ID RW02.ABC-A (RS232 Interface)

ID RW02.ABC-B (RS485 Interface)

(english)

E N G L I S H

Note

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General information's regarding this document

The sign "☞" indicates extensions or changes of this manual compared with the former issue.

Content

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1. Safety instructions

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- **The device has to be used only for the purpose designed by the manufacturer.**

- **The operation manual has to be stored available at any time and has to be handed over to each user.**

- **Unauthorized changes and the use of spare parts and additional devices which have not been sold or recommended by the manufacturer may cause fire, electric shocks or injuries. Such measures will lead to exclusion of any liability by the manufacturer.**

- **The liability-prescriptions of the manufacturer in the issue valid at the time of purchase are valid for the device. The manufacturer is not legally responsible for incorrect, unsuitable manual or automatical setting of parameters for a device or the incorrect application of a device.**

- **Repairs can only be executed by the manufacturer.**

- **Installation-, operation- and maintenance procedures should only be carried out by qualifiedpersonnel.**

- **Before opening the device, the power supply must always be interrupted. Make sure that the device is without voltage by measuring. CAUTION! The fading of an operation control (LED) is no indicator for an interrupted power supply or the device being withoutvoltage!**

- **Works at the device and its installation have to be executed according to the national legal requirements and local prescriptions.**

- **When working on devices the valid safety regulations must be observed.**

2. Installation

The Reader has been designed for wall installation on 60 mm flush-mounting box. For surface installation, the bottom part of the casing can be substituted by the surface frame ID APR-A, which is available as an attachment.

NOTES:

- *The Reader must not be installed directly upon conductive materials as e.g. metal surfaces, metal grids (reinforcements) or metallized surfaces, as these surfaces reduce the detection range of the Reader. The distance between the Reader and such surfaces should be min. 3 cm.*

  If an installation to a metal surface becomes necessary, the surface frame ID APR-A can be employed in order to keep the minimal distance.

- *The distance between two Readers of the same type should not fall below 30 cm.*

- *Before any installation the intended position of the Reader should be tested for its suitability.*

- *The opening (A) in the casing (see Fig 1) has to be installed downwards!*
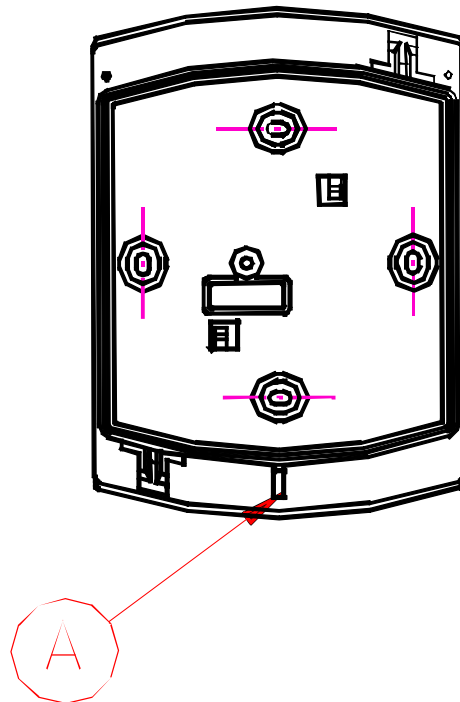
Fig 1: mounting direction (A) downwards

2.1 Installation on flush-mounting box

1. Select installation place:

The installation should be executed always on a surface as even as possible.

2. Connection:

see chapter Reader-connection

3. Operation:

- snap connection board into bottom part of casing (see Fig 2).
- Put the top of the casing onto its bottom part. The pin board of the Reader electronic has to be inserted carefully into the socket board X3!
- see chapter Installation

4. Wallinstallation:

The wall installation should be executed only after a control of all functions.

- Remove top of the casing from its bottom part again.
- Screw bottom part of casing with snapped-in connection board to selected surface.
- Put top of the casing again onto its bottom part. Insert the pin board of the Reader electronic carefully in the socket board X3!
- Screw top of casing to bottom part by using thread cutting screw 3,2 x 25 mm.
- Attach adhesive label to clean and non-greasy casing.

Fig 2: Rear view with snapped-in connection board (1)

2.2 Installation with surface frame ID APR-A

1. Wall installation:

- The installation should be executed always on a surface as even as possible.
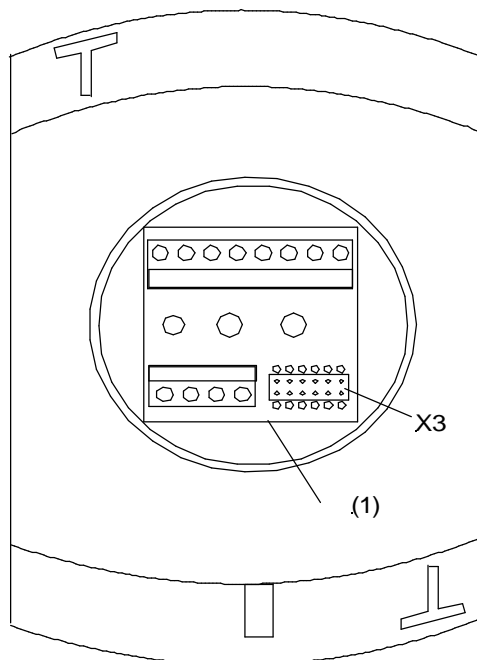- Make openings into the bottom part of the casing for lead-in wire, eventually attach twisting sleeve and pull wire into the casing.
- Screw bottom part of casing to surface.

2. Connection:

see chapter Reader-connection

3. Close casing:

- Put the connection board (1) out of the bottom part of the concealed casing and snap it into the bottom part of casing according to Fig 3 with the connectors in downward direction. In order to do this, press the notches slightly apart with your fingers.
- Put top of the casing onto its bottom part. Insert the pin board of the Reader electronic carefully into the socket board X3!!
- Screw top of casing to bottom part by using thread cutting screw 3,2 x 25 mm.

4. Operation:

see chapter Reader-connection

5. Adhesive label:

Attach label to clean and non-greasy casing

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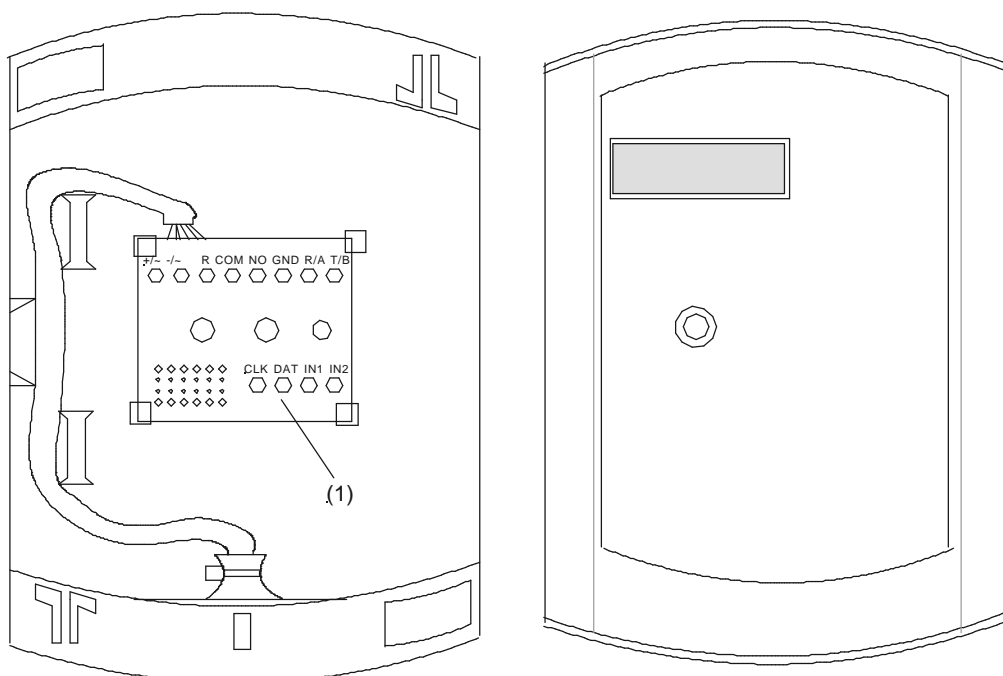
Fig 3: Surface installation (LED top left)
Open surface casing with snapped-in connection board (1)

3. Reader-connection

The connection of the Reader is executed via the connection board. (see: Fig 4) which is snapped into the bottom part of the casing.

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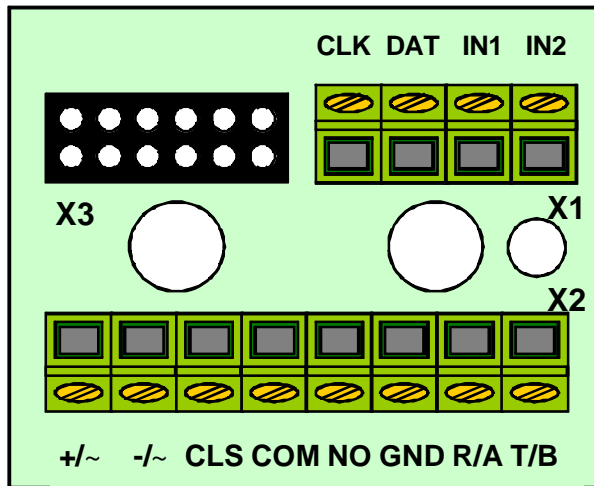
Fig 4: Connection board

connector		function	
board	**name**	**ID RW02.ABC-A**	**ID RW02.ABC-B**
X2	**+ / ~**	power supply 12 - 24 AC / DC	
	- / ~		
	CLS	data-/clock interface – cls	
	COM	relay	
	NO		
	GND	internal GND	
	R/A	RS232 - RxD	RS485 - A
	T/B	RS232 - TxD	RS485 - B
X1	**CLK**	data-/clock interface – clock	
	DAT	data-/clock interface – data	
	IN1	digital input 1 (IN1)	
	IN2	digital input 2 (IN1)	

Table 1: connection plan

3.1 (☞) Jumper and Switches

Fig 5 shows the position of the jumpers and switches on the printed circuit board of the ID RW02.ABC. The jumpers and switches are only accessible at opened device.

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Fig 5: Jumper and switsches

S1:

> DIP-switch to configure the Reader address.

X1:

> Terminal for sticking up the connection board.

X2 / X3 / X4:

> Jumper for termination resistors of the RS485 interface (only ID RW02.ABC-B).

X7:

> Interface for firmware update.

J1 / J2:

> Jumper for firmware update.

3.2 Power supply

The power supply is effected via the connectors [+ / ~] and [- / ~]. The device may be supplied either with 12 - 24 V AC or DC. In case of DC supply, the polarity may be chosen freely.
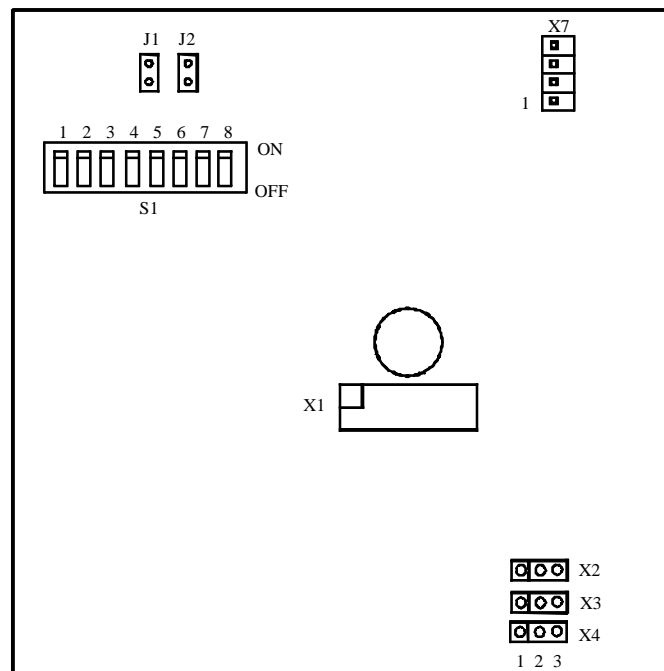
NOTE:
The lead-in wire should not be laid directly parallel to other power supply- and low voltage wires.

3.3 Relay

The device is equipped with an relay (normally open contact). The connection is executed via the connectors [NO] and [COM].

3.4 Digital inputs (IN1 / IN2)

The digital inputs [IN1] and [IN2] can only be connected to internal GND (terminal [GND]) according to Fig 6.

Any connection to external voltage might damage the unit!
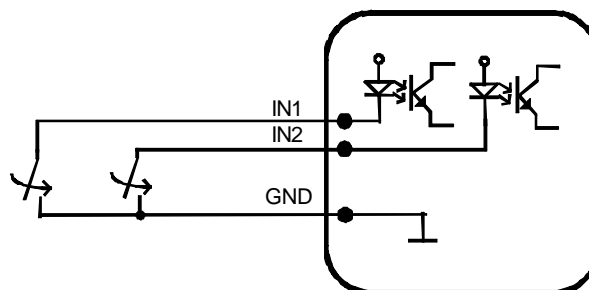

Fig 6: connection of the digital inputs

3.5 RS232 Interface (ID RW02.ABC-A)

Readers with RS232 interface have to be connected to the host according to Fig 7.
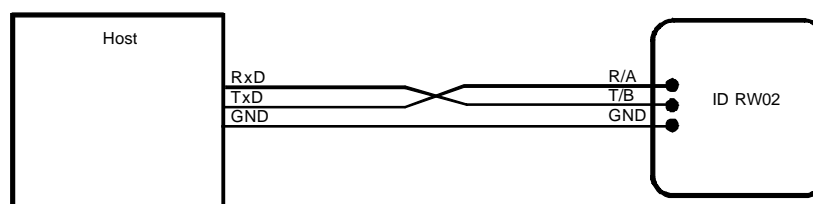
Fig 7: connection of the RS232-interface

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3.6 (☞) RS485 Interface (ID RW02.ABC-B)

With RS485 data buses, it can be necessary to use terminating resistors. For each installation, checks should be made as to whether it is necessary to use terminating resistors, because this e.g. is dependent on line lengths, bus structure, powering of the Readers and the employed host computer. Generally, a terminating resistor is only required at the end of the bus, i.e. on the last unit. In order to do this, the Jumper needs to be pit on X2 terminals 1 and 2 (see Fig 8 and Fig 5).

To operate the bus, you need a host computer with a terminating resistor and active termination. A twisted paired or stranded wire is recommended.
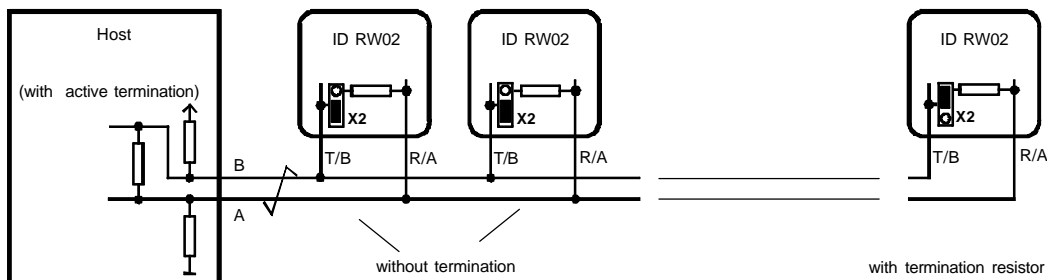
Fig 8: data bus with RS485 interface

If no host computer with active termination is available, a active termination can be implemented as an alternative at <u>maximum</u> one Reader. The Jumpers X3 and X4 are available to this.
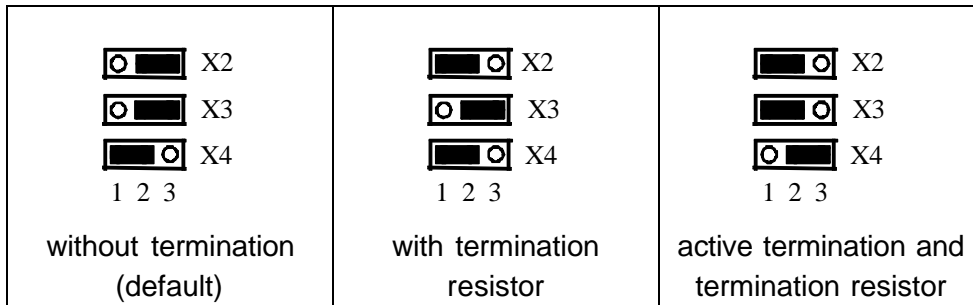
Fig 9: Jumper positions of the RS485 interface
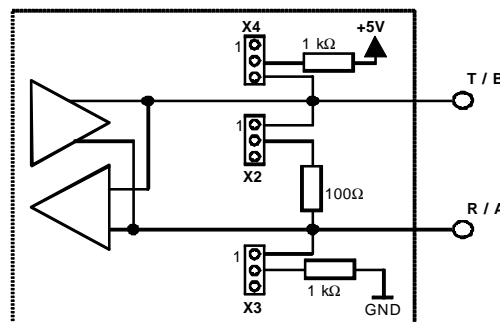
Fig 10: intern construction of the RS485 interface

3.7 (☞) Data-/Clock interface

The connection of the data-/clock interface is executed according to Fig 11. If no CLS signal is required on host, this connection can be abandon.

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Host

CLOCK — CLK
DATA — DAT
CLS — CLS   ID RW02
GND — GND
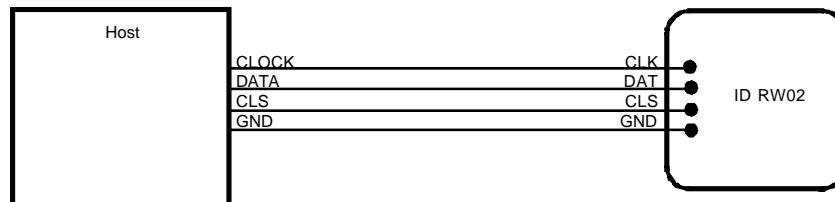
Fig 11: connection of the data-/clock interface

4. Operation

4.1 Address setting (Bus mode with RS485 interface)

For Readers with RS232 interfaces usually no address setting is necessary. In case of units with RS485 interface, the unit address can be set either via the DIP-switch on the opened unit (see Fig 5), or via the host.

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Bus mode with up to 16 Readers:
> The setting of the individual addresses is executed via the DIP-switches S1, DIP1 - DIP 4 according to the table seen below (DIP5 - DIP8 are unused). Thus, each Reader is being provided with an individual address.

Address	DIP 1	DIP 2	DIP 3	DIP 4
0	OFF	OFF	OFF	OFF
1	**ON**	OFF	OFF	OFF
2	OFF	**ON**	OFF	OFF
3	**ON**	**ON**	OFF	OFF
4	OFF	OFF	**ON**	OFF
5	**ON**	OFF	**ON**	OFF
6	OFF	**ON**	**ON**	OFF
7	**ON**	**ON**	**ON**	OFF
8	OFF	OFF	OFF	**ON**
9	**ON**	OFF	OFF	**ON**
10	OFF	**ON**	OFF	**ON**
11	**ON**	**ON**	OFF	**ON**
12	OFF	OFF	**ON**	**ON**
13	**ON**	OFF	**ON**	**ON**
14	OFF	**ON**	**ON**	**ON**
15	**ON**	**ON**	**ON**	**ON**

Bus mode with 16 - 32 Readers:
> The setting of addresses is executed by the host-PC (host).

> *NOTE:*
> *Due to the default value 0 of each Reader, they have to be connected and configurated one after another.*

5. (☞) Technical data

E N G L I S H

casing		**Plastic material ASA**
colour	**bottom part of casing:**	**similar to RAL 9002 (greyish white)**
	top of casing:	**similar to RAL 7043 (traffic grey)**
weight		**approx. 120 g**
protective system		**IP 54**
power supply		**12 - 24 V AC/DC**
power consumption		**max. 2,5 W**
temperature range		**-25°C to 70°C**
relative air humidity		**95 % (non-condensing)**
antenna		**integrated**
data transmission with transponder		**125 kHz**
for transponder		• **ID CTx.A**
		• **ID DTx.B**
		• **ID DTx.C**
signal transmitter		**1 x bicolor-LED (red, green, orange)**
		1 x buzzer
relay		**1 x normally open**
		capacity of contacts: 24 V AC/DC 1,5 A
digital inputs		**2 x configurable**
		length of lead-in wire max. 3 m
interfaces		
	asynchrony (bi-directional)	**2400 to 38400 Baud**
		• **RS232** (ID RW02.ABC-A)
		length of lead-in wire max. 10 m
		• **RS485** (ID RW02.ABC-B)
		max. 32 units on each data bus
	data / clock (unidirectional)	**TTL**
		length of lead-in wire max. 3 m
		• **Magnetic Stripe Emulation,**
		track 1 (7 Bit), track 2+3 (5 Bit)
		• **Wiegand Emulation**
DIP-switch		**8-channel**
EEPROM		**10.000 writing cycles**

Default values (factory alined):	
asynchronous interface:	**9600 Baud, 8 data- 1 stopbit, even parity**
IN1	**activates LED red and relay**
IN2	**aktivates LED green and buzzer**
LED-operation control	**orange**

5.1 Approval

When properly used this radio equipment conforms to the basic requirements of Article 3 and the other relevant provisions of the R&TTE Directive 1999/5/E6 of March 99.

CE 0682 ⊕

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5.2 USA (FCC)

<div style="border:1px solid black">

FCC ID: PJMRW02

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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<div style="border:1px solid black">

This device is labeled with an FCC ID number.
If this label is not visible when installed in an end device, the outside of the device MUST also display a label referring to the enclosed module.
Wording on the label similar to the following shall be used:
This device contains transmitter module FCC ID PJMRW02

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5.3 Dimensions for concealed installation
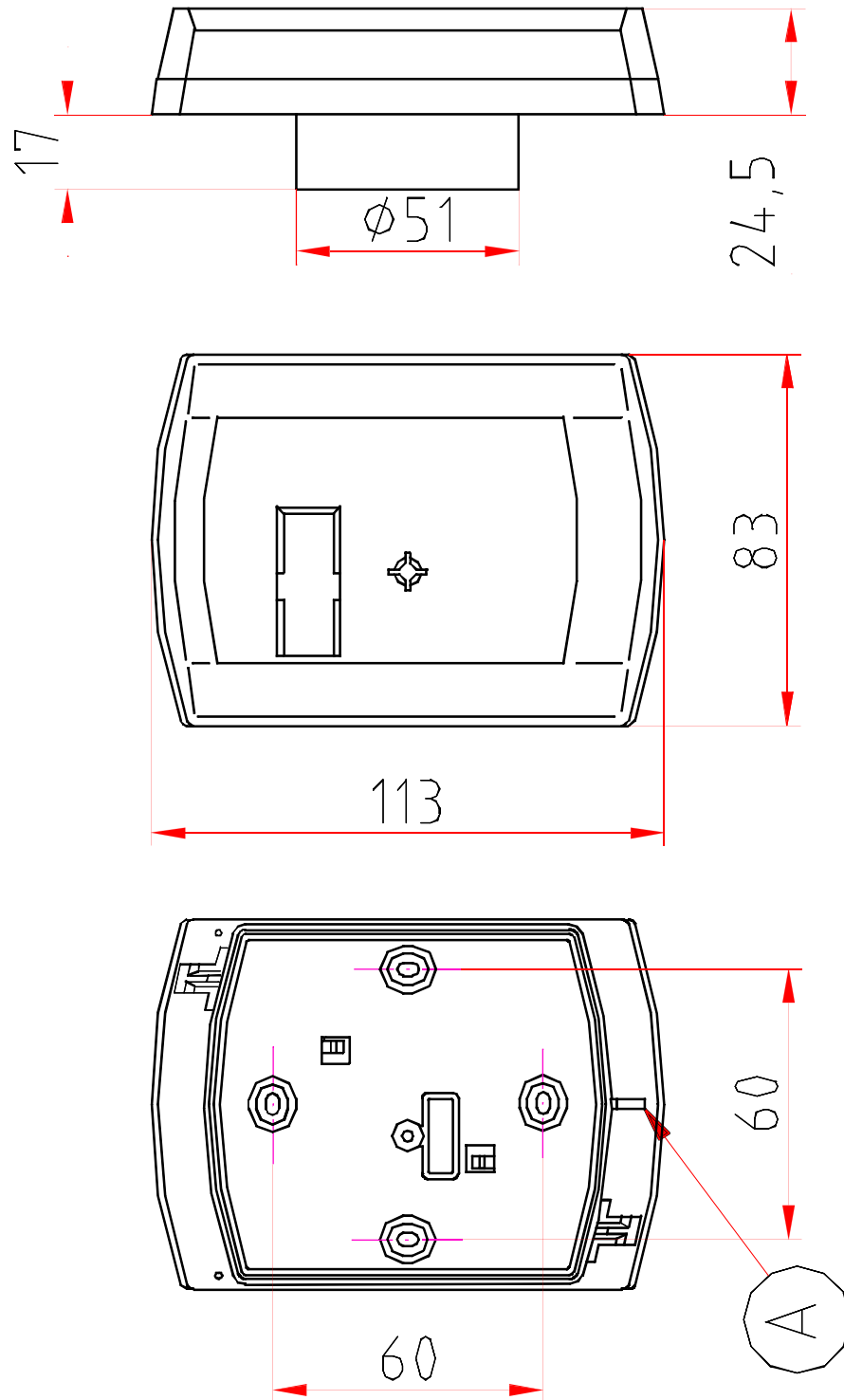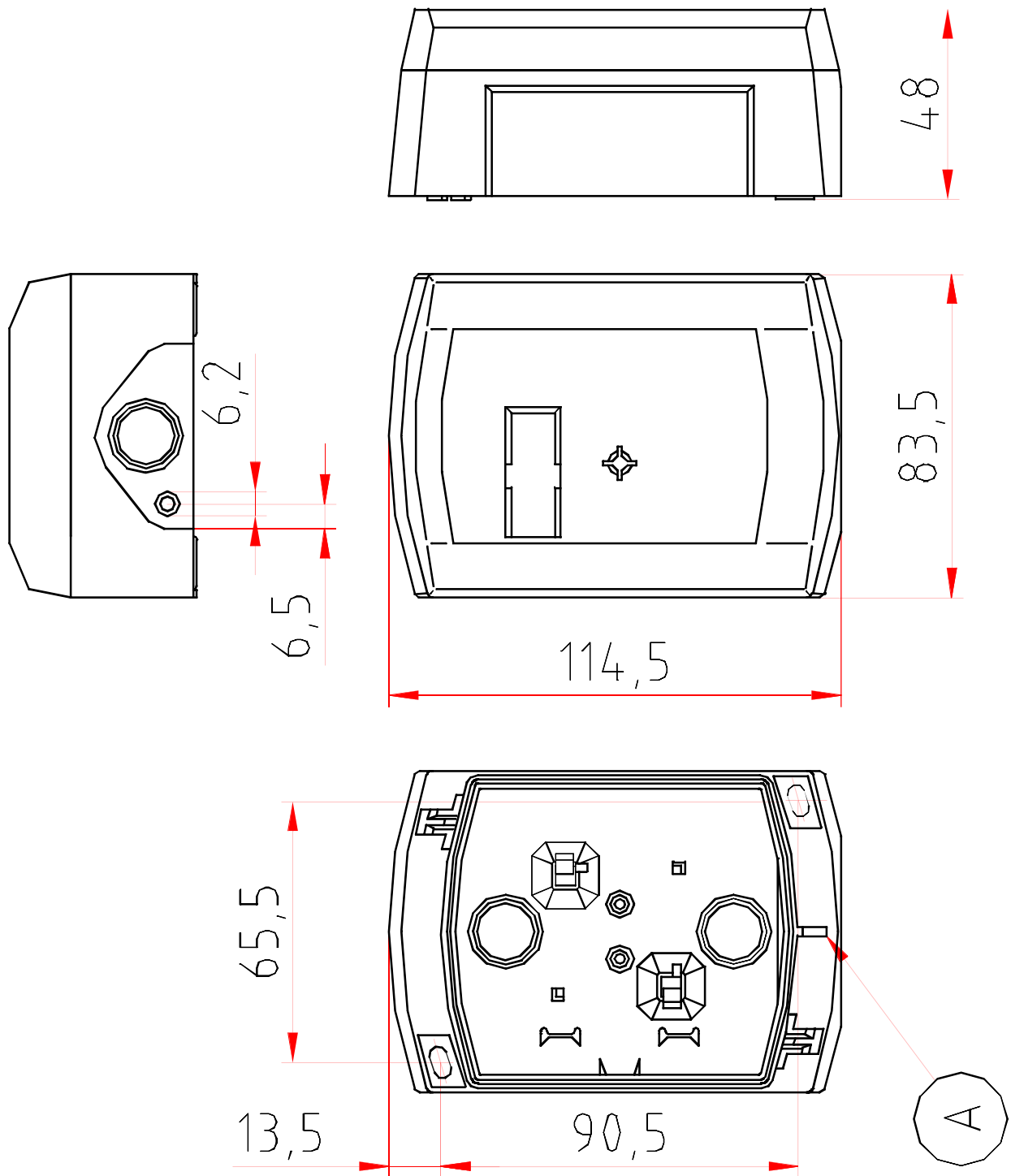
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Fig 12: Dimensions of concealed casing
(A) = below

5.4 Dimensions for surface installation with ID APR-A

Fig 13: Dimensions for installation with surface frame ID APR-A

(A) = below

6. System delivery contents:

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  1 x bottom part of casing (concealed casing)

  1 x top of casing with Reader electronic

  1 x connection board

  1 x adhesive label

  1 x thread cutting screw 3,2 x 25 mm (for connecting parts of casing)

  2 x thread cutting screws 3,2 x 15 mm (for wall installation)

  1 x Installation instructions

6.1 Optional Accessories

bottom part of casing for surface installation
        ID APR-A   Order-No.: 1144.001.00

adhesive front label
        ID AKL.02   Order-No.: 1424.000.00