CELLWATCH
POWERING CONFIDENCE™

Tech20081110-1-1

Cellwatch Electrical Installation

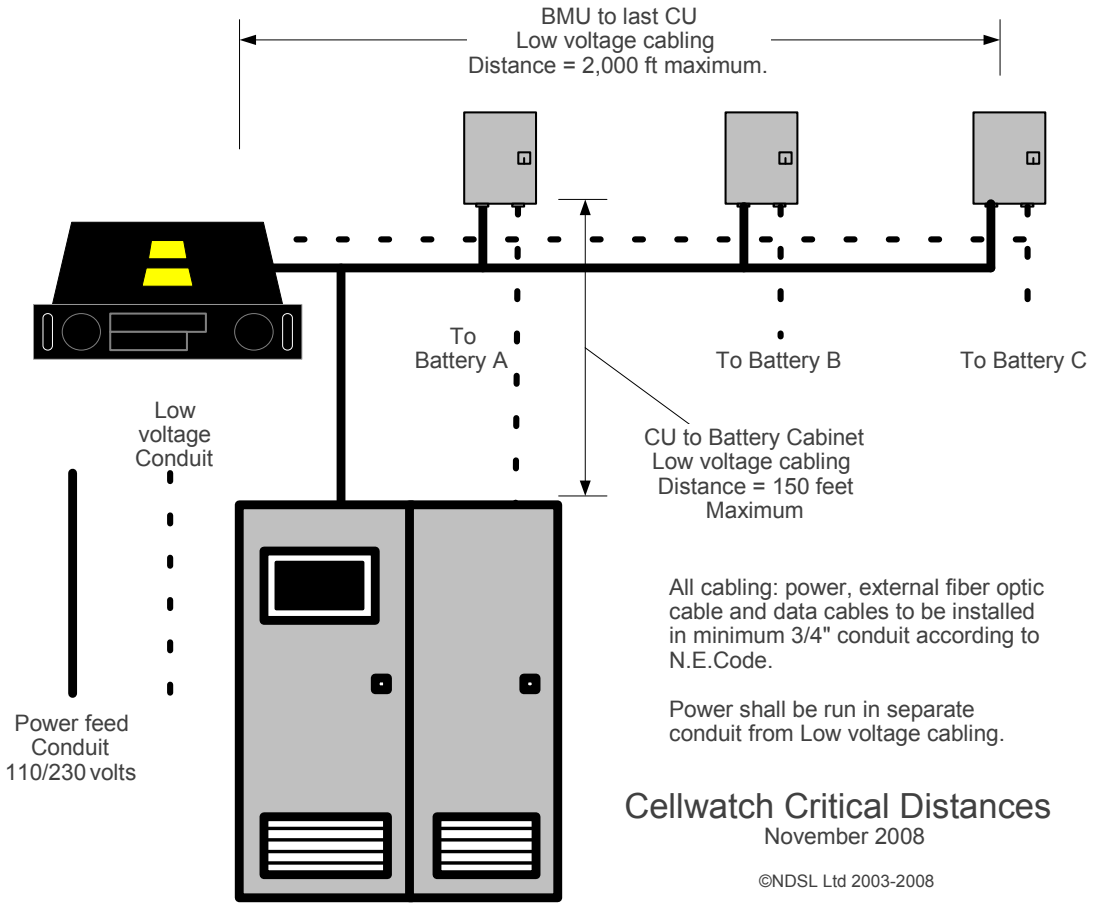
Installation should be carried out by competent qualified engineers in accordance with all relative Health and Safety Regulation and NDSL procedures.

All system components are to be installed to a system design agreed upon by all parties involved in a contract.

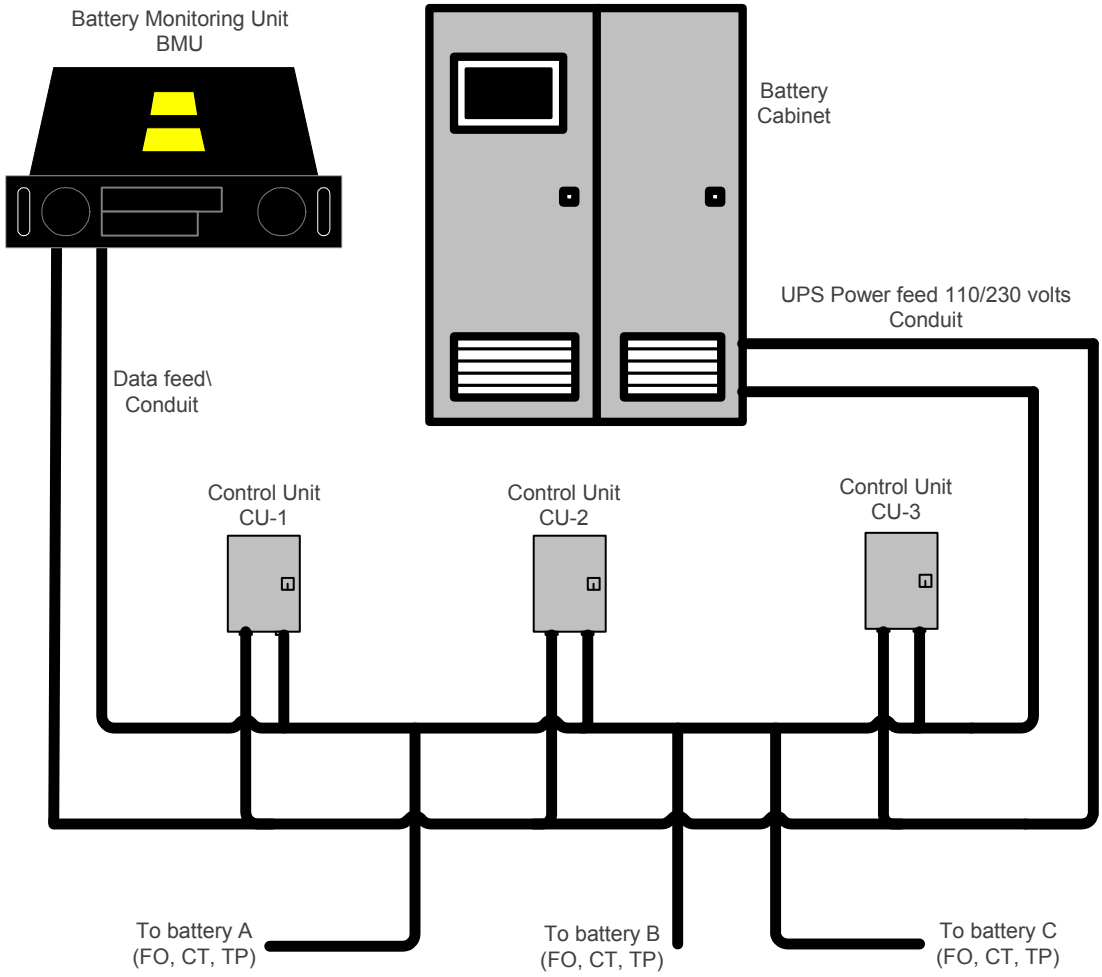
Cable entry to the steel cabinets used for housing the Battery Monitoring Unit and Control Unit should be via properly installed conduit, or cable entry glands. When making entry points into those cabinets, ensure that the integrity and strength of the cabinets is not impaired. The system is not designed to withstand sprayed liquids, either continuously or intermittently (for instance for cleaning purposes. Ensure that the cabinets are not mounted where water or other liquids will be sprayed or be present.

Critical Conduit Distances

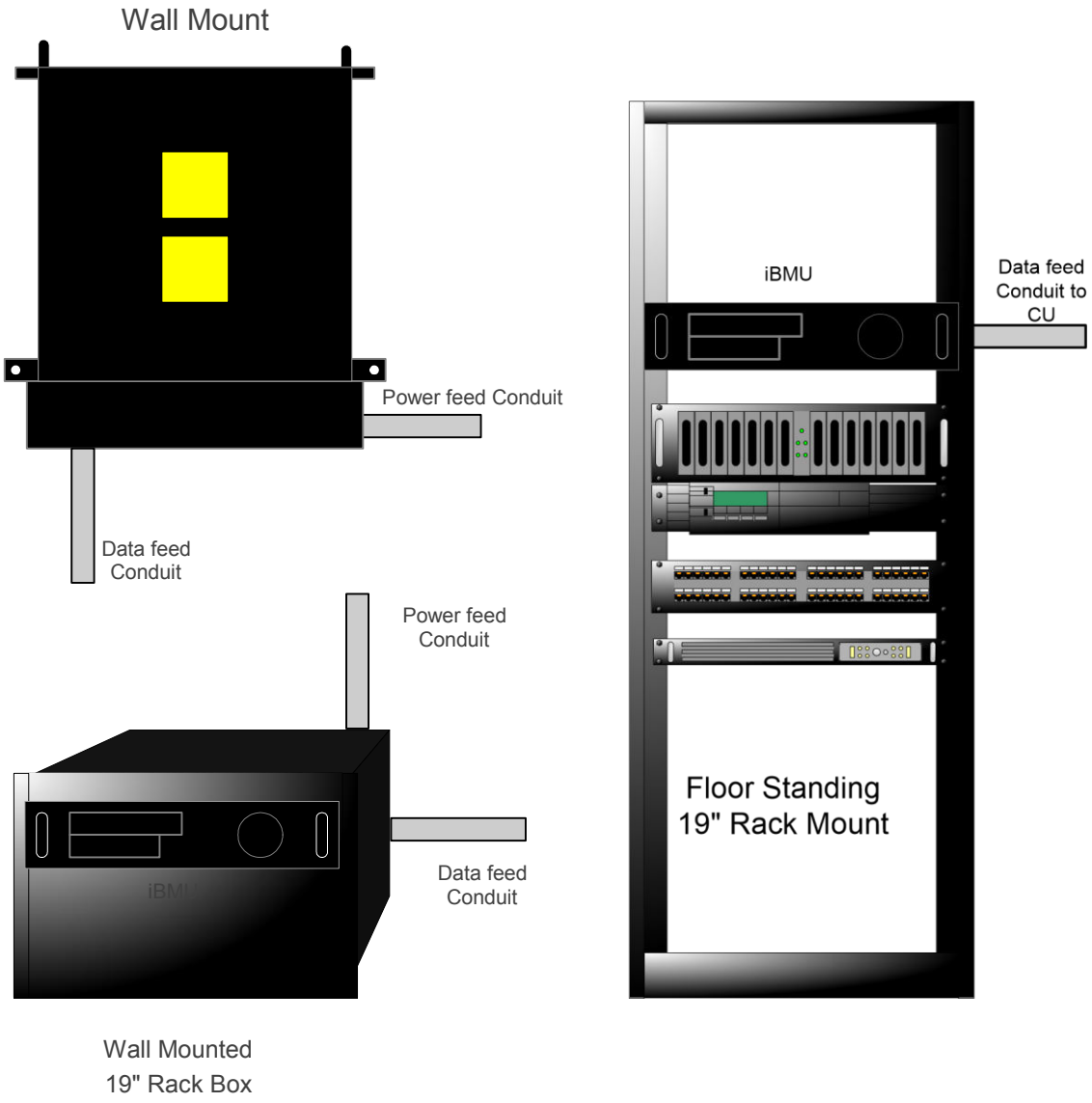
When installing the power feeds for the Cellwatch system maintaining the critical distances for the low voltage conduit as shown in the diagram below is very important. The distances shall be measured not by “line-of-sight”, but the actual length the cable will be spooled through the conduit. If the distances must be greater than specified, please consult a qualified Cellwatch installer or contact Cellwatch customer support to determine what added Cellwatch equipment will be required.



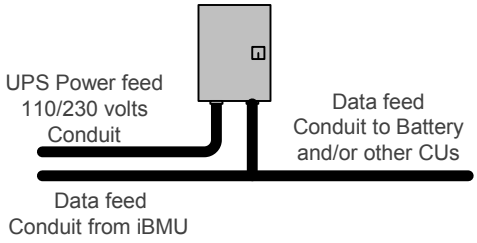
Typical Conduit Layout

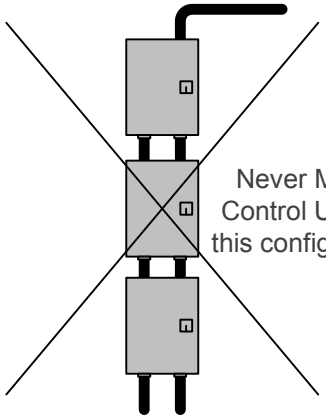


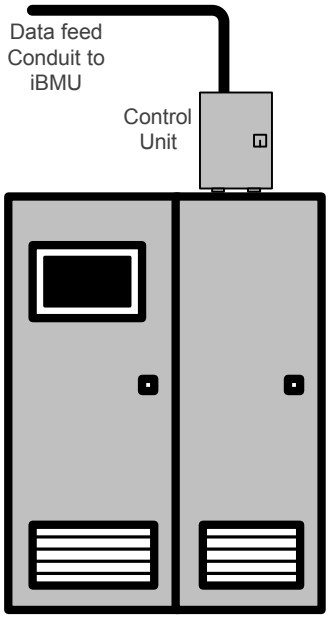
Typical iBMU Placement



Typical Control Unit Placement







Control Unit
Mounted on
Battery Cabinet

Physical Mounting and Location - General

CU Cabinet Mounting Overview

The CU is supplied with fixings appropriate to two types of mounting.

Supplied with each cabinet are the following items[1]:

Qty 4 minimum 12x1½" steel screw, combination head.

Qty 4 minimum plastic masonry wall plugs.

Qty 4 minimum SAE ¼" flat steel washer.

Qty 4 minimum ¼"x20x1" round head steel machine screw.

Qty 4 minimum ¼"x20 Hexagonal steel nylon insert, self locking nut.

The installer will also need:

(Note. Fixing should only be attempted by a qualified installer, equipped and using appropriate safety equipment, especially eye protection. Ensure all power cables in the vicinity of drilling are isolated).

For masonry fixings:

5/16" (8mm) masonry drill (carbide tipped or similar).

Cross head (Phillips, Pozi-drive□) screwdriver, size 2.

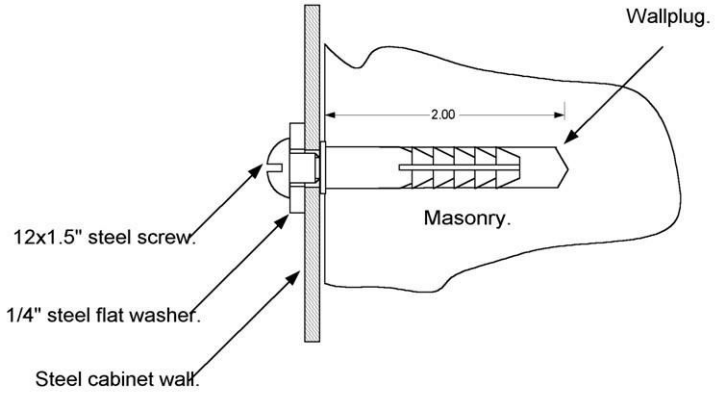
For sheet steel mounting surface:- 5/16" (8mm)
high speed drill .

Cross head (Phillips, Pozi-drive□) screwdriver, size 2.

Wrench, hexagonal size 7/16" AF.

[1] note, In UK and Europe, metric equivalents will be provided.

Cabinet Mounting Instructions - General



Masonry wall

Hold cabinet (either iBMU or CU) against wall, check for position and square.
Mark, using a pencil or appropriate marker through the cabinet corner mounting holes, the location of the four holes onto the wall.

Move the cabinet well away from the area to be drilled to ensure no drilling debris enters the cabinet.

Drill the four holes with the carbide tipped drill bit in a suitable electric tool to a depth of approximately 2 inches.

Place the plastic wall plugs supplied into each of the holes and tap home until there is no protrusion.

Place the cabinet back against the wall and starting with one of the two top mounting holes, place a washer on the 1½” screws provided and drive almost all the way home into the wall plug.

Repeat until all 4 corners are loosely fixed. Tighten all screws.

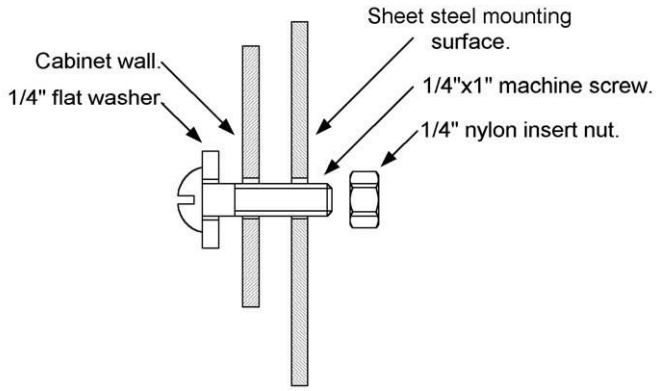
Clean out any debris that may have collected in the cabinet.

Sheet steel fixing

Hold cabinet (either iBMU or CU) against steel surface, check for position and square. Mark using a pencil or appropriate marker through the cabinet corner mounting holes the location of the four holes onto the wall.

Move the cabinet well away from the area to be drilled to ensure no drilling debris enters the cabinet.

Drill the four holes with the high-speed drill bit in a suitable electric tool.



Place the cabinet back against the surface and starting with one of the two top mounting holes, place a washer on the 1” machine screws provided and insert through the cabinet and the sheet steel mounting surface.

Attach nut to rear of machine screw using 7/16” wrench.

Repeat until all 4 corners are loosely fixed. Then tighten all screws and nuts.

Clean out any debris that may have collected inside the CU cabinet.

iBMU Mounting

Installation should take place as part of the Cellwatch Battery Monitoring System installation and should only be carried out by a qualified Cellwatch installer.

The iBMU should be installed either in a standard 19” rack mounting enclosure, or mounted on a wall using the iBMU Wall Mount Adapter Kit.

When fitted in a rack enclosure, care should be taken to ensure that airflow is not impeded. Air intake is at the front of the case. Air outlet is at the rear and top of the case.

Rack Mounting

Due to the large variations in rack fittings from different manufacturers, the rack mounted IBMU is NOT supplied with fixings. The IBMU should be adequately supported in the rack using shelf supports and retained in place with retaining fixtures.

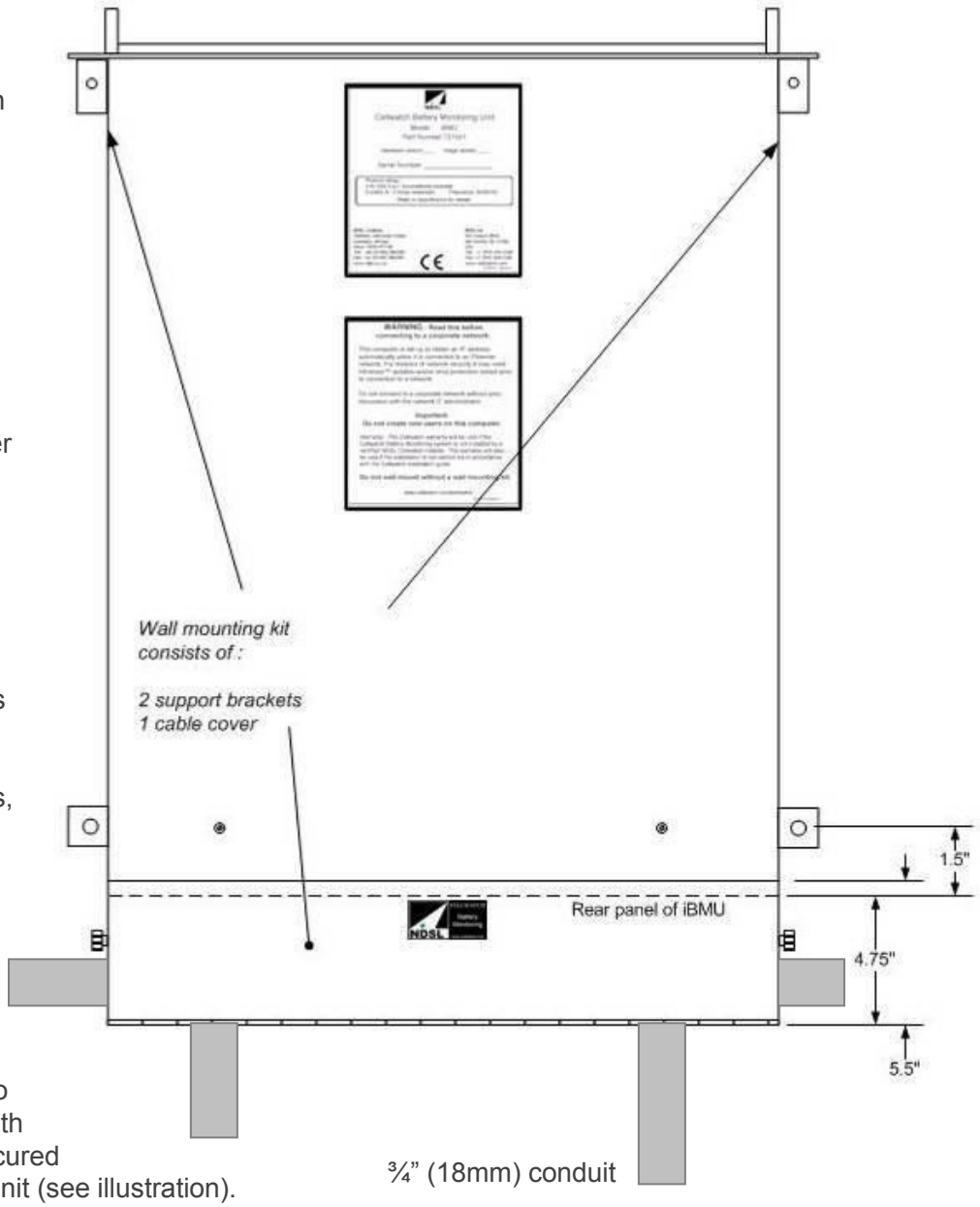
Contact your racking supplier for suitable shelf supports and retaining fixtures.

Wall Mounting

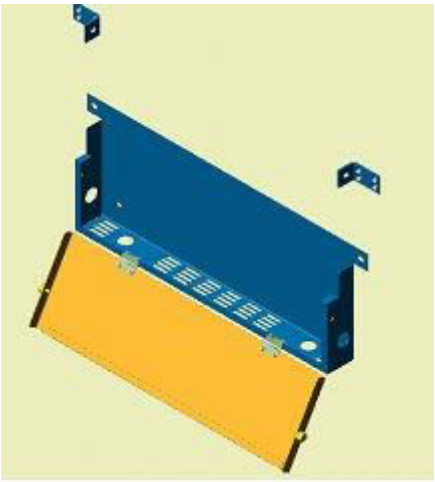
When fitting to a wall using the optional NDSL Wall Mounting Kit, ensure there is adequate space around the iBMU to allow airflow. Allow at least 4” between the sides, top and bottom of the unit, and any adjacent surfaces.

In particular allow enough space for the hinged front doors to be fully opened above the unit.

The unit should be mounted with the cable connections to the bottom of the unit and with the two support brackets secured to the wall at the top of the unit (see illustration).



Wall Kit Mounting Instructions

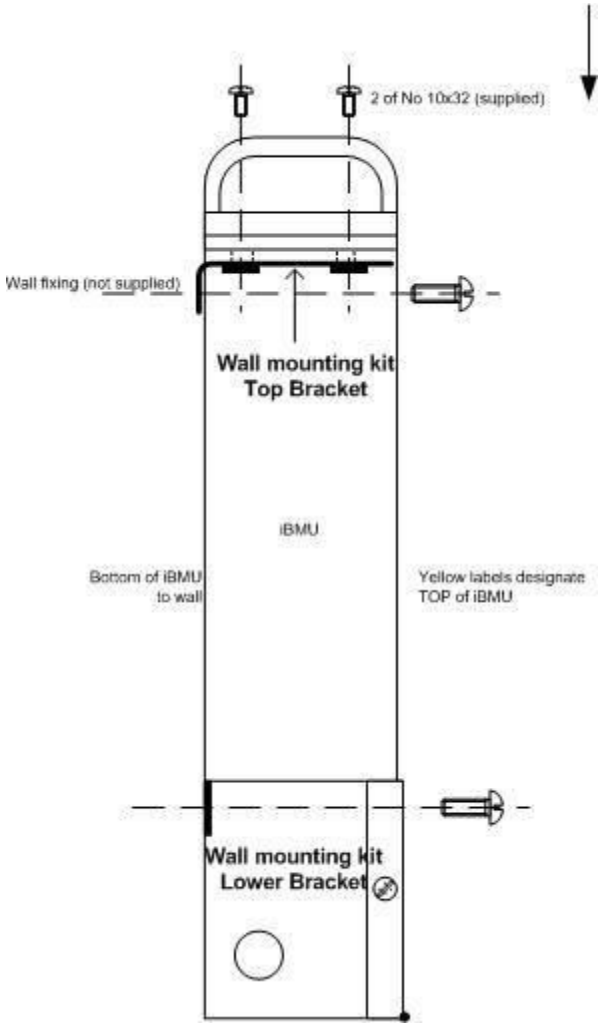


to fix the iBMU to a wall or panel.

The wall mounting kit comprises two upper brackets and a lower main body as shown left, complete with a bag of fasteners.

The lower bracket enclosure has a hinged door for concealing the cables and other material at the back or bottom of the iBMU. Cables/conduit should be brought through the holes already pre-drilled in the bracket enclosure.

The top ‘L’ brackets are mounted with the 4 of 10 x 32 supplied to the 19” rack mounting ears and used



Prepare the iBMU Chassis.

Take the iBMU main body and place it on a secure horizontal surface with the yellow label facing upwards.

Fix the angled ‘L’ brackets to the mounting flange of the iBMU with the four 10x32 screws provided.

The wall side of the iBMU is the bottom or non-labeled side. Ensure the ‘L’ brackets are mounted under the iBMU flanges with the wall mounting hole towards the bottom or non-labeled side of the iBMU as shown in the sketch here.

Hold the iBMU carefully against the wall in the correct position ensuring there is sufficient room for the two doors at the top of the iBMU to open. Mark where the two top wall mounting holes need to be.

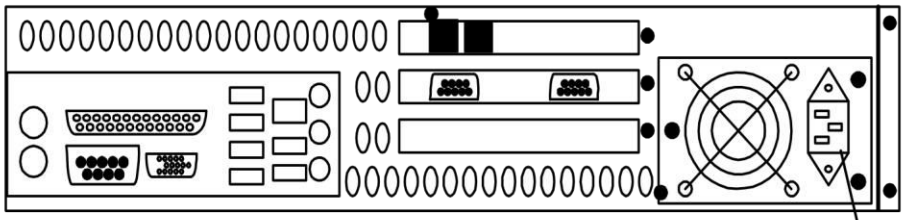
Take the iBMU away from the wall and protecting it from dust and drill debris, drill the wall and use the appropriate wall fixing (not supplied) to mount the iBMU by the top fixings to the wall.

Position the bottom bracket over the bottom of the iBMU – note the cover slides around the iBMU. Mark the holes, drill the holes as above and fix.

iBMU Electrical Connection

To wire directly to the iBMU PSU from power fed directly from conduit attached to the iBMU lower mounting bracket use the rewirable IEC plug provided with the iBMU packaging.

Rewirable IEC Plug



iBMU rear view

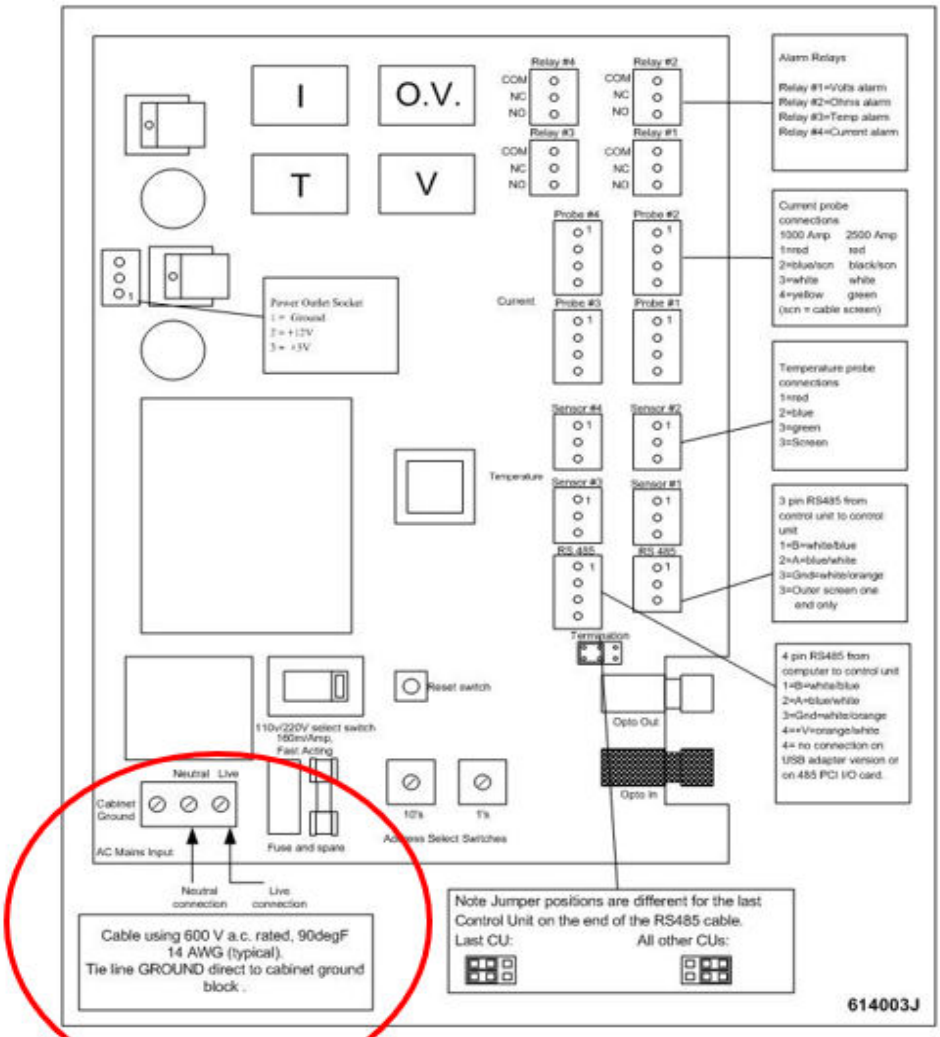
IEC Plug connects here.

Note:

This is the rear view of the iBMU that sits into the lower mounting bracket. The power feed to the wired rewirable IEC plug should be positioned and/or strapped such that the cabling force will not pull the IEC plug from its socket.

The Control Unit (CU)

Control Unit Power Connection



CU power input connector

Physical Mounting of Control Uits

The control unit comes ready drilled for wall mounting and recommendations in the section above entitled System Installation and Cabinet Mounting Instructions should be followed.

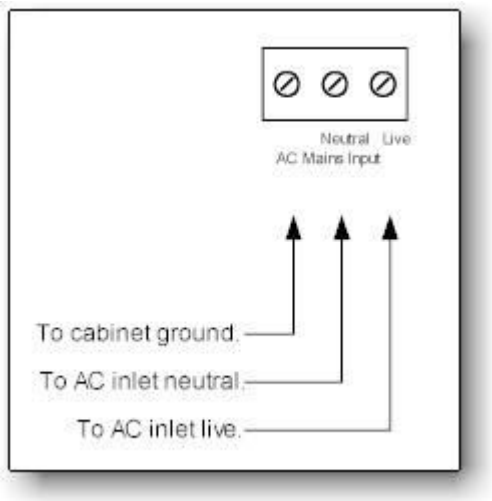
The Control Unit is ready punched on the lower surface for fitting of ¾“ conduit.

It is a condition of UL Approval that installation of electrical conductors be carried out in accordance with the relevant sections in the National Electrical Code.

In particular, Article 300 – (Wiring Methods) of the National Electrical Code and Article 346 – (Rigid Metal Conduit) of the National Electrical Code define the applicable standards and recommended installation procedures.

Failure to conform to the above standards invalidates current and future UL approval of the equipment.

Power Inputs Description



Mounted on the lower left corner of the PCB is a three way screw terminal connector. This provides for power input from a suitable AC power source, wired in compliance with National Electrical Code and / or other local statutes.

A suitable, clearly labeled and identified, safety isolation switch should be selected and fitted into the feeds to the CU and BMU. Both the CU and BMU should have feeds from a UPS supported power source.

All cabling to the CU and BMU should be installed via grounded steel conduit.

For ratings of connection cable see the cable selection guide in this handbook. The input power is protected by a fuse. Only replace with the correct rating and size of fuse as stated in the Control Unit.

Connections are, from left to right:-

- Ground connection from Cabinet Grounding Lug.
- AC inlet neutral connector.
- AC inlet live connector.