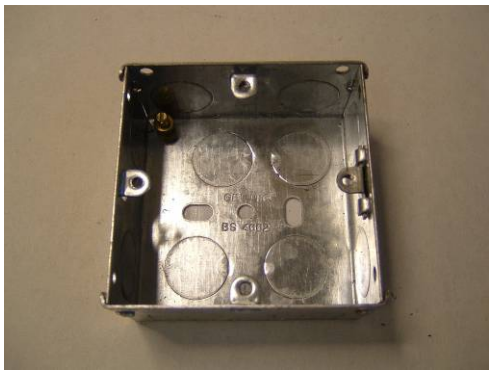
Guidelines – How To Wire DRH Modules

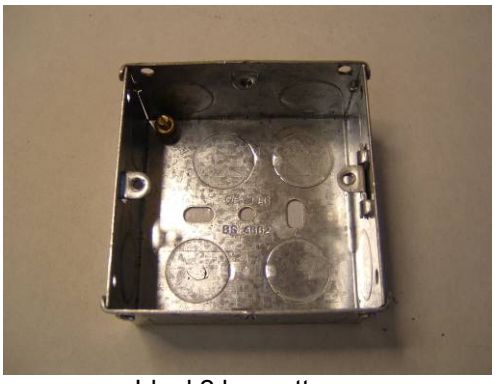
NOTE:
This document mainly provides guidance on wiring in relation to mains (domestic electricity supply) switching applications for this module. The guidelines are based on UK electrical fittings and UK electrical regulations. Installers in other countries will recognise similar basic principles but must consult and adapt to their own regulations

Choice of UK pattress

It is recommended that a single UK style pattress box of 35mm or deeper is used. The one illustrated on the left has lugs top and bottom as well as left and right. These must be removed or the pattress replaced with one which has lugs only on the left and right.



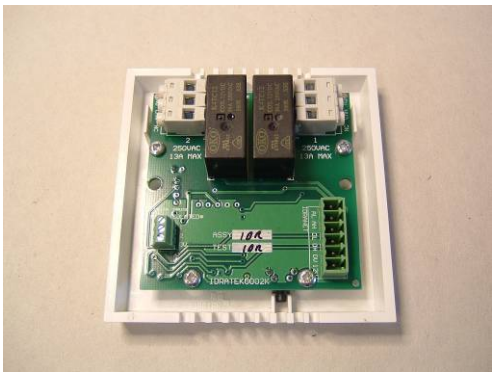
Pattress with 4 fixing lugs



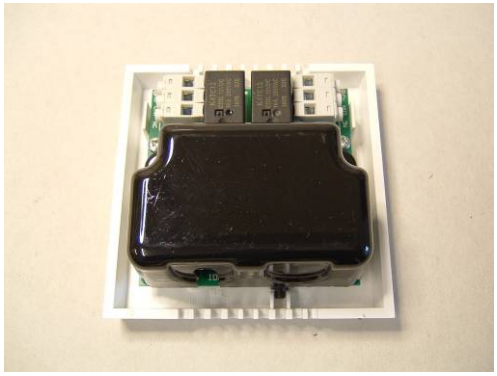
Ideal 2 lug pattress

The DRH Module

The DRH module has two relays capable of switching 13A, but should be de-rated for highly inductive loads. These relays are not fused and therefore the circuit must provide this protection with an external device. The DRH module is shown below, with an isolating shroud that separates the mains and low voltage.



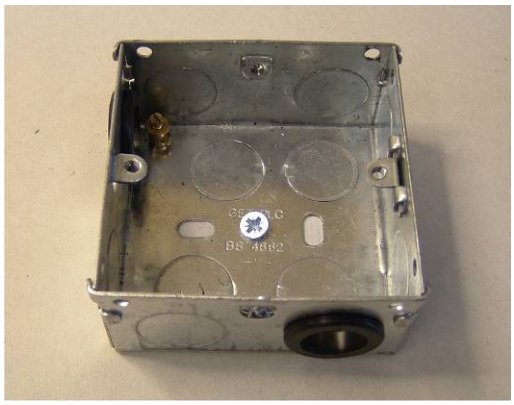
DRH001 rear view



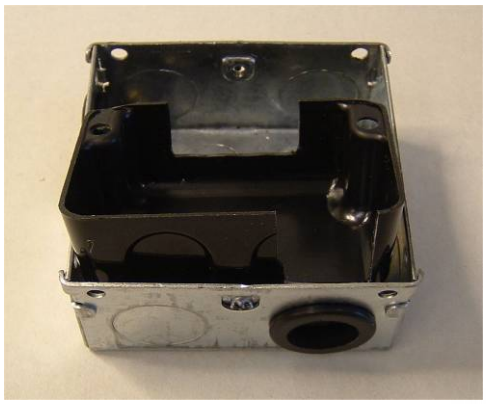
DRH insulating shroud

Preparing the pattress

The holes in the pattress are knocked out as required and rubber grommets fitted. It is easier to remove all the knockouts you require at this stage, rather than when the box is mounted in the wall. The shroud can be cut to better accommodate IDRANet/Digital input cable entry from the chosen hole in the pattress.



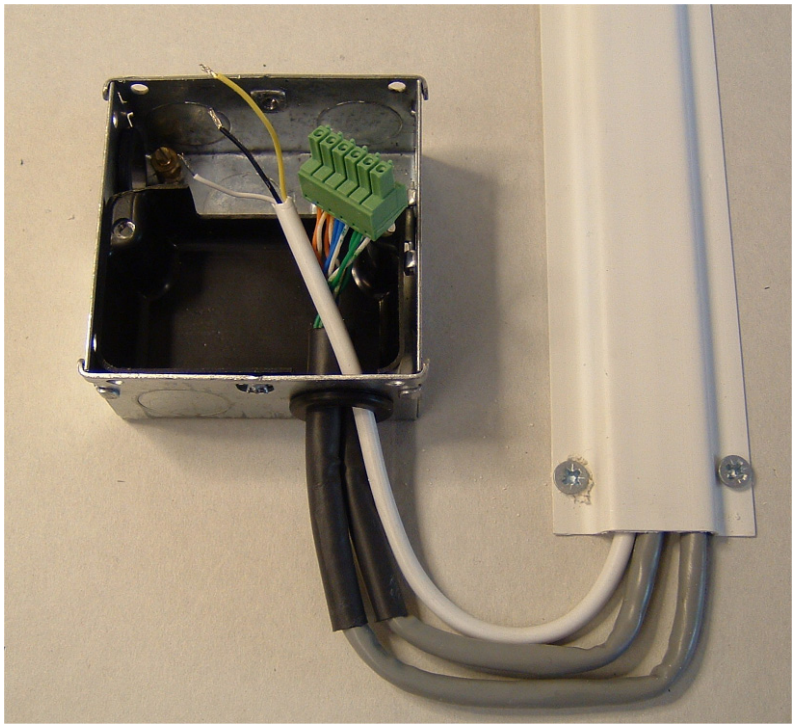
Pattress knock outs and grommet



DRH insulating shroud

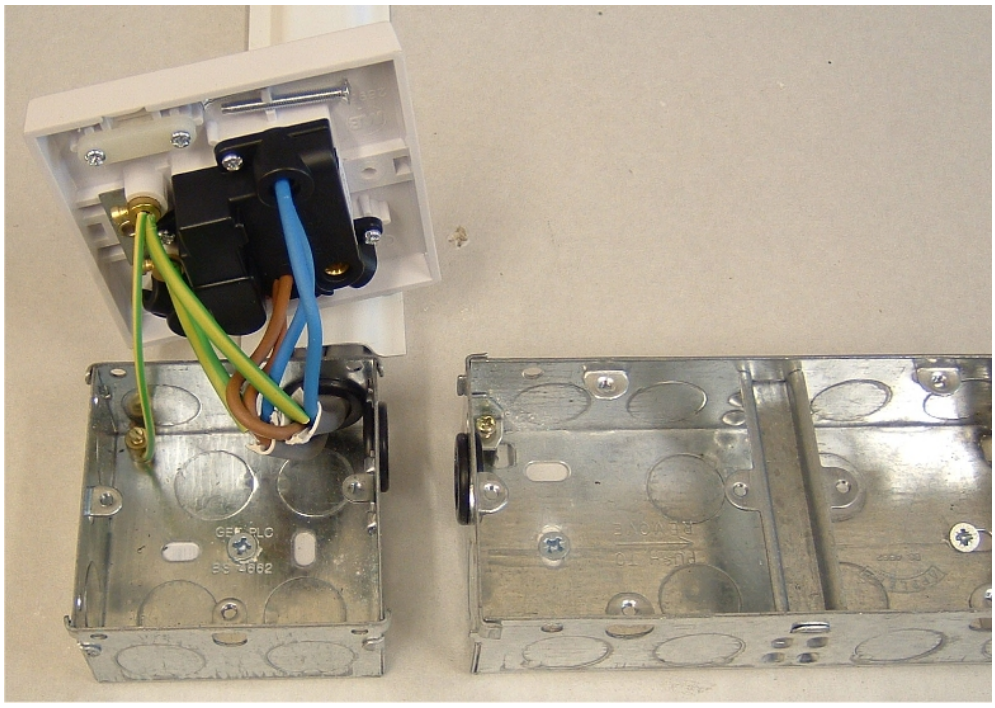
Low Voltage Wiring

The IDRANet cable must enter from the bottom of the pattress alongside any low voltage wiring that is used for the digital inputs on the DRH (e.g. window contacts also enter via this path). This is to ensure the separation between low voltage and mains wiring is maintained. **Failure to do so, which results in any low voltage wiring being exposed to the mains, MUST BE AVOIDED AT ALL COSTS!!**.

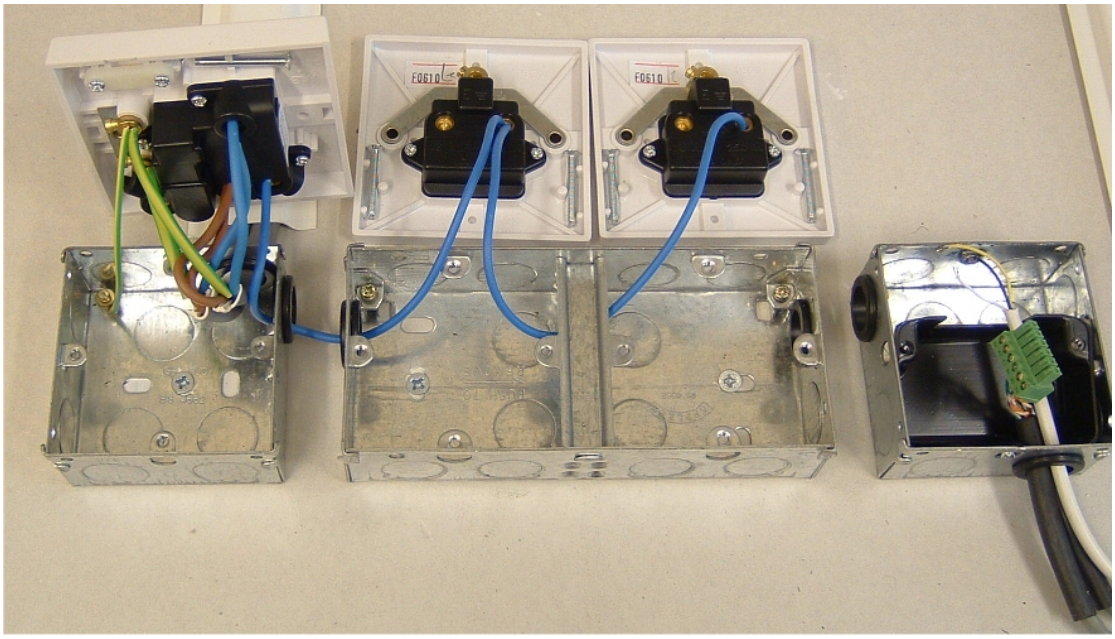


Wiring the Ring Main Spur

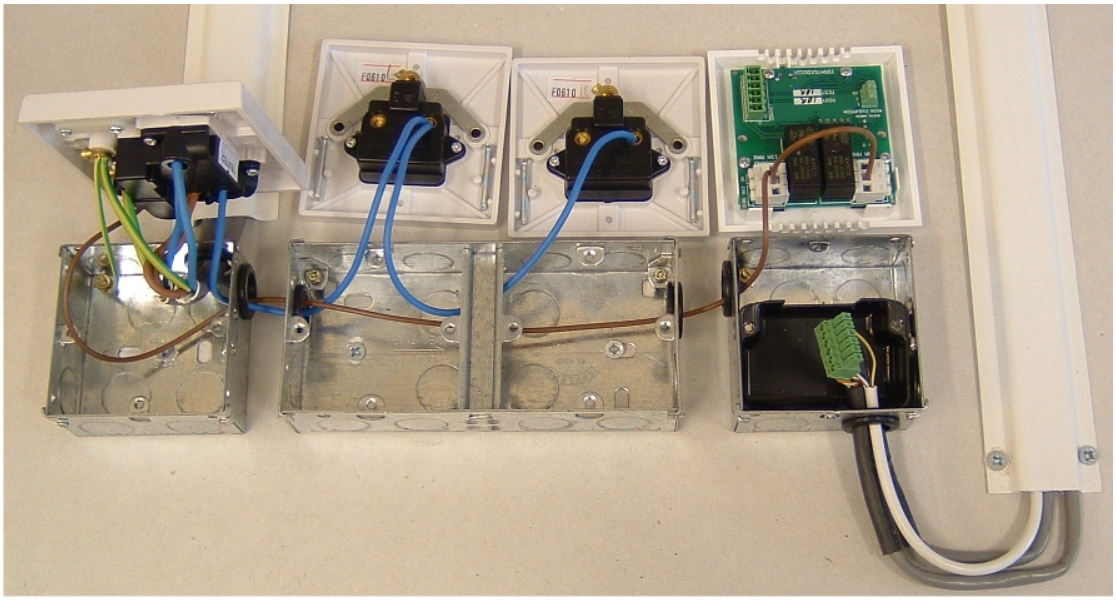
Mounted to the left of the DRH, is a dual pattress capable of fitting two single outlets. This is on the assumption that both relay channels are to be used. For a single switching scheme, a single pattress can be used to house a single (network controlled) socket. A further single pattress is used to house the fuse and spur switch which must be included. The picture below shows the ring mains wiring connected to the fused spur switch on the feed side.



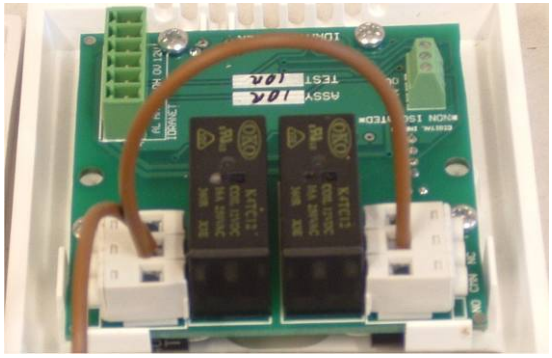
A connection is made from the neutral terminal to each socket using suitably rated wire (2.5mm^2 should be used for a 13A fuse).

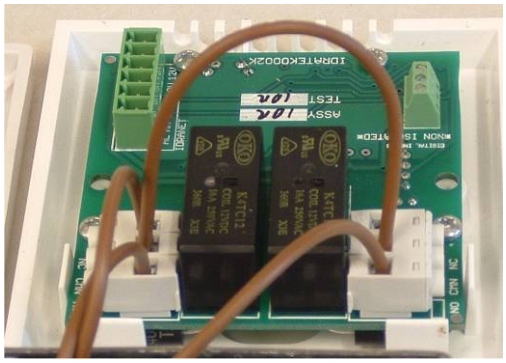


A connection is made from the fused live terminal (and not ring main live terminal) again using suitably rated cable to the common (CMN) relay terminals on the DRH module.

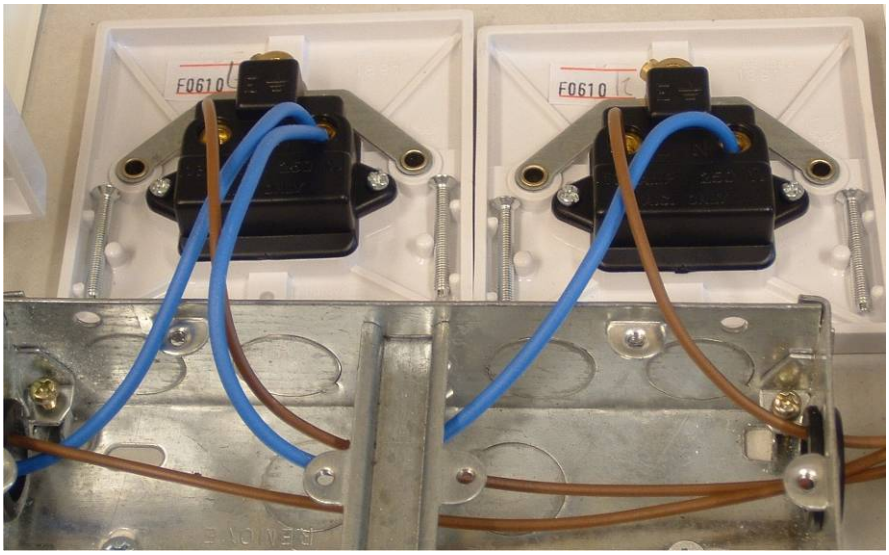


If both relays are to be used, then both CMN terminals should be connected as below.



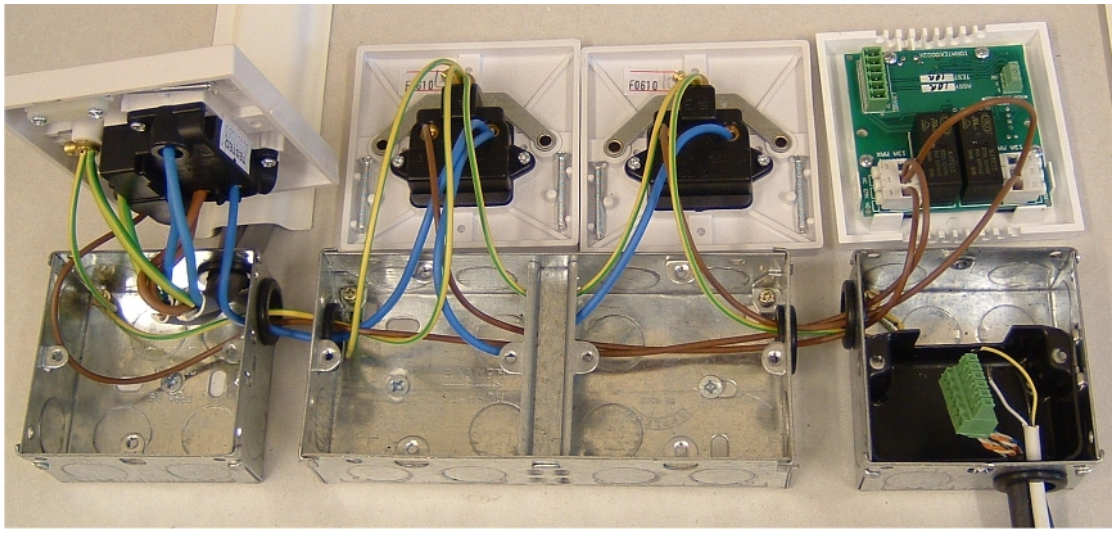


It is most likely that the DRH is used to switch power to the socket, hence each relay is wired via the normally open connection (NO) to each connection on the back of the socket. In the highly unlikely and not recommended event of using the relays to turn off power then the normally closed (NC) terminal should be used.



Fitting the Earth Wiring

It is extremely important that an earth connection is made from the fused spur switch (i.e. the ring main) to the socket outlets and that all pattress boxes are earthed, including the DRH pattress on the right.



In the UK the wiring should be done in accordance with the 16th Edition Wiring Regulations and to comply with Part P of the building regulations. An appropriate inspection or certified installer should be sought.

The completed assembly is shown below, illustrating the feed from the ring main (top left), a circuit protection device such as a suitable rated fuse, a switch allowing this spur to be isolated and a neon indicator showing when the spur is live. In addition, the two mains outlets are shown which are now under full control of the DRH module via IDRANet.

Additional Notes

1. All interlinking wiring should be rated and comply with current wiring regulations. If in doubt consult a qualified electrician.

2. The socket outlets may be of the switched variety.

3. The Cat5 cable should be protected with suitable capping up to the pattress (not shown).

4. If the DRH is fed off the lighting circuit (e.g. only intended to be used to switch table lamps) then the sockets should not 13A mains outlets, but 5A outlets characterised by their smaller round pins (in the UK). This makes it clear that only low power appliances can be plugged in. (Check current wiring regulations).

5. Suitable conduit (round) should be placed between the pattresses during first fix to allow the wires to be connected between the pattresses during second fix.