



# Networkable Fan Coil Controller

## EFCB-OE1 Series

### Modbus Communication Module User Guide



**EFCB10T-OE1** (24Vac / 0 relays)  
**EFCB12T-OE1** (240Vac / 0 relays)  
**EFCB10TU2-OE1** (24Vac / 2 relays)  
**EFCB10TU4-OE1** (24Vac / 4 relays)  
**EFCB12TU2-OE1** (240Vac / 2 relays)  
**EFCB12TU4-OE1** (240Vac / 4 relays)





## Introduction

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The EFCB-OE1 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 EFCB-OE1 Series devices.

The EFCB-OE1 Series Modbus Guide assumes that you are familiar with Modbus terminology.

The following are the requirements for Modbus:

- **Data Model.** The EFCB-OE1 Series Modbus server data model uses only the Holding Registers table.
- **Function Codes.** The EFCB-OE1 Series Modbus server supports a limited function codes subset comprising:
  - Read Holding Registers (0x03)
  - Write Single Register (0x06)
  - Write Multiple Registers (0x10)
- **Exception Responses.** The EFCB-OE1 Series Modbus server supports the following exception codes:
  - Illegal data address
  - Illegal data value
  - Slave device busy
- **Serial Line.** The EFCB-OE1 Series 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.
  - If the device does not detect any activity for one second or more, it will find a silent line to prevent a possible baud rate scan on the next frame it detects.
- **Addressing.** The EFCB-OE1 Series device 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

## 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 Base | Register Index | Description                                                  | Data Type                    | Range                                                                                                     | Writable |
|---------------|----------------|--------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------|----------|
| 0             | 40001          | Address - Neptronic ID and Modbus address of current device. | Unsigned                     | MB = Modbus Address (e.g. 110), LB = 1-247                                                                | W        |
| 1             | 40002          | MSTP Baud Rate - BaudRate of device/100.                     | Unsigned<br><i>Scale 100</i> | 0, 9600, 19200, 38400, or 57600, 0 = Auto Baud Rate Detection<br><i>Value/100 (e.g. 38400 baud = 384)</i> | W        |
| 2             | 40003          | 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          | ProdName_87, characters 8-7 of 8 name characters.            | ASCII                        | 1 to 65,535<br>char 8: 0x0046 = F<br>char 7: 0x0043 = C                                                   | W        |
| 4             | 40005          | ProdName_65, characters 6-5 of 8 name characters.            | ASCII                        | 1 to 65,535<br>char 6: 0x0042 = B<br>char 5: 0x0034 = 4                                                   | W        |
| 5             | 40006          | ProdName_43, characters 4-3 of 8 name characters.            | ASCII                        | 1 to 65,535<br>char 4: 0x004F = O<br>char 3: 0x0045 = E                                                   | W        |



| Protocol Base | Register Index | Description                                       | Data Type             | Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Writable |
|---------------|----------------|---------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 6             | 40007          | ProdName_21, characters 2-1 of 8 name characters. | ASCII                 | 1 to 65,535<br>char 2: 0x0031 = 1<br>char 1: 0x0000 =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | W        |
| 7             | 40008          | Product actual firmware version.                  | Unsigned              | 1 to 65,535 (e.g. 205)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | RO       |
| 8             | 40009          | Product actual EEPROM version.                    | Unsigned              | 1 to 65, 535 (e.g. 207)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | RO       |
| 9             | 40010          | System Status 1.                                  | Bit String            | <b>[B1, B5, B7-B11]: Reserved</b><br><b>B0: System operation</b><br><i>0 = Normal, 1 = Fault</i><br><b>B2: System override by NSB</b><br><i>0 = Normal, 1 = OFF</i><br><b>B3: Change Over Mode</b><br><i>0 = Cooling, 1 = Heating</i><br><b>B4: Flow Switch Alarm</b><br><i>0 = No alarm, 1 = Alarm activated</i><br><b>B6: Dirty Filter Alarm</b><br><i>0 = No alarm, 1 = Alarm activated</i><br><b>B12: Analog Input 3 Mode</b><br><i>0 = Temp 10kΩ, 1 = 0-10Vdc</i><br><b>B13: Analog Input 4 Mode</b><br><i>0 = Temp 10kΩ, 1 = 0-10Vdc</i><br><b>B14: Analog Input 5 mode</b><br><i>0 = Temp 10kΩ, 1 = 0-10Vdc</i><br><b>B15: Analog Input 6 Mode</b><br><i>0 = Temp 10kΩ, 1 = 0-10Vdc</i> | RO       |
| 10            | 40011          | System Status 2.                                  | Bit String            | <b>[B0-B6, B12-B14]: Reserved</b><br><b>B7: Override Alarm</b><br><i>0 = Off, 1 = On</i><br><b>B8: Window Opened Alarm</b><br><i>0 = Off, 1 = On</i><br><b>B9: Door Opened Alarm</b><br><i>0 = Off, 1 = On</i><br><b>B10: DI1 Alarm</b><br><i>0 = Off, 1 = On</i><br><b>B11: DI2 Alarm</b><br><i>0 = Off, 1 = On</i><br><b>B13: DI4 Alarm</b><br><i>0 = Off, 1 = On</i><br><b>B15: Overheat Alarm</b><br><i>0 = Off, 1 = On</i>                                                                                                                                                                                                                                                                | RO       |
| 11            | 40012          | Internal temperature sensor reading.              | Unsigned<br>Scale 100 | Range: 0°C to 50°C or 32°F to 122°F<br>Value x 100 (e.g. 23°C = 2300 or 33°F = 3300)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RO       |
| 12            | 40013          | External temperature sensor reading.              | Unsigned<br>Scale 100 | Range: 0°C to 50°C or 32°F to 122°F<br>Value x 100 (e.g. 23°C = 2300 or 33°F = 3300)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RO       |
| 13            | 40014          | Changeover temperature sensor reading.            | Unsigned<br>Scale 100 | Range: 0°C to 50°C or 32°F to 122°F<br>Value x 100 (e.g. 23°C = 2300 or 33°F = 3300)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RO       |
| 14            | 40015          | Control temperature reading.                      | Unsigned<br>Scale 100 | Range: 0°C to 50°C or 32°F to 122°F<br>Value x 100 (e.g. 23°C = 2300 or 33°F = 3300)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | W        |



| Protocol Base | Register Index | Description                                                               | Data Type            | Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Writable |
|---------------|----------------|---------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 15            | 40016          | Internal humidity sensor reading. Select models only.                     | Unsigned<br>Scale 10 | Unit: % RH, Range: 5%RH to 100%RH<br>Value x 10 (e.g. 30%RH = 300)                                                                                                                                                                                                                                                                                                                                                                                                        | RO       |
| 16            | 40017          | External Humidity sensor reading. Select models only.                     | Unsigned<br>Scale 10 | Unit: % RH, Range: 5%RH to 100%RH<br>Value x 10 (e.g. 30%RH = 300)                                                                                                                                                                                                                                                                                                                                                                                                        | RO       |
| 17            | 40018          | Analog input 3 reading.                                                   | Signed<br>Scale 100  | Unit: Volts or °C/°F, Range: 0V to 10V, -40°C to 100°C or -40°F to 212°F<br>Value x 100 (e.g. 3 V = 300/18°C = 1800 or 33°F = 3300)                                                                                                                                                                                                                                                                                                                                       | RO       |
| 18            | 40019          | Analog input 4 reading.                                                   | Signed<br>Scale 100  | Unit: Volts or °C/°F, Range: 0V to 10V, -40°C to 100°C or -40°F to 212°F<br>Value x 100 (e.g. 3 V = 300/18°C = 1800 or 33°F = 3300)                                                                                                                                                                                                                                                                                                                                       | RO       |
| 19            | 40020          | Analog input 5 reading.                                                   | Signed<br>Scale 100  | Unit: Volts or °C/°F, Range: 0V to 10V, -40°C to 100°C or -40°F to 212°F<br>Value x 100 (e.g. 3 V = 300/18°C = 1800 or 33°F = 3300)                                                                                                                                                                                                                                                                                                                                       | RO       |
| 20            | 40021          | Analog input 6 reading.                                                   | Signed<br>Scale 100  | Unit: Volts or °C/°F, Range: 0V to 10V, -40°C to 100°C or -40°F to 212°F<br>Value x 100 (e.g. 3 V = 300/18°C = 1800 or 33°F = 3300)                                                                                                                                                                                                                                                                                                                                       | RO       |
| 21            | 40022          | Digital input status of 8 digital inputs.                                 | Bit String           | <b>[B8-B15]: Reserved</b><br><b>B0: Digital input 1</b><br>0 = Open, 1 = Close<br><b>B1: Digital input 2</b><br>0 = Open, 1 = Close<br><b>B2: Digital input 3</b><br>0 = Open, 1 = Close<br><b>B3: Digital input 4</b><br>0 = Open, 1 = Close<br><b>B4: AI3 Digital input</b><br>0 = Open, 1 = Close<br><b>B5: AI4 Digital input</b><br>0 = Open, 1 = Close<br><b>B6: AI5 Digital input</b><br>0 = Open, 1 = Close<br><b>B7: AI6 Digital input</b><br>0 = Open, 1 = Close | RO       |
| 22            | 40023          | Actual system occupancy state.                                            | Unsigned             | 1= NoOccupancy   2= Occupancy   3= Override                                                                                                                                                                                                                                                                                                                                                                                                                               | RO       |
| 23            | 40024          | Actual night setback state of the system.<br>Not available on all models. | Unsigned             | 1= Day   2= Night   3= Override                                                                                                                                                                                                                                                                                                                                                                                                                                           | RO       |
| 24            | 40025          | Actual heating demand.                                                    | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, Value x 10 (e.g. 100% = 1000)                                                                                                                                                                                                                                                                                                                                                                                                                 | RO       |
| 25            | 40026          | Actual local reheat demand.                                               | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, Value x 10 (e.g. 100% = 1000)                                                                                                                                                                                                                                                                                                                                                                                                                 | RO       |
| 26            | 40027          | Actual cooling demand.                                                    | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, Value x 10 (e.g. 100% = 1000)                                                                                                                                                                                                                                                                                                                                                                                                                 | RO       |
| 27            | 40028          | Actual changeover demand.                                                 | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, Value x 10 (e.g. 100% = 1000)                                                                                                                                                                                                                                                                                                                                                                                                                 | RO       |



| Protocol Base | Register Index | Description                                                         | Data Type            | Range                                                                                                                                                                                                                                                     | Writable |
|---------------|----------------|---------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 28            | 40029          | Actual fan demand.                                                  | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | RO       |
| 29            | 40030          | Actual dehumidification demand. Select models only.                 | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | RO       |
| 30            | 40031          | Actual humidification demand. Select models only.                   | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | RO       |
| 31            | 40032          | Switch timer countdown until the system is able to swap the demand. | Unsigned<br>Scale 1  | Unit: Minutes, Range: 0 to 120 minutes, <i>Value x 1 (e.g. 5 mins = 5)</i>                                                                                                                                                                                | RO       |
| 32            | 40033          | Analog output 1 value.                                              | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | W        |
| 33            | 40034          | Analog output 2 value.                                              | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | W        |
| 34            | 40035          | Analog output 3 value.                                              | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | W        |
| 35            | 40036          | Analog output 4 value.                                              | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | W        |
| 36            | 40037          | Floating output 1 value.                                            | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | RO       |
| 37            | 40038          | Floating output 2 value.                                            | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | RO       |
| 38            | 40039          | Pulsing output 1 value.                                             | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | RO       |
| 39            | 40040          | Pulsing output 2 value.                                             | Unsigned<br>Scale 10 | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | RO       |
| 40            | 40041          | Pulsing output 3 value.                                             | Signed<br>Scale 10   | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | RO       |
| 41            | 40042          | Pulsing output 4 value.                                             | Signed<br>Scale 10   | Unit: %, Range: 0% to 100%, <i>Value x 10 (e.g. 100% = 1000)</i>                                                                                                                                                                                          | RO       |
| 42            | 40043          | TRIAC output on-off mode status.                                    | Bit String           | <b>[B4-B15]: Reserved</b><br><b>B0: On Off output 1</b><br><i>0 = Off, 1 = On</i><br><b>B1: On Off output 2</b><br><i>0 = Off, 1 = On</i><br><b>B2: On Off output 3</b><br><i>0 = Off, 1 = On</i><br><b>B3: On Off output 4</b><br><i>0 = Off, 1 = On</i> | W        |



| Protocol Base | Register Index | Description                                    | Data Type          | Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Writable |
|---------------|----------------|------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 43            | 40044          | Digital output - 7 relays output status.       | Bit String         | <b>[B7-B15]: Reserved</b><br><b>B0: Digital output 1</b><br><i>0 = Open, 1 = Close</i><br><b>B1: Digital output 2</b><br><i>0 = Open, 1 = Close</i><br><b>B2: Digital output 3</b><br><i>0 = Open, 1 = Close</i><br><b>B3: Digital output 4</b><br><i>0 = Open, 1 = Close</i><br><b>B4: FAN Output High</b><br><i>0 = Open, 1 = Close</i><br><b>B5: FAN Output Med</b><br><i>0 = Open, 1 = Close</i><br><b>B6: FAN Output Low</b><br><i>0 = Open, 1 = Close</i>                                                                                | W        |
| 44            | 40045          | System command.                                | Bit String         | <b>[B6, B9-B15]: Reserved</b><br><b>B0: Service Display Address</b><br><i>0 = Off, 1 = Display address on LCD</i><br><b>B1: Cooling Ramp Lock</b><br><i>0 = Off, 1 = On</i><br><b>B2: Condensation Alarm</b><br><i>0 = Off, 1 = On</i><br><b>B3: Heating Ramp Lock</b><br><i>0 = Off, 1 = On</i><br><b>B4: Reheat Ramp Lock</b><br><i>0 = Off, 1 = On</i><br><b>B5: Changeover Ramp Lock</b><br><i>0 = Off, 1 = On</i><br><b>B7: Humidify Ramp Lock</b><br><i>0 = Off, 1 = On</i><br><b>B8: Dehumidify Ramp Lock</b><br><i>0 = Off, 1 = On</i> | W        |
| 45            | 40046          | System mode status.                            | Unsigned           | 1 = Auto   2 = Heat   3 = Cool   4 = Fan   5 = Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | W        |
| 46            | 40047          | Fan speed selection by user.                   | Unsigned           | 1 = Auto   2 = Low   3 = Med   4 = High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | W        |
| 47            | 40048          | Temperature setpoint in occupancy or day mode. | Signed<br>Scale 10 | Unit: Volts or °C/°F, Range: min to max setpoint<br>Value x 10 (e.g. 3 V = 300/18°C = 180 or 60°F = 600)                                                                                                                                                                                                                                                                                                                                                                                                                                       | W        |



| Protocol Base | Register Index | Description       | Data Type  | Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Writable |
|---------------|----------------|-------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 48            | 40049          | System options 1. | Bit String | <p><b>B0: Temp unit displayed on digital room sensor</b><br/><i>0 = °C, 1 = °F</i></p> <p><b>B1: Temp unit displayed in Modbus</b><br/><i>0 = °C, 1 = °F</i></p> <p><b>B2: Temp SetPoint Lock</b><br/><i>0 = Off, 1 = On</i></p> <p><b>B3: Humidity SetPoint Lock</b><br/><i>0 = Off, 1 = On</i></p> <p><b>B4: Program Mode Lock</b><br/><i>0 = Off, 1 = On</i></p> <p><b>B5: Floating TO1/TO2 Direction</b><br/><i>0 = Direct, 1 = Reverse</i></p> <p><b>B6: Floating TO3/TO4 Direction</b><br/><i>0 = Direct, 1 = Reverse</i></p> <p><b>B7: Freeze Protection Alarm</b><br/><i>0 = Off, 1 = On</i></p> <p><b>B8: User System Off Modes</b><br/><i>0 = Enable, 1 = Disable</i></p> <p><b>B9: Keypad Bottom Left Lock</b><br/><i>0 = Off, 1 = On</i></p> <p><b>B10: Keypad Upper Left Lock</b><br/><i>0 = Off, 1 = On</i></p> <p><b>B11: Keypad Arrows Lock</b><br/><i>0 = Off, 1 = On</i></p> <p><b>B12: User Fan Auto Mode</b><br/><i>0 = Enable, 1 = Disable</i></p> <p><b>B13: Night SetBack Mode*</b><br/><i>0 = Setpoint, 1 = OFF</i><br/><i>* Also applies to No Occupancy Mode</i></p> <p><b>B14: Humidity Control Source</b><br/><i>0 = Intern Sensor, 1 = Extern Sensor</i></p> <p><b>B15: Time Mode</b><br/><i>0 = 24h, 1 = 12h</i></p> | W        |





| Protocol Base | Register Index | Description                  | Data Type  | Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Writable |
|---------------|----------------|------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 49            | 40050          | System options 2.            | Bit String | <b>[B0-B1]: Reserved</b><br><b>B2: Baud Rate</b><br><i>0 = Auto, 1 = Manual</i><br><b>B3: Schedule On or Off</b><br><i>0 = Off, 1 = On</i><br><b>B4: Analog Output 1 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B5: Analog Output 2 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B6: Analog Output 3 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B7: Analog Output 4 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B8: TO1 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B9: TO2 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B10: TO3 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B11: TO4 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B12: Digital Output 1 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B13: Digital Output 2 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B14: Digital Output 3 Direction</b><br><i>0 = Direct, 1 = Reverse</i><br><b>B15: Digital Output 4 Direction</b><br><i>0 = Direct, 1 = Reverse</i> | W        |
| 50            | 40051          | System option 3.             | Bit String | <b>[B0, B2, B5-B6, B8, B11-B15]: Reserved</b><br><b>B1: ECM Fan Enable</b><br><i>0 = Off, 1 = On</i><br><b>B3: Display CO2</b><br><i>0 = Off, 1 = On</i><br><b>B4: CO2 Source Select</b><br><i>0 = TFL, 1 = Analog</i><br><b>B7: Occupancy Control Source</b><br><i>0 = DigitalInput3, 1 = InternSensor</i><br><b>B9: Display RH</b><br><i>0 = Off, 1 = On</i><br><b>B10: User system Fan Mode</b><br><i>0 = Disable, 1 = Enable</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | W        |
| 51            | 40052          | System option 4.             |            | <b>[B0-B15]: Reserved</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | W        |
| 52            | 40053          | TFL/TDF display information. | Unsigned   | 1= Temperature and Demand   2= Setpoint and Demand   3= Temperature Only<br>4= Setpoint Only   5= Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | W        |
| 53            | 40054          | Temperature control source.  | Unsigned   | 1= Network Temp   2= Intern Temp   3= Extern Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | W        |



| Protocol Base | Register Index | Description                                               | Data Type                   | Range                                                                                                                     | Writable |
|---------------|----------------|-----------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------|----------|
| 54            | 40055          | Network fallback timeout Present Value.                   | Unsigned                    | Unit: Minutes, Range: 0 to 60 minutes, <i>Value x 1 (e.g. 30 mins = 30)</i>                                               | W        |
| 55            | 40056          | Minimum occupancy/day setpoint.                           | Signed<br><i>Scale 10</i>   | Unit: Volts or °C/°F, Range: 10°C to max or 50°F to max<br><i>Value x 10 (e.g. 3 V = 30/18°C = 180 or 60°F = 600)</i>     | W        |
| 56            | 40057          | Maximum occupancy/day setpoint.                           | Signed<br><i>Scale 10</i>   | Unit: Volts or °C/°F, Range: min to 40°C or min to 104°F<br><i>Value x 10 (e.g. 3 V = 30/18°C = 180 or 60°F = 600)</i>    | W        |
| 57            | 40058          | Cooling temperature setpoint in unoccupied or night mode. | Signed<br><i>Scale 10</i>   | Unit: Volts or °C/°F, Range: 10°C to 40°C or 50°F to 104°F<br><i>Value x 10 (e.g. 3 V = 300/18°C = 180 or 60°F = 600)</i> | W        |
| 58            | 40059          | Heating temperature setpoint in unoccupied or night mode. | Signed<br><i>Scale 10</i>   | Unit: Volts or °C/°F, Range: 10°C to 40°C or 50°F to 104°F<br><i>Value x 10 (e.g. 3 V = 300/18°C = 180 or 60°F = 600)</i> | W        |
| 59            | 40060          | Heating proportional band.                                | Unsigned<br><i>Scale 10</i> | Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°<br><i>Value x 10 (e.g. 1°C = 10 or 2°F = 20)</i>                  | W        |
| 60            | 40061          | Local reheat proportional band.                           | Unsigned<br><i>Scale 10</i> | Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F<br><i>Value x 10 (e.g. 1°C = 10 or 2°F = 20)</i>                 | W        |
| 61            | 40062          | Cooling proportional band.                                | Unsigned<br><i>Scale 10</i> | Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F<br><i>Value x 10 (e.g. 1°C = 10 or 2°F = 20)</i>                 | W        |
| 62            | 40063          | Change over proportional band.                            | Unsigned<br><i>Scale 10</i> | Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F<br><i>Value x 10 (e.g. 1°C = 10 or 2°F = 20)</i>                 | W        |
| 63            | 40064          | Heating dead band.                                        | Unsigned<br><i>Scale 10</i> | Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F<br><i>Value x 10 (e.g. 1°C = 10 or 2°F = 20)</i>                 | W        |
| 64            | 40065          | Local reheat dead band.                                   | Unsigned<br><i>Scale 10</i> | Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F<br><i>Value x 10 (e.g. 1°C = 10 or 2°F = 20)</i>                 | W        |
| 65            | 40066          | Cooling dead band.                                        | Unsigned<br><i>Scale 10</i> | Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F<br><i>Value x 10 (e.g. 1°C = 10 or 2°F = 20)</i>                 | W        |
| 66            | 40067          | Change over dead band.                                    | Unsigned<br><i>Scale 10</i> | Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F<br><i>Value x 10 (e.g. 1°C = 10 or 2°F = 20)</i>                 | W        |
| 67            | 40068          | Change over setpoint.                                     | Signed<br><i>Scale 10</i>   | Unit: depends on system unit, 10°C to 40°C or 50°F to 104°F<br><i>Value x 10 (e.g. 12°C = 120 or 60°F = 600)</i>          | W        |
| 68            | 40069          | Fan time out in seconds.                                  | Unsigned<br><i>Scale 1</i>  | Unit: Seconds, Range: 0 to 255 seconds, <i>Value x 1 (e.g. 100 secs = 100)</i>                                            | W        |
| 69            | 40070          | Fan damping factor in seconds.                            | Unsigned<br><i>Scale 1</i>  | Unit: Seconds, Range: 0 to 255 seconds, <i>Value x 1 (e.g. 100 secs = 100)</i>                                            | W        |
| 70            | 40071          | Heating integral time factor in seconds.                  | Unsigned<br><i>Scale 1</i>  | Unit: Seconds, Range: 0 to 250 seconds, <i>Value x 1 (e.g. 100 secs = 100)</i>                                            | W        |



| Protocol Base | Register Index | Description                                                                                                                      | Data Type           | Range                                                                                                                                                                                                                                             | Writable |
|---------------|----------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 71            | 40072          | Cooling integral time factor in seconds.                                                                                         | Unsigned<br>Scale 1 | Unit: Seconds, Range: 0 to 250 seconds, <i>Value x 1 (e.g. 100 secs = 100)</i>                                                                                                                                                                    | W        |
| 72            | 40073          | Delay between cooling and heating or vice versa.                                                                                 | Unsigned<br>Scale 1 | Unit: Minutes, Range: 0 to 120 minutes, <i>Value x 1 (e.g. 10 mins = 10)</i>                                                                                                                                                                      | W        |
| 73            | 40074          | Cooling anticycle delay in minutes.                                                                                              | Unsigned<br>Scale 1 | Unit: Minutes, Range: 0 to 15 minutes, <i>Value x 1 (e.g. 100 mins = 100)</i>                                                                                                                                                                     | W        |
| 74            | 40075          | NSB override delay in minutes.                                                                                                   | Unsigned<br>Scale 1 | Unit: Minutes, Range: 0 to 180 minutes, <i>Value x 1 (e.g. 100 mins = 100)</i>                                                                                                                                                                    | W        |
| 75            | 40076          | Unoccupied override delay in minutes.                                                                                            | Unsigned<br>Scale 1 | Unit: Minutes, Range: 0 to 180 minutes, <i>Value x 1 (e.g. 100 mins = 100)</i>                                                                                                                                                                    | W        |
| 76            | 40077          | Occupancy minimum time in minutes.                                                                                               | Unsigned<br>Scale 1 | Unit: Minutes, Range: 0 to 240 minutes, <i>Value x 1 (e.g. 100 mins = 100)</i>                                                                                                                                                                    | W        |
| 77            | 40078          | Unoccupied override delay count down in minutes.                                                                                 | Unsigned<br>Scale 1 | Unit: Minutes, Range: 0 to 180 minutes, <i>Value x 1 (e.g. 100 mins = 100)</i>                                                                                                                                                                    | W        |
| 78            | 40079          | Fan mode (speed) in unoccupied or NSB mode.                                                                                      | Unsigned            | 1= Low   2= Med   3= High   4=Auto                                                                                                                                                                                                                | W        |
| 79            | 40080          | System Control mode.                                                                                                             | Unsigned            | 1= Auto   2= Heat   3= Cool   4= Heat or Cool   5= Auto Lock                                                                                                                                                                                      | W        |
| 80            | 40081          | Digital input 3 mode.                                                                                                            | Unsigned            | 1= Off   2= Occupancy normally open   3= Occupancy normally close<br>4= NSB normally open   5= NSB normally close                                                                                                                                 | W        |
| 81            | 40082          | Override system occupancy or NSB mode.<br>Depending on the selected DI3 mode (40080), some of these options may not be writable. | Unsigned            | 1= Locally   2= OFF   3= Occupied   4= Unoccupied   5= Day   6= Night                                                                                                                                                                             | W        |
| 82            | 40083          | Internal temperature sensor offset correction.                                                                                   | Signed<br>Scale 100 | Unit: depends on system unit, Range: $\pm 5^{\circ}\text{C}$ or $\pm 9^{\circ}\text{F}$<br><i>Value x 100 (e.g. <math>2^{\circ}\text{C} = 200</math> or <math>3^{\circ}\text{F} = 300</math>)</i>                                                 | W        |
| 83            | 40084          | External temperature sensor offset correction.                                                                                   | Signed<br>Scale 100 | Unit: depends on system unit, Range: $\pm 5^{\circ}\text{C}$ or $\pm 9^{\circ}\text{F}$<br><i>Value x 100 (e.g. <math>2^{\circ}\text{C} = 200</math> or <math>3^{\circ}\text{F} = 300</math>)</i>                                                 | W        |
| 84            | 40085          | Change over analog input signal.                                                                                                 | Unsigned            | 3= Sensor   4= Normally Cool   5= Normally Heat                                                                                                                                                                                                   | W        |
| 85            | 40086          | Change over control mode.                                                                                                        | Unsigned            | 1= Local   2= Cool   3= Heat                                                                                                                                                                                                                      | W        |
| 86            | 40087          | External temperature 0-10V input on analog input.                                                                                | Unsigned            | 1= Off   2= 2-10V   3= 0-10V                                                                                                                                                                                                                      | W        |
| 87            | 40088          | Minimum analog input external temperature reading.                                                                               | Signed<br>Scale 10  | Unit: depends on system unit, Range: $-40^{\circ}\text{C}$ to $0^{\circ}\text{C}$ or $-40^{\circ}\text{F}$ to $32^{\circ}\text{F}$<br><i>Value x 10 (e.g. <math>-20^{\circ}\text{C} = -200</math> or <math>-20^{\circ}\text{F} = 200</math>)</i>  | W        |
| 88            | 40089          | Maximum analog input external temperature reading.                                                                               | Signed<br>Scale 10  | Unit: depends on system unit, Range: $50^{\circ}\text{C}$ to $100^{\circ}\text{C}$ or $122^{\circ}\text{F}$ to $212^{\circ}\text{F}$<br><i>Value x 10 (e.g. <math>60^{\circ}\text{C} = 600</math> or <math>140^{\circ}\text{F} = 1400</math>)</i> | W        |
| 89            | 40090          | Fan output signal.                                                                                                               | Unsigned            | 1= 1 speed   2= 2 speeds   3= 3 speeds   4= Analog                                                                                                                                                                                                | W        |



| Protocol Base | Register Index | Description                                  | Data Type            | Range                                                                                                                                                                                                                                                     | Writable |
|---------------|----------------|----------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 90            | 40091          | Ramp to control analog output 1.             | Unsigned             | 1= Off   2= Alarm   3= Changeover with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat   8= HumidifyWithFan (with TFLHxx/TDF digital room sensor with humidity only)   9= Reserved   10= Cooling or Heating  | W        |
| 91            | 40092          | Minimum voltage for analog output 1 (volt).  | Unsigned<br>Scale 10 | Unit: Volt, Range: 0V to 10V, Value x 10 (e.g. 3 V = 30)                                                                                                                                                                                                  | W        |
| 92            | 40093          | Maximum voltage for analog output 1 (volt).  | Unsigned<br>Scale 10 | Unit: Volt, Range: 0V to 10V, Value x 10 (e.g. 3 V = 30)                                                                                                                                                                                                  | W        |
| 93            | 40094          | Ramp to control analog output 2.             | Unsigned             | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat   8= HumidifyWithFan (with TFLHxx/TDF digital room sensor with humidity only)   9= Reserved   10= Cooling or Heating | W        |
| 94            | 40095          | Minimum voltage for analog output 2 (volt).  | Unsigned<br>Scale 10 | Unit: Volt, Range: 0V to 10V, Value x 10 (e.g. 3 V = 30)                                                                                                                                                                                                  | W        |
| 95            | 40096          | Maximum voltage for analog output 2 (volt).  | Unsigned<br>Scale 10 | Unit: Volt, Range: 0V to 10V, Value x 10 (e.g. 3 V = 30)                                                                                                                                                                                                  | W        |
| 96            | 40097          | Ramp to control analog output 3.             | Unsigned             | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat   8= HumidifyWithFan (with TFLHxx/TDF digital room sensor with humidity only)   9= Reserved   10= Cooling or Heating | W        |
| 97            | 40098          | Minimum voltage for analog output 3 (volt).  | Unsigned<br>Scale 10 | Unit: Volt, Range: 0V to 10V, Value x 10 (e.g. 3 V = 30)                                                                                                                                                                                                  | W        |
| 98            | 40099          | Maximum voltage for analog output 3 (volt).  | Unsigned<br>Scale 10 | Unit: Volt, Range: 0V to 10V, Value x 10 (e.g. 3 V = 30)                                                                                                                                                                                                  | W        |
| 99            | 40100          | Ramp to control analog output 4.             | Unsigned             | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat   8= HumidifyWithFan (with TFLHxx/TDF digital room sensor with humidity only)   9= Fan   10= Cooling or Heating      | W        |
| 100           | 40101          | Minimum voltage for analog output 4 (volt).  | Unsigned<br>Scale 10 | Unit: Volt, Range: 0V to 10V, Value x 10 (e.g. 3 V = 30)                                                                                                                                                                                                  | W        |
| 101           | 40102          | Maximum voltage for analog output 4 (volt).  | Unsigned<br>Scale 10 | Unit: Volt, Range: 0V to 10V, Value x 10 (e.g. 3 V = 30)                                                                                                                                                                                                  | W        |
| 102           | 40103          | Timing of floating motor TO1-TO2 in seconds. | Unsigned<br>Scale 1  | Unit: Seconds, Range: 15 to 250 seconds, Value x 1 (e.g. 20 secs = 20)                                                                                                                                                                                    | W        |



| Protocol Base | Register Index | Description                                     | Data Type           | Range                                                                                                                                | Writable |
|---------------|----------------|-------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------|
| 103           | 40104          | Timing of floating motor TO3-TO4 in seconds.    | Unsigned<br>Scale 1 | Unit: Seconds, Range: 15 to 250 seconds, <i>Value x 1 (e.g. 20 secs = 20)</i>                                                        | W        |
| 104           | 40105          | Ramp to control TRIAC output 1.                 | Unsigned<br>Scale 1 | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat | W        |
| 105           | 40106          | Signal output configuration for TRIAC output 1. | Unsigned<br>Scale 1 | 1= Pulsing mode   2= On/Off mode   3= Floating mode                                                                                  | W        |
| 106           | 40107          | TRIAC output 1 when set to close.               | Unsigned<br>Scale 1 | Unit: %, Range: 15 to 80%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                          | W        |
| 107           | 40108          | TRIAC output 1 when set to open.                | Unsigned<br>Scale 1 | Unit: %, Range: 0 to TO1closepos-4%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                | W        |
| 108           | 40109          | Ramp to control TRIAC output 2.                 | Unsigned            | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat | W        |
| 109           | 40110          | Signal output configuration for TRIAC output 2. | Unsigned            | 1= Pulsing mode   2= On/Off mode   3= Floating mode                                                                                  | W        |
| 110           | 40111          | TRIAC output 2 when set to close.               | Unsigned<br>Scale 1 | Unit: %, Range: 15 to 80%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                          | W        |
| 111           | 40112          | TRIAC output 2 when set to open.                | Unsigned<br>Scale 1 | Unit: %, Range: 0 to TO2closepos-4%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                | W        |
| 112           | 40113          | Ramp to control TRIAC output 3.                 | Unsigned            | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat | W        |
| 113           | 40114          | Signal output configuration for TRIAC output 3. | Unsigned            | 1= Pulsing mode   2= On/Off mode   3= Floating mode                                                                                  | W        |
| 114           | 40115          | TRIAC output 3 when set to close.               | Unsigned<br>Scale 1 | Unit: %, Range: 15 to 80%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                          | W        |
| 115           | 40116          | TRIAC output 3 when set to open.                | Unsigned<br>Scale 1 | Unit: %, Range: 0 to TO3closepos-4%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                | W        |
| 116           | 40117          | Ramp to control TRIAC output 4.                 | Unsigned            | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat | W        |
| 117           | 40118          | Signal output configuration for TRIAC output 4. | Unsigned            | 1= Pulsing mode   2= On/Off mode   3= Floating mode                                                                                  | W        |
| 118           | 40119          | TRIAC output 4 when set to close.               | Unsigned<br>Scale 1 | Unit: %, Range: 15 to 80%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                          | W        |
| 119           | 40120          | TRIAC output 4 when set to open.                | Unsigned<br>Scale 1 | Unit: %, Range: 0 to TO4closepos-4%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                | W        |



| Protocol Base | Register Index | Description                                  | Data Type           | Range                                                                                                                                                                                                              | Writable |
|---------------|----------------|----------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 120           | 40121          | Configuration of DO1 mode.                   | Unsigned            | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat   8= HumidifyWithFan (with TFLHxx/TDF digital room sensor with humidity only) | W        |
| 121           | 40122          | Delay before activation of DO1 in minutes.   | Unsigned<br>Scale 1 | Unit: Minutes, Range: 0 to 15 minutes, Value x 1 (e.g. 5 = 5 mins)                                                                                                                                                 | W        |
| 122           | 40123          | Close position percentage for contact DO1.   | Unsigned<br>Scale 1 | Unit: %, Range: 15% to 80%, Value x 1 (e.g. 20% = 20)                                                                                                                                                              | W        |
| 123           | 40124          | Open position percentage for contact DO1.    | Unsigned<br>Scale 1 | Unit: %, Range: 0 to DO1closepos-4%, Value x 1 (e.g. 20% = 20)                                                                                                                                                     | W        |
| 124           | 40125          | Configuration of DO2 mode.                   | Unsigned            | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat   8= HumidifyWithFan (with TFLHxx/TDF digital room sensor with humidity only) | W        |
| 125           | 40126          | Activation delay for contact DO2 in minutes. | Unsigned<br>Scale 1 | Unit: Minutes, Range: 0 to 15 minutes, Value x 1 (e.g. 5 = 5 mins)                                                                                                                                                 | W        |
| 126           | 40127          | Close position percentage for contact DO2.   | Unsigned<br>Scale 1 | Unit: %, Range: 15% to 80%, Value x 1 (e.g. 20% = 20)                                                                                                                                                              | W        |
| 127           | 40128          | Open position percentage for contact DO2.    | Unsigned<br>Scale 1 | Unit: %, Range: 0 to DO2closepos-4%, Value x 1 (e.g. 20% = 20)                                                                                                                                                     | W        |
| 128           | 40129          | Configuration of DO3 mode.                   | Unsigned            | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat   8= HumidifyWithFan (with TFLHxx/TDF digital room sensor with humidity only) | W        |
| 129           | 40130          | Activation delay for contact DO3 in minutes. | Unsigned<br>Scale 1 | Unit: Minutes, Range: 0 to 15 minutes, Value x 1 (e.g. 5 = 5 mins)                                                                                                                                                 | W        |
| 130           | 40131          | Close position percentage for contact DO3.   | Unsigned<br>Scale 1 | Unit: %, Range: 15% to 80%, Value x 1 (e.g. 20% = 20)                                                                                                                                                              | W        |
| 131           | 40132          | Open position percentage for contact DO3.    | Unsigned<br>Scale 1 | Unit: %, Range: 0 to DO3closepos-4%, Value x 1 (e.g. 20% = 20)                                                                                                                                                     | W        |
| 132           | 40133          | Configuration of DO4 mode.                   | Unsigned            | 1= Off   2= Alarm   3= Change Over with fan   4= Cooling with fan   5= Heating with fan   6= Local Reheat with fan   7= Local Reheat   8= HumidifyWithFan (with TFLHxx/TDF digital room sensor with humidity only) | W        |



| Protocol Base | Register Index | Description                                                                       | Data Type            | Range                                                                                                                                                                                                                                                                                                                                                                 | Writable |
|---------------|----------------|-----------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 133           | 40134          | Activation delay for contact DO4 in minutes.                                      | Unsigned<br>Scale 1  | Unit: Minutes, Range: 0 to 15 minutes, <i>Value x 1 (e.g. 5 = 5 mins)</i>                                                                                                                                                                                                                                                                                             | W        |
| 134           | 40135          | Close position percentage for contact DO4.                                        | Unsigned<br>Scale 1  | Unit: %, Range: 15% to 80%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                                                                                                                                                                                                                                                          | W        |
| 135           | 40136          | Open position percentage for contact DO4.                                         | Unsigned<br>Scale 1  | Unit: %, Range: 0 to DO4closepos-4%, <i>Value x 1 (e.g. 20% = 20)</i>                                                                                                                                                                                                                                                                                                 | W        |
| 136           | 40137          | Digital input contact of DI1 to DI4.                                              | Bit String           | <b>[B3, B5-B15]: Reserved</b><br><br><b>B0: Digital input 1</b><br><i>0 = Normally Open, 1 = Normally Close</i><br><br><b>B1: Digital input 2</b><br><i>0 = Normally Open, 1 = Normally Close</i><br><br><b>B2: Digital input 3</b><br><i>0 = Normally Open, 1 = Normally Close</i><br><br><b>B4: Digital input 4</b><br><i>0 = Normally Open, 1 = Normally Close</i> | W        |
| 137           | 40138          | Configuration of DI1 mode.                                                        | Unsigned             | 1= OFF   2= Override   3= Window   4= Door   5= DirtyFilter   6= FlowSwitch<br>7= OverHeat   8= SelectorSwitch*<br><i>* Warning, must be used with FlowSwitch, in local mode Fan stay off</i>                                                                                                                                                                         | W        |
| 138           | 40139          | Delay before activation of DI1 in minutes.                                        | Unsigned<br>Scale 1  | Unit: Minutes, Range: 0 to 65,535 minutes, <i>Value x 1 (e.g. 5 = 5 mins)</i>                                                                                                                                                                                                                                                                                         | W        |
| 139           | 40140          | Configuration of DI2 mode.                                                        | Unsigned             | 1= OFF   2= Override   3= Window   4= Door   5= DirtyFilter   6= FlowSwitch<br>7= OverHeat   8= SelectorSwitch*<br><i>* Warning, must be used with FlowSwitch, in local mode Fan stay off</i>                                                                                                                                                                         | W        |
| 140           | 40141          | Delay before activation of DI2 in minutes.                                        | Unsigned<br>Scale 1  | Unit: Minutes, Range: 0 to 65,535 minutes, <i>Value x 1 (e.g. 5 = 5 mins)</i>                                                                                                                                                                                                                                                                                         | W        |
| 141           | 40142          | Configuration of DI4 mode.                                                        | Unsigned             | 1= OFF   2= Override   3= Window   4= Door   5= DirtyFilter   6= FlowSwitch<br>7= OverHeat   8= SelectorSwitch<br><i>* Warning, must be used with FlowSwitch, in local mode Fan stay off</i>                                                                                                                                                                          | W        |
| 142           | 40143          | Delay before activation of DI4 in minutes.                                        | Unsigned<br>Scale 1  | Unit: Minutes, Range: 0 to 65,535 minutes, <i>Value x 1 (e.g. 5 = 5 mins)</i>                                                                                                                                                                                                                                                                                         | W        |
| 143           | 40144          | Humidity control mode status.<br>Not available on all models.                     | Unsigned             | 1= Auto   2= Dehumidification   3= Humidification   4= Off                                                                                                                                                                                                                                                                                                            | W        |
| 144           | 40145          | Humidity setpoint (%RH) in occupancy or day mode.<br>Not available on all models. | Unsigned<br>Scale 10 | Unit: %RH, Limited by min/max humidity setpoint, <i>Value x 10 (e.g. 20%RH = 200)</i>                                                                                                                                                                                                                                                                                 | W        |





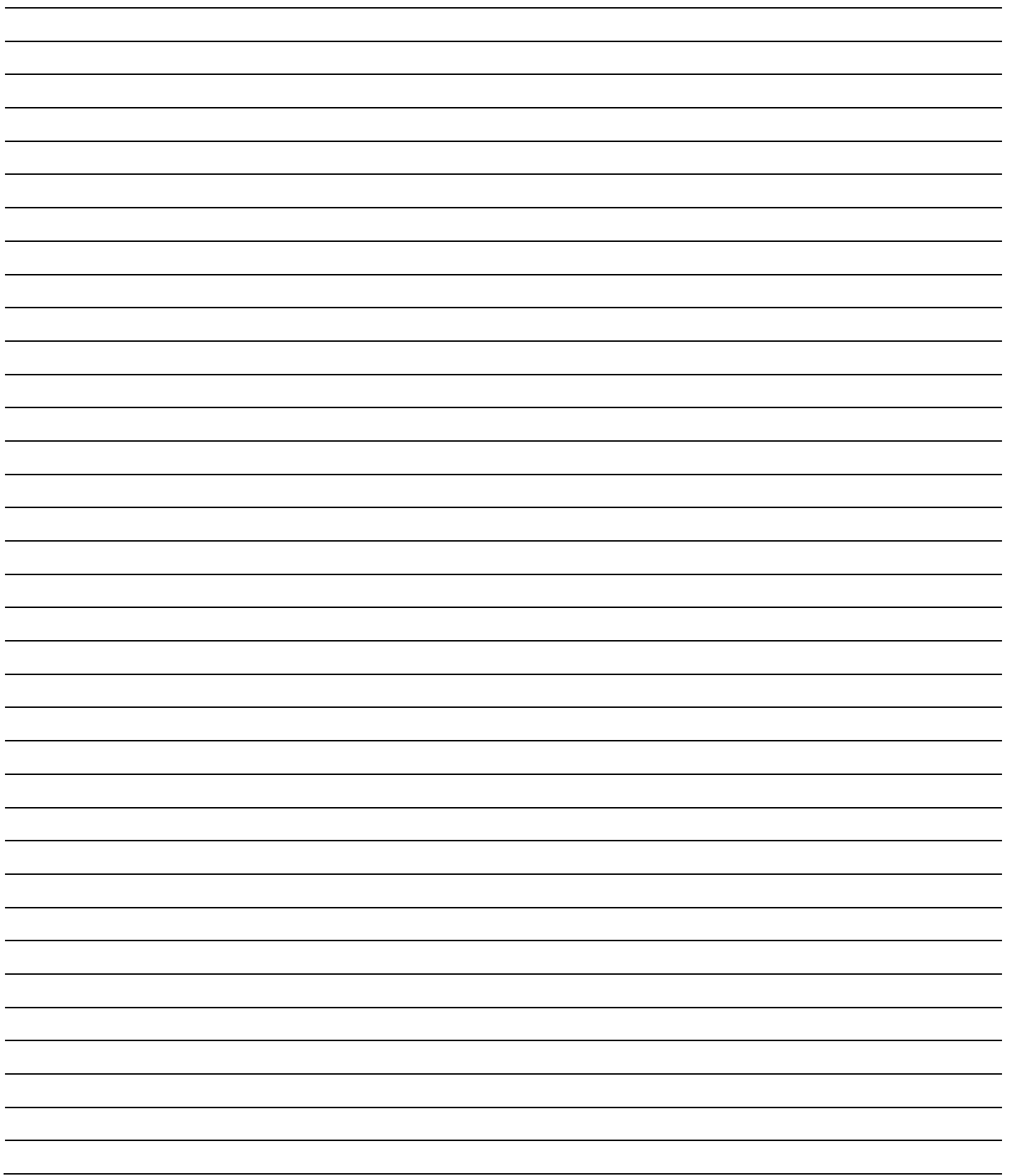
| Protocol Base | Register Index | Description                                                                               | Data Type            | Range                                                                                  | Writable |
|---------------|----------------|-------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------------------|----------|
| 145           | 40146          | Dehumidification setpoint (%RH) in unoccupied or night mode. Not available on all models. | Unsigned<br>Scale 10 | Unit: %RH, Range: 10% to 65%, <i>Value x 10 (e.g. 20%RH = 200)</i>                     | W        |
| 146           | 40147          | Humidification setpoint (%RH) in unoccupied or night mode. Not available on all models.   | Unsigned<br>Scale 10 | Unit: %RH, Range: 10% to 65%, <i>Value x 10 (e.g. 20%RH = 200)</i>                     | W        |
| 147           | 40148          | Minimum user setpoint. Not available on all models.                                       | Unsigned<br>Scale 10 | Unit: %RH, Range: 10% to max, <i>Value x 10 (e.g. 20%RH = 200)</i>                     | W        |
| 148           | 40149          | Maximum user setpoint. Not available on all models.                                       | Unsigned<br>Scale 10 | Unit: %RH, Range: min to 65%, <i>Value x 10 (e.g. 20%RH = 200)</i>                     | W        |
| 149           | 40150          | Humidity proportional band. Not available on all models.                                  | Unsigned<br>Scale 10 | Unit: %RH, Range: 3%RH to 10%RH, <i>Value x 10 (e.g. 4%RH = 40)</i>                    | W        |
| 150           | 40151          | Humidity deadband. Not available on all models.                                           | Unsigned<br>Scale 10 | Unit: %RH, Range: 0% to 5%, <i>Value x 10 (e.g. 4%RH = 40)</i>                         | W        |
| 151           | 40152          | External humidity sensor input.                                                           | Unsigned             | 1= Off   2= Analog input 3   3= Analog input 4   4= Analog input 5   5= Analog input 6 | W        |
| 152           | 40153          | Internal humidity sensor offset correction. Not available on all models.                  | Signed<br>Scale 10   | Unit: %RH, Range: ± 5%RH, <i>Value x 10 (e.g. 2%RH = 20)</i>                           | W        |
| 153           | 40154          | External humidity sensor offset correction. Not available on all models.                  | Signed<br>Scale 10   | Unit: %RH, Range: ± 5%RH, <i>Value x 10 (e.g. 2%RH = 20)</i>                           | W        |
| 154           | 40155          | Internal CO <sub>2</sub> sensor reading. Not available on all models.                     | Unsigned<br>Scale 1  | Unit: PPM, Range 0 to 2000 PPM, <i>Value x 1 (e.g. 20PPM = 20)</i>                     | RO       |
| 155           | 40156          | Maximum limit of CO <sub>2</sub> concentration. Not available on all models.              | Unsigned<br>Scale 10 | Unit: PPM, Range 100 to CO2rangePPM, <i>Value x 10 (e.g. 200PPM = 2000)</i>            | W        |
| 156           | 40157          | System status 3.                                                                          | Unsigned             | <b>[B1-B15]: Reserved</b><br><b>B0: CO<sub>2</sub> Alarm</b><br><i>0 = Off, 1 = On</i> | RO       |
| 157           | 40158          | Maximum range for the CO <sub>2</sub> sensor. Not available on all models.                | Unsigned<br>Scale 50 | Unit: PPM, Range 0 to 2000 PPM, <i>Value x 50 (e.g. 20PPM = 1000)</i>                  | W        |
| 158           | 40159          | External CO <sub>2</sub> sensor reading. Not available on all models.                     | Unsigned<br>Scale 1  | Unit: PPM, Range 1 to CO2rangePPM, <i>Value x 1 (e.g. 20PPM = 20)</i>                  | RO       |
| 159           | 40160          | Internal light sensor reading in Luxes. Not available on all models.                      | Unsigned<br>Scale 1  | Unit: Luxes, Range 0 to 16000 Luxes, <i>Value x 1 (e.g. 20Luxes = 20)</i>              | RO       |





| Protocol Base | Register Index | Description                                                      | Data Type           | Range                                                                                                                      | Writable |
|---------------|----------------|------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------|----------|
| 160           | 40161          | Internal PIR sensor reading. Not available on all models.        | Unsigned            | 0 = No Occupancy   1 = Occupancy                                                                                           | RO       |
| 161           | 40162          | Internal VOC sensor reading in ppb. Not available on all models. | Unsigned<br>Scale 1 | Unit: ppb, Range 1 to 60000 ppb, <i>Value x 1 (e.g. 20ppb = 20)</i>                                                        | RO       |
| 162           | 40163          | Configuration of AI3 mode.                                       | Unsigned            | 1 = Off   2 = Temperature   3 = CO2   4 = Humidity                                                                         | W        |
| 163           | 40164          | Configuration of AI4 mode.                                       | Unsigned            | 1 = Off   2 = Temperature   3 = CO2   4 = Humidity                                                                         | W        |
| 164           | 40165          | Configuration of AI5 mode.                                       | Unsigned            | 1 = Off   2 = Temperature   3 = CO2   4 = Humidity                                                                         | W        |
| 165           | 40166          | Configuration of AI6 mode.                                       | Unsigned            | 1 = Off   2 = Temperature   3 = CO2   4 = Humidity                                                                         | W        |
| 166           | 40167          | Configuration of TO1 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 167           | 40168          | Configuration of TO2 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 168           | 40169          | Configuration of TO3 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 169           | 40170          | Configuration of TO4 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 170           | 40171          | Configuration of AO1 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 171           | 40172          | Configuration of AO2 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 172           | 40173          | Configuration of AO3 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 173           | 40174          | Configuration of AO4 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 174           | 40175          | Configuration of DO1 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 175           | 40176          | Configuration of DO2 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 176           | 40177          | Configuration of DO3 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |
| 177           | 40178          | Configuration of DO4 alarm source.                               | Unsigned            | 1 = Alarm Override   2 = Alarm Overheat   3 = Alarm Door   4 = Alarm Window Contact   5 = Alarm FlowSwitch   6 = Alarm CO2 | W        |

Notes





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