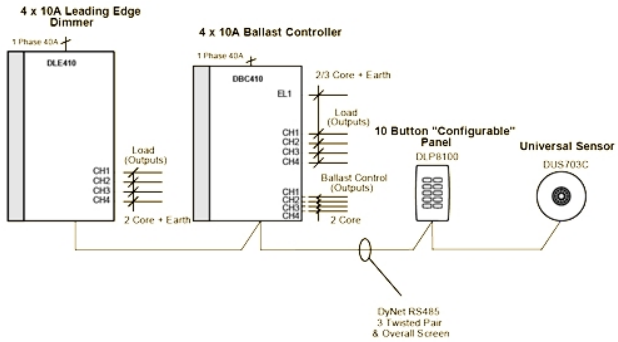
Philips Dynalite DyNet Wiring Guide

Introduction

The DyNet network is the communications protocol that links the various Dynalite products together and enables them to interact with each other. It utilises RS485, which is an industry standard method of data transmission, plus the addition of extra conductors that carry a DC supply. This DC supply is generated by an integral power supply contained within mains powered devices and is used to energise non-mains power devices, such as motion detectors and wall mounted user control panels. As with all control systems it is important that the wiring and network topology are of a high standard to ensure long term reliability & stability.

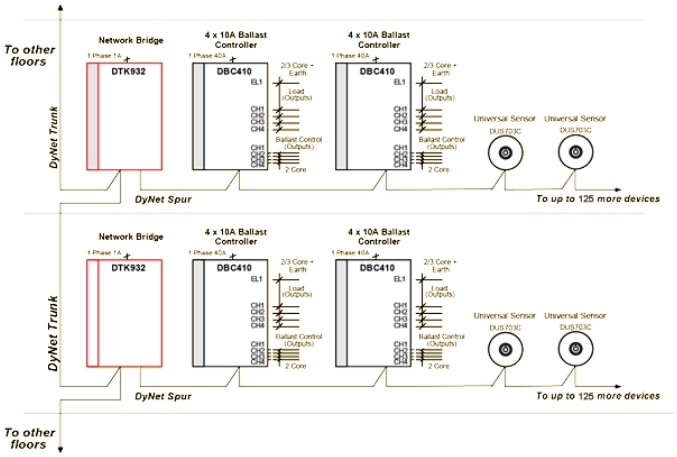
Note: The information in this guide is provided in good faith. Standards change and individual manufactures may have different requirements. Morban accept no responsibility for the accuracy of the information supplied within.

Wiring Topology



- **Daisy chain layout only. Eg the network must start at one point and run past all the DyNet devices ending at the last.**
- **Max cable length is 1,000m.**
- **Shielded Stranded cable is preferred eg: Belden 9503/4.**
- **Adopt standard data cabling placement i.e. not parallel with mains cables unless provided with 300mm separation. Cross mains cables at 90 degrees etc.**
- **Network power supplies are required for each touch screen and to cover long cable runs. Please note their placement on the system schematics.**
- **There must only be a maximum of two cables terminated at any one device (With the exception of the DyNet Bridge).**
- **Maximum of 128 devices per DyNet network**

Larger Networks



- **It is recommended that a Ethernet gateway or DyNet bridge be installed between floors or buildings to improve noise immunity and reliability**
- **Note the spurs do not directly connect to the trunk but are connected via Network Bridge Nodes.**
- **A Network Bridge Node has two RS485 ports which are optically isolated from each other, which will assist to isolate any faults to a single spur only and also provide galvanic isolation.**
- **The use of Network Bridge Nodes allows the maximum number of devices on a single network to be 16,776,960.**
- **The Network Bridge Nodes may also be used as repeaters when cable runs exceed 1,000 metres.**

- **In addition to optical isolation, the device can also be configured as a packet filter for security and network load balancing purposes.**

Cable

- **Use screened stranded RS485 data cable with at least three twisted pairs. If using Cat5, 5e, 6 cable look for shielded (FTP or STP) stranded (Patch) cable.**
- **Stranded cable has a larger cross-sectional area than solid core cable and is less prone to snapping.**
- **A data cable that is connected to an energised device is live. Do not cut or terminate live data cables.**
- **Morban's recommendation is Shielded Stranded cable eg: Belden 9503/4**

Recommended Cable Types

Manufacturer	Part Number
Belden	9503/4
Garland	MCP3S
Garland	STPL5e
Hartland	HCK603
M&M Cable	B2003CS
M&M Cable	B9503CS
Multicables	AWM E120236 2092 20
RS Components	368-687

Terminations

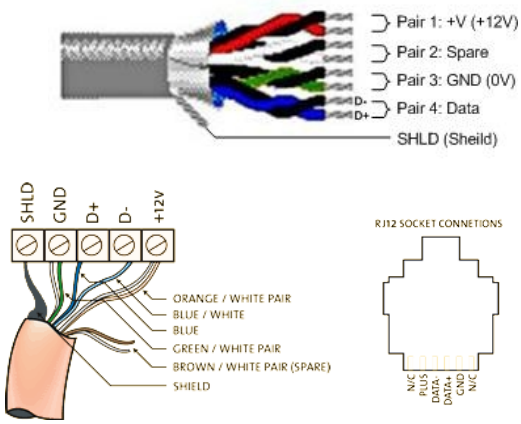
A 5 way rising clamp terminal strip is provided on devices for data cable termination. Please ensure that the cables are on the right side of the clamp to ensure a tight termination.

Some devices also have an RJ12 connector for temporary connection of portable and programming devices.

Note the conductors (pairs) that carry the DC supply are both wired in paralleled. This is to avoid the DC supply suffering voltage drop on long cable runs.

Recommended Standard Colour Coding...

Pair	Colour (Cat5, 5e, 6)	Colour Belden	Signal
1	Blue	Blue	D+
	Blue/White	Black (Blue Mate)	D-
2	Orange	Red	Paralleled
	Orange/White	Black (Red Mate)	for +12Volts
3	Green	Green	Paralleled
	Green/White	Black (Green Mate)	for GND (0V)
4	Brown	White	Spare / Shield
	Brown/White	Black (White Mate)	Spare / Shield
S	Shield	Shield	Shld



Note: If using un-shielded Cat5, 5e, 6 cables use the spare Brown pair as the shield connection. Ensure that sleeving is used on the shield to prevent any short circuits