

OWNER'S MANUAL

FreeWay

LiteConnector Lon FTT-10

LonWorks® -gateway for Enervent AC-series



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Safety instructions

Overview

This chapter states the safety instructions that must be followed when installing and operating FreeWay LON FTT-10 Gateway. The material in this chapter must be studied before attempting any work on, or with, the unit.

General Safety Instructions

WARNING! All electrical installation and maintenance work on the ventilation unit should be carried out by qualified electricians.

Do not attempt any work on a powered unit. After switching off the mains, always allow the fans two minutes to stop and heater in ACE-models to cool down before working on the unit. There can be dangerous voltages inside the ventilation unit from external control circuits (COH cooker hood, CVC central vacuum cleaner) even when the unit mains power is shut off.

Introduction

Overview

This chapter contains a description of the User's Manual for the FreeWay LiteConnector LON FTT-10 LonWorks® Gateway.

Intended Audience

The guide is intended for people responsible for installing, commissioning, and using FreeWay LON Gateway. The reader is expected to have a basic knowledge of:

- electrical fundamentals and wiring practices
- the Enervent AC ventilation unit and control panel
- LonWorks® networks configuration

Terms and abbreviations

LonMark®

Products that conform to LonMark® Interoperability Guidelines, defined by the LonMark® Interoperability Association are eligible to carry the LonMark® logo.

LonTalk®

The communication protocol in LonWorks® networks.

Neuron® ID

Every LonWorks® device or –as synonym- node must have a unique ID. This is called the Neuron® ID. This ID is, on Neuron® Chip-based nodes, stored in the chip itself and cannot be changed.

FreeWay LiteConnector LON FTT-10

Is one of the FreeWay system Gateways for Enervent AC series ventilation units FreeWay LiteConnector LON FTT-10 is a device through which the ventilation unit is connected to a LonWorks® network.

nv

Network variable

nvi

Input network variable

nvo

Output network variable

Service Pin

The Service Pin is used in installing the node. Pressing the Service Pin causes the LonWorks® node to send the so-called Service Pin Message which includes, among other things, the Neuron® ID. This informs the network or installation tool about the node.

SNVT

Standard Network Variable Type

Further information

Further information is available on the WWW from www.lonmark.org and www.echelon.com.

Overview

Overview

This chapter contains a short description of the LonWorks® system and the FreeWay LON FTT-10 Gateway, delivery checklist and warranty information.

The LonWorks® system

The LonWorks® system is an open serial communication solution that enables data exchange between all kinds of automation components.

A LonWorks® network consists of intelligent devices, called nodes, connected by one or more communications media that communicate with one another using the LonTalk® protocol. A LonWorks® network can consist of up to 32385 nodes divided into 255 subnets (127 nodes/subnet). Nodes are programmed to send messages to one another in response to external events or messages they receive. Each intelligent device, for example FreeWay LON FTT-10 Gateway, is a LonWorks® node. A node is connected to other nodes with

appropriate communications media, such as twisted pair cable, RF link or power line circuit.

Each node includes a physical interface, transceiver that interfaces with the communication media. FreeWay LON FTT-10 uses the FTT-10A transceiver. This is the most commonly used twisted-pair media in building automation and this architecture supports star, bus and loop wiring. FTT-10A transceiver connects to a twisted pair cable with a baud rate of 78 kbit/s and appears as a high impedance to the network when unpowered, hence it does not interfere with the network communications when powered down.

LonWorks[®] nodes are objects that respond to various inputs and that produce desired outputs. Connecting the inputs and outputs of these network objects enables the network to perform specific tasks.

While the function of any particular node may be quite simple, the interaction among nodes enables a LonWorks[®] network to perform complex tasks. A benefit of LonWorks[®] network is that a small number of common node types may perform a broad spectrum of different functions depending on how they are configured and connected.

FreeWay Lon FTT-10 LonWorks[®] Gateway

FreeWay LiteConnector LON FTT-10 LonWorks[®] Gateway is an optional device for Enervent AC-series ventilation units. It enables the connection of the ventilation unit to a LonWorks[®] network. Through the gateway it is possible to do almost the same functions as in AC operating panel.

Compatibility

FreeWay LiteConnector LON FTT-10 LonWorks[®] Gateway is compatible with every Enervent AC-series ventilation unit beginning from software version C1.37.

If the ventilation unit has an older software version it must be updated to a newer before installing the gateway.

Check the ventilation unit model from model plate on the unit before installing the gateway.

Delivery check

The option package for the LonWorks[®] gateway contains:

- FreeWay LiteConnector LON FTT-10 LonWorks[®] Gateway
- A connection cable for connecting the gateway to AC control board
- Owner's manual

Warranty

Enervent warrants the FreeWay LiteConnector LON FTT-10 LonWorks[®] gateway against defects in design, materials and workmanship for a period of twelve (12) months after installation.

Enervent is not responsible for

- Any costs resulting from a failure if the installation, commissioning, repair, alternation or ambient conditions do not fulfill the requirements

specified in the documentation delivered with the gateway and other relevant documentation

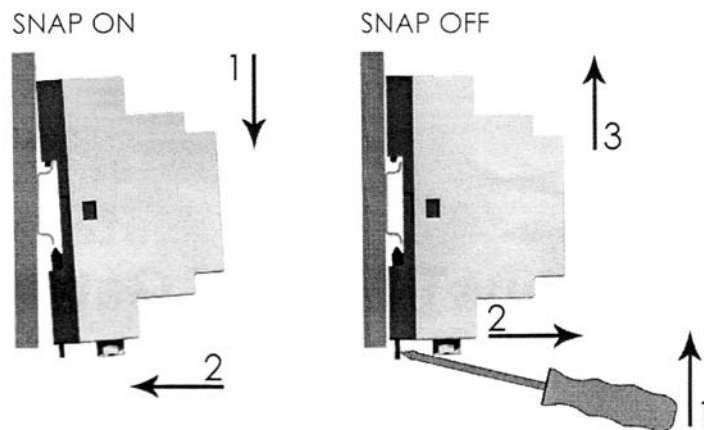
- Gateways subjected to misuse, negligence or accident
- Gateways comprised of materials provided or designs stipulated by the purchaser

Mechanical installation

WARNING! Follow the safety instructions given in this manual and in the ventilation unit manual.

FreeWay LiteConnector LON FTT-10 LonWorks® is possible to be mounted at the factory inside some models of the ventilation units or in other models outside the unit. The ambient condition shall be dry and the temperature must be between +5...+55°C. Relative humidity must be between 5...95% RH without condensing.

The Gateway shall be installed on a DIN rail (EN 50022).



Electrical installation

Overview

This chapter contains:

- Cabling instructions
- Instructions for bus termination
- FreeWay LiteConnector LON FTT-10 LonWorks® Gateway connection instructions and earthing instructions for the bus cable

WARNING! Before installation, switch off the ventilation unit power supply. Wait for two minutes for the fans to stop. The AC-model's electrical heater can also be hot. Switch off all dangerous voltages connected from external control circuits (COH cooker hood/ CVC central vacuum cleaner) to the inputs of the AC ventilation unit.

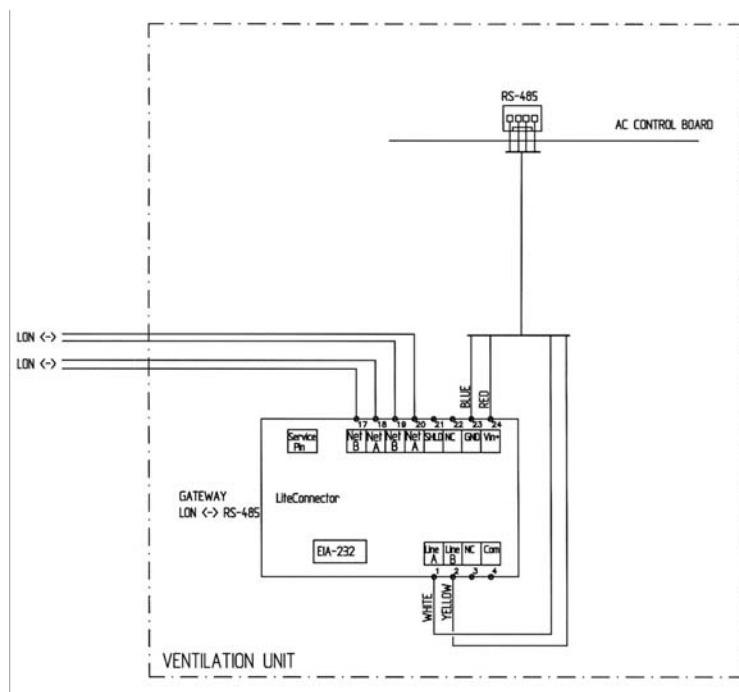
Cabling

Arrange the bus cables as far away from power cables. Avoid parallel runs. Use bushings at cable entries.

Note: LonWorks® networks require a special cable. It is recommended to use cables defined by LonMark® Layer 1-6 guidelines.

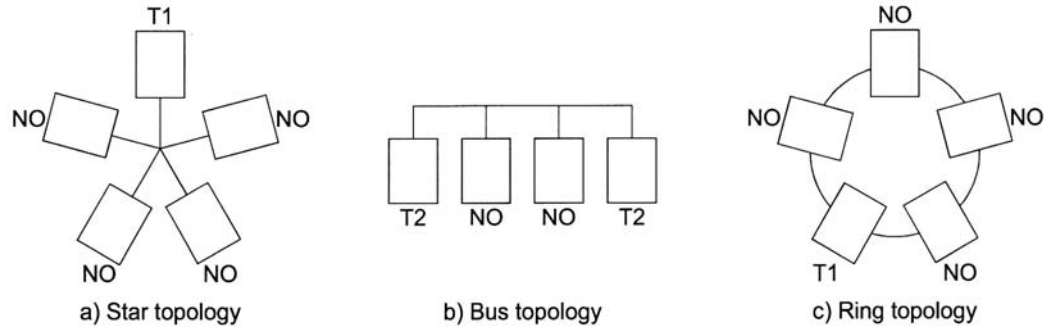
FreeWay Lon FTT-10 LonWorks® connections

The bus cable is connected in terminal block to 17 (LonWorks Net B) and 18 (LonWorks Net A). The bus can be continued from 19 (LonWorks Net B) and 20 (LonWorks Net A). AC control board is connected to the gateway with a special cable. The cable is connected to the AC control board RS-485 with a 4-pole connector and to the gateway terminal block.



Bus termination

The bus line is terminated with resistors connected between the network cable connection interfaces A (20) and B (19) when the LiteConnector LON FTT-10 LonWorks® gateway is at the end of the bus. Termination prevents signal reflections from the bus cable ends.



Bus termination for different network topologies.

Different bus termination	
T1	52,5Ω termination at one of the nodes in one bus segment
T2	105Ω termination at both ends of the line
NO	No termination

Earthing the LonWorks® cable screens

Usually a cable without screen is used.

If a screened cable is used then it should be earthed at one point only. The screen is not connected to the FreeWay LiteConnector LON FTT-10 LonWorks® Gateway.

Resource file

After the FreeWay LiteConnector LON FTT-10 LonWorks® gateway has been mechanically and electrically installed the LonWorks® network must be prepared for communication with the gateway. The LonWorks® network is configured with a network installation tool. The installation tool needs the resource file which is given as XIF-file. It can be downloaded on WWW from www.enervent.fi.

Fault tracing

LED indicators

FreeWay LiteConnector LON FTT-10 LonWorks® gateway is equipped with four diagnostic LEDs. The description of the LEDs is presented below.

Name	Color	Function
Service	Green	ON – Node is "application less"
	Green	Flashing – Node is unconfigured
	Green	Off – Node is configured and running in normal mode
Module Status	OFF	No power
	Green	Turned on – Module is running in normal mode
Serial Status	Green	Flashing – Serial Packet transmit
	Red	Flashing – Serial Packet receive
	Green/red	Flashing 8/4Hz – Wink message received

Network Variables

Input Network Variables

NviSupAirTmpStpt

Definition:
input SNVT_temp_p

Explanation:
Supply air temperature set point, when nviTempRegMode is constant supply air temperature.

Valid range:
15-25 °C, step=1

NviExhAirTmpStpt

Definition:
input SNVT_temp_p

Explanation:
Exhaust air temperature set point, when nviTempRegMode is constant exhaust air temperature.

Valid range:
15-25 °C, step=1

NviRoomTempStpt

Definition:
input SNVT_temp_p

Explanation:
Room air temperature set point, when nviTempRegMode is constant room air temperature.

Valid range:
15-25 °C, step=1

NviSupFanSpdCmd

Definition:
input SNVT_switch

Explanation:
Supply air fan speed set point at normal duty.

Valid range:
1-8, step=1

NviExhFanSpdCmd

Definition:
input SNVT_switch

Explanation:
Exhaust air fan speed set point at normal duty.

Valid range:
1-8, step=1

NviSupFanSpdTmrC

Definition:
input SNVT_switch

Explanation:
Supply air fan speed during time program when nviEnvironmentMd is set to 'home' mode.

Valid range:
1-8, step=1

NviExhFanSpdTmrC

Definition:
input SNVT_switch

Explanation:
Supply air fan speed during time program when nviEnvironmentMd is set to 'home' mode.

Valid range:
1-8, step=1

NviSupFanSpdPrC

Definition:
input SNVT_press_p

Explanation:
Supply air duct pressure set point, when NviCtrlModeFans is set to constant duct pressure control.

Valid range:
20-200Pa, step=10Pa

NviExhFanSpdPrC

Definition:
input SNVT_press_p

Explanation:
Exhaust air duct pressure set point, when NviCtrlModeFans is set to constant duct pressure control.

Valid range:
20-200Pa, step=10Pa

NviSupFanSpdPrTm

Definition:
input SNVT_press_p

Explanation:
Supply air duct pressure set point during time program, when NviCtrlModeFans is set to constant duct pressure control.

Valid range:
20-200Pa, step=10Pa

NviExhFanSpdPrTm

Definition:
input SNVT_press_p

Explanation:
Exhaust air duct pressure set point during time program, when NviCtrlModeFans is set to constant duct pressure control.

Valid range:
20-200Pa, step=10Pa

NviSupAirTmpMin

Definition:
input SNVT_temp_p

Explanation:
Supply air minimum temperature limit, when nviTempRegMode is set to constant exhaust or constant room air temperature.

Valid range:
15-20 °C, step=1

NviSupAirTmpMax

Definition:
input SNVT_temp_p

Explanation:
Supply air maximum temperature limit, when nviTempRegMode is set to constant exhaust or constant room air temperature.

Valid range:
20-30 °C, step=1

NviCO2Ctrl

Definition:
input SNVT_switch

Explanation:
CO₂ (carbon dioxide) control on/off

Valid range:
On/off

NviCO2limStpt

Definition:
input SNVT_ppm

Explanation:
CO₂ (carbon dioxide) boosting limit

Valid range:
60-150 (=600-1500 ppm), step=5 (50 ppm)

NviCO2CtlntrvlTm

Definition:
input SNVT_time_min

Explanation:
Fan speed change interval during CO₂ (carbon dioxide) control.
For example if interval is 1 minute it takes 1 minute to the fans to change from speed 3 to speed 4.

Valid range:
1-10 min, step=1

NviRHCO2SupMax

Definition:
input SNVT_switch

Explanation:
Maximum supply air fan speed during CO₂ (carbon dioxide) and %RH (relative humidity) control.
For example if setting is 7 then supply air fan speed will rise in maximum to 7.

Valid range:
1-8, step=1

NviRHCO2ExhMax

Definition:
input SNVT_switch

Explanation:
Maximum exhaust air fan speed during CO₂ (carbon dioxide) and %RH (relative humidity) control.
For example if setting is 7 then exhaust air fan speed will rise in maximum to 7.

Valid range:
1-8, step=1

NviRHCO2SupPrMx

Definition:
input SNVT_press_p

Explanation:
Maximum supply air fan speed during CO₂ (carbon dioxide) and %RH (relative humidity) control when NviCtrlModeFans is set to constant duct pressure control.

For example if setting is 125 Pa then supply air fan speed will rise until duct pressure is 125 Pa.

Valid range:
1-50, step=1, (10-500 Pa)

NviRHCO2ExhPrMx

Definition:
input SNVT_press_p

Explanation:
Maximum exhaust air fan speed during CO₂ (carbon dioxide) and %RH (relative humidity) control when NviCtrlModeFans is set to constant duct pressure control.

For example if setting is 125 Pa then exhaust air fan speed will rise in speed until duct pressure is 125 Pa.

Valid range:
1-50, step=1, (10-500 Pa)

NviRHCtrl

Definition:
input SNVT_switch

Explanation:
%RH (relative humidity) control on/off

Valid range:
On/off

NviRHlimStpt

Definition:
input SNVT_switch

Explanation:
%RH (relative humidity) boosting limit

Valid range:
25-60 %, step=5

NviRHCtrlIntrvITm

Definition:
input SNVT_time_min

Explanation:
Fan speed change interval during %RH (relative humidity) control.
For example if interval is 1 minute it takes 1 minute to the fans to change from speed 3 to speed 4.
Note! When setting the NviRHCtrlIntrvITm the NviCO2CtrlIntrvITm will be updated to the same and vice versa.

Valid range:
1-10 min, step=1

NviFiltrPrsAlrm

Definition:
input SNVT_press_p

Explanation:
Filter pressure difference alarm limit.

Valid range:
50-200 Pa, step=10

NviTempCtrl

Definition:
input SNVT_switch

Explanation:
Temperature control on/off.
For example choose off if you don't want the after heater to switch on at all and choose on if you want the after heater to affect the supply air temperature.
Also for cooling when NviCoolCtrl is set to on.

Valid range:
On/ off

NviSupAirCldLmt

Definition:
input SNVT_temp_p

Explanation:
Supply air cold alarm limit.

Valid range:
5-10 °C, step=1

NviSupAirHotLmt

Definition:
input SNVT_temp_p

Explanation:
Supply air hot alarm limit.

Valid range:
35-40 °C, step=1

NviExhAirCldLmt

Definition:
input SNVT_temp_p

Explanation:
Exhaust air cold alarm limit.

Valid range:
15-20 °C, step=1

NviHRWSumTmrLim

Definition:
input SNVT_temp_p

Explanation:
Heat recovery outside air temperature limit.
The heat exchanger rotates continuously when outside air temperature is below this limit.
The heat exchanger can stop or it can be stopped manually from control panel button when outside air temperature is above this limit.

Valid range:
10-20 °C, step=1

NviHRWDfrtStpt

Definition:
input SNVT_temp_p

Explanation:
Waste air temperature set point during heat exchanger antifrost mode.
Waste air temperature is kept in it's set point within a given hysteresis by stopping the supply air fan when the AC control system has detected a risk for frost.

Valid range:
OFF, -10...+3 °C, step=1

NviHRWDFrtHyst

Definition:
input SNVT_temp_p

Explanation:
Waste air temperature set point hysteresis during antifrost mode.
For example set point is +2 °C and hysteresis is 5 °C. Supply air fan stops when waste air temperature is +2 °C and starts again when temperature rises 5 degrees to +7 °C. Heat exchanger and exhaust air fan rotates continuously.

Valid range:
3-8 °C, step=1

NviBoostCmd

Definition:
input SNVT_switch

Explanation:
Fan boost on/ off. Starts and stops boost mode.

Valid range:
On/ off

NviOvrPresCmd

Definition:
input SNVT_switch

Explanation:
Over pressure (fireplace) on/ off.
Starts and stops over pressure.

Valid range:
On/ off

NviOvrPresCtrl

Definition:
input SNVT_switch

Explanation:
Choose 'on' if over pressure control is allowed.
Choose 'off' if over pressure control is not allowed.

Valid range:
On/ off

NviOvrPresDrtn

Definition:
input SNVT_time_min

Explanation:
Time after which over pressure ends and fans returns to normal duty.

Valid range:
5-30 min, step=1

NviOvrPrSpFanSpd

Definition:
input SNVT_switch

Explanation:
Supply air fan speed during over pressure.

Valid range:
1-8, step=1

NviOvrPrExFanSpd

Definition:
Input SNVT_switch

Explanation:
Exhaust air fan speed during over pressure.

Valid range:
1-8, step=1

NviConstPrCtrl

Definition:
input SNVT_switch

Explanation:
Choose 'on' if constant pressure control is allowed.
Choose 'off' if constant pressure control is not allowed.
With constant pressure control is meant cooker hood / central vacuum cleaner controlled fan speeds.

Valid range:
On/ off

NviDayOfWeek

Definition:
input SNVT_date_day

Explanation:
Day of week
1= Monday
2= Tuesday
3= Wednesday
4= Thursday
5= Friday
6= Saturday
7= Sunday

Valid range:
Mo, Tu, We, Th, Fr, Sa, Su

NviHourMin

Definition:
input SNVT_time_stamp

Explanation:
Time setting, hours and minutes

Valid range:
0-23 h and 0-59 min

NviTempRegMode

Definition:
input SNVT_count

Explanation:
0 = constant supply air temperature
1 = constant exhaust air temperature
2 = constant room air temperature

Valid range:
0, 1 or 2

NviCascadeFact

Definition:
input SNVT_count

Explanation:
Cascade factor setting in constant exhaust and constant room temperature control. Cascade factor defines the change in supply air temperature compared to the change in exhaust/ room air temperature.
For example cascade factor is 5. When exhaust or room temperature decreases one degree the supply air temperature will increase 5 degrees.

Valid range:
1-20, step=1

NviEnvironmentMd

Definition:
input SNVT_count

Explanation:
Control mode for fan speeds during time control and control board terminal block HS.
0= home
1= office
In 'home' mode the fan speeds can be controlled with time program to 1...8.
HS terminal block is used for over pressure button (fireplace).
In 'office' mode the fan speeds can be controlled with time program on or off.
HS terminal block is used for extended time button for fans which will start the fans to normal speed if time program has stopped them.

Valid range:
0 or 1

NviCoolCtrl

Definition:
input SNVT_switch

Explanation:
0 = cooling control not allowed
1 = cooling control allowed

Valid range:
0 or 1

NviCtrlModeFans

Definition:
input SNVT_count

Explanation:
0 = fan speed control (0)1-8
1 = constant duct pressure control

Valid range:
0 or 1

NviExtTimeCmd

Definition:
input SNVT_switch

Explanation:
Starts the fans in 'office' mode for extended time when the time program has stopped them.

Valid range:
On / off

NviBoostAmount

Definition:
input SNVT_switch

Explanation:
Defines how much manual boost affects the fan speeds.
For example value is set to 3 and normal fan speed is 4. During boost command the fan speeds increases with 3 so the fan speeds will be 7.
Has nothing to do with CO₂ and %RH controls which have their own maximum limits.

Valid range:
1-8, step=1

NviBoostDuration

Definition:
input SNVT_time_min

Explanation:
Manual boost duration.

Valid range:
10-240 min, step=10

NviHWRCmd

Definition:
input SNVT_switch

Explanation:
Choose 'on' if heat recovery is allowed.
Choose 'off' if heat recovery is not allowed.
When 'on' the heat exchanger rotates but stops automatically for example during summertime effect regulation.
When 'off' the heat exchanger does not rotate but starts automatically when outside air temperature decreases below NviHRWSumTmrLim or when cool recovery is needed.

Valid range:
On/ off

NviEmergStop

Definition:
input SNVT_switch

Explanation:
Emergency Stop. Stops the fans and heat exchanger. Switches off the electrical heater and cooling. Shuts the dampers and water heater valve.

Valid range:
On/ off

NviObjRequest

Definition:
Input SNVT_obj_request

Explanation:
This input is used to enable control commands and updates from network to specific objects in the node. Identification number for the node is 0 and for the drive object is 1. The request functionality is the same for both objects. The status of the node is reported in nvoObjStatus.

Valid range for object id:
0 and 1.

Valid range for request:
RQ_NORMAL is the normal request where node functions as normal. No action is taken but it will not generate an error response. Updates nvoObjStatus.

RQ_UPDATE_STATUS updates nvoObjStatus.

RQ_REPORT_MASK reports supported requests in nvoObjStatus.

All other requests are not supported, and any attempt to use them, will set the invalid_request bit in nvoObjStatus.

Output Network Variables

NvoSupAirTemp

Definition:
output SNVT_temp_p

Explanation:
Supply air temperature

Valid range:
-273,13...327,66

NvoExhAirTemp

Definition:
output SNVT_temp_p

Explanation:
Exhaust air temperature

Valid range:
-273,13...327,66

NvoWasteAirTemp

Definition:
output SNVT_temp_p

Explanation:
Waste air temperature

Valid range:
-273,13...327,66

NvoOutsideAirTem

Definition:
output SNVT_temp_p

Explanation:
Outside air temperature

Valid range:
-273,13...327,66

NvoRetWaterTemp

Definition:
output SNVT_temp_p

Explanation:
Return water temperature

Valid range:
-273,13...327,66

NvoAlarmState bit 0, nvoInAlarm, nvoObjStatus.in_alarm

Definition:
output SNVT_state, SNVT_switch, SNVT_obj_status

Explanation:
Heat recovery alarm. Manual reset.

Valid range:
On/ off

NvoAlarmState bit 1, nvoInAlarm, nvoObjStatus.in_alarm

Definition:
output SNVT_state, SNVT_switch, SNVT_obj_status

Explanation:
Supply air temperature low limit alarm (supply air cold). Alarm resets automatically when supply air temperature rises above the alarm limit.

Valid range:
On/ off

NvoAlarmState bit 2, nvoInAlarm, nvoObjStatus.in_alarm

Definition:
output SNVT_state, SNVT_switch, SNVT_obj_status

Explanation:
Supply air temperature upper limit alarm (supply air hot). Alarm resets automatically when supply air temperature drops under the alarm limit.

Valid range:
On/ off

NvoAlarmState bit 3, nvoInAlarm, nvoObjStatus.in_alarm

Definition:
output SNVT_state, SNVT_switch, SNVT_obj_status

Explanation:
Exhaust air temperature low limit alarm (exhaust air cold). Alarm resets automatically when exhaust air temperature rises above the alarm limit.

Valid range:
On/ off

NvoAlarmState bit 4, nvoInAlarm, nvoObjStatus.in_alarm

Definition:
output SNVT_state, SNVT_switch, SNVT_obj_status

Explanation:
Electrical heater overheating alarm. Manual reset.

Valid range:
On/ off

NvoAlarmState bit 6, nvoInAlarm, nvoObjStatus.in_alarm

Definition:
output SNVT_state, SNVT_switch, SNVT_obj_status

Explanation:
Return water temperature low limit alarm. Manual reset.

Valid range:
On/ off

NvoAlarmState bit 7, nvoInAlarm, nvoObjStatus.in_alarm

Definition:
output SNVT_state, SNVT_switch, SNVT_obj_status

Explanation:
Filter service reminder every 4 months or from a pressure transmitter (nviFiltrPrsAlrm, nvoFilterPresDif).

Valid range:
On/ off

NvoTmpAftHtRcSup

Definition:
output SNVT_temp_p

Explanation:
Supply air temperature after heat exchanger.

Valid range:
-273,13...327,66

NvoCO2

Definition:
output SNVT_ppm

Explanation:
The highest reading from CO₂ (carbon dioxide) transmitters.

Valid range:
0-255 (0-2550 ppm)

NvoRelHumidity

Definition:
output SNVT_switch

Explanation:
The highest reading from %RH (relative humidity) transmitters.

Valid range:
0-100 %

NvoFilterPresDif

Definition:
output SNVT_press_p

Explanation:
Filter pressure difference.

Valid range:
0-200 Pa

NvoSupAirDuctPr

Definition:
output SNVT_press_p

Explanation:
Supply air duct pressure.

Valid range:
0-200 Pa

NvoExhAirDuctPr

Definition:
output SNVT_press_p

Explanation:
Exhaust air duct pressure.

Valid range:
0-200 Pa

NvoStatus bit 0

Definition:
output SNVT_state

Explanation:
Over pressure/ extended time status.

Valid range:
On/ off

NvoStatus bit 1

Definition:
output SNVT_state

Explanation:
Heat exchanger status.

Valid range:
On/ off

NvoStatus bit 2

Definition:
output SNVT_state

Explanation:
Cooker Hood status.

Valid range:
On/ off

NvoStatus bit 3

Definition:
output SNVT_state

Explanation:
Central Vacuum Cleaner status.

Valid range:
On/ off

NvoObjStatus

Definition:
Output SNVT_obj_status

Explanation:
This output network variable reports node object status (bit field). It will be updated every time status changes or a node object request is received.

Valid Range:

Invalid_ID	The node has been asked for an invalid object ID.
Invalid_request	The node has been asked for an unsupported request.
Report_mask	Report supported fields.
Comm_failure	No contact with unit.
In_alarm	The unit is faulted. (Some Alarm bit is set in unit)

NvoCoolingCoilVa

Definition:
output SNVT_switch

Explanation:
Cooling coil valve motor status.

Valid range:
0-255 = 0-10V

NvoSupFanSpd

Definition:
output SNVT_switch

Explanation:
Supply air speed status.

Valid range:
0-8

NvoExhFanSpd

Definition:
output SNVT_switch

Explanation:
Exhaust air fan status.

Valid range:
0-8

NvoHRWefficiency

Definition:
output SNVT_switch

Explanation:
Heat recovery efficiency.

Valid range:
0-100%

NvoPanelTemp

Definition:
output SNVT_temp_p

Explanation:
Average room air temperature reading from from control panels.

Valid range:
-273,13...327,66

Technical data

FreeWay Lon FTT-10 LonWorks® gateway

Outer dimensions:

90mm x 70 mm x 58mm

Mounting:

DIN-rail (EN 50022)

Degree of protection:

IP20

Temperature range:

Operating 5...55 °C

Storage -25...75 °C

Humidity range:

5...95% RH, non-condensing

Connectors:

- 8-pole terminal block
- EIA-485, 4-pole terminal block.
- EIA-232, 9-pole DSUB connector

Current consumption:

25mA, 24V AC from the AC control board

Power supply:

9-32V AC/DC (1.2VA)

General:

- Complies with EMC standards EN 50081-2:1993, EN 61000-6-2:1999