



Evolution by Mode Lighting (UK) Limited

M-Bus Wiring

The M-Bus connects all Evolution devices, such as packs, plates and relay units together. It carries both power for the plates and other peripherals, and the proprietary data to tell all devices what to do. The M-Bus consists of four connections, marked A, B, C and D. Connect A, B, C and D on the first device, to the corresponding A, B, C and D terminals on the second device, and so on.

A daisy-chain method of wiring should be deployed, rather than wiring the devices in a star-topology. Most devices, including packs and plates, have two sets of A, B, C and D terminals. It does not matter which of the two A terminals is used as "in" and which is used as "out" when daisy-chaining as they are internally connected. The same is true for the B, C and D. Terminal A must never be connected to B, C or D etc.

The maximum bus length is 1000m (if you need to exceed this length, please contact Mode Lighting (UK) Limited for more information about bus extender units).

Star-wiring is not permitted.

M-Bus Termination

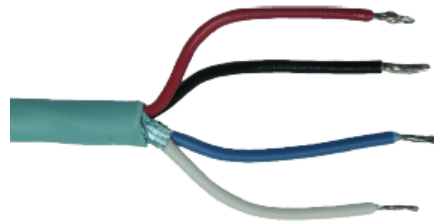
The bus must be terminated at both "open" ends. Termination is achieved using DIP-switch 9 on the packs, and DIP-switch 10 on the plates. No more than two devices on the network should be terminated. The termination switches place a 120Ω resistor across the C and D terminals of the M-Bus.

M-Bus Cable Requirements

The M-Bus cable requires four conductors (two for power, and two for data). The "power" pair (A and B) should be no less than 0.5mm². The data pair (C and D) should be shielded and twisted.

Approved M-Bus Cable types:

Mode Lighting EVO-CAB-00-04 or
Belden 1502R screened cable.



Testing the M-Bus Wiring

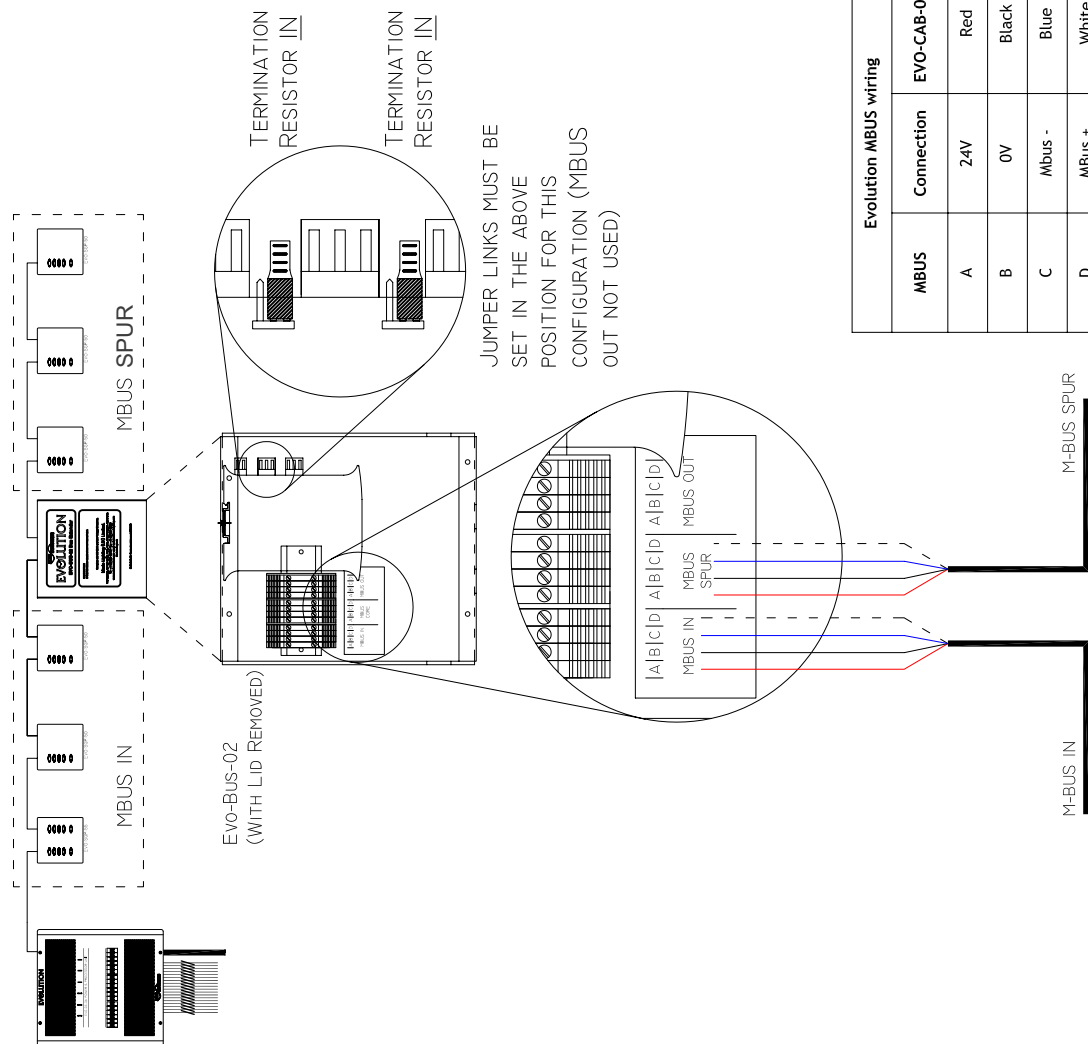
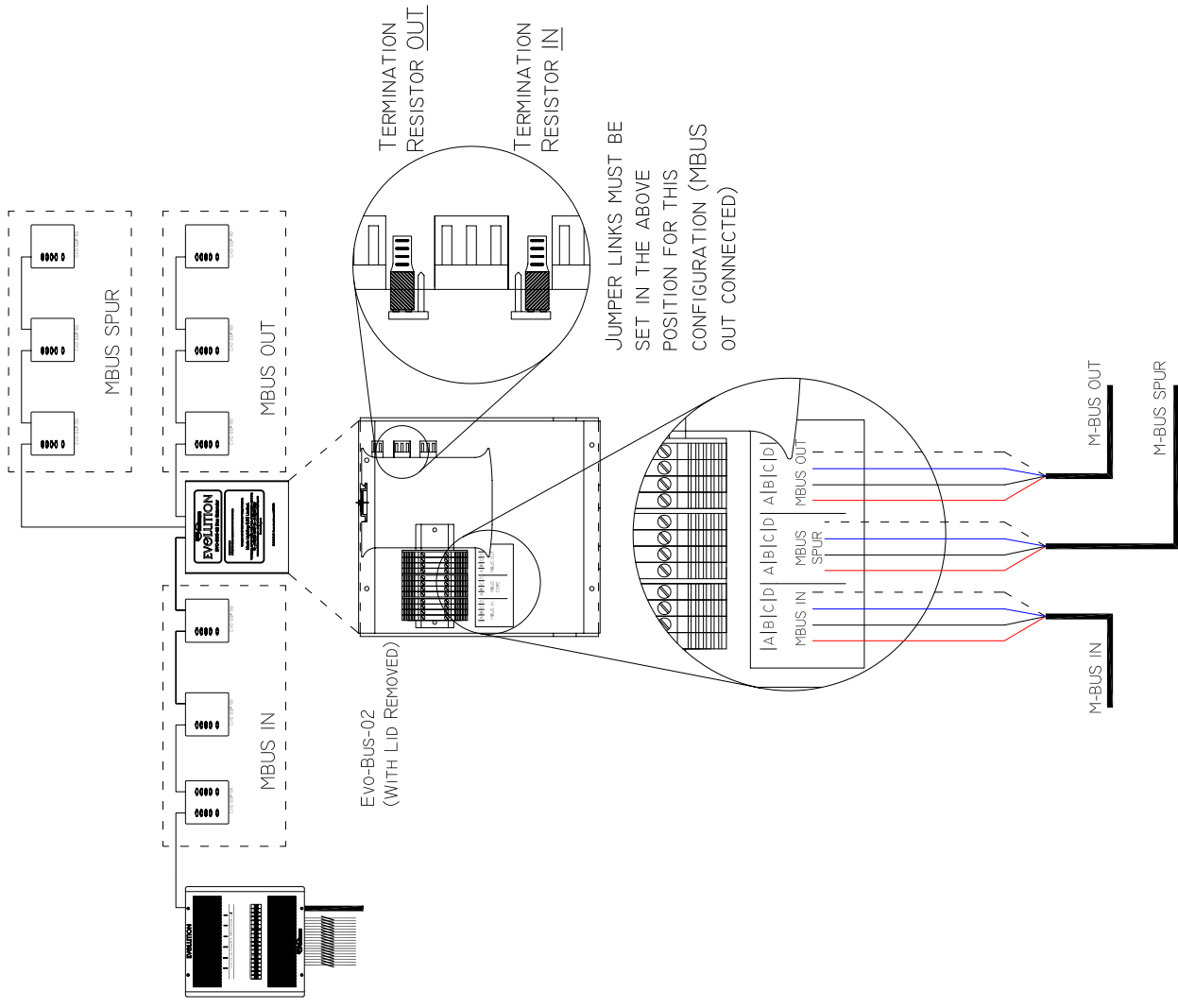
With the power switched off, a basic test of the M-Bus wiring can be performed with an ohms-meter as follows:

With the bus terminated at just one end the measurement should be approx 120Ω.

With both bus terminations correctly switched on (one at each end of the bus) the measurement should be approx 60Ω.

Between A and C or A and D should be approx 4MΩ – 8MΩ. Likewise between B and C or B and D there should be approx 4MΩ – 8MΩ. If either of these measures a short-circuit you should contact Mode Lighting (UK) Limited for advice.

To test any one device on its own, remove it from the network and, with the bus termination switched off, measure between C and D. This should be approx 37kΩ.



Evolution MBUS wiring	
MBUS	Connection
A	24V
B	0V
C	Mbus -
D	Mbus +

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A.	FIRST ISSUE	DATE
ISSUE	NOTES	
DRAWN	JCT	CHECKED

PRODUCTS
 EVO-BUS-02 CONNECTION DETAIL