IPS Boxed Solution
Combo Cluster

INSTALLATION MANUAL

Specifications

The Impro IPS Combo Cluster comes pre-installed with an integrated DC Power Supply, a Cluster Controller Module and one to three Expansion Modules. A maximum of four Expansion Modules can be accommodated. Wired connection cables and space for a 12V gel battery (available separately) are provided.

Working Environment

IPS enclosure............................... Designed to work in an indoor (dry) environment similar to IP20, the housing is not sealed against water.

Switched Mode Power Supply

Input Voltage.................... 90 V AC to 240 V AC at 50/60 Hz
Power Rating.................... 75 W (Standard)
150W (For Digital I/O Cluster)
Output Voltage................. 13,8 V DC ±0,3 V DC
Max Current Output......... 5 A continuous for 75W version
10 A continuous for the 150W version
(1,15 A reserved for battery charging)

Net power consumption will depend on the type of modules and peripherals that are installed and connected. Refer to the installation manuals for the individual modules (and their peripherals) for this information

Communication

The Impro IPS Cluster Combo may be connected to a Host Computer via RS485 or Ethernet (on the Cluster Controller Module).

For further details on communications, consult the Cluster Controller Installation Manual (HCM320-0-0-GB-XX), which is included with the Combo Cluster

INSTALLATION INFORMATION

Accessories

CAUTION: **DO NOT use the included Metal-oxide Varistors (25 Vrms, 500 A, 77 V max clamping for the relays) with mains power applications.**

Find the following when unpacking the IPS Combo Cluster:
- Housing, consisting of the IPS Case and a Cover
- Housing Case is fitted with:
  - One DC Power Supply Unit
  - Power supply wiring harness with an integrated battery charging PCB and battery fuse.
  - One Cluster Controller Module and its Installation Manual
- Installation Manual for the Expansion Module type that is fitted.
- Ziploc bags, containing the following:
  - Metal-Oxide Varistors (MOVs) 25 V_{RMS}, 500 A, 77 V max clamping - one MOV for each relay on the Expansion Modules.
  - Fixed Address Labels for each of the included Modules, for installation site mapping purposes (see Fixed Address Labels on page 6)

NOTE: *Expansion modules are pre-installed in accordance with the item number that was ordered. See the IPS Combo Cluster Product Specification Catalogue (IPS351-0-0-GB-XX) for the available combinations and their item numbers.*

The digital I/O Combo Cluster is fitted with a larger (150W) power supply.

No mounting hardware is included in the packaging - the installer should obtain fasteners that are appropriate for the mounting surface.

General

AC Supply Connection

The installer will need to supply a 3-core mains power supply cable, which must be connected to the mains terminals on the DC power supply. (See Figure 1, on page 4, and "Connecting an AC mains power cable" on page 5)

Remotely Mounted Expansion Modules

Additional expansion modules (Wiegand Reader Modules, Antenna Reader Modules, Digital I/O modules, etc) may be connected to the Cluster Controller Module's S-Bus Host Terminal, and mounted up to 150 m away. See the Cluster Controller Module Installation Manual (HCM320-0-0-GB-XX) for details.

Mounting the IPS Cluster Combo

Choose a position on a suitable firm mounting surface that is sheltered from the weather and allows for the convenient routing of cables and possible future expansion.

CAUTION: **Make certain that you mount the IPS Cluster Combo on a vibration-free surface.**

NOTE: *You can mount onto virtually any surface including metal.*

NOTE: *During mounting, we recommend unplugging the IPS Cluster's Enclosure Cover Earth Strap and removal of the housing lid. After installation, we strongly recommend you reattach the Earth Strap to the Lid.*

Hold the IPS Cluster against the wall/mounting surface and mark the position of the mounting holes on the mounting surface. Drill the mounting holes and secure the IPS Cluster to the mounting surface, using suitable screws and wall plugs, nuts and bolts or rivets.
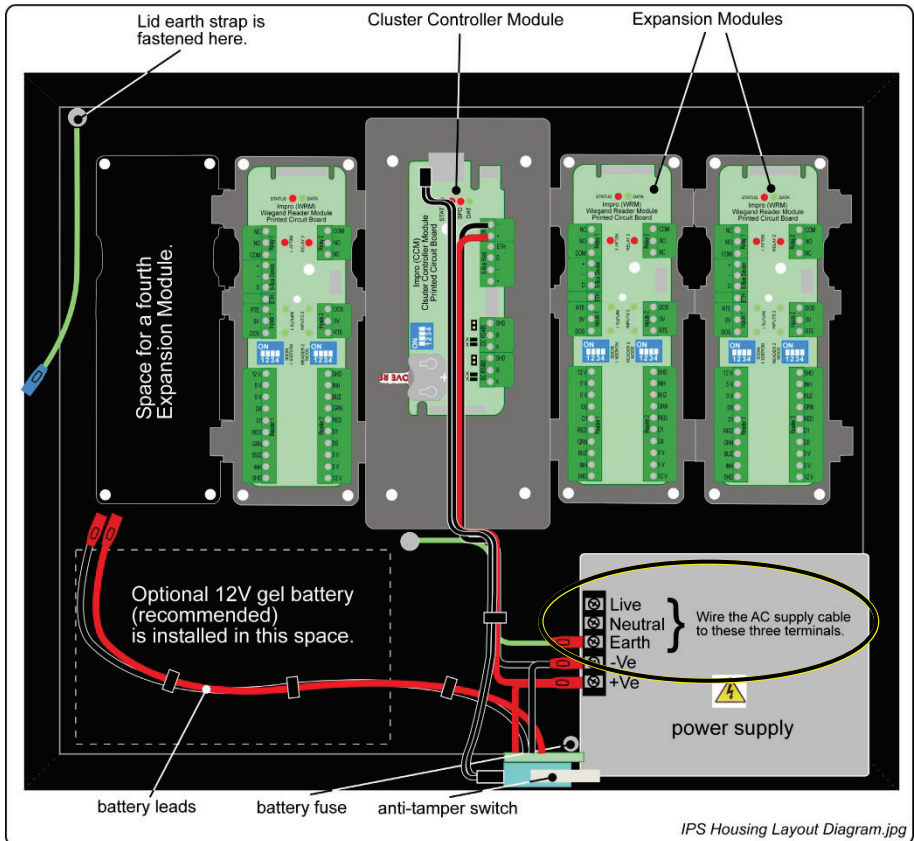
Wiring the IPS Cluster Combination

1. Remove the Battery Tag from under the Button Cell on the Cluster Controller Module
2. Follow the "clustered" wiring instructions in the Installation Manuals for the Cluster Modules that are fitted in the IPS Housing.

ELECTRICAL CONNECTIONS

Key Component Positions

Figure 1: Key component positions, electrical mains connection highlighted

NOTE: *The above example shows the HMW932 model, with three Wiegand Reader Modules installed, and the Cluster Controller Module housing cover removed.*

         In this case the power supply is a 75W version (with a 6.3 A battery fuse) – but the AC supply wiring is the same for all the IPS Combo Cluster variants.

         In the case of the 150W power supply (which is longer, and extends underneath and beyond the location of the Anti-tamper Switch); the battery fuse is rated at 10 A.

Connecting an AC mains power cable

3. Open the Cabinet.
4. Choose a mains power cable entry point that suites the installation and remove the corresponding knock-out tab from the IPS housing.
5. Insert a suitable gland/grommet (not included) in the hole and pass the three-core mains cable though the gland/grommet, into the IPS housing.
6. Establish a safe and tidy route for the cable to get to the power supply's mains terminals.
7. Strip back the out sheath of the mains cable ~ 30 mm
8. Strip the Live, Earth and Neutral cores back by ~ 6 mm and clamp these onto the power supply terminals (indicated in **Figure 1**).
9. If the earth strap between the lid and the main housing was removed to allow for the lid to be moved out of the way – then be sure to replace this earth strap when replacing the lid.

NOTE: The DC power to the Cluster Controller and the Expansion Modules has been factory wired. The remainder of the module wiring is explained in the relevant Installation Manuals – these manuals are included with the hardware.

Fuse Information

Power Supply	Expansion Modules fitted	Battery Fuse Rating
75W version	Wiegand/Antenna Reader Modules	6.3 A 250 V Slow-blow (5 mm x 20 mm)
150 W version	Digital I/O Modules	10 A 250 V Slow-blow (5 mm x 20 mm)

Table 1: Fuse Ratings

NOTE: The larger (150W) power supply is necessary in the case of Digital I/O (DIO) clusters, as the DIO Modules have four relays per module, which will add up to sixteen relays in a fully populated DIO IPS Combo Cluster.

Replacing the Battery Fuse

CAUTION: **Ensure that you have disconnected the mains power supply to the Power Supply Combo before replacing the fuse.**

1. Disconnect the mains power supply to the Power Supply Combo.
2. Open the Cabinet.
3. Remove the old fuse from the fuse holder clips
   (Location shown in Figure 1, page 4)
4. Insert a new fuse into the Fuse Holder
   (See fuse value in Table 1 on page 5 for the correct fuse specification).
5. Close the Cabinet.
6. Reconnect the mains power supply to the IPS Cluster.

Fixed Address Labels

On installation of each IPS Combo Cluster, do the following:

- Obtain, or prepare a sketched plan of the installation site.
- Attach the additional Fixed Address Labels, packaged with the IPS Combo Cluster, in the corresponding position on the sketched site plan.
- When the system installation is complete and all the IPS Combo Clusters are represented on the site plan by their Fixed Address Labels, file the site plan for future reference.

USER NOTES

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GUARANTEE OR WARRANTY

CAUTION: **We reserve the right to nullify the products guarantee or warranty where you have not properly installed the Metal-oxide Varistors.**

This product conforms to our Guarantee or Warranty details placed on our Web Site, to read further please go to www.impro.net.

This manual is applicable to the "Wide" IPS Combo Clusters: HCI9XX-0-0-GB-XX, HCL9XX-0-0-GB-XX, HCS9XX-0-0-GB-XX, HCW9XX-0-0-GB-XX (The last two digits of the Impro stock code indicate the issue status of the product).			
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