



SANDOR WS SMA

Technical
manual

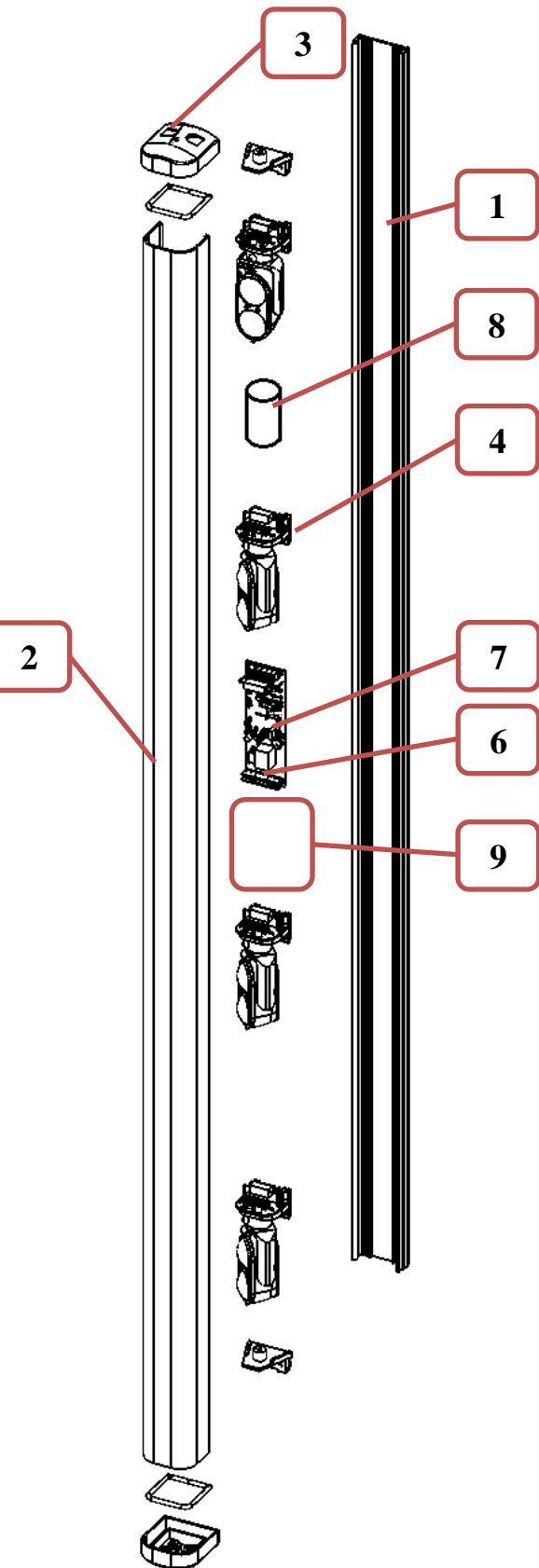
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Installation recommendation

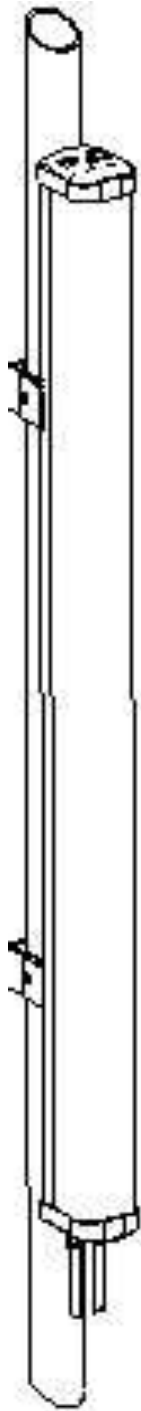
- *Verify that the beam tower is fully watertight once the cover and end caps have been correctly filled at the end of the installation.*
- *Use the cable glands supplied on the tower for all cabling must pass through the lower end cap using the cable glands supplied. The missed used of proper accessories decrease the IP grade protection of the tower.*
- *Avoid any type of obstruction between the transmitter and receiver.*
- *Avoid installing the receivers beams in a position where direct sunlight, at the same angle as the receivers beams, can enter directly into optics especially at sunset and sunrise*
- *Do not install multiple beams where the transmitter beam can interfere with other receiver beams. It is always better place either transmitter or receivers back to back.*

1. MAIN COMPONENTS

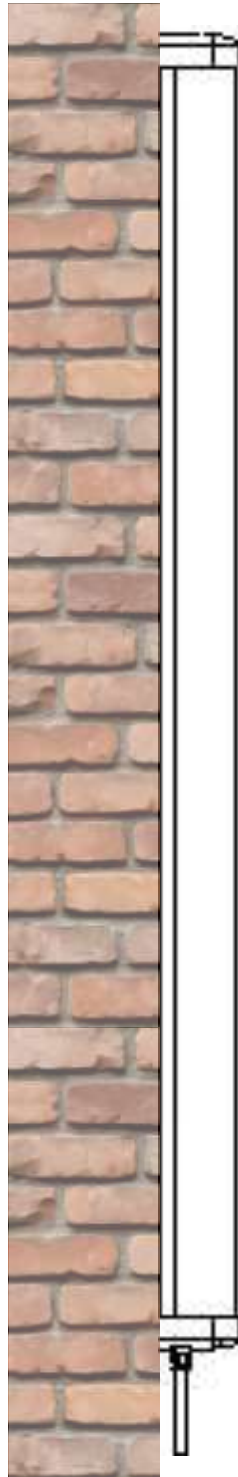


N°	Q.ty	Description
1	1	Aluminium profile
2	1	Polycarbonate cover
3	2	Caps
4	2/4/6	Opticals TX & RX
5	1	Flat cable
6	1	Terminals card
7	1	Mother board
8	1	Battery 3.6 V 19 Ah
9	1	Wireless trasmitter position

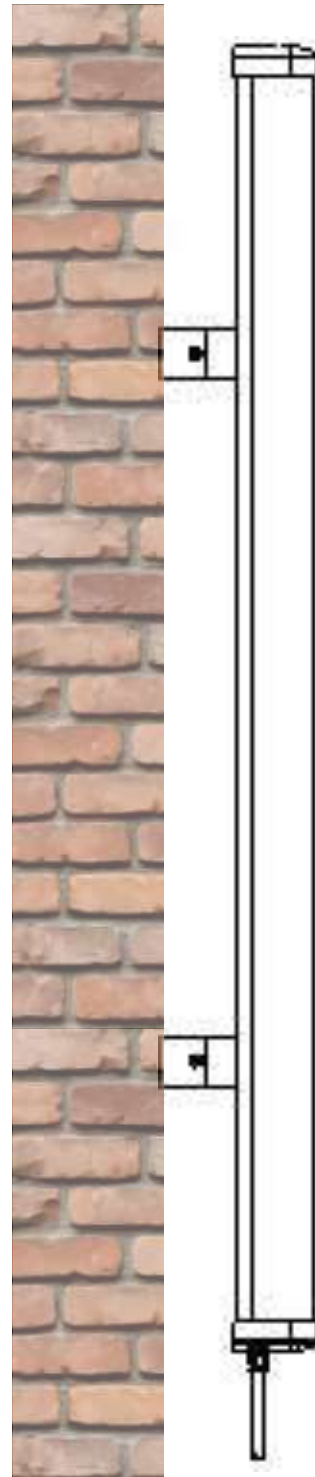
2. MOUNTING SAMPLES



**Pole
mounting
with
SAN/PL**



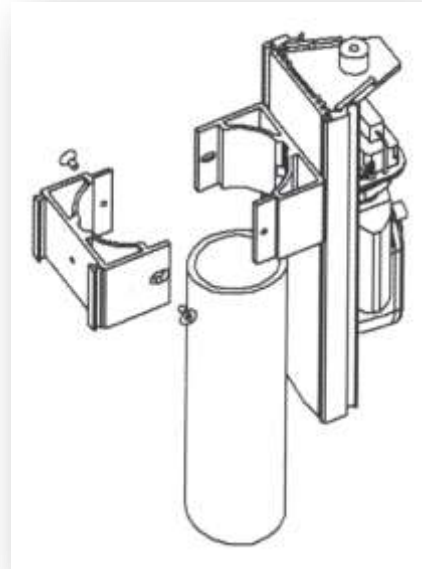
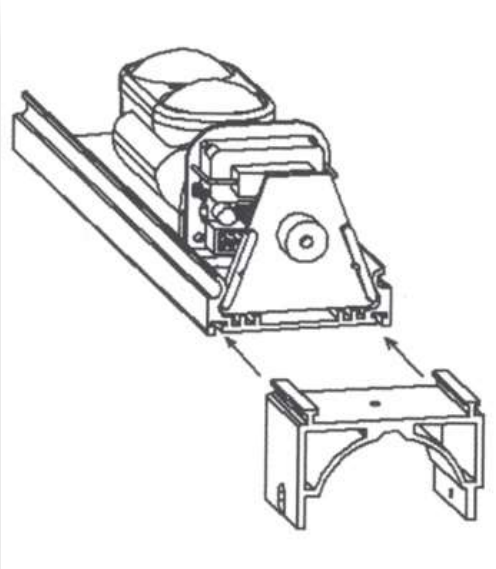
**Wall
mounting
with
SAN/SD**



**Wall
mounting
with
SAN/PL**

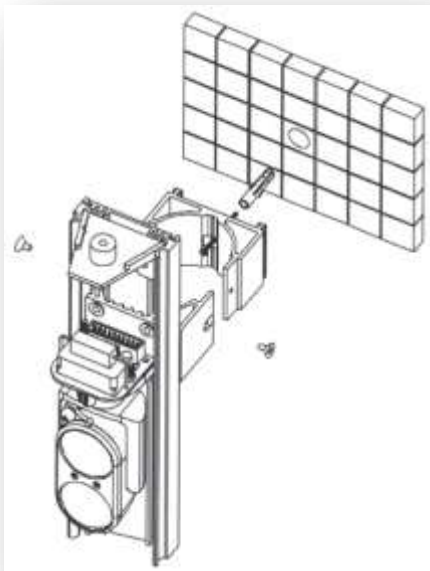
MOUNTING WITH BRACKETS

**Insert the bracket
on the back**

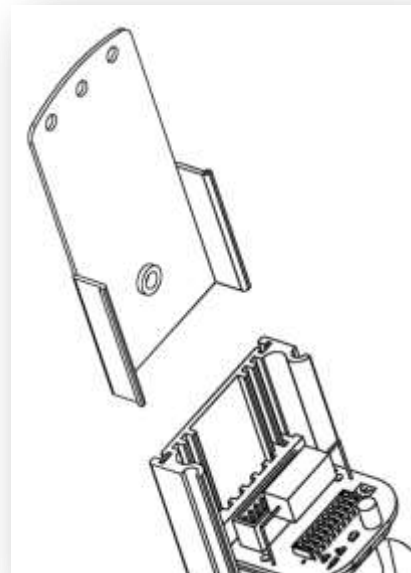


**Pole
mounting
with
SAN/PL**

**Diameter pole
max 48 mm**



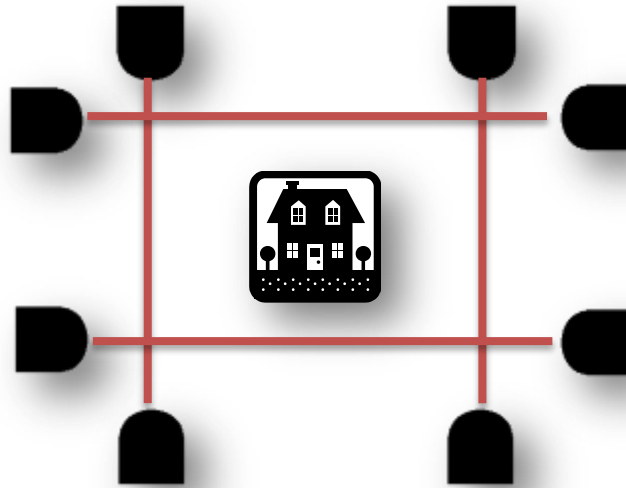
**Wall mounting with
SAN/PL**



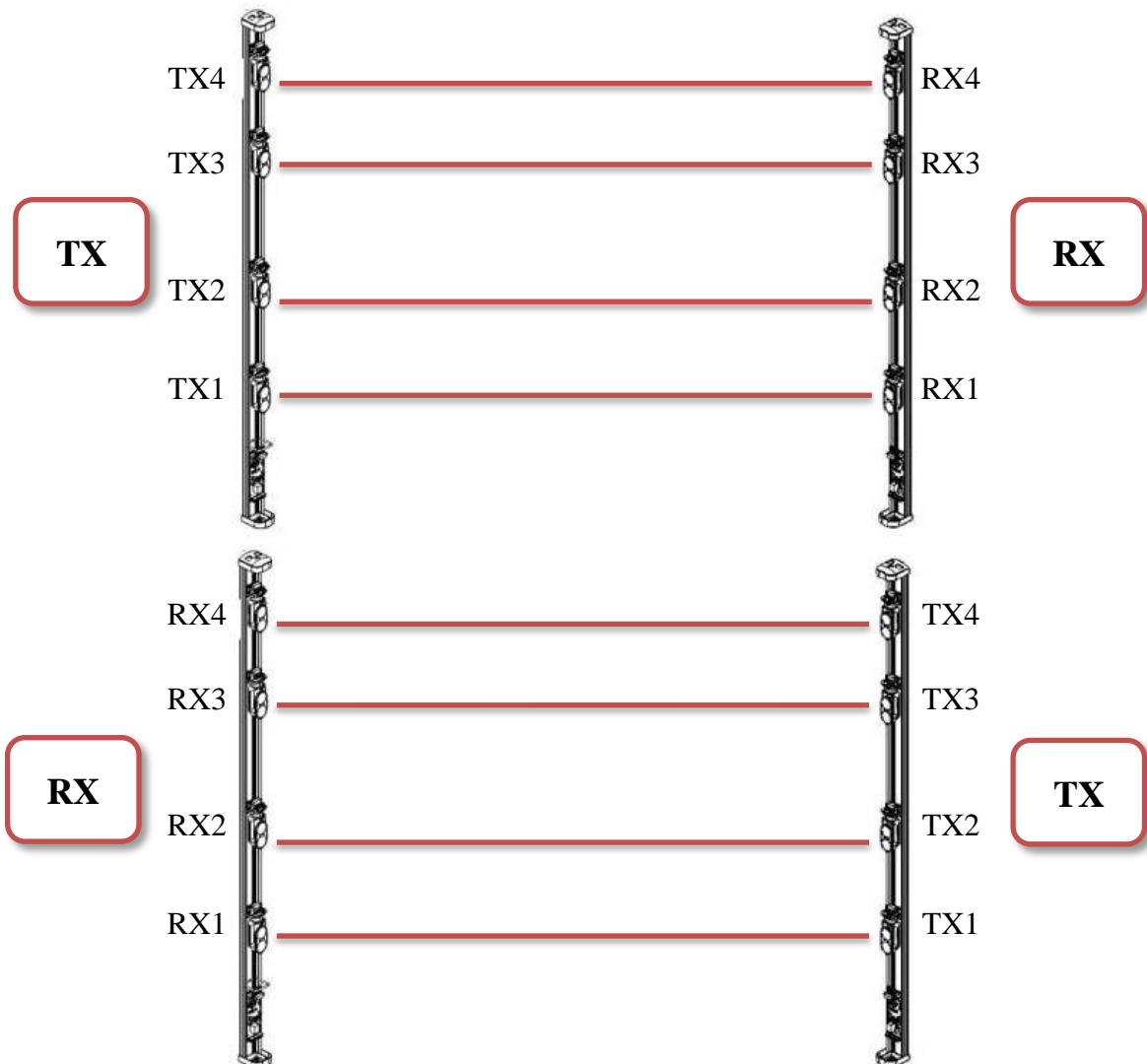
**Wall mounting with
SAN/SD**

3. INSTALLATION SAMPLES

Standard perimeter protection:

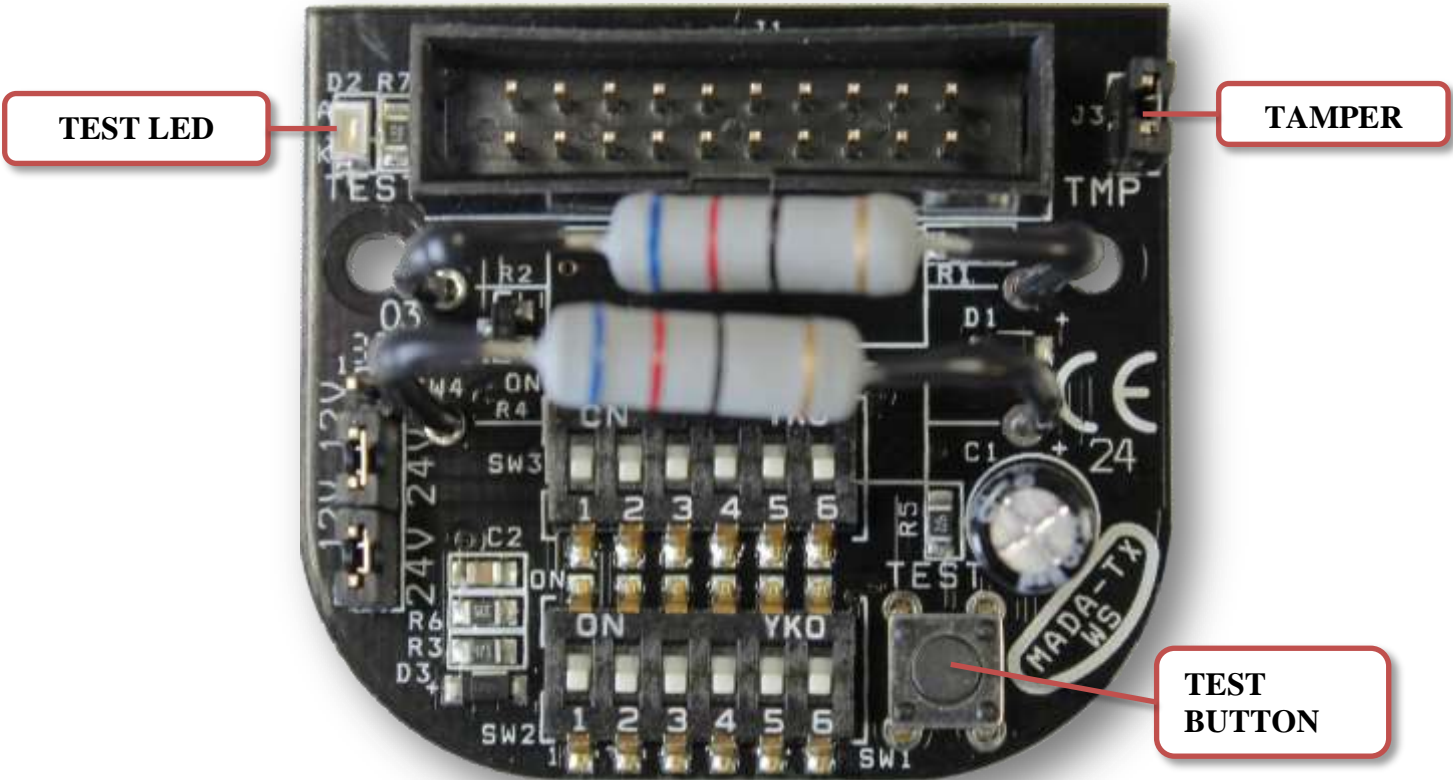


In the case of overlapped barriers:



4. CONFIGURATION OF THE OPTICALS

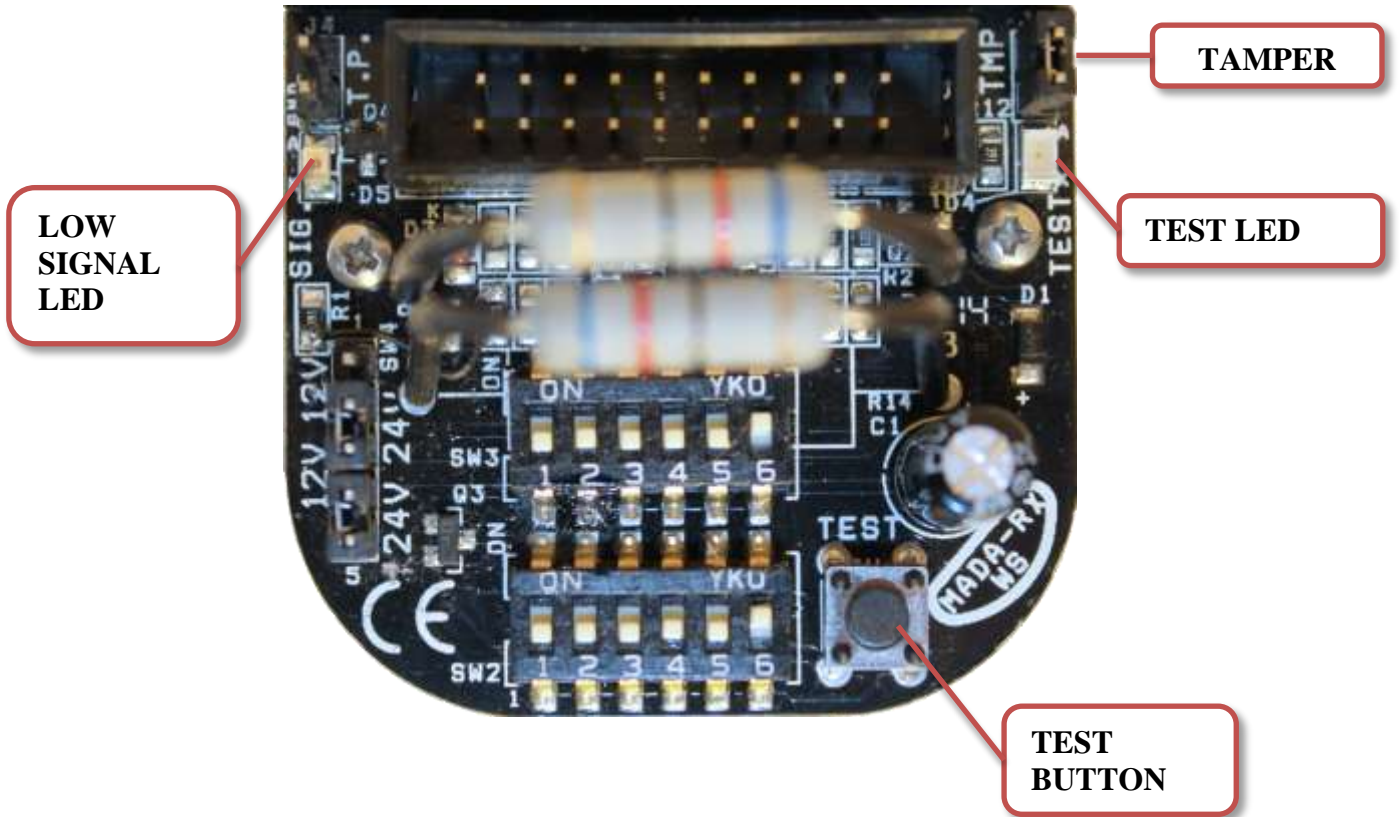
OPTICAL TX



	1	2	3	4	5	6	1	2	3	4	5	6
TX1	█	█	█	█	█	█	█	█	█	█	█	█
TX2	█	█	█	█	█	█	█	█	█	█	█	█
TX3	█	█	█	█	█	█	█	█	█	█	█	█
TX4	█	█	█	█	█	█	█	█	█	█	█	█
TX5	█	█	█	█	█	█	█	█	█	█	█	█
TX6	█	█	█	█	█	█	█	█	█	█	█	█

NB: The address settings as per default .

OPTICAL RX

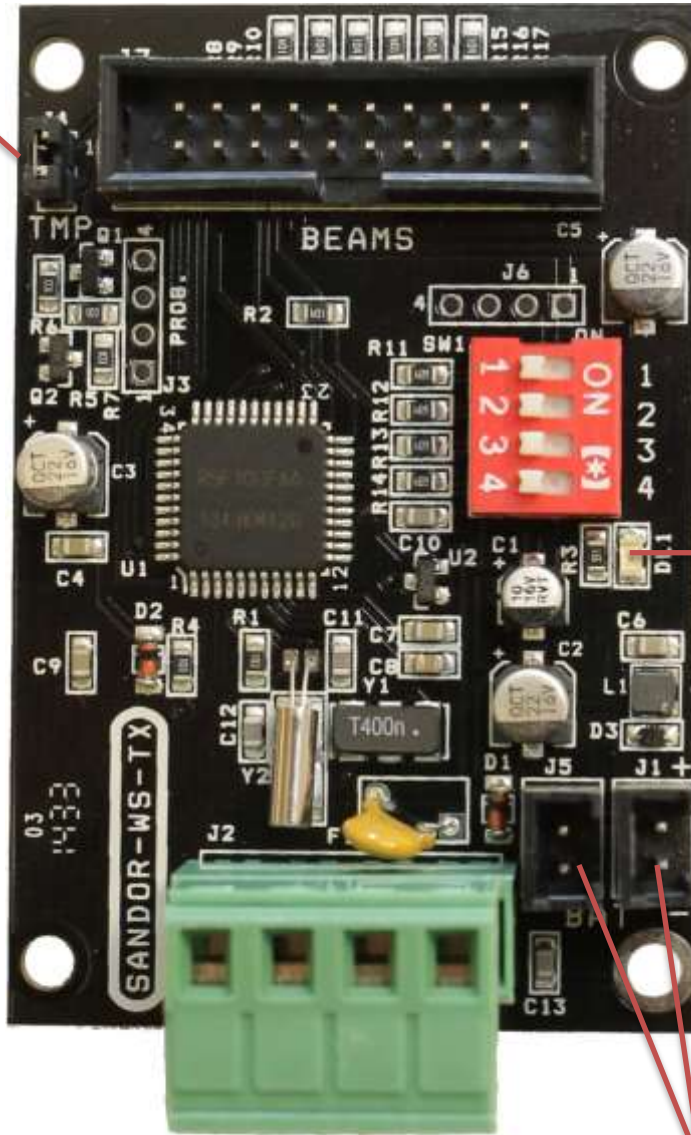


	1	2	3	4	5	6	1	2	3	4	5	6
RX1	Black	White	White	White	White	White	Black	White	White	White	White	White
RX2	Black	White	White	White	White	White	Black	White	White	White	White	White
RX3	White	White	Black	White	White	White	White	White	Black	White	White	White
RX4	White	White	White	Black	White	White	White	White	White	Black	White	White
RX5	White	White	White	White	Black	White	White	White	White	White	Black	White
RX6	White	White	White	White	White	Black	White	White	White	White	White	Black

NB: The address settings as per default .

5. SANDOR WS SMA TX MOTHER BOARD

TAMPER

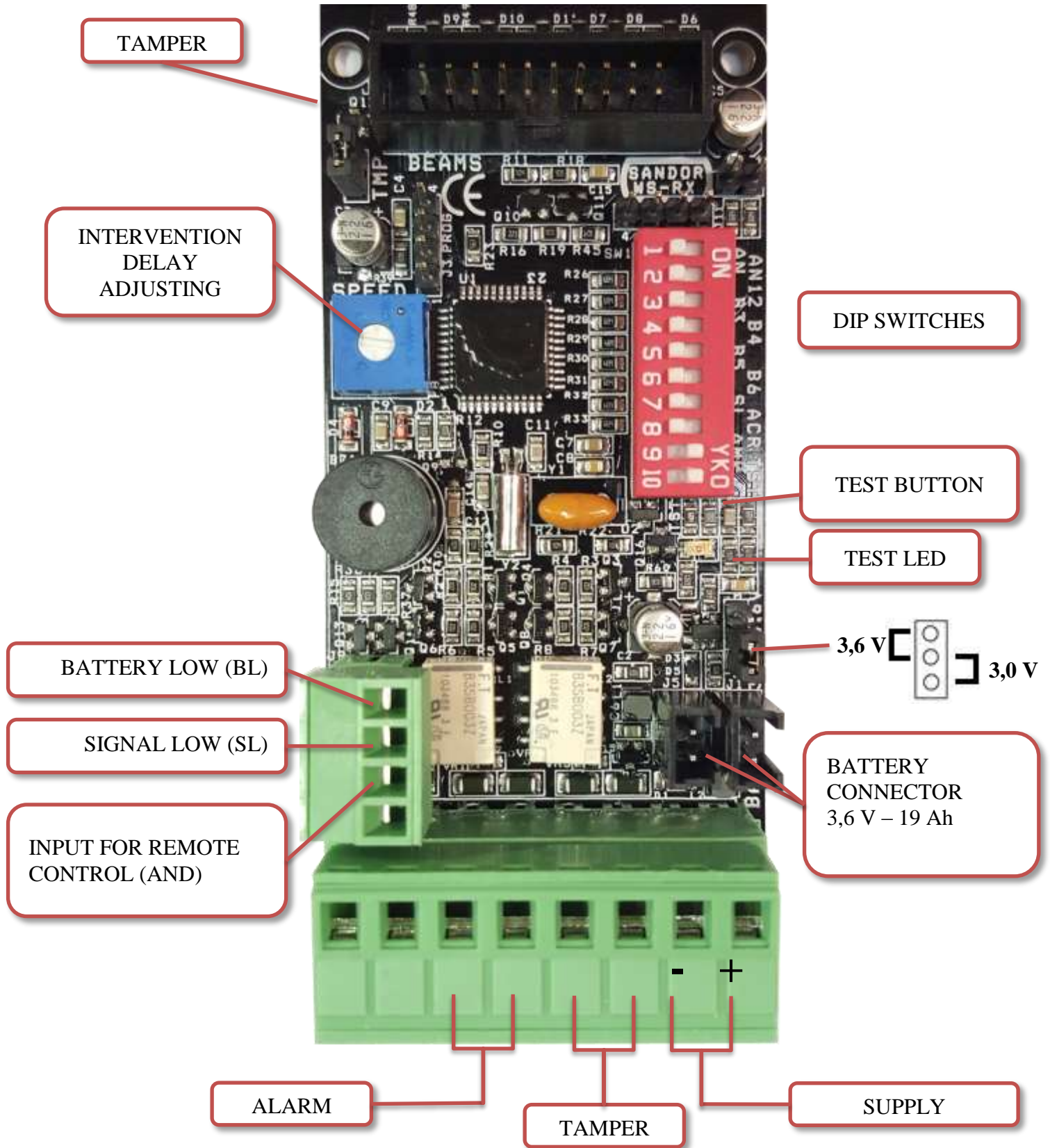


LED ON

BATTERY
CONNECTION
3,6 V - 19 Ah

N.B.: When the motherboard is supplied the LED ON will flash.

6. SANDOR WS SMA RX MOTHER BOARD



N.B.: When the motherboard is supplied by battery the TEST LED will flash

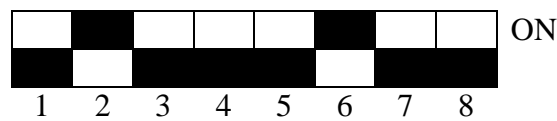
7. SETTINGS & FUNCTIONS

DIP SWITCHES

The card has Dip Switches to set different functions:

BANCO A 4 DIP SWITCH SCHEDA TX

1	TEST	In ON position goes in test for alignment. The TEST LED start blinking.
2	/	Not utilized
3	BEAM ON	It puts in test all TX during alignment (DIP 1 ON). Test LED fixed ON.
4	BEAM OFF	It puts OFF all TX during alignment (DIP 1 ON). Test LED fixed ON.



i.e.: Function AND 1-2 with 6 beams

8 DIP SWITCHES

1	AND	At least 2 optical must be interrupted to give alarm
2	AND 1-2	AND function only for 1st and 2nd beam, usefull in case of growing grass
3	BEAM 3	First 3 RX are active
4	BEAM 4	First 4 RX are active
5	BEAM 5	First 5 RX are active
6	BEAM 6	all RX are active
7	S. LOW	FOG disqualification active
8	A. CRAWL	ON - Anti crawling active. In this condition if the first beam (lower) is interrupted for more than 2 seconds, it will generate an alarm, independently of its configuration (i.e. AND)
9	AMK	/
10	TEST	Put in ON activates the test phases

CONNECTOR

1	HTR	Not utilized
2		
3	ALLARME	NC Alarm relay
4		
5	TAMPER	NC Tamper relay
6		
7	SUPPLY	Possibility to supply the radio trasmitter with 3,0 or 3,6 V
8		

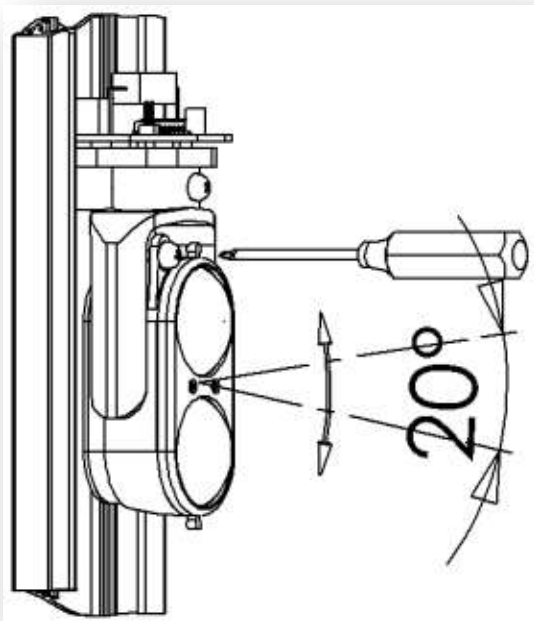
CONNETTORE

BL	BATTERY LOW	Low battery indication (negative open collector)
SL	SIGNAL LOW	Fog disqualification (negative open collector)
AN	REMOTE CONTROL	Giving a positive (3,6 V) the AND function is activated

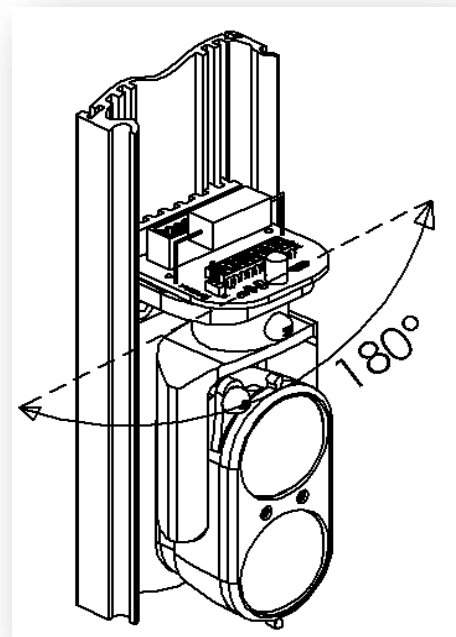
8. COLOUMN ALIGNMENT

For proper alignment once installed barriers orient optical groups of the transmitters and receivers each optical groups in the direction of others. Adjusting horizontally through the manual movement, and vertically through the front screws placed above the lenses.

Vertical adjustment



Horizontal adjustment

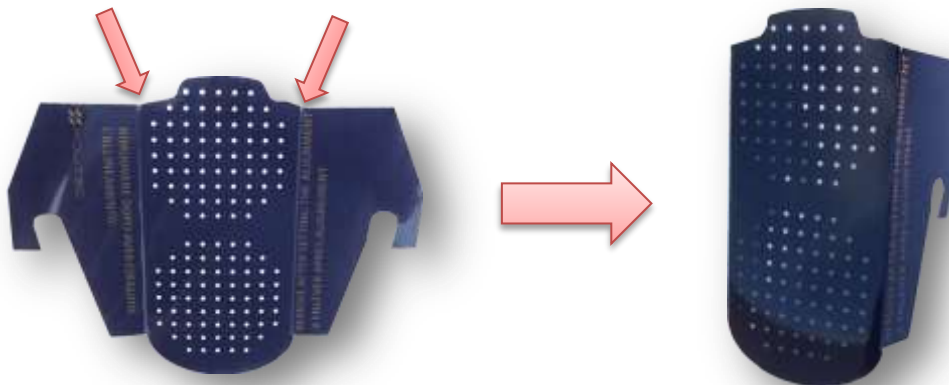


9. CALIBRATION WITH SMA SYSTEM

You can improve the calibration through the use of the supplied filter



- 1) Fold the device by following the folds preset

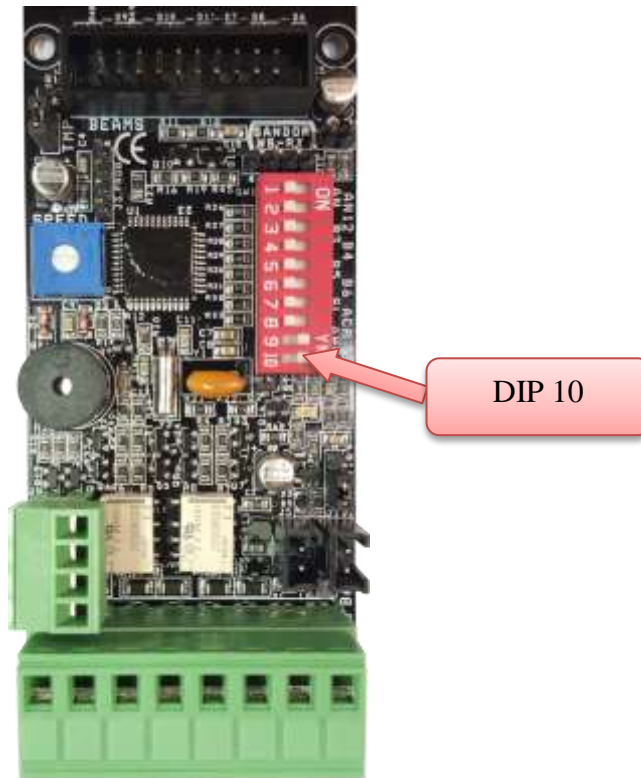


- 2) Place the filter in front of the optics TX positioning the two hooks on the pins of the fork optics to effectively search the signal alignment with critical conditions.

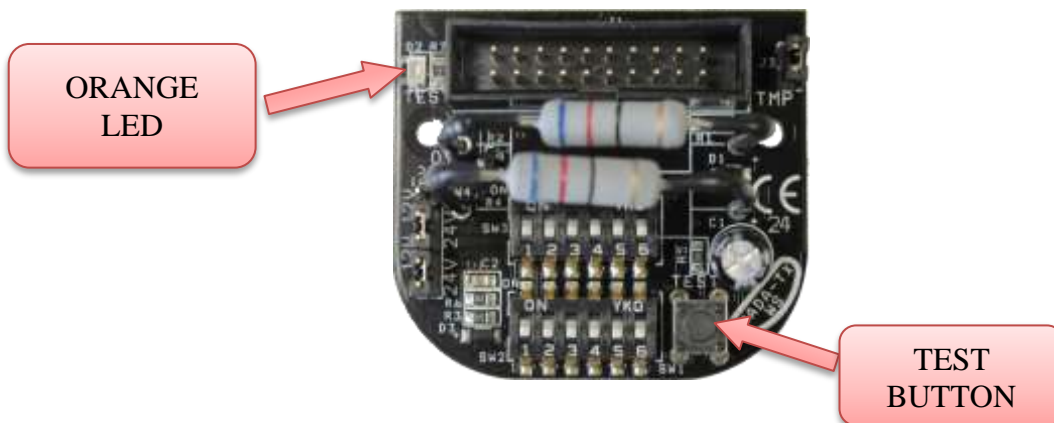


Simply applying the filter only on the TX, no need to repeat the operation RX.

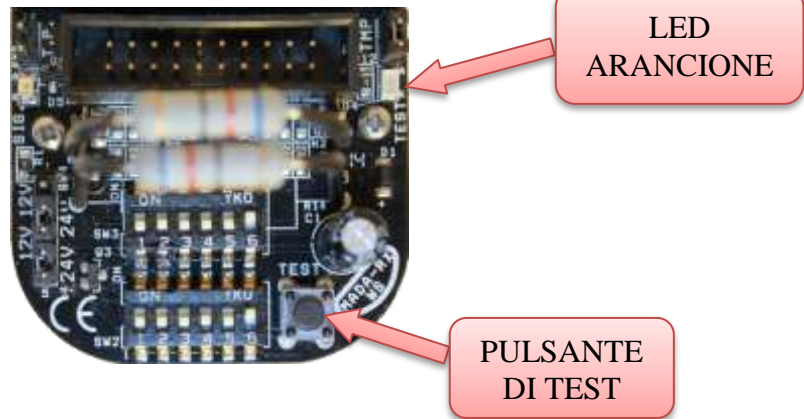
- 3) Put the DIP10 in ON on the motherboard to activate the programming mode indicated by the flashing LED test. During this phase the LED will continue to flash.



- 4) Start the alignment of the barrier is on activating the transmitter optics TX TEST, pressing the dedicated button for about 3 seconds until the TEST LED turns orange.



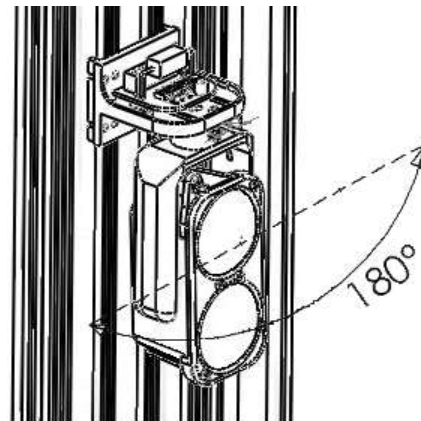
- 5) Turn the TEST on the corresponding optics receiver by pressing the dedicated button for about 3 seconds until the TEST LED turns orange , the Buzzer and LED alignment go ON.



- 6) Through the TRANSMITTER lens shifts , find the maximum optical alignment based on the BUZZER and LED (high-brightness) of alignment, the 'increase in the frequency of blinking of the LEDs and the whistle of the corresponding BUZZER indicate better ALIGNMENT.

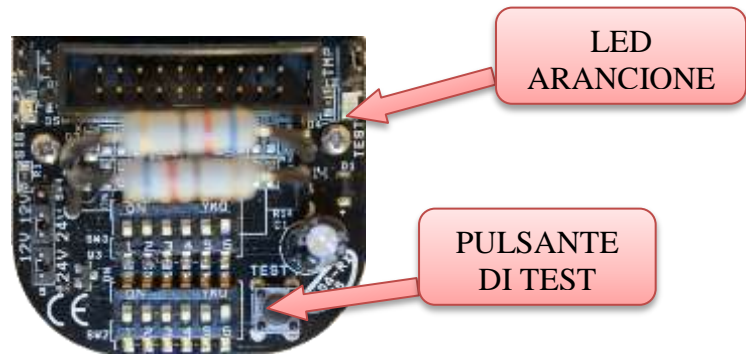


- 7) By a FULL rotation on the horizontal axis of the RECEIVER optics , you make the SCANNING of the optical signal.



- 8) Rotating the optical RX find the maximum value of which corresponds to the ALIGNMENT LED (high-brightness) FIXED and whistle CONTINUOUS of the BUZZER.

- 9) Exit the function by repressing the ALIGNMENT TEST button for about 3 seconds on both optics (TX-RX) ensuring that the orange LED TEST is shown in original condition.



- 10) When finished, remove the shade that acts as a attenuator, with the certainty of having found the optimum value.



- 11) Once the alignment of all the beams is finished, put in OFF the DIP 10 on the motherboard to deactivate the programming mode indicated by the LED turns off.
For the next 30 seconds the barrier will sound continuously in case of alignment not effective or interruption of a beam; correct the orientation of the columns so that the buzzer emits no longer any sound.

10. PARALLEL BEAMS CALIBRATION



Put TEST optics TX1 and RX1 and proceed with the calibration as previously explained.



Put TEST optics TX2 and RX2 and proceed with the calibration as previously explained.



Put TEST optics TX3 and RX3 and proceed with the calibration as previously explained.



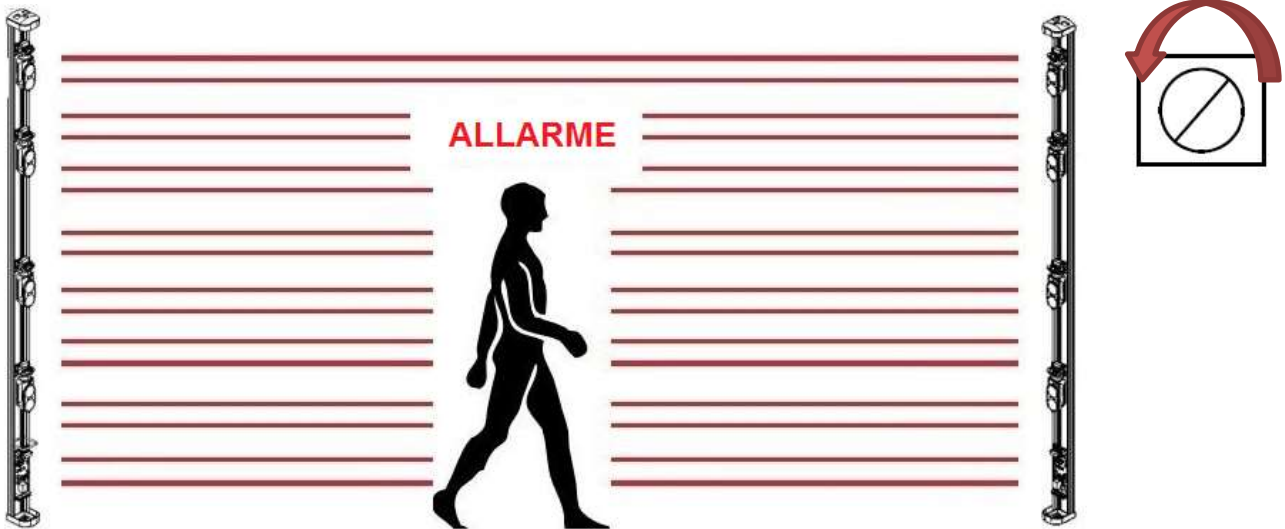
Put TEST optics TX4 and RX4 and proceed with the calibration as previously explained.

N.B.: During the alignment phase of a transmitter the other TX are switched off automatically.

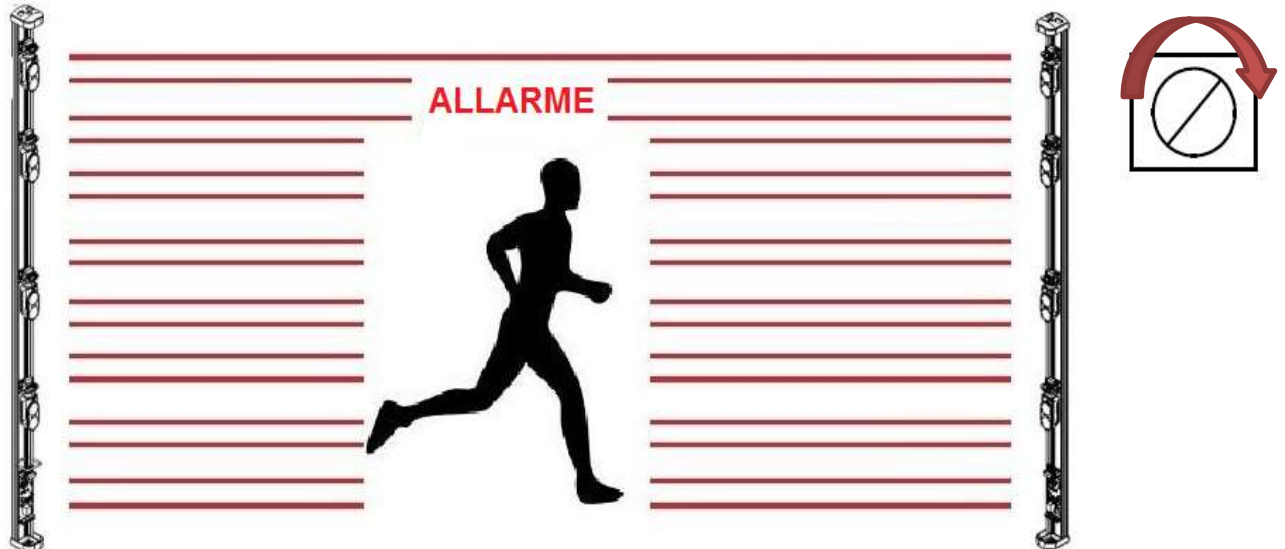
11. ALARM SENSITIVITY ADJUSTMENT

You can set the barrier for HIGH sensitivity as crossing fast (running) or LOW as slow (walking).

- By adjusting the potentiometer counterclockwise to increase the alarm delay up to 500ms. In this condition ensures the alarm of a person walking through the barrier, with the advantage of excluding the possibility of any false alarms such as animals.



- Adjusting the potentiometer clockwise to decrease the alarm delay up to 50ms. In this condition ensures the alarm of a person crossing the barrier running at maximum speed.



12. TECHNICAL CHARACTERISTICS

MAX RANGE INDOOR	150 m
MAX RANGE OUTDOOR	50 m
SYNCHRONIZATION	optical
SUPPLY	BATTERY 3,6 V 19 Ah

N° Beams	Battery life	
	TX	RX
2	72 Months	72 Months
4	52 Months	52 Months
6	36 Months	36 Months

OPERATING TEMP.	-25°C ÷ +65°C
PROTECTION GRADE	IP65
HORIZOPNTAL ADJUSTMENT	180°
VERTICAL ADJUSTMENT	20°
DIMENSIONS	60 mm x 60 mm x (from 600 mm to 4000 mm)



POLITEC s.r.l.

Via Adda, 66/68 - 20882 Bellusco (MB) - Italy
tel. +39 039 6883019 r.a. - fax +39 039 6200471
www.politecsrl.it