

IQ™ Network Communication Cartridge

Network Communication Cartridges upgrade ESP-LXME2, ESP-LXME2 PRO, ESP-LXIVM, ESP-LXIVM PRO, ESP-LXME, ESP-LXMEF and ESP-LXD Series controllers with cellular Ethernet or direct cable capabilities. The communication cartridge connects to the back of the controller faceplate and provides the communication link between IQ4 and the controller.

Applications

Applications IQ4 is the perfect irrigation control solution for parks departments, school districts, property managers, landscape maintenance contractors, and water managers. IQ can manage small single-controller sites as well as large multi-controller sites. Communication cartridges are compatible with the ESP-LXME2, ESP-LXME traditionally-wired controllers with 1 to 48 station capacity, ESP-LXD 2-wire controllers with 1 to 200 station capacity, and ESP-LXIVM 2-wire controllers with 1 to 240 station capacity.

Communication cartridges are initially configured through a setup wizard provided in the ESP-LX Series Controller IQ4 Settings dial position. Communication setting parameters are configured through the IQ4 software or the IQ4 Configuration Software designed for netbook/laptop/Windows tablet use on the job site.

Direct Satellites

Single controller sites would use a communication cartridge configured as a Direct satellite. A Direct satellite has an IQ4 central computer communication connection but no network connections to other satellites in the system.

Server & Client Satellites

Multi-controller sites would use one communication cartridge configured as a Server satellite and the other communication cartridges configured as Client satellites. The Server satellite has an IQ4 central computer communication connection and shares this communication connection with the Client satellites through high-speed data cable or radios. The communication connection between Server and Client satellites is called the IQNet™. Satellites on a common IQNet can share weather sensors and master valves.

Server and Client satellites using high-speed data cable for IQNet communication require installation of an IQ CM Communication Module. Server and Client satellites using radio communication for IQNet communication require installation of an IQSSRADIO or RBSS-TN9B radio. Each cartridge kit includes cables to connect the communication cartridge to connection module and/or radio.

NCC-4G Cellular Cartridge

- Includes embedded 4G Cellular Data Modem with antenna connector
- Includes internal antenna for plastic controller enclosures (optional external antenna available for metal case controller enclosures)
- Requires 4G Cellular data service plan purchased from Rain Bird with cellular service included
- Used for Direct or Server Satellite applications requiring wireless Cellular communication with IQ4

NCC-EN Ethernet Cartridge

- Includes embedded Ethernet Network Modem with RJ-45 port
- Includes RJ-45e patch cable
- Requires LAN network static IP address
- Used for Direct or Server Satellite applications requiring Ethernet LAN network communication with IQ4

NCC-RSRS232 Cartridge

- Includes RS-232 Port for IQ Direct Cable or External Modem communication connection to IQ4
- Includes external null modem cable
- Used for Direct or Server Satellite applications requiring direct cable connection or external modem (radio or other third-party device) communication with IQ4
- Used for Client Satellite applications requiring IQNet high-speed data cable or radio communication with the Server Satellite

IQ-PSCM-LXM

- Adds server/client hardwired central control capability to the LXME2 Pro.
- Replaces LXME2 Pro base module

IQ FSCM-LXME Flow Smart Connection Module

- Provides IQNet high-speed data cable connections for ESP-LXME, ESP-LXMEF Controller
- Includes Flow Smart Module and Base Module functions
- Replaces standard ESP-LXME Base Module



IQ CM-LXD Connection Module

- Provides IQNet high-speed data cable connections for ESP-LXD and ESP-LXIVM Controllers
- Installs in ESP-LXD/ESP-LXIVM 0 (zero) module slot

IQ SS-Radio Radio Modem

- Fully enclosed in ruggedized hard case
- Provides IQNet wireless radio communication between Server and Client satellite controllers
- Can also be used with the IQ NCC-RS RS232 Cartridge for IQ4 to Direct or Server controller radio communication
- Includes power supply and external antenna (programming software and cable provided separately)

RBSS-TN9N Radio Modem

- In plastic case for surface mounting
- Provides IQNet wireless radio communication between Server and Client satellite controllers
- Can also be used with the IQNCC-RS RS-232 Cartridge for IQ4 to Direct or Server controller radio communication
- Includes power supply and external antenna (programming software and cable provided separately)



Specifications

The irrigation central control system shall be the IQ4 Platform as hereafter specified and as shown on the drawings. The system shall be fully programmable, providing the operator with absolute and full control of the entire irrigation control. The system shall provide a degree of flexibility such that, in effect, anything that could be done at the controller shall be capable of being done in IQ4.

The system hardware interface to the controller shall be the Network Communication Cartridge (NCC). The cartridge shall be designed to install in the ESP-LXME2, ESP-LXME2 PRO, ESP-LXIVM, ESP-LXIVM PRO, ESP-LXME, ESP-LXMEF and ESP-LXD Series Controller faceplate. No tools shall be required for communication cartridge installation. The communication cartridge shall receive power through a ribbon cable connection to the controller front panel.

The communication cartridge shall be configured and monitored through a dedicated dial position on the controller front panel. In this dial position the communication cartridge shall be in control of the controller display and user interface softkeys. The user interface shall include a setup wizard to guide the user through the required configuration settings. The communication cartridge shall be user configurable as a Direct, Server, or Client satellite controller.

The communication cartridge shall incorporate 3 communication ports to communicate with the system central control as well as communicate with other communication cartridge equipped controllers via high-speed data cable and/or radio communication. The communication cartridge shall incorporate status lights (LEDs) showing the real-time status of the cartridge communication ports.

Communication cartridges configured as a Direct satellite shall communicate directly with the system central control via the primary (IQ) communication port. Configuring the communication cartridge as Direct satellite shall disable the IQNet high-speed data cable (CM) and radio (Radio) communication ports.

Communication cartridges configured as a Server satellite shall communicate directly with the system central control via the primary (IQ) communication port. Configuring the

communication cartridge as a Server controller shall enable the IQNet high-speed data cable (CM) and radio (Radio) communication ports for communication with Client controllers. A single Server controller shall be capable of networking up to 255 Client controllers across the IQNet network.

Communication cartridges configured as a Client controller shall communicate via the IQNet network with a Server controller. The Client controller shall not have direct communication with the system central control but shall instead use the Server controller connection. Client controller primary (IQ) communication port shall be disabled. Configuring the communication cartridge as a Client controller shall enable the IQNet high-speed data cable (CM) and radio (Radio) communication ports for communication with a Server controller.

Controllers on a single IQNet network can share up to 10 master valves and 32 weather sensors. Master valves and weather sensors shall be shared across ESP-LXME, ESP-LXME2 PRO traditionally-wired and ESP-LXD, ESP-LXIVM, ESP-LXIVM PRO, 2-wire controllers.

Communication Cartridges shall be available with 4G Cellular, Ethernet, or RS-232 external modem port. Communication cartridges with 4G Cellular, Ethernet, and WiFi shall utilize static IP addresses for communication with the system central control.

The 4G Cellular communication cartridge (IQ4614) shall incorporate a 4G Cellular data modem. A SIM card configured with a static IP address on a wireless network is required.

The 4G Cellular communication cartridge (IQ4614X) shall incorporate a 4G Cellular data modem and a SIM card configured with a static IP address on a wireless network with one year of service.

The Ethernet communication cartridge shall incorporate an Ethernet modem. Connection to the site local area network (LAN) shall be via the provided RJ-45e patch cable.

The RS-232 communication cartridge shall incorporate an RS-232 Port for connection to an external modem. The communication cartridge shall be provided with an external modem cable.

Server and Client controllers shall utilize a Connection Module to connect to the IQNet

via high-speed data cable. The Connection Module shall be controlled by the cartridge CM port. Connection Modules shall provide quick connect terminals for connection to the 2 communication conductors as well as ground.

Server and Client controllers shall utilize a Frequency Hopping Spread Spectrum Digital Radio for wireless communication on the IQNet. The radio shall be controlled by the cartridge Radio port. A connector cable to interconnect the cartridge and radio shall be supplied with the cartridge.

The system central control shall be capable of upgrading (reflashing) the communication cartridge firmware through the IQ communication port. In this way, new features can be deployed without the need to replace the existing communication cartridges.

The communication cartridge shall keep a log of all controller and IQNet activity for upload to the system central control.

The IQ Platform shall be as manufactured by Rain Bird Corporation.

How to Specify

NCC

Network Communication Cartridge

IQ4G-X
NCC-EN Ethernet
NCC-RS RS232

X=
A: Australia
B: USA
C: Canada
E: Europe
I: International

IQ CM

IQ Connection Module

IQ FSCM-LXME for ESP-LXME
IQ CM-LXD for ESP-LXD/
ESP-LXIVM

IQ SS-RADIO

IQ Radio Modem

IQ SS-RADD
RBSS-TN9B Radio

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