The LonSLTA Driver

The LonSLTA driver connects to a wide range of equipment supporting the Echelon LonWorks standard. Compatible equipment includes actuators, chillers, fan coils, hvac controls, power meters, input-output modules, lighting, and sensors. Available for Commander and ObSys.

This document relates to LonSLTA driver version 1.2

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

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Compatibility with the Lon System

The LonSLTA driver allows North to interface with a wide range of equipment supporting the Echelon LonWorks standard. Compatible equipment includes actuators, chillers, fan coils, hvac controls, power meters, input-output modules, lighting, and sensors.

The driver connects, via a Serial LonTalk Adapter (SLTA-10), to a TP/FT-10 network of LonWorks compatible devices (Fig. 1).

On a LonWorks network, communication can only take place among devices configured within the same domain. A domain can contain up to 255 subnets, physically connected using a LonWorks router, with each subnet containing up to 127 locally-powered devices.

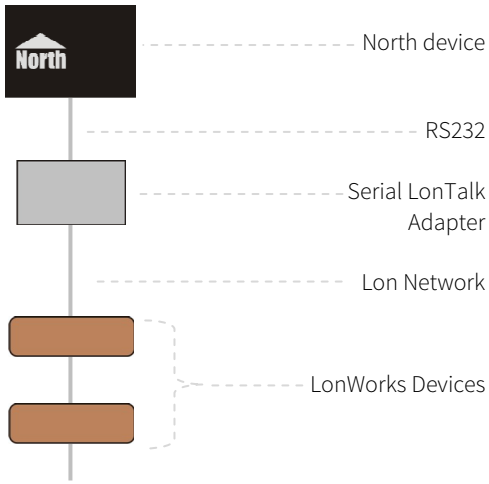

Fig. 1 North Lon Network

Equipment

The North device connects to the RS232 port of an SLTA-10 network adapter. Depending on the SLTA-10 model, this converts the RS232 electrical signal typically to the LonWorks twisted-pair FT-10 standard.

The driver supports many different manufacturers' LonWorks compatible or LonMark® certified devices, including: ABB, Daikin, Danfoss, Honeywell, Kieback & Peter, Philips Lighting, Schneider Electric, Siemens, Trane, etc.

Values

The values within a LonWorks device conform to one of the Standard Network Variable Types (SNVTs) available. These include counters, current, flow, mass, time, volume, voltage, length, power, temperature, switch, etc. A full list of SNVTs is published by Echelon and available at *http://types.lonmark.org/*.

The driver scans the LonWorks network and automatically detects each Lon device. For each device type, a list of available SNVTs is available from the manufacturer in an external interface file (XIF).

Prerequisites

Each device on the Lon network, including the SLTA, must be addressed with a domain, subnet and node number. To configure each device's address use commissioning software, such as LonMaker, or the LonSLTA driver.

Note that only Lon devices residing on the same domain may communicate with each other.

The LonSLTA driver requests network variables from a device directly. Devices do not need to be configured with Lon bindings and a LNS database is not required on the network.

An external interface file (XIF) may be required for each type of Lon device. North already includes details of many LonWorks and LonMark® products in the ObSys type information database. If you have a new device, or would like to check compatibility, then email the XIF to *support@northbt.com* and we will generate and return the type information database files to you.

Using the Driver

On ObSys and Commander, the LonSLTA driver is pre-installed. On all of these North devices, you can use the driver to create an interface to a LonWorks network. Once started, you will need to set up the driver before it can communicate with the Lon system.

Making the Cable

Using the RS232 cable specification (Fig. 2), connect the North device COM port to the SLTA-10 network adapter.

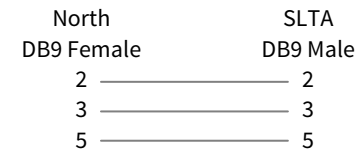

Fig. 2 North to SLTA-10 cable

An SLTA-10 serial LonTalk adapter for FT-10 networks is available from North, order code MISC/LONSLTA.

The connection between the SLTA-10 and the Lon network is dependent on the type of Lon network. For FT-10 networks, this is a polarity independent twisted-pair connection.

Setting the SLTA Switches

The SLTA-10 has an 8-way DIP-switch to select how the SLTA communicates on its RS232 port. The diagram below (Fig.3) shows the switch settings required for 38400 baud.

Changes to the switch configuration will not occur until the power is cycled on the SLTA.

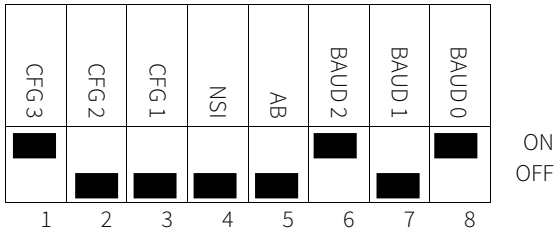

Fig. 3 SLTA-10 Switch Settings

Starting the Interface

To start an interface using the LonSLTA driver, follow these steps:

- → **Start Engineering** your North device using ObSys
- → Navigate to **Configuration, Interfaces,** and set a unused **Interface** to 'LonSLTA' to start the particular interface
- → Navigate to the top-level of your North device, then rescan it

The driver setup object (Mc), labelled **LonSLTA Setup**, should now be available.

Setting up the Driver

To set up the driver, follow these steps:

- Navigate to the **LonSLTA Setup** object (Mc). For example, if you started interface 1 with the driver earlier, then the object reference will be 'M1'
- Set **RS232 COM Port** (RS.COM) to select which serial port on the North device the Lon system is connected
- Set **Initialise SLTA** (I) to 'No'.

Addressing the SLTA

Before you can communicate with devices on the Lon network, the SLTA will require addressing.

Using LonMaker Software

If devices on the Lon network are addressed using LonMaker, or LNS software, then no further configuration is required with the North LonSLTA driver.

Using the Driver with Known Network Settings

If LonMaker software is unavailable, then the LonSLTA driver can configure the address of the SLTA.

To configure the SLTA with known network settings using the driver, follow these steps:

- Set **SLTA's Domain ID** (S.I) and **SLTA's Authentication Key** (S.A) to match the devices you wish to communicate with
- Set **SLTA's Subnet** (S.S) and **SLTA's Node** (S.N) to an available address on the Lon network
- Set **Initialise SLTA** to **'**Yes'

Using the Driver when Network Settings are Unknown

If LonMaker software is unavailable and the address of devices on the Lon network is unknown, then use the LonSLTA driver to discover the network settings of a device before configuring the address of the SLTA.

You will require the Neuron ID of the Lon device, a 12-digit hexadecimal number typically found on a barcode sticker on the device.

To discover network settings and configure the SLTA using the driver, follow these steps:

- Set **SLTA's Domain ID** (S.I) to '00', **SLTA's Subnet** (S.S) to '127', **SLTA's Node** (S.N) to '127', and **SLTA's Authentication Key** (S.A) to 'FFFFFFFFFFFF'
- Set **Initialise SLTA** to **'**Yes'
- Check **SLTA Successfully Initialised** has the value 'Yes'. If the value remains at 'No', check the cable to the SLTA and that the switch settings are correct
- Set **Default ID Mode** (DM) to 'Yes'
- Set **Default ID** (DID) to the Neuron ID from the device's sticker.
- Navigate to the top-level of your North device, and then to **Lon Network** (Sc) and re-scan it. For example, if you started interface 1 with the driver earlier, then the object reference will be 'S1'
- Navigate to **Device by Neuron ID, Domain 0** and note the network settings
- Again, from the top-level of your North device, navigate to the **LonSLTA Setup** object (Mc).
- Set **Default ID Mode** to 'No'

- → Set **SLTA's Domain ID** (S.I) and **SLTA's Authentication Key** (S.A) to match the device's network settings you noted earlier
- → Set **SLTA's Subnet** (S.S) and **SLTA's Node** (S.N) to an available address on the Lon network. Typically these can be left at 127
- → Set **Initialise SLTA** to 'No' and then to **'**Yes'

Checking Communications

Check the **SLTA Successfully Initialised** object (DS) has the value 'Yes'. This indicates the driver has configured the SLTA, if required. If the value remains at 'No', check the cable to the SLTA and that the switch settings are correct.

Also, navigate to the **Lon Network** object (S*c*) and re-scan it. This will refresh with a list of Lon devices found on the network.

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 being 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 Lon Network (S1) contains a device at Subnet 2 Node 25 (S2N25), which contains a network variable 28 (V28), of type SNVT_elec_kwh (W). Therefore, the complete object reference is 'S1.S2N25.V28.W'.

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.S2N25.V28.W') – therefore the complete object reference is 'IP.CDIP.S1.S2N25.V28.W'.

Device Top-Level Objects

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

Description	Reference	Type
LonSLTA Setup Set up the SLTA, started on interface *c* (*c* is the interface number)	M*c*	Fixed Container: On the Commander platform this will be *[CDM v20\LonSLTA v12]* On the ObSys platform this will be *[OSM v20\LonSLTA v12]*
Lon Network Access Lon Network connected to interface *c* (*c* is the interface number)	S*c*	Variable Container: *[Lon\Network]*

LonSLTA Setup

Object Type: *[OSM v20\LonSLTA v12]*
Object Type: *[CDM v20\LonSLTA v12]*

The LonSLTA driver contains the following objects:

Description	Reference	Type
RS232 COM Port	RS.COM	Obj\Num; Range: 1…8; Adjustable
Baud Rate	RS.BR	Obj\Num; Adjustable Values: 9600, 19200 or 38400
Initialise SLTA When set to 'Yes', the SLTA will be configured with the network settings below	IS	Obj\NoYes; Adjustable
SLTA successfully initialised If Initialise SLTA is set to 'Yes', then this indicates that the SLTA has been configured with the network settings below	DS	Obj\NoYes
SLTA's Domain ID Domain network setting to configure the SLTA with. Only devices with the same Domain ID can communicate	S.I	Obj\Text: blank, 2, 6 or 12 char hexadecimal; Adjustable
SLTA's Subnet Subnet network setting to configure the SLTA with	S.S	Obj\Num; Range: 1…255; Adjustable
SLTA's Node Node number network setting to configure the SLTA with	S.N	Obj\Num; Range: 1…127; Adjustable
SLTA Authentication Authentication key network setting to configure the SLTA with. Only devices with the same key can communicate	S.A	Obj\Text; 12 character hexadecimal; Adjustable Default value 'FFFFFFFFFFFF', indicating no authentication.
Default ID Mode In Default ID mode, the driver can access a Lon device using its Neuron ID rather than network address	DM	Obj\NoYes; Adjustable
Default ID Press the service button on a Lon device, or enter its Neuron ID here	DID	Obj\Text; blank, or 12 character hexadecimal; Adjustable

Lon Network

Object Type: *[Lon\Network]*

The Lon Network object contains a list of available Lon devices, typically a list of devices within the same domain as the SLTA. If the driver is in Default ID mode, refer to *Default ID Mode Objects* section below.

On scanning the Lon Network, each device will report its program ID. For example, a Daikin VRV Gateway has the program ID '9000874850040403'. Many Lon devices, such as this one, are already available in the ObSys type information database. If you have a new device, or would like to check compatibility, then an external interface file (XIF) from the device manufacturer will be required. Refer to the *Prerequisites* section for further details.

If an XIF is unavailable, but documentation for the Lon device's network variables is available, then the device's object contents may be edited manually. For a list of SNVTs and objects supported by the driver, refer to the *Lon Device* object

Description	Reference	Type
Lon Device The subnet number, *s*, is in the range 0…255. The node number, *n*, is in the range 0…127.	S*s*N*n*	Fixed Container in the format [Lon*ProgID*], where *ProgID* is the Program ID reported by the Lon device (see note above). Example Lon device listing all supported SNVTs: *[Lon/Network/Various]*

Default ID Mode Objects

In Default ID Mode, the Lon Network object contains only one device – the device with the Neuron ID specified in *LonSLTA Setup*.

Description	Reference	Type
Device by Neuron ID	D	Fixed Container: *[Lon\Neuron]*

Device by Neuron ID

Object Type: *[Lon\Neuron]*

A Device by Neuron ID object contains configuration information for the device. This object is only available when the driver is in Default ID mode, as the device is accessed using its Neuron ID.

For devices to communicate they must have the same domain and authentication key. A Lon device, however, can be configured with network settings for two domains.

Description	Reference	Type
Device Status	S	Fixed Container: *[Lon\Status]*
Domain 0 Network settings – first domain address	D0	Fixed Container: *[Lon\DomainEntry]*
Domain 1 Network settings – second domain address	D1	Fixed Container: *[Lon\DomainEntry]*

Device Status

Object Type: *[Lon\Status]*

A Device Status object contains information about the status of the Lon device.

Description	Reference	Type
State	S	Obj\ENum: 2…4, 6; Ajustable Values: 2=Unconfigured (but with an application), 3=Applicationless and unconfigured, 4=Configured and online, 6=Configured and hard offline
Model	M	Obj\Num: 0…255
Reset Cause	R	Obj\Num: 0…255
Last Error	E	Obj\Num: 0…255
Version	V	Obj\Num: 0…255

Domain

Object Type: *[Lon\DomainEntry]*

A Lon Domain contains a device's address configuration on the Lon network. For devices to communicate, they must have the same domain and authentication key, and a unique node number on the subnet.

Use this information when addressing the SLTA and network settings are unknown – see *Addressing the SLTA* – or to configure a new Lon device's network settings.

Description	Reference	Type
Domain ID Only devices on the same domain can communicate	I	Obj\Text: 0, 2, 6 or 12 char hexadecimal; Adjustable
Subnet	S	Obj\Num: 0…255; Adjustable
Node	N	Obj\Num: 0…127; Adjustable
Authentication Key Only devices with the same key can communicate	A	Obj\Text: 12 character hexidecimal; Adjustable Default value 'FFFFFFFFFFFF', indicating no authentication

Lon Device

Object Type: *[Lon\Network\Various]*

A typical Lon Device contains the following objects:

Description	Reference	Type
Device Status	S	Fixed Container: *[Lon\Status]*
Network variable name Output (nvo) or input (nvi) network variable. The network variable number, *v*, is in the range 0…6000. The *Network variable name* is provided from the XIF	V*v*	Object type depends on the network variable type. See *[Lon\Network\Variable]* for list of supported SNVTs
Configuration: *Network variable name* Configuration of the network variable. The network variable number, *v*, is in the range 0…6000. The *Network variable name* is provided from the XIF	C*v*	Fixed Container: Input variable (nvi) *[Lon\SNVTConfig\In]* Output variable (nvo) *[Lon\SNVTConfig\Out]*

Lon Network Variables

Object Type: *[Lon\Network\Variable]*

Each network variable within a Lon device confirms to a standard network variable type (SNVT). These can include types for counters, current, flow, mass, time, volume, etc.

Some SNVTs contain a single value, and some contain multiple values. The list of supported SNVTs below decribes the object type for a single value SNVTs, and the container type for multi-value SNVTs.

If the device has network variables that do not conform to a standard SNVT, then objects are available to decode these. Refer to the *Non-SNVT Objects* section below.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
SNVT_amp Electric current (A)	I1	Obj\Float: -3276.8…3276.7 A
SNVT_amp_mil Electric current (mA)	I1	Obj\Float: -3276.8…3276.7 mA
SNVT_angle Angular distance (radians)	W3	Obj\Float: 0…65.535 rad
SNVT_angle_vel Angular velocity (radians/second)	I1	Obj\Float: -3276.8…3276.7 rad/s
SNVT_btu_kilo Thermal energy (kilo-Btus)	W	Obj\Num: 0…65535 KBTU
SNVT_btu_mega Thermal energy (mega-Btus)	W	Obj\Num: 0…65535 MBTU
SNVT_char_ascii ASCII character code	B	Obj\Num: 0…255
SNVT_count Absoulte count	W	Obj\Num: 0…65535
SNVT_count_inc Increment count	I	Obj\Num: -32768…32767
SNVT_date_day Day of week	B	Obj\ENum: 0…6 Where: 0=Sun, 1=Mon, 2=Tue, 3=Wed, 4=Thu, 5=Fri, 6=Sat

Description	Reference	Type
SNVT_elec_kwh Electric energy (kWh)	W	Obj\Num: 0…65535 kW h
SNVT_elec_whr Electric energy (Wh)	W1	Obj\Float: 0…6553.5 W h
SNVT_flow Flow volume (l/s)	W	Obj\Num: 0…65534 l/s
SNVT_flow_mili Flow volume (ml/s)	W	Obj\Num: 0…65535 ml/s
SNVT_length Length (m)	W1	Obj\Float: 0…6553.5 m
SNVT_length_kilo Length (km)	W1	Obj\Float: 0…6553.5 km
SNVT_length_micr Length (micrometers)	W1	Obj\Float: 0…6553.5 µm
SNVT_length_mil Length (millimeters)	W1	Obj\Float: 0…6553.5 mm
SNVT_lev_cont Continuous level (% full level)	C	Obj\Float: 0…100 %
SNVT_mass Mass (g)	W1	Obj\Float: 0…6553.5 g
SNVT_mass_kilo Mass (kg)	W1	Obj\Float: 0…6553.5 kg
SNVT_mass_mega Mass (metric tons)	W1	Obj\Float: 0…6553.5 t
SNVT_mass_mili Mass (mg)	W1	Obj\Float: 0…6553.5 mg
SNVT_power Power (Watts)	W1	Obj\Float: 0…6553.5 W
SNVT_power_kilo Power (kW)	W1	Obj\Float: 0…6553.5 kW
SNVT_ppm Concentration (ppm)	W	Obj\Float: 0…65535 ppm
SNVT_press Pressure (kPa)	I1	Obj\Float: -3276.8…3276.6 kPa
SNVT_res Electric resistance (Ohms)	W1	Obj\Float: 0…6553.5 Ω
SNVT_res_kilo Electric resistance (kiloOhms)	W1	Obj\Float: 0…6553.5 kΩ
SNVT_sound_db Sound level (dB)	I2	Obj\Float: -327.68…327.67 dB
SNVT_speed Linear velocity (m/s)	W1	Obj\Float: 0…6553.5 m/s
SNVT_speed_mili Linear velocity (m/s)	W3	Obj\Float: 0…65.535 m/s
SNVT_str_asc ASCII character string	S	Obj\Text: 30 characters max
SNVT_telcom Telecomm states	B	Obj\ENum: 0…19, where: 0=NotUse, 1=OffHk, 2=Dial, 3=DialOk, 4=Ringback, 5=In, 6=Ring, 7=Answ, 8=Conn, 9=Talk, 10=HangUp, 11=Hold, 12=Unhold, 13=Rel, 14=Fulld, 15=Block, 16=CWait, 17=DBusy, 18=NBusy, 19=Err
SNVT_temp Temperature (°C)	T	Obj\Float: -274…6279.5 °C
SNVT_vol Volume (liters)	W1	Obj\Float: 0…6553.5 l

Description	Reference	Type
SNVT_vol_kilo Volume (kiloliters)	W1	Obj\Float: 0…6553.5 kl
SNVT_vol_mil Volume (milliliters)	W1	Obj\Float: 0…6553.5 ml
SNVT_volt Electric voltage (Volts)	I1	Obj\Float: -3276.8…3276.7 V
SNVT_volt_dbmw Electric voltage (dB micro Volts)	I2	Obj\Float: -327.68…327.67 dB µV
SNVT_volt_kilo Electric voltage (kiloVolts)	I1	Obj\Float: -3276.8…3276.7 kV
SNVT_volt_mil Electric voltage (milliVolts)	I1	Obj\Float: -3276.8…3276.7 mV
SNVT_amp_f Electric current (A)	F	Obj\Float: -1000000…1000000 A
SNVT_angle_f Angular distance (radians)	F	Obj\Float: -1000000…1000000 rad
SNVT_angle_vel_f Angular velocity (radians/second)	F	Obj\Float: -1000000…1000000 rad/s
SNVT_count_f Absoulte count	F	Obj\Float: -1000000…1000000
SNVT_count_inc_f Increment count	F	Obj\Float: -1000000…1000000
SNVT_flow_f Flow volume (l/s)	F	Obj\Float: -1000000…1000000 l/s
SNVT_length_f Length (m)	F	Obj\Float: -1000000…1000000 m
SNVT_lev_cont_f Continuous level (% full scale)	F	Obj\Float: 0…100 %
SNVT_mass_f Mass (g)	F	Obj\Float: -1000000…1000000 g
SNVT_power_f Power (Watts)	F	Obj\Float: -1000000…1000000 W
SNVT_ppm_f Concentration (ppm)	F	Obj\Float: 0…1000000 ppm
SNVT_press_f Pressure (kPa)	F	Obj\Float: -1000000…1000000 ppm
SNVT_res_f Electric resistance (Ohms)	F	Obj\Float: -1000000…1000000 Ω
SNVT_sound_db_f Sound level (dB)	F	Obj\Float: -1000000…1000000 dB (SPL)
SNVT_speed_f Linear velocity (m/s)	F	Obj\Float: -1000000…1000000 m/s
SNVT_temp_f Temperature (°C)	F	Obj\Float: -1000000…1000000 °C
SNVT_time_f Elapsed time (secs)	F	Obj\Float: -1000000…1000000 sec
SNVT_vol_f Volume (liters)	F	Obj\Float: -1000000…1000000 l
SNVT_volt_f Electric voltage (Volts)	F	Obj\Float: -1000000…1000000 V
SNVT_btu_f Thermal energy (Btus)	F	Obj\Float: -1000000…1000000 Btu
SNVT_elec_whr_f Electric energy (Wh)	F	Obj\Float: -1000000…1000000 W hr
SNVT_config_src Configuration source	B	Obj\ENum: 0..1, where: 0=Local, 1=external

Description	Reference	Type
SNVT_color CIELAB colour		Fixed Container: nvi *[Lon\SNVT_color\In]* nvo *[Lon\SNVT_color\out]*
SNVT_grammage Grammage (g/sq meter)	W1	Obj\Float: 0…6553.5 g/m2
SNVT_grammage_f Grammage (g/sq meter)	F	Obj\Float: 0…1000000 g/m2
SNVT_freq_f Frequency (Hertz)	F	Obj\Float: 0…1000000 Hz
SNVT_freq_hz Frequency (Hertz)	W1	Obj\Float: 0…6553.5 Hz
SNVT_freq_kilohz Frequency (kiloHertz)	W1	Obj\Float: 0…6553.5 kHz
SNVT_freq_milhz Frequency (milliHertz)	W4	Obj\Float: 0…6553.5 mHz
SNVT_lux Illumination (lux)	W	Obj\Float: 0…65535 lux
SNVT_multiplier Multiplier value	X3	Obj\Float: 0…32.7675
SNVT_state 16 individual state values		Fixed Container: nvi *[Lon\SNVT_state\In]* nvo *[Lon\SNVT_state\out]*
SNVT_time_stamp Time stamp	TS	Obj\DateTime
SNVT_zerospan Linear transformation		Fixed Container: nvi *[Lon\SNVT_zerospan\In]* nvo *[Lon\SNVT_zerospan\out]*
SNVT_elapsed_tm Elapsed time		Fixed Container: nvi *[Lon\SNVT_elapsed_tm\In]* nvo *[Lon\SNVT_elapsed_tm\out]*
SNVT_alarm Report alarm status		Fixed Container: nvi *[Lon\SNVT_alarm\In]* nvo *[Lon\SNVT_alarm\out]*
SNVT_currency Monetary currency value		Fixed Container: nvi *[Lon\SNVT_currency\In]* nvo *[Lon\SNVT_currency\out]*
SNVT_muldiv Multiply/Divide gain factor		Fixed Container: nvi *[Lon\SNVT_muldiv\In]* nvo *[Lon\SNVT_muldiv\out]*
SNVT_obj_request Object request		Fixed Container: nvi *[Lon\SNVT_obj_request\In]* nvo *[Lon\SNVT_obj_request\out]*
SNVT_obj_status Object status		Fixed Container: nvi *[Lon\SNVT_obj_status\In]* nvo *[Lon\SNVT_obj_status\out]*
SNVT_preset Preset		Fixed Container: nvi *[Lon\SNVT_preset\In]* nvo *[Lon\SNVT_preset\out]*
SNVT_switch Switch percentage level and on/off state		Fixed Container: nvi *[Lon\SNVT_switch\In]* nvo *[Lon\SNVT_switch\out]*
SNVT_trans_table Translation table		Fixed Container: nvi *[Lon\SNVT_trans_table\In]* nvo *[Lon\SNVT_trans_table\out]*
SNVT_override Override code	B	Obj\ENum: 0…2, where: 0=Retain, 1=Specified, 2=Default

Description	Reference	Type
SNVT_pwr_fact Power factor (multiplier)	J4	Obj\Float: -1…1
SNVT_pwr_fact_f Power factor (multiplier)	F	Obj\Float: -1…1
SNVT_density Density (kg/m³)	X	Obj\Float: 0…32767 kg/m³
SNVT_density_f Density (kg/m³)	F	Obj\Float: 0…1000000 kg/m³
SNVT_rpm Angular velocity (revolutions/minute)	W	Obj\Float: 0…65534 rpm
SNVT_hvac_emerg HVAC emergency mode	B	Obj\ENum: 0…6, where: 0=Normal, 1=Pressure, 2=Depressure, 3=Purge, 4=Shutdown, 5=Fire
SNVT_angle_deg Angular distance (degrees)	K1	Obj\Float: -359.98…360 °
SNVT_temp_p Temperature (°C)	I2	Obj\Float: -273.17…327.67 °C
SNVT_temp_setpt Temperature setpoint		Fixed Container: nvi *[Lon\SNVT_temp_setpt\In]* nvo *[Lon\SNVT_temp_setpt\out]*
SNVT_time_sec Elapsed time (seconds)	W1	Obj\Float: 0…6553.5 s
SNVT_hvac_mode HVAC mode	B	Obj\ENum: 0…20, where: 0=Auto, 1=Heat, 2=Warmup, 3=Cool, 4=NtPurge, 5=PreCool, 6=Off, 7=Test, 8=EmHeat, 9=Fan, 10=FreeCool, 11=Ice, 12=MaxHeat, 13=Eco, 14=Dehum, 15=Calib, 16=EmCool, 17=EmSteam, 18=MaxCool, 19=HvcLd, 20=NoLd
SNVT_occupancy Occupancy state	B	Obj\ENum: 0…3, where: 0=Occupied, 1=Unoccupied, 2=Bypass, 3=Standby
SNVT_area Area (square meters)	Y3	Obj\Float: 0…13.107 m²
SNVT_hvac_overid HVAC override		Fixed Container: nvi *[Lon\SNVT_hvac_overid\In]* nvo *[Lon\SNVT_hvac_overid\out]*
SNVT_hvac_status HVAC status		Fixed Container: nvi *[Lon\SNVT_hvac_status\In]* nvo *[Lon\SNVT_hvac_status\out]*
SNVT_press_p Pressure (Pascals)	I	Obj\Num: -32768…32767 Pa
SNVT_address Neuron address	W	Obj\Num: 16384..64767
SNVT_scene Scene control		Fixed Container: nvi *[Lon\SNVT_scene\In]* nvo *[Lon\SNVT_scene\Out]*
SNVT_scene_cfg Scene configuration		Fixed Container: nvi *[Lon\SNVT_scene_cfg\In]* nvo *[Lon\SNVT_scene_cfg\Out]*
SNVT_setting Setting control		Fixed Container: nvi *[Lon\SNVT_setting\In]* nvo *[Lon\SNVT_setting\Out]*
SNVT_evap_state Evapourator state	B	Obj\ENum: 0…2, where: 0=NoCooling, 1=Cooling, 2=EmergCooling
SNVT_therm_mode Thermostat mode	B	Obj\ENum: 0…2, where: 0=NoControl, 1=InOut, 2=Modulating

Description	Reference	Type
SNVT_defr_mode Defrost mode	B	Obj\ENum: 0…2, where: 0=Ambient, 1=Forced, 2=Sync
SNVT_defr_term Defrost termination	B	Obj\ENum: 0… 0=Temp, 1=Time, 2=First, 3=Last, 4=Sensor, 5=Discharge, 6=Return, 7=SW Open, 8=SW Close
SNVT_defr_state Defrost state	B	Obj\ENum: 0…4, where: 0=Standby, 1=Pumpdown, 2=Defrost, 3=Draindown, 4=InjectDly
SNVT_time_min Elapsed time (minutes)	W	Obj\Num: 0…65535 min
SNVT_time_hour Elapsed time (hours)	W	Obj\Num: 0…65535 hr
SNVT_ph Acidity (pH)	I3	Obj\Float: -32.68…32.767 pH
SNVT_ph_f Acidity (pH)	F	Obj\Float: -1000000…1000000 pH
SNVT_chlr_status Chiller status		Fixed Container: nvi *[Lon\SNVT_chlr_status\In]* nvo *[Lon\SNVT_chlr_status\Out]*
SNVT_tod_event Time of day event		Fixed Container: nvi *[Lon\SNVT_tod_event\In]* nvo *[Lon\SNVT_tod_event\Out]*
SNVT_smo_obscur Smoke obscuration	W3	Obj\Float: 0…5
SNVT_fire_test Fire test request	B	Obj\ENum: 0…3, where: 0=Normal, 1=Reset, 2=Test, 3=No Test
SNVT_temp_ror Temperature rate of change/rise	J	Obj\Num: -16384…16383 °C/min
SNVT_fire_init Fire initiator type	B	Obj\Num: 0…16
SNVT_fire_indcte Fire indicator type	B	Obj\ENum: 0…8, where: 0=undefined, 1=Strobe U, 2=Strobe S, 3=Horn, 4=Chime, 5=Bell, 6=Sounder, 7=Speaker, 8=Universal
SNVT_time_zone Time zone with daylight savings		Fixed Container: nvi *[Lon\SNVT_time_zone\In]* nvo *[Lon\SNVT_time_zone\Out]*
SNVT_earth_pos Latitude/longtitude location		Fixed Container: nvi *[Lon\SNVT_earth_pos\In]* nvo *[Lon\SNVT_earth_pos\Out]*
SNVT_reg_val Register value		Fixed Container: nvi *[Lon\SNVT_reg_val\In]* nvo *[Lon\SNVT_reg_val\Out]*
SNVT_reg_val_ts Timestamped register value		Fixed Container: nvi *[Lon\SNVT_reg_val_ts\In]* nvo *[Lon\SNVT_reg_val_ts\Out]*
SNVT_volt_ac Voltage (volts AC)	W	Obj\Num: 0…65535 V AC
SNVT_amp_ac Amperage (amperes AC)	W	Obj\Num: 0…65545 A AC
SNVT_turbidity Turbidity or water-clarity (nephelometric turbidity units)	W3	Obj\Float: 0…65.534 NTU
SNVT_turbidity_f Turbidity or water-clarity	F	Obj\Float: 0…1000000 NTU

Description	Reference	Type
SNVT_hvac_type HVAC equipment type	B	Obj\ENum: 0…9, where: 0=Generic, 1=FanCoil, 2=VAV, 3=HtPmp, 4=Rooftop, 5=UnitVent, 6=ChillCeil, 7=Rad, 8=AHU, 9=SelfCont
SNVT_elec_kwh_l Electric energy (kWh)	L1	Obj\Float: -214748364.8…214748364.7 kWh
SNVT_temp_diff_p Temperature difference (°C)	I2	Obj\Float: -327.68…327.67 °C
SNVT_ptz Camera PTZ		Fixed Container: nvi *[Lon\SNVT_ptz\In]* nvo *[Lon\SNVT_ptz\Out]*
SNVT_privacyzone Camera privacy zone		Fixed Container: nvi *[Lon\SNVT_privacyzone\In]* nvo *[Lon\SNVT_privacyzone\Out]*
SNVT_pos_ctrl Camera position control		Fixed Container: nvi *[Lon\SNVT_pos_ctrl\In]* nvo *[Lon\SNVT_pos_ctrl\Out]*
SNVT_enthalpy Enthalpy (kiloJules/kg)	I2	Obj\Float: -327.68…327.67 kJ/kg
SNVT_gfci_status Ground-fault circuit-interrupter (GFCI) device status	B	Obj\ENum: 0…5, where: 0=Unknown, 1=Normal, 2=Tripped, 3=Tst Fail, 4=Tst Pass, 5=Tst Now
SNVT_motor_state Motor state	B	Obj\ENum: 0…7, where: 0=Stopped, 1=Starting, 2=Accelerating, 3=Standby, 4=Normal, 5=Reference, 6=Decelerating, 7=Stopping
SNVT_pumpset_mn Main pumpset		Fixed Container: nvi *[Lon\SNVT_pumpset_mn\In]* nvo *[Lon\SNVT_pumpset_mn\Out]*
SNVT_ex_control Exclusive control		Fixed Container: nvi *[Lon\SNVT_ex_control\In]* nvo *[Lon\SNVT_ex_control\Out]*
SNVT_pumpset_sn Pumpset sensors		Fixed Container: nvi *[Lon\SNVT_pumpset_sn\In]* nvo *[Lon\SNVT_pumpset_sn\Out]*
SNVT_pump_sensor Pump sensor		Fixed Container: nvi *[Lon\SNVT_pump_sensor\In]* nvo *[Lon\SNVT_pump_sensor\Out]*
SNVT_abs_humid Absolute humidity (gram/kilogram)	W2	Obj\Num: 0…655.34 g/kg
SNVT_flow_p Flow volume (m^3/hr)	W2	Obj\Num: 0…655.34 m^3/hr
SNVT_dev_c_mode Device control mode	B	Obj\ENum: 0…31, where: 0=SpdCn, 1=PrCn, 2=PrCmp, 3=FlwCn, 4=FlwCmp, 5=TmpCn, 6=TmpCmp, 7=PrAuto, 20=QckOpn, 21=Linear, 22=EquPer, 23=Qd, 24=FreeDef, 27=2Way, 28=Mix, 29=Dvrt, 30=InQckOpn, 31=InQd
SNVT_valve_mode HVAC Valve mode	B	Obj\ENum: 0…7, where: 0=Normal, 1=Cool, 2=Heat, 3=Emerg, 4=StrokeAdp, 5=StrokeSyn, 6=Err, 7=Overridden
SNVT_alarm_2 Reports alarm status		Fixed Container: nvi *[Lon\SNVT_alarm_2\In]* nvo *[Lon\SNVT_alarm_2\Out]*
SNVT_state_64 64 individual state values		Fixed Container: nvi *[Lon\SNVT_state_64\In]* nvo *[Lon\SNVT_state_64\Out]*

Description	Reference	Type
SNVT_nv_type Network variable type		Fixed Container: nvi *[Lon\SNVT_nv_type\In]* nvo *[Lon\SNVT_nv_type\Out]*
SNVT_ent_opmode Entry operation mode	B	Obj\ENum: 0…15, where: 0=Unkn, 1=Auto, 2=AutoRed, 3=ClseLk, 4=ClseUnlk, 5=ExtOnly, 6=Opn, 7=OpnOnc, 8=Man, 9=Fire,Evac, 10=Weather, 11=DayLk, 12=NghtLk, 13=Block, 14=Svc, 15=EntryOnly
SNVT_ent_state Entry state	B	Obj\ENum: 0…13, where: 0=Unkn, 1=OpnPulse, 2=Opn, 3=Clse, 4=Stop, 5=StopResu, 6=EntryRq, 7=ExtRq, 8=KeyRq, 9=SftyExtReq, 10=EmrgRq, 11=UpdtState, 12=SftyExtRes, 13=EmrgRes
SNVT_ent_status Entry status		Fixed Container: nvi *[Lon\SNVT_ent_status\In]* nvo *[Lon\SNVT_ent_status\Out]*
SNVT_flow_dir Flow direction	B	Obj\ENum: 0…3, where: 0=None, 1=Out, 2=In, 3=Any
SNVT_hvac_satsts HVAC saturation status		Fixed Container: nvi *[Lon\SNVT_hvac_satsts\In]* nvo *[Lon\SNVT_hvac_satsts\Out]*
SNVT_dev_status Status of a pump controller		Fixed Container: nvi *[Lon\SNVT_dev_status\In]* nvo *[Lon\SNVT_dev_status\Out]*
SNVT_dev_fault Fault states of a pump controller		Fixed Container: nvi *[Lon\SNVT_dev_fault\In]* nvo *[Lon\SNVT_dev_fault\Out]*
SNVT_dev_maint Maintenance states of a pump controller		Fixed Container: nvi *[Lon\SNVT_dev_maint\In]* nvo *[Lon\SNVT_dev_maint\Out]*
SNVT_date_event Status of a schedule		Fixed Container: nvi *[Lon\SNVT_date_event\In]* nvo *[Lon\SNVT_date_event\Out]*
SNVT_sched_val Scheduler index value	B	Obj\Num: 0…254
SNVT_sec_state Security state		Fixed Container: nvi *[Lon\SNVT_sec_state\In]* nvo *[Lon\SNVT_sec_state\Out]*
SNVT_sec_status Security status		Fixed Container: nvi *[Lon\SNVT_sec_status\In]* nvo *[Lon\SNVT_sec_status\Out]*
SNVT_sblnd_state Sunblind state		Fixed Container: nvi *[Lon\SNVT_sblnd_state\In]* nvo *[Lon\SNVT_sblnd_state\Out]*
SNVT_count_32 Absolute count	D	Obj\Num: 0…4294967295
SNVT_clothes_w_c Clothes washer command		Fixed Container: nvi *[Lon\SNVT_clothes_w_c\In]* nvo *[Lon\SNVT_clothes_w_c\Out]*
SNVT_clothes_w_m Clothes washer management status		Fixed Container: nvi *[Lon\SNVT_clothes_w_m\In]* nvo *[Lon\SNVT_clothes_w_m\Out]*
SNVT_clothes_w_s Clothes washer status		Fixed Container: nvi *[Lon\SNVT_clothes_w_s\In]* nvo *[Lon\SNVT_clothes_w_s\Out]*

Description	Reference	Type
SNVT_clothes_w_a Clothes washer alarm		Fixed Container: nvi *[Lon\SNVT_clothes_w_a\In]* nvo *[Lon\SNVT_clothes_w_a\Out]*
SNVT_multiplier_s Value multiplyer	B2	Obj\Float: 0…2.54
SNVT_switch_2 Switch with scene and setting control		Fixed Container: nvi *[Lon\SNVT_switch_2\In]* nvo *[Lon\SNVT_switch_2\Out]*
SNVT_color_2 Colour		Fixed Container: nvi *[Lon\SNVT_color_2\In]* nvo *[Lon\SNVT_color_2\Out]*
SNVT_time_stamp_p Timestamp	TT	Obj\DateTime
SNVT_enthalpy_d Enthalpy difference (kJ/kg)	I	Obj\Num:-32768…32767
SNVT_amp_ac_mil Electrical current (mA)	W	Obj\Num:0…65534
SNVT_time_hour_p Time (hours)	D	Obj\Num:0…4294967295
SNVT_lamp_status Lamp status		Fixed Container: nvi *[Lon\SNVT_lamp_status\In]* nvo *[Lon\SNVT_lamp_status\Out]*
SNVT_environment Environment		Fixed Container: nvi *[Lon\SNVT_environment\In]* nvo *[Lon\SNVT_environment\Out]*
SNVT_geo_loc Geographic location		Fixed Container: nvi *[Lon\SNVT_geo_loc\In]* nvo *[Lon\SNVT_geo_loc\Out]*
SNVT_program_status Program status		Fixed Container: nvi *[Lon\SNVT_program_status\In]* nvo *[Lon\SNVT_program_status\Out]*
SNVT_load_offsets Load control offsets		Fixed Container: nvi *[Lon\SNVT_load_offsets\In]* nvo *[Lon\SNVT_ load_offsets\Out]*

Unsupported SNVTs

The following SNVTs are currently unsupported by the driver: Unicode text string (SNVT_str_int), ISO-7811 card (SNVT_magcard), File access (SNVT_file_*), Control request/response (SNVT_ctrl_*), Audio request/response (SNVT_rac_*), Log file transfer (SNVT_log_fx_*), and Safe protocol (SNVT_safe_*).

Obsolete SNVTs have also been removed from the object list above.

Non-SNVT Objects

Some network variables may not conform to standard SNVTs, or newer SNVTs may be available. In these cases, you can directly access the information in the network variable structure if you understand how they are constructed.

The following objects allow custom decoding of a network variable (see notes below):

Description	Reference	Type
Bit *y* The bit number, y, is in the range 1…7	P*x*Z*y*	Obj\OffOn
Signed 8-bit (short) value	P*x*A*d*	Obj\Float: -128…127
Unsigned 8-bit (short) value	P*x*B*d*	Obj\Float: 0…255

Description	Reference	Type
Unsigned 8-bit (short) value divided by two	P*x*C*d*	Obj\Float: 0…127.5
Unsigned 16-bit (long) value	P*x*W*d*	Obj\Float: 0…65535
Unsigned 16-bit (long) value divided by two	P*x*X*d*	Obj\Float: 0…32767.5
Unsigned 16-bit (long) value divided by five	P*x*Y*d*	Obj\Float: 0…13107
Signed 16-bit (long) value	P*x*I*d*	Obj\Float: -32768…32767
Signed 16-bit (long) value divided by two	P*x*J*d*	Obj\Float: -16384…16383
Signed 16-bit (long) value divided by five	P*x*K*d*	Obj\Float: -6553…6553
Unsigned 32-bit (quad) value	P*x*D*d*	Obj\Float: 0…4294967295
Signed 32-bit (quad) value	P*x*L*d*	Obj\Float: -2147483648…2147483647
IEEE Floating-point (float) value	P*x*F*d*	Obj\Float
Hex Value The length, *z*, specifies the number of bytes	P*x*H*z*	Obj\Text The value is displayed by byte values, separated by colons. E.g. “AB:12:34”
ASCII String	P*x*S	Obj\Text
SNVT_switch State	P*x*SWS	Obj\OffOn
SNVT_switch Value	P*x*SWV	Obj\Num; 0…100%
SNVT_temp	P*x*T	Obj\Float; -274…6278 °C
SNVT_time_stamp	P*x*TS	Obj\DateTime
Timestamp Decodes 32-bit value storing seconds since 1/1/2000	P*x*TT	Obj\DateTime

Notes

1. If the network variable is an input type (nvi), then object values are adjustable.
2. All objects can be prefixed with an optional byte offset, *x*, into the network variable structure. The byte offset is in the range 0…13.
3. The optional factor, *d*, available for some objects is used to divide the value on reading and multiply on writing. The factor, d, is in the range 1…7:

Factor	Value
1	10
2	100
3	1000
4	10000

Factor	Value
5	100000
6	1000000
7	10000000

SNVT_color

Object Type: *[Lon\SNVT_color\Out]*
Object Type: *[Lon\SNVT_color\In]*

A SNVT_color contains a CIELAB colour reference.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Lab Color: Lightness	P0W1	Obj\Float: 0…100.0
Lab Color: a	P2I1	Obj\Float: -200…200
Lab Color: b	P4I1	Obj\Float: -200…200

SNVT_state

Object Type: *[Lon\SNVT_state\Out]*
Object Type: *[Lon\SNVT_state\In]*

A SNVT_state contains 16 individual bit values or states.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Bit 0	P0Z0	Obj\OffOn
Bit 1	P0Z1	Obj\OffOn
Bit 2	P0Z2	Obj\OffOn
Bit 3	P0Z3	Obj\OffOn
Bit 4	P0Z4	Obj\OffOn
Bit 5	P0Z5	Obj\OffOn
Bit 6	P0Z6	Obj\OffOn
Bit 7	P0Z7	Obj\OffOn
Bit 8	P1Z0	Obj\OffOn
Bit 9	P1Z1	Obj\OffOn
Bit 10	P1Z2	Obj\OffOn
Bit 11	P1Z3	Obj\OffOn
Bit 12	P1Z4	Obj\OffOn
Bit 13	P1Z5	Obj\OffOn
Bit 14	P1Z6	Obj\OffOn
Bit 15	P1Z7	Obj\OffOn

SNVT_zerospan

Object Type: *[Lon\SNVT_zerospan\Out]*
Object Type: *[Lon\SNVT_zerospan\In]*

A SNVT_zerospan contains linear transformation parameters: multiply by the span-factor, then add the zero-term.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Zero Term	P0J2	Obj\Float; -163.84…163.84
Span Factor	P2X3	Obj\Float; 0.0…32.767

SNVT_elapsed_tm

Object Type: *[Lon\SNVT_elapsed_tm\Out]*
Object Type: *[Lon\SNVT_elapsed_tm\In]*

A SNVT_elapsed_tm contains an elapsed time (day, hour, minute, second, millisecond).

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Days	P0W	Obj\Num; 0…65534
Hours	P2B	Obj\Num; 0…23
Minutes	P3B	Obj\Num; 0…59
Seconds	P4B	Obj\Num; 0…59
Milliseconds	P5W	Obj\Num; 0…999

SNVT_alarm

Object Type: *[Lon\SNVT_alarm\Out]*
Object Type: *[Lon\SNVT_alarm\In]*

A SNVT_alarm contains the following objects and is used as an output network variable to report an alarm status.

Description	Reference	Type
Location Code	P0H6	Obj\Text
Object ID	P6W	Obj\Num; 0…65535
Alarm Type	P8I	Obj\Float; -13…32
Priority Level	P10I	Obj\Enum; 0…11, where: 0=Level0, 1=Level1, 2=Level2, 3=Level3, 4=1, 5=2, 6=3, 7=4, 8=6, 9=8, 10=10, 11=16
Index of NV	P12W	Obj\Num; 0…65535
Value	P14H4	Obj\Text
Date and Time	P18TS	Obj\Text
Alarm Limit	P26H4	Obj\Text

SNVT_currency

Object Type: *[Lon\SNVT_currency\Out]*
Object Type: *[Lon\SNVT_currency\In]*

A SNVT_currency is used to represent a monetary value in a specified currency.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Country of Currency	P0B	Obj\ENum: 0=AR, 1=AU, 2=AT, 3=BH, 4=BE, 5=BR, 6=GB, 7=CA, 8=CZ, 9=CL, 10=CN, 11=CO, 12=DK, 13=EC, 14=EU, 15=FI, 16=FR, 17=DE, 18=GR, 19=HK, 20=HU, 21=IN, 22=ID, 23=IE, 24=IL, 25=IT, 26=JP, 27=JO, 28=KW, 29=LB, 30=MY, 31=MT, 32=MX, 33=NL, 34=NZ, 35=NO, 36=PK, 37=PE, 38=PH, 39=PL, 40=PT, 41=SA, 42=SG, 43=SK, 44=ZA, 45=KR, 46=ES, 47=Special, 48=SE, 49=CH, 50=TW, 51=TH, 52=TR, 53=AE, 54=US, 55=UY, 56=VE
Magnitude (power of 10)	P1A	Obj\Float: -128…127
Currency Value	P2L	Obj\Float: -2147483648…2147483648

SNVT_muldiv

Object Type: *[Lon\SNVT_muldiv\Out]*
Object Type: *[Lon\SNVT_muldiv\In]*

A SNVT_muldiv contains a multiply/divide gain factor.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Multiplier	P0W	Obj\Num; 0…65535
Divisor	P2W	Obj\Num; 0…65535

SNVT_obj_request

Object Type: *[Lon\SNVT_obj_request\Out]*
Object Type: *[Lon\SNVT_obj_request\In]*

A SNVT_obj_request is a functional block used to make an object request.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Object ID	P0W	Obj\Num; 0…65535
Object Request	P2A	Obj\ENum; 0…17, where: 0=Norm, 1=Dis, 2=UpdState, 3=SlfTst, 4=UpdAlm, 5=RepMask, 6=Over, 7=Enable, 8=RmvOver, 9=ClrStat, 10=ClrAlm, 11=AlmNtfyOn, 12=AlmNtfyOff, 13=Man, 14=Rem, 15=Pgm, 16=ClrRst, 17=ClrLog

SNVT_obj_status

Object Type: *[Lon\SNVT_obj_status\Out]*
Object Type: *[Lon\SNVT_obj_status\In]*

A SNVT_obj_status is used to indicate the status of the various objects within a device.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Object ID	P0W	Obj\Num; 0…65535
Invalid ID	P2Z0	Obj\NoYes
Invalid Request	P2Z1	Obj\NoYes
Disabled	P2Z2	Obj\NoYes
Out of Limits	P2Z3	Obj\NoYes
Open Circuit	P2Z4	Obj\NoYes
Out of Service	P2Z5	Obj\NoYes
Mechanical Fault	P2Z6	Obj\NoYes
Feedback Fail	P2Z7	Obj\NoYes
Over Range	P3Z0	Obj\NoYes
Under Range	P3Z1	Obj\NoYes
Electrical Fault	P3Z2	Obj\NoYes
Unable to Measure	P3Z3	Obj\NoYes
Comm Fail	P3Z4	Obj\NoYes
Fail Self-Test	P3Z5	Obj\NoYes
Self-Test in Progress	P3Z6	Obj\NoYes
Locked-Out	P3Z7	Obj\NoYes
Manual Control	P4Z0	Obj\NoYes
Input Alarm	P4Z1	Obj\NoYes
Input Override	P4Z2	Obj\NoYes
Report Mask	P4Z3	Obj\NoYes
Programming Mode	P4Z4	Obj\NoYes
Programming Fail	P4Z5	Obj\NoYes
Alarm Notify Disabled	P4Z6	Obj\NoYes
Reset	P4Z7	Obj\NoYes

SNVT_preset

Object Type: *[Lon\SNVT_preset\Out]*
Object Type: *[Lon\SNVT_preset\In]*

A SNVT_preset is used to allow a sendor or actuator to control one of several controllable values. It contains the following objects:

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Learn Mode	P0B	Obj\ENum; 0…3, where: 0=Recall, 1=Learn Current, 2=Learn Value, 3=Report Value
Selector	P1W	Obj\Num; 0…65535
Value	P3H4	Obj\Text
Days	P7W	Obj\Num; 0…65534
Hours	P9B	Obj\Num; 0…23
Minutes	P10B	Obj\Num; 0…59
Seconds	P11B	Obj\Num; 0…59

SNVT_switch

Object Type: *[Lon\SNVT_switch\Out]*
Object Type: *[Lon\SNVT_switch\In]*

A SNVT_switch contains a percentage level and a switch on/off state.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Switch State	SWS	Obj\OffOn
Scene Setting Level	SWV	Obj\Num: 0…100 %

SNVT_trans_table

Object Type: *[Lon\SNVT_trans_table\Out]*
Object Type: *[Lon\SNVT_trans_table\In]*

A SNVT_trans_table contains a translation table with up to seven points for a single axis.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Point 1	P0F	Obj\Float; -1000000…1000000
Point 2	P4F	Obj\Float; -1000000…1000000
Point 3	P8F	Obj\Float; -1000000…1000000
Point 4	P12F	Obj\Float; -1000000…1000000
Point 5	P16F	Obj\Float; -1000000…1000000
Point 6	P20F	Obj\Float; -1000000…1000000
Point 7	P24F	Obj\Float; -1000000…1000000

SNVT_temp_setpt

Object Type: *[Lon\SNVT_temp_setpt\Out]*
Object Type: *[Lon\SNVT_temp_setpt\In]*

A SNVT_temp_setpt contains six temperature setpoint values:

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Occupied Cooling Setpoint	P0I2	Obj\Float; -273.17…327.67 °C
Standby Cooling Setpoint	P2I2	Obj\Float; -273.17…327.67 °C
Unoccupied Cooling Setpoint	P4I2	Obj\Float; -273.17…327.67 °C
Occupied Heating Setpoint	P6I2	Obj\Float; -273.17…327.67 °C
Standby Heating Setpoint	P8I2	Obj\Float; -273.17…327.67 °C
Unoccupied Heating Setpoint	P10I2	Obj\Float; -273.17…327.67 °C

SNVT_hvac_overid

Object Type: *[Lon\SNVT_hvac_overid\Out]*
Object Type: *[Lon\SNVT_hvac_overid\In]*

A SNVT_hvac_overid contains an HVAC override state, percent, and flow rate:

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
State	P0B	Obj\ENum; 0…21, where: 0=Off, 1=Pos, 2=FlwV, 3=Flw%, 4=Opn, 5=Clse, 6=Min, 7=Max, 8=Pos1, 9=FlwV1, 10=Flw%1, 11=Opn1, 12=Cls1, 13=Min1, 14=Max1, 15=Pos2, 16=FlwV2, 17=Flw%2, 18=Opn2, 19=Clse2, 20=Min2, 21=Max2
Percent	P1J2	Obj\Float; 0…163.83 %
Flow	P3W	Obj\Num; 0…65535 l/s

SNVT_hvac_status

Object Type: *[Lon\SNVT_hvac_status\Out]*
Object Type: *[Lon\SNVT_hvac_status\In]*

A SNVT_hvac_status contains an HVAC status objects:

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
HVAC Status Mode	P0B	Obj\ENum; 0…20, where: 0=Auto, 1=Heat, 2=Warmup, 3=Cool, 4=NtPurge, 5=PreCool, 6=Off, 7=Test, 8=EmHeat, 9=FanOnly, 10=FreeCool, 11=Ice, 12=MaxHeat, 13=Econ, 14=Dehum, 15=Calib, 16=EmCool, 17=EmSteam, 18=MaxCool, 19=HvcLoad, 20=NoLoad
Primary Heat Output	P1J2	Obj\Float; -163.83…163.83 %
Secondary Heat Output	P3J2	Obj\Float; -163.83…163.83 %
Cooling Output	P5J2	Obj\Float; -163.83…163.83 %
Economizer Output	P7J2	Obj\Flaot; -163.83…163.83 %
Fan Output	P9J2	Obj\Float; -163.83…163.83 %
In Alarm State	P11B	Obj\Num; 0…255

SNVT_scene

Object Type: *[Lon\SNVT_scene\Out]*
Object Type: *[Lon\SNVT_scene\In]*

A SNVT_scene contains objects for a scene control.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Function	P0B	Obj\ENum; 0…23, where: 0=Recall, 1=Lrn, 2=Disp, 3=GrpOff, 4=GrpOn, 5=StatOff, 6=StatOn, 7=StatMix, 8=GrpStat, 9=Flik, 10=TO, 11=TOFlik, 12=DlyOff, 13=DlyOffFlik, 14=DlyOn, 15=GrpOn, 16=GrpOff, 17=ClnOn, 18=ClnOff, 19=Wink, 20=Rst, 21=M1, 22=M2, 23=M3
Scene Number	P1B	Obj\Num; 1…255

SNVT_scene_cfg

Object Type: *[Lon\SNVT_scene_cfg\Out]*
Object Type: *[Lon\SNVT_scene_cfg\In]*

A SNVT_scene_cfg contains objects for a scene configuration. Used to store an actuator position for a specific scene number.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Function	P0B	Obj\ENum; 0…4, where: 0=Save, 1=Clear, 2=Report, 3=Size, 4=Free
Scene Number	P1B	Obj\Num; 1…255
Scene Setting Level	P2C	Obj\Float; 0…200 %
Scene Rotation Angle	P3K1	Obj\Float; -360…360 °
Scene Fade Time	P5W1	Obj\Float; 0…6553.4 s
Scene Delay Time	P7W1	Obj\Float; 0…6553.4 s
Scene Priority	P1B	Obj\Num; 0…255

SNVT_setting

Object Type: *[Lon\SNVT_setting\Out]*
Object Type: *[Lon\SNVT_setting\In]*

A SNVT_setting contains objects to tell an actuator to invoke a stored setting or scene.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Function	P0B	Obj\ENum; 0…5, where: 0=Off, 1=On, 2=Down, 3=Up, 4=Stop, 5=State
Scene Setting Level	P1C	Obj\Num; 0…200 %
Rotation Angle	P1K1	Obj\Float; -360…360 %

SNVT_chlr_status

Object Type: *[Lon\SNVT_chlr_status\Out]*
Object Type: *[Lon\SNVT_chlr_status\In]*

A SNVT_chlr_status contains the following chiller status objects:

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Chiller Run Mode	P0B	Obj\Enum; 0…4, where: 0=Off, 1=Start, 2=Run, 3=Pre Shutdown, 4=Service
Chiller Op Mode	P1B	Obj\Enum; 0…11, where: 0=Auto, 1=Heat, 2=Warmup, 3=Cool, 4=NightPurge, 5=PreCool, 6=Off, 7=Test, 8=EmergHeat, 9=FanOnly, 10=FreeCool, 11=Ice, 12=MaxHeat, 13=Econ, 14=Dehum, 15=Calibrate, 16=EmergCool, 17=EmergSteam
In Alarm	P2Z0	Obj\NoYes
Run Enabled	P2Z1	Obj\NoYes
Local Control	P2Z2	Obj\NoYes
Limited Condition	P2Z3	Obj\NoYes
Chilled Water Flow	P2Z4	Obj\NoYes
Condenser Water Flow	P2Z5	Obj\NoYes

SNVT_tod_event

Object Type: *[Lon\SNVT_tod_event\Out]*
Object Type: *[Lon\SNVT_tod_event\In]*

A SNVT_tod_event contains a time of day event with the following objects:

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Current State	P0B	Obj\ENum; 0=Occupied, 1=Unoccupied, 2=Bypass, 3=Standby
Next State	P1B	Obj\ENum; 0=Occupied, 1=Unoccupied, 2=Bypass, 3=Standby
Time to Next State	P2W	Obj\Num; 0…65535 mins

SNVT_time_zone

Object Type: *[Lon\SNVT_time_zone\Out]*
Object Type: *[Lon\SNVT_time_zone\In]*

A SNVT_time_zone contains objects for setting the time zone and daylight savings:

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Offset from UTC	P0L	Obj\Float; -86400…86400 s
Calendar Type	P4B	Obj\ENum; 0…2, where: 0=Gregorian, 1=Julian, 2=Meu
DST start: Hours	P5B	Obj\Num; 0…23
DST start: Mins	P6B	Obj\Num; 0…59
DST start: Secs	P7B	Obj\Num; 0…59
DST start: Day	P8W	Obj\Num; 0…365
DST end: Hours	P10B	Obj\Num; 0…23
DST end: Mins	P11B	Obj\Num; 0…59
DST end: Secs	P12B	Obj\Num; 0…59
DST end: Day	P13W	Obj\Num; 0…365

SNVT_earth_pos

Object Type: *[Lon\SNVT_earth_pos\Out]*
Object Type: *[Lon\SNVT_earth_pos\In]*

A SNVT_earth_pos contains objects for a geographic location.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Direction of Latitude	P0Z0	Obj\ENum; 0…1, where: 0=South, 1=North
Direction of Longitude	P0Z1	Obj\ENum; 0…1, where: 0=East, 1=West
Latitude	P1B	Obj\Num; 0…90°
Latitude (minutes)	P2W3	Obj\Float; 0…59999 min
Longitude	P4B	Obj\Num; 0…180 °
Longitude (minutes)	P5W3	Obj\Float; 0…59999 min
Height Above Sea Level	P7F	Obj\Float; -1000000…1000000 m

SNVT_reg_val

Object Type: *[Lon\SNVT_reg_val\Out]*
Object Type: *[Lon\SNVT_reg_val\In]*

A SNVT_reg_val contains a register value used to send a value to a recording or display device.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Raw Value	P0L	Obj\Float; 2147483647…2147483648
Unit Code	P4B	Obj\Num; 0…43
Num of Decimals	P5B	Obj\Num; 0…7

SNVT_reg_val_ts

Object Type: *[Lon\SNVT_reg_val_ts\Out]*
Object Type: *[Lon\SNVT_reg_val_ts\In]*

A SNVT_reg_val_ts contains a time-stamped register value used to send a value to a recording or display device.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Raw Value	P0L	Obj\Float; 2147483647…2147483648
Unit Code	P4B	Obj\Num; 0…43
Num of Decimals	P5B	Obj\Num; 0…7
Activation State	P5Z7	Obj\NoYes
Year	P6I	Obj\Float; -1…3000
Month	P8B	Obj\Num; 0…12
Days	P9B	Obj\Num; 0…31
Hours	P10B	Obj\Num; 0…23
Mins	P11B	Obj\Num; 0…59
Secs	P12B	Obj\Num; 0…59

SNVT_ptz

Object Type: *[Lon\SNVT_ptz\Out]*
Object Type: *[Lon\SNVT_ptz\In]*

A SNVT_ptz contains camera pan, tilt and zoom values.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Pan Direction	P0B	Obj\ENum; 0…2, where: 0=Stop, 1=Right, 2=Left
Pan Speed	P1B	Obj\Num; 0…250
Tilt Direction	P2B	Obj\ENum; 0…2, where: 0=Stop, 1=Up, 2=Down
Tilt Speed	P3B	Obj\Num; 0…250
Zoom Direction	P4B	Obj\ENum; 0=Stop, 1=Tele, 2=Wide
Zoom Speed	P5B	Obj\Num; 0…250

SNVT_privacy_zone

Object Type: *[Lon\SNVT_privacy_zone\Out]*
Object Type: *[Lon\SNVT_privacy_zone\In]*

A SNVT_privacy_zone contains a camera privacy zone.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Action	P0B	Obj\ENum; 0…5, where: 0=Disable, 1=Enable, 2=Upper Left, 3=Lower Right, 4=Enter, 5=Exit
Zone Number	P1B	Obj\Num; 0…255
Camera ID	P2W	Obj\Num; 0…65535

SNVT_pos_ctrl

Object Type: *[Lon\SNVT_pos_ctrl\Out]*
Object Type: *[Lon\SNVT_pos_ctrl\In]*

A SNVT_pos_ctrl contains a camera position control.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Receiver ID	P0W	Obj\Num; 0…65535
Controller ID	P2W	Obj\Num; 0…65535
Controller Priority	P4B	Obj\Num; 0…100
Camera Function	P5B	Obj\ENum; 0…2, where; 0=Preset 1=Tour, 2=Absolute
Camera Action	P6B	Obj\ENum; 0…2, where; 0=Save, 1=Call, 2=Read
Function Action: Number	P7B	Obj\Num; 1…255
Function Absolute: Pan	P7K1	Obj\Float; -360…360
Function Absolute: Pan	P9K1	Obj\Float; -360…360
Function Absolute: Pan	P11J2	Obj\Float; -160…160 %

SNVT_pumpset_mn

Object Type: *[Lon\SNVT_pumpset_mn\Out]*
Object Type: *[Lon\SNVT_pumpset_mn\In]*

A SNVT_pumpset_mn contains the main features of a 'pumpset', which consists of one or more mechanical vacuum pumps.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Main Pump State	P0B	Obj\ENum; 0…7, where: 0=Stop, 1=Start, 2=Acc, 3=Standby, 4=Normal, 5=ref, 6=Decel, 7=Stopping
Booster Pump State	P1B	Obj\ENum; 0…7, where: 0=Stop, 1=Start, 2-Acc, 3=Standby, 4=Normal, 5=ref, 6=Decel, 7=Stopping
Priority Level	P2B	Obj\ENum; 0…11, where: 0=Level0, 1=Level1, 2=Level2, 3=Level3, 4=1, 5=2, 6=3, 7=4, 8=6, 9=8, 10=10, 11=16
Process Ready	P3B	Obj\NoYes
Emergency Stop Activated	P4B	Obj\NoYes
Main Pump Drive Enabled	P5B	Obj\NoYes
Booster Pump Drive Enabled	P6B	Obj\NoYes
Maintenance Required	P7B	Obj\NoYes

SNVT_ex_control

Object Type: *[Lon\SNVT_ex_control\Out]*
Object Type: *[Lon\SNVT_ex_control\In]*

A SNVT_ex_control contains a definition of what device has exclusive control of an item.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Control Status	P0B	Obj\ENum; 0…2, where: 0=None, 1=Other, 2=This Addr
Domain ID	P1H6	Obj\Text;
Domain Length	P7B	Obj\Num; 0…6
Subnet Number	P8B	Obj\Num; 0…255
Node Number	P9B	Obj\Num; 0…127

SNVT_pumpset_sn

Object Type: *[Lon\SNVT_pumpset_sn\Out]*
Object Type: *[Lon\SNVT_pumpset_sn\In]*

A SNVT_pumpset_sn contains readings from sensors in a 'pumpset'.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Dilution Gas Flow	P0W	Obj\Num; 0…65535 ml/s
Exhaust Line External Temperature	P2T	Obj\Float; -274…6279.5 °C
Exhaust Line Pressure	P4I1	Obj\Float; -3276.8…3276.6 kPa
Shaft Seal Purge Pressure	P6I1	Obj\Float; -3276.8…3276.7 kPa
Process Gas Inlet Pressure	P8F	Obj\Float; -1000000…1000000 Pa
Pumpset Power Supply Voltage	P12I1	Obj\Float; -3276.8…3276.6 V
Total Coolant Flow	P14W	Obj\Num; 0…65535 ml/s
Coolant Flow Too Low	P16B	Obj\NoYes
Dilution Gas In Use	P17B	Obj\NoYes
Dilution Gas Used as Ballast	P18B	Obj\NoYes
Dilution Gas Used to Purge Process	P19B	Obj\NoYes
Dilution Gas Used to Dilute Exhaust	P20B	Obj\NoYes
Dilution Gas Flow Outside Normal Range	P21B	Obj\NoYes
Main Power Supply	P22B	Obj\NoYes

SNVT_pump_sensor

Object Type: *[Lon\SNVT_pump_sensor\Out]*
Object Type: *[Lon\SNVT_pump_sensor\In]*

A SNVT_pump_sensor contains readings from a mechanical vacuum pump.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Rotational Speed	P0W1	Obj\Float; 0…6553.5
Body Temperature	P2T	Obj\Float; -274, 6279.5 °C
Motor External Temperature	P4T	Obj\Float; -274, 6279.5 °C
Motor Internal Temperature	P6T	Obj\Float; -274, 6279.5 °C
Motor Overloaded	P8B	Obj\NoYes
Oil Level Low	P9B	Obj\NoYes
Phase Imbalance	P10B	Obj\NoYes
Current Usage	P11I1	Obj\Float; -3276.8…3276.7 A
Power Usage	P13W1	Obj\Float; 0…6553.5 kW
Pump Body Temp Control Status	P15B	Obj\ENum; 0=Inactiva, 1=At Desired, 2=Too Hot, 3=Too Cold
Electromagnetic Brake Active	P16B	Obj\NoYes
Friction Brake Active	P17B	Obj\NoYes
Friction Brake Active	P18B	Obj\OffOn

SNVT_alarm_2

Object Type: *[Lon\SNVT_alarm_2\Out]*
Object Type: *[Lon\SNVT_alarm_2\In]*

A SNVT_alarm_2 is used to report the alarm status for a functional block or device.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Alarm Type	P0A	Obj\Float; -13…32
Priority Level	P1B	Obj\Enum; 0…11, where: 0=Level0, 1=Level1, 2=Level2, 3=Level3, 4=1, 5=2, 6=3, 7=4, 8=6, 9=8, 10=10, 11=16
Date and Time	P2TT	Obj\DateTime
Description	P7S	Obj\Text; Max Characters: 22

SNVT_state_64

Object Type: *[Lon\SNVT_state_64\Out]*
Object Type: *[Lon\SNVT_state_64\In]*

A SNVT_state_64 contains 64 individual bit states or values.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Bit 0	P0Z0	Obj\OffOn
Bit 1	P0Z1	Obj\OffOn
Bit 2	P0Z2	Obj\OffOn
Bit 3	P0Z3	Obj\OffOn
Bit 4	P0Z4	Obj\OffOn
Bit 5	P0Z5	Obj\OffOn
Bit 6	P0Z6	Obj\OffOn
Bit 7	P0Z7	Obj\OffOn
Bit 8	P1Z0	Obj\OffOn
Bit 9	P1Z1	Obj\OffOn
Bit 10	P1Z2	Obj\OffOn
Bit 11	P1Z3	Obj\OffOn
Bit 12	P1Z4	Obj\OffOn
Bit 13	P1Z5	Obj\OffOn
Bit 14	P1Z6	Obj\OffOn
Bit 15	P1Z7	Obj\OffOn
Bit 16	P2Z0	Obj\OffOn
Bit 17	P2Z1	Obj\OffOn
Bit 18	P2Z2	Obj\OffOn
Bit 19	P2Z3	Obj\OffOn
Bit 20	P2Z4	Obj\OffOn
Bit 21	P2Z5	Obj\OffOn
Bit 22	P2Z6	Obj\OffOn
Bit 23	P2Z7	Obj\OffOn
Bit 24	P3Z0	Obj\OffOn
Bit 25	P3Z1	Obj\OffOn
Bit 26	P3Z2	Obj\OffOn
Bit 27	P3Z3	Obj\OffOn
Bit 28	P3Z4	Obj\OffOn
Bit 29	P3Z5	Obj\OffOn
Bit 30	P3Z6	Obj\OffOn
Bit 31	P3Z7	Obj\OffOn
Bit 32	P4Z0	Obj\OffOn
Bit 33	P4Z1	Obj\OffOn
Bit 34	P4Z2	Obj\OffOn
Bit 35	P4Z3	Obj\OffOn
Bit 36	P4Z4	Obj\OffOn
Bit 37	P4Z5	Obj\OffOn
Bit 38	P4Z6	Obj\OffOn
Bit 39	P4Z7	Obj\OffOn
Bit 40	P5Z0	Obj\OffOn
Bit 41	P5Z1	Obj\OffOn
Bit 42	P5Z2	Obj\OffOn
Bit 43	P5Z3	Obj\OffOn
Bit 44	P5Z4	Obj\OffOn
Bit 45	P5Z5	Obj\OffOn

Description	Reference	Type
Bit 46	P5Z6	Obj\OffOn
Bit 47	P5Z7	Obj\OffOn
Bit 48	P6Z0	Obj\OffOn
Bit 49	P6Z1	Obj\OffOn
Bit 50	P6Z2	Obj\OffOn
Bit 51	P6Z3	Obj\OffOn
Bit 52	P6Z4	Obj\OffOn
Bit 53	P6Z5	Obj\OffOn
Bit 54	P6Z6	Obj\OffOn
Bit 55	P6Z7	Obj\OffOn
Bit 56	P7Z0	Obj\OffOn
Bit 57	P7Z1	Obj\OffOn
Bit 58	P7Z2	Obj\OffOn
Bit 59	P7Z3	Obj\OffOn
Bit 60	P7Z4	Obj\OffOn
Bit 61	P7Z5	Obj\OffOn
Bit 62	P7Z6	Obj\OffOn
Bit 63	P7Z7	Obj\OffOn

SNVT_nv_type

Object Type: *[Lon\SNVT_nv_type\Out]*
Object Type: *[Lon\SNVT_nv_type\In]*

A SNVT_nv_type contains the network variable type.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Type Program ID	P0H8	Obj\Text
Type Scope	P8B	Obj\Num; 0…6
Type Index	P9W	Obj\Num; 0…65535
Type Category	P11B	Obj\ENum; 0…14 0=Init, 1=s8, 2=u8, 3=s16, 4=u16, 5=s32, 6=u32, 7=ENum, 8=Array, 9=Struct, 10=Union, 11=Bits, 12=Float, 13=sQuad, 14=Ref
Type Length	P12B	Obj\Num; 0…31
Scaling Factor a	P13I	Obj\Float; -32766…32768
Scaling Factor b	P15I	Obj\Float; -32766…32768
Scaling Factor c	P17I	Obj\Float; -32766…32768

SNVT_ent_status

Object Type: *[Lon\SNVT_ent_status\Out]*
Object Type: *[Lon\SNVT_ent_status\In]*

A SNVT_ent_status contains status information for an entry object, e.g. a door, lock, etc.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Unlocked Device	P0Z0	Obj\NoYes
Locked Device	P0Z1	Obj\NoYes
Security Locked	P0Z2	Obj\NoYes
Closed Device	P0Z3	Obj\NoYes
Open Device	P0Z4	Obj\NoYes
In Alarm	P0Z5	Obj\NoYes
In Error	P0Z6	Obj\NoYes
Open: Pre-alarm	P0Z7	Obj\NoYes
Open: Alarm	P1Z0	Obj\NoYes
Needs Service	P1Z1	Obj\NoYes
Tamper	P1Z2	Obj\NoYes
Entry Request	P1Z3	Obj\NoYes
Exit Request	P1Z4	Obj\NoYes
Key Request	P1Z5	Obj\NoYes
Safety-exit Request	P1Z6	Obj\NoYes
Emergency-exit Request	P1Z7	Obj\NoYes
Unable to Lock	P2Z0	Obj\NoYes
Unable to Unlock	P2Z1	Obj\NoYes
Device is Stuck	P2Z2	Obj\NoYes
Forced Open	P2Z3	Obj\NoYes
Forced Closed	P2Z4	Obj\NoYes
Opening	P2Z5	Obj\NoYes
Closing	P2Z6	Obj\NoYes
In Motion	P2Z7	Obj\NoYes
Stopped	P3Z0	Obj\NoYes
Safety Alarm	P3Z1	Obj\NoYes
Unknown State	P3Z2	Obj\NoYes
Command Feedback	P4B	Obj\ENum; 0…16, where: 0=Undefined, 1=Auto, 2=Auto Red, 3=Close Lock, 4=Close Unlock, 5=Exit Only, 6=Open, 7=Open Once, 8=Manual, 9=Fire, 10=Evac, 11=Weather, 12=Day, 13=Night, 14=Blocked, 15=Service, 16=Entry Only

SNVT_hvac_satsts

Object Type: *[Lon\SNVT_hvac_satsts\Out]*
Object Type: *[Lon\SNVT_hvac_satsts\In]*

A SNVT_hvac_satsts contains the HVAC saturation status for several resources.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Pri Heating Saturated	P0Z0	Obj\NoYes
Sec Heating Saturated	P0Z1	Obj\NoYes
Pri Cooling Saturated	P0Z2	Obj\NoYes
Sec Cooling Saturated	P0Z3	Obj\NoYes
Pri Duct Saturated	P0Z4	Obj\NoYes
Sec Duct Saturated	P0Z5	Obj\NoYes

SNVT_dev_status

Object Type: *[Lon\SNVT_dev_status\Out]*
Object Type: *[Lon\SNVT_dev_status\In]*

A SNVT_dev_status contains the status of a pump controller or valve positioner.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Device Select	P0B	Obj\ENum: 0…1 0=Pump Ctrl, 1=Valve Pos
Pump: Device Fault	P1Z0	Obj\NoYes
Pump: Supply Fault	P1Z1	Obj\NoYes
Pump: Low Speed	P1Z3	Obj\NoYes
Pump: High Speed	P1Z4	Obj\NoYes
Pump: Setpoint out of Range	P1Z6	Obj\NoYes
Pump: Local Control	P2Z1	Obj\NoYes
Pump: Running	P2Z2	Obj\NoYes
Pump: Remote Pressure Sensor	P2Z4	Obj\NoYes
Pump: Remote Flow Sensor	P2Z5	Obj\NoYes
Pump: Remote Temp Sensor	P2Z6	Obj\NoYes
Valve: Running	P1Z0	Obj\NoYes
Valve: Adapting	P1Z1	Obj\NoYes
Valve: Initializing	P1Z2	Obj\NoYes
Valve: Local Control	P1Z3	Obj\NoYes
Valve: Setpoint Out of Range	P1Z4	Obj\NoYes
Valve: Remote Control Signal	P1Z5	Obj\NoYes
Valve: Hardware Emergency	P2Z0	Obj\NoYes
Valve: Software Emergency	P2Z1	Obj\NoYes

SNVT_dev_fault

Object Type: *[Lon\SNVT_dev_fault\Out]*
Object Type: *[Lon\SNVT_dev_fault\In]*

A SNVT_dev_fault contains the fault states of a pump controller or valve positioner.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Device Select	P0B	Obj\Enum; 0…1, where: 0=Pump Ctrl, 1=Valve Pos
Pump: Supply Fault Low Voltage	P1Z0	Obj\NoYes
Pump: Supply Fault High Voltage	P1Z1	Obj\NoYes
Pump: Supply Fault Power Phase	P1Z2	Obj\NoYes
Pump: Supply Fault No Fluid	P1Z3	Obj\NoYes
Pump: Supply Fault Low Pressure	P1Z4	Obj\NoYes
Pump: Supply Fault High Pressure	P1Z5	Obj\NoYes
Pump: Device Fault Motor Temp High	P2Z0	Obj\NoYes
Pump: Device Fault Motor Fatal Failure	P2Z1	Obj\NoYes
Pump: Device Fault Pump Blocked	P2Z2	Obj\NoYes
Pump: Device Fault Electronics Temp High	P2Z3	Obj\NoYes
Pump: Device Fault Electronics Non-Fatal Fail	P2Z4	Obj\NoYes
Pump: Device Fault Electronics Fatal Fail	P2Z5	Obj\NoYes
Pump: Device Fault Sensor Fail	P2Z6	Obj\NoYes
Valve: Device Fault Valve Blocked	P1Z0	Obj\NoYes
Valve: Device Fault Valve Blocked Open	P1Z1	Obj\NoYes
Valve: Device Fault Valve Blocked Closed	P1Z2	Obj\NoYes
Valve: Device Fault Valve Position Error	P1Z3	Obj\NoYes
Valve: Device Fault Stroke Out of Range	P1Z4	Obj\NoYes
Valve: Device Fault Init Error	P1Z5	Obj\NoYes
Valve: Device Fault Excessive Vibration	P1Z6	Obj\NoYes
Valve: Device Fault ED Too High	P1Z7	Obj\NoYes
Valve: Eng Error Oscillating Error	P2Z3	Obj\NoYes
Valve: Eng Error Valve too Large	P2Z4	Obj\NoYes
Valve: Eng Error Valve too Small	P2Z5	Obj\NoYes
Valve: Supply Fault Volt Out of Range	P3Z1	Obj\NoYes
Valve: Supply Fault Electronics Temp High	P3Z2	Obj\NoYes
Valve: Supply Fault Frictional Resistance	P3Z3	Obj\NoYes
Valve: General Fault	P3Z7	Obj\NoYes

SNVT_dev_maint

Object Type: *[Lon\SNVT_dev_maint\Out]*
Object Type: *[Lon\SNVT_dev_maint\In]*

A SNVT_dev_ maint contains the device maintenance states of a pump controller or valve positioner.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Device Select	P0B	Obj\ENum: 0…1 0=Pump Ctrl, 1=Valve Pos
Pump: Service Required	P1Z0	Obj\NoYes
Pump: Change Bearings	P1Z1	Obj\NoYes
Pump: Lubricate Bearings	P1Z2	Obj\NoYes
Pump: Change Shaft Seal	P1Z3	Obj\NoYes
Valve: Motor Maintenance	P1Z0	Obj\NoYes
Valve: Packing Change	P1Z1	Obj\NoYes
Valve: Check Electronics	P1Z2	Obj\NoYes
Valve: Check Position	P1Z3	Obj\NoYes
Valve: Check Lubrication	P1Z4	Obj\NoYes
Valve: Check Spring-Return Function	P1Z5	Obj\NoYes
Valve: Check Battery	P1Z6	Obj\NoYes
Valve: General Maintenance	P3Z7	Obj\NoYes

SNVT_date_event

Object Type: *[Lon\SNVT_date_event\Out]*
Object Type: *[Lon\SNVT_date_event\In]*

A SNVT_date_event reports the status of a schedule.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Days to Active	P0I	Obj\Float: -32768…32766 days
Days to Inactive	P2I	Obj\Float: -32768…32766 days
Schedule Name	P4S	Obj\Text: Max Characters: 22

SNVT_sec_state

Object Type: *[Lon\SNVT_sec_state\Out]*
Object Type: *[Lon\SNVT_sec_state\In]*

A SNVT_sec_state contains a security state, and is used to communicate with security devices.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
State	P0B	Obj\ENum; 0…19, where: 0=Off, 1=On, 2=InhRst, 3=Inh, 4=WlkTstOff, 5=WlkTstOn, 6=TstMdeOff, 7=TstMdeOn, 8=PollStus, 9=PollSt, 10=AlmRst, 11=Alm, 12=TmpRst, 13=Tmp, 14=Mnt, 15=Trb, 16=Flt, 17=RecSen, 18=LstSen, 19=Unsupp
Identity	P1W	Obj\Num; 0…65535

SNVT_sec_status

Object Type: *[Lon\SNVT_sec_status\Out]*
Object Type: *[Lon\SNVT_sec_status\In]*

A SNVT_sec_status contains the status from a security device.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
State	P0B	Obj\ENum; 0…25, where: 0=PwrUp, 1=AlmRst, 2=Alm, 3=TmpRst, 4=Tmp, 5=Mnt, 6=Trb, 7=Flt, 8=RecSen, 9=LstSen, 10=PolAct, 11=PolInact, 12=PolTmp, 13=PolOn, 14=PolOff, 15=PolInh, 16=PolTst, 17=ConfOff, 18=ConfOn, 19=ConfInhRst, 20=ConfInh, 21=ConfWlkTstOff, 22=ConfWlkTstOn, 23=CnfTstMdOff, 24=CnfTstMdOn, 25=CnfUnsup
Identity	P1W	Obj\Num; 0…65535

SNVT_sblnd_state

Object Type: *[Lon\SNVT_sblnd_state\Out]*
Object Type: *[Lon\SNVT_sblnd_state\In]*

A SNVT_sblnd_state provides the preset state of a sunblind.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Setting Function	P0B	Obj\ENum; 0…5, where: 0=Off, 1=On, 2=Down, 3=Up, 4=Stop, 5=State
Scene Setting Level	P1C	Obj\Float; 0…100 %
Scene Rotation Angle	P2K1	Obj\Float; -360…360 °
Command Source	P4B	Obj\ENum; 0…33, where: 0=Lcl, 1=Grp, 2=Wind, 3=Sun, 4=Rain, 5=Frost, 6=Dawn, 7=Dusk, 8=OutT, 9=InT, 10=OutRH, 11=InRH, 12=IllumLvl, 13=Scn, 14=Glbl, 15=WinCt, 16=Auto, 17=Over, 18=Emg, 19=Mnt, 20=Int, 21=Load, 22=Alm, 23=OccSns, 24=OccCmd, 25=Glare, 26=Alm2, 27=Not, 28=Elev, 29=Az, 30=StOv, 31=StMnt, 32=Tmr, 33=Unk
Error Code	P5B	Obj\ENum; 0…14, where: 0=None, 1=InProg, 2=Limit, 3=ObstUp, 4=ObstDn, 5=OvHt, 6=Pwr, 7=Sns, 8=Mtr, 9=Fuse, 10=RefLst, 11=Comm, 12=V1, 13=V2, 14=Ctlr

SNVT_clothes_w_c

Object Type: *[Lon\SNVT_clothes_w_c\Out]*
Object Type: *[Lon\SNVT_clothes_w_c\In]*

A SNVT_clothes_w_c is used to program the start of a clothes washer.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Wash Cycle	P0B	Obj\ENum; 0…3, where: 0=Wash, 1=Rinse, 2=Spin, 3=Dry
Wash Subcycle	P1B	Obj\ENum; 0…11, where: 0=Load Sensing, 1=Wetting, 2=Detergent, 3=Washing, 4=Watering, 5=Rinsing, 6=Arranging, 7=Drain, 8=Spin, 9=Final Spin, 10=Fluffing, 11=Drying, 12=Cooling
Action: Power On	P3Z0	Obj\OffOn
Action: Run Mode	P3Z1	Obj\NoYes
Function: Program	P4B	Obj\ENum; 0…11, where: 0=General, 1=Boil, 2=Fast Wash, 3=Lingerie, 4=Wool, 5=Towel, 6=Bed Linens, 7=Curtain, 8=Rinse Spin Only, 9=Delicate Rinse, 10=Spin Only, 11=Dry Only
Function: Wash Load Level	P5B	Obj\ENum; 0…4, where: 0=Off, 1=Low, 2=Med, 3=High, 4=On
Function: Wash Temperature	P6B	Obj\Num; 0…255
Function: Wash Time	P7B	Obj\Num;
Function: Pre Wash	P8B	Obj\NoYes
Function: Rinse Temperature	P9B	Obj\Num; 0…255
Function: Rinse Repeat	P10B	Obj\Num; 0…9
Function: Rinse Option	P11B	Obj\ENum; 0…3, where: 0=Pre Wash, 1=Water Plus, 2=Detergent Plus, 3=Rinse Hold
Function: Spin Speed	P12W	Obj\Num; 0…65534 rpm
Function: Spin Time	P14B	Obj\Num; 0…255
Function: Spin Hold	P15B	Obj\NoYes
Function: Dry Temperature	P16B	Obj\NoYes
Function: Dry Duration	P17B	Obj\Num; 0…255
Function: Dry Dryness	P18B	Obj\ENum; 0...4 0=Off, 1=Low, 2=Med, 3=High, 4=On
Time Remaining	P19W	Obj\Num; 0…65535 min

SNVT_clothes_w_m

Object Type: *[Lon\SNVT_clothes_w_m\Out]*
Object Type: *[Lon\SNVT_clothes_w_m\In]*

A SNVT_clothes_w_m provides the status of the door and drain for a clothes washer.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Door Open	P0Z0	Obj\NoYes
Drain On	P0Z1	Obj\NoYes

SNVT_clothes_w_s

Object Type: *[Lon\SNVT_clothes_w_s\Out]*
Object Type: *[Lon\SNVT_clothes_w_s\In]*

A SNVT_clothes_w_s provides the present status of a clothes washer.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Cycle	P0B	Obj\ENum; 0…3, where: 0=Wash, 1=Rinse, 2=Spin, 3=Dry
Subcycle	P1B	Obj\ENum; 0…12 Load 0=Sensing, 1=Wetting, 2=Detergent, 3=Washing, 4=Watering, 5=Rinsing, 6=Arranging, 7=Drain, 8=Spin, 9=Final Spin, 10=Fluffing, 11=Drying, 12=Cooling
Date: Cycle	P2B	Obj\ENum; 0…3, where: 0=Wash, 1=Rinse, 2=Spin, 3=Dry
Data: Subcycle	P3B	Obj\ENum; 0…12 Load 0=Sensing, 1=Wetting, 2=Detergent, 3=Washing, 4=Watering, 5=Rinsing, 6=Arranging, 7=Drain, 8=Spin, 9=Final Spin, 10=Fluffing, 11=Drying, 12=Cooling
Data: Action: Power On	P5Z0	Obj\OffOn
Data: Action: Run Mode	P5Z1	Obj\NoYes
Data: Function: Program	P6B	Obj\ENum; 0…11, where: 0=General, 1=Boil, 2=Fast Wash, 3=Lingerie, 4=Wool, 5=Towel, 6=Bed Linnens, 7=Curtain, 8=Rinse Spin Only, 9=Delicate Rinse, 10=Spin Only, 11=Dry Only
Data: Function: Wash Load Level	P7B	Obj\ENum; 0…4, where: 0=Off, 1=Low, 2=Med, 3=High, 4=On
Data: Function: Wash Temperature	P8B	Obj\Num; 0…255
Data: Function: Wash Time	P9B	Obj\Num
Data: Function: Pre Wash	P10B	Obj\NoYes
Data: Function: Rinse Temperature	P11B	Obj\Num: 0…255
Data: Function: Rinse Repeat	P12B	Obj\Num: 0…9
Data: Function: Rinse Option	P13B	Obj\ENum; 0…3, where: 0=Pre Wash, 1=Water Plus, 2=Detergent Plus, 3=Rinse Hold
Data: Function: Spin Speed	P14W	Obj\Num; 0…65535 rpm
Data Function: Spin Time	P16B	Obj\Num; 0…255
Data: Function: Spin Hold	P17B	Obj\NoYes
Data: Function: Dry Temperature	P18B	Obj\NoYes
Data: Function: Dry Duration	P19B	Obj\Num; 0…255
Data: Function: Dry Dryness	P20B	Obj\ENum; 0…4, where: 0=Off, 1=Low, 2=Med, 3=High, 4=On
Data: Time Remaining	P21W	Obj\Num; 0…65535
Time Remaining	P23W	Obj\Num; 0…65535
Alarm: Reset	P25Z0	Obj\NoYes
Alarm: Water Supply	P25Z1	Obj\NoYes
Alarm: Slow Drain	P25Z2	Obj\NoYes
Alarm: Door Open	P25Z3	Obj\NoYes
Alarm: Load Unbalanced	P25Z4	Obj\NoYes
Alarm: Filter Cleaning	P25Z5	Obj\NoYes
Alarm: Hoses Reversed	P25Z6	Obj\NoYes
Alarm: Voltage Low	P25Z7	Obj\NoYes
Alarm: Power Fail	P26Z0	Obj\NoYes
Alarm: Drain Open	P26Z1	Obj\NoYes

Description	Reference	Type
Alarm: Execute Fail	P26Z2	Obj\NoYes
Alarm: Door Locked	P26Z3	Obj\NoYes
Alarm: Service	P26Z4	Obj\NoYes
Alarm: Motor Stall	P27Z0	Obj\NoYes
Alarm: Water Temp	P27Z1	Obj\NoYes
Alarm: Pressure	P27Z2	Obj\NoYes
Alarm: Overflow	P27Z3	Obj\NoYes
Alarm: Water Heat	P27Z4	Obj\NoYes
Alarm: Water Leak	P27Z5	Obj\NoYes
Alarm: Motor Speed	P27Z6	Obj\NoYes
Alarm: Wash Thermistor	P27Z7	Obj\NoYes
Alarm: Dry Thermistor	P28Z0	Obj\NoYes
Alarm: Dry Overheat	P28Z1	Obj\NoYes
Alarm: Dry Heating	P28Z2	Obj\NoYes
Alarm: Dry Fan	P28Z3	Obj\NoYes
Manuf Code	P30B	Obj\Num

SNVT_clothes_w_a

Object Type: *[Lon\SNVT_clothes_w_a\Out]*
Object Type: *[Lon\SNVT_clothes_w_a\In]*

A SNVT_clothes_w_a provides the alarm status for a clothes washer.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Alarm: Reset	P0Z0	Obj\NoYes
Alarm: Water Supply	P0Z1	Obj\NoYes
Alarm: Slow Drain	P0Z2	Obj\NoYes
Alarm: Door Open	P0Z3	Obj\NoYes
Alarm: Load Unbalanced	P0Z4	Obj\NoYes
Alarm: Filter Cleaning	P0Z5	Obj\NoYes
Alarm: Hoses Reversed	P0Z6	Obj\NoYes
Alarm: Voltage Low	P0Z7	Obj\NoYes
Alarm: Power Fail	P1Z0	Obj\NoYes
Alarm: Drain Open	P1Z1	Obj\NoYes
Alarm: Execute Fail	P1Z2	Obj\NoYes
Alarm: Door Locked	P1Z3	Obj\NoYes
Alarm: Service	P1Z4	Obj\NoYes
Alarm: Motor Stall	P2Z0	Obj\NoYes
Alarm: Water Temp	P2Z1	Obj\NoYes
Alarm: Pressure	P2Z2	Obj\NoYes
Alarm: Overflow	P2Z3	Obj\NoYes
Alarm: Water Heat	P2Z4	Obj\NoYes
Alarm: Water Leak	P2Z5	Obj\NoYes
Alarm: Motor Speed	P2Z6	Obj\NoYes
Alarm: Wash Thermistor	P2Z7	Obj\NoYes
Alarm: Dry Thermistor	P3Z0	Obj\NoYes
Alarm: Dry Overheat	P3Z1	Obj\NoYes
Alarm: Dry Heating	P3Z2	Obj\NoYes
Alarm: Dry Fan	P3Z3	Obj\NoYes
Alarm: Manuf Code	P5B	Obj\Num

SNVT_switch_2

Object Type: *[Lon\SNVT_switch_2\Out]*
Object Type: *[Lon\SNVT_switch_2\In]*

A SNVT_switch_2 is an enhanced version of a SNVT_switch, and contains a switch with scene and setting control.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
State	P0B	Obj\ENum; 0…36, where: 0=Off, 1=On, 2=RptOff, 3=RptOn, 4=Tgle, 5=LvlSet, 6=Lvl+, 7=Lvl-, 8=ScnRcall, 9=ScnStor, 10=ScnLrn, 11=Occ, 12=Unocc, 13=Mult, 14=GrpOn, 15=GrpOff, 16=Wnk, 17=Rst, 18=RstEngy, 19=RstRun, 20=Hue+, 21=Hue-FanU, 22=FanD, 24=Fan+, 25=Fan-, 26=FanOn, 27=FanOff, 29=MveOpn, 30=MveCls, 31=Agl, 32=ROpn, 33=RCls, 34=Stop, 35=Stby, 36=Pos
Value	P1C	Obj\Float; 0…100 %
Change in Level	P1C	Obj\Float; 0…100 %
Time Delay (s)	P1B	Obj\Num; 0…254 s
Group Number	P1B	Obj\Num; 0…63
Level Multiplier	P1B2	Obj\Num; 0…254
Scene Rotation Angle	P1A	Obj\Num; -90…90 °/2
Scene Number	P2B	Obj\Num; 1…255

SNVT_color_2

Object Type: *[Lon\SNVT_color_2\Out]*
Object Type: *[Lon\SNVT_color_2\In]*

A SNVT_color_2 contains a colour.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Color Encoding	P0B0	Obj\ENum; 0…3, Where: 0=CIE31 (Lumen), 1=CIE31 (%), 2=RGB, 3=Temperature
CIE31 lumen: x	P1C	Obj\Float: 0…100 %
CIE31 lumen: y	P2C	Obj\Float: 0…100 %
CIE31 lumen: Luminance	P3W	Obj\Num: 0…65535 lm/10
CIE31 %: x	P1C	Obj\Float: 0…100 %
CIE31 %: y	P2C	Obj\Float: 0…100 %
CIE31 %: Luminance	P3W2	Obj\Float: 0…100 %
RGB: red	P1B	Obj\Num: 0…255
RGB: green	P2B	Obj\Num: 0…255
RGB: blue	P3B	Obj\Num: 0…255
Color Temperature	P1B	Obj\Num: 0...255 K/50

SNVT_lamp_status

Object Type: *[Lon\SNVT_lamp_status\Out]*
Object Type: *[Lon\SNVT_lamp_status\In]*

A SNVT_lamp_status contains a lamp status.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Alarm Time Time stamp for alarm message	P0TT	Obj\DateTime
Lamp current too high	P5Z0	Obj\NoYes
Lamp current too low	P5Z1	Obj\NoYes
Main current too high	P5Z2	Obj\NoYes
Main current too low	P5Z3	Obj\NoYes
Lamp voltage too high	P5Z4	Obj\NoYes
Lamp voltage too low	P5Z5	Obj\NoYes
Main voltage too high	P5Z6	Obj\NoYes
Main voltage too low	P5Z7	Obj\NoYes
Power factor too low	P6Z0	Obj\NoYes
Temperature too high	P6Z1	Obj\NoYes
Power too high	P6Z2	Obj\NoYes
Power too low	P6Z3	Obj\NoYes
Relay failure	P6Z4	Obj\NoYes
Capacitor failure	P6Z5	Obj\NoYes
Lamp failure	P6Z6	Obj\NoYes
Ballast failure	P6Z7	Obj\NoYes
Internal comms failure	P7Z0	Obj\NoYes
External comms failure	P7Z1	Obj\NoYes
Main voltage below specification	P7Z2	Obj\NoYes
Lamp restart counter failure	P7Z3	Obj\NoYes
Fading ready	P7Z4	Obj\NoYes
Ballast temperature too high	P7Z5	Obj\NoYes
Digital input A	P7Z6	Obj\OffOn
Digital input B	P7Z7	Obj\OffOn

SNVT_environment

Object Type: *[Lon\SNVT_environment\Out]*
Object Type: *[Lon\SNVT_environment\In]*

A SNVT_environment contains an environment.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Lamp current (mA)	P0W	Obj\Num: 0…65534
Lamp voltage (V)	P2W	Obj\Num: 0…65534
Supply voltage (V)	P4W	Obj\Num: 0…65534
Supply current (mA)	P6W	Obj\Num: 0…65534
Ballast temperature (°C)	P8I2	Obj\Float: -273.17…327.67
Power (W)	P10W1	Obj\Float: 0…6553.5
Power factor	P12J4	Obj\Float: -1…1
Run hours	P14D	Obj\Num: 0…4294967295
Energy (kWh)	P18L1	Obj\Float: -214748364.8…214748364.7

SNVT_geo_loc

Object Type: *[Lon\SNVT_geo_loc\Out]*
Object Type: *[Lon\SNVT_geo_loc\In]*

A SNVT_geo_loc contains an geographic location.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Longtitude (°)	P0L7	Obj\Float: -180…180
Latitude (°)	P4L7	Obj\Float: -90…90
Elevation (m)	P8F	Obj\Float
Name	P12S	Obj\Text: 19chars

SNVT_program_status

Object Type: *[Lon\SNVT_program_status\Out]*
Object Type: *[Lon\SNVT_program_status\In]*

A SNVT_program_status contains the program status information for the program object.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
State	P0B	Obj\ENum Values: 0=No program, 1=Idle, 2=Load, 3=Run, 4=Halt, 5=Unload
Run time – days	P1W	Obj\Num: 0…65534
Run time – hours	P3B	Obj\Num: 0…23
Run time – minutes	P4B	Obj\Num: 0…59
Run time – seconds	P5B	Obj\Num: 0…59
Run time – milliseconds	P6W	Obj\Num: 0…999
Last error	P8B	Obj\Num: 0…63 (see note 1)
Time of last error	P9TS	Obj\DateTime

Notes

1. The value of last error can indicate the following fault conditions:

Value	Meaning	Program Halted
0	No error	No
1	Program fault	No
2	Invalid operation	No
3	Invalid parameter	No
4	Stack overflow	No
5	Stack underflow	No
6	Insufficient memory	No
7	Watchdog	No
31	Unknown error	No
32	Load error	Yes
33	Program fault	Yes
34	Invalid operation	Yes
35	Invalid parameter	Yes
36	Stack overflow	Yes
37	Stack underflow	Yes
38	Insufficient memory	Yes
39	Watchdog	Yes
40	Corrupted program	Yes
63	Unknown error	Yes

SNVT_load_offsets

Object Type: *[Lon\SNVT_load_offsetsOut]*
Object Type: *[Lon\SNVT_load_offsets\In]*

A SNVT_load_offsets contains the load control offsets.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Standby mode offset (%)	P0J2	Obj\Float: -163.84…163.83
Standby rotation	P2A	Obj\Num: -90…90
Demand-response mode offset (%)	P3J2	Obj\Float: -163.84…163.83
Dmand-response rotation	P5A	Obj\Float: -90…90

Configuration

Object Type: *[Lon\SNVTConfig\Out]*
Object Type: *[Lon\SNVTConfig\In]*

A network variable configuration contains the following objects.

If the network variable is an input type (nvi), then object values are adjustable.

Description	Reference	Type
Priority Indicates network variable uses priority messaging	P	Obj\NoYes
Direction Input (nvi), or output (nvo) network variable	D	Obj\ENum; 0…1, where: 0=Input, 1=Output
Selector Indicates if network variable is bound	S	Obj\Num; 1…4095
Turnaround Indicates turnaround network variable, bound to another network variable on the same device	T	Obj\NoYes
Service Type of service to deliver this network variable	C	Obj\ENum; 0…3, where: 0=Acknowledged, 1=Unacknowledged/repeated, 2=Unacknowledged, 3=Request
Authenticate Indicates network variable uses authenticated transactions	A	Obj\NoYes
Address Index Address table for this network variable (0…14), or if it is not associated with an address table entry (15)	I	Obj\Num; 0…15

Driver Versions

Version	Build Date	Details
1.1	4/9/2004	Fix for large network variable numbers (>256) not handled correctly.
1.1	6/4/2006	Fix for writing to Vx.Ix objects
1.2	21/1/2010	Added Px offset object (replaces Ox). New decode types: L, D, H, TT
1.2	7/6/2013	Type H decode corrected
1.2	28/1/2014	On initilasation, now set baud rate and SLTA address Increase factor to 10^7 (see *Non-SNVT Objects*, note 3)

Next Steps…

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

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