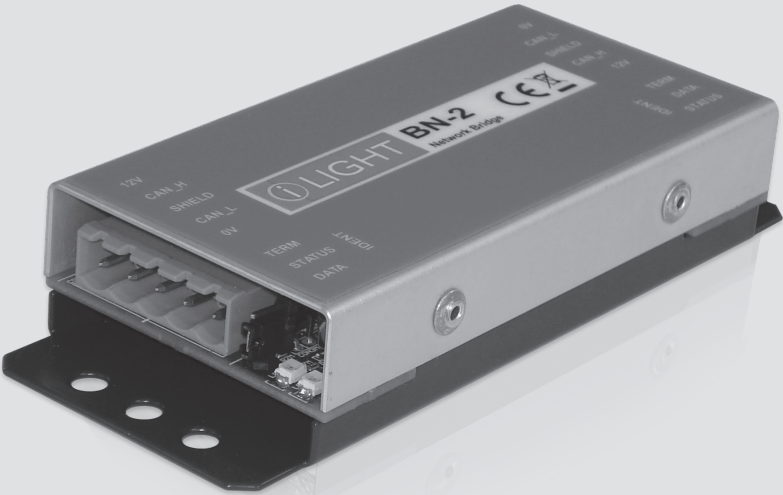


# BN-2

iCAN Network to iCAN Network Bridge



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## Introduction

The Network Bridge allows two iCAN networks to be connected together. The BN-2 is used to extend the network where more than 1000m of cabling is required or more than 100 devices are required, as well as filtering of network messages.

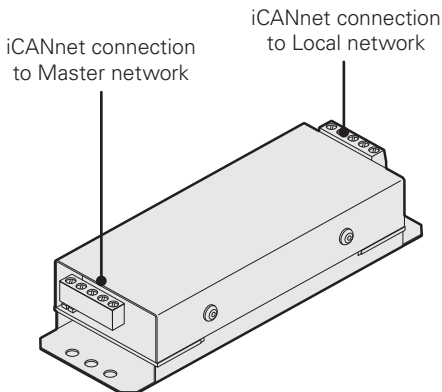
It allows for connection of multiple networks, up to a total of 65,000 devices on one system. The network bridge also ensures reliability of large systems by isolating and containing any network cabling faults.

## Environmental Data

Temperature: 0°C to 40°C

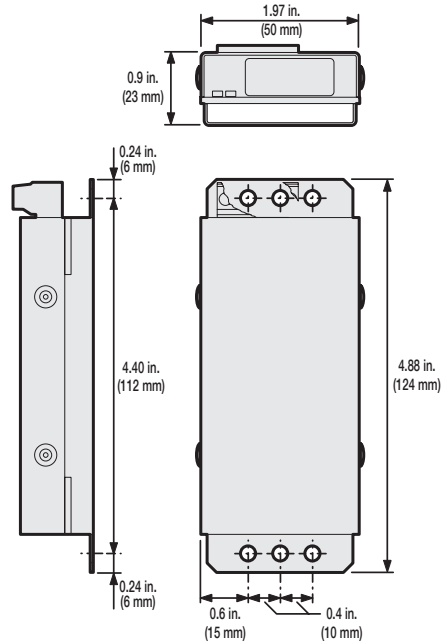
Humidity: 0 to 95% non-condensing

## Supplied parts



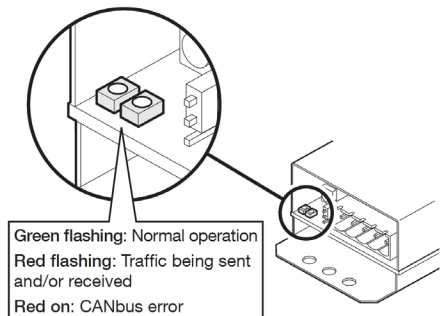
## Dimensions

Note: All mounting holes are 4mm diameter. The two outer holes at either end allow you to attach the unit using plastic ties.



## Operation indicators

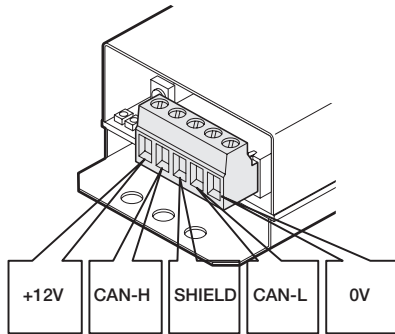
The BN-2 unit has a red and green indicator at either end to assist with configuration and troubleshooting.



## Connections

### iCANnet wiring

Cable connections to the iCANnet network are made to a removable 5-way connector block located at each end of the BN-2 unit:



Cable type: CAT5 FTP

Belden 1502R or 1502P

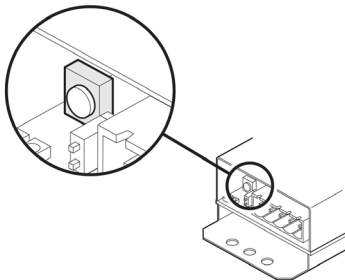
Maximum cable length: 1000 ft. (305 m) \*

Devices per segment: 100 (without bridge or repeater)

\* A maximum segment distance of 3200 ft. (1000 m) is possible if an additional 12V power supply is used.

### iCANnet IDENT button

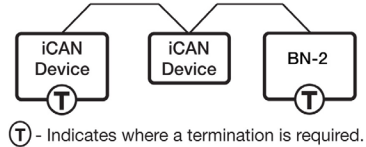
The BN-2 unit features a small button adjacent to the green connector which can be used to add the device to an iCANnet network. When pressed, the BN-2 will send an announcement message across the iCANnet network. Please see the section 'Adding the BN-2 to iCANsoft' for more details.



### iCANnet termination

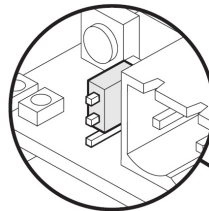
The iCANnet link is a 'daisy chain' protocol that requires termination on the devices located at either end of the iCANnet chain.

The BN-2 unit is supplied with termination enabled as standard. If it is not connected as an end device in the iCANnet chain, you need to disable termination.

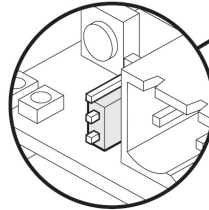


To disable BN-2 termination, move the jumper from the lower two pins to the upper two pins, as shown here:

#### Termination off



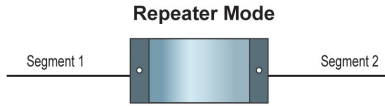
#### Termination on



# Typical Network Design

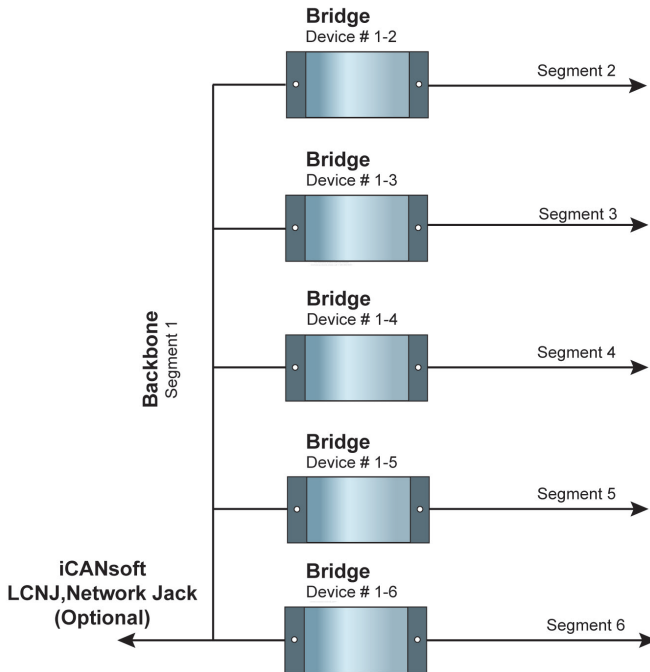
## Repeater Mode

In Repeater Mode, the bridge passes all traffic in both directions. It doesn't filter at all. This mode is used primarily to split networks into 2 segments. Usually this will be due to long cable lengths, or if there are more than 100 devices.



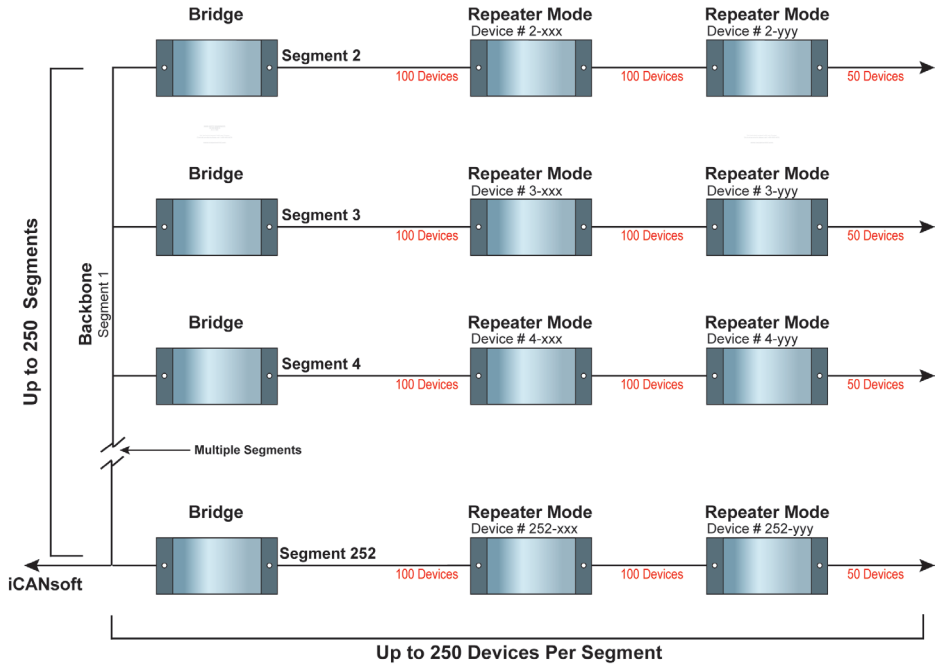
## Bridge Mode

When in Bridge Mode, the bridge will only pass traffic for one segment. This is to minimize traffic onto the network. This is typically used on large networks, with 100's or 1000's of devices, connected across many segments.



## Combination

When in Bridge Mode, the bridge will only pass traffic for one segment. This is to minimize traffic onto the network. This is typically used on large networks, with 100's or 1000's of devices, connected across many segments.




**Large projects may require a combination of BN-2 Network Bridges in bridge mode, as well as, repeater mode.**

# Programming - within iCANsoft

This section provides details about programming items specific to the BN-2 network bridge within the iCANsoft application. For details about the general use of iCANsoft, please refer to the System manual.

## Adding the BN-2 to iCANsoft

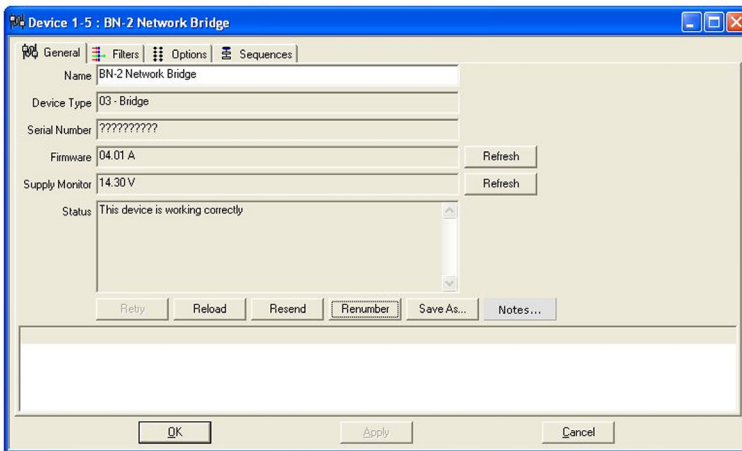
Once the BN-2 network bridge has been connected to the iCANnet network, you can add it to the iCANsoft application in any of the following three ways:

- Within the iCANsoft main window, click the  icon,
- Within the iCANsoft main window, select 'Tools' > 'Advanced Network Search', or
- On the BN-2 unit, adjacent to the green connector block, press and release the small 'IDENT' button to cause an announcement message to be sent across the network.

Note: Where there are multiple BN-2 units installed on a network, you can use the announce button to pinpoint the device within iCANsoft. Its entry within the device list will appear in bold and the iCAN soft output section will provide device number details.

## The BN-2 configuration window

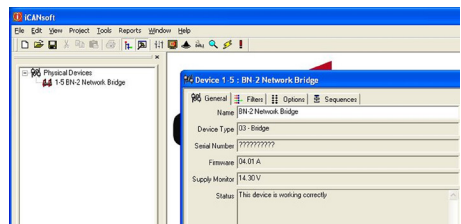
This tabbed window provides all of the options necessary to program the BN-2 unit.



## Viewing BN-2 details in iCANsoft

Once the BN-2 unit has been added to the iCANsoft application, it will appear in the devices list within the workspace window:

To view the configuration window for the BN-2 network bridge, double click its entry within the list.



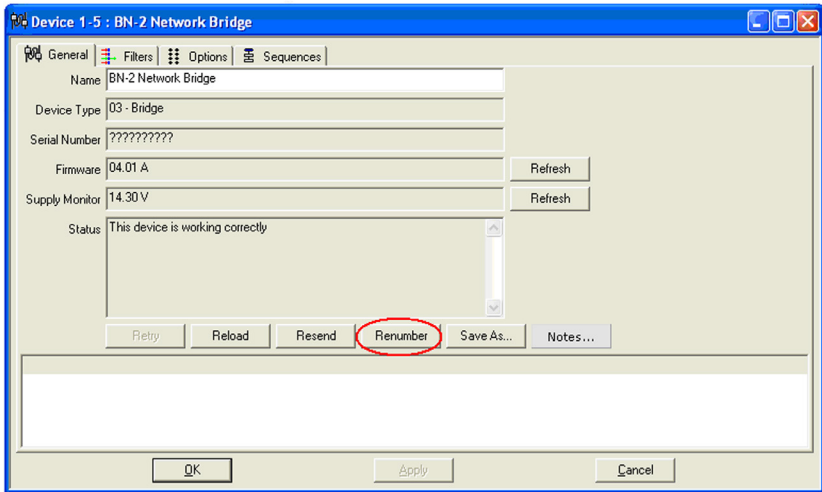
# Programming - General settings

## Repeater Mode

The Network Bridge is not used to filter messages, so the device number is not important.

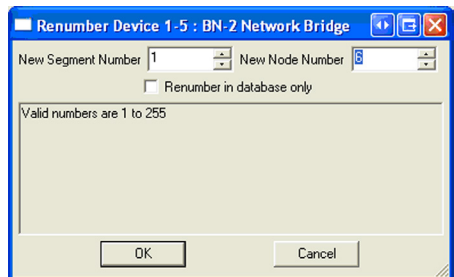
## Bridge Mode

The Network Bridge should be programmed to use segment 1, so the device number is 1 – xxx.



Click on Renumber to change the device number.

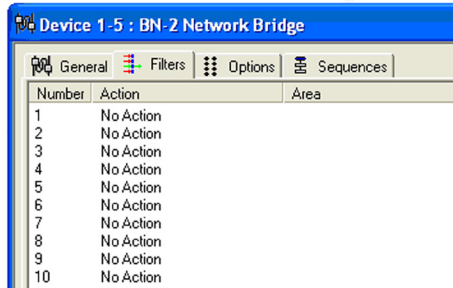
If the Network Bridge is device number 1 – 6, it will manage all devices on segment 6. All devices on the local (right) network will need to be renumbered to 6 – xxx, so that iCANsoft can configure them from the backbone (master) network.





## Virtual Filters

Each Network Bridge can have up to 16 filters for virtual messages. Double-click the filter to configure it:

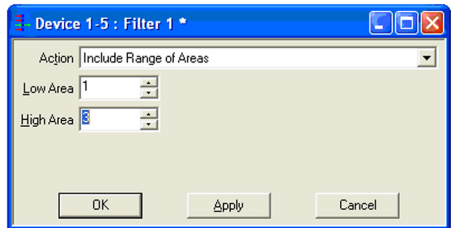


The default is to have none of the filters configured. This means that no virtual messages will be transmitted onto the local network (across the bridge).

Ranges of Virtual Areas can be added, or just a single area. Areas can also be excluded. This allows flexibility so that only the relevant messages are passed onto the local network.

It's good design practice to plan area numbers before commissioning a project. The numbers aren't important, but use a range of numbers for each segment. That way you only need to use a few filters, perhaps even one.

Example: segment 5 will use areas 500 – 599, segment 6 will use 600 – 699



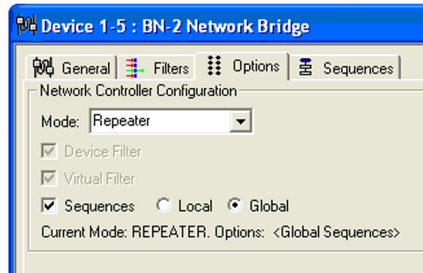
## Options

There are 3 modes of operation for the Network Bridge

- Repeater
- Bridge
- Locked

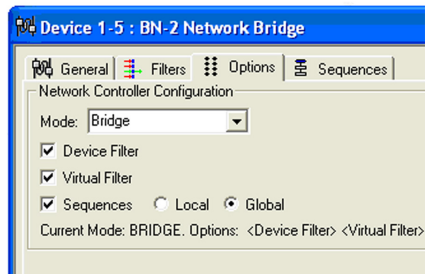
### Repeater Mode

Repeater mode is used when a network is either too long or has too many devices, and there's no requirement for filtering messages.



### Bridge Mode

Bridge mode is used for large networks, typically when there is a backbone network that covers several levels of a building. It is good practice to isolate messages from one segment being sent onto another segment.



### Locked Mode

Locked mode is used for testing and diagnostic purposes, and will prevent all messages from being sent across the bridge.

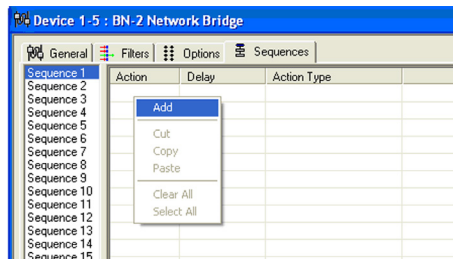
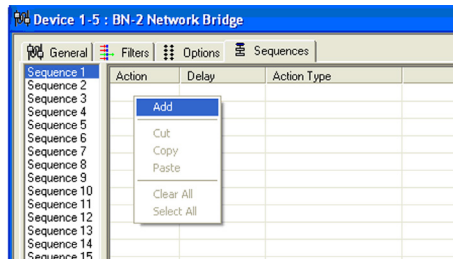
# Sequences

The sequence engine can be disabled. It can also be configured to send messages just to the local network, or across onto the backbone as well (global).

Sequences allow you to link a number of individual actions together, with or without a time delay between each, in order to cause multiple operations from a single trigger action. The BN-2 can store up to sixteen sequences of its own (each with up to 128 steps) that can be triggered by an action via the iCANNet network.

## To define a sequence

1. Click on the 'Sequences' tab to display the page.
2. Right click within the main panel area to display a popup menu. Select the 'Add' option to add a step to the sequence.
3. Optionally alter the delay option (introduces a time delay before the current action is launched).
4. Click the 'Action Type' down arrow and select the required action from the list. Depending upon the chosen action, one or more of the 'Param' columns to the right will show their own selection options. You can use these to further define the selected action.
5. Repeat steps 2 to 4 for each required step within the sequence. When all have been configured, either click the Apply button to save without closing the window or click the OK button to save and close.



## iLight Technical Support

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Email: TechSupportCC@eaton.com

Web: [www.iLight.info](http://www.iLight.info)

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