



Modbus Register Map: Galaxy VL 200-500 kW

Notes:

990-6447K

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 code 3 is supported.
4. Modbus serial RTU and Modbus TCP 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 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.
13. The multiplier and divider values for registers 4867-4869, 4891, 5123-5125, 5140, 5379-5381, 5396 and 6144-6152 are different to the values for the same registers on GVS and GPX products. The valid response value for register 8227 is kVA for GVS products and kW for GVL products.
14. This Modbus register map is compatible with firmware version 18.5.0 and higher.

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

Modicon Standard Register Number	Absolute Starting Register Address, (Hexa-decimal)	Absolute Starting Register Address, (Decimal)	Read/Write or Read Only Registers (RW/RO)	Bit	Data Point	Length	Data Type	Scale		Valid Response
								Multiply Reading By:	Divide Reading By:	
Status Data										
40002	0x0001	1	RO		UPS status	1				
				0	UPS operation mode - Battery		BOOLEAN			1=UPS operation mode - Battery
				1	Battery is below minimum acceptable runtime		BOOLEAN			1=Battery is below minimum acceptable runtime
				2	Bypass		BOOLEAN			1=UPS is in bypass
				3	UPS operation mode - Battery test		BOOLEAN			1=UPS operation mode - Battery test
				4	Reserved		BOOLEAN			
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	Reserved		BOOLEAN			
				8	Reserved		BOOLEAN			
				9	Battery inoperable		BOOLEAN			1=Battery inoperable
				10	Reserved		BOOLEAN			
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Informational alarm present		BOOLEAN			1=Informational alarm present
				14	Warning alarm present		BOOLEAN			1=Warning alarm present
				15	Critical alarm present		BOOLEAN			1=Critical alarm present
Alarm Register										
40003	0x0002	2	RO		Bypass	1				
				0	Bypass voltage out of tolerance		BOOLEAN			1=Bypass voltage is out of tolerance and UPS is prevented from going into requested bypass mode
				1	Bypass phase sequence incorrect		BOOLEAN			1=The phase rotation on bypass is incorrect
				2	Bypass frequency out of tolerance		BOOLEAN			1=Bypass frequency is out of tolerance
				3	Bypass phase missing		BOOLEAN			1=Bypass is missing a phase
				4	Bypass backfeed breaker open		BOOLEAN			1=Bypass backfeed breaker is open
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	Reserved		BOOLEAN			
				8	Reserved		BOOLEAN			
				9	Reserved		BOOLEAN			
				10	Reserved		BOOLEAN			
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			

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								Multiply Reading By:	Divide Reading By:	
40004	0x0003	3	RO		Energy storage	1				
				0	Battery breaker BB1 open		BOOLEAN			1=Battery breaker BB1 is open
				1	Battery breaker BB2 open		BOOLEAN			1=Battery breaker BB2 is open
				2	Battery breaker BB3 open		BOOLEAN			1=Battery breaker BB3 is open
				3	Battery breaker BB4 open		BOOLEAN			1=Battery breaker BB4 is open
				4	Batteries are discharging		BOOLEAN			1=The load is drawing more power than the UPS can draw from the input, causing the UPS to draw power from the batteries
				5	Charger shutdown due to high battery temperature		BOOLEAN			1=The charger has been shut down due to a high battery temperature
				6	Battery is below minimum acceptable runtime		BOOLEAN			1=The battery runtime is below configured minimum acceptable value
				7	Battery voltage does not match battery configuration		BOOLEAN			1=Battery voltage does not match the battery configuration settings
				8	Battery condition is weak		BOOLEAN			1=Battery capacity is between 50% and 75%
				9	Battery condition is poor		BOOLEAN			1=Battery capacity is lower than 50%
				10	High battery temperature level		BOOLEAN			1=The battery temperature is above the alarm setting
				11	Low battery temperature level		BOOLEAN			1=The battery temperature is below the alarm setting
				12	Battery capacity is below minimum acceptable level		BOOLEAN			1=The battery capacity is below the minimum acceptable value according to UPS power rating. Risk of battery damage
				13	Battery charge power is reduced		BOOLEAN			1=The battery charge power has been reduced
				14	Battery is not working correctly		BOOLEAN			1=A battery is not working correctly
				15	Battery float charge current exceeds expected value		BOOLEAN			1=The battery float charge current exceeds the expected value and has been limited to avoid thermal runaway
40005	0x0004	4	RO		Energy storage	1				
				0	High battery temperature shutdown		BOOLEAN			1=The energy storage surveillance has detected a battery temperature above shutdown limit
				1	Battery configuration is incorrect		BOOLEAN			1=The configuration of the settings for number of batteries in series, number of cells in battery and nominal cell voltage does not match the battery voltage range of the UPS
				2	Reserved		BOOLEAN			
				3	Reserved		BOOLEAN			
				4	Reserved		BOOLEAN			
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	Reserved		BOOLEAN			
				8	Reserved		BOOLEAN			
				9	Reserved		BOOLEAN			
				10	Reserved		BOOLEAN			
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			
40006	0x0005	5	RO		General	1				
				0	EPO switch activated		BOOLEAN			1=An emergency power off (EPO) switch is activated
				1	Synchronization unavailable - system is free running		BOOLEAN			1=The UPS is unable to synchronize to the bypass input, external source or parallel system
				2	Inverter output is not in phase with bypass input		BOOLEAN			1=The UPS inverter output is not in phase with the bypass input
				3	UPS operation mode - Battery		BOOLEAN			1=On battery power in response to an input power unavailability or due to a transfer out of eConversion
				4	UPS operation mode - Requested static bypass		BOOLEAN			1= The UPS is in bypass in response to a user-initiated command, typically for maintenance
				5	UPS operation mode - Forced static bypass		BOOLEAN			1=The UPS is in forced static bypass
				6	UPS operation mode - Maintenance bypass		BOOLEAN			1=The UPS load is supplied through maintenance bypass breaker (MBB)
				7	UPS operation mode - Battery test		BOOLEAN			1=On battery power in response to a test of the performance of the batteries
				8	UPS operation mode - Off		BOOLEAN			1=The output power is turned off
				9	UPS operation mode - Initialization		BOOLEAN			1=The UPS is initializing
				10	UPS operation mode - Static bypass standby		BOOLEAN			1=The UPS is ready to enter static bypass but awaits permission from the system. UPS output is off
				11	UPS operation mode - Inverter standby		BOOLEAN			1=The UPS is ready to enter battery operation but awaits permission from the system. UPS output is off
				12	System operation mode - Off		BOOLEAN			1=The system output power is turned off
				13	System operation mode - Forced static bypass		BOOLEAN			1=The system is in bypass in response to a critical event or an inverter off request
				14	System operation mode - Requested static bypass		BOOLEAN			1=The UPS is in bypass in response to a user-initiated command, typically for maintenance
				15	System operation mode - Maintenance bypass		BOOLEAN			1=The system load is supplied through maintenance bypass breaker (MBB)

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								Multiply Reading By:	Divide Reading By:	
40007	0x0006	6	RO		General	1				
				0	System operation mode - Static bypass standby		BOOLEAN			1=The system is in static bypass standby operation in response to a critical event or an inverter off request
				1	Reserved		BOOLEAN			
				2	Reserved		BOOLEAN			
				3	Reserved		BOOLEAN			
				4	Reserved		BOOLEAN			
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	Reserved		BOOLEAN			
				8	Reserved		BOOLEAN			
				9	System locked in bypass operation		BOOLEAN			1=The system is locked in bypass operation
				10	Unsupported power frame type detected		BOOLEAN			1=The detected UPS power frame type is not supported by the current UPS power configuration
				11	Unsupported power module type detected		BOOLEAN			1=The detected power module type is not supported by the current UPS power configuration
				12	Unsupported static bypass switch module type detected		BOOLEAN			1=The detected static bypass switch module type is not supported by the current UPS power configuration
				13	Incorrect system voltage configuration detected		BOOLEAN			1=The configured UPS system voltage is not within the allowed range
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			
40008	0x0007	7	RO		General	1				
				0	Reserved		BOOLEAN			
				1	No SBS present		BOOLEAN			1=No SBS present
				2	No power module(s) present		BOOLEAN			1=No power module(s) present
				3	Available UPS power lower than configured UPS power rating		BOOLEAN			1=The available power from inverter is lower than the configured UPS power rating
				4	Static bypass switch power rating lower than configured UPS power rating		BOOLEAN			1=The static bypass switch power rating is lower than the configured UPS power rating. UPS power rating has been derated to match static bypass switch power rating
				5	Ambient temperature out of tolerance		BOOLEAN			1=The ambient temperature out of tolerance
				6	Ambient temperature high		BOOLEAN			1=Ambient temperature is high
				7	Inverter is off due to a request by the user		BOOLEAN			1=The inverter is off due to a request by the user
				8	Settings file not accepted		BOOLEAN			1=The settings file is not valid or not intended for this UPS
				9	Warranty expiring soon		BOOLEAN			1=The product is reaching the end of warranty
				10	Technical check recommended		BOOLEAN			1=The product and its batteries need to be checked as preventive maintenance is recommended
				11	Air filter technical check recommended		BOOLEAN			1=The air filters need to be checked as preventive maintenance is recommended
				12	Reserved		BOOLEAN			
				13	UPS surveillance detected fault		BOOLEAN			1=UPS surveillance detected a fault
				14	Display communication lost - display is disconnected from the system		BOOLEAN			1=Communication link between display and SLC is lost. Display is disconnected from the system
				15	Display communication lost but the display is connected to the system		BOOLEAN			1=Communication link between display and SLC is lost but the display is connected to the system
40009	0x0008	8	RO		General	1				
				0	Display communication not authenticated		BOOLEAN			1=Communication link between display and SLC is not authenticated
				1	Multiple NTP server connections enabled		BOOLEAN			1=Multiple NTP server connections are enabled
				2	Reserved		BOOLEAN			
				3	Reserved		BOOLEAN			
				4	Reserved		BOOLEAN			
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	Internal power module redundancy lost		BOOLEAN			1=The configured internal power module redundancy is lost because there are not enough power modules available
				8	UPS output load is too low to allow eConversion		BOOLEAN			1=UPS output load is too low to allow eConversion
				9	Reserved		BOOLEAN			
				10	Incompatible power module type detected		BOOLEAN			1=The detected power module type is incompatible
				11	Start-up recommended		BOOLEAN			1=The product has been running overtime without start-up
				12	UPS output load power factor is too low to allow eConversion		BOOLEAN			1=UPS output load power factor is too low to allow eConversion
				13	PFC AC current limitation threshold lowered due to high temperature		BOOLEAN			1=The AC current limitation threshold of the PFC has been lowered due to high ambient temperature
				14	High efficiency mode disabled by system		BOOLEAN			1=High efficiency mode has been disabled by the system
				15	High efficiency mode disabled due to bypass UTHD above limit		BOOLEAN			1=High efficiency mode is disabled due to bypass UTHD is above configured limit

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								Multiply Reading By:	Divide Reading By:	
40010	0x0009	9	RO		General	1				
				0	Engineering firmware version detected		BOOLEAN			1=The UPS firmware is an unofficial engineering version
				1	Unsupported DDU type detected		BOOLEAN			1=The detected DDU type is not supported by the current UPS power configuration
				2	Incorrectly installed power module(s) detected		BOOLEAN			1=One or more incorrectly installed power modules have been detected
				3	UPS forced to battery operation		BOOLEAN			1=UPS is forced to battery operation
				4	Automatic spare part firmware update in progress		BOOLEAN			1=Automatic spare part firmware update is in progress
				5	Reserved		BOOLEAN			
				6	Inverter output overload threshold lowered due to high ambient temperature		BOOLEAN			1=Inverter output overload threshold lowered due to high ambient temperature
				7	Reserved		BOOLEAN			
				8	Reserved		BOOLEAN			
				9	Reserved		BOOLEAN			
				10	Reserved		BOOLEAN			
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			
40011	0x000A	10			RESERVED	1				
40012	0x000B	11	RO		Input	1				
				0	Input voltage out of tolerance		BOOLEAN			1=Input voltage is out of tolerance
				1	Input phase sequence incorrect		BOOLEAN			1=The phase rotation on input is incorrect
				2	Input frequency out of tolerance		BOOLEAN			1=Input frequency is out of tolerance
				3	Input phase missing		BOOLEAN			1=Input is missing a phase
				4	External sync voltage out of tolerance		BOOLEAN			1=External sync voltage is out of tolerance and UPS is prevented from going into external sync mode
				5	External sync phase sequence incorrect		BOOLEAN			1=The phase rotation on external sync is incorrect
				6	External sync frequency out of tolerance		BOOLEAN			1=External sync frequency is out of tolerance
				7	External sync phase missing		BOOLEAN			1=External sync is missing a phase
				8	External sync temporarily disabled		BOOLEAN			1=External sync has been temporarily disabled because UPS cannot lock and synchronize to the external sync source
				9	Neutral displacement detected		BOOLEAN			1=Neutral displacement detected
				10	Bonding between neutral and ground missing		BOOLEAN			1=Bonding between neutral and ground is missing
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			
40013	0x000C	12	RO		Output	1				
				0	Output voltage out of tolerance		BOOLEAN			1=The output voltage is out of tolerance
				1	Output frequency out of tolerance		BOOLEAN			1=The output frequency is out of tolerance
				2	Overload or short-circuit on UPS		BOOLEAN			1=The load exceeds 100% of rated capacity or there is a short-circuit on the output
				3	Overload on UPS due to high ambient temperature		BOOLEAN			1=The load exceeds the rated UPS capacity when running in high ambient temperature
				4	Overload on installation		BOOLEAN			1=The load exceeds the rated installation capacity
				5	Load on UPS is above warning level		BOOLEAN			1=Load on UPS has exceeded the warning level
				6	Load exceeds 100% of the rated capacity but is within the continuous overload range		BOOLEAN			1=The load exceeds 100% of rated capacity but is within the continuous overload range Note: This is a warning alarm
				7	Reserved		BOOLEAN			
				8	Reserved		BOOLEAN			
				9	Load exceeds 100% of the rated capacity but is within the continuous overload range		BOOLEAN			1=The load exceeds 100% of rated capacity but is within the continuous overload range Note: This is an informational alarm
				10	Reserved		BOOLEAN			
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			

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								Multiply Reading By:	Divide Reading By:	
40014	0x000D	13	RO		Parallel system	1				
				0	Parallel communication lost on PBUS cable 1		BOOLEAN			1=PBUS cable 1 may be damaged
				1	Parallel communication lost on PBUS cable 2		BOOLEAN			1=PBUS cable 2 may be damaged
				2	General parallel system event		BOOLEAN			1=The parallel system is not configured correctly or is not working correctly
				3	Parallel mixed operation mode		BOOLEAN			1=One or more parallel UPSs are operating in battery operation, while others are operating in normal operation
				4	Parallel unit not present		BOOLEAN			1=UPS is unable to communicate with one of the parallel UPSs. The UPS might have been powered down or PBUS cables may be damaged
				5	Parallel redundancy lost		BOOLEAN			1=The configured parallel redundancy is lost, either because the output load is too high, or because there are not enough parallel UPSs available.
				6	Not enough UPSs ready to turn on inverter		BOOLEAN			1=One or more parallel UPSs have been requested to turn on inverter, but not enough UPSs are ready for system to enter inverter on operation
				7	Firmware versions in parallel UPSs are not identical		BOOLEAN			1=The firmware versions in parallel UPSs are not identical
				8	Confirm redundancy lost and /or transfer to forced static bypass		BOOLEAN			1=Inverter OFF button has been pushed and user must confirm that the redundancy will be lost and/or system will transfer to forced static bypass
				9	Reserved		BOOLEAN			
				10	Parallel breaker status inconsistency detected		BOOLEAN			1=The status of one or more common parallel breakers is not detected to be the same on all parallel UPSs
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			
40015	0x000E	14	RO		Power module	1				
				0	Power module inoperable		BOOLEAN			1=Power module is inoperable
				1	Power module temperature warning		BOOLEAN			1=Power module temperature exceeds warning level
				2	Power module overheated		BOOLEAN			1=Power module temperature exceeds critical level
				3	Power module inlet temperature high		BOOLEAN			1=The power module inlet temperature is high
				4	Power module inlet temperature out of tolerance		BOOLEAN			1=The power module inlet temperature is out of tolerance
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	Power module fan inoperable		BOOLEAN			1=The power module has one or more inoperable fans. Fan redundancy is lost
				8	Power module disabled		BOOLEAN			1=The power module has been disabled
				9	Power module surveillance detected fault		BOOLEAN			1=Power module surveillance detected a fault
				10	PMC communication lost - disconnected		BOOLEAN			1=Communication link between PMC and UC is lost. PMC is disconnected
				11	PMC communication lost - connected		BOOLEAN			1=Communication link between PMC and UC is lost. PMC is connected
				12	PMC communication not authenticated		BOOLEAN			1=Communication link between PMC and UC is not authenticated
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			
40016	0x000F	15			RESERVED	1				
40017	0x0010	16	RO		Static bypass switch	1				
				0	Static bypass switch fan inoperable		BOOLEAN			1=Static bypass switch has one or more inoperable fans. Fan redundancy is lost
				1	Reserved		BOOLEAN			
				2	Static bypass switch warning		BOOLEAN			1=The static bypass switch needs a technical check but is still fully operational
				3	Static bypass switch inoperable		BOOLEAN			1=Static bypass switch is inoperable. UPS is prevented from going into static bypass operation
				4	Static bypass switch controller communication lost - disconnected		BOOLEAN			1=Communication link between static bypass switch controller and unit controller is lost. Static bypass switch controller is disconnected
				5	Static bypass switch controller communication lost - connected		BOOLEAN			1=Communication link between static bypass switch controller and unit controller is lost. Static bypass switch controller is connected
				6	Static bypass switch controller communication not authenticated		BOOLEAN			1=Communication link between static bypass switch controller and unit controller is not authenticated
				7	Reserved		BOOLEAN			
				8	Reserved		BOOLEAN			
				9	Reserved		BOOLEAN			
				10	Reserved		BOOLEAN			
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			

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								Multiply Reading By:	Divide Reading By:	
40018	0x0011	17	RO		Switchgear	1				
				0	Breaker UIB open		BOOLEAN			1=Unit input breaker UIB is open, and the UPS is prevented from running in normal operation
				1	Breaker UOB open		BOOLEAN			1=Unit output breaker UOB is open, and the UPS is prevented from supplying the load
				2	Breaker MBB closed		BOOLEAN			1=Maintenance bypass breaker MBB is closed, supplying the load with unprotected power from bypass
				3	Breaker SIB open		BOOLEAN			1=System isolation breaker SIB is open, and system cannot supply the load
				4	Breaker SSIB open		BOOLEAN			1=Static switch input breaker SSIB is open, preventing static bypass operation
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	User-defined input 1 activated		BOOLEAN			1=User-defined input contact 1 is activated
				8	User-defined input 2 activated		BOOLEAN			1=User-defined input contact 2 is activated
				9	Ground fault detected		BOOLEAN			1=Dry contact input indicates that a ground wire fault has been detected
				10	Genset is supplying the UPS		BOOLEAN			1=Dry contact input indicates that a genset is supplying the UPS
				11	Battery room ventilation inoperable		BOOLEAN			1=Dry contact input indicates that the battery room ventilation is not working correctly
				12	External battery monitoring detected fault		BOOLEAN			1=Dry contact input indicates external battery monitoring detected fault
				13	UOB redundant monitoring not working correctly		BOOLEAN			1=The two redundant AUX contacts of UOB do not report the same status
				14	MBB redundant monitoring not working correctly		BOOLEAN			1=The two redundant AUX contacts of MBB do not report the same status
				15	Reserved		BOOLEAN			
40019	0x0012	18	RO		Switchgear	1				
				0	Reserved		BOOLEAN			
				1	UPS locked in static bypass mode: activated		BOOLEAN			1=Dry contact input for UPS locked in static bypass mode is activated
				2	High efficiency mode disabled		BOOLEAN			1=High efficiency mode is disabled from a dry contact input
				3	External energy storage monitoring: minor alarm		BOOLEAN			1=Dry contact input indicates external energy storage monitoring has detected a minor fault
				4	External energy storage monitoring: major alarm		BOOLEAN			1=Dry contact input indicates external energy storage monitoring has detected a major fault
				5	External charger off command: activated		BOOLEAN			1=Dry contact input for charger off is activated
				6	Temperature of input, bypass and/or output transformer is too high		BOOLEAN			1=Temperature of input, bypass and/or output transformer is too high
				7	Breaker LBB closed		BOOLEAN			1=Load bank breaker LBB is closed
				8	Force to battery operation input contact activated		BOOLEAN			1=Input contact that forces the UPS into battery operation has been activated
				9	Reserved		BOOLEAN			
				10	Reserved		BOOLEAN			
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			
40020	0x0013	19	RO		System level controller (SLC)	1				
				0	SLC in controller box is not working correctly		BOOLEAN			1=The SLC in the controller box is not working correctly
				1	Reserved		BOOLEAN			
				2	Reserved		BOOLEAN			
				3	Reserved		BOOLEAN			
				4	Reserved		BOOLEAN			
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	Reserved		BOOLEAN			
				8	Reserved		BOOLEAN			
				9	Reserved		BOOLEAN			
				10	Reserved		BOOLEAN			
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			

Modicon Standard Register Number	Absolute Starting Register Address, (Hexa-decimal)	Absolute Starting Register Address, (Decimal)	Read/Write or Read Only Registers (RW/RO)	Bit	Data Point	Length	Data Type	Scale		Valid Response
								Multiply Reading By:	Divide Reading By:	
40021	0x0014	20	RO		Unit controller (UC)	1				
				0	Reserved		BOOLEAN			
				1	Reserved		BOOLEAN			
				2	Reserved		BOOLEAN			
				3	Reserved		BOOLEAN			
				4	Reserved		BOOLEAN			
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	Reserved		BOOLEAN			
				8	UC in controller box is not working correctly		BOOLEAN			1=The UC in the controller box is not working correctly
				9	UC communication lost - disconnected		BOOLEAN			1=Communication link between UC and SLC is lost. UC is disconnected
				10	UC communication lost - connected		BOOLEAN			1=Communication link between UC and SLC is lost. UC is connected
				11	UC communication not authenticated		BOOLEAN			1=Communication link between UC and SLC is not authenticated
				12	UC controller box disabled		BOOLEAN			1=UC controller box has been disabled by user
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			
40022	0x0015	21			RESERVED	1				
40023	0x0016	22	RO		Energy Storage	1				
				0	Reserved		BOOLEAN			
				1	Reserved		BOOLEAN			
				2	High battery discharge current shutdown		BOOLEAN			1=The energy storage surveillance has detected a battery discharge current above shutdown limit
				3	Reserved		BOOLEAN			
				4	Reserved		BOOLEAN			
				5	Reserved		BOOLEAN			
				6	Reserved		BOOLEAN			
				7	Reserved		BOOLEAN			
				8	Reserved		BOOLEAN			
				9	Reserved		BOOLEAN			
				10	Reserved		BOOLEAN			
				11	Reserved		BOOLEAN			
				12	Reserved		BOOLEAN			
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			
40024	0x0017	23	RO		Network	1	BOOLEAN			
				0	Low temperature threshold violation at remote sensor		BOOLEAN			1=A low temperature threshold violation exists for integrated environmental monitor sensor
				1	Minimum temperature threshols violation at remote sensor		BOOLEAN			1=A minimum temperature threshold violation exists for integrated environmental monitor sensor
				2	High temperature threshold violation at remote sensor		BOOLEAN			1=A high temperature threshold violation exists for integrated environmental monitor sensor
				3	Maximum temperature threshold violation at remote sensor		BOOLEAN			1=A maximum temperature threshold violation exists for integrated environmental monitor sensor
				4	Low humidity threshold violation at remote sensor		BOOLEAN			1=A low humidity threshold violation exists for integrated environmental monitor sensor
				5	Minimum humidity threshold violation at remote sensor		BOOLEAN			1=A minimum humidity threshold violation exists for integrated environmental monitor sensor
				6	High humidity threshold violation at remote sensor		BOOLEAN			1=A high humidity threshold violation exists for integrated environmental monitor sensor
				7	Maximum humidity threshold violation at remote sensor		BOOLEAN			1=A maximum humidity threshold violation exists for integrated environmental monitor sensor
				8	Lost communication to remote sensor		BOOLEAN			1=Lost the local network management interface-to-integrated environmental monitor communication
				9	Communication link between NMC and SLC is lost. NMC is disconnected from the system		BOOLEAN			1=Communication link between NMC and SLC is lost. NMC is disconnected
				10	Communication link between NMC and SLC is lost but the NMC is connected to the system		BOOLEAN			1=Communication link between NMC and SLC is lost. NMC is connected
				11	Communication link between NMC and SLC is not authenticated		BOOLEAN			1=Communication link between NMC and SLC is not authenticated
				12	NMC firmware incompatible		BOOLEAN			1=Firmware version of the NMC is incompatible
				13	Reserved		BOOLEAN			
				14	Reserved		BOOLEAN			
				15	Reserved		BOOLEAN			

Modicon Standard Register Number	Absolute Starting Register Address, (Hexa-decimal)	Absolute Starting Register Address, (Decimal)	Read/Write or Read Only Registers (RW/RO)	Bit	Data Point	Length	Data Type	Scale		Valid Response
								Multiply Reading By:	Divide Reading By:	
Static Data										
44097	0x1000	4096	RO		The firmware package version number of the UPS system	8	ASCII			
44105	0x1008	4104	RO		The hardware version number of the UPS system	16	ASCII			
44121	0x1018	4120	RO		The UPS model number (commercial reference)	16	ASCII			
44137	0x1028	4136	RO		The UPS serial number	16	ASCII			
44153	0x1038	4152	RO		The network management card firmware version number	8	ASCII			
44161	0x1040	4160	RO		The network management card hardware version number	16	ASCII			
44177	0x1050	4176	RO		The model number (commercial reference) of the network management card	16	ASCII			
44193	0x1060	4192	RO		The network management card serial number	16	ASCII			
44209	0x1070	4208	RO		Time since battery statistics timer reset (in minutes).	2	UINT32			
44211	0x1072	4210	RO		Total time for UPS in battery operation since battery statistics timer reset (in minutes).	2	UINT32			
44213	0x1074	4212	RO		Time since operational statistics timer reset (in minutes).	2	UINT32			
44215	0x1076	4214	RO		Total time for UPS in normal operation since operational statistics timer reset (in minutes).	2	UINT32			
44217	0x1078	4216	RO		Total time for UPS in bypass operation since operational statistics timer reset (in minutes).	2	UINT32			
44219	0x107A	4218	RO		Total time for UPS in eConversion mode since Operational Statistics timer reset (in minutes).	2	UINT32			
44221	0x107C	4220	RO		Time since the battery was last replaced (in minutes).	2	UINT32			
44223	0x107E	4222	RO		Time since input energy counter timer reset (in minutes)	2	UINT32			
44225	0x1080	4224	RO		Time since ouput energy counter timer reset (in minutes)	2	UINT32			
44227	0x1082	4226	RO		The core version of the Network Management Card	16	ASCII			
Dynamic Data										
44609	0x1200	4608	RO		Alarm status of the unit	1				
					No alarms present		ENUM			0=No alarms present
					Informational alarm present		ENUM			1=Informational alarm present
					Warning alarm present		ENUM			2=Warning alarm present
					Critical alarm present		ENUM			3=Critical alarm present
44865	0x1300	4864	RO		The present apparent output power for each phase in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes (phase1)	1	UINT16	0.1	10	kVA
44866	0x1301	4865	RO		The present apparent output power for each phase in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes (phase2)	1	UINT16	0.1	10	kVA
44867	0x1302	4866	RO		The present apparent output power for each phase in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes (phase3)	1	UINT16	0.1	10	kVA
44868	0x1303	4867	RO		The present output current for each phase in A (phase1)	1	UINT16	0.1	10	A
44869	0x1304	4868	RO		The present output current for each phase in A (phase2)	1	UINT16	0.1	10	A
44870	0x1305	4869	RO		The present output current for each phase in A (phase3)	1	UINT16	0.1	10	A
44871	0x1306	4870	RO		The present output crest factor for each phase. The output crest factor is the ratio of the peak value of the output current to the RMS (root mean square) value (phase1)	1	UINT16	0.1	10	

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								Multiply Reading By:	Divide Reading By:	
44872	0x1307	4871	RO		The present output crest factor for each phase. The output crest factor is the ratio of the peak value of the output current to the RMS (root mean square) value (phase2)	1	UINT16	0.1	10	
44873	0x1308	4872	RO		The present output crest factor for each phase. The output crest factor is the ratio of the peak value of the output current to the RMS (root mean square) value (phase3)	1	UINT16	0.1	10	
44874	0x1309	4873			RESERVED	1				
44875	0x130A	4874			RESERVED	1				
44876	0x130B	4875			RESERVED	1				
44877	0x130C	4876	RO		The present output power factor for each phase. Power factor is the ratio of active power to apparent power (phase1)	1	UINT16	0.01	100	
44878	0x130D	4877	RO		The present output power factor for each phase. Power factor is the ratio of active power to apparent power (phase2)	1	UINT16	0.01	100	
44879	0x130E	4878	RO		The present output power factor for each phase. Power factor is the ratio of active power to apparent power (phase3)	1	UINT16	0.01	100	
44880	0x130F	4879	RO		The present active (or real) output power for each phase in kW. Active power is the portion of power flow that, averaged over a complete cycle of the AC waveform, results in net transfer of energy in one direction (phase1)	1	UINT16	0.1	10	kW
44881	0x1310	4880	RO		The present active (or real) output power for each phase in kW. Active power is the portion of power flow that, averaged over a complete cycle of the AC waveform, results in net transfer of energy in one direction (phase2)	1	UINT16	0.1	10	kW
44882	0x1311	4881	RO		The present active (or real) output power for each phase in kW. Active power is the portion of power flow that, averaged over a complete cycle of the AC waveform, results in net transfer of energy in one direction (phase3)	1	UINT16	0.1	10	kW
44883	0x1312	4882	RO		The present output voltage for each phase (phase1)	1	UINT16	0.1	10	V
44884	0x1313	4883	RO		The present output voltage for each phase (phase2)	1	UINT16	0.1	10	V
44885	0x1314	4884	RO		The present output voltage for each phase (phase3)	1	UINT16	0.1	10	V
44886	0x1315	4885	RO		The present phase-to-phase output RMS voltage (phase1)	1	UINT16	0.01	100	V
44887	0x1316	4886	RO		The present phase-to-phase output RMS voltage (phase2)	1	UINT16	0.01	100	V
44888	0x1317	4887	RO		The present phase-to-phase output RMS voltage (phase3)	1	UINT16	0.01	100	V
44889	0x1318	4888	RO		The present total apparent output power in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes	1	UINT16	0.1	10	kVA
44890	0x1319	4889	RO		Output current as percentage of total available current (highest phase)	1	UINT16	0.1	10	%
44891	0x131A	4890	RO		The present output frequency in Hz	1	UINT16	0.1	10	Hz
44892	0x131B	4891	RO		The present total active (or real) output power (for all three phases) in kW	1	UINT16	0.1	10	kW
44893	0x131C	4892	RO		The total energy supplied since the time of installation or since the counter was reset	2	UINT32	0.1	10	kWh
44895	0x131E	4894	RO		The present output neutral current in A	1	UINT16	0.1	10	A

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								Multiply Reading By:	Divide Reading By:	
45121	0x1400	5120	RO		The present apparent input power for each phase in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes (phase1)	1	UINT16	0.1	10	kVA
45122	0x1401	5121	RO		The present apparent input power for each phase in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes (phase2)	1	UINT16	0.1	10	kVA
45123	0x1402	5122	RO		The present apparent input power for each phase in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes (phase3)	1	UINT16	0.1	10	kVA
45124	0x1403	5123	RO		The present input current for each phase in A (phase1)	1	UINT16	0.1	10	A
45125	0x1404	5124	RO		The present input current for each phase in A (phase2)	1	UINT16	0.1	10	A
45126	0x1405	5125	RO		The present input current for each phase in A (phase3)	1	UINT16	0.1	10	A
45127	0x1406	5126	RO		The ratio of the active power to the apparent power (phase1)	1	UINT16	0.01	100	
45128	0x1407	5127	RO		The ratio of the active power to the apparent power (phase2)	1	UINT16	0.01	100	
45129	0x1408	5128	RO		The ratio of the active power to the apparent power (phase3)	1	UINT16	0.01	100	
45130	0x1409	5129	RO		The present active (or real) input power for each phase in kW. Active power is the portion of power flow that averaged over a complete cycle of the AC waveform, results in net transfer of energy in one direction (phase1)	1	UINT16	0.1	10	kW
45131	0x140A	5130	RO		The present active (or real) input power for each phase in kW. Active power is the portion of power flow that, averaged over a complete cycle of the AC waveform, results in net transfer of energy in one direction (phase2)	1	UINT16	0.1	10	kW
45132	0x140B	5131	RO		The present active (or real) input power for each phase in kW. Active power is the portion of power flow that, averaged over a complete cycle of the AC waveform, results in net transfer of energy in one direction (phase3)	1	UINT16	0.1	10	kW
45133	0x140C	5132	RO		The present input voltage for each phase (phase1)	1	UINT16	0.1	10	V
45134	0x140D	5133	RO		The present input voltage for each phase (phase2)	1	UINT16	0.1	10	V
45135	0x140E	5134	RO		The present input voltage for each phase (phase3)	1	UINT16	0.1	10	V
45136	0x140F	5135	RO		The present phase-to-phase input RMS voltage (phase1)	1	UINT16	0.01	100	V
45137	0x1410	5136	RO		The present phase-to-phase input RMS voltage (phase2)	1	UINT16	0.01	100	V
45138	0x1411	5137	RO		The present phase-to-phase input RMS voltage (phase3)	1	UINT16	0.01	100	V
45139	0x1412	5138	RO		The present total apparent power input (for all three phases) in kVA	1	UINT16	0.1	10	kVA
45140	0x1413	5139	RO		The present input frequency in Hz	1	UINT16	0.1	10	Hz
45141	0x1414	5140	RO		The present total real power (or active power) input (for all three phases) in kW	1	UINT16	0.1	10	kW
45142	0x1415	5141	RO		The total energy consumption since the time of installation or since the counter was reset.	2	UINT32	0.1	10	kWh
45377	0x1500	5376	RO		The present apparent bypass power for each phase in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes (phase1)	1	UINT16	0.1	10	kVA

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								Multiply Reading By:	Divide Reading By:	
45378	0x1501	5377	RO		The present apparent bypass power for each phase in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes (phase2)	1	UINT16	0.1	10	kVA
45379	0x1502	5378	RO		The present apparent bypass power for each phase in kVA. Apparent power is the product of RMS (root mean square) volts and RMS amperes (phase3)	1	UINT16	0.1	10	kVA
45380	0x1503	5379	RO		The present bypass current for each phase in A (phase1)	1	UINT16	0.1	10	A
45381	0x1504	5380	RO		The present bypass current for each phase in A (phase2)	1	UINT16	0.1	10	A
45382	0x1505	5381	RO		The present bypass current for each phase in A (phase3)	1	UINT16	0.1	10	A
45383	0x1506	5382	RO		The present bypass power factor for each phase. Power factor is the ratio of active power to apparent power (phase1)	1	UINT16	0.01	100	
45384	0x1507	5383	RO		The present bypass power factor for each phase. Power factor is the ratio of active power to apparent power (phase2)	1	UINT16	0.01	100	
45385	0x1508	5384	RO		The present bypass power factor for each phase. Power factor is the ratio of active power to apparent power (phase3)	1	UINT16	0.01	100	
45386	0x1509	5385	RO		The present active (or real) bypass power for each phase in kW. Active power is the time average of the instantaneous product of voltage and current (phase1)	1	UINT16	0.1	10	kW
45387	0x150A	5386	RO		The present active (or real) bypass power for each phase in kW. Active power is the time average of the instantaneous product of voltage and current (phase2)	1	UINT16	0.1	10	kW
45388	0x150B	5387	RO		The present active (or real) bypass power for each phase in kW. Active power is the time average of the instantaneous product of voltage and current (phase3)	1	UINT16	0.1	10	kW
45389	0x150C	5388	RO		The present bypass voltage for each phase (phase1)	1	UINT16	0.1	10	V
45390	0x150D	5389	RO		The present bypass voltage for each phase (phase2)	1	UINT16	0.1	10	V
45391	0x150E	5390	RO		The present bypass voltage for each phase (phase3)	1	UINT16	0.1	10	V
45392	0x150F	5391	RO		The present phase-to-phase bypass RMS voltage (V). (phase1)	1	UINT16	0.01	100	V
45393	0x1510	5392	RO		The present phase-to-phase bypass RMS voltage (V). (phase2)	1	UINT16	0.01	100	V
45394	0x1511	5393	RO		The present phase-to-phase bypass RMS voltage (V). (phase3)	1	UINT16	0.01	100	V
45395	0x1512	5394	RO		The present total apparent bypass power (for all three phases) in kVA	1	UINT16	0.1	10	kVA
45396	0x1513	5395	RO		The present bypass frequency in Hz	1	UINT16	0.1	10	Hz
45397	0x1514	5396	RO		The present total active bypass power (for all three phases) in kW	1	UINT16	0.1	10	kW
45633	0x1600	5632	RO		The general condition of the charger	1				
					Float charging		ENUM			0=Float charging
					Boost charging		ENUM			1=Boost charging
					Cyclic resting		ENUM			2=Cyclic resting
					Not charging		ENUM			3=Not charging
					Equalization charging		ENUM			4=Equalization charging
					Test in progress		ENUM			5=Test in progress
					Cyclic float charging		ENUM			6=Cyclic float charging
					Two-level charge mode V1		ENUM			7=Two-level charge mode V1
					Two-level charge mode V2		ENUM			8=Two-level charge mode V2

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								Multiply Reading By:	Divide Reading By:	
45634	0x1601	5633	RO		The highest battery temperature from the connected temperature sensors	1	INT16	0.1	10	Celsius
45635	0x1602	5634	RO		The present DC power being drawn from the battery in kW	1	INT16	0.1	10	kW
45636	0x1603	5635	RO		Combined status for battery breakers.	1				
					Open		ENUM			0=Open
					Closed		ENUM			1=Closed
					Unknown		ENUM			2=Unknown
45637	0x1604	5636	RO		The amount of time before the batteries reach the low-voltage shutdown level	2	UINT32	1	1	Sec
45639	0x1606	5638	RO		Estimated time for recharging the battery	2	UINT32	1	1	Sec
45641	0x1608	5640	RO		The present battery charge, as a percentage of full charge capacity	1	UINT16	1	1	%
45642	0x1609	5641	RO		The present battery voltage (V)	1	UINT16	0.1	10	V
45643	0x160A	5642	RO		The present battery current (A). A positive current indicates that the battery is charging; a negative current indicates that the battery is discharging.	1	INT16	0.1	10	A
45644	0x160B	5643	RO		Status of battery self-test. Can indicate the battery test status triggered by user-commanded or scheduled self-test	1				
					Battery self-test is inactive		ENUM			0=Battery self test is inactive
					Battery self-test is running		ENUM			1=Battery self test is running
					Battery self-test is aborted because the system detects a critical alarm		ENUM			2=Battery self-test is aborted because the system detects a critical alarm
					Battery self-test is aborted due to user command		ENUM			3=Battery self test is aborted due to user command
					Battery self-test is completed		ENUM			4=Battery self test is completed
45645	0x160C	5644	RO		Status indicates the battery health state result from battery test	1				
					Battery condition is OK		ENUM			0=Battery condition is OK
					Battery condition is unknown		ENUM			1=Battery condition is unknown
					Battery condition is weak		ENUM			2=Battery condition is weak
					Battery condition is poor		ENUM			3=Battery condition is poor
					Battery condition status is initializing		ENUM			4=Battery condition status is initializing
45646	0x160D	5645	RO		The operation mode of the charger	1				
					Battery is resting		ENUM			0=Battery is resting
					Battery is charging		ENUM			1=Battery is charging
					Battery is discharging		ENUM			2=Battery is discharging
45647	0x160E	5646	RO		Measurement of the total available battery capacity in Ah for the UPS	1	UINT16	1	1	Ah
45648	0x160F	5647			RESERVED	1				
45649	0x1610	5648			RESERVED	1				
45889	0x1700	5888	RO		Switchgear system status	1				
				0	Unit input breaker (UIB) status		BOOLEAN			1=Closed
				1	Unit output breaker (UOB) status		BOOLEAN			1=Closed
				2	Static switch input breaker (SSIB) status		BOOLEAN			1=Closed
				3	Reserved		BOOLEAN			
				4	Maintenance bypass breaker (MBB) status		BOOLEAN			1=Closed
				5	Reserved		BOOLEAN			
				6	System isolation breaker (SIB) status		BOOLEAN			1=Closed
45890	0x1701	5889	RO		Status of the firmware upgrade process	1				
					Firmware update in INIT state		ENUM			0=Firmware update in INIT state
					Firmware update in IDLE State		ENUM			1=Firmware update in IDLE State
					Firmware package is DOWNLOADING		ENUM			2=Firmware package is DOWNLOADING
					Firmware package is INSTALLING		ENUM			3=Firmware package is INSTALLING
					Firmware package is in REBOOTING state		ENUM			4=Firmware package is in REBOOTING state
					Firmware update in FULL_SYS_UPDATE_FAIL state		ENUM			5=Firmware update in FULL_SYS_UPDATE_FAIL state
					Firmware update in FULL_SYS_UPDATE_DONE state		ENUM			6=Firmware update in FULL_SYS_UPDATE_DONE state
					Firmware update in FULL_SYS_UPDATE_ABORTED state		ENUM			7=Firmware update in FULL_SYS_UPDATE_ABORTED state
					Firmware update in SPARE_PART_UPDATE state		ENUM			8=Firmware update in SPARE_PART_UPDATE state
					Firmware update did not succeed		ENUM			9=Firmware update did not succeed

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								Multiply Reading By:	Divide Reading By:	
45891	0x1702	5890			RESERVED	1				
45892	0x1703	5891	RO		The present operation mode of the complete UPS system	1				
					System: off operation		ENUM			0=System is in off operation
					System: inverter operation		ENUM			1=System is in inverter operation
					System: forced static bypass operation		ENUM			2=System is in forced static bypass operation
					System: requested static bypass operation		ENUM			3=System is in requested static bypass operation
					System: maintenance bypass operation		ENUM			4=System is in maintenance bypass operation
					System: static bypass standby operation		ENUM			5=System is in static bypass standby operation
					System: eConversion mode		ENUM			6=System is in eConversion mode
					System: ECO mode		ENUM			7=System is in ECO mode
45893	0x1704	5892	RO		The present operation mode of the UPS	1				
					UPS: initialize operation		ENUM			0=UPS is in initialize operation
					UPS: off operation		ENUM			1=UPS is in off operation
					UPS: battery operation		ENUM			2=UPS is in battery operation
					UPS: normal operation		ENUM			3=UPS is in normal operation
					UPS: forced static bypass operation		ENUM			4=UPS is in forced static bypass operation
					UPS: requested static bypass operation		ENUM			5=UPS is in requested static bypass operation
					UPS: maintenance bypass operation		ENUM			6=UPS is in maintenance bypass operation
					UPS: emergency static bypass operation		ENUM			7=UPS is in emergency static bypass operation
					UPS: inverter standby operation		ENUM			8=UPS is in inverter standby operation
					UPS: static bypass standby operation		ENUM			9=UPS is in static bypass standby operation
					UPS: battery test		ENUM			10=UPS is in battery test
					UPS: inverter SPoT mode		ENUM			11=UPS is in inverter SPoT mode
					UPS: charger SPoT mode		ENUM			12=UPS is in charger SPoT mode
					UPS: battery SPoT mode		ENUM			13=UPS is in battery SPoT mode
					UPS: eConversion mode		ENUM			14=UPS is in eConversion mode
					UPS: ECO mode		ENUM			15=UPS is in ECO mode
45894	0x1705	5893	RO		UPS base model number check	1				
					State is OK		ENUM			0=State is OK
					State is not OK		ENUM			1=State is not OK
45895	0x1706	5894	RO		The UPS ambient temperature	1	UNIT16	1	1	°C
Registers 6144-6155 are for Parallel Configurations only.										
46145	0x1800	6144	RO		The present phase-to-phase input current in amperes in A (phase 1)	1	UINT16	1	1	A
46146	0x1801	6145	RO		The present phase-to-phase input current in amperes in A (phase 2)	1	UINT16	1	1	A
46147	0x1802	6146	RO		The present phase-to-phase input current in amperes in A (phase 3)	1	UINT16	1	1	A
46148	0x1803	6147	RO		The present phase-to-phase bypass current in amperes in A (phase 1)	1	UINT16	1	1	A
46149	0x1804	6148	RO		The present phase-to-phase bypass current in amperes in A (phase 2)	1	UINT16	1	1	A
46150	0x1805	6149	RO		The present phase-to-phase bypass current in amperes in A (phase 3)	1	UINT16	1	1	A
46151	0x1806	6150	RO		The present phase-to-phase output current in amperes in A (phase 1)	1	UINT16	1	1	A
46152	0x1807	6151	RO		The present phase-to-phase output current in amperes in A (phase 2)	1	UINT16	1	1	A
46153	0x1808	6152	RO		The present phase-to-phase output current in amperes in A (phase 3)	1	UINT16	1	1	A
46154	0x1809	6153	RO		The present total apparent output power (for all three phases) for the parallel system	1	UINT16	0.1	10	kVA
46155	0x180A	6154	RO		The percentage of the UPS system capacity presently used across all phases. The load percentage for the highest phase load is displayed	1	UINT16	0.1	10	%
46156	0x180B	6155	RO		The present total active output power (for all three phases) for the parallel system	1	UINT16	0.1	10	kW

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								Multiply Reading By:	Divide Reading By:	
NMC Dynamic Data										
46401	0x1900	6400	RO		The current temperature measurement from the external sensor	1	UINT16	0.1	10	°C
46402	0x1901	6401	RO		The current humidity measurement from the external sensor	1	UINT16	0.1	10	% RH
Configuration Data										
48193	0x2000	8192	RO		This is the configured AC voltage system setting. The setting applies for input as well if no specific setting is placed in input system.	1				
					Output voltage 380VAC PhPh		ENUM			0=Output voltage 380VAC PhPh
					Output voltage 400VAC PhPh		ENUM			1=Output voltage 400VAC PhPh
					Output voltage 415VAC PhPh		ENUM			2=Output voltage 415VAC PhPh
					Output voltage 480VAC PhPh		ENUM			3=Output voltage 480VAC PhPh
					Output voltage 208VAC PhPh		ENUM			4=Output voltage 208VAC PhPh
					Output voltage 200VAC PhPh		ENUM			5=Output voltage 200VAC PhPh
					Output voltage 220VAC PhPh		ENUM			6=Output voltage 220VAC PhPh
					Output voltage 440VAC PhPh		ENUM			7=Output voltage 440VAC PhPh
48194	0x2001	8193	RO		Setting for single mains or dual mains supply	1				
					Single mains system		ENUM			0=Single mains system
					Dual mains system		ENUM			1=Dual mains system
48195	0x2002	8194	RO		Ramp in timer for input current limitation during transfer from battery to normal operation	1	UINT16			Sec
48196	0x2003	8195	RO		Defines the AC wiring of the system: 3-wire does not include neutral; 4-wire includes neutral	1				
					3-wire system configuration		ENUM			0=3 wire-system configuration
					4-wire system configuration		ENUM			1=4 wire-system configuration
					4-wire system configuration HRG		ENUM			2=4-wire system configuration HRG
48197	0x2004	8196	RO		Energy storage type	1				
					No energy storage		ENUM			0=No energy storage
					Battery/batteries		ENUM			1=Battery/batteries
					Flywheel		ENUM			2=Flywheel
					Ultra capacitors		ENUM			3=Ultra capacitors
48198	0x2005	8197	RO		Voltage compensation. Increase voltage to compensate for different cable lengths	1	INT16	0.1	10	%
48199	0x2006	8198	RO		This is the output frequency setting including the tolerance. This drives whether the output is in sync with the input.	1				
					Frequency of 50 Hz +/- 1.0 Hz.		ENUM			0=Frequency of 50 Hz +/- 1.0 Hz.
					Frequency of 50 Hz +/- 3.0 Hz.		ENUM			1=Frequency of 50 Hz +/- 3.0 Hz.
					Frequency of 60 Hz +/- 1.0 Hz.		ENUM			2=Frequency of 60 Hz +/- 1.0 Hz.
					Frequency of 60 Hz +/- 3.0 Hz.		ENUM			3=Frequency of 60 Hz +/- 3.0 Hz.
					Frequency of 50 Hz +/- 10.0 Hz.		ENUM			4=Frequency of 50 Hz +/- 10.0 Hz.
					Frequency of 60 Hz +/- 10.0 Hz.		ENUM			5=Frequency of 60 Hz +/- 10.0 Hz.
48200	0x2007	8199	RO		The apparent UPS power rating (kVA)	1	UINT16			kVA
48201	0x2008	8200	RO		Acceptable voltage as percent of nominal voltage (voltage tolerance)	1	UINT16			%
48202	0x2009	8201	RO		Delay time before autostart of the inverter after input source returns after an outage	1				
					Function disabled		ENUM			0=Function disabled
					Function enabled		ENUM			1=Function enabled
48203	0x200A	8202	RO		Set user-defined threshold for output overload status.	1	UINT16	0.1	10	%
48204	0x200B	8203	RO		Settings for autoboot mode of the charger	1				
					Disable autoboot charger		ENUM			0=Disable autoboot charger
					Enable autoboot charger		ENUM			1=Enable autoboot charger
48205	0x200C	8204	RO		Setting for charge current rate by user	1	UINT16	0.01	100	
48206	0x200D	8205	RO		Setting for auto cyclic mode charge mode	1				
					Function disabled		ENUM			0=Function disabled
					Function enabled		ENUM			1=Function enabled
48207	0x200E	8206	RO		Configuration of breakers	1				
					Not present		ENUM			0=Not present
					Present		ENUM			1=Present
48208	0x200F	8207	RO		Configuration of breakers	1				
					Not present		ENUM			0=Not present

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								Multiply Reading By:	Divide Reading By:	
48209	0x2010	8208	RO		Present	1	ENUM			1=Present
					Battery deep discharge settings.					
					Deep discharge is not allowed.		ENUM			0=Deep discharge is not allowed.
					Deep discharge is allowed.		ENUM			1=Deep discharge is allowed.
48210	0x2011	8209	RO		Setting for minimum allowed temperature	1	UINT16	0.1	10	Celsius
48211	0x2012	8210	RO		Setting for maximum allowed temperature	1	UINT16	0.1	10	Celsius
48212	0x2013	8211	RO		Battery Solution setting for predefined battery solutions	1				
					Custom Battery Solution		ENUM			0=Custom Battery Solution
					Battery Solution type GVSCBC7A		ENUM			1=Battery Solution type GVSCBC7A
					Battery Solution type GVSCBC7B		ENUM			2=Battery Solution type GVSCBC7B
					Battery Solution type GVSCBC7C		ENUM			3=Battery Solution type GVSCBC7C
					Battery Solution type GVSCBC10A/GVSCBC10A2		ENUM			4=Battery Solution type GVSCBC10A/GVSCBC10A2
					Battery Solution type GVSCBC10B/GVSCBC10B2		ENUM			5=Battery Solution type GVSCBC10B/GVSCBC10B2
					Battery Solution type GVSCBT1/GVSCBT1ST		ENUM			6=Battery Solution type GVSCBT1/GVSCBT1ST
					Battery Solution type GVSCBT2/GVSCBT2ST		ENUM			7=Battery Solution type GVSCBT2/GVSCBT2ST
					Battery Solution type GVSCBT3/GVSCBT3ST		ENUM			8=Battery Solution type GVSCBT3/GVSCBT3ST
					Battery Solution type GVSCBT4/GVSCBT4ST		ENUM			9=Battery Solution type GVSCBT4/GVSCBT4ST
					Battery Solution type GVSCBT5/GVSCBT5ST		ENUM			10=Battery Solution type GVSCBT5/GVSCBT5ST
					Battery Solution type LIBATTSMGEIEC		ENUM			11=Battery Solution type LIBATTSMGEIEC
					Battery Solution type LIBATTSMGEUL		ENUM			12=Battery Solution type LIBATTSMGEUL
					Modular Battery Solution		ENUM			13=Modular Battery Solution
					Battery Solution type GVSCBT6/GVSCBT6ST		ENUM			14=Battery Solution type GVSCBT6/GVSCBT6ST
					Battery Solution type GVSCBT7/GVSCBT7ST		ENUM			15=Battery Solution type GVSCBT7/GVSCBT7ST
					Battery Solution type LIBATTSMGSIEC		ENUM			16=Battery Solution type LIBATTSMGSIEC
					Battery Solution type LIBATTSMGSUL		ENUM			17=Battery Solution type LIBATTSMGSUL
					Battery Solution type LIBSESMG13IEC		ENUM			18=Battery Solution type LIBSESMG13IEC
					Battery Solution type LIBSESMG13UL		ENUM			19=Battery Solution type LIBSESMG13UL
					Battery Solution type LIBSMG95SIEC		ENUM			20=Battery Solution type LIBSMG95SIEC
					Battery Solution type LIBSMG95SUL		ENUM			21=Battery Solution type LIBSMG95SUL
					Battery Solution type LIBSMG95SIEC1PH		ENUM			22=Battery Solution type LIBSMG95SIEC1PH
					Battery Solution type LIBSMG95SUL1PH		ENUM			23=Battery Solution type LIBSMG95SUL1PH
					Battery Solution type LIBSESMG16IEC		ENUM			24=Battery Solution type LIBSESMG16IEC
					Battery Solution type LIBSESMG16UL		ENUM			25=Battery Solution type LIBSESMG16UL
					Battery Solution type LIBSESMG17IEC		ENUM			26=Battery Solution type LIBSESMG17IEC
					Battery Solution type LIBSESMG17UL		ENUM			27=Battery Solution type LIBSESMG17UL
					Battery Solution type LIBSMG95GUL		ENUM			28=Battery Solution type LIBSMG95GUL
					Battery Solution type LIBSMG95GIEC		ENUM			29=Battery Solution type LIBSMG95GIEC
					Battery Solution type LIBSMG95EUL		ENUM			30=Battery Solution type LIBSMG95EUL
					Battery Solution type LIBSMG95EIEC		ENUM			31=Battery Solution type LIBSMG95EIEC
					Battery Solution type LIBSMG95GUL1PH		ENUM			32=Battery Solution type LIBSMG95GUL1PH
					Battery Solution type LIBSMG95GIEC1PH		ENUM			33=Battery Solution type LIBSMG95GIEC1PH
					Battery Solution type LIBSMG95EUL1PH		ENUM			34=Battery Solution type LIBSMG95EUL1PH
					Battery Solution type LIBSMG95EIEC1PH		ENUM			35=Battery Solution type LIBSMG95EIEC1PH
					Battery Solution type LIBATTSMGGUL		ENUM			36=Battery Solution type LIBATTSMGGUL
					Battery Solution type LIBATTSMGGIEC		ENUM			37=Battery Solution type LIBATTSMGGIEC
					Battery Solution type LIBCAT2W9X80		ENUM			38=Battery Solution type LIBCAT2W9X80
					Battery Solution type LIBCAT2W10X80		ENUM			39=Battery Solution type LIBCAT2W10X80
					Battery Solution type LIBCAT2W11X80		ENUM			40=Battery Solution type LIBCAT2W11X80
48213	0x2014	8212	RO		Setting for automatic test	1				
					Never autotest		ENUM			0=Never autotest
					Autotest every week		ENUM			1=Autotest every week
					Autotest every 2 week		ENUM			2=Autotest every 2 week
					Autotest every 4 week		ENUM			3=Autotest every 4 week
					Autotest every 8 week		ENUM			4=Autotest every 8 week
					Autotest every 12 week		ENUM			5=Autotest every 12 week
					Autotest every 26 week		ENUM			6=Autotest every 26 week
					Autotest every 52 week		ENUM			7=Autotest every 52 week

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								Multiply Reading By:	Divide Reading By:	
48214	0x2015	8213	RO		Time of day battery test should start. The min should be 0 the max should be 86399 (24 hours).	2	UINT32	1	1	Sec
48216	0x2017	8215	RO		Day of week battery test should start	1				
					Test on Monday		ENUM			0=Test on Monday
					Test on Tuesday		ENUM			1=Test on Tuesday
					Test on Wednesday		ENUM			2=Test on Wednesday
					Test on Thursday		ENUM			3=Test on Thursday
					Test on Friday		ENUM			4=Test on Friday
					Test on Saturday		ENUM			5=Test on Saturday
					Test on Sunday		ENUM			6=Test on Sunday
48217	0x2018	8216	RO		Switchgear system setting	1				
				0	Unit input breaker (UIB) setting		BOOLEAN			1=Present
				1	Unit output breaker (UOB) setting		BOOLEAN			1=Present
				2	Static switch input breaker (SSIB) setting		BOOLEAN			1=Present
				3	Maintenance bypass breaker (MBB) setting		BOOLEAN			1=Present
				4	Reserved		BOOLEAN			
				5	System isolation breaker (SIB) setting		BOOLEAN			1=Present
48218	0x2019	8217	RO		Slew rate of the inverter	1				
					Slew rate is 0.25 Hz/s		ENUM			0=Slew rate is 0.25 Hz/s
					Slew rate is 0.50 Hz/s		ENUM			1=Slew rate is 0.50 Hz/s
					Slew rate is 1 Hz/s		ENUM			2=Slew rate is 1 Hz/s
					Slew rate is 2 Hz/s		ENUM			3=Slew rate is 2 Hz/s
					Slew rate is 4 Hz/s		ENUM			4=Slew rate is 4 Hz/s
					Slew rate is 6 Hz/s		ENUM			5=Slew rate is 6 Hz/s
48219	0x201A	8218	RO		Setting for adjusting the output voltage to compensate for load dependant transformer voltage drop. It must be synchronized in parallel systems.	1	UINT16			%
48220	0x201B	8219	RO		Setting to configure break duration in ms. when shifting to an asynchronous bypass.	1	UINT16	1	1	ms
48221	0x201C	8220	RO		The charging capacity based on system kW rating.	1	UINT16	1	1	%
48222	0x201D	8221			RESERVED	1				
48223	0x201E	8222	RO		The parallel UPS number of the operated UPS.	1	UINT16	1	1	
48224	0x201F	8223	RO		Setting for which parallel UPSs are present in the system. Each UPS can be selected as present or not present.	1				
				0	unit 1		BOOLEAN			1=Present
				1	unit 2		BOOLEAN			1=Present
				2	unit 3		BOOLEAN			1=Present
				3	unit 4		BOOLEAN			1=Present
				4	unit 5		BOOLEAN			1=Present
				5	unit 6		BOOLEAN			1=Present
48225	0x2020	8224	RO		The selected number of redundant UPSs in the parallel system.	1				
					N+0		ENUM			0=N+0
					N+1		ENUM			1=N+1
					N+2		ENUM			2=N+2
					N+3		ENUM			3=N+3
					N+4		ENUM			4=N+4
					N+5		ENUM			5=N+5
48226	0x2021	8225	RO		The minimum number of parallel units available to start up automatically.	1	UINT16	1	1	
48227	0x2022	8226	RO		Status to indicate whether there are enough UPSs for the parallel system to enter the inverter operation mode.	1				
					State is OK		ENUM			0=State is OK
					State is not OK		ENUM			1=State is not OK
48228	0x2023	8227	RO		Current UPS power rating (kW).	1	UINT16			kW
48229	0x2024	8228	RO		Battery type of the connected batteries	1				
					Valve regulated Lead-Acid, or Maintenance-Free		ENUM			0=Valve regulated Lead-Acid, or Maintenance-Free
					Vented, Flooded, Wet or Open cell battery type		ENUM			1=Vented, Flooded, Wet or Open cell battery type
					Lithium Ion		ENUM			2=Lithium Ion
					NiCd		ENUM			3=NiCd

								Scale		Valid Response
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Peak Shaving										
97345	0xE000	57344	RO		Exchange Key for Protected Modbus writes for Software Defined Power (SDP) Peak Shaving	4	UINT16			
97361	0xE010	57360	RW		Authentication code for Protected Modbus writes for Software Defined Power (SDP) Peak Shaving	4	UINT16			
97377	0xE020	57376	RO		System status of the Software Defined Power (SDP) Protected Modbus system	1				
					Inactive		ENUM			0=Inactive
					Active		ENUM			1=Active
					Reserved		ENUM			2=Reserved
					Reserved		ENUM			3=Reserved
					Hold Maintenance		ENUM			4=Hold Maintenance
97378	0xE021	57377	RO		Setting to enable Peak Shaving function	1				
					Function Disabled		ENUM			0=Function Disabled
					Function Enabled		ENUM			1=Function Enabled
97381	0xE024	57380	RW		Activate Peak Shaving mode via Modbus	1				
					Disable		ENUM			0=Disable
					Enable		ENUM			1=Enable
97382	0xE025	57381	RW		Setting to configure the maximum allowed power to be drawn from the utility grid in Peak Shaving mode	1	UINT16	1	1	%
97383	0xE026	57382	RW		Setting for how much energy must be available in the battery (state of charge) for Peak Shaving mode to be active	1	UINT16	1	1	%
97384	0xE027	57383	RW		Setting to enable and disable battery charging when in Peak Shaving mode	1				
					Disable		ENUM			0=Disable
					Enable		ENUM			1=Enable
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