

Installation Instructions

A. INSTALLATION STEPS

- Select location for **Power Source (D.)** and mount and run **Power Feed Cable (E.)** to soffit. Plan to minimize distance between panel and fixtures as much as possible and follow **Power Cable Loading (B.)** guidance. Connect 18 AWG cable to DelphiTech Power Source (D.)
- Select sheltered locations for various **Fixtures (F.)** mounted on soffit using the desired **Metal Kit(s) (F.)**
- Perform all **Connections (C.)** between fixtures and power feed cable taking care to hide and secure all cables and keep all connections dry
- When you are finished and turn the system on, check to ensure furthest fixture is operating at 9VDC or higher and the power supply current is less than its rating.
- Apply corrective action if necessary. Contact DelphiTech if you have any questions.

The above 5 steps represent a typical installation for a soffit mounted fixture. Other mounting locations follow the same general principles and standard trade practices. Always shelter the fixture and locate connections where they will stay dry. All DelphiTech wire routing & connections follow Class II electrical rules — low voltage, power limited circuit on a short circuit protected PS.

For use in non-fire-rated Installations ONLY.

B. Power Cable Loading

- Voltage drop on Power Feed Cable should be considered. Fixtures should not be allowed to operate below 9 VDC or they may turn off.
- Plan routes that put fixtures as close to the Power Source as possible to reduce voltage drop. A PRJX20 fixture consumes 2W of power. The table below shows a worst case scenario for different power feed cable lengths **if all fixtures were at the end of the wire – typically not the case.**
- For large systems, we recommend multiple runs of wire from the supply, especially when the wire runs are long. If possible in new construction limit each run to 5 fixtures—reduces voltage drop, reduces power consumption, and allows easier grouping in a multiple supply situation.
- Maximum number of fixtures on a 5 amp supply is 20.** Use this table to plan multiple runs from supply:

Feet of Wire	Max fixtures
50	20
100	11
150	7
200	5

C. Connections

- DelphiTech wiring and connections consists of one or more **non-branching** runs of 18AWG main feed cable, each run originating from the power source and supplying power to one or more fixtures attached at appropriate locations.
- Use **DelphiTech supplied connectors.** Regardless of DelphiTech supplied connector type, ensure all connections are sheltered in a dry area that **WILL NEVER** get wet or otherwise connection must be placed in a weather resistant electrical box. Supplied connectors **ARE NOT** approved for wet locations.
- When connection is finished, even though connector is in a permanently dry location, it is a good idea to wrap connector in an approved electrical tape to enhance robustness to abrasion and enhance moisture immunity due to humidity. Example tape is 3M Scotch Super 33+ or 3M Scotch Premium Vinyl 88.
- All connections **MUST** be serviceable for repair if necessary—never hide a connection where it can't be found or worked on.
- Ensure the far end of 18 AWG main feed cable is insulated so that the Red and Black wire don't short together or touch any metal such as the soffit, fascia, or gutter system.

OTHER NOTES: If you need to splice 18 AWG power feed cable, either solder or use appropriate connectors and always put in an approved electrical box that is located where it won't get wet. If any wire (not connection) is exposed to rain, a drip loop should be considered if wire is higher than connection to ensure that the connection remains dry. Regardless of connection method used, it should have a rating to support 7A or higher on the 18 AWG side and must also remain dry. In connecting a fixture to a power feed, you need to reliably connect a 22 AWG fixture wire to the 18 AWG power feed cable. Never put these 12VDC connections in a conduit or electrical box containing standard household wiring. Before using any supplementary material to facilitate additional moisture resistance, ensure it is approved for electrical connections.

D. Power Source (PS)

- Never connect the 12 VDC output of one Power Source (PS) to another 12 VDC PS. A PS can drive multiple main power feed cables, but no power feed cable can share more than one PS
- Never use any PS other than a DelphiTech PS to avoid risk of fire or possible fixture damage
- The DelphiTech PS should be operated in a dry indoor location (20% - 90% RH non-condensing) and a temperature (0°C - 40°C or 32°F - 104°F)
- Never use attics, garages, sheds or outside shelter boxes for the PS unless that area meets above conditions 12 months of the year
- Measure total current when install is finished at the PS and ensure DC current is less than the supply rating—we recommend at least 0.25 amps less than supply rating..
- The AC input of the PS is plugged into a standard 120 VAC circuit including timer that is capable of switching an inductive load.

E. Power Feed Cable

- Use DelphiTech approved 18 AWG power cable as it has proper safety ratings, low temperature flexibility, and UV additives for exterior grade use
- Use DelphiTech approved 18 AWG power cable designed for burial when putting cable into the ground and never put connections in the ground

F. Fixtures & Metal Kits

- When mounted outside, fixtures are to be sheltered from full exposure to rain, hail, ice, and other perils by location of fixture and use of a mounting kit (examples of mounting kits include a recessed kit or bracket for soffit mounting). Fixtures may be installed in areas that are -40 to +50 degrees Celcius and whose **average humidity** is 10-95% Relative Humidity RH non-condensing. These fixtures are short duration water resistant. Direct sunlight is also permitted.
- For long durability, use DelphiTech approved mounting kits to avoid thermal stress to fixtures - see application notes. Never surround a fixture by something that adds heat to the fixture. Never surround a fixture by any insulating material including building insulation, plastic, wood, etc. Fixtures are non-IC (non-Insulation-Contact). **Do NOT install insulation within 76mm (3") of any part of luminaire.**
- All fixtures mount with a Stainless Steel 8-32x 1/2" long screw supplied with fixtures.
- When mounting, hide extra fixture wire and IDC connection above soffit. Avoid having fixture wire or power cable hanging where it might dangle and blow in the wind — always secure it with a cable clamp if necessary.

Warranty

Please contact DelphiTech for details on warranty. Note: Never twist the lens cap of a fixture or you will break the moisture seal and void warranty. Avoid mounting fixtures in areas that expose fixtures to ice buildup, constant wetness, vines, ice slides, excessive thermal stress, hail, animals chewing on wires, tampering, or other unnecessary perils. Do not paint fixtures. Do not put strain on fixture wire. Only use a DelphiTech Power Source.