About this quick guide

Validity

This quick guide describes the product:

Product name:	Kaba compact reader 91 04 MIFARE Kaba compact reader 91 04 LEGIC
Functional type:	Subterminal
Date of manufacture:	April 2014 and later
Firmware:	ARCC01_05RA (LEGIC) MRCC01_08RA (MIFARE)

Target group

This quick guide is written exclusively for skilled personnel. The descriptions in this guide are intended for personnel trained by the manufacturer.

Complementary documents

The contents of this quick guide are extracted from the technical manual and limited to important information about the product and its installation.
A detailed product documentation can be downloaded from the Internet after registration.
URL: www.kaba.com/workforce–management/

Safety instructions

Designated use

The product is only intended for use as described in chapter "Product description". Any use beyond that is considered contrary to its designated use. The manufacturer cannot be held liable for damage resulting from such use.

Qualification of the personnel

The tasks described in this quick guide may only be performed by a Service Person according to EN 60950-1 (Information technology equipment - Safety).

Service persons are persons having adequate technical training and sufficient experience to be aware of and to minimize the possible risks for themselves or other persons, which may occur when carrying out these operations. The service persons are responsible for adhering to the instructions given by the manufacturer and to the applicable standards and regulations during execution of their work.

Environmental protection

Do not dispose of the device with household waste.

Used devices contain valuable recyclable materials that should be recycled. Dispose of used devices appropriately.

ESD protective measures

NOTICE

Danger for electronic components due to electrostatic discharge.

Improper handling of printed circuit boards and components may cause damage leading to complete failure or malfunction of the device.

- Applicable ESD protective measures must be observed and applied when using electronic components.

Product Description

The Kaba compact reader 91 04 functional type Subterminal is designed for use with a time and attendance terminal or access control system.
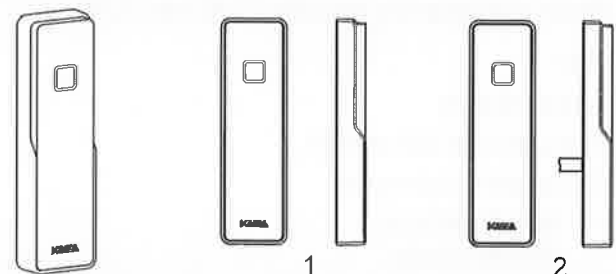
Versions:

1   With plug-in connection terminal (IP54 variant)

2   With permanently connected connection cable (IP66 variant)

The compact reader is mounted in the protected region in an ergonomically sensible position, e.g. in the region of the entrance (door).

The integrated RFID reader makes it possible to read and write RFID media contactlessly in MIFARE and LEGIC technologies (depending on hardware).

Communication with the higher-level access control unit or time and attendance terminal takes place in "online" mode via the RS-485 subpartyline.

The compact reader has an indicator light (red/green) and a buzzer for optical and acoustic signaling.

Technical Data

Interfaces

RS-485

RS-485 two-wire subpartyline for communication with the higher-level access control unit or time and attendance terminal.

- Protocol: BPA/9 subset.
- Automatic detection of Baud rate; 9600/19200 Baud.
- 7 data bit, even parity, 1 stop bit. Other settings are possible using the system mode.

Programming interface

For connecting the Kaba programmer 1460

Power supply

- Voltage range: 12–27 V AC; 10–34 V DC
- Power consumption: typically 1.2 W; max. 2.2 W

Reader

MIFARE hardware

- RFID standard: ISO 14443A
- Supported badge media:
  - MIFARE DESFire
  - MIFARE Classic

LEGIC hardware

- RFID standard: ISO 14443A, ISO 15693, LEGIC RF
- Supported badge media:
  - LEGIC advant
  - LEGIC prime

Inputs/outputs

1 relay output

- One potential-free switchover contact
- Contact load capacity: 30 V AC/DC; max. 2 A

2 digital inputs

- 2 inputs with one pull-up resistor each for connecting mechanical contacts (potential-free) to a common ground connection (GND).

Ambient conditions

- Protection type as per IEC 60529:
  - IP54 (device variant with plug-in connection terminal)
  - IP66 (device variant with permanently connected connection cable)
- Relative humidity:
  - 5%–95 %, non-condensing
- Ambient temperature:
  - -25 °C – +70 °C (operating)
  - -40 °C – +85 °C (storage)

Conformity

$C \in$ This product conforms to the following standards:

EN 60950-1:2006 + A11:2009
EN 301 489-1 V1.8.1
EN 301 489-3 V1.4.1
EN 300 330-1 V1.7.1
EN 300 330-2 V1.5.1

in accordance with the provisions of the EC directives

2006/95/EC Low voltage directive
1999/5/EC R&TTE directive
2004/108/EC EMC directive

RoHS This device complies with the regulations of Directive 2011/65/EU.

Installation

Fastening the base frame

The base frame is mounted directly onto the wall or door frame.

Two slots are provided in the base frame for fastening (see arrows). Fastening takes place using screws/wall plugs or Parker screws depending on the subsurface.

> **i** The base frame must not lose its shape. Screw the base frame to an even surface. Only tighten the screws slightly.

Even out bumps in the mounting surface with suitable measures (e.g. washers). If the mounting surface is soft, make sure that the base frame is not pressed into the mounting surface.
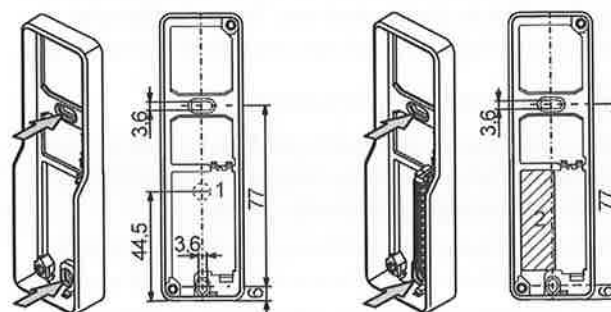
If the cable is fed from the rear, ensure correct positioning over the drill hole (> 10 mm) or empty conduit.

1 Position of cable exit in compact readers with permanently connected connection cable (IP66 variant)

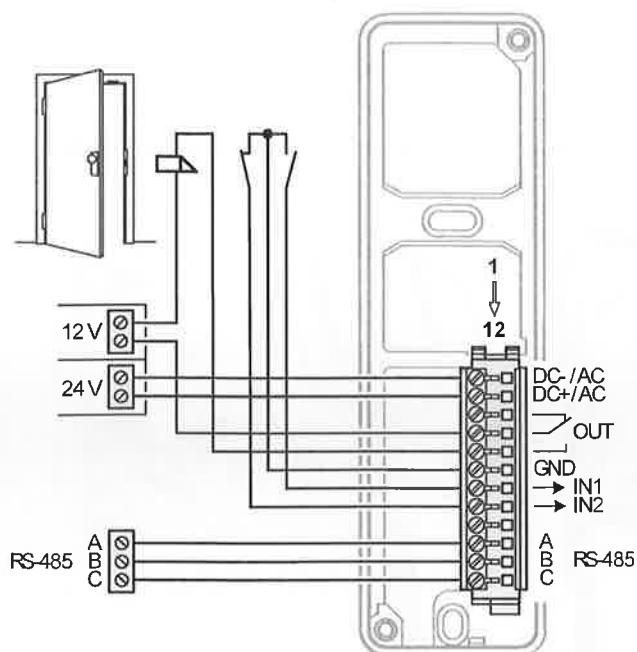2 Region of cable feed from the rear in compact readers with plug-in connection terminal (IP54 variant)

> **i** In order to prevent the ingress of water, lay the cables in a siphon shape.

Connections

> **i** Only connect the terminals when the power is switched off.

Compact reader with plug-in connection terminal

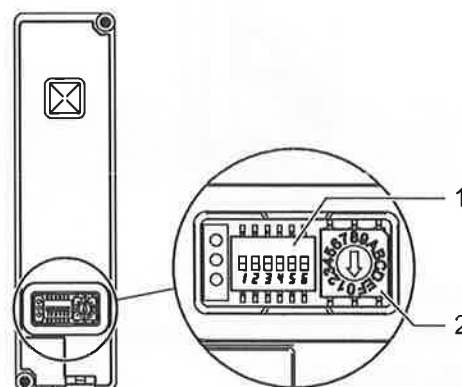| grey	-	
brown	A	RS-485 Subpartyline
purple	B	Data interface to higher-level control unit
black	C	
pink	Shield	

Note on the use of door openers

The relay can be used to activate the door opener. For door openers that are supplied with DC voltage, a "freewheeling" diode must be parallel-connected (in the reverse direction) to the door opener for noise attenuation. A varistor must be connected parallel to AC voltage door openers.

Function of inputs and outputs

The function of the inputs and outputs depends on the control unit used and its parameter settings.

1	DC-/AC	24 V AC/DC power supply input
2	DC+/AC	
3	NC	Relay output
4	COM	Contact load capacity 30 V AC/DC; max. 2 A
5	NO	
6	GND	Digital inputs
7	IN1	Connect to ground (GND) by means of a switch or relay contact.
8	IN2	
9	-	
10	A	RS-485 Subpartyline
11	B	Data interface to higher-level control unit.
12	C	

Setting the switches

On the front of the compact reader there is a DIP switch (1) and a rotary switch (2).

DIP Switch

1	2	3	4	5	6
		OFF	OFF	OFF	OFF
		RS-485 terminating resistor			
ON	OFF	4.7 kOhm (star wiring)			
OFF	ON	Bus terminating resistor 120 Ohm			
OFF	OFF	open			

The defaults for operation as Subterminal are shown in bold.

Rotary switch

The addressing of a device via the RS-485 subpartyline takes place using the group and device addresses. The rotary switch is used to set the logic device address (DID) of the Subterminal.

Compact reader with permanently connected connection cable

The wires of the connection cable have different colors. The table below shows the configuration using the wire color.

blue	DC- / AC	24 V AC/DC power supply input
red	DC+ / AC	
yellow	NC	Relay output
green	COM	Contact load capacity 30 V AC/DC; max. 2 A
orange	NO	
white	GND	Digital inputs
white/black	IN1	The inputs are connected to ground (GND) by means of a simple switch or relay contact.
white/brown	IN2	

| Position	DID	Position	DID
0	16	8	08
1	01	9	09
2	02	A	10
3	03	B	11
4	04	C	12
5	05	D	13
6	06	E	14
7	07	F	15

ℹ️ The logic group address GID is set permanently to 00 and cannot be changed.

Final installation

After the connections have been made and the switches have been set, the final installation of the compact reader takes place.
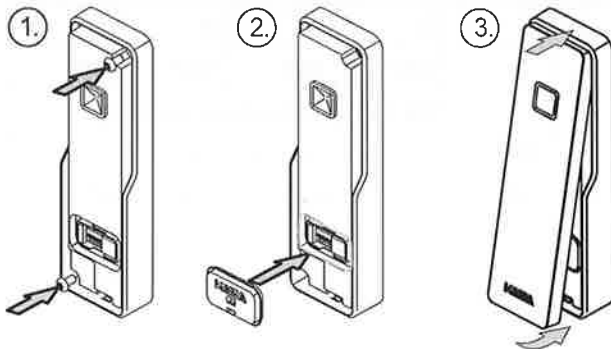
For surface cable mounting:

• Break off the joint bar from the core device.
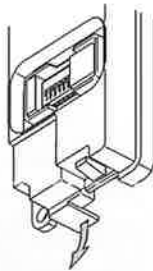
Carry out final installation:

1. Place the core device on the base frame and secure.
2. Insert the sealing plug.
3. Push the front cover into the top of the base frame. Push the front cover into the bottom of the base frame until it snaps in.
⇨ The installation process is complete.

Dismounting

Dismount the compact reader:

1. Push the screwdriver (no. 00) into the opening on the bottom and press the concealed spring upwards. At the same time gently lift the front cover at the bottom and then unhook it at the top and remove it.
2. Remove the sealing plug if necessary.
3. Remove screws and take the core device out of the base frame.
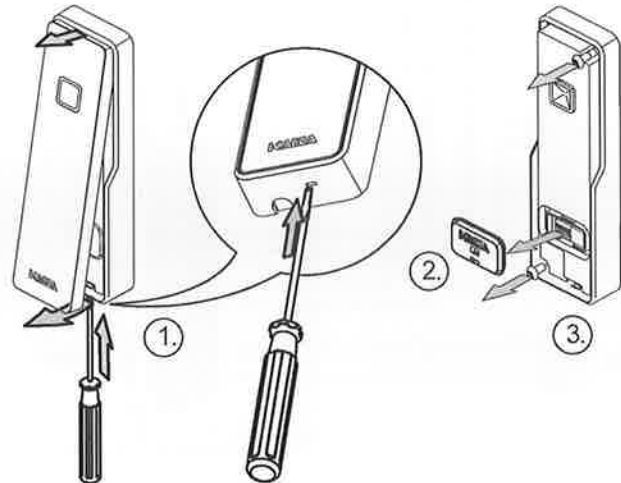
Putting into operation

Putting into operation process

1. Switch on the power supply.
2. Log the Subterminal into B-COMM® on the control unit and put it into operation.
3. Carry out a functional test.

LEGIC® reader

A LEGIC® reader launch is required in the following cases:

• If a read-protected segment is to be used.
• If a write-protected segment is to be written to, e.g. if CardLink™ is used.

Details on the LEGIC® reader launch can be found in the Technical Manual.