

BF

Light Curtain



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CE

Before operating the device, be sure to read this user manual carefully. Follow the steps described in the installation, electrical connection, and initial startup sections with attention. After completing these steps, the product owner/user must keep this manual in a known and easily accessible location for the entire service life of the product.



- Store the product in a dry environment. Otherwise, malfunctions may occur.
- In battery- or accumulator-powered products, batteries and accumulators are not covered under warranty. Similarly, failures caused by battery discharge or leakage in products that have exceeded their shelf life are not covered under warranty.
- All service and repair operations must be carried out exclusively by Kontal Elektronik technical service. The product must not be tampered with by unauthorized personnel.
- The operating voltage of each product is indicated on the label. Do not supply the device with a voltage different from the specified value.



- ✓ Failure to comply with the above-mentioned conditions may result in fire, serious personal injury, or damage to the product or the structure in which it is installed. In such cases caused by user negligence or misuse, **Kontal Elektronik San. ve Tic. Ltd. Şti.** assumes no responsibility.
- ✓ This symbol will be used to highlight important notes in the following sections.



- ✓ Do not touch the power supply terminals of the device with bare hands.
- This symbol will be used to indicate warnings related to voltage in the following sections.



- This symbol on the label indicates that the device operates with a DC supply voltage.



- This symbol on the label indicates that the device is equipped with reinforced insulation.
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- This symbol on the product or its packaging indicates that the product must not be disposed of as household waste. Instead, it should be delivered to designated collection points for the recycling of electrical and electronic equipment. Improper disposal or destruction of the product may have adverse effects on the environment and human health.



- This document and its revisions are the legal property and responsibility of **KONTAL ELEKTRONİK SAN. VE TİC. LTD. ŞTİ.** Any unauthorized modification or alteration is strictly prohibited.



- Ensure that the system is properly grounded for the device to operate reliably.

1. DEFINITION

The **BF90 (90 cm)** and **BF180 (180 cm)** light curtain photocells are area sensors designed to ensure passage safety by projecting a full-length vertical infrared light curtain. They instantly detect any object or person entering the detection zone and send an obstruction signal to the control unit via a dry contact relay output to enable safe passage. The sensors are fully compatible with all access control and automation systems.

1.1 Box Content

1x BF90A / BF180A Receiver Module 1x BF90V / BF180V Transmitter Module	1x BF User Manual
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**For special orders, the box contents may vary depending on the project or customer requirements.*

2. TECHNICAL SPECIFICATIONS

2.1 BF 180 Technical Specifications

Model	BF180/A 180cm RX Module	BF180/V 180cm TX Module
Product Code	K105-01	K106-01
Operating Voltage	15-40V DC	15-40V DC
Operating Current	65mA @24V DC	70mA @ 24V DC
Operating Distance	15m(max.)	15m(max.)
Operating Temperature	-20 °C +55 °C	-20 °C +55 °C
Number of Beams / Beam Pitch	12 / 15cm	12 / 15cm
Contact Type	Kuru Kontak (NO / NC)	-
Contact Capacity (max.)	30V DC 1A / 125V AC 0.3A	-
Weight	1056gr	1040gr
Dimensions(W x H x D)	3,7 x 197 x 3cm	3,7 x 197 x 3cm

2.2 BF 90 Technical Specifications

Model	BF90/A 90cm RX Module	BF90/V 90cm TX Module
Product Code	K103-01	K104-01
Operating Voltage	15-40V DC	15-40V DC
Operating Current	50mA @24V DC	65mA @ 24V DC
Operating Distance	15m(max.)	15m(max.)
Operating Temperature	-20 °C +55 °C	-20 °C +55 °C
Number of Beams / Beam Pitch	6 / 15cm	6 / 15cm
Contact Type	Kuru Kontak (NO / NC)	-
Contact Capacity (max.)	30V DC 1A / 125V AC 0.3A	-
Weight	580gr	565gr
Dimensions(W x H x D)	3,7 x 107 x 3cm	3,7 x 107 x 3cm



The specified maximum operating distance of the photoelectric sensor is a nominal value obtained under standard test conditions. External factors such as ambient light level, optical alignment, target surface color and reflectivity, dust and contamination, and environmental temperature may reduce the detection performance and operating distance.

3. BF – INSTALLATION AND INITIAL OPERATION

3.1 BF – Transmitter Module Control Board

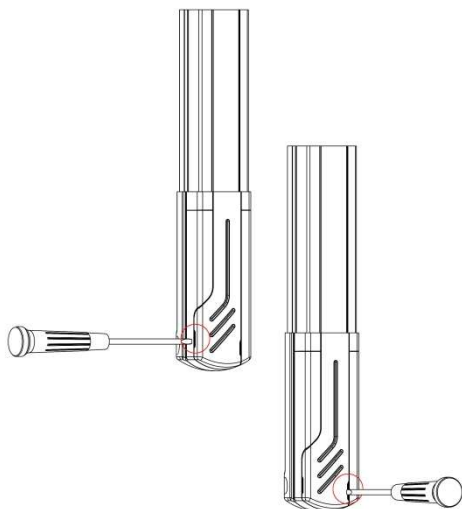


Figure 3.1 Removing the BF front plastic cover

Step 1: Remove the front plastic cover of the product as shown in the figure.

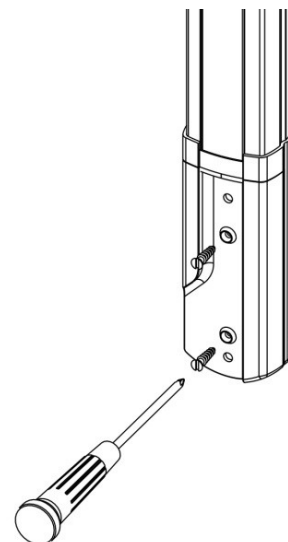


Figure 3.2 Removing the BF front screws

Step 2: Remove the product screws as shown in the figure.

Step 3: Connect the power supply to terminals 1 and 2. (See also Section 5: Wiring Diagram)

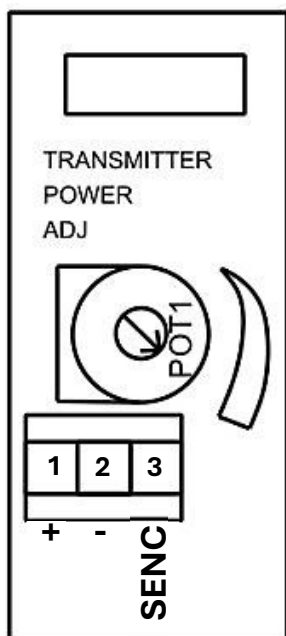


Figure 3.3 BF Transmitter module control board



Observe the proper polarity ("+" and "-") when making the power connections of the product!



Do not power the product with a voltage outside the specified operating voltage range. Otherwise, the product may be damaged!



To ensure correct and stable operation of the device, it is recommended to use a power supply with an output power of at least 3.5 W on the supply line.



Never touch the connection points after the power supply has been connected to the product!

Step 4: Connect terminal 3 (SENC) to the SENC input on the receiver module.



When the SENC cable is connected, the ground (-) lines of both the Receiver and Transmitter modules must be common to ensure efficient operation of the product!

Step 5: Adjust the operating distance of the product using POT1. Turning it clockwise increases the detection distance, while turning it counterclockwise decreases it.

3.2 BF – Receiver Module Control Board

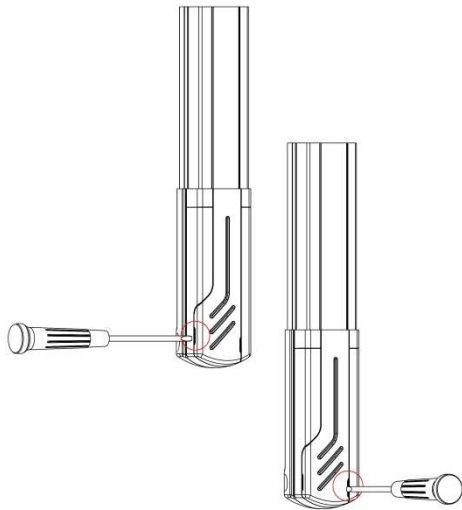


Figure 3.1 Removing the BF front plastic cover

Step 1: Remove the front plastic cover of the product as shown in the figure.

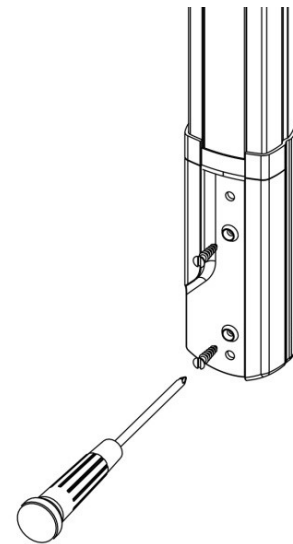


Figure 3.2 Removing the BF front screws

Step 2: Remove the product screws as shown in the figure.

Step 3: Connect the power supply to terminals 1 and 2. (See also Section 5: Wiring Diagram)



Observe the proper polarity ("+" and "-") when making the power connections of the product!



Do not power the product with a voltage outside the specified operating voltage range. Otherwise, the product may be damaged!



To ensure correct and stable operation of the device, it is recommended to use a power supply with an output power of at least 3.5 W on the supply line.



Never touch the connection points after the power supply has been connected to the product!

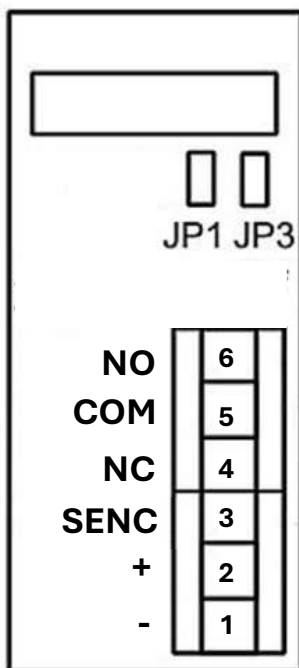


Figure 3.5 BF Receiver Module Control Board

Step 4: Connect terminal 3 (SENC) to the SENC input on the transmitter module.



When the SENC cable is connected, the ground (–) lines of both the Receiver and Transmitter modules must be common to ensure efficient operation of the product!

Step 5: Set the jumper settings of the product as shown in the table:

JP1		JP3	
	When not installed: Buzzer disabled.		When not installed: Triggers output upon interruption of a single beam.
	When installed: Buzzer enabled.		When installed: Triggers output upon interruption of dual beams (or two adjacent beams).



To apply any jumper configuration changes, disconnect the power supply to the product, wait approximately 10 seconds, and reconnect the power.

4.MOUNTING

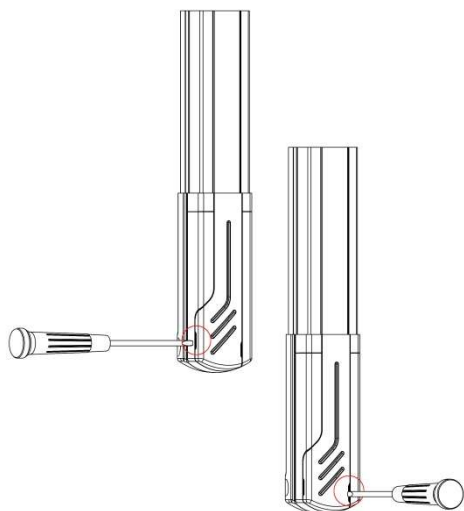


Figure 4.1 Disassembly of BF front plastic covers

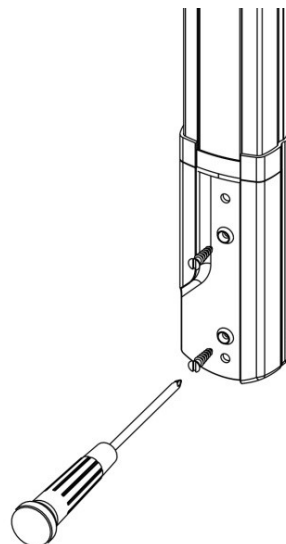


Figure 4.2 Removal of BF front plastic screws

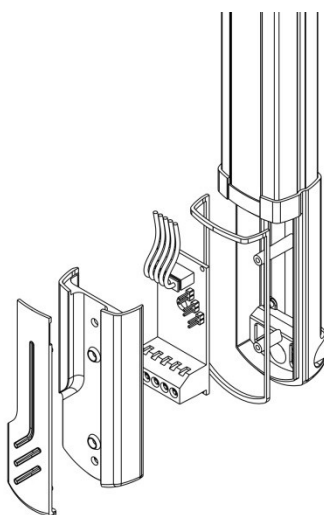


Figure 4.3 BF components / explosion view

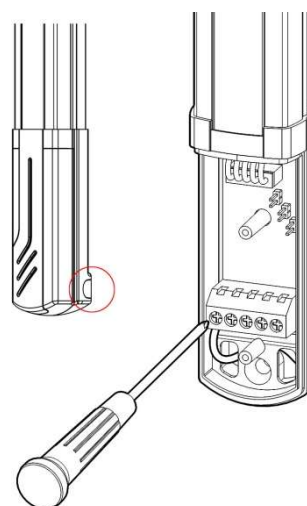


Figure 4.4 Making BF terminal block connections

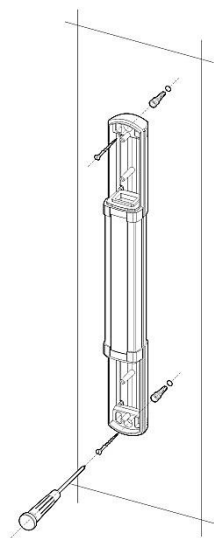


Figure 4.5 BF sample installation diagram

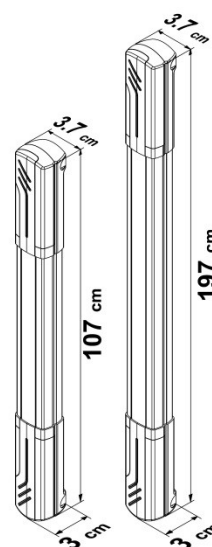
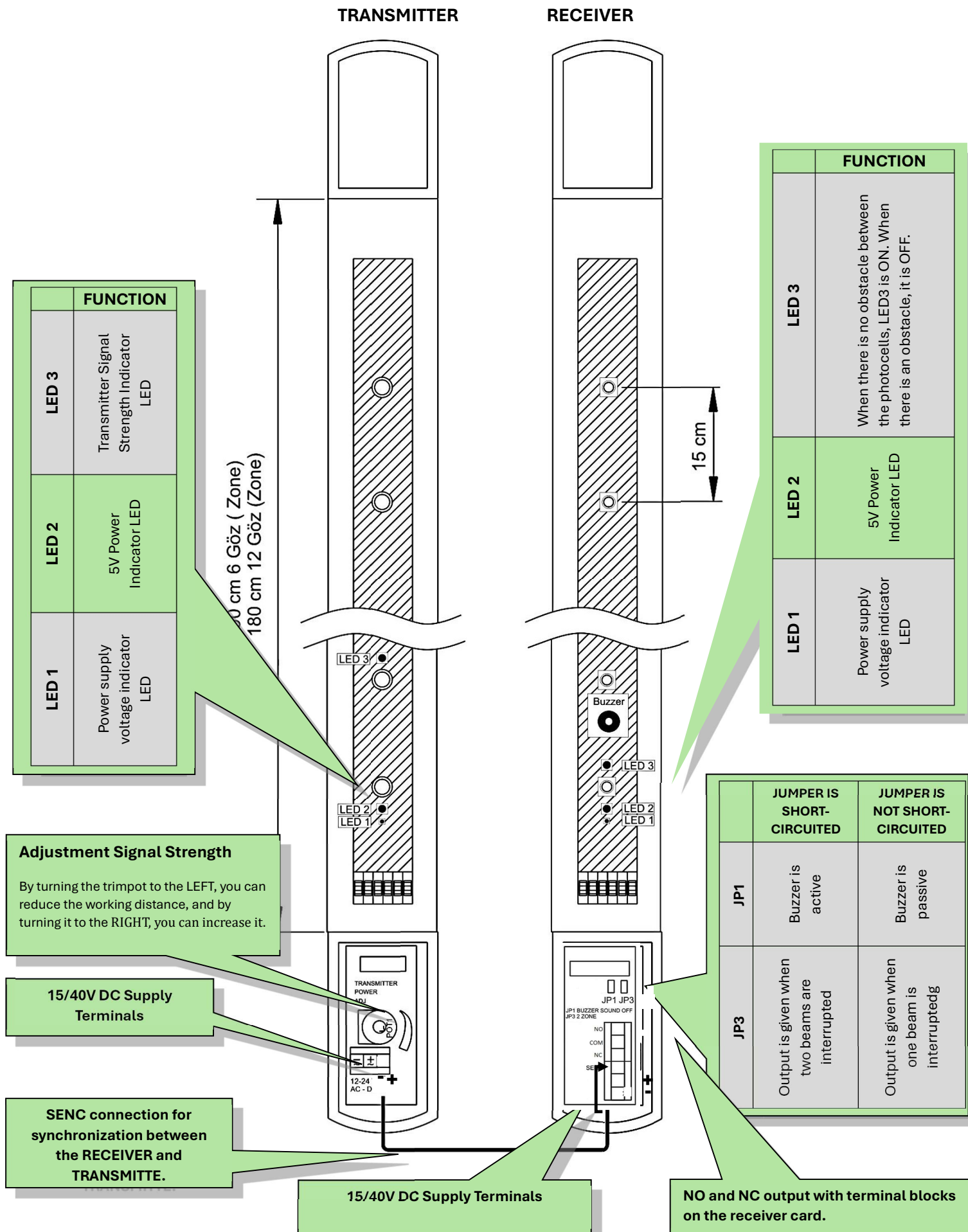
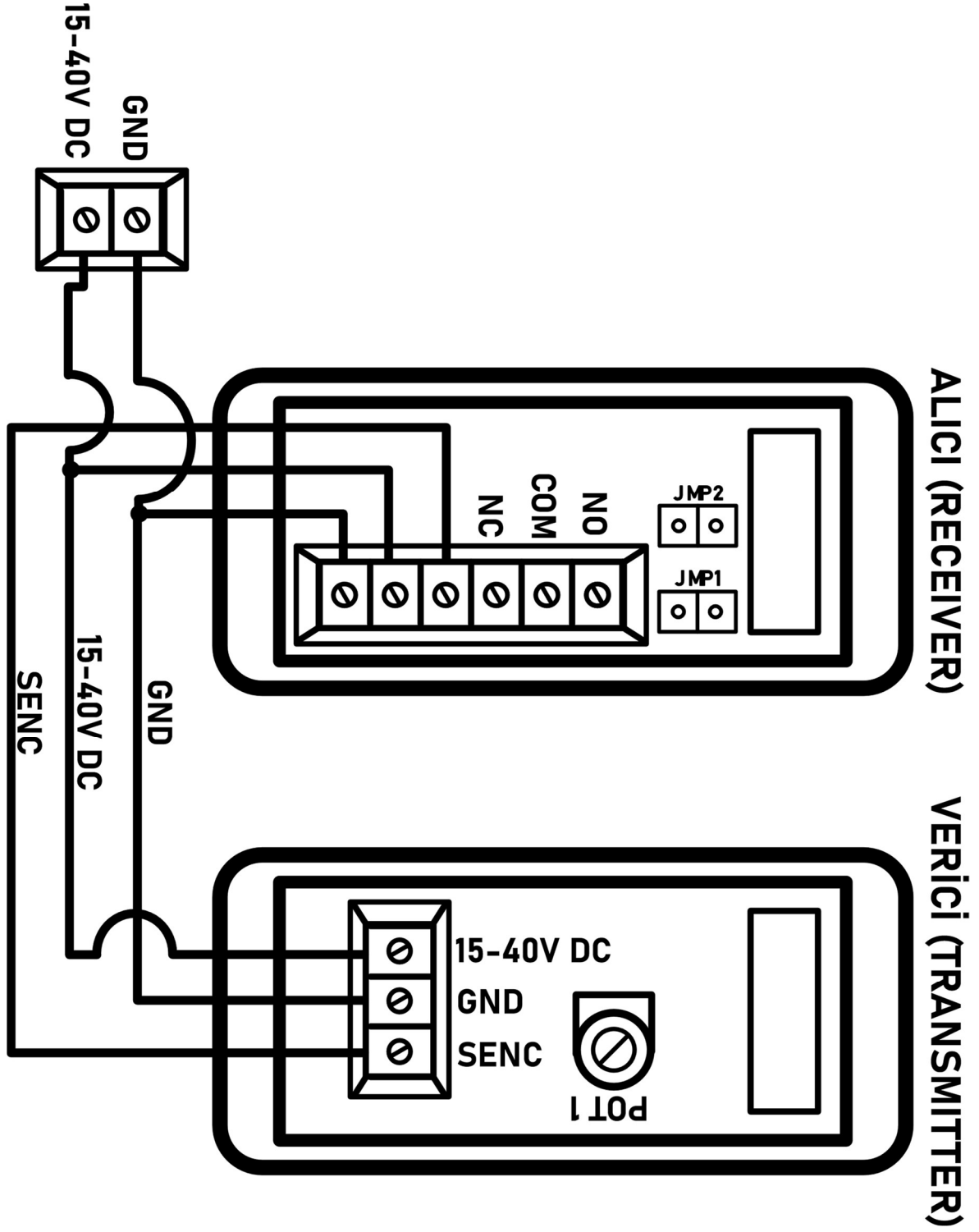


Figure 4.6 BF dimensions

5. CONNECTION SCHEMA





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