

**BALTECH**  
*balanced technology*



# Operation Manual

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# Operation Manual

## ACCESS100

Covered Models:

10023-155-51

10023-001

10023

The “ACCESS100” is a multifunctional contactless smart card RFID Read-/Write-Device (short: reader).

The reader supports Mifare, ISO14443A/B, ISO15693 and all cards compliant to these standards. It provides serial interface RS485/ RS232 or a Wiegand Interface to exchange data with a host computer and a 13.56MHz inductive interface to supply power to and exchange data with the Mifare/ISO compliant card (or other available form-factors such as tags, key-fobs).

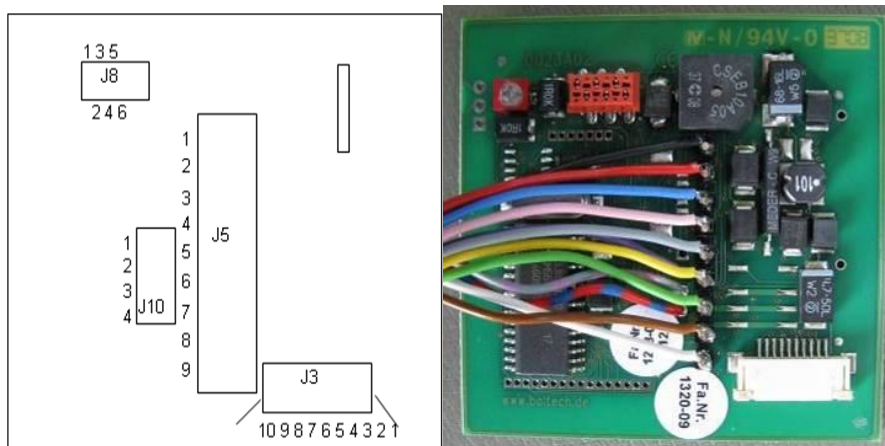
## Mounting and Connection

The reader generates a magnetic field with the frequency of 13.56MHz which is influenced by any electrically conductive material in close proximity to the device. When mounting the unit, a distance to any such material of minimum 20 mm is required to ensure that there will be no significant degradation of the performance in terms of read range and reliability. Mounting the unit directly to metal would result in a severe reduction of read range down to zero functionality. Care should be taken when testing the device after mounting at a problematic environment: Read ranges and performance vary from card to card and very much from card to tag or key-fob.

When mounting multiple readers, the distance between readers should be minimum 0.5 meters in order to avoid degradation of performance due to interference.

The reader provides an attached cable to connect the device to the host computer. The cable is colour coded as follows:

## Pinning



Rear View Reader PCB

<b>J5: Screw-Clamp, pluggable, 9-Pole. Alternative, potted devices: pigtail cable 1m length.</b>			
<b>RS485 / Wiegand</b>			
Pin#	Color	Name	Description
1	Black	GND	Power and Signal GND
2	Red	+VIN	Supply Voltage (9...30 VDC)
3	Blue	Mult_A: 485/WIE_D0	RS485 A or Wiegand data 0, depending on configuration
4	Pink	Mult_B: 485/WIE_D1	RS485 B or Wiegand data 1, depending on configuration
5	Grey	LEDGN	Wiegand: LED-control input
6	Yellow	LEDRD	Wiegand: LED-control input
7	Green	REL_WC	Relais working contact (not installed for ACC-Versions)
8	Brown	REL_NO	Relais normal open (not installed for ACC-Versions)
9	White	REL_NC	Relais normal closed. (Special option, available by ordering from factory: Wiegand-Interface Buzzer control input)

RS485 interface termination resistor: 120 Ohms, to be connected between Mult\_A and Mult\_B at both **ends** of the RS485 bus lane cable. Stub line length 1 m max.

<b>J10: Through holes, 4-Pole</b>			
<b>RS232/CMOS</b>			
Pin#	Color	Name	Description
1		+5V	Power
2	Magenta	GND	GND
3	Grey-pink	RX	RS232 / CMOS
4	Red-blue	TX	RS232 / CMOS

<b>J8: Service Interface AMP MicroMatch 6-Pole</b>			
Pin#	Name	Physical	Description
1	TX	RS232 / CMOS	Reader transmit
2	RX	RS232 / CMOS	Reader receive
3	GND	GND	
4	+5V	5V 5%	5VDC supply reader (if connected, the +VIN from J5 must not be connected)
5	NC	RS232 / CMOS	Do not Connect!
6	NC	RS232 / CMOS	Do not Connect!

## Operation

Whenever the device is connected to a proper power supply, it will switch on the internal antenna and periodically scan for a card. Once a card has been detected, the card number is read, the data converted and sent to the host system through the serial interface. To enable the device to read cards, tags and key-fobs successfully, they should be placed centered above the reader. The reader may also provide a keypad that may be used to enter user identification number.

## Technical Data

Supply Voltage:	9...30 VDC
Power consumption :	1.0 W typ. 2.0 W max.
Operating temperature :	-25 to + 65 C°
Operation frequency	13.56 MHz

Additional requirements for the supply voltage: Vripple = 50mVpp max.

### ***RF Characteristics***

- Operating frequency: 13.56 MHz
- Data transmission modulation reader to card: ASK
- Data transmission modulation card to reader: ASK/load modulation

### ***Temperature***

- Operating temperature range: -25...+65°C
- Storage temperature range: -25...+80°C
- Thermal shock: 30°C/min maximum dT/dt

### ***Humidity***

- Operating:
  - standard indoor version: 0..90%; non condensing
  - potted version: 0..100% condensing IP65

## General regulatory requirements

### FCC Compliance Statement:

This device complies with Part 15 of the FCC rules. The product FCC ID is OKY1002300101A02B. The operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### Canada:

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada