



43-0001-00

SHERLOCK 2 & 4 SERIES – MODBUS RTU ADDRESS MAP

Version 3.0

Released on August 21, 2018

SHERLOCK 2 & 4 Series MODBUS RTU protocol is conformed to MODBUS Application Protocol Version 1.1b. Not all public functions are implemented; supported public functions are listed below. There are two new user defined functions; Read Sequential byte size data and read logged data memories. The SHERLOCK II supports serial RS485 RTU interface, Baud rate from 2400 to 38400 bits per second, 8-bit data byte, No parity/Even/Odd data format. Station number can be set to 1-250. With our Genesis Serial communication server, this Mod-bus-RTU can communicate with host devices via Ethernet TCP/IP transport. Some front end programs start address is off by one when send over to our controls. In order for our devices reply back the corrected data, those programs need to add one to the start address field.

Example: Start address 8 need to change to 9 before send

Note: Single Star & Double Star

- * : For Sherlock 4 series control only. For Sherlock 2 Series, accessing these locations may have unexpected results.
- ** : Customized Functions



Supported function codes:

- Function 1: Read Coils
- Function 2: Read Coil inputs (share overlay data as function 1)
- Function 3: Read Holding Registers
- Function 4: Read Input Registers (share overlay data as function 3)
- Function 5: Write Single Coil
- Function 6: Write Single Register
- Function 15: Write Multiple Coils
- Function 16: Write Multiple Registers
- Function 22: Mask Write Register
- Function 43: Read Device Identification
- Function 65: Read Sequential Bytes**
- Function 66: Write Sequential Bytes**
- Function 67: Read Logged Memory Data Bytes**



Coil (Bit) Address Map:

0	LEVEL 1 ALARM RELAY
1	LEVEL 1 ALARM SILENCE-ABLE RELAY
2	LEVEL 2 ALARM RELAY
3	LEVEL 2 ALARM SILENCE-ABLE RELAY
4	LEVEL 3 ALARM RELAY
5	LEVEL 3 ALARM SILENCE-ABLE RELAY
6	SYSTEM ALARM RELAY
7	SYSTEM ALARM SILENCE-ABLE RELAY
8	SENSOR A ZONE ALARM RELAY
9	SENSOR B ZONE ALARM RELAY
10	SENSOR C ZONE ALARM RELAY
11	SENSOR D ZONE ALARM RELAY
12	SENSOR E ZONE ALARM RELAY
13	SENSOR F ZONE ALARM RELAY
14	SENSOR G ZONE ALARM RELAY
15	SENSOR H ZONE ALARM RELAY
16	LED SENSOR A
17	LED SENSOR B
18	LED SENSOR C
19	LED SENSOR D
20	LED SENSOR E
21	LED SENSOR F
22	LED SENSOR G



23	LED SENSOR H
24	LED SYS ALARM SILENCE
25	LED SYS ALARM (LED LEVEL 1 SILENCE*)
26	LED LEVEL 2 ALARM SILENCE*
27	LED LEVEL 3 ALARM SILENCE*
28	LED SYS ALARM SILENCE*
29	LED SYS ALARM*
30	LED LEVEL 3 ALARM*
31	LED LEVEL 2 ALARM*
32	LED LEVEL ALARM SILENCED, II series Only(LED LEVEL 1 ALARM*)
33	NOT USED
34	HORN STROBE 1*
35	HORN STROBE 2*
36	HORN STROBE 3*
37	HORN STROBE 4*
38	HORN STROBE 5*
39	HORN STROBE 6*
40	HORN STROBE 7*
41	HORN STROBE 8*



REGISTER Address Map

16 BIT FORMAT

REG 00	Memory Start Address
REG 01	Display Line 1 Flashing Bit Location
REG 02	Display Line 2 Flashing Bit Location
REG 03	Display Line 3 Flashing Bit Location*
REG 04	Display Line 4 Flashing Bit Location*
REG 05	LED 1-2 Image
REG 06	LED 1-2 Image
REG 07	Sensor Warm Up Timer Count Down
REG 08	Sensor A Reading
REG 09	Sensor B Reading
REG 10	Sensor C Reading
REG 11	Sensor D Reading
REG 12	Sensor E Reading
REG 13	Sensor F Reading
REG 14	Sensor G Reading
REG 15	Sensor H Reading
REG 16	Sensor A Absolute Reading
REG 17	Sensor B Absolute Reading
REG 18	Sensor C Absolute Reading
REG 19	Sensor D Absolute Reading
REG 20	Sensor E Absolute Reading
REG 21	Sensor F Absolute Reading



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Tel: 636-282-0011 Fax: 636-282-2722

Web: www.Genesis-International.com
E-Mail: Mail@Genesis-International.com

REG 22 Sensor G Absolute Reading
REG 23 Sensor H Absolute Reading
REG 24 Communication Key Poke
REG 25 Alarm Timer Delay*
REG 26 Reset Alarm*

8 BIT FORMAT

REG 1000 Memory Byte Start Address
REG 1001 Display Buffer 1 (1-40)
REG 1002 LED 2 Image Byte
REG 1003 LED 1 Image Byte
REG 1004 Relay 1-8 Image
REG 1005 Relay 9-16 Image
REG 1006 Timer Read EE

16 BIT FORMAT

REG 2000 Start Clock Memory Address(II series Only)

8 BIT FORMAT

Reg 3000 Start Clock Memory Address(II series Version 6.2 and Lower)
Reg 3001 Alarm Log Index(II series Version 6.2 and Lower)
Reg 3002 Ram Alarm Log Area(II series Version 6.2 and Lower)

16 BIT FORMAT

REG 4000 EE Start Address



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REG 4001	EE Sensor A Level 1 Setpoint
REG 4002	EE Sensor B Level 1 Setpoint
REG 4003	EE Sensor C Level 1 Setpoint
REG 4004	EE Sensor D Level 1 Setpoint
REG 4005	EE Sensor E Level 1 Setpoint
REG 4006	EE Sensor F Level 1 Setpoint
REG 4007	EE Sensor G Level 1 Setpoint
REG 4008	EE Sensor H Level 1 Setpoint
REG 4009	EE Sensor A Level 1 Setback Setpoint
REG 4010	EE Sensor B Level 1 Setback Setpoint
REG 4011	EE Sensor C Level 1 Setback Setpoint
REG 4012	EE Sensor D Level 1 Setback Setpoint
REG 4013	EE Sensor E Level 1 Setback Setpoint
REG 4014	EE Sensor F Level 1 Setback Setpoint
REG 4015	EE Sensor G Level 1 Setback Setpoint
REG 4016	EE Sensor H Level 1 Setback Setpoint
REG 4017	EE Sensor A Level 2 Setpoint
REG 4018	EE Sensor B Level 2 Setpoint
REG 4019	EE Sensor C Level 2 Setpoint
REG 4020	EE Sensor D Level 2 Setpoint
REG 4021	EE Sensor E Level 2 Setpoint
REG 4022	EE Sensor F Level 2 Setpoint
REG 4023	EE Sensor G Level 2 Setpoint
REG 4024	EE Sensor H Level 2 Setpoint
REG 4025	EE Sensor A Level 2 Setback Setpoint*



REG 4026 EE Sensor B Level 2 Setback Setpoint*

REG 4027 EE Sensor C Level 2 Setback Setpoint*

REG 4028 EE Sensor D Level 2 Setback Setpoint*

REG 4029 EE Sensor E Level 2 Setback Setpoint*

REG 4030 EE Sensor F Level 2 Setback Setpoint*

REG 4031 EE Sensor G Level 2 Setback Setpoint*

REG 4032 EE Sensor H Level 2 Setback Setpoint*

REG 4033 EE Sensor A Level 3 Setpoint*

REG 4034 EE Sensor B Level 3 Setpoint*

REG 4035 EE Sensor C Level 3 Setpoint*

REG 4036 EE Sensor D Level 3 Setpoint*

REG 4037 EE Sensor E Level 3 Setpoint*

REG 4038 EE Sensor F Level 3 Setpoint*

REG 4039 EE Sensor G Level 3 Setpoint*

REG 4040 EE Sensor H Level 3 Setpoint*

REG 4041 EE Sensor A Level 3 Setback Setpoint*

REG 4042 EE Sensor B Level 3 Setback Setpoint*

REG 4043 EE Sensor C Level 3 Setback Setpoint*

REG 4044 EE Sensor D Level 3 Setback Setpoint*

REG 4045 EE Sensor E Level 3 Setback Setpoint*

REG 4046 EE Sensor F Level 3 Setback Setpoint*

REG 4047 EE Sensor G Level 3 Setback Setpoint*

REG 4048 EE Sensor H Level 3 Setback Setpoint*

REG 4049 EE Oxygen Sensor A Level 1 Setpoint*

REG 4050 EE Oxygen Sensor B Level 1 Setpoint*



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REG 4051 EE Oxygen Sensor C Level 1 Setpoint*

REG 4052 EE Oxygen Sensor D Level 1 Setpoint*

REG 4053 EE Oxygen Sensor E Level 1 Setpoint*

REG 4054 EE Oxygen Sensor F Level 1 Setpoint*

REG 4055 EE Oxygen Sensor G Level 1 Setpoint*

REG 4056 EE Oxygen Sensor H Level 1 Setpoint*

REG 4057 EE Oxygen Sensor A Level 2 Setpoint*

REG 4058 EE Oxygen Sensor B Level 2 Setpoint*

REG 4059 EE Oxygen Sensor C Level 2 Setpoint*

REG 4060 EE Oxygen Sensor D Level 2 Setpoint*

REG 4061 EE Oxygen Sensor E Level 2 Setpoint*

REG 4062 EE Oxygen Sensor F Level 2 Setpoint*

REG 4063 EE Oxygen Sensor G Level 2 Setpoint*

REG 4064 EE Oxygen Sensor H Level 2 Setpoint*

REG 4065 EE Oxygen Sensor A Level 3 Setpoint*

REG 4066 EE Oxygen Sensor B Level 3 Setpoint*

REG 4067 EE Oxygen Sensor C Level 3 Setpoint*

REG 4068 EE Oxygen Sensor D Level 3 Setpoint*

REG 4069 EE Oxygen Sensor E Level 3 Setpoint*

REG 4070 EE Oxygen Sensor F Level 3 Setpoint*

REG 4071 EE Oxygen Sensor G Level 3 Setpoint*

REG 4072 EE Oxygen Sensor H Level 3 Setpoint*

REG 4073 EE Sensor A Calibration Offset*

REG 4074 EE Sensor B Calibration Offset*

REG 4075 EE Sensor C Calibration Offset*



REG 4076 EE Sensor D Calibration Offset*

REG 4077 EE Sensor E Calibration Offset*

REG 4078 EE Sensor F Calibration Offset*

REG 4079 EE Sensor G Calibration Offset*

REG 4080 EE Sensor H Calibration Offset*

REG 4081 EE Oxygen Sensor A Calibration Offset*

REG 4082 EE Oxygen Sensor B Calibration Offset*

REG 4083 EE Oxygen Sensor C Calibration Offset*

REG 4084 EE Oxygen Sensor D Calibration Offset*

REG 4085 EE Oxygen Sensor E Calibration Offset*

REG 4086 EE Oxygen Sensor F Calibration Offset*

REG 4087 EE Oxygen Sensor G Calibration Offset*

REG 4088 EE Oxygen Sensor H Calibration Offset*

Reg 4089 EE Alarm Log Index(IV Series, II Series With Version 6.3
And Above)

Reg 4090 EE Alarm Log Area(IV Series, II Series With Version 6.3
And Above)

8 BIT FORMAT

REG 5000 EE Start Address

REG 5001 EE Sensor A Level 1 Delay

REG 5002 EE Sensor B Level 1 Delay

REG 5003 EE Sensor C Level 1 Delay

REG 5004 EE Sensor D Level 1 Delay

REG 5005 EE Sensor E Level 1 Delay

REG 5006 EE Sensor F Level 1 Delay



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REG 5007 EE Sensor G Level 1 Delay
REG 5008 EE Sensor H Level 1 Delay
REG 5009 EE Sensor A Level 1 Setback Delay
REG 5010 EE Sensor B Level 1 Setback Delay
REG 5011 EE Sensor C Level 1 Setback Delay
REG 5012 EE Sensor D Level 1 Setback Delay
REG 5013 EE Sensor E Level 1 Setback Delay
REG 5014 EE Sensor F Level 1 Setback Delay
REG 5015 EE Sensor G Level 1 Setback Delay
REG 5016 EE Sensor H Level 1 Setback Delay
REG 5017 EE Sensor A Level 2 Delay
REG 5018 EE Sensor B Level 2 Delay
REG 5019 EE Sensor C Level 2 Delay
REG 5020 EE Sensor D Level 2 Delay
REG 5021 EE Sensor E Level 2 Delay
REG 5022 EE Sensor F Level 2 Delay
REG 5023 EE Sensor G Level 2 Delay
REG 5024 EE Sensor H Level 2 Delay
REG 5025 EE Sensor A Level 2 Setback Delay*
REG 5026 EE Sensor B Level 2 Setback Delay*
REG 5027 EE Sensor C Level 2 Setback Delay*
REG 5028 EE Sensor D Level 2 Setback Delay*
REG 5029 EE Sensor E Level 2 Setback Delay*
REG 5030 EE Sensor F Level 2 Setback Delay*
REG 5031 EE Sensor G Level 2 Setback Delay*



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REG 5032 EE Sensor H Level 2 Setback Delay*

REG 5033 EE Sensor A Level 3 Delay*

REG 5034 EE Sensor B Level 3 Delay*

REG 5035 EE Sensor C Level 3 Delay*

REG 5036 EE Sensor D Level 3 Delay*

REG 5037 EE Sensor E Level 3 Delay*

REG 5038 EE Sensor F Level 3 Delay*

REG 5039 EE Sensor G Level 3 Delay*

REG 5040 EE Sensor H Level 3 Delay*

REG 5041 EE Sensor A Level 3 Setback Delay*

REG 5042 EE Sensor B Level 3 Setback Delay*

REG 5043 EE Sensor C Level 3 Setback Delay*

REG 5044 EE Sensor D Level 3 Setback Delay*

REG 5045 EE Sensor E Level 3 Setback Delay*

REG 5046 EE Sensor F Level 3 Setback Delay*

REG 5047 EE Sensor G Level 3 Setback Delay*

REG 5048 EE Sensor H Level 3 Setback Delay*

REG 5049 EE Sensor A Level 1 Install (Install = Value 255)

REG 5050 EE Sensor B Level 1 Install

REG 5051 EE Sensor C Level 1 Install

REG 5052 EE Sensor D Level 1 Install

REG 5053 EE Sensor E Level 1 Install

REG 5054 EE Sensor F Level 1 Install

REG 5055 EE Sensor G Level 1 Install

REG 5056 EE Sensor H Level 1 Install



REG 5057 EE Sensor Number Install*

REG 5058 EE Daylight Saving Install

REG 5059 EE 4 to 20 MA Install*

REG 5060 EE Alarm Relay Normally Open Mode (255 - NO)

REG 5061 EE Alarm Level 1 Stage Normally Open Mode (255 - NO)*

REG 5062 EE Alarm Level 2 Stage Normally Open Mode (255 - NO)*

REG 5063 EE Alarm Level 3 Stage Normally Open Mode (255 - NO)*

REG 5064 EE Level 1 Latch

REG 5065 EE Level 2 Latch

REG 5066 EE Level 3 Latch*

REG 5067 EE Time Setback Hour ON Time*

REG 5068 EE Time Setback Minute ON Time*

REG 5069 EE Time Setback Hour OFF Time*

REG 5070 EE Time Setback Minute OFF Time*

REG 5071 EE Zone Alarm On Level 1,2,3 or Level 2,3 or Level 3

REG 5072 EE Zone Relay Silence-able

REG 5073 EE Zone Relay Silent Length*

REG 5074 EE Sensor A Type*

REG 5075 EE Sensor B Type*

REG 5076 EE Sensor C Type*

REG 5077 EE Sensor D Type*

REG 5078 EE Sensor E Type*

REG 5079 EE Sensor F Type*

REG 5080 EE Sensor G Type*

REG 5081 EE Sensor H Type*



REG 5082 EE Sensor A Level 1 Setback Install(II series Only)

REG 5083 EE Sensor B Level 1 Setback Install(II series Only)

REG 5084 EE Sensor C Level 1 Setback Install(II series Only)

REG 5085 EE Sensor D Level 1 Setback Install(II series Only)

REG 5086 EE Sensor E Level 1 Setback Install(II series Only)

REG 5087 EE Sensor F Level 1 Setback Install(II series Only)

REG 5088 EE Sensor G Level 1 Setback Install (II series Only)

REG 5089 EE Sensor H Level 1 Setback Install(II series Only)

REG 5090 EE Sensor A Level 2 Install(II series Only)

REG 5091 EE Sensor B Level 2 Install(II series Only)

REG 5092 EE Sensor C Level 2 Install(II series Only)

REG 5093 EE Sensor D Level 2 Install(II series Only)

REG 5094 EE Sensor E Level 2 Install(II series Only)

REG 5095 EE Sensor F Level 2 Install(II series Only)

REG 5096 EE Sensor G Level 2 Install(II series Only)

REG 5097 EE Sensor H Level 2 Install(II series Only)

REG 5098 EE Sensor A Calibration Offset(II series Only)

REG 5099 EE Sensor B Calibration Offset(II series Only)

REG 5100 EE Sensor C Calibration Offset(II series Only)

REG 5101 EE Sensor D Calibration Offset(II series Only)

REG 5102 EE Sensor E Calibration Offset(II series Only)

REG 5103 EE Sensor F Calibration Offset(II series Only)

REG 5104 EE Sensor G Calibration Offset(II series Only)

REG 5105 EE Sensor H Calibration Offset(II series Only)

REG 5106 EE Time Setback Install(II series Only)



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REG 5107 EE Level 2 Alarm Off Delay(II series Only)

REG 5108 EE Sensor A Oxygen Install(II series Only)

8 BIT FORMAT EE SENSOR TYPE STRUCTURE*

Index Byte 0:EE Sensor Type(0-CMOS, 1 - OXGN, 2 - NDIR, 3 - ECHM,
4 - 4-20MA)

Index Byte 1:EE_SNR_B_RANGE(0 - 100PPM, 1 - 250PPM, 2 - 500PPM,
3 - 1000PPM,4 - 10000PPM, 5 - 20000PPM)

Index Byte 2:EE_SNR_B_SETBCK_INST(0 - NO, 1 - T/D1, 2 - DI2, 3 - DI1,
4 - TMCK)

Index Byte 3:EE Sensor Gas Type:(0 - 11, 1 - 12, 2 - 22, 3 - 123,
4- 134A, 5 - 402A, 6 - 407A, 7 - 502,
8 - 507A,9 - NH3, 10 - Others)

Index Byte 4:EE_SNR_B_LNK_METHOD:(0-3WIRE, 1 -COMM)

Index Byte 5:EE_SNR_B_TM_WAT_AVG:(0- NO, 1 - 1, 2 - 1&2)

Index Byte 6:EE_SNR_B_NAME:(Character Name)

Index Byte 7:EE_SNR_B_NAME:(Character Name)

Index Byte 8:EE_SNR_B_NAME:(Character Name)

Index Byte 9:EE_SNR_B_NAME:(Character Name)

Index Byte 10:EE_SNR_B_NAME:(Character Name)

Index Byte 11:EE_SNR_B_NAME:(Character Name)

Index Byte 12:EE_SNR_B_NAME:(Character Name)

Index Byte 13:EE_SNR_B_NAME:(Character Name)

Index Byte 14:EE_SNR_B_NAME:(Character Name)

Index Byte 15:EE_SNR_B_NAME:(Character Name)



How to clear led level 1,2 & 3 alarm (Does not apply to sensor open/short system alarm)

- Station #: Set to RTU Station #
- Customized Function Code: 66 (Write Sequential Bytes)
- Address Hi Byte: 0
- Address Low Byte: 25
- Count Hi Byte: 0
- Count Low Byte: 3
- Data Byte: 255
- Data Byte: 255
- Data Byte: 255

Click **Send**