

# Dycon EN-54-4 Range

## D2431, D2433, D2435

EN54-4 Certified 24VDC 1.5A, 3A and 5A Power Supplies



*1.5A & 3A units with space for 2 x 7AH batteries*

*3A & 5A units with space for 2 x 17AH batteries*

- 1.5A, 3A and 5A units, all EN54-4 & CPR Certified
- Micro-processor monitored and controlled
- On-demand battery charging
- Constant battery impedance monitoring
- On-board & remote temperature monitoring
- 3 x opto-relay fault outputs
- 2 x separately fused 24VDC outputs
- 1 x external and 3 x internal status LED's

Dycon D2431, D2433 and D2435 units are 1.5 Ampere, 3 Ampere and 5 Ampere switched-mode power supplies complying with and certified to EN54-4 and the Construction Product Regulations (CPR). They feature 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. All units are 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 the batteries' impedance which gives a more accurate reading and prior warning of impending problems and extending battery life.



**DYCON**  
power solutions

# Not all EN54-4 Power Supplies are the same!



## Dycon's EN54 has unique features that improve performance and reliability

A fire alarm system power supply needs to be robust to ensure the safe continuity of fire detection. Dycon's EN54 range has additional performance features built-in that most other makes fail to provide. These will ensure that not only does the unit provide reliable power when needed, but also so continuously monitors total performance, even regularly checking batteries' performance to ensure that it will operate correctly even if the mains power is lost

## Main Features

The Dycon EN54-4 range consists of 5 Amp, 3 Amp and 1.5 Amp devices, providing a nominal 27VDC with two separate 12V lead-acid batteries for standby operation when AC power is lost.

The power supplies all share the following features:

- **Microprocessor controlled operation and protection**
- **On-demand battery charging and load output current sharing**
- **Battery impedance monitoring**
- **Automatic output reconnection after short circuit fault**
- **No user-serviceable fuses, outputs protected by electronic E-fuses**
- **Two independent, electronically fused, switched outputs**
- **Three opto-relay fault outputs for AC Power Fail, Battery Fault, PSU Fault**
- **Four status LED's; 1 x external and visible, 3 x inside the housing, visible on removing the lid**
- **Over-voltage output protection**
- **Battery-free option can be selected by a jumper. *Note : Using this jumper to disable the battery monitoring when a battery is fitted will create an EN54-4 non-compliance.***
- **On-board or remote temperature sensing (jumper selectable) with optional remote sensor**
- **UK-manufactured electronics and steel housings**



*Larger systems require more power, D2433-17 (3A) and D2435 (5A) units, both have ample space for 2 x 12VDC 17Ah batteries*

## **Four units cover most EN54-4 system requirements, and all have the following 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 systems use 2 x 12VDC batteries connected in series to provide the 24VDC needed to drive a fire system, this means that the only way to check each individual battery's performance is to disconnect it from the system. Dycon's EN54-4 units connect each battery separately, then seamlessly combine 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. Dycon's EN54-4 units constantly measure the impedance of each battery and can flag up deterioration outside certain parameters.



*Ideal for the smaller system, D2431-7 (1.5A) and D2433-7 (3A) units, both have space for 2 x 12VDC 7 or 8Ah batteries,*

### **Constant ambient temperature monitoring to control the battery charging rate**

Battery charging at too high an ambient temperature will dramatically shorten its life! Dycon's EN54 range has on-board sensors to automatically adjust the charging rate depending on the temperature. For difficult environments, a remote temperature sensor is also available, this has a 250mm cable enabling it to be fitted, quickly, in a suitable place.

### **Integral data connection to simplify system integration and reporting**

Available to OEM customers. This information can include the current operational status of the unit including output voltage, current, battery charge rates/ voltages, battery impedance, and ambient temperature. *Contact Dycon Sales for more details.*

### **Take action before an issue becomes a problem**

The features shown above continuously monitor the performance of a Dycon EN54-4 power supply and deal with potential problems before they become expensive emergency call-outs; why wait until a problem happens? Shouldn't all systems have the same safeguards as Dycon units?

# Dycon EN54 Range - D2431, D2433 and D2435

## EN54-4 24VDC 1.5A, 3A and 5A Fire System Power Solutions

### Specifications

Construction Product Regulation No.	0359-CPR-00434
Tick Mark Certificate of Compliance to : - EN54-4: 1997+A1:2002+A2:2006	No. 17LHK0674-01 (issued by Intertek Group plc)
Voltage Input	230VAC+10% -15%; 50Hz ± 15%
Max. AC Input Continuous Current	D2431 - 0.45A; D2433 - 0.9A; D2435 – 1.5A
Recommended Fused-Spur Input Fuses	D2431-250V T1A; D2433-250V T3.15A; D2435 250-T3.13A
Output Voltage with AC Power	Minimum 26VDC; Maximum 29.5VDC Nominal
Output Ripple	< 0.7V Peak-to-Peak at Full Rated Output
Maximum Output Current at Full Load	D2341-1.5A; D2343-3A; D2345-5A
Battery Charging Voltage; Charging Current	27.6VDC; On-Demand (Maximum) D2431-1.5A; D2343-3A; D2345-5A;
Type of Batteries Required	D2431-7 & D2433-7 = 2 x 12VDC 7 or 8AH, sealed lead/acid D2433-17 & D2435-17 = 2 x 12VDC 17Ah, 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)	168 x 141 x 65mm

Product Descriptions	Ancillaries	PCB-only	Medium Housing. (H x W x D) 330 x 295 x 90mm	Large Housing. (H x W x D) 394 x 379 x 90mm
1.5 Amp -24VDC (2 x 7 or 8Ah batteries)		D2431-P *	D2431-7	
3 Amp - 24VDC (2 x 7 or 8Ah batteries)		D2433-P *	D2433-7	
3 Amp - 24VDC (2 x 17Ah batteries)		D2433-P *		D2433-17
5 Amp - 24VDC (2 x 17Ah batteries)		D2435-P *		D2435-17
Remote Temperature Sensor	D-TEMP-01			
Remote Temperature Sensor 250mm extension cable	D-TEMP-02			

**Key:** \* These PCB-only modules are EN54-4 compliant but are not certified unless fitted into an approved Dycon housing

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#### For more information about the Dycon products:

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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.

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