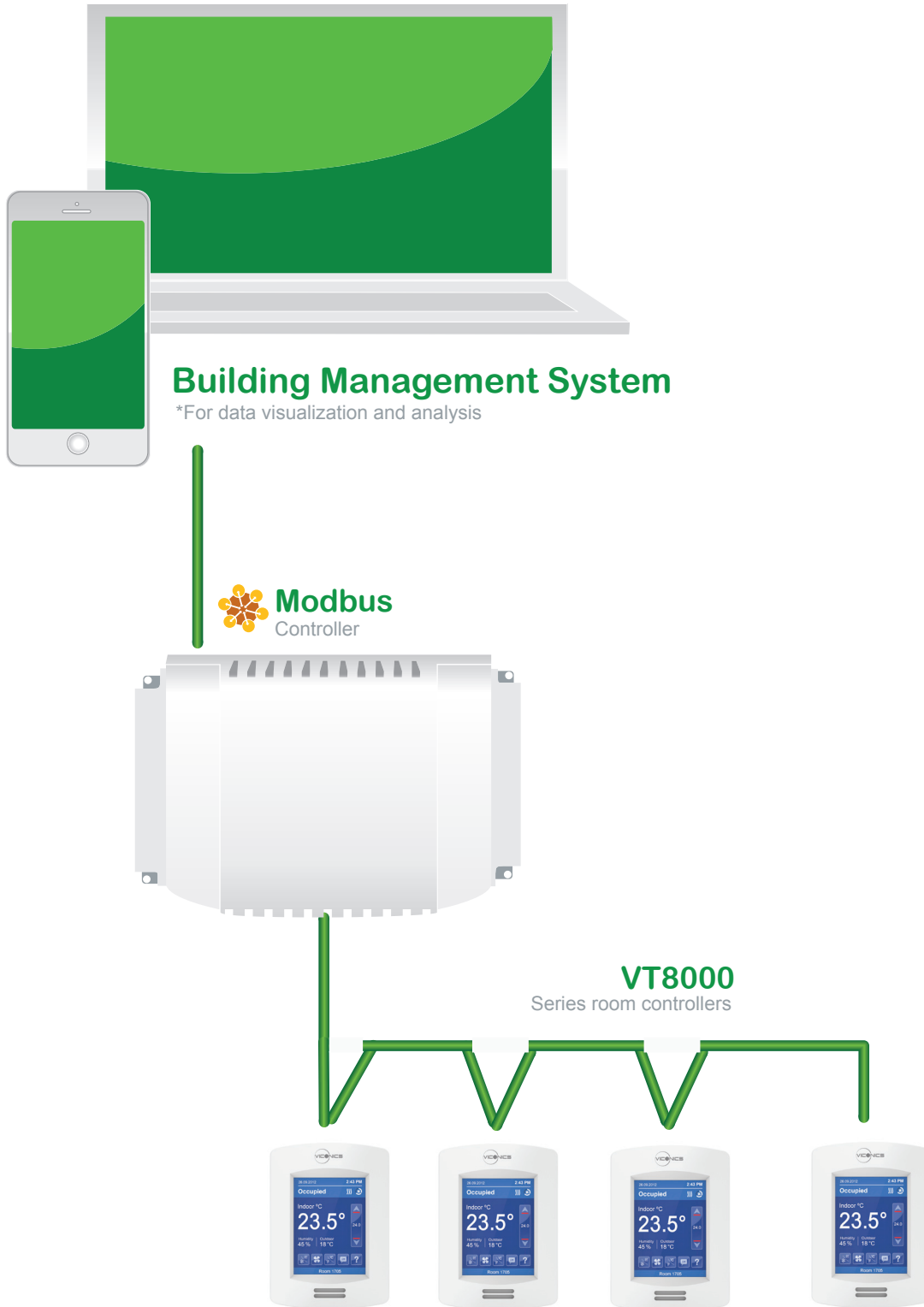


# Modbus Integration

Integration for Modbus Functionality for VT8600 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.

### VT8600 SERIES MODBUS SPECIFICATIONS

The VT8600 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 VT8600 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
- Only the RTU mode is used
- 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	Index	Function Code	Low Limit	High Limit	Description ***
UO10 Binary Output	2	2	1	1	0	1	0=Off, 1=On
BO1 Auxiliary Binary Output	7	7	5	1	0	1	0=Off, 1=On
UO11 Binary Output	8	8	6	1	0	1	0=Off, 1=On
UO12 Binary Output	9	9	7	1	0	1	0=Off, 1=On
G Fan Status	10	10	8	1	0	1	0=Off, 1=On
Y1 Status	11	11	9	1	0	1	0=Off, 1=On
Y2 Status	12	12	10	1	0	1	0=Off, 1=On
W1 Status	13	13	11	1	0	1	0=Off, 1=On
W2/OB Status	14	14	12	1	0	1	0=Off, 1=On

## 1000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
UI16 Binary Input	1	1	0	2	0	1	0=Activated, 1=Not activ.
UI17 Binary Input	2	2	1	2	0	1	0=Activated, 1=Not activ.
UI19 Binary Input	6	6	4	2	0	1	0=Activated, 1=Not activ.
UI20 Binary Input	7	7	5	2	0	1	0=Activated, 1=Not activ.
UI22 Binary Input	8	8	6	2	0	1	0=Activated, 1=Not activ.
UI23 Binary Input	9	9	7	2	0	1	0=Activated, 1=Not activ.
UI24 Binary Input	10	10	8	2	0	1	0=Activated, 1=Not activ.

## 3000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Room Temperature	1	30001	0	4	-40	122	Fahrenheit
UI22 Supply Temperature	3	30003	2	4	-40	122	Fahrenheit
Room Humidity	4	30004	3	4	0	100	Fahrenheit
UI19 Temperature	5	30005	4	4	-40	150	Fahrenheit
UI20 Remote Temperature	6	30006	5	4	-40	150	Fahrenheit
CO <sub>2</sub> Level	7	30007	6	4	0	5000	ppm
Airflow Level	8	30008	7	4	0	20000	ft <sup>3</sup>
UI19 Analog Input	9	30009	8	4	0	100	%
Outdoor Temperature	10	30010	1	4	-40	150	Fahrenheit
UI24 Temperature	12	30012	9	4	-40	150	Fahrenheit
Light Sensor Level	1002	31002	1	4	0	30000	---
UI20 Raw Value	1005	31005	4	4	0	4095	---
UI23 Raw Value	1007	31007	6	4	0	4095	---
UI22 Raw Value	1008	31008	7	4	0	4095	---
UI24 Raw Value	1009	31009	8	4	0	4095	---
UI19 Raw Value	1010	31010	5	4	0	4095	---
Wireless Device 1 - Address	1011	31011	9	4	-32768	32767	---
Wireless Device 2 - Address	1012	31012	10	4	-32768	32767	---
Wireless Device 3 - Address	1013	31013	11	4	-32768	32767	---
Wireless Device 4 - Address	1014	31014	12	4	-32768	32767	---
Wireless Device 5 - Address	1015	31015	13	4	-32768	32767	---
Wireless Device 6 - Address	1016	31016	14	4	-32768	32767	---
Wireless Device 7 - Address	1017	31017	15	4	-32768	32767	---
Wireless Device 8 - Address	1018	31018	16	4	-32768	32767	---

## 3000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Wireless Device 9 - Address	1019	31019	17	4	-32768	32767	---
Wireless Device 10 - Address	1020	31020	18	4	-32768	32767	---
Wireless Green Power - Address	1025	31025	19	4	-32768	32767	---
Wireless Device 1 - Temperature	1026	31026	20	4	-40	122	Fahrenheit
Wireless Device 2 - Temperature	1027	31027	21	4	-40	122	Fahrenheit
Wireless Device 3 - Temperature	1028	31028	22	4	-40	122	Fahrenheit
Wireless Device 4 - Temperature	1029	31029	23	4	-40	122	Fahrenheit
Wireless Device 5 - Temperature	1030	31030	24	4	-40	122	Fahrenheit
Wireless Device 6 - Temperature	1031	31031	25	4	-40	122	Fahrenheit
Wireless Device 7 - Temperature	1032	31032	26	4	-40	122	Fahrenheit
Wireless Device 8 - Temperature	1033	31033	27	4	-40	122	Fahrenheit
Wireless Device 9 - Temperature	1034	31034	28	4	-40	122	Fahrenheit
Wireless Device 10 - Temperature	1035	31035	29	4	-40	122	Fahrenheit
Wireless Green Power - Temperature	1037	31037	31	4	-40	185	Fahrenheit
Remote relative humidity	1038	31038	32	4	0	100	%RH
Paired ZigBee Devices	1041	31041	35	4	0	11	---
Effective Occupancy	5001	35001	0	4	0	3	0=Occupied, 1=Unoccupied, 2=Override, 3=Standby
ZigBee Network Status	5003	35003	2	4	0	4	0=Not det., 1=Pwr on, 2=No NWK, 3=Joined, 4=Online
Weekday	5005	35005	4	4	0	6	0=Monday, 1=Tuesday, 2=Wednesday, 3=Thursday, 4=Friday, 5=Saturday, 6=Sunday
Program Status	5006	35006	5	4	0	5	0=Idle, 1=Loading, 2=Running, 3=Waiting, 4=Halted, 5=Unloading
Program Error	5007	35007	6	4	0	5	0=No error, 1=Yield, 2=Runtime, 3=Syntax, 4=Memory, 5=Double err

## 3000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Wireless Device 1 - Status	5008	35008	7	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 2 - Status	5009	35009	8	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 3 - Status	5010	35010	9	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 4 - Status	5011	35011	10	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 5 - Status	5012	35012	11	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 6 - Status	5013	35013	12	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 7 - Status	5014	35014	13	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 8 - Status	5015	35015	14	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 9 - Status	5016	35016	15	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 10 - Status	5017	35017	16	4	0	6	0=None, 1=Closed, 2=Opened, 3=No motion, 4=Motion, 5=Normal, 6=Leak
Wireless Device 1 - Battery	5018	35018	35018	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 2 - Battery	5019	35019	35019	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 3 - Battery	5020	35020	35020	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 4 - Battery	5021	35021	35021	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 5 - Battery	5022	35022	35022	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 6 - Battery	5023	35023	35023	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 7 - Battery	5024	35024	35024	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 8 - Battery	5025	35025	35025	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 9 - Battery	5026	35026	35026	4	0	2	0=None, 1=Normal, 2=Low
Wireless Device 10 - Battery	5027	35027	35027	4	0	2	0=None, 1=Normal, 2=Low



## 3000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Wireless Device 1 - Communication Status	5028	35028	27	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 2 - Communication Status	5029	35029	28	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 3 - Communication Status	5030	35030	29	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 4 - Communication Status	5031	35031	30	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 5 - Communication Status	5032	35032	31	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 6 - Communication Status	5033	35033	32	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 7 - Communication Status	5034	35034	33	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 8 - Communication Status	5035	35035	34	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 9 - Communication Status	5036	35036	35	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Device 10 - Communication Status	5037	35037	36	4	0	3	0=Not paired, 1=Online, 2=Invalid, 3=Offline
Wireless Green Power - Communication Status	5045	35045	38	4	0	4	0=Not paired, 1=Online, 2=Invalid, 3=Offline, 4=Paired
Wireless Green Power - Battery	5046	35046	39	4	0	2	0=None, 1=Normal, 2=Low
Wireless Green Power - Remove	5047	35047	40	4	0	1	0=No, 1=Yes
Effective temperature sensor	5048	35048	41	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	42	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

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Temperature Scale	1	40001	0	3,6	0	1	0= °C, 1=°F
Display Language	2	40002	1	3,6	0	20	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
System Mode	4	40004	3	3,6	0	3	0=Off, 1=Auto, 2=Cool, 3=Heat
Room Humidity Display	10	40010	10	3,6	0	1	0=Disabled, 1=Enabled
Dehumidification Lockout	12	40012	12	3,6	0	1	0=Disabled, 1=Enabled
Setpoint Function	17	40017	17	3,6	0	1	0=Dual SP, 1=Attach SP
Occupancy Command	22	40022	20	3,6	0	2	0=Loc. occ., 1=Occupied, 2=Unocc.
Network Units	23	40023	22	3,6	0	1	0=SI, 1=Imperial
Time Format	27	40027	26	3,6	0	1	0=AM-PM, 1=24-Hours
Standby Mode Configuration	28	40028	27	3,6	0	1	0=Absolute, 1=Offset
HMI Color	29	40029	28	3,6	0	4	0=White, 1=Green, 2=Blue, 3=Grey, 4=Dark grey
Main Display	30	40030	29	3,6	0	1	0=Temp., 1=Setpoint
Long Message Background Colour	31	40031	30	3,6	0	6	0=White, 1=Green, 2=Blue, 3=Grey, 4=Dark grey, 5=Default, 6=Red
Use Standby Screen	32	40032	31	3,6	0	3	0=No, 1=Yes, 2=Occ. only, 3=Screen sav
UO9 Configuration	41	40041	36	3,6	0	3	0=Analog, 1=Binary, 2=Relay RC, 3=Relay RH
UO10 Configuration	42	40042	37	3,6	0	2	0=Analog, 1=Binary, 2=Relay RC
UO11 Configuration	43	40043	38	3,6	0	1	0=Analog, 1=Binary
UO12 Configuration	44	40044	39	3,6	0	1	0=Analog, 1=Binary
Frost Protection	45	40045	41	3,6	0	1	0=Off, 1=On
Fan Control in Heating Mode	46	40046	19	3,6	0	1	0=Off, 1=On
Fan Mode	47	40047	2	3,6	0	2	0=On, 1=Auto, 2=Smart
UI16 Configuration	48	40048	8	3,6	0	5	0=None, 1=Rem NSB, 2=Motion NO, 3=Motion NC, 4=Window, 5=Fan lock

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
BO1 Auxiliary Output Configuration	49	40049	35	3,6	0	1	0=NO, 1=NC
Mechanical Cooling Allowed	50	40050	42	3,6	0	1	0=Off., 1=On
Enable Smart Recovery	51	40051	43	3,6	0	1	0=Off, 1=On
UI19 Configuration	52	40052	13	3,6	0	1	0=None, 1=CO <sub>2</sub>
Economizer Configuration	53	40053	44	3,6	0	1	0=Off., 1=On
Schedule Menu	54	40054	45	3,6	0	3	0=Disabled, 1=Enabled, 2=Dis.no.cik, 3=En.no.cik
French	56	40056	47	3,6	0	1	0=Disabled, 1=Enabled
Spanish	57	40057	48	3,6	0	1	0=Disabled, 1=Enabled
Chinese	58	40058	49	3,6	0	1	0=Disabled, 1=Enabled
Russian	59	40059	50	3,6	0	1	0=Disabled, 1=Enabled
Month	60	40060	51	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.
Fan Delay	61	40061	40	3,6	0	1	0=Off., 1=On
UI17 Configuration	63	40063	9	3,6	0	4	0=None, 1=Door dry, 2=override, 3=Filter, 4=Service

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Wireless Device 1 - Function	66	40066	54	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 2 - Function	67	40067	55	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 3 - Function	68	40068	56	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 4 - Function	69	40069	57	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 5 - Function	70	40070	58	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 6 - Function	71	40071	59	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 7 - Function	72	40072	60	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 8 - Function	73	40073	61	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 9 - Function	74	40074	62	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Wireless Device 10 - Function	75	40075	63	3,6	0	6	0=None, 1=Window, 2=Door, 3=Motion, 4=Status, 5=Remove, 6=Water
Occupancy Source	77	40077	65	3,6	0	1	0=Motion, 1=Schedule
Mode Button	78	40078	66	3,6	0	1	0=Disabled, 1=Enabled
Control Status	79	40079	67	3	0	2	0=Off, 1=Cool, 2=Heat
Custom button icon	81	40081	69	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	70	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	71	3,6	0	1	0=Disabled, 1=Enabled
Czech	85	40085	73	3,6	0	1	0=Disabled, 1=Enabled
Danish	86	40086	74	3,6	0	1	0=Disabled, 1=Enabled
Dutch	87	40087	75	3,6	0	1	0=Disabled, 1=Enabled
Finnish	88	40088	76	3,6	0	1	0=Disabled, 1=Enabled
German	89	40089	77	3,6	0	1	0=Disabled, 1=Enabled

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Hungarian	90	40090	78	3,6	0	1	0=Disabled, 1=Enabled
Indonesian	91	40091	79	3,6	0	1	0=Disabled, 1=Enabled
Italian	92	40092	80	3,6	0	1	0=Disabled, 1=Enabled
Norwegian	93	40093	81	3,6	0	1	0=Disabled, 1=Enabled
Polish	94	40094	82	3,6	0	1	0=Disabled, 1=Enabled
Portuguese	95	40095	83	3,6	0	1	0=Disabled, 1=Enabled
Slovak	96	40096	84	3,6	0	1	0=Disabled, 1=Enabled
Swedish	97	40097	85	3,6	0	1	0=Disabled, 1=Enabled
Turkish	98	40098	86	3,6	0	1	0=Disabled, 1=Enabled
Comfort or economy mode	99	40099	87	3,6	0	1	0=Comfort, 1=Economy
Reversing valve operation	100	40100	88	3,6	0	1	0=O, 1=B
Compressor - auxiliary interlock	101	40101	89	3,6	0	1	0=Off, 1=On
Application	102	40102	90	3,6	0	1	0=Rooftop, 1=Heatpump
Modbus Baud Rate	105	40105	93	3,6	0	4	0=4800, 1=9600, 2=19200, 3=38400, 4=57600
Modbus Parity Bit	106	40106	94	3,6	0	2	0=None, 1=Odd, 2=Even
Schedule Type	107	40107	95	3,6	0	2	0=7 days, 1= 5+2 days, 2=5+1+1 days
UI19 Input Type	111	40111	99	3,6	0	2	0=Thermistor, 1=Binary, 2=Voltage
UI20 Input Type	112	40112	100	3,6	0	2	0=Thermistor, 1=Binary, 2=Voltage
UI22 Input Type	113	40113	101	3,6	0	2	0=Thermistor, 1=Binary, 2=Voltage
UI23 Input Type	114	40114	102	3,6	0	2	0=Thermistor, 1=Binary, 2=Voltage
UI24 Input Type	115	40115	103	3,6	0	3	0=Thermistor, 1=Binary, 2=Voltage, 3=Reserved
Room Temperature Sensor	116	40116	104	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
CO <sub>2</sub> Display	118	40118	105	3,6	0	1	0=Disabled, 1=Enabled

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
CO <sub>2</sub> Auto calibration	119	40119	106	3,6	0	1	0=Disabled, 1=Enabled
Lock Screen	120	40120	107	3,6	0	1	0=No, 1=Yes
Relative humidity sensor	121	40121	108	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	110	3,6	0	1	0=Off, 1=On
ADR Permission	124	40124	111	3,6	0	1	0=Off, 1=On
Wireless Device GP - Function	125	40125	112	3,6	0	2	0=Remove, 1=None, 2=T
Occupied Cool Setpoint	4001	44001	4	3,6	54	100	°F
Occupied Heat Setpoint	4002	44002	5	3,6	40	90	°F
Unoccupied Cool Setpoint	4003	44003	6	3,6	54	100	°F
Unoccupied Heat Setpoint	4004	44004	7	3,6	40	90	°F
Heating Setpoint Limit	4005	44005	8	3,6	40	90	°F
Cooling Setpoint Limit	4006	44006	9	3,6	54	100	°F
Calibrate Room Temperature Sensor	4007	44007	10	3,6	-5	5	°F
Standby Cool Setpoint	4009	44009	12	3,6	54	100	°F
Standby Heat Setpoint	4010	44010	13	3,6	40	90	°F
Dehumidification Setpoint	4012	44012	15	3,6	30	95	%RH
Calibrate Humidity Sensor	4013	44013	16	3,6	-15	15	%RH
Dehumidification Hysteresis	4015	44015	17	3,6	2	20	%RH
Main Password	4017	44017	18	3,6	0	9999	---
COM Address	4018	44018	19	3,6	0	254	---
Model Number	4019	44019	0	3	160	163	---
Minimum Deadband	4020	44020	20	3,6	2	5	°F

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Heating CPH	4021	44021	21	3,6	3	8	---
Cooling CPH	4022	44022	22	3,6	3	4	---
Unoccupied Time	4026	44026	23	3,6	0	24	Hours
Temporary Occupancy Time	4027	44027	24	3,6	0	24	Hours
Standby Time	4028	44028	25	3,6	5	24	Hours
Proportional Band	4029	44029	26	3,6	3	10	---
Cooling Demand Limit	4030	44030	30	3,6	0	100	%
Heating Demand Limit	4031	44031	31	3,6	0	100	%
Low Backlight	4033	44033	33	3,6	0	100	%
Night Backlight	4034	44034	34	3,6	0	100	%
Standby Temperature Differential	4038	44038	38	3,6	1	5	°F
User Password	4039	44039	39	3,6	0	9999	---
User HMI	4042	44042	42	3,6	0	12	---
Default Heating Setpoint	4043	44043	43	3,6	65	80	°F
Anti Short Cycle Time	4047	44047	45	3,6	0	5	Minutes
Number of Heating Stages	4048	44048	46	3,6	0	2	
Number of Cooling Stages	4049	44049	47	3,6	1	2	
Power-up Delay	4050	44050	48	3,6	10	120	Seconds
Calibrate Outside Temperature Sensor	4051	44051	49	3,6	-5	5	°F
Heating Lockout from Outside Air Temperature	4052	44052	50	3,6	-15	120	°F

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Cooling Lockout	4053	44053	51	3,6	-40	95	°F
Supply Air Setpoint	4054	44054	52	3,6	50	90	°F
Changeover Setpoint	4055	44055	53	3,6	14	70	°F
Economizer Minimum Position	4056	44056	54	3,6	0	100	%
Economizer Maximum Position	4057	44057	55	3,6	0	100	%
Occupied 1	4059	44059	56	3,6	0	1440	---
Unoccupied 1	4060	44060	57	3,6	0	1440	---
Occupied 2	4061	44061	58	3,6	0	1440	---
Unoccupied 2	4062	44062	59	3,6	0	1440	---
Occupied 3	4063	44063	60	3,6	0	1440	---
Unoccupied 3	4064	44064	61	3,6	0	1440	---
Occupied 1	4065	44065	62	3,6	0	1440	---
Unoccupied 1	4066	44066	63	3,6	0	1440	---
Occupied 2	4067	44067	64	3,6	0	1440	---
Unoccupied 2	4068	44068	65	3,6	0	1440	---
Occupied 3	4069	44069	66	3,6	0	1440	---
Unoccupied 3	4070	44070	67	3,6	0	1440	---
Occupied 1	4071	44071	68	3,6	0	1440	---
Unoccupied 1	4072	44072	69	3,6	0	1440	---
Occupied 2	4073	44073	70	3,6	0	1440	---
Unoccupied 2	4074	44074	71	3,6	0	1440	---
Occupied 3	4075	44075	72	3,6	0	1440	---
Unoccupied 3	4076	44076	73	3,6	0	1440	---



## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Occupied 1	4077	44077	74	3,6	0	1440	---
Unoccupied 1	4078	44078	75	3,6	0	1440	---
Occupied 2	4079	44079	76	3,6	0	1440	---
Unoccupied 2	4080	44080	77	3,6	0	1440	---
Occupied 3	4081	44081	78	3,6	0	1440	---
Unoccupied 3	4082	44082	79	3,6	0	1440	---
Occupied 1	4083	44083	80	3,6	0	1440	---
Unoccupied 1	4084	44084	81	3,6	0	1440	---
Occupied 2	4085	44085	82	3,6	0	1440	---
Unoccupied 2	4086	44086	83	3,6	0	1440	---
Occupied 3	4087	44087	84	3,6	0	1440	---
Unoccupied 3	4088	44088	85	3,6	0	1440	---
Occupied 1	4089	44089	86	3,6	0	1440	---
Unoccupied 1	4090	44090	87	3,6	0	1440	---
Occupied 2	4091	44091	88	3,6	0	1440	---
Unoccupied 2	4092	44092	89	3,6	0	1440	---
Occupied 3	4093	44093	90	3,6	0	1440	---
Unoccupied 3	4094	44094	91	3,6	0	1440	---
Occupied 1	4095	44095	92	3,6	0	1440	---
Unoccupied 1	4096	44096	93	3,6	0	1440	---
Occupied 2	4097	44097	94	3,6	0	1440	---
Unoccupied 2	4098	44098	95	3,6	0	1440	---
Occupied 3	4099	44099	96	3,6	0	1440	---
Unoccupied 3	4100	44100	97	3,6	0	1440	---

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Fresh Air Range Upper Limit	4101	44101	98	3,6	0	20000	ft <sup>3</sup>
Minimum Supply Heat	4102	44102	99	3,6	50		°F
Supply Heat Lockout	4103	44103	100	3,6	-15	120	°F
Discharge High Limit	4104	44104	101	3,6	7	15	°F
Discharge Low Limit	4105	44105	102	3,6	35	65	°F
Minimum Fresh Air	4106	44106	103	3,6	0	20000	ft <sup>3</sup>
Maximum Fresh Air	4107	44107	104	3,6	0	20000	ft <sup>3</sup>
Minimum CO <sub>2</sub>	4108	44108	105	3,6	0	5000	ppm
Maximum CO <sub>2</sub>	4109	44109	106	3,6	0	5000	ppm
Time	4110	44110	107	3,6	0	1439	---
Year	4111	44111	108	3,6	2000	2100	---
Day	4112	44112	109	3,6	1	31	---
Lua Parameter A (AV25)	4117	44117	114	3,6	-32768	32767	---
Lua Parameter B (AV26)	4118	44118	115	3,6	-32768	32767	---
Lua Parameter C (AV27)	4119	44119	116	3,6	-32768	32767	---
Lua Parameter D (AV28)	4120	44120	117	3,6	-32768	32767	---
Lua Parameter E (AV29)	4121	44121	118	3,6	-32768	32767	---
Lua Parameter F (AV30)	4122	44122	119	3,6	-32768	32767	---
Hardware Revision	4123	44123	120	3	3	11	---
Keyboard Value	4126	44126	123	3,6	0	35	---
High balance point	4132	44132	129	3,6	34	90	°F
Low balance point	4133	44133	130	3,6	-40	30	°F

## 4000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
UI19 Lua	4134	44134	131	3,6	-32768	32767	---
UI20 Lua	4135	44135	132	3,6	-32768	32767	---
UI22 Lua	4136	44136	133	3,6	-32768	32767	---
UI23 Lua	4137	44137	134	3,6	-32768	32767	---
UI24 Lua	4138	44138	135	3,6	-32768	32767	---
Temperature Alarm Threshold	4143	44143	139	3,6	32	45	°F
Temperature Alarm Hysteresis	4144	44144	140	3,6	0	10	°F
Load Shedding Offset	4145	44145	141	3,6	4	10	°F
PI Heating Demand	8001	48001	0	3	0	100	%
PI Cooling Demand	8002	48002	1	3	0	100	%
Economizer Demand	8004	48004	3	3	0	100	%
Analog Output Heat Demand	8005	48005	4	3			%
UO11 Analog Output	9001	49001	0	3	0	10	Voltage
UO12 Analog Output	9002	49002	1	3	0	10	Voltage
UO9 Analog Output	9003	49003	2	3	0	10	Voltage
UO10 Analog Output	9004	49004	3	3	0	10	Voltage

## 5000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Filter Alarm	5001	5001	0	1	0	1	0=Off, 1=On
Service Alarm	5002	5002	1	1	0	1	0=Off, 1=On
Window Alarm	5003	5003	2	1	0	1	0=Off, 1=On
PIR Local Motion	5004	5004	3	1	0	1	0=No motion, 1=Motion
Dehumidification Status	5005	5005	4	1	0	1	0=Off, 1=On
Low Battery Alarm	5006	5006	5	1,5	0	1	0=Off, 1=On
Window Contact Installed	5007	5007	6	1,5	0	1	0=No, 1=Yes
Window Contact Status	5008	5008	7	1,5	0	1	0=Closed, 1=Open
Door Contact Installed	5009	5009	8	1,5	0	1	0=No, 1=Yes
Door Contact Status	5010	5010	9	1,5	0	1	0=Closed, 1=Open
Display Long Screen Message	5011	5011	10	1,5	0	1	0=Off, 1=On
Force High Backlight	5012	5012	11	1,5	0	1	0=Off, 1=On

## 5000+ MODBUS ADDRESS FUNCTIONS

Object Name	Modbus Register	Modbus Address	Index	Function Code	Low Limit	High Limit	Description ***
Fan Lock Alarm	5013	5013	12	1	0	1	0=Off, 1=On
Smart Recovery Status	5014	5014	13	1	0	1	0=Off, 1=On
Exception Status	5015	5015	14	1	0	1	0=Off, 1=On
CO2 Alarm	5016	5016	15	1	0	1	0=Off, 1=On
Low Fresh Air Alarm	5017	5017	16	1	0	1	0=Off, 1=On
Frost Protection Alarm	5018	5018	17	1	0	1	0=Off, 1=On
ZigBee PIR Sensor Installed	5019	5019	18	1,5	0	1	0=Off, 1=On
ZigBee Sensor Motion	5020	5020	19	1,5	0	1	0=No motion, 1=Motion
Clock Alarm	5021	5021	20	1	0	1	0=Off, 1=On
Water Leak	5024	5024	23	1,5	0	1	0=Off, 1=On
Water Leak Sensor Installed	5025	5025	24	1,5	0	1	0=No, 1=Yes
Water leak Sensor Status	5026	5026	25	1,5	0	1	0=Normal, 1=Leak
Low Temperature	5027	5027	26	1,5	0	1	0=Off, 1=On
Load Shedding Demand	5028	5028	27	1,5	0	1	0=Off, 1=On
Load Shedding Status	5029	5029	28	1,5	0	1	0=Off, 1=On
Load Shedding Override	5030	5030	29	1,5	0	1	0=Off, 1=On