

Calculations for the D2xB1LD2-H and D2xC2LD2-H units are as follows:

Product: **D2xB1LD2DC024MN0H1R/C**
Cable Spec: 14AWG = 1.63mm² and is 2.52 ohms per 1000ft
Cable Length: 250ft



Scenario 1: Using UL measured nominal current draw of 99.5mA @ 24Vdc

1. Calculate resistance of cable
Formula is resistance/1000ft x cable length x 2 (Note: we multiply by 2 as conductor in and out of unit making total wire length)
Result: $2.52 / 1000 \times 250 \times 2 = 1.26$ ohms
2. Calculation of number of units on cable run multiplied by the individual **nominal** current draw
Formula is number of units x unit current (max)
Example result: $6 \times 0.0995A = 0.597A$ [Using 6 x D2xB1LD2-H]
3. Calculate voltage drop
Formula is total cable resistance x total current
Example result: $1.26 \times 0.597A = 0.753V$ [Using 6 x D2xB1LD2-H]
4. Conclusion
Minimum voltage from power supply/batteries needs to be greater than 16V + calculated voltage drop
Example result: $16V + 0.753V = 16.753V$ [Using 6 x D2xB1LD2-H]

NOTE: Maximum number of units can be calculated using above through adjustment of available voltage from the PSU and if required by altering the characteristics of the cable and the length of the cable.

Example: 12 x D2xB1LD2-H units at nominal current per 250ft circuit using 14AWG cable would require a PSU output voltage of 17.5V.

NOTE: UL measured **MAXIMUM** operating current is 273mA @ 24Vdc. E2S recommends considering maximum current consumption during system design.

IN-RUSH:

E2S in-house testing of the Honeywell HPFF12 PSU has proved that a quantity of 6 x D2xB1LD2-H units can be powered from one of the 4 x Notification Appliance outputs without any disruption to the operation of the supply. Consequently it can be extrapolated that the in-rush of 24 x D2xB1LD2-H devices would not disrupt the operation of the HPFF12 PSU.

Further testing of different quantities of D2xB1LD2-H and D2xC2LD2-H signals with the HPFF12 PSU are work in progress at E2S – results will be published as they become available. If information is required on a specific quantity/mix of devices please advise and those tests can then be prioritised.

Product: **D2xC2LD2DC024BN0H1R/C**
Cable Spec: 14AWG = 1.63mm² and is 2.52 ohms per 1000ft
Cable Length: 250ft



Scenario 1: Using UL measured nominal current draw of 99.5mA+313mA = 412.5mA @ 24Vdc

5. Calculate resistance of cable
Formula is resistance/1000ft x cable length x 2 (Note: we multiply by 2 as conductor in and out of unit making total wire length)
Result: $2.52 / 1000 \times 250 \times 2 = 1.26$ ohms
6. Calculation of number of units on cable run multiplied by the individual **nominal** current draw
Formula is number of units x unit current (max)
Example result: $6 \times 0.4125A = 2.475A$ [Using 6 x D2xC2LD2-H]
7. Calculate voltage drop
Formula is total cable resistance x total current
Example result: $1.26 \times 2.475A = 3.119V$ [Using 6 x D2xC2LD2-H]
8. Conclusion
Minimum voltage from power supply/batteries needs to be greater than 16V + calculated voltage drop
Example result: $16V + 3.119V = 19.119V$ [Using 6 x D2xC2LD2-H]

NOTE: Maximum number of units can be calculated using above through adjustment of available voltage from the PSU and if required by altering the characteristics of the cable and the length of the cable.

NOTE: UL measured MAXIMUM operating current is 460mA @ 24Vdc. E2S recommends considering maximum current consumption during system design.

IN-RUSH:

E2S in-house testing of the Honeywell HPFF12 PSU has proved that a quantity of 6 x D2xB1LD2-H units can be powered from one of the 4 x Notification Appliance outputs without any disruption to the operation of the supply. Consequently it can be extrapolated that the in-rush of 24 x D2xB1LD2-H devices would not disrupt the operation of the HPFF12 PSU.

Further testing of different quantities of D2xB1LD2-H and D2xC2LD2-H signals with the HPFF12 PSU are work in progress at E2S – results will be published as they become available. If information is required on a specific quantity/mix of devices please advise and those tests can then be prioritised.