![RBH blueLINE logo]

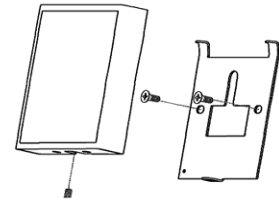# RBH blueLINE™ Readers Installation Manual

Readers in the blueLINE™ series are capable of using **DESFire (EV1 & EV2)** and **Mifare** credentials for the highest of security standards and **up to 128 bit credentials are supported**. Communication to controllers can be using **standard Wiegand or OSDP version 1 & 2** for increased security where maximum integrity and tamper conditions are required. All blueLINE™ readers use **UHSC via NFC or Bluetooth** and supports both **Android and IOS operating system** devices for build revision version 17-1.0.8g and up.

I. BlueLINE™ Readers Models and Mounting

Surface Mounting using 2 provided anchoring screws:

Model	Single Gang Mount	Mullion Mount	Firmware
RBH-N86-D	X		10-XXXX
RBH-N86-DNB	X		11-XXXX
RBH-M45-D		X	10-XXXX
RBH-M45-DNB		X	11-XXXX
RBH-NK86-D	X		10-XXXX
RBH-NK86-DNB	X		11-XXXX
*** D=Desfire(EV1 & EV2) DNB=Desfire(EV1 & EV2), NFC and Bluetooth ***			

II. Cabling and Communication

Wiring is in accordance with the National Electrical Code, ANSI/NFPA 70

Wiegand		OSDP	
500' (152m) max, 18-22 AWG, 6-7 conductor shielded cable		RS485: 2,000' (610m) max, 20-22 AWG, 1 twisted stranded shielded pair cable	
Wire Color	**Function**	**Wire Color**	**Function**
Red:	9 – 12 VDC	Red:	9 – 12 VDC
Black:	Ground	Black:	Ground
Brown:	RS485+	Brown:	RS485+
Orange:	RS485-	Orange:	RS485-
Green:	WD0	Default Baud rate: 9600 bps	
White:	WD1	Default Address: 1	
Blue:	LED	Default Secure Channel Key:	
Yellow:	Buzzer	SCBK_D = 0x303132333435363738393A3B3C3D3E3	

III. Power Supply

DC power for this reader is generally supplied from terminals of the Wiegand reader port on the system's panel and panel is battery backed up. If this is not possible, use an independent power supply. Power should be nominal 9 - 15 volts DC @ 120ma regulated output. If the power supply is independent from the panel's reader port, the reader's black wire must be connected to both the power supply's Negative terminal and the panel's Ground terminal.

IV. Operation

1. When the reader is first powered on it will beep twice and the LED will turn blue.
2. When presented with a supported access credential the reader will perform the following operations:

	LED	Buzzer
Access Granted	Turn Green for unlock time	Beeps Once
Access Denied	Flashes Red and Green	Beeps Twice
Standby (Card Swipe not needed)	Stays Blue	No Sound

3. Keypad Reader can be used for Card only, pin only and/or Card+Pin
4. RBH Mobile BT Apps are optimized to work on smartphones supporting BLE version 4.2 or newer. RBH NFC App is optimized to work on android smartphones supporting NFC. All apps can be downloaded in either the Apple Store (for iOS devices) or the Google Play Store (for android devices). To use Bluetooth credentials, open app and press short range button (up to 12 inches) or long-range button (up to 50 feet). To use NFC credentials, open app and present within close proximity to the reader.
The wireless electronic device(smartphones) shall only be used in the same manner as a physical credential, transmitting user data to the reader interface within close proximity (NFC Apps)

V. Troubleshooting

Please see table below for troubleshooting information

	Possible Reasons	Solutions
No LED & Buzzer	Incorrect Wiring	Verify Connections
	No Power	Check Power
	Unsupported Credential Used	Verify you are using supported credentials
Continuous Buzzer	Tamper Alarm	Ensure the reader is properly mounted to the back plate
Flashing Blue LED	No communication with panel (OSDP)	Check RS485 connection

If the Solutions above don't resolve the issue, please contact RBH Access Technologies

VI. Certifications

Access Control Performance Level

Feature	Level
Destructive Attack Level	II
Line Security	II
Endurance Level	III
Standby Power	I
Single Point Locking Device with Key Locks	I

Operating Temperature: −31° F to +150° F (−35° C to +66° C)
Operating Humidity: 0% to 90% Relative Humidity
IP Rating: IP67

Wireless Device Credentials Applications:
RBH Mobile BT (Android) – Software Version: 1.0.8g   Build Revision: 17
RBH Mobile NFC (Android) – Software Version: 2.3.0k   Build Revision: 7
RBH Mobile BT (iOS) – Software Version: 1.0.5   Build Revision: 1.4

These Products are intended for indoor use.

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Document: 0155 - Rev 1
April 16, 2021