INSTRUCTIONS

Type LonWorks Gateway

57552B - 10/06 (BJ)

English

This instruction describes the OJ-LON gateway, which provides connectivity for the OJ Electronics standard ventilation system, OJ Air, to a LonWorks network.

This instruction applies to OJ-LON with ProgramID: 9F:FE:22:55:05:06:04:xx.

Product Program

Type	Product
OJ-LON	LonWorks Gateway to ABC-Bus

Function
The LonWorks gateway converts the signals on the internal RS485 ABC-Bus, to standard LonMark Association SNVT's, such that it is possible to communicate with an AHU, which is equipped with an OJ Air control system, from a LonWorks network.

An FTT-10A transceiver with a transmission speed of 78kbps free topology is used.

CE MARKING
Subject to the consequences of the law, OJ Electronics A/S declares that this product complies with Council EMC Directive 92/31/EEC and subsequent modifications concerning electro-magnetic compatibility, and Council Low Voltage Directive 72/23/EEC (LVD) and subsequent modifications concerning electric material for application within certain voltage limits.

Standards applied
Electromagnetic compatibility (EMC):
EN 61000-6-2 and EN 61000-6-3

The product is intended for installation in machines or assembly with other machine parts for installation in machines covered by the Council Machinery Directive 98/37/EEC - therefore it does not fulfil the provisions in this directive in all respects.

Technical data
Supply
OJ-LON is supplied
from the ABC-Bus with . . . . . .24VDC.
ABC-Bus connection
Signal . . . . . .RS 485(half duplex, 9,6kbaud)
Protocol . . .ABC (Automatic Bus Configuration)
Connector . . . . . .RJ11/6 jack
(double female mounted in module)
Max. cable length 100m
LonWorks connection
Transceiver FTT-10A
Speed 78kbps
Connector . . . . . .PTA STLZ950/2G-508H
(2-pole male and female parts
are supplied with the module)
Max. cable length 500m

Environmental data
Enclosure rating IP20
Air humidity . . . . . .10-90% RH
Temperature range . . . . . .0-50°C

Mechanical Installation
The LonWorks gateway is to be mounted on a DIN rail in an enclosure with the enclosure rating required by the installation.

The gateway dimensions can be seen from figure 1.

Electrical Installation
A. The network cable to the LonWorks network is connected to the LonWorks gateway using the supplied 2-pole male connector.
B. Then connect the LonWorks Gateway to the ABC-Bus using an RJ11/6 jack.

User interface
The user interface consists of 3 LEDs and a Service Request button on the front of the module. The Service Request button is used to identify the node on the control network and can be activated using a pencil or similar sharp implement (2 mm dia.). The LEDs have the following colours and functions:

LED Name	Colour	Function
Service	Yellow	Flashes if node is not configured. Turned off if node is configured on network. Lit when the Service Request button is pressed. Constantly lit if node is without program (error condition).
Com.	Green	Flashes whenever data are synchronised by ABC-Bus. Flashes rapidly when data are updated from control network to ABC-Bus. Constantly lit/turned off when communication errors occur.
Power	Green	Lit when node is connected to power supply.
Power/Com	Green	Flash alternately during node initialisation or power supply connection. Flash alternately when WINK signal is sent to node from installation tool.

Location of LED diodes and service button is shown in figure 1.

LonWorks software conformity
The LonWorks module is designed to connect an OJ Air ventilation system to an open LonWorks control network in compliance with LonMark International guidelines.

Standard Program ID: 9F:FE:22:55:05:06:04:xx

For use in connection with LonWorks installation tools and to document conformity, the following data files can be downloaded from www.oj.dk:

Latest eXternal Interface File	0936Axyy.xif
Latest ResourceFileSet	0936Dxyy.zip
Visio Shape Stencil with LonMark objects for use withLonMaker for Windows	Included in 0936Dxyy.zip
Version management	x signifies a major release and y signifies a minor release. The actual version can be found online by the installation tool browser in NodeObject cpDevMinorVer and cpDevMajorVer. Major version upgrading requires a new XIF file.

Lists of LonMark objects are shown in tables 1-3, and applied user types in table 4.

Function blocks are shown in fig. 2-4.

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Dansk

Denne instruktion beskriver OJ-LON gatewayen, der giver mulighed for at tilslutte OJ Electronics standard ventilation system, OJ Air, til et LonWorks netværk.

Denne instruktion er gældende for OJ-LON med ProgramID: 9F:FE:22:55:05:06:04:xx.

Produkt Program

Type	Produkt
OJ-LON	LonWorks Gateway til ABC-Bus

Funktion
LonWorks gatewayen konverterer signalerne på den interne RS485 ABC-Bus, til standard LonMark Association SNVT's, således at det er muligt at kommunikere med et ventilations aggregat udstyret med en OJ styring, fra et LonWorks netværk.

Der benyttes en FTT-10A tranceiver med en transmissionshastighed på 78kbps i fri topologi.

CE MÆRKNING
OJ Electronics A/S erklærer under ansvar, at dette produkt opfylder Rådets Direktiv 92/31 og efterfølgende ændringer om elektromagnetisk kompatibilitet samt Rådets Direktiv 73/23 og efterfølgende ændringer om elektrisk materiel bestemt til anvendelse indenfor visse spændingsgrænser.

Standarder benyttet
Elektromagnetisk kompatibilitet (EMC):
EN 61000-6-2 og EN 61000-6-3

Produktet er tænkt inkorporeret i maskiner eller samlet med andre maskindele til indsættelse i maskiner dækket af RÅDETS DIREKTIV 98/37/EØF med senere ændringer. Derfor opfyldes bestemmelserne i dette direktiv ikke i alle henseender.

Tekniske data
Forsyning . . . . . .OJ-LON forsynes fra ABC-Bus med 24VDC.
ABC-Bus tilslutning
Signal . . . . . .RS 485(halv duplex,9,6kbaud)
Protocol . . .ABC (Automatic Bus Configuration)
Stik . . . . . .RJ11/6 telestik (dobbelt hunstik monteret i modulet)
Maks. kabellængde 100m

LonWorks tilslutning
Tranceiver FTT-10A
Speed 78kbps
Stik . . . . . .PTA STLZ950/2G-508H
(2-polet han- og hunstik leveres med modulet)
Maks. kabellængde 500m

Miljø specifikationer
Tæthed IP20
Luftfugtighed . . . . . .10-90% RH
Temperaturområde . . . . . .0-50°C

Montering og tilslutning
Montering
LonWorks gatewayen monteres på en DIN skinne i en kapsling, som overholder den for installationen nødvendige tæthedsgrad.

Gatewayens dimensioner kan ses af figur 1.

Tilslutning
LonWorks gatewayen leveres med et 2-polet hanstik til LonWorks netværket og en RJ11/6 hunstik

A. Netværkskablet til LonWorks netværket forbindes til LonWorks gatewayen med det medfølgende 2-polede hanstik.

B. Herefter forbindes LonWorks Gatewayen med ABC-Bus ved brug af et RJ11/6 telestik.

Terminalernes placering kan ses i figur 1.

Brugerflade
Brugerfladen består af 3 lysdioder samt en serviceknap udvendig på modulet. Serviceknappen (benævnt Service Request) som er beregnet for identificering af noden på kontrolnetværket, kan aktiveres v.h.a. en blyant eller anden spids genstand på Ø2mm. Lysdioderne har følgende farver og funktion

LED Navn	Farve	Funktion
Service	Gul	Blinker hvis noden er ukonfigureret. Slukket hvis noden er konfigureret på netværket. Lyser når serviceknappen betjenes. Lyser konstant hvis noden er uden program (fejltilstand).
Com.	Grøn	Blinker ved hver synkronisering af data med ABC bus. Blinker hurtigt ved opdatering af data fra kontrolnetværket til ABC bus. Konstant slukket/tændt ved fejlkommunikation.
Power	Grøn	Lyser når noden er strømforsynet.
Power/Com	Grøn	Blinker ude af takt under initialisering af noden efter tilslutning af strømforsyning. Blinker ude af takt, når der sendes WINK signal til noden fra installationsværktøj.

Diodernes og service knappens placering kan ses i figur 1.

LonWorks software overensstemmelse
LonWorks modulet er designet til at forbinde et OJ Air ventilationssystem til et åbent LonWorks kontrolnetværk i overensstemmelse med LonMark International retningslinier.

Standard Program ID: 9F:FE:22:55:05:06:04:xx

Til brug i forbindelse med LonWorks installationsværktøjet og til dokumentation af overensstemmelse iøvrigt foreligger der følgende datafiler til download fra www.oj.dk.

Nyeste eXternal Interface File	0936Axyy.xif
Nyeste ResourceFileSet	0936Dxyy.zip
Visio Shape Stencil med LonMark objekter for brug i forbindelse med LonMaker for Windows	Inkluderet i 0936Dxyy.zip
Versionstyring	x angiver Major releace og y angiver Minor releace. Aktuel version kan aflæses online af installationsværktøjet browser i NodeObjektets cpDevMinorVer og cpDevMajorVer. Major version opgradering kræver ny XIF fil.

Liste over LonMark objekter er vist i tabel 1-3 og anvendte UserTypes i tabel 4.

Funktionsblokke er vist i fig. 2-4.

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Table 1 - UFPTNodeObject

nviRequest	Object Request input	SNVT_obj_request
nviTimeSet	Syncronization input for clock and date	SNVT_time_stamp
nviUnitMode	Setting of Unit Operational Mode (only UNIT_ON-UNIT_OFF-UNIT_AUTO is used)	UNVT_unit_mode
nvoAlarm	Readout of recent Alarm location and time	SNVT_alarm
nvoFlowRegMode	Readout of Airflow Regulation Mode	UNVT_flow_regmode
nvoMaxFlow	Readout of Maximum Flow allowed in USER mode	SNVT_flow
nvoOpTime	Readout of Total Operating Time in Days	SNVT_elapsed_tm
nvoStatus	Object Status	SNVT_obj_status
nvoTempRegMode	Readout of Temperature Control Mode	UNVT_temp_regmode
nvoTime	Readout of clock and date	SNVT_time_stamp
nvoUnitMode	Readout of Unit Operational Mode	UNVT_unit_mode
nvoOccMode	Readout of Occupancy mode	SNVT_occupancy
nvoAlarmNum	Readout of Alarm number for last updated Alarm by nvoAlarm	UNVT_alarm_num
nciHeartBeat	Max period of time between consecutive transmissions of the FB output values	SCPTmaxSendTime (SNVT_time_sec)
nciDevMajVer	Readout of Device Major version	SCPTdevMajVer
nciDevMinVer	Readout of Device Minor version	SCPTdevMinVer

Table 2 - UFPTInletAirContr

nviOccFlowSetp2	Setpoint for Occupied Inlet Airflow	SNVT_flow
nviOccVAVsetp2	Setpoint for Occupied Inlet VAV in %	SNVT_lev_percent
nviUnOccFlowSp2	Setpoint for UnOccupied Flow in Inlet	SNVT_flow
nviUnOccVAVsp2	Setpoint for UnOccupied Inlet VAV in %	SNVT_lev_percent
nviMaxTemp2	Config of Maximum Inlet Temperature in Room Control Mode	UCPTmaxTemp (SNVT_temp_p)
nviMinTemp2	Config of Minimum Inlet Temperature in Room Control Mode	UCPTminTemp (SNVT_temp_p)
nviTempSetPnt2	Setpoint for Inlet Temperature	SNVT_temp_p
nvoAirFlow2	Measured Airflow in Inlet	SNVT_flow
nvoCoolSec	Readout of Analogue Output Voltage for Cooling control in %	SNVT_lev_percent
nvoCoolStopTemp	Readout of setpoint Stop outdoor temperature for cooling control	SNVT_temp_p
nvoFltrStatPres2	Measured differential pressure across Inlet Filter in pascal	SNVT_press_p
nvoFltrStatPer2	Measured differential pressure across Inlet Filter in percent	SNVT_lev_percent
nvoWaterTemp	Measured Temperature from Water coil Frost Guard	SNVT_temp_p
nvoHeatPrim	Rotation of Heat Exchanger in % (with heat transport linearization)	SNVT_lev_percent
nvoMinFlowCool	Readout Config of Minimum Airflow with Cooling applied	SNVT_flow
nvoMotorHz2	Current Motor Frequency for Inlet Fan	SNVT_freq_hz
nvoOutdoorTemp	Current Outdoor temperature	SNVT_temp_p
nvoHeatSec	Readout of Analogue Output Voltage for Reheating control in %	SNVT_lev_percent
nvoSpaceTemp2	Measured Temperature in Inlet	SNVT_temp_p
nciHeartBeat2	Max period of time between consecutive ‘transmissions of the FB output values	SCPTmaxSendTime (SNVT_time_sec)

Table 3 - UFPTOutletAirContr

nviOccFlowSetp1	Setpoint for Occupied Outlet Airflow	SNVT_flow
nviOccVAVsetp1	Setpoint for Occupied Outlet VAV in %	SNVT_lev_percent
nviUnOccFlwSp1	Setpoint for Unoccupied Outlet Airflow	SNVT_flow
nviUnOccVAVsp1	Setpoint for Unnoccupied Outlet VAV in %	SNVT_lev_percent
nvoAirFlow1	Measured Airflow in Outlet	SNVT_flow
nvoFltrStatPres1	Measured differential pressure across Outlet Filter in pascal	SNVT_press_p
nvoFltrStatPer1	Measured differential pressure across Outlet Filter in percent	SNVT_lev_percent
nvoMotorHz1	Current Motor Frequency for Outlet Fan	SNVT_freq_hz
nvoSpaceTemp1	Measured Temperature in Outlet	SNVT_temp_p
nvoDischAirTemp	Measured exhaust temperature	SNVT_temp_p
nviTempSetPnt1	Setpoint for Outlet Temperature	SNVT_temp_p
nciHeartBeat1	Max period of time between consecutive transmissions of the FB output values	SCPTmaxSendTime (SNVT_time_sec)

Table 4: Applied UserTypes

typedef enum unit_mode	**Value**
UNIT_AUTO	0
UNIT_OFF	6
UNIT_ON	18
typedef enum temp_reg_mode	**Value**
CONST_SUPPLY_AIR	0
EXTRACT_AIR	1
EXTR_SUPPLY_AIR_DIFF	2
typedef enum airflow_reg_mode	**Value**
FLOW_CONTROL	0
PRESS_CONTROL	1
CO2_CONTROL	2
PA_OUTLET_BAL_SA_CONTROL	3

Fig. 1

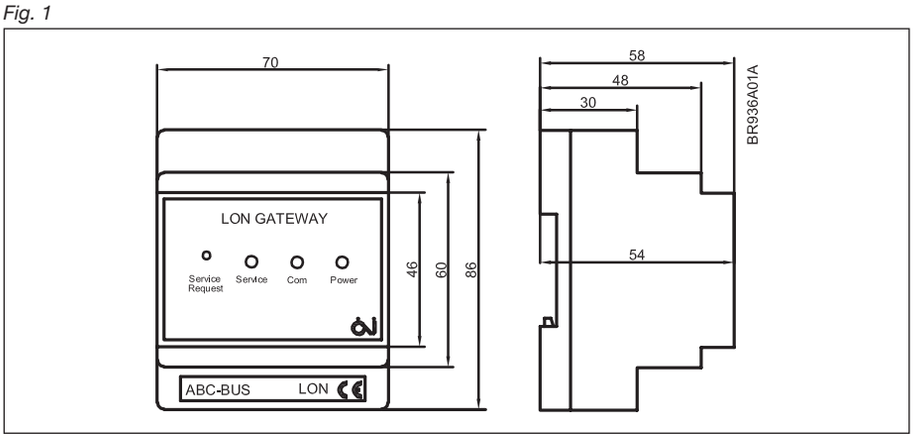


Fig. 2

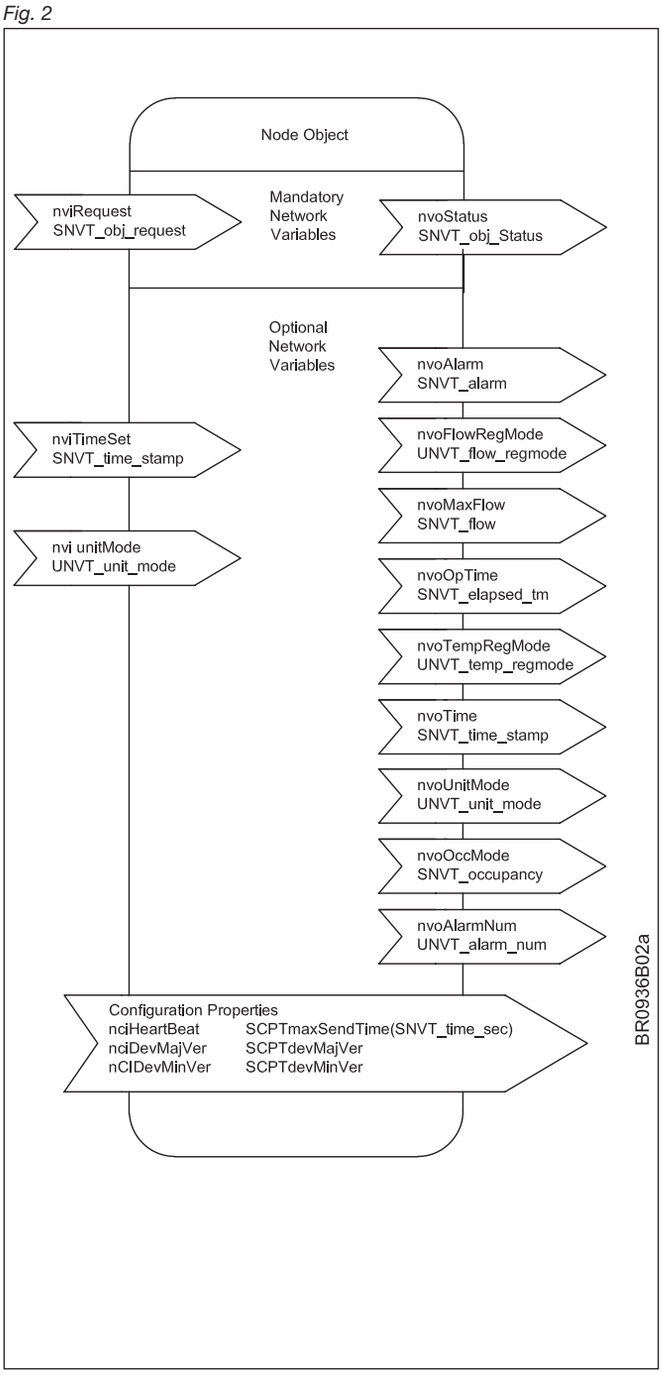


Fig. 3

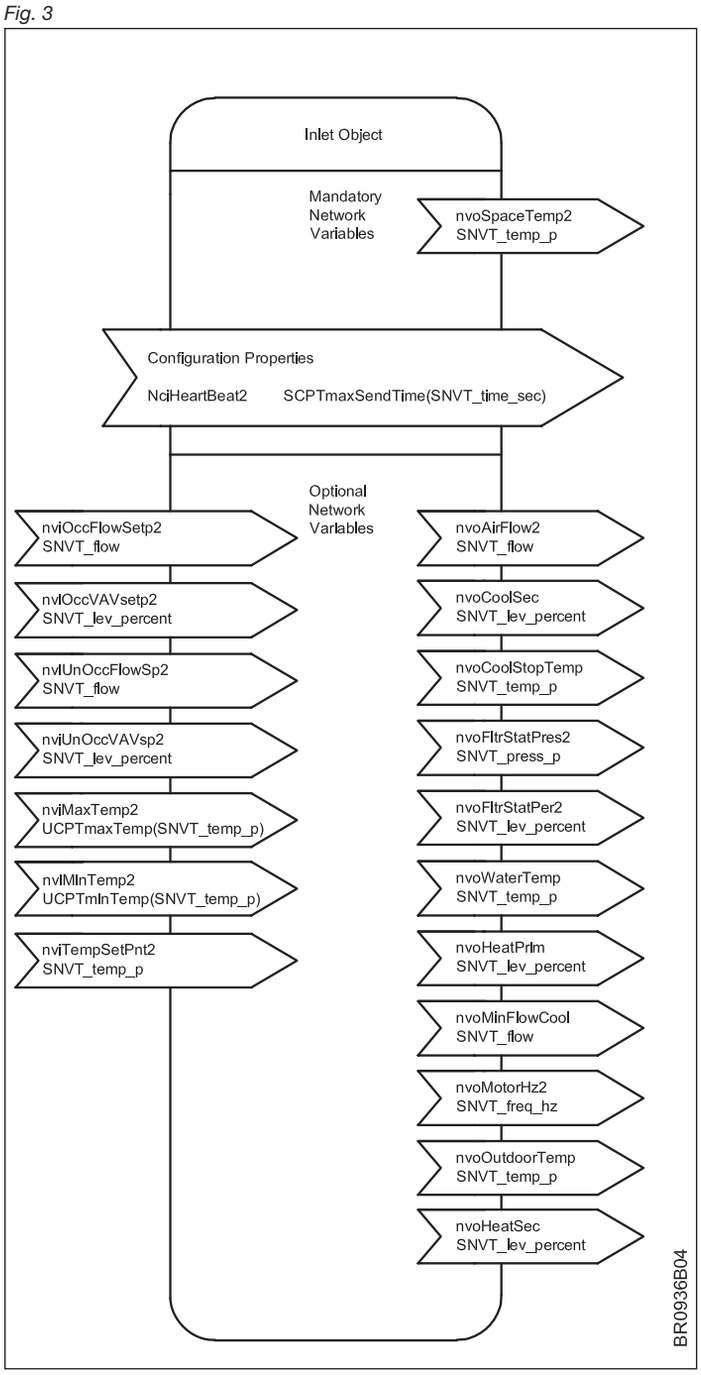
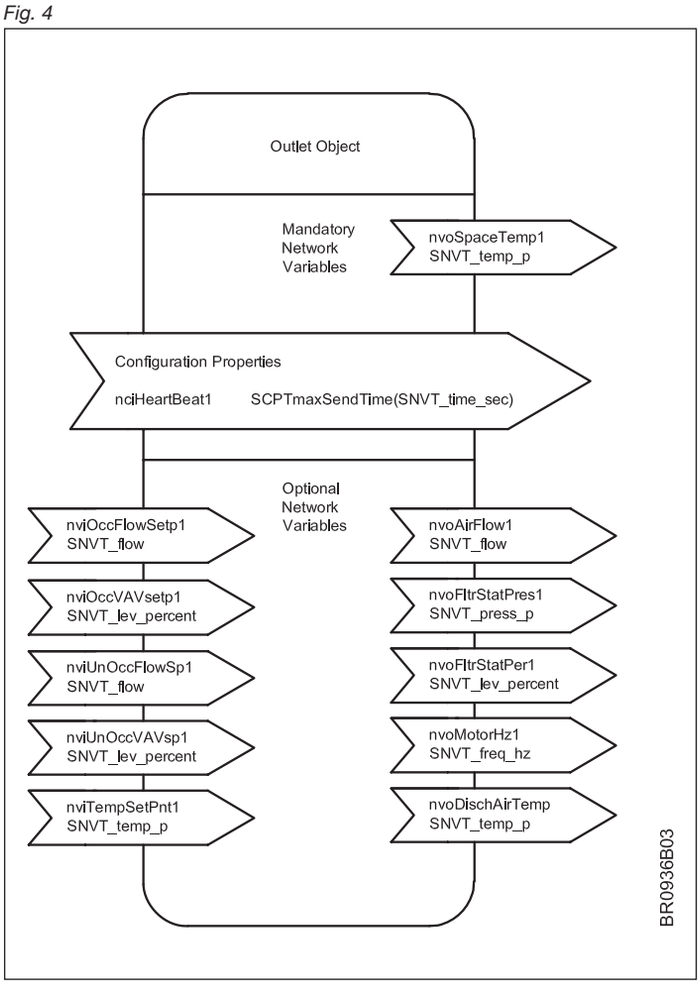


Fig. 4


Outlet Object
Mandatory
Network
Variables
nvoSpaceTemp1
SNVT_temp_p
Configuration Properties
nciHeartBeat1
SCPTmaxSendTime(SNVT_time_sec)
Optional
Network
Variables
nviOccFlowSetp1
SNVT_flow
nviOccVAVsetp1
SNVT_lev_percent
nviUnOccFlowSp1
SNVT_flow
nviUnOccVAVsp1
SNVT_lev_percent
nviTempSetPnt1
SNVT_temp_p
nvoAirFlow1
SNVT_flow
nvoFltrStatPres1
SNVT_press_p
nvoFltrStatPer1
SNVT_lev_percent
nvoMotorHz1
SNVT_freq_hz
nvoDischAirTemp
SNVT_temp_p
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