



Modbus Register Map: Easy UPS SRV

990-6548

Notes:

1. This Modbus Register Map is to be used with the Easy UPS On-Line SRV Modbus Card (SRVSMB001).
2. Modbus serial RTU and Modbus TCP is supported.
3. Status bits are atomic within a single Modbus register. User should not look for consistency across multiple registers, only within a single register.
4. For ASCII strings less than the maximum length, the unused characters are filled with nulls.
5. 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.
6. Bit #0 is least significant bit.
7. Units column: "ASCII" = the printable ASCII subset from 0x20 -0x7E. BOOLEAN= a single bit, 0 or 1.
8. "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.

For detailed Modbus configuration settings, please refer to the display.

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
Warning Item								
0x0000	0	0	Reserved					
		1	Reserved					
		2	Charger fail	Read-Only	0=False 1=True		BOOLEAN	
		3	Over temperature	Read-Only	0=False 1=True		BOOLEAN	
		4	Reserved					
		5	EPO active	Read-Only	0=False 1=True		BOOLEAN	
		6	Reserved					
		7	Overload warning	Read-Only	0=False 1=True		BOOLEAN	
		8	Battery low	Read-Only	0=False 1=True		BOOLEAN	
		9	Battery overcharge	Read-Only	0=False 1=True		BOOLEAN	
		10	Reserved					
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Reserved					

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
		15	Battery open	Read-Only	0=False 1=True		BOOLEAN	
0x0001	1		RESERVED					
0x0002	2		RESERVED					
0x0003	3	0	Reserved					
		1	Reserved					
		2	EEPROM operation error	Read-Only	0=False 1=True		BOOLEAN	
		3	Reserved					
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Warning for battery replacement	Read-Only	0=False 1=True		BOOLEAN	
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Reserved					
		15	Reserved					
0x0004	4	0	Reserved					
		1	UPS in bypass mode due to internal fault	Read-Only	0=False 1=True		BOOLEAN	
		2	Reserved					
		3	UPS in bypass mode as a result of UPS-Link or key command	Read-Only	0=False 1=True		BOOLEAN	
		4	UPS is returning from bypass mode	Read-Only	0=False 1=True		BOOLEAN	
		5	Reserved					
		6	UPS ready to power load upon user command	Read-Only	0=False 1=True		BOOLEAN	
		7	UPS ready to power load upon user command or return of normal line voltage	Read-Only	0=False 1=True		BOOLEAN	
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Online mode	Read-Only	0=False 1=True		BOOLEAN	

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
		12	On battery mode	Read-Only	0=False 1=True		BOOLEAN	
		13	Overload output	Read-Only	0=False 1=True		BOOLEAN	
		14	Low battery	Read-Only	0=False 1=True		BOOLEAN	
		15	Replace battery	Read-Only	0=False 1=True		BOOLEAN	
0x0005	5	0	UPS device's output unpowered due to low battery shut down	Read-Only	0=False 1=True		BOOLEAN	
		1	Reserved					
		2	Reserved					
		3	UPS in sleep mode via "@ddd" command	Read-Only	0=False 1=True		BOOLEAN	
		4	UPS in shut down mode via "S" command	Read-Only	0=False 1=True		BOOLEAN	
		5	Battery charger failure	Read-Only	0=False 1=True		BOOLEAN	
		6	Reserved					
		7	Internal temperature has exceeded nominal limits	Read-Only	0=False 1=True		BOOLEAN	
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	UPS fault - DC inbalance; UPS is in bypass	Read-Only	0=False 1=True		BOOLEAN	
		13	Reserved					
		14	Reserved					
		15	Bad output voltage	Read-Only	0=False 1=True		BOOLEAN	
Capability Setting								
00x000E	14	0	Enable/disable energy saving (NOT SUPPORTED ON 6-10kVA UNITS)	Read/Write	0=False 1=True	E:1/D:FFFE	BOOLEAN	
		1	Enable/disable high efficiency mode	Read/Write	0=False 1=True	E:2/D:FFFD	BOOLEAN	
		2	Enable/disable bypass audible warning	Read/Write	0=False 1=True	E:4/D:FFFB	BOOLEAN	

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
		3	Enable/disable bypass when device turn off.	Read/Write	0=False 1=True	E:8/D:FFF7	BOOLEAN	
		4	Reserved					
		5	Reserved					
		6	Enable/disable bypass forbidding	Read/Write	0=False 1=True	E:40/D:FFBF	BOOLEAN	
		7	Enable/disable code start (NOT SUPPORTED ON 6-10kVA UNITS)	Read/Write	0=False 1=True	E:80/D:FF7F	BOOLEAN	
		8	Reserved					
		9	Reserved					
		10	Enable/disable auto-restart (NOT SUPPORTED ON 6-10kVA UNITS)	Read/Write	0=False 1=True	E:400/D:FBFF	BOOLEAN	
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Reserved					
		15	Enable/disable audible alarm	Read/Write	0=False 1=True	E:8000/D:7FFF	BOOLEAN	
00x000F	15	0	Reserved					
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	Enable/disable converter mode	Read/Write	0=False 1=True		BOOLEAN	
		13	Reserved					
		14	Reserved					
		15	Reserved					
Support Capability List								
00x0010	16	0	Support: Enable/disable energy saving (NOT SUPPORTED ON 6-10kVA UNITS)	Read-Only	0=False 1=True		BOOLEAN	

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
		1	Support: Enable/disable high efficiency	Read-Only	0=False 1=True		BOOLEAN	
		2	Support: Enable/disable bypass audible warning	Read-Only	0=False 1=True		BOOLEAN	
		3	Support: Enable/disable bypass when device turn off	Read-Only	0=False 1=True		BOOLEAN	
		4	Reserved					
		5	Reserved					
		6	Support: Enable/disable bypass forbidding	Read-Only	0=False 1=True		BOOLEAN	
		7	Support: Enable/disable code start (NOT SUPPORTED ON 6-10kVA UNITS)	Read-Only	0=False 1=True		BOOLEAN	
		8	Reserved					
		9	Reserved					
		10	Support: Enable/disable auto-restart. (NOT SUPPORTED ON 6-10kVA UNITS)	Read-Only	0=False 1=True		BOOLEAN	
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Reserved					
		15	Support: Enable/disable audible alarm	Read-Only	0=False 1=True		BOOLEAN	
00x0011	17	0	Reserved					
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	Reserved					
		5	Reserved					
		6						
		7	Reserved					
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	Support: Enable/disable converter mode	Read-Only	0=False 1=True		BOOLEAN	
		13	Reserved					
		14	Reserved					
		15	Reserved					

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
Control Item								
0x001A	26	0	Reserved					
		1	Reserved					
		2	Shutdown UPS on battery	Read/Write	0=False 1=True	Y:4	BOOLEAN	
		3	Turn off after delay	Read/Write	0=False 1=True	Y:8	BOOLEAN	
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	10 seconds test	Read/Write	0=False 1=True	Y:100	BOOLEAN	
		9	Cancel test	Read/Write	0=False 1=True	Y:200	BOOLEAN	
		10	Cancel shutdown	Read/Write	0=False 1=True	Y:400	BOOLEAN	
		11	Turn on UPS	Read/Write	0=False 1=True	Y:800	BOOLEAN	
		12	Turn off UPS	Read/Write	0=False 1=True	Y:1000	BOOLEAN	
		13	Test until battery low	Read/Write	0=False 1=True	Y:2000	BOOLEAN	
		14	Buzzer beep open	Read/Write	0=False 1=True	Y:4000	BOOLEAN	
		15	Silence buzzer beep	Read/Write	0=False 1=True	Y:8000	BOOLEAN	
Control Result								
0x0025	37	0	Reserved					
		1	Reserved					
		2	Flag: Shutdown on battery	Read-Only	0=Fail 1=Success		BOOLEAN	
		3	Flag: Turn off after delay	Read-Only	0=Fail 1=Success		BOOLEAN	
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
		8	Flag: 10 seconds test	Read-Only	0=Fail 1=Success		BOOLEAN	
		9	Flag: Cancel test	Read-Only	0=Fail 1=Success		BOOLEAN	
		10	Flag: Cancel shutdown	Read-Only	0=Fail 1=Success		BOOLEAN	
		11	Flag: Turn on UPS	Read-Only	0=Fail 1=Success		BOOLEAN	
		12	Flag: Turn off UPS	Read-Only	0=Fail 1=Success		BOOLEAN	
		13	Flag: Test until battery low	Read-Only	0=Fail 1=Success		BOOLEAN	
		14	Flag: Buzzer beep open	Read-Only	0=Fail 1=Success		BOOLEAN	
		15	Flag: Silence buzzer beep	Read-Only	0=Fail 1=Success		BOOLEAN	
Set Parameter to Default Value								
0x0030	48	0	Reserved					
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Reserved					
		15	Setting control parameter to default value	Read/Write	0=Fail 1=Success		BOOLEAN	
0x003B	59	0	Reserved					
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	Reserved					

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Reserved					
		15	Flag: Setting control parameter to default value	Read/Write	0=Fail 1=Success		BOOLEAN	
Set Parameter Item								
0x0350	848	1	The bypass voltage high loss point	Read/Write			V	
0x0351	849	1	The bypass voltage low loss point	Read/Write			V	
Set Parameter Success/Fail								
0x0385	901	0	Reserved					
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Flag: The bypass voltage low loss point	Read-Only	0=False 1=True		BOOLEAN	
		9	Flag: The bypass voltage high loss point	Read-Only	0=False 1=True		BOOLEAN	
		10	Flag: The bypass frequency low loss point	Read-Only	0=False 1=True		BOOLEAN	
		11	Flag: The bypass frequency high loss point	Read-Only	0=False 1=True		BOOLEAN	
		12	Reserved					
		13	Reserved					
		14	Reserved					
		15	Reserved					

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
UPS Working Status								
0x00A9	169		Battery current	Read-Only			0.1A	
0x00AA	170		Line voltage	Read-Only			0.1V	
0x00AB	171		Input frequency	Read-Only			0.1Hz	
0x00AC	172		Output voltage	Read-Only			0.1V	
0x00AD	173		Output frequency (AC output frequency)	Read-Only			0.01Hz	
0x00AE	174		Output current	Read-Only			0.01A	
0x00AF	175		Output load percentage	Read-Only			0.10%	
0x00B2	178		P battery voltage	Read-Only			0.1V	
0x00B4	180		UPS internal temperature	Read-Only			0.1	
0x00B5	181		UPS status					
		0	Reserved					
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	UPS failed	Read-Only	0=False 1=True		BOOLEAN	
		5	Reserved					
		6	Reserved					
		7	Utility fail	Read-Only	0=False 1=True		BOOLEAN	
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Reserved					
		15	Reserved					
0x00B6	182	0	Reserved					
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Reserved					
		9	Reserved					

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
		10	Reserved					
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Flag: Battery test OK	Read-Only	0=False 1=True		BOOLEAN	
		15	Flag: Battery test fail	Read-Only	0=False 1=True		BOOLEAN	
0x00C0	192	1	Battery remain time	Read-Only			Minutes	
	198	1	Line L1L2 voltage	Read-Only			0.1V	
	199	1	Line L2L3 voltage	Read-Only			0.1V	
	200	1	Line L3L1 voltage	Read-Only			0.1V	
	201	1	Line L1 voltage	Read-Only			0.1V	
	202	1	Line L2 voltage	Read-Only			0.1V	
	203	1	Line L3 voltage	Read-Only			0.1V	
0x00D0	208	1	UPS mode inquiry	Read-Only				
			Battery mode					0x42
			Converter mode					0x43
			Shutdown mode					0x44
			HE/ECO mode					0x45
			Fault mode					0x46
			Line mode					0x4C
			Power on mode					0x50
			Standby mode					0x53
			Battery test mode					0x54
			Bypass mode					0x59
0x00D0	216	1	Output L1 voltage	Read-Only			0.1V	
	220	1	L1 load current	Read-Only			0.1A	
	221	1	L1 load percent	Read-Only			0.10%	
	239	1	L2 load current	Read-Only			0.1A	
	240	1	L3 load current	Read-Only			0.1A	
	247	1	Output L2 voltage	Read-Only			0.1V	
	248	1	Output L3 voltage	Read-Only			0.1V	
	249	1	Output L1L2 voltage	Read-Only			0.1V	
	250	1	Output L2L3 voltage	Read-Only			0.1V	
	251	1	Output L3L1 voltage	Read-Only			0.1V	
	252	1	L2 load percent	Read-Only			0.10%	
	253	1	L3 load percent	Read-Only			0.10%	
	254	1	Whole load percent	Read-Only			0.10%	
	295	1	Apparent load power	Read-Only			0.01%	

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
UPS Battery Information								
0x036B	875	4	Battery replacement date	Read/Write			mm/dd/yy	
0x036F	879	1	Unit battery capacity (AH) SP6K, SP10K only support the below setting 7,9,10,12,17,26,40,65,100 SP1K, SP2K only support the below setting 7 SP3K only support the below setting 9	Read/Write			1AH	
Set UPS Battery Information Success/Fail								
0x0386	902	0	Flag: Set battery replacement data	Read-Only	0=False 1=True		BOOLEAN	
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Reserved					
		15	Reserved					
0x0387	903	0	Reserved					
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Reserved					
		9	Reserved					
		10	Reserved					

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
		11	Reserved					
		12	Reserved					
		13	Reserved					
		14	Reserved					
		15	Flag: Set unit battery capacity (AH)	Read-Only	0=False 1=True		BOOLEAN	
UPS Fault Information								
0x02A3	675	1	Fault kind	Read-Only	OK=No fault NO=Unknown error		BOOLEAN	
			Bus start fail					0x01
			Bus volt over					0x02
			Bus volt under					0x03
			Bus volt unbalance					0x04
			Bus short					0x05
			Inverter soft fail					0x11
			Inverter volt high					0x12
			Inverter volt low					0x13
			L1 inverter short					0x14
			L1 inverter negative power					0x1A
			Battery SCR fault					0x21
			Inverter relay short fault					0x24
			Battery too high					0x27
			Battery too low					0x28
			Charger output short					0x2A
			Over temperature					0x41
			CPU communication fault					0x42
			Overload fault					0x43
Remote Shutdown and Test								
0x03AC	940	1	Test for specified time	Read/Write			Minutes (ASCII)	
0x03AE	942	1	Shutdown and restore (M)	Read/Write			0.1 hours (ASCII)	
0X03DA	986	0						
		1	Reserved					
		2	Reserved					
		3	Reserved					

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	Reserved					
		13	Shutdown and restore	Read-Only	0=Fail 1=Success		BOOLEAN	
		14	Test for specified time	Read-Only	0=Fail 1=Success		BOOLEAN	
		15	Reserved					
CPU Information								
0x03E1	993	10	Main CPU firmware version	Read-Only			ASCII	
UPS Model and Rating Information								
0x03EB	1003	7	Manufacturer ID	Read-Only			ASCII	
0x03F2	1010	1	Battery piece number	Read-Only				
0x03F4	1012	1	Input phase	Read-Only				
0x03F5	1013	1	Output phase	Read-Only				
0x03F6	1014	1	Nominal I/P voltage	Read-Only			V	
0x03F7	1015	1	Nominal O/P voltage	Read-Only			V	
0x03F9	1017	2	Output rated VA	Read-Only			W	
0x03FB	1019	8	Device model	Read-Only			ASCII	
0x048A	1162	1	Battery voltage	Read-Only			0.1V	
0x048B	1163	1	Rating output current	Read-Only			1A	
0x048C	1164	1	Rating output frequency	Read-Only			0.1Hz	

Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Access	Bit Value	Register Value	Units	Fault Code
Read Configurable Parameters								
0x04F0	1264	1	Audible alarm	Read-Write				
			Alarm is sounded for low battery conditions only					0x4C
			Audible alarm is disabled under all conditions					0x4E
			Audible alarm is sounded immediately upon failure of utility and for low battery condition					0x30
			Alarm is not sounded until utility failure has lasted for more than 30 seconds. Low battery warning operates normally					0x54
0x04F1	1265	1	Shutdown delay	Read-Write			Seconds	
0x04F2	1266	1	Turn on delay	Read-Write			Seconds	
Setting Configurable Parameters Succeed/Fail								
0x0516	1302	0	Reserved					
		1	Reserved					
		2	Reserved					
		3	Reserved					
		4	Reserved					
		5	Reserved					
		6	Reserved					
		7	Reserved					
		8	Reserved					
		9	Reserved					
		10	Reserved					
		11	Reserved					
		12	Reserved					
		13	Flag: Turn on delay	Read-Only	0=False 1=True		BOOLEAN	
		14	Flag: Shutdown delay	Read-Only	0=False 1=True		BOOLEAN	
		15	Flag: Audible alarm	Read-Only	0=False 1=True		BOOLEAN	

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