

## Modbus Boiler Configuration Properties

### Modbus Object Type: Holding Registers

Name	Default	Min	Max	Units	Modbus Reg #	Multiplier	Focus Screen	Modbus Notes
Device Type	6	6	6	None	1	1	Device	(Not writable) 6=Boiler
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) 1.0=VC1000 / 2.0=C1000 / 2.5=C1050 / 3.0=M1000 / 3.1=M2000
Supply Temp Scale Min	60	15	80	deg C	4	100	Temperature	
Supply Temp Scale Max	90	15	100	deg C	5	100	Temperature	
Outside Temp Scale Min	-15	-40	25	deg C	6	100	Temperature	
Outside Temp Scale Max	15	-20	40	deg C	7	100	Temperature	
Demand Offset Math Source	0	0	5	None	8	1	Temperature	0=OFF / 1=Math1 ... 5=Math5
Occupied Offset	0	0	30	deg C	9	100	Temperature	
Number of Stages per Boiler	1	1	4	None	10	1	Boiler	Does not apply to modulating boilers
Boiler Min Off Time	5	0	30	min	11	1	Boiler	
Boiler Target Differential	5	2	30	deg C	12	100	Boiler	
Enable Valve Sequence	0	0	1	None	13	1	Boiler	
Modulating Proportionnal	20	0	30	deg C	14	100	Boiler	
Modulating Integral	15	0	30	min	15	1	Boiler	
Valve Derivative	10	0	100	deg C	16	100	Boiler	Not in use as of v.5.5.0
Modulating Activation Point	25	0	100	%	17	1	Boiler	When Valve enabled, this is the Min Valve Position
High Return Limit	72	30	85	deg C	18	100	Temperature	
Analog Output Reverse Acting	0	0	1	None	19	1	Boiler	Applies to Valve output or Modulating Boiler output

Analog Output Range	1	0	2	None	20	1	Boiler	0=0-10VDC / 1=2-10VDC / 2=0-5VDC (Applies to Valve output or Modulating Boiler output)
Max Receive Time	720	0	6550	sec	21	1	Temperature	Not configurable via Focus Software as of v.5.5.0
Net Baud	3	0	5	None	22	1	COM Ports	0=9600 / 1=19200 / 2=38400 / 3=57600 / 4=76800 / 5=115200
Net Parity	0	0	2	None	23	1	COM Ports	0=NONE / 1=ODD / 2=EVEN
Net StopBits	0	0	1	None	24	1	COM Ports	0=1 Stop Bit / 1=2 Stop Bits
RJ45 Baud	3	0	5	None	25	1	COM Ports	0=9600 / 1=19200 / 2=38400 / 3=57600 / 4=76800 / 5=115200
RJ45 Parity	0	0	2	None	26	1	COM Ports	0=NONE / 1=ODD / 2=EVEN
RJ45 StopBits	0	0	1	None	27	1	COM Ports	0=1 Stop Bit / 1=2 Stop Bits
Supply Water Temp Calibration	0	-20	20	deg C	28	100	Calibration	
Outside Air Temp Calibration	0	-20	20	deg C	29	100	Calibration	
Return Water Temp Calibration	0	-20	20	deg C	30	100	Calibration	
Location	0	0	0	None	31	1	Device	Each reg holds 2 chars -- 16 chars max -- 8 regs (Regs 31-38)
Boiler Min On Time	5	0	30	min	39	1	Boiler	
Pump Warm Weather Shutdown	16	-10	99	deg C	40	100	Pumps	
Lead Pump Mode	0	0	3	None	41	1	Pumps	0=WWSD Only / 1=HeatCall Only / 2=WWSD or HeatCall / 3=WWSD and HeatCall
Use Dual Pumps	1	0	1	None	42	1	Pumps	
Lag Pump Mode	0	0	1	None	43	1	Pumps	0=Backup Pump / 1=Follower Pump
Pump Lead Lag Sequence	1	0	3	None	44	1	Pumps	0=None / 1=Alternate after each call / 2=Alternate with fixed run time / 3=Equal run time
Pump Fixed Run Time Minutes	1440	60	5040	min	45	1	Pumps	
Pump No Proof Time	15	5	250	sec	46	1	Pumps	
Boiler Warm Weather Shut Down	16	-20	99	deg C	47	100	Boiler	Set to 99 degC to deactivate WWSD

Use Offset Sequence	0	0	1 None	48	1 Boiler	
Use Fixed Target Setpoint	0	0	1 None	49	1 Boiler	
Fixed Target Setpoint	75	10	90 deg C	50	100 Boiler	
Use Modulating Boiler	0	0	1 None	51	1 Boiler	
Boiler Lead Lag Sequence	1	0	3 None	52	1 Boiler	0=None / 1=Alternate after each call / 2=Alternate with fixed run time / 3=Equal run time
Boiler Fixed Run Time Minutes	60	15	5040 min	53	1 Boiler	
Pump Min On Time	2	0	20 min	54	1 Pumps	
Pump Min Off Time	5	0	20 min	55	1 Pumps	
Pump Exercise Interval	2880	0	60000 min	56	1 Pumps	Set to 0 to not perform pump exercise
Pump Exercise Time	15	10	30 min	57	1 Pumps	
Morning Warm Up Time	0	0	250 min	58	1 Temperature	
Number of Boilers	1	1	4 None	59	1 Boiler	
Use Return Sensor	0	0	1 None	60	1 Temperature	
Low Return Limit	13	5	30 deg C	61	100 Temperature	Only applies to "Staging Boiler with Valve" sequence
Boiler Post Off Time	1	0	30 min	62	1 Pumps	
Use Backup Boiler	0	0	1 None	63	1 Boiler	Only available as a backup for the modulating boiler sequence
Inter-Stage Activation Delay	5	0	30 min	64	1 Boiler	
Inter-Stage Deactivation Delay	5	0	30 min	65	1 Boiler	
Modulating Deactivation Point	15	0	100 %	66	1 Boiler	
Alarm High Supply Limit	95	15	100 deg C	67	100 Visualisation	
Alarm Low Supply Limit	55	15	100 deg C	68	100 Visualisation	
Use Same Proof for Both Pumps	0	0	1 None	69	1 Pumps	Applies to M2000 only
Chip Type	0	0	1 None	70	1 Device	0=PIC18F6722 / 1=PIC18F67K40
DO5 Pump Override	255	0	255 None	75	1 Visualisation	0=OFF / 1=ON / Else=AUTO
AO1 Pump Override	255	0	255 None	76	1 Visualisation	0=OFF / 1=ON / Else=AUTO
Boiler 1 Override	255	0	255 None	77	1 Visualisation	0=OFF / 1=ON / Else=AUTO
Boiler 2 Override	255	0	255 None	78	1 Visualisation	0=OFF / 1=ON / Else=AUTO

Modulating Boiler 1 Override	255	0	255 %		79	1	Visualisation	Set to greater than 100 to cancel override. When Valve enabled, this is the Valve override.
Schedule Override	255	0	255 None		80	1	Visualisation	0=Unoccupied / 1=Occupied / Else=AUTO
Boiler 3 Override	255	0	255 None		81	1	Visualisation	0=OFF / 1=ON / Else=AUTO
Boiler 4 Override	255	0	255 None		82	1	Visualisation	0=OFF / 1=ON / Else=AUTO
Modulating Boiler 2	255	0	255 %		83	1	Visualisation	Set to greater than 100 to cancel override.
Clear Lead Pump Timers	0	0	1 None		90	1	Device	Write 1 to clear timers
Clear Pump DO5 Timers	0	0	1 None		91	1	Device	Write 1 to clear timers
Clear Pump AO1 Timers	0	0	1 None		92	1	Device	Write 1 to clear timers
Clear Lead Boiler Timers	0	0	1 None		93	1	Device	Write 1 to clear timers
Clear Boiler DO1 Timers	0	0	1 None		94	1	Device	Write 1 to clear timers
Clear Boiler DO2 Timers	0	0	1 None		95	1	Device	Write 1 to clear timers
Clear Boiler DO3 Timers	0	0	1 None		96	1	Device	Write 1 to clear timers
Clear Boiler DO4 Timers	0	0	1 None		97	1	Device	Write 1 to clear timers
Reset	0	0	1 None		100	1	Device	Set to 1 to cause a reset
Reprogram	0	0	1 None		101	1	Device	Set to 255 to enter reprogram mode (Warning: Irreversible action - Reserved for ProLon Focus software)
Time Zone	7	0	25 None		125	1	Visualisation	
Use Daylight Savings Time	1	0	1 None		126	1	Visualisation	
DST Active Month	3	1	12 None		127	1	Visualisation	1=January ... 12=December
DST Active Week	1	0	4 None		128	1	Visualisation	0= First weekend of month ... 4=5th weekend of month
DST Deactive Month	11	1	12 None		129	1	Visualisation	1=January ... 12=December
DST Deactive Week	0	0	4 None		130	1	Visualisation	0= First weekend of month ... 4=5th weekend of month
Locked Address	0	0	127 None		140	1	Device	Saved address (overrides physical dipswitch address). Set to 0 to return to physical address.
Time - Set Year	0	0	99 None		175	1	Visualisation	

Time - Set Month	0	1	12	None	176	1	Visualisation	
Time - Set Weekday	0	0	6	None	177	1	Visualisation	
Time - Set Day	0	1	31	None	178	1	Visualisation	
Time - Set Hours	0	0	23	None	179	1	Visualisation	
Time - Set Minutes	0	0	59	None	180	1	Visualisation	
Time - Set Seconds	0	0	59	None	181	1	Visualisation	
Weekly Schedule	127	0	127	None	200	1	Schedule	Registers 200 to 327. Must access using Multiple Read/Write. [Sunday to Saturday, then Holiday] [period 1-8] [ hour, minute]
Calendar	0	0	255	None	328	1	Calendar	Registers 328 to 375. Must access using Multiple Read/Write. [January to December][4 bytes = 32 days]. Each bit set to 1 is considered a holiday.

## Modbus Boiler Network Variable Outputs

### Modbus Object Type: Input Registers

Name	Units	Modbus Reg #	Mult	Modbus Notes
Supply Water Temp	deg C	1	100	
Outside Air Temp	deg C	2	100	
Return Water Temp	deg C	3	100	
Boiler DO1 Action	None	4	1	
Modulating Boiler 1 Value / Valve Pos	%	5	1	Larger value = hotter supply temp
Boiler Calculated Proof	None	6	1	Calculated by comparing the difference between the supply and return over time
Boiler DO2 Action	None	7	1	
Supply Water Target SP	deg C	8	100	
Pump DO5 Action	None	9	1	
Proof Pump DO5	None	10	1	
Pump AO1 Action	None	11	1	
Proof Pump AO1	None	12	1	
Occupancy	None	13	1	0=Unoccupied / 1=Occupied
Boiler DO3 Action	None	14	1	
Boiler DO4 Action (Backup Stage in Modulating Seq)	None	15	1	
Lead Pump ID	None	16	1	0=AO1 / 1=DO5
Lead Boiler Stage ID	None	17	1	0=DO1 / 1=DO2 / 2=DO3 / 3=DO4
Modulating Boiler 2 Value	None	18	1	
Max Sp Request	None	19	1	Status of AI6 (M2000 only)
Boiler Disable	None	20	1	Status of AI7 (M2000 only)
Alert Status	None	21	1	0=OK / 1=NO_PROOF_PUMP / 2=INVALID_SUPPLY / 3=HIGH_SUPPLY / 4=LOW_SUPPLY / 5=INVALID_RETURN / 6=NO_HEAT_WARNING / 7=INVALID_OUTSIDE

Lead Pump Run Time	min	30	1
Lead Pump Inactive Time	min	31	1
DO5 Run Time - Days	days	32	1
DO5 Run Time - Minutes	min	33	1
AO1 Run Time - Days	days	34	1
AO1 Run Time - Minutes	min	35	1
Lead Boiler Run Time	min	36	1
DO1 Run Time - Days	days	37	1
DO1 Run Time - Minutes	min	38	1
DO2 Run Time - Days	days	39	1
DO2 Run Time - Minutes	min	40	1
DO3 Run Time - Days	days	41	1
DO3 Run Time - Minutes	min	42	1
DO4 Run Time - Days	days	43	1
DO4 Run Time - Minutes	min	44	1

**Modbus**  
**Boiler Network Variable Inputs**

Modbus Object Type: Holding Registers

Name	Units	Modbus Reg #	Mult	Modbus Notes
Math 1 Value	%	135	1	Sets Math 1 for use in the Demand Offset Sequence
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.
Supply Water Temp Input	deg C	142	1	Allows the supply water temp to be read/set by another network device.