

C-VIGIL Ltd : marine (CVM)

Marine Safety & Security Systems

GUARDIAN SYSTEMS

guardianKLARION

Acoustic Area Denial



GUARDIAN KLARION

Operations Guide



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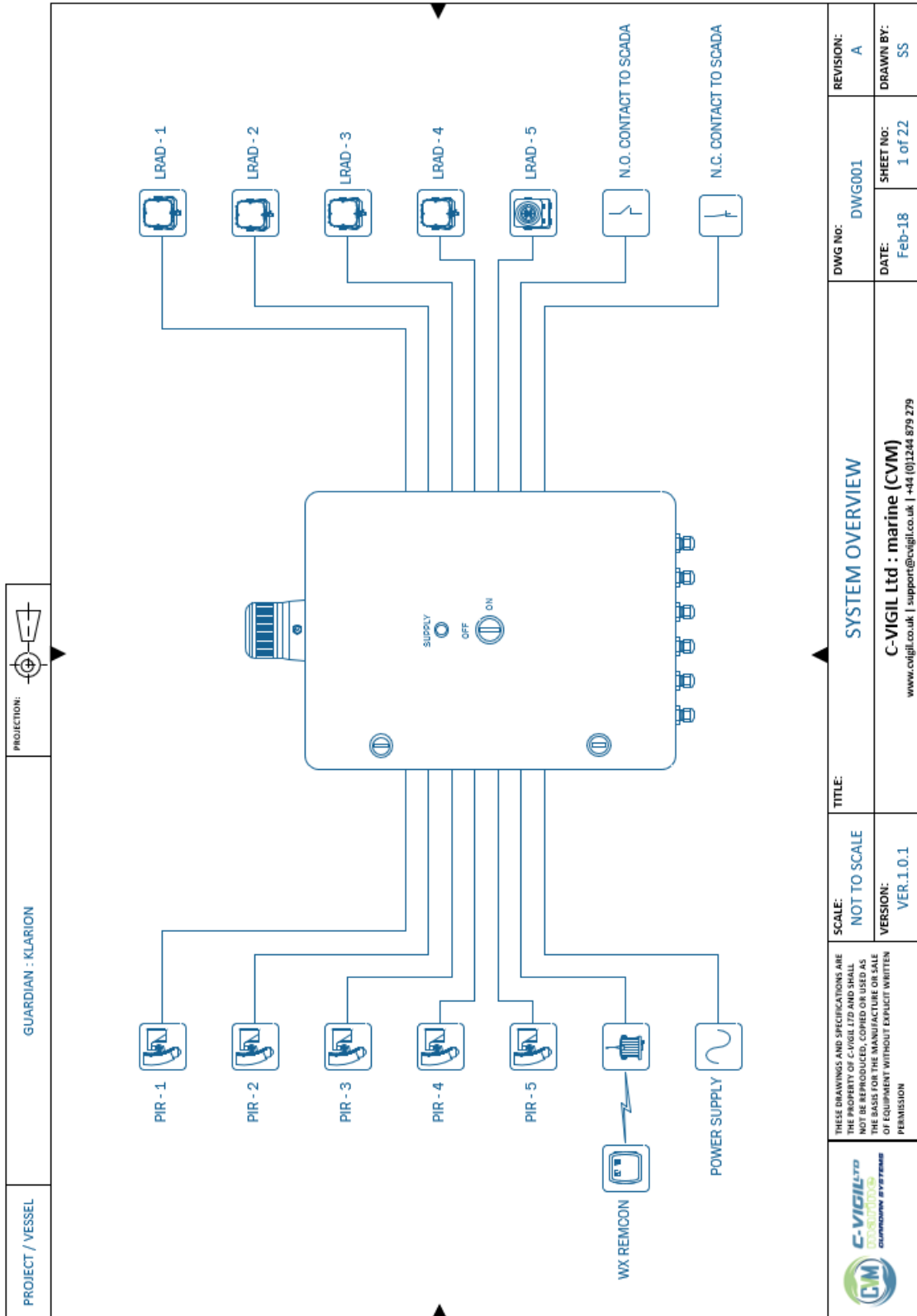


Contents

OVERVIEW	4
1. GENERAL DESCRIPTION	5
1.1 Introduction	5
2. SYSTEM COMPONENTS	6
2.1 Main Control Unit (MCU)	6
2.2 PIR-5030	6
2.3 Long Range Acoustic Device (LRAD 500X-RE)	7
2.4 Long Range Acoustic Device (LRAD 100X)	7
2.5 LRAD MP3 Player	7
2.6 Beacon	8
2.7 Remote Timer On – Off	8
3. SYSTEM FUNCTIONS	9
3.1 Power Supply On - Off	9
3.2 PIR Motion Detectors – On / Off	9
3.3 PIR Motion Detection	10
3.4 LRADs On - Off	10
3.5 MP3s On - Off	10
3.6 LRADs Alarm Reset	10
3.7 LRADs Alarm Test	11
3.8 SCADA Output	11
4. OPERATION	12



Overview





1. General Description

1.1 Introduction

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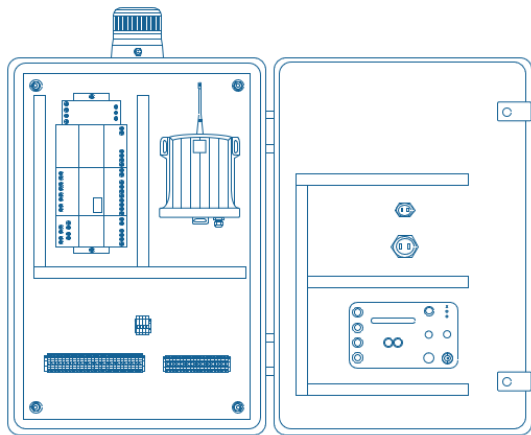
Un-manned off-shore platforms are by their very nature exposed & vulnerable to intrusions. These unauthorised intrusions are not just a nuisance; they can be very costly in production down-time and lost equipment.

With the use of PIR motion sensors located around the boat landing platform it is possible to detect any unauthorised approach / access to the platform from seaward, once detected the intruder can be driven away using Long Range Acoustic Devices. The acoustic energy being sufficient to cause actual physical pain and discomfort which only gets worse the closer they get to the rig. Wireless remote control allows maintenance personnel to switch the system on / off at a safe distance.

- RUGGED CONSTRUCTION
- SEALED TO MINIMUM OF IP65
- NON-LETHAL DETERRENT
- 50M X 30M PIR DETECTION AREA
- SPL – 149DB @ 1M
- INSTRUCTION VOICE MESSAGE & WARNING TONE
- MULTIPLE LANGUAGES
- WIRELESS REMOTE CONTROL

2. System Components

2.1 Main Control Unit (MCU)



MCU – fitted at a suitable position on the boat landing area.

The MCU contains: -

PSU MODULE, PLC MODULE & EXTENTION MODULE – main control elements.

WIRELESS RECEIVER – provides remote control of the system from a safe distance.

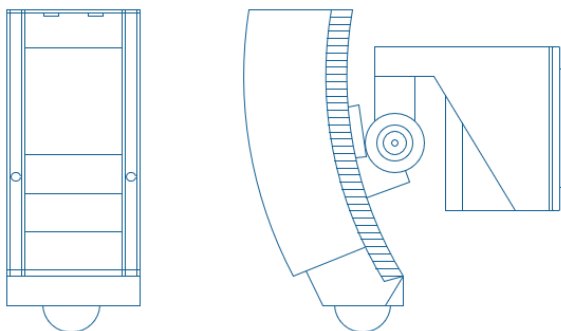
TB0, TB1 & TB2 – main connection terminal strips.

BEACON – provides visual indication of systems status.

POWER ON / OFF – key operated on / off switch.

LRAD MP3 PLAYERS – MP3 players 1-5 for each of the LRADs, used to play pre-recorded warning message followed by warning tone.

2.2 PIR-5030



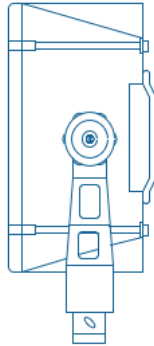
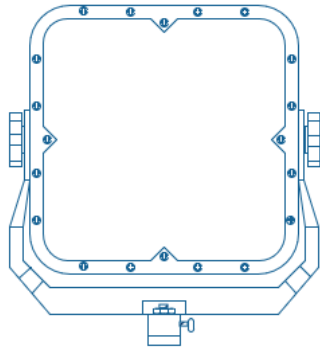
PIR-5030 : 1 – 4 (Outward Looking)

PIR motion sensors 1 - 4 with a 50m x 30m detection area. Positioned around the platform to provide full 360° coverage. Anyone approaching the platform – from any direction – will be detected by a PIR which will cause the LRAD to operate.

PIR-5030 : 5 (Inward Looking)

Installed on the boat landing platform and facing inwards. Should anyone evade detection by the outward looking PIRs then this sensor will detect any movement on the boat landing and operate LRAD5.

2.3 Long Range Acoustic Device (LRAD 500X-RE)



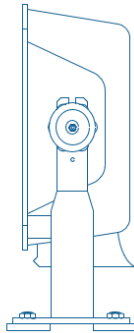
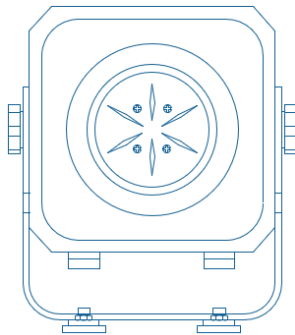
LRAD 500X – RE : 1 – 4 (Outward Facing)

Positioned on a mount on the boat landing platform, so as to face each point of approach, or can be mounted individually at the PIR positions.

The LRADs are activated by the PIR motion detectors.

Once triggered a high intensity (149Db) acoustic beam is directed towards the detection area. The LRAD 500X can be clearly heard up to 2Km away. When triggered in the detection area of the PIRs (50m x 30m) the acoustic beam will cause pain and acute discomfort to anyone in the beam, thereby discouraging further approach toward the platform.

2.4 Long Range Acoustic Device (LRAD 100X)

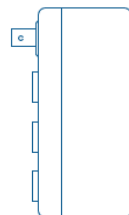
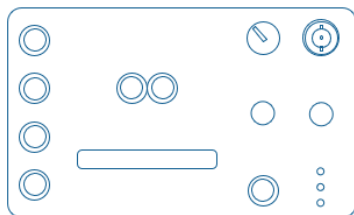


LRAD 100X : 5 (Inward Facing)

Positioned at a suitable position on the boat landing deck so as to provide coverage of the access areas.

Anyone getting this far will be subjected to further pain and discomfort.

2.5 LRAD MP3 Player



LRAD MP3 PLAYER

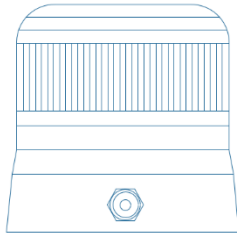
MP3 player – used to playback pre-recorded warning messages through the LRAD. Warn anyone approaching that they are approaching a controlled area and risk acute pain and discomfort.

Can record various languages.

Warning message is followed by high frequency warning tone.



2.6 Beacon

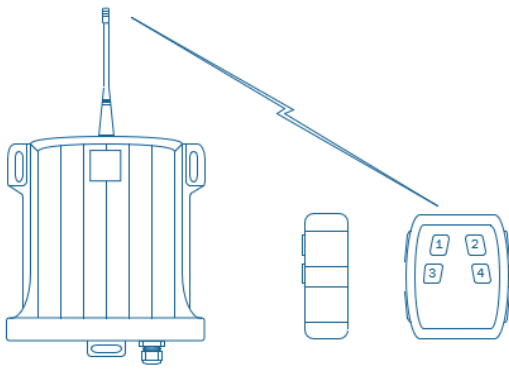


XENON BEACON

Provides visual indication that the PIR motion detectors are active.

Flashes orange when system armed.

2.7 Remote Timer On – Off



WIRELESS RECEIVER

Located in the MCU – will provide wireless control to arm / disarm the system from a safe distance.

Wx module has four momentary closing relays: -

Relay 1 : PIR detectors on / off.

Relay 2 : Alarm reset.

Relay 3 : Test.

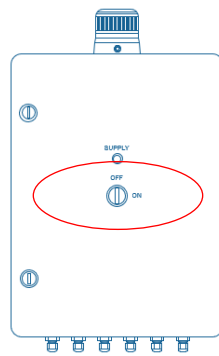
3. System Functions

3.1 Power Supply On - Off

The system power supply (AC or DC) is controlled by a key operated On / Off switch located on the front door of the MCU.

When the power supply is switched on – a white LED indicator will be lit.

For security the key can be removed in both the On & Off positions.

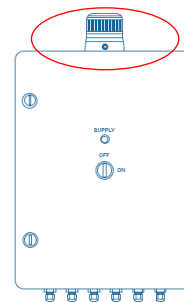


3.2 PIR Motion Detectors – On / Off

The PIR motion detectors are powered up when the power supply is switched on. The detection circuits are turned on and off through the wireless portable transmitter.

Press button 1 once to turn the PIRs on and again to turn the PIRs off.

Once the PIRs are active the flashing orange warning beacon on the MCU is turned on.





3.3 PIR Motion Detection

The sensitivity of the PIRs can be adjusted on-site along with the pulse count. This helps prevent false alarms.

3.4 LRADs On - Off

The Long Range Acoustic Devices (LRADs) are powered up when the power supply is switched on (key switch).

However, there is no output till the PIRs detect any movement.

Once triggered the LRADs will output for 5 minutes then reset.

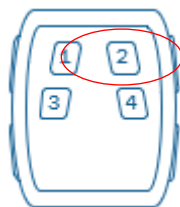
3.5 MP3s On - Off

The MP3s are powered up when the PIRs detect movement.

The MP3 will then provide a pre-recorded message and warning tone to the LRADs

3.6 LRADs Alarm Reset

The LRADs once triggered will output for 5 minutes then reset, however the alarm output can be reset at any time using the wireless portable transmitter, by pressing button 2.





3.7 LRADs Alarm Test

Once at a safe distance the LRADS can be tested using the wireless portable transmitter.

By pressing button three for >3 secs ALL the LRADs will activated for as long as the button is pressed.



3.8 SCADA Output

Provision is made to connect to any SCADA equipment present on the platform.

N/O & N/C clean contacts are available.

These contacts change state when the LRADs are triggered.



4. Operation

- Turn the system on using the key switch – ensure the white LED indicator comes on.
- After a brief period, the beacon will flash for 0.5 secs to indicate the program has started.
- Now move away from the platform to a safe distance.
- Using the wireless portable transmitter press button one (On / Off) to turn the PIRs detection circuits on – ensure the orange flashing warning beacon is active.
- Press and hold button 3 (>3 secs) to test the LRADs – ensure all the LRADs are outputting correctly