

Selecting the Best Two-Wire for Your Irrigation Project

To ensure that your new irrigation system performs at peak operating levels, Baseline recommends that you install two-wire irrigation control cable that conforms to our specification.

While we have examples of approved wire from specific vendors, you may use other types as long as the wire exactly matches the specification.

Two-wire irrigation cable has two insulated conductors inside an outer Polyethylene jacket.

When you are evaluating wire types, pay close attention to the following details:

- The material used for the outer jacket
We recommend wire that has a Polyethylene (PE) outer jacket. This material is durable and non-permeable (compared to PVC), which helps to prevent water from coming in contact with the conductors.
Additionally, PE is mechanically stronger and more resistant to abrasion, which is important for installation and long-term use in landscape applications.
- The arrangement of the conductors
The specification ensures that the two conductors are arranged in a way that enables the dielectric constant to remain consistent over long distances. On large projects, this is particularly important because Baseline's biLine two-wire communication protocol is transmitted at a relatively high frequency with fast rise and fall times of each pulse.
- Conductor insulation that reduces susceptibility to electromagnetic interference
The specification ensures that the conductors in the irrigation wire are decoupled from electromagnetic interference and shielded from noise caused by other electrical wires that are in the environment.

Baseline's Two-Wire Specification

Operating Voltage: 600 V RMS max
Temperature Rating: 140°F (60°C)

In addition, the two-wire must meet one criterion within each of the following categories:

Outer Jacket

- High Density Polyethylene (HDPE) between 0.035" and 0.048" thick, conforming to ICEA S-61-402 and NEMA WC5

Conductors (two of the same gauge, conforming to ASTM B-33, B-3, or B-8)

- Bare copper
- Tin coated solid copper

Conductor Arrangement

- Conductors that are twisted
- Conductors that are laid in parallel

Conductor Insulation

- Low Density, High Molecular Weight Polyethylene (PE) with a thickness of 0.045"
- Polyvinyl Chloride (PVC) conforming to UL-493 or UL-719 for thermoplastic-insulated style UF (Underground Feeder)