Schneider Electric

Modbus Register Map
Symmetra PX 20/40/48/80/96/100/160 kVA

990-91054

This modbus register map is for devices with "sy3p" or "px2" version 6.5.0 and higher NMC2 firmware applications

Notes:
1. 16-bit registers are transmitted MSB first (i.e. big-endian).
2. UINT16 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 serial RTU is supported.
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 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.
13. The number of word by frame should not exceed 26 words.

Note1: For detailed modbus configuration settings please refer to the AP9635 User's Guide.
Note2: SSC for Static Switch Cabinet.bat

Modicon Standard Register Number	Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Length # registers	Type	Valid Response
40001	0x0000	0		Alarm/Status Register	1	UINT16	
			15–8	Reserved		BOOLEAN	
			7	UPS ready to provide power to the load upon return of normal line voltage or upon user command		BOOLEAN	
			6	UPS ready to provide power to the load upon user command		BOOLEAN	
			5	UPS in bypass mode as a result of manual bypass control		BOOLEAN	
			4	UPS returning from bypass		BOOLEAN	
			3	UPS in bypass due to command		BOOLEAN	
			2	UPS going to bypass due to command		BOOLEAN	
			1	UPS in bypass due to an internal fault indicated through register 0002 or 0003		BOOLEAN	
			0	UPS turning on		BOOLEAN	
40002	0x0001	1		Alarm/Status Register	1	UINT16	
			15–8	Reserved		BOOLEAN	
			7	UPS fault—internaltemperature exceeded nominal limits		BOOLEAN	
			6	Bypass relay malfunction		BOOLEAN	
			5	Battery charger failure		BOOLEAN	
			4	UPS in shutdown mode		BOOLEAN	
			3	UPS in sleep mode		BOOLEAN	
			2	Main relay malfunction		BOOLEAN	
			1	UPS unable to transfer to on-battery operation due to overload		BOOLEAN	
			0	UPS output not receiving power due to low-battery shutdown		BOOLEAN	
40003	0x002	2		Alarm/Status Register	1	UINT16	
			15–6	Reserved		BOOLEAN	
			5	UPS commanded out of bypass with no batteries attached—UPS in bypass.		BOOLEAN	
			4	UPS fault—UPS in bypass		BOOLEAN	
			3	Output voltage select failure—UPS in bypass		BOOLEAN	
			2	Reserved		BOOLEAN	
			1	Isolation unit fan failure		BOOLEAN	
			0	Electronics unit fan failure		BOOLEAN	
40004	0x0003	3		Alarm/Status Register	1	UINT16	
			15–8	Reserved		BOOLEAN	
			7	Replace battery		BOOLEAN	
			6	Low battery		BOOLEAN	
			5	Overload		BOOLEAN	
			4	On battery		BOOLEAN	
			3	On-line		BOOLEAN	
			2	AVR boost		BOOLEAN	
			1	AVR trim		BOOLEAN	
			0	Performing battery calibration discharge		BOOLEAN	

Modicon Standard Register Number	Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Length # registers	Type	Valid Response
40005	0x0004	4		Alarm/Status Register	1	UINT16	
			15–12	Reserved		BOOLEAN	
			11	Backfeed relay open (fault)		BOOLEAN	
			10	Site wiring fault		BOOLEAN	
			9	Fault found in register 0033, 0034, 0035, or 0036		BOOLEAN	
			8	Battery voltage high		BOOLEAN	
			7	No batteries		BOOLEAN	
			6	System not synchronized		BOOLEAN	
			5	Output voltage out of range		BOOLEAN	
			4	XR frame fault		BOOLEAN	
			3	Runtime below alarm threshold		BOOLEAN	
			2	Load shutdown from bypass—Input frequency or voltage outside limits		BOOLEAN	
			1	No functional modules present		BOOLEAN	
			0	Internal communication failure		BOOLEAN	
40006	0x0005	5		Alarm/Status Register	1	UINT16	
			15	Redundant intelligence module is in control		BOOLEAN	
			14	System level fan failed		BOOLEAN	
			13	Input circuit breaker tripped open		BOOLEAN	
			12	System is in maintenance bypass		BOOLEAN	
			11	UPS in bypass due to overload		BOOLEAN	
			10	UPS in bypass due to internal fault		BOOLEAN	
			9	Bypass contactor stuck in online position.		BOOLEAN	
			8	Bypass contactor stuck in bypass position.		BOOLEAN	
			7	Bypass not in range (frequency or voltage)		BOOLEAN	
			6	Redundancy below threshold		BOOLEAN	
			5	Loss of redundancy		BOOLEAN	
			4	Load is above alarm threshold		BOOLEAN	
			3	An installed battery has failed		BOOLEAN	
			2	Redundant intelligence module is installed and failed		BOOLEAN	
			1	Main intelligence module is installed and failed		BOOLEAN	
			0	An installed Power Module has failed		BOOLEAN	
40007	0x0006	6		Line Quality 00FF=acceptable utility line quality 0000=unacceptable utility line quality	1	UINT16	—
40008	0x0007	7		% Battery Capacity Remaining battery capacity as a percent of the fully charged condition (0-100)	1	UINT16	%
40009	0x0008	8		Runtime remaining	1	UINT16	minutes
40010	0x0009	9		Battery voltage Present UPS battery voltage	1	UINT16	V
40011	0x000A	10		UPS internal temperature (0-209) 00XX=valid reading FFXX=invalid reading XX=sensor reading	1	UINT16	°C
40012	0x000B	11		Amps drawn by load	1	UINT16	A
40013	0x000C	12		Number of battery packs with bad batteries	1	UINT16	each
40014	0x000D	13		Number of battery packs	1	UINT16	each
40015	0x000E	14		UPS output load as a percentage of full rated load in Watts	1	UINT16	%
40016	0x000F	15		Maximum input voltage since last reading	1	UINT16	V
40017	0x0010	16		Minimum input voltage since last reading	1	UINT16	V
40018	0x0011	17		Nominal battery voltage	1	UINT16	V
40019	0x0012	18		Actual battery voltage	1	UINT16	V
40020	0x0013	19		Utility input frequency	1	UINT16	Hz
40021	0x0014	20		Phase A utility input voltage	1	UINT16	V
40022	0x0015	21		Phase A utility input current	1	UINT16	A
40023	0x0016	22		Phase A bypass input voltage	1	UINT16	V
40024	0x0017	23		Phase A percent of maximum output VA @ n + 0	1	UINT16	%
40025	0x0018	24		Phase A percent of maximum output VA @ n + x	1	UINT16	%
40026	0x0019	25		Phase A output	1	UINT16	kVA
40027	0x001A	26		Phase A output voltage	1	UINT16	V
40028	0x001B	27		Phase A output current	1	UINT16	A
40029	0x001C	28		Phase A peak output current	1	UINT16	A
40030	0x001D	29		Phase B utility input voltage	1	UINT16	V
40031	0x001E	30		Phase B utility input current	1	UINT16	A
40032	0x001F	31		Phase B bypass input voltage	1	UINT16	V
40033	0x0020	32		Phase B percent of maximum output VA @ n + 0	1	UINT16	%
40034	0x0021	33		Phase B percent of maximum output VA @ n + x	1	UINT16	%
40035	0x0022	34		Phase B output	1	UINT16	kVA
40036	0x0023	35		Phase B output voltage	1	UINT16	V

Modicon Standard Register Number	Absolute Starting Register Address, (Hexadecimal)	Absolute Starting Register Address, (Decimal)	Bit	Data Point	Length # registers	Type	Valid Response
40037	0x0024	36		Phase B output current	1	UINT16	A
40038	0x0025	37		Phase B peak output current	1	UINT16	A
40039	0x0026	38		Phase C utility input voltage	1	UINT16	V
40040	0x0027	39		Phase C utility input current	1	UINT16	A
40041	0x0028	40		Phase C bypass input voltage	1	UINT16	V
40042	0x0029	41		Phase C percent of maximum output VA @ n + 0	1	UINT16	%
40043	0x002A	42		Phase C percent of maximum output VA @ n + x	1	UINT16	%
40044	0x002B	43		Phase C output	1	UINT16	kVA
40045	0x002C	44		Phase C output voltage	1	UINT16	V
40046	0x002D	45		Phase C output current	1	UINT16	A
40047	0x002E	46		Phase C peak output current	1	UINT16	A
40048	0x002F	47		Environmental Monitoring Card temperature reading (Sensor 1)	1	UINT16	°C
40049	0x0030	48		Environmental Monitoring Card humidity reading (Sensor 1)	1	UINT16	%RH
40050	0x0031	49		Environmental Monitoring Card temperature reading (Sensor 2)	1	UINT16	°C
40051	0x0032	50		Environmental Monitoring Card humidity reading (Sensor 2)	1	UINT16	%RH
40052	0x0033	51		Reserved	1	UINT16	—
40053	0x0034	52		Reserved	1	UINT16	—
40054	0x0035	53		Alarm/Status Register	1	UINT16	
			15–2	Reserved		BOOLEAN	
			1	Battery charger shut down externally		BOOLEAN	
			0	System startup configuration failed		BOOLEAN	
40055	0x0036	54		Alarm/Status Register	1	UINT16	
			15	Static bypass switch module removed		BOOLEAN	
			14	UPS in forced bypass state		BOOLEAN	
			13	System ID card failed		BOOLEAN	
			12	System ID card removed		BOOLEAN	
			11	Static bypass switch module fault		BOOLEAN	
			10	Internal DC disconnect switch tripped		BOOLEAN	
			9	Switch gear communication card removed		BOOLEAN	
			8	Switch gear communication card failure		BOOLEAN	
			7	XR Communication card removed		BOOLEAN	
			6	XR Communication card failure		BOOLEAN	
			5	Battery monitor card removed		BOOLEAN	
			4	Battery monitor card failure		BOOLEAN	
			3	System power supply card failure		BOOLEAN	
			2	External DC disconnect switch tripped		BOOLEAN	
			1	Isolation transformer over temperature		BOOLEAN	
			0	Maintenance bypass failure		BOOLEAN	
40056	0x0037	55		Environmental Monitoring Card contact position	1	UINT16	—
40057	0x0038	56		Minimum return battery capacity	1	UINT16	%
40058	0x0039	57		Lower transfer point	1	UINT16	V
40059	0x003A	58		Upper transfer point	1	UINT16	V
40060	0x003B	59		Nominal output voltage	1	UINT16	V
40061	0x003C	60		Shutdown delay	1	UINT16	seconds
40062	0x003D	61		Low battery duration	1	UINT16	minutes
40063	0x003E	62		Turn on delay	1	UINT16	seconds
40064	0x003F	63		Sensitivity	1	UINT16	—
40065	0x0040	64		UPS ID character #1	1	UINT16	—
40066	0x0041	65		UPS ID character #2	1	UINT16	—
40067	0x0042	66		UPS ID character #3	1	UINT16	—
40068	0x0043	67		UPS ID character #4	1	UINT16	—
40069	0x0044	68		UPS ID character #5	1	UINT16	—
40070	0x0045	69		UPS ID character #6	1	UINT16	—
40071	0x0046	70		UPS ID character #7	1	UINT16	—
40072	0x0047	71		UPS ID character #8	1	UINT16	—
40073	0x0048	72		Battery current	1	UINT16	A
40074	0x0049-0x004F	73-79		Reserved	7		—