

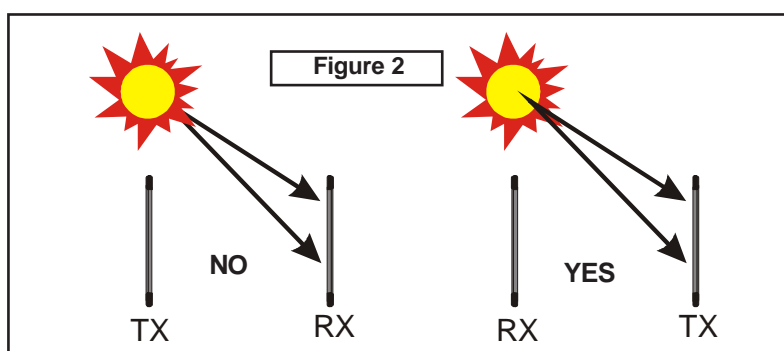
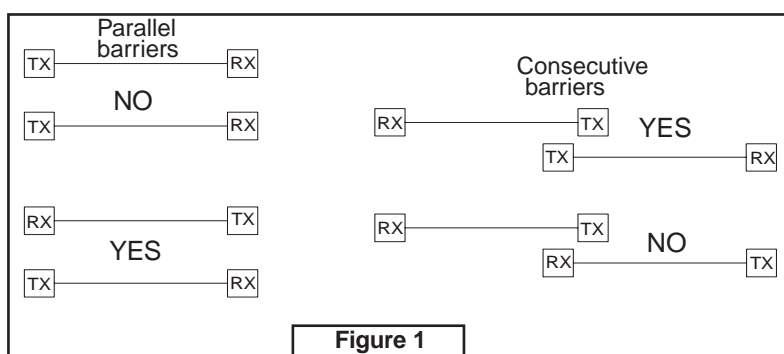
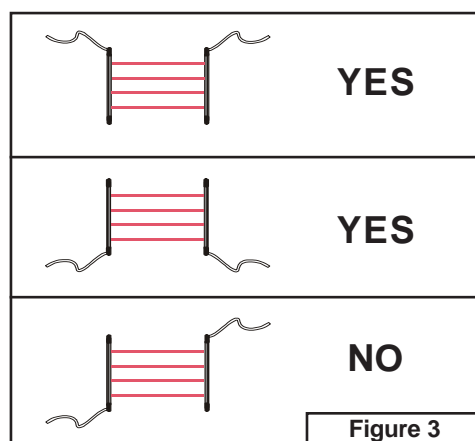
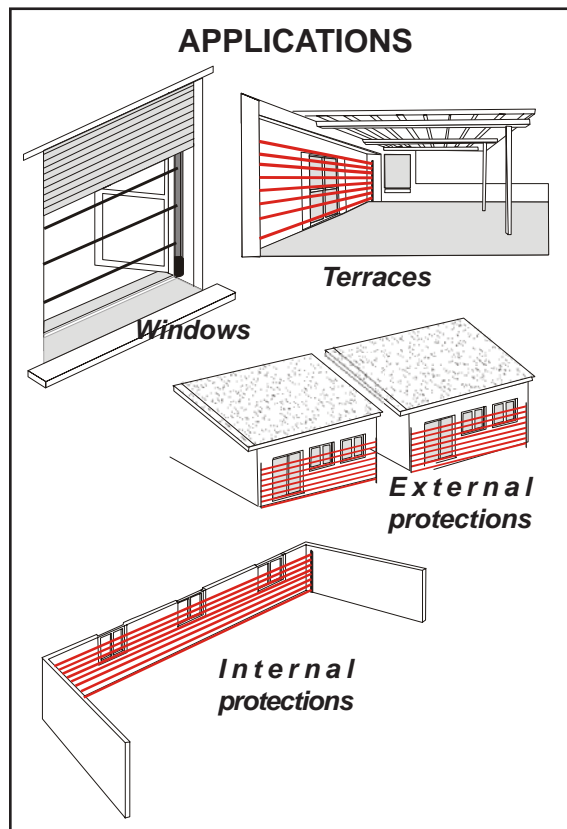
EL20 - Infrared outdoor barrier

Overall Characteristics

- 4 barrier models are available: EL20RT/05 (0,5m - 2 beams), EL20RT/10 (1m - 4 beams), EL20RT/15 (1,5m - 6 beams), EL20RT/20 (2m - 28beams).
- Extremely compact size allows installation between window and blinds, or roller shade
- High resistance to shocks and to severe weather conditions, thanks to the polycarbonate case and the gasket system on closing cover
- Resistance to UV rays
- Compensation of expansion caused by heat excursion, thanks to a special expansion joint.
- Maximum stability of columns installed on wall with intermediate fixtures
- Protection against accidental opening and removal
- Easy optical alignment (without calibration tools)
- Microprocessor-controlled SMD technology
- Three (3) selectable operating modes: point-to-point beams, adjacent beams, crossed beams
- Selectable range according to type of installation (see TX Programming). The distances shown are indicative and may change according to where the barrier is installed.
- Identification code between TX and the corresponding RX
- Optical barrier synchronism (without connection in row)
- Alarm memory

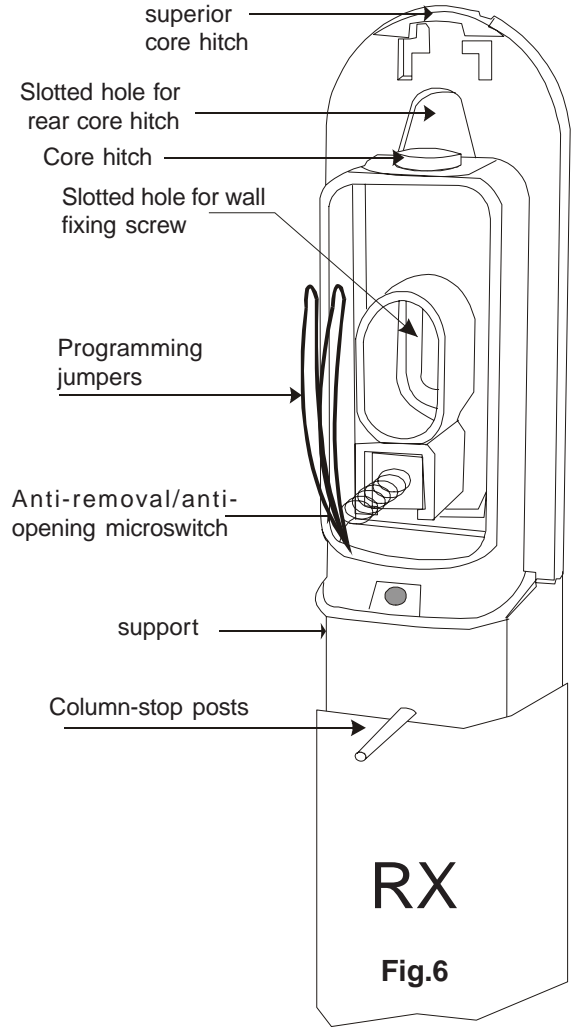
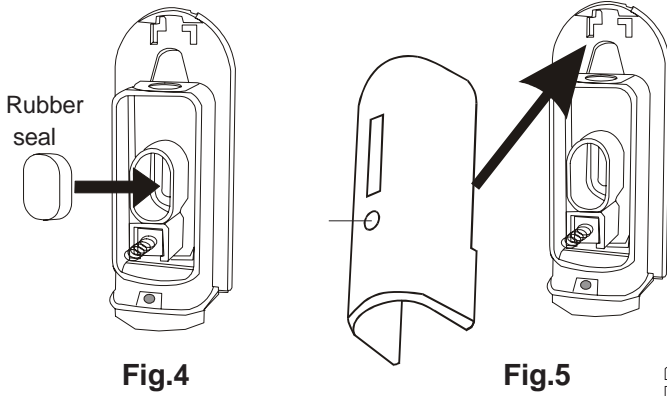
Installation hints

- Avoid as much as possible the presence of objects that could obstruct the beam
- Use of a shielded cable is advisable, preferably, one cable for each barrier
- If barriers are installed consecutively or in parallel, use the configuration described in Figure 1
- Position the barriers so that the sun rays do not hit the receivers directly (see figure 2).
- Check full operation of the barrier in the case of installation near large reflecting surfaces which could cause undesired optical coupling.
- To fix columns, use only the screws supplied with the barrier
- The barrier can be installed either with the cable at top or at bottom; the only precaution to be observed in this case is that the transmitter and the receiver both be placed in the same direction (Figure 3)
- Tampering with the product will void the warranty.
- The two columns are supplied in pairs (Tx and Rx). Always replace the pair, if required for maintenance purposes.



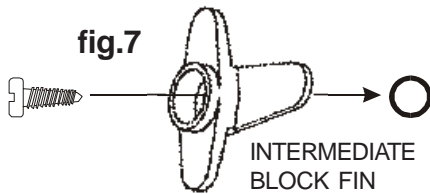
Installation

- Arrange the columns (receiver and transmitter) one opposite the other at the same height (the optical power of the Tx column can be programmed according to the distance between the two columns - see TX Programming). Mark the fixing screw holes and drill the supporting surface; intermediate blocks (supplied on production models more than half a meter high) are available to improve the column's adhesion to the wall: Read the NOTE below if you wish to use these blocks, otherwise go to the next step.
- Fix the column to wall by inserting the fixing screws inside the appropriate slotted holes, and tighten them (Figure 6).
- Insert the oval-shaped rubber seal (supplied on production models) as shown in Figure 4.
- Run the cable through the appropriate slotted holes (Figure 6) if you wish to use the rear core hitch.
- If necessary, cut the programming jumpers (see par. "TX and RX Programming").
- Cut the column-stop posts (on the RX and TX) being careful to remove any residual traces of burrs to avoid compromising the heat expansion compensation (Figure 6).
- Close the cover and fasten with appropriate screw (see Figure 5).

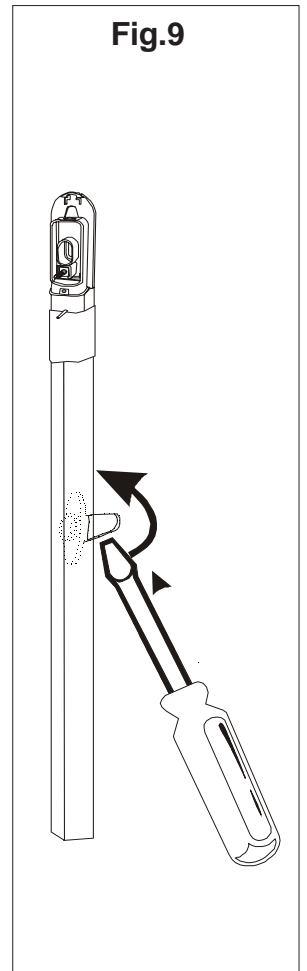
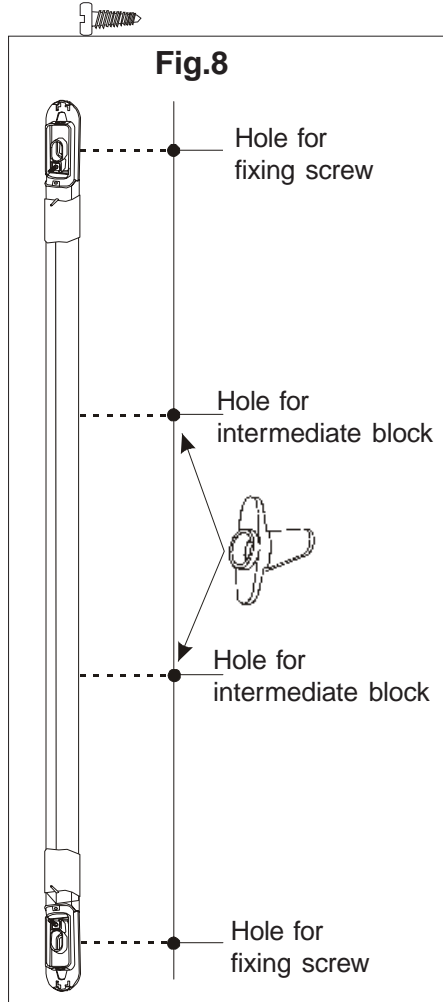


NOTE 1: COLUMN WALL FIXING

- After having marked the position of fixing screw holes, drill the holes necessary for the intermediate blocks (Figure 8).
- Fix the intermediate blocks (with appropriate screws) making sure that blocking fins can rotate freely (see Figure 7).



- Fasten the column to the wall using the screws supplied for this purpose.
- Push the fins of the intermediate blocks with a screwdriver so that they rotate (Figure 9).



Connection

RECEIVER CONNECTION CABLES

- RED: POSITIVE
- BLACK: NEGATIVE
- GREEN: NC ALARM CONTACT
- YELLOW: NC ALARM CONTACT
- BROWN: TC INPUT
- BLUE: TAMPER
- WHITE: TAMPER

TRANSMITTER CONNECTION CABLES

- RED: POSITIVE
- BLACK: NEGATIVE
- BLUE: TAMPER
- WHITE: TAMPER

Factory Parameters

- The RX column is supplied with point to-point operating mode.
- The TX column is supplied with integral jumper: minimum rating.

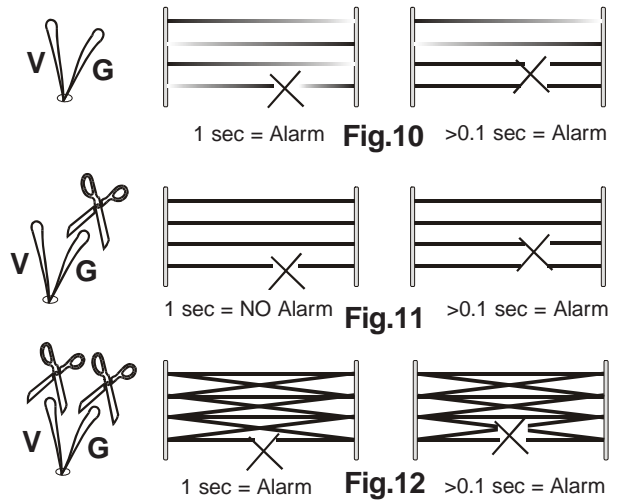
TC Input

- The TC is a command generated by the anti-tampering unit to inform the barrier of the system's condition (armed or disarmed). When present (disarmed system), the TC enables:
 - viewing of the alarm memory
 - blocking of the alarm relay, for less wear.
- When it is not present (armed system), the TC command allows viewing of alarm events.
- The TC command is considered to be present when the writing -12 V is indicated on the corresponding cable (Brown).
- The TC command is considered to not be present when the writing 0 V is indicated on the corresponding cable (Brown), or when the cable is not connected.

RX Programming

- Each RX column is supplied with 2 jumpers that are used for programming the operating mode.
- **INTEGRAL JUMPERS: POINT-TO-POINT BEAM MODE**
An alarm is generated when a single beam is interrupted for at least one second, or when 2 adjacent beams are interrupted for >0.1 sec.
- **YELLOW CUT JUMPER: ADJACENT BEAM MODE**
An alarm is generated when 2 adjacent beams are interrupted for at least >0.1 sec.
- **2 CUT JUMPERS: CROSSED BEAM MODE**
An alarm is generated when a single beam is interrupted for at least one second, or when 2 beams are interrupted for >0.1 sec.

WARNING: The range of crossed beams is typically 0.9 m and can increase if the columns are installed in the presence of strong environmental light.



G = YELLOW JUMPER
V = GREEN JUMPER

TX Programming

- Each Tx column is supplied with 1 jumper for programming the transmitted optical power as follows:
 - integral jumper: reduced optical power
 - cut jumper: maximum optical power
- The following ranges are obtained according to the selected optical power:

OUTDOOR INSTALLATION

- **INTEGRAL JUMPER**
MINIMUM RANGE 40 cm
MAX RANGE 2 m
- **CUT JUMPER**
MINIMUM RANGE 2 m
MAX RANGE 10 m

INDOOR INSTALLATION

- **INTEGRAL JUMPER**
MINIMUM RANGE 40 cm
MAX RANGE 5 m
- **CUT JUMPER**
MINIMUM RANGE 5 m
MAX RANGE 20 m

WARNING: - Detection faults or anomalies may occur in the case of installation near reflecting surfaces due to undesired optical coupling. In many cases, the problem may be solved by setting the curtain to reduced optical power by leaving the Tx jumper intact. Always check full functionality of the curtain before completing installation

SUMMARY OF RX PROGRAMMING

JUMPER CONDITION	No. OF INTERRUPTED BEAMS	INTERRUPTION TIME NEEDED TO GENERATE AN ALARM	No. OF BARRIER BEAM 0.5 m	No. OF BARRIER BEAM 1 m	No. OF BARRIER BEAM 1,5 m	No. OF BARRIER BEAM 2 m
INTEGRAL JUMPERS	1	1 sec	2	4	6	8
	2 ADJACENT	>0.1 sec				
YELLOW CUT JUMPERS	1	NO ALARM	2	4	6	8
	2 ADJACENT	>0.1 sec				
2 CUT JUMPERS	1	1 sec	4	10	16	22
	2	>0.1 sec				

First powering up

- At first powering up, after the columns have been fixed one in front of the other, the beams are automatically synchronized by the optical signal.
- The Coding of TX coupling with RX is performed automatically
- The receiver Led indicates any malfunctions:
 - Led OFF: relay closed, barriers are functioning correctly
 - Quick-flashing Led: see section titled "Troubleshooting"

Technical Characteristics

- RX-TX power supply nominal voltage 12 V—
- RX-TX power supply min-max 10,5 - 15 V—
- Absorptions (typical-max) transmitter with 12 V—

	MIN RANGE	MAX RANGE
EL20/05T	11 mA typ - 16 mA max	38 mA typ - 47 mA max
EL20/10T	13 mA typ - 20 mA max	64 mA typ - 73 mA max
EL20/15T	15 mA typ - 24 mA max	90 mA typ - 99 mA max
EL20/20T	17 mA typ - 28 mA max	116 mA typ - 127 mA max
- Absorptions (typical-max) receiver with 12 V—

	AT REST	WITH ALARM
EL20/05R	16 mA typ - 20 mA max	14 mA typ - 18 mA max
EL20/10R	22 mA typ - 26 mA max	20 mA typ - 24 mA max
EL20/15R	28 mA typ - 32 mA max	26 mA typ - 30 mA max
EL20/20R	34 mA typ - 38 mA max	32 mA typ - 36 mA max
- Max range (adjustable on two levels) 10 m (Outdoor inst.) 20 m (Indoor inst.)
- Alarm times >0.1 sec (one ray interrupted)
1 sec (two adjacent rays interrupted)
- Emitters wave lenght 940nm
- Issued signal PM transmission (pulse mode)
- Operating temperature certified (rules CEI) -25°C - +55°C
- Alarm relay contact 0,1 A@24V— with serial protection R=10 Ohm
- Anti-tampering/anti-removal microswitch 50 mA@12 V—
- Degree of protection declared by builder IP65 IK04
- Degree of protection certified (rules CEI) IP34
- Fault indication Red LED flashing
- Size and weight

EL20/05	500 x 25 x 23 mm - weight 250 g
EL20/10	1000 x 25 x 23 mm - weight 500 g
EL20/15	1500 x 25 x 23 mm - weight 750 g
EL20/20	2000 x 25 x 23 mm - weight 1000 g

Troubleshooting

Trouble	Possible Cause	Corrective Measure
Led is lit with fixed light and the relay contact is open.	• Incomplete acquisition of random code	• Check that there are no obstacles between barriers
	• Power supply to TX column missing	• Supply TX column
	• Barrier is excessively off-center	• Re-position barriers
	• Range selection jumper is not set correctly	• Check the distance between barriers and select the correct range
Led is flashing and the relay contact is open	• RX column fault	• Check the RX column and replace, if necessary
Led is always OFF and the relay contact is open.	• Power supply to RX column missing	• Supply RX column
Led is lit with fixed light and the relay contact is closed	• Alarm memory enabled	• Arm the system and disarm, if necessary (refer to the TC input)
Led is always OFF and the relay contact is closed.	• TC present	• Arm the system and check connections

ELKRON S.p.A.
 Via Carducci, 3 - 10092 BEINASCO (TO) - ITALY
 TEL. +39.011.3986711 - FAX +39.011.3499434
 www.elkron.it e-mail info@elkron.it

