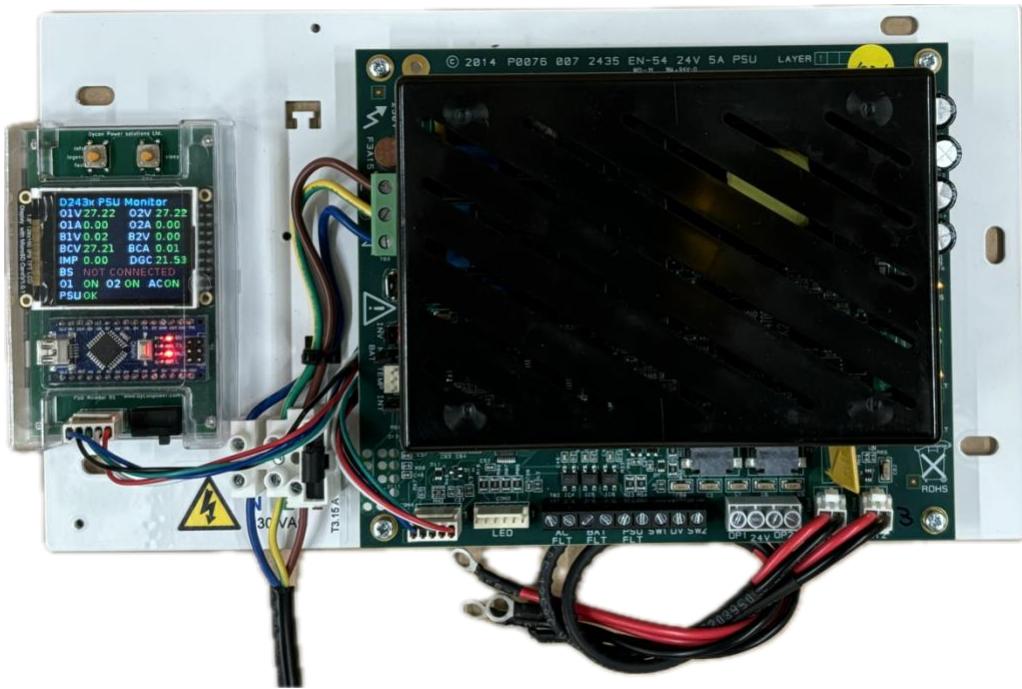


D2435-M-MS1-PSUMON-01



24VDC 5A Intelligent Power Supply with Real-Time Monitoring & Display of Voltages, Current-Drawn, Battery Impedance & Operational Faults



- 24VDC 5A switched-mode power supply
- Micro-processor monitored & controlled
- On-demand battery charging
- Constant battery impedance monitoring
- Integral ambient temperature monitoring
- Integral real-time monitor & easy-to-read colour display
- 3 x opto-relay fault outputs
- 1 x external & 3 x internal status LED's
- Supplied pre-wired & assembled on a 2mm steel mounting plate

Dycon D2435-M-MS1 is a high-efficiency, 5 Ampere switched-mode, dual-output, 'intelligent' 24VDC power supply (PSU) with an integral Dycon PSUMON-01 PSU monitor and display. The PSU module features on-demand load sharing to provide exceptional flexibility, allowing rapid, large-capacity, battery charging with either extended, standby, hold-up duration at light loads, or short, high current, peak loads where the spare capacity is diverted to battery charging. It is fitted with a constant-operation temperature sensor which automatically adjusts the charging rate to ensure that a battery is never overcharged simply because the ambient temperature has risen. Rather than relying on simple voltage readings to gauge the battery condition, these units constantly check and display the batteries' impedance and voltage which gives a more accurate reading and warning of impending problems and extending battery life. The integral PSUMON-01 monitor and easy-to-read display shows, in real time, all the operational data, without the need for multi meters. A selectable fast-scan mode shows even the smallest changes in milli volts and milli-amperes, any fault messages are displayed in red. The D2435-M-MS1-PSUMON-01 is supplied mounted and wired on a 2mm steel mounting plate, a remotely-mountable Green LED status indicator, all battery, earth and display connectors are also included in the carton..



DYCON
power solutions

D2435-M-MS1

24VDC 5A 'Intelligent' Power Supply Module

Dycon's D2435-M-MS1 has unique features that improve system performance and reliability

A critical security system power supply needs to be robust to ensure continuity of protection. The D2435-M-MS1 has additional performance features built-in that most other brands fail to provide. These will ensure that not only does the unit provide reliable power when needed, but also continuously monitors total performance, even regularly checking batteries' performance to ensure that it will operate correctly when the mains power is lost.

Main Features

The D2435-M-MS1 is a high-efficiency, 5 Amp power supply, providing a nominal 27VDC with two separate 12V lead-acid batteries for standby operation when AC power is lost.

These features include:

- **Microprocessor controlled operation and protection.**
- **High-efficiency technology uses far less electricity and produces less heat than existing units.**
- **On-demand battery charging and load output current sharing**
- **Battery impedance monitoring.**
- **Automatic output reconnection after short circuit fault.**
- **No user-serviceable fuses, both outputs are protected by electronic E-fuses.**
- **Two independent, monitored, and controlled outputs.**
- **Two control inputs that can be used to switch the two outputs.**
- **Three opto-relay fault outputs for AC Power Fail, Battery Fault, PSU Fault**
- **1 x Green Status LED for fitting to the lid, supplied with a 350mm cable.**
- **3 x PCB-mounted LED fault indicators and 1 x PCB-mounted status LED indicator**
- **Over-voltage output protection**
- **On-board ambient temperature sensing**
- **Supplied wired & assembled on a 2mm mild-steel mounting plate to facilitate rapid change-over**

Dycon D2435-M-MS1 offers the following operational benefits: -

On-demand load sharing capability

This feature runs automatically and continuously giving the power supply exceptional flexibility. It allows rapid, large capacity battery charging with either extended standby hold-up duration at light loads, or short high current peak loads where spare output capacity is diverted to battery charging.

Each battery is connected separately, why?

Most 24VDC systems use 2 x 12VDC batteries connected in series to provide the 24VDC needed to drive the system, this means that the only way to check each individual battery's performance is to disconnect it from the system. Dycon's D2435-M-MS1 connects each battery separately, then seamlessly combines the 2 x 12VDC outputs into 24VDC, enabling the unit to constantly measure each individual battery's performance and report any problems individually.

Battery impedance monitoring

The weakest part of a conventional power supply is its batteries. Currently, most systems rely on battery voltage measurement which cannot predict, accurately, if there is a problem until it is too late. The D2435-M-MS1 regularly measures the impedance of the batteries and can flag up deterioration outside certain parameters.

Constant ambient temperature monitoring to control the battery charging rate

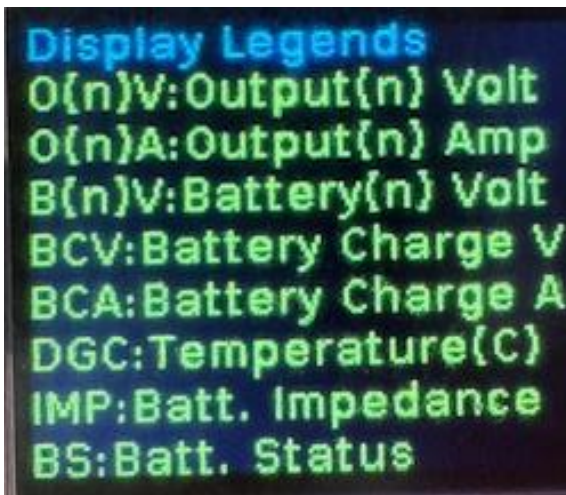
A battery charging at too high an ambient temperature will dramatically shorten its life! Dycon's D2435-M-SM1 has on-board sensors to automatically adjust the charging rate depending on the temperature.

PSUMON-01

Real-Time PSU Monitoring and Display

Many of today's corporate operations increasingly rely on critical infrastructure resilience solution hardware to keep their business and premises safe and functioning, this can be compromised if the power that they require to operate these systems fails. Dycon's PSUMON-01 provides a simple way of providing advance notice of impending and actual on-site problems by constantly monitoring how the connected Dycon D2435-M-MS1 PSU is operating. The unit is plugged into the PSU's on-board data-port and, while connected, the display shows, in real time, all the operational data, without the need for multi meters. A selectable fast-scan mode shows even the smallest changes in milli volts and milli-amperes, any fault messages are displayed in **RED**. Both 12VDC batteries are independently monitored and the precise measurement also shows any bad battery connections. The charging voltage and current depends on the battery temperature and the smart charging of the PSU is clearly shown on the display. The integral impedance tester shows the battery status This real time data also provides all the information on a single screen to ensure that the correct battery and amperage is installed and also meets the EN54-4 fire standards on battery backup and re-charging times.

Installer Friendly



Switch-selectable legend key, useful for training new engineers.



High speed sampling rate displays peak-to-peak voltages and current created by the connected equipment.

The D2435 has the one of the lowest power consumptions on the market, it is same with the PSU monitoring unit, which draws its power from the PSU itself, it does not need a separate battery or power feed. The in-depth PSU monitoring provides helpful data eliminating returns due to connection issues with other equipment, cabling or incorrect multi meter settings displaying all information on a single screen. This saves valuable time compared to connecting a multi-meter to the outputs, batteries to monitor these one by one. A PSUMON-01 monitor removes the need to carry out separate tests to check voltage, current or impedance, a single operation tests all these functions as well as checking and displaying that the PSU itself is still functioning correctly. If any fault is discovered the display line text for that function turns to **RED**, focussing the engineer's attention rather than having to try to trace why a simple LED has turned on.

D2435 PSU's have two separate 24VDC outputs to provide a safety buffer when used in an EN54-4 fire system, these outputs are monitored and shown as Voltage 1 and Voltage 2 rather than simply showing a combined figure. Again, this speeds up identifying on-site problems. The system's two 12VDC batteries are independently monitored and the precise measurement display also shows any bad battery connections

Ambient temperature can be critical to the performance and longevity of connected batteries, A D2435 PSU has an on-board temperature-sensor that enables the PSU to vary the charging rate to lessen this impact. The display indicates the actual ambient temperature so that an engineer can ensure that this will not cause future problems

The D2435-M-MS1-PSUMON-01 is supplied in single carton which contains all you need to make new installations, or power supply change-outs, quick and easy.

2mm steel plate with PSU and 230VAC mains connector, ready-assembled and wired

D2435-P 24VDC 5A 'Intelligent' power module



PSUMON-01 Real-Time PSU monitor with colour display

All necessary connectors, housing earthing leads, battery terminal caps and remote green LED with 350mm lead

D2435-M-MS1

Specifications for D2435-M-MS1 PSU Assembly

Voltage Input	230VAC+10% -15%; 50Hz ± 15%
Max. AC Input Continuous Current	1.5A
Recommended Fused-Spur Input Fuses	250V-T3.15A
Output Voltage with AC Power	Minimum 26VDC; Maximum 29.5VDC Nominal
Output Ripple	< 0.07V Peak-to-Peak at Full Rated Output
Maximum Output Current at Full Load	5A
Battery Charging Voltage; Charging Current	27.6VDC; On-Demand (Maximum) 5A
Type of Batteries Required	2 x 12VDC 17Ah, VRLA (Sealed Lead Acid)
Standby Output Voltage	Minimum 19.5VDC; Maximum 27.6VDC
PSU Standby Current	32mA
Over-Voltage Cut-Out Threshold	30Vdc 2%
Low-Voltage Power Output Fault	<22VDC ±2%; Low Voltage Restore>23VDC ±2%
Battery Deep Discharge Voltage Limit	21VDC ±2%
Output Monitoring Threshold	Battery Charging Voltage <±2%
Battery Fuse	6A PTC non-replaceable
Fault Opto-Relays	Normally-Closed (NC), 100mA at 60V; ON-Resistance 16 Ohms maximum; 1500VRMS Isolation Voltage
Operating Temperature Range	-10°C to +40°C
Humidity	95% non-condensing
PCB Size (h x w x d)	168mm x 141 x 65mm
Mounting Plate Size & Construction	150 mm(h) x 285mm (w) x 2mm; (d); Powder-Coated, 2mm Mild-Steel
PCB to 12VDC 17Ah Battery Connectors	2 x CAB047 M5 Ring Terminal to 2-pin Molex, 300mm long
PCB to housing base & door earth connector	1 x CAB031 3 x T3 Spade Connectors, 150mm long
230VAC Mains Connector Block	1 x CAB003 230VAC with 3.15A Replaceable Fuse
Status indicator for mounting on box lid	1 x LED-G-350 5mm green LED with 350mm cable and connector

Specifications for PSUMON-01 Real-Time Monitor & Display

Voltage Input	5 to 14 VDC
Max. Input Continuous Current	30 mA at 5 volts
Cable	5-core included
LED 1	Red = Power on
LED 2	Green = Data
Switch 1	Display legend, product info and fast-scan mode
Switch 2	Deep sleep mode - switches off display
Display Language	English (others on request)
Output Monitoring Threshold	Battery Charging Voltage <±2%
Sleep Mode	Toggle switch
ON/OFF	Slider switch
Operating Temperature Range	-10°C to +40°C
Humidity	95% non-condensing
Unit size	93 x 61 x 20mm

Full D2435-M-MS1 Data sheet



Full PSUMON-01 Data sheet

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Or to discuss your specific needs:

+44 (0)1443 471 900



Dycon leads the security and associated power supply markets, with UK design and manufacture of advanced power products, engineered to provide high quality, cost-effective solutions to meet current regulations and the specific needs of system integrators and end-users.

D2435-M-MS1-PSUMON-01 datasheet 14012025v8