

Cables for Lightronics Remotes and DMX products

SMART REMOTE STATION CONTROL CABLING METHODS

Smart remote stations (AC-1009 for instance) connect to the AR-1202 in a daisy chain fashion. That is, from the AR-1202 to the first AC-1009 then to the next AC-1009, etc.. For long runs (more than 500 feet) each end of the control wiring may need to be terminated with a 150 ohm resistor. The remote stations operate on a bidirectional RS-485 network at 62.5 Kbaud. This is the same network structure as the DMX-512 standard except that DMX-512 operates at 250 Kbaud and is unidirectional.

SMART REMOTE STATION CONTROL WIRE

Two twisted pair with shield, 24 or 22 gauge wire, with capacitance 25pF per foot or less for a maximum 5000' run should be used. Many installers who are running wire will chose a 3 pair wire instead of 2 pair. This is done in case the wire is nicked and a pair can not be used. The manufacturer and part number of some suggested cables is given below.

Belden	9842	2 pair cable	
Alpha	5271	2 pair cable	
	6413	2 pair low capacitance cable	
West Penn	534	2 pair cable (flexible like mic cord)	
	D3651	Standard data cable	2 pair cable
	D3652	Standard data cable	3 pair cable
	D253651	Plenum data cable	2 pair cable
	D253652	Plenum data cable	3 pair cable

Except for West Penn 534, these are mildly stiff cables, meant to run in conduit (D3651/2) or plenum ceiling (D253651/2). A shielded wire with higher capacitance per foot will work if the run is short. Generally, a well shielded cable with as high as 100pF per foot will work. This standard can communicate as high as 1000 Kbaud at 5000 feet. Since the smart remote bus only operates at 62.5 Kbaud and runs are usually less than 1000 feet, it is are operating well below the limits.

DMX CABLING METHODS

DMX wiring should also be connected in a daisy chain fashion. That is, from the console (the signal source) to the first AR-1202 then to the next AR-1202, etc.. For runs more than 50 feet, the far end of the control wiring (end furthest away from the signal source) should be terminated with a resistor in the value range of 110 to 130 Ohms.

DMX WIRE

One or Two twisted pair with shield (overall or individual), 24 gauge wire, capacitance 25pF per foot or less for 5000' run. DMX-512 operates at 250 Kbaud. The manufacturer and part number of some suggested cables is given below.

Belden	9841	1 pair cable	
Alpha	6412	1 pair cable	
West Penn	D2401	Standard data cable	1 pair cable
	D2402	Standard data cable	2 pair cable
	D252401	Plenum data cable	1 pair cable
	D252402	Plenum data cable	2 pair cable
	533	Flexible	1 pair cable