

Dubhe IV

PROGRAMMING COMMANDS

Lamp commands (for all devices)

#A	# Second Alternate - changes the state of the lamp in a smooth ramp. The duration of the ramp, in seconds, is determined by the # entry. Allowed values for # are from 1 to 999 inclusive.
#D	# Second Dissolve - same as #A for a special effect.
#N	# Second Dissolve On - ramps lamp to level designated by PARM. # designates duration of the ramp. Allowed values for # are all integers from 1 to 999 inclusive.
#F	# Second Dissolve Off - turns the lamp off in a ramp of # seconds duration. Allowed values for # are all integers from 1 to 999 inclusive.
LN	Lamp On - turns the lamp on instantly to level of (limit)%.
LF	Lamp Off - turns the lamp off instantly.
FA	Fast Alternate - changes state of the lamp instantly (on to off or off to on).
HC	Hard Cut - same as FA for a special effect.
FZ	Freeze - if issued during a ramp lamp, the ramp will freeze, holding the lamp at that level. If issued again, the ramp will continue from that point.
PLMP	Pulse Lamp - activates lamp for 1/2 second.
F#,#	Flash Lamp #1,#2 - Flashes lamp at regular intervals. #1 is lamp 'on' time in system heartbeats; #2 is lamp 'off' time in system heartbeats. F50,50 flashes lamp on for 1/2 second, then off for 1/2 second. F0,0 disables flashing. The range for both numbers is 0<=#<=99. This command is a layered command. The lamp must be turned on with another command to see the effect.

Special Effect Commands (Type FX)

M1N	MOTION 1 ON activates special effect motion #1.
M1F	MOTION 1 OFF deactivates special effect motion #1.
M1R	MOTION 1 RESET instructs this motion to seek home position.
M2N	MOTION 2 ON activates special effect motion #2.
M2F	MOTION 2 OFF deactivates special effect motion #2.
PH	PROJECTOR HOME turns lamp off. Homes special effect.
PWRON	POWER ON activates projector power manually.
PWROFF	POWER OFF deactivates projector power manually.
SN	SWITCH ON activate relay.
SF	SWITCH OFF deactivate relay.

Dubhe IV Notes

1. Dubhe IV unit numbers are set internally via a Dipswitch, just like Dubhe II's. The unit numbers are set at the factory. The unit numbers appear on the rear of the unit.
2. Each Dubhe IV can handle four special effect projectors, type **FX**. Each projector can have a 120 VAC dimmable lamp, a 120 VAC switchable fan, and two 120 VAC switchable motors. One of the switchable motors (Motor 1) is associated with a single bit home sense input to allow for automatic projector reset.
3. Each Dubhe IV has four independent low current relay closures available. These are not 'associated' with the special effect control ports.
4. Slot Assignments:
 - 1 – Special Effect Projector #1 – Type FX
 - 2 – Special Effect Projector #2 – Type FX
 - 3 – Special Effect Projector #3 – Type FX
 - 4 – Special Effect Projector #4 – Type FX
 - 5 – Relay #1 – Type S1
 - 6 – Relay #2 – Type S1
 - 7 – Relay #3 – Type S1
 - 8 – Relay #4 – Type S1
5. Special Effect Projectors plug into Dubhe IV's using normal AC plugs. The projector lamp and fan are usually tied together inside the projector. Plugging this cord into the dimmable outlet is usually acceptable. In some cases the projector may have to be modified to separate lamp and fan circuits, but don't do this unless necessary for the aesthetically correct operation of the projector.
6. Relays and special effects homing circuits are available at DB9 connectors. The pinouts are:

DB9 HOME/RELAY Connector Pinout

1 – home sensor ground	6 – home sensor +5V
2 – home sensor home sense	7 – n/c
3 – relay (normally open)	8 – relay (common)
4 – n/c	9 – n/c
5 – n/c	
7. If a projector uses a microswitch for homing, attach the microswitch common to pin #1, and the microswitch NC to pin #2.
8. If a projector uses an optical sensor for homing, attach the anode of the led to pin #6, the transistor collector to pin #2, and the led cathode and transistor emitter to pin #1.
9. The "HOME" led should light when the projector is home. If the logic is reversed, a jumper needs to be moved on the motherboard.