

## Safety information



### Stored charge

The drive contains capacitors that remain charged to a potentially lethal voltage after the AC supply has been disconnected. If the drive has been energised, the AC supply must be isolated at least ten minutes before work may continue. Refer to section 3.1 *Safety information* in the *Unidrive SP User Guide*.



If the drive has been used at high load levels for a period of time, the heatsink and heatsink mounted braking resistor can reach temperatures in excess of 70°C (158°F). Human contact with the heatsink and heatsink braking resistor should be restricted.



To avoid the risk of fire when the drive is surface mounted with the braking resistor fitted, the back plate should be a non-flammable material.

## Introduction

This braking resistor has been especially designed to be mounted within the heatsink of the Unidrive SP size 2. The design of the resistor is such that no thermal protection circuit is required, as the device will fail safely under fault conditions. The in built software overload protection is set up at default to protect the braking resistor.

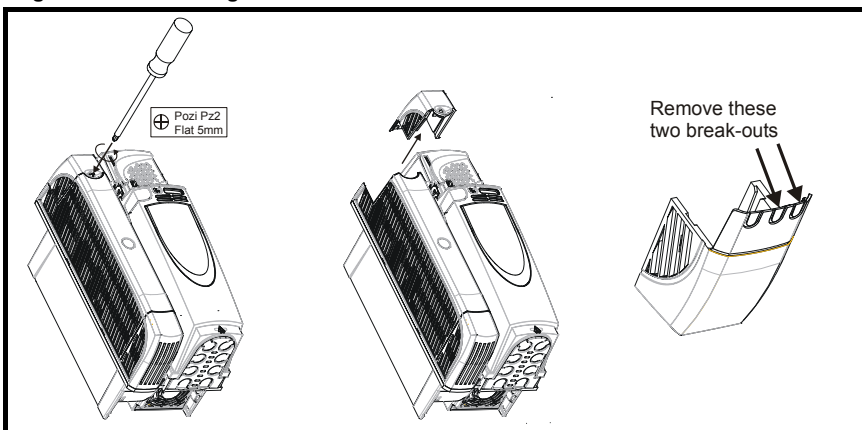
### Contents of the box (1220-2758-01)

The following items should be supplied in the box:

1x 37.5Ω Brake resistor assembly      1x Through hole grommet      1x Wire clip      1x Installation sheet

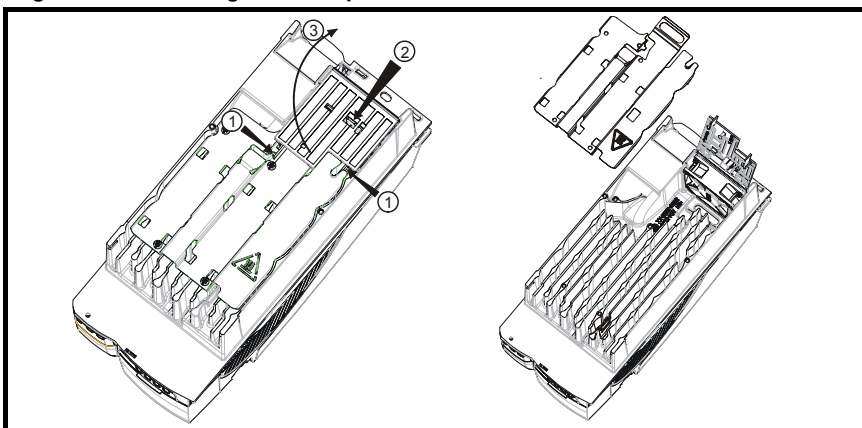
## Fitting instructions

**Figure 1-1 Removing the DC terminal cover and break-outs**



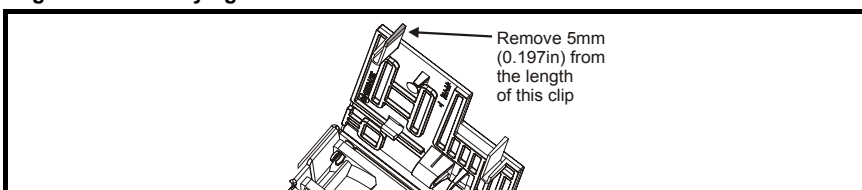
- To remove the DC terminal cover, undo the screw and lift off as shown in the diagram opposite.
- When replacing the terminal covers the screws should be tightened to a maximum torque of 1 N m (0.7 lb ft).
- The two break-outs that line up with the BR and DC2 terminal connections must be removed, as shown in the diagram opposite.
- Grasp the 48V/DC terminal cover break-outs with pliers and twist to remove.
- Remove any flash / sharp edges once the break-outs are removed.

**Figure 1-2 Removing the baffle plate**



- Lift the hinged fan baffle by pushing plastic tabs in the direction shown (1). Push tab in the direction shown (2), and lift the baffle as shown (3).
- Remove the metal heatsink baffle plate by removing the two screws. These two screws are no longer required.

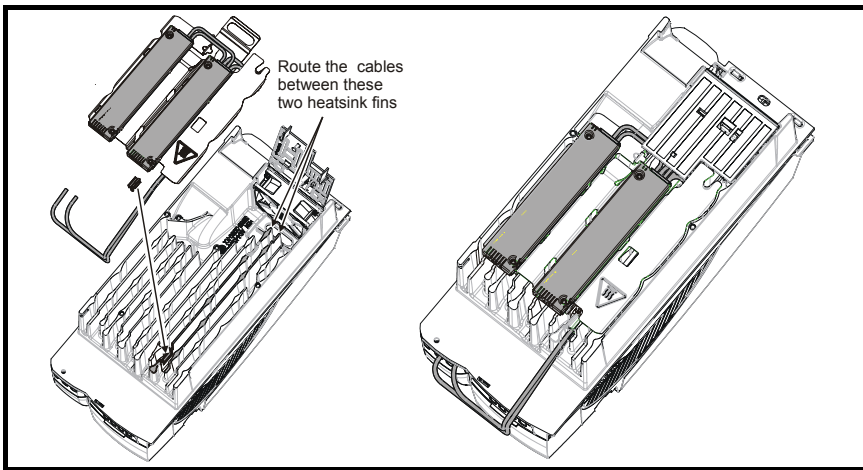
**Figure 1-3 Modifying the fan baffle**



- Remove 5mm (0.197in) from the length of the clip on the plastic fan baffle.

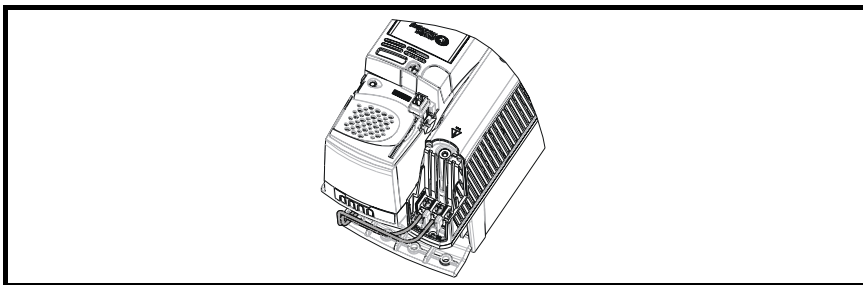


**Figure 1-4 Fitting of the heatsink mounted braking resistor**



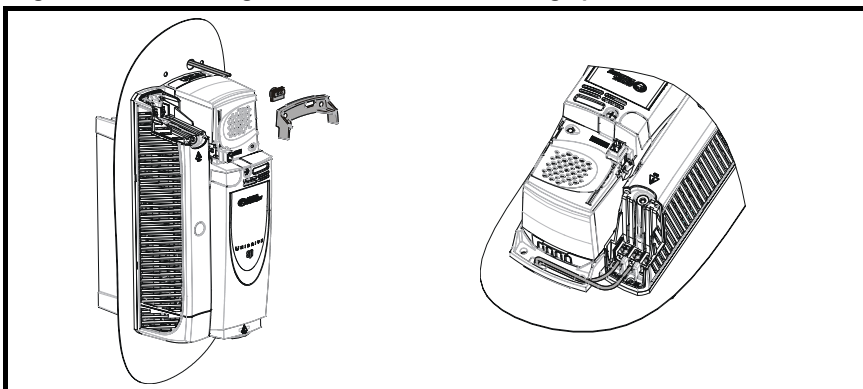
- Fit clip to heatsink in the position shown in diagram opposite. Route the long cables of the resistor assembly between the fins of the heatsink as shown in the diagram opposite.
- Fit the heatsink baffle plate in place with the cables routed underneath. Ensure the cables are not trapped between a heatsink fin and the baffle plate.
- Fit the braking resistors to the heatsink. The resistors are fitted with captive screws.
- The screws should be tightened to a maximum torque of 2.0 N m (1.5 lb ft).
- Close the hinged fan baffle.
- Fit cables to heatsink clip.

**Figure 1-5 Connecting the brake resistor on a surface mounted drive**



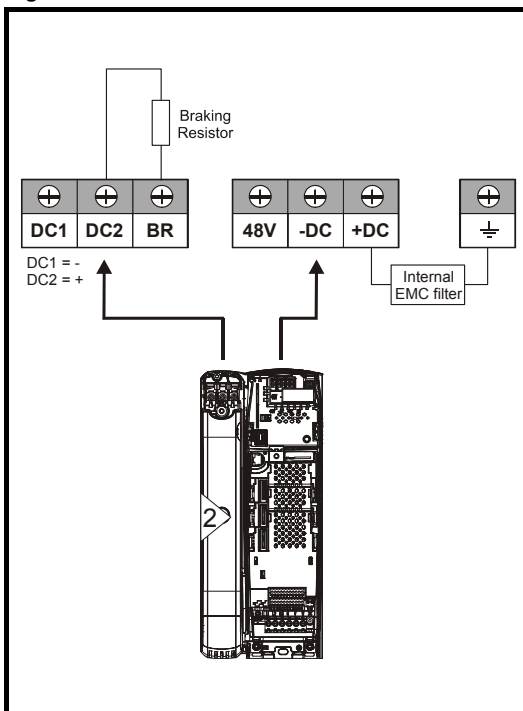
- Fit the DC terminal cover grommets supplied in the accessory box with the drive, to the cables.
- Terminate the cables with suitable crimps and connect to the BR and DC2 terminals.
- Replace the terminal cover.

**Figure 1-6 Connecting the brake resistor on a through-panel mounted drive**



- See section 3.10 in the *Unidrive SP User Guide* for through-panel mounting cut-out details.
- Pass the cables through the hole in the panel and fit the hole grommet.
- Fit the mounting bracket.
- Fit the DC terminal cover grommets supplied in the accessory box with the drive, to the cables. To ensure a good seal, the grommets are a tight fit. Lubrication may be required to help fit the grommets to the cables.
- Terminate the cables with suitable crimps and connect to the BR and DC2 terminals.
- Replace the terminal cover.

**Figure 1-7 Unidrive SP size 2 DC connections**



**Failure to observe the following information may damage the resistor.**

#### Parameter Settings

The Unidrive SP software contains an overload protection function for a braking resistor. On Unidrive SP size 2 this function is enabled at default to protect the heatsink mounted resistor. Below are the parameter settings.

Parameter		200V Drive	400V Drive
Full power braking time	Pr 10.30	0.09	0.02
Full power braking period	Pr 10.31	2.0	

For more information on the braking resistor software overload protection, see the *Unidrive SP Advanced User Guide*.

If the resistor is to be used at more than half of its average power rating then the drive's cooling fan must be set to full speed by setting Pr 6.45 to On (1).

#### Resistor Specification

Parameter	Value
DC resistance at 25°C	37.5Ω
Peak instantaneous power over 1ms at nominal resistance	16kW
Average power over 60s	100W *
Ingress Protection (IP) rating	IP54
Maximum altitude	2000m

\* To keep the temperature of the resistor below 70°C (158°F) in a 30°C (86°F) ambient, the average power rating is 100W. The above parameter settings ensure this is the case.

#### Approvals

The resistor is UL recognised under UL file number E238661.



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