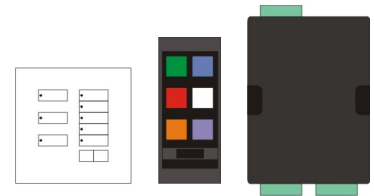




The LutronQS Driver



The LutronQS driver interfaces to a Lutron HomeWorks QS, Quantum, or QS Standalone lighting control system. Available for Commander and ObSys.

This document relates to LutronQS driver version 1.0

Please read the *Commander Manual* or *ObSys Manual* alongside this document, available from www.northbt.com

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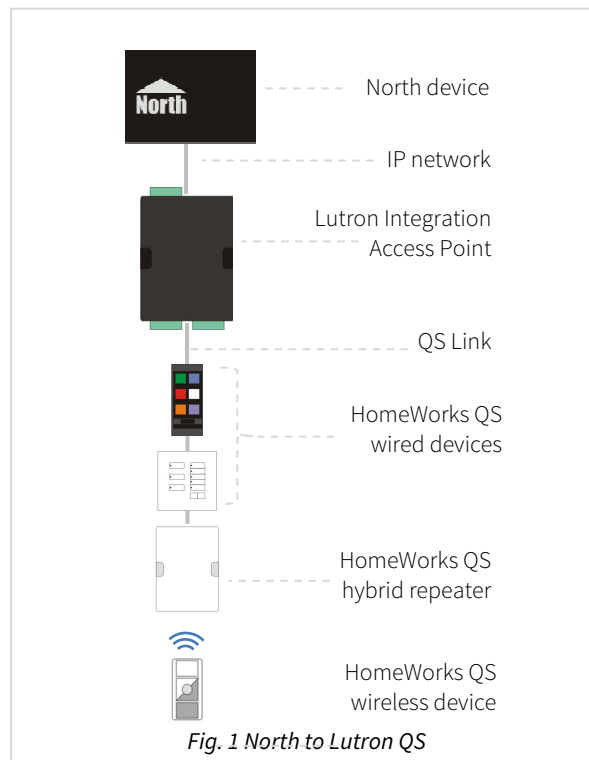
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Compatibility with the Lutron System

The LutronQS driver allows North to interface with a Lutron HomeWorks QS, Quantum, or QS Standalone lighting control system.

The driver connects via an Ethernet network, to a single Lutron Integration Access Point (Fig. 1). Compatible access points include the HomeWorks QS Processor (HQP6-2) and QS Network Interface (QSE-CI-NWK-E).

Two alternative Lutron compatible drivers are also available: the LutronHW driver interfaces to the HomeWorks series processor, and the BACnetIP driver interfaces to the Lutron Quantum BACnet Integration module.



Equipment

Lutron product ranges compatible with the driver include:

- HomeWorks QS home control system
- Quantum commercial lighting and shade control system
- QS Standalone lighting control system

Values

Depending on the type of Lutron equipment connected to the Integration Access Point, the driver can typically access the following values:

- Device input LED state
- Device input button actions
- Device input light level
- Device input battery status
- Output device zone level
- HVAC controller temperature
- HVAC controller heat/cool setpoint
- HVAC controller mode
- Area occupancy state
- Area scene
- Time-clock event

Prerequisites

Before a device, output, time clock, etc. can be accessed, it must be assigned a numeric Integration ID (less than 256, if possible). Lutron software can automatically assign Integration IDs for each component during system setup.

Set the IP address of the Lutron Integration Access Point to the same range assigned to the North device. With a QS Network Interface, the default IP address is 192.168.250.1. With a HomeWorks QS Processor, change the IP address from DHCP assigned to a static value.

If you are connecting to an Integration Access Point via a firewall, then the driver will require access to TCP port 23 on Lutron.

The Lutron system may begin to slow down if requests are sent too frequently to the Integration Access Point. If this problem is experienced, then increase the time between read and write requests from the North system. In particular, when using an ObVerse Processor, check the frequency between object read and write requests as these have the ability to make many requests in a short period.

Using the Driver

On ObSys and Commander, the driver is pre-installed. On all of these North devices, you can use the driver to create an interface to Lutron. Once started, you will need to configure the driver before it can communicate with the Lutron system.

Starting the Interface

- 📖 To start an interface using the LutronQS driver, follow these steps:
 - **Start Engineering** your North device using ObSys
 - Navigate to **Configuration, Interfaces**, and set an unused **Interface** to 'LutronQS' to start the interface
 - Navigate to the top-level of your North device and re-scan it

The driver setup object (Mc), labelled **LutronQS Setup**, should now be available. If this object is not available, check an interface licence is available and the driver is installed.

Setting up the Driver

- 📖 To set up the driver, follow these steps:
 - Navigate to the **LutronQS Setup** object (Mc). For example, if you started interface 1 with the driver earlier, then the object reference will be 'M1'
 - Set the **Lutron IP Address** object (SIA) to the IP address of the Lutron Integration Access Point
 - Set the **Telnet User** (TU) and **Telnet Password** (TP) objects to match those configured in the Lutron Integration Access Point.

Checking Communications

You can check that the interface is communicating by reading the **Device Communicating** object (DS). A value of 'yes' indicates the driver has connected to, and is communicating with the LutronQS system.

Object Specifications

Once an interface is started, one or more extra objects become available within the top-level object of the device. As with all North objects, each of these extra objects may contain sub-objects, (and each of these may contain sub-objects, and so on) – the whole object structure is a multi-layer hierarchy. It is possible to navigate around the objects using the ObSys Engineering Software.

Each object is specified below, along with its sub-objects.

Example Object Reference

An example of a reference to an object in the same device: the LutronQS system object (S1) contains a keypad Device 20 (D20), which contains an LED at Component 9 (C9), with an LED state object (LS). Therefore the object reference will be 'S1.D20.C9.LS'.

An example of a reference to an object in a different device: the IP network object (IP) contains Default Commander object (CDIP), which contains the object above (S1.D20.C9.LS) – therefore the complete object reference is 'IP.CDIP.S1.D20.C9.LS'.

Device Top-Level Objects

When an interface is started using the LutronQS driver, the objects below become available within the top-level object of the device. For example, if Interface 1 is started, then the object with references 'M1' and 'S1' become available.

Description	Reference	Type
LutronQS Setup Set up the LutronQS driver, started on interface <i>c</i> (<i>c</i> is the interface number)	Mc	Fixed Container: On the Commander platform this will be <i>[CDM v20\LutronQS v10]</i> On the ObSys platform this will be <i>[OSM v20\LutronQS v10]</i>
LutronQS System Access LutronQS system connected to interface <i>c</i> (<i>c</i> is the interface number)	Sc	Variable Container: <i>[LutronQS v10]</i>

LutronQS Driver Setup

Object Type: [OSM v20\LutronQS v10]

Object Type: [CDM v20\LutronQS v10]

The Lutron driver contains the following objects:

Description	Reference	Type
System Label Label displayed when scanning the system object	DL	Obj\Text; Max. 20 chars; Adjustable
Lutron IP Address IP address of the Integration Access Point	SIA	Obj\IP; Adjustable
Telnet User	TU	Obj\Text; Max. 30 chars; Adjustable
Telnet Password	TP	Obj\Text; Max. 30 chars; Adjustable
Device Communicating Indicates the driver has connected to the Lutron Integration Access Point.	DS	Obj\NoYes

LutronQS System

Object Type: [LutronQS v10]

The Lutron QS System includes objects to access device, output, HVAC, area, and timeclock components within the Lutron system. These objects can represent physical items attached to the system, or virtual modules configured in software.

Before a device, output, time clock, etc. can be accessed; it must be assigned an Integration ID. Lutron software automatically generates Integration IDs for each item.

Scan this variable container object to find the list of items available. Currently, only Integration IDs less than 256 are scanned. Include additional IDs by editing the object with Object Editor, and add information from the *Integration Report*. Generate the report for your installation using the Lutron software.

Description	Reference	Type
Device x Device inputs, such as button presses, releases and contact closure inputs. The integration ID, x, is in the range 1...65535	Dx	Fixed Container: [LutronQS v10\Device]
Output x Device outputs, such as dimmers, CCOs, etc. The integration ID, x, is in the range 1...65535	Ox	Fixed Container: [LutronQS v10\Output]
HVAC x HVAC controller. The integration ID, x, is in the range 1...65535	Hx	Fixed Container: [LutronQS v10\HVAC]
Area x Activate area scene or monitor occupancy. The integration ID, x, is in the range 1...65535	Ax	Fixed Container: [LutronQS v10\Area]
TimeClock x System time clock event. The integration ID, x, is in the range 1...65535	Tx	Fixed Container: [LutronQS v10\TimeClock]

Device

Object Type: [LutronQS v10\Device]

The Device object allows control and monitoring of device inputs such as button presses, releases, and contact closure inputs.

Each Lutron device type has a published list of component numbers and their use. For example, a GRAFIK Eye QS device uses component number 70 for a Scene 1 Button.

Generate an *Integration Report* for your installation using Lutron software. This contains a list of component numbers and their usage for each device installed.

Description	Reference	Type
Component x The component number, x, is in the range 1...1300 and dependent on the type of device.	Cx	Fixed container: [LutronQS v10\Device\Comp]

Device Component

Object Type: [LutronQS v10\Device\Comp]

A Device Component supports various actions depending on the type of input it is. Not all actions are supported by a component.

For example, a GRAFIK Eye QS device has a Scene 1 Button. This only supports press and release actions.

The driver supports the following device component actions using these objects:

Description	Reference	Type
LED State	LS	Obj\OffOn
Button Press Set value to 'yes' to simulate a press/close/occupied action on the component	BP	Obj\NoYes; Adjustable-only
Button Release Set value to 'yes' to simulate a release/open/unoccupied action on the component	BR	Obj\NoYes; Adjustable-only
Button Hold Set value to 'yes' to simulate a hold action on the component	BH	Obj\NoYes; Adjustable-only
Button Multi-tap Set value to 'yes' to simulate a multi-tap action on the component	BM	Obj\NoYes; Adjustable-only
Light Level %	LL	Obj\Float; Adjustable Range: 0...100.00

Output

Object Type: *[LutronQS v10\Output]*

The Output object allows control and monitoring of device outputs, such as dimmers, CCOs, or other devices in a system that have a controllable output.

Description	Reference	Type
Zone Level (%)	L	Obj\Float: 0...100.00; Adjustable

HVAC

Object Type: [LutronQS v10\Hvac]

The HVAC object allows control and monitoring of HVAC controllers and temperature sensors.

Description	Reference	Type
Temperature (°C)	TC	Obj\Num; Adjustable Range: 4...38
Temperature (°F)	TF	Obj\Num; Adjustable Range: 40...100
Heat/Cool Setpoint (°C)	CSPC	Obj\Num; Adjustable Range: 4...39°C (Heat setpoint), 10...45°C (Cool setpoint)
Heat/Cool Setpoint (°F)	CSPF	Obj\Num; Adjustable Range: 40...103°F (Heat setpoint), 50...113°C (Cool setpoint)
System Mode	SM	Obj\Enum: 0...2 Values: 0=Normal, 1=Away, 2=Green
Operating Mode	OM	Obj\Enum: 0...7; Adjustable Values: 0=Off, 1=Heat, 2=Cool, 3=Auto, 4=EmHeat, 6=Fan, 7=Dry
Sensor Status Temperature sensor connection status	SS	Obj\Enum: 0...3 Values: 0=Ok, 1=Missing, 2=Wired only, 3=No sensor
Eco Offset	EO	Obj\Num; Adjustable Range: 1...11°
Eco Mode Enables setback mode	EM	Obj\OffOn; Adjustable
Fan Mode	FM	Obj\Enum: 0...7; Adjustable Values: 0=Auto, 1=On, 2=Cycle, 4=High, 5=Medium, 6=Low, 7=Top

Area

Object Type: [LutronQS v10\Area]

The Area object allows control and monitoring of an area – such as activating area scenes, or monitoring occupancy.

Description	Reference	Type
Area Occupied	OS	Obj\NoYes
Scene Set the area to a pre-configured scene. Scene 0 is the Off scene.	S	Obj\Num; Adjustable Range: 0...32
Daylighting Mode	DM	Obj\OffOn; Adjustable

TimeClock

Object Type: [LutronQS v10\TimeClock]

The TimeClock object allows control of a system time clock.

Description	Reference	Type
Execute Event Set the event number to trigger	X	Obj\Num; Adjustable-only Value: 1...1000

Driver Versions

Version	Build Date	Details
1.0	3/3/2014	Driver released

Next Steps...

If you require help, contact support on 01273 694422 or visit www.northbt.com/support



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