



IRONCLAD Installation Guide



**One and Two
Zone Standalone
Kits**



Field Equipment Installation

The purpose of this guide is to provide the method of installation for the field equipment of the IRONCLAD sensor system.

PLEASE READ ALL THE MANUAL BEFORE ATTEMPTING TO INSTALL THE SYSTEM

This handbook includes:

- Installation of one or two zones IRONCLAD sensor cable, each zone up to 1000ft/300m on the fence.
- Connecting the analyzer LPU-304 field control unit.
- System calibration.
- Connection of weather compensation unit.
- Troubleshooting.

Recommendation : view the PDF power point in colors for better understanding



Required Tools For Installation



Wire
Stripper



Small Flat
Screwdriver



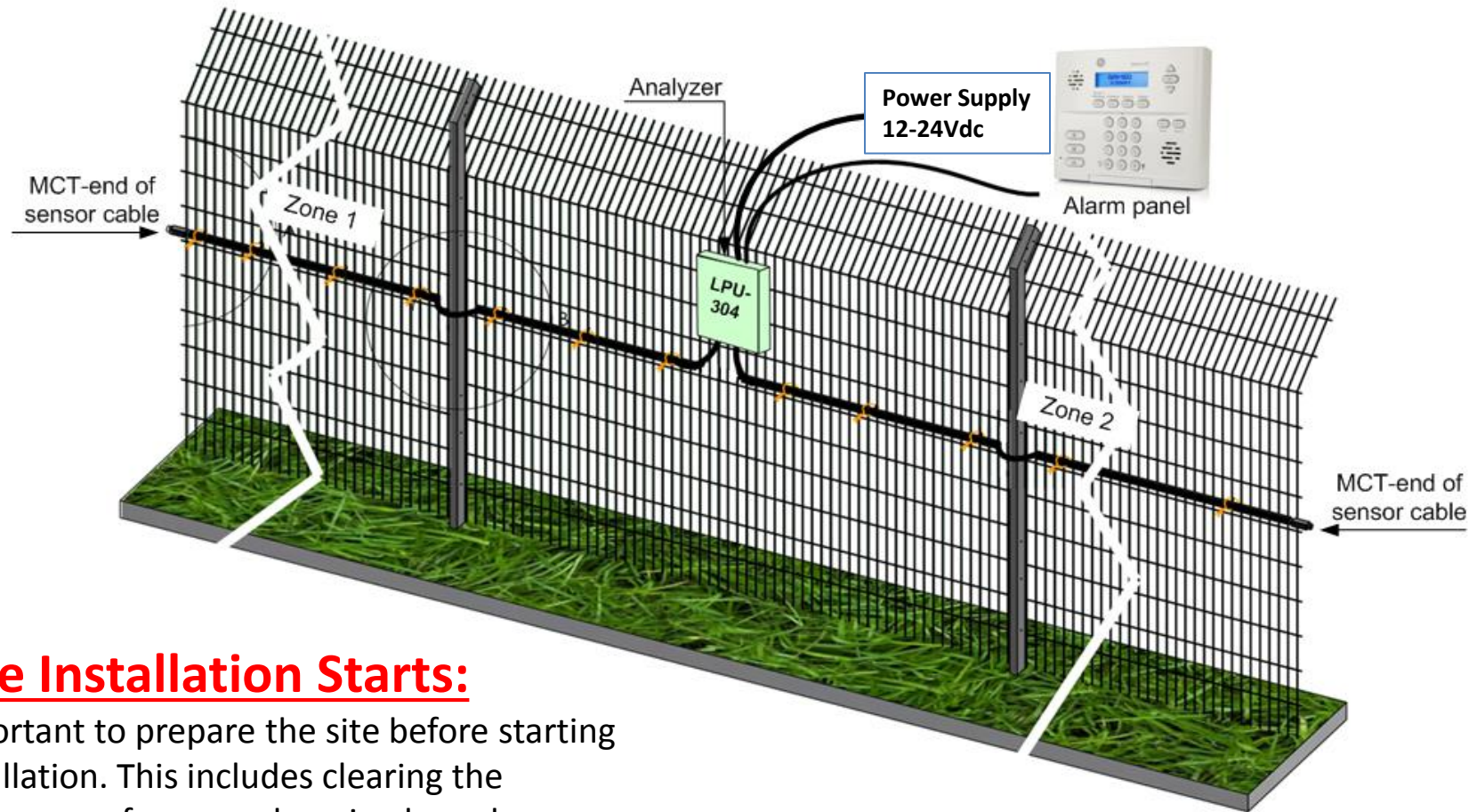
Voltmeter



Stainless Steel Ties
(Sold Separately)



Installing The IRONCLAD



Before Installation Starts:

it is important to prepare the site before starting the installation. This includes clearing the detection area of any overhanging branches, shrubbery, bushes, etc. and marking sure there are no objects attached or rattling on or next to the fence that might hit it.

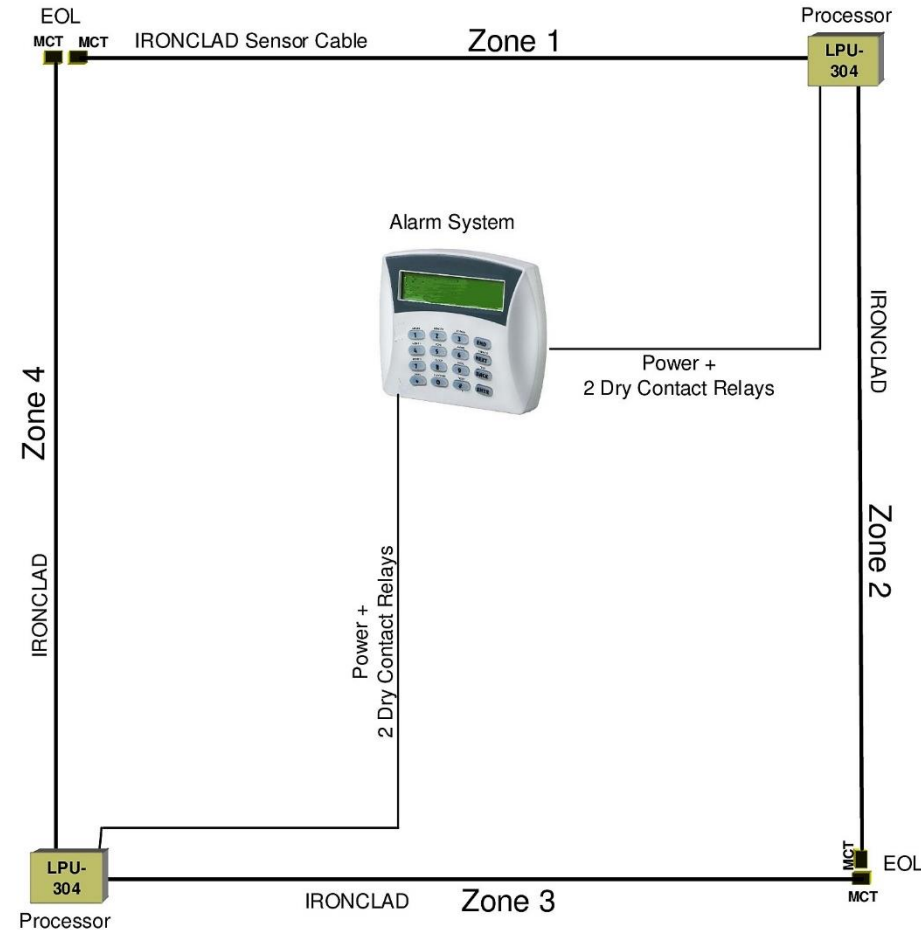


IRONCLAD Multiple Standalone Systems Layout

When using more than 1 kit:

When using more than one kit each LPU processor needs it's own home run cable. The 6 wire cable (recommended 18 gauge) Will carry the 12-24vdc to the LPU and carry the 2 relay outputs back to the alarm system.

The **lead cable can be attached to the fence with the sensor cable**, this layout drawing is just an example of how the system should be wired.





Sensor Cable Installation On The Fence

MCT- End Of Line Unit



- The sensor line should be attached on the **internal (protected)** side of the fence
- The cable should be attached at middle of the fence 3-4ft high for 6-8ft fences.
- Attach first the end of line unit then continue attaching the cable on the fence from the **END** of the zone to the processor location. Installing the zone in reverse.



Sensor Cable Installation On The Fence



- Attach the cable to the fence within the chain link low point, the low point creates a “channel” that allows the cable to sit in and have as much surface contact with the fence fabric.
Follow the low point line along the whole fence to keep a leveled straight line installation.



Sensor Cable Installation Around Poles



Make a drop loop around the poles to allow the cable movement with the fence without grabbing on the pole.

Do not run the cable between the pole and the fence!



Sensor Cable Installation On The Fence



Wrap the wire



Slide the hook inside the rings



Pull&Rotate the tool to wrap.

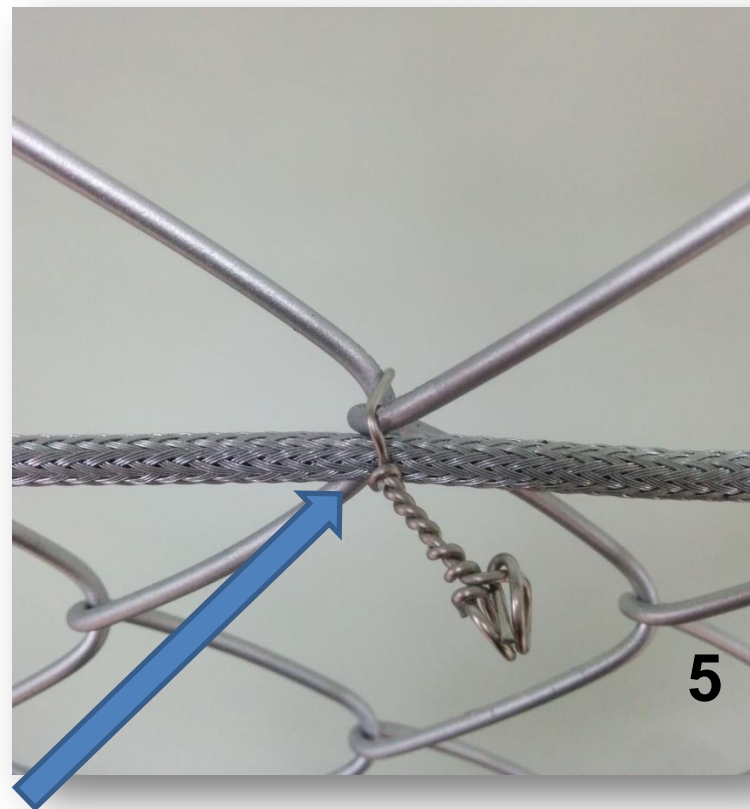
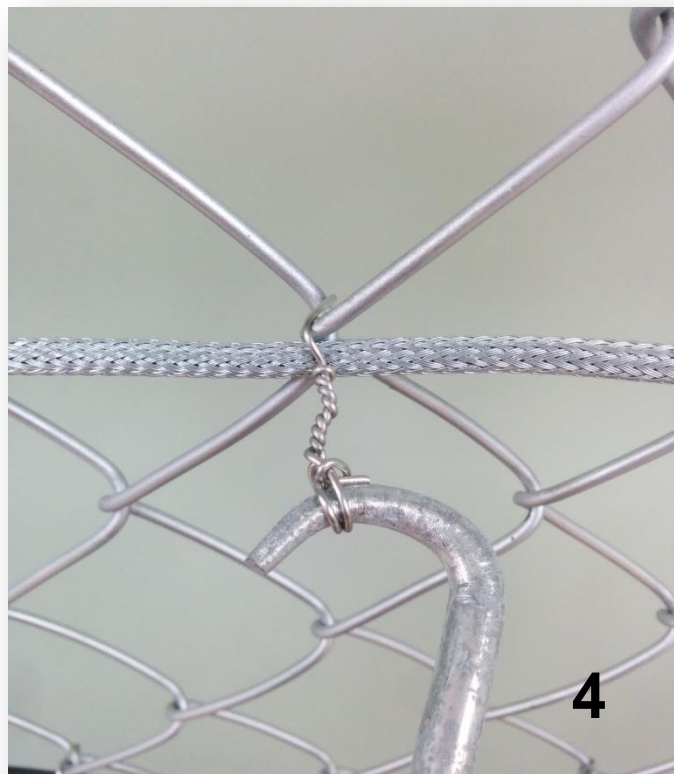


- Attach tie wraps every 1 foot / 30 cm.
- Place the ties only Vertically.
- Can be done also with any outdoor UV plastic tie wraps/Zip ties
Although not recommended.
- The ties need to be snug to not allow the cable to slide in the tie. **Do not over tighten the ties on the cable.**

While rotating the tool with the other hand pull the loose side of the cable to keep the cable tight on the fence.



Sensor Cable Installation On The Fence



The ties are tied vertically to “lock” the cable in the chain link low point.



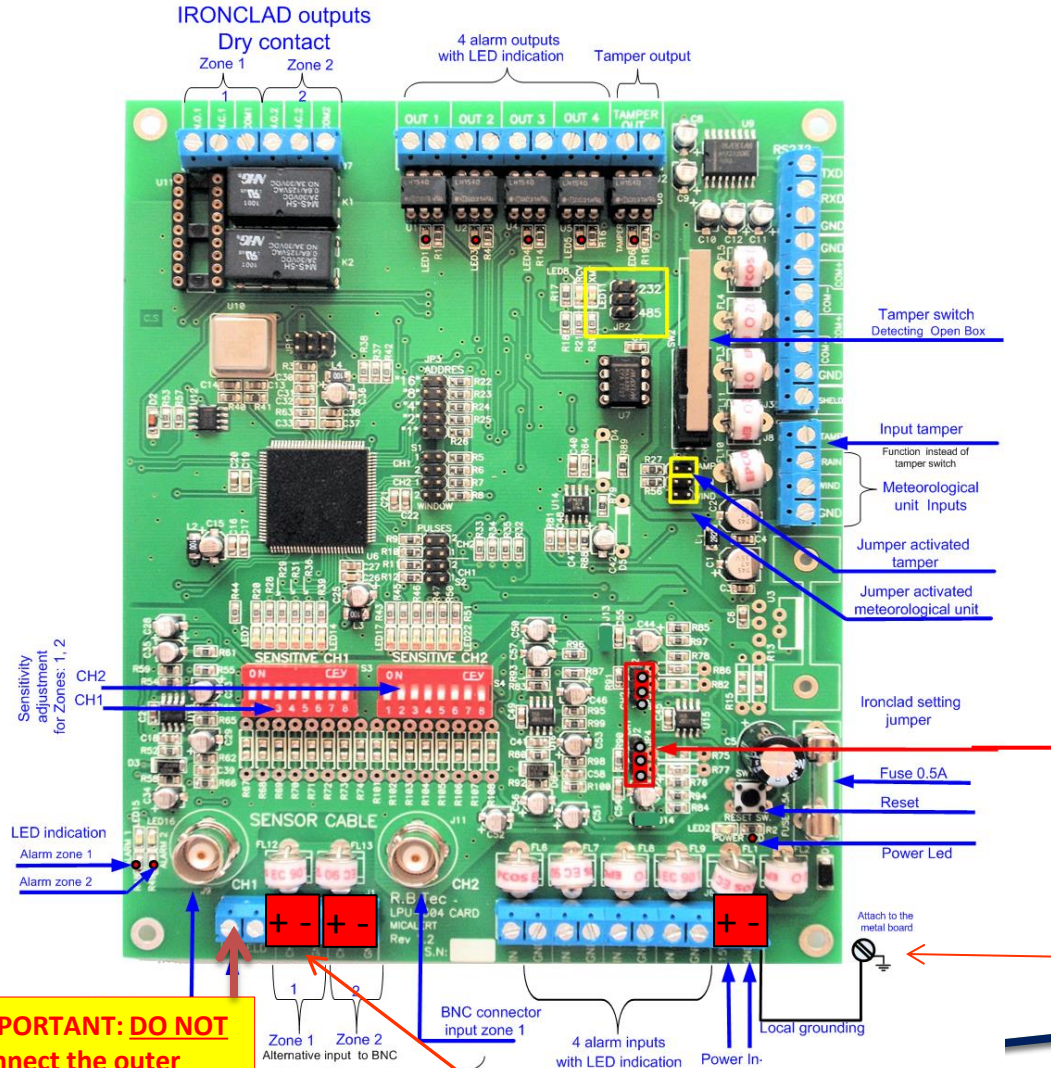
The IRONCLAD Sensor Wire



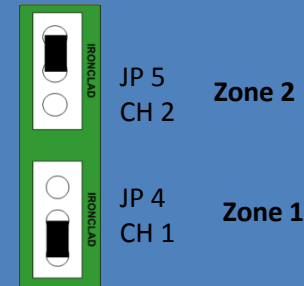
IMPORTANT: DO NOT
connect the outer
shield/braid to the
processor board



LPU-304 For 1-2 Zones



Ironclad Sensitivity Jumper



IMPORTANT:
Install local
grounding

IMPORTANT: DO NOT
connect the outer
shield/braid

IMPORTANT: Remove any resistor if
sensor cable is connected

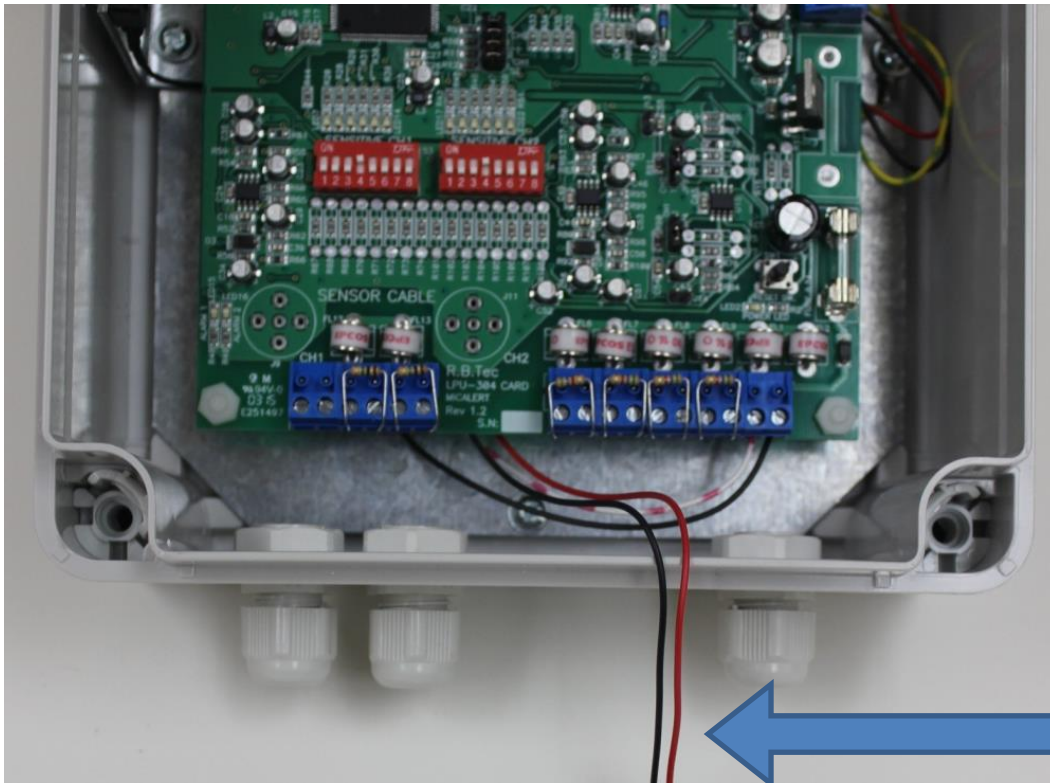


Power Input

The LPU Controllers arrive with a power regulator already connected to the power terminals.

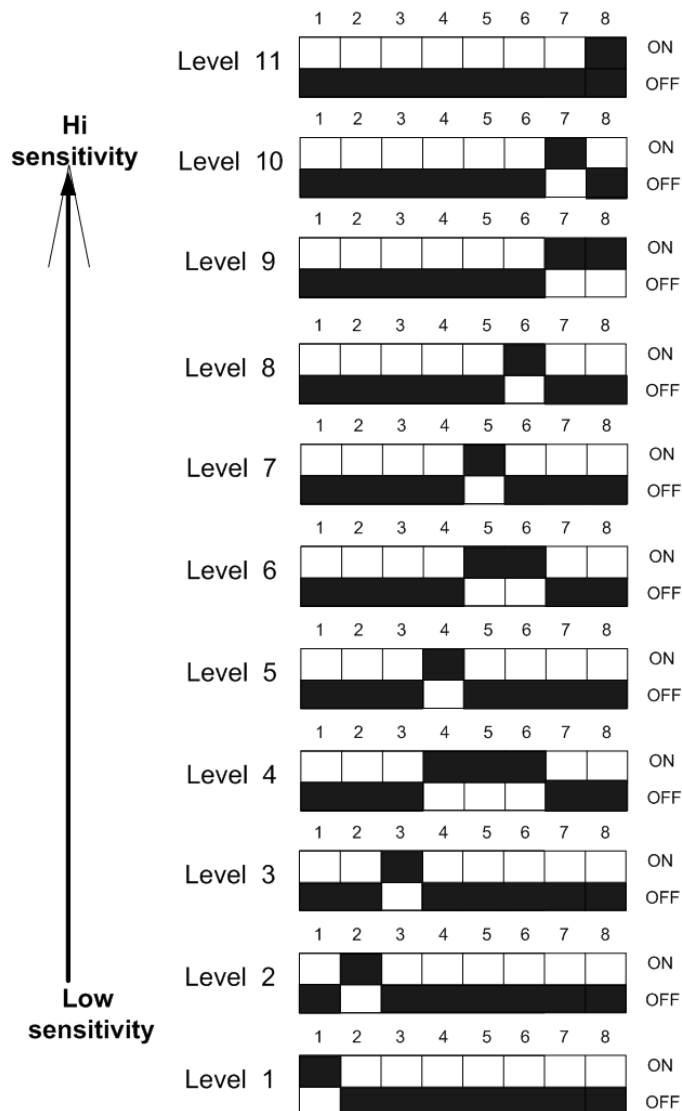
Use the loose red and black wire to connect to your power source.

Use at least a 12-24VDC 2amps
Power supply



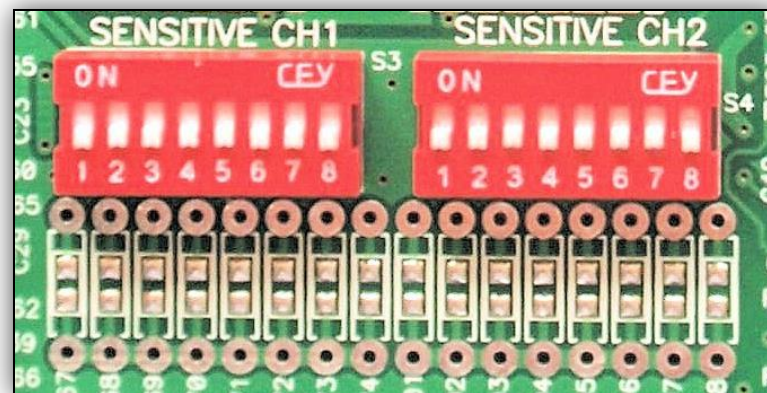


LPU-304 Sensitivity Level Adjustment



Zone 1

Zone 2

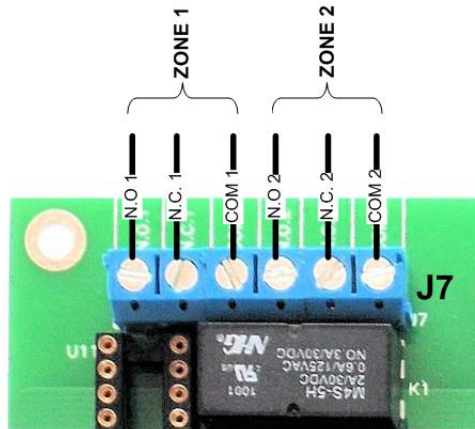


ATTENTION : To avoid nuisance alarm.
When only one zone is connected please move dip switch 1 up and the rest down in the inactive channel (zone).

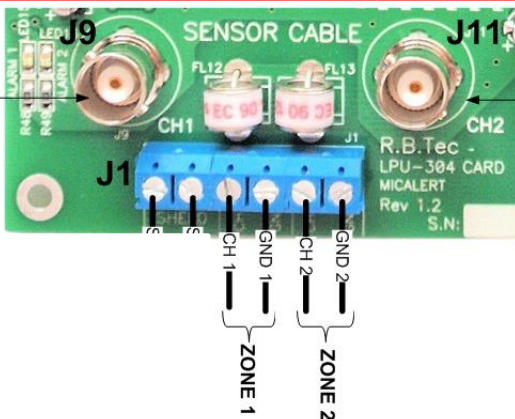


LPU-304 Inputs & Outputs for Ironclad Sensor Cable

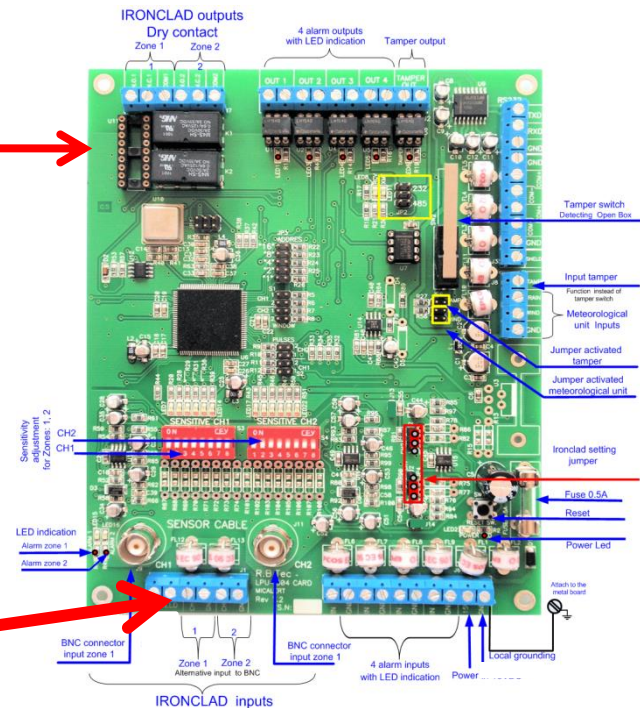
Ironclad outputs



BNC connector
Input zone 1



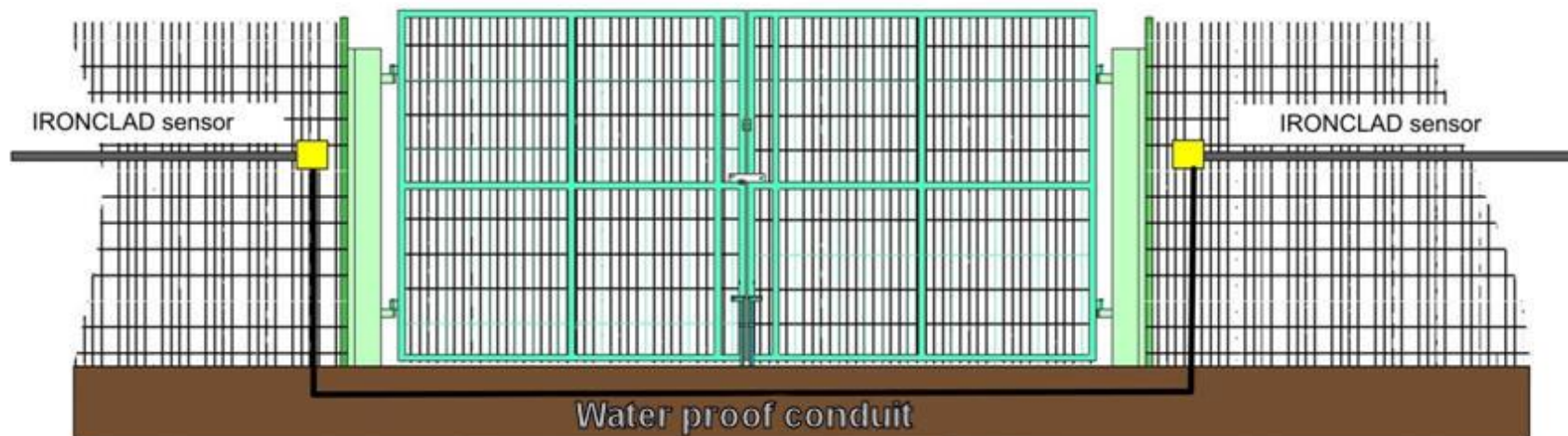
Ironclad inputs



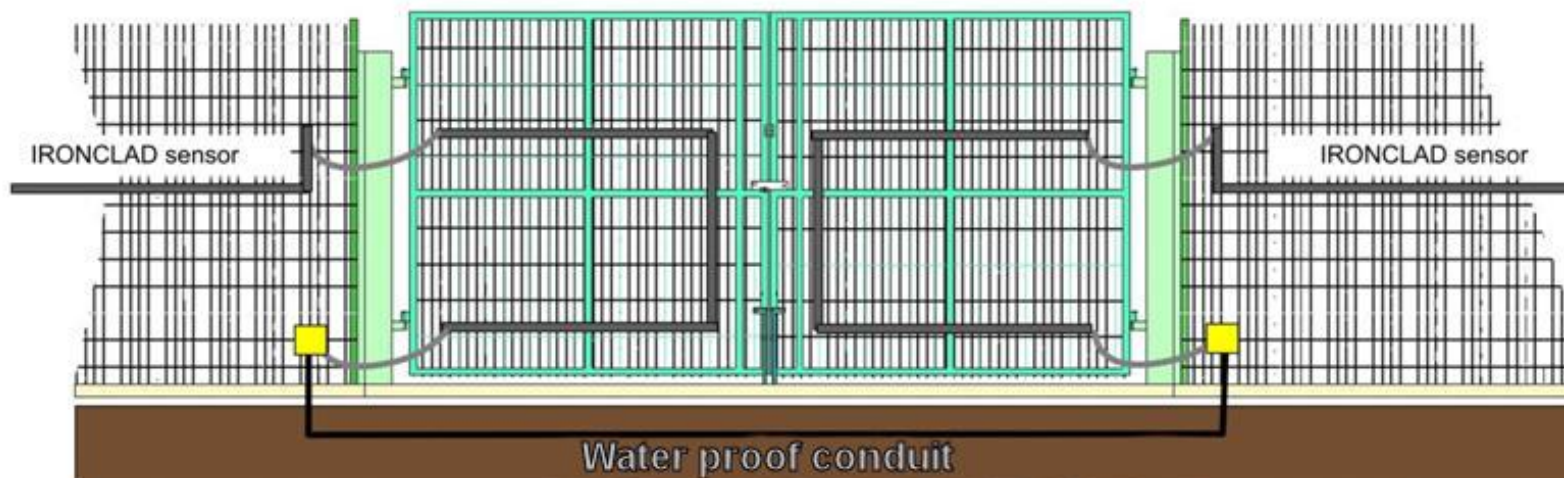


GATE PROTECTION

Gate Bypass

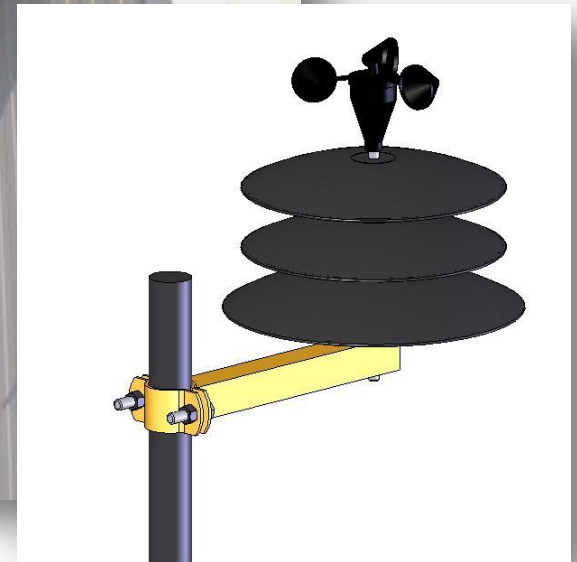


Swing gate



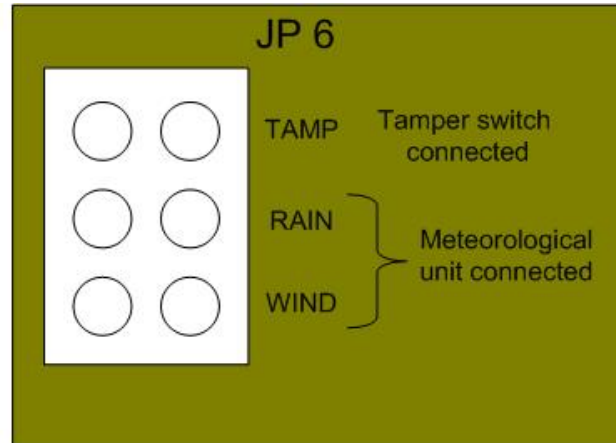
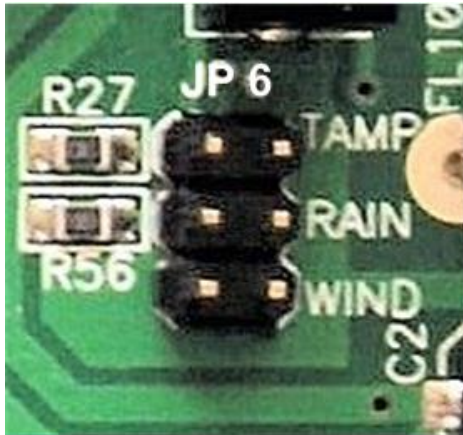


Weather Compensation Unit

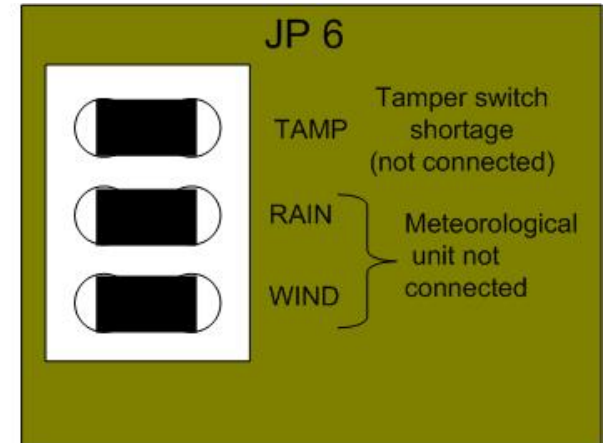




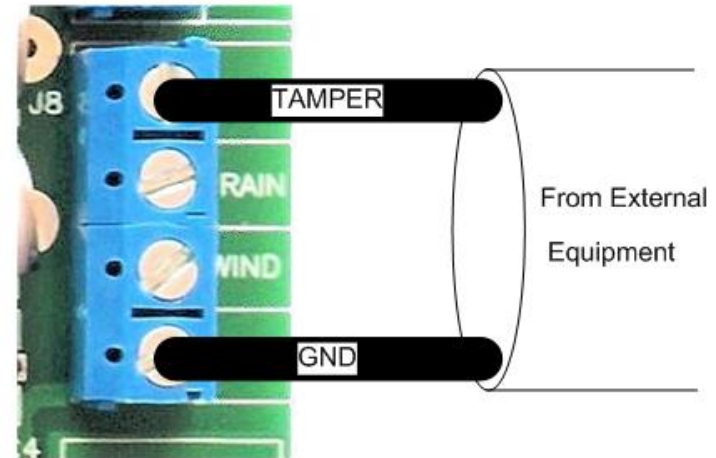
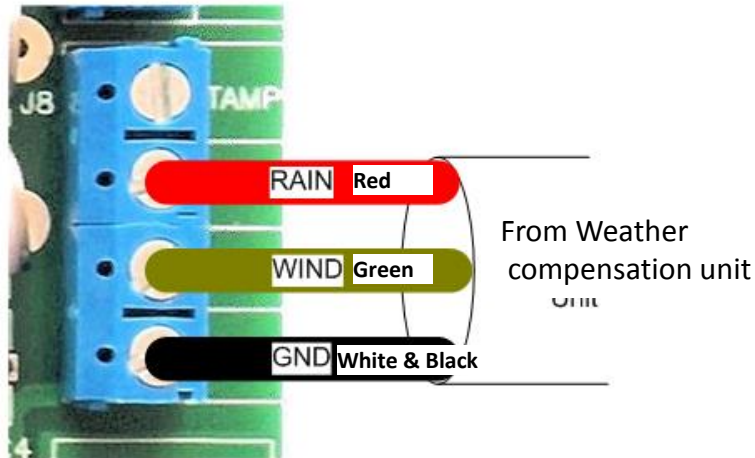
Weather Compensation Unit



With weather compensation unit

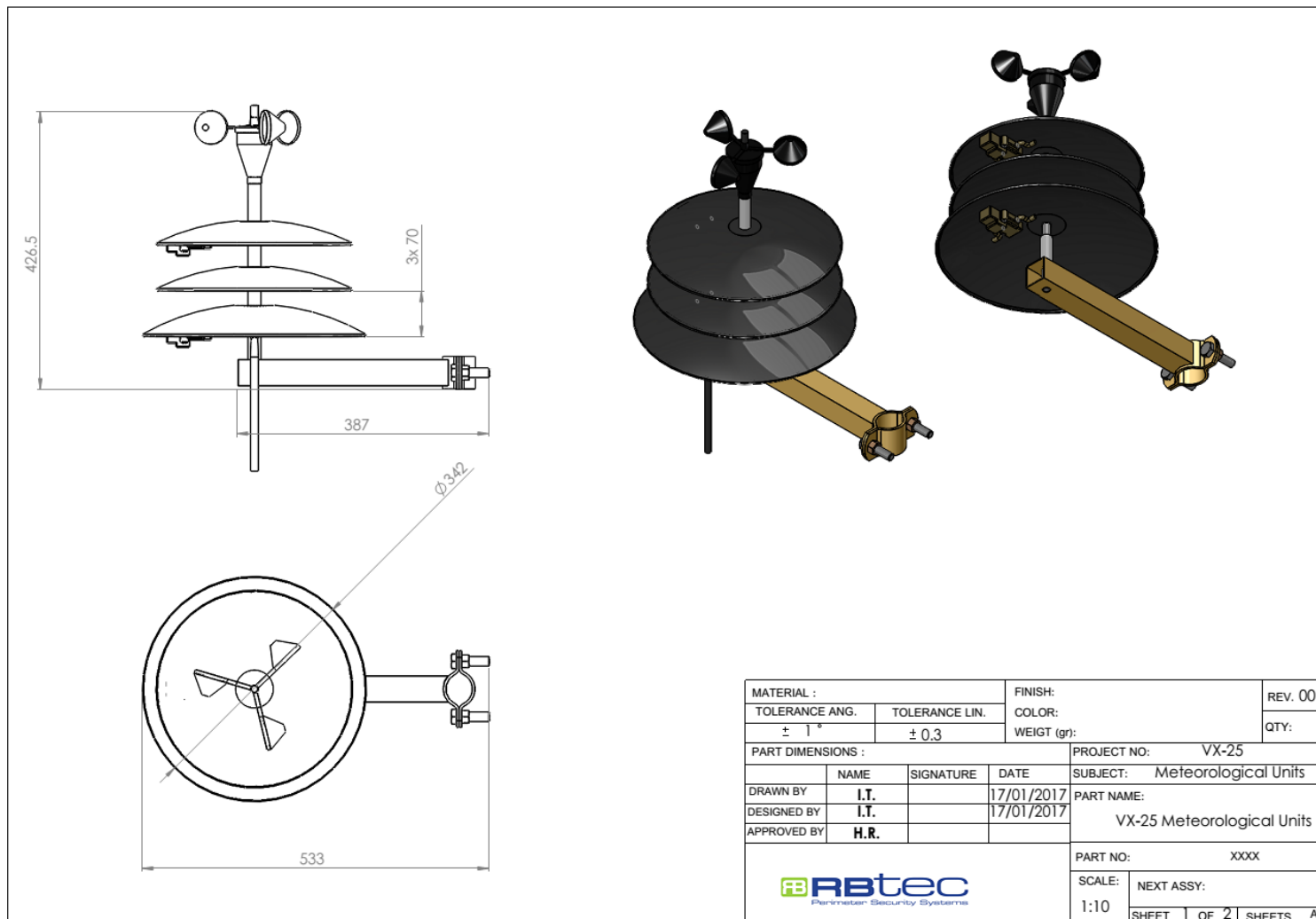


Without weather compensation unit





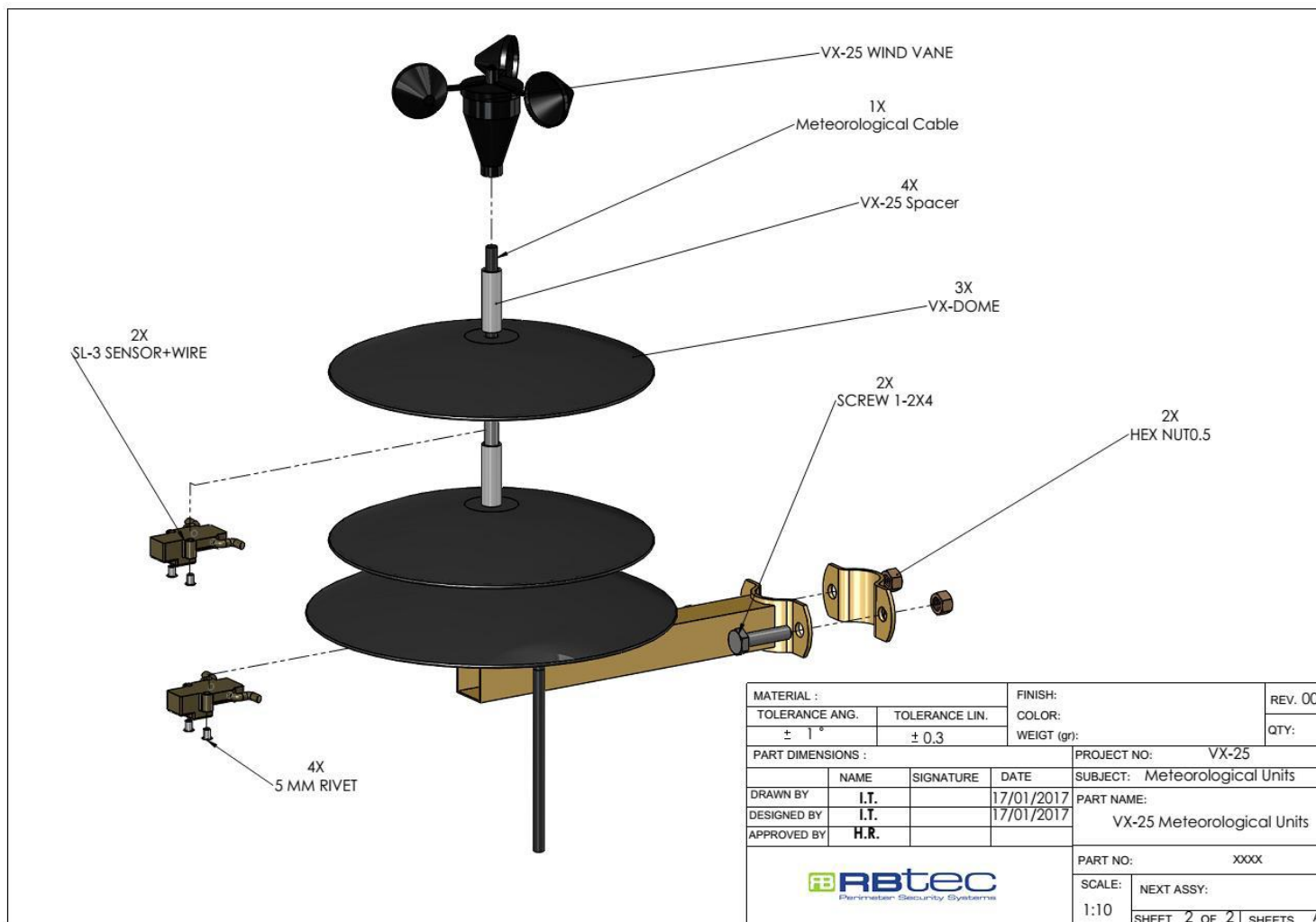
Weather Compensation Unit



\\RBTEC-MAIN\rbtec-main\Engineering R&D\ELECTROMECHANISM\Mechanics\Production Files\VX-25\



Weather Compensation Unit



\\RBTEC-MAIN\rbtec-main\Engineering R&D\ELECTROMECHANISM\Mechanics\Production Files\VX-25\



Troubleshooting

Attention!

The default status of the LPU processor is when everything works correctly there is only 1 LED lit (LED 7 for CH1 and 17 for CH2).

The LEDs strips on the LPU are an indication that the sensor cable is sensing vibrations and NOT for alarm.

There are 2 dedicated alarm LEDs on the lower left corner of the analyzer called ALARM 1 and ALARM 2.

There is 1 LED per zone that turn on once the analyzer has determined that the sensing from the sensor cable is a true alarm, the transition from sensing to a true alarm is determined by the sensitivity level.

Sensitivity/Alarm testing

Sensitivity test should be done by tapping on the fence only! Pulling, pushing or shaking of the fence is the **WRONG** way to test the system. Tapping on the fence should be done in a similar way of knocking on a door.

Periodic Testing Of the System

It's recommended to do a system test monthly to quarterly basis in order to verify proper operation of the system.



Troubleshooting

Symptom	Possible cause	Steps for identification and correction
<p>Frequent alarm or false alarms.</p> <p>1 2+ LEDs are lit/flickering/flushing while the fence is quiet without any reason that should cause an alarm.</p>	Loose connections between the sensor line and the LPU processor (analyzer) or in junction boxes.	Verify the sensor and the shield are tightly screwed in the screw terminals and there are no strands from the shield touching the sensing wire.
	Faulty sensor line/End line termination unit	<ol style="list-style-type: none"> 1. Check for physical damage on the cable, if the cable was crashed or tightly bent. 2. Check End-of-line unit for any physical or water damage.
	Faulty power source/ground, the power supply unit generates noise that causes false alarms OR bad/no grounding.	Change the power source with a 12v battery with no other grounding. If the flickering of LED 5 on CH2 stops replace the power supply, ground the GND (-) in the analyzer location to provide better ground.
	Sensitivity too high	<p>Lower sensitivity until system stabilizes.</p> <p>If you reached the lowest sensitivity and the system still too sensitive:</p> <p>Move to a lower tier of sensitivities:</p> <ol style="list-style-type: none"> 1. Move jumper CH1(JP4) and CH2 (JP5) to the other position (See page 11 on this manual "Sensitivity Jumpers"). For CH1-JP4 that would be the upper 2 pins instead of the lower 2 and for CH2-JP5 that would be the lower 2 pins instead of the 2 upper pins. 2. After doing so please restart the system by clicking the reset button next to power LED. 3. Re-adjust the sensitivity dip switches.



Troubleshooting

Symptom		Possible cause	Steps for identification and correction
2	Steady alarm/system does not reset	MCT end line resistor unit is faulty or damaged. System would not reset since it does not “see” the end of line unit.	<ol style="list-style-type: none"> 1. Check for physical damage on the end of line box or the cable that connects into it. 2. Measure resistance at the beginning of the cable between the sensor and ground. It should be close to 1M ohm.
		Loose connect of sensor cable to the board.	<ol style="list-style-type: none"> 1. Restripe and reconnect the sensor cable to the board.
3	No alarm/detection or low detection	Sensitivity too low or sensor cable is not connected properly.	<ol style="list-style-type: none"> 1. If you tap the sensor cable and there is no indication in the LEDs strip on the analyzer. Check and adjust sensitivity 2. Verify no wires from the ground are touching the sensor wire.
		Resistor still connected to the input.	Remove all resistors from sensor inputs.
		Faulty processor	<p>Take out the sensor cable and any resistor out of the sensor input.</p> <p>Once you do so the alarm LED for that input should lit, if nothing happens the analyzer is faulty.</p>
4	Wind causes alarms although the weather station is connected.	Weather Station jumpers are still on the board.	Remove jumpers as described in page 17 of this manual.
		Weather station is Incorrectly connected to the LPU (analyzer).	<p>Check connections in the LPU:</p> <p>Red - Rain</p> <p>Green - Wind</p> <p>Black&White - Ground(GND).</p>
5	LPU does not turn on after connection to power	Burned fuse	Check fuse, replace if needed (250v 500mA).
		The power + and – were connected in a reversed way.	Check if the card in connected correctly turns on, if not please contact the company you have purchased the system from.



This document has been written and produced by RBtec to provide the reader with as much technical and other information as possible about RBtec, its products and its services.
Copying any of its contents without prior permission from RBtec is strictly prohibited.
This information is provided for the purpose of initial evaluation of RBtec's products and services.
In keeping with RBtec's policy of continuous development, RBtec reserves the right to alter these specifications without notice.



Site: www.rbtec.com Email: info@rbtec.com