

# Modbus Register Map

**Notes:**

1. 16-bit registers (INT16, UINT16, ENUM) are transmitted MSB first (i.e., big-endian).
2. INT32 and UINT32 are most-significant word in n+0, least significant word in n+1 (i.e. big-endian).
3. Reads can be performed with function codes 3, or 4. Writes can be performed with function code 16, or with function code 6 to registers with length 1.
4. Modbus over TCP is supported.
5. Signed numbers (INT16, INT32, ENUM) are twos-complement
6. Status bits are atomic within a single Modbus register. User should not look for consistency across multiple registers, only within a single register.
7. Strings are two characters per register, first character in high-order byte, second character in low-order byte. Printable ASCII only.
8. When writing an ASCII string the null terminator must be included.
9. Single-register reads of reserved or undefined registers will return an error. Block reads which begin with a valid register will not return an error but will return zeros for undefined registers.
10. Data Type column:  
 "INT16" = signed 16-bit integer,  
 "UINT16" = unsigned 16-bit integer,  
 "INT32" = signed 32-bit integer,  
 "UINT32" = unsigned 32-bit integer,  
 "ENUM" = signed 16-bit integer which maps to a defined list of states,

Modicon Standard Register Number	Absolute Starting Register Number (Hexadecimal)	Absolute Starting Register Number (Decimal)	Data Point	R/W	Length	Data Type	Valid Response
<b>Input Registers</b>							
30001	0000	0	App Version	R	2	STREAM	App Version: Bit31~24: Reserved, Bit23~16: Major, Bit15~8: Minor, Bit7~0: Pa
30003	0002	2	Bootloader Version	R	2	STREAM	Bootloader Version: Bit31~24: Reserved, Bit23~16: Major, Bit15~8: Minor, Bit7
30005	0004	4	Model Number	R	8	ASCII	ASCII string, end with null terminator
30013	000C	12	Serial Number	R	8	ASCII	ASCII string, end with null terminator
30021	0014	20	Device Name	R	8	ASCII	ASCII string, end with null terminator
30029	001C	28	Device Location	R	8	ASCII	ASCII string, end with null terminator
30037	0024	36	Device Contact	R	8	ASCII	ASCII string, end with null terminator
30045	002C	44	Number of Devices	R	1	UINT16	The number of devices cascaded
30046	002D	45	Number of Sensors	R	1	UINT16	The number of sensors attached on the Rack PDU
30047	002E	46	Number of Phases	R	1	UINT16	The number of phases present in the Rack PDU
30048	002F	47	Number of Metered Banks	R	1	UINT16	The number of metered banks present in the Rack PDU
30049	0030	48	Number of Switched Outlets	R	1	UINT16	The number of switched outlets on the Rack PDU
30050	0031	49	Number of Metered Outlets	R	1	UINT16	The number of metered outlets on the Rack PDU
30051	0032	50	The maximum current rating	R	1	UINT16	Measured in Amps
30052	0033	51	MAC Address	R	3	STREAM	Raw stream of MAC address
30055	0036	54	Reserved	R	1	UINT16	N/A
30056	0037	55	Reserved	R	1	UINT16	N/A
30057	0038	56	Reserved	R	1	UINT16	N/A
30058	0039	57	Reserved	R	1	UINT16	N/A
30059	003A	58	Reserved	R	1	UINT16	N/A
30060	003B	59	Reserved	R	1	UINT16	N/A
30061	003C	60	Reserved	R	1	UINT16	N/A
30062	003D	61	Reserved	R	1	UINT16	N/A
30063	003E	62	Reserved	R	1	UINT16	N/A
30064	003F	63	Temperature 1	R	1	UINT16	Unit: 0.1 Degree C

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30065	0040	64	Humidity 1	R	1	UINT16	Unit: %RH
30066	0041	65	TH Sensor 1 Alarm	R	1	ENUM	0 = Normal; 1 =Low Humidity; 2 = Over Temperature, 3 = Low Humidity & Over T
30067	0042	66	Temperature 2	R	1	UINT16	Unit: 0.1 Degree C
30068	0043	67	Humidity 2	R	1	UINT16	Unit: %RH
30069	0044	68	TH Sensor 2 Alarm	R	1	ENUM	0 = Normal; 1 =Low Humidity; 2 = Over Temperature, 3 = Low Humidity & Over T
30070	0045	69	Temperature 3	R	1	UINT16	Unit: 0.1 Degree C
30071	0046	70	Humidity 3	R	1	UINT16	Unit: 1 %RH
30072	0047	71	TH Sensor 3 Alarm	R	1	ENUM	0 = Normal; 1 =Low Humidity; 2 = Over Temperature, 3 = Low Humidity & Over T
30073	0048	72	Temperature 4	R	1	UINT16	Unit: 0.1 Degree C
30074	0049	73	Humidity 4	R	1	UINT16	Unit: %RH
30075	004A	74	TH Sensor 4 Alarm	R	1	ENUM	0 = Normal; 1 =Low Humidity; 2 = Over Temperature, 3 = Low Humidity & Over T
30076	004B	75	Device Power	R	1	UINT16	Unit: W
30077	004C	76	Apparent Power	R	1	UINT16	Unit: VA
30078	004D	77	Power Factor	R	1	UINT16	Unit: 0.1 %
30079	004E	78	Device Energy	R	2	UINT32	Unit: WH
30081	0050	80	Device Frequency	R	1	UINT16	Unit: 0.1 %
30082	0051	81	Device Alarm	R	1	ENUM	0 = Normal; 1 =Low Humidity; 2 = Over Temperature, 3 = Low Humidity & Over T
30083	0052	82	Phase L1 Current	R	1	UINT16	Unit: mA
30084	0053	83	Phase L1 Voltage	R	1	UINT16	Unit: 0.1 V
30085	0054	84	Phase L1 Power	R	1	UINT16	Unit: W
30086	0055	85	Phase L1 Apparent Power	R	1	UINT16	Unit: VA
30087	0056	86	Phase L1 Power Factor	R	1	UINT16	Unit: 0.1 %
30088	0057	87	Phase L1 Energy	R	2	UINT32	Unit: WH
30090	0059	89	Phase L1 Alarm	R	1	ENUM	0 = Normal; 1 =Low Load; 2 = Over Load
30091	005A	90	Phase L2 Current	R	1	UINT16	Unit: mA, return 0 if single phase
30092	005B	91	Phase L2 Voltage	R	1	UINT16	Unit: 0.1 V, return 0 if single phase
30093	005C	92	Phase L2 Power	R	1	UINT16	Unit: W, return 0 if single phase
30094	005D	93	Phase L2 Apparent Power	R	1	UINT16	Unit: VA, return 0 if single phase
30095	005E	94	Phase L2 Power Factor	R	1	UINT16	Unit: 0.1 %, return 0 if single phase
30096	005F	95	Phase L2 Energy	R	2	UINT32	Unit: WH, return 0 if single phase
30098	0061	97	Phase L2 Alarm	R	1	ENUM	0 = Normal; 1 = Low Load; 2 = Over Load
30099	0062	98	Phase L3 Current	R	1	UINT16	Unit: mA, return 0 if single phase
30100	0063	99	Phase L3 Voltage	R	1	UINT16	Unit: 0.1 V, return 0 if single phase
30101	0064	100	Phase L3 Power	R	1	UINT16	Unit: W, return 0 if single phase
30102	0065	101	Phase L3 Apparent Power	R	1	UINT16	Unit: VA, return 0 if single phase
30103	0066	102	Phase L3 Power Factor	R	1	UINT16	Unit: 0.1 %, return 0 if single phase
30104	0067	103	Phase L3 Energy	R	2	UINT32	Unit: WH, return 0 if single phase
30106	0069	105	Phase L3 Alarm	R	1	ENUM	0 = Normal; 1 = Low Load; 2 = Over Load
30107	006A	106	Bank 1 Current	R	1	UINT16	Unit: mA, return 0 not support
30108	006B	107	Bank 1 Voltage	R	1	UINT16	Unit: 0.1 V, return 0 not support
30109	006C	108	Bank 1 Power	R	1	UINT16	Unit: W, return 0 not support
30110	006D	109	Bank 1 Apparent Power	R	1	UINT16	Unit: VA, return 0 not support
30111	006E	110	Bank 1 Power Factor	R	1	UINT16	Unit: 0.1 %, return 0 not support
30112	006F	111	Bank 1 Energy	R	2	UINT32	Unit: WH, return 0 not support
30114	0071	113	Bank 1 Breaker Status	R	1	ENUM	0 = Not Support; 1 = Off; 2 = On

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30115	0072	114	Bank 1 Alarm	R	1	ENUM	0 = Normal; 1 = Low Load; 2 = Over Load
***	***	***	***	***	***	***	Bank n = Bank 1 parameter Absolute Starting Register Number + (n-1)*9
30206	00CD	205	Bank 12 Current	R	1	UINT16	Unit: mA, return 0 not support
30207	00CE	206	Bank 12 Voltage	R	1	UINT16	Unit: 0.1 V, return 0 not support
30208	00CF	207	Bank 12 Power	R	1	UINT16	Unit: W, return 0 not support
30209	00D0	208	Bank 12 Apparent Power	R	1	UINT16	Unit: VA, return 0 not support
30210	00D1	209	Bank 12 Power Factor	R	1	UINT16	Unit: 0.1 %, return 0 not support
30211	00D2	210	Bank 12 Energy	R	2	UINT32	Unit: WH, return 0 not support
30213	00D4	212	Bank 12 Breaker Status	R	1	ENUM	0 = Not Support; 1 = Off; 2 = On
30214	00D5	213	Bank 12 Alarm	R	1	ENUM	0 = Normal; 1 = Low Load; 2 = Over Load
30215	00D6	214	Outlet 1 Current	R	1	UINT16	Unit: mA, return 0 not support
30216	00D7	215	Outlet 1 Voltage	R	1	UINT16	Unit: 0.1 V, return 0 not support
30217	00D8	216	Outlet 1 Power	R	1	UINT16	Unit: W, return 0 not support
30218	00D9	217	Outlet 1 Apparent Power	R	1	UINT16	Unit: VA, return 0 not support
30219	00DA	218	Outlet 1 Power Factor	R	1	UINT16	Unit: 0.1 %, return 0 not support
30220	00DB	219	Outlet 1 Energy	R	2	UINT32	Unit: WH, return 0 not support
30222	00DD	221	Outlet 1 Status	R	1	ENUM	0 = Not Support; 1 = Off; 2 = On
30223	00DE	222	Outlet 1 Alarm	R	1	ENUM	0 = Normal; 1 = Low Load; 2 = Over Load
***	***	***	***	***	***	***	Outlet n = Outlet 1 parameter Absolute Starting Register Number + (n-1)*9
30782	030D	781	Outlet 64 Current	R	1	UINT16	Unit: mA, return 0 not support
30783	030E	782	Outlet 64 Voltage	R	1	UINT16	Unit: 0.1 V, return 0 not support
30784	030F	783	Outlet 64 Power	R	1	UINT16	Unit: W, return 0 not support
30785	0310	784	Outlet 64 Apparent Power	R	1	UINT16	Unit: VA, return 0 not support
30786	0311	785	Outlet 64 Power Factor	R	1	UINT16	Unit: 0.1 %, return 0 not support
30787	0312	786	Outlet 64 Energy	R	2	UINT32	Unit: WH, return 0 not support
30789	0314	788	Outlet 64 Status	R	1	ENUM	0 = Not Support; 1 = Off; 2 = On
30790	0315	789	Outlet 64 Alarm	R	1	ENUM	0 = Normal; 1 = Low Load; 2 = Over Load
<b>Holding Registers</b>							
40001	0000	0	Device Address	R/W	1	UINT16	0~255
40002	0001	1	Buad Rate	R/W	1	ENUM	0 = 4800; 1 = 9600; 2 = 19200; 4 = 38400; 3 = 115200 (default);
40003	0002	2	Device Reset	W	1	ENUM	1 = Reboot; 2 = Reset configurations
40004	0003	3	Energy Reset	W	1	ENUM	1 = Reset Energy
40005	0004	4	Outlet 1 to Outlet 16 Turn Off	W	1	UINT16	Turn Off outlets if corresponding bits set
40006	0005	5	Outlet 17 to Outlet 32 Turn Off	W	1	UINT16	Turn Off outlets if corresponding bits set
40007	0006	6	Outlet 33 to Outlet 48 Turn Off	W	1	UINT16	Turn Off outlets if corresponding bits set
40008	0007	7	Outlet 49 to Outlet 64 Turn Off	W	1	UINT16	Turn Off outlets if corresponding bits set
40009	0008	8	Outlet 1 to Outlet 16 Turn On	W	1	UINT16	Turn On outlets if corresponding bits set
40010	0009	9	Outlet 17 to Outlet 32 Turn On	W	1	UINT16	Turn On outlets if corresponding bits set
40011	000A	10	Outlet 33 to Outlet 48 Turn On	W	1	UINT16	Turn On outlets if corresponding bits set
40012	000B	11	Outlet 49 to Outlet 64 Turn On	W	1	UINT16	Turn On outlets if corresponding bits set
40013	000C	12	Device Power Low Threshold	R/W	1	UINT16	Unit: kW
40014	000D	13	Device Power High Threshold	R/W	1	UINT16	Unit: kW
40015	000E	14	Phase Current Low Threshold	R/W	1	UINT16	Unit: A

