Installation

Turn off power before installing.

Figure 1 shows bridge installation on a HeatNet™ Bridge interface card. The interface card is required for HeatNet™ controls that do not have a built-in socket. The inner tabs (shown in red) on the socket must be removed for proper installation. This is usually done at the factory, but can be done in the field using needle nose pliers if necessary. The outer tabs should not be removed; they are required for proper alignment and secure installation. Electrical connections to 24VAC Power and Modbus Port on the HeatNet™ control are shown. All electrical connections shown are required for proper operation.

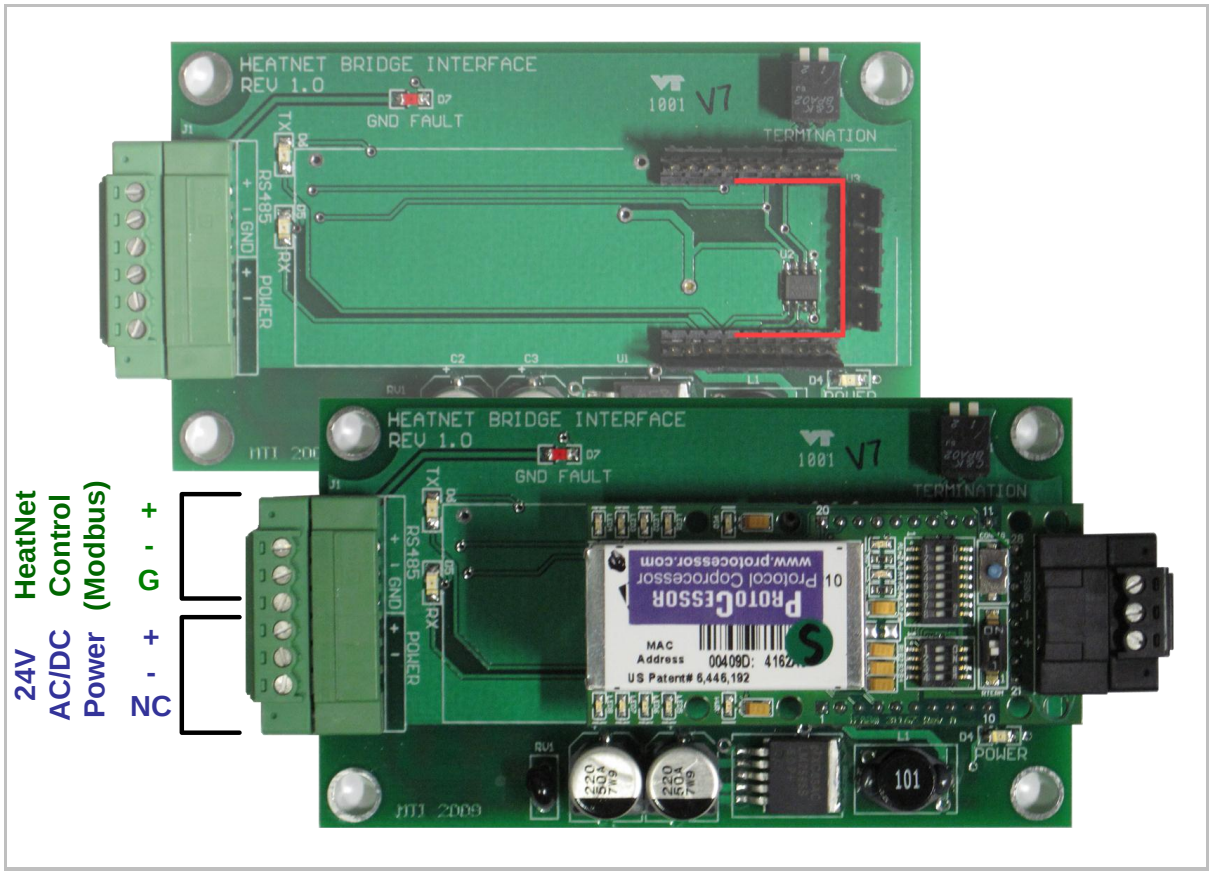

Figure 1: HeatNet™ Bridge Interface Installation

Figure 2 shows bridge installation on a HeatNet™ control with a built-in socket. The inner tabs (shown in red) on the socket must be removed for proper installation. This is usually done at the factory, but can be done in the field using needle nose pliers if

necessary. The outer tabs should not be removed; they are required for proper alignment and secure installation.

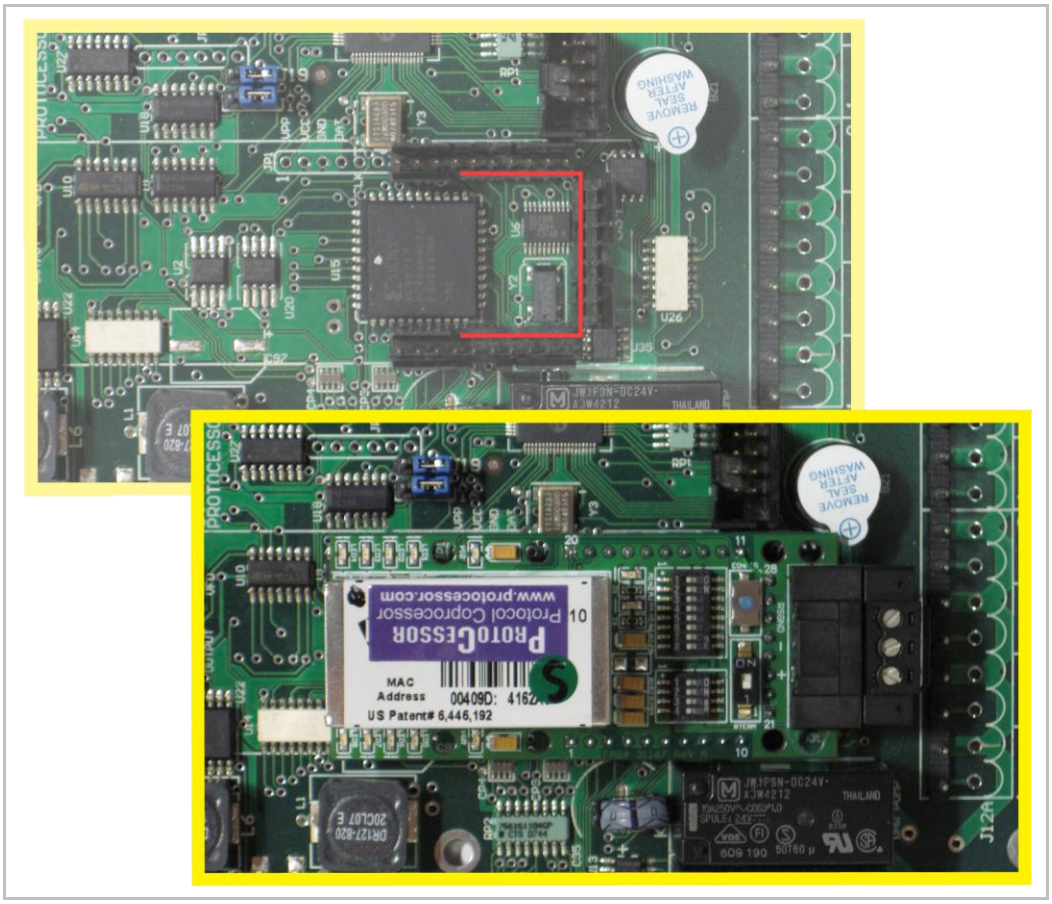

Figure 2: HeatNet™ Control Installation

Figure 3 shows the N2 electrical connections. Shielded and twisted wire is strongly recommended due to the high amount of "electrical noise" often found in mechanical rooms. The ground must be also used to help ensure proper communications.

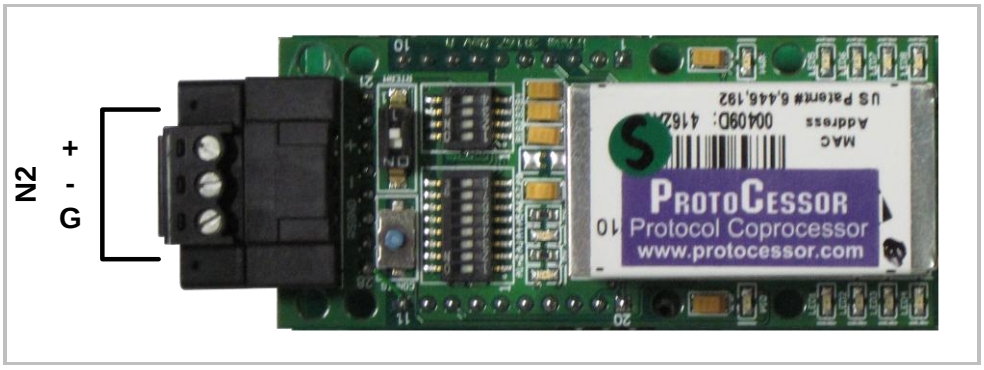

Figure 3: N2 Electrical Connections

HeatNet™ Control Configuration

The HeatNet™ control has one port that can be used for external communications. This port is used by the Modbus, USB, and Bridge socket. Because it is shared, only one external communications device can be used. For this reason, the Modbus communications settings are "fixed" on the HeatNet™ N2 Bridge. For proper Modbus communications, the HeatNet™ Control must be configured to use the same settings as follows:

"Advanced->Distributed Control" Menu

- Console or Modbus Address[2] = 1

"Advanced->Communications" Menu

- Baud Rate = 19200
- Parity or Data Format[2] = Even or 8E1

Operation

A HeatNet™ Master-Member system (network) can contain up to 16 boilers. The HeatNet™ N2 Bridge is normally attached to the master and can provide most data points that the master periodically reads from each member. The N2 protocol is limited to 255 data points of each type. For this reason, the HeatNet™ N2 Bridge is configured to act like 16 different N2 devices. Each device represents a different boiler. The device addresses are usually configured at the factory, but can be changed in the field if necessary. The default N2 device addresses are 101 (Master) and 102 – 116 (Member 2 – Member 16).

The HeatNet™ N2 Bridge translates native Modbus RTU on the HeatNet™ Control to the Metasys® N2 Protocol. If Modbus communications are lost for an extended period of time (> 1 minute), the bridge will go "offline" and stop responding to all N2 commands. If Modbus communications are restored, the bridge will come back "online" in the "reset" state waiting for an "Identify Yourself" command.

Analog Input[1] (AI) points represent read-only data on the HeatNet™ Control. They will accept an override and return the override value on subsequent reads, but the override DOES NOT change the value used on the control. For example, overriding the Outside Air Temperature does not force the control to use the overridden value; the control will continue to use the value from the Outside Air Temperature Sensor. Change of state (COS), alarm, and warning functions are supported.

Binary Input[1] (BI) points represent read-only data on the HeatNet™ Control. They are used to represent switches, relays, and other "on/off" binary data. They will accept an

override and return the override value on subsequent reads, but the override DOES NOT change the value used on the control. For example, overriding the Low Water Cutoff (LWCO) interlock does not force the control to use the overridden value; the control will continue to use the value from the LWCO interlock input.

Internal Float Parameter[1] (ADF) points are used for read-write data on the HeatNet™ Control. They can be overridden, but will always reflect the current value if it changes. For example, the Setpoint can be overridden to control the desired loop temperature. However, if the setpoint is changed using the boiler display, the new value will be returned when the point is read. Issuing a release will not necessarily cause the point to return to its pre-override value if the current value has changed for any reason.

[1]The allowable (valid) values for each data point are listed in the "Data Points" section below. The HeatNet™ N2 Bridge will accept any value within the range of the data type (BI, AI, ADF). However, any attempt to write a value outside the listed range will be rejected by the HeatNet™ control.

Data Points

The following variables are available on N2 Bridges with configuration versions 1.00 and above.

Boiler 1: Master (Boiler connected to bridge)

Name	Type-Address Units	Description	Valid Values/Range Multiplier
Input/Output (Read/Write) Objects			
Heat Demand	ADF-1 (no units)	Heat Demand/Request. Setting the state member of this variable will put the boiler in heating mode.	0 = no heat demand 1 = heat demand
SetpointTimer	ADF-2 Seconds	System Setpoint Timer The system setpoint timer and system setpoint work in tandem to externally control (i.e. a BMS - building management system) the operating setpoint. The setpoint (countdown) timer should be loaded with a timeout value (in seconds) prior to writing the system setpoint. When the timer reaches zero, the control assumes that the BMS is no longer operating and the local setpoint (saved on the control) is reloaded. This is a failsafe feature used to help safeguard the system in case of BMS failure. If the setpoint timer is not written, a default timeout value of 60 seconds is assumed.	0 – 65535 seconds
Setpoint	ADF-3 Fahrenheit	System Setpoint (see S*etpointTimer*)	40 - 220 °F
OAResetEnable	ADF-4 (no units)	Enables/Disables outdoor air reset mode.	0 = disabled 1 = enabled
OARSetpoint	ADF-5 Fahrenheit	Outdoor air reset setpoint. Temperature at which boiler shuts down.	40 – 100 °F
OARHighWaterTemp	ADF-6 Fahrenheit	Boiler water temperature setpoint when outdoor air temperature is at the high outdoor air temperature setpoint (OARHiAirTemp).	60 – 150 °F
OARHighAirTemp	ADF-7 Fahrenheit	High outdoor air temperature setpoint.	50 – 90 °F
OARLowWaterTemp	ADF-8 Fahrenheit	Header/Supply temperature setpoint when outdoor air temperature is at the low outdoor air temperature setpoint (OARLoAirTemp).	70 – 220 °F

Name	Type-Address Units	Description	Valid Values/Range Multiplier
OARLowAirTemp	ADF-9 Fahrenheit	Low outdoor air temperature setpoint.	-35 – 40 °F
SetMonth	ADF-10 Months	Set real time clock – month (*see SetClock*)	0 = January … 11 = December
SetDay	ADF-11 Days	Set real time clock – day (*see SetClock*)	1 – 31
SetYear	ADF-12 Years	Set real time clock – year (*see SetClock*)	0 – 99
SetHour	ADF-13 Hours	Set real time clock – hour (*see SetClock*)	0 – 23
SetMinute	ADF-14 Minutes	Set real time clock – minute (*see SetClock*)	0 – 59
SetSecond	ADF-15 Seconds	Set real time clock – second (*see SetClock*)	0 – 59
SetWeekday	ADF-16 (no units)	Set real time clock – weekday (*see SetClock*)	0 = Monday … 6 = Sunday
SetClock	ADF-17 (no units)	Set (write) the real time clock. To write the real time clock, the system variables (SetMonth, SetMonth, SetDay, SetYear, SetHour, SetMinute, SetSecond, SetWeekday) must first be loaded with the correct date and time. Then, a 1 must be written to the state portion of this system variable to write the new date and time to the system clock.	0 = no action 1 = set the clock
DHWSetpoint	ADF-18 Fahrenheit	DHW Setpoint. Only applicable when DHW is enabled.	40 – 200 °F
Input (Read Only) Objects			
BoilersOn	AI-1 (no units)	The number of boilers currently running.	0 – 16
Modulation	AI-2 (no units)	Current system (target) modulation level. This is the modulation level that the system is trying to run at to meet the heating demand.	0 – 100 %
HeaderTemp	AI-3 Fahrenheit	Header / System temperature.	32 – 250 °F
SupplyTemp	AI-4 Fahrenheit	Supply temperature.	32 – 250 °F

Name	Type-Address Units	Description	Valid Values/Range Multiplier
ReturnTemp	AI-5 Fahrenheit	Return temperature.	32 – 250 °F
OutsideTemp	AI-6 Fahrenheit	Outside air temperature.	-40 – 250 °F
Spare1	AI-7 (no units)	Raw A/D value from spare 1 input.	-32768 to 32767
Spare2	AI-8 (no units)	Raw A/D value from spare 2 input.	-32768 to 32767
Month	AI-9 Months	Real time clock month.	0 – 11
Day	AI-10 Days	Real time clock day.	1 – 31
Year	AI-11 Years	Real time clock year.	0 – 99
Hour	AI-12 Hours	Real time clock hour.	0 – 23
Minute	AI-13 Minutes	Real time clock minute.	0 – 59
Second	AI-14 Seconds	Real time clock second.	0 – 59
Weekday	AI-15 (no units)	Real time clock weekday.	0 = Monday … 6 = Sunday
Runtime	AI-16 Minutes	Total runtime.	0 – 35791394 minutes
Cycles	AI-17 (no units)	Total number of cycles.	0 – 2147483647 cycles
SupplyTemp	AI-18 Fahrenheit	Supply (outlet) temperature.	32 – 250 °F
ReturnTemp	AI-19 Fahrenheit	Return (inlet) temperature.	32 – 250 °F
DHWTemp	AI-20 Fahrenheit	DHW sensor Temperature.	32 – 250 °F
Modulation	AI-21 Percent	The boiler modulation percent. Does not work in AA/High Fire, T1, or T2 modes.	0 – 100 %

Name	Type-Address Units	Description	Valid Values/Range Multiplier
Operating Setpoint	AI-22 Fahrenheit	This is the current operating or active setpoint. It may be: 1) The normal heating setpoint. 2) The DHW setpoint if running in DHW mode. 3) A calculated setpoint if running in Outdoor Air Reset Mode 4) The 4-20ma (0-10V) setpoint.	40 - 220 °F
Disabled	BI-1 (no units)	Boiler is disabled.	0 = enabled 1 = disabled
RESERVED	BI-2 (no units)	---	---
Alarm	BI-3 (no units)	Boiler Alarm	0 = ok 1 = alarm
Failed	BI-4 (no units)	Boiler Failed	0 =ok 1 = failed
MemberError	BI-5 (no units)	Member Alarm or Failed.	0 =ok 1 = error
Running	BI-6 (no units)	Boiler is running (firing).	0 =off 1 = running
LocalPumpOn	BI-7 (no units)	Local pump is on (running).	0 = off 1 = on
SystemFlowInterlock	BI-8 (no units)	System Flow Interlock (Previously called “Spare 3”).	0 = open 1 = closed
LWCOInterlock	BI-9 (no units)	Low Water Cutoff Interlock.	0 = open 1 = closed
VFDInterlock	BI-10 (no units)	VFD Interlock.	0 = open 1 = closed
GasProveInterlock	BI-11 (no units)	Gas Prove Interlock.	0 = open 1 = closed
Spare4Interlock	BI-12 (no units)	Spare 4 (application defined) Interlock.	0 = open 1 = closed
OperatorInterlock	BI-13 (no units)	Operator Interlock.	0 = open 1 = closed
LocalFlowInterlock	BI-14 (no units)	Local Flow Interlock.	0 = open 1 = closed
RESERVED	BI-15 (no units)	---	---
MainValve	BI-16 (no units)	Main Valve.	0 = closed 1 = open

Name	Type-Address Units	Description	Valid Values/Range Multiplier
PilotValve	BI-17 (no units)	Pilot Valve.	0 = closed 1 = open
Blower	BI-18 (no units)	Blower.	0 = off 1 = on
IgnitionAlarm	BI-19 (no units)	Ignition Circuit Alarm.	0 = ok 1 = alarm
ValveAlarm	BI-20 (no units)	Valve Alarm.	0 = ok 1 = alarm
HighLimit	BI-21 (no units)	High Limit.	0 = ok 1 = tripped
AirProveSwitch	BI-22 (no units)	Air Prove Switch.	0 = open 1 = closed
RESERVED	BI-23 (no units)	---	---
SoftwareOperator	BI-24 (no units)	Software Operator.	0 = off 1 = on
HeaderSensorNA	BI-25 (no units)	Header Sensor not Available (detected).	0 = detected 1 = not available
SupplySensorNA	BI-26 (no units)	Supply/Outlet Sensor not Available (detected).	0 = detected 1 = not available
ReturnSensorNA	BI-27 (no units)	Return/Inlet Sensor not Available (detected).	0 = detected 1 = not available
OutsideSensorNA	BI-28 (no units)	Header Sensor not Available (detected).	0 = detected 1 = not available
SystemPumpOn	BI-29 (no units)	System Pump is on/running.	0 = off 1 = on
Damper	BI-30 (no units)	Combustion Air Damper.	0 = off 1 = on
Master	BI-31 (no units)	This is the Master Boiler.	0 = member 1 = master
Detected	BI-32 (no units)	Boiler detected (present).	0 = not detected 1 = detected
AAHighFire	BI-33 (no units)	AA/High Fire Input.	0 = open 1 = closed
HeatDemand	BI-34 (no units)	Heat Demand (Local Override) Input.	0 = open 1 = closed
4to20Remote	BI-35 (no units)	4 to 20ma Remote Input.	0 = open 1 = closed

Name	Type-Address Units	Description	Valid Values/Range Multiplier
OAROverride	BI-36 (no units)	Outside Air Reset Override Input.	0 = open 1 = closed
T1	BI-37 (no units)	T1 Input.	0 = open 1 = closed
T2	BI-38 (no units)	T2 Input.	0 = open 1 = closed
T3	BI-39 (no units)	T3 Input.	0 = open 1 = closed
T4	BI-40 (no units)	T4 Input.	0 = open 1 = closed
RESERVED	BI-41 (no units)	---	---
RESERVED	BI-42 (no units)	---	---
RESERVED	BI-43 (no units)	---	---
RESERVED	BI-44 (no units)	---	---
RESERVED	BI-45 (no units)	---	---
RESERVED	BI-46 (no units)	---	---
RESERVED	BI-47 (no units)	---	---
RESERVED	BI-48 (no units)	---	---
DHWEnabled	BI-49 (no units)	DHW enabled status (menus).	0 = disabled 1=enabled
DamperProve	BI-50 (no units)	Damper Prove (J12B).	0 = open 1 = closed (proven)
ServiceFault	BI-51 (no units)	Call service fault.	0 = ok 1 = fault
BlowerFault	BI-52 (no units)	Air Switch Blower fault.	0 = ok 1 = fault
RESERVED	BI-53 (no units)	---	---
RESERVED	BI-54 (no units)	---	---

Name	Type-Address Units	Description	Valid Values/Range Multiplier
RESERVED	BI-55 (no units)	---	---
RESERVED	BI-56 (no units)	---	---
RESERVED	BI-57 (no units)	---	---
DHWSensorNA	BI-58 (no units)	DHW Sensor is not available (detected).	0 = detected 1 = not available
DHWBoiler	BI-59 (no units)	DHW Boiler.	0 = no 1 = yes
OpLimitClamp	BI-60 (no units)	Boiler input is limited (clamped) due to high supply (outlet) temperature.	0 = not clamped 1 = clamped

Boiler (Member) 2 – Boiler (Member) 16

Name	Type/Address Units	Description	Valid Values/Range
Input (Read Only) Objects			
Runtime	AI-1 Minutes	Total runtime.	0 – 35791394
Cycles	AI-2 (no units)	Total number of cycles.	0 – 2147483647
SupplyTemp	AI-3 Fahrenheit	Supply (outlet) temperature.	32 – 250 °F
ReturnTemp	AI-4 Fahrenheit	Return (inlet) temperature.	32 – 250 °F
DHWTemp	AI-5 Fahrenheit	DHW sensor Temperature.	32 – 250 °F
Modulation	AI-6 Percent	The boiler modulation percent. Does not work in AA/High Fire, T1, or T2 modes.	0 – 100 %
Disabled	BI 1 (no units)	Boiler is disabled.	0 = enabled 1 = disabled
RESERVED	BI 2 (no units)	---	---
Alarm	BI 3 (no units)	Boiler Alarm	0 = ok 1 = alarm
Failed	BI 4 (no units)	Boiler Failed	0 =ok 1 = failed
MemberError	BI 5 (no units)	Member Alarm or Failed.	0 =ok 1 = error
Running	BI 6 (no units)	Boiler is running (firing).	0 =off 1 = firing
LocalPumpOn	BI 7 (no units)	Local pump is on (running).	0 = off 1 = on
SystemFlowInterlock	BI 8 (no units)	System Flow Interlock (Previously called “Spare 3”).	0 = open 1 = closed
LWCOInterlock	BI 9 (no units)	Low Water Cutoff Interlock.	0 = open 1 = closed
VFDInterlock	BI 10 (no units)	VFD Interlock.	0 = open 1 = closed
GasProveInterlock	BI 11 (no units)	Gas Prove Interlock.	0 = open 1 = closed

Name	Type/Address Units	Description	Valid Values/Range
Spare4Interlock	BI 12 (no units)	Spare 4 (application defined) Interlock.	0 = open 1 = closed
OperatorInterlock	BI 13 (no units)	Operator Interlock.	0 = open 1 = closed
LocalFlowInterlock	BI 14 (no units)	Local Flow Interlock.	0 = open 1 = closed
RESERVED	BI 15 (no units)	---	---
MainValve	BI 16 (no units)	Main Valve.	0 = closed 1 = open
PilotValve	BI 17 (no units)	Pilot Valve.	0 = closed 1 = open
Blower	BI 18 (no units)	Blower.	0 = off 1 = on
IgnitionAlarm	BI 19 (no units)	Ignition Circuit Alarm.	0 = ok 1 = alarm
ValveAlarm	BI 20 (no units)	Valve Alarm.	0 = ok 1 = alarm
HighLimit	BI 21 (no units)	High Limit.	0 = ok 1 = tripped
AirProveSwitch	BI 22 (no units)	Air Prove Switch.	0 = open 1 = closed
RESERVED	BI 23 (no units)	---	---
SoftwareOperator	BI 24 (no units)	Software Operator.	0 = off 1 = on
HeaderSensorNA	BI 25 (no units)	Header Sensor not Available (detected).	0 = detected 1 = not available
SupplySensorNA	BI 26 (no units)	Supply/Outlet Sensor not Available (detected).	0 = detected 1 = not available
ReturnSensorNA	BI 27 (no units)	Return/Inlet Sensor not Available (detected).	0 = detected 1 = not available
OutsideSensorNA	BI 28 (no units)	Header Sensor not Available (detected).	0 = detected 1 = not available
SystemPumpOn	BI 29 (no units)	System Pump is on/running.	0 = off 1 = on
Damper	BI 30 (no units)	Combustion Air Damper.	0 = off 1 = on

Name	Type/Address Units	Description	Valid Values/Range
Master	BI 31 (no units)	This is the Master Boiler.	0 = member 1 = master
Detected	BI 32 (no units)	Boiler detected (present).	0 = not detected 1 = detected
AAHighFire	BI 33 (no units)	AA/High Fire Input.	0 = open 1 = closed
HeatDemand	BI 34 (no units)	Heat Demand (Local Override) Input.	0 = open 1 = closed
4to20Remote	BI 35 (no units)	4 to 20ma Remote Input.	0 = open 1 = closed
OAROverride	BI 36 (no units)	Outside Air Reset Override Input.	0 = open 1 = closed
T1	BI 37 (no units)	T1 Input.	0 = open 1 = closed
T2	BI 38 (no units)	T2 Input.	0 = open 1 = closed
T3	BI 39 (no units)	T3 Input.	0 = open 1 = closed
T4	BI 40 (no units)	T4 Input.	0 = open 1 = closed
RESERVED	BI-41 (no units)	---	---
RESERVED	BI-42 (no units)	---	---
RESERVED	BI-43 (no units)	---	---
RESERVED	BI-44 (no units)	---	---
RESERVED	BI-45 (no units)	---	---
RESERVED	BI-46 (no units)	---	---
RESERVED	BI-47 (no units)	---	---
RESERVED	BI-48 (no units)	---	---
DHWEnabled	BI-49 (no units)	DHW enabled status (menus).	0 = disabled 1=enabled

Name	Type/Address Units	Description	Valid Values/Range
DamperProve	BI-50 (no units)	Damper Prove (J12B).	0 = open 1 = closed (proven)
ServiceFault	BI-51 (no units)	Call service fault.	0 = ok 1 = fault
BlowerFault	BI-52 (no units)	Air Switch Blower fault.	0 = ok 1 = fault
RESERVED	BI-53 (no units)	---	---
RESERVED	BI-54 (no units)	---	---
RESERVED	BI-55 (no units)	---	---
RESERVED	BI-56 (no units)	---	---
RESERVED	BI-57 (no units)	---	---
DHWSensorNA	BI-58 (no units)	DHW Sensor is not available (detected).	0 = detected 1 = not available
DHWBoiler	BI-59 (no units)	DHW Boiler.	0 = no 1 = yes
OpLimitClamp	BI-60 (no units)	Boiler input is limited (clamped) due to high supply (outlet) temperature.	0 = not clamped 1 = clamped

Changing Configuration Settings

The N2 HeatNet Bridge ships with the following default settings:

Boiler	Enabled	Address
Boiler 1 (Master)	Yes	101
Member 2	No	102
Member 3	No	103
Member 4	No	104
Member 5	No	105
Member 6	No	106
Member 7	No	107
Member 8	No	108
Member 9	No	109
Member 10	No	110
Member 11	No	111
Member 12	No	112
Member 13	No	113
Member 14	No	114
Member 15	No	115
Member 16	No	116

If necessary, the values can be changed to meet specific application requirements by following the steps below. Do not change any settings not specifically listed in this document or the bridge may no longer function properly.

1) Connect a computer to the ProtoCessor using the RUINET application. For instructions on connecting a computer to the ProtoCessor, see the document: "*Connecting a computer to the HeatNet™ Bridge*". You should see the RUINET Main Menu as shown in Figure 4.

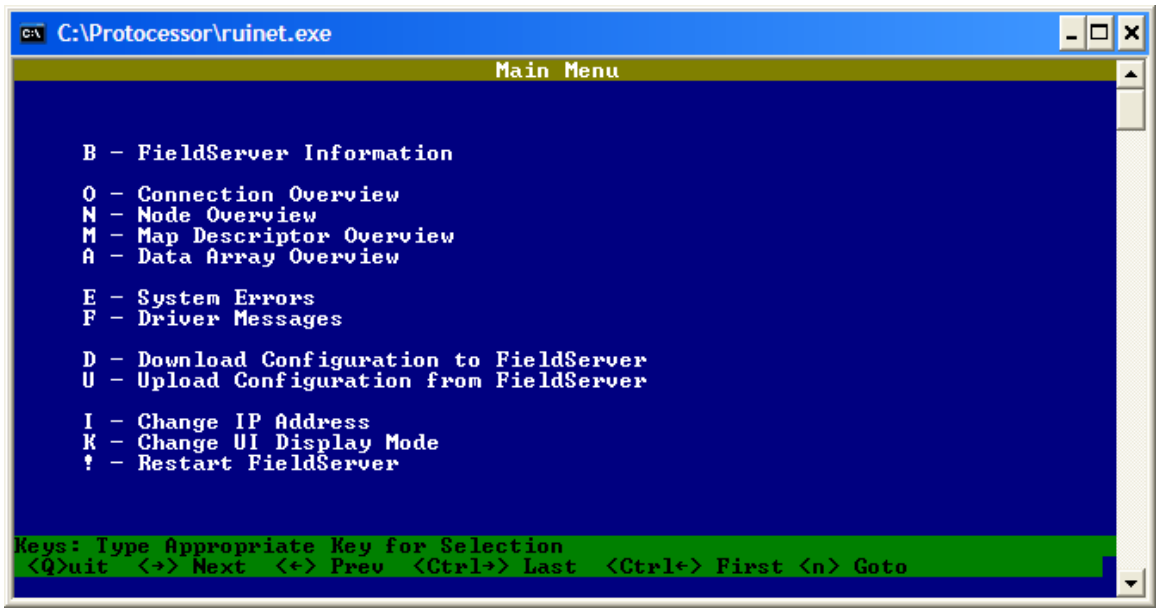

Figure 4 – RUINET Main Menu

2) Press the 'U' key to choose (U)pload Configuration (see Figure 5). Press 'U' again to begin the upload. This uploads the ProtoCessor configuration file (*config.csv*) to the computer from the ProtoCessor. When the upload is complete (see Figure 6), press 'N' to choose (N)otepad. This will open the configuration file in NotePad for editing. Other basic text editors can be used, but the file is already formatted for use in NotePad. **DO NOT EDIT THE FILE WITH EXCEL, IT WILL ADD EXTRA FORMATING AND CORRUPT THE FILE.**

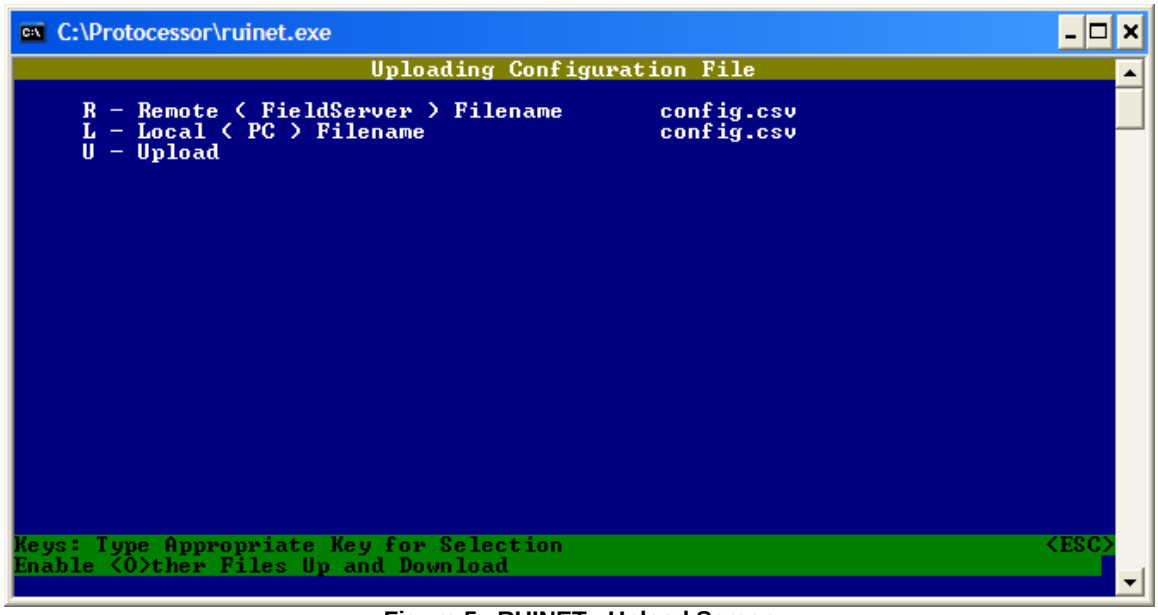

Figure 5. RUINET - Upload Screen

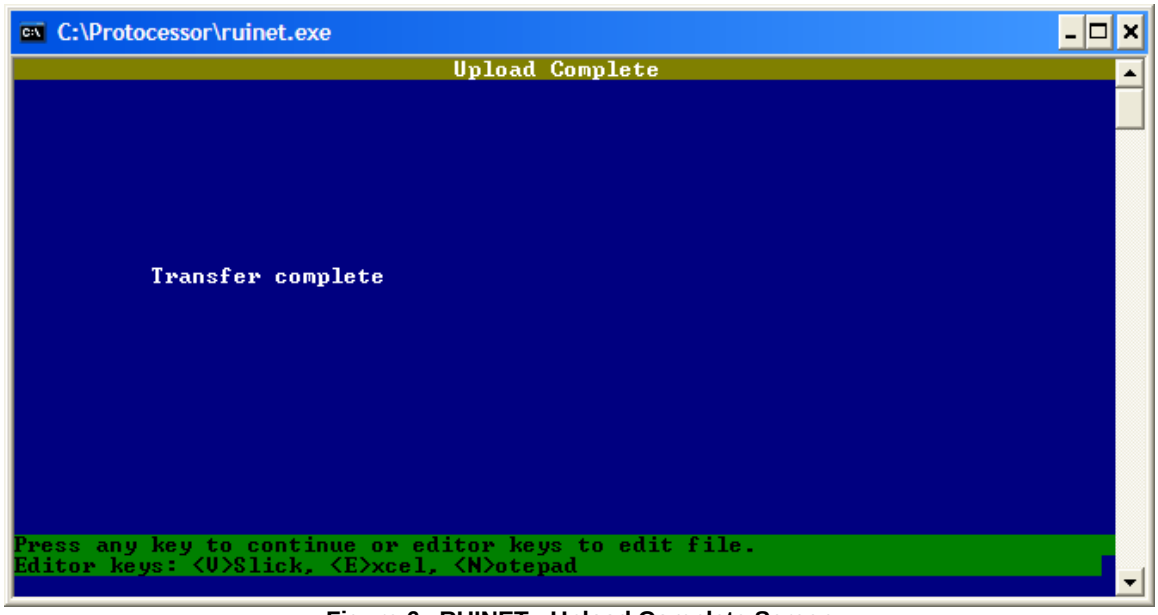

Figure 6. RUINET - Upload Complete Screen

3) To enable a boiler or change its address, find the section titled “Server Side Nodes” (see Figure 7). A member can be enabled by removing the comment “//” at the beginning of the Member## line. If a member is enabled, the appropriate datapoints in the “Server Side Map Descriptors” section must also be uncommented (see Figure 8).

   To change a boilers N2 address change the Node_ID field as needed. It can be changed any value from 1 to 254.

```
//=============================================================================
//
// Server Side Nodes
//
// Node_Name: DO NOT CHANGE
//
//      Boiler01 = Boiler Attached to Bridge (Typically the Master)
//      Member02 = Member 2
//      ...
//      Member16 = Member 16
//
// Node_Id: 1 - 255 (101...116)
//      The Metasys N2 Address. It can be changed to meet specific application
//      needs.
//
// Protocol: DO NOT CHANGE
//
// NOTE: Member boilers can be enabled by removing the comment (//) at the
// beginning of the Boiler## line.  This can help conserve N2 addresses and
// configuration errors if not all member boilers are present.  The datapoints for
// each boiler will also need to be enabled in the "Server Side Map Descriptors"
// section below.
//
Nodes
Node_Name    ,Node_ID    ,Protocol
Boiler01     ,101        ,Metasys_N2
//Member02   ,102        ,Metasys_N2
//Member03   ,103        ,Metasys_N2
//Member04   ,104        ,Metasys_N2
//Member05   ,105        ,Metasys_N2
//Member06   ,106        ,Metasys_N2
//Member07   ,107        ,Metasys_N2
//Member08   ,108        ,Metasys_N2
//Member09   ,109        ,Metasys_N2
//Member10   ,110        ,Metasys_N2
//Member11   ,111        ,Metasys_N2
//Member12   ,112        ,Metasys_N2
//Member13   ,113        ,Metasys_N2
//Member14   ,114        ,Metasys_N2
//Member15   ,115        ,Metasys_N2
//Member16   ,116        ,Metasys_N2
```

Figure 7 –Enabling boilers and changing N2 addresses.

```
////=============================================================================
//// Member 2
////=============================================================================
//Map_Descriptors
//Map_Descriptor_Name   ,Data_Array_Name        ,Data_Array_Offset      ,Function   ,
//M02_Runtime                ,DA_RUNTIME_32          ,1                      ,Server
//M02_Cycles                 ,DA_CYCLES_32           ,1                      ,Server
//M02_SupplyTemp        ,DA_IR_SUPPLY           ,1                      ,Server     ,
//M02_ReturnTemp        ,DA_IR_RETURN           ,1                      ,Server     ,
//
//M02_DHWTemp                ,DA_IR_DHW              ,1                      ,Server
//M02_Modulate          ,DA_IR_MODULATE         ,1                      ,Server     ,
////-----------------------------------------------------------------------------
//// Status Bits
////-----------------------------------------------------------------------------
//Map_Descriptors
//Map_Descriptor_Name   ,Data_Array_Name        ,Data_Array_Offset      ,Length     ,
//M02_Disabled          ,DA_STATUS12_BITS       ,32                     ,1          ,
//M02_UNUSED_S12B01          ,DA_STATUS12_BITS       ,33                     ,1
//M02_Alarm             ,DA_STATUS12_BITS       ,34                     ,1          ,
//M02_Failed                 ,DA_STATUS12_BITS       ,35                     ,1
//M02_MemberError       ,DA_STATUS12_BITS       ,36                     ,1          ,
//M02_Running                ,DA_STATUS12_BITS       ,37                     ,1
//M02_LocalPumpOn       ,DA_STATUS12_BITS       ,38                     ,1          ,
//M02_SystemFlowInterlock    ,DA_STATUS12_BITS       ,39                     ,1
//M02_LwcoInterlock          ,DA_STATUS12_BITS       ,40                     ,1
//M02_VfdInterlock           ,DA_STATUS12_BITS       ,41                     ,1
//M02_GasProveInterlock ,DA_STATUS12_BITS       ,42                     ,1          ,
//M02_Spare4Interlock   ,DA_STATUS12_BITS       ,43                     ,1          ,
//M02_OperatorInterlock ,DA_STATUS12_BITS       ,44                     ,1          ,
//M02_LocalFlowInterlock     ,DA_STATUS12_BITS       ,45                     ,1
//M02_UNUSED_S12B14          ,DA_STATUS12_BITS       ,46                     ,1
...
...
...
//M02_OpLimitClamp           ,DA_STATUS4_BITS        ,27                     ,1
//M02_UNUSED_S4B12           ,DA_STATUS4_BITS        ,28                     ,1
//M02_UNUSED_S4B13           ,DA_STATUS4_BITS        ,29                     ,1
//M02_UNUSED_S4B14           ,DA_STATUS4_BITS        ,30                     ,1
//M02_UNUSED_S4B15           ,DA_STATUS4_BITS        ,31                     ,1
```

Figure 8 –Enabling member data points.

4) Save all changes and exit by choosing ‘Save’, then ‘Exit’ from the File Menu.

5) Back in RUINET, press ‘Escape’ to return to the Main Menu. Press ‘D’ to choose (D)ownload Configuration. Press ‘D’ again to begin the download (see Figure 9). This downloads the updated configuration file (*config.*csv) from the computer to the bridge. When the download is complete, press ‘escape’ twice to return to the Main Menu.

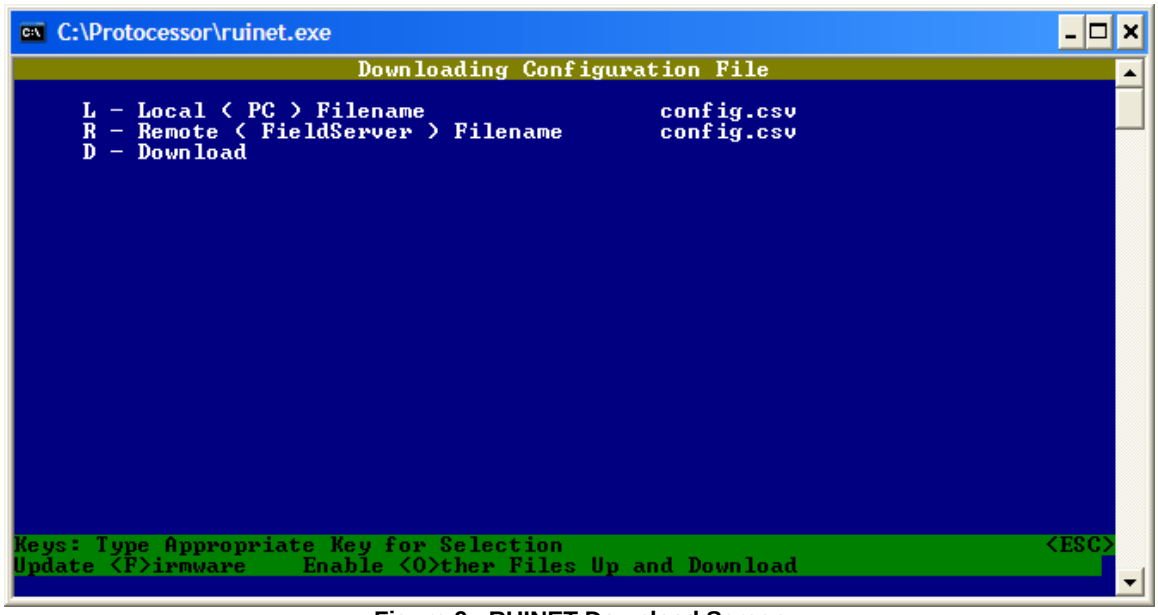

Figure 9 - RUINET Download Screen

6) Press '!' to restart the bridge. The changes are permanently saved.