



WIRING SPECIFICATIONS

PDC SERIES PROGRAMMABLE DIGITAL CONTROLLER

PDC controller: The controller should be installed in a locked electrical room to prevent vandalism. There are three knockouts located along the top edge and three along the bottom edge of the controller enclosure.

Wiring specifications: The wire used is critical to the proper operation of any digital system. The wiring must consist of two conductors, 14 gauge, stranded wire for 24V power and 2-conductor shielded cable, 18 gauge, low capacitance, twisted-pair for communication (Data-A and Data-B). All wiring must be installed in dedicated conduit in accordance with local electrical codes.

Wiring connections: Wiring to DST transmitters and CNB network bridges must be a daisy-chain configuration. No other configuration, (such as branch or star) will work. This means four wires going into the device and connected to the IN side of the terminal strip and four wires connected to the OUT side of the terminal strip and going on to the next device. This is the only acceptable method of termination. No other connections, such as at junction boxes, should be used. Ensure the data-A and data-B lines are not crossed. Ensure that wiring screw terminals are tight. A good system ground is most important, ensure there is no connection to earth ground.

Wiring shield: The shield from the communication bus cable must be connected to the negative terminal of the BATT BACK-UP terminal strip located at the bottom right corner of the PDC board. At each DST or CNB, the shields must be connected together but not to common or ground. Installed correctly, this creates a continuous shield from the PDC to the last transmitter on the wiring run. At the last DST transmitter on the wiring run, the shield must be left floating. It is grounded at one point only and that is at the PDC controller. Failure to properly connect wire shield will result in communication errors.

DST digital transmitters: Conduit can enter the DST enclosures from the back, top or bottom of the enclosure base. Take care when installing conduit to avoid damaging the electronic circuit board. Do not coil excess wiring inside the DST transmitter enclosure.

CNB network bridges: CNB network bridges act as repeaters for the data communication and remove electrical noise from the signal. They must be installed every 1000 feet of wire (no more) or communication problems will occur. The installer must also consider any loops, corners and drops in calculating this distance. If CNB network bridges are supplied with the system, install them. Conduit can enter the CNB enclosures from the back, top or bottom of the enclosure base. Take care when installing conduit to avoid damaging the electronic circuit board.

Remote power supplies: Remote power supplies are used to boost the 24VDC on the power wiring (upstream and downstream) to compensate for voltage drops created by resistance from long wiring runs. It is critical that the DST transmitters receive at a minimum of 20.0 VDC. The power supply must be installed approximately 2/3 of the way along the wiring run. Failure to install a remote power supply will likely cause communication problems. The RPS remote power supply requires 90 to 240VAC, 47 to 63 HZ line voltage power. The output from the RPS is regulated to 24VDC and it is parallel connected to the 24VDC supply wires coming from the PDC controller. We recommend installing the RPS close to one of the DST transmitters and attaching the two 24VDC wires in parallel with the same wires entering the DST at the terminal strip.

Jumpers: Termination jumpers must be placed on the correct terminals of the PDC controller as well as the last (end-of-line) DST transmitter on any wiring run. Jumpers are also be used in the CNB network bridges. Jumpers can be found in a plastic bag attached to the inside of the PDC controller. Correct jumper placement is critical to good communication.