Communication Cable Installation Guidelines for Toro Network Central/Satellite Wireline Control Systems

Recommended communication cable size and type:

U.L. approved, insulated, twisted pair, #16 copper communication wire with one #16 copper drain wire. Aluminum polyester or mylar internal shielding with outer jacket of 65 mil PVC or 45 mil Polyethylene insulation.

Note: If the cable will be installed in sharp volcanic soils or within gopher infested areas, armored cable is available.

Please note the following cable installation guidelines:

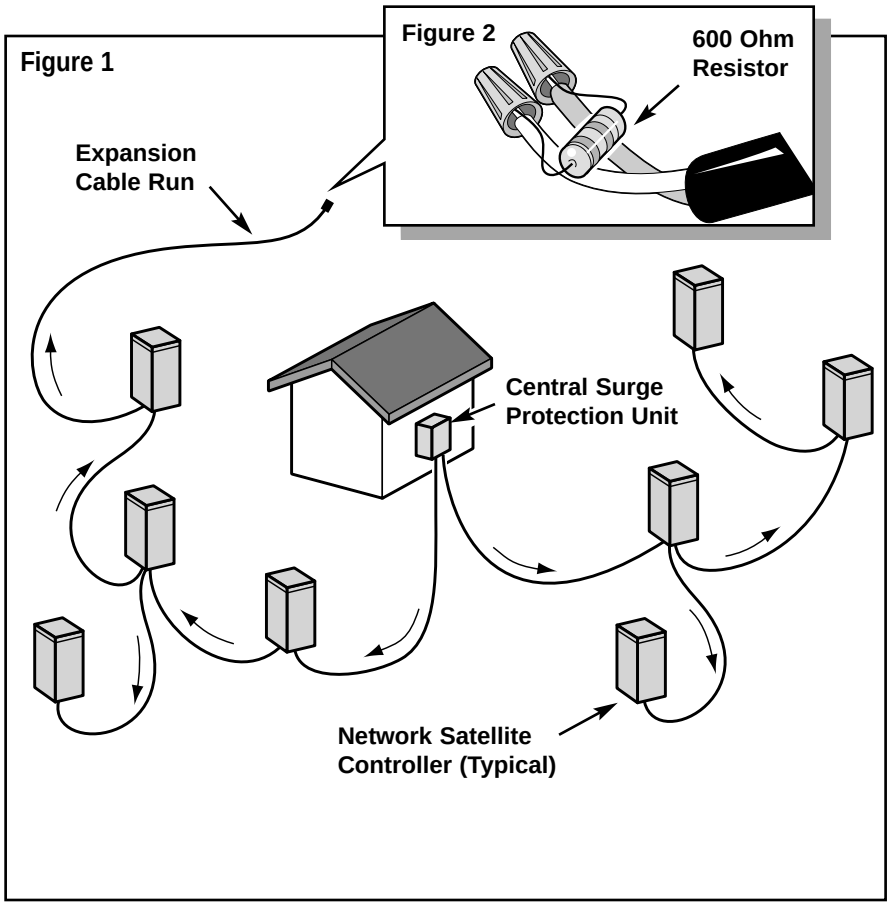
- Multiple cable runs can be connected to the Central Surge Protection Unit (SPU).
- A satellite cable run can branch from another satellite.
- If additional cable runs are installed for future system expansion, each cable wire pair must be terminated with a 600 ohm resistor.
- If the communication cable is routed in the same trench as main power wires, a separation space is recommended to prevent voltage induction on the communication cable. Always refer to local codes for specific installation requirements.
- If in-ground cable splices or repairs are required, the connection must be properly insulated with a waterproof splicing device. Using an appropriate splicing kit, such as Scotchcast 82-A1 (or equivalent), is recommended. Placing the cable splice in a small valve box for protection and accessibility is also recognized as good installation practice.

Cable Installation Procedure

1. Starting at the SPU, route the communication cable to each satellite leaving enough cable to facilitate connection. See **Figure 1** for typical communication cable routing paths.
2. If additional communication cable is installed for future system expansion, connect a 600 ohm resistor across the wire pair at the end of the cable as shown in **Figure 2**.
3. From the cable ends, carefully remove the outer jacket and inner shielding material to expose the yellow and gray insulated copper communication wires and bare copper drain wire. Refer to the installation instructions provided with the satellite for specific cable connection details.

Note: Prior to connecting the cable to the satellites and the SPU, the communication cable must be tested for continuity, resistance and induced voltage. Refer to the test procedure included within the Network Central controller installation instructions.

Figure 1



Printing Date
March 1998 -Rev A

Form Number
371-0062