#### developing solutions









# Data sheet

## **ER76**

Control relay for level probe DNV-GL version





## **1** Product and functional description

#### **1.1 Performance characteristics**

#### **Typical applications**

- · Monitoring of min. or max. Levels in containers
- · Controlling and monitoring in water treatment plants
- Filling systems
- Dry-run protection of pumps
- · Separation of oil-water layers within closed separators
- · On all vessels in accordance with the provisions of DNV-GL

#### Main features

- Galvanic isolation
- AC voltage connection
- LED switching status display

#### 1.2 Device versions



Fig. 1: Device versions

Bestellnummer	Switch output	Supply U <sub>b</sub>
ER76 1 000000 1	1 relay contact	230 V AC
ER76 1 000000 4	1 relay contact	24 V AC
ER76 2 000000 1	2 relay contacts	230 V AC
ER76 2 000000 4	2 relay contacts	24 V AC

#### 1.3 Intended use

Control relay ER76 can be used in connection with type NK06 level probes for the automatically controlling and regulating conductive liquid filling levels in tank systems.

#### 1.4 Function diagram



Fig. 2: Function diagram

#### 1.5 Design and mode of operation

ER76 is controlled by the medium using a type NK06 probe. Input sensitivity is factory-adjusted to 70 k $\Omega$ . In order for the relay to switch properly, the medium-conductivity must not fall below a value of 14  $\mu$ S / cm.

When contact is made, an alternating voltage without a direct voltage component flows through the medium, preventing galvanic erosion of the probe material.

Depending on the application, location or national regulations, the control electrodes' reference potential can be represented by a common electrode as well as by the container itself.

After the level probe has been installed and the control relay has been electrically connected, the contact switches to the working position. LED is on.

If the maximum level is reached, the output relay switches to the rest position. LED is off. This state remains until the level falls below the minimum level and the contact switches to the working position again.

If the supply voltage fails, there is a defect in the control circuit or an interruption in the measuring line, the system goes into the safe state (normally closed contact) and thus prevents the container from being overfilled.

### 2 Technical data

#### 2.1 General

Type designation	ER76
Inputs for conductive probes	1 or 2
Switch outputs	1 or 2
Measurement principle	Conductive

#### 2.2 Input variables

Measuring range	The measuring range termined by the corprobe.	ge (fill level) is de- nnected conductive
Input signal	Probe rods covered between the rods.	d: A current flows
	Probe rods uncovered: No current flows between the rods.	
	Adjustment range	Set
Input sensitivity	0 200 kΩ	70 kΩ
Medium conductivity		≥ 14 µS/cm

Input sensitivity is preset at the factory and cannot be changed on site.

#### 2.3 Output sizes

Switching function	2-point controller
Switch output	1 or 2 potential-free changeover con- tacts
Max. switching voltage	250 V AC
Max. switching current	2 A
Max. switching output	250 VA
Switching status display	LED

#### 2.4 Auxiliary energy

Nominal voltage	230 V AC 24 V AC
Absorbed power	Max. 5 VA

#### 2.5 Operating conditions

Ambient temperature range	-10 °C +70 °C
Storage temperature range	-10 °C +70 °C
Housing protection class Terminal protection class	IP40 IP20
NSR	EN 61010-1:2010 + A1:2019 + A1:2019/AC:2019
EMC	EN 61326-1:2013 EN 61326-2-3:2013
RoHS	EN IEC 63000:2018
DNV-GL	On all vessels in accordance with the provisions of the DNVGL (class guideline: DNVGL-CG-339) Certificate No. TAA00001ZU

#### 2.6 Construction design

Electrical connection	Screw terminals	
Installation position	User-defined	
Assembly *)	Assembly of the mountin	g rails
Dimensions	68 x 75 x 110 mm	
Weight (max.)	280 g 380 g	ER76 1-Channel ER76 2-Channel

<sup>\*)</sup> A cut-to-size mounting rail and end clamps are available as accessories for wall mounting.

#### 2.6.1 Materials

Housing	Polycarbonate / acrylonitrile butadiene styrene (ABS-PC)
Terminals	Polyamide (PA), Cu alloy

#### 2.6.2 Dimension drawing

All dimensions in mm unless otherwise stated



Fig. 3: Dimension drawing ER76 1 channel

The 2-channel version has the same dimensions.

## 3 Order codes



#### Design:

[1]	(Code no.)
1	1-way relay
2	2-way relay

#### **Operating voltage:**

[8]	(Code no.)
1	230 V AC
4	24 V AC

#### 3.1 Accessories

Order no.	Discription
NK06	Conductive level probe
09001380	35 mm mounting rail perforated; 122 mm long
09001479	End clamp 6mm wide

#### 3.2 Information about the document

This document contains all technical data about the device. Great care was taken when compiling the texts and illustrations. nevertheless, errors cannot be ruled out.

Subject to technical amendments.

#### Notes





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