

EngA[®]

ENGINEERED AIR[®]

C-TRAC3
COMMUNICATION MANUAL
FOR
LON
REV 1.5

UNIT MODEL NO. _____
UNIT SERIAL NO. _____
SERVICED BY: _____
TEL. NO: _____

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AND FACTORY**

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Retain instructions with unit and maintain in a legible condition.
Please give model number and serial number when contacting
Engineered Air for information and/or parts.

www.engineeredair.com

If any errors or omissions are noted please contact the Calgary Engineered Air Service Department at (403) 287-4775, or fax: (403) 287-4799 or (403) 243-5059 or use email address service@engineeredair.com.

To ensure warranty is honored, only a qualified HVAC service person should be employed for service and troubleshooting. If further information is required please contact the nearest Engineered Air office.

Under no conditions (except for temporary copying) should the unit function be removed from the unit. There are two copies provided with the unit. One is in an envelope for copying, then return it to the unit or store in a safe place. The other is attached to the control panel door and should never be removed. If a copy of the function for a particular unit is needed, record the unit serial number, C-TRAC3 model number (ex model C-TRAC3.2) and record the C-TRAC3's program number from under the model number (top right corner). Then contact the nearest Engineered Air factory for a copy.

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INTRODUCTION

The C-TRAC3 is a configurable logic controller designed to be the primary controller of Engineered Air heating, cooling and ventilation equipment. This manual is used in conjunction with the C-TRAC3 operation manual. The C-TRAC3 is designed to control the blower, cooling, heating, and mixing economizer. The C-TRAC3 HVAC controller can be configured to control one or two independent control process at the same time. In this manual, the primary setpoint and sensor refer to the final leaving temperature. Multizone equipment use the primary sensor and setpoint as the hot deck. The secondary sensor and setpoint are typically used for pre-cool control of dehumidifiers or the cold deck control of multizone equipment.

PDA

In this manual, the term PDA refers to the setting and adjustment of the internal C-TRAC3 control program, using Engineered Air SMC commissioning software. While normally this is accomplished with a personal digital assistant (PDA), the term also includes a laptop or similar device.

NETWORK COMMUNICATION

The FTT-10A 78KBS can reside anywhere on the TP/FT-10 network that is designed to support free topology wiring, and will accommodate bus, star, loop or any combination of these topologies. The network connection (A & B) is polarity insensitive and therefore either of the two twisted pair wires can be connected to either of these network connections.

Echelon has qualified the following cables to be used as network wiring:

- 1) TIA568A Category 5 cable (24awg/0.51mm)
- 2) NEMA Level IV cable (22awg/0.65mm)

The controls contractor is responsible to ensure that the maximum bus length, node to node distance, cable termination and shield grounding meet the free topology transmission specifications.

In this manual SNVT's that can be written to are said to be EMS (Energy Management System) commanded.

GENERAL**EMS Discharge Air Setpoint**

- Description: The input range must be between 0 to 255 °F with a 1°F resolution (-17.7 to 123.8°C with 0.55°C resolution). With EMS control enabled, the DT setpoint will equal the EMS setpoint.

- R/W

- NVIEMSDTSET, NVOEMSDTSET; SNVT_TEMP_P *105*

EMS Secondary Discharge Air Setpoint

- Description: The input range must be between 0 to 255 °F with a 1°F resolution (-17.7 to 123.8°C with 0.55°C resolution). With EMS control enabled, the secondary DT setpoint will equal the EMS setpoint.

- R/W

- NVIEMSSECDTSET, NVOEMSSECDTSET; SNVT_TEMP_P *105*

EMS Damper Minimum Position Setpoint

- Description: The input range must be between 0 to 100%.

- R/W

- NVIEMSDPRMINPOS, NVOEMSDPRMINPOS; SNVT_COUNT *8*

EMS Unit Command On / Off

- Description: The EMS can command the C-TRAC3 on or off.

- R/W

- NVIUNITONOFF, NVOUNITONOFF; SNVT_SWITCH *95*

EMS Dehumidification Enabled

- Description: This is the SNVT in which the EMS can enable the dehumidification function, assuming the equipment has this ability.

- R/W

- NVIDEHENABLE, NVODEHENABLE; SNVT_SWITCH *95*

EMS Economizer Enabled

- Description: This is the SNVT in which the EMS can enable the economizer function, assuming the equipment has this ability.

- R/W

- NVIECONENABLE, NVOECONENABLE; SNVT_SWITCH *95*

EMS Cooling Enabled

- Description: This is the object in which the EMS can enable the cooling function, assuming the equipment has this ability.

- R/W

- NVICOOLENABLE, NVOCOOLENABLE; SNVT_SWITCH *95*

EMS Heating Enabled

- Description: This is the object in which the EMS can enable the heating function, assuming the equipment has this ability.

- R/W

- NVIHEATENABLE, NVOHEATENABLE; SNVT_SWITCH *95*

EMS Room Setpoint

- Description: This is the object in which the EMS can adjust the room setpoint to control a 0 to 10v output to Y2, only special programs will have this function, see the wiring diagram for control from Y2.
- R/W
- NVIROOMSETPT, NVOROOM SETPOINT; SNVT_TEMP_P *105*

CONTROL MODE

Primary Application Mode

- Description: This variable indicates the current operating mode (heating, cooling or economizer) for the primary control process.
- Read only
- NVOPRIAPPMODE; SNVT_COUNT *8*
- Return value: None, Heat, Economizer, Cool

Unit On / Off Status

- Description: This SNVT indicates the unit on/off status.
- Read only
- NVOUNITSTATUS; SNVT_COUNT *8*
- Return value: On or Off

TEMPERATURE SENSORS

The temperature sensors can be configured to read either Fahrenheit or Celsius by entering a password under SERVICE.

Ambient Temperature

- Description: Outdoor ambient temperature sensor, generally located in the outside air inlet.
- Read only
- NVOAMBT; SNVT_TEMP_P *105*
- Sensor range: -58 to 302 °F -50 to 150 °C

Discharge Air Temperature

- Description: Primary leaving air discharge air sensor.
- Read only
- NVODISCHT; SNVT_TEMP_P *105*
- Sensor range: -58 to 302 °F -50 to 150 °C

Secondary Discharge Temperature Sensor

- Description: Multiple use sensor. If used, confirm its operation with the wiring diagram and unit function. Uses include, but are not limited to:
 - Not used
 - Used as a secondary discharge temperature sensor.
 - Room temperature sensor.
 - Return air temperature sensor.
 - Cold deck temperature sensor.
 - Dehumidification precool sensor.
- Read only
- NVOSECDISCHT; SNVT_TEMP_P *105*
- Sensor range: -58 to 302 °F -50 to 150 °C

Discharge Air Temperature Setpoint

- Description: This is the actual controlling discharge air temperature set point after all the set point offsets and resets have been applied or it will equal the EMS PRIMARY SETPOINT.
- Read only
- NVODISCHSET; SNVT_TEMP_P *105*
- Set point range: Upper and lower set point limits have been preprogrammed into the C-TRAC3. Depending on the application, different limits may have been programmed for heating and economizer/mechanical cooling functions. Consult the unit function.



The EMS setpoint will equal the discharge setpoint if there are no reset signals being implemented.

BLOWER OPERATION

Blower Status

- Read Only
- NVOBLOWERSTATUS; SNVT_SWITCH *95*
- Return value: On / Off

COOLING

Cooling Status – Mechanical Cooling On / Off

- Read Only
- NVOCOOLSTATUS; SNVT_SWITCH *95*
- Return value: On / Off

Cooling Stages % On

- Description: Indicates the percentage of total stages of mechanical cooling that is being commanded to operate. To know the exact number of compressors running, additional decoding is required based on total number of cooling stages in the unit.
- Read only
- NVOCLSTAGEON; SNVT_LEV_PERCENT *81*
- Return value: 0 to 100%

Cooling Modulated Output

- Description: Indicates the level of modulating cooling output for mechanical cooling or chilled water.
- Read only
- NVOCLMODON; SNVT_LEV_PERCENT *81*
- Return value: 0-100%

ECONOMIZER / DAMPERS

Damper Minimum Position

- Description: Indicates the required minimum position volume setpoint. The minimum position is normally set by the BACnet EMS, but may be preset by the face mounted C-TRAC3 pot, remote pot, 0-10Vdc control signal or PDA.
- Read only
- NVODPRMINPOS; SNVT_LEV_PERCENT *81*
- Return value: 0-100%

Damper Contact DM Closed

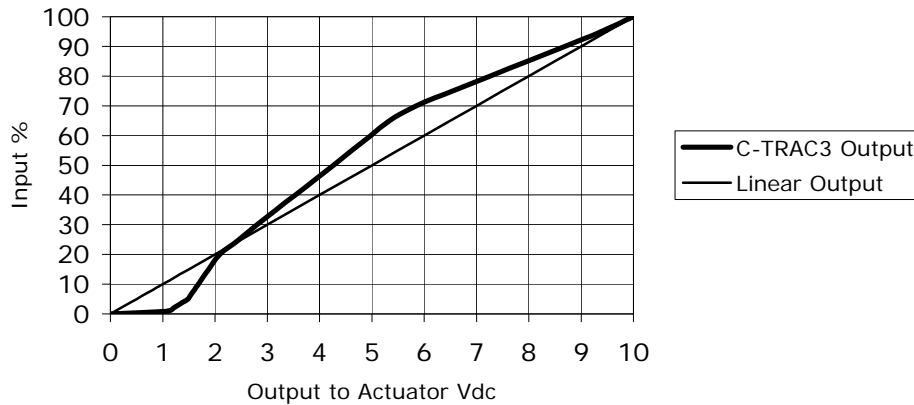
- Description: Binary output DM closed. Normally this output is used for enabling a 2 position damper actuator. Refer to the wiring diagram and unit function to determine.
- Read Only
- NVOECONDAMPER; SNVT_SWITCH *95*
- Return value: On / Off

Damper % Open

- Description: Indicates the economizer output position in percentage. This number may not exactly match the economizer minimum position setpoint. The C-TRAC3 will modify the output to the damper actuator for a number of reasons. The airflow across a set of dampers does not increase linearly as the dampers open. For example, if the dampers are open 50%, the actual airflow is not 50%, but more like 70%. The C-TRAC3 has a preprogrammed 'damper linearization curve' to account for this to give a more accurate reflection of airflow volume. The low limit function will also reduce the minimum position if the discharge air temperature approaches the low limit setpoint (if used).

- Read only
- NVODPROPEN; SNVT_LEV_PERCENT *81*
- Return value: 0 to 100%

C-TRAC3 Damper Linearization Curve



Additionally, ambient compensation may be implemented to account for the thermal expansion of the cold outside air as it passes over the heat exchanger. Makeup air equipment typically uses a two position damper actuator, however, a modulating actuator may also be used. The modulating output from the C-TRAC3 to the actuator will decrease from 10Vdc to 5Vdc as the ambient temperature falls from 70°F (21°C) to -20°F (-30°C).

UNIT MODES

Economizer Mode - Terminal E

- Description: Status of 24Vac input to disable economizer or mix box operation, usually wired from external safeties or controls. Refer to the wiring diagram and unit function to determine.
- Read only
- NVOECONMODE; SNVT_SWITCH *95*
- Return value: On / Off

Heating Mode - Terminal HS

- Description: Status of 24Vac input to disable the heating, usually wired from external safeties or controls. Refer to the wiring diagram and unit function to determine.
- Read only
- NVOHEATMODE; SNVT_SWITCH *95*
- Return value: On / Off

Occupied Mode - Terminal FS

- Description: Status of 24Vac input to enable occupied operation, usually wired from external safeties or controls. Refer to the wiring diagram and unit function to determine.
- Read only
- NVOOCCUPIED; SNVT_SWITCH *95*
- Return value: On / Off

HEATING

Heating Modulating % Output

- Description: Displays the voltage output to the heating device.
- Read only
- NVOHTMODON; SNVT_LEV_PERCENT *81*
- Return value: 0-100%

Heating Status

- Read Only
- NVOHEATSTATUS; SNVT_SWITCH *95*
- Return value: On / Off

ALARMS

Discharge Air Low Limit

- Description: When the discharge air temperature falls below the discharge air low limit, this point will go into alarm.
- Read only
- NVODTLOWLIMIT; SNVT_SWITCH *95*
- Return value: On / Off

Heating Lockout

- Read Only
- NVOHTLOCKOUT; SNVT_SWITCH *95*
- Return value: On / Off

UNOCCUPIED OPERATION

The C-TRAC3 controller may have a preprogrammed unoccupied mode, with the EMS used only for monitoring. Refer to the C-TRAC3 IOM manual for more information. Normally, however, the LON head end will initiate the event. This would typically include provisions for night heat only, however night cooling can be allowed in a similar fashion:

- Disable the economizer to minimum position.
- Set the minimum position to 0%.
- Set the discharge air temperature.
- Enable the unit.

MORNING WARM-UP OPERATION

Similar to unoccupied mode, morning warm up may also be accomplished through the LON head-end program for a preset amount of time.

- Disable the economizer to minimum position.
- Set the minimum position to 0%.
- Set the discharge air temperature to maximum.
- Enable the unit.

SNVT INDEX

Description	SNVT Type	Page
Ambient Temperature	NVOAMBT; SNVT_TEMP_P *105*	8
Blower Status	NVOBLOWERSTATUS; SNVT_SWITCH *95*	9
Cooling Mode - A	NVOCOOLMODE; SNVT_SWITCH *95*	11
Cooling Modulated Output	NVOCLMODON; SNVT_LEV_PERCENT *81*	10
Cooling Stages % On	NVOCLSTAGEON; SNVT_LEV_PERCENT *81*	10
Cooling Status – Mech Cool On/Off	NVOCOOLSTATUS; SNVT_SWITCH *95*	10
Damper % Open	NVODPROPEN; SNVT_LEV_PERCENT *81*	11
Damper Contact DM closed	NVOECONDAMPER; SNVT_SWITCH *95*	10
Damper Minimum Position	NVODPRMINPOS; SNVT_LEV_PERCENT *81*	10
Discharge Air Temperature	NVODISCHT; SNVT_TEMP_P *105*	9
Discharge Air Temperature Setpoint	NVODISCHSET; SNVT_TEMP_P *105*	9
Economizer Mode - E	NVOECONMODE; SNVT_SWITCH *95*	12
EMS Cooling Enabled	NVICOOLENABLE, NVOCOOLENABLE; SNVT_SWITCH *95*	8
EMS Damper Minimum Position	NVIEMSDPRMINPOS, NVOEMSDPRNMINPOS; SNVT_LEV_PERCENT *81*	7
EMS Dehumidification Enabled	NVIDEHENABLE, NVODEHENABLE; SNVT_SWITCH *95*	7
EMS Discharge Air Setpoint	NVIEMSDTSET, NVOEMSDTSET; SNVT_TEMP_P *105*	7
EMS Economizer Enabled	NVIECONENABLE, NVOECONENABLE; SNVT_SWITCH *95*	8
EMS Heating Enabled	NVIHEATENABLE, NVOHEATENABLE; SNVT_SWITCH *95*	8
EMS Secondary Discharge Setpoint	NVIEMSSECDTSET, NVOEMSSECDTSET; SNVT_TEMP_P *105*	7
EMS Unit Command On/Off	NVIUNITONOFF, NVOUNITONOFF; SNVT_SWITCH *95*	7
EMS Room Setpoint	NVIROOMSETPOINT, NVOROOMSETPOINT; SNVT_TEMP_P *105*	7
Heating Mode - HS	NVOHEATMODE; SNVT_SWITCH *95*	12
Heating Modulating % Output	NVOHTMODON; SNVT_LEV_PERCENT *81*	12
Heating Status	NVOHEATSTATUS; SNVT_SWITCH *95*	12
Occupied Mode - FS	NVOOCCUPIED; SNVT_SWITCH *95*	12
Primary Application Mode	NVOPRIAPPMODE; SNVT_COUNT *8*	8
Secondary Discharge Sensor	NVOSECDISCHT; SNVT_TEMP_P *105*	8
Unit On/Off Status	NVOUNITSTATUS; SNVT_COUNT *8*	8
Discharge Air Low Limit	NVODTLOWLIMIT; SNVT_SWITCH *95*	12
Heating Lockout	NVOHTLOCKOUT; SNVT_SWITCH *95*	12

ADDITIONAL INPUT/ OUTPUT POINTS THAT ARE NOT PART OF THIS MANUAL

If additional status points are added to the controller the description can be found in the unit function on the electrical data sheets. The terminal # on the controller relates to the following Lon SNVT.

BI-1 =NVOAIN1 BI-2 =NVOAIN2 BI-3 =NVOAIN3
BI-4 =NVOAIN4 BI-5 =NVOAIN5 BI-6 =NVOAIN6

ID-1 =NVODIN1 ID-2 =NVODIN2 ID-3 =NVODIN3
ID-4 =NVODIN4

Y-1 =NVIAOUT1 / NVOAOUT1 Y-2 =NVIAOUT2 / NVOAOUT 2

C-1 =NVIRELAY1 / NVORELAY1 C-2 =NVIRELAY2 / NVORELAY2
C-3 =NVIRELAY3 / NVORELAY3 C-4 =NVIRELAY4 / NVORELAY4

file: T:\Engineered Air\USEA2_SIOS\Production_EngA\EngineeredAir\Gateway\LON.XIF

generated by APC Revision 2.74, XIF Version 3.1

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ver 1.5

90:00:94:82:00:0A:04:0A

2 15 0 62 0 3 3 3 3 3 11 9 2 4 0 0 3 6 1 1 128

0 5 12 13 28 519 0 15 5 3 326 4

1 7 1 0 4 4 4 15 200 0

78125 0 0 0 0 0 0 0 0 0 0

90 0 240 0 0 0 40 40 0 5 8 5 12 14 15

*

";PCOx0000F0 Carel Custom table si12

VAR xif_data 0 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

0 * 4

2 0 0 0 0

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

VAR rd_prmt 1 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

0 * 4

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

2 0 0 1 0

VAR wr_cmnd 2 0 0 0

0 1 63 0 0 1 0 1 0 1 0 0 0

*

0 * 4

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

2 0 0 1 0

VAR nviEmsDtSet 3 0 0 0

0 1 63 0 0 1 0 1 0 1 0 0 0

*

105 * 1

2 0 0 1 0

VAR nviEmsSecDtSet 4 0 0 0

0 1 63 0 0 1 0 1 0 1 0 0 0

*

105 * 1

2 0 0 1 0

VAR nviRoomSetpt 5 0 0 0

```
0 1 63 0 0 1 0 1 0 1 0 0 0
*
105 * 1
2 0 0 1 0
VAR nviaout2 6 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0
*
44 * 1
2 0 0 1 0
VAR nviaout1 7 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0
*
44 * 1
2 0 0 1 0
VAR nviEmsDprMinPos 8 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0
*
8 * 1
2 0 0 0 0
VAR nviRelay1 9 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nviRelay2 10 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nviRelay3 11 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nviUnitOnOff 12 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nviDehEnable 13 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nviEconEnable 14 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0
```


*

95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nviCoolEnable 15 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0

*

95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nviHeatEnable 16 0 0 0
0 1 63 0 0 1 0 1 0 1 0 0 0

*

95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoain1 17 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0

*

105 * 1
2 0 0 1 0
VAR nvoain2 18 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0

*

105 * 1
2 0 0 1 0
VAR nvoain3 19 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0

*

105 * 1
2 0 0 1 0
VAR nvoain4 20 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0

*

105 * 1
2 0 0 1 0
VAR nvoain5 21 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0

*

105 * 1
2 0 0 1 0
VAR nvoain6 22 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0

*

105 * 1
2 0 0 1 0
VAR nvoDprMinPos 23 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0

*

81 * 1
2 0 0 1 0

VAR nvoCIStageOn 24 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
81 * 1
2 0 0 1 0
VAR nvoCIModOn 25 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
81 * 1
2 0 0 1 0
VAR nvoDprOpen 26 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
81 * 1
2 0 0 1 0
VAR nvoHtModOn 27 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
81 * 1
2 0 0 1 0
VAR nvoEmsDtSet 28 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
105 * 1
2 0 0 1 0
VAR nvoEmsSecDtSet 29 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
105 * 1
2 0 0 1 0
VAR nvoAmb_T 30 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
105 * 1
2 0 0 1 0
VAR nvoDischT 31 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
105 * 1
2 0 0 1 0
VAR nvoSecDischT 32 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
105 * 1
2 0 0 1 0
VAR nvoDischTSet 33 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
105 * 1
2 0 0 1 0
VAR nvoRoomSetpt 34 0 0 0

```
0 1 63 1 0 1 0 1 0 1 0 0 0
*
105 * 1
2 0 0 1 0
VAR nvoPriAppMode 35 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
8 * 1
2 0 0 0 0
VAR nvoaout1 36 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
44 * 1
2 0 0 1 0
VAR nvoaout2 37 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
44 * 1
2 0 0 1 0
VAR nvoUnitStatus 38 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
8 * 1
2 0 0 0 0
VAR nvoEmsDprMinPos 39 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
8 * 1
2 0 0 0 0
VAR nvoRelay1 40 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoRelay2 41 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvodin1 42 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoOccupied 43 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
```

1 0 0 0 0
1 0 0 1 0
VAR nvoCoolMode 44 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoEconMode 45 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoHeatMode 46 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoRelay3 47 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoBlowerStatus 48 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoEconDamper 49 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoDtLowLimit 50 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoHtLockout 51 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0
VAR nvoHeatStatus 52 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

95 * 2

1 0 0 0 0

1 0 0 1 0

VAR nvoUnitOnOff 53 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

95 * 2

1 0 0 0 0

1 0 0 1 0

VAR nvoDehEnable 54 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

95 * 2

1 0 0 0 0

1 0 0 1 0

VAR nvoEconEnable 55 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

95 * 2

1 0 0 0 0

1 0 0 1 0

VAR nvoCoolEnable 56 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

95 * 2

1 0 0 0 0

1 0 0 1 0

VAR nvoHeatEnable 57 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

95 * 2

1 0 0 0 0

1 0 0 1 0

VAR nvoCoolStatus 58 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

95 * 2

1 0 0 0 0

1 0 0 1 0

VAR nvodin2 59 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

95 * 2

1 0 0 0 0

1 0 0 1 0

VAR nvodin3 60 0 0 0

0 1 63 1 0 1 0 1 0 1 0 0 0

*

95 * 2

1 0 0 0 0
1 0 0 1 0
VAR nvodin4 61 0 0 0
0 1 63 1 0 1 0 1 0 1 0 0 0
*
95 * 2
1 0 0 0 0
1 0 0 1 0

NOTES