

# Schneider Electric Modbus Register Map: Easy UPS 3S, 3M, 3L

Part number: 990-91462

**Notes:**

1. 16-bit registers 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. Function codes 3 and 4 are supported
4. Modbus TCP must use Device ID=2 to communicate with the NMC.
5. Signed numbers are twos-compliment
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. For ASCII strings less than the maximum length, the unused characters are filled with nulls.
8. 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.
9. Strings are two characters per register, first character in high-order byte, second character in low-order byte. Printable ASCII only.
10. Bit #0 is least significant bit.
11. Data Type column: "INT16"=signed 16-bit integer, "UINT16" = unsigned 16-bit integer, "INT32" = signed 32-bit integer, "UINT32" = unsigned 32-bit integer, "ENUM" is a UINT16 value which maps to a defined list of states, "ASCII" = the printable ASCII subset from 0x20 - 0x7E. BOOLEAN= a single bit, 0 or 1.
12. "Absolute Starting Register Address" = 0 (the column heading used in this table) is equivalent to "Register 40001" in Modicon terminology, which is address zero when transmitted over the wire.

Modicon Standard Register Number	Modbus Function Code	Absolute Starting Register Address (Hexa-decimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Length # registers	Data Type	R/W	E3S Units	E3S Multiply By:	E3M/L Units	E3M/L Multiply by:	Response	E3S	E3M	E3L
40001	0x04	0x0000	0		<b>UPS Status Summary</b>	1	BOOLEAN	RO						.	.	.
				0	Load is being powered from battery for any reason. Includes both bits 3 & 12 and any other reason.		BOOLEAN	RO					1=Load is being powered from battery	Y	Y	Y
				1	Low-Battery		BOOLEAN	RO					1=Low Battery	Y	Y	Y
				2			BOOLEAN	RO					1=System is in Bypass	Y	Y	Y
				3	UPS running on battery due to Self-Test (not due to input failure).		BOOLEAN	RO					1=Battery-test in progress	Y	Y	Y
				4	Load not Powered		BOOLEAN	RO					1=Load is not powered	Y	Y	Y
				5	Rectifier Status		BOOLEAN	RO					1=Rectifier failure	Y	Y	Y
				6	Inverter Failure		BOOLEAN	RO					1=Inverter failure	Y	Y	Y
				7	Abnormal Condition (Soft errors: not hardware failures, e.g. overload, over-temp, lo/hi input voltage, etc.)		BOOLEAN	RO					1=Abnormal condition present OR of: 2.4, 2.9, 2.14, 2.15, 2.0, 3.15, 4.8, 4.11, 7.12, 13.8, 16.5	Y	Y	Y
				12	Input failure (includes high/low voltage, phase reverse, frequency outside of 40-70 Hz and Neutral missing, as well as input line failure) Does not include on-battery due to battery self-test.		BOOLEAN	RO					1=Input failure	Y	Y	Y
				13	Battery condition is poor		BOOLEAN	RO					1=Battery condition is weak	Y	Y	Y
				14	Warning alarm present		BOOLEAN	RO					1=Warning alarm present	Y	Y	Y
				15	Critical alarm present		BOOLEAN	RO					1=Critical alarm present	Y	Y	Y
40003	0x04	0x0002	2		<b>Alarm Register 1</b>	1								.	.	.
				0	Lost local network management interface - to - UPS communication		BOOLEAN	RO					1=Lost local network management interface - to - UPS communication	Y	Y	Y
				4	Inverter overload		BOOLEAN	RO					1=Inverter overload	Y	Y	Y
				9	Inverter overload shutdown		BOOLEAN	RO					1=Inverter shutdown due to overload	Y	Y	Y
				14	Inverter over-temperature		BOOLEAN	RO					1=Inverter over-temperature	Y	Y	Y
				15	Overload on system		BOOLEAN	RO					1=Overload on system	Y	Y	Y
40004	0x04	0x0003	3		<b>Alarm Register 2</b>	1								.	.	.
				0	On battery in response to an input power failure -- No AC		BOOLEAN	RO					1=On battery in response to an input power failure	Y	Y	Y
				14	Rectifier fault		BOOLEAN	RO					1=Rectifier fault	Y	Y	Y
				15	Rectifier over temperature		BOOLEAN	RO					1=Rectifier over temperature	Y	Y	Y
40005	0x04	0x0004	4		<b>Alarm Register 3</b>	1								.	.	.
				8	Overload		BOOLEAN	RO					1=Overload	Y	Y	Y
				11	EPO activated		BOOLEAN	RO					1=EPO activated	Y	Y	Y
				13	Aux Power Supply fault		BOOLEAN	RO					1=Aux Power Supply fault	Y	Y	Y
				15	Inverter Fault								1=Inverter fault	Y	Y	Y
40006	0x04	0x0005	5		<b>Alarm Register 4</b>	1								.	.	.
40007	0x04	0x0006	6		<b>Alarm Register 5</b>	1								.	.	.
				4	Battery is below minimum acceptable runtime		BOOLEAN	RO					1=Battery is below minimum acceptable runtime	Y	N	N
														.	.	.

Modicon Standard Register Number	Modbus Function Code	Absolute Starting Register Address (Hexa-decimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Length # registers	Data Type	R/W	E3S Units	E3S Multiply By:	E3M/L Units	E3M/L Multiply by:	Response	E3S	E3M	E3L
40008	0x04	0x0007	7		Alarm Register 6	1								.	.	.
				10	Breaker Q2 (UOB) open		BOOLEAN	RO					1=Breaker Q2 (UOB) open	N	Y	Y
				11	Bypass over-temperature		BOOLEAN	RO					1=Bypass over-temperature	N	Y	Y
40014	0x04	0x000D	13		Alarm Register 12	1								.	.	.
				8	Battery string disconnected		BOOLEAN	RO					1=Battery string disconnected	Y	Y	Y
40017	0x04	0x0010	16		Alarm Register 15	1								.	.	.
				2	UPS operation mode - Power saving mode		BOOLEAN	RO					1=UPS operation mode - Power saving mode	Y	Y	Y
				5	Short circuit on output		BOOLEAN	RO					1=Short circuit on output	Y	Y	Y
				7	Fan fault		BOOLEAN	RO					1=Two or more faulty fans exists	Y	Y	Y
				11	Charger status		BOOLEAN	RO					1=Faulty	Y	Y	Y
				12	Inverter status		BOOLEAN	RO					1=Faulty	Y	Y	Y
				15	No Mains Power		BOOLEAN	RO					1=No Mains Power	Y	Y	Y
<b>Static Data</b>																
44097	0x03	0x1000	4096		NMC Model Number	9	ASCII	RO						Y	Y	Y
44106	0x03	0x1009	4105		NMC Serial Number	8	ASCII	RO						Y	Y	Y
44114	0x03	0x1011	4113		NMC Firmware Revision APP	9	ASCII	RO						Y	Y	Y
44123	0x03	0x101A	4122		NMC Hardware Revision	9	ASCII	RO						Y	Y	Y
44132	0x03	0x1023	4131		NMC Date of Manufacture	6	ASCII	RO						Y	Y	Y
44138	0x03	0x1029	4137		UPS Model Name	8	ASCII	RO						Y	Y	Y
44146	0x03	0x1031	4145		UPS Serial Number	8	ASCII	RO						Y	Y	Y
44154	0x03	0x1039	4153		UPS Firmware Version	12	ASCII	RO						Y	Y	Y
44166	0x03	0x1045	4165		UPS Family: 3S = 1 3M = 5 3L = 9	1	UINT16	RO					UPS Family: 3S = 1 3M = 5 3L = 9	Y	Y	Y
<b>Dynamic Data</b>																
44355	0x03	0x1102	4354		Runtime remaining	2	UINT32	RO	Sec.	1	Min	1		Y	Y	Y
44359	0x03	0x1106	4358		Estimated charge %	1	UINT16	RO	%	0.1	%	1		Y	Y	Y
44360	0x03	0x1107	4359		Battery (+) Voltage	1	UINT16	RO	Vdc	0.1	Vdc	0.1		Y	Y	Y
44361	0x03	0x1108	4360		Battery (-) Voltage	1	UINT16	RO	Vdc	0.1	Vdc	0.1		Y	Y	Y
44362	0x03	0x1109	4361		Battery (+) Current	1	SINT16	RO	amps	0.1	amps	0.1		Y	Y	Y
44363	0x03	0x110A	4362		Battery (-) Current	1	SINT16	RO	amps	0.1	amps	0.1		Y	Y	Y
44368	0x03	0x110F	4367		Battery System Temperature	1	UINT16	RO	°C	0.1	°C	0.1		Y	Y	Y
44609	0x03	0x1200	4608		Input Frequency	1	UINT16	RO	Hz	0.01	Hz	0.1		Y	Y	Y
44610	0x03	0x1201	4609		Input Voltage L1-2	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
44611	0x03	0x1202	4610		Input Voltage L2-3	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
44612	0x03	0x1203	4611		Input Voltage L3-1	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
44613	0x03	0x1204	4612		Input Current L1	1	UINT16	RO	amps	0.1	amps	0.1		Y	Y	Y
44614	0x03	0x1205	4613		Input Current L2	1	UINT16	RO	amps	0.1	amps	0.1		Y	Y	Y
44615	0x03	0x1206	4614		Input Current L3	1	UINT16	RO	amps	0.1	amps	0.1		Y	Y	Y
44624	0x03	0x120F	4623		Input Voltage L1-N	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
44625	0x03	0x1210	4624		Input Voltage L2-N	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
44626	0x03	0x1211	4625		Input Voltage L3-N	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
44865	0x03	0x1300	4864		Bypass Frequency	1	UINT16	RO	Hz	0.01	Hz	0.1		Y	Y	Y
44866	0x03	0x1301	4865		Bypass Voltage L1-2	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
44867	0x03	0x1302	4866		Bypass Voltage L2-3	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
44868	0x03	0x1303	4867		Bypass Voltage L3-1	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
44880	0x03	0x130F	4879		Bypass Voltage L1-N	1	UINT16	RO	Vrms	0.1	Vrms	0.1		N	Y	Y
44881	0x03	0x1310	4880		Bypass Voltage L2-N	1	UINT16	RO	Vrms	0.1	Vrms	0.1		N	Y	Y
44882	0x03	0x1311	4881		Bypass Voltage L3-N	1	UINT16	RO	Vrms	0.1	Vrms	0.1		N	Y	Y
45121	0x03	0x1400	5120		Nominal (Apparent) output rating	1	UINT16	RO	kVA	1	kVA	0.1		Y	Y	Y
45122	0x03	0x1401	5121		Output Frequency	1	UINT16	RO	Hz	0.01	Hz	0.1		Y	Y	Y
45123	0x03	0x1402	5122		Output Voltage L1-2	1	UINT16	RO	Vrms	0.1	Vrms	0.1		N	Y	Y
45124	0x03	0x1403	5123		Output Voltage L2-3	1	UINT16	RO	Vrms	0.1	Vrms	0.1		N	Y	Y
45125	0x03	0x1404	5124		Output Voltage L3-1	1	UINT16	RO	Vrms	0.1	Vrms	0.1		N	Y	Y
45126	0x03	0x1405	5125		Output Current L1	1	UINT16	RO	amps	0.1	amps	0.1		Y	Y	Y
45127	0x03	0x1406	5126		Output Current L2	1	UINT16	RO	amps	0.1	amps	0.1		Y	Y	Y
45128	0x03	0x1407	5127		Output Current L3	1	UINT16	RO	amps	0.1	amps	0.1		Y	Y	Y
45135	0x03	0x140E	5134		Output Active power L1	1	UINT16	RO	kW	0.1	kW	0.1		Y	Y	Y
45136	0x03	0x140F	5135		Output Active power L2	1	UINT16	RO	kW	0.1	kW	0.1		Y	Y	Y
45137	0x03	0x1410	5136		Output Active power L3	1	UINT16	RO	kW	0.1	kW	0.1		Y	Y	Y
45138	0x03	0x1411	5137		Output Apparent power L1	1	UINT16	RO	kVA	0.1	kVA	0.1		Y	Y	Y
45139	0x03	0x1412	5138		Output Apparent power L2	1	UINT16	RO	kVA	0.1	kVA	0.1		Y	Y	Y
45140	0x03	0x1413	5139		Output Apparent power L3	1	UINT16	RO	kVA	0.1	kVA	0.1		Y	Y	Y

Modicon Standard Register Number	Modbus Function Code	Absolute Starting Register Address (Hexa-decimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Length # registers	Data Type	R/W	E3S Units	E3S Multiply By:	E3M/L Units	E3M/L Multiply by:	Response	E3S	E3M	E3L
45141	0x03	0x1414	5140		Output % Load L1 kVA	1	UINT16	RO	%	0.1	%	1		Y	Y	Y
45142	0x03	0x1415	5141		Output % Load L2 kVA	1	UINT16	RO	%	0.1	%	1		Y	Y	Y
45143	0x03	0x1416	5142		Output % Load L3 kVA	1	UINT16	RO	%	0.1	%	1		Y	Y	Y
45144	0x03	0x1417	5143		Output % Load L1 kW	1	UINT16	RO	%	0.1	%	1		Y	Y	Y
45145	0x03	0x1418	5144		Output % Load L2 kW	1	UINT16	RO	%	0.1	%	1		Y	Y	Y
45146	0x03	0x1419	5145		Output % Load L3 kW	1	UINT16	RO	%	0.1	%	1		Y	Y	Y
45156	0x03	0x1423	5155		Output Voltage L1-N	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
45157	0x03	0x1424	5156		Output Voltage L2-N	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
45158	0x03	0x1425	5157		Output Voltage L3-N	1	UINT16	RO	Vrms	0.1	Vrms	0.1		Y	Y	Y
45377	0x03	0x1500	5376		Ambient temperature	1	UINT16	RO	°C	0.1	°C	0.1		Y	Y	Y

Maintenance Data																
48961	0x03	0x2300	8960		DC capacitor maintenance cycle	1	UINT16	RO	Days	1	Months	1		Y	Y	Y
48962	0x03	0x2301	8961		AC capacitor maintenance cycle	1	UINT16	RO	Days	0.1	Months	1		Y	Y	Y
48963	0x03	0x2302	8962		Aux Power Supply (APS) maintenance cycle	1	UINT16	RO	Days	0.1	Months	1		Y	Y	Y
48964	0x03	0x2303	8963		Air filter maintenance cycle	1	UINT16	RO	Days	1	Months	1		Y	Y	Y
48965	0x03	0x2304	8964		Battery maintenance cycle	1	SINT16	RO	Days	1	Months	1	remaining vs. 1440 days/ 48 mo. / 4 years	Y	Y	Y
48966	0x03	0x2305	8965		Warranty cycle	1	UINT16	RO	Days	0.1	Months	1		Y	Y	Y
48977	0x03	0x2310	8976		DC capacitor running time	1	UINT16	RO	Days	1	Days	1		Y	Y	Y
48978	0x03	0x2311	8977		AC capacitor running time	1	UINT16	RO	Days	0.1	Days	1		Y	Y	Y
48979	0x03	0x2312	8978		Aux Power Supply (APS) running time	1	UINT16	RO			Days	1		N	Y	Y
48980	0x03	0x2313	8979		Air filter running time	1	UINT16	RO			Days	1		N	Y	Y
48981	0x03	0x2314	8980		Battery running time	1	UINT16	RO	Days	0.1	Days	1		Y	Y	Y
48982	0x03	0x2315	8981		Warranty elapsed time	1	UINT16	RO			Days	1		N	Y	Y
46412	0x03	0x190B	6411		Last Battery Transfer	1	ENUM	RO					0="None" / 1="Input Failure" / 2="UPS Battery Test".	Y	N	N
46413	0x03	0x190C	6412		Last Battery Test Result	1	ENUM	RO					0="Pass" (Event Message: UPS:Passed a self test) 1="Fail" (Alarm message: Self-Test-Did not pass.	Y	N	N

**APC Worldwide Customer Support**

Customer support for this or any other APC product is available at no charge in any of the following ways:

- \* Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
- www.apc.com (Corporate Headquarters) Connect to localized APC Web sites for specific countries, each of which provides customer support information.
- www.apc.com/support/ - Global support searching APC Knowledge Base and using e-support.
- \* Contact the APC Customer Support Center by telephone or e-mail.