

# Jola-Protection relays

for connection of binary sensors  
(e.g. Jola floating switches or Jola immersion probes) or  
for connection of Namur-sensors  
(e.g. inductive or capacitive proximity sensors)  
and

# Jola-Alarm relays

for connection of several relays to one alarm relay or  
for connection of binary sensors  
(e.g. Jola floating switches or Jola immersion probes)



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# KR 3 and KR 3 A protection relays

for signalling a limit level (1 sensor) or  
for two-point control (2 sensors)



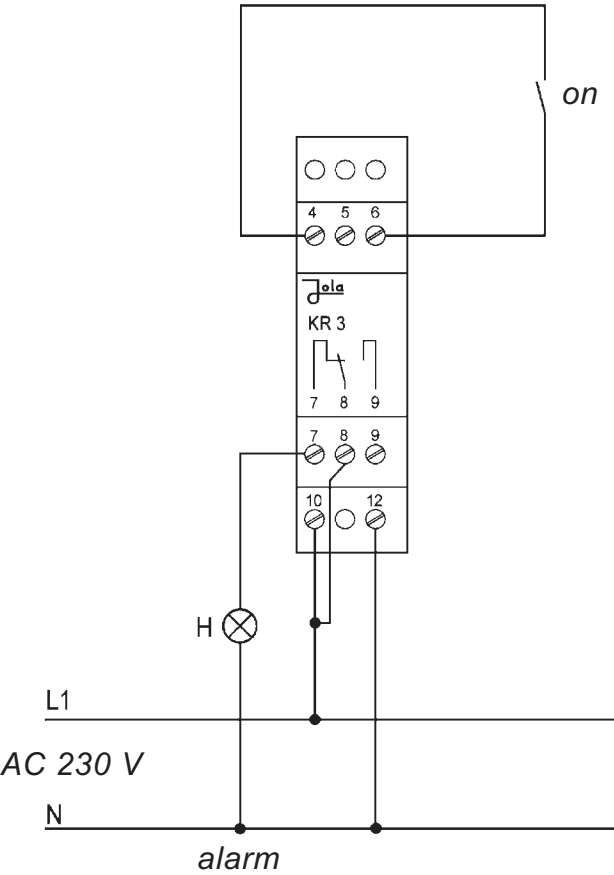
Protection relay for U-bar mounting, with connection terminals on top of housing and with 2 built-in LEDs for signalling the respective switching status.

**These appliances are designed for switch cabinet installation or mounting in an appropriate protective housing and may therefore not be installed in other locations. They are only suitable for use in clean environments.**

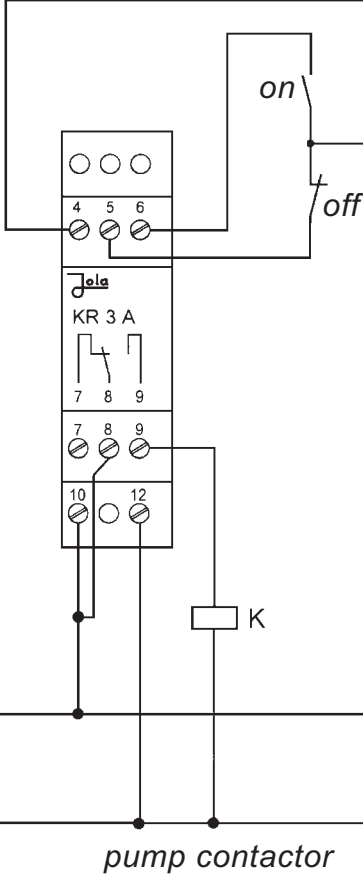
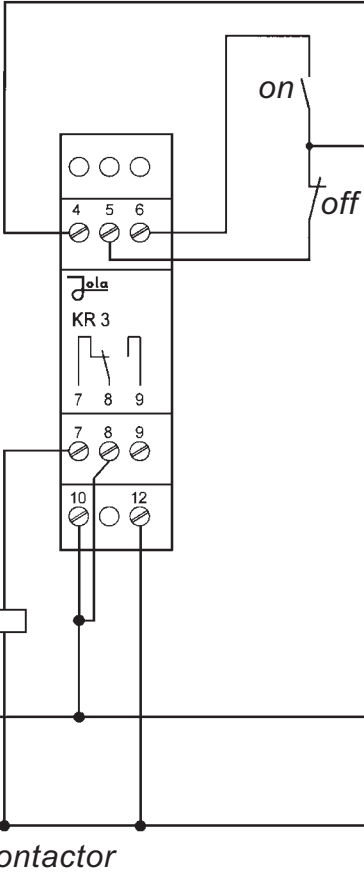
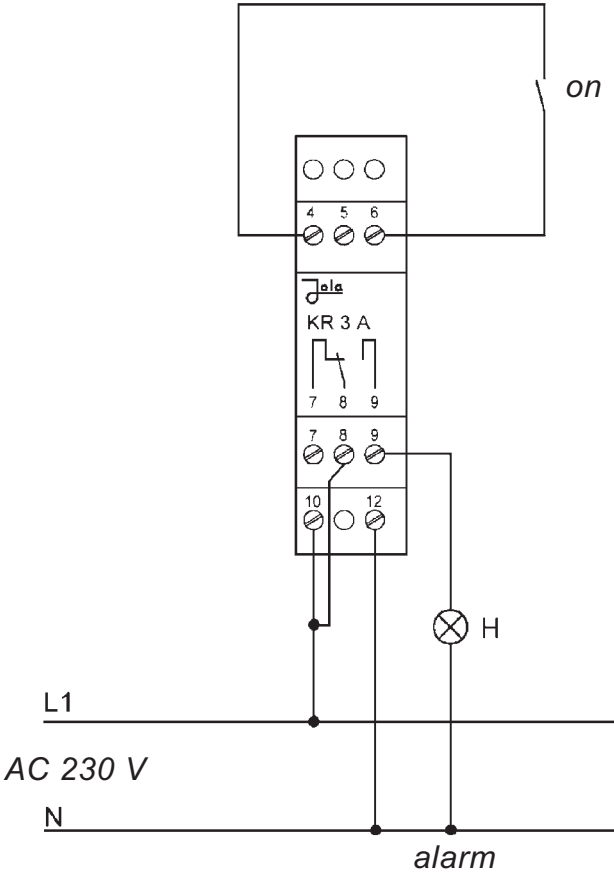
Technical data	KR 3	KR 3 A
Alternative supply voltages (AC versions: terminals 10 and 12; DC versions: - terminal 10: - - terminal 12: +)	- AC 230 V (delivered if no other supply voltage is specified in the order) or - AC 240 V or - AC 115 V or - AC 24 V or - DC 24 V or } in these two cases, the unit must only be connected to a low safety voltage which corresponds to the safety regulations relating to the application - DC 12 V or } - further supply voltages on request	
Power input Control circuit (terminals 4, 5, 6)	approx. 3 VA  3 terminals (under safety extra low voltage SELV), acting on 1 output relay with self-hold according to DIN EN 50 227 DC 8.4 V (safety extra low voltage SELV) < 10 mA 1.5 mA $\square$ 1.8 mA	
Sensor connection - no-load voltage - short-circuit current - response hysteresis	<b>1 single-pole potential-free changeover contact with self-hold</b> <b>quiescent current principle   working current principle</b> 1 green LED lights when the output relay is energised 1 red LED lights when the output relay is not energised	
<b>Controlled circuit (terminals 7, 8, 9)</b> <b>Principle</b>	max. AC 250 V max. AC 4 A max. 500 VA	
Switching status indicators	insulating material, 75 x 22.5 x 100 mm (dimensions see p. 12-1-13) terminals on top of housing IP 20 clip attachment for U-bar to DIN 46 277 and EN 50 022 any from - 15°C to + 60°C	
Switching voltage Switching current Switching capacity	<b>1,000 m</b>	
Housing Connection Protection class Mounting Mounting orientation Temperature appl. range	for interferences emission in accordance with the appliance-specific requirements for households, business and commerce as well as small companies, and for interference immunity in accordance with the appliance-specific requirements for industrial companies 114502	
<b>Max. cable length between relay and sensor(s)</b>	in accordance with EN 60 730 97540	
VDE marks licence in accordance with - the EMC guideline	114502	
VDE marks licence certific. - in accordance with the low-voltage guideline	in accordance with EN 60 730 97540	
VDE marks licence certific.	97540	

Connection diagrams

KR 3



KR 3 A



Output contact shown in no-current condition



# KR 5 and KR 5 A protection relays

for signalling a limit level (1 sensor)  
or  
for two-point control (2 sensors)



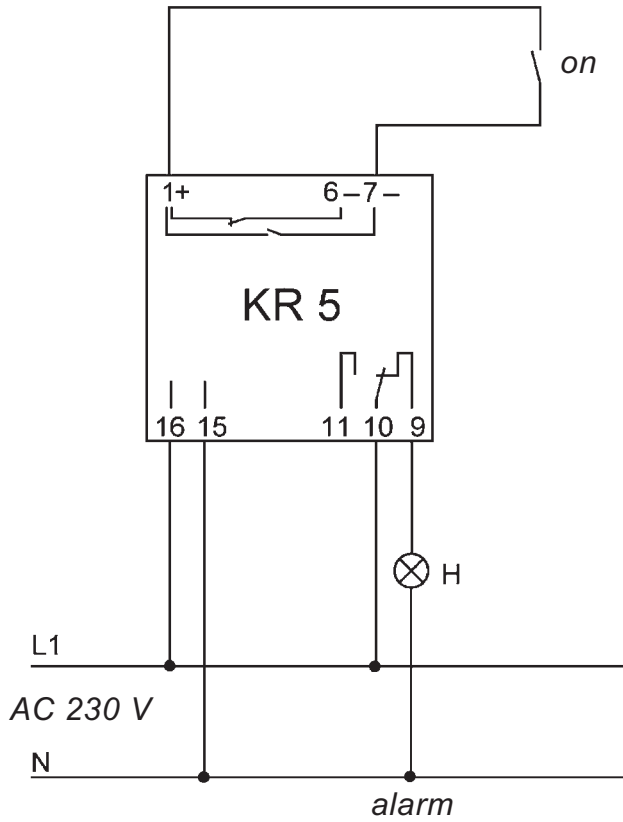
Protection relay for U-bar mounting or surface mounting, with connection terminals on top of housing and with 2 built-in LEDs for signalling the respective switching status.

**These appliances are designed for switch cabinet installation or mounting in an appropriate protective housing and may therefore not be installed in other locations. They are only suitable for use in clean environments.**

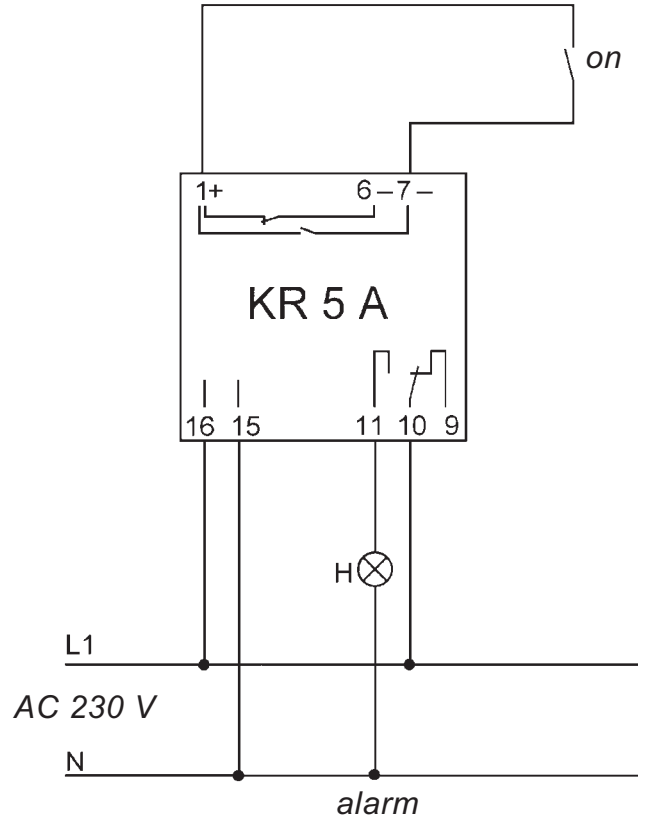
Technical data	KR 5	KR 5 A
Alternative supply voltages (AC versions: terminals 15 and 16; DC versions: - terminal 15: - - terminal 16: +)	- AC 230 V (delivered if no other supply voltage is specified in the order) or - AC 240 V or - AC 115 V or - AC 24 V or - DC 24 V or - DC 12 V or } in these two cases, the unit must only be connected to a low safety voltage which corresponds to the safety regulations relating to the application - further supply voltages on request approx. 3 VA	
Power input Control circuit (terminals 1, 6, 7)	3 terminals (under safety extra low voltage SELV), acting on 1 output relay with self-hold according to DIN EN 50 227 DC 8.4 V (safety extra low voltage SELV) < 10 mA	
Sensor connection - no-load voltage - short-circuit current - response hysteresis	1.5 mA <input type="checkbox"/> 1.8 mA	
<b>Controlled circuit (terminals 9, 10, 11)</b>	<b>1 single-pole potential-free changeover contact with self-hold</b>	
<b>Principle</b> Switching status indicators	<b>quiescent current principle   working current principle</b>  1 green LED lights when the output relay is energised 1 red LED lights when the output relay is not energised	
Switching voltage Switching current Switching capacity Housing	max. AC 250 V max. AC 4 A max. 500 VA insulating material, 75 x 55 x 110 mm (dimensions see page 12-1-13) terminals on top of housing IP 20	
Connection Protection class Mounting	clip attachment for U-bar to DIN 46 277 and EN 50 022 or fastening via two boreholes any	
Mounting orientation Temperature appl. range <b>Max. cable length between relay and sensor(s)</b> VDE marks licence in accordance with the EMC guideline	from - 15°C to + 60°C  <b>1,000 m</b>  for interference emission in accordance with the appliance-specific requirements for households, business and commerce as well as small companies, and for interference immunity in accordance with the appliance-specific requirements for industrial companies	
VDE marks licence cert.	114502	

Connection diagrams

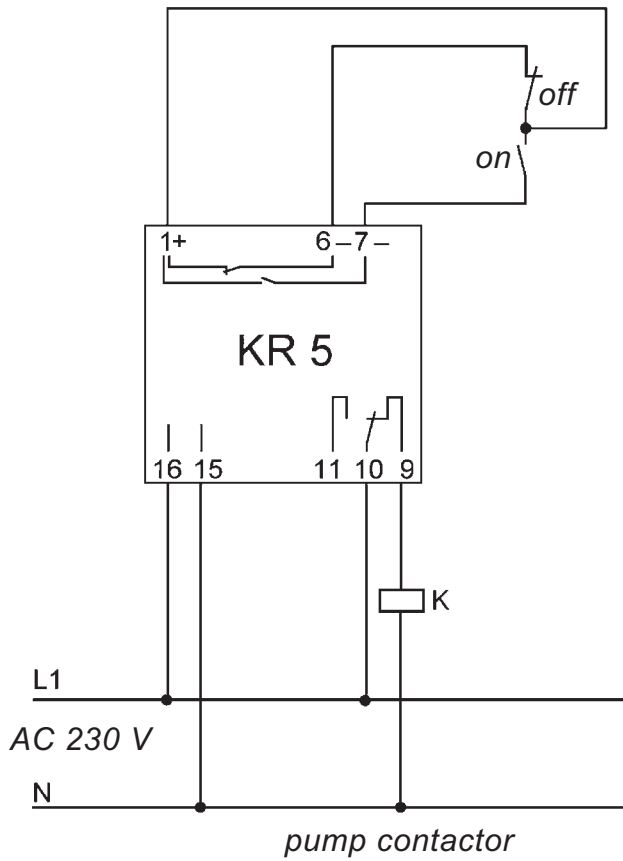
KR 5



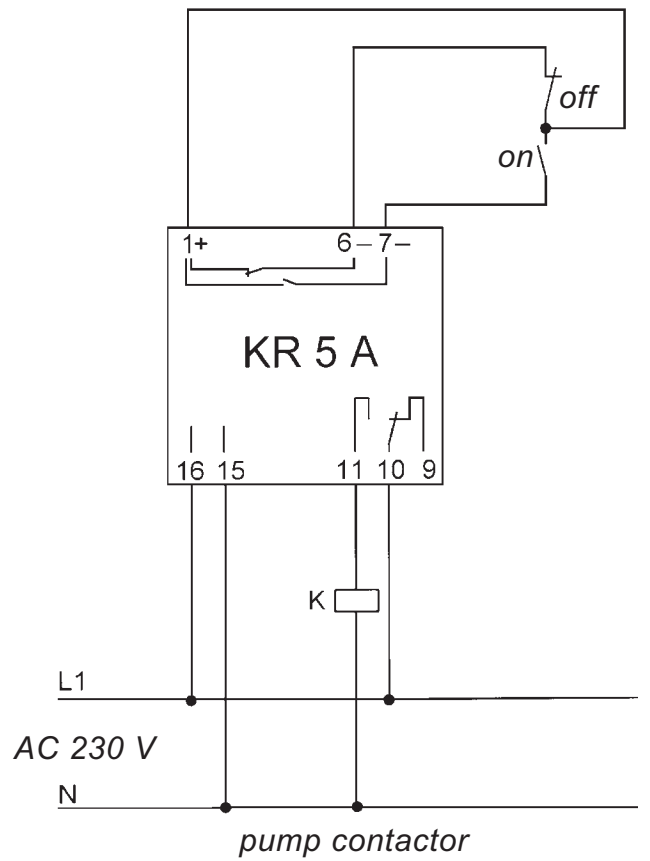
KR 5 A



KR 5



KR 5 A



Output contact shown in no-current condition



# KR 5/G protection relay

for signalling a limit level  
(1 sensor) or  
for two-point control  
(2 sensors)



Protection relay in surface-mount housing, with transparent cover and switching status indicators inside the housing

## Technical data

## KR 5/G

Alternative supply voltages  
AC versions:  
terminals 1 and 2;  
DC versions:  
- terminal 1: –  
- terminal 2: +)

- AC 230 V (delivered if no other supply voltage is specified in the order) or  
- AC 240 V or  
- AC 115 V or  
- AC 24 V or  
- DC 24 V or } in these two cases, the unit must only be connected to a low safety voltage which corresponds to the safety regulations relating to the application  
- DC 12 V or }  
- further supply voltages on request  
approx. 3 VA

Power input  
Control circuit  
(terminals 6, 7, 8)

3 terminals (under safety extra low voltage SELV), acting on 1 output relay with self-hold according to DIN EN 50 227  
DC 8.4 V (safety extra low voltage SELV)  
< 10 mA  
1.5 mA  $\square$  1.8 mA

Sensor connection  
– no-load voltage  
– short-circuit current  
– response hysteresis

**Controlled circuit  
(terminals 3, 4, 5)**

**1 single-pole potential-free changeover contact with self-hold  
quiescent current principle**

## Principle

Switching status indicators

1 green LED lights when the output relay is energised  
1 red LED lights when the output relay is not energised

Switching voltage  
Switching current  
Switching capacity  
Housing

max. AC 250 V  
max. AC 4 A  
max. 500 VA  
insulating material, with 3 screw connections (dimensions see page 12-1-14)

Connection  
Protection class  
Mounting  
Mounting orientation  
Temperature appl. range

internal terminals  
IP 54  
surface mounting using 4 screws  
any  
from – 15°C to + 60°C

**Max. cable length  
between relay and  
sensor(s)**

**1,000 m**

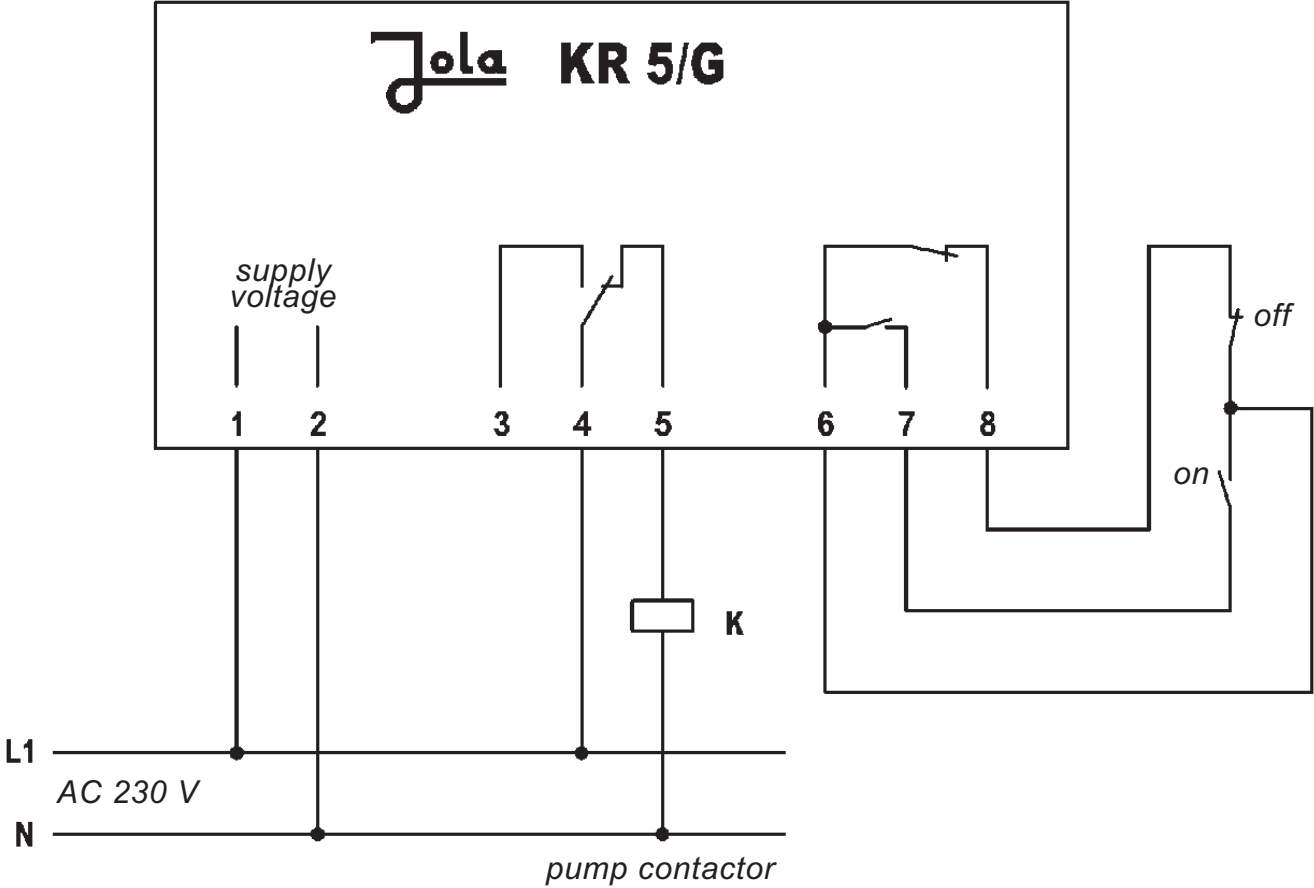
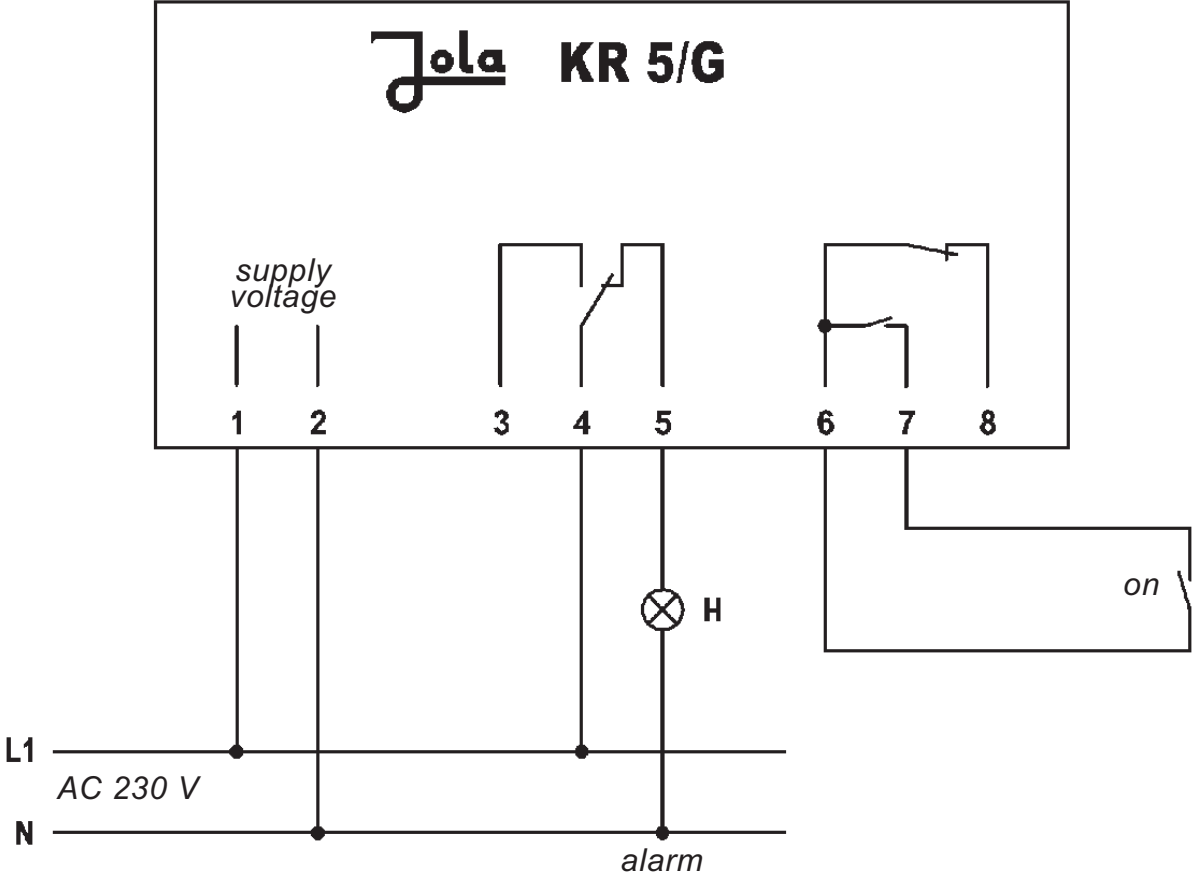
VDE marks licence in accordance with the EMC guideline

for interference emission in accordance with the appliance-specific requirements for households, business and commerce as well as small companies, and for interference immunity in accordance with the appliance-specific requirements for industrial companies

VDE marks licence cert.

114502

Connection diagrams



Output contact shown in no-current condition

# Jola ESA 2 alarm relay

Alarm relay for U-bar mounting or surface mounting, with connection terminals on top of housing and built-in two-colour LED for signalling the respective switching status.

**This appliance is designed for switch cabinet installation or mounting in an appropriate protective housing and may therefore not be installed in other locations. It is only suitable for use in clean environments.**

The design of the alarm relay is based on the **quiescent current principle**, in other words, an alarm signal is given if there is no connection between terminals 7 and 8; the output contacts of the unit also revert to alarm status if there is a supply voltage failure.

**In standby status** (unit is supplied with voltage and connection between terminals 7 and 8), the two potential-free outputs are in activated condition = open and the LED lights green.

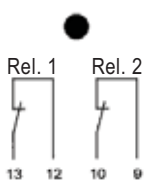
**In the event of an alarm** (unit supplied with voltage and no connection between terminals 7 and 8), the two potential-free outputs are in non activated condition (contacts in quiescent state = closed) and the LED flashes red.

In order to cancel the alarm given via the output, one of the two relays in the output can be reset using the built-in acknowledgement button or a connected external acknowledgement button. The LED then stops flashing and reverts to permanent red.



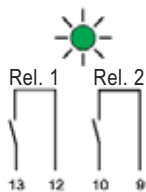
## Position of output contacts in the ESA 2 alarm relay

without supply voltage



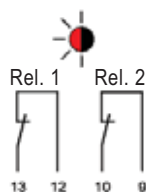
LED dark –  
both output relays not energised –  
output contacts closed

OK status



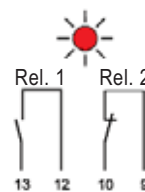
LED lights green –  
both output relays energised –  
output contacts open

alarm status



LED flashes red –  
both output relays not energised –  
output contacts closed

alarm status acknowledgement



LED lights red –  
output relay 1 energised –  
contact 12, 13 open –  
output relay 2 not energised –  
contact 9, 10 closed

Technical data	ESA 2
Alternative supply voltages (AC versions: terminals 15 and 16; DC versions: - terminal 15: - - terminal 16: +)	<ul style="list-style-type: none"> <li>- AC 230 V (delivered if no other supply voltage is specified in the order) or</li> <li>- AC 240 V or</li> <li>- AC 115 V or</li> <li>- AC 24 V or</li> <li>- DC 24 V or</li> <li>- DC 12 V or</li> </ul> <p>in these two cases, the unit must only be connected to a low safety voltage which corresponds to the safety regulations relating to the applications</p> <ul style="list-style-type: none"> <li>- further supply voltages on request</li> </ul>
Power input	approx. 3 VA
Control circuit (terminals 7 and 8)	2 terminals (under safety extra low voltage SELV), acting on 2 output relays without self-hold, where one can be reset if an alarm is activated
<ul style="list-style-type: none"> <li>- no-load voltage</li> <li>- short-circuit current</li> <li>- response sensitivity</li> </ul>	9 V <sub>eff</sub> $\square$ 10 Hz (safety extra low voltage SELV) max. 0.5 mA <sub>eff</sub> approx. 30 kOhm
<b>Controlled circuits (terminals 12, 13 – rel. 1, terminals 9, 10 – rel. 2)</b>	<p><b>2 potential-free normally closed contacts based on the quiescent current principle, both activated in standby status.</b></p> <p><b>One of the two normally closed contacts (terminals 12, 13 – rel. 1) can be reset in the event of alarm.</b></p> <p><b>The other normally closed contact (terminals 9, 10 – rel. 2) retains its switching status as long as the alarm is given.</b></p>
Acknowledgement	output relay 1 (terminals 12, 13) can be reset via a built-in button or external acknowledgement button (connection option at terminals 4 and 5)
Switching status indicator	via two-colour LED: green = standby, both output relays energised flashing red = alarm, both output relays not energised lights red = alarm acknowledged, output relay 1 reset
Switching voltage	max. AC 250 V
Switching current	max. AC 4 A
Switching capacity	max. 500 VA
Housing	insulating material, 75 x 55 x 110 mm (dimensions see page 12-1-13)
Connection	terminals on top of housing
Protection class	IP 20
Mounting	clip attachment to U-bar to DIN 46 277 and EN 50 022 or fastening via two boreholes
Mounting orientation	any
Temperature application range	from – 15°C to + 60°C
<b>Max. cable length between relay and contact(s) / sensor(s)</b>	<b>1,000 m</b>
EMC	for interference emission in accordance with the appliance-specific requirements for households, business and commerce as well as small companies, and for interference immunity in accordance with the appliance-specific requirements for industrial companies

# Jola ESA 2/G alarm relay

Alarm relay in surface-mount housing with transparent cover and switching status indicators inside the housing.

The design of the relay is based on the **quiescent current principle**, in other words, an alarm signal is given if there is no connection between terminals 11 and 12; the output contacts of the unit also revert to alarm status if there is a supply voltage failure.

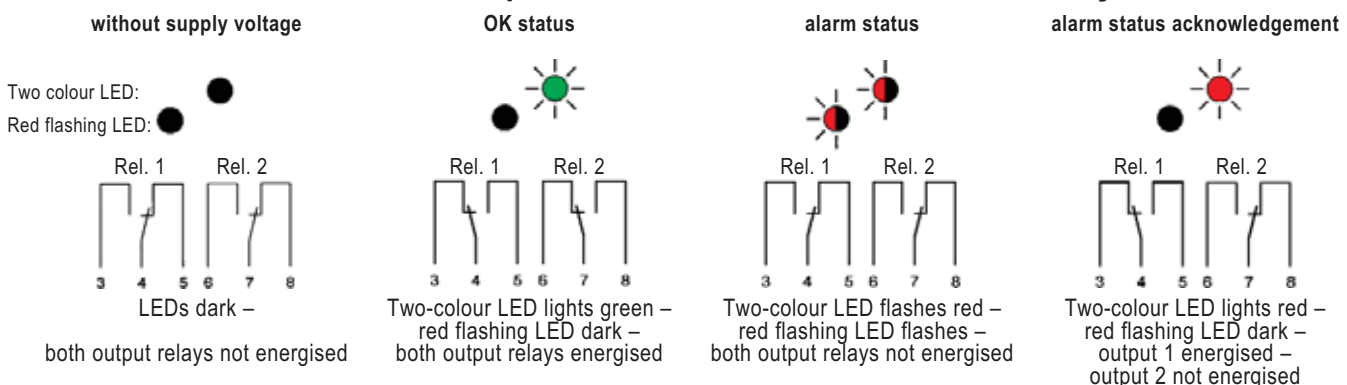
**In standby status** (unit supplied with voltage and connection between terminals 11 and 12), the two potential-free outputs are in activated condition and the two-colour LED lights green.

**In the event of an alarm** (unit supplied with voltage and no connection between terminals 11 and 12), the two potential-free outputs are in non activated condition (contacts in quiescent state), and the two-colour LED flashes red; an additional red flashing LED also flashes as a switching status indicator for the relay which can be acknowledged.

In order to cancel the alarm given via the output, one of the two relays in the output (terminals 3, 4, 5) can be reset using a connected external acknowledgement button (connection option at terminals 9 and 10). The red flashing LED then stops flashing and the two-colour LED reverts to permanent red.

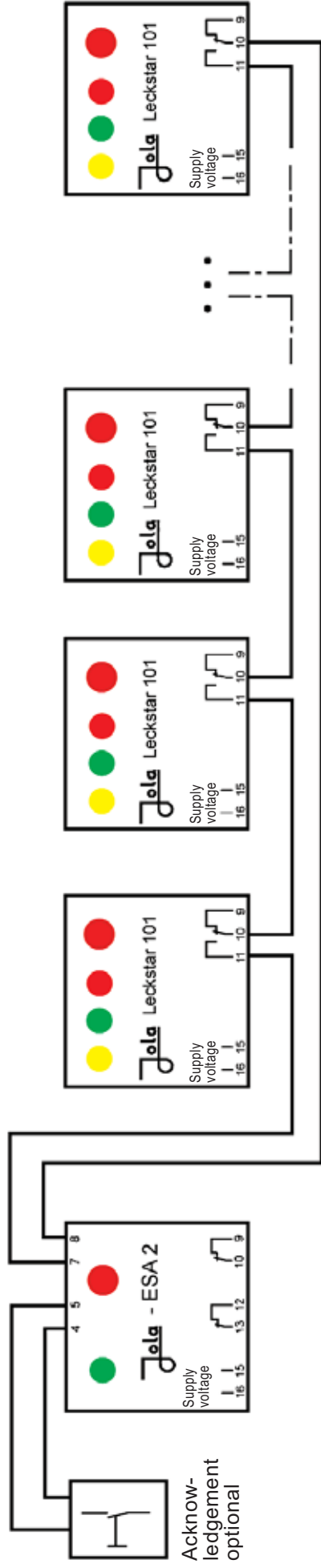


## Position of output contacts in the ESA 2/G alarm relay



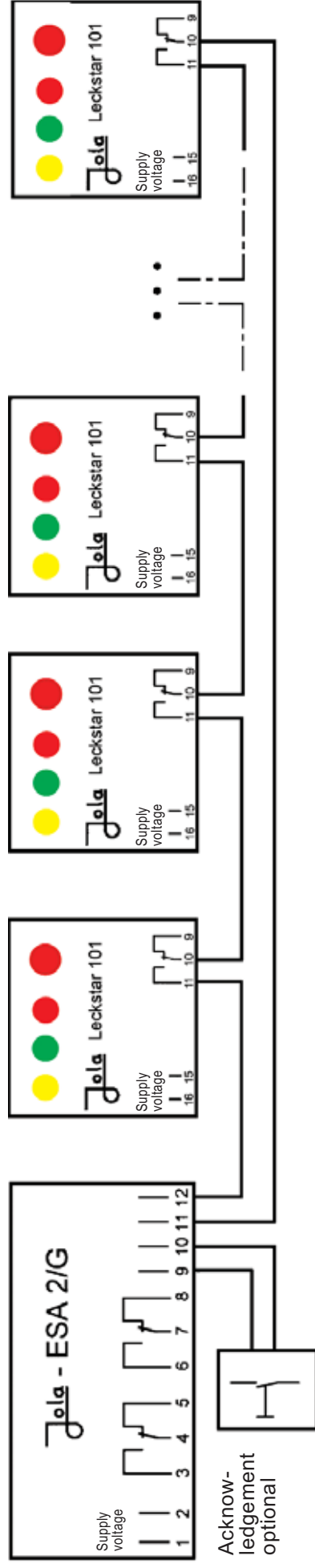
Technical data	ESA 2/G
Alternative supply voltages (AC versions: terminals 1 and 2; DC versions: - terminal 1: – - terminal 2: +)	<ul style="list-style-type: none"> <li>- AC 230 V (delivered if no other supply voltage is specified in the order) or</li> <li>- AC 240 V or</li> <li>- AC 115 V or</li> <li>- AC 24 V or</li> <li>- DC 24 V or</li> <li>- DC 12 V or</li> </ul> <p style="margin-left: 20px;">} in these two cases, the unit must only be connected to a low safety voltage which corresponds to the safety regulations relating to the application</p> <ul style="list-style-type: none"> <li>- further supply voltages on request</li> </ul>
Power input	approx. 3 VA
Control circuit (terminals 11 and 12)	2 terminals (under safety extra low voltage SELV), acting on 2 output relays without self-hold, where one can be reset if an alarm is activated
<ul style="list-style-type: none"> <li>– no-load voltage</li> <li>– short-circuit current</li> <li>– response sensitivity</li> </ul>	<p>9 V<sub>eff</sub> <math>\square</math> 10 Hz (safety extra low voltage SELV)  max. 0.5 mA<sub>eff</sub>  approx. 30 kOhm</p>
<b>Controlled circuit (terminals 3 to 8)</b>	<p><b>2 potential-free changeover contacts based on the quiescent current principle, both activated in standby status.</b></p> <p><b>One of the two changeover contacts (terminals 3, 4, 5 – rel. 1) can be reset in the event of alarm.</b></p> <p><b>The other changeover contact (terminals 6, 7, 8 – rel. 2) retains its switching status as long as the alarm is given.</b></p>
Acknowledgement	output relay 1 (terminals 3, 4, 5) can be reset via a connected external acknowledgement button (connection option at terminals 9 and 10)
Switching status indicators	<ul style="list-style-type: none"> <li>– via two-colour LED: <ul style="list-style-type: none"> <li>green = standby, both output relays energised</li> <li>flashing red = alarm, both output relays not energised</li> <li>lights red = alarm acknowledged, output relay 1 reset</li> </ul> </li> <li>– and one red flashing LED: <ul style="list-style-type: none"> <li>flashes red = output relay 1 in alarm status</li> </ul> </li> </ul>
Switching voltage	max. AC 250 V
Switching current	max. AC 4 A
Switching capacity	max. 500 VA
Housing	insulating material, with 3 screw connections (dimensions see page 12-1-14)
Connection	internal terminals
Protection class	IP 54
Mounting	surface mounting using 4 screws
Mounting orientation	any
Temperature application range	from – 15°C to + 60°C
<b>Max. cable length between relay and contact(s) / sensor(s)</b>	<b>1,000 m</b>
EMC	for interference emission in accordance with the appliance-specific requirements for households, business and commerce as well as small companies, and for interference immunity in accordance with the appliance-specific requirements for industrial companies

**Circuit diagram for connection of several Leckstar 101 relays connected to each other to an alarm relay ESA 2 (example)**



Output contacts shown in no-current condition

**Circuit diagram for connection of several Leckstar 101 relays connected to each other to an alarm relay ESA 2/G (example)**



Output contacts shown in no-current condition



# Hooter

for connection to an alarm relay ESA 2 or ESA 2/G

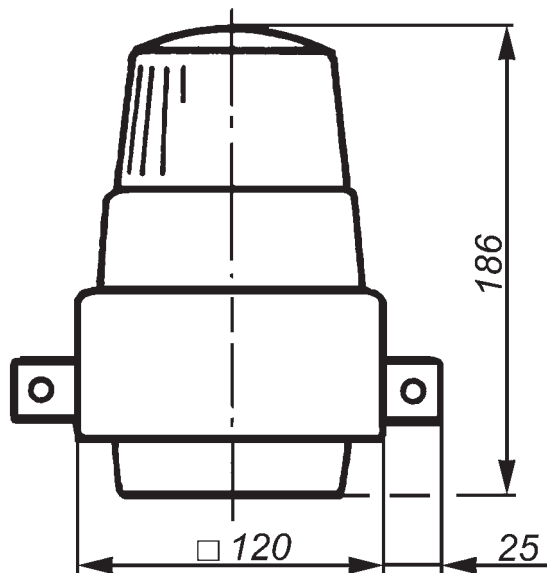
Technical data	HU 2	HU 4	HU 12, with incorporated flashlight
Application	dry rooms	damped rooms or outer mounting	dry rooms
<b>Control voltage</b>		<b>AC 230 V</b>	
Current consumption	AC 0.01 A	AC 0.1 A	AC 0.08 A
Power consumption	approx. 2.2 VA	approx. 22 VA	approx. 17.6 VA
Sound level at a distance of 1 m	approx. 93 dB	approx. 110 dB	approx. 100 dB
Dimensions	approx. 70 x 170 mm	approx. 140 x 162 mm	approx. 170 x 186 mm
Protection class	IP 33	IP 55	IP 43



HU 2

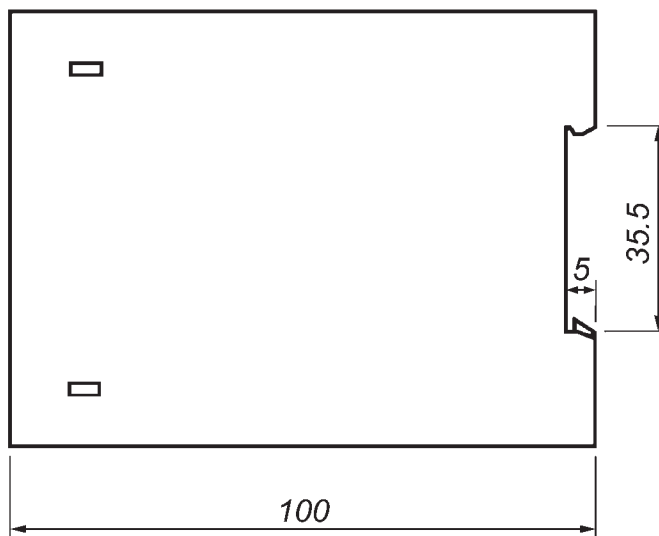
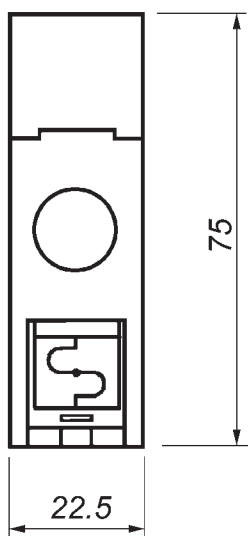


HU 4

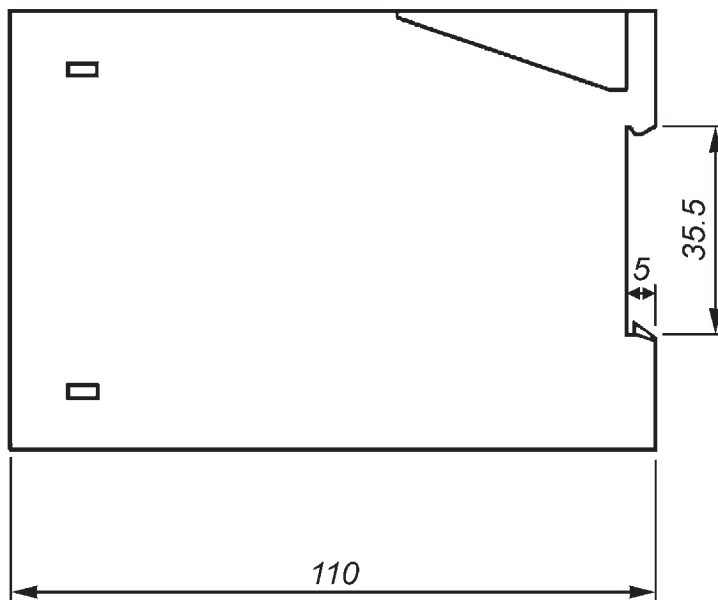
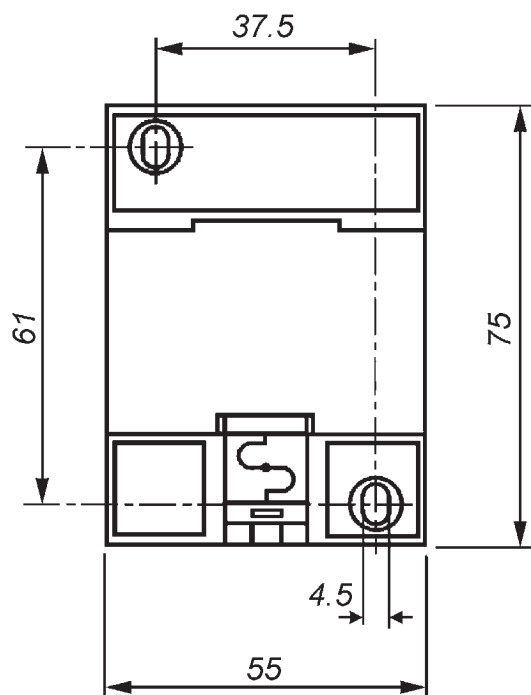


HU 12

## Dimensional drawings

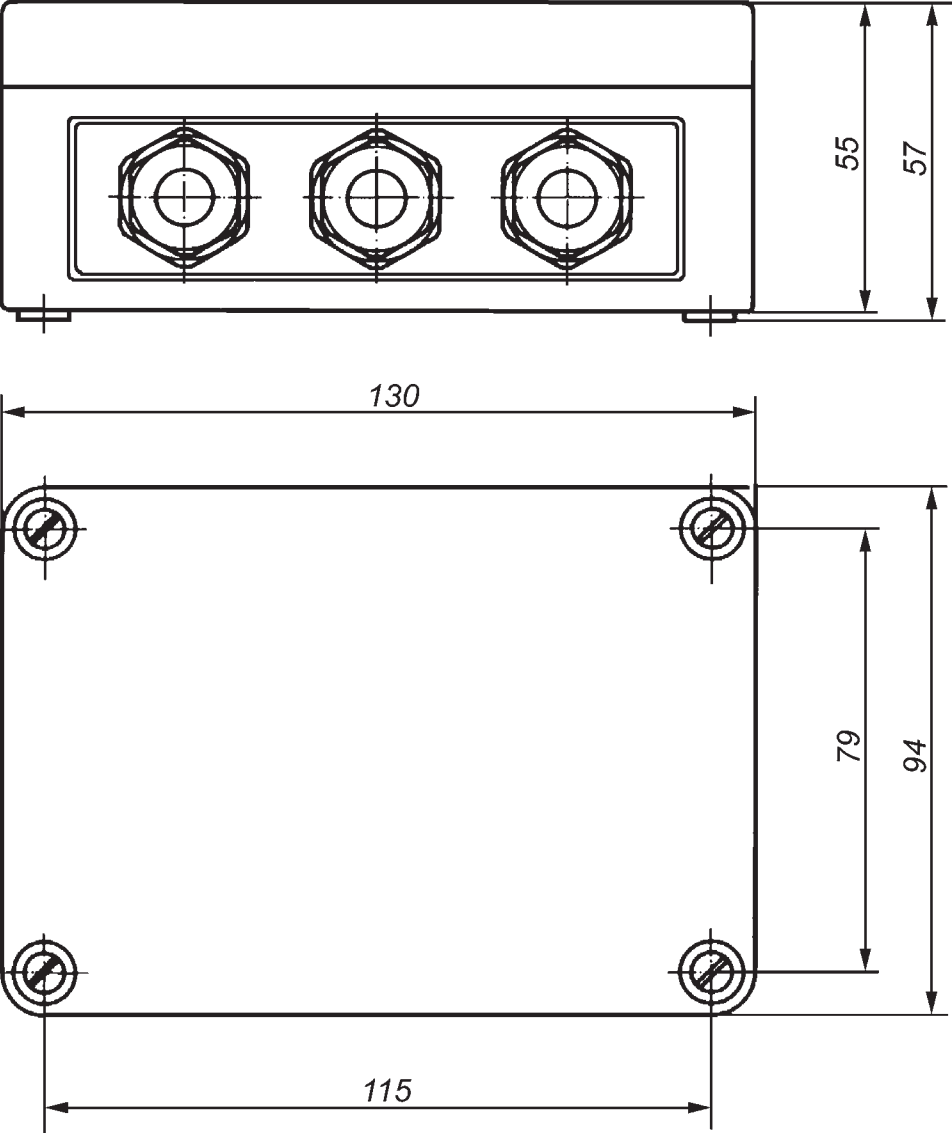


KR 3 or KR 3 A



KR 5, KR 5 A or ESA 2

Dimensional drawings



KR 5/G or ESA 2/G

**The units described in this documentation  
may only be installed, connected and  
started up by suitably qualified personnel!**

**Subject to deviations from the diagrams  
and technical data.**

**The details in this brochure are product  
specification descriptions and do not  
constitute assured properties in the legal  
sense.**