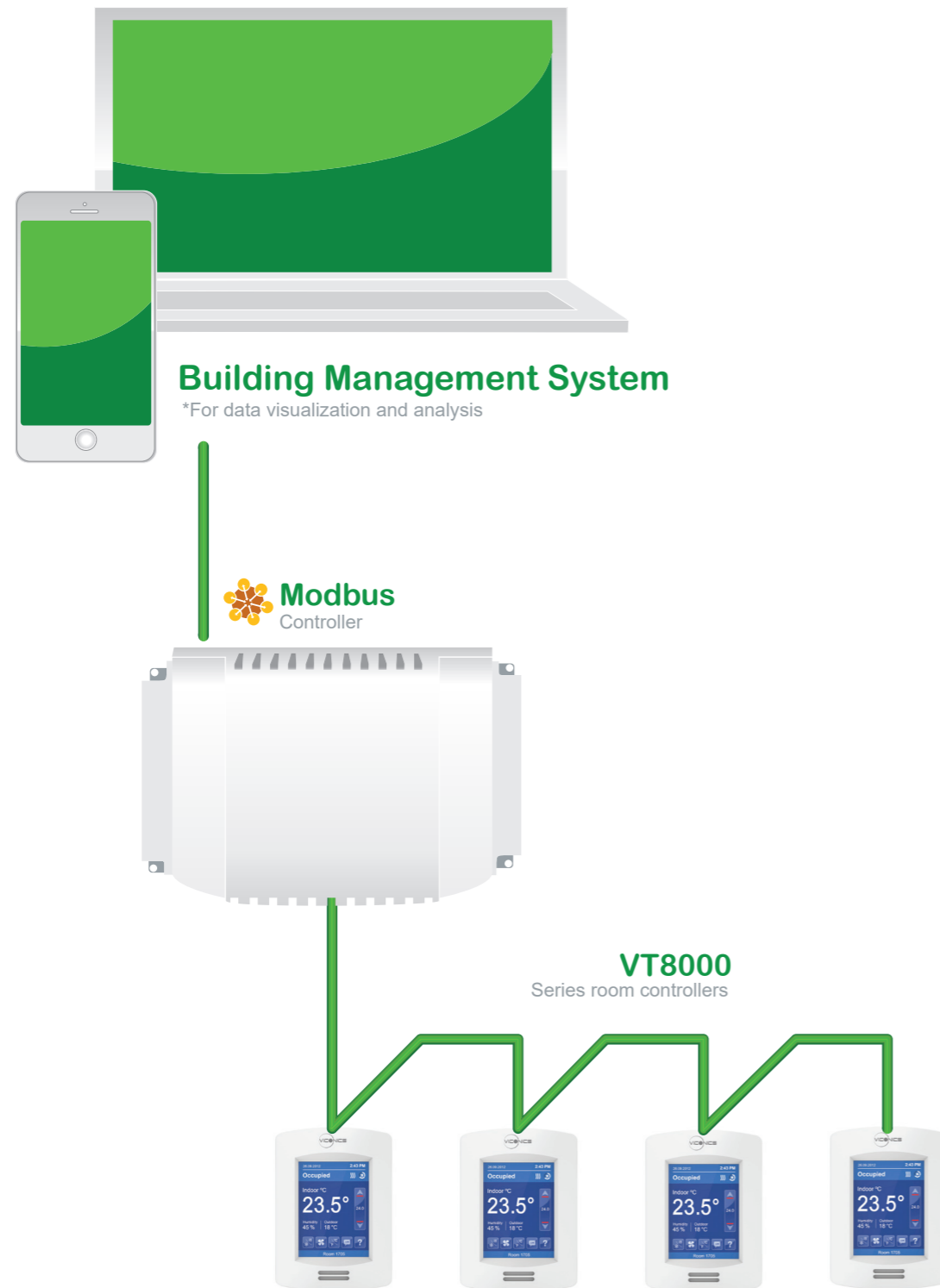


# Modbus Integration

Integration for Modbus Functionality for VZ8250 Series



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## INTRODUCTION

Modbus is an application-layer messaging protocol which is independent of the physical network layer. A Modbus serial line can be integrated into Modbus TCP networks, using simple gateways.

### VZ8250 SERIES MODBUS SPECIFICATIONS

The VZ8250 Series Room Controller acts as a Modbus slave by using its RS485 port. As BACnet and Modbus use the same RS485 port, a setup menu allows switching between the two protocols.

### MODBUS SPECIFIC READ-ONLY POINTS

The below points serve to identify the version Numbers for all VZ8250 Series Room Controllers.

Modbus point type	Description	Modbus functions available	Modbus Register	Modbus Address
16-bit Input	Hardware Revision	4	9001	39001
16-bit Input	Software Version Major	4	9002	39002
16-bit Input	Software Version Minor	4	9003	39003
16-bit Input	Software Version Revision	4	9004	39004
16-bit Input	Software Version Build	4	9005	39005
16-bit Input	Model Number	4	9006	39006

## CONFIGURATION

1/1 Modbus network

COM address	254
Network units	SI
Baud rate	19200
Parity	None

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- Modbus ID is the same as already defined in COM address for BACnet & ZigBee
- Network units can be changed to SI or Imperial
- The baudrate can be: 4800 / 9600 / 19200 / 38400 / 57600
- The data bits are always 8
- The parity can be: none, odd or even. In case of parity odd or even, 1 stop bit is used, otherwise 2 stop bits are used

Configuration Parameters Default Value	Significance and Adjustments
<b>Comm address</b> Room Controller networking address Default value: 254 Range: 0 to 254	<b>Communication Address</b> Default value of 254 disables Modbus communication for the Room Controller.
<b>Network units</b> Default value: Imperial	<b>Measurement Units</b> <b>Imperial:</b> network units shown as Imperial units. <b>SI:</b> network units shown as International Metric units.
<b>Baud rate</b> Default value: Auto	<b>Baud Rate</b> <b>Auto:</b> automatically detects baud rate. <b>Other choices:</b> (115200, 76800, 57600, 38400, 19200, and 9600).
<b>Parity</b> Default value: None	<b>Parity</b> Parity checking of the data character frame (Even, Odd, or no parity (None)).

## MAPPING

The mapping is directly based on database IDs.

**The correspondence is the following:**

function 1, register 1 (Modbus addr 1)	<=> DB id 0x6000 (BOs)
function 1/5, register 5001 (Modbus addr 5001)	<=> DB id 0x4000 (BVs)
function 2, register 1 (Modbus addr 10001)	<=> DB id 0x5000 (BIs)
function 4, register 1 (Modbus addr 30001)	<=> DB id 0x3000 (AHVs)
function 4, register 1001 (Modbus addr 31001)	<=> DB id 0x7000 (AIs)
function 4, register 5001 (Modbus addr 35001)	<=> DB id 0xC000 (MSIs)
function 3/6, register 1 (Modbus addr 40001)	<=> DB id 0x1000 (MVs)
function 3/6, register 4001 (Modbus addr 44001)	<=> DB id 0x2000 (AVs)
function 3, register 8001 (Modbus addr 48001)	<=> DB id 0x8000 (AOs)
function 3, register 9001 (Modbus addr 49001)	<=> DB id 0x9000 (AHOs)

A special range of addresses is used to identify the device: function 4, register 9001 (Modbus addr 39001)

## GENERAL MODBUS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
UO9 Binary Output	1	1	1	0	1	0=Off, 1=On
UO10 Binary Output	2	2	1	0	1	0=Off, 1=On
BO4 High Speed Fan Output	3	3	1	0	1	0=Off, 1=On
BO8 Auxiliary Binary Output	7	7	1	0	1	0=Off, 1=On
UO11 Binary Output	8	8	1	0	1	0=Off, 1=On
UO12 Binary Output	9	9	1	0	1	0=Off, 1=On

## 1000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
UI16 Binary Input	1	10001	2	0	1	0=Activated, 1=Not activ.
UI17 Binary Input	2	10002	2	0	1	0=Activated, 1=Not activ.
UI19 Binary Input	6	10006	2	0	1	0=Activated, 1=Not activ.
UI20 Binary Input	7	10007	2	0	1	0=Activated, 1=Not activ.
UI22 Binary Input	8	10008	2	0	1	0=Activated, 1=Not activ.
UI23 Binary Input	9	10009	2	0	1	0=Activated, 1=Not activ.
UI24 Binary Input	10	10010	2	0	1	0=Activated, 1=Not activ.

## 3000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Room Temperature	1	30001	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Outdoor Temperature	2	30002	4	-40°F(-40°C)	180°F(82°C)	Fahrenheit/Celsius
UI22 Supply Temperature	3	30003	4	-40°F(-40°C)	180°F(82°C)	Fahrenheit/Celsius
Room Humidity	4	30004	4	0	100	Percent Relative Humidity
UI19 Changeover Temperature	5	30005	4	-40°F(-40°C)	180°F(82°C)	Fahrenheit/Celsius
UI20 Remote Temperature	6	30006	4	-40°F(-40°C)	180°F(82°C)	Fahrenheit/Celsius
CO2 Level	7	30007	4	0	5000	Parts per Million
Airflow Level	8	30008	4	0	20000	Cubic Feet per Minute
Terminal24 10V	11	30011	4	0	10	Voltage
UI24 Temperature	12	30012	4	-40°F(-40°C)	180°F(82°C)	Fahrenheit/Celsius
Light Sensor Level	1002	31002	4	0	30000	
Relative Humidity Raw Value	1004	31004	4	0	1000	Percent Relative Humidity
UI20 Raw Value	1005	31005	4	0	4095	
UI19 Raw Value	1006	31006	4	0	4095	
UI23 Raw Value	1007	31007	4	0	4095	
UI22 Raw Value	1008	31008	4	0	4095	
UI24 Raw Value	1009	31009	4	0	4095	
Wireless Device 1 - Address	1011	31011	4	0x0000	0xFFFF	
Wireless Device 2 - Address	1012	31012	4	0x0000	0xFFFF	
Wireless Device 3 - Address	1013	31013	4	0x0000	0xFFFF	
Wireless Device 4 - Address	1014	31014	4	0x0000	0xFFFF	
Wireless Device 5 - Address	1015	31015	4	0x0000	0xFFFF	
Wireless Device 6 - Address	1016	31016	4	0x0000	0xFFFF	
Wireless Device 7 - Address	1017	31017	4	0x0000	0xFFFF	

## 3000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Wireless Device 8 - Address	1018	31018	4	0x0000	0xFFFF	
Wireless Device 9 - Address	1019	31019	4	0x0000	0xFFFF	
Wireless Device 10 - Address	1020	31020	4	0x0000	0xFFFF	
Wireless Green Power - Address	1025	31025	4	0x0000	0xFFFF	
Wireless Device 1 - Temperature	1026	31026	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Device 2 - Temperature	1027	31027	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Device 3 - Temperature	1028	31028	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Device 4 - Temperature	1029	31029	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Device 5 - Temperature	1030	31030	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Device 6 - Temperature	1031	31031	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Device 7 - Temperature	1032	31032	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Device 8 - Temperature	1033	31033	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Device 9 - Temperature	1034	31034	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Device 10 - Temperature	1035	31035	4	-40°F(-40°C)	122°F(50°C)	Fahrenheit/Celsius
Wireless Green Power - Temperature	1037	31037	4	-40°F(-40°C)	185°F(85°C)	Fahrenheit/Celsius
Remote relative humidity	1038	31038	4	0	100	Percent Relative Humidity
Effective Setpoint	1040	31040	4	40°F(4°C)	100°F(38°C)	Fahrenheit/Celsius
Paired ZigBee Devices	1041	31041	4	0	11	
RH Temperature Raw Value	1042	31042	4	-400	1220	
Therm. Raw Value	1045	31045	4	-400	1220	
SH Therm. Raw Value	1046	31046	4	-400	1220	
Wi-Fi Network Signal Strength	1058	31058	4	0	100	Percent
Wi-Fi Module Boot Count	1059	31059	4	0	32767	

## 3000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Airflow Setpoint	1060	31060	4	0	10000	Cubic Feet per Minute
Effective Occupancy	5001	35001	4	0	3	0=Occupied, 1=Unoccupied, 2=Override, 3=Standby
ZigBee Network Status	5003	35003	4	0	4	0=Not det., 1=Pwr on, 2=No NWK, 3=Joined, 4=Online
Weekday	5005	35005	4	0	6	0=Monday, 1=Tuesday, 2=Wed., 3=Thursday, 4=Friday, 5=Saturday, 6=Sunday
Program Status	5006	35006	4	0	5	0=Idle, 1=Loading, 2=Running, 3=Waiting, 4=Halted, 5=Unloading
Program Error	5007	35007	4	0	5	0=No error, 1=Yield, 2=Runtime, 3=Syntax, 4=Memory, 5=Double err
Wireless Device 1 - Status	5008	35008	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 2 - Status	5009	35009	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 3 - Status	5010	35010	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 4 - Status	5011	35011	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 5 - Status	5012	35012	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 6 - Status	5013	35013	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 7 - Status	5014	35014	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 8 - Status	5015	35015	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 9 - Status	5016	35016	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 10 - Status	5017	35017	4	0	6	0=None, 1=Closed, 2=Opened,3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 1 - Battery	5018	35018	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 2 - Battery	5019	35019	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 3 - Battery	5020	35020	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 4 - Battery	5021	35021	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 5 - Battery	5022	35022	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 6 - Battery	5023	35023	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 7 - Battery	5024	35024	4	0	2	0=None, 1=Normal, 2=Low



## 3000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Wireless Device 8 - Battery	5025	35025	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 9 - Battery	5026	35026	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 10 - Battery	5027	35027	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 1 - Communication Status	5028	35028	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 2 - Communication Status	5029	35029	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 3 - Communication Status	5030	35030	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 4 - Communication Status	5031	35031	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 5 - Communication Status	5032	35032	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 6 - Communication Status	5033	35033	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 7 - Communication Status	5034	35034	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 8 - Communication Status	5035	35035	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 9 - Communication Status	5036	35036	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 10 - Communication Status	5037	35037	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Green Power - Communication Status	5045	35045	4	0	4	0=Not paired, 1=Online, 2=Invalid, 3=Offline, 4=Paired
Wireless Green Power - Battery	5046	35046	4	0	2	0=None, 1=Normal, 2=Low
Wireless Green Power - Remove	5047	35047	4	0	1	0=No, 1=Yes
Effective temperature sensor	5048	35048	4	0	13	0=Wired, 1=Internal, 2=WL IO, 3=WL 1, 4=WL 2, 5=WL 3, 6=WL 4, 7=WL 5, 8=WL 6, 9=WL 7, 10=WL 8, 11=WL 9, 12=WL 10, 13=WL GP,
Effective relative humidity sensor	5049	35049	4	0	12	0=None, 1=Internal, 2=WL 1, 3=WL 2, 4=WL 3, 5=WL 4, 6=WL 5, 7=WL 6, 8=WL 7, 9=WL 8, 10=WL 9, 11=WL 10, 12=WL GP,
Effective System Mode	5050	35050	4	0	1	0=Cool, 1=Heat
Wi-Fi Module Status	5051	35051	4	0	6	0=Offline, 1=Initializing, 2=Ready, 3=Booting, 4=Resetting, 5=Fail, 6=Testing
Wi-Fi Status	5052	35052	4	0	6	0=Idle, 1=Associate, 2=Config., 3=Ready, 4=Online, 5=Disconn., 6=Failure
BACnet IP Status	5053	35053	4	0	1	0=Disabled, 1=Enabled
SMTP Server Status	5054	35054	4	0	3	0=Unknown, 1=Disabled, 2=Offline, 3=Online

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Temperature Scale	1	40001	3-6	0	1	0=°C, 1=°F
Display Language	2	40002	3-6	0	22	0=English, 1=French, 2=Spanish, 3=Chinese, 4=Russian, 5=Arabic, 6=Bulgarian, 7=Czech, 8=Danish, 9=Dutch, 10=Finnish, 11=German, 12=Hungarian, 13=Indones., 14=Italian, 15=Norwegian, 16=Polish, 17=Portug., 18=Slovak, 19=Swedish, 20=Turkish, 21=Japanese, 22=Hebrew,
System Mode	4	40004	3-6	0	1	0=Off, 1=Auto
UI16 Configuration	8	40008	3-6	0	4	0=None, 1=Rem NSB, 2=Motion NO, 3=Motion NC, 4=Window
Room Humidity Display	10	40010	3-6	0	1	0=Disabled, 1=Enabled
Occupancy Command	22	40022	3-6	0	2	0=Loc occ., 1=Occupied, 2=Unocc.
Network Units	23	40023	3-6	0	1	0=SI, 1=Imperial
No Activity Sleep Mode Time	26	40026	3-6	0	1	0=Disabled, 1=Enabled
Time Format	27	40027	3-6	0	1	0=AM-PM, 1=24 Hours
Standby Mode Configuration	28	40028	3-6	0	1	0=Absolute, 1=Offset
HMI Color	29	40029	3-6	0	9	0=White, 1=Green, 2=Blue, 3=Grey, 4=Dark grey, 5=Pink, 6=Purple, 7=Red, 8=Orange, 9=Black,
Main Display	30	40030	3-6	0	2	0=Temp., 1=Setpoint, 2=T. + set.
Long Message Background Colour	31	40031	3-6	0	10	0=White, 1=Green, 2=Blue, 3=Grey, 4=Dark grey, 5=Pink, 6=Purple, 7=Red, 8=Orange, 9=Black, 10=Default,
Use Standby Screen	32	40032	3-6	0	3	0=No, 1=Yes, 2=Occ. only, 3=Screen sav
Actuator Type	34	40034	3-6	0	4	0=0-10V DA, 1=0-10V RA, 2=2-10V DA, 3=2-10V RA, 4=Floating
Baseboard Configuration	36	40036	3-6	0	3	0=Relay, 1=PWM Vac, 2=Valve NC, 3=Valve NO
UI17 Configuration	38	40038	3-6	0	4	0=None, 1=Door dry, 2=Override, 3=Filter, 4=Service
UI19 Configuration	39	40039	3-6	0	3	0=None, 1=COC/NH, 2=COC/NC, 3=COS
UO9 Configuration	41	40041	3-6	0	3	0=Analog, 1=Binary, 2=Relay RC, 3=Relay RH
UO10 Configuration	42	40042	3-6	0	2	0=Analog, 1=Binary, 2=Relay RC
UO11 Configuration	43	40043	3-6	0	1	0=Analog, 1=Binary
UO12 Configuration	44	40044	3-6	0	1	0=Analog, 1=Binary
Enable Smart Recovery	51	40051	3-6	0	1	0=Off, 1=On

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Schedule Menu	54	40054	3-6	0	3	0=Disabled, 1=Enabled, 2=Dis.no.clk, 3=En.no.clk
French	56	40056	3-6	0	1	0=Disabled, 1=Enabled
Spanish	57	40057	3-6	0	1	0=Disabled, 1=Enabled
Chinese	58	40058	3-6	0	1	0=Disabled, 1=Enabled
Russian	59	40059	3-6	0	1	0=Disabled, 1=Enabled
Month	60	40060	3-6	0	11	0=Jan., 1=Feb., 2=Mar., 3=Apr., 4=May, 5=June, 6=July, 7=Aug., 8=Sept., 9=Oct., 10=Nov., 11=Dec.,
Wireless Device 1 - Function	66	40066	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 2 - Function	67	40067	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 3 - Function	68	40068	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 4 - Function	69	40069	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 5 - Function	70	40070	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 6 - Function	71	40071	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 7 - Function	72	40072	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 8 - Function	73	40073	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 9 - Function	74	40074	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 10 - Function	75	40075	3-6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Occupancy Source	77	40077	3-6	0	1	0=Motion, 1=Schedule
Control Status	79	40079	3	0	2	0=Off, 1=Cool, 2=Heat
Custom button icon	81	40081	3-6	0	16	0=Default Button, 1=No Button, 2=System Mode Heat/Cool, 3=System Mode On/Off, 4=Fan Mode, 5=Override Button, 6=Units Button, 7=Help Button, 8=Language Button, 9=Schedule Button, 10=Lighting Button, 11=Blind Button, 12=Lamp Button, 13=Energy Button, 14=Make Room Button, 15=Setting Button, 16=Timer Button,
Custom button behavior	82	40082	3-6	0	11	0=Default function, 1=No function, 2=System mode function, 3=Fan function, 4=Override function, 5=Schedule function, 6=Units function, 7=Help function, 8=Language function, 9=Configuration function, 10=Custom function, 11=Standby function,
Arabic	83	40083	3-6	0	1	0=Disabled, 1=Enabled
Czech	85	40085	3-6	0	1	0=Disabled, 1=Enabled
Danish	86	40086	3-6	0	1	0=Disabled, 1=Enabled
Dutch	87	40087	3-6	0	1	0=Disabled, 1=Enabled
Finnish	88	40088	3-6	0	1	0=Disabled, 1=Enabled

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
German	89	40089	3-6	0	1	0=Disabled, 1=Enabled
Hungarian	90	40090	3-6	0	1	0=Disabled, 1=Enabled
Indonesian	91	40091	3-6	0	1	0=Disabled, 1=Enabled
Italian	92	40092	3-6	0	1	0=Disabled, 1=Enabled
Norwegian	93	40093	3-6	0	1	0=Disabled, 1=Enabled
Polish	94	40094	3-6	0	1	0=Disabled, 1=Enabled
Portuguese	95	40095	3-6	0	1	0=Disabled, 1=Enabled
Slovak	96	40096	3-6	0	1	0=Disabled, 1=Enabled
Swedish	97	40097	3-6	0	1	0=Disabled, 1=Enabled
Turkish	98	40098	3-6	0	1	0=Disabled, 1=Enabled
Modbus Baud Rate	105	40105	3-6	0	4	0=4800, 1=9600, 2=19200, 3=38400, 4=57600
Modbus Parity Bit	106	40106	3-6	0	2	0=None, 1=Odd, 2=Even
Schedule Type	107	40107	3-6	0	2	0=7 days, 1=5+2 days, 2=5+1+1 day
UI19 Input Type	111	40111	3	0	2	0=Therm., 1=Binary, 2=Voltage
UI20 Input Type	112	40112	3	0	2	0=Therm., 1=Binary, 2=Voltage
UI22 Input Type	113	40113	3	0	2	0=Therm., 1=Binary, 2=Voltage
UI23 Input Type	114	40114	3-6	0	1	0=Binary, 1=Voltage
UI24 Input Type	115	40115	3	0	2	0=Therm., 1=Binary, 2=Voltage
Room Temperature Sensor	116	40116	3-6	0	13	0=Wired, 1=Internal, 2=WL IO, 3=WL 1, 4=WL 2, 5=WL 3, 6=WL 4, 7=WL 5, 8=WL 6, 9=WL 7, 10=WL 8, 11=WL 9, 12=WL 10, 13=WL GP
CO2 Display	118	40118	3-6	0	1	0=Disabled, 1=Enabled
CO2 Autocalibration	119	40119	3-6	0	1	0=Disabled, 1=Enabled
Lock Screen	120	40120	3-6	0	1	0=No, 1=Yes
Relative humidity sensor	121	40121	3-6	0	12	0=None, 1=Internal, 2=WL 1, 3=WL 2, 4=WL 3, 5=WL 4, 6=WL 5, 7=WL 6, 8=WL 7, 9=WL 8, 10=WL 9, 11=WL 10, 12=WL GP
Temperature Alarm Enabled	123	40123	3-6	0	1	0=Off, 1=On
ADR Permission	124	40124	3-6	0	1	0=Off, 1=On
Wireless Device GP - Function	125	40125	3-6	0	3	0=Remove, 1=None, 2=T,rH, 3=T,rH,CO2

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Fan Type	128	40128	3-6	0	4	0=None, 1=Par. on/off, 2=Ser. on/off, 3=Par. ECM, 4=Ser. ECM
Japanese	129	40129	3-6	0	1	0=Disabled, 1=Enabled
Hebrew	130	40130	3-6	0	1	0=Disabled, 1=Enabled
Duct Heater Configuration	133	40133	3-6	0	8	0=0-10V DA, 1=0-10V RA, 2=2-10V DA, 3=2-10V RA, 4=Floating, 5=On/Off, 6=PWM Vac, 7=Valve NC, 8=Valve NO
VAV Box Type	134	40134	3-6	0	1	0=PD, 1=PI
Reheat Configuration	135	40135	3-6	0	4	0=None, 1=Duct only, 2=Base only, 3=Duct+base, 4=Base+duct
Damper Override	136	40136	3-6	0	5	0=None, 1=Minimum, 2=Max. cool, 3=Close, 4=Reheat, 5=Open
Zone Control Mode	137	40137	3-6	0	1	0=Cool, 1=Heat
Occupied Cool Setpoint	4001	44001	3-6	54°F(12°C)	100°F(38°C)	Fahrenheit/Celsius
Occupied Heat Setpoint	4002	44002	3-6	40°F(4°C)	90°F(32°C)	Fahrenheit/Celsius
Unoccupied Cool Setpoint	4003	44003	3-6	54°F(12°C)	100°F(38°C)	Fahrenheit/Celsius
Unoccupied Heat Setpoint	4004	44004	3-6	40°F(4°C)	90°F(32°C)	Fahrenheit/Celsius
Heating Setpoint Limit	4005	44005	3-6	40°F(4°C)	90°F(32°C)	Fahrenheit/Celsius
Cooling Setpoint Limit	4006	44006	3-6	54°F(12°C)	100°F(38°C)	Fahrenheit/Celsius
Calibrate Room Temperature Sensor	4007	44007	3-6	-5°F(-2.5°C)	5°F(-2.5°C)	Fahrenheit/Celsius
Standby Cool Setpoint	4009	44009	3-6	54°F(12°C)	100°F(38°C)	Fahrenheit/Celsius
Standby Heat Setpoint	4010	44010	3-6	40°F(4°C)	90°F(32°C)	Fahrenheit/Celsius
Calibrate Humidity Sensor	4013	44013	3-6	-15%	+15%	Percent Relative Humidity
Main Password	4017	44017	3-6	0	9999	
COM Address	4018	44018	3-6	0	254	
Model Number	4019	44019	3	85	88	
Deadband	4020	44020	3-6	2°F(1.3°C)	5°F(3°C)	Fahrenheit/Celsius Degrees
Unoccupied Time	4026	44026	3-6	0	24	Hours
Temporary Occupancy Time	4027	44027	3-6	0	24	Hours
Standby Time	4028	44028	3-6	0.5	24	Hours
Proportional Band	4029	44029	3-6	3	10	

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Cooling Demand Limit	4030	44030	3-6	0	100	Percent
Heating Demand Limit	4031	44031	3-6	0	100	Percent
Low Backlight	4033	44033	3-6	0	100	Percent
Night Backlight	4034	44034	3-6	0	100	Percent
Standby Temperature Differential	4038	44038	3-6	1°F(0.8°C)	5°F(3°C)	Fahrenheit/Celsius Degrees
User Password	4039	44039	3-6	0	9999	
User HMI	4042	44042	3-6	0	12	
Default Heating Setpoint	4043	44043	3-6	65°F(18°C)	80°F(27°C)	Fahrenheit/Celsius
Occupied 1	4059	44059	3-6	0	1440	Minutes
Unoccupied 1	4060	44060	3-6	0	1440	Minutes
Occupied 2	4061	44061	3-6	0	1440	Minutes
Unoccupied 2	4062	44062	3-6	0	1440	Minutes
Occupied 3	4063	44063	3-6	0	1440	Minutes
Unoccupied 3	4064	44064	3-6	0	1440	Minutes
Occupied 1	4065	44065	3-6	0	1440	Minutes
Unoccupied 1	4066	44066	3-6	0	1440	Minutes
Occupied 2	4067	44067	3-6	0	1440	Minutes
Unoccupied 2	4068	44068	3-6	0	1440	Minutes
Occupied 3	4069	44069	3-6	0	1440	Minutes
Unoccupied 3	4070	44070	3-6	0	1440	Minutes
Occupied 1	4071	44071	3-6	0	1440	Minutes
Unoccupied 1	4072	44072	3-6	0	1440	Minutes
Occupied 2	4073	44073	3-6	0	1440	Minutes
Unoccupied 2	4074	44074	3-6	0	1440	Minutes
Occupied 3	4075	44075	3-6	0	1440	Minutes
Unoccupied 3	4076	44076	3-6	0	1440	Minutes

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Occupied 1	4077	44077	3-6	0	1440	Minutes
Unoccupied 1	4078	44078	3-6	0	1440	Minutes
Occupied 2	4079	44079	3-6	0	1440	Minutes
Unoccupied 2	4080	44080	3-6	0	1440	Minutes
Occupied 3	4081	44081	3-6	0	1440	Minutes
Unoccupied 3	4082	44082	3-6	0	1440	Minutes
Occupied 1	4083	44083	3-6	0	1440	Minutes
Unoccupied 1	4084	44084	3-6	0	1440	Minutes
Occupied 2	4085	44085	3-6	0	1440	Minutes
Unoccupied 2	4086	44086	3-6	0	1440	Minutes
Occupied 3	4087	44087	3-6	0	1440	Minutes
Unoccupied 3	4088	44088	3-6	0	1440	Minutes
Occupied 1	4089	44089	3-6	0	1440	Minutes
Unoccupied 1	4090	44090	3-6	0	1440	Minutes
Occupied 2	4091	44091	3-6	0	1440	Minutes
Unoccupied 2	4092	44092	3-6	0	1440	Minutes
Occupied 3	4093	44093	3-6	0	1440	Minutes
Unoccupied 3	4094	44094	3-6	0	1440	Minutes
Occupied 1	4095	44095	3-6	0	1440	Minutes
Unoccupied 1	4096	44096	3-6	0	1440	Minutes
Occupied 2	4097	44097	3-6	0	1440	Minutes
Unoccupied 2	4098	44098	3-6	0	1440	Minutes
Occupied 3	4099	44099	3-6	0	1440	Minutes
Unoccupied 3	4100	44100	3-6	0	1440	Minutes
Minimum CO2	4108	44108	3-6	0 ppm	4800 ppm	Parts per Million
Maximum CO2	4109	44109	3-6	200 ppm	5000 ppm	Parts per Million

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Time	4110	44110	3-6	0	1439	
Year	4111	44111	3-6	2000	2100	
Day	4112	44112	3-6	1	31	
Lua Parameter A (AV25)	4117	44117	3-6	-32768	32767	
Lua Parameter B (AV26)	4118	44118	3-6	-32768	32767	
Lua Parameter C (AV27)	4119	44119	3-6	-32768	32767	
Lua Parameter D (AV28)	4120	44120	3-6	-32768	32767	
Lua Parameter E (AV29)	4121	44121	3-6	-32768	32767	
Lua Parameter F (AV30)	4122	44122	3-6	-32768	32767	
Hardware Revision	4123	44123	3	20	21	
Keyboard Value	4126	44126	3-6	0	35	
UI19 Lua	4134	44134	3-6	-3276.8	3276.7	
UI20 Lua	4135	44135	3-6	-3276.8	3276.7	
UI22 Lua	4136	44136	3-6	-3276.8	3276.7	
UI23 Lua	4137	44137	3-6	-3276.8	3276.7	
UI24 Lua	4138	44138	3-6	-3276.8	3276.7	
Temperature Alarm Threshold	4143	44143	3-6	32°F(0°C)	45°F(7°C)	Fahrenheit/Celsius
Temperature Alarm Hysteresis	4144	44144	3-6	0°F(0°C)	10°F(5.8°C)	Fahrenheit/Celsius Degrees
Load Shedding Offset	4145	44145	3-6	4°F(2.4°C)	10°F(5.8°C)	Fahrenheit/Celsius Degrees
Lua Parameter G (AV225)	4146	44146	3-6	-32768	32767	
Lua Parameter H (AV226)	4147	44147	3-6	-32768	32767	
Lua Parameter I (AV227)	4148	44148	3-6	-32768	32767	
Lua Parameter J (AV228)	4149	44149	3-6	-32768	32767	
Lua Parameter K (AV229)	4150	44150	3-6	-32768	32767	
Lua Parameter L (AV230)	4151	44151	3-6	-32768	32767	
ECM Fan Low Voltage	4152	44152	3-6	2 Vdc	4 Vdc	Voltage



## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
ECM Fan High Voltage	4154	44154	3-6	7.1 Vdc	10 Vdc	Voltage
Zone Heating PI Weight	4155	44155	3-6	0	100	Percent
Zone Cooling PI Weight	4156	44156	3-6	0	100	Percent
Flow @ 1 inch wc (K)	4157	44157	3-6	150	7500	Cubic Feet per Minute
Pressure Sensor Range	4158	44158	3-6	0.5	5	
Actuator Timing	4159	44159	3-6	0.5	9	Minutes
Floating Reheat Timing	4160	44160	3-6	0.5	9	Minutes
Outside Air Temperature Duct Heater Lock-out	4161	44161	3-6	30°F(-1°C)	90°F(32°C)	Fahrenheit/Celsius
Outside Air Temperature Baseboard Lockout	4162	44162	3-6	30°F(-1°C)	90°F(32°C)	Fahrenheit/Celsius
Damper Minimum Position	4163	44163	3-6	0	100	Percent
Damper Maximum Cooling Position	4164	44164	3-6	0	100	Percent
Damper Maximum Heating Position	4165	44165	3-6	0	100	Percent
Damper Maximum Reheat Position	4166	44166	3-6	0	100	Percent
Minimum Airflow	4167	44167	3-6	0	10000	Cubic Feet per Minute
Maximum Cooling Airflow	4168	44168	3-6	0	10000	Cubic Feet per Minute
Maximum Heating Airflow	4169	44169	3-6	0	10000	Cubic Feet per Minute
Maximum Reheat Airflow	4170	44170	3-6	0	10000	Cubic Feet per Minute
Minimum Airflow Offset	4171	44171	3-6	-5000	5000	Cubic Feet per Minute
Maximum Airflow Offset	4172	44172	3-6	-5000	5000	Cubic Feet per Minute
Standby Screen Delay	4174	44174	3-6	5	300	Seconds
PI Heating Demand	8001	48001	3	0	100	Percent
PI Cooling Demand	8002	48002	3	0	100	Percent
PI Zoning Demand	8006	48006	3	-100	100	Percent
UO11 Analog Output	9001	49001	3	0	10	Voltage
UO12 Analog Output	9002	49002	3	0	10	Voltage

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
UO9 Analog Output	9003	49003	3	0	10	Voltage
UO10 Analog Output	9004	49004	3	0	10	Voltage

## 5000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Function Code	Low Limit	High Limit	Description ***
Filter Alarm	5001	5001	1	0	1	0=Off, 1=On
Service Alarm	5002	5002	1	0	1	0=Off, 1=On
Window Alarm	5003	5003	1	0	1	0=Off, 1=On
PIR Local Motion	5004	5004	1	0	1	0=No motion, 1=Motion
Low Battery Alarm	5006	5006	1	0	1	0=Off, 1=On
Window Contact Installed	5007	5007	1	0	1	0=Off, 1=On
Window Contact Status	5008	5008	1	0	1	0=Closed, 1=Opened
Door Contact Installed	5009	5009	1	0	1	0=Off, 1=On
Door Contact Status	5010	5010	1	0	1	0=Closed, 1=Opened
Display Long Screen Message	5011	5011	1-5	0	1	0=Off, 1=On
Force High Backlight	5012	5012	1-5	0	1	0=Off, 1=On
Smart Recovery Status	5014	5014	1	0	1	0=Off, 1=On
Exception Status	5015	5015	1	0	1	0=Off, 1=On
CO2 Alarm	5016	5016	1	0	1	0=Off, 1=On
ZigBee PIR Sensor Installed	5019	5019	1	0	1	0=Off, 1=On
ZigBee Sensor Motion	5020	5020	1	0	1	0=No motion, 1=Motion
Clock Alarm	5021	5021	1	0	1	0=Off, 1=On
Water Leak	5024	5024	1	0	1	0=Off, 1=On
Water Leak Sensor Installed	5025	5025	1	0	1	0=No, 1=Yes
Water leak sensor status	5026	5026	1	0	1	0=Normal, 1=Leak
Low Temperature	5027	5027	1	0	1	0=Off, 1=On
Load Shedding Demand	5028	5028	1-5	0	1	0=Off, 1=On
Load Shedding Status	5029	5029	1	0	1	0=Off, 1=On
Load Shedding Override	5030	5030	1	0	1	0=Off, 1=On

