

USER'S MANUAL

SMART CARD READER
MODEL: BSR-10



BESS

6. OPERATION

POWER ON AND INITIALIZATION

- Put DC12V power to the reader, it will make 3 beep sounds with flashing Red-Green-Red LEDs alternately.
- Red LEDs will flash continuously indicating reader is ready.

CARD READING

- Approach a card to the reader and it makes a beep sound with flashing Green LEDs, simultaneously Wiegand data and RS232 data will be sent out to connected ACU.
- The reader has OTR(One Time Reading) function therefore the same card can not be read twice unless the card is away from the read range of the reader.

SELECT WIEGAND OUTPUT FORMAT (34bit or 26bit)

- The reader has a Wiegand Select Input port (purple wire).
- The purple wire stays OPEN(No Connection), the reader will set 34bit Wiegand output format.
- When the purple wire puts to ground(GND) before power ON, the reader will set 26bit Wiegand output format.
- If you want to have 26bit Wiegand output format, the purple wire always puts to ground(GND).

LED CONTROL

- The reader has a LED Control Input port (yellow wire).
- While the yellow wire puts to ground(GND), all Green LEDs lit.

BEEPER CONTROL

- The reader has a BEEPER Control Input port (blue wire).
- While the blue wire puts to ground(GND), Beeper makes sound.

BOOT MODE

- The reader has a BOOT Input port (brown wire).
- When the brown wire puts to ground(GND) before power ON, the reader will enter to BOOT MODE when it powered ON.
- BOOT MODE is used to upgrade F/W of the reader therefore the brown wire always be OPEN(No Connection).

1. IDENTIFYING SUPPLIED PARTS

Please unpack and check the contents of the box.



2. FEATURES

- Reading Format : MIFARE Classic & MIFARE Plus, ISO14443 Type-A & Type-B Cards
- NFC (Smart Phones), ISO15693 & OCTOPUS Cards (Optional)
- Output : 34Bit/26Bit WIEGAND Output (Selectable) & RS232 Serial Output
- Input : WIEGAND Select Input, BEEPER Control Input, LED Control Input
- Easy Installation
- FIT to European Gangbox
- Onsite F/W Upgrade
- BOOT Mode to Upgrade F/W using Serial Port
- Robust Design
- SMART & TINY Design
- INNER Module Fully Potted by Hard Epoxy
- MULLION & DOOR FRAME Mount

3. SPECIFICATION

Read Range	Up to 3"(7.6cm) depending on Card Type
Reading Format	13.56MHz MIFARE Classic, MIFARE Plus, NFC ISO14443 Type-A/Type-B, ISO15693 (optional)
Micro-Processor	32bit Micro-Processor
Failure Correction	Built-in WATCH-DOG Timer
Input	LED Control, BEEP Control, WIEGAND Select
Output	34Bit/26Bit Wiegand, RS232, RS485 (optional)
LED Indicator	4 x 2-Color LEDs, LOGO LED (optional)
Beeper	80dB Piezo Buzzer
Operating Temp.	-31°F ~ 149°F (-35°C ~ 65°C)
Storage Temp.	-49°F ~ 176°F (-45°C ~ 80°C)
Power Spec.	DC12V, max.150mA
Plastic Material	Poly Carbonate
Potting Material	Epoxy Potting
Dimension	W2.20"xH3.35"xD0.59"(W56xH85xD15mm)
Weight	2.2oz (62g)
Certification	FCC, CE, KCC

4. WIRE COLOR TABLE

RED	Power Input, DC +12V
BLACK	Power Ground, GND
GREEN	Wiegand Output, DATA_D0
WHITE	Wiegand Output, DATA_D1
GRAY	RS232 Input, RS232-RX
ORANGE	RS232 Output, RS232-TX
YELLOW	LED Control Input, Active to GND
BLUE	BEEPER Control Input, Active to GND
PURPLE	Wiegand Select Input, Open=34BIT, GND=26BIT
BROWN	BOOT Input, Open=RUN, GND=BOOT MODE

5. INSTALLATION

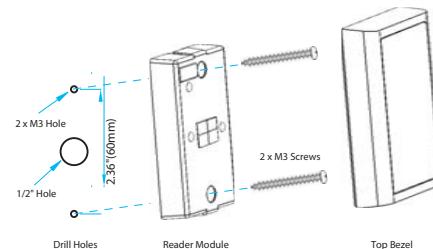
- Drill 2 x M3 holes 2.36"(60mm) apart in vertical and drill a 1/2"(13mm) hole for the cable in the middle of 2 x M3 holes.
- Connect all necessary wires of SMD Connector to ACU device.
- Plug in SMD Connector to Reader Module and put DC power to the reader and test the reader is working fine.
- Fix the Reader Module to the wall using 2 screws or bolts.

How to attach Top Bezel to the Reader Module

- Attach Top Bezel to Reader Module from the bottom side and push top side until the Top Bezel locked to Reader Module.
- Peel off protection tape from the window of Top Bezel.

How to detach Top Bezel from the Reader Module

- Insert a toothpicker to small hole on the bottom side of Top Bezel.
- Push toothpicker to upper side until the Top Bezel unlocked.



7. OUTPUT FORMAT and TIMING

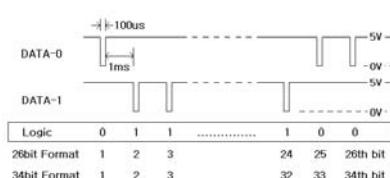
34bit Wiegand Output Format

- Bit_1 : EVEN parity of Bit_1 to Bit_13
- Bit_2 ~ Bit_33 : 32bit Card ID Number(4bytes of CSN)
- Bit_34 : ODD parity of Bit_18 to Bit_34

26bit Wiegand Output Format

- Bit_1 : EVEN parity of Bit_1 to Bit_13
- Bit_2 ~ Bit_25 : 24bit Card ID Number(3bytes of CSN)
- Bit_26 : ODD parity of Bit_14 to Bit_26

Timing Diagram



RS232 Output Format

- 9.600bps/8 Data bit/1 Stop bit/Parity None

RS232 Data Format(Total 13bytes)

Ch1 1byte Start Ch (0x02h)	Ch2 ~ Ch11 10bytes Card ID Number (0x30h~0x39h)	Ch12 1byte End Ch (0x03h)	Ch13 1byte CRC (XOR)
Ch1 : Start Character, 1 byte (0x02h)			
Ch2~Ch11 : Card ID Number, 10 bytes (0x30h~0x39h)			
Ch12 : End Character, 1 byte (0x03h)			
Ch13 : CRC, 1 byte (XOR of Ch1~Ch12)			

8. FCC REGISTRATION INFORMATION

FCC REQUIREMENTS PART 15

Caution: Any changes or modifications in construction of this device which are not expressly approved by the manufacturer for compliance could void the user's authority to operate the equipment.

NOTE: 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.

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 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 radio or television off and on, the user is encouraged to try to correct interference by one or more of the following measures.

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on another circuit.
4. Consult the dealer or an experienced radio/TV technician for help.

9. Warranty and Service

BESS Smart Card Reader warranty is 5 years from the shipping date. The following warranty and service information applies to all customers. For the information regard the service, contact your local distributor or suppliers. To obtain in or out of warranty service, please prepay shipment and return the product to the facility listed below.

BESS Corp., Service Center

#1313 Hyosung Intellian,

426 Gangseo-ro, Gangseo-gu,

SEOUL, KOREA 157-030

Tel.: (+82) 704 045 0058

E-mail: service@bess.cc

Web-site: www.bess.cc

Please use the original container, or pack the unit(s) in a sturdy carton with sufficient packing to prevent damage, include following information:

1. A proof-of-purchase indicating model number and date of purchase.
2. Bill-to address
3. Ship-to address
4. Number and description of units shipped.
5. Name, phone number and email address of person to contact.
6. Reason for return and description of the problem.

NOTE: Damage occurring during shipment is deemed the responsibility of the carrier, and claims should be made directly to the carrier.

BESS

Best Security Solutions

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