EL.MO. SPA

TECHNICAL MANUAL

DT93485

Indoor long-range dual technology detector with ULTRABUS interface for intrusion detection systems

ULTRABUS ADVANCED SERIAL BUS

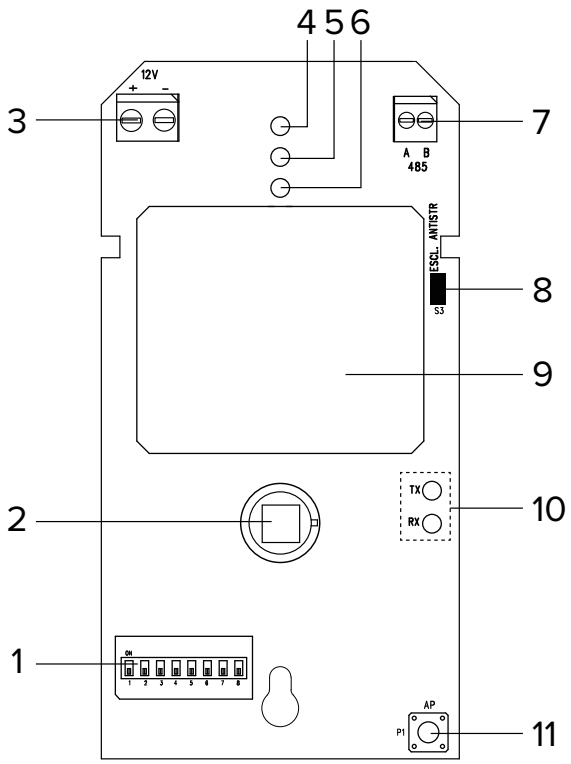
IMQ-SISTEMI DI SICUREZZA

Addressee for this information: (U) User | (I) Installer

1 DESCRIPTION

DT93485 is a dual technology detector with ULTRABUS RS-485 serial interface.
The device features two sections working in AND mode.
Infrared section (IR): digital PIR sensor with temperature compensation and lens with white light protection.
Microwave section (MW): 10.525GHz DRO planar antenna with built-in LNA amplifier.
For side-by-side mounting, differentiated frequencies can be used.
The detector long range (up to 23 m) makes it suitable to protect large-size indoor locations.
The device features the anti-blinding, anti-masking, anti-sneak functions.
LEDs indicate device working activity.
DT93485 can be programmed using BrowserOne software.
Optional joint available.
DT93485 is certified IMQ - Security Systems.

2 PCB (I)



1 Dip switch for addressing
2 PIR sensor
3 Power supply terminals
4 Blue LED
5 Red LED
6 Green LED
7 Serial line terminals
8 Jumper to exclude protection against removal
9 MW antenna
10 Communication LED serial RX, TX (red)
11 Tamper button

3 TECHNICAL DATA

Model		DT93485	
Identification			
Use		indoor	
Technology		IR + MW	
Coverage type		Volumetric	
IR section			
PIR sensors number		1	
Max range		23	m
Pulse count		5	s
Opening		94°	°
No. of IR sensitive zones		20 zones on 4 levels, 3 creep zones on one level	
MW section			
MW max range		23	m
Pulse count		5	s
Standard TX frequency		10.525	GHz
Differentiated TX frequency		10.587	GHz
MW horizontal coverage		90°	°
MW vertical coverage		30°	°
Max power output		13	dBm
General features			
Operating voltage	Power supply	12	V
	Minimum power supply	7.5	V
	Power fault detection threshold	7.5	V
Consumption at power voltage	Idle mode	64	mA
	Alarm mode	65.0	mA
	MW excluded mode	18	mA
Operating times	Power-on stand-by	20	s
	Pre-alarm time	10	s
Working temperature		-10 / +55	°C
Humidity		93%	
Protection class		IP3X	
Certification		IMQ-Security Systems EN50131-2-4: grade 3, environmental class II (1)	
Dimensions and weight		W72 × H138 × D56, 150 g (only detector body)	

(1) grade 1 if the optional joint is used

Parts supplied

Screws, dowels, S4 screw and dowel for microswitch against removal, sloped bracket, technical manual.

Optional accessories

SND3D joint.

4 BEFORE INSTALLATION

⚠ *General warnings are at the end of this manual.*

Before installing the product, please read the following indications carefully.

4.1 General considerations

- Make sure the device operating field is free and devoid of zones darkened by obstacles.
- Adjust microwave range so that it does not extend beyond glazing or plastic curtains. If necessary, set the range to the minimum and disable anti-sneak function.
- Do not install the device near swaying or vibrating metal objects (ex. fridge/refrigerators groups, window blinds, metal roller shutters).
- Avoid installation near heat sources or drafts.
- Do not touch PIR sensor silicon filter.
- Two or more detectors (not necessarily all DT93485) operating at the same frequency must be installed at a distance of at least 25 metres between each other.
- In case of installation of DT93485 and another detector at a distance of less than 25 m between each other, one of the two must be a differentiated-frequency model.
- The detector's MW section can detect moving objects even from long distances: adapt the range to the location to be monitored, especially in case of use in wide locations where there are large metal objects (metal shelving, metal gates etc.).

⚠ *The electronic board of the detector may be damaged by electrostatic discharges. The installer must completely avoid any presence of electrostatic discharges.*

4.2 Definition of installation position

The detector must be installed at an height of at least 2.1 m.
Mounting at heights lower than 2.1 m is not allowed.
It is mandatory to use:

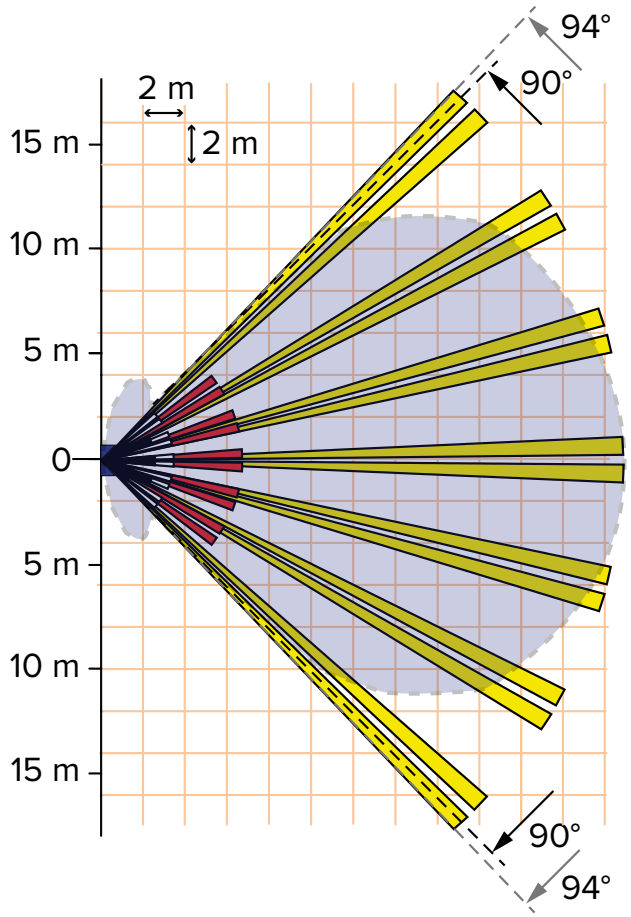
- the sloped bracket for installation at 2.1 m height;
- the optional joint for installation at heights higher than 2.1 m.

⚠ *Small changes in height or tilt might significantly alter the detector range. Follow the instructions listed in the mounting procedure thoroughly (chapter 5 p. 3).*

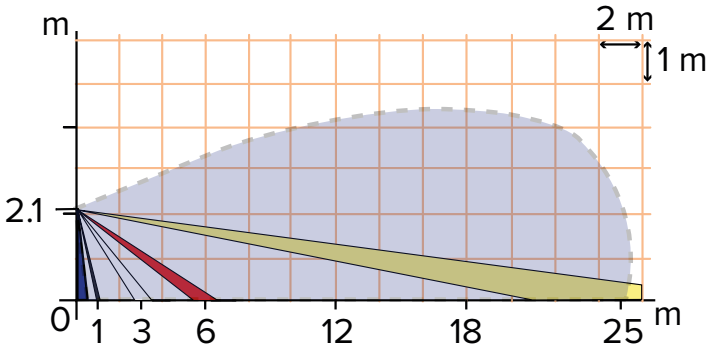
The following diagrams refer to detectors mounted at 2.1 m height.
Range: 23 m (± 2 m)
Coverage: volumetric
Beams arrangement: 20 zones on 4 levels, 3 under-crawl

zones on one level

Top view



Side view

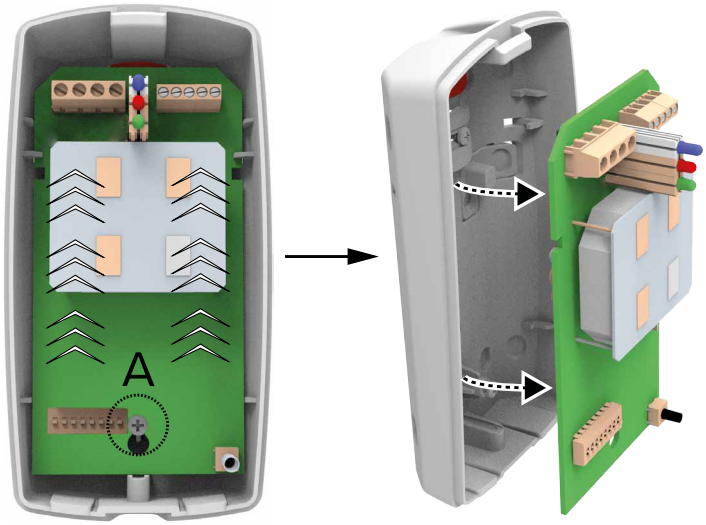


5 DEVICE MOUNTING

- **Opening the housing**

– loosen cover fixing screw
– insert the screwdriver flat tip between detector bottom and cover in the indicated areas
– gently leverage the cover up and remove it

- **Removing the electronic board**



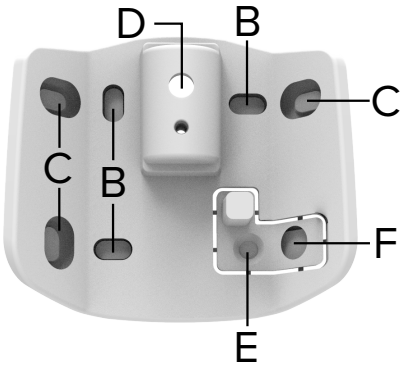
Note: the board layout in the previous picture is merely indicative.
– loosen the screw A fixing the board to the base
– slide the board upwards
– remove the board

The detector's installation requires that you use either the 6-degree sloped bracked (supplied) or the optional joint.
It is mandatory to use:

- the sloped bracket for installation at 2.1 m height;
- the optional joint for installation at heights higher than 2.1 m.

Read the relevant section.

- **Fixing the bracket**



– using a screwdriver, open the pre-drilled areas of the bracket suitable for mounting on flat surface (B) or on a corner (C)
– drill area D for cables passage
– feed the cable through the drilled hole

For protection against removal:

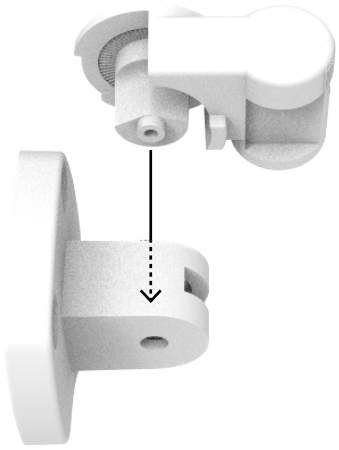
– in case of mounting on a flat surface, insert a screw with S4 dowel into the hole E
– in case of mounting on a corner, insert a screw with S4 dowel into the hole F

The bracket must be mounted at 2.1 m height.

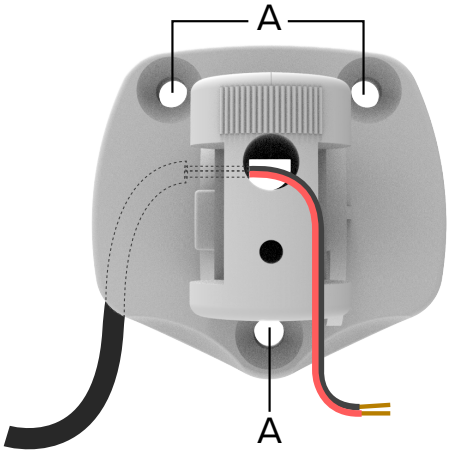
– fix the bracket to the surface using screws and dowels

- **Mounting of optional joint**

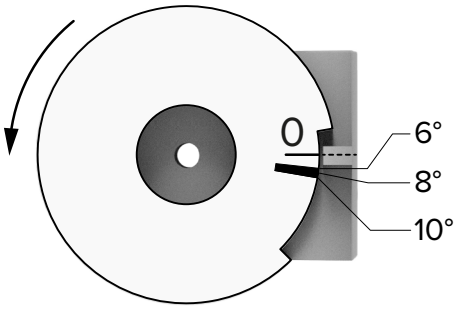
If necessary, install the optional joint:



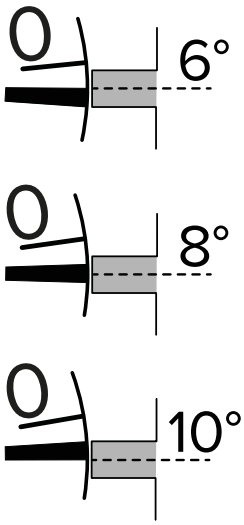
– assemble the joint



– remove the sheath from the end of the wires to connect to the terminal block
– feed the cable as illustrated
– fix the mounting plate to the wall using the supplied screws and inserts (use A holes)



– tilt the joint as needed



To adjust it, align the center of the plastic tooth:

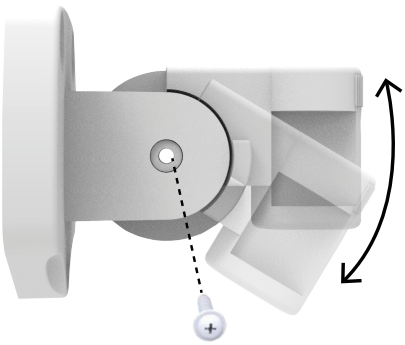
- with the upper edge of the notch to get 6° tilt;
- with the center of the notch to get 8° tilt;
- with the lower edge of the notch to get 10° tilt.

For information on the tilt angle to set according to the installation height, refer to the following table.

Installation height	Required tilt
2.1 m	6°
3 m	8°

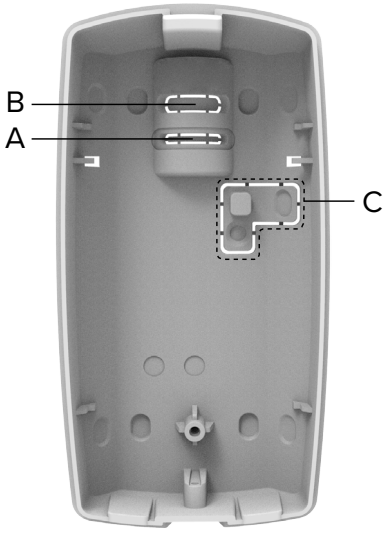
⚠ *The height suggested to achieve the optimal coverage is 2.1 m. Installing the detector at greater heights might make the coverage below the detector less effective, if the tilt defined for the maximum range is kept.*

⚠ *Small changes in height or tilt might significantly alter the detector's range. In any case, we recommend checking the detector's actual range with tests to find the optimal tilt.*



– fix the joint to the mounting plate using a pan head screw

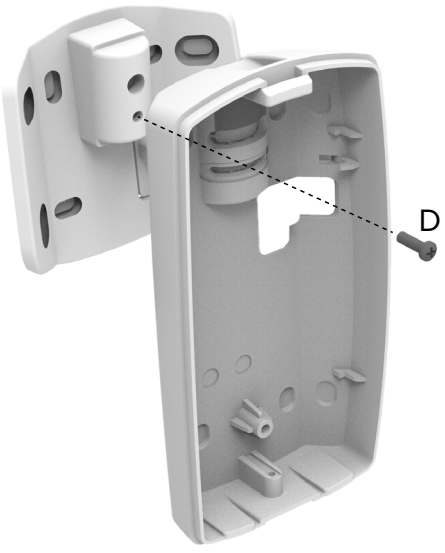
- **Base wall mount**



– using a screwdriver, open the pre-drilled area A for fixing
– using a screwdriver, open the pre-drilled area B for cable passage
– feed the cable through the drilled hole

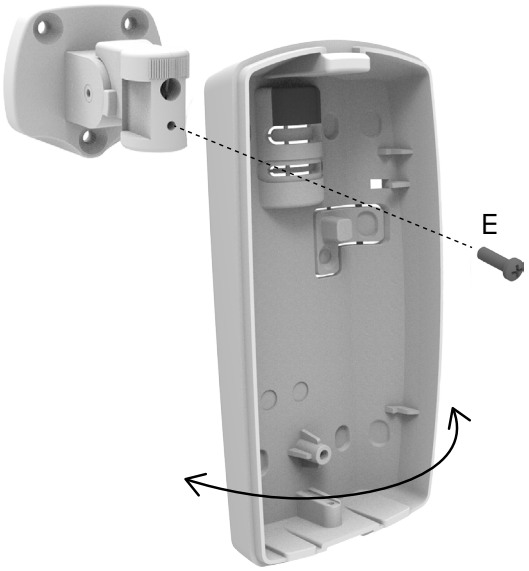
If you are using the bracket:

– remove the plate for protection against removal (C) from the detector base



– fix the base to the bracket using the suitable screw (D)

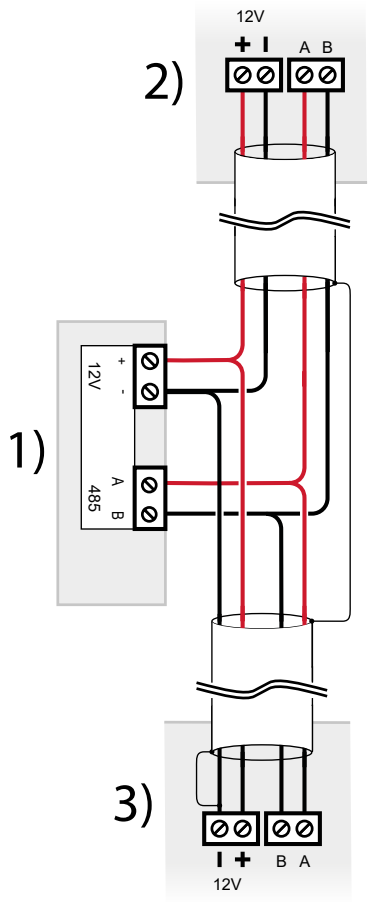
With optional joint:



– rotate the base on the joint as needed
– fix the base to the joint using the supplied screw (E)

- **Wirings**

– wire terminals



1 Terminal board DT93485
2 Previous device over serial line
3 Next device over serial line

Use cables with the following section: 2 × 0.75 mm^2 (power) + 2 × 0.22 mm^2 (signal).

The serial line may be extended with branches, provided that the following rules are followed:

- the sum of the lengths of the branches must not exceed 1 km;

- 680 Ω termination resistors must be connected to the ends of the two longest branches.

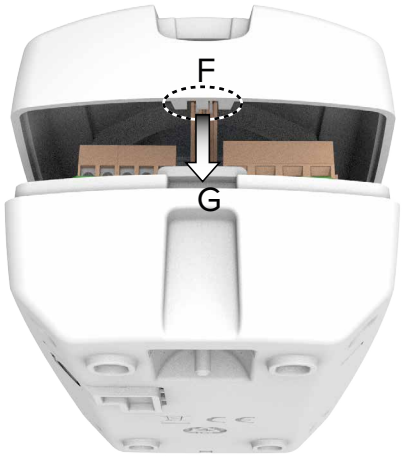
- **Board positioning**

– place the board on the supports
– slide the board downwards until it stops
– tighten the screw A fixing the board to the base

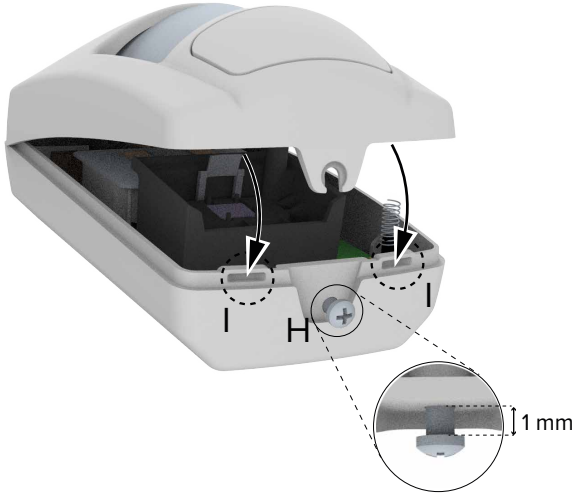
- **Device setup**

Now proceed with detector setup (see following chapter).

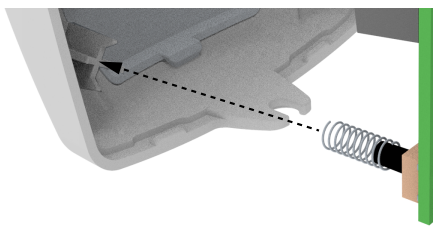
- **Closing the housing**



– insert hooks on the upper side of the cover (F) into the base slot (G)



– insert closing screw in hole H, leaving approximately 1 mm between the screw and the housing bottom
– lower the device cover until the hooks on the internal cover fit into the base slots (I)



⚠ *Make sure the tamper protection spring fits correctly to its place.*

– tighten closing screw

6 STARTING THE DEVICE

6.1 Factory default

To restore device default settings:
– disconnect it from mains
– set **all** dips to OFF
– connect it to mains
– verify that blue and green LEDs blink slowly
– wait 20 s
– disconnect it from mains
– set a valid address
– connect it to mains
– set it up via software

6.2 Address setup

Set device address over serial line using the dipswitch. To access it, open housing cover as illustrated in section 5 *p. 3*.

VIDOMO, PREGIO, PROXIMA control units

Add.	dip ON	Add.	dip ON	Add.	dip ON
1	12345678	2	-2345678	3	1-345678
4	--345678	5	12-45678	6	-2-45678
7	1--45678	8	---45678	9	123-5678
10	-23-5678	11	1-3-5678	12	--3-5678
13	12--5678	14	-2--5678	15	1---5678
16	----5678	17	1234-678	18	-234-678
19	1-34-678	20	--34-678	21	12-4-678
22	-2-4-678	23	1--4-678	**24**	**---4-678**
25	123--678	26	-23--678	27	1-3--678
28	--3--678	29	12---678	30	-2---678
31	1----678	32	-----678	33	12345-78
34	-2345-78	35	1-345-78	36	--345-78
37	12-45-78	38	-2-45-78	39	1--45-78
40	---45-78	41	123-5-78	42	-23-5-78
43	1-3-5-78	44	--3-5-78	45	12--5-78
46	-2--5-78	47	1---5-78	**48**	**----5-78**
49	1234--78	50	-234--78	51	1-34--78
52	--34--78	53	12-4--78	54	-2-4--78
55	1--4--78	56	---4--78	57	123---78
58	-23---78	59	1-3---78	60	--3---78
61	12----78	62	-2----78	63	1-----78
64	**------78**	65	123456-8	66	-23456-8
67	1-3456-8	68	--3456-8	69	12-456-8
70	-2-456-8	71	1--456-8	72	---456-8
73	123-56-8	74	-23-56-8	75	1-3-56-8
76	--3-56-8	77	12--56-8	78	-2--56-8

Add.	dip ON	Add.	dip ON	Add.	dip ON
79	1 - - - 5 6 - 8	80	- - - - 5 6 - 8	81	1 2 3 4 - 6 - 8
82	- 2 3 4 - 6 - 8	83	1 - 3 4 - 6 - 8	84	- - 3 4 - 6 - 8
85	1 2 - 4 - 6 - 8	86	- 2 - 4 - 6 - 8	87	1 - - 4 - 6 - 8
88	- - - 4 - 6 - 8	89	1 2 3 - - 6 - 8	90	- 2 3 - - 6 - 8
91	1 - 3 - - 6 - 8	92	- - 3 - - 6 - 8	93	1 2 - - - 6 - 8
94	- 2 - - - 6 - 8	95	1 - - - - 6 - 8	96	- - - - - 6 - 8
97	1 2 3 4 5 - - 8	98	- 2 3 4 5 - - 8	99	1 - 3 4 5 - - 8
100	- - 3 4 5 - - 8	101	1 2 - 4 5 - - 8	102	- 2 - 4 5 - - 8
103	1 - - 4 5 - - 8	**104**	**- - - 4 5 - - 8**	105	1 2 3 - 5 - - 8
106	- 2 3 - 5 - - 8	107	1 - 3 - 5 - - 8	108	- - 3 - 5 - - 8
109	1 2 - - 5 - - 8	110	- 2 - - 5 - - 8	111	1 - - - 5 - - 8
112	- - - - 5 - - 8	113	1 2 3 4 - - - 8	114	- 2 3 4 - - - 8
115	1 - 3 4 - - - 8	116	- - 3 4 - - - 8	117	1 2 - 4 - - - 8
118	- 2 - 4 - - - 8	119	1 - - 4 - - - 8	120	- - - 4 - - - 8
121	1 2 3 - - - - 8	122	- 2 3 - - - - 8	123	1 - 3 - - - - 8
124	- - 3 - - - - 8	125	1 2 - - - - - 8	126	- 2 - - - - - 8
127	1 - - - - - - 8	**128**	**- - - - - - - 8**	129	1 2 3 4 5 6 7 -
130	- 2 3 4 5 6 7 -	131	1 - 3 4 5 6 7 -	132	- - 3 4 5 6 7 -
133	1 2 - 4 5 6 7 -	134	- 2 - 4 5 6 7 -	135	1 - - 4 5 6 7 -
136	- - - 4 5 6 7 -	137	1 2 3 - 5 6 7 -	138	- 2 3 - 5 6 7 -
139	1 - 3 - 5 6 7 -	140	- - 3 - 5 6 7 -	141	1 2 - - 5 6 7 -
142	- 2 - - 5 6 7 -	143	1 - - - 5 6 7 -	144	- - - - 5 6 7 -
145	1 2 3 4 - 6 7 -	146	- 2 3 4 - 6 7 -	147	1 - 3 4 - 6 7 -
148	- - 3 4 - 6 7 -	149	1 2 - 4 - 6 7 -	150	- 2 - 4 - 6 7 -
151	1 - - 4 - 6 7 -	152	- - - 4 - 6 7 -	153	1 2 3 - - 6 7 -
154	- 2 3 - - 6 7 -	155	1 - 3 - - 6 7 -	156	- - 3 - - 6 7 -
157	1 2 - - - 6 7 -	158	- 2 - - - 6 7 -	159	1 - - - - 6 7 -
160	- - - - - 6 7 -	161	1 2 3 4 5 - 7 -	162	- 2 3 4 5 - 7 -
163	1 - 3 4 5 - 7 -	164	- - 3 4 5 - 7 -	165	1 2 - 4 5 - 7 -
166	- 2 - 4 5 - 7 -	167	1 - - 4 5 - 7 -	168	- - - 4 5 - 7 -
169	1 2 3 - 5 - 7 -	170	- 2 3 - 5 - 7 -	171	1 - 3 - 5 - 7 -
172	- - 3 - 5 - 7 -	173	1 2 - - 5 - 7 -	174	- 2 - - 5 - 7 -
175	1 - - - 5 - 7 -	176	- - - - 5 - 7 -	177	1 2 3 4 - - 7 -
178	- 2 3 4 - - 7 -	179	1 - 3 4 - - 7 -	180	- - 3 4 - - 7 -
181	1 2 - 4 - - 7 -	182	- 2 - 4 - - 7 -	183	1 - - 4 - - 7 -
184	- - - 4 - - 7 -	185	1 2 3 - - - 7 -	186	- 2 3 - - - 7 -
187	1 - 3 - - - 7 -	188	- - 3 - - - 7 -	189	1 2 - - - - 7 -
190	- 2 - - - - 7 -	191	1 - - - - - 7 -	192	- - - - - - 7 -
193	1 2 3 4 5 6 - -	194	- 2 3 4 5 6 - -	195	1 - 3 4 5 6 - -
196	- - 3 4 5 6 - -	197	1 2 - 4 5 6 - -	198	- 2 - 4 5 6 - -
199	1 - - 4 5 6 - -	200	- - - 4 5 6 - -	201	1 2 3 - 5 6 - -
202	- 2 3 - 5 6 - -	203	1 - 3 - 5 6 - -	204	- - 3 - 5 6 - -
205	1 2 - - 5 6 - -	206	- 2 - - 5 6 - -	207	1 - - - 5 6 - -
208	- - - - 5 6 - -	209	1 2 3 4 - 6 - -	210	- 2 3 4 - 6 - -
211	1 - 3 4 - 6 - -	212	- - 3 4 - 6 - -	213	1 2 - 4 - 6 - -
214	- 2 - 4 - 6 - -	215	1 - - 4 - 6 - -	216	- - - 4 - 6 - -
217	1 2 3 - - 6 - -	218	- 2 3 - - 6 - -	219	1 - 3 - - 6 - -
220	- - 3 - - 6 - -	221	1 2 - - - 6 - -	222	- 2 - - - 6 - -

Add.	dip ON	Add.	dip ON	Add.	dip ON
223	1 - - - - 6 - -	224	- - - - - 6 - -	225	1 2 3 4 5 - - -
226	- 2 3 4 5 - - -	227	1 - 3 4 5 - - -	228	- - 3 4 5 - - -
229	1 2 - 4 5 - - -	230	- 2 - 4 5 - - -	231	1 - - 4 5 - - -
232	- - - 4 5 - - -	233	1 2 3 - 5 - - -	234	- 2 3 - 5 - - -
235	1 - 3 - 5 - - -	236	- - 3 - 5 - - -	237	1 2 - - 5 - - -
238	- 2 - - 5 - - -	239	1 - - - 5 - - -	240	- - - - 5 - - -
241	1 2 3 4 - - - -	242	- 2 3 4 - - - -	243	1 - 3 4 - - - -
244	- - 3 4 - - - -	245	1 2 - 4 - - - -	246	- 2 - 4 - - - -
247	1 - - 4 - - - -	248	- - - 4 - - - -	249	1 2 3 - - - - -
250	- 2 3 - - - - -	251	1 - 3 - - - - -	252	- - 3 - - - - -
253	1 2 - - - - - -	254	- 2 - - - - - -	255	1 - - - - - - -

Max no. of addresses:
PREGIO500: 24
PREGIO1000: 48
VIDOMO: 64
PREGIO2000: 104
PRX128: 128

ETR100MG2 control units

Add.	dip ON	Add.	dip ON	Add.	dip ON
9	1 2 3 4 5 6 7 8	10	- 2 3 4 5 6 7 8	11	1 - 3 4 5 6 7 8
12	- - 3 4 5 6 7 8	13	1 2 - 4 5 6 7 8	14	- 2 - 4 5 6 7 8
15	1 - - 4 5 6 7 8	16	- - - 4 5 6 7 8	17	1 2 3 - 5 6 7 8
18	- 2 3 - 5 6 7 8	19	1 - 3 - 5 6 7 8	20	- - 3 - 5 6 7 8
21	1 2 - - 5 6 7 8	22	- 2 - - 5 6 7 8	23	1 - - - 5 6 7 8
24	- - - - 5 6 7 8	25	1 2 3 4 - 6 7 8	26	- 2 3 4 - 6 7 8
27	1 - 3 4 - 6 7 8	28	- - 3 4 - 6 7 8	29	1 2 - 4 - 6 7 8
30	- 2 - 4 - 6 7 8	31	1 - - 4 - 6 7 8	32	- - - 4 - 6 7 8
33	1 2 3 - - 6 7 8	34	- 2 3 - - 6 7 8	35	1 - 3 - - 6 7 8
36	- - 3 - - 6 7 8	37	1 2 - - - 6 7 8	38	- 2 - - - 6 7 8
39	1 - - - - 6 7 8	40	- - - - - 6 7 8	41	1 2 3 4 5 - 7 8
42	- 2 3 4 5 - 7 8	43	1 - 3 4 5 - 7 8	44	- - 3 4 5 - 7 8
45	1 2 - 4 5 - 7 8	46	- 2 - 4 5 - 7 8	47	1 - - 4 5 - 7 8
48	- - - 4 5 - 7 8	49	1 2 3 - 5 - 7 8	50	- 2 3 - 5 - 7 8
51	1 - 3 - 5 - 7 8	52	- - 3 - 5 - 7 8	53	1 2 - - 5 - 7 8
54	- 2 - - 5 - 7 8	55	1 - - - 5 - 7 8	56	- - - - 5 - 7 8
57	1 2 3 4 - - 7 8	58	- 2 3 4 - - 7 8	59	1 - 3 4 - - 7 8
60	- - 3 4 - - 7 8	61	1 2 - 4 - - 7 8	62	- 2 - 4 - - 7 8
63	1 - - 4 - - 7 8	64	- - - 4 - - 7 8	65	1 2 3 - - - 7 8
66	- 2 3 - - - 7 8	67	1 - 3 - - - 7 8	68	- - 3 - - - 7 8
69	1 2 - - - - 7 8	70	- 2 - - - - 7 8	71	1 - - - - - 7 8
72	- - - - - - 7 8	73	1 2 3 4 5 6 - 8	74	- 2 3 4 5 6 - 8
75	1 - 3 4 5 6 - 8	76	- - 3 4 5 6 - 8	77	1 2 - 4 5 6 - 8
78	- 2 - 4 5 6 - 8	79	1 - - 4 5 6 - 8	80	- - - 4 5 6 - 8
81	1 2 3 - 5 6 - 8	82	- 2 3 - 5 6 - 8	83	1 - 3 - 5 6 - 8
84	- - 3 - 5 6 - 8	85	1 2 - - 5 6 - 8	86	- 2 - - 5 6 - 8
87	1 - - - 5 6 - 8	88	- - - - 5 6 - 8	89	1 2 3 4 - 6 - 8
90	- 2 3 4 - 6 - 8	91	1 - 3 4 - 6 - 8	92	- - 3 4 - 6 - 8

Add.	dip ON	Add.	dip ON	Add.	dip ON
93	1 2 - 4 - 6 - 8	94	- 2 - 4 - 6 - 8	95	1 - - 4 - 6 - 8
96	- - - 4 - 6 - 8	97	1 2 3 - - 6 - 8	98	- 2 3 - - 6 - 8
99	1 - 3 - - 6 - 8	100	- - 3 - - 6 - 8	101	1 2 - - - 6 - 8
102	- 2 - - - 6 - 8	103	1 - - - - 6 - 8	104	- - - - - 6 - 8

ETR128-256-512 G2 and TITANIA series control units

Add.	dip ON	Add.	dip ON	Add.	dip ON
17	1 2 3 4 5 6 7 8	18	- 2 3 4 5 6 7 8	19	1 - 3 4 5 6 7 8
20	- - 3 4 5 6 7 8	21	1 2 - 4 5 6 7 8	22	- 2 - 4 5 6 7 8
23	1 - - 4 5 6 7 8	24	- - - 4 5 6 7 8	25	1 2 3 - 5 6 7 8
26	- 2 3 - 5 6 7 8	27	1 - 3 - 5 6 7 8	28	- - 3 - 5 6 7 8
29	1 2 - - 5 6 7 8	30	- 2 - - 5 6 7 8	31	1 - - - 5 6 7 8
32	- - - - 5 6 7 8	33	1 2 3 4 - 6 7 8	34	- 2 3 4 - 6 7 8
35	1 - 3 4 - 6 7 8	36	- - 3 4 - 6 7 8	37	1 2 - 4 - 6 7 8
38	- 2 - 4 - 6 7 8	39	1 - - 4 - 6 7 8	40	- - - 4 - 6 7 8
41	1 2 3 - - 6 7 8	42	- 2 3 - - 6 7 8	43	1 - 3 - - 6 7 8
44	- - 3 - - 6 7 8	45	1 2 - - - 6 7 8	46	- 2 - - - 6 7 8
47	1 - - - - 6 7 8	48	- - - - - 6 7 8	49	1 2 3 4 5 - 7 8
50	- 2 3 4 5 - 7 8	51	1 - 3 4 5 - 7 8	52	- - 3 4 5 - 7 8
53	1 2 - 4 5 - 7 8	54	- 2 - 4 5 - 7 8	55	1 - - 4 5 - 7 8
56	- - - 4 5 - 7 8	57	1 2 3 - 5 - 7 8	58	- 2 3 - 5 - 7 8
59	1 - 3 - 5 - 7 8	60	- - 3 - 5 - 7 8	61	1 2 - - 5 - 7 8
62	- 2 - - 5 - 7 8	63	1 - - - 5 - 7 8	64	- - - - 5 - 7 8
65	1 2 3 4 - - 7 8	66	- 2 3 4 - - 7 8	67	1 - 3 4 - - 7 8
68	- - 3 4 - - 7 8	69	1 2 - 4 - - 7 8	70	- 2 - 4 - - 7 8
71	1 - - 4 - - 7 8	72	- - - 4 - - 7 8	73	1 2 3 - - - 7 8
74	- 2 3 - - - 7 8	75	1 - 3 - - - 7 8	76	- - 3 - - - 7 8
77	1 2 - - - - 7 8	78	- 2 - - - - 7 8	79	1 - - - - - 7 8
80	- - - - - - 7 8	81	1 2 3 4 5 6 - 8	82	- 2 3 4 5 6 - 8
83	1 - 3 4 5 6 - 8	84	- - 3 4 5 6 - 8	85	1 2 - 4 5 6 - 8
86	- 2 - 4 5 6 - 8	87	1 - - 4 5 6 - 8	88	- - - 4 5 6 - 8
89	1 2 3 - 5 6 - 8	90	- 2 3 - 5 6 - 8	91	1 - 3 - 5 6 - 8
92	- - 3 - 5 6 - 8	93	1 2 - - 5 6 - 8	94	- 2 - - 5 6 - 8
95	1 - - - 5 6 - 8	96	- - - - 5 6 - 8	97	1 2 3 4 - 6 - 8
98	- 2 3 4 - 6 - 8	99	1 - 3 4 - 6 - 8	100	- - 3 4 - 6 - 8
101	1 2 - 4 - 6 - 8	102	- 2 - 4 - 6 - 8	103	1 - - 4 - 6 - 8
104	- - - 4 - 6 - 8	105	1 2 3 - - 6 - 8	106	- 2 3 - - 6 - 8
107	1 - 3 - - 6 - 8	108	- - 3 - - 6 - 8	109	1 2 - - - 6 - 8
110	- 2 - - - 6 - 8	111	1 - - - - 6 - 8	112	- - - - - 6 - 8
113	1 2 3 4 5 - - 8	114	- 2 3 4 5 - - 8	115	1 - 3 4 5 - - 8
116	- - 3 4 5 - - 8	117	1 2 - 4 5 - - 8	118	- 2 - 4 5 - - 8
119	1 - - 4 5 - - 8	120	- - - 4 5 - - 8	121	1 2 3 - 5 - - 8
122	- 2 3 - 5 - - 8	123	1 - 3 - 5 - - 8	124	- - 3 - 5 - - 8
125	1 2 - - 5 - - 8	126	- 2 - - 5 - - 8	127	1 - - - 5 - - 8
128	- - - - 5 - - 8	129	1 2 3 4 - - - 8	130	- 2 3 4 - - - 8
131	1 - 3 4 - - - 8	132	- - 3 4 - - - 8	133	1 2 - 4 - - - 8
134	- 2 - 4 - - - 8	135	1 - - 4 - - - 8	136	- - - 4 - - - 8

Add.	dip ON	Add.	dip ON	Add.	dip ON
137	1 2 3 - - - - 8	138	- 2 3 - - - - 8	139	1 - 3 - - - - 8
140	- - 3 - - - - 8	141	1 2 - - - - - 8	142	- 2 - - - - - 8
143	1 - - - - - - 8	144	- - - - - - - 8	145	1 2 3 4 5 6 7 -
146	- 2 3 4 5 6 7 -	147	1 - 3 4 5 6 7 -	148	- - 3 4 5 6 7 -
149	1 2 - 4 5 6 7 -	150	- 2 - 4 5 6 7 -	151	1 - - 4 5 6 7 -
152	- - - 4 5 6 7 -	153	1 2 3 - 5 6 7 -	154	- 2 3 - 5 6 7 -
155	1 - 3 - 5 6 7 -	156	- - 3 - 5 6 7 -	157	1 2 - - 5 6 7 -
158	- 2 - - 5 6 7 -	159	1 - - - 5 6 7 -	160	- - - - 5 6 7 -
161	1 2 3 4 - 6 7 -	162	- 2 3 4 - 6 7 -	163	1 - 3 4 - 6 7 -
164	- - 3 4 - 6 7 -	165	1 2 - 4 - 6 7 -	166	- 2 - 4 - 6 7 -
167	1 - - 4 - 6 7 -	168	- - - 4 - 6 7 -	169	1 2 3 - - 6 7 -
170	- 2 3 - - 6 7 -	171	1 - 3 - - 6 7 -	172	- - 3 - - 6 7 -
173	1 2 - - - 6 7 -	174	- 2 - - - 6 7 -	175	1 - - - - 6 7 -
176	- - - - - 6 7 -	177	1 2 3 4 5 - 7 -	178	- 2 3 4 5 - 7 -
179	1 - 3 4 5 - 7 -	180	- - 3 4 5 - 7 -	181	1 2 - 4 5 - 7 -
182	- 2 - 4 5 - 7 -	183	1 - - 4 5 - 7 -	184	- - - 4 5 - 7 -
185	1 2 3 - 5 - 7 -	186	- 2 3 - 5 - 7 -	187	1 - 3 - 5 - 7 -
188	- - 3 - 5 - 7 -	189	1 2 - - 5 - 7 -	190	- 2 - - 5 - 7 -
191	1 - - - 5 - 7 -	192	- - - - 5 - 7 -	193	1 2 3 4 - - 7 -
194	- 2 3 4 - - 7 -	195	1 - 3 4 - - 7 -	196	- - 3 4 - - 7 -
197	1 2 - 4 - - 7 -	198	- 2 - 4 - - 7 -	199	1 - - 4 - - 7 -
200	- - - 4 - - 7 -	201	1 2 3 - - - 7 -	202	- 2 3 - - - 7 -
203	1 - 3 - - - 7 -	204	- - 3 - - - 7 -	205	1 2 - - - - 7 -
206	- 2 - - - - 7 -	207	1 - - - - - 7 -	208	- - - - - - 7 -
209	1 2 3 4 5 6 - -	210	- 2 3 4 5 6 - -	211	1 - 3 4 5 6 - -
212	- - 3 4 5 6 - -	213	1 2 - 4 5 6 - -	214	- 2 - 4 5 6 - -
215	1 - - 4 5 6 - -	216	- - - 4 5 6 - -	217	1 2 3 - 5 6 - -
218	- 2 3 - 5 6 - -	219	1 - 3 - 5 6 - -	220	- - 3 - 5 6 - -
221	1 2 - - 5 6 - -	222	- 2 - - 5 6 - -	223	1 - - - 5 6 - -
224	- - - - 5 6 - -	225	1 2 3 4 - 6 - -	226	- 2 3 4 - 6 - -
227	1 - 3 4 - 6 - -	228	- - 3 4 - 6 - -	229	1 2 - 4 - 6 - -
230	- 2 - 4 - 6 - -	231	1 - - 4 - 6 - -	232	- - - 4 - 6 - -
233	1 2 3 - - 6 - -	234	- 2 3 - - 6 - -	235	1 - 3 - - 6 - -
236	- - 3 - - 6 - -	237	1 2 - - - 6 - -	238	- 2 - - - 6 - -
239	1 - - - - 6 - -	240	- - - - - 6 - -	241	1 2 3 4 5 - - -
242	- 2 3 4 5 - - -	243	1 - 3 4 5 - - -	244	- - 3 4 5 - - -
245	1 2 - 4 5 - - -	246	- 2 - 4 5 - - -	247	1 - - 4 5 - - -
248	- - - 4 5 - - -	249	1 2 3 - 5 - - -	250	- 2 3 - 5 - - -
251	1 - 3 - 5 - - -	252	- - 3 - 5 - - -	253	1 2 - - 5 - - -
254	- 2 - - 5 - - -	255	1 - - - 5 - - -	256	- - - - 5 - - -
257	1 2 3 4 - - - -	258	- 2 3 4 - - - -	259	1 - 3 4 - - - -
260	- - 3 4 - - - -	261	1 2 - 4 - - - -	262	- 2 - 4 - - - -
263	1 - - 4 - - - -	264	- - - 4 - - - -	265	1 2 3 - - - - -
266	- 2 3 - - - - -	267	1 - 3 - - - - -	268	- - 3 - - - - -
269	1 2 - - - - - -	270	- 2 - - - - - -	271	1 - - - - - - -

7 SETUP VIA BROWSERONE

The device can be set using BrowserOne (version v3.13.17 or above).

– load the latest version of the module available for the control unit in use
– start control unit connection
– click on **Read setup** to read control unit setup
– on page **Zones** select the grid row corresponding to the zone used

for VIDOMO, PREGIO, PROXIMA control units:

– click on **Cable devices** tab
– select **Zone Type** in **Sensor 485** drop-down menu
– in the grid row corresponding to the zone enable **Connected** option; click on **DT93** in the window that will display
– click on **Open configuration form**

for ETR control units:

– click on **Concentrators** tab
– in **Zone assigned to** pane select **1 input device**
– click on **Open configuration form**

for TITANIA control units:

– click on **Cable devices** tab
– in pane **Zone assigned to** select **1 input device**
– click on **Open configuration form**

7.1 Device setup

The window allows setting:

▼ **And/Or**
Select an option.

▼ **Anti-sneak**
Enable/disable anti-sneak function.

▼ **Led**
Enable/disable LED indications.

▼ **Masking**
Enable/disable anti-masking function.

▼ **Dazzle**
Enable/disable anti-blinding function.

▼ **Disable MW if disarmed**
When enabled, MW section will be deactivated when all sectors to which the zone is assigned are disarmed. The general alarm will be generated when IR section enters pre-alarm mode.

▼ **Range**
Select the range from drop-down menu

▼ **Sensitivity**
Select the sensitivity from drop-down menu
(high: 4 MW pulses, 2 IR pulses; low: 8 MW pulses, 3 IR pulses)

Click on **Advanced options** to set further parameters (among which pre-alarm time and pulses number) and also:

▼ **Single IR if preal. MW**
When enabled, the detector in MW pre-alarm mode will generate an alarm when it receives the first IR pulse (just one, regardless the number of pulses set).

▼ **Compensate high envir. T°**
Activate it to adjust IR section sensitivity in case the temperature shall raise above 33°C.

▼ **Dazzle/Masking on Alarm (Tamper)**
When enabled, general alarm relay (tamper) will activate in case of blinding/masking attempts.

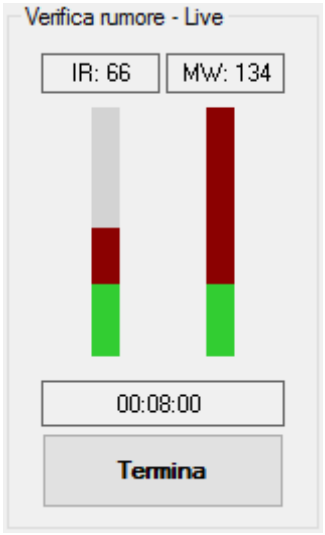
▼ **Arming on red LED**
If selected, the detector red LED will turn on to signal its sectors are being armed.

Load default

Select it to restore device default settings.

Detect noise

It opens an environment noise detection tool for IR and MW sections. After the detection, the tool provides a result according to **IR threshold** and **MW thresholds** "warning" set in **Advanced options** menu.



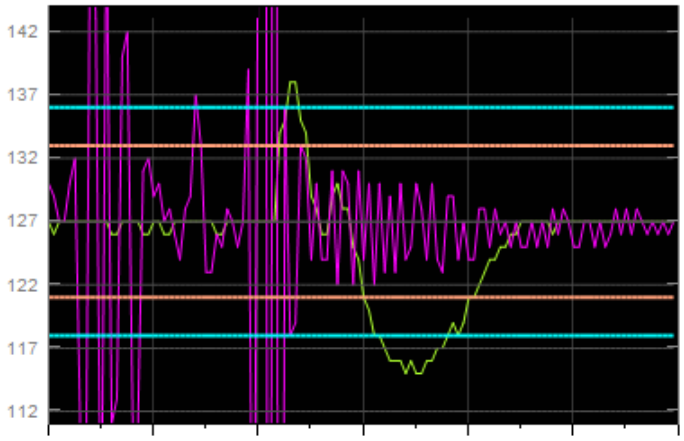
– Select **Start**. Two vertical bars will display detected values.
– Select **Stop** to stop detection mode.

7.2 Device status

The panel provides real time information on device status and its IR and MW sections

7.3 Oscillographic function

The software will display environment noise detected and IR and MW sections activity.



Check option boxes in **System Options** (on the right of the graphic) to select data to be displayed on the graphic (IR/MW detection performance, grid, thresholds set).
The graphic flows leftwards: to stop the flowing press **Stop live acquisition** key.
Press **Show recording controls** key to activate commands to record detector waveforms for up to 4 hours.

REC	Start the recording
Pause	Pause the recording
Stop	Stop the recording
Playback	Play a previously recorded video
Restart live acquisition	Continue recording after having pressed STOP.

Select **Save samples** to save a recording.
Select **Open sample file** to load a recording saved.
Move the cursor on the position desired on the registration bar.

7.4 Send commands

Read configuration

It applies the setup currently saved on control unit to the device.

Write configuration

It writes the configuration set to the unit.

Read log

It displays wave forms of the last alarm generated by the detector. The alarm will be saved only if at least one of sectors belonging to the detector zone is armed.
Select **Display options** to see further options.
The following data will be saved:

- waveforms of first alarm received after last arming: alarms following the first in the same arming cycle will not be saved;
- alarm date and time;
- IR and MW alarm thresholds;
- room temperature at alarm occurrence (approximate value).

Alarms saved will not be cancelled in case of unit reset, but they will be lost in the event of mains failure.

⚠ *Do not change the configuration before reading a detector alarm memory otherwise parameters shown in* **Device Setup** *window will be the latest entered and not the saved ones.*

8 OPERATING MODE

The detector detects motion inside the covered area.

8.1 AND/OR mode

The way the alarm notification is given differs depending on operating mode set:

AND mode

The function can be activated via browser.
The alarm relay is activated only when both IR and MW technologies trigger an alarm.
One of the two technologies detects a movement and switches to pre-alarm status (IR or MW) for the set time.
If within such time the other technology does not confirm the detection, the technology in pre-alarm status will reset.

OR mode

The function can be activated via browser.
The alarm relay is activated when either of the two technologies sends an alarm notification due to movement within the controlled area.

8.2 Anti-blinding function

DT93485 features anti-blinding function.
The function detects blinding attempts made by placing a reflective body before the lens.
The function can be activated via browser.
When the device enters a "blinded" condition, the green LED will start blinking slowly.
When the reflective body is removed, the standard operating mode will be restored.

⚠ *We recommend to disable anti-blinding function if the detector is installed in places with people passing often at less than 20 cm distance.*

8.3 Anti-masking function

DT93485 features anti-masking function.
The function detects attempts to obscure/cover the vision by placing an object in front of the detector.
In order to activate the anti-masking function, the device shall be operating in AND mode and the MW mode shall be enabled.
The function can be activated via browser.
When the device enters a "detector masked" condition, the blue LED will start blinking slowly.
The standard operating mode will be restored when one of the technologies confirms the first movement.
Activation status of the anti-masking function can be controlled with indications only during stabilisation at power on: if someone passes close to the sensor, blue and green LEDs will blink.

⚠ *We recommend to disable anti-masking function if the detector is installed in places with people passing often close to the detector.*

Note: for grade 3 compliance, enable anti-masking and anti-blinding functions.

8.4 Anti-sneak

DT93485 features anti-sneak function.
The function detects attempts to elude the IR section from far off with special physical expedients.
In order to activate the function, the device shall be operating in AND mode.
The function can be activated via browser.
When the function activates, blue LED indicator will start blinking quickly.
The standard operating mode will be restored when one of the technologies confirms the first movement.

⚠ *We suggest disabling the anti-sneak function in case there are plastic curtains or glass windows close to the detector and, in any case, where there are big metal objects (metal shelving, metal gates etc.).*

⚠ *We suggest disabling the anti-sneak function in case the detector is installed for protection of long hallways (not recommended).*

8.5 Fault detection

The device manages the detection and signalling of the following faults:

- power fault: when power low voltage is detected a fault event is generated.
- PIR fault
- microwave section fault

Detector LED indicators will light on as shown in the table of paragraph 8.6 *p. 11.*

8.6 LED indications

Condition	Red LED	Green LED	Blue LED
Stabilisation at power on	Steady light		
IR pulse		Single blinking	
MW pulse			Single blinking
Pre-alarm IR		Steady light	
Pre-alarm MW			Steady light
General alarm		Steady light	Steady light
Power failure	Slow blinking	Slow blinking	Slow blinking
PIR fault		Fast blinking	
MW fault			Fast blinking
Blinding		Slow blinking	

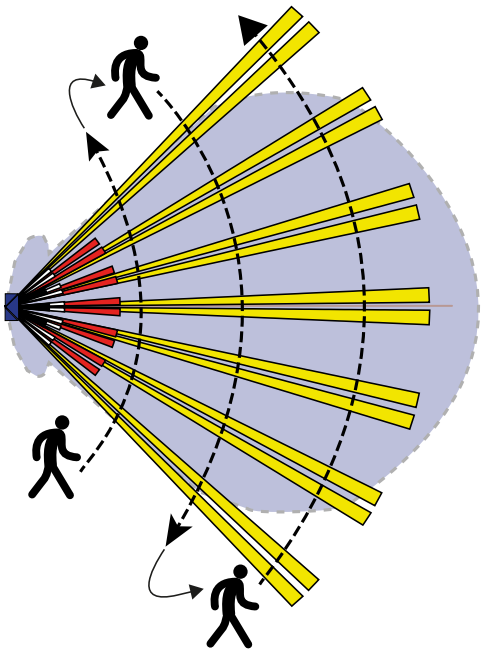
Condition	Red LED	Green LED	Blue LED
Sneak/Masking			Slow blinking
Sector armed (*)	ON		

(*) The red LED will turn on to signal that the sectors belonging to the detector are being armed only if the option **Arming on red LED** has been enabled in the detector's configuration window in BrowserOne.
The LED will turn on regardless of LED enablement.
The low power supply indication overrides the sector arming indication anyway.

9 MAINTENANCE

9.1 Periodic test

Carry out a simple test regularly to verify the functionality and the coverage limits of the detector.



– Switch the device to system test mode: using the keypad, access the control unit SYSTEM TEST > ZONE TEST menu
– taking detector position as the point of reference, make half-circle movements from opposite directions to check coverage from both sides

Detector LED indicators shall respond as shown in the table of 8.6 *p. 11* paragraph.

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EU DECLARATION OF CONFORMITY

Hereby, EL.MO. Spa declares that the radio equipment DT93485 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.elmospa.com – registration is quick and easy.

CE

GENERAL WARNINGS

This device has been designed, built and tested with the utmost care and attention, adopting test and inspection procedures in compliance with current legislation. Full compliance of the working specifications is only achieved in the event the device is used solely for its intended purpose, namely:

Indoor long-range dual technology detector with ULTRABUS interface for intrusion detection systems

The device is not intended for any use other than the above and hence its correct functioning in such cases cannot be assured. Consequently, any use of the manual in your possession for any purpose other than those for which it was compiled - namely for the purpose of explaining the product's technical features and operating procedures - is strictly prohibited.

Production processes are closely monitored in order to prevent faults and malfunctions. However, the components adopted are subject to an extremely modest percentage of faults, which is nonetheless the case with any electronic or mechanical product.

Given the intended use of this item (protection of property and people), we invite you to adapt the level of protection offered by the system to suit the actual situation of risk (allowing for the possibility of impaired system operation due to faults or other problems), while reminding you that there are specific standards for the design and production of systems intended for this kind of application.

We hereby advise you (the system's operator) to see that the system receives regular routine maintenance, at least in accordance with the provisions of current legislation, and also check on as regular a basis as the risk involved requires that the system in question is operating properly, with particular reference to the control unit, sensors, sounders, dialler(s) and any other device connected. You must let the installer know how well the system seems to be operating, based on the results of periodic checks, without delay.

Work involved in the design, installation and maintenance of systems incorporating this product should be performedonly by personnel with suitable skills and knowledge required to work safely so as to prevent any accidents. It is vital that systems be installed in accordance with current legislation. The internal parts of certain equipment are connected to the mains and therefore there is a risk of electrocution when maintenance work is performed inside without first disconnecting the primary and emergency power supplies. Certain products include batteries, rechargeable or otherwise, as an emergency backup power supply.

If connected incorrectly, they may cause damage to the product or property, and may endanger the operator (explosion and fire).

INSTALLER WARNINGS

Comply strictly with current standards governing the installation of electrical systems and security systems, and with the manufacturer's directions given in the manuals supplied with the products.

Provide the user with full information on using the system installed and on its limitations, pointing out that there are different levels of security performance that will need to suit the user's requirements within the constraints of the specific applicable standards. See that the user looks through the warnings given herein.

Work involved in the design, installation and maintenance of systems incorporating this product should be performedonly by personnel with suitable skills and knowledge required to work safely so as to prevent any accidents. It is vital that systems be installed in accordance with current legislation. The internal parts of certain equipment are connected to the mains and therefore there is a risk of electrocution when maintenance work is performed inside without first disconnecting the primary and emergency power supplies. Certain products include batteries, rechargeable or otherwise, as an emergency backup power supply.

If connected incorrectly, they may cause damage to the product or property, and may endanger the operator (explosion and fire).

USER WARNINGS

Check the system's operation thoroughly at regular intervals, making sure the equipment can be armed and disarmed properly.

Make sure the system receives proper routine maintenance, employing the services of specialist personnel who meet the requirements prescribed by current regulations.

Ask your installer to check that the system suits changing operating conditions (e.g. changes in the extent of the areas to be protected, change in access methods, etc...)

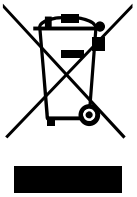
MAIN SAFETY RULES

The use of the device is forbidden for children and unassisted disabled individuals.

Do not touch the device when bare footed, or with wet body parts. Do not directly spray or throw water on the device.

Do not pull, remove or twist the electric cables protruding from the device even if the same is disconnected from the power source.

DISPOSAL WARNINGS



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In accordance with Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), please be advised that the EEE was placed on the market after 13 August 2005 and must be disposed of separately from normal household waste.

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