Stand-Alone Controller

I/O Flex 6126

TECHNICAL INSTRUCTIONS

OEMCtrl™

I/O Flex 6126

Using the I/O Flex 6126

About this document

This document provides information specific to the I/O Flex 6126 hardware platform and its module driver, drv_ioflex.

NOTE The beta release of the I/O Flex 6126 module does not yet support LonWorks SLTA, LonWorks plug-in, or Ethernet but will support these protocols in the future. References in this document to these protocols, and any other features that are not yet supported, are shown in grey text.

Introduction

The I/O Flex 6126 is general purpose control module for mounting within the building envelope. It provides the communications circuitry, non-volatile memory, and removable screw terminals for I/O connections. See Table 1 for a description of the I/O Flex 6126's points.

Table 1. I/O Flex 6126 points

Point Type	Specifics
Digital Outputs	6 digital outputs, relay contacts rated at 5A maximum at 250VAC. Use pins on the connector to configure contacts as normally open (NO) or normally closed (NC).
Input	12 inputs, configurable for dry contact, thermistor/RTD, 0-20ma input, or 0-10VDC input. Inputs 1 and 2 may be used for pulse counting. Input resolution is 12 bit A/D.
Analog Output	6 analog outputs, (outputs 1 and 2 are either 0-10v or 0-20ma; 3 through 6 are 0-10v only). Output resolution is 8 bit.

Hardware Configuration

Figure 1 on page 4 details the I/O Flex 6126 hardware.

Ports

The I/O Flex 6126 has the following ports.

Port 1 3-pin port for ARCNET only.

Port 2a 5-pin port, jumper selectable for EIA-232 or 2-wire/4-wire EIA-485. In EIA-232 mode, there is one software-controllable input line and one software-controllable output line. Port 2a supports BACnet MSTP and PTP, Modbus (RTU and ASCII), and N2.

NOTE In the future, Port 2a will also support LonWorks SLTA.

Port 2b In the future, this 14-pin port will support LonWorks plug-in or Ethernet.

Rnet port 4-pin port for interface with a BACview6, RS sensors, or local laptop access.

Xnet Remote Expansion port 3-pin port for communication with an I/O Flex 8160 point expander through the Xnet network.

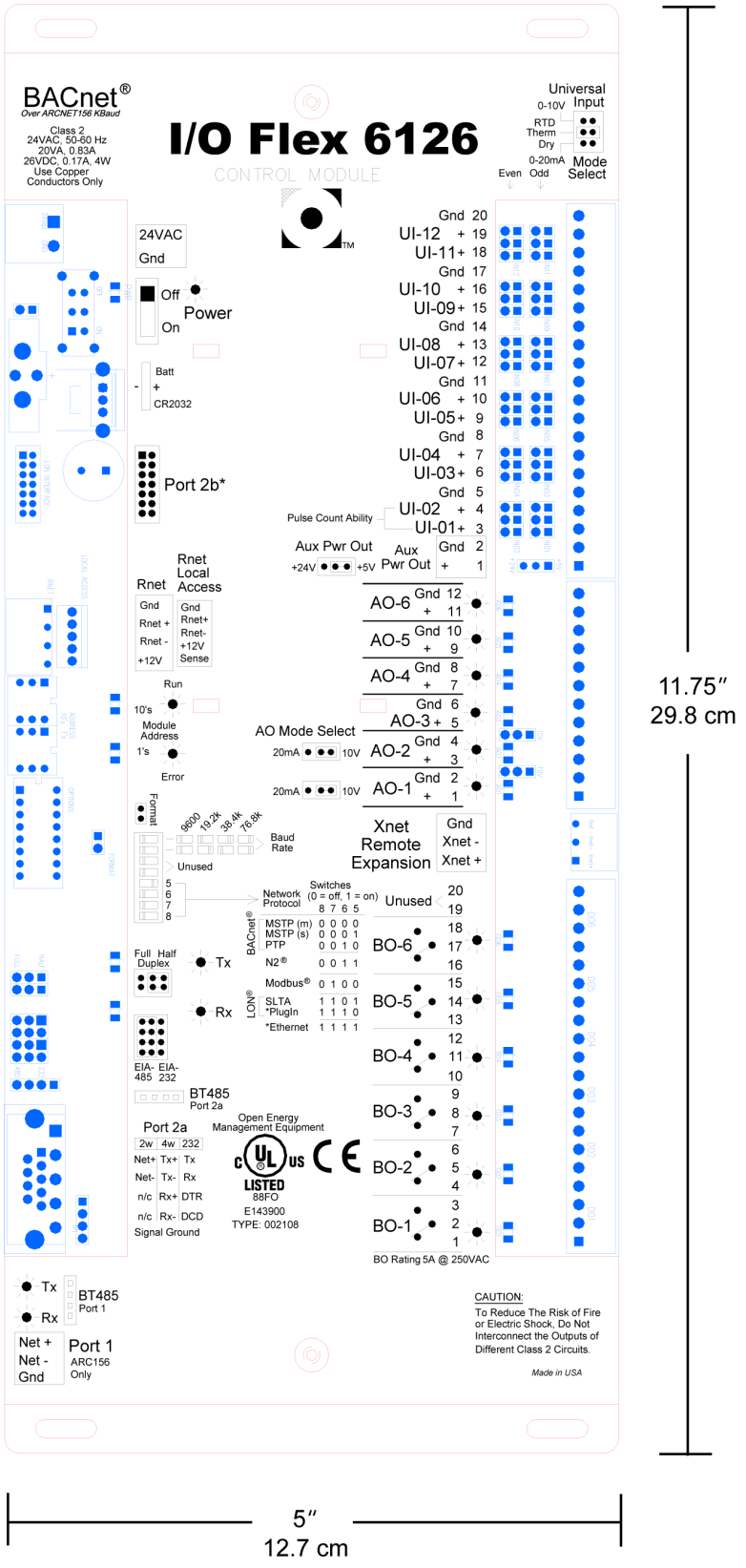


Figure 1. I/O Flex 6126 dimensions and layout - DRAFT

Jumpers

The I/O Flex 6126 has the following jumper settings:

NOTE To avoid damaging the jumpers, grip them on the sides parallel to the jumper leads. The jumper leads must remain parallel to the row of jumper pins. See Figure 2.

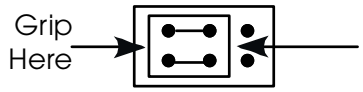


Figure 2. Gripping the jumper properly

Universal Input Mode Select Jumpers Select 0-10V, RTD Therm Dry, or 0-20mA to indicate what type of signal each input should expect.

Aux Pwr Out Jumper Select +24V or +5V if you are using this as an additional power source when the current input mode is being used.

AO Mode Select Jumpers Select 20mA or 10V, depending on what type of signal this output will send.

Full Half Duplex Jumper Select Full (4-wire) or Half (2-wire) for Port 2a.

NOTE This jumper setting must match the correct protocol settings in WebCTRL, or the module will not be able to communicate on Port 2a.

EIA-485/EIA-232 jumper Select EIA-485 or EIA-232 for Port 2a.

Rotary Address Switches

The I/O Flex 6126's pair of rotary switches determines the I/O Flex 6126's MAC address when it is placed on a BACnet/ARC156 or BACnet MS/TP network. The rotary switches define the MAC address portion of the device's BACnet address which is composed of the network address and the MAC address.

These rotary switches can be set to anything between 1 and 99. One switch corresponds to the tens digit and the other corresponds to the ones digit. For example, if the module's address is one, set the tens switch to zero and the ones switch to one, as shown in Figure 3.

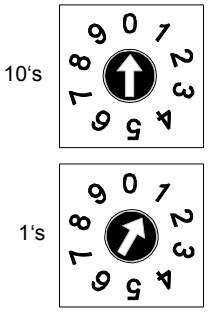


Figure 3. Rotary address switches

Comm Selector DIP Switches

NOTE You do not need to set the DIP switches if the Comm port is set to communicate BACnet-over-ARC156.

NOTE Port 1 is BACnet-over-ARC156 only.

Port 2a and Port 2b DIP Switches

The I/O Flex 6126's DIP switches determine the baud rate and protocol used on the network port when it is configured for BACnet MS/TP, Modbus RTU, N2, LonWorks, or Ethernet. Set the DIP switch to the right for On or to the left for Off.

NOTE DIP switches 3 and 4 are not currently used on this module.

Baud Rate DIP Switches (SW1 and SW2)

Switches 1 and 2 are used to determine what baud rate the I/O Flex 6126 is communicating at on the EIA-485 network. Table 2 shows the appropriate DIP switch settings for each baud rate.

Table 2. Baud Rate (SW1 and SW2)

Baud Rate	SW1	SW2
9600	Off	Off
19.2K	Off	On
38.4K	On	Off
76.8K	On	On

Protocol DIP Switches (SW5, SW6, SW7, and SW8)

Switches 5, 6, 7, and 8 are used to determine what protocol the I/O Flex 6126 is communicating with. Table 3 shows the appropriate DIP switch settings for each protocol.

NOTE In Table 3, switches are listed in descending order, as they are on the module.

Table 3. Protocol (SW5, SW6, SW7, and SW8)

Protocol	SW8	SW7	SW6	SW5
BACnet MS/TP (m)	Off	Off	Off	Off
BACnet MS/TP (s)	Off	Off	Off	On
BACnet PTP	Off	Off	On	Off
N2	Off	Off	On	On
Modbus	Off	On	Off	Off
LonWorks SLTA	On	On	Off	On
LonWorks plug-in	On	On	On	Off
Ethernet	On	On	On	On

LEDs

The I/O Flex 6126 has 19 LEDs: Power, Run, Error, Tx and Rx for Port 1, Tx and Rx for Port 2a, one for each of the six digital outputs, and one for each of the six analog outputs. The LEDs provide visual indication of power, device status, or communications.

Specifications

Power 24VAC ± 15%, 50-60Hz, 20VA power consumption (single Class 2 source only, 100VA or less).

Inputs Twelve inputs, configurable for 0-10V, RTD Therm Dry, or 0-20mA Inputs 1 and 2 may be used for pulse counting.

Input Resolution 10 bit A/D.

Digital Outputs Six digital outputs, relay contacts rated at 5A @ 250VAC. Configured as normally open or normally closed.

Analog Outputs Six analog outputs; AOs 1 and 2 are configurable for 0-10V or 0-20mA; AOs 3 through 6 are 0-10V only.

Output Resolution 8 bit D/A.

Communication One ARC156 port; one network port configurable for BACnet-over-ARC156 or EIA-485 BACnet MS/TP, (9600 bps, 19.2k bps, 38.4k bps, or 76.8k bps), Modbus (9600 bps, 19.2k bps, or 38.4k bps), N2 (9600 bps), and in the future, LonWorks SLTA; one plug-in option

port for LonWorks plug-in or Ethernet; one Rnet port (EIA-485, 115.2k bps) for communication with a BACview, RS sensors, or WebCTRL.

Environmental Operating Range -22° to 150°F (-30° to 65.5°C); 10 to 95% relative humidity, non-condensing.

Status Indication Visual (LED) status of network communication, running, errors, power, and all outputs.

Memory 1MB Flash memory and 1MB non-volatile battery-backed RAM (does not lose information that was stored before a power failure).

Protection Built-in surge and transient protection circuitry. The module is protected by internal solid state Polyswitches on the incoming power and network connections. These Polyswitches are not replaceable and will reset themselves if the condition that caused the fault returns to normal.

Battery Lithium 3V coin cell battery, CR2032, provides a minimum of 10,000 hours of data retention during power outages.

Listed By UL 916 (PAZX), cUL C22.2 No. 205-M1983 (PAZX7), CE (1997), FCC Part 15 - Subpart B - Class A.

Mounting

Screw the I/O Flex 6126 into an enclosed panel using the mounting holes provided on the cover plate. Be sure to leave about 2 inches (5 centimeters) on each side for wiring.

Power Wiring

CAUTION The I/O Flex 6126 is a Class 2 device (less than 30VAC, 100VA maximum). Take appropriate isolation measures when mounting the I/O Flex 6126 in a control panel where non-Class 2 devices (for example, 120VAC) or wiring are present.

You can power several devices from the same transformer if you maintain the same polarity.

The I/O Flex 6126 has an operating range of 21.6VAC to 26.4VAC. If voltage measured at the I/O Flex 6126's power input terminals is outside this range, the I/O Flex 6126 may not work properly.

1. Turn the I/O Flex 6126's power off. This prevents the I/O Flex 6126 from being powered up before the proper voltage is verified.
2. Make sure the 24VAC power source is off.
3. Connect the power wires to the I/O Flex 6126's power connector, making sure the proper polarity is observed for Ground and Hot (24VAC) (see Figure 1 on page 4 for location).
4. Apply power to the transformer.
5. Make sure that 24VAC is present at the power connector terminals.
6. Set the I/O Flex 6126's address. Refer to "Rotary Address Switches" on page 4 for details about setting the address.
7. Turn the I/O Flex 6126's power back on.

   When the I/O Flex 6126 turns on, the Power, Run and Error LEDs turn on and the Run and Error LEDs begin blinking. The Error LED goes off once memory has been downloaded to the I/O Flex 6126. (See "LEDs" on page 15 for more information about LED signals.)

Communicating with the I/O Flex 6126

Downloading memory

The I/O Flex 6126 can store one module driver and up to 999 Graphic Function Blocks (GFBs), depending on the size of the control programs. The I/O Flex 6126 requires the drv_ioflex module driver. You must be logged in to WebCTRL with the appropriate privilege to download memory.

NOTE Currently, memory cannot be downloaded through the Access Port. It can only be downloaded from WebCTRL via Ethernet to a router (for example, an LGE or an LGRM-E) and from the router over ARC156 or BACnet MS/TP to the I/O Flex 6126.

1. In WebCTRL, click the CFG button at the bottom of the navigation pane.
2. Click Download in the CFG tree control.
3. Click the Memory, Parameters, or Schedules boxes, depending on what you want to download.
4. Expand the tree in the action pane, click the I/O Flex 6126 you want to download to, then click Add. Repeat for other I/O Flex 6126s you want to download to.
5. Click the Execute Download button.

   If any downloads failed, they are listed in the Failures section under the tree in the action pane. To retry a failed download, click on the I/O Flex 6126 in the Failures list, click Add, and click the Execute Download button again. If you do not want to retry a failed download, click the Clear Failures button.

   NOTE Since a failed download indicates a system problem, you should never clear a failure. Locate and resolve the problem, and then retry the download.
6. Click the Properties button to refresh the screen. This removes the items from the Download Items list.

BACview6

The I/O Flex 6126 can be configured with a BACview6 keypad/display on the Rnet port. The BACview6 allows a local operator to access information directly from the I/O Flex 6126 after a custom keypad file has been written and downloaded to the module.

NOTE If the I/O Flex 6126 is powered by a 40VA or higher transformer, no external power supply is needed to power the BACview6 and its backlight. However, to avoid overheating under these circumstances:

- use the BACview6's built-in inactivity time-out control to avoid having the backlight on for an extended time
- provide adequate air circulation around the I/O Flex 6126 to dissipate heat

RS Pro and RS Standard

The I/O Flex 6126 supports up to 5 RS sensors on its BACview/RS sensor port. Following are allowable sensor types and combinations:

- one RS Pro,
- up to 4 RS Standards, or
- one RS Pro and up to 4 RS Standards.

The RS Pro is a thermistor-based temperature sensor. See Figure 4 for a diagram on how to connect the RS Pro to the I/O Flex 6126.

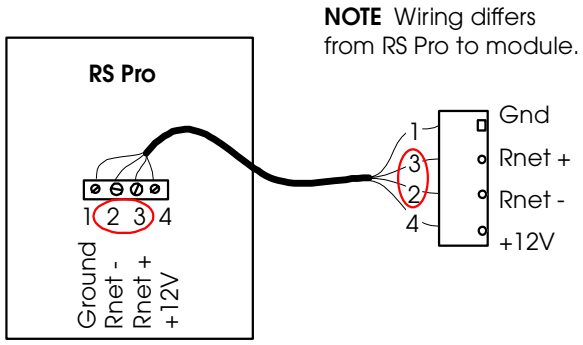


Figure 4. Connecting RS Pro

For more information on the RS Pro and RS Standard, see the RS Standard and RS Pro Technical Instructions at *http://www.oemctrl.com*.

BACnet Networking

ARC156

An ARCNET coprocessor allows the I/O Flex 6126 to communicate on an ARC156 network through the module's dedicated ARC156 port, Port 1. ARC156 is a unique implementation of the industry standard, ARCNET. It differs from ARCNET as shown in Table 4.

Table 4. ARC156 vs. ARCNET

	ARC156	ARCNET
Speed	156K bits/second	2.5M bits/second
Coupling	Opto coupled, d.c.	Transformer coupled
Mode	Backplane	Dipulse Hybrid
Connector type	3 pos screw terminal	BNC
Wire type	twisted pair	RG-59/U coax
Topology	daisy chain	star, with active hub
Termination	120 Ohm	75 Ohm

The I/O Flex 6126 uses the BACnet protocol to communicate with up to 99 other devices on an ARC156 network at 156 kbps. A special communications cable is recommended for maximum signal integrity. This cable can be ordered from:

Magnum Cable Corporation
Cleveland, OH 44110-0500
(800) 421-0820

Refer to the ARC156 CMnet Wiring Technical Instructions for more information about termination, repeaters, wiring, and ARCNET token passing.

NOTE You can verify that the I/O Flex 6126 is communicating on the ARC156 network segment by checking the module's transmit and receive LEDs on the Comm port. Both LEDs should be active to indicate token passing.

BACnet MS/TP

The I/O Flex 6126 can be configured to communicate on a BACnet MS/TP network as an MS/TP master or slave device through the Comm port.

Configuring the I/O Flex 6126 for BACnet MS/TP

1. Turn the I/O Flex 6126's power off.
2. Configure Port 2a for BACnet MS/TP:
   - Set the EIA-485/EIA-232 jumper to EIA-485. See Figure 5.
   - Set DIP switches 1 and 2 for the appropriate communications speed (9600, 19.2k, 38.4k, or 76.8k bps).
   - Set DIP switches 5 through 8 for BACnet MS/TP. See module for correct BACnet MS/TP settings.

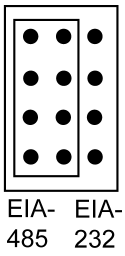


Figure 5. EIA-485/EIA-232 jumper set to EIA-485

Figure 6 shows the DIP switches set for 38.4k bps and BACnet MS/TP master. (See “Comm Selector DIP Switches” on page 5 for information on DIP switch settings.)

3. Refer to the WebCTRL help file for information on MS/TP wiring.
4. Turn the I/O Flex 6126’s power on.

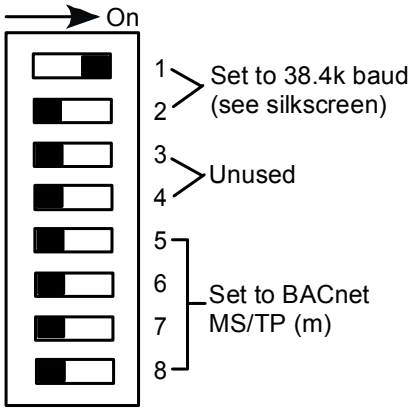


Figure 6. DIP switches set to 38.4k bps and BACnet MS/TP

Third Party Networking

Modbus

The I/O Flex 6126 can be configured as a Modbus slave device and connected directly to a Modbus network at the Comm port.

Configuring the I/O Flex 6126 for Modbus

1. Turn the I/O Flex 6126’s power off.
2. Configure Port 2a for communications with the Modbus network.
   - Set the EIA-485/EIA-232 jumper to EIA-485. See Figure 5 on page 10.
   - Set DIP switches 1 and 2 for the appropriate communications speed (9600, 19.2k, or 38.4k bps).
   - Set DIP switches 5 through 8 for Modbus. See module for Modbus settings.

     Figure 7 shows the DIP switches set for 38.4k bps and Modbus. (See “Comm Selector DIP Switches” on page 4 for information on DIP switch settings.)
3. Refer to Wiring Tips for EIA-232 and EIA-485 Communications in OEMCtrl’s Knowledge Base for information on wiring.
4. Turn the I/O Flex 6126’s power on.

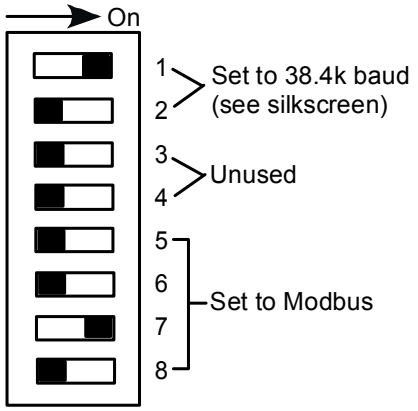


Figure 7. DIP switches set to 38.4k bps and Modbus

N2

The I/O Flex 6126 can be configured as an N2 slave device and connected directly to an N2 network at the Comm port. Up to 255 slaves are allowed on an N2 network.

Configuring the I/O Flex 6126 for N2

1. Turn the I/O Flex 6126’s power off.

2. Configure the Comm port for communications with the N2 network.
   - Set the EIA-485/EIA-232 jumper to EIA-485. See Figure 5 on page 10.
   - Set DIP switches 1 and 2 both to Off for 9600 bps.
   - Set DIP switches 5 through 8 for N2.

     Figure 8 shows the DIP switches set for 9600 bps and N2. (See “Comm Selector DIP Switches” on page 4 for information on DIP switch settings.)
3. Refer to Wiring Tips for EIA-232 and EIA-485 Communications in OEMCtrl’s Knowledge Base for information on wiring.
4. Turn the I/O Flex 6126’s power on.

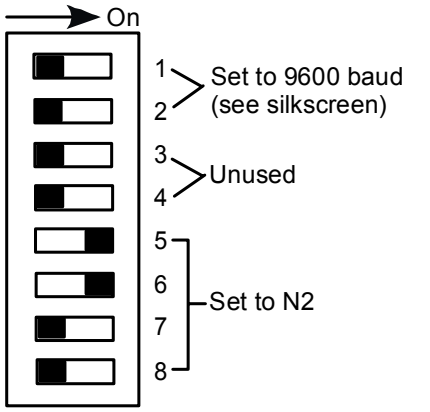


Figure 8. DIP switches set to 9600 bps and N2

Inputs and Outputs

Inputs

The I/O Flex 6126 is equipped with universal inputs that can accept both analog and digital input signals. All 12 inputs support thermistors, dry contacts, and 0-10VDC sensors and have a 12-bit A/D resolution; inputs 1 and 2 can be used for pulse counting.

The I/O Flex 6126 uses voltage dividers and current sensing resistors to convert electric input signals to volts, which are then measured and converted to the appropriate units. Scaling can be accomplished in WebCTRL on the module driver Properties page.

Input Signal Types

Table 5 describes the input signal types available on the I/O Flex 6126.

Table 5. Input Signal Types

Signal Type	Description
Thermistor	Precon type 2 (10kohm at 77 deg F). Thermistor input voltages should range between 0.489V and 3.825V.
Dry Contact	A 5VDC wetting voltage is used to detect contact position. This results in a 0.5mA maximum sense current when the contacts are closed. Any switch, which has more than 412 Ohms effective resistance (0.2V) when closed, must have an interposing mechanical relay when used with OEMCtrl modules.
0 to 5 VDC	The output impedance of a 0 to 5VDC source must not exceed 10kohms. The input impedance of the module is approximately 1Mohm.
1kohm RTD	Platinum, nickel, or balco.

Input Wiring Restrictions

Wiring restrictions for the I/O Flex 6126’s inputs are as follows:

- Maximum length: 50 feet (15 meters)

- Minimum gauge: 24 AWG
- Shielding: shielded and grounded to module's Gnd terminal

Input Connection Sequence

1. Turn the I/O Flex 6126's power off before wiring any inputs or outputs.
2. Connect the input wiring to the screw terminals on the module.

   See Figure 9 for details on wiring thermistors to inputs 5 and 6.
3. Ground shielded wire to the module's ground terminal.
4. Making sure that the jumper is positioned correctly and that you are gripping the jumper by the sides only (see Figure 2 on page 5), set the configuration jumper for inputs 1 and 2 to indicate signal type.

   NOTE You can also use the 0 - 5VDC setting for 0 - 10VDC. After setting the jumper, access WebCTRL and select input for 0 - 5VDC or input for 0 - 10VDC.

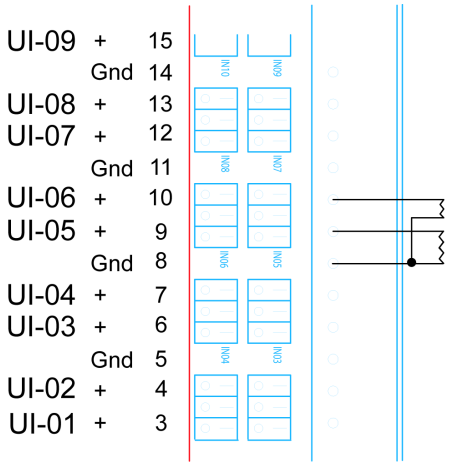


Figure 9. Wiring thermistors

5. For each input, enter the point identifiers. In WebCTRL, enter the point number and the point type on the Properties page. For linear inputs, set the minimum value and maximum value to scale the point to engineering units.
6. To verify each input's operation, have each sensor create a known value and compare it to the condition reported on the control program's Properties page in WebCTRL.
7. Turn the module's power on.

Outputs

Binary outputs can be connected to a maximum of 24 Volts AC/DC. Each output is a dry contact (rated at 1A, 24VAC maximum).

Analog outputs can support voltage devices in the range of 0 to 10VDC (analog outputs 1 and 2 are either 0-10v or 0-20ma; 3 through 6 are 0-10v only). The device that is being controlled must have a minimum of 500 Ohms resistance measured from its input to ground and must share the same ground as the I/O Flex 6126.

Digital Output Connection Sequence

1. Turn the I/O Flex 6126's power off.
2. Connect the output wiring to the screw terminals on the module as shown in Figure 10.

   NOTE Do not power pilot relays from the same transformer that powers the module.
3. Turn the I/O Flex 6126's power on and power the digital outputs.
4. Verify each output's operation.

   Lock the output to a known condition using the Equipment Definition's Properties page in WebCTRL, then make sure the equipment operates as specified.

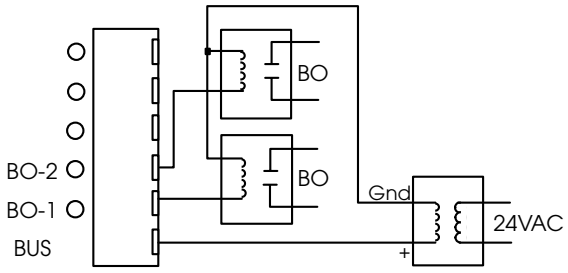


Figure 10. Wiring for Digital Outputs

Analog Output Connection Sequence

NOTE The device that is being controlled by the I/O Flex 6126 must have a minimum of 2000 Ohms resistance at 10VDC out measured from its input to ground and must share the same ground as the I/O Flex 6126.

1. Turn the I/O Flex 6126's power off.
2. Connect the output wiring to the screw terminals on the module as shown in Figure 11.
3. Turn the I/O Flex 6126's power on.
4. Verify each output's operation.

   In WebCTRL, lock the output to a known condition using the Equipment Definition's Properties page, then make sure the equipment operates as specified.

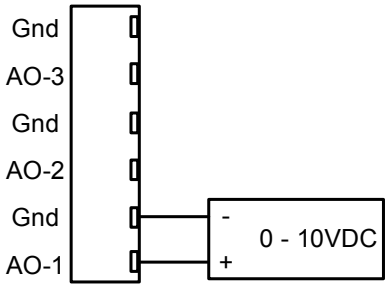


Figure 11. Wiring for Analog Outputs

I/O Flex Driver Protocol Settings

You must configure protocol information on the Open Protocol Interface Properties page in WebCTRL.

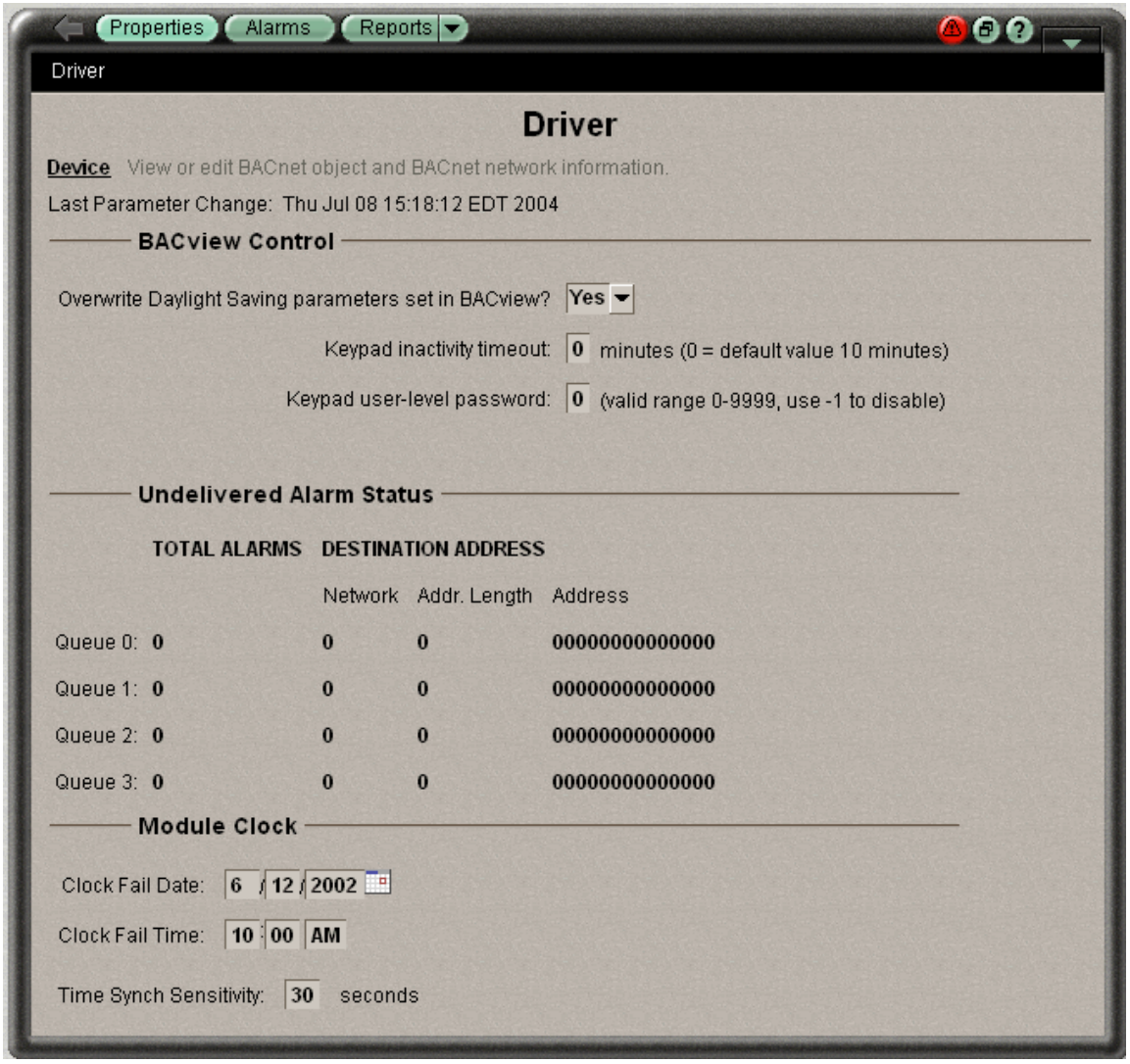


Figure 12.

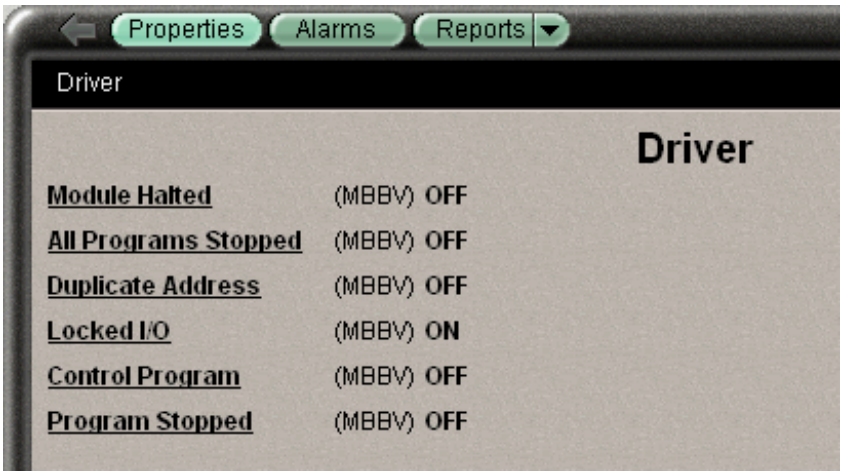


Figure 13.

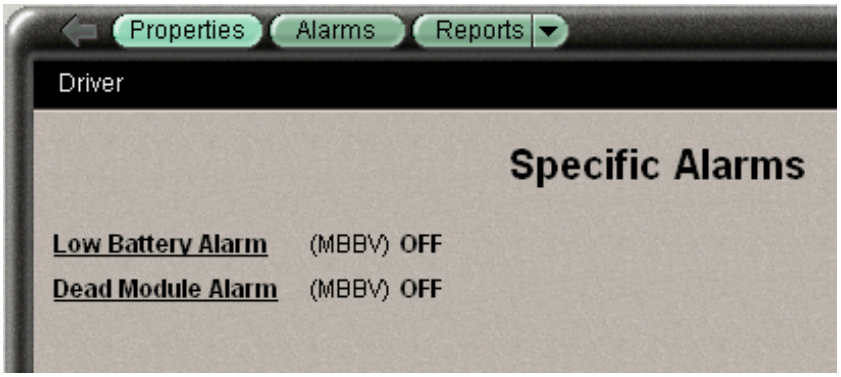


Figure 14.

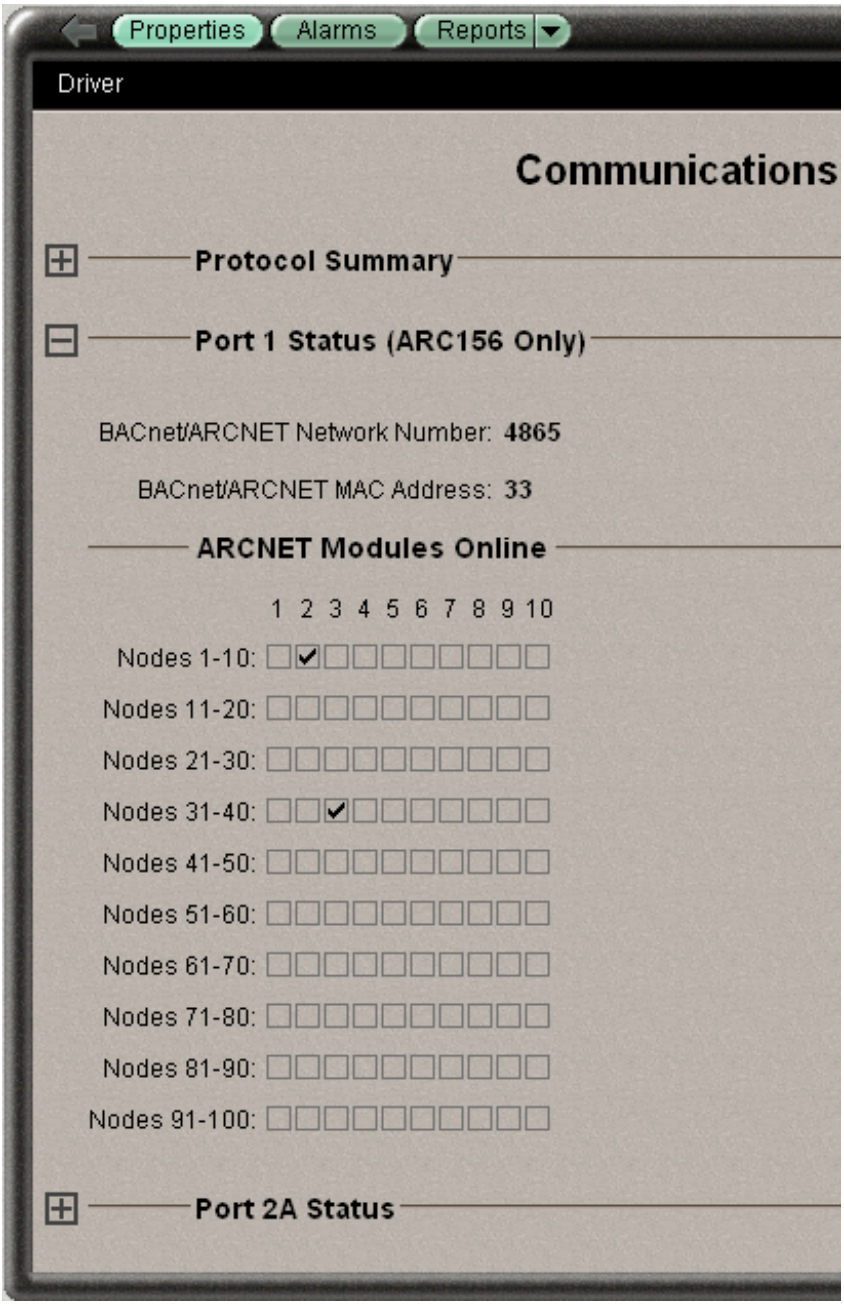


Figure 15.

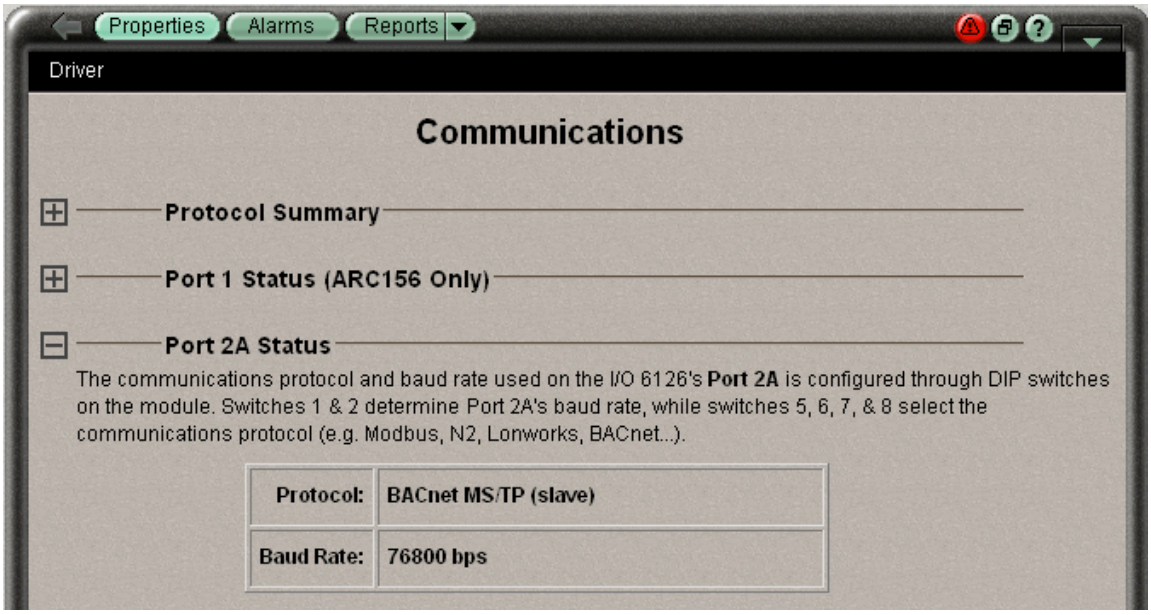
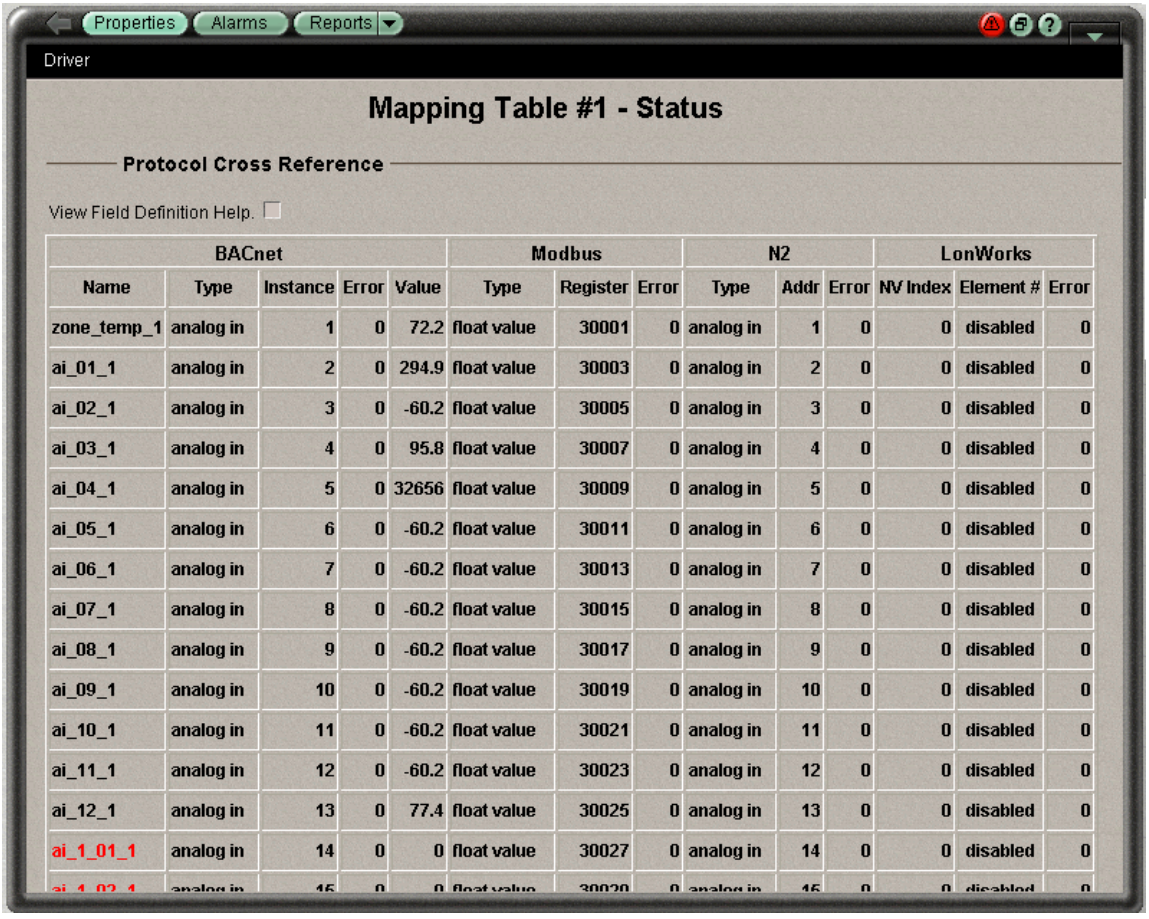


Figure 16.



BACnet					Modbus			N2			LonWorks		
Name	Type	Instance	Error	Value	Type	Register	Error	Type	Addr	Error	NV Index	Element #	Error
zone_temp_1	analog in	1	0	72.2	float value	30001	0	analog in	1	0	0	disabled	0
ai_01_1	analog in	2	0	294.9	float value	30003	0	analog in	2	0	0	disabled	0
ai_02_1	analog in	3	0	-60.2	float value	30005	0	analog in	3	0	0	disabled	0
ai_03_1	analog in	4	0	95.8	float value	30007	0	analog in	4	0	0	disabled	0
ai_04_1	analog in	5	0	32656	float value	30009	0	analog in	5	0	0	disabled	0
ai_05_1	analog in	6	0	-60.2	float value	30011	0	analog in	6	0	0	disabled	0
ai_06_1	analog in	7	0	-60.2	float value	30013	0	analog in	7	0	0	disabled	0
ai_07_1	analog in	8	0	-60.2	float value	30015	0	analog in	8	0	0	disabled	0
ai_08_1	analog in	9	0	-60.2	float value	30017	0	analog in	9	0	0	disabled	0
ai_09_1	analog in	10	0	-60.2	float value	30019	0	analog in	10	0	0	disabled	0
ai_10_1	analog in	11	0	-60.2	float value	30021	0	analog in	11	0	0	disabled	0
ai_11_1	analog in	12	0	-60.2	float value	30023	0	analog in	12	0	0	disabled	0
ai_12_1	analog in	13	0	77.4	float value	30025	0	analog in	13	0	0	disabled	0
ai_1_01_1	analog in	14	0	0	float value	30027	0	analog in	14	0	0	disabled	0

Figure 17.

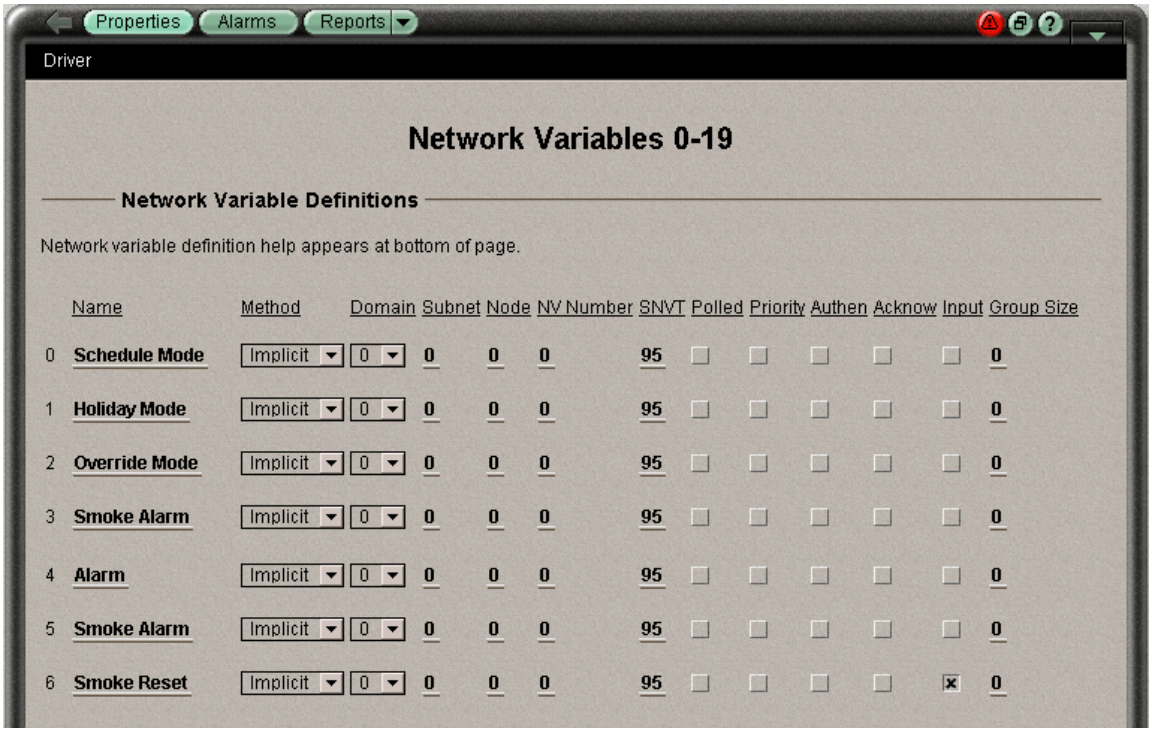


Figure 18.

Figure 19.

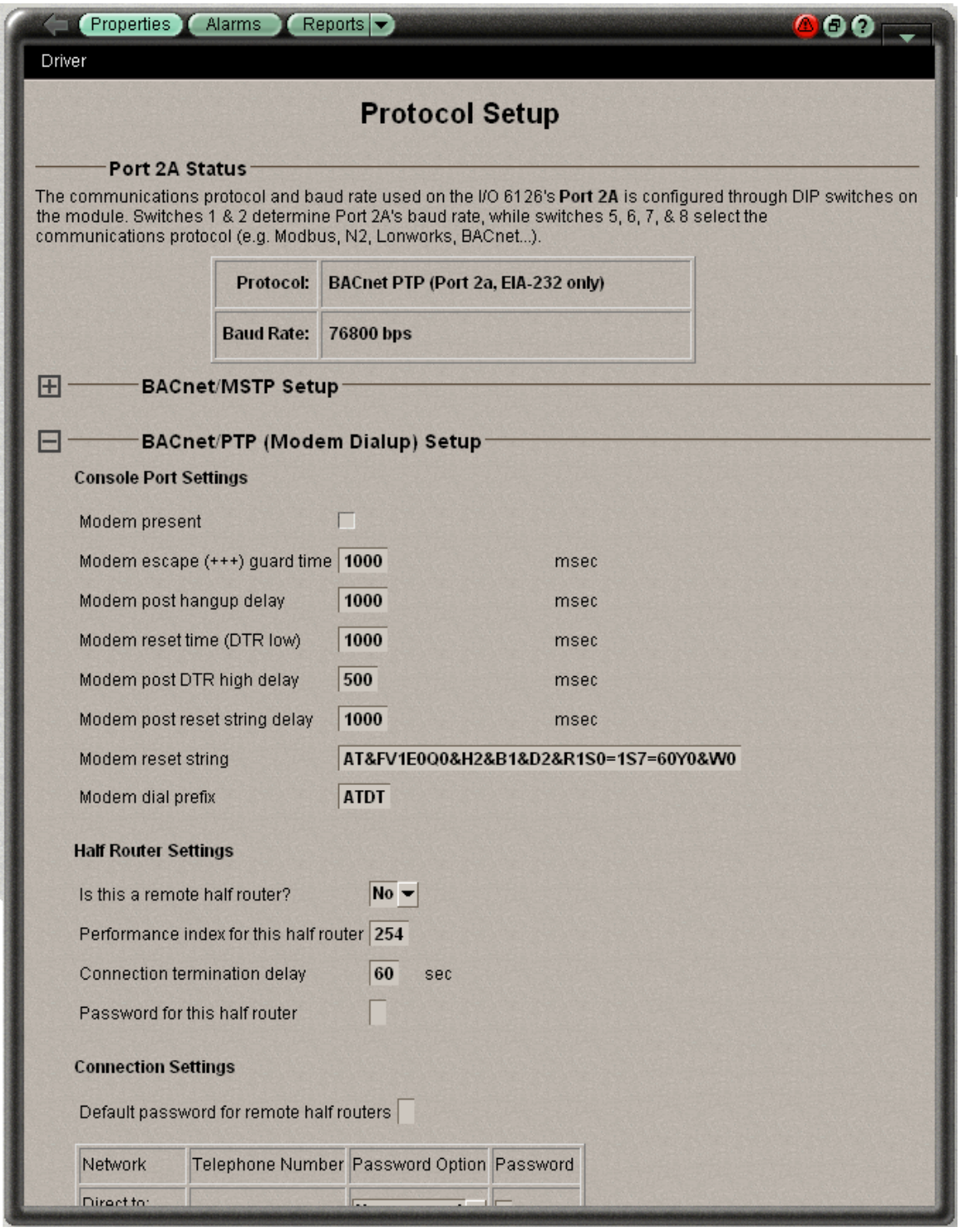


Figure 20.

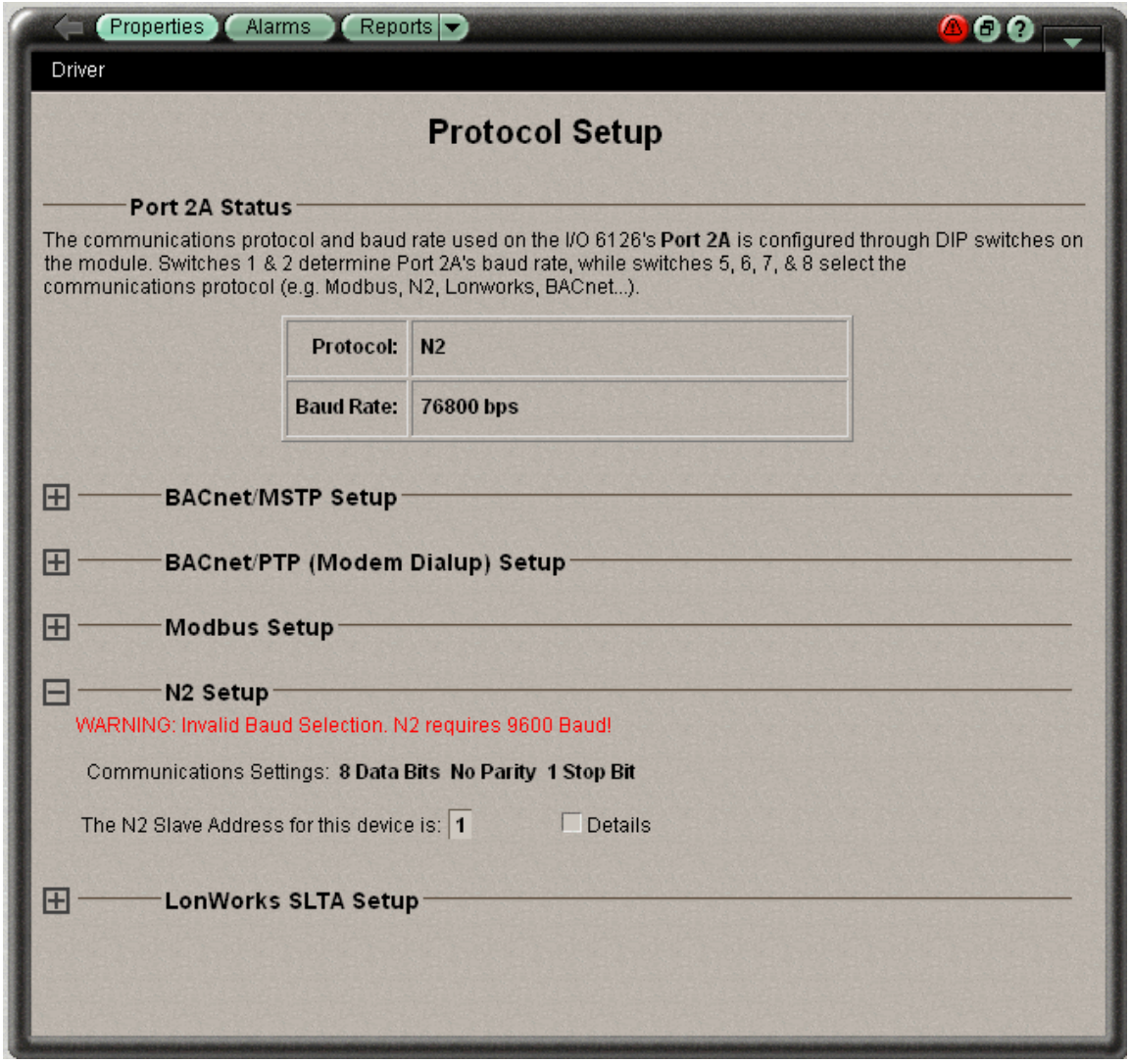


Figure 21.

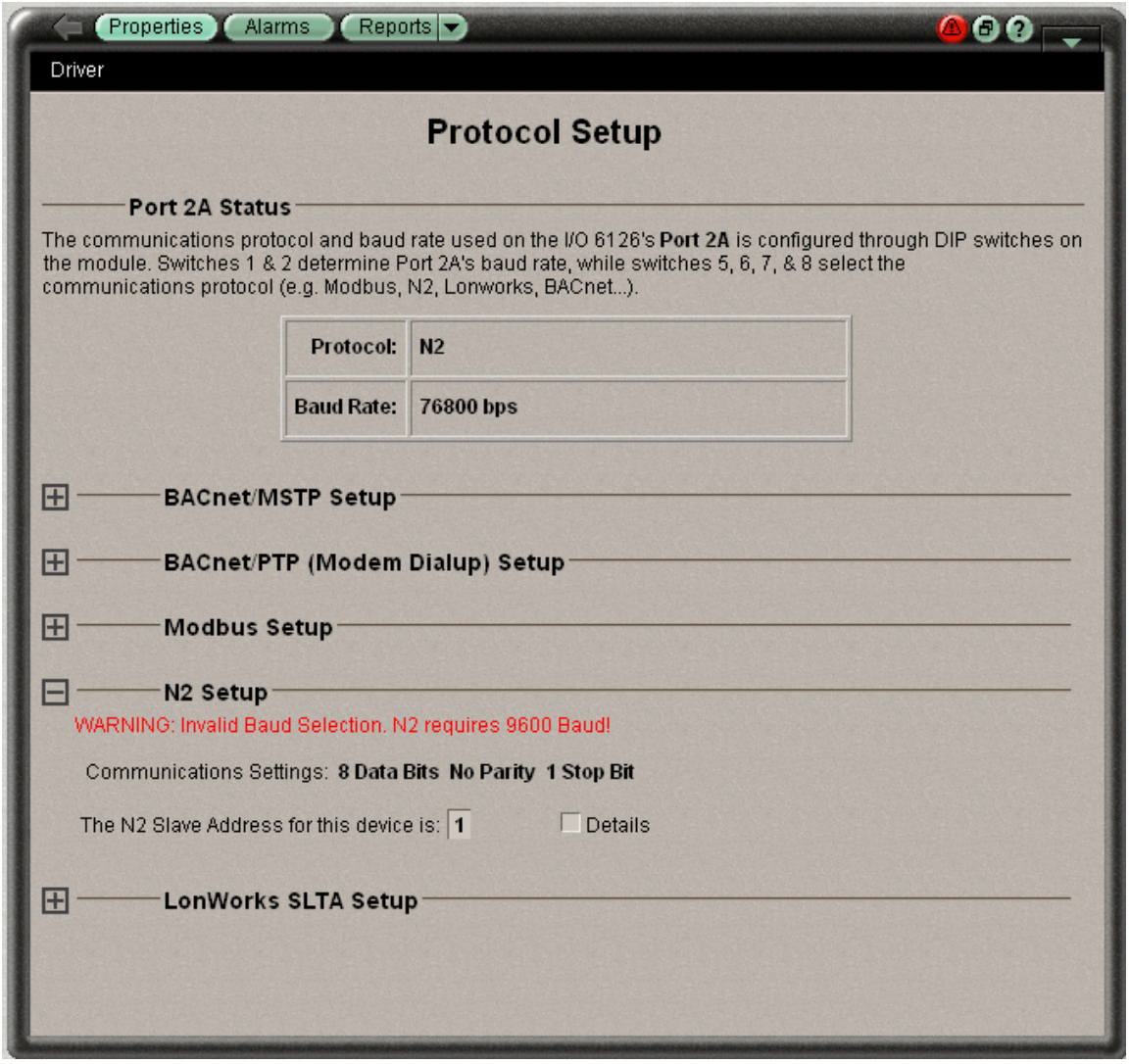


Figure 22.

Figure 23.

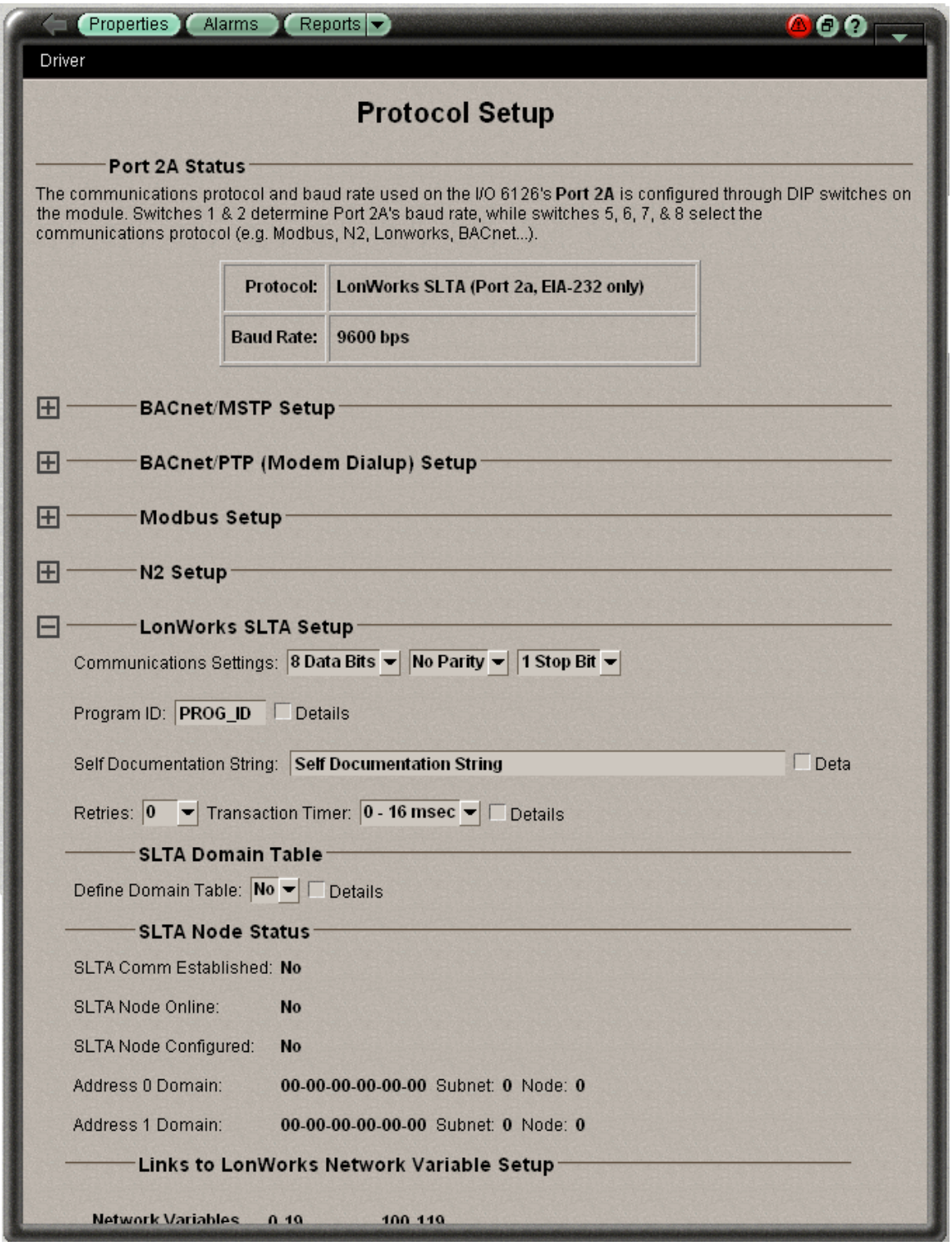


Figure 24.

Troubleshooting

If you are experiencing problems communicating with the I/O Flex 6126, note the following:

- Use a meter to verify the a input power voltage is within 10% of 24VAC and that the VA of the transformer is at least 40VA.
- Make sure the program is downloaded and running.
- If the equipment is not running, double-check sensor wiring.

LEDs

The I/O Flex 6126 has several LED indicators to show the status of certain functions.

Power Lights when power is being supplied to the module.

NOTE The I/O Flex 6126 is protected by internal solid state Polyswitches on the incoming power and network connections. These Polyswitches are not replaceable and will reset themselves if the condition that caused the fault returns to normal.

Digital Output Status Lights when the digital output is activated.

Analog Output Status Lights when the analog output is activated.

Rx Lights when the module receives data from the network segment; there is an Rx LED for Ports 1 and 2a.

Tx Lights when the module transmits data over the network segment; there is a Tx LED for Ports 1 and 2a.

Run Lights based on module health. See Table 6 for explanation.

Error Lights based on module health. See Table 6 for explanation.

Table 6. LED Signals

Run LED	Error LED	Condition
2 flashes per second	Off	Normal
2 flashes per second	2 flashes alternating	Five minute auto-restart delay after system error
2 flashes per second	2 flashes in sync, then pause	Module is configured for a different baud rate than the rest of the network segment
2 flashes per second	3 flashes, then off	Module has just been formatted
2 flashes per second	4 flashes, then pause	Two or more devices on this network have the same ARC156 network segment address
2 flashes per second	On	Exec halted after frequent system errors or GFBs halted
5 flashes per second	On	Exec start-up aborted, Boot is running
5 flashes per second	Off	Firmware transfer in progress, Boot is running

Table 6. LED Signals

Run LED	Error LED	Condition
7 flashes per second	7 flashes per second, alternating	Ten second recovery period after brownout
14 flashes per second	14 flashes per second, alternating	Brownout

Formatting the Module

CAUTION Before formatting the module, please note that ALL memory will be erased. You must be able to download memory to the module after formatting a module.

Rarely is it necessary to format a module. We strongly advise NOT formatting a module without consultation with a factory representative or an experienced technician. Formatting causes the module to delete the GFB in memory permanently, and memory will have to be downloaded to the module.

If communications are lost with the module, formatting it can narrow down the problem. However, before formatting the module, follow these steps:

- Remove all external wiring other than power.
- Through the access port, attempt to get a Module Status.
  - If you can communicate, the problem with communications involves one of the wires you just removed. Reconnect each wire one at a time and try to get a Module Status in between to figure out where the problem lies.
  - If you cannot communicate and you have the system files for downloading memory to this module, try the format procedure below. Then try again to get a Module Status. If you cannot communicate with the module after a format, send it in for repair. If you can communicate after the format, formatting has resolved the problem. You will need to download memory to the module and reconnect all the inputs and outputs.

Formatting Procedure

1. Turn the I/O Flex 6126's power off. Make sure the module's address switches are addressed correctly and are not set to '0 0'.
2. Short the Format pins with a jumper covering both pins or with the blade of a screwdriver. Maintain the short while performing step 3.
3. Turn the module's power on.

   The Error LED flashes three times in sync with the Run LED.
4. Discontinue the short by removing the jumper or screwdriver blade from the Format pins.
5. Download memory to the module.

Production Date

To determine when a module was manufactured, check the module's status report in WebCTRL. Refer to the WebCTRL help file for more information about the module status report.

A sticker on the back of the module also shows the date the module was manufactured. The first three characters on the sticker indicate the type of module. The next two characters show the year and month of manufacture. (The month digit is in hexadecimal.)

CAUTION Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate equipment.

NOTE This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

I/O Flex 6126 - Technical Instructions

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