YF

No Touch Hand Sensor



KONTAL

CE

Read this user manual carefully before using the device. Follow the installation, electrical connection and first start-up sections step by step. After this stage, the product owner/user must keep this user manual in a known and visible place throughout the service life of the product.

- Use the product only indoors and in dry environments. This product is designed for indoor use and has no protection against water or dust.
- Keep the product in a dry environment. Otherwise, the product may malfunction.
- All service and repair work may only be carried out by Kontal Elektronik technical service. The product must not be tampered with by any other person.
- The operating voltage of each product is stated on its label. Do not supply the product from a source other than this voltage.



✓ Using the product in a way that does not comply with the above may cause fire, serious personal injury, or damage to the product or the structure it is installed on. Kontal Elektronik San. ve Tic. Ltd. Şti. accepts no liability in such cases caused by the user.

✓ This sign is used for important points in the following sections.



✓ Disconnect the power supply before making the product connections.

✓ Do not touch the supply terminals of the product with bare hands.

- This sign is used for voltage-related warnings in the following sections.



- This symbol on the label indicates that the supply voltage of the product is DC.



- This symbol on the product or its packaging indicates that this product must not be treated as household waste. Instead, it must be handed over to a collection point for the recycling of electrical and electronic equipment. Incorrect disposal of the product may have negative consequences for the environment and human health.



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1. DESCRIPTION

The YF (Proximity Photocell) is a sensor with infrared (IR) detection technology that switches without contact when your hand or any object approaches its detection area. When detection occurs, it provides a dry-contact relay output that triggers the system it is connected to (automatic glass doors, garage doors, touchless button systems, etc.). Since it operates without physical contact, it offers practical and hygienic use and can easily be used in areas where hygiene is important, especially hospitals.

1.1 BOX CONTENTS

1x YF Proximity Photocell

**For special orders, the box contents may vary depending on the project or customer request.*

2. TECHNICAL SPECIFICATIONS

Model	YF – Proximity Photocell
Product Code	K006-01
Operating Voltage	12/24V DC
Operating Current	50mA @ 24V DC
Operating (Detection) Distance	5-30cm (Adjustable)
Operating Temperature	-20 °C / +55 °C
Operating Modes	Pulse / Toggle
Operating Technology	Infrared (IR)
Contact Type	Dry Contact (NO/NC)
Contact Rating	30V DC 1A / 125V AC 0.3 A (Max.)
Contact Hold Time	0.4s (min.) / 5s (max.) (Adjustable)
Weight	47g
Dimensions (Diameter x Depth)	Ø80 x 23mm

3. USER SETTING COMPONENTS

JP1 : Use this component to select the operating voltage of your product (12V / 24V DC). (See also 4.1)

JP2 : Use this component to set the sensor address in applications where more than one YF is used together. (See also 6)

JP3 : Use this component to select the output contact type of your product (NC / NO). (See also 4.1)

POT1 : Use this component to adjust the transmitter signal strength and therefore the operating (detection) distance of your product. (See also 4.2)

POT2 : The setting of this component must not be changed. (See also 4.2)

LED Groups : Use these components to observe the standby and detection status of your product and, during mode setting, the selected mode. (See also 4.3 and 5)

Terminal : 4-way terminal block for the supply and relay output connections. (See also 7)

4. YF CONTROL BOARD

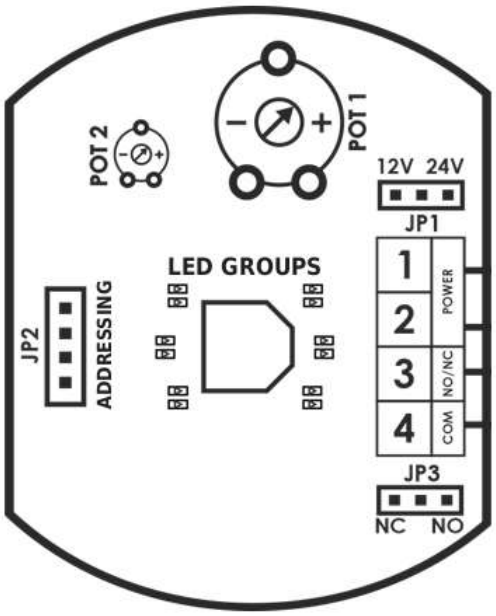
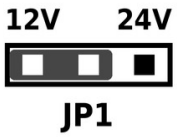


Figure 4.1 YF Control Board

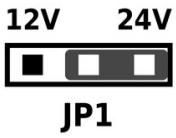
4.1 YF Initial Setup and Start-up

1. Open the front cover: Lift off the front cover of the product using a screwdriver (see Figure 8.2).

2. Select the operating voltage: Set the JP1 jumper as shown below according to the supply voltage you will use.

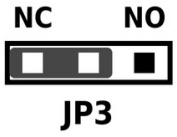


12V DC Supply

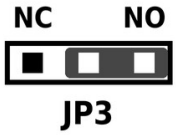


24V DC Supply

3. Select the output contact type: The position of the JP3 jumper determines the contact type of the relay output.



NC Contact



NO Contact

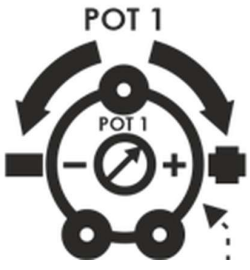
4. Set the address: If more than one YF will be used together, set the JP2 jumper of each sensor to a different position (see Section 6).

5. Make the connections: With the power off, connect the supply and relay output cables to the terminal block (see Section 7).

6. Power up and adjust: Adjust the detection distance with POT1 (see 4.2), and the operating mode and contact hold time with the hand-pass method (see Section 5).

7. Close the cover: After the settings are completed, refit the front cover.

4.2 Adjusting the Operating (Detection) Distance



The transmitter signal strength, and therefore the operating (detection) distance of the product, is adjusted with the **POT1** trimpot on the board.

Turning POT1 in the **(+) direction** increases the operating distance; turning it in the **(–) direction** decreases it. The operating distance of the product is 5–30cm.

Please do not change the setting of the trimpot labelled POT2!

4.3 LED Groups

The YF has two LED groups of different colors. One LED group lights while the product is in standby, and the other lights at the moment of switching when you bring your hand close to the sensor. At power-up and during operating mode setting, the LEDs indicate the status (see Section 5).

5. SETTING THE YF OPERATING MODE AND CONTACT HOLD TIME

The operating mode of the YF (Pulse / Toggle) and the contact hold time in Pulse mode are set right after power-up by passing your hand in front of the sensor. Follow the steps below:

Step 1 : Power up the product. The blue LEDs on the board flash rapidly for 2 seconds.

Step 2 : Within these 2 seconds, place your hand in front of the sensor and hold it there for about 10 seconds. During this time the blue LEDs flash more slowly.

Step 3 : At the end of the 10 seconds, the LEDs stay on; the product has entered mode setting. Remove your hand from in front of the sensor.

Step 4 : Pass your hand in front of the sensor the number of times that corresponds to the mode you want (see the table below).

Step 5 : Wait 4 seconds after the last hand pass. The product indicates the selected mode by flashing the LEDs as many times as the number of hand passes.

NUMBER OF HAND PASSES	CONTACT HOLD TIME	OPERATING MODE
1	0.4s	Pulse
2	1s	Pulse
3	2s	Pulse
4	3s	Pulse
5	4s	Pulse
6	Not time-dependent	Toggle

The product is shipped in mode 1 (Pulse, 0.4s).

- **Pulse Mode:** The default operating mode of the product. When a hand is detected, the relay energizes for the selected time and then releases.
- **Toggle Mode:** Activated when the hand is passed 6 times during mode setting. When you pass your hand, the relay energizes and stays energized; to release the relay, pass your hand again.

When you pass your hand 6 times during mode setting, unlike the other modes, the red LEDs light once instead of the blue LEDs. If no further hand pass occurs during the 4-second waiting time, the red LEDs light again, indicating that the product operates in Toggle mode.

If the hand is passed again immediately after the 6th hand pass, the product detects this as a single hand pass and returns to mode 1 (Pulse, 0.4s).

6. OPERATING MULTIPLE SENSORS SIDE BY SIDE

When your application requires more than one YF to operate side by side or facing each other, the JP2 (ADDRESSING) jumper of each sensor must be set to a different position so that the sensor signals do not interfere with each other. The jumper positions for up to 4 YF units are shown in Figure 6.1 and in the table below.

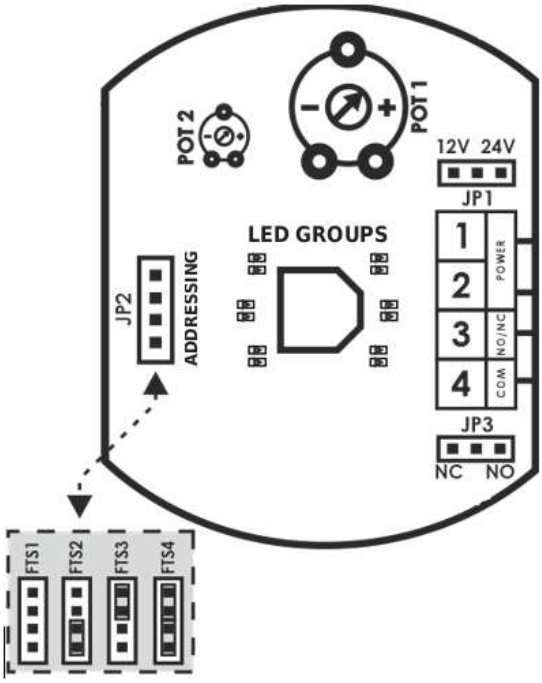


Figure 6.1 YF Addressing (JP2) Jumper Positions

SENSOR	JP2 JUMPER POSITION
Sensor 1 (FTS1)	No jumper fitted
Sensor 2 (FTS2)	1 jumper on the lower two pins
Sensor 3 (FTS3)	1 jumper on the upper two pins
Sensor 4 (FTS4)	One jumper each on the upper and lower pin pairs (2 jumpers)

**Jumper positions refer to the board orientation shown in Figure 6.1.*

7. WIRING DIAGRAM

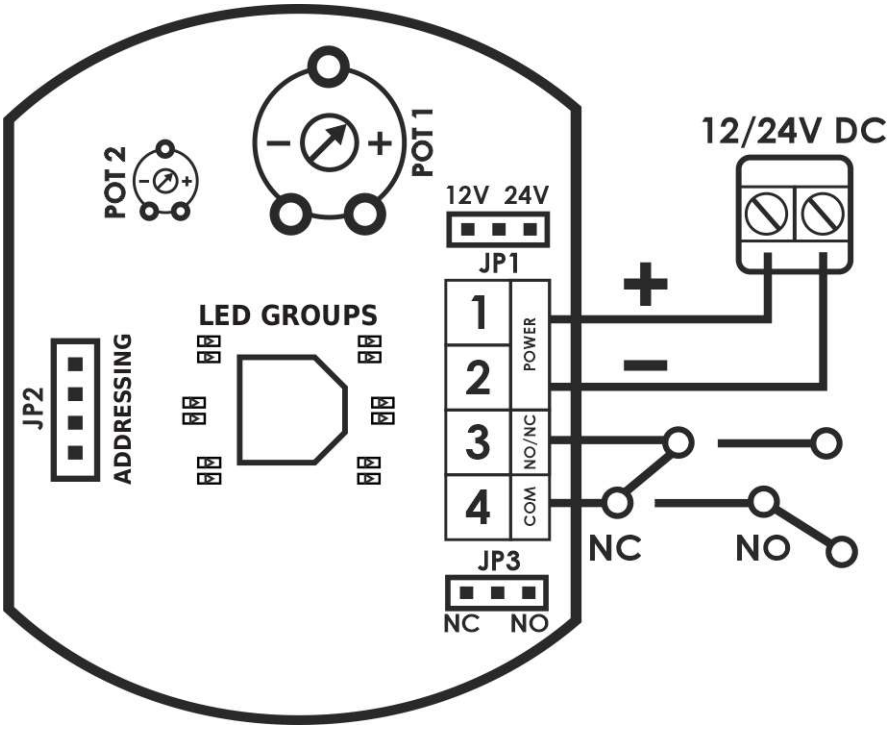


Figure 7.1 YF Wiring Diagram

TERMINAL	MARKING	DESCRIPTION
1	+ (POWER)	12/24V DC supply (+)
2	− (POWER)	12/24V DC supply (−)
3	NO/NC	Relay output (contact type selected with JP3)
4	COM	Relay output common

Never touch the connection points after the power connections of the product have been made!

Do not connect loads exceeding the contact rating (60V DC 100mA / 42V AC 100mA) directly to the relay output!

For correct and stable operation, a power supply with a minimum output power of 1.2W is recommended on the supply line!

An easily accessible disconnecting device (switch, fuse, etc.) connected to the building electrical installation must be provided.

8. INSTALLATION

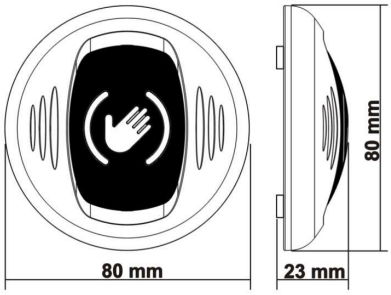


Figure 8.1 YF Dimensions (Unit: mm)

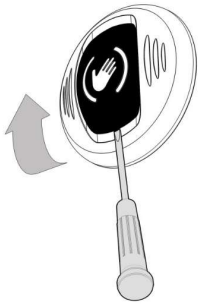


Figure 8.2 Removing the YF Front Cover



Figure 8.3 Removing the YF Housing Screw

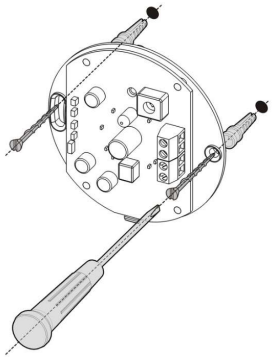


Figure 8.4 Mounting the YF on the Wall

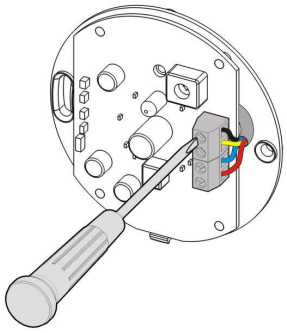


Figure 8.5 Making the YF Cable Connections

1. Make sure that the power is disconnected.

2. Lift off the front cover using a screwdriver (Figure 8.2).

3. Remove the housing screw under the front cover and separate the outer housing from the base carrying the board (Figure 8.3).

4. Fix the base to the mounting surface with suitable wall plugs and screws (Figure 8.4). Wall plugs and screws are not included in the box.

5. Connect the cables to the terminal block according to the wiring diagram in Section 7 (Figure 8.5).

6. Make the jumper and distance settings (Section 4). Refit and screw the outer housing, then fit the front cover.

7. Power up the product and set the operating mode (Section 5).

Carry out installation and connection work only with the product disconnected from power!

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