

Trend to ISMA Integration Guide

Summary:

This manual covers the installation process required to integrate Trend BACnet enabled controllers with the ISMA range of I/O modules.

This current release supports the configuration of the latest ISMA Mini-series and Mix series modules listed below:

ISMA-B-4U4A-H-IP

ISMA -B-4I4O-H-IP

ISMA-B-4O-H-IP

ISMA-B-4U4O-H-IP

ISMA-B-8I-IP

ISMA-B-8U-IP

ISMA-B-MIX18-IP

ISMA-B-MIX-38IP

Trend controllers supported:

IQ3xxBAC

IQ4xxBAC

TON (with the use of our Tridium developed ISMA jar file)

Please note. The Trend IQ3xx/IQ4xx controllers do not fully support all of the standard BACnet object types so configuration of the ISMA I/O module parameters can only be achieved via a web Browser or using the ISMA configuration tool.

<http://www.innon.co.uk/pages/isma-download/>

The TON controller does fully supports all of the ISMA range of I/O modules and there setup parameters so please download the driver module from the following link:

<http://www.innon.co.uk/pages/isma-download>

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1. ISMA I/O Module setup

- The I/O modules all contain inbuilt web services applets to assist with their setup alternatively you can download the ISMA configurator which will give you more functionality to backup and commission the different type of modules:
<http://www.innon.co.uk/pages/isma-download>
- Using your default web browser and a fixed IP address on your laptop in the range of 192.168.1.xxx please connect directly to the first I/O module that you require commissioning and make sure that it is not connected to any other module as they all share the same default IP address: 192.168.1.123
- Once connected and you have typed 192.168.1.123 into you menu bar of the web browser you will then be prompted for a User name & Password the defaults are “admin” & “1000” these can be changed once you have logged in
- The first requirement is to setup the BACnet ID for this module, this is found by clicking on the network tab:
- Please enter a unique address such as the example below and take a note of this as it will be required when configuring the Trend controller:

Modbus Configuration	
Modbus TCP Port	502
Modbus Address	1
Modbus TCP Connection Timeout	1000
RS485 Timeout	1000
BACnet Configuration	
BACnet ID	2015
BACnet UDP Port	47808
<input type="button" value="Submit"/> <input type="button" value="Refresh"/> <input type="button" value="Reboot"/>	

- The next step is to set the watchdog timeout this is set to 10mins by default so it is suggested that this is changed to 15 seconds, this setting box can be found by pressing on any of the analogue or digital output tabs they are both common so the settings will be updated automatically

MIX18-IP Digital Output

Output	State	
Digital Output 1	<input type="checkbox"/>	<input type="checkbox"/>
Digital Output 2	<input type="checkbox"/>	<input type="checkbox"/>
Digital Output 3	<input type="checkbox"/>	<input type="checkbox"/>
Digital Output 4	<input type="checkbox"/>	<input type="checkbox"/>
Watchdog (s)	<input type="text" value="15"/>	

- Once this has been set you can then select what state you want the outputs to be in during a coms timeout this is done by selecting the default state in the right hand on the associated output, the state column is the actual status of the output.
- This can be repeated for the modules with analogue outputs the default output values can also be setup in the event of a coms failure to the parent Trend controller, please note that the setting for this is in millivolts so this should be set to 10000 which = 10v or 100% output.
- If you also click on the universal inputs tab you can then set up the required sensor types, if using voltage/current inputs on any of the channels please leave the settings at the default state of “10K3A1” do not set to “Disable Resistance Measurement” as this will completely isolate the input channel.
- If voltage/current inputs are required on any of the input channels then please select the 16bit resolution button adjacent to the desired input as indicate below:

Device	Local IO	RS485 Configuration	IP Configurati
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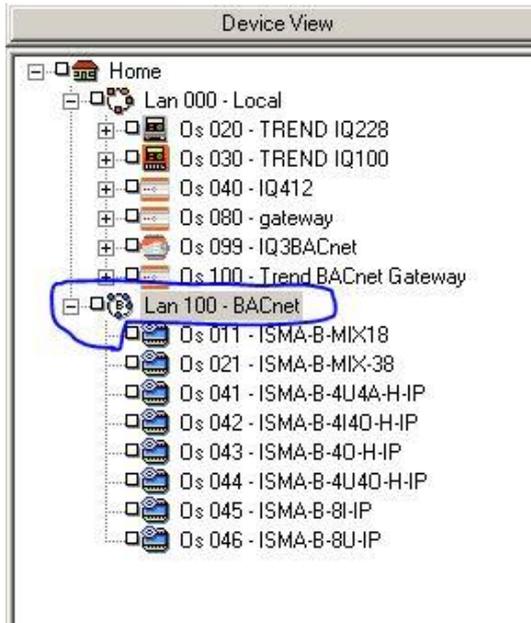
MI

Input	Type	Resolution	UI Flag	Di
Universal Input 1	Temperature 10k3A1	16 Bit	<input type="checkbox"/>	<input type="checkbox"/>
Universal Input 2	Temperature 10k3A1	12 Bit	<input type="checkbox"/>	<input type="checkbox"/>

- Once all of the settings for the ISMA module have been set then these can be backed up for future reference by using the ISMA configuration tool from the following link:
<http://www.innon.co.uk/pages/isma-download>

2. Trend IQ 3xx/IQ4xx BACnet controller setup

- Using SET create a new project and in the device viewer create the Trend BACnet controller under Lan 0 local Lan and then open the controller strategy default page
- Now add a BACnet network in the device viewer at say address 100 as illustrated below:



- You can now add the first ISMA I/O device by selecting insert Non Trend Device to this network and then give it the following identifiers:

Lan no.: a unique address say 11

Name & Identifier: "ISMA-B-MIX18-IP"

Device ID: "2015" this is the unique BACnet address that you setup in the ISMA I/O module

BACnet Network number: This is set to 1 default as in the example below

Registered Office

2 Sheen Road, Richmond, TW9 1AE,
UK Tel: 0044 (0)780 977 2811
office@innon.co.uk

Company Details:

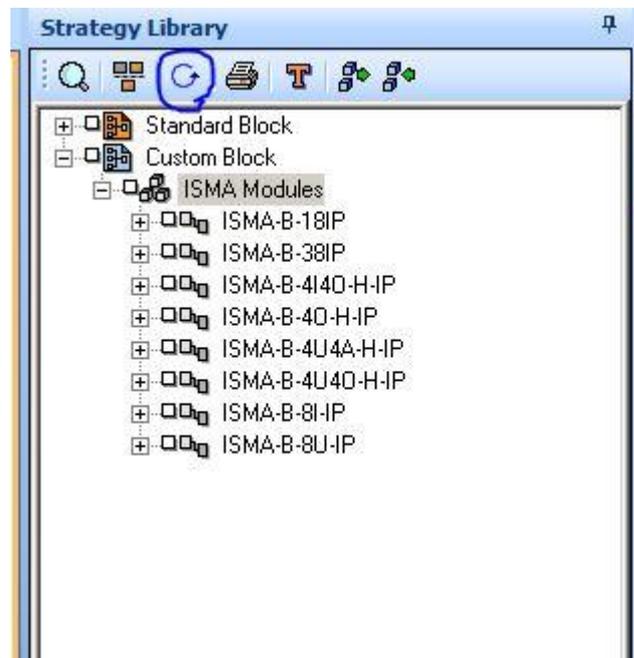
Innon Energy Ltd.
VAT.Nr: **941 2897 05**
Company Number: **6740177**

- The next step is to add the IP address and port number of the module this is encoded into Hex format and is created as follows:

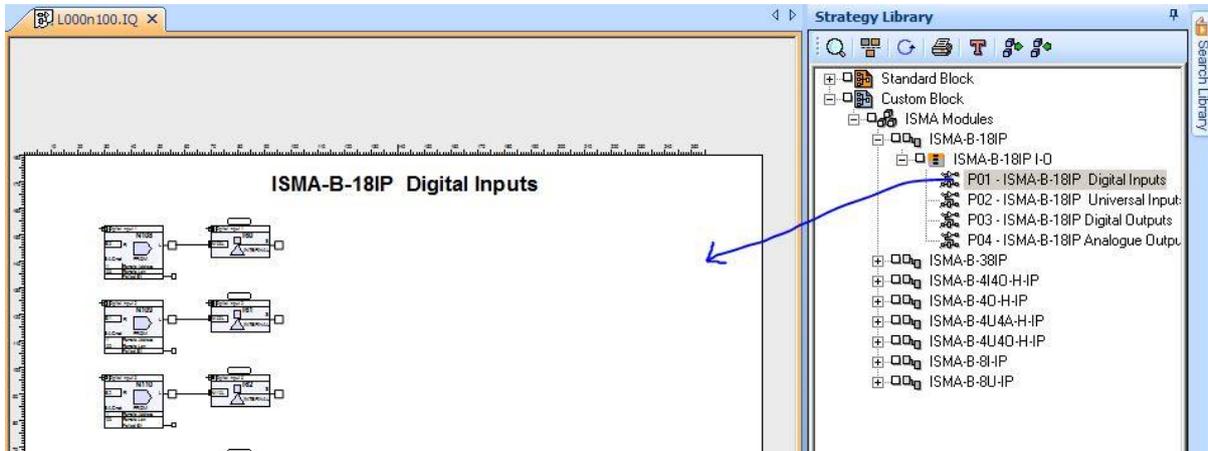
192-168-013-123-47808
C0 - A8- 0D- 7B-BAC0

- Place this hex code into the Mac address field as below and it will then create the IP address and port number but you will have to press the ok button and then re-open the applet again to view the correct settings have been created as below:

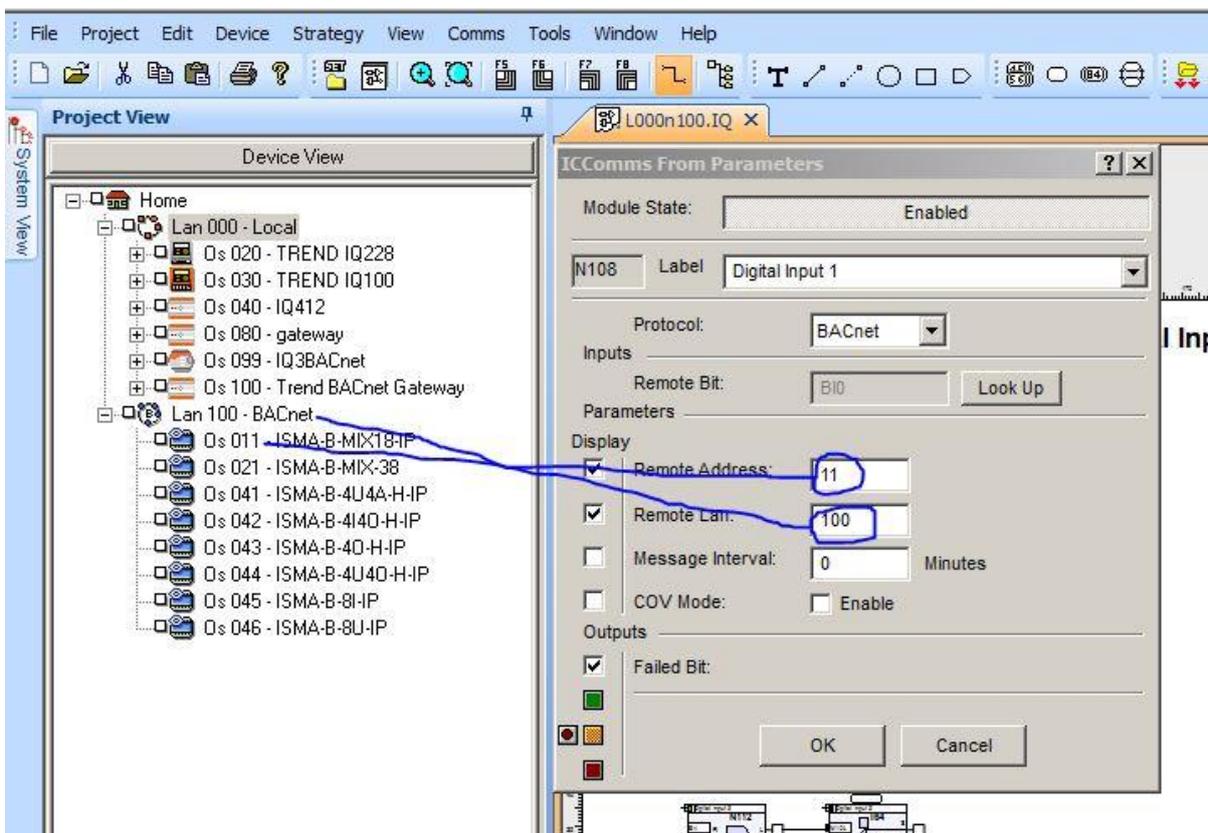
- Please note it is not necessary to press the OK and Send button unless you are connected to the Trend controller as the parent IQ3/4 controller has not yet been assigned in the strategy, the BACnet settings will need to be sent to the controller once the strategy interface has been created.
- The next step is to load the strategy template for the specific I/O module which will then expose the inputs and outputs required to link to your desired control strategy, these have been created in the custom strategy blocks which can be down loaded from the following link: <http://www.innon.co.uk/pages/isma-download>
- Once you have downloaded then please unzip these into the following directory on your computer: `C:\Program Files (x86)\Trend Control Systems\System Engineering Tool\Strategy Library\Custom` you will then need to press the database refresh button as highlighted below which will then populate the 8 ISMA module types:



- Now expand the ISMA modules in the custom pallet and then drag each one of the input/outputs strategy blocks of the selected module in this case we are configuring an ISMA-B-18IP module and then drop them on a new strategy page of the parent Trend BACnet controller that you are configuring please see example below:



- Once all four of the pages have been created in the strategy you can then open each of the IC coms modules to make sure that the ISMA controller Lan & Node numbers match up with the IC coms module settings as illustrated below:



- Once all of the IC coms modules have been verified and set on each of the strategy pages associated with the type of module you are configuring you can then verify the correct association by right clicking on the ISMA module in the BACnet tree and selecting device details, the applet below will appear and in the “Used In” column there should be an address of the associated Parent Trend BACnet controller, this is important as you could have several I/O modules and several Trend controllers on the same physical network:

The screenshot shows the 'NTD Parameters' dialog box for an ISMA-B-MIX18-IP module. The 'Address' field is set to 11. The 'Name' field is ISMA-B-MIX18-IP. The 'Type' is BACnet. The 'Identifier' is ISMA-B-MIX18-IP. The 'Used In' field is circled in blue and contains the value L000n100. The 'Device Instance' is 2015, 'Network Number' is 1, 'MAC Address' is C0A80D7BBAC0, 'IP Address' is 192.168.13.123, and 'UDP Port' is 47808. A warning message at the bottom right states: 'Warning! Any changes made in this dialog may affect all the controllers listed above.'

- You can now change the name tags on your I/O strategy pages for the Inputs, Sensors & Outputs these have all been assigned to internal Sensors, Dig-ins & Drivers for ease of integration with your desired control strategy.
- It is recommended that you now download the entire strategy file to the controller and test the module operation before moving on to any other ISMA module configuration that may also be required to connect to the IQ controller.

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- All of the ISMA I/O modules are supplied with an RS485 port which supports both Modbus RTU and BACnet mstp protocols, however Trend do not support the functionality eg. port forwarding except for the TON controller which we can integrate and support the full functionality of the ISMA modules.

If you do require integration to Modbus RTU and BACnet mstp devices from an IQ3xx/IQ4xx Bacnet controller then we can provide a pre-configured gateway controller the iSMA-B-AAC20 which can also work in conjunction with our wireless solution the iSMA-B-W0202 this can then further expand you system to pick up 1,000 remote devices over 8 separate wireless networks.

For further details on our integration products or If you encounter any problems with this configuration then please contact Innon support at the following address where we will arrange for a call back to further assist: support@innon.co.uk