



Networkable Fan Coil Controller

EFCB12-OE1 Series Modbus User Guide



EFCB12T-OE1 (240Vac / 0 relays)
EFCB12TU2-OE1 (240Vac / 2 relays)
EFCB12TU4-OE1 (240Vac / 4 relays)





Introduction

The EFCB12-OE1 Series Modbus Guide provides information for using Neptronic® ESCD 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 series devices.

The EFCB12-OE1 Series Modbus Guide assumes that you are familiar with Modbus terminology.

The following are the requirements for Modbus:

- **Data Model.** The EFCB12-OE1 Modbus server data model uses only the Holding Registers table.
- **Function Codes.** The EFCB12-OE1 Modbus server supports a limited function codes subset comprising:
 - Read Holding Registers (0x03)
 - Write Multiple Registers (0x10)
- **Exception Responses.** The EFCB12-OE1 Modbus server supports the following exception codes:
 - Illegal function
 - Illegal data address
 - Illegal data value
- **Serial Line.** The EFCB12-OE1 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 **Network Auto Baud Rate** device menu item.
 - The supported baud rates are 9600, 19200, 38400, and 57600.
 - The physical layer also supports variable parity control and stop bit configuration.
 - Parity control can be activated through the **Network Parity** device menu item.
 - Stop bit configuration is modified through the **Network Stop Bits** menu item.
 - 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 EFCB12-OE1 device answers at the following two different addresses:
 - The device's unique address (1 to 246) that can be set through the device menu or through holding register index 0.
 - The permanent backdoor address for easy debugging. The backdoor for all EFCB12-OE1 devices is 247.

Holding Registers Table

Glossary

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

Holding Register Table

Register Index	Description	Data Type	Range	Writable
40000	Address - Neptronic ID and Modbus address of current device.	Unsigned	MB = Modbus Address (e.g. 110), LB = 1-247	W
40001	MSTP Baud Rate - BaudRate of device/100.	Unsigned <i>Scale 100</i>	0, 9600, 19200, 38400, or 57600, 0 = Auto Baud Rate Detection <i>Value/100 (e.g. 38400 baud = 384)</i>	W
40002	Communication port configuration.	Unsigned	1= No parity, 2 Stop bits 2= Even parity, 1 stop bit 3= Odd parity, 1 Stop bit	W
40003	ProdName_87, characters 8-7 of 8 name characters.	ASCII	MB = 7, LB = 6	W
40004	ProdName_65, characters 6-5 of 8 name characters.	ASCII	MB = 5, LB = 4	W
40005	ProdName_43, characters 4-3 of 8 name characters.	ASCII	MB = 3, LB = 2	W
40006	ProdName_21, characters 2-1 of 8 name characters.	ASCII	MB = 1, LB = 0	W
40007	Thermostat Product_Version, actual firmware version.	Unsigned	1 to 65535 (e.g. 207)	RO



Register Index	Description	Data Type	Range	Writable
40008	Thermostat parameters version.	Unsigned	1 to 65535 (e.g. 207)	RO
40009	System Status 1.	Bit String	[B1, B5, B7 – B11]: Reserved B0: System operation 0 = Normal; 1 = Fault B2: System override by NSB 0 = Normal; 1 = OFF B3: Change Over Mode 0 = Cooling; 1 = Heating B4: Flow Switch Alarm 0 = No alarm, 1 = Alarm activated B6: Dirty Filter Alarm 0 = No alarm, 1 = Alarm activated B12: Analog Input 3 Mode 0 = Temp 10kΩ, 1 = 0-10Vdc B13: Analog Input 4 Mode 0 = Temp 10kΩ, 1 = 0-10Vdc B14: Analog Input 5 mode 0 = Temp 10kΩ, 1 = 0-10Vdc B15: Analog Input 6 Mode 0 = Temp 10kΩ, 1 = 0-10Vdc	RO
40010	System Status 2.	Bit String	[B0-B6, B12-B14]: Reserved B7: Override Alarm 0 = Off, 1 = On B8: Window Opened Alarm 0 = Off, 1 = On B9: Door Opened Alarm 0 = Off, 1 = On B10: DI1 Alarm 0 = Off, 1 = On B11: DI2 Alarm 0 = Off, 1 = On B13: DI4 Alarm 0 = Off, 1 = On B15: Overheat Alarm 0 = Off, 1 = On	RO
40011	Internal temperature sensor reading.	Unsigned Scale 100	Range: 0 to 50 °C or 32 to 122°F, <i>Value/100</i> (e.g. 23°C = 2300)	RO
40012	External temperature sensor reading.	Unsigned Scale 100	Range: 0 to 50 °C or 32 to 122°F, <i>Value/100</i> (e.g. 25°C = 2500)	RO
40013	Changeover temperature sensor reading.	Unsigned Scale 100	Range: 0 to 50°C or 32 to 122°F, <i>Value/100</i> (e.g. 18°C = 1800)	RO
40014	Control temperature reading.	Unsigned Scale 100	Range: 0 to 50°C or 32 to 122°F, <i>Value/100</i> (e.g. 30°C = 3000)	W
40015	Internal humidity sensor reading. Select models only.	Unsigned Scale 10	Range: 5%RH to 100%RH, <i>Value/10</i> (e.g. 30%RH = 300)	RO
40016	External Humidity sensor reading. Select models only.	Unsigned Scale 10	Range: 5%RH to 100%RH, <i>Value/10</i> (e.g. 30%RH = 300)	RO



Register Index	Description	Data Type	Range	Writable
40017	Analog input 3 reading.	Signed Scale 100	Unit: Volts or °C/°F, Range: 0V to 10V, -40 to 100°C or -40 to 212°F <i>Value/100 (e.g. 3 V = 300/18°C = 1800)</i>	RO
40018	Analog input 4 reading.	Signed Scale 100	Unit: Volts or °C/°F, Range: 0V to 10V, -40 to 100°C or -40 to 212°F <i>Value/100 (e.g. 3 V = 300/18°C = 1800)</i>	RO
40019	Analog input 5 reading.	Signed Scale 100	Unit: Volts or °C/°F, Range: 0V to 10V, -40 to 100°C or -40 to 212°F <i>Value/100 (e.g. 3 V = 300/18°C = 1800)</i>	RO
40020	Analog input 6 reading.	Signed Scale 100	Unit: Volts or °C/°F, Range: 0V to 10V, -40 to 100°C or -40 to 212°F <i>Value/100 (e.g. 3 V = 300/18°C = 1800)</i>	RO
40021	Digital input status of 4 digital inputs.	Bit String	[B4-B15] : Reserved B0: Digital input 1 0 = Open, 1 = Close B1: Digital input 2 0 = Open, 1 = Close B2: Digital input 3 0 = Open, 1 = Close B3: Digital input 4 0 = Open, 1 = Close	RO
40022	Actual system occupancy state.	Unsigned	1= NoOccupancy 2= Occupancy 3= Override	RO
40023	Actual night setback state of the system. Not available on all models.	Unsigned	1= Day 2= Night 3= Override	RO
40024	Actual heating demand.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10 (e.g. 200% = 20)</i>	RO
40025	Actual local reheat demand.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10 (e.g. 200% = 20)</i>	RO
40026	Actual cooling demand.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10 (e.g. 200% = 20)</i>	RO
40027	Actual changeover demand.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10 (e.g. 200% = 20)</i>	RO
40028	Actual fan demand.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10 (e.g. 200% = 20)</i>	RO



Register Index	Description	Data Type	Range	Writable
40029	Actual dehumidification demand. Select models only.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	RO
40030	Actual humidification demand. Select models only.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	RO
40031	CL_HT_SwitchTimerCount - countdown until system is able to swap the demand.	Unsigned Scale 1	Range: 0 to 120 minutes, <i>Value/1</i> (e.g. 5 mins =5)	RO
40032	Analog output 1 value.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	W
40033	Analog output 2 value.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	W
40034	Analog output 3 value.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	W
40035	Analog output 4 value.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	W
40036	Floating output 1 value.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	RO
40037	Floating output 2 value.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	RO
40038	Pulsing output 1 value.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	RO
40039	Pulsing output 2 value.	Unsigned Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	RO
40040	Pulsing output 3 value.	Signed Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	RO
40041	Pulsing output 4 value.	Signed Scale 10	Range: 0% to 100%, <i>Value/10</i> (e.g. 200% = 20)	RO
40042	TRIAC output on-off mode status	Bit String	[B4-B15] : Reserved B0: On Off output 1 <i>0 = Off, 1 = On</i> B1: On Off output 2 <i>0 = Off, 1 = On</i> B2: On Off output 3 <i>0 = Off, 1 = On</i> B3: On Off output 4 <i>0 = Off, 1 = On</i>	W



Register Index	Description	Data Type	Range	Writable
40043	Digital output - 7 relays output status.	Bit String	[B7-B15] : Reserved B0: Digital output 1 <i>0 = Open, 1 = Close</i> B1: Digital output 2 <i>0 = Open, 1 = Close</i> B2: Digital output 3 <i>0 = Open, 1 = Close</i> B3: Digital output 4 <i>0 = Open, 1 = Close</i> B4: FAN Output High <i>0 = Open, 1 = Close</i> B5: FAN Output Med <i>0 = Open, 1 = Close</i> B6: FAN Output Low <i>0 = Open, 1 = Close</i>	W
40044	System command.	Bit String	[B6, B9 - B15]: Reserved B0: Service Display Address <i>0 = Off; 1 = Display address on LCD</i> B1: Cooling Ramp Lock <i>0 = Off; 1 = On</i> B2: Condensation Alarm <i>0 = Off; 1 = On</i> B3: Heating Ramp Lock <i>0 = Off; 1 = On</i> B4: Reheat Ramp Lock <i>0 = Off; 1 = On</i> B5: Changeover Ramp Lock <i>0 = Off; 1 = On</i> B7: Humidify Ramp Lock <i>0 = Off; 1 = On</i> B8: Dehumidify Ramp Lock <i>0 = Off; 1 = On</i>	W
40045	System mode status.	Unsigned	1= Auto 2= Heat 3= Cool 4= Fan 5= Off	W
40046	Fan speed selection by user.	Unsigned	1= Auto 2= Low 3= Med 4= High	W
40047	Temperature setpoint in occupancy or day mode.	Signed Scale 10	Unit: Volts or °C/°F, Range: min to max setpoint <i>Value/10 (e.g. 3 V = 300/18°C = 180)</i>	W



Register Index	Description	Data Type	Range		Writable
40048	System options1.	Bit String	B0: Temp unit displayed on thermostat <i>0 = °C, 1 = °F</i> B1: Temp unit displayed in Modbus <i>0 = °C, 1 = °F</i> B2: Temp SetPoint Lock <i>0 = Off, 1 = On</i> B3: Humidity SetPoint Lock <i>0 = Off, 1 = On</i> B4: Program Mode Lock <i>0 = Off, 1 = On</i> B5: Floating TO1/TO2 Direction <i>0 = Direct, 1 = Reverse</i> B6: Floating TO3/TO4 Direction <i>0 = Direct, 1 = Reverse</i> B7: Freeze Protection Alarm <i>0 = Off, 1 = On</i>	B8: User System Off Modes <i>0 = Enable, 1 = Disable</i> B9: Keypad Bottom Left Lock <i>0 = Off, 1 = On</i> B10: Keypad Upper Left Lock <i>0 = Off, 1 = On</i> B11: Keypad Arrows Lock <i>0 = Off, 1 = On</i> B12: User Fan Auto Mode <i>0 = Enable, 1 = Disable</i> B13: Night SetBack Mode* <i>0 = Setpoint, 1 = OFF</i> <i>* Also applies to No Occupancy Mode</i> B14: Humidity Control Source <i>0 = Intern Sensor, 1 = Extern Sensor</i> B15: Time Mode <i>0 = 24h, 1 = 12h</i>	W



Register Index	Description	Data Type	Range	Writable
40049	System options 2.	Bit String	[B0-B1] : Reserved B2: Baud Rate 0 = Auto; 1 = Manual B3: Schedule On or Off 0 = Off, 1 = On B4: Analog Output 1 Direction 0 = Direct, 1 = Reverse B5: Analog Output 2 Direction 0 = Direct, 1 = Reverse B6: Analog Output 3 Direction 0 = Direct, 1 = Reverse B7: Analog Output 4 Direction 0 = Direct, 1 = Reverse B8: TO1 Direction 0 = Direct, 1 = Reverse B9: TO2 Direction 0 = Direct, 1 = Reverse B10: TO3 Direction 0 = Direct, 1 = Reverse B11: TO4 Direction 0 = Direct, 1 = Reverse B12: Digital Output 1 Direction 0 = Direct, 1 = Reverse B13: Digital Output 2 Direction 0 = Direct, 1 = Reverse B14: Digital Output 3 Direction 0 = Direct, 1 = Reverse B15: Digital Output 4 Direction 0 = Direct, 1 = Reverse	W
40050	System option3.		[B0-B15] : Reserved	W
40051	System option4.		[B0-B15] : Reserved	W
40052	TRL display information.	Unsigned	1= Temperature and Demand 2= Setpoint and Demand 3= Temperature Only 4= Setpoint Only 5= Off	W
40053	Temperature control source.	Unsigned	1= Network Temp 2= Intern Temp, 3= Extern Temp if AI1 (external temp) is available.	W
40054	Network fallback timeout Present Value	Unsigned	Range: 0 to 60 minutes	W
40055	Minimum occupancy/day setpoint.	Signed Scale 10	Unit: Volts or °C/°F, Range: 10°C to max or 50°C to max Value/10 (e.g. 3 V = 30/18°C = 180)	W
40056	Maximum occupancy/day setpoint.	Signed Scale 10	Unit: Volts or °C/°F, Range: min to 40°C or min to 104°F Value/10 (e.g. 3 V = 30/18°C = 180)	W



Register Index	Description	Data Type	Range	Writable
40057	Cooling temperature setpoint in unoccupied or night mode.	Signed Scale 10	Unit: Volts or °C/°F, Range: 10°C to 40°C or 50°F to 104°F <i>Value/10 (e.g. 3 V = 300/18°C = 180)</i>	W
40058	Heating temperature setpoint in unoccupied or night mode.	Signed Scale 10	Unit: Volts or °C/°F, Range: 10°C to 40°C or 50°F to 104°F <i>Value/10 (e.g. 3 V = 300/18°C = 180)</i>	W
40059	Heating proportional band.	Unsigned Scale 10	Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9° <i>Value/10 (e.g. 1 = 10)</i>	W
40060	Local reheat proportional band.	Unsigned Scale 10	Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F <i>Value/10 (e.g. 1 = 10)</i>	W
40061	Cooling proportional band.	Unsigned Scale 10	Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F <i>Value/10 (e.g. 1 = 10)</i>	W
40062	Change over proportional band.	Unsigned Scale 10	Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F <i>Value/10 (e.g. 1 = 10)</i>	W
40063	Heating dead band.	Unsigned Scale 10	Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F <i>Value/10 (e.g. 1 = 10)</i>	W
40064	Local reheat dead band.	Unsigned Scale 10	Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F <i>Value/10 (e.g. 1 = 10)</i>	W
40065	Cooling dead band.	Unsigned Scale 10	Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F <i>Value/10 (e.g. 1 = 10)</i>	W
40066	Change over dead band.	Unsigned Scale 10	Unit: depends on system unit, 0.5°C to 5°C or 1°F to 9°F <i>Value/10 (e.g. 1 = 10)</i>	W
40067	Change over setpoint.	Signed Scale 10	Unit: depends on system unit, 10°C to 40°C or 50°F to 104°F <i>Value/10 (e.g. 12 = 120)</i>	W
40068	Fan time out in seconds	Unsigned	Range: 0 to 255 seconds	W
40069	Fan damping factor in seconds.	Unsigned	Range: 0 to 255 seconds	W
40070	Heating integral time factor in seconds.	Unsigned	Range: 0 to 250 seconds	W
40071	Cooling integral time factor in seconds.	Unsigned	Range: 0 to 250 seconds	W
40072	Delay between cooling and heating or vice versa.	Unsigned	Range: 0 to 120 Minutes	W
40073	Cooling anticycle delay in minutes.	Unsigned	Range: 0 to 15 Minutes	W
40074	NSB override delay in minutes.	Unsigned	Range: 0 to 180 Minutes	W
40075	Unoccupied override delay in minutes.	Unsigned	Range: 0 to 180 Minutes	W
40076	Occupancy minimum time in minutes.	Unsigned	Range: 0 to 240 Minutes	W



Register Index	Description	Data Type	Range	Writable
40077	Unoccupied override delay count down in minutes.	Unsigned	Range: 0 to 180 Minutes	W
40078	Fan mode (speed) in unccupied or nsb mode.	Unsigned	1= Auto 2= Heat 3= Cool 4= Heat or Cool	W
40079	Selected user temperature control mode (according to Register 45).	Unsigned	1= Auto 2= Heat 3= Cool 4= Heat or Cool 5= Auto Lock	W
40080	Digital input 3 mode.	Unsigned	1= Off 2= Occupancy normally open 3= Occupancy normally close 4= NSB normally open 5= NSB normally close	W
40081	Override system occupancy or NSB mode. 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
40082	Internal temperature sensor offset correction.	Signed Scale 100	Unit: depends on system unit, Range: $\pm 5^{\circ}\text{C}$ or $\pm 9^{\circ}\text{F}$	W
40083	External temperature sensor offset correction.	Signed Scale 100	Unit: depends on system unit, Range: $\pm 5^{\circ}\text{C}$ or $\pm 9^{\circ}\text{F}$	W
40084	Change over analog input signal.	Unsigned	3= Sensor 4= Normally Cool 5= Normally Heat	W
40085	Change over control mode.	Unsigned	1= Local 2= Cool 3= Heat	W



Register Index	Description	Data Type	Range	Writable
40086	External temperature 0-10V input on AI3.	Unsigned	1= Off 2= 2-10V 3= 0-10V	W
40087	Minimum AI3 external temperature reading.	Signed Scale 10	Unit: depends on system unit, Range: -40°C to 0°C or -40°F to 32°F <i>Value/10 (-20°C = -200)</i>	W
40088	Maximum AI3 external temp reading.	Signed Scale 10	Unit: depends on system unit, Range: 50°C to 100°C or 122°F to 212°F, <i>Value/10 (60°C = 600)</i>	W
40089	Fan output signal.	Unsigned	1= 1 speed 2= 2 speeds 3= 3 speeds 4= Analog	W
40090	Ramp to control analog output 1.	Unsigned	1= Off 2= Changeover with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat 7= HumidifyWithFan (<i>with TRLHxx thermostat only</i>)	W
40091	Minimum voltage for analog output 1 (volt).	Unsigned Scale 10	Range: 0V to 10V, <i>Value/10 (e.g. 3 V = 30)</i>	W
40092	Maximum voltage for analog output 1 (volt).	Unsigned Scale 10	Range: 0V to 10V, <i>Value/10 (e.g. 3 V = 30)</i>	W
40093	Ramp to control analog output 2.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat 7= HumidifyWithFan (<i>with TRLHxx thermostat only</i>)	W
40094	Minimum voltage for analog output 2 (volt).	Unsigned Scale 10	Range: 0V to 10V, <i>Value/10 (e.g. 3 V = 30)</i>	W
40095	Maximum voltage for analog output 2 (volt).	Unsigned Scale 10	Range: 0V to 10V, <i>Value/10 (e.g. 3 V = 30)</i>	W



Register Index	Description	Data Type	Range	Writable
40096	Ramp to control analog output 3.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat 7= HumidifyWithFan (<i>with TRLHxx thermostat only</i>)	W
40097	Minimum voltage for analog output 3 (volt).	Unsigned Scale 10	Range: 0V to 10V, <i>Value/10</i> (e.g. 3 V = 30)	W
40098	Maximum voltage for analog output 3 (volt).	Unsigned Scale 10	Range: 0V to 10V, <i>Value/10</i> (e.g. 3 V = 30)	W
40099	Ramp to control analog output 4.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat 7= HumidifyWithFan (<i>with TRLHxx thermostat only</i>) 8= Fan	W
40100	Minimum voltage for analog output 4 (volt).	Unsigned Scale 10	Range: 0V to 10V, <i>Value/10</i> (e.g. 3 V = 30)	W
40101	Maximum voltage for analog output 4 (volt).	Unsigned Scale 10	Range: 0V to 10V, <i>Value/10</i> (e.g. 3 V = 30)	W
40102	Timing of floating motor TO1-TO2 in seconds.	Unsigned	Range: 15 to 250 Seconds	W
40103	Timing of floating motor TO3-TO4 in seconds	Unsigned	Range: 15 to 250 Seconds	W
40104	Ramp to control TRIAC output 1.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat	W



Register Index	Description	Data Type	Range	Writable
40105	Signal output configuration for TRIAC output 1.	Unsigned	1= Pulsing mode 2= On/Off mode 3= Floating mode	W
40106	TRIAC output 1 when set to close.	Unsigned	Range: 15 to 80%	W
40107	TRIAC output 1 when set to open.	Unsigned	Range: 0 to TO1closepos-4%	W
40108	Ramp to control TRIAC output 2.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat	W
40109	Signal output configuration for TRIAC output 2.	Unsigned	1= Pulsing mode 2= On/Off mode 3= Floating mode	W
40110	TRIAC output 2 when set to close.	Unsigned	Range: 15 to 80%	W
40111	TRIAC output 2 when set to open.	Unsigned	Range: 0 to TO2closepos-4%	W
40112	Ramp to control TRIAC output 3.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat	W
40113	Signal output configuration for TRIAC output 3.	Unsigned	1= Pulsing mode 2= On/Off mode 3= Floating mode	W
40114	TRIAC output 3 when set to close.	Unsigned	Range: 15 to 80%	W
40115	TRIAC output 3 when set to open.	Unsigned	Range: 0 to TO3closepos-4%	W
40116	Ramp to control TRIAC output 4.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat	W



Register Index	Description	Data Type	Range	Writable
40117	Signal output configuration for TRIAC output 4.	Unsigned	1= Pulsing mode 2= On/Off mode 3= Floating mode	W
40118	TRIAC output 4 when set to close.	Unsigned	Range: 15 to 80%	W
40119	TRIAC output 4 when set to open.	Unsigned	Range: 0 to TO4closepos-4%	W
40120	Configuration of DO1 mode.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat 7= HumidifyWithFan (<i>with TRLHxx thermostat only</i>)	W
40121	Delay before activation of DO1 in minutes	Unsigned	Range: 0 to 15 minutes	W
40122	Close position percentage for contact DO1.	Unsigned	15 to 80%	W
40123	Open position percentage for contact DO1.	Unsigned	Range: 0 to DO1closepos-4%	W
40124	Configuration of DO2 mode.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat 7= HumidifyWithFan (<i>with TRLHxx thermostat only</i>)	W
40125	Activation delay for contact DO2 in minutes.	Unsigned	Range: 0 to 15 minutes	W
40126	Close position percentage for contact DO2.	Unsigned	Range: 15 to 80%	W
40127	Open position percentage for contact DO2.	Unsigned	Range: 0 to DO2closepos-4%	W
40128	Configuration of DO3 mode.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat 7= HumidifyWithFan (<i>with TRLHxx thermostat only</i>)	W



Register Index	Description	Data Type	Range	Writable
40129	Activation delay for contact DO3 in minutes.	Unsigned	Range: 0 to 15 minutes	W
40130	Close position percentage for contact DO3.	Unsigned	Range: 15 to 80%	W
40131	Open position percentage for contact DO3.	Unsigned	Range: 0 to DO1closepos-4%	W
40132	Configuration of DO4 mode.	Unsigned	1= Off 2= Change Over with fan 3= Cooling with fan 4= Heating with fan 5= Local Reheat with fan 6= Local Reheat 7= HumidifyWithFan (with TRLHxx thermostat only)	W
40133	Cfg_DigitalOutput4ContactDelay	Unsigned	Range: 0 to 15 minutes	W
40134	Cfg_DigitalOutput4ClosePos	Bit String	Range: 15 to 80%	W
40135	Cfg_DigitalOutput4OpenPos	Unsigned	Range: 0 to DO1closepos-4%	W
40136	Digital input contact of DI1 to DI 4.	Bit String	[B2-B15] : Reserved B0: Digital input 1 <i>0 = Normally Open, 1 = Normally Close</i> B1: Digital input 2 <i>0 = Normally Open; 1 = Normally Close</i> B2: Digital input 3 <i>0 = Normally Open; 1 = Normally Close</i> B4: Digital input 4 <i>0 = Normally Open; 1 = Normally Close</i>	W
40137	Configuration of DI1 mode.	Unsigned	1= OFF 2= Override 3= Window 4= Door 5= FlowSwitch 6= DirtyFilter 7= OverHeat 8= SelectorSwitch* <i>* Warning, must be used with FlowSwitch, in local mode Fan stay off</i>	RO



Register Index	Description	Data Type	Range	Writable
40138	Delay before activation of DI1 in minutes	Unsigned	Range: 0 to 65,535 seconds	RO
40139	Configuration of DI2 mode.	Unsigned	1= OFF 2= Override 3= Window 4= Door 5= FlowSwitch 6= DirtyFilter 7= OverHeat 8= SelectorSwitch* <i>* Warning, must be used with FlowSwitch, in local mode Fan stay off</i>	RO
40140	Delay before activation of DI2 in minutes	Unsigned	Range: 0 to 65,535 seconds	RO
40141	Configuration of DI4 mode.	Unsigned	1= OFF 2= Override 3= Window 4= Door 5= FlowSwitch 6= DirtyFilter 7= OverHeat 8= SelectorSwitch <i>* Warning, must be used with FlowSwitch, in local mode Fan stay off</i>	RO
40142	Delay before activation of DI4 in minutes	Unsigned	Range: 0 to 65,535 seconds	RO
40143	Humidity control mode status. Not available on all models.	Unsigned	1= Auto 2= Dehumidification 3= Humidification 4= Off	W
40144	Humidity setpoint (%RH) in occupancy or day mode. Not available on all models.	Unsigned Scale 10	Unit: %RH, Limited by min/max humidity setpoint, <i>Value/10 (e.g. 20 = 200)</i>	W
40145	Dehumidification setpoint (%RH) in unoccupied or night mode. Not available on all models.	Unsigned Scale 10	Unit: %RH, Range: 10% to 65%, <i>Value/10 (e.g. 20 = 200)</i>	W
40146	Humidification setpoint (%RH) in unoccupied or night mode. Not available on all models.	Unsigned Scale 10	Unit: %RH, Range: 10% to 65%, <i>Value/10 (e.g. 20 = 200)</i>	W
40147	Minimum user setpoint. Not available on all models.	Unsigned Scale 10	Unit: %RH, Range: 10% to max, <i>Value/10 (e.g. 20 = 200)</i>	W



Register Index	Description	Data Type	Range	Writable
40148	Maximum user setpoint. Not available on all models.	Unsigned Scale 10	Unit: %RH, Range: min to 65% , <i>Value/10</i> (e.g. 20 = 200)	W
40149	Humidity proportional band. Not available on all models.	Unsigned Scale 10	Unit: %RH, Range: 3% to 10% , <i>Value/10</i> (e.g. 4 = 40)	W
40150	Cfg_HumDeadBand Not available on all models.	Unsigned Scale 10	Unit: %RH, Range: 0% to 5% , <i>Value/10</i> (e.g. 4 = 40)	W
40151	External humidity sensor input.	Unsigned	1= Off 2= Analog input 3 3= Analog input 4 4= Analog input 5 5= Analog input 6	W
40152	Internal humidity sensor offset correction. Not available on all models.	Signed Scale 10	Unit: %RH, Range: $\pm 5\%RH$	W
40153	External humidity sensor offset correction. Not available on all models.	Signed Scale 10	Unit: %RH, Range: $\pm 5\%RH$	W

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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