



IDRATEK

INTELLIGENT AUTOMATION

IPS-002 Intelligent Power Supply

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The Intelligent Power Supply provides a battery backed power source for a typical sized installation of the IDRANet system. The unit provides four separate relay switched spurs delivering up to 1 Amp each, via a standard IDRANet connector. It features a battery back-up and charging circuit to provide a 400mA (max) charging current optimised for a 4Ah lead acid battery. An additional onboard microprocessor also provides Reflex capability, IDRANet connectivity, and current monitoring functions. A further low current connection provides an 'always on' option for an interface style module eg. PCD/PCA.

The IPS-002 not only provides continued network function in the event of mains power failure, but is also instrumental in the management and monitoring of power delivery to the individual spurs and provides some isolation capabilities in the event of bus faults. A brief listing of the features is summarised below.



Spur Characteristics

- 4 Switched Output spurs
- 1 Always-On spur (125mA max)
- Current capacity: 1A per spur (4A total)
- Spur voltage: 13.5V DC regulated (no load)

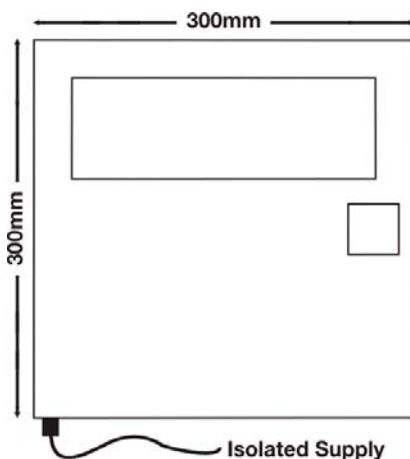
General Features

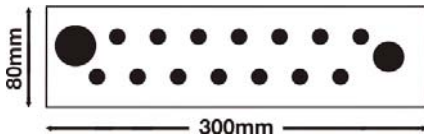
- Automatic switchover to battery back up on mains power failure
- Designed for 4Ah Lead Acid battery (e.g. Yuasa NP4-12) although larger batteries may be fitted external to enclosure.
- Data and power isolation on each spur
- Each spur double protected using electronic current trip and mechanical fuse
- Fuse protected Mains and battery circuitry
- On board data and audio bus loading circuits via link option
- On board data and audio bus spike protection
- Key secured enclosure with window for viewing indicator LEDs
- Enclosure tamper detection
- Additional 6M space (105mm) for DIN modules



Functional

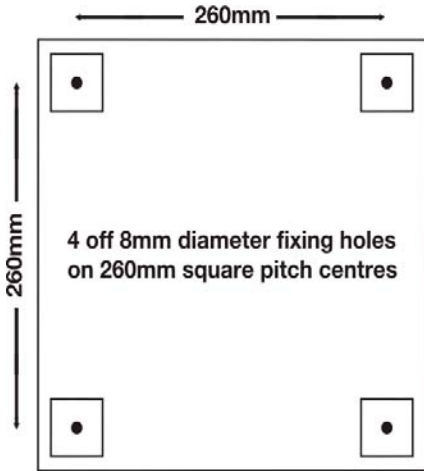
- Status indicator LED
- Spur power indicator LEDs
- Mains and Battery indicator LEDs
- Current level on any spur can be interrogated at any time
- Current measurement resolution ~5mA per spur (sampled at ~40Hz)
- All four channels capable of independent Reflex functions
- Three independent Reflex triggers for each channel :
 - Current level equals or exceeds user defined 'High' limit
 - Current level equals or falls below user defined 'Low' limit
 - Current level change exceeds user defined 'Delta' limit (auto-datuming)
- Chronometer with leap year correction and Reflex functions :
 - Two independent chronometer based Reflex triggers
 - Two independent time interval based Reflex triggers
- Tamper, battery and mains detect inputs with associated Reflex functions
- Module Initialise trigger
- Fully IDRANet Compatible





Electrical

- Operating voltage 230Vac (50Hz)
- Power Consumption 75W maximum
- Supplied pre-fitted with 2m of mains cable for connection to isolated supply
- 2A MCB should be used to protect unit



Environmental

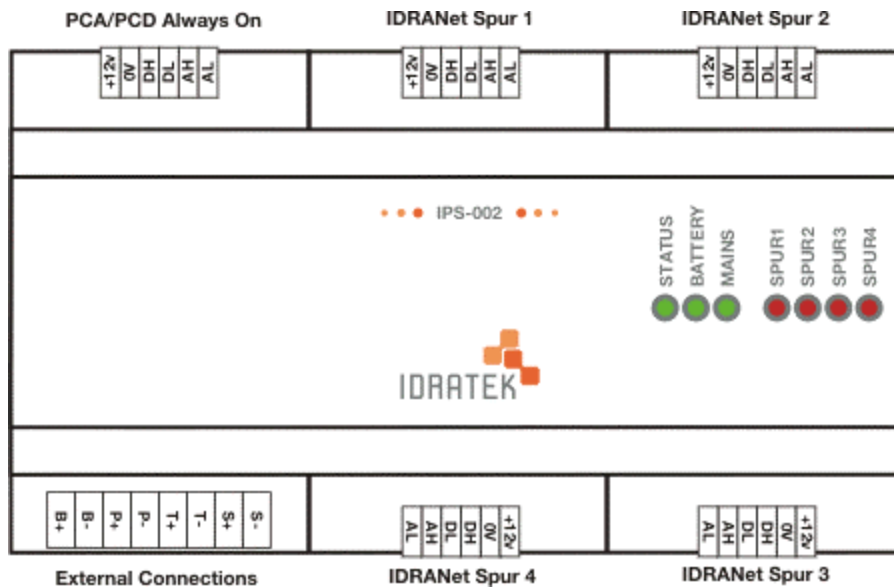
- Operating temperature 0°C to +40°C
- Operating humidity 5% to 95% (non-condensing)

Mechanical

- High quality steel enclosure with clear polycarbonate window powder coated in textured RAL7032
- Enclosure provides IP65 protection to EN60529/10.91
- Dimensions 300mm x 300mm x 80mm (WxHxD)
- 4 x 8mm fixing holes on 260mm square pitched centres
- Generous provision for cable entry via 14 x PG11(19mm) holes which are supplied with blanking grommets
- Access only by opening lid (180° opening), via special key
- Weight (without battery) 4kg, 5.7kg (approx.) with 4Ah NP4-12

Module Connections

The IPS-002 unit incorporates the IPD-002 (DIN) module as shown below. This provides 4 x IDRANet switched outputs as well as an always-on IDRANet output intended to connect to a PC interface module such as a PCA-001 or PCD-001. The DIN module does not itself contain a power supply – its function is solely to provide the electronics which manage the charging of the external Lead Acid battery and which manage and monitor the spur connections. A separate switch mode power supply provides the unit (and via this to IDRANet) with a regulated DC supply from the mains. The IPS-002 is shipped pre-wired to the fitted DC power supply, battery, tamper switch and DC side on-off isolator. These connections should not be altered but, if not required, the tamper switch may be by-passed using a shorting link.



Example Connectivity

The IPS-002 provides controllable and monitored connections to 4 IDRANet spurs and a single 'always on' spur connection intended typically for an IDRANet/PC interface module (eg. PCA-001/PCD-001) - the idea being that in a Cortex managed environment the PC could control all 4 switchable spurs whilst still maintaining communications with the IPS-002 at all times. However, as with other IDRANet modules there is a high degree of flexibility and the Reflex capabilities mean that it is possible for the unit to operate entirely autonomously (without a PC) and indeed PC interface modules can be utilised on any of the spurs subject to the understanding that they may be switched out as a result of any programmed operating conditions.

The following diagram illustrates typical usage within a Cortex managed network. Here the IPS-002 is connected to Cortex via a PC interface and to two IDRANet spurs.

