# Application Note:
Ethernet I/O Simplifies Communication Between One PLC and Multiple Remote Locations

Defining the Problem:

A customer has multiple remote locations linked over an Ethernet network, each requiring discrete outputs. They all need to be sent the same communication signal at the same time.

System Requirements:

- All remote sites need to be controlled simultaneously from one central control room via Ethernet protocol
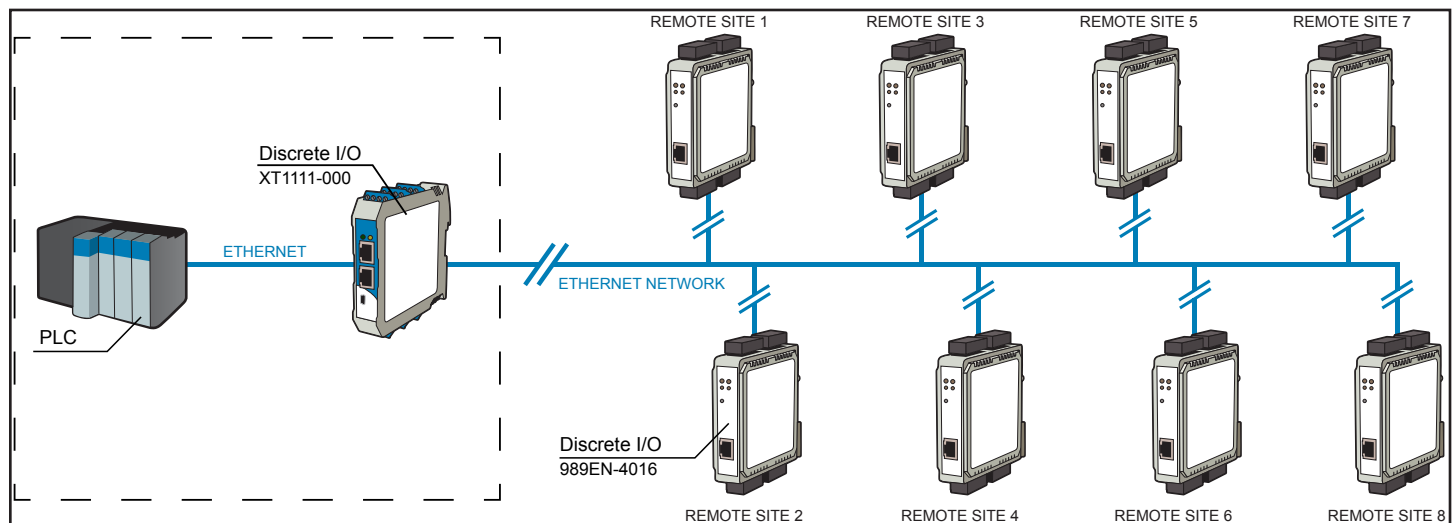
Implementing the Solution:

1. Set up Ethernet communication between master PLC device and the BusWorks XT discrete I/O module (XT1111).

2. Connect the XT1111 module and the remote site discrete I/O modules (989EN) to an Ethernet network.

3. Configure the XT module to use Acromag's i2o peer-to-peer communication to replicate the PLC's discrete signal to 8 other multiple locations by IP address.

Featured Products:

16-Channel Discrete I/O, Modbus/TCP XT1111-000

16-Channel Discrete I/O, with Counter/Timers 989EN-4016

Software Interface Package XT-SIP

Why Acromag:

Our BusWorks XT Modbus/TCP remote I/O modules include a peer-to-peer feature known as i2o, where two or more slaves can talk to each other without requiring a master. With i2o communication, one signal from the PLC is split by the XT1111 module and sent to multiple locations. The XT1111 automatically re-transmits the discrete level to each 989EN module's IP address, thus reproducing the status of the original PLC input.