



**neptronic®**

## **EVCB44N Series**

### **Modbus Communication Module User Guide**



**EVCB44NIT0S**  
**EVCB44NDT0S**

(0 TRIACS / pressure independent)  
(0 TRIACS / pressure dependent)





## Introduction

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The EVCB44N Series Modbus Communication Module User Guide provides information for using Neptronic® communication feature. The controller uses Modbus communication protocol over serial line in the RTU mode and provides a Modbus network interface between client devices and Neptronic EVCB44N Series devices.

The EVCB44N Series Modbus Guide assumes that you are familiar with Modbus terminology.

The following are the requirements for Modbus:

- **Data Model.** The EVCB Modbus server data model uses only the Holding Registers table.
- **Function Codes.** The EVCB Modbus server supports a limited function codes subset comprising:
  - Read Holding Registers (0x03)
  - Write Single Register (0x06)
  - Write Multiple Registers (0x10)
- **Exception Responses.** The EVCB Modbus server supports the following exception codes:
  - Illegal data address
  - Illegal data value
  - Slave device busy
- **Serial Line.** The EVCB Modbus over serial line uses RTU transmission mode over a two-wire configuration RS485 (EIA/TIA-485 standard) physical layer.
  - The physical layer can use fixed baud rate selection or automatic baud rate detection (default) as per the **Modbus Auto Baud Rate** device menu item or holding register index 1.
  - The supported baud rates are 9600, 19200, 38400, and 57600.
  - The physical layer also supports variable parity control and stop bit configuration as per the **Modbus Comport Config** device menu item or holding register index 2.
  - In auto baud rate configuration, if the device detects only consecutive bad frames (2 or more) for one second with any given baud rate, it will reinitialize itself to the next baud rate.
- **Addressing.** The EVCB device only answers at the following address:
  - The device's unique address (1 to 246) that can be set through the device menu or through holding register index 0.

# Holding Registers Table

## Table Glossary

| Name       | Description                                                            | Name  | Description                                       |
|------------|------------------------------------------------------------------------|-------|---------------------------------------------------|
| W          | Writable Register                                                      | ASCII | For registers containing ASCII (8-bit) characters |
| RO         | Read Only Register                                                     | MSB   | Most Significant Byte                             |
| Unsigned   | For range of values from 0 to 65,535, unless otherwise specified       | LSB   | Least Significant Byte                            |
| Signed     | For range of values from -32,768 to 32,767, unless otherwise specified | MSW   | Most Significant Word                             |
| Bit String | For registers with multiple values using bit mask (example, flags)     | LSW   | Least Significant Word                            |

## Holding Register Table

| Protocol Address | Convention Notation | Description                                    | Data Type                    | Range                                                                                                       | Writable |
|------------------|---------------------|------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------|----------|
| 0                | 40001               | Modbus Address and Product Type.               | Unsigned                     | MSB = Product type (e.g. 111 for EVCB44)<br>LSB = Modbus Address (e.g. 1-246)                               | W        |
| 1                | 40002               | MSTP Baud Rate.                                | Unsigned<br><i>Scale 100</i> | 0, 9600, 19200, 38400, or 57600<br>0 = Auto Baud Rate Detection<br><i>Value/100 (e.g. 38400 baud = 384)</i> | W        |
| 2                | 40003               | Modbus Slave Communication Port Configuration. | Unsigned                     | 1= No parity, 2 Stop bits<br>2= Even parity, 1 stop bit<br>3= Odd parity, 1 stop bit                        | W        |
| 3                | 40004               | Product Name (characters 8 & 7).               | ASCII                        | 1 to 65,535      char 8: 0x53 = S      char 7: 0x00 =                                                       | W        |
| 4                | 40005               | Product Name (characters 6 & 5).               | ASCII                        | 1 to 65,535      char 6: 0x49 = I      char 5: 0x34 = 4                                                     | W        |
| 5                | 40006               | Product Name (characters 4 & 3).               | ASCII                        | 1 to 65,535      char 4: 0x42 = B      char 3: 0x4E = N                                                     | W        |
| 6                | 40007               | Product Name (characters 2 & 1).               | ASCII                        | 1 to 65,535      char 2: 0x45 = E      char 1: 0x56 = V                                                     | W        |
| 7                | 40008               | Product actual firmware version.               | Unsigned                     | 1 to 65,535 (e.g. 512)                                                                                      | RO       |



| Protocol Address | Convention Notation | Description                                                                                                                                   | Data Type                    | Range                                                                                                                                                                                                                                        | Writable |
|------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 8                | 40009               | Product actual EEPROM version.                                                                                                                | Unsigned                     | 1 to 65535 (e.g. 203)                                                                                                                                                                                                                        | RO       |
| 9                | 40010               | System Status 1.                                                                                                                              | Bit String                   | <b>B0 – B11: Reserved</b><br><br><b>B12: CO2 alarm</b><br><i>0 = Normal; 1 = Alarm</i><br><br><b>B13: Pressure mode (actual status)</b><br><i>0 = Independent; 1 = Dependent</i><br><br><b>B14: Air Flow</b><br><i>0 = Normal; 1 = Error</i> | RO       |
| 10               | 40011               | System Status 2.                                                                                                                              | Bit String                   | [B0, B1, B3-B11, B13-B14]: Reserved<br><br><b>B2: Airflow Detected</b><br><i>0 = No airflow detected, 1 = Airflow detected</i><br><br><b>B12: Alarm override</b><br><i>0 = Normal; 1 = Alarm</i>                                             | RO       |
| 11               | 40012               | Internal Temperature reading from digital room sensor.                                                                                        | Unsigned<br><i>Scale 100</i> | 0 to 5000<br><i>Value x 100 (e.g. 23°C = 2300)</i>                                                                                                                                                                                           | RO       |
| 12               | 40013               | External Temperature reading from AI1. See reg 40108.                                                                                         | Signed<br><i>Scale 100</i>   | -4000 to 10000<br><i>Value x 100 (e.g. 18°C = 1800)</i>                                                                                                                                                                                      | RO       |
| 13               | 40014               | Change Over Temperature reading from AI1. See reg 40108.                                                                                      | Signed<br><i>Scale 100</i>   | -4000 to 10000<br><i>Value x 100 (e.g. 18°C = 1800)</i>                                                                                                                                                                                      | RO       |
| 14               | 40015               | Optional relative humidity reading from digital room sensor on designated models. If not available, the value will be fixed to 0x7FFF (32767) | Unsigned<br><i>Scale 10</i>  | 0 to 1000<br><i>Value x 10 (e.g. 45%RH = 450)</i>                                                                                                                                                                                            | RO       |
| 15               | 40016               | Integrated pressure sensor reading on EVCB44N models.                                                                                         | Unsigned<br><i>Scale 10</i>  | 0 to 2500<br><i>Value x 10 (e.g. 10 Pa = 100)</i>                                                                                                                                                                                            | RO       |
| 16               | 40017               | Analog input 1 value.                                                                                                                         | Unsigned<br><i>Scale 100</i> | 0 to 1000<br><i>Value x 100 (e.g. 2 V = 200)</i>                                                                                                                                                                                             | RO       |
| 17               | 40018               | <i>Reserved address space</i>                                                                                                                 |                              |                                                                                                                                                                                                                                              |          |



| Protocol Address | Convention Notation | Description                                                                                                                                                        | Data Type             | Range                                                 | Writable |
|------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------|----------|
| 18               | 40019               | CO2 reading in ppm, either from digital room sensor on designated models or reading from AI1 as per reg 40159 "System Options 3" bit 3 "CO2 Control Source" value. | Unsigned<br>Scale 100 | 100 to reg 40099<br>Value x 100 (e.g. 5 ppm = 500)    | RO       |
| 19               | 40020               | Air supply temperature reading from AI1.<br>See reg 40108.                                                                                                         | Signed<br>Scale 100   | -4000 to 10000<br>Value x 100 (e.g. 5°C = 500)        | RO       |
| 20               | 40021               | Control temperature.                                                                                                                                               | Signed<br>Scale 100   | -4000 to 10000<br>Value x 100 (e.g. 25°C = 2500)      | W        |
| 21               | 40022               | Heating demand for heating ramp 1.                                                                                                                                 | Unsigned<br>Scale 10  | 0 to 1000<br>Value x 10 (e.g. 25% = 250)              | RO       |
| 22               | 40023               | Cooling demand for cooling ramp 1.                                                                                                                                 | Unsigned<br>Scale 10  | 0 to 1000<br>Value x 10 (e.g. 25% = 250)              | RO       |
| 23               | 40024               | Temperature offset applied on internal temperature.                                                                                                                | Signed<br>Scale 100   | -500 to 500<br>Value x 100 (e.g. 0.5°C = 50)          | W        |
| 24               | 40025               | Temperature offset applied on external temperature.                                                                                                                | Signed<br>Scale 100   | -500 to 500<br>Value x 100 (e.g. 0.5°C = 50)          | W        |
| 25               | 40026               | Temperature setpoint used during the occupancy period of the day.                                                                                                  | Unsigned<br>Scale 10  | Range: 40027 to 40028<br>Value x 10 (e.g. 20°C = 200) | W        |
| 26               | 40027               | Minimum temperature setpoint used during the day.                                                                                                                  | Unsigned<br>Scale 10  | Range: 100 to 40028<br>Value x 10 (e.g. 10°C = 100)   | W        |
| 27               | 40028               | Maximum temperature setpoint used during the day.                                                                                                                  | Unsigned<br>Scale 10  | Range: 40027 to 400<br>Value x 10 (e.g. 40°C = 400)   | W        |
| 28               | 40029               | Cooling setpoint during No Occupancy / Night Set Back                                                                                                              | Unsigned<br>Scale 10  | Range: 40030 to 400<br>Value x 10 (e.g. 22°C = 220)   | W        |
| 29               | 40030               | Heating setpoint during No Occupancy / Night Set Back                                                                                                              | Unsigned<br>Scale 10  | Range: 100 to 40029<br>Value x 10 (e.g. 16°C = 160)   | W        |
| 30               | 40031               | Cooling demand for proportional band 1.                                                                                                                            | Unsigned<br>Scale 10  | 5 to 50<br>Value x 10 (e.g. 0.3°C = 3)                | W        |



| Protocol Address | Convention Notation | Description                                  | Data Type            | Range                                             | Writable |
|------------------|---------------------|----------------------------------------------|----------------------|---------------------------------------------------|----------|
| 31               | 40032               | Heating demand for proportional band 1.      | Unsigned<br>Scale 10 | 5 to 50<br><i>Value x 10 (e.g. 0.3°C = 3)</i>     | W        |
| 32               | 40033               | Cooling dead band for proportional band 1.   | Unsigned<br>Scale 10 | 0 to 50<br><i>Value x 10 (e.g. 0.3°C = 3)</i>     | W        |
| 33               | 40034               | Heating dead band for proportional band 1.   | Unsigned<br>Scale 10 | 0 to 50<br><i>Value x 10 (e.g. 0.3°C = 3)</i>     | W        |
| 34               | 40035               | Changeover temperature setpoint.             | Unsigned<br>Scale 10 | 100 to 400<br><i>Value x 10 (e.g. 12°C = 120)</i> | W        |
| 35               | 40036               | Night setback override delay in minutes.     | Unsigned             | 0 to 180 minutes                                  | W        |
| 36               | 40037               | Integral time factor for heating in seconds. | Unsigned             | 0 to 250 seconds                                  | W        |
| 37 to 38         | 40038 to 40039      | <i>Reserved address space</i>                |                      |                                                   |          |
| 39               | 40040               | Occupancy Delay Mode in minutes.             | Unsigned             | 0 to 180 minutes                                  | W        |
| 40               | 40041               | Cooling demand for cooling ramp 2.           | Unsigned<br>Scale 10 | 0 to 1000%<br><i>Value x 10 (e.g. 30% = 300)</i>  | RO       |
| 41               | 40042               | Proportional band for cooling ramp 2.        | Unsigned<br>Scale 10 | 5 to 50<br><i>Value x 10 (e.g. 0.2°C = 2)</i>     | W        |
| 42               | 40043               | Dead band for cooling ramp 2.                | Unsigned<br>Scale 10 | 0 to 50<br><i>Value x 10 (e.g. 0.2°C = 2)</i>     | W        |
| 43               | 40044               | Heating demand for heating ramp 2.           | Unsigned<br>Scale 10 | 0 to 1000%<br><i>Value x 10 (e.g. 30% = 300)</i>  | W        |
| 44               | 40045               | Proportional band for heating ramp 2.        | Unsigned<br>Scale 10 | 5 to 50<br><i>Value x 10 (e.g. 0.2°C = 2)</i>     | W        |
| 45               | 40046               | Dead band for heating ramp 2.                | Unsigned<br>Scale 10 | 0 to 50<br><i>Value x 10 (e.g. 0.2°C = 2)</i>     | W        |
| 46               | 40047               | Changeover demand for the VAV box.           | Unsigned<br>Scale 10 | 0 to 1000%<br><i>Value x 10 (e.g. 30% = 300)</i>  | RO       |



| Protocol Address                                                                                                                                                                                                                                                                                         | Convention Notation | Description                                                                                                                 | Data Type            | Range                                                               | Writable |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------|----------|
| 47                                                                                                                                                                                                                                                                                                       | 40048               | Changeover proportional band: the range in which the controller modulates the cooling and heating output from 0 to 100%.    | Unsigned<br>Scale 10 | 5 to 50<br><i>Value x 10 (e.g. 0.2°C = 2)</i>                       | W        |
| 48                                                                                                                                                                                                                                                                                                       | 40049               | Changeover deadband: the range at which the controller takes no action when the temperature is above or below the setpoint. | Unsigned<br>Scale 10 | 0 to 50<br><i>Value x 10 (e.g. 0.2°C = 2)</i>                       | W        |
| 49                                                                                                                                                                                                                                                                                                       | 40050               | AO1 min Vdc: minimum voltage of analog output 1.                                                                            | Unsigned<br>Scale 10 | Range: 0 to reg. 40052<br><i>Value x 10 (e.g. 2 Volts = 20)</i>     | W        |
| 50                                                                                                                                                                                                                                                                                                       | 40051               | <i>Reserved address space</i>                                                                                               |                      |                                                                     |          |
| 51                                                                                                                                                                                                                                                                                                       | 40052               | AO1 max Vdc: maximum voltage of analog output 1.                                                                            | Unsigned<br>Scale 10 | Range: reg. 40050 to 100<br><i>Value x 10 (e.g. 10 Volts = 100)</i> | W        |
| 52                                                                                                                                                                                                                                                                                                       | 40053               | <i>Reserved address space</i>                                                                                               |                      |                                                                     |          |
| * = The minimum and maximum voltages correspond to 0 to 100% demand. The minimum voltage is always applied to the output. The maximum voltage is applied when the demand reaches 100%. For reheat applications, we recommend leaving the minimum voltage at 0Vdc to avoid heating when the demand is 0%. |                     |                                                                                                                             |                      |                                                                     |          |
| 53                                                                                                                                                                                                                                                                                                       | 40054               | Time of numerical filter of delta pressure in seconds.                                                                      | Unsigned             | 1 to 10 seconds                                                     | W        |
| 54                                                                                                                                                                                                                                                                                                       | 40055               | Factor of $V=K*\sqrt{dP}$ , where $dP = 1$ .<br>Only available on pressure independent model EVCB44NIT0S.                   | Unsigned             | Range: 100 to 9995 CFM                                              | W        |
| 55                                                                                                                                                                                                                                                                                                       | 40056               | Minimum air flow for cooling.<br>Only available on pressure independent model EVCB44NIT0S.                                  | Unsigned             | Range: 0 or (12.7%) Kfac to reg 40057 CFM                           | W        |
| 56                                                                                                                                                                                                                                                                                                       | 40057               | Maximum air flow for cooling.<br>Only available on pressure independent model EVCB44NIT0S.                                  | Unsigned             | Range: reg 40056 to reg 40055 CFM                                   | W        |
| 57                                                                                                                                                                                                                                                                                                       | 40058               | Minimum air flow for heating.<br>Only available on pressure independent model EVCB44NIT0S.                                  | Unsigned             | Range: 0 or (12.7%) Kfac to reg 40059 CFM                           | W        |
| 58                                                                                                                                                                                                                                                                                                       | 40059               | Maximum air flow for heating.<br>Only available on pressure independent model EVCB44NIT0S.                                  | Unsigned             | Range: reg 40058 to reg 40055 CFM                                   | W        |
| 59                                                                                                                                                                                                                                                                                                       | 40060               | Integral time factor of air flow in minutes.<br>Only available on pressure independent model EVCB44NIT0S.                   | Unsigned             | 0 to 60 minutes                                                     | W        |
| 60                                                                                                                                                                                                                                                                                                       | 40061               | Actual air flow converted from delta pressure sensor.<br>Only available on pressure independent model EVCB44NIT0S.          | Unsigned             | Range: 0 to reg 40055 CFM                                           | RO       |



| Protocol Address | Convention Notation | Description                                                                                                                                                                                              | Data Type            | Range                                                                       | Writable |
|------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------|----------|
| 61               | 40062               | Air flow calculated from system demand.<br>Only available on pressure independent model EVCB44NIT0S.                                                                                                     | Unsigned             | Range: 0 to 9999 CFM                                                        | RO       |
| 62               | 40063               | Configuration value for Air Flow Max used during airflow balancing sequence.<br>Refer to <a href="#">EVCB-Airflow Balance</a> Instructions.<br>Only available on pressure independent model EVCB44NIT0S. | Unsigned             | Range: 0 to 9999 CFM                                                        | W        |
| 63               | 40064               | Analog output 1 value.                                                                                                                                                                                   | Unsigned<br>Scale 10 | Unit: Volt, Range: reg 40050 to reg 40052<br>Value x 10 (e.g. 5 Volts = 50) | W        |
| 64 to 72         | 40065 to 40073      | Reserved address space                                                                                                                                                                                   |                      |                                                                             |          |
| 73               | 40074               | Integral time factor for cooling in seconds.                                                                                                                                                             | Unsigned             | 0 to 250 seconds                                                            | W        |
| 74               | 40075               | Motor position.                                                                                                                                                                                          | Unsigned             | 0 to 100%                                                                   | RO       |
| 75 to 80         | 40076 to 40081      | Reserved address space                                                                                                                                                                                   |                      |                                                                             |          |
| 81               | 40082               | Air flow offset calibration.<br>Refer to <a href="#">EVCB-Airflow Balance</a> Instructions.<br>Only available on pressure independent model EVCB44NIT0S.                                                 | Signed               | 500 to 500 CFM                                                              | W        |
| 82 to 83         | 40083 to 40084      | Reserved address space                                                                                                                                                                                   |                      |                                                                             |          |
| 84               | 40085               | Configuration value for Air Flow Min used during airflow balancing sequence.<br>Refer to <a href="#">EVCB-Airflow Balance</a> Instructions.<br>Only available on pressure independent model EVCB44NIT0S. | Unsigned             | Range: 0 to 9999 CFM                                                        | W        |
| 85 to 95         | 40086 to 40096      | Reserved address space                                                                                                                                                                                   |                      |                                                                             |          |
| 96               | 40097               | Network fallback timeout Present Value in minutes.                                                                                                                                                       | Unsigned             | 0 to 60 minutes                                                             | W        |
| 97               | 40098               | Reserved address space                                                                                                                                                                                   |                      |                                                                             |          |
| 98               | 40099               | Maximum range of the CO2 sensor connected to AI1.                                                                                                                                                        | Unsigned             | 100 to 5000 PPM                                                             | W        |
| 99               | 40100               | Maximum concentration of CO2 before the EVC activates an alarm.                                                                                                                                          | Unsigned             | Range: 100 to the greater ppm value between 2000 and reg 40099.             | W        |



| Protocol Address | Convention Notation | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Data Type  | Range                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                     | Writable |
|------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 100              | 40101               | System Option 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Bit String | <b>B3-B6, B13-B14: Reserved</b><br><br><b>B0: Tstat temperature units</b><br>0 = Celsius; 1 = Fahrenheit<br><br><b>B1: Modbus temperature units</b><br>0 = Celsius; 1 = Fahrenheit<br><br><b>B2: Temperature setpoint lock</b><br>0 = Unlocked; 1 = Locked<br><br><b>B7: Freeze protection</b><br>0 = Disabled; 1 = Enabled | <b>B8: User system off mode</b><br>0 = User can set Tstat to OFF<br>1 = User cannot set Tstat OFF<br><br><b>B9: Keypad bottom left lock</b><br>0 = Unlocked; 1 = Locked<br><br><b>B10:Keypad upper left lock</b><br>0 = Unlocked; 1 = Locked<br><br><b>B11: Keypad arrows lock</b><br>0 = Unlocked; 1 = Locked<br><br><b>B12: Program lock</b><br>0 = Unlocked; 1 = Locked<br><br><b>B15: Schedule</b><br>0 = Disabled; 1 = Enabled | W        |
| 101              | 40102               | System Option 2.<br><br>B15: Configuration value of the fan operation when an output ramp is configured with the option "Fan On". When set to (0) On, the fan is continuously in operation even when EVC is off. When set to (1) Off, the fan turns off during the following conditions: <ul style="list-style-type: none"><li>User System Mode is set to OFF, when in night setback mode, scheduler forces the EVC OFF</li></ul> <sup>Φ</sup> Only available on pressure independent model EVCB44NIT0S. | Bit String | <b>B0-B1, B5-B9, B13-B14: Reserved</b><br><br><b>B2: Auto baud rate detection</b><br>0 = Enabled; 1 = Disabled<br><br><b>B3: Night setback mode</b><br>0 = Tstat ON; 1 = Tstat OFF<br><br><b>B4: AO1 direction</b><br>0 = Direct; 1 = Reverse                                                                               | <b>B10: Display RH<sup>Φ</sup></b><br>0 = No; 1 = Yes<br><br><b>B11: Pressure mode select<sup>Φ</sup></b><br>0 = independent; 1 = dependent<br><br><b>B12: Auto pressure mode<sup>Φ</sup> change</b><br>0 = Enabled; 1 = Disabled<br><br><b>B15: Fan always "on" mode</b><br>0 = Always on;<br>1 = Follow NSB/NoOcc                                                                                                                 | W        |
| 102              | 40103               | Status value of the actual changeover control mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Unsigned   | 0 = Cooling<br>1 = Heating                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                     | RO       |
| 103              | 40104               | System command status.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Unsigned   | 0 = No Command<br>1 = AirFlow 1 Balancing<br>4 = AirFlow 2 Balancing                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                     | W        |
| 104              | 40105               | Reserved address space                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |
| 105              | 40106               | Occupancy or night setback mode commands.                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Unsigned   | 1 = Reserved<br>2 = Off<br>3 = Occupancy<br><br>4 = NoOccupancy<br>5 = Day<br>6 = Night                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                     | W        |



| Protocol Address | Convention Notation | Description                                                                                                                                                                      | Data Type | Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Writable |
|------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 106              | 40107               | <i>Reserved address space</i>                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |
| 107              | 40108               | Analog input 1 signal.<br>* STFL is available only on pressure independent model EVCB44NIT0S.                                                                                    | Unsigned  | 1 = OFF<br>2 = ETS (external temp)<br>3 = SENS (changeover sensor)<br>4 = NoCL (normally cool)<br>5 = NoHT (normally heat)<br>6 = STFL* (setpnt airflow 0-10Vdc)<br>7 = CO2 (carbon dioxide)<br>8 = AST (air supply temp sensor)<br>9 = mor (motor position)<br>10 = EXT50K (external 50KΩ sensor)<br>11 = TSTAT temp sensor (thermostat temperature sensor)<br>12 = TSTAT Setpoint(thermostat setpoint 0-10Vdc)<br>13 = TSTAT Setpoint 2-10V (thermostat setpoint 2-10Vdc) | W        |
| 108              | 40109               | User System Control Mode.                                                                                                                                                        | Unsigned  | 1 = AUTO<br>2 = HEAT<br>3 = COOL<br>4 = OFF                                                                                                                                                                                                                                                                                                                                                                                                                                 | W        |
| 109              | 40110               | Sets the permissions or restrictions to change the system control mode by the user.                                                                                              | Unsigned  | 1 = AUTO<br>2 = HEAT<br>3 = COOL<br>4 = COOL-HEAT<br>5 = AUTO-LOCK                                                                                                                                                                                                                                                                                                                                                                                                          | W        |
| 110              | 40111               | Indicates the status of the Night Setback mode.                                                                                                                                  | Unsigned  | 1 = Day<br>2 = Night<br>3 = Derogation                                                                                                                                                                                                                                                                                                                                                                                                                                      | RO       |
| 111 to 112       | 40112 to 40113      | <i>Reserved address space</i>                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |
| 113              | 40114               | Occupancy status of the zone.                                                                                                                                                    | Unsigned  | 1 = No Occupancy<br>2 = Occupancy<br>3 = Derogation                                                                                                                                                                                                                                                                                                                                                                                                                         | RO       |
| 114              | 40115               | AO1: Analog output 1 control ramp<br>For pressure independent model EVCB44NIT0S, the default value is Hr1.<br>*STFL is available only on pressure independent model EVCB44NIT0S. | Unsigned  | 1 = OFF<br>2 = CR1 (cooling ramp 1)<br>3 = CR2 (cooling ramp 2)<br>4 = HR1 (heating ramp 1)<br>5 = HR2 (heating ramp 2)<br>6 = ArFL (airflow reading)<br>7 = CO2 (carbon dioxide)<br>8 = STFL* (setpnt airflow 0-10Vdc)<br>9 – 11 = reserved<br>12 = Fan Auto (follow demand)<br>13 = Fan On (always on)                                                                                                                                                                    | W        |
| 115 to 124       | 40116 to 40125      | <i>Reserved address space</i>                                                                                                                                                    |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |



| Protocol Address | Convention Notation | Description                                                                                                                                                | Data Type | Range                                                                                                                                            |                                                                                                                                               | Writable |
|------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 125              | 40126               | Motor ramp: Configuration of the ramp used to modulate the actuator based on demand.<br>*STFL is available only on pressure independent model EVCB44NIT0S. | Unsigned  | 1 = reserved<br>2 = CR1 (cooling ramp 1)<br>3 = CR2 (cooling ramp 2)<br>4 = HR1 (heating ramp 1)<br>5 = HR2 (heating ramp 2)<br>6 – 7 = reserved | 8 = STFL* (setpnt airflow 0-10Vdc)<br>9 = COR (changeover ramp)<br>10 = CH1 (cool/heat 1)<br>11 = ANLG (analog 0-10Vdc)<br>12 – 13 = reserved | W        |
| 126              | 40127               | Changeover control mode status that indicates the source of changeover values.                                                                             | Unsigned  | 1 = Local<br>2 = Cooling<br>3 = Heating                                                                                                          |                                                                                                                                               | W        |
| 127 to 129       | 40128 to 40130      | <i>Reserved address space</i>                                                                                                                              |           |                                                                                                                                                  |                                                                                                                                               |          |
| 130              | 40131               | Selected temperature control source (in Programming mode).                                                                                                 | Unsigned  | 1 = Internal Temperature<br>2 = External Temperature<br>3 = Remote Temperature                                                                   | 4 = Average Temperature<br>5 = Maximum Temperature                                                                                            | W        |
| 131              | 40132               | Airflow balance mode enter the balancing mode to adjust air flow factor.                                                                                   | Unsigned  | 1 = Close<br>2 = Minimum Flow                                                                                                                    | 3 = Maximum Flow<br>4 = Full Open                                                                                                             | W        |
| 132              | 40133               | <i>Reserved address space</i>                                                                                                                              |           |                                                                                                                                                  |                                                                                                                                               |          |
| 133              | 40134               | Configuration to set the motor position in night setback mode.                                                                                             | Unsigned  | 1 = Auto<br>2 = Open                                                                                                                             |                                                                                                                                               | W        |
| 134              | 40135               | <i>Reserved address space</i>                                                                                                                              |           |                                                                                                                                                  |                                                                                                                                               |          |
| 135              | 40136               | Floating time 2: Time in seconds required by the actuator to complete a 90° run.                                                                           | Unsigned  | 15 to 250 seconds                                                                                                                                |                                                                                                                                               | W        |
| 136              | 40137               | Minimum motor position in percentage of stroke for cooling.                                                                                                | Unsigned  | 0 to 100%                                                                                                                                        |                                                                                                                                               | W        |
| 137              | 40138               | Minimum motor position in percentage of stroke for heating.                                                                                                | Unsigned  | 0 to 100%                                                                                                                                        |                                                                                                                                               | W        |
| 138              | 40139               | Airflow Hysteresis Stop in percentage.                                                                                                                     | Unsigned  | 1 to 100%                                                                                                                                        |                                                                                                                                               | W        |
| 139              | 40140               | Airflow Hysteresis Start in percentage.                                                                                                                    | Unsigned  | reg 40139 to 100%                                                                                                                                |                                                                                                                                               | W        |
| 140              | 40141               | Airflow scale.                                                                                                                                             | Unsigned  | 1 = Scale1<br>2 = Scale10<br>3 = Scale100                                                                                                        |                                                                                                                                               | W        |
| 141              | 40142               | Airflow fault deadband in percentage                                                                                                                       | Unsigned  | 1 to 30%                                                                                                                                         |                                                                                                                                               | W        |

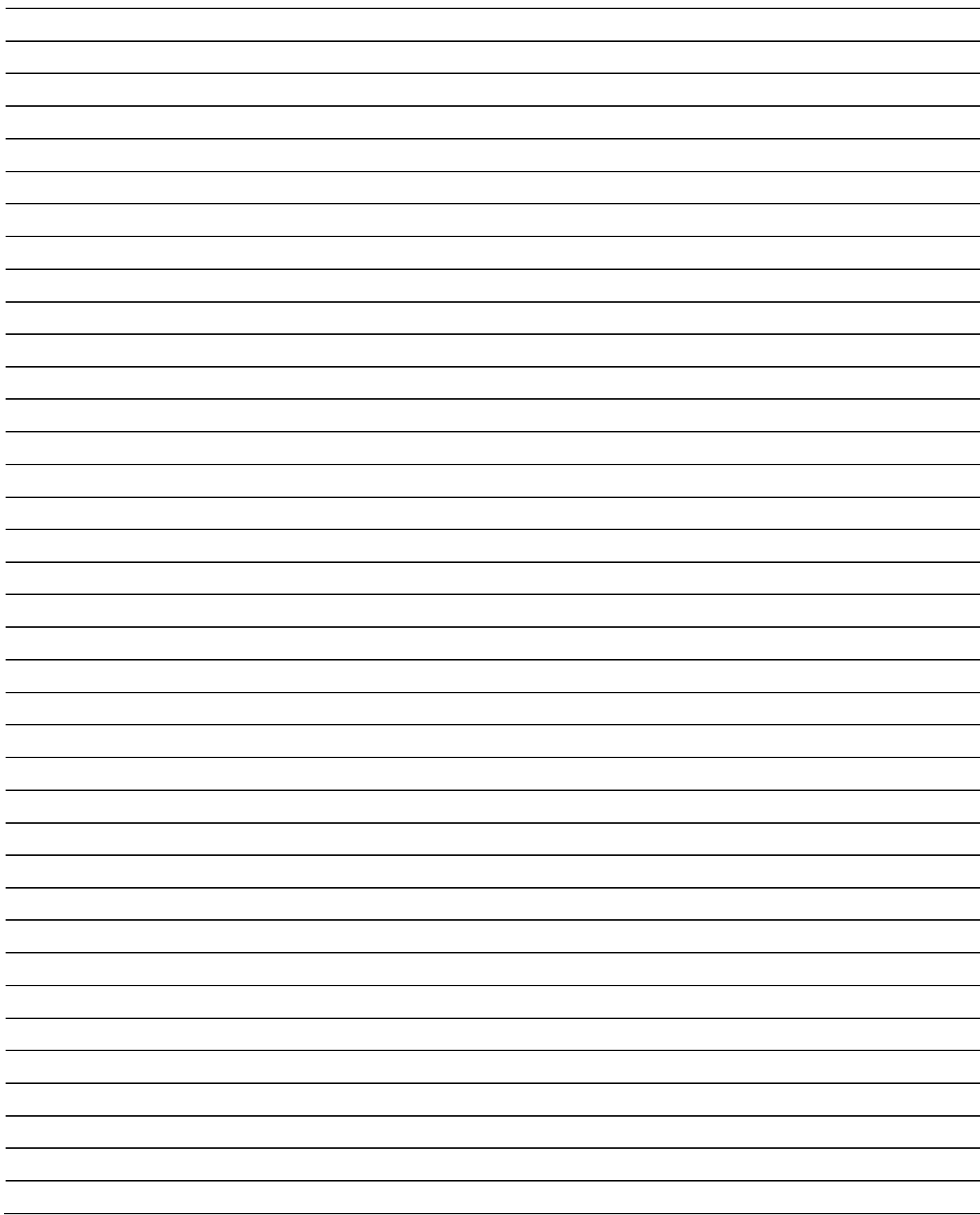


| Protocol Address | Convention Notation | Description                                                                               | Data Type  | Range                                                                                                                                                                          |                                                                                                                                                                                                                                       | Writable |
|------------------|---------------------|-------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 142              | 40143               | Airflow fault error in percentage                                                         | Unsigned   | 0 to 100%                                                                                                                                                                      |                                                                                                                                                                                                                                       | W        |
| 143              | 40144               | Airflow fault hysteresis in percentage.                                                   | Unsigned   | 1 to 30%                                                                                                                                                                       |                                                                                                                                                                                                                                       | W        |
| 144              | 40145               | Airflow fault time.                                                                       | Unsigned   | 2 to 59 minutes                                                                                                                                                                |                                                                                                                                                                                                                                       | W        |
| 145              | 40146               | CL_HT SwitchTimer, waiting time before switching between the heating and cooling modes.   | Unsigned   | 0 to 120 minutes                                                                                                                                                               |                                                                                                                                                                                                                                       | W        |
| 146              | 40147               | CL_HT SwitchTimerCount, countdown to indicate the swap between heating and cooling modes. | Unsigned   | 0 to 4,294,967,295 seconds                                                                                                                                                     |                                                                                                                                                                                                                                       | RO       |
| 147 to 152       | 40148 to 40153      | Reserved address space                                                                    |            |                                                                                                                                                                                |                                                                                                                                                                                                                                       |          |
| 153              | 40154               | Overheat status.                                                                          | Unsigned   | 1 = OverHeatNormal<br>2 = OverHeat1                                                                                                                                            | 3 = OverHeat2<br>4 = OverHeatAll                                                                                                                                                                                                      | RO       |
| 154              | 40155               | Configuration to override the motor position.                                             | Unsigned   | 1 = Auto<br>2 = Open<br>3 = Close                                                                                                                                              | 4 = AirFlowCoolMin<br>5 = AirFlowCoolMax                                                                                                                                                                                              | W        |
| 155              | 40156               | Information displayed on the TRL/TDU.                                                     | Unsigned   | 1 = Temp Demand<br>2 = Setpoint Demand<br>3 = Temp                                                                                                                             | 4 = Setpoint<br>5 = Off                                                                                                                                                                                                               | W        |
| 156              | 40157               | Reserved address space                                                                    |            |                                                                                                                                                                                |                                                                                                                                                                                                                                       |          |
| 157              | 40158               | Reserved address space                                                                    |            |                                                                                                                                                                                |                                                                                                                                                                                                                                       |          |
| 158              | 40159               | System Options 3                                                                          | Bit String | <b>B0-B1, B4-B6, B8, B11-B15: Reserved</b><br><br><b>B2: CO<sub>2</sub> Display</b><br>0 = No; 1 = Yes<br><br><b>B3: CO<sub>2</sub> Control Source</b><br>0 = Analog; 1 = TRLG | <b>B7: Occupancy Control Source</b><br>0 = Reserved; 1 = Intern Sensor<br><br><b>B9: Motor Position Control Temperature Fault</b><br>0 = Close; 1 = Open<br><br><b>B10: CO<sub>2</sub> Control Mode</b><br>0 = Open; 1 = Control ramp | W        |



| Protocol Address | Convention Notation | Description                                                                                                | Data Type           | Range                                                  | Writable |
|------------------|---------------------|------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------|----------|
| 159              | 40160               | System Options 4                                                                                           | Bit String          | <b>B0 – B15: Reserved</b>                              | RO       |
| 160              | 40161               | Internal CO2 reading from digital room sensor. If not available, the value will be fixed to 0x7FFF (32767) | Unsigned            | 0 to 2000 ppm                                          | RO       |
| 161              | 40162               | <i>Reserved address space</i>                                                                              |                     |                                                        |          |
| 162              | 40163               | Internal VOC sensor reading in ppb from the digital room sensor.                                           | Unsigned            | 1 to 60000 ppb                                         | RO       |
| 163              | 40164               | Internal PIR sensor reading from the digital room sensor.                                                  | Unsigned            | 0 = NoOccupancy<br>1 = Occupancy                       | RO       |
| 164              | 40165               | Occupancy minimum time in minutes.                                                                         | Unsigned            | 0 to 240 minutes                                       | W        |
| 165              | 40166               | Configuration value of the minimum position in cooling/heating mode in %.                                  | Unsigned            | 0 to 100 %                                             | W        |
| 166              | 40167               | Control SetPoint.                                                                                          | Unsigned<br>Scale 1 | 10 to 40<br>Value x 1 (e.g. 30°C = 30)                 | RO       |
| 167              | 40168               | CO2 ramp proportional band                                                                                 | Unsigned<br>Scale 1 | 50 to 250 ppm<br>Value x 1 (e.g. 50ppm = 50)           | W        |
| 168              | 40169               | CO2 ramp dead band                                                                                         | Unsigned<br>Scale 1 | 10 to 50 ppm<br>Value x 1 (e.g. 50ppm = 50)            | W        |
| 169              | 40170               | Temperature sensor combination                                                                             | Unsigned            | 1 = TSTAT+AI1<br>2 = TSTAT<br>3 = TSTAT+AI1<br>4 = AI1 | W        |
| 170              | 40171               | Average temperature                                                                                        | Signed<br>Scale 100 | -4000 to 10000<br>Value x 100 (e.g. 5°C = 500)         | RO       |
| 171              | 40172               | Maximum temperature                                                                                        | Signed<br>Scale 100 | -4000 to 10000<br>Value x 100 (e.g. 5°C = 500)         | RO       |
| 172              | 40173               | <i>Reserved address space</i>                                                                              |                     |                                                        |          |

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