Modbus Map: Freedom Sequence

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Revision A.4

⚠ WARNING
UNINTENDED OPERATION
The use of this product with Modbus communications requires expertise in the design, operation, and programming of the device. Only qualified persons should program, install, alter, and commission this product.
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 Freedom Sequence. The information in this document is intended for use only by qualified persons 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.

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Document Applicability

The Freedom Sequence Device Modbus map applies to the following products, as listed in Table 1.

Table 1 Applicable Products

Product ID	Product Description
809-0913	Freedom Sequence

Supported Modbus Data Types

Table 2 lists the supported data types.

Table 2 Modbus Data Types

Data Type	Description
uint16	unsigned 16-bit integer [0,65535]
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)

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 user manual.

Section 1: Freedom Sequence Device Modbus Map

Table 3 Configuration and Status Registers

Modbus Address	Name	Type	read/write (r/w)	Units	Scale	Offset	Notes
0x0000	Device Name	str16	rw				
0x000A	FGA Number	str20	r				
0x0014	Unique ID Number	str20	r				
0x001E	Firmware Version	str20	r				
0x0028	Modbus Address	uint16	rw		1.0	0.0	
0x0029	Device Number	uint16	rw		1.0	0.0	
0x002A	System Instance	uint16	rw		1.0	0.0	

Table 3 Configuration and Status Registers

Modbus Address	Name	Type	read/write (r/w)	Units	Scale	Offset	Notes
0x002B	Hardware Serial Number	str20	r				
0x0035	Configuration Status	uint16	r		1.0	0.0	0=Refreshing 1=Done
0x0036	Configuration Refresh Counter	uint32	r		1.0	0.0	
0x0040	Device State	uint16	r		1.0	0.0	See section 2
0x0041	Device Present	uint16	r		1.0	0.0	0=Inactive (all data invalid) 1=Active (data valid)
0x0046	Shore Breaker Rating	uint16	rw	A	0.01	0.0	
0x0047	Shore Breaker Rating - Minimum	uint16	rw	A	0.01	0.0	
0x0048	Shore Breaker Rating - Maximum	uint16	rw	A	0.01	0.0	
0x0049	Generator Breaker Rating	uint16	rw	A	0.01	0.0	
0x004A	Generator Breaker Rating - Minimum	uint16	rw	A	0.01	0.0	
0x004B	Generator Breaker Rating - Maximum	uint16	rw	A	0.01	0.0	
0x0050	Refresh Configuration Data	uint16	rw		1.0	0.0	1=Refresh

Section 2: Operating State

Device State can report one of the following values:

- 0=Hibernate
- 1=Power Save
- 2=Safe Mode
- 3=Operating
- 4=Diagnostic Mode
- 5=Remote Power Off
- 255=Data Not Available

Exclusion for Documentation

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Contact Information solar.schneider-electric.com

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