

## Modbus

### Make Up Air Configuration Properties

Name	Default	Min	Max	Units	Modbus Reg #	Multiplier	Focus Screen	Modbus Notes
Device Type	10	10	10	None	1	1	Device	(Not writable) 10=MakeUpAir
Device Soft Ver	7.6	0	655.35	None	2	100	Device	(Not writable)
Device Hard Ver	3.1	0	0	None	3	10	Device	(Not writable) 3.0=M1000 / 3.1=M2000
Net Baud	3	0	5	None	4	1	Baud Rate	0=9600 / 1=19200 / 2=38400 / 3=57600 / 4=76800 / 5=115200
RJ45 Baud	3	0	5	None	5	1	Baud Rate	0=9600 / 1=19200 / 2=38400 / 3=57600 / 4=76800 / 5=115200
Net Parity	0	0	2	None	6	1	Baud Rate	0=NONE / 1=ODD / 2=EVEN
RJ45 Parity	0	0	2	None	7	1	Baud Rate	0=NONE / 1=ODD / 2=EVEN
Net StopBits	0	0	1	None	8	1	Baud Rate	0=1 Stop Bit / 1=2 Stop Bits
RJ45 StopBits	0	0	1	None	9	1	Baud Rate	0=1 Stop Bit / 1=2 Stop Bits
Location	0	0	65535	None	10	1	Device	Each reg holds 2 chars -- 16 chars max -- 8 regs (Regs 10-17)
Zone Proportionnal	3	0	10	deg C	18	100	Temperature	
Zone Heat Integral	30	0	120	min	19	1	Temperature	
Zone Cool Integral	30	0	120	min	20	1	Temperature	
Default Zone Heat SP	21.5	-30	40	deg C	21	100	Temperature	
Default Zone Cool SP	22.5	-29.5	55	deg C	22	100	Temperature	
Minimum Zone Heat SP	19	-30	40	deg C	23	100	Temperature	
Maximum Zone Heat SP	25	-30	40	deg C	24	100	Temperature	
Minimum Zone Cool SP	20	-29.5	55	deg C	25	100	Temperature	
Maximum Zone Cool SP	26	-29.5	55	deg C	26	100	Temperature	
Unoccupied Mode Override Time	120	0	720	min	27	1	Temperature	When the override button on the thermostat is pushed during unoccupied mode, the controller temporarily returns to occupied mode for this amount of time.
Outside Air Temp Calibration	0	-20	20	deg C	28	100	Calibration	

Discharge Air Temp Calibration	0	-20	20	deg C	29	100	Calibration	
Zone Air Temp Offset	0	-20	20	deg C	30	100	Calibration	
Pressure Offset	0	-50	50	Pascal s	31	10	Calibration	
CO2 Offset	0	-3000	3000	ppm	32	1	Calibration	
Mech Cooling Setup	1	0	255	None	33	1	Hardware	(8th bit--> 0=Staged Cooling / 1=Analog Cooling) (Remaining Bits-->Qty Stages)
Analog Out 1 Range	0	0	1	None	34	1	Hardware	0 = 0-10VDC / 1=2-10VDC
Analog Out 1 Reverse Acting	0	0	1	None	35	1	Hardware	
Analog Out 3 Range	0	0	1	None	36	1	Hardware	0 = 0-10VDC / 1=2-10VDC
Analog Out 3 Reverse Acting	0	0	1	None	37	1	Hardware	
Pressure Input Mode	0	0	5	None	38	1	Pressure/CO2	0=-25 to +25 Pa / 1=-50 to +50 Pa / 2=-100 to +100 Pa / 3=-62.5 to +62.5 Pa / 4=-125 to +125 Pa / 5=0 to +375 Pa
Pressure Input Voltage	0	0	1	None	39	1	Pressure/CO2	0=0-5V / 1=1-5V
Network Supply Temp Source	0	0	127	None	40	1	Network	
Math Refresh Rate	3	1	250	sec	41	1	Math	
Group Code 1	0	0	250	None	42	1	Group Codes	
Group Code 2	0	0	250	None	43	1	Group Codes	
Group Code 3	0	0	250	None	44	1	Group Codes	
Group Weight 1	0	0	15	None	45	1	Group Codes	
Group Weight 2	0	0	15	None	46	1	Group Codes	
Group Weight 3	0	0	15	None	47	1	Group Codes	
Global Weight	1	0	60	None	48	1	Group Codes	
List Refresh Rate	30	0	250	min	49	1	Math	
Math 1 Source	0	0	255	None	50	1	Math	0=WeightedAverage / 1=MaxHeating / 2=MaxCooling / 3=WeightedAverage (HeatOnly) / 4=WeightedAverage(CoolOnly) / 5=MathOccupancy / 6=MathOverride / 7=RadiantReq / Else=OFF

Math 2 Source	0	0	255	None	51	1	Math	0=WeightedAverage / 1=MaxHeating / 2=MaxCooling / 3=WeightedAverage (HeatOnly) / 4=WeightedAverage(CoolOnly) / 5=MathOccupancy / 6=MathOverride / 7=RadiantReq / Else=OFF
Math 3 Source	0	0	255	None	52	1	Math	0=WeightedAverage / 1=MaxHeating / 2=MaxCooling / 3=WeightedAverage (HeatOnly) / 4=WeightedAverage(CoolOnly) / 5=MathOccupancy / 6=MathOverride / 7=RadiantReq / Else=OFF
Math 4 Source	0	0	255	None	53	1	Math	0=WeightedAverage / 1=MaxHeating / 2=MaxCooling / 3=WeightedAverage (HeatOnly) / 4=WeightedAverage(CoolOnly) / 5=MathOccupancy / 6=MathOverride / 7=RadiantReq / Else=OFF
Math 5 Source	0	0	255	None	54	1	Math	0=WeightedAverage / 1=MaxHeating / 2=MaxCooling / 3=WeightedAverage (HeatOnly) / 4=WeightedAverage(CoolOnly) / 5=MathOccupancy / 6=MathOverride / 7=RadiantReq / Else=OFF
Math 1 Group	0	0	250	None	55	1	Math	
Math 2 Group	0	0	250	None	56	1	Math	
Math 3 Group	0	0	250	None	57	1	Math	
Math 4 Group	0	0	250	None	58	1	Math	
Math 5 Group	0	0	250	None	59	1	Math	
Demand Filter	10	0	100	%	60	1	Math	
Math Unoccupied Mode	0	0	1	None	61	1	Math	0=MAX DEMAND / 1=NORMAL
Discharge Temp Low Limit	4	-40	40	deg C	62	100	Limits	
Discharge Temp Re-enable	12	-40	40	deg C	63	100	Limits	
Damper Run Time while below Discharge Lim	15	0	60	min	64	1	Limits	

Discharge Low Limit repeat time	60	0	100 min	65	1	Limits	Time between first and third occurrence. Will then go into lockout mode.
Damper open Time without proof	5	0	100 min	66	1	Limits	
Fan run time without proof	5	0	100 min	67	1	Limits	
Volume Sequence Type	0	0	2 None	68	1	Hardware	0=Single Volume / 1=Dual Volume / 2=Variable Volume
VFD controlled by CO2	0	0	1 None	69	1	Pressure/CO2	0=Controlled by pressure / 1=Controlled by CO2
VFD Min Volts	0	0	10 volts	70	10	Pressure/CO2	
VFD Max Volts	10	0	10 volts	71	10	Pressure/CO2	
CO2 Setpoint	800	0	1500 ppm	72	1	Pressure/CO2	
CO2 Proportionnal	200	0	1000 ppm	73	1	Pressure/CO2	
Pressure Setpoint	0	-125	375 Pascal s	74	1	Pressure/CO2	
Pressure Proportionnal	20	0	100 Pascal s	75	1	Pressure/CO2	
Pressure Integral	15	0	100 min	76	1	Pressure/CO2	
Summer Seq En Out Temp	23	-30	40 deg C	77	100	Summer	
Control cooling based on demand	1	0	1 None	78	1	Summer	
Compressor Min ON Time	2	0	10 min	79	1	Hardware	
Compressor Min OFF Time	5	0	15 min	80	1	Hardware	
Cool Stage 1 Out Enable Temp	23	-30	40 deg C	81	100	Summer	
Cool Stage 2 Out Enable Temp	25	-30	40 deg C	82	100	Summer	
Cool Stage 1 Setpoint	30	0	100 %	83	1	Summer	

Cool Stage 2 Setpoint	75	0	100 %		84	1	Summer	
Cool Stage 1 Differential	40	0	100 %		85	1	Summer	
Cool Stage 2 Differential	40	0	100 %		86	1	Summer	
Winter Seq En Out Temp	18	-30	40 deg C		87	100	Winter	
Heat Discharge Temp Scale Min	13	-30	65 deg C		88	100	Winter	
Heat Discharge Temp Scale Mid	21	-30	65 deg C		89	100	Winter	
Heat Discharge Temp Scale Max	21	-30	65 deg C		90	100	Winter	
Control heating based on demand	1	0	1 None		91	1	Winter	0=Calculate based on outside temperature / 1=Calculate based on demand
Heat Demand Scale Min	-100	-100	100 %		92	1	Winter	
Heat Demand Scale Mid	0	-100	100 %		93	1	Winter	
Heat Demand Scale Max	100	-100	100 %		94	1	Winter	
Heat Outside Temp Scale Max	18	-30	40 deg C		95	100	Winter	
Heat Outside Temp Scale Min	12	-30	40 deg C		96	100	Winter	
Modulating Heat Prop Band	20	0	80 deg C		97	100	Winter	
Modulating Heat Integral	5	0	60 min		98	1	Winter	
Slave List	0	0	65535 None		99	1	Slave List	Each reg holds 16 bits - 8 regs - 99 - 106
Enable Absolute Overrides	0	0	1 None		107	1	Visualisation	
Time Zone	7	0	25 None		108	1	Visualisation	
Use Daylight Savings Time	1	0	1 None		109	1	Visualisation	
DST Active Month	3	1	12 None		110	1	Visualisation	1=January ... 12=December
DST Active Week	1	0	4 None		111	1	Visualisation	0= First weekend of month ... 4=5th weekend of month
DST Deactive Month	11	1	12 None		112	1	Visualisation	1=January ... 12=December

DST Deactive Week	0	0	4	None	113	1	Visualisation	0= First weekend of month ... 4=5th weekend of month
Discharge Temp High Limit	30	-40	75	deg C	114	100	Limits	
DO1 Display Mode	2	0	2	None	115	1	Hardware	0=No exhaust, no demand / 1=No exhaust, show demand / 2=Show exhaust, show demand
Cool Demand Scale Min	-100	-100	100	%	116	1	Summer	
Cool Demand Scale Mid	0	-100	100	%	117	1	Summer	
Cool Demand Scale Max	100	-100	100	%	118	1	Summer	
Cool Discharge Temp Scale Min	13	-30	65	deg C	119	100	Summer	
Cool Discharge Temp Scale Mid	18	-30	65	deg C	120	100	Summer	
Cool Discharge Temp Scale Max	21	-30	65	deg C	121	100	Summer	
Cool Outside Temp Scale Min	23	-30	40	deg C	122	100	Summer	Aligned with "Cool Discharge Temp Scale Mid"
Cool Outside Temp Scale Max	28	-30	40	deg C	123	100	Summer	Aligned with "Cool Discharge Temp Scale Min"
Modulating Cool Prop Band	20	0	80	deg C	124	100	Summer	
Modulating Cool Integral	5	0	60	min	125	1	Summer	
Analog Out 2 Range	0	0	1	None	126	1	Summer	0 = 0-10VDC / 1=2-10VDC
Analog Out 2 Reverse Acting	0	0	1	None	127	1	Summer	
Integral Dropoff Rate	3	0	4	None	128	1	Temperature	0=Slow, 4=Fast
Extra Comm Delay	0	0	1500	msec	129	1	Baud Rate	Extra delay that the master should wait when forwarding messages before declaring a timeout (intended for PL-TREE-COM)
Chip Type	0	0	1	None	130	1	Device	0=PIC18F6722 / 1=PIC18F67K40
Heat Authorization Mode	0	0	1	None	131	1	Winter	0=BASED ON SEASON / 1=BASED ON CALL FOR MOD HEAT (AO1)

Locked Address	0	0	127	None	140	1	Device	Saved address (overrides physical dipswitch address). Set to 0 to return to physical address.
Reset	0	0	1	None	150	1	Device	Set to 1 to cause a reset
"Get Slave List" Command	0	0	1	None	151	1	Slave List	
Reprogram	0	0	1	None	152	1	Device	Set to 255 to enter reprogram mode (Warning: Irreversible action - Reserved for ProLon Focus software)
Alarm Override	255	0	255	None	200	1	Visualisation	0=OFF / 1=ON / Else=AUTO
Damper Override	255	0	255	None	201	1	Visualisation	0=CLOSED / 1=OPEN / Else=AUTO
Fan Override	255	0	255	None	202	1	Visualisation	0=OFF / 1=ON / Else=AUTO
VFD Override	255	0	255	volts	203	10	Visualisation	0.0-10.0 = Override Voltage / Else=AUTO If Staged-->0=OFF / 1=1 stage ON / 2= 2 stages ON / 3=AUTO If Analog -->0-100% = Output Override / Else=AUTO
Cooling Override	255	0	255	None	204	1	Visualisation	
Heat Authorization Override	255	0	255	None	205	1	Visualisation	0=OFF / 1=ON / Else=AUTO
Modulating Heat Override	255	0	255	%	206	1	Visualisation	0-100% = Output Override / Else=AUTO
Schedule Override	255	0	255	None	207	1	Visualisation	0=Unoccupied / 1=Occupied / Else=AUTO
Time - Set Year	0	0	99	None	250	1	Visualisation	
Time - Set Month	0	1	12	None	251	1	Visualisation	
Time - Set Weekday	0	0	6	None	252	1	Visualisation	
Time - Set Day	0	1	31	None	253	1	Visualisation	
Time - Set Hours	0	0	23	None	254	1	Visualisation	
Time - Set Minutes	0	0	59	None	255	1	Visualisation	
Time - Set Seconds	0	0	59	None	256	1	Visualisation	
Password	0	0	65535	None	260	1	Device	Each reg holds 2 chars -- 16 chars max -- 8 regs --regs 211-218

Weekly Schedule	127	0	127	None	300	1	Schedule	Registers 300 to 427. Must access using Multiple Read/Write. [Sunday to Saturday, then Holiday] [period 1-8] [ hour, minute]
Calendar	0	0	255	None	428	1	Calendar	Registers 428 to 475. Must access using Multiple Read/Write. [January to December][4 bytes = 32 days]. Each bit set to 1 is considered a holiday.
Weekly Schedule	127	0	127	None	300	1	Schedule	Registers 300 to 427. Must access using Multiple Read/Write. [Sunday to Saturday, then Holiday] [period 1-8] [ hour, minute]
Calendar	0	0	255	None	428	1	Calendar	Registers 428 to 475. Must access using Multiple Read/Write. [January to December][4 bytes = 32 days]. Each bit set to 1 is considered a holiday.



## Modbus

### Make Up Air Network Variable Outputs

#### Modbus Object Type: Input Registers

Name	Units	Modbus Reg #	Mult	Modbus Notes
Outside Air Temp	deg C	1	100	
Discharge Air Temp	deg C	2	100	
Occupancy	None	3	1	0=Unoccupied / 1=Occupied
Digital Input 1 State	None	4	1	(Exhaust 1 Proof) 0=Open contact / 1=Closed contact
Digital Input 2 State	None	5	1	(Exhaust 2 Proof) 0=Open contact / 1=Closed contact
Damper Open Proof	None	6	1	0=No proof / 1=Proof obtained
Fan Proof	None	7	1	0=No proof / 1=Proof obtained
Zone Air Temp	deg C	8	100	
Active Zone Heat SP	deg C	9	100	
Active Zone Cool SP	deg C	10	100	
Pressure	Pascals	11	10	
CO2 Reading	ppm	12	1	
Active Season	None	13	1	0=MID SEASON / 1=WINTER SEASON / 2=SUMMER SEASON
Discharge Setpoint	deg C	14	100	The Discharge air SP calculated during winter mode
Reason For Lockout Mode	None	15	1	0=Lockout not in effect / 1=Due to absence of damper proof / 2=Due to discharge limit triggering 3 times / 3=Due to absence of fan proof / 4=Invalid Discharge Temp
Discharge Air Limit Triggered	None	16	1	0=Not currently triggered / 1=Triggered
Damper Demand	None	17	1	0=CLOSED / 1=OPEN
Fan Demand	None	18	1	0=STOP / 1=RUN
Heat Authorization	None	19	1	0=Not authorized / 1=Authorized
Alarm State	None	20	1	0=Alarm inactive / 1=Alarm Active
Modulating Heat Value	%	21	1	

Cooling Status	None	22	1	If staged--> Number of cooling stages ON / If analog--> Output action (%)
Variable Freq Drive Value	volts	23	10	The voltage output to the VFD
Math 1	%	24	1	Negative value represents a cooling demand, positive value represents a heating demand
Math 2	%	25	1	Negative value represents a cooling demand, positive value represents a heating demand
Math 3	%	26	1	Negative value represents a cooling demand, positive value represents a heating demand
Math 4	%	27	1	Negative value represents a cooling demand, positive value represents a heating demand
Math 5	%	28	1	Negative value represents a cooling demand, positive value represents a heating demand
Unoccupied Ovrerr Status	None	29	1	

**Modbus**  
**Make Up Air Network Variable Inputs**

Modbus Object Type: Holding Registers

Name	Units	Modbus Reg #	Mult	Modbus Notes
Occupancy Input	None	136	1	Allows the occupancy to be set by another network device (0=Unoccupied, 1=Occupied, 2=AUTO)
Outside Temp Input	deg C	139	100	Allows the outside temp to be set by another network device. Physical sensor (if available) takes priority. Set to 0x7FFF to invalidate.