



# DIGITAL NET

## 10 ... 20

**10 1 METRE 2 STRAIGHT OR 4 CROSSED BEAMS**  
**15 1.5 METRES 3 STRAIGHT OR 7 CROSSED BEAMS**  
**20 2 METRES 4 STRAIGHT OR 10 CROSSED BEAMS**

***MULTI-BEAM OPTICAL BARRIER***  
***OPTICAL OR BY WIRE SYNCHRONISM***  
***COMPLETE DIGITAL CONTROL with AGC***



**INSTALLATION INSTRUCTIONS**

Ver. ENG 01 – Set. 2008





## ***DIGITAL NET General Description***

This new-concept BARRIER is a real step forward in PERIMETER PROTECTION, offering greater reliability and ease of use.

Basically, DIGITAL NET consists of a RECEIVING element and a TRANSMITTING element which manage DOUBLE LENS optics with infra red beams. The controlling electronics have no trimmers, jumpers or any other components which could prejudice the reliability of the barrier.

Every barrier function is set DIGITALLY, so that all the parameters can be read/controlled/modified really easily.

Even the AUTOMATIC GAIN CONTROL, transparent for the user, is managed digitally. The wide AUTOMATIC CONTROL margin means that the barrier works just as well at 5 metres as at 80 metres, maintaining the same operational features over a wide thermal and environmental range.

The synchronisation can be either linear or optical; the linear connection during the alignment phase means that the installation can be made by a single operator thanks to the DISPLAYS on both sides, so that the barrier can be ALIGNED WITHOUT any additional instrumentation.

The barrier is equipped with integrated disqualification that can be managed both traditionally, with its N.O. RELAY OUTPUT, or through the setting of the relative function, which intervenes on the ALARM RELAY block. In this case, the disqualification output relay continues to operate normally; that is, it closes when there are adverse environmental conditions and opens during normal operating conditions.

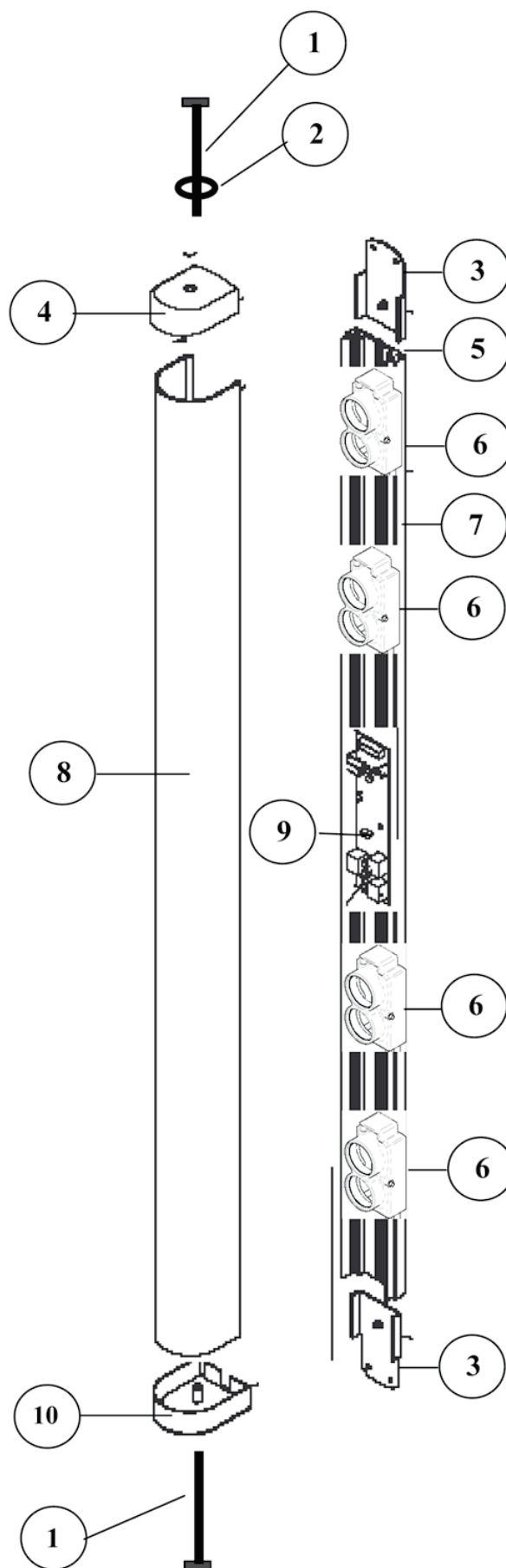
The double optical lenses reduce the false alarms to a minimum, maintaining a good optical range in all environmental conditions.

The ALARM MEMORY is an innovational function, recording the last 20 beam interruptions; a very useful function in cases of repeated FALSE ALARMS.

The barrier is fitted with everything necessary for correct installation, including cable fittings for the lower cap and the heating.

**BARRIER COMPOSITION** (Version 20)

- |    |                                       |
|----|---------------------------------------|
| 1  | Upper / Lower CAP screws              |
| 2  | UPPER CAP O-RING screws               |
| 3  | WALL support brackets                 |
| 4  | Upper CAP                             |
| 5  | Anodised ALUMINIUM bar                |
| 6  | LENS unit (2 Lenses per beam)         |
| 7  | WHITE (Rx) – RED (Tx) spot            |
| 8  | I.R. POLYCARBONATE Front panel        |
| 9  | Tx or Rx MOTHER board                 |
| 10 | Lower CAP (with water drainage holes) |



## INSTALLATION TIPS

Remove the upper and lower barrier caps.

Fix the barriers to the wall or the pole with the special fixtures.

If possible, avoid positioning the receiver so that it faces the sun at dawn or sunset.

Make the electrical connections.

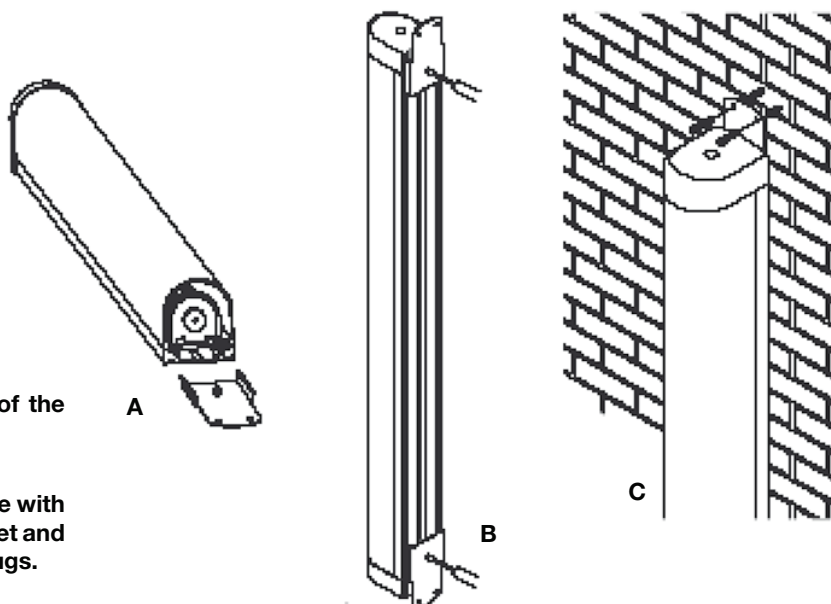
Make the alignment.

Check that there are no branches or other moving obstacles between the barriers.

Block the upper and lower cap with the special supplied screws.

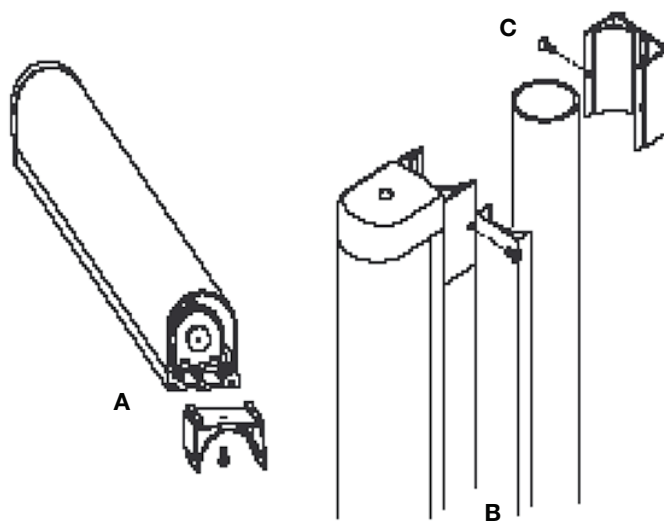
## WALL MOUNTING WITH BRACKETS (DUAL KFP)

- A) Insert the bracket in the rear guides of the aluminium bar
- B) Tighten the bracket-fixing screw.
- C) Drill holes in the wall in correspondence with the holes on the upper and lower bracket and fix the brackets to the wall with the plugs.



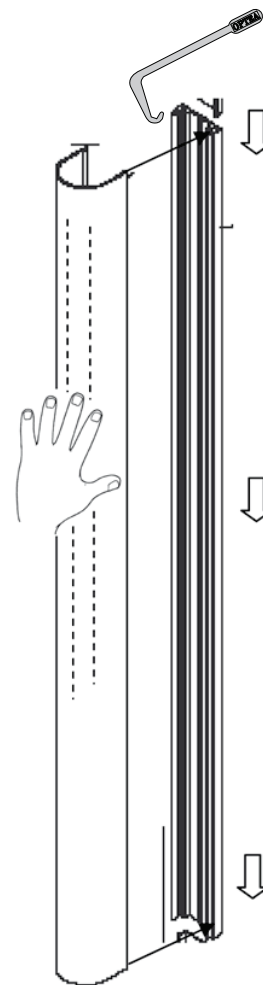
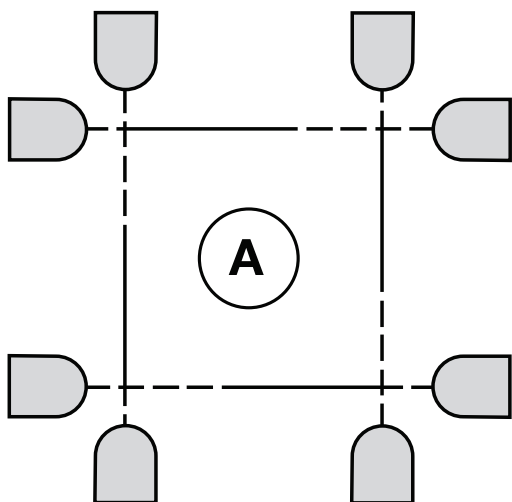
## POLE MOUNTING WITH BRACKETS (DUAL STAF)

- A) Insert the bracket in the rear guides of the aluminium bar and tighten the bracket-fixing screw.
- B) Fix the other part of the bracket with the special screws.
- C) Fix the barrier to the pole, tightening the screws on the upper and lower bracket.

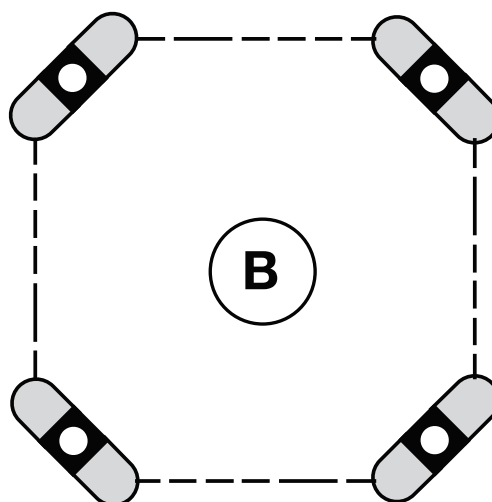


**MOUNTING THE I.R. PLASTIC FRONT PANEL CONFIGURATION A**

- 1) Place the I.R. profile on the barrier alongside the heating elements **PAYING ATTENTION** to the **CENTRAL TAMPER** lever.
- 2) Fix the profile along **ALL** of the aluminium profile on one of the 2 sides.
- 3) Insert the supplied tool from the other side of the I.R. profile, pulling it.
- 4) slide the tool downwards by pressing with the free hand on the profile.
- 5) After about 40-50 cm. press right down on the I.R. polycarbonate with your hand.
- 6) Repeat the operation until the polycarbonate is completely inserted.
- 7) Slide the tool out from the bottom and close, mounting the caps on the ends.
- 8) Remove the protective film from the front of the I.R. profile.

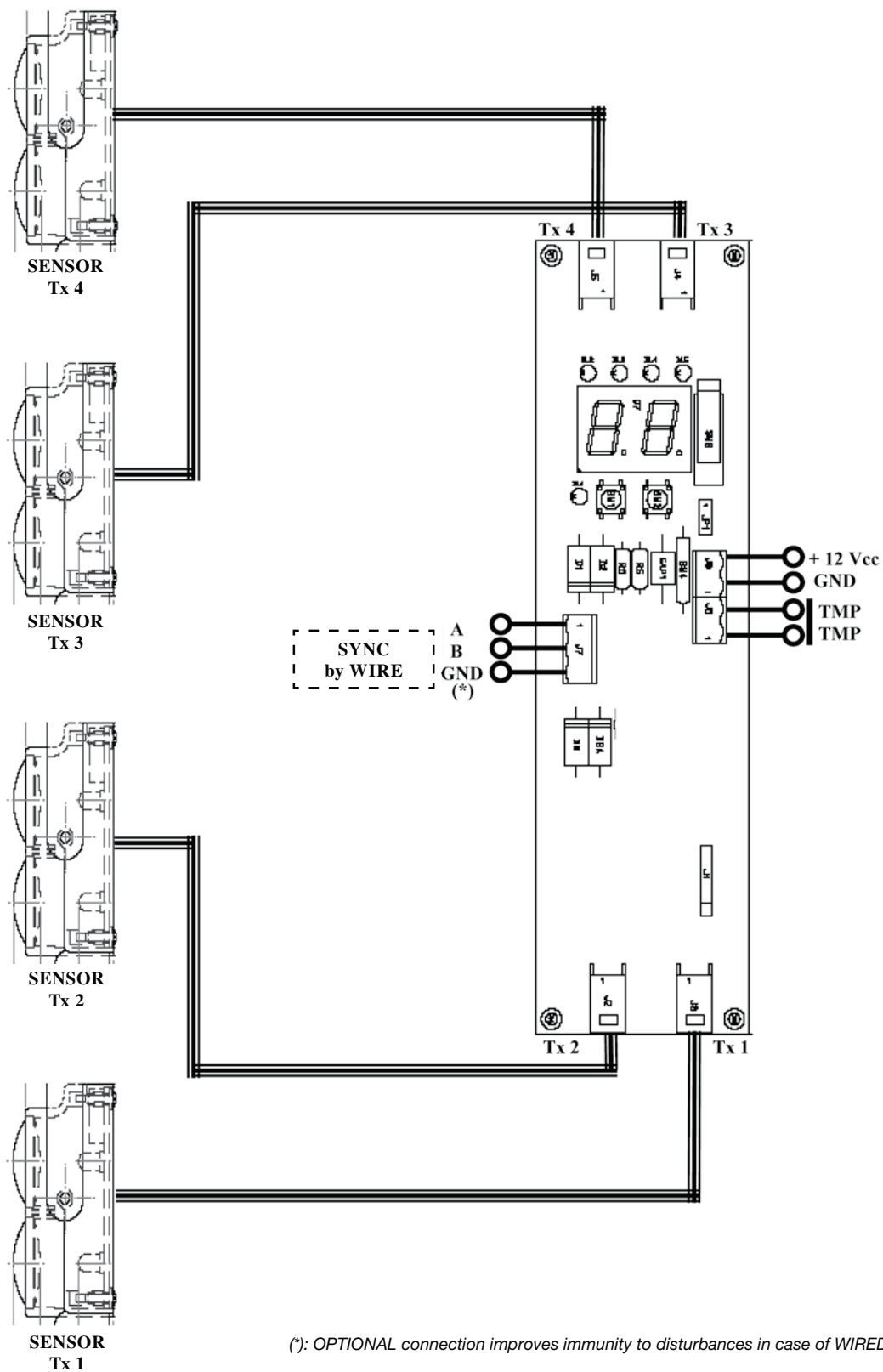
**EXAMPLES OF DIGITAL NET INSTALLATIONS**

**CONFIGURATION  
with CROSSING BARRIERS**

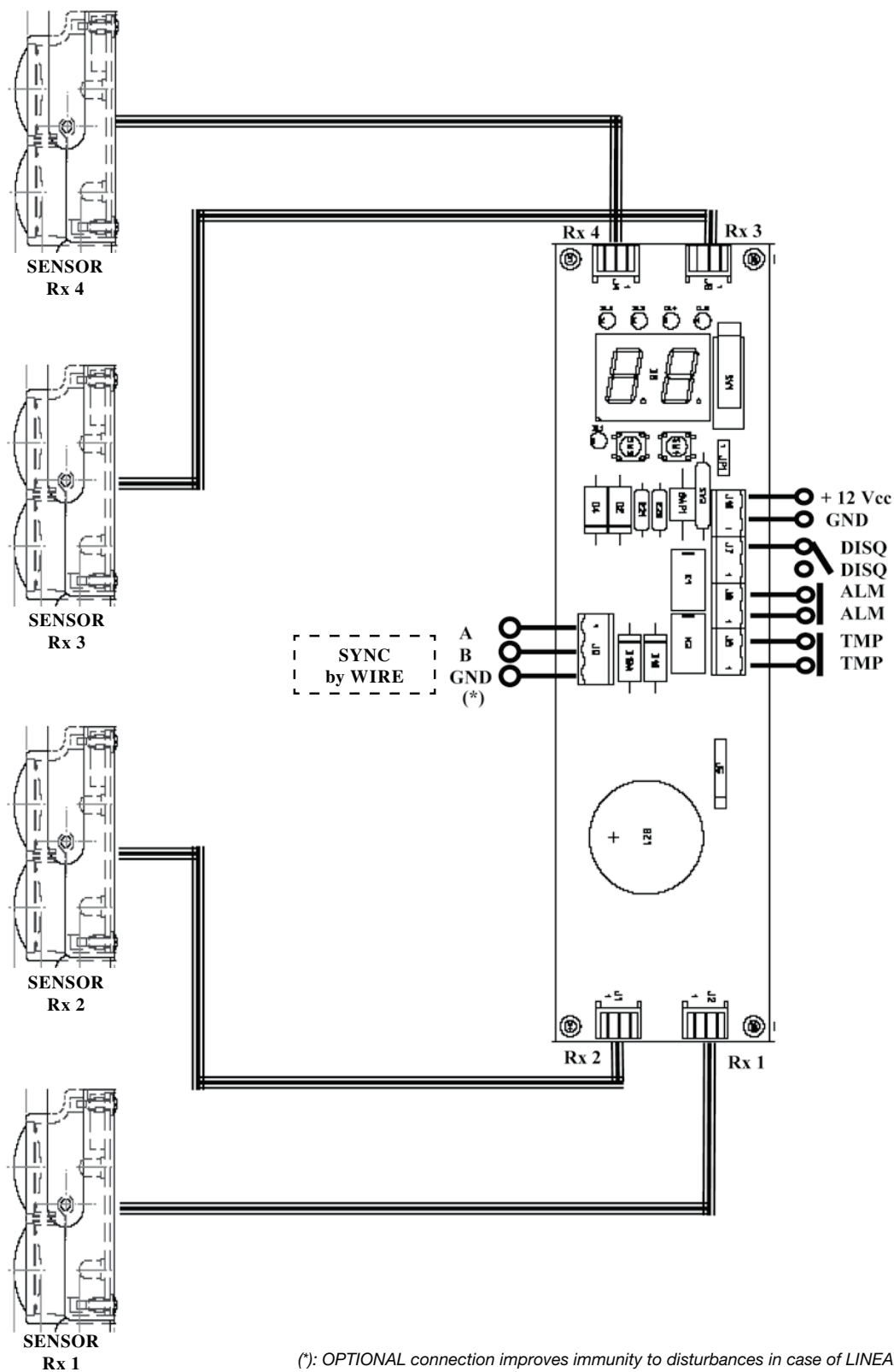


**POLE MOUNTING  
(perimeter protection)**

## TRANSMITTER CARD CONNECTIONS



(\*): OPTIONAL connection improves immunity to disturbances in case of WIRED SYNCHRONISM

**RECEIVER CARD CONNECTIONS**

(\*): OPTIONAL connection improves immunity to disturbances in case of LINEAR SYNCHRONISM



## PROGRAMMING OPERATING PARAMETERS

The barrier operating parameters can **only** be set from the **RECEIVER** side, using the **DISPLAY** and the **2 BUTTONS** underneath. The parameters are associated to variables from P1 to P6.

**Table 1** shows the modifiable variables and the minimum and maximum values associated to them.

To set the operating values, proceed as follows:

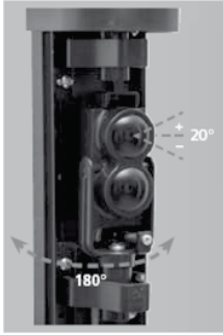


1. Press BOTH buttons (together); the DISPLAY indicates the first parameter P1.
2. Move from P1 to P6 by scrolling back and forth with the + and – buttons.
3. Once the variable (parameter) TO BE MODIFIED is shown.....
4. Press BOTH buttons to access the value (**FLASHING**) and modify it with the + and – buttons.
5. Press BOTH buttons to SAVE the new set value.
6. The display shows the last parameter MODIFIED/ Saved P1...P6.
7. To modify or read the other values, repeat from point 2.
8. To interrupt the modifications, do not touch the buttons and after a few seconds the sequence blocks.

**Table 1 - List of PARAMETERS**

<b>P1</b> <u>Optical range</u>	: <b>5 ÷ 80 Metres</b> (BARRIER OPTICAL installation distance)
<b>P2</b> <u>N° beams (*)</u>	: <b>2 ÷ 10</b> (selectable) <b>ADJACENT crossed or straight</b> (10 Beams Vers. 20)
<b>P3</b> <u>Alarm condition</u>	: <b>1,2,3...10</b> N° beams to be INTERRUPTED to generate a <b>valid ALARM</b> condition
<b>P4</b> INTERVENTION -T	: Adjustment of the intervention time, from <b>50 mSec.</b> to <b>990 mSec.</b> (reading x 10mS)
<b>P5</b> Reset - T	: Adjustment of the RESET time, from <b>0.1 Sec.</b> to <b>9.9 Sec.</b> (reading x 0.1 S)
<b>P6</b> <u>Disqualification</u>	: <b>ON / OFF</b> (if ON, blocks the ALARM RELAY in case of fog)

(\*) **N.B.:** CROSSED BEAMS can be used for OPTICAL distances of **AT LEAST 20 METRES**

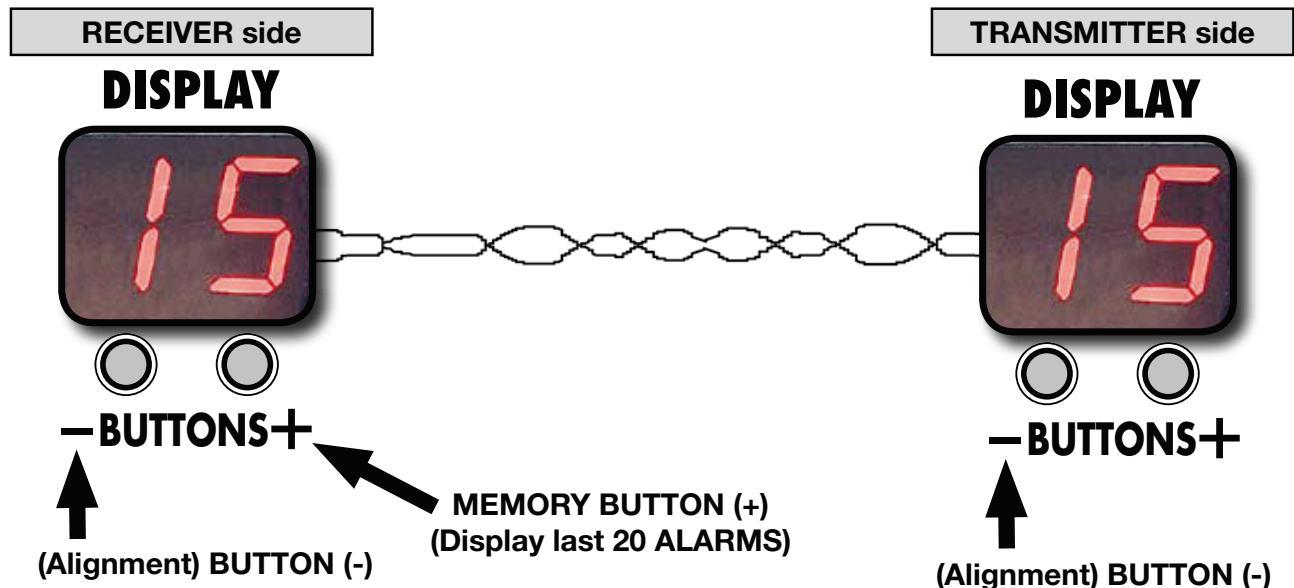


### **BARRIER ALIGNMENT**

1. Connect the **synchronism (\*)**, Receiver A and B with Transmitter A and B (2 wires are enough).
2. From the **Rx side**, set parameter **P1** from **5** to **80** metres (the exact installation optical distance).
3. Exit from MODIFY PARAMETERS by pressing both buttons or by waiting for a few seconds.
4. PRESS THE (-) BUTTON on the Tx or Rx card, the DISPLAY lights up and the L.E.D. of the 1<sup>st</sup> beam starts FLASHING on both sides.
5. Manually rotate the lenses horizontally and use a screwdriver to make the vertical adjustment.
6. Set the DISPLAY reading to the maximum signal possible (end of scale 99) then change side and repeat.
7. When the adjustment of the current beam is completed, PRESS + or - to move to another BEAM.
8. Repeat from point 4, when the alignment is completed, exit from this function by KEEPING THE (-) BUTTON PRESSED.
9. This function is accessible from BOTH SIDES (Rx and Tx).

### **ALARM reading** (recent events memory)

1. This function is **only** accessible from the **Rx SIDE**, KEEP the + BUTTON PRESSED for a few seconds.
2. The DISPLAY shows 1 and the red L.E.D.s corresponding to the last **ALARM** (beams interrupted) light up.
3. Use the + and - BUTTONS to access the last 20 ALARMS; 1= latest, 2=penultimate etc up to 20.
4. To **EXIT** from this function, **KEEP the + BUTTON PRESSED** for a few seconds.



(\*) **N.B.:** The LINEAR synchronism is **only** necessary during the ALIGNMENT PHASE, in order to read the VALUES on both DISPLAYS. At the end of the alignment phase, the linear connection can be removed. The BARRIER functions perfectly with OPTICAL SYNCHRONISM. Linear synchronism gives greater operating stability, especially when there are several barriers which could interfere with each other or TV cameras with infra red illuminators. The wires also give greater security in the case of an attempted blinding with a similar barrier.



## TECHNICAL FEATURES

Available models:	<b>DIGITAL NET 10 - Height 1 METRE with 2 / 4 Straight / Crossed BEAMS</b>
	<b>DIGITAL NET 15 - Height 1.5 METRES with 3 / 7 Straight / Crossed BEAMS</b>
	<b>DIGITAL NET 20 - Height 2 METRES with 4 / 10 Straight / Crossed BEAMS</b>

Maximum recommended OPTICAL distance OUTDOORS	<b>80 Metres</b>
Maximum recommended OPTICAL distance INDOORS	<b>200 Metres</b>
Minimum INSTALLATION distance	<b>5 Metres</b>
Minimum OPERATING distance for CROSSED BEAMS FUNCTION	<b>20 Metres</b>
Horizontal alignment adjustment	<b>± 90°</b>
Vertical alignment adjustment	<b>± 20°</b>
BARRIER LOGIC power supply (version 20)	<b>11 - 16 VDC – 150 mA</b>
HEATING power supply (vers. 10 / 15 / 20)	<b>24 VAC – (20 / 40 / 40) W</b>
Protection rating	<b>IP 54</b>
Operating temperature	<b>-25° to +55° C</b>

## OTHER FEATURES

<b>Automatic Gain Control</b> with <b>DIGITAL</b> control as standard
<b>Linear or Optical synchronism</b> with automatic control
INTEGRATED <b>disqualification</b> for fog or other adverse atmospheric conditions
<b>DOUBLE optics</b> with INFRA RED LENSES for high immunity to sunlight
<b>TAMPER PROTECTION</b> on upper CAP, lower CAP and I.R. front panel
<b>Events memory</b> (last 20 ALARMS)
BEAM LEDs and DISPLAY with <b>automatic shutdown</b> after 60 seconds of button inactivity

BARRIER OUTPUT:	<b>ALARM</b>	<b>N.C. RELAY CONTACT (only Rx side)</b>
	<b>DISQUALIFICATION</b>	<b>N.O. RELAY CONTACT (only Rx side)</b>
	<b>TAMPER</b>	<b>TAMPER N.C. CONTACTs</b>