinie
2011/65/EU : RoHS directive

2014/30/EU : EMV Richtlinie
2014/30/EU : EMC directive

Die Übereinstimmung der bezeichneten Produkte mit den Vorschriften der o.a. Richtlinie wird, falls anwendbar, nachgewiesen durch die vollständige Einhaltung folgender Normen:
If applicable, the conformity of the designated products is proved by full compliance with the following standards:

EN 61439-1:2011
EN 60947-5-1:2017
IEC 63000:2018
EN 60664-1:2007
EN 61000-6-2:2005
EN 60947-1:2007 + A1:2011 + A2:2014
EN 61000-6-3:2007 + A1:2011

Dokumentationsbeauftragte/-r: Christiane Nittschalk
Documentation manager

Aachen, den 14.05.2019

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Manager for EC declaration of conformity

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