

# DSE9470 MKII

24 Volt, 10 Amp Battery Charger



## ADVANCED FEATURES

- UL recognised (9470-01 USA / 9470-A4 USA & Canada)
- Intelligent three and four stage charging profiles
- Configurable to suit 12V/24V - 5A/10A applications
- Adjustable current limit
- Can be used as a battery charger, power supply or both at the same time
- Automatic or manual boost and storage charge functions to help maintain battery condition
- Digital microprocessor technology
- Temperature compensation for battery charging
- Low output ripple and superb line regulation
- Three LED indicators
- Switched mode design
- Fully customisable battery charging curves
- Battery health check
- Battery voltage sensing
- Deep sleep mode
- PSU only mode
- Automatic voltage detection
- Wide output current range

## Full Protection

- AC input under voltage
- AC input over voltage
- Battery charger output over voltage
- Battery charger output over current
- Battery under voltage alarm
- Automatic battery detection
- Automatic battery charger self test
- Output short circuit and inversion polarity with auto recovery
- Max current mode
- SCADA digital input status information
- Automatic power de-rating at high ambient temperatures.
- Optional battery temperature compensation using PT1000 temperature sensor with over temperature protection

## Automatic Boost Mode

- Boosts and equalises cell charge, improving battery performance

## Power Save Mode

- Once the battery is fully charged, the chargers switch to eco-power to save energy

## Communication

- Can be integrated into external systems through MODBUS RTU using RS485

- Fully configurable via DSE Configuration Suite PC Software
- External remote display option - DSE2541

## KEY BENEFITS

- Fully flexible to maximise the life of the battery
- Suitable for a wide range of battery types
- Minimum 86% efficiency throughout full operating range
- No external intervention for boost mode
- Multiple chargers can be linked together to provide larger current outputs
- Can be permanently connected to a battery and AC supply. No need to disconnect through high load conditions such as cranking or when the engine is running.

## SPECIFICATIONS

### AC SUPPLY

**VOLTAGE RANGE**  
90 V to 305 V (L to N)

**FREQUENCY RANGE**  
48 Hz to 64 Hz (L to N)

### DC OUTPUT

10 A DC at 24 V DC (Configurable)

**RIPPLE AND NOISE**  
<1%

**EFFICIENCY**  
>86%

**REGULATION LINE**  
<0.5%

**LOAD**  
2%

**TEMPERATURE SENSOR INPUT**  
PT1000

### PROTECTIONS

Short circuit  
DC over voltage  
DC over current  
Reverse polarity  
Over temperature  
AC under & over voltage

**CHARGE FAILURE RELAY**  
3 A at 30 V DC volt free relay

### DIMENSIONS

**OVERALL**  
70 mm x 200 mm x 130 mm  
2.7" x 7.9" x 5.1"

**WEIGHT**  
0.75 kg

### OPERATING TEMPERATURE RANGE

-30 °C to +70 °C  
-22 °F to +158 °F

### STORAGE TEMPERATURE RANGE

-30 °C to +70 °C  
-22 °F to +158 °F

### UL VOLTAGE APPROVAL RATINGS

**USA ONLY (9470-01)**  
110 V - 250 V  
**USA & CANADA (9470-A4)**  
110 V - 150 V

## RELATED MATERIALS

TITLE	PART NO.
DSE9400 Series Configuration Suite PC Software Manual	057-159
DSE Configuration Suite Installation & Operators Manual	057-151
DSE9000 Series Installation Instructions	053-049
DSE9000 Series Operators Manual	057-085

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# DSE9470 MKII

## 24 Volt, 10 Amp Battery Charger

The DSE9470 MKII is a UL recognised intelligent battery charger fully configurable for 12 Volt/ 24 Volt & 5 Amp / 10 Amp applications.

There are two different UL recognised variants. The 9470-01 is recognised for USA only (110 V - 250 V) and the 9470-A4 is recognised for USA & Canada (110 V - 150 V).

The charger features automatic voltage detection and battery voltage sensing down to 1 volt and has an output current range that can go down to 1 amp. The charger can be easily programmed for different charging curves, to maximise battery life.

The charger can be DIN rail or chassis mounted, using the fixing holes that are built into the case. The charger includes three coloured LEDs to indicate charging status and fault conditions.

The chargers do not include any moving parts for additional durability and reliability. Each charger will continue to operate during engine running.

Multiple chargers can be linked together to provide a larger current output where required.

The battery chargers are programmed using the user-friendly DSE Configuration Suite PC software.

### PART NUMBERS

**9470-01**  
24 V 10 A Battery Charger  
(110 V - 250 V UL Recognised - USA)

**9470-A4**  
24 V 10 A Battery Charger  
(110 V - 150 V UL Recognised - USA & Canada)

### ENVIRONMENTAL TESTING STANDARDS

#### ELECTRO-MAGNETIC COMPATIBILITY

BS EN 61000-6-2  
EMC Generic Immunity Standard for the Industrial Environment  
BS EN 61000-6-4  
EMC Generic Emission Standard for the Industrial Environment

#### OPERATING TEMPERATURE RANGE

BS EN 60068-2-1  
Ab/Ae Cold Test -30 °C  
BS EN 60068-2-2  
Bb/Be Dry Heat +80 °C  
\* Refer to de-rating curve in the DSE9000 Operator Manual

#### VIBRATION

BS EN 60068-2-6  
Ten sweeps in each of three major axes  
5 Hz to 8 Hz @ +/-7.5 mm,  
8 Hz to 500 Hz @ 2 gn

#### HUMIDITY

BS EN 60068-2-30  
Db Damp Heat Cyclic 20/55 oC  
@ 95% RH 48 Hours  
BS EN 60068-2-78  
Cab Damp Heat Static 40 oC  
@ 93% RH 48 Hours

#### SHOCK

BS EN 60068-2-27  
Three shocks in each of three major axes  
15 gn in 11 ms

## COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF BATTERY CHARGER APPLICATIONS

