

# Conext™ Gateway

Modbus Interface Specification (502)

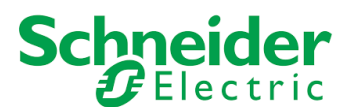
Conext™ XW Inverter/Chargers

990-91343C

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## Revision History

Rev	Date	Description of Change
A	Feb 13, 2020	v1.06 Firmware Release
B	Jun 4, 2020	v1.07 Firmware Release
C	Aug 10, 2021	v1.15 Firmware Release

## Document Applicability

This Modbus map applies to the following products:

<b>Product ID</b>	<b>Product Description</b>
865-1000	XW6048-120/240-60
865-1000-01	XW6048-120/240-60
865-1000-1	XW6048-120
865-1005	XW4548-120/240-60
865-1005-1	XW4548-120-60
865-1010	XW4024-120/240-60
865-1010-1	XW4024-120-60
865-1035	XW6048-230-50
865-1035-61	XW6048-230-50
865-1040	XW4548-230-50
865-1040-61	XW4548-230-50
865-1045	XW4024-230-50
865-1045-61	XW4024-230-50
865-4524-01	XW4524-120/240-60
865-4524-2	XW4524-120
865-5324-61	XW5324-230-50
865-5524-01	XW5524-120-60
865-5524-2	XW5524-120-60
865-5524-61	XW5524-230-50
865-5548-01	XW5548-120/240-60
865-5548-2	XW5548-120
865-5548-21	XWPRO5548-120/240-60
865-5548-22	XWPRO5548-120
865-5548-61	XWPRO5548-230-50
865-6848-01	XW6048-120/240-60
865-6848-2	XW6848-120
865-6848-21	XWPRO6848-120/240
865-6848-22	XWPRO6848-120
865-7048-01	XW7048-120/240-60
865-7048-2	XW7048-120-60
865-7048-55	XWPRO7048-230-50
865-7048-61	XW7048-230-50
865-8548-01	XW8548-120/240-60
865-8548-2	XW8548-120-60
865-8548-55	XWPRO8548-230-50
865-8548-61	XW8548-230-50

**⚠ WARNING****UNINTENDED OPERATION**

The use of this product with Modbus communications requires expertise in the design, operation, and programming of the device. Only qualified personnel should program, install, alter, and commission this product. Unless specified, information on safety, specifications, installation and operation is as shown in the primary documentation received with the product. Qualified personnel must be familiar with that information before proceeding. When writing values to the device, you must ensure other persons are not working with the device.

**Failure to follow these instructions can result in death or serious injury, and/or equipment damage.**

**⚠ WARNING****LOSS OF CONTROL**

Do not assign the same address to two Modbus devices. The entire serial bus may behave unexpectedly if the master device cannot communicate with all the slave devices on the bus.

**Failure to follow these instructions can result in death or serious injury, and/or equipment damage.**

## Overview

This document describes the structure of the Modbus register address map, which is used to configure, control, and monitor the device. Use this document in conjunction with the device Owner's Guide. The information in this document is intended for use only by qualified personnel who have a detailed technical understanding of the Modbus protocol. The Modbus map is divided into rows of Modbus registers. Each row indicates the Modbus register address, its name, data type, access type, units, scale, offset, and applicable notes as required. External Modbus master devices, such as the Schneider Electric M340 PLC, can read and write the Modbus registers to configure, control, or monitor the device remotely.

## Writing Modbus Registers

Modbus does not provide an error response when data written to a Modbus register is out of range or invalid. To confirm that a Modbus register is correctly written, you should read it back and compare it with the expected value. For descriptions of settings and their valid values, refer to the product's Owner's Guide.

## Supported Modbus Data Types

Data Type	Description
uint16	unsigned 16-bit integer [0,65535]
sint16	signed 16-bit integer [-32768,32767]
uint32	unsigned 32-bit integer [0,4294967295]
sint32	signed 32-bit integer [-2147483648,2147483647]
str<nn>	packed 8-bit character string, where <nn> is the length of characters in the string. Two characters are packed into each Modbus register. Example: str20 = 20-character string (packed into 10 Modbus registers) str16 = 16-character string (packed into 8 Modbus registers)

## Modbus Device Addressing

The Modbus slave address registers are automatically assigned on a first come, first served basis. The first detected device is assigned to the start of the address range. Subsequently added devices are assigned the next available address in the range.

Once assigned, the modbus slave address is associated to the serial number of the device, ensuring the consistency of the modbus address for the lifetime of the installation.

If Modbus slave addresses need to be changed, the Conext Gateway can be reset to its factory defaults and devices added one by one to establish the desired modbus address mapping.

ModbusTCP port	502
Modbus Slave Address Range	[ 10 .. 29 ]

## Modbus Register Addressing

The Register Number is the 1-based register identifier. Some 3rd party Modbus tools require 1-based register addressing.

The Register Address is the zero-based register address representing the register address as it is transmitted on-the-wire inside the Modbus data frame.

## Modbus Error Response

The Modbus Server will respond with a 02 ILLEGAL DATA ADDRESS error if an attempt is made to read/write registers which don't exist or if a request is made to read only part of a 32-bit register. This error will also be thrown if a read/write address range contains a data point which does not exist, or if the read/write address range starts or ends halfway through a 32-bit word.

A blank row in the Modbus Register map indicates a boundary between sets of contiguous registers. Multi-register reads/writes across these boundaries will result in a 02 ILLEGAL DATA ADDRESS error

## Modbus Cybersecurity Considerations

### WARNING

#### **CYBERSECURITY RISK: POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY**

Always secure the Local Area Network on which the Conext Gateway is connected. Modbus TCP must NEVER be routed over a public network. Use cybersecurity best practices to help prevent unauthorized access.

**Failure to follow these instructions can result in unintended access to sensitive or secure customer data, permanent loss of data, and equipment damage.**

Modbus TCP is a legacy protocol in widespread use within the Solar industry. It is appreciated by system operators due to its simplicity and ease of use in control and monitoring applications. However, Modbus TCP is an insecure protocol which does not provide any data security, encryption, or authentication.

Anyone with access to the local area network on which the Conext Gateway is connected can monitor and control the power conversion devices attached to the Conext Gateway.

Modbus TCP should only be used on trusted, private, and highly secure local area networks for local control and monitoring applications only. Failure to properly secure the Local Area Network on which the Conext Gateway is connected can allow a remote attacker to compromise your power system installation.

## 1 Register Map for Conext™ XW Inverter/Chargers

### Start Marker

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40000	Start Marker	uint32	r		1	0	

### Common Model

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40002	Common Model ID	uint16	r				
40003	Model Length	uint16	r				
40004	Manufacturer Well known value registered with SunSpec for compliance	str32	r				
40020	Model name of the device	str32					
40036	Options, Manufacturer specific value (16 chars)	str16	r				
40044	Version, Manufacturer specific value (16 chars)	str16	r				
40052	Hardware Serial Number	str32	r				
40068	Modbus Slave Address (Port 502)	uint16	rw		1.0	0.0	
40069	Force even alignment	uint16	r				

### Inverter Model

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40070	Inverter Model ID	uint16	r			0.0	
40071	Model Length	uint16	r			0.0	
40072	AC Current	uint16	r	A	0.01	0.0	
40073	Phase A Current	uint16	r	A	0.01	0.0	
40074	Phase B Current	uint16	r	A	0.01	0.0	
40075	Phase C Current	uint16	r	A	0.01	0.0	



Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40076	Inverter-charger power module AC current Scaling factor	sint16	r		1.0	0.0	
40077	Inverter-charger power module phase voltage	uint16	r	V	1.0	0.0	
40078	Inverter-charger power module phase voltage	uint16	r	V	1.0	0.0	
40079	Inverter-charger power module phase voltage	uint16	r	V	1.0	0.0	
40080	Phase Voltage AN	uint16	r	V	1.0	0.0	
40081	Phase Voltage BN	uint16	r	V	1.0	0.0	
40082	Phase Voltage CN	uint16	r	V	1.0	0.0	
40083	Inverter-charger power module phase voltage scaling factor	sint16	r		1.0	0.0	
40084	Transformer invert power +ve is inverting	sint16	r	W	1.0	0.0	
40085	Inverter-charger power module total AC power scaling factor	sint16	r		1.0	0.0	
40086	Transformer measured frequency	uint16	r	Hz	0.01	0.0	
40087	Frequency scaling factor	sint16	r		1.0	0.0	
40088	Inverter-charger power module apparent power	sint16	r	VA	1.0	0.0	
40089	Inverter-charger power module apparent power scaling factor	sint16	r		1.0	0.0	
40090	AC Reactive Power	sint16	r	var	1.0	0.0	
40091	Inverter-charger power module VAR scale factor	sint16	r		1.0	0.0	
40092	Inverter-charger power module power factor	sint16	r	Pct	1.0	0.0	

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40093	Inverter-charger power module power factor scaling factor	sint16	r		1.0	0.0	
40094	Energy at the XFMR Lifetime	uint32	r	kWh	0.001	0.0	
40096	Inverter-charger power module energy scaling factor	sint16	r		1.0	0.0	
40097	Inverter-charger power module DC current	uint16	r	A	1.0	0.0	
40098	Inverter-charger power module DC current scaling factor	sint16	r		1.0	0.0	
40099	Inverter-charger power module DC voltage	uint16	r	V	1.0	0.0	
40100	Inverter-charger power module DC voltage scaling factor	sint16	r		1.0	0.0	
40101	Inverter-charger power module DC power	sint16	r	W	1.0	0.0	
40102	Inverter-charger power module DC power scaling factor	sint16	r		1.0	0.0	
40103	Cabinet Temperature	sint16	r	degC	1.0	0.0	
40104	Heat Sink Temperature	sint16	r	degC	1.0	0.0	
40105	Inverter-charger power module Transformer Temperature	sint16	r	C	1.0	0.0	
40106	Inverter-charger power module Other Temperature	sint16	r	C	1.0	0.0	
40107	Inverter-charger power module Temperature scaling factor	sint16	r		1.0	0.0	
40108	Enumerated value. Operating state	uint16	r		1.0	0.0	

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40109	Inverter-charger power module vendor operating state	uint16	r		1.0	0.0	
40110	Bitmask value. Event fields	uint32	r		1.0	0.0	
40112	Reserved for future use	uint32	r		1.0	0.0	
40114	Vendor defined events	uint32	r		1.0	0.0	
40116	Vendor defined events	uint32	r		1.0	0.0	
40118	Vendor defined events	uint32	r		1.0	0.0	
40120	Vendor defined events	uint32	r		1.0	0.0	

### Nameplate Model

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40122	Nameplate Model ID	uint16	r		1.0	0.0	
40123	Nameplate Model Length	uint16	r		1.0	0.0	
40124	Type of DER device. Default value is 4 to indicate PV device.	uint16	r		1.0	0.0	
40125	Continuous power output capability of the inverter - Max	uint16	r	W	1.0	0.0	
40126	Scale factor	sint16	r		1.0	0.0	
40127	Continuous Volt-Ampere capability of the inverter.	uint16	r		1.0	0.0	
40128	Scale factor	sint16	r		1.0	0.0	
40129	Continuous VAR capability of the inverter in quadrant 1.	sint16	r		1.0	0.0	
40130	Continuous VAR capability of the inverter in quadrant 2.	sint16	r		1.0	0.0	
40131	Continuous VAR capability of the inverter in quadrant 3.	sint16	r		1.0	0.0	

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40132	Continuous VAR capability of the inverter in quadrant 4 - Max	sint16	r	var	1.0	0.0	
40133	Scale factor	sint16	r		1.0	0.0	
40134	Maximum RMS AC current level capability of the inverter - Max	uint16	r	A RMS	0.01	0.0	
40135	Scale factor	sint16	r		1.0	0.0	
40136	Minimum power factor capability of the inverter in quadrant 1.	sint16	r		1.0	0.0	
40137	Minimum power factor capability of the inverter in quadrant 2.	sint16	r		1.0	0.0	
40138	Minimum power factor capability of the inverter in quadrant 3.	sint16	r		1.0	0.0	
40139	Minimum power factor capability of the inverter in quadrant 4.	sint16	r		1.0	0.0	
40140	Scale factor	sint16	r		1.0	0.0	
40141	Nominal energy rating of storage device.	uint16	r		1.0	0.0	
40142	Scale factor	sint16	r		1.0	0.0	
40143	The useable capacity of the battery. Maximum charge minus minimum charge from a technology capability perspective (Amp-hour capacity rating).	uint16	r		1.0	0.0	
40144	Scale factor for amp-hour rating.	sint16	r		1.0	0.0	
40145	Maximum rate of energy transfer into the storage device - Min	sint16	r	W	1.0	0.0	
40146	Scale factor	sint16	r		1.0	0.0	

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40147	Maximum rate of energy transfer out of the storage device.	uint16	r		1.0	0.0	
40148	Scale factor	sint16	r		1.0	0.0	
40149	Pad register.	uint16	r		1.0	0.0	

### Basic Settings Model

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40150	Basic Settings Model ID	uint16	r		1.0	0.0	
40151	Basic settings Model Length	uint16	r		1.0	0.0	
40152	EPC Maximum Discharge Power	uint16	rw	W	1.0	0.0	
40153	Static Operating Reference Voltage	uint16	rw	V	0.01	0.0	
40154	Nominal Operating Voltage Offset	sint16	rw	V	0.01	0.0	
40155	Setpoint for maximum voltage.	uint16	rw		1.0	0.0	
40156	Setpoint for minimum voltage.	uint16	rw		1.0	0.0	
40157	Setpoint for maximum apparent power. Default to VARtg.	uint16	rw		1.0	0.0	
40158	Setting for maximum reactive power in quadrant 1. Default to VArRtgQ1.	sint16	rw		1.0	0.0	
40159	Setting for maximum reactive power in quadrant 2. Default to VArRtgQ2.	sint16	rw		1.0	0.0	
40160	Setting for maximum reactive power in quadrant 3. Default to VArRtgQ3.	sint16	rw		1.0	0.0	

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40161	Setting for maximum reactive power in quadrant 4. Default to VArRtgQ4.	sint16	rw		1.0	0.0	
40162	Default ramp rate of change of active power due to command or internal action.	uint16	rw		1.0	0.0	
40163	Setpoint for minimum power factor value in quadrant 1. Default to PFRtgQ1.	sint16	rw		1.0	0.0	
40164	Setpoint for minimum power factor value in quadrant 2. Default to PFRtgQ2.	sint16	rw		1.0	0.0	
40165	Setpoint for minimum power factor value in quadrant 3. Default to PFRtgQ3.	sint16	rw		1.0	0.0	
40166	Setpoint for minimum power factor value in quadrant 4. Default to PFRtgQ4.	sint16	rw		1.0	0.0	
40167	VAR action on change between charging and discharging: 1=switch 2=maintain VAR characterization.	uint16	rw		1.0	0.0	
40168	Calculation method for total apparent power. 1=vector 2=arithmetic.	uint16	rw		1.0	0.0	

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40169	Setpoint for maximum ramp rate as percentage of nominal maximum ramp rate. This setting will limit the rate that watts delivery to the grid can increase or decrease in response to intermittent PV generation.	uint16	rw		1.0	0.0	
40170	Setpoint for nominal frequency at the ECP.	uint16	rw		1.0	0.0	
40171	Identity of connected phase for single phase inverters. A=1 B=2 C=3.	uint16	rw		1.0	0.0	
40172	Scale factor for real power.	sint16	r		1.0	0.0	
40173	Scale factor for voltage at the PCC.	sint16	r		1.0	0.0	
40174	Scale factor for offset voltage.	sint16	r		1.0	0.0	
40175	Scale factor for min/max voltages.	sint16	r		1.0	0.0	
40176	Scale factor for apparent power.	sint16	r		1.0	0.0	
40177	Scale factor for reactive power.	sint16	r		1.0	0.0	
40178	Scale factor for default ramp rate.	sint16	r		1.0	0.0	
40179	Scale factor for minimum power factor.	sint16	r		1.0	0.0	
40180	Scale factor for maximum ramp percentage.	sint16	r		1.0	0.0	
40181	Scale factor for nominal frequency.	sint16	r		1.0	0.0	

**Immediate Controls Model**

<b>Modbus Address</b>	<b>Name</b>	<b>Type</b>	<b>R/W</b>	<b>Units</b>	<b>Scale</b>	<b>Offset</b>	<b>Notes</b>
40182	Immediate Controls Model ID	uint16	r		1.0	0.0	
40183	Immediate Controls Model Length	uint16	r		1.0	0.0	
40184	Time Window for connect/disconnect	uint16	rw		1.0	0.0	
40185	Timeout period for connect/disconnect	uint16	rw		1.0	0.0	
40186	External command to connect or disconnect XW	uint16	rw		1.0	0.0	
40187	Set power output to specified level.	uint16	r	%	0.01		
40188	Time window for power limit change	uint16	rw		1.0	0.0	
40189	Timeout period for power limit	uint16	rw		1.0	0.0	
40190	Ramp time for moving from current setpoint to new setpoint.	uint16	rw		1.0	0.0	
40191	Enumerated valued. Throttle enable/disable control.	uint16	r				0=Disabled 1=Enabled
40192	Power Factor	sint8	rw		0.01	0.0	
40193	Time window for power factor change	uint16	rw		1.0	0.0	
40194	Timeout period for power factor	uint16	rw		1.0	0.0	
40195	Ramp time for moving from current setpoint to new setpoint.	uint16	rw		1.0	0.0	
40196	Power Factor Target Enable/Disable	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
40197	Reactive Power in percent of Wmax	sint16	rw		1.0	0.0	
40198	Reactive Power in percent of VArMax	sint16	rw	%	0.01	0.0	



Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40199	Reactive Power in percent of VArAval	sint16	rw		1.0	0.0	
40200	Time window for VAR limit change	uint16	rw		1.0	0.0	
40201	Timeout period for VAR limit	uint16	rw		1.0	0.0	
40202	Ramp time for moving from current setpoint to new setpoint.	uint16	rw		1.0	0.0	
40203	VAR percent limit mode	uint16	rw		1.0	0.0	See section 2.1
40204	Percent limit Var enable/disable control	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
40205	Scale factor for WMaxLimPct	sint16	r		1.0	0.0	
40206	Scale factor for OutPFSet	sint16	r		1.0	0.0	
40207	Scale factor for VArPct	sint16	r		1.0	0.0	

### Storage Settings Model

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40208	Storage Settings Model ID	uint16	r		1.0	0.0	
40209	Storage settings Model Length	uint16	r		1.0	0.0	
40210	EPC Maximum Charge Power	uint16	rw	W	1.0	0.0	
40211	Reference max rate of change charge power	uint16	rw	%/s	0.1	0.0	
40212	Normal Power Ramp Rate	uint16	rw	%/s	0.1	0.0	
40213	External power control command	uint8	rw		1.0	0.0	
40214	Setpoint for maximum charging VA.	uint16	rw		1.0	0.0	
40215	Grid Support SOC	sint16	rw	%	0.01	0.0	

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40216	Currently available energy as a percent of the capacity rating.	uint16	r		1.0	0.0	
40217	State of charge (ChaState) minus storage reserve (MinRsvPct) times capacity rating (AhrRtg).	uint16	r		1.0	0.0	
40218	Internal battery voltage.	uint16	r		1.0	0.0	
40219	Charge status of storage device. Enumerated value.	uint16	r		1.0	0.0	
40220	EPC Maximum Discharge Power Percent	uint16	rw	%	0.01	0.0	
40221	EPC Maximum Charge Power Percent	uint16	rw	%	0.01	0.0	
40222	Time window for charge/discharge rate change.	uint16	rw		1.0	0.0	
40223	Timeout period for charge/discharge rate.	uint16	rw		1.0	0.0	
40224	Ramp time for moving from current setpoint to new setpoint.	uint16	rw		1.0	0.0	
40225	Storage Settings - ChaGriSet	uint16	rw		1.0	0.0	
40226	Scale factor for maximum charge.	sint16	r		1.0	0.0	
40227	Scale factor for maximum charge and discharge rate.	sint16	r		1.0	0.0	
40228	Scale factor for maximum charging VA.	sint16	r		1.0	0.0	
40229	Scale factor for minimum reserve percentage.	sint16	r		0.01	0.0	

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40230	Scale factor for available energy percent.	sint16	r		1.0	0.0	
40231	Scale factor for state of charge.	sint16	r		1.0	0.0	
40232	Scale factor for battery voltage.	sint16	r		1.0	0.0	
40233	Scale factor for percent charge/discharge rate.	sint16	r		1.0	0.0	

### Custom model map number

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40234	Custom model map number	uint16	r				
40235	Custom model map len	uint16	r				
40236	Energy at the XFMR Lifetime - charging	uint32	r	kWh	0.001	0.0	
40238	Max chage power	uint16	r	W	1.0	0.0	
40239	Max discharge power	uint16	r	W	1.0	0.0	
40240	Wmax scaling factor	uint16	r		1.0	0.0	
40241	Operating Mode	uint16	rw		1.0	0.0	2=Standby 3=Operating
40242	Battery sensor count	uint16	r		1.0	0.0	
40243	Battery sensor config mode	uint16	rw		1.0	0.0	
40244	Inverter clear fault command	uint16	rw		1.0	0.0	
40245	AC PV Charge SOC Limit	uint16	rw	%	0.01	0.0	
40246	High SOC Cut Out	sint16	rw	%	0.01	0.0	
40247	Recharge SOC	sint16	rw	%	0.01	0.0	
40248	Low SOC Cut Out	sint16	rw	%	0.01	0.0	
40249	SOC scaling factor	uint16	r		1.0	0.0	

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40250	Fail-over action on loss of SunSpec Controller heartbeat	uint8	rw		1.0	0.0	0=Heartbeat Disabled 1=Do Nothing 2=Autonomous Operation 3=AC Passthrough
40251	Battery Association	uint16	rw		1.0	0.0	See section 2.2
40252	Inverter Status	uint16	r		1.0	0.0	See section 2.3
40253	Charger Status	uint16	r		1.0	0.0	See section 2.4
40254	Reset	uint16	rw		1.0	0.0	0=Reboot 2=Reset User Settings to Factory 5=Reset All Settings to Factory
40255	AC2 Voltage	uint32	r	V	0.001	0.0	
40257	AC2 L1 Voltage	uint32	r	V	0.001	0.0	
40259	AC2 L2 Voltage	uint32	r	V	0.001	0.0	
40261	Backup Mode	uint16	rw		1.0	0.0	0=Disabled 1=Enabled

### End Marker

Modbus Address	Name	Type	R/W	Units	Scale	Offset	Notes
40262	End Marker	uint16	r		1	0	
40263	End Marker 0	uint16	r		1	0	

## 2 Data Point Enumerations

### 2.1 VAR percent limit mode

0=None  
1=Wmax  
2=VArMax  
3=VArAval

## 2.2 DC Input/Output Association

The following associations are supported:

3=House Battery Bank 1  
4=House Battery Bank 2  
5=House Battery Bank 3  
6=House Battery Bank 4  
7=House Battery Bank 5

## 2.3 Inverter Status

The Conext XW Inverter may operate in one of the following modes:

1024=Invert  
1025=AC Pass Through  
1026=APS Only  
1027=Load Sense  
1028=Inverter Disabled  
1029=Load Sense Ready  
1030=Engaging Inverter  
1031=Invert Fault  
1032=Inverter Standby  
1033=Grid-Tied  
1034=Grid Support  
1035=Gen Support  
1036=Sell-to-Grid  
1037=Load Shaving  
1038=Grid Frequency Stabilization  
1039=AC Coupling  
1040=Reverse Ibatt

## 2.4 Charger Status

The Conext XW Charger may operate in one of the following modes:

768=Not Charging  
769=Bulk  
770=Absorption  
771=Overcharge  
772=Equalize  
773=Float  
774=No Float  
775=Constant VI  
776=Charger Disabled  
777=Qualifying AC  
778=Qualifying APS  
779=Engaging Charger  
780=Charge Fault  
781=Charger Suspend  
782=AC Good  
783=APS Good  
784=AC Fault  
785=Charge  
786=Absorption Exit Pending  
787=Ground Fault  
788=AC Good Pending