

# Unidrive M600, M700, M800

## Size 4 and 5 Braking Resistor Installation Sheet

### 1 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 energized, the AC supply must be isolated at least ten minutes before work may continue. Refer to section 3.1 Safety information in the User Guide.



The chassis and chassis mounted braking resistor can reach temperatures in excess of 70 °C (158 °F). Human contact with the chassis and chassis braking resistor should be restricted.



To avoid the risk of fire when the drive is surface mounted with the braking resistor installed, the backplate should be made from a non-flammable material.

### 2 Introduction

This braking resistor has been especially designed to be mounted within the chassis of the Unidrive M600, M700, M800 size 4 and 5. 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 (1299-0003-00)

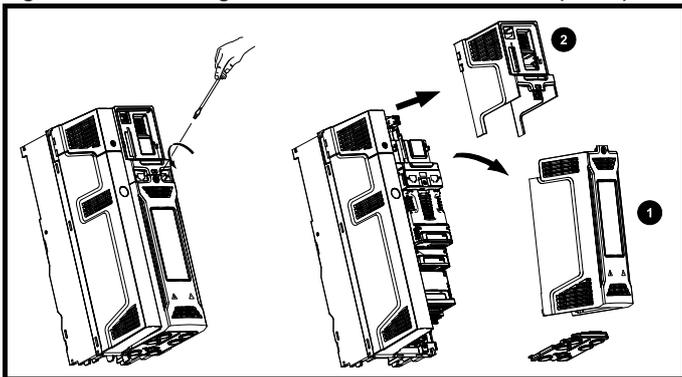
The following items are supplied in the box:

- 1 x 37.5 Ω Brake resistor assembly
- 2 x Cable crimps
- 1 x Installation sheet

### 3 Installation

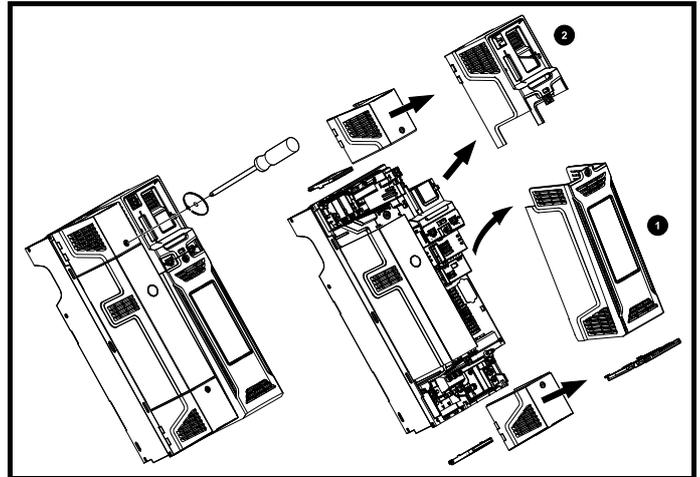
#### Step 1: Removing the terminal covers

Figure 1-1 Removing the AC and DC terminal covers (size 4)



- To remove the terminal covers, undo the screw and remove the covers in direction shown above (Figure 1-1).
- The AC terminal cover (1) must be removed prior to the DC terminal cover (2).
- When replacing the terminal covers the screw should be tightened to a maximum torque of 1 N m (0.7 lb ft).

Figure 1-2 Removing the AC and DC terminal covers (size 5)

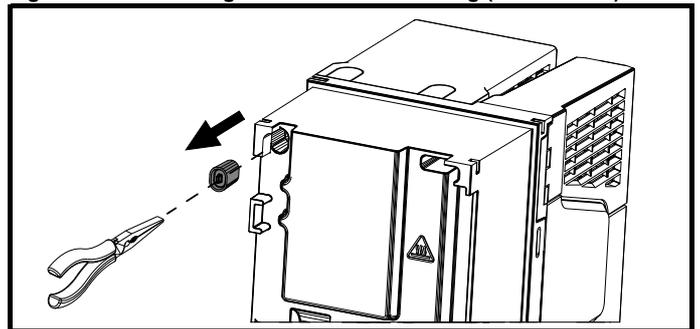


- To remove the terminal covers, undo the screw and remove the covers in direction shown above (Figure 1-2).
- The AC terminal cover (1) must be removed prior to the DC terminal cover (2).

When replacing the terminal covers the screw should be tightened to a maximum torque of 1 N m (0.7 lb ft).

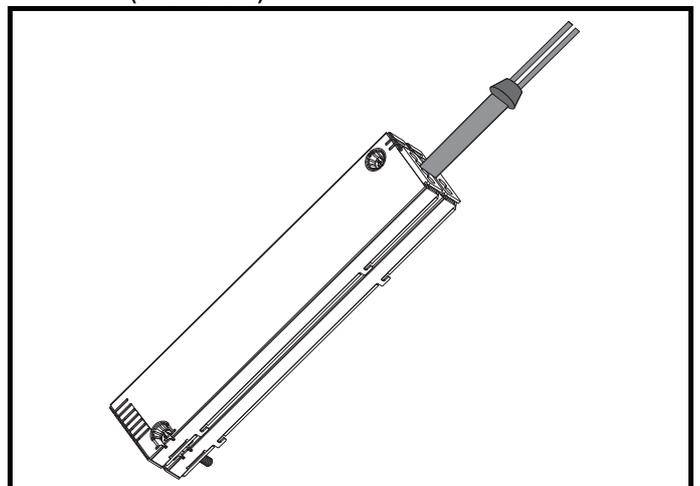
#### Step 2: Preparing for installation

Figure 1-3 Removing the brake resistor bung (size 4 and 5)



- Remove the brake resistor bung from the hole in the chassis as shown above. The cap at the closed end of the bung will need to be cut off so that the cable can be routed through.

Figure 1-4 Inserting the brake resistor cable through the bung (size 4 and 5)



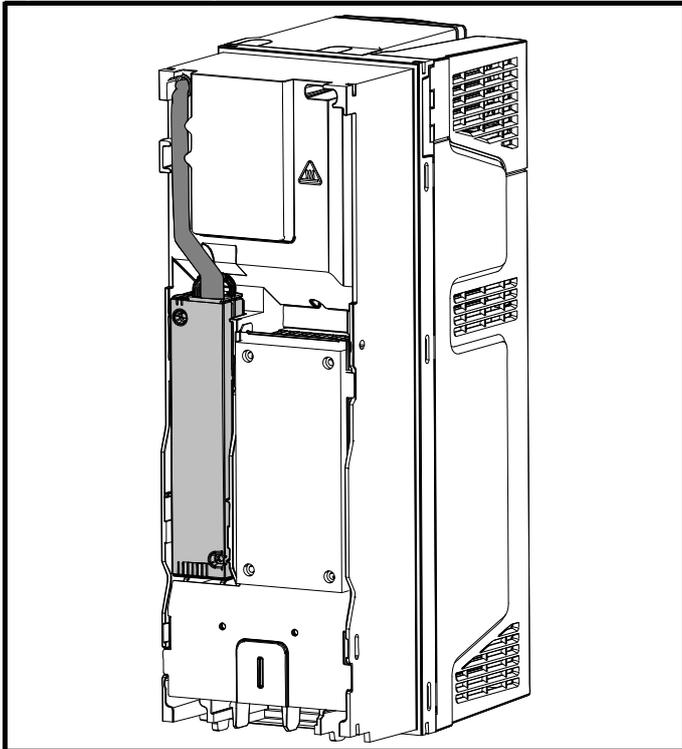
- Feed the brake resistor bung on to the outer insulation of the brake resistor cable. The wider end of the bung should be inserted first. The narrow end should then align with the end of insulation.



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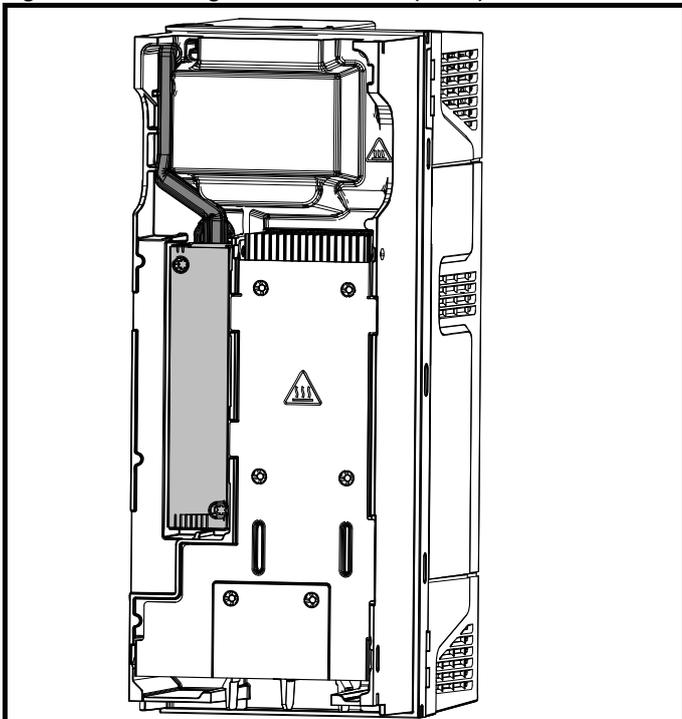
### Step 3: Secure the braking resistor

Figure 1-5 Installing the brake resistor (size 4)



- Secure the braking resistor using captive M4 (x 2) screws as shown above. The screws should be tightened to a maximum torque of 2 N m (1.5 lb ft).
- Route the cables through the provided hole at the rear of the chassis as shown in Figure 1-5 and take the cable out from the front side of the drive. Ensure the cables are routed between the fins of the chassis, and the cables are not trapped between the chassis fins and the resistor.
- Cut 70 mm (2.76 in) length off from one of the cables. Strip about 10 mm (0.39 in) of insulation from both of the cables and terminate the cables with the crimps provided.

Figure 1-6 Installing the brake resistor (size 5)



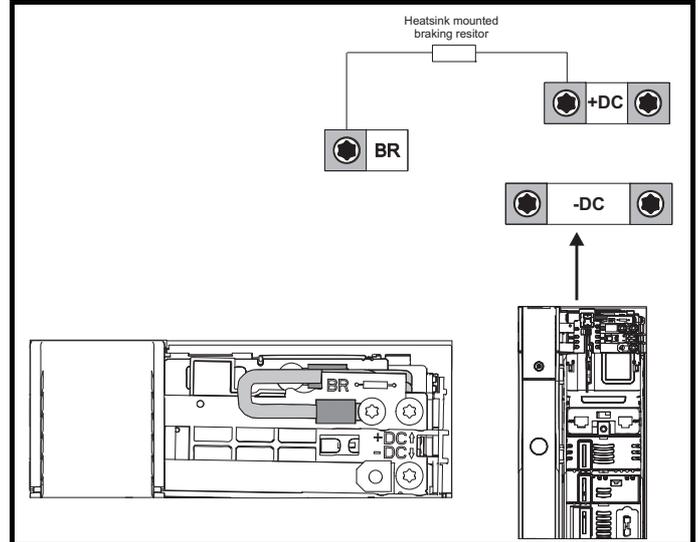
- Secure the braking resistor using captive M4 (x 2) screws as shown above. The screws should be tightened to a maximum torque of 2 N m (1.5 lb ft).

- Route the cables through the provided hole at the rear of the chassis as shown in Figure 1-6 and take the cable out from the front side of the drive. Ensure the cables are routed between the fins of the chassis, and the cables are not trapped between the chassis fins and the resistor.
- Cut 70 mm (2.76 in) length off from one of the cables. Strip about 10 mm (0.39 in) of insulation from both of the cables and terminate the cables with the crimps provided.
- Crimp the cable ends and make appropriate connections. The brake terminals must be tightened to a maximum torque of 2 N m (1.5 lb ft).

Replace the terminal covers on the drive, tighten to a maximum torque of 1 N m (0.7 lb ft).

### Step 4: Establishing brake resistor electrical connections

Figure 1-7 Electrical connections (size 4 and 5)



- Connect the brake resistor cables to BR and +DC terminals as shown above. Tighten the screw terminals to a maximum torque of 1.5 N m (1.1 lb ft).
- Replace both terminal covers. When replacing the terminal covers the screw should be tightened to a maximum torque of 1 N m (0.7 lb ft).



Failure to observe the following information may damage the resistor.

#### Parameter settings

Fan speed should be set to a maximum (Pr 06.045 to 11). The drive software contains an overload protection function for a braking resistor. On size 4 and 5 this function is enabled at default to protect the chassis mounted braking resistor. Below are the parameter settings.

Parameter		Size 4 and 5
Braking Resistor Rated Power	Pr 10.030	100 W
Braking Resistor Thermal Time Constant	Pr 10.031	2.0 s
Braking Resistor Resistance	Pr 10.061	38 Ω

For more information on the braking resistor software overload protection, see the *Parameter Reference Guide*.

#### Resistor specification

Parameter	Value
DC resistance at 25 °C	37.5 Ω
Peak instantaneous power over 1 ms at nominal resistance	8 kW
Average power over 60 s	100 W
Ingress Protection (IP) rating	IP54
Maximum altitude	2000 m



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