SP, Gateway, Modbus to BACNet	2607055	condair

Kit Contents

Item	Description	Qty
1	Gateway, Modbus to BACNet, DA	1
2	Module, Ethernet Unitronics V100-17-ET2	1
3	Cable, Ethernet Cat 5, 0.5m	1
4	Adhesive tape, double-sided, foam	4
5	Wire 20 GA 10 STRND BLACK	20 IN
6	Wire 20 GA 10 STRND RED	20 IN
7	IM, Gateway Card, Modbus to BACnet	1
8	IM, Ethernet Modbus Card Installation, Dehumidification	1

Installation Instructions of Gateway Card to allow communication from Modbus to BACnet

Please read carefully before attempting to assemble, install and operate the product. If you have additional questions, please contact your Condair representative. They will be glad to assist you.

This document outlines the installation of a Field server Gateway module (namely the FPC-N64-2199) in the dehumidifier control panel to allow user to translate Modbus communication to BACnet MS/TP or BACnet IP communication.

It is a two-step process,

1. Install Ethernet Modbus communications module (namely the V100-ET2 module) to the SM35 PLC. ***Please refer to Manual 2606415 – IM, Ethernet Modbus Card Installation, Dehumidification provided in the spare part kit.***
2. Install Field server Gateway module (namely the FPC-N64-2143) in the dehumidifier control panel to establish communication from Modbus to BACnet. ***Refer to the installation instructions below.***

Installation of BACnet Gateway

1. After the Ethernet module has been installed and tested for connection in the PLC, disconnect the unit from the power supply before performing any work.
2. The gateway accepts 24VDC. Connect gateway to terminal “7” (+24V) and terminal “3” (GND) of dehumidifier terminal block inside the control panel compartment.
3. Connect supplied CAT 5 cable from SM35 PLC to gateway at ETH1 port.

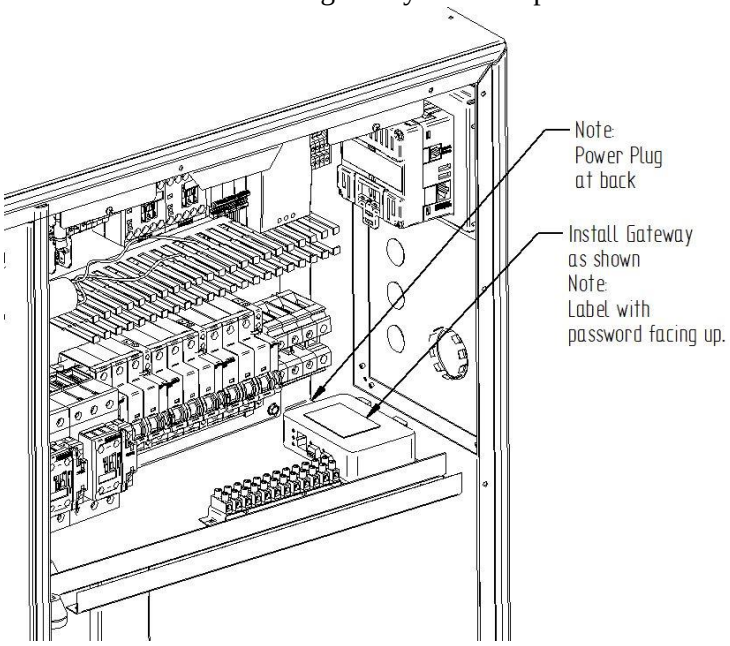


Figure 1: Recommended mounting location for the gateway module

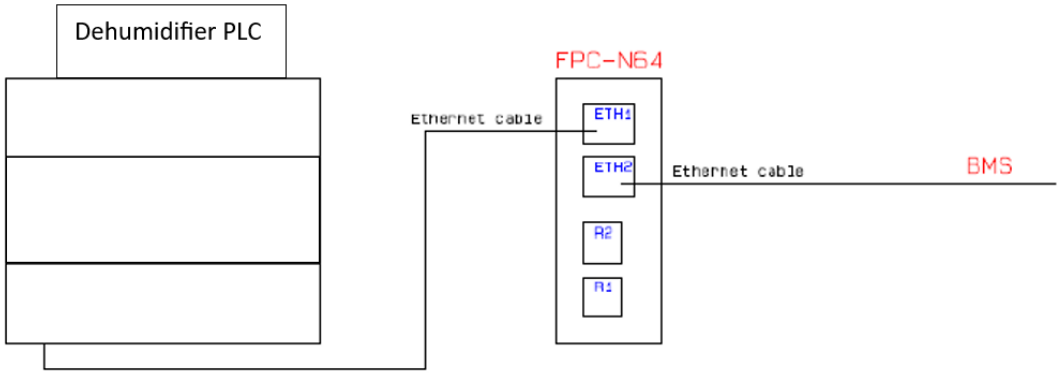
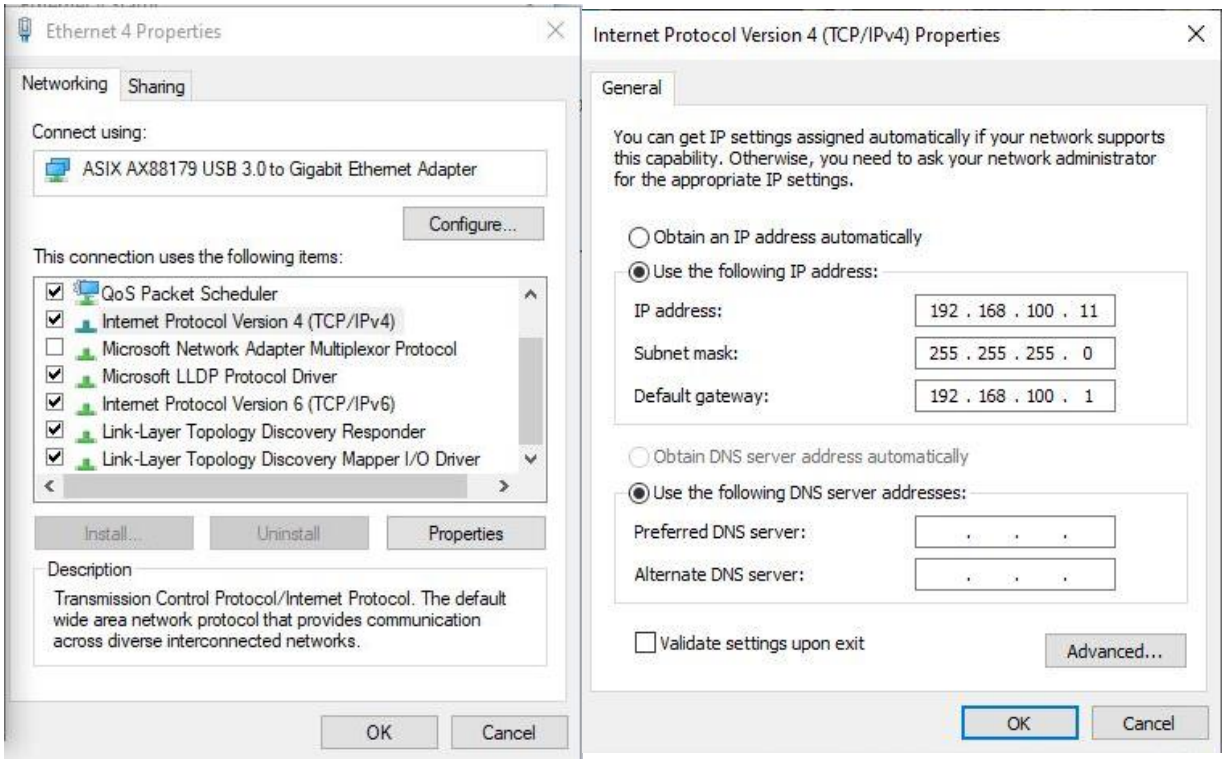


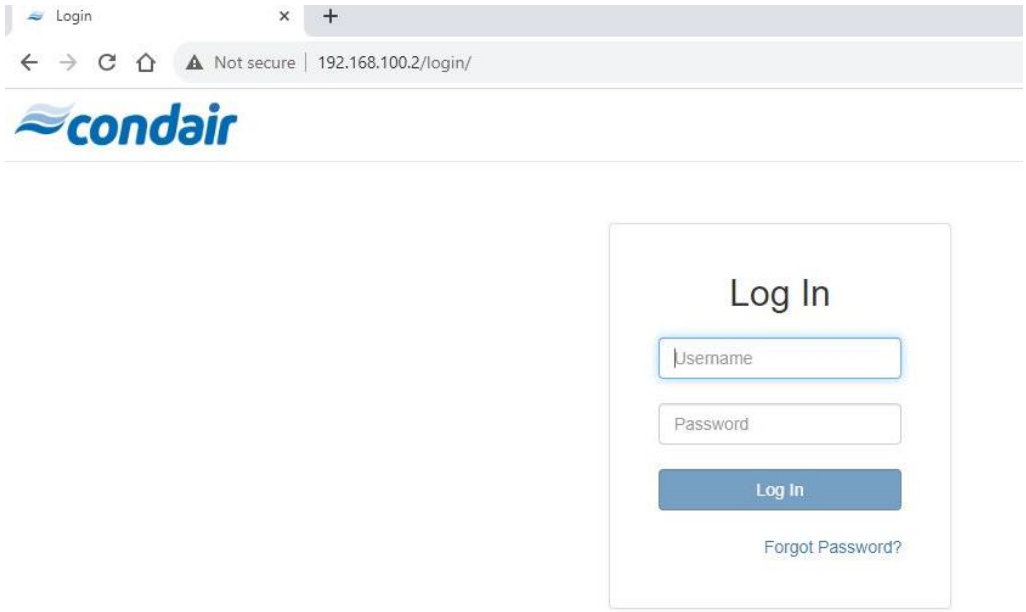
Figure 2: PLC connection to gateway module to Building Management Systems (BMS)

4. Power up the unit.
5. On the PLC User Interface navigate to Menu > Communication Setup
6. Enter the user level password: 4498
7. The display will note the installation of an Ethernet card. Navigate to Modbus TCP/IP settings.
8. Note the default PLC IP address, gateway, subnet mask and the Modbus network ID.
9. Use a PC to validate the network connection.
    a. Connect an RJ45 Ethernet cable from gateway port (ETH2) to a computer.
    b. Use network settings to configure the computer's ethernet IP settings to connect to the Gateway.
    c. Configure PC address to same subnet as IP address of gateway (see label on gateway), set default gateway to IP address of the gateway.



Note: Above image shows network settings for Windows 7

d. Using a web browser enter the gateway IP address and login with the following credentials.
Username: ***admin***
Password: ***See label on the gateway (or scan QR code)***

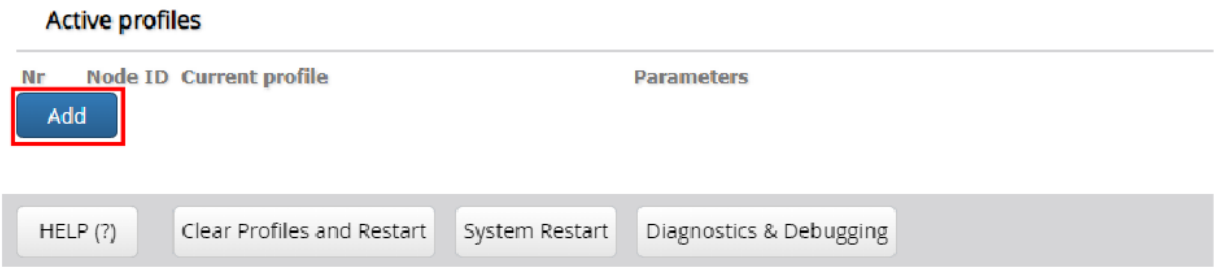


10. Configure the Gateway

Under the Configuration Parameters, select/change the communication for either IP or MSTP network.

BACnet IP	BACnet MSTP
• Select, 1 in Protocol Selector	• Select, 2 in Protocol Selector
• Click Submit	• Click Submit
• Click System Restart	• Click System Restart
• Select/Adjust Desired Parameters	• Select/Adjust Desired Parameters
• Click Submit	• Click Submit
• Click System Restart	• Click System Restart

a. Add DA Device - Under Active Profiles – Click Add



b. Enter values below depending on type of connection (BACnet IP or BACnet MSTP)

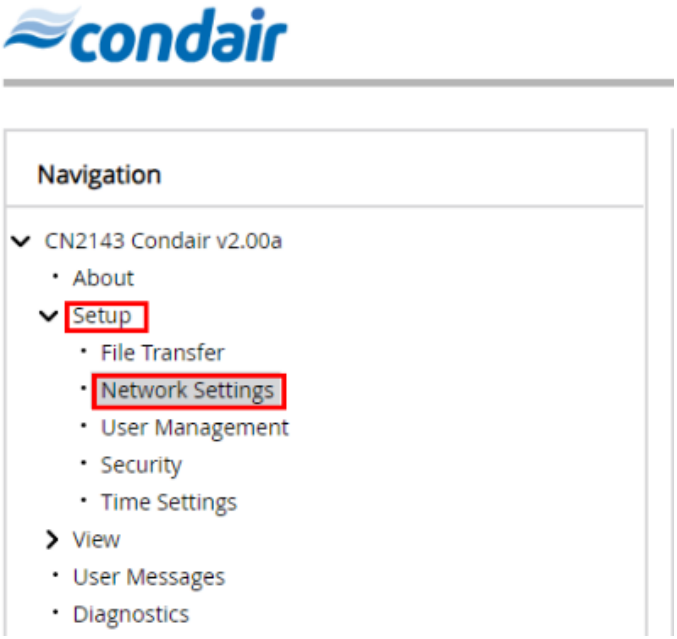
BACnet IP	BACnet MSTP
• Enter Node ID as 1	• Enter Node ID : *Enter the PLC's Modbus Network ID that was noted above.*
• Select BAC_IP_DA	• Select BAC_MSTP_NA
• Parameters Ip_address: 192.168.0.150 • TCP_id : *Enter the PLC's Modbus Network ID that was noted above.*	• Click Submit
• Click System Restart	• Click System Restart

Example after entering values (example is for BACnet IP)

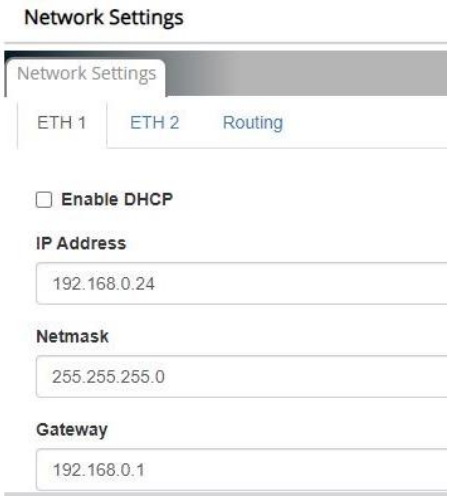
11. The gateway installation and configuration is complete.

Changing IP Addresses / Troubleshooting:

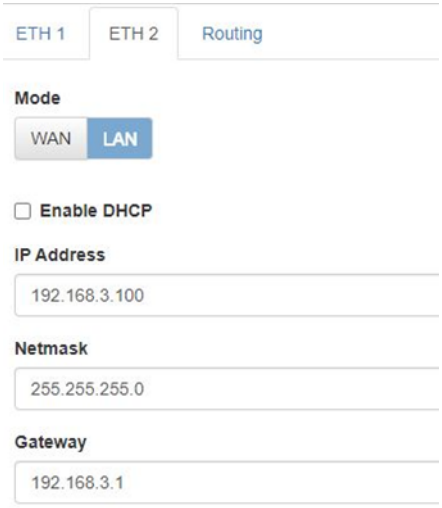
- Connect computer and login to gateway as described in point 9 above.
- Click Diagnostics & Debugging
- Click, Setup > Network Settings



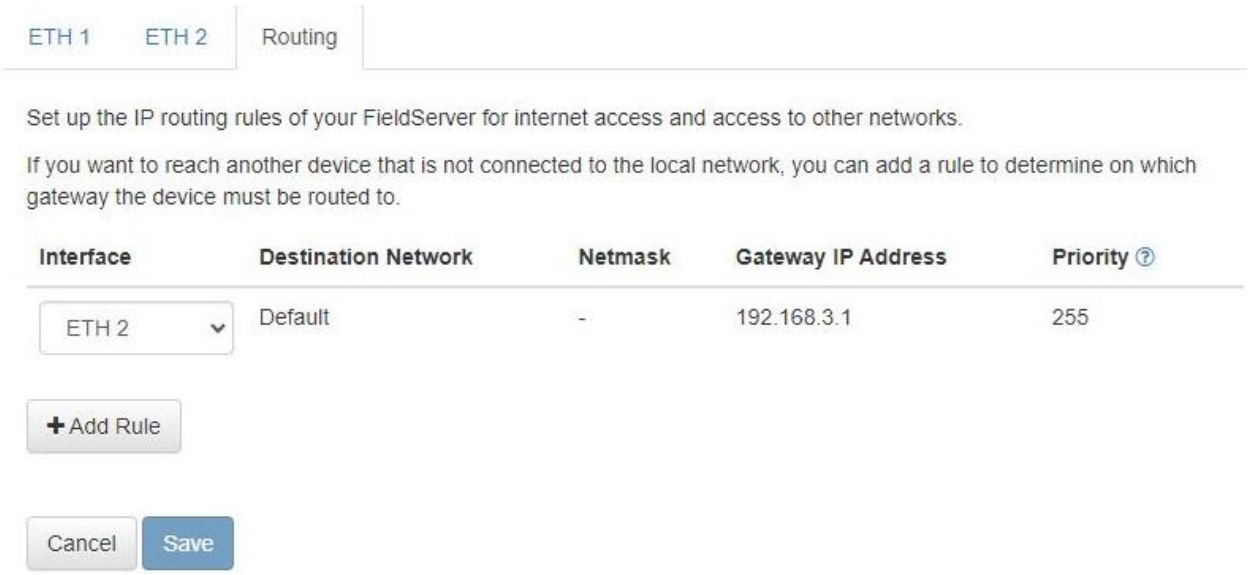
- In Network settings you can assign an IP address for ETH1 (For PLC and Gateway Network) or ETH2 (For PC or BACnet network), set up a rule for the output ethernet port.



- Set ETH1 IP address to connect to PLC or set ETH2 IP address to connect to the laptop (BMS).



- Default routing priority is set to ETH2 and should not be changed. In case of communication issues check that this is set correctly.



BACnet Object Table

Object name	Object ID	Read/Write	Text / Info	Value
Analog Inputs				
ANALOG INPUT 0	001	R	Humidity sensor	0.0 – 100.0 % rH
ANALOG INPUT 1	002	R	0-10V Dehum Control	0.0 – 10.0 V
Analog Outputs				
ANALOG OUTPUT 0	003	R/W	Humidity Setpoint	50.0 % rH
Digital Value				
BINARY VALUE 0	004	R/W	Unit on/off	1=On
BINARY VALUE 1	007	R	Cooling time react. Air fan	1=On
BINARY VALUE 2	008	R	Unit automatic/manual mode	1=On
BINARY VALUE 3	009	R/W	Continuous process air fan	1=On
Digital Inputs				
BINARY INPUT 0	005	R	Urgent Alarm	1=On
BINARY INPUT 1	006	R	Non-Urgent Alarm	1=On
BINARY INPUT 2	010	R	Rotation Guard Sensor	1=On
BINARY INPUT 3	011	R	Circuit Brk React Heater	1=On
BINARY INPUT 4	012	R	Circuit Brk Process Air Fan	1=On
BINARY INPUT 5	013	R	Circuit Brk React Air Fan/Drive Mtr	1=On
BINARY INPUT 6	014	R	Overheating Protection OH2	1=On
BINARY INPUT 7	015	R	Proc Air Fan Thermal Protect Alarm	0=On
BINARY INPUT 8	016	R	Filter Guard	1=On
BINARY INPUT 9	017	R	External Start Humidistat	1=On
BINARY INPUT 10	018	R	External Stop Stop Button	0=On
BINARY INPUT 11	019	R	React Air Fan Thermal Protect Alarm	0=On
BINARY INPUT 12	020	R	React Heater Step 1	1=On
BINARY INPUT 13	021	R	Process Air Fan	1=On
BINARY INPUT 14	022	R	React Air Fan	1=On
BINARY INPUT 15	023	R	Driver Motor	1=On
BINARY INPUT 16	024	R	Alarm Indication	1=On
BINARY INPUT 17	025	R	React Heater Step 2	1=On
BINARY INPUT 18	026	R	React Air Fan 10V Control Relay	1=On