GE

Entellisys™ Low Voltage Switchgear

Integrator's Guide

DEH-232

Warnings, Cautions, and Notes as used in this publication

Warnings

WARNING! Warning notices are used in this publication to emphasize that hazardous voltages, currents, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

Warning notices are also used for situations in which inattention or lack of equipment knowledge could cause either personal injury or damage to equipment.

Cautions

CAUTION: Caution notices are used for situations in which equipment might be damaged if care is not taken.

Notes

NOTE: Notes call attention to information that is especially significant to understanding and operating the equipment.

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1 Integrator's Guide

1.1 Modbus® protocol implementation

1.1.1 Introduction

The CPU supports a number of communications protocols to allow connection to the HMI computer, as well as other equipment which includes personal computers, RTUs, SCADA masters, and programmable logic controllers. The Modicon Modbus® RTU protocol is the most basic protocol supported. Modbus is available via ethernet as specified by the Modbus/TCP specification. Note that:

- The CPU always acts as a slave device, meaning that it never initiates communications; it only listens and responds to requests issued by a master computer.
- For Modbus, a subset of the Remote Terminal Unit (RTU) protocol format is supported that allows extensive monitoring, programming, and control functions using read and write register commands.
- The CPU will support a maximum of 8 concurrent Modbus sessions. Four sessions are reserved for use by HMI computers. A remote device that attempts to connect when all sessions are in use will receive a response message indicating the number of maximum connections has been exceeded. If a remote device does not make a request within 30 seconds, the session will be timed out and made available to the next device that establishes a session.

1.1.2 Physical layer

The Modbus RTU protocol is hardware-independent so that the physical layer can be any of a variety of standard hardware configurations. The CPU includes a faceplate (front panel) 100BaseT Ethernet port. Data flow is auto-configuring full or half-duplex. Each data byte is transmitted in an asynchronous format consisting of 1 start bit, 8 data bits, 1 stop bit, and possibly 1 parity bit. This produces a 10 or 11 bit data frame. The master device in any system must know the address of the slave device with which it is to communicate. In the case of ModbusTCP communications, the CPU will not act on a request from a master if the address in the request does not match the CPU's slave address. A single setting selects the slave address used for ModbusTCP. The default slave address for a CPU is 1.

1.1.3 Data link layer

Communications takes place in packets, which are groups of asynchronously framed byte data. The master transmits a packet to the slave and the slave responds with a packet. The end of a packet is marked by 'dead-time' on the communications line. The following describes general format for both transmit and receive packets. For exact details on packet formatting, see the subsequent sections describing each function code.

MODBUS PACKET FORMAT

DESCRIPTION	SIZE
SLAVE ADDRESS	1 byte
FUNCTION CODE	1 byte
DATA	N bytes
CRC	2 bytes
DEAD TIME	3.5 bytes transmission time

SLAVE ADDRESS

This is the address of the slave device that is intended to receive the packet sent by the master and perform the desired action. Only the addressed slave will respond to a packet that starts with its address. Note that since Modbus/TCP also relies on a correct IP address to receive the packet, and each CPU responds as a single device, it is generally not necessary to change the Modbus address of the device.

FUNCTION CODE

This is one of the supported function codes of the unit which tells the slave what action to perform. See Supported function codes on page 10 for complete details. An exception response from the slave is indicated by setting the high order bit of the function code in the response packet. See Exception responses on page 15 for further details.

DATA

This will be a variable number of bytes depending on the function code. This may include actual values, settings, or addresses sent by the master to the slave or by the slave to the master.

CRC

This is a two byte error checking code. The RTU version of Modbus includes a 16-bit cyclic redundancy check (CRC-16) with every packet which is an industry standard method used for error detection. If a Modbus slave device receives a packet in which an error is indicated by the CRC, the slave device will not act upon or respond to the packet thus preventing any erroneous operations. See CRC-16 Algorithm on page 9 for a description of how to calculate the CRC.

1.1.4 CRC-16 Algorithm

The CRC-16 algorithm essentially treats the entire data stream (data bits only; start, stop and parity ignored) as one continuous binary number. This number is first shifted left 16 bits and then divided by a characteristic polynomial (11000000000000101B). The 16-bit remainder of the division is appended to the end of the packet, most significant byte first. The resulting packet including CRC, when divided by the same polynomial at the receiver, will give a zero remainder if no transmission errors have occurred. This algorithm requires the characteristic polynomial to be reverse bit ordered. The most significant bit of the characteristic polynomial is dropped, since it does not affect the value of the remainder.

CRC-16 ALGORITHM

SYMBOLS	-->	data transfer
	A	16-bit working register
	Alow	low order byte of A
	Ahigh	high order byte of A
	CRC	16-bit CRC-16 result
	i,j	loop counters
	(+)	logical EXCLUSIVE-OR operator
	N	total number of data bytes
	Di	i-th data byte (i = 0 to N-1)
	G	16-bit characteristic polynomial = 1010000000000001 (binary) with MSbit dropped and bit order reversed
	shr (x)	right shift operator (th LSbit of x is shifted into a carry flag, a '0' is shifted into the MSbit of x, all other bits are shifted right one location)

ALGORITHM:

1. FFFF (hex) --> A
2. 0 --> i
3. 0 --> j
4. Di (+) Alow --> Alow
5. j + 1 --> j
6. shr (A)
7. Is there a carry? No: go to 8 Yes: G (+) A --> A and continue.
8. Is j = 8? No: go to 5 Yes: continue
9. i + 1 --> i
10. Is i = N? No: go to 3 Yes: continue
11. A --> CRC

1.1.5 Supported function codes

Modbus officially defines function codes from 1 to 127 though only a small subset is generally needed. The CPU supports some of these functions, as summarized in the following table. Subsequent sections describe each function code in detail.

1.1.5.1 Function Code 03H/04H – Read Actual Values or Settings

This function code allows the master to read one or more consecutive data registers (actual values or settings) from a relay. Data registers are always 16 bit (two byte) values transmitted with high order byte first. The maximum number of registers that can be read in a single packet is 125. See the MODBUS MEMORY MAP table on page 17 for exact details on the data registers. Since some PLC implementations of Modbus only support one of function codes 03h and 04h, the CPU interpretation allows either function code to be used for reading one or more consecutive data registers. The data starting address will determine the type of data being read. Function codes 03h and 04h are therefore identical. The following table shows the format of the master and slave packets. The example shows a master device requesting 3 register values starting at address 4050h from slave device 11h (17 decimal); the slave device responds with the values 40, 300, and 0 from registers 4050h, 4051h, and 4052h, respectively.

FUNCTION CODE		MODBUS DEFINITION	CPU DEFINITION
HEX	DEC		
03	3	Read Holding Registers	Read Actual Values or Settings
04	4	Read Holding Registers	Read Actual Values or Settings
05	5	Force Single Coil	Execute Operation
06	6	Preset Single Register	Store Single Setting
10	16	Preset Multiple Registers	Store Multiple Settings

Master and Slave Device Packet Transmission Example

MASTER TRANSMISSION	
PACKET FORMAT	EXAMPLE (HEX)
SLAVE ADDRESS	11
FUNCTION CODE	04
DATA STARTING ADDR - hi	40
DATA STARTING ADDR - lo	50
NUMBER OF REGISTERS - hi	00
NUMBER OF REGISTERS - lo	03
CRC - lo A7 DATA #2 - lo	A7
CRC - hi 4A DATA #3 - hi	4A

SLAVE RESPONSE	
PACKET FORMAT	**EXAMPLE (HEX)**
SLAVE ADDRESS	11
FUNCTION CODE	04
BYTE COUNT	06
DATA #1 - hi	00
DATA #1 - lo	28
DATA #2 - hi	01
DATA #2 - lo	2C
DATA #3 - hi	00
DATA #3 - lo	00
CRC - lo	0D
CRC - hi	60

1.1.5.2 Function Code 05H – Execute Operation

This function code allows the master to perform various operations in the CPU.

The following table shows the format of the master and slave packets. The example shows a master device requesting the slave device 11H (17 dec) to perform a reset. The hi and lo CODE VALUE bytes always have the values 'FF' and '00' respectively and are a remnant of the original Modbus definition of this function code.

Master and Slave Device Packet Transmission Example

MASTER TRANSMISSION	
PACKET FORMAT	**EXAMPLE (HEX)**
SLAVE ADDRESS	11
FUNCTION CODE	05
OPERATION CODE - hi	00
OPERATION CODE - lo	01
CODE VALUE - hi	FF
CODE VALUE - lo	00
CRC - lo	DF
CRC - hi	6A

SLAVE RESPONSE	
PACKET FORMAT	**EXAMPLE (HEX)**
SLAVE ADDRESS	11
FUNCTION CODE	05
OPERATION CODE - hi	00
OPERATION CODE - lo	01
CODE VALUE - hi	FF
CODE VALUE - lo	00
CRC - lo	DF
CRC - hi	6A

1.1.5.3 Function Code 06H – Store Single Setting

This function code allows the master to modify the contents of a single setting register in a CPU. Setting registers are always 16-bit (two byte) values transmitted high-order byte first. The following table shows the format of the master and slave packets. The example shows a master device storing the value 200 at memory map address 4051h to slave device 11h (17 dec).

Master and Slave Device Packet Transmission Example

MASTER TRANSMISSION	
PACKET FORMAT	**EXAMPLE (HEX)**
SLAVE ADDRESS	11
FUNCTION CODE	06
DATA STARTING ADDR - hi	40
DATA STARTING ADDR - lo	51
DATA - hi	00
DATA - lo	C8
CRC - lo	CE
CRC - hi	DD

SLAVE RESPONSE	
PACKET FORMAT	**EXAMPLE (HEX)**
SLAVE ADDRESS	11
FUNCTION CODE	06
DATA STARTING ADDR - hi	40
DATA STARTING ADDR - lo	51
DATA - hi	00
DATA - lo	C8
CRC - lo	CE
CRC - hi	DD

1.1.5.4 Function Code 10H – Store Multiple Settings

This function code allows the master to modify the contents of a one or more consecutive setting registers in a CPU. Setting registers are 16-bit (two byte) values transmitted high-order byte first. The maximum number of setting registers that can be stored in a single packet is 60. The following table shows the format of the master and slave packets. The example shows a master device storing the value 200 at memory map address 4051h, and the value 1 at memory map address 4052h to slave device 11h (17 dec).

Master and Slave Device Packet Transmission Example

MASTER TRANSMISSION	
PACKET FORMAT	**EXAMPLE (HEX)**
SLAVE ADDRESS	11
FUNCTION CODE	10
DATA STARTING ADDR-hi	40
DATA STARTING ADDR-lo	51
NUMBER OF SETTINGS-hi	00
NUMBER OF SETTINGS-lo	02
BYTE COUNT	04
DATA #1 - hi	00
DATA #1 - lo	C8
DATA #2 - hi	00
DATA #2 - lo	01
CRC – lo	12
CRC – hi	62

SLAVE RESPONSE	
PACKET FORMAT	**EXAMPLE (HEX)**
SLAVE ADDRESS	11
FUNCTION CODE	10
DATA STARTING ADDR - hi	40
DATA STARTING ADDR - lo	51
NUMBER OF SETTINGS - hi	00
NUMBER OF SETTINGS - lo	02
CRC - lo	07
CRC - hi	64

1.1.5.5 Exception responses

Programming or operation errors usually happen because of illegal data in a packet. These errors result in an exception response from the slave. The slave detecting one of these errors sends a response packet to the master with the high order bit of the function code set to 1. The following table shows the format of the master and slave packets. The example shows a master device sending the unsupported function code 39h to slave device 11.

Master and Slave Device Packet Transmission Example

MASTER TRANSMISSION	
PACKET FORMAT	**EXAMPLE (HEX)**
SLAVE ADDRESS	11
FUNCTION CODE	39
CRC - low order byte	CD
CRC - high order byte	F2

SLAVE RESPONSE	
PACKET FORMAT	**EXAMPLE (HEX)**
SLAVE ADDRESS	11
FUNCTION CODE	B9
ERROR CODE	01
CRC - low order byte	93
CRC - high order byte	95

1.1.6 File transfers

1.1.6.1 Obtaining CPU files using Modbus protocol

The CPU has a generic file transfer facility, meaning that you use the same method to obtain all of the different types of files from the unit. The Modbus registers that implement file transfer are found in the "Modbus File Transfer (Read/Write)" and "Modbus File Transfer (Read Only)" modules, starting at address 030Eh in the Modbus Memory Map. To read a file from the CPU, use the following steps:

1. Write the filename to the "Name of file to read" register using a write multiple registers command. If the name is shorter than 80 characters, you may write only enough registers to include all the text of the filename. Filenames are not case sensitive.
2. Repeatedly read all the registers in "Modbus File Transfer (Read Only)" using a read multiple registers command. It is not necessary to read the entire data block, since the CPU will remember which was the last register read. The "position" register is initially zero and thereafter indicates how many bytes (2 times the number of registers) you have read so far. The "size of..." register indicates the number of bytes of data remaining to read, to a maximum of 244.
3. Keep reading until the "size of..." register is smaller than the number of bytes you are transferring. This condition indicates end of file. Discard any bytes you have read beyond the indicated block size.
4. If you need to re-try a block, read only the "size of..." and "block of data", without reading the position. The file pointer is only incremented when you read the position register, so the same data block will be returned as was read in the previous operation. On the next read, check to see if the position is where you expect it to be, and discard the previous block if it is not (this condition would indicate that the CPU did not process your original read request). The CPU retains connection-specific file transfer information, so files may be read simultaneously on multiple Modbus connections.

   a. Obtaining files from the CPU using other protocols

   All the files available via Modbus may also be retrieved using the standard file transfer mechanisms in other protocols (for example, TFTP).

   b. Reading event recorder files

   To read the entire event recorder contents in ASCII format (the only available format), use the following filename:

   - EVT.TXT

   c. Reading fault report files

   The file name for fault report data is **faultReport#####.txt**. The ##### refers to the fault report record number. This number is identical to the event record number associated with the fault report. A request for a non-existent fault report file will yield file with no data below the header.

   d. Reading waveform capture files

   Waveform records comply with COMTRADE 1999 format (IEEE Std C37.111-1999). The file names as required by the standard for waveform capture data are **wfc#####.dat** and **wfc#####.cfg**. The ##### refers to the waveform record number. Note that this number is not the same as the event number cited in the case of the fault report above. If an event has a waveform capture associated with it, the waveform number will be shown in the WF Number field as indicated in the header of the event log.

1.1.6.2 Modbus password operation

The COMMAND password is set up at memory location 0458h. Storing a value of "0" removes COMMAND password protection. When reading the password setting, the encrypted value (zero if no password is set) is returned. COMMAND security is required to change the COMMAND password.

Similarly, the SETTING password is set up at memory location 045Ah. To gain COMMAND level security access, the COMMAND password must be entered at memory location 045Ch. To gain SETTING level security access, the SETTING password must be entered at memory location 045Eh. The entered SETTING password must match the current SETTING password setting, or must be zero, to change settings or download firmware.

COMMAND and SETTING passwords each have a 30-minute timer. Each timer starts when you enter the particular password, and is restarted whenever you "use" it. For example, writing a setting restarts the SETTING password timer and writing a command register or forcing a coil restarts the COMMAND password timer. The value read at memory location 0460h can be used to confirm whether a COMMAND password is enabled or disabled (0 for Disabled). The value read at memory location 0461h can be used to confirm whether a SETTING password is enabled or disabled.

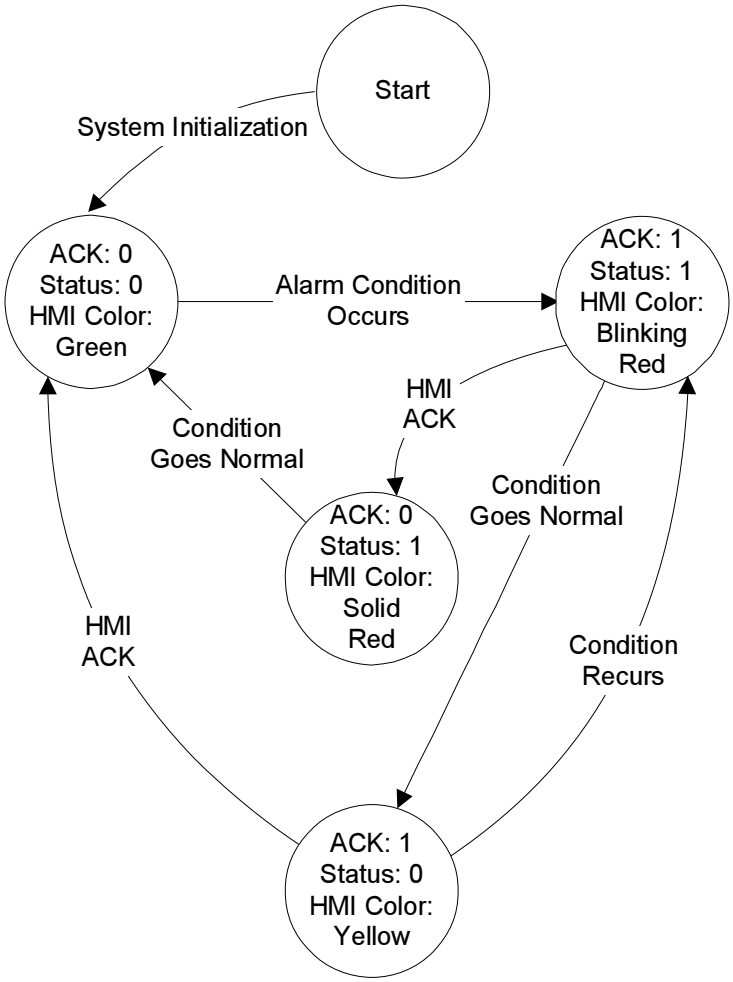
COMMAND or SETTING password security access is restricted to the particular port or particular TCP/IP connection on which the entry was made. Passwords must be entered when accessing the relay through other ports or connections, and the passwords must be reentered after disconnecting and reconnecting on TCP/IP.

1.2 Interfacing to the Alarm Handler

The set of registers beginning at 0648h provides the means to interface to each CPU's Alarm Handler functionality. Each pair of 32-bit values represent the current state (read only) and the acknowledge setting (read/write) for each alarm type. Each value represents the states for all of the circuit breakers in the system as denoted in Format Code F722, one bit for each. A 1 in the bit field position for a given circuit breaker in the state register indicates that the alarm condition is currently active, while a 0 indicates the condition is not currently active.

When a condition passes from inactive to active, the corresponding ACK bit in the next register will be set to 1. At this point an external program may acknowledge the alarm by writing a 0 to that bit location. It is important for the external program to first read the ACK register and mask the new value such that the states represented by the other bits remain intact. The following state table describes how the HMI interfaces with the CPU to update its indicators.

Figure 1-1 Alarm state transition diagram



Alarm State Transition Diagram

Modbus Memory Map

NOTE: A multiplier factor may be necessary in cases where an integer value is returned but the Range and/or Step imply a greater precision. In these cases, it is necessary to divide the returned value by 10 for a step of "0.1" or "0.5"; by 100 for a step of ".01"; and so on. Similarly, it is necessary to multiply by these factors prior to writing a settings value. This note does **not** apply to any step value greater than 1 (a step of "10" does not require a multiplier, for example). This note also does not apply to values returned in floating point format. See the format codes at the end of the map for more information.

NOTE: Discrete I/O output state registers (Contact Output x State – register range from x9180 to x91FF and Contact Output States – register range from xB256 to 0xB25D) contain correct information only when FlexLogic Active register (x0034) contains value 1 (yes).

Addr	Register Name	Range	Units	Step	Format	Factory Default
Product Information (Read Only)						
0000	Product Type	0 to 2	---	1	F716	0 (Low Voltage Switchgear)
0001	Serial Number	---	---	---	F203	"0"
0009	External Ethernet MAC Address	---	---	---	F072	0
000C	Reserved (3 items)	---	---	---	F001	0
000F	CPU Hardware Version	0 to 655.35	---	0.01	F001	100
0010	CPU Firmware Version	0 to 655.35	---	0.01	F001	100
0011	CPU Firmware Boot Code Version	0 to 655.35	---	0.01	F001	100
0012	Build Date	---	---	---	F200	"0"
0026	Synchronizer Board Status	0 to 1	---	1	F102	0 (Disabled)
0027	Synchronizer Board Frequency Setting	50 to 60	Hz	10	F001	60
0028	Last Energy Clear Date	0 to 4294967295	---	1	F050	0
002A	Last CPU Commissioned Date	0 to 4294967295	---	1	F050	0
002C	Expected Node Protocol Version	0 to 655.35	---	0.01	F001	0
002D	Summary Number	---	---	---	F205	"0"
0033	Line Up	0 to 99	---	1	F001	1
0034	FlexLogic Active	0 to 1	---	1	F126	0 (No)
0035	Reserved (203 items)	---	---	---	F001	0
Installation (Read/Write Setting)						
0100	CPU ID	0 to 1	---	1	F717	0 (CPU A)
0101	CPU Commissioned	0 to 1	---	1	F102	0 (Disabled)
0102	CPU Name	---	---	---	F200	"UNNAMED"
0116	System Frequency	50 to 60	Hz	10	F001	60
0117	Phase Rotation	0 to 1	---	1	F106	0 (ABC)
0118	Reserved (232 items)	---	---	---	F001	0
Clock (Read/Write Command)						
0200	RTC Set Time	0 to 4294967295	---	1	F050	0
	Clock (Read Only)					
0202	Date Time Changed	0 to 4294967295	---	1	F050	0
0204	Reserved (8 items)	---	---	---	F001	0

Communications (Read/Write Setting)						
0210	External Ethernet IP Address	0 to 4294967295	---	1	F003	3232235876
0212	External Ethernet IP Subnet Mask	0 to 4294963200	---	1	F003	4294967040
0214	External Ethernet Gateway IP Address	0 to 4294967295	---	1	F003	0
0216	Reserved (205 items)	1 to 254	---	1	F001	1
Event Recorder (Read Only)						
0308	Events Since Last Clear	0 to 4294967295	---	1	F003	0
030A	Number of Available Events	0 to 4294967295	---	1	F003	0
030C	Event Recorder Last Cleared Date	0 to 4294967295	---	1	F050	0
Modbus File Transfer (Read/Write)						
030E	Name of file to read	---	---	---	F204	(none)
	Modbus File Transfer (Read Only)					
0336	Character position of current block within file	0 to 4294967295	---	1	F003	0
0338	Size of currently-available data block	0 to 65535	---	1	F001	0
0339	Block of data from requested file (122 items)	0 to 65535	---	1	F001	0
	Modbus File Transfer Area 2 (Read/Write)					
03B3	Name of file to read	---	---	---	F204	(none)
	Modbus File Transfer Area 2 (Read Only)					
03DB	Character position of current block within file	0 to 4294967295	---	1	F003	0
03DD	Size of currently-available data block	0 to 65535	---	1	F001	0
03DE	Block of data from requested file (122 items)	0 to 65535	---	1	F001	0
	Passwords (Read/Write)					
045C	Command Password Entry	0 to 4294967295	---	1	F003	0
045E	Setting Password Entry	0 to 4294967295	---	1	F003	0
	Passwords (Read Only)					
0460	Command Password Status	0 to 1	---	1	F102	0 (Disabled)
0461	Setting Password Status	0 to 1	---	1	F102	0 (Disabled)
Zone Manager (Read Only)						
04E4	Current Topology State	0 to 255	---	1	F001	0
	Zone Manager (Read/Write Setting)					
04E5	Maintenance Mode Setting	0 to 1	---	1	F102	0 (Disabled)
	Zone Manager (Read Only)					
04E6	Current Zone1 Topology	0 to 255	---	1	F001	1
04E7	Current Zone2 Topology	0 to 255	---	1	F001	1
04E8	Current Zone3 Topology	0 to 255	---	1	F001	1
04E9	Current Zone4 Topology	0 to 255	---	1	F001	1
04EA	Zone Manager Reserved (22 items)	0 to 65535	---	1	F001	1
Event Recorder Commands (Read/Write Command)						
0500	Event Recorder Clear Command	0 to 1	---	1	F126	0 (No)
Energy Commands (Read/Write Command)						
0501	Energy Clear Command	0 to 1	---	1	F126	0 (No)
Demand (Read/Write Setting)						
0504	Demand Subinterval Length	1 to 60	---	1	F001	1
0505	Demand Subintervals Per Interval	1 to 15	---	1	F001	1

	Demand (Read/Write Command)					
0506	Demand Reset All Command	0 to 1	---	1	F126	0 (No)
	Demand (Read Only)					
0507	Number Of Demand Resets All	0 to 4294963200	---	1	F003	0
0509	Last Demand Reset All DateTime	0 to 4294967295	---	1	F050	0
	Demand (Read/Write Command)					
050B	Demand Log Clear All Command	0 to 1	---	1	F126	0 (No)
	Demand (Read Only)					
050C	Demand Log Last Cleared All Date	0 to 4294967295	---	1	F050	0
050E	Demand Reserved (10 items)	0 to 65535	---	1	F001	0
Waveform Capture (Read Only)						
0518	Number WF Records Available	0 to 65535	---	1	F001	0
	Waveform Capture (Read/Write Command)					
0519	Waveform Clear Command	0 to 1	---	1	F126	0 (No)
	Waveform Capture (Read Only)					
051A	Waveform Last Clear Date	0 to 4294967295	---	1	F050	0
	Waveform Capture (Read/Write Command)					
051C	Waveform Trigger Command	0 to 1	---	1	F126	0 (No)
	Waveform Capture (Read/Write Setting)					
051D	Waveform Trigger Mode	0 to 1	---	1	F118	0 (Automatic Overwrite)
051E	Waveform Trigger Position	0 to 119	Half Cycles	1	F001	60
	Waveform Capture (Read Only)					
051F	Waveforms Since Last Clear	0 to 4294967295	---	1	F003	0
0523	Reserved (8 items)	0 to 65535	---	1	F001	0
Preventive Maintenance (Read/Write Setting)						
052B	Load Life Rating 800A	0 to 65535	---	1	F001	2800
052C	Load Life Rating 1600A	0 to 65535	---	1	F001	1200
052D	Load Life Rating 2000A	0 to 65535	---	1	F001	1000
052E	Load Life Rating 3200A	0 to 65535	---	1	F001	600
052F	Load Life Rating 4000A	0 to 65535	---	1	F001	500
0530	Load Life Rating 5000A	0 to 65535	---	1	F001	400
0531	Mechanical_Life_Rating_800A	0 to 65535	---	1	F001	12500
0532	Mechanical_Life_Rating_1600A	0 to 65535	---	1	F001	4000
0533	Mechanical_Life_Rating_2000A	0 to 65535	---	1	F001	4000
0534	Mechanical_Life_Rating_3200A	0 to 65535	---	1	F001	1500
0535	Mechanical_Life_Rating_4000A	0 to 65535	---	1	F001	1500
0536	Mechanical_Life_Rating_5000A	0 to 65535	---	1	F001	1500
0537	Load Life Max Current 800A	1 to 50	---	1	F001	15
0538	Load Life Max Current 1600A	1 to 50	---	1	F001	15
0539	Load Life Max Current 2000A	1 to 50	---	1	F001	15
053A	Load Life Max Current 3200A	1 to 50	---	1	F001	13
053B	Load Life Max Current 4000A	1 to 50	---	1	F001	9
053C	Load Life Max Current 5000A	1 to 50	---	1	F001	7

Hardware Information (Read Only)						
053D	Flash Lifetime	1 to 10	---	1	F001	1
Source Vectors (Read/Write Setting)						
0600	Expected Nodes x State	0 to 4294967295	---	1	F722	0
0602	Source Node Identifier LED x State	0 to 4294967295	---	1	F722	0
0604	Node Setting Changed x State	0 to 4294967295	---	1	F722	0
	Source Vectors (Read Only)					
0630	Nodes Communicating x State	0 to 4294967295	---	1	F722	0
0632	Nodes Commissioned x State	0 to 4294967295	---	1	F722	0
0634	Duplicate Nodes x State	0 to 4294967295	---	1	F722	0
0636	Node Internal Diagnostics x State	0 to 4294967295	---	1	F722	0
0638	Node System Diagnostics x State	0 to 4294967295	---	1	F722	0
063A	Node Hardware Diagnostics x State	0 to 4294967295	---	1	F722	0
063C	Node Reflected CPU Diagnostics x State	0 to 4294967295	---	1	F722	0
063E	Breaker Contact Position x State	0 to 4294967295	---	1	F722	0
0640	Breaker Primary Connection x State	0 to 4294967295	---	1	F722	0
0642	Breaker Lockout x State	0 to 4294967295	---	1	F722	0
0644	Summations Suspended x State	0 to 4294967295	---	1	F722	0
0646	Breaker Tripped x State	0 to 4294967295	---	1	F722	0
0648	Undervoltage Trip Alarm State	0 to 4294967295	---	1	F722	0
	Source Vectors (All Ack Vectors are Read/Write Setting; All State Vectors are Read Only)					
064A	Undervoltage Trip Alarm Ack	0 to 4294967295	---	1	F722	0
064C	Undervoltage Alarm State	0 to 4294967295	---	1	F722	0
064E	Undervoltage Alarm Ack	0 to 4294967295	---	1	F722	0
0650	Overvoltage Trip Alarm State	0 to 4294967295	---	1	F722	0
0652	Overvoltage Trip Alarm Ack	0 to 4294967295	---	1	F722	0
0654	Overvoltage Alarm State	0 to 4294967295	---	1	F722	0
0656	Overvoltage Alarm Ack	0 to 4294967295	---	1	F722	0
0658	Phase Loss Trip Alarm State	0 to 4294967295	---	1	F722	0
065A	Phase Loss Trip Alarm Ack	0 to 4294967295	---	1	F722	0
065C	Phase Loss Alarm State	0 to 4294967295	---	1	F722	0
065E	Phase Loss Alarm Ack	0 to 4294967295	---	1	F722	0
0660	Reverse Power Trip Alarm State	0 to 4294967295	---	1	F722	0
0662	Reverse Power Trip Alarm Ack	0 to 4294967295	---	1	F722	0
0664	Reverse Power Alarm State	0 to 4294967295	---	1	F722	0
0666	Reverse Power Alarm Ack	0 to 4294967295	---	1	F722	0
0668	High Current Alarm State	0 to 4294967295	---	1	F722	0
066A	High Current Alarm Ack	0 to 4294967295	---	1	F722	0
066C	Underfrequency Trip Alarm State	0 to 4294967295	---	1	F722	0
066E	Underfrequency Trip Alarm Ack	0 to 4294967295	---	1	F722	0
0670	Underfrequency Alarm State	0 to 4294967295	---	1	F722	0
0672	Underfrequency Alarm Ack	0 to 4294967295	---	1	F722	0
0674	Overfrequency Trip Alarm State	0 to 4294967295	---	1	F722	0
0676	Overfrequency Trip Alarm Ack	0 to 4294967295	---	1	F722	0

0678	Overfrequency Alarm State	0 to 4294967295	---	1	F722	0
067A	Overfrequency Alarm Ack	0 to 4294967295	---	1	F722	0
067C	High Resistance Ground Fault Alarm State	0 to 4294967295	---	1	F722	0
067E	High Resistance Ground Fault Alarm Ack	0 to 4294967295	---	1	F722	0
0680	Breaker Open Failed Alarm State	0 to 4294967295	---	1	F722	0
0682	Breaker Open Failed Alarm Ack	0 to 4294967295	---	1	F722	0
0684	Long Time Overcurrent Trip Alarm State	0 to 4294967295	---	1	F722	0
0686	Long Time Overcurrent Trip Alarm Ack	0 to 4294967295	---	1	F722	0
0688	Short Time Overcurrent Trip Alarm State	0 to 4294967295	---	1	F722	0
068A	Short Time Overcurrent Trip Alarm Ack	0 to 4294967295	---	1	F722	0
068C	Ground Fault Trip Alarm State	0 to 4294967295	---	1	F722	0
068E	Ground Fault Trip Alarm Ack	0 to 4294967295	---	1	F722	0
0690	Ground Fault Alarm State	0 to 4294967295	---	1	F722	0
0692	Ground Fault Alarm Ack	0 to 4294967295	---	1	F722	0
0694	Analog IOC Trip Alarm State	0 to 4294967295	---	1	F722	0
0696	Analog IOC Trip Alarm Ack	0 to 4294967295	---	1	F722	0
0698	IOC Trip Alarm State	0 to 4294967295	---	1	F722	0
069A	IOC Trip Alarm Ack	0 to 4294967295	---	1	F722	0
069C	Node Control Power Lost State	0 to 4294967295	---	1	F722	0
069E	Node Control Power Lost Ack	0 to 4294967295	---	1	F722	0
06A0	Node Communication Lost State	0 to 4294967295	---	1	F722	0
06A2	Node Communication Lost Ack	0 to 4294967295	---	1	F722	0
06A4	Breaker Load Life 50 State	0 to 4294967295	---	1	F722	0
06A6	Breaker Load Life 50 Ack	0 to 4294967295	---	1	F722	0
06A8	Breaker Load Life 75 State	0 to 4294967295	---	1	F722	0
06AA	Breaker Load Life 75 Ack	0 to 4294967295	---	1	F722	0
06AC	Breaker Load Life 90 State	0 to 4294967295	---	1	F722	0
06AE	Breaker Load Life 90 Ack	0 to 4294967295	---	1	F722	0
06B0	Breaker Accum Service Alarm State	0 to 4294967295	---	1	F722	0
06B2	Breaker Accum Service Alarm Ack	0 to 4294967295	---	1	F722	0
06B4	Breaker Mechanical Life 12 5 State	0 to 4294967295	---	1	F722	0
06B6	Breaker Mechanical Life 12 5 Ack	0 to 4294967295	---	1	F722	0
06B8	Breaker Mechanical Life 25 State	0 to 4294967295	---	1	F722	0
06BA	Breaker Mechanical Life 25 Ack	0 to 4294967295	---	1	F722	0
06BC	Breaker Mechanical Life 37 5 State	0 to 4294967295	---	1	F722	0
06BE	Breaker Mechanical Life 37 5 Ack	0 to 4294967295	---	1	F722	0
06C0	Breaker Mechanical Life 50 State	0 to 4294967295	---	1	F722	0
06C2	Breaker Mechanical Life 50 Ack	0 to 4294967295	---	1	F722	0
06C4	Breaker Mechanical Life 62 5 State	0 to 4294967295	---	1	F722	0
06C6	Breaker Mechanical Life 62 5 Ack	0 to 4294967295	---	1	F722	0
06C8	Breaker Mechanical Life 75 State	0 to 4294967295	---	1	F722	0
06CA	Breaker Mechanical Life 75 Ack	0 to 4294967295	---	1	F722	0
06CC	Breaker Mechanical Life 87 5 State	0 to 4294967295	---	1	F722	0
06CE	Breaker Mechanical Life 87 5 Ack	0 to 4294967295	---	1	F722	0
06D0	Breaker Mechanical Life 100 State	0 to 4294967295	---	1	F722	0

06D2	Breaker Mechanical Life 100 Ack	0 to 4294967295	---	1	F722	0
06D4	Bus Differential Trip Alarm State	0 to 4294967295	---	1	F722	0
06D6	Bus Differential Trip Alarm Ack	0 to 4294967295	---	1	F722	0
06D8	Bus Differential Alarm State	0 to 4294967295	---	1	F722	0
06DA	Bus Differential Alarm Ack	0 to 4294967295	---	1	F722	0
06DC	Multi Source Ground Fault Trip Alarm State	0 to 4294967295	---	1	F722	0
06DE	Multi Source Ground Fault Trip Alarm Ack	0 to 4294967295	---	1	F722	0
06E0	Multi Source Ground Fault Alarm State	0 to 4294967295	---	1	F722	0
06E2	Multi Source Ground Fault Alarm Ack	0 to 4294967295	---	1	F722	0
06E4	Hardware Synch Card Lost State	0 to 4294967295	---	1	F722	0
06E6	Hardware Synch Card Lost Ack	0 to 4294967295	---	1	F722	0
06E8	Reserved	0 to 4294967295	---	1	F722	0
06EA	Compartment ID Button Missing Alarm State	0 to 4294967295	---	1	F722	0
06EC	Reserved	0 to 4294967295	---	1	F722	0
06EE	Compartment ID Button Missing Alarm Ack	0 to 4294967295	---	1	F722	0
06F0	Control Alarm State	0 to 4294967295	---	1	F722	0
06F2	Control Alarm Ack	0 to 4294967295	---	1	F722	0
06F4	Redundant CPU Node Comm Loss State	0 to 4294967295	---	1	F722	0
06F6	Redundant CPU Node Comm Loss Ack	0 to 4294967295	---	1	F722	0
06F8	Redundant CPU Hardware Synch Loss State	0 to 4294967295	---	1	F722	0
06FA	Redundant CPU Hardware Synch Loss Ack	0 to 4294967295	---	1	F722	0
06FC	Discrete IO Misconfigured State	0 to 4294967295	---	1	F722	0
06FE	Discrete IO Misconfigured Ack	0 to 4294967295	---	1	F722	0
Voltage (Read Only) (30 modules)						
1000	Phase AG Voltage RMS	0 to 999999.999	V	0.001	F060	0
1002	Phase BG Voltage RMS	0 to 999999.999	V	0.001	F060	0
1004	Phase CG Voltage RMS	0 to 999999.999	V	0.001	F060	0
1006	Phase AB or AC Voltage RMS	0 to 999999.999	V	0.001	F060	0
1008	Phase BC or BA Voltage RMS	0 to 999999.999	V	0.001	F060	0
100A	Phase CA or CB Voltage RMS	0 to 999999.999	V	0.001	F060	0
100C	Reserved (50 items)	---	---	---	F001	0
103E	...Repeated for module number 2					
107C	...Repeated for module number 3					
10BA	...Repeated for module number 4					
10F8	...Repeated for module number 5					
1136	...Repeated for module number 6					
1174	...Repeated for module number 7					
11B2	...Repeated for module number 8					
11F0	...Repeated for module number 9					
122E	...Repeated for module number 10					
126C	...Repeated for module number 11					
12AA	...Repeated for module number 12					
12E8	...Repeated for module number 13					
1326	...Repeated for module number 14					

1364	...Repeated for module number 15					
13A2	...Repeated for module number 16					
13E0	...Repeated for module number 17					
141E	...Repeated for module number 18					
145C	...Repeated for module number 19					
149A	...Repeated for module number 20					
14D8	...Repeated for module number 21					
1516	...Repeated for module number 22					
1554	...Repeated for module number 23					
1592	...Repeated for module number 24					
15D0	...Repeated for module number 25					
160E	...Repeated for module number 26					
164C	...Repeated for module number 27					
168A	...Repeated for module number 28					
16C8	...Repeated for module number 29					
1706	...Repeated for module number 30					
Current (Read Only) (30 modules)						
1800	Phase A Current RMS	0 to 999999.999	A	0.001	F060	0
1802	Phase B Current RMS	0 to 999999.999	A	0.001	F060	0
1804	Phase C Current RMS	0 to 999999.999	A	0.001	F060	0
1806	Neutral Current RMS	0 to 999999.999	A	0.001	F060	0
1808	Ground Current RMS	0 to 999999.999	A	0.001	F060	0
180A	Reserved (28 items)	---	---	---	F001	0
1826	...Repeated for module number 2					
184C	...Repeated for module number 3					
1872	...Repeated for module number 4					
1898	...Repeated for module number 5					
18BE	...Repeated for module number 6					
18E4	...Repeated for module number 7					
190A	...Repeated for module number 8					
1930	...Repeated for module number 9					
1956	...Repeated for module number 10					
197C	...Repeated for module number 11					
19A2	...Repeated for module number 12					
19C8	...Repeated for module number 13					
19EE	...Repeated for module number 14					
1A14	...Repeated for module number 15					
1A3A	...Repeated for module number 16					
1A60	...Repeated for module number 17					
1A86	...Repeated for module number 18					
1AAC	...Repeated for module number 19					
1AD2	...Repeated for module number 20					
1AF8	...Repeated for module number 21					

1B1E	...Repeated for module number 22					
1B44	...Repeated for module number 23					
1B6A	...Repeated for module number 24					
1B90	...Repeated for module number 25					
1BB6	...Repeated for module number 26					
1BDC	...Repeated for module number 27					
1C02	...Repeated for module number 28					
1C28	...Repeated for module number 29					
1C4E	...Repeated for module number 30					
Power (Read Only) (30 modules)						
1D00	Three Phase Real Power	-1000000000000 to 1000000000000	W	0.001	F060	0
1D02	Phase A Real Power	-1000000000000 to 1000000000000	W	0.001	F060	0
1D04	Phase B Real Power	-1000000000000 to 1000000000000	W	0.001	F060	0
1D06	Phase C Real Power	-1000000000000 to 1000000000000	W	0.001	F060	0
1D08	Three Phase Reactive Power	-1000000000000 to 1000000000000	var	0.001	F060	0
1D0A	Phase A Reactive Power	-1000000000000 to 1000000000000	var	0.001	F060	0
1D0C	Phase B Reactive Power	-1000000000000 to 1000000000000	var	0.001	F060	0
1D0E	Phase C Reactive Power	-1000000000000 to 1000000000000	var	0.001	F060	0
1D10	Three Phase Apparent Power	-1000000000000 to 1000000000000	VA	0.001	F060	0
1D12	Phase A Apparent Power	-1000000000000 to 1000000000000	VA	0.001	F060	0
1D14	Phase B Apparent Power	-1000000000000 to 1000000000000	VA	0.001	F060	0
1D16	Phase C Apparent Power	-1000000000000 to 1000000000000	VA	0.001	F060	0
1D18	Three Phase Power Factor	-0.999 to 1	---	0.001	F013	0
1D19	Phase A Power Factor	-0.999 to 1	---	0.001	F013	0
1D1A	Phase B Power Factor	-0.999 to 1	---	0.001	F013	0
1D1B	Phase C Power Factor	-0.999 to 1	---	0.001	F013	0
1D1C	Reserved (4 items)	---	---	---	F001	0
1D20	...Repeated for module number 2					
1D40	...Repeated for module number 3					
1D60	...Repeated for module number 4					
1D80	...Repeated for module number 5					
1DA0	...Repeated for module number 6					
1DC0	...Repeated for module number 7					
1DE0	...Repeated for module number 8					
1E00	...Repeated for module number 9					
1E20	...Repeated for module number 10					
1E40	...Repeated for module number 11					
1E60	...Repeated for module number 12					
1E80	...Repeated for module number 13					
1EA0	...Repeated for module number 14					

1EC0	...Repeated for module number 15					
1EE0	...Repeated for module number 16					
1F00	...Repeated for module number 17					
1F20	...Repeated for module number 18					
1F40	...Repeated for module number 19					
1F60	...Repeated for module number 20					
1F80	...Repeated for module number 21					
1FA0	...Repeated for module number 22					
1FC0	...Repeated for module number 23					
1FE0	...Repeated for module number 24					
2000	...Repeated for module number 25					
2020	...Repeated for module number 26					
2040	...Repeated for module number 27					
2060	...Repeated for module number 28					
2080	...Repeated for module number 29					
20A0	...Repeated for module number 30					
Energy (Read Only Non-Volatile) (30 modules)						
2100	Positive Watthour	0 to 1000000000000	Wh	0.001	F060	0
2102	Phase A Positive Watthour	0 to 1000000000000	Wh	0.001	F060	0
2104	Phase B Positive Watthour	0 to 1000000000000	Wh	0.001	F060	0
2106	Phase C Positive Watthour	0 to 1000000000000	Wh	0.001	F060	0
2108	Negative Watthour	0 to 1000000000000	Wh	0.001	F060	0
210A	Phase A Negative Watthour	0 to 1000000000000	Wh	0.001	F060	0
210C	Phase B Negative Watthour	0 to 1000000000000	Wh	0.001	F060	0
210E	Phase C Negative Watthour	0 to 1000000000000	Wh	0.001	F060	0
2110	Positive Varhour	0 to 1000000000000	varh	0.001	F060	0
2112	Phase A Positive Varhour	0 to 1000000000000	varh	0.001	F060	0
2114	Phase B Positive Varhour	0 to 1000000000000	varh	0.001	F060	0
2116	Phase C Positive Varhour	0 to 1000000000000	varh	0.001	F060	0
2118	Negative Varhour	0 to 1000000000000	varh	0.001	F060	0
211A	Phase A Negative Varhour	0 to 1000000000000	varh	0.001	F060	0
211C	Phase B Negative Varhour	0 to 1000000000000	varh	0.001	F060	0
211E	Phase C Negative Varhour	0 to 1000000000000	varh	0.001	F060	0
2120	Vahour	0 to 1000000000000	vah	0.001	F060	0
2122	Phase A Vahour	0 to 1000000000000	vah	0.001	F060	0
2124	Phase B Vahour	0 to 1000000000000	vah	0.001	F060	0
2126	Phase C Vahour	0 to 1000000000000	vah	0.001	F060	0
2128	Reserved (8 items)	---	---	---	F001	0

2130	...Repeated for module number 2					
2160	...Repeated for module number 3					
2190	...Repeated for module number 4					
21C0	...Repeated for module number 5					
21F0	...Repeated for module number 6					
2220	...Repeated for module number 7					
2250	...Repeated for module number 8					
2280	...Repeated for module number 9					
22B0	...Repeated for module number 10					
22E0	...Repeated for module number 11					
2310	...Repeated for module number 12					
2340	...Repeated for module number 13					
2370	...Repeated for module number 14					
23A0	...Repeated for module number 15					
23D0	...Repeated for module number 16					
2400	...Repeated for module number 17					
2430	...Repeated for module number 18					
2460	...Repeated for module number 19					
2490	...Repeated for module number 20					
24C0	...Repeated for module number 21					
24F0	...Repeated for module number 22					
2520	...Repeated for module number 23					
2550	...Repeated for module number 24					
2580	...Repeated for module number 25					
25B0	...Repeated for module number 26					
25E0	...Repeated for module number 27					
2610	...Repeated for module number 28					
2640	...Repeated for module number 29					
2670	...Repeated for module number 30					
Source Harmonic Analysis (Read Only) (30 modules)						
26A0	SRC x Phase A Voltage THD	0 to 1	---	0.001	F001	0
26A1	SRC x Phase B Voltage THD	0 to 1	---	0.001	F001	0
26A2	SRC x Phase C Voltage THD	0 to 1	---	0.001	F001	0
26A3	SRC x Phase A Current THD	0 to 1	---	0.001	F001	0
26A4	SRC x Phase B Current THD	0 to 1	---	0.001	F001	0
26A5	SRC x Phase C Current THD	0 to 1	---	0.001	F001	0
26A6	SRC x Phase N Current THD	0 to 1	---	0.001	F001	0
26A7	SRC x Phase A K Factor	0 to 6553.5	---	0.1	F001	10
26A8	SRC x Phase B K Factor	0 to 6553.5	---	0.1	F001	10
26A9	SRC x Phase C K Factor	0 to 6553.5	---	0.1	F001	10
26AA	SRC x Phase N K Factor	0 to 6553.5	---	0.1	F001	10
26AB	SRC x Harmonic Analysis Reserved (5 items)	---	---	---	F001	0
26B0	...Repeated for module number 2					

26C0	...Repeated for module number 3					
26D0	...Repeated for module number 4					
26E0	...Repeated for module number 5					
26F0	...Repeated for module number 6					
2700	...Repeated for module number 7					
2710	...Repeated for module number 8					
2720	...Repeated for module number 9					
2730	...Repeated for module number 10					
2740	...Repeated for module number 11					
2750	...Repeated for module number 12					
2760	...Repeated for module number 13					
2770	...Repeated for module number 14					
2780	...Repeated for module number 15					
2790	...Repeated for module number 16					
27A0	...Repeated for module number 17					
27B0	...Repeated for module number 18					
27C0	...Repeated for module number 19					
27D0	...Repeated for module number 20					
27E0	...Repeated for module number 21					
27F0	...Repeated for module number 22					
2800	...Repeated for module number 23					
2810	...Repeated for module number 24					
2820	...Repeated for module number 25					
2830	...Repeated for module number 26					
2840	...Repeated for module number 27					
2850	...Repeated for module number 28					
2860	...Repeated for module number 29					
2870	...Repeated for module number 30					
Source Demand Peaks (Read Only Non-Volatile) (30 modules)						
2880	SRC x Maximum kW	-1000000000000 to 1000000000000	W	0.001	F060	0
2882	SRC x Maximum kW DateTime	0 to 4294967295	---	1	F050	0
2884	SRC x Maximum kvar	-1000000000000 to 1000000000000	var	0.001	F060	0
2886	SRC x Maximum kvar DateTime	0 to 4294967295	---	1	F050	0
2888	SRC x Maximum kVA	-1000000000000 to 1000000000000	VA	0.001	F060	0
288A	SRC x Maximum kVA DateTime	0 to 4294967295	---	1	F050	0
288C	SRC x Source Demand Reserved (5 items)	---	---	---	F001	0
2891	...Repeated for module number 2					
28A2	...Repeated for module number 3					
28B3	...Repeated for module number 4					
28C4	...Repeated for module number 5					
28D5	...Repeated for module number 6					
28E6	...Repeated for module number 7					

28F7	...Repeated for module number 8					
2908	...Repeated for module number 9					
2919	...Repeated for module number 10					
292A	...Repeated for module number 11					
293B	...Repeated for module number 12					
294C	...Repeated for module number 13					
295D	...Repeated for module number 14					
296E	...Repeated for module number 15					
297F	...Repeated for module number 16					
2990	...Repeated for module number 17					
29A1	...Repeated for module number 18					
29B2	...Repeated for module number 19					
29C3	...Repeated for module number 20					
29D4	...Repeated for module number 21					
29E5	...Repeated for module number 22					
29F6	...Repeated for module number 23					
2A07	...Repeated for module number 24					
2A18	...Repeated for module number 25					
2A29	...Repeated for module number 26					
2A3A	...Repeated for module number 27					
2A4B	...Repeated for module number 28					
2A5C	...Repeated for module number 29					
2A6D	...Repeated for module number 30					
Power Peaks (Read Only Non-Volatile) (30 modules)						
2A80	SRC x Three Phase Power Factor Min	-0.999 to 1	---	0.001	F013	0
2A81	SRC x Three Phase Power Factor Min Date	0 to 4294967295	---	1	F050	0
2A83	SRC x Phase A Power Factor Min	-0.999 to 1	---	0.001	F013	0
2A84	SRC x Phase A Power Factor Min Date	0 to 4294967295	---	1	F050	0
2A86	SRC x Phase B Power Factor Min	-0.999 to 1	---	0.001	F013	0
2A87	SRC x Phase B Power Factor Min Date	0 to 4294967295	---	1	F050	0
2A89	SRC x Phase C Power Factor Min	-0.999 to 1	---	0.001	F013	0
2A8A	SRC x Phase C Power Factor Min Date	0 to 4294967295	---	1	F050	0
2A8C	SRC x Three Phase Power Factor Max	-0.999 to 1	---	0.001	F013	0
2A8D	SRC x Three Phase Power Factor Max Date	0 to 4294967295	---	1	F050	0
2A8F	SRC x Phase A Power Factor Max	-0.999 to 1	---	0.001	F013	0
2A90	SRC x Phase A Power Factor Max Date	0 to 4294967295	---	1	F050	0
2A92	SRC x Phase B Power Factor Max	-0.999 to 1	---	0.001	F013	0
2A93	SRC x Phase B Power Factor Max Date	0 to 4294967295	---	1	F050	0
2A95	SRC x Phase C Power Factor Max	-0.999 to 1	---	0.001	F013	0
2A96	SRC x Phase C Power Factor Max Date	0 to 4294967295	---	1	F050	0
2A98	SRC x Last Clear Energy Date	0 to 4294967295	---	1	F050	0
2A9A	SRC x Last Commissioned Date	0 to 4294967295	---	1	F050	0
2A9C	SRC x Power Peak Reserved (50 items)	---	---	---	F001	0

2ACE	...Repeated for module number 2					
2B1C	...Repeated for module number 3					
2B6A	...Repeated for module number 4					
2BB8	...Repeated for module number 5					
2C06	...Repeated for module number 6					
2C54	...Repeated for module number 7					
2CA2	...Repeated for module number 8					
2CF0	...Repeated for module number 9					
2D3E	...Repeated for module number 10					
2D8C	...Repeated for module number 11					
2DDA	...Repeated for module number 12					
2E28	...Repeated for module number 13					
2E76	...Repeated for module number 14					
2EC4	...Repeated for module number 15					
2F12	...Repeated for module number 16					
2F60	...Repeated for module number 17					
2FAE	...Repeated for module number 18					
2FFC	...Repeated for module number 19					
304A	...Repeated for module number 20					
3098	...Repeated for module number 21					
30E6	...Repeated for module number 22					
3134	...Repeated for module number 23					
3182	...Repeated for module number 24					
31D0	...Repeated for module number 25					
321E	...Repeated for module number 26					
326C	...Repeated for module number 27					
32BA	...Repeated for module number 28					
3308	...Repeated for module number 29					
3356	...Repeated for module number 30					
Source Demand (Read Only) (30 modules)						
35AC	SRC x Previous Internal kW	-1000000000000 to 1000000000000	W	0.001	F060	0
35AE	SRC x Previous Interval kvar	-1000000000000 to 1000000000000	var	0.001	F060	0
35B0	SRC x Previous Interval kVA	-1000000000000 to 1000000000000	VA	0.001	F060	0
	Source Demand (Read Only Non-Volatile) (30 modules)					
35B2	SRC x Last Reset DateTime	0 to 4294967295	---	1	F050	0
35B4	SRC x Number Of Demand Resets	0 to 4294967295	---	1	F003	0
	Source Demand (Read/Write Command) (30 modules)					
35B6	SRC x Demand Reset	0 to 1	---	1	F126	0 (No)
35B7	SRC x Demand Log Clear Command	0 to 1	---	1	F126	0 (No)
	Source Demand (Read Only Non-Volatile) (30 modules)					
35B8	SRC x Demand Log Last Cleared Date	0 to 4294967295	---	1	F050	0

	Source Demand (Read Only) (30 modules)					
35BA	SRC x Demand Log Records Since Last Clear	0 to 4294967295	---	1	F003	0
35BC	SRC x Demand Log Interval Records Available	0 to 4294967295	---	1	F003	0
35BE	SRCx Source Demand Reserved (10 items)	0 to 4294967295	---	1	F001	0
35C8	...Repeated for module number 2					
35E4	...Repeated for module number 3					
3600	...Repeated for module number 4					
361C	...Repeated for module number 5					
3638	...Repeated for module number 6					
3654	...Repeated for module number 7					
3670	...Repeated for module number 8					
368C	...Repeated for module number 9					
36A8	...Repeated for module number 10					
36C4	...Repeated for module number 11					
36E0	...Repeated for module number 12					
36FC	...Repeated for module number 13					
3718	...Repeated for module number 14					
3734	...Repeated for module number 15					
3750	...Repeated for module number 16					
376C	...Repeated for module number 17					
3788	...Repeated for module number 18					
37A4	...Repeated for module number 19					
37C0	...Repeated for module number 20					
37DC	...Repeated for module number 21					
37F8	...Repeated for module number 22					
3814	...Repeated for module number 23					
3830	...Repeated for module number 24					
384C	...Repeated for module number 25					
3868	...Repeated for module number 26					
3884	...Repeated for module number 27					
38A0	...Repeated for module number 28					
38BC	...Repeated for module number 29					
38D8	...Repeated for module number 30					
	Source Status (Read Only) (30 modules)					
5000	SRC x Node ID	0 to 29	---	1	F001	0
5001	Reserved (3 items)	---	---	---	F001	0
5004	SRC x Frame Rating	0 to 65535	---	1	F001	0
5005	SRC x CT Rating	0 to 65535	---	1	F001	0
5006	SRC x Breaker Type	0 to 1	---	1	F715	0 (UL)
5007	SRC x NodeProt Protection Config	0 to 65535	---	1	F705	0
5008	SRC x Node Firmware Version	0 to 655.35	---	0.01	F001	0
5009	SRC x Hardware Version	0 to 255	---	1	F001	0
500A	SRC x Message Protocol Version	0 to 655.35	---	0.01	F001	0

500B	SRC x Product Type	0 to 2	---	1	F716	0 (Low Voltage Switchgear)
500C	SRC x NodeProt Rating Switch	0 to 65535	---	1	F001	0
500D	SRC x NodeProt LT Setting	0 to 655.35	---	0.01	F001	0
500E	SRC x NodeProt IOC Threshold Setting	0 to 655.35	---	0.01	F001	0
500F	SRC x NodeProt Ground Fault Setting	0 to 1	---	1	F102	0 (Disabled)
5010	SRC x NodeProt Short Time Setting	0 to 1	---	1	F102	0 (Disabled)
5011	SRC x Node Internal Diagnostics	0 to 65535	---	1	F701	0
5012	SRC x Node System Diagnostics 1	0 to 65535	---	1	F702	0
5013	SRC x Node System Diagnostics 2	0 to 65535	---	1	F703	0
5014	SRC x Node Hardware Diagnostics	0 to 65535	---	1	F704	0
5015	SRC x Node Physical Status	0 to 65535	---	1	F708	0
5016	SRC x Node Logic and Trip Status	0 to 65535	---	1	F709	0
5017	SRC x Node Last Trip Sequence Number	0 to 4294967295	---	1	F003	0
5019	SRC x Reflected CPU Diagnostics	0 to 65535	---	1	F706	0
501A	SRC x Reflected CPU 0 Command	0 to 65535	---	1	F707	0
501B	SRC x Reflected CPU 1 Command	0 to 65535	---	1	F707	0
501C	SRC x Fan Status	0 to 1	---	1	F108	0 (Off)
501D	SRC x CT Rating Node Report	0 to 65535	---	1	F001	0
501E	SRC x Node Serial Number	---	---	---	F205	(none)
5024	SRC x Node Status Reserved (43 items)	0 to 1	---	1	F001	0
504F	...Repeated for module number 2					
509E	...Repeated for module number 3					
50ED	...Repeated for module number 4					
513C	...Repeated for module number 5					
518B	...Repeated for module number 6					
51DA	...Repeated for module number 7					
5229	...Repeated for module number 8					
5278	...Repeated for module number 9					
52C7	...Repeated for module number 10					
5316	...Repeated for module number 11					
5365	...Repeated for module number 12					
53B4	...Repeated for module number 13					
5403	...Repeated for module number 14					
5452	...Repeated for module number 15					
54A1	...Repeated for module number 16					
54F0	...Repeated for module number 17					
553F	...Repeated for module number 18					
558E	...Repeated for module number 19					
55DD	...Repeated for module number 20					
562C	...Repeated for module number 21					
567B	...Repeated for module number 22					
56CA	...Repeated for module number 23					
5719	...Repeated for module number 24					

5768	...Repeated for module number 25					
57B7	...Repeated for module number 26					
5806	...Repeated for module number 27					
5855	...Repeated for module number 28					
58A4	...Repeated for module number 29					
58F3	...Repeated for module number 30					
Source Settings (Read/Write Setting) (30 modules)						
5C8A	SRC x Node Commissioned	0 to 1	---	1	F102	0 (Disabled)
	Source Settings (Read Only) (30 modules)					
5C8B	SRC x PT Source Node Identifier	0 to 29	---	1	F001	0
	Source Settings (Read/Write Setting) (30 modules)					
5C8C	SRC x Breaker Connection	0 to 1	---	1	F712	0 (Forward)
5C8D	SRC x IOC Enabled	0 to 1	---	1	F718	1 (Enabled)
5C8E	SRC x IOC Pickup Setting Multiplier	1.5 to 15	---	0.5	F001	60
5C8F	SRC x Ground Fault Protection Switch	0 to 1	---	1	F102	0 (Disabled)
5C90	SRC x Short Time Protection Switch	0 to 1	---	1	F102	1 (Enabled)
5C91	SRC x Short Time Pickup Setting	1.5 to 9	---	0.5	F001	50
5C92	SRC x Short Time I2T Curve	0 to 1	---	1	F102	0 (Disabled)
5C93	SRC x Short Time Delay Band Setting	0 to 6	---	1	F713	2 (BAND 3)
5C94	SRC x Long Time Delay Band Setting	0 to 3	---	1	F711	1 (BAND 2)
5C95	SRC x Ground Fault Protection Alarm Select	0 to 1	---	1	F714	0 (Trip)
5C96	SRC x Ground Fault Protection I2T Curve	0 to 1	---	1	F102	1 (Enabled)
5C97	SRC x Ground Fault Protection Pickup Setting	0.2 to 0.6	---	0.01	F001	24
5C98	SRC x Ground Fault Protection Delay Band Setting	0 to 6	---	1	F713	2 (BAND 3)
5C99	SRC x PT Rating	0 to 6	---	1	F719	0 (None)
5C9A	SRC x UV Trip Enable	0 to 1	---	1	F102	0 (Disabled)
5C9B	SRC x UV Trip Curve Type	0 to 1	---	1	F726	1 (Constant time curve)
5C9C	SRC x UV Trip Pickup Setting	50 to 95	---	1	F001	50
5C9D	SRC x UV Trip Time Delay	0.5 to 600	---	0.5	F001	300
5C9E	SRC x UV Trip Phase Requirement	1 to 3	---	1	F001	1
5C9F	SRC x UV Block Voltage Enable	0 to 1	---	1	F102	0 (Disabled)
5CA0	SRC x UV Trip Block Volt Setting	5 to 75	---	1	F001	5
5CA1	SRC x UV Trip Open or Trip Setting	0 to 1	---	1	F727	1 (Trip and activate lockout)
5CA2	SRC x UV Alarm Enable	0 to 1	---	1	F102	0 (Disabled)
5CA3	SRC x UV Alarm Curve Type	0 to 1	---	1	F726	1 (Constant time curve)
5CA4	SRC x UV Alarm Pickup Setting	50 to 95	---	1	F001	50
5CA5	SRC x UV Alarm Time Delay	0.5 to 600	---	0.5	F001	150
5CA6	SRC x UV Alarm Phase Requirement	1 to 3	---	1	F001	1
5CA7	SRC x UV Alarm Block Volt Enable	0 to 1	---	1	F102	0 (Disabled)
5CA8	SRC x UV Alarm Block Volt Setting	5 to 75	---	1	F001	5
5CA9	Reserved1 (5 items)	0 to 65535	---	1	F001	0
5CAE	SRC x OV Trip Enable	0 to 1	---	1	F102	0 (Disabled)
5CAF	SRC x OV Trip Pickup Setting	105 to 125	---	1	F001	120

5CB0	SRC x OV Trip Time Delay	0.5 to 600	---	0.5	F001	300
5CB1	SRC x OV Trip Phase Requirement	1 to 3	---	1	F001	1
5CB2	SRC x OV Trip Open or Trip Setting	0 to 1	---	1	F727	1 (Trip and activate lockout)
5CB3	SRC x OV Alarm Enable	0 to 1	---	1	F102	0 (Disabled)
5CB4	SRC x OV Alarm Pickup Threshold	105 to 125	---	1	F001	120
5CB5	SRC x OV Alarm Time Delay	0.5 to 600	---	0.5	F001	150
5CB6	SRC x OV Alarm Phase Requirement	1 to 3	---	1	F001	1
5CB9	Reserved2 (7 items)	0 to 65535	---	1	F001	0
5CBE	SRC x PL Trip Enable	0 to 1	---	1	F102	0 (Disabled)
5CBF	SRC x PL Trip Pickup Setting	8 to 50	---	1	F001	8
5CC0	SRC x PL Trip Time Delay	0.5 to 600	---	0.5	F001	300
5CC1	SRC x PL Trip Block Volt Enable	0 to 1	---	1	F102	0 (Disabled)
5CC2	SRC x PL Open or Trip Setting	0 to 1	---	1	F727	1 (Trip and activate lockout)
5CC3	SRC x PL Alarm Enable	0 to 1	---	1	F102	0 (Disabled)
5CC4	SRC x PL Alarm Pickup Setting	8 to 50	---	1	F001	8
5CC5	SRC x PL Alarm Time Delay	0.5 to 600	---	0.5	F001	150
5CC6	SRC x PL Alarm Block Volt Enable	0 to 1	---	1	F102	0 (Disabled)
	Source Settings (Read Only) (30 modules)					
5CC7	SRC x PL Trip Voltage Setting	5 to 5	---	1	F001	5
5CC8	SRC x PL Alarm Blocking Voltage Setting	5 to 5	---	1	F001	5
	Source Settings (Read/Write Setting) (30 modules)					
5CC9	Reserved3 (3 items)	0 to 65535	---	1	F001	0
5CCC	SRC x Rev Power Trip Enable	0 to 1	---	1	F102	0 (Disabled)
5CCD	SRC x Rev Power Trip Pickup Setting	10 to 990	---	10	F001	990
5CCE	SRC x Rev Power Trip Time Delay	0.5 to 600	---	0.5	F001	300
5CCF	SRC x Rev Power Alarm Enable	0 to 1	---	1	F102	0 (Disabled)
5CD0	SRC x Rev Power Alarm Pickup Setting	10 to 990	---	10	F001	990
5CD1	SRC x Rev Power Alarm Time Delay	0.5 to 600	---	0.5	F001	150
5CD2	SRC x Rev Power Trip or Open	0 to 1	---	1	F727	1 (Trip and activate lockout)
5CD3	Reserved4 (4 items)	0 to 65535	---	1	F001	0
5CD7	SRC x High Curr Alarm Enable	0 to 1	---	1	F102	0 (Disabled)
5CD8	SRC x High Curr Alarm Pickup Setting	50 to 200	---	5	F001	200
5CD9	SRC x High Curr Alarm Time Delay	1 to 15	---	1	F001	15
5CDA	Reserved5 (5 items)	0 to 65535	---	1	F001	0
5CDF	SRC x Total Breaker Operations	0 to 65535	---	1	F001	0
5CE0	SRC x Total Breaker No Load Operations	0 to 65535	---	1	F001	0
5CE1	SRC x Total Breaker Load Operations	0 to 65535	---	1	F001	0
5CE2	SRC x Total Breaker Fault Operations	0 to 65535	---	1	F001	0
5CE3	SRC x Breaker Percent Load Life	0 to 655.35	---	0.01	F001	0
	Source Settings (Read Only) (30 modules)					
5CE4	SRC x Percent Mechanical Life	0 to 655.35	---	0.01	F001	0
	Source Settings (Read/Write Setting) (30 modules)					
5CE5	SRC x Time Date Last Breaker Operation	0 to 4294967295	---	1	F050	0

5CE7	SRC x Time Date Initial Energization	0 to 4294967295	---	1	F050	0
	Source Settings (Read Only) (30 modules)					
5CE9	SRC_X_Breaker_Service_Hours	0 to 4294967295	---	1	F003	0
	Source Settings (Read/Write Setting) (30 modules)					
5CEB	Reserved6 (5 items)	0 to 65535	---	1	F001	0
5CF0	SRC x UF Trip Enable	0 to 1	---	1	F102	0 (Disabled)
5CF1	SRC x UF Trip Pickup Setting	45 to 60	---	0.1	F001	450
5CF2	SRC x UF Trip Time Delay	0.1 to 600	---	0.1	F001	300
5CF3	SRC x UF Trip Blocking Voltage Enable	0 to 1	---	1	F102	0 (Disabled)
5CF4	SRC x UF Trip or Open setting	0 to 1	---	1	F727	1 (Trip and activate lockout)
5CF5	SRC x UF Alarm Enable	0 to 1	---	1	F102	0 (Disabled)
5CF6	SRC x UF Alarm Pickup Setting	45 to 60	---	0.1	F001	450
5CF7	SRC x UF Alarm Time Delay	0.1 to 600	---	0.1	F001	150
5CF8	SRC x UF Alarm Blocking Voltage Enable	0 to 1	---	1	F102	0 (Disabled)
5CF9	SRC x OF Trip Enable	0 to 1	---	1	F102	0 (Disabled)
5CFA	SRC x OF Trip Pickup Setting	50 to 70	---	0.1	F001	500
5CFB	SRC x OF Trip Time Delay	0.1 to 600	---	0.1	F001	300
5CFC	SRC x OF Trip Blocking Voltage Enable	0 to 1	---	1	F102	0 (Disabled)
5CFD	SRC x OF Trip or Open setting	0 to 1	---	1	F727	1 (Trip and activate lockout)
5CFE	SRC x OF Alarm Enable	0 to 1	---	1	F102	0 (Disabled)
5CFF	SRC x OF Alarm Pickup Setting	50 to 70	---	0.1	F001	500
5D00	SRC x OF Alarm Time Delay	0.1 to 600	---	0.1	F001	150
5D01	SRC x OF Alarm Blocking Voltage Enable	0 to 1	---	1	F102	0 (Disabled)
5D02	SRC x HRGF Enable	0 to 1	---	1	F102	0 (Disabled)
5D03	SRC x HRGF Pickup	2 to 10	---	0.1	F001	20
5D04	SRC x HRGF Delay	0.5 to 5	---	0.1	F001	5
5D05	SRC x HRGF Ground Resistance	5 to 500	---	1	F001	5
5D06	SRC x HRGF CT Rating	10 to 10	---	1	F001	10
5D07	SRC x Settings Reserved (41 items)	0 to 65535	---	1	F001	0
5D30	...Repeated for module number 2					
5DD6	...Repeated for module number 3					
5E7C	...Repeated for module number 4					
5F22	...Repeated for module number 5					
5FC8	...Repeated for module number 6					
606E	...Repeated for module number 7					
6114	...Repeated for module number 8					
61BA	...Repeated for module number 9					
6260	...Repeated for module number 10					
6306	...Repeated for module number 11					
63AC	...Repeated for module number 12					
6452	...Repeated for module number 13					
64F8	...Repeated for module number 14					
659E	...Repeated for module number 15					

6644	...Repeated for module number 16					
66EA	...Repeated for module number 17					
6790	...Repeated for module number 18					
6836	...Repeated for module number 19					
68DC	...Repeated for module number 20					
6982	...Repeated for module number 21					
6A28	...Repeated for module number 22					
6ACE	...Repeated for module number 23					
6B74	...Repeated for module number 24					
6C1A	...Repeated for module number 25					
6CC0	...Repeated for module number 26					
6D66	...Repeated for module number 27					
6E0C	...Repeated for module number 28					
6EB2	...Repeated for module number 29					
6F58	...Repeated for module number 30					
Source Commands (Read/Write Command) (30 modules)						
7000	SRC x Open Breaker	0 to 1	---	1	F126	0 (No)
7001	SRC x Close Breaker	0 to 1	---	1	F126	0 (No)
7002	SRC x Trip Breaker	0 to 1	---	1	F126	0 (No)
7003	SRC x Clear Energy	0 to 1	---	1	F126	0 (No)
7004	Reserved	---	---	---	F001	0
7005	SRC x Remote Lockout Enable	0 to 1	---	1	F126	0 (No)
7006	SRC x Remote Lockout Reset	0 to 1	---	1	F126	0 (No)
7007	SRC x ATO Mode Enabled	0 to 1	---	1	F126	0 (No)
7008	SRC x Command Reserved (42 items)	0 to 65535	---	1	F001	0
7032	...Repeated for module number 2					
7064	...Repeated for module number 3					
7096	...Repeated for module number 4					
70C8	...Repeated for module number 5					
70FA	...Repeated for module number 6					
712C	...Repeated for module number 7					
715E	...Repeated for module number 8					
7190	...Repeated for module number 9					
71C2	...Repeated for module number 10					
71F4	...Repeated for module number 11					
7226	...Repeated for module number 12					
7258	...Repeated for module number 13					
728A	...Repeated for module number 14					
72BC	...Repeated for module number 15					
72EE	...Repeated for module number 16					
7320	...Repeated for module number 17					
7352	...Repeated for module number 18					
7384	...Repeated for module number 19					

73B6	...Repeated for module number 20					
73E8	...Repeated for module number 21					
741A	...Repeated for module number 22					
744C	...Repeated for module number 23					
747E	...Repeated for module number 24					
74B0	...Repeated for module number 25					
74E2	...Repeated for module number 26					
7514	...Repeated for module number 27					
7546	...Repeated for module number 28					
7578	...Repeated for module number 29					
75AA	...Repeated for module number 30					
Contact Input Configuration (Read/Write Setting) (2 modules)						
75DC	Board x I/O Direction High	0 to 4294967295	---	1	F737	0
75DE	Board x I/O Direction Low	0 to 4294967295	---	1	F736	0
75E0	...Repeated for module number 2					
SynchCheck Settings (Read/Write Setting) (6 modules)						
7F97	Synch Check Enable	0 to 1	---	1	F102	0 (Disabled)
7F98	Synch Chech V1 Source	0 to 29	---	1	F001	0
7F99	Synch Check V2 Source	0 to 29	---	1	F001	0
7F9A	Synch Check Max Volt Diff	0 to 90	---	0.5	F001	0
7F9B	Synch Check Max Phase Diff	0 to 60	---	1	F001	0
7F9C	Synch Check Max Freq Diff	0 to 2	---	0.1	F001	0
7F9D	Synch Check Dead Max V1	5 to 50	---	1	F001	5
7F9E	Synch Check Live Min V1	50 to 100	---	1	F001	50
7F9F	Synch Check Dead MaxV2	5 to 50	---	1	F001	5
7FA0	Synch Check Live Min V2	50 to 100	---	1	F001	50
7FA1	Synch Check Dead Source Select	0 to 5	---	1	F176	0 (None)
	SynchCheck Settings (Read Only) (6 modules)					
7FA2	SynchCheck Status	0 to 65535	---	1	F001	0
7FA3	Synch Check Reserved (9 items)	0 to 65535	---	1	F001	0
7FAC	...Repeated for module number 2					
7FC1	...Repeated for module number 3					
7FD6	...Repeated for module number 4					
7FEB	...Repeated for module number 5					
8000	...Repeated for module number 6					
Discrete I/O Configuration (Read Only)						
8015	Boards Detected	0 to 8	---	1	F001	0
8016	Boards Used	0 to 8	---	1	F001	0
8017	Total I/O Points Available	0 to 65535	---	1	F001	0
8018	Contact Input Count	0 to 128	---	1	F001	0
8019	Contact Output Count	0 to 128	---	1	F001	0
	Discrete I/O Configuration (Read/Write Setting)					
801A	Boards Expected	0 to 2	---	1	F001	0
801B	Discrete I/O Configuration Reserved (15 items)	0 to 65535	---	1	F001	0

Force Contact Inputs (Read/Write Setting)						
8700	Force Contact Input x State (128 items)	0 to 2	---	1	F144	0 (Disabled)
Force Contact Outputs (Read/Write Setting)						
8780	Force Contact Output x State (128 items)	0 to 3	---	1	F131	0 (Disabled)
Expanded Digital I/O states (Read Only)						
9100	Contact Input x State (128 items)	0 to 1	---	1	F108	0 (Off)
9180	Contact Output x State (128 items)	0 to 1	---	1	F108	0 (Off)
Options (Read Only)						
9379	Options Authentication State	0 to 2	---	1	F738	0
937A	Options Timestamp	0 to 4294967295	---	1	F050	0
937C	Options Bit Vectors	0 to 65535	---	1	F728	0
937D	Options Expanded Metering Count	0 to 30	---	1	F001	0
	Options (Read/Write Setting)					
937E	Options Expanded Metering Node x State Enable	0 to 4294967295	---	1	F722	0
	Options (Read Only)					
9380	Options Demand Metering Count	0 to 30	---	1	F001	0
	Options (Read/Write Setting)					
9381	Options Demand Metering Node x State Enable	0 to 4294967295	---	1	F722	0
	Options (Read Only)					
9383	Options Harmonics Metering Count	0 to 30	---	1	F001	0
	Options (Read/Write Setting)					
9384	Options Harmonics Metering Node x State Enable	0 to 4294967295	---	1	F722	0
	Options (Read Only)					
9386	Options Voltage Relay Count	0 to 30	---	1	F001	0
	Options (Read/Write Setting)					
9387	Options Voltage Relay Node x State Enable	0 to 4294967295	---	1	F722	0
	Options (Read Only)					
9389	Options High Current Relay Count	0 to 30	---	1	F001	0
	Options (Read/Write Setting)					
938A	Option High Current Relay Node x State Enable	0 to 4294967295	---	1	F722	0
	Options (Read Only)					
938C	Options Freq and Rev Pwr Relay Count	0 to 30	---	1	F001	0
	Options (Read/Write Setting)					
938D	Option Freq and Rev Pwr Relay Node x Enable	0 to 4294967295	---	1	F722	0
Virtual Input Commands (Read/Write Command) (32 modules)						
AC00	Virtual Input x State	0 to 1	---	1	F108	0 (Off)
AC01	...Repeated for module number 2					
AC02	...Repeated for module number 3					
AC03	...Repeated for module number 4					
AC04	...Repeated for module number 5					
AC05	...Repeated for module number 6					

AC06	...Repeated for module number 7					
AC07	...Repeated for module number 8					
AC08	...Repeated for module number 9					
AC09	...Repeated for module number 10					
AC0A	...Repeated for module number 11					
AC0B	...Repeated for module number 12					
AC0C	...Repeated for module number 13					
AC0D	...Repeated for module number 14					
AC0E	...Repeated for module number 15					
AC0F	...Repeated for module number 16					
AC10	...Repeated for module number 17					
AC11	...Repeated for module number 18					
AC12	...Repeated for module number 19					
AC13	...Repeated for module number 20					
AC14	...Repeated for module number 21					
AC15	...Repeated for module number 22					
AC16	...Repeated for module number 23					
AC17	...Repeated for module number 24					
AC18	...Repeated for module number 25					
AC19	...Repeated for module number 26					
AC1A	...Repeated for module number 27					
AC1B	...Repeated for module number 28					
AC1C	...Repeated for module number 29					
AC1D	...Repeated for module number 30					
AC1E	...Repeated for module number 31					
AC1F	...Repeated for module number 32					
Digital I/O States (Read Only)						
B200	Virtual Input States (2 items)	0 to 65535	---	1	F500	0
B202	Reserved (30 items)	0 to 65535	---	1	F500	0
B220	Virtual Output States (8 items)	0 to 65535	---	1	F500	0
B228	Reserved (30 items)	0 to 65535	---	1	F500	0
B246	Contact Input States (8 items)	0 to 65535	---	1	F500	0
B24E	Reserved (8 items)	0 to 65535	---	1	F500	0
B256	Contact Output States (8 items)	0 to 65535	---	1	F500	0
B25E	Reserved (162 items)	0 to 65535	---	1	F500	0
Flexlogic Status (Read Only)						
B320	Flexlogic Status Message	---	---	---	F200	(none)
Breaker Control (Read/Write Setting) (30 modules)						
B400	Breaker Control x Open Flux Shifter	0 to 65535	---	1	F300	0
B401	Breaker Control x Open Shunt Trip	0 to 65535	---	1	F300	0
B402	Breaker Control x Trip Flux Shifter	0 to 65535	---	1	F300	0
B403	Breaker Control x Trip Shunt Trip	0 to 65535	---	1	F300	0
B404	Breaker Control x Close	0 to 65535	---	1	F300	0

B405	Breaker Control x Lockout	0 to 65535	---	1	F300	0
B406	Breaker Control x Lockout Reset	0 to 65535	---	1	F300	0
B407	Reserved (18 items)	0 to 65535	---	1	F001	0
B419	...Repeated for module number 2					
B432	...Repeated for module number 3					
B44B	...Repeated for module number 4					
B464	...Repeated for module number 5					
B47D	...Repeated for module number 6					
B496	...Repeated for module number 7					
B4AF	...Repeated for module number 8					
B4C8	...Repeated for module number 9					
B4E1	...Repeated for module number 10					
B4FA	...Repeated for module number 11					
B513	...Repeated for module number 12					
B52C	...Repeated for module number 13					
B545	...Repeated for module number 14					
B55E	...Repeated for module number 15					
B577	...Repeated for module number 16					
B590	...Repeated for module number 17					
B5A9	...Repeated for module number 18					
B5C2	...Repeated for module number 19					
B5DB	...Repeated for module number 20					
B5F4	...Repeated for module number 21					
B60D	...Repeated for module number 22					
B626	...Repeated for module number 23					
B63F	...Repeated for module number 24					
B658	...Repeated for module number 25					
B671	...Repeated for module number 26					
B68A	...Repeated for module number 27					
B6A3	...Repeated for module number 28					
B6BC	...Repeated for module number 29					
B6D5	...Repeated for module number 30					
ZSI Option Settings (Read/Write Setting)						
B784	ZSI Option	0 to 2	---	1	F732	0 (ST ZSI)
B785	ZSI Option Reserved	0 to 65535	---	1	F001	0
ZSI Zone Enables (Read/Write Setting) (4 modules)						
B786	ZSI Zone x Enabled	0 to 1	---	1	F126	0 (No)
B787	ZSI Zone Enable Reserved (14 items)	0 to 65535	---	1	F001	0
B795	...Repeated for module number 2					
B7A4	...Repeated for module number 3					
B7B3	...Repeated for module number 4					

ZSI ST Tier Settings (Read/Write Setting) (30 modules)						
B7C2	SRC x ST ZSI Zone 1 Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
B7D2	SRC x ST ZSI Zone 2 Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
B7E2	SRC x ST ZSI Zone 3 Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
B7F2	SRC x ST ZSI Zone 4 Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
B802	ZSI Tier Settings reserved (16 items)	0 to 65635	---	1	F001	0
B812	...Repeated for module number 2					
B862	...Repeated for module number 3					
B8B2	...Repeated for module number 4					
B902	...Repeated for module number 5					
B952	...Repeated for module number 6					
B9A2	...Repeated for module number 7					
B9F2	...Repeated for module number 8					
BA42	...Repeated for module number 9					
BA92	...Repeated for module number 10					
BAE2	...Repeated for module number 11					
BB32	...Repeated for module number 12					
BB82	...Repeated for module number 13					
BBD2	...Repeated for module number 14					
BC22	...Repeated for module number 15					
BC72	...Repeated for module number 16					
BCC2	...Repeated for module number 17					
BD12	...Repeated for module number 18					
BD62	...Repeated for module number 19					
BDB2	...Repeated for module number 20					
BE02	...Repeated for module number 21					
BE52	...Repeated for module number 22					
BEA2	...Repeated for module number 23					
BEF2	...Repeated for module number 24					
BF42	...Repeated for module number 25					
BF92	...Repeated for module number 26					
BFE2	...Repeated for module number 27					
C032	...Repeated for module number 28					
C082	...Repeated for module number 29					
C0D2	...Repeated for module number 30					
ZSI GF Tier Settings (Read/Write Setting) (30 modules)						
C122	SRC x GF ZSI Zone 1 Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
C132	SRC x GF ZSI Zone 2 Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
C142	SRC x GF ZSI Zone 3 Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
C152	SRC x GF ZSI Zone 4 Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
C162	SRC x GF ZSI Tier Settings reserved (16 items)	0 to 65535	---	1	F001	0
C172	...Repeated for module number 2					
C1C2	...Repeated for module number 3					

C212	...Repeated for module number 4					
C262	...Repeated for module number 5					
C2B2	...Repeated for module number 6					
C302	...Repeated for module number 7					
C352	...Repeated for module number 8					
C3A2	...Repeated for module number 9					
C3F2	...Repeated for module number 10					
C442	...Repeated for module number 11					
C492	...Repeated for module number 12					
C4E2	...Repeated for module number 13					
C532	...Repeated for module number 14					
C582	...Repeated for module number 15					
C5D2	...Repeated for module number 16					
C622	...Repeated for module number 17					
C672	...Repeated for module number 18					
C6C2	...Repeated for module number 19					
C712	...Repeated for module number 20					
C762	...Repeated for module number 21					
C7B2	...Repeated for module number 22					
C802	...Repeated for module number 23					
C852	...Repeated for module number 24					
C8A2	...Repeated for module number 25					
C8F2	...Repeated for module number 26					
C942	...Repeated for module number 27					
C992	...Repeated for module number 28					
C9E2	...Repeated for module number 29					
CA32	...Repeated for module number 30					
ZSI MSGF Tier Settings (Read/Write Setting) (4 modules)						
CA82	MSGF ZSI Zone 1 GRPx Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
CA92	MSGF ZSI Zone 2 GRP x Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
CAA2	MSGF ZSI Zone 3 GRP x Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
CAB2	MSGF ZSI Zone 4 GRP x Tier Settings (16 items)	0 to 3	---	1	F733	0 (ZSI Tier 0)
CAC2	MSGF ZSI Reserved (16 items)	0 to 65535	---	1	F001	0
CAD2	...Repeated for module number 2					
CB22	...Repeated for module number 3					
CB72	...Repeated for module number 4					
Zone x MSGF Settings (Read/Write Setting) (4 modules)						
CBC2	Zone x MSGF Trip Pickup Setting (16 items)	30 to 1200	---	1	F001	1200
CBD2	Zone x MSGF Alarm Pickup Setting (16 items)	30 to 1200	---	1	F001	1200
CBE2	Zone x MSGF Trip Delay Band Setting (16 items)	0 to 6	---	1	F735	2 (BAND 3)
CBF2	Zone x MSGF Alarm Delay Band Setting (16 items)	0 to 6	---	1	F735	2 (BAND 3)
CC02	Zone x MSGF Trip I2T Curve (16 items)	0 to 1	---	1	F102	0 (Disabled)

CC12	Zone x MSGF Alarm I2T Curve (16 items)	0 to 1	---	1	F102	0 (Disabled)
CC22	Zone x MSGF Trip Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
CC32	Zone x MSGF Alarm Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
CC42	Zone x MSGF Backup Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
CC52	Zone x MSGF Backup Time Date Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
CC62	Zone x MSGF Trip or Open	0 to 1	---	1	F727	0 (Open and don't activate lockout)
CC63	Zone x MSGF Reserved (16 items)	0 to 65535	---	1	F001	0
CC73	...Repeated for module number 2					
CD24	...Repeated for module number 3					
CDD5	...Repeated for module number 4					
Zone x BD Settings (Read/Write Setting) (4 modules)						
CE8A	Zone x BD Trip Pickup Setting (16 items)	30 to 22000	---	1	F001	1200
CE9A	Zone x BD Alarm Pickup Setting (16 items)	30 to 22000	---	1	F001	1200
CEAA	Zone x BD Trip Pickup Setting2 (16 items)	30 to 22000	---	1	F001	1200
CEBA	Zone x BD Alarm Pickup Setting2 (16 items)	30 to 22000	---	1	F001	1200
CECA	Zone x BD Trip Delay Band Setting (16 items)	0 to 6	---	1	F735	2 (BAND 3)
CEDA	Zone x BD Alarm Delay Band Setting (16 items)	0 to 6	---	1	F735	2 (BAND 3)
CEEA	Zone x BD Trip Delay Band Setting2 (16 items)	0 to 6	---	1	F735	2 (BAND 3)
CEFA	Zone x BD Alarm Delay Band Setting2 (16 items)	0 to 6	---	1	F735	2 (BAND 3)
CF0A	Zone x BD Trip Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
CF1A	Zone x BD Alarm Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
CF2A	Zone x BD Backup Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
CF3A	Zone x BD Backup Time Delta Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
CF4A	Zone x BD Trip or Open	0 to 1	---	1	F727	0 (Open and don't activate lockout)
CF4B	Zone x BD Reserved (16 items)	0 to 65535	---	1	F001	0
CF5B	...Repeated for module number 2					
D02C	...Repeated for module number 3					
D0FD	...Repeated for module number 4					
Zone x Summation Settings (Read/Write Setting) (2 modules)						
D1D2	Zone x Summation MSGF Trip Delay Band Setting (16 items)	0 to 6	---	1	F735	2 (BAND 3)
D1E2	Zone x Summation MSGF Alarm Delay Band Setting (16 items)	0 to 6	---	1	F735	2 (BAND 3)
D1F2	Zone x Summation MSGF Trip I2T (16 items)	0 to 1	---	1	F102	0 (Disabled)
D202	Zone x Summation MSGF Alarm I2T Curve (16 items)	0 to 1	---	1	F102	0 (Disabled)
D212	Zone x Summation MSGF Trip Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
D222	Zone x Summation MSGF Alarm Enabled (16 items)	0 to 1	---	1	F102	0 (Disabled)
D232	Zone x Summation MSGF Trip Pickup Setting (16 items)	30 to 1200	---	1	F001	1200
D242	Zone x Summation MSGF Alarm Pickup	30 to 1200	---	1	F001	1200

	Setting (16 items)					
D252	Zone x Summation MSGF Trip or Open	0 to 1	---	1	F727	0 (Open and don't activate lockout)
D253	Zone x Summation Reserved (32 items)	0 to 65535	---	1	F001	0
D273	...Repeated for module number 2					
Alarm Flex Logic (Read/Write Setting) (16 modules)						
D314	Alarm x Flex Logic	0 to 65535	---	1	F300	0
D315	Alarm Flex Logic Reserved	0 to 65535	---	1	F001	0
D316	...Repeated for module number 2					
D318	...Repeated for module number 3					
D31A	...Repeated for module number 4					
D31C	...Repeated for module number 5					
D31E	...Repeated for module number 6					
D320	...Repeated for module number 7					
D322	...Repeated for module number 8					
D324	...Repeated for module number 9					
D326	...Repeated for module number 10					
D328	...Repeated for module number 11					
D32A	...Repeated for module number 12					
D32C	...Repeated for module number 13					
D32E	...Repeated for module number 14					
D330	...Repeated for module number 15					
D332	...Repeated for module number 16					
Contact Inputs (Read/Write Setting) (128 modules)						
D334	Contact Input x Name	---	---	---	F200	"Contact Input 1 "
D348	Contact Input x Events	0 to 1	---	1	F102	1 (Enabled)
D349	Contact Input x Debounce Time	0 to 4	---	1	F734	0 (Disabled)
D34A	Contact Input x Reserved (4 items)	0 to 65535	---	1	F001	0
D34E	...Repeated for module number 2					
D368	...Repeated for module number 3					
D382	...Repeated for module number 4					
D39C	...Repeated for module number 5					
D3B6	...Repeated for module number 6					
D3D0	...Repeated for module number 7					
D3EA	...Repeated for module number 8					
D404	...Repeated for module number 9					
D41E	...Repeated for module number 10					
D438	...Repeated for module number 11					
D452	...Repeated for module number 12					
D46C	...Repeated for module number 13					
D486	...Repeated for module number 14					
D4A0	...Repeated for module number 15					
D4BA	...Repeated for module number 16					

D4D4	...Repeated for module number 17
D4EE	...Repeated for module number 18
D508	...Repeated for module number 19
D522	...Repeated for module number 20
D53C	...Repeated for module number 21
D556	...Repeated for module number 22
D570	...Repeated for module number 23
D58A	...Repeated for module number 24
D5A4	...Repeated for module number 25
D5BE	...Repeated for module number 26
D5D8	...Repeated for module number 27
D5F2	...Repeated for module number 28
D60C	...Repeated for module number 29
D626	...Repeated for module number 30
D640	...Repeated for module number 31
D65A	...Repeated for module number 32
D674	...Repeated for module number 33
D68E	...Repeated for module number 34
D6A8	...Repeated for module number 35
D6C2	...Repeated for module number 36
D6DC	...Repeated for module number 37
D6F6	...Repeated for module number 38
D710	...Repeated for module number 39
D72A	...Repeated for module number 40
D744	...Repeated for module number 41
D75E	...Repeated for module number 42
D778	...Repeated for module number 43
D792	...Repeated for module number 44
D7AC	...Repeated for module number 45
D7C6	...Repeated for module number 46
D7E0	...Repeated for module number 47
D7FA	...Repeated for module number 48
D814	...Repeated for module number 49
D82E	...Repeated for module number 50
D848	...Repeated for module number 51
D862	...Repeated for module number 52
D87C	...Repeated for module number 53
D896	...Repeated for module number 54
D8B0	...Repeated for module number 55
D8CA	...Repeated for module number 56
D8E4	...Repeated for module number 57
D8FE	...Repeated for module number 58

D918	...Repeated for module number 59
D932	...Repeated for module number 60
D94C	...Repeated for module number 61
D966	...Repeated for module number 62
D980	...Repeated for module number 63
D99A	...Repeated for module number 64
D9B4	...Repeated for module number 65
D9CE	...Repeated for module number 66
D9E8	...Repeated for module number 67
DA02	...Repeated for module number 68
DA1C	...Repeated for module number 69
DA36	...Repeated for module number 70
DA50	...Repeated for module number 71
DA6A	...Repeated for module number 72
DA84	...Repeated for module number 73
DA9E	...Repeated for module number 74
DAB8	...Repeated for module number 75
DAD2	...Repeated for module number 76
DAEC	...Repeated for module number 77
DB06	...Repeated for module number 78
DB20	...Repeated for module number 79
DB3A	...Repeated for module number 80
DB54	...Repeated for module number 81
DB6E	...Repeated for module number 82
DB88	...Repeated for module number 83
DBA2	...Repeated for module number 84
DBBC	...Repeated for module number 85
DBD6	...Repeated for module number 86
DBF0	...Repeated for module number 87
DC0A	...Repeated for module number 88
DC24	...Repeated for module number 89
DC3E	...Repeated for module number 90
DC58	...Repeated for module number 91
DC72	...Repeated for module number 92
DC8C	...Repeated for module number 93
DCA6	...Repeated for module number 94
DCC0	...Repeated for module number 95
DCDA	...Repeated for module number 96
DCF4	...Repeated for module number 97
DD0E	...Repeated for module number 98
DD28	...Repeated for module number 99
DD42	...Repeated for module number 100

DD5C	...Repeated for module number 101					
DD76	...Repeated for module number 102					
DD90	...Repeated for module number 103					
DDAA	...Repeated for module number 104					
DDC4	...Repeated for module number 105					
DDDE	...Repeated for module number 106					
DDF8	...Repeated for module number 107					
DE12	...Repeated for module number 108					
DE2C	...Repeated for module number 109					
DE46	...Repeated for module number 110					
DE60	...Repeated for module number 111					
DE7A	...Repeated for module number 112					
DE94	...Repeated for module number 113					
DEAE	...Repeated for module number 114					
DEC8	...Repeated for module number 115					
DEE2	...Repeated for module number 116					
DEFC	...Repeated for module number 117					
DF16	...Repeated for module number 118					
DF30	...Repeated for module number 119					
DF4A	...Repeated for module number 120					
DF64	...Repeated for module number 121					
DF7E	...Repeated for module number 122					
DF98	...Repeated for module number 123					
DFB2	...Repeated for module number 124					
DFCC	...Repeated for module number 125					
DFE6	...Repeated for module number 126					
E000	...Repeated for module number 127					
E01A	...Repeated for module number 128					
Contact Outputs (Read/Write Setting) (128 modules)						
E034	Contact Output x Name	---	---	---	F200	"Contact Output 1 "
E048	Contact Output x Operation	0 to 65535	---	1	F300	0
E049	Contact Output x Sealin	0 to 65535	---	1	F300	0
E04A	Contact Output x Events	0 to 1	---	1	F102	1 (Enabled)
E04B	Contact Outputs Reserved (7 items)	0 to 65535	---	1	F001	0
E052	...Repeated for module number 2					
E070	...Repeated for module number 3					
E08E	...Repeated for module number 4					
E0AC	...Repeated for module number 5					
E0CA	...Repeated for module number 6					
E0E8	...Repeated for module number 7					
E106	...Repeated for module number 8					
E124	...Repeated for module number 9					
E142	...Repeated for module number 10					

E160	...Repeated for module number 11
E17E	...Repeated for module number 12
E19C	...Repeated for module number 13
E1BA	...Repeated for module number 14
E1D8	...Repeated for module number 15
E1F6	...Repeated for module number 16
E214	...Repeated for module number 17
E232	...Repeated for module number 18
E250	...Repeated for module number 19
E26E	...Repeated for module number 20
E28C	...Repeated for module number 21
E2AA	...Repeated for module number 22
E2C8	...Repeated for module number 23
E2E6	...Repeated for module number 24
E304	...Repeated for module number 25
E322	...Repeated for module number 26
E340	...Repeated for module number 27
E35E	...Repeated for module number 28
E37C	...Repeated for module number 29
E39A	...Repeated for module number 30
E3B8	...Repeated for module number 31
E3D6	...Repeated for module number 32
E3F4	...Repeated for module number 33
E412	...Repeated for module number 34
E430	...Repeated for module number 35
E44E	...Repeated for module number 36
E46C	...Repeated for module number 37
E48A	...Repeated for module number 38
E4A8	...Repeated for module number 39
E4C6	...Repeated for module number 40
E4E4	...Repeated for module number 41
E502	...Repeated for module number 42
E520	...Repeated for module number 43
E53E	...Repeated for module number 44
E55C	...Repeated for module number 45
E57A	...Repeated for module number 46
E598	...Repeated for module number 47
E5B6	...Repeated for module number 48
E5D4	...Repeated for module number 49
E5F2	...Repeated for module number 50
E610	...Repeated for module number 51
E62E	...Repeated for module number 52

E64C	...Repeated for module number 53
E66A	...Repeated for module number 54
E688	...Repeated for module number 55
E6A6	...Repeated for module number 56
E6C4	...Repeated for module number 57
E6E2	...Repeated for module number 58
E700	...Repeated for module number 59
E71E	...Repeated for module number 60
E73C	...Repeated for module number 61
E75A	...Repeated for module number 62
E778	...Repeated for module number 63
E796	...Repeated for module number 64
E7B4	...Repeated for module number 65
E7D2	...Repeated for module number 66
E7F0	...Repeated for module number 67
E80E	...Repeated for module number 68
E82C	...Repeated for module number 69
E84A	...Repeated for module number 70
E868	...Repeated for module number 71
E886	...Repeated for module number 72
E8A4	...Repeated for module number 73
E8C2	...Repeated for module number 74
E8E0	...Repeated for module number 75
E8FE	...Repeated for module number 76
E91C	...Repeated for module number 77
E93A	...Repeated for module number 78
E958	...Repeated for module number 79
E976	...Repeated for module number 80
E994	...Repeated for module number 81
E9B2	...Repeated for module number 82
E9D0	...Repeated for module number 83
E9EE	...Repeated for module number 84
EA0C	...Repeated for module number 85
EA2A	...Repeated for module number 86
EA48	...Repeated for module number 87
EA66	...Repeated for module number 88
EA84	...Repeated for module number 89
EAA2	...Repeated for module number 90
EAC0	...Repeated for module number 91
EADE	...Repeated for module number 92
EAFC	...Repeated for module number 93
EB1A	...Repeated for module number 94

EB38	...Repeated for module number 95					
EB56	...Repeated for module number 96					
EB74	...Repeated for module number 97					
EB92	...Repeated for module number 98					
EBB0	...Repeated for module number 99					
EBCE	...Repeated for module number 100					
EBEC	...Repeated for module number 101					
EC0A	...Repeated for module number 102					
EC28	...Repeated for module number 103					
EC46	...Repeated for module number 104					
EC64	...Repeated for module number 105					
EC82	...Repeated for module number 106					
ECA0	...Repeated for module number 107					
ECBE	...Repeated for module number 108					
ECDC	...Repeated for module number 109					
ECFA	...Repeated for module number 110					
ED18	...Repeated for module number 111					
ED36	...Repeated for module number 112					
ED54	...Repeated for module number 113					
ED72	...Repeated for module number 114					
ED90	...Repeated for module number 115					
EDAE	...Repeated for module number 116					
EDCC	...Repeated for module number 117					
EDEA	...Repeated for module number 118					
EE08	...Repeated for module number 119					
EE26	...Repeated for module number 120					
EE44	...Repeated for module number 121					
EE62	...Repeated for module number 122					
EE80	...Repeated for module number 123					
EE9E	...Repeated for module number 124					
EEBC	...Repeated for module number 125					
EEDA	...Repeated for module number 126					
EEF8	...Repeated for module number 127					
EF16	...Repeated for module number 128					
Virtual Outputs (Read/Write Setting) (128 modules)						
EF34	Virtual Output x Name	---	---	---	F200	"Virtual Output 1 "
EF48	Virtual Output x Events	0 to 1	---	1	F102	0 (Disabled)
EF49	Virtual Output x Reserved (2 items)	---	---	---	F001	0
EF4B	...Repeated for module number 2					
EF62	...Repeated for module number 3					
EF79	...Repeated for module number 4					
EF90	...Repeated for module number 5					
EFA7	...Repeated for module number 6					

EFBE	...Repeated for module number 7
EFD5	...Repeated for module number 8
EFEC	...Repeated for module number 9
F003	...Repeated for module number 10
F01A	...Repeated for module number 11
F031	...Repeated for module number 12
F048	...Repeated for module number 13
F05F	...Repeated for module number 14
F076	...Repeated for module number 15
F08D	...Repeated for module number 16
F0A4	...Repeated for module number 17
F0BB	...Repeated for module number 18
F0D2	...Repeated for module number 19
F0E9	...Repeated for module number 20
F100	...Repeated for module number 21
F117	...Repeated for module number 22
F12E	...Repeated for module number 23
F145	...Repeated for module number 24
F15C	...Repeated for module number 25
F173	...Repeated for module number 26
F18A	...Repeated for module number 27
F1A1	...Repeated for module number 28
F1B8	...Repeated for module number 29
F1CF	...Repeated for module number 30
F1E6	...Repeated for module number 31
F1FD	...Repeated for module number 32
F214	...Repeated for module number 33
F22B	...Repeated for module number 34
F242	...Repeated for module number 35
F259	...Repeated for module number 36
F270	...Repeated for module number 37
F287	...Repeated for module number 38
F29E	...Repeated for module number 39
F2B5	...Repeated for module number 40
F2CC	...Repeated for module number 41
F2E3	...Repeated for module number 42
F2FA	...Repeated for module number 43
F311	...Repeated for module number 44
F328	...Repeated for module number 45
F33F	...Repeated for module number 46
F356	...Repeated for module number 47
F36D	...Repeated for module number 48

F384	...Repeated for module number 49
F39B	...Repeated for module number 50
F3B2	...Repeated for module number 51
F3C9	...Repeated for module number 52
F3E0	...Repeated for module number 53
F3F7	...Repeated for module number 54
F40E	...Repeated for module number 55
F425	...Repeated for module number 56
F43C	...Repeated for module number 57
F453	...Repeated for module number 58
F46A	...Repeated for module number 59
F481	...Repeated for module number 60
F498	...Repeated for module number 61
F4AF	...Repeated for module number 62
F4C6	...Repeated for module number 63
F4DD	...Repeated for module number 64
F4F4	...Repeated for module number 65
F50B	...Repeated for module number 66
F522	...Repeated for module number 67
F539	...Repeated for module number 68
F550	...Repeated for module number 69
F567	...Repeated for module number 70
F57E	...Repeated for module number 71
F595	...Repeated for module number 72
F5AC	...Repeated for module number 73
F5C3	...Repeated for module number 74
F5DA	...Repeated for module number 75
F5F1	...Repeated for module number 76
F608	...Repeated for module number 77
F61F	...Repeated for module number 78
F636	...Repeated for module number 79
F64D	...Repeated for module number 80
F664	...Repeated for module number 81
F67B	...Repeated for module number 82
F692	...Repeated for module number 83
F6A9	...Repeated for module number 84
F6C0	...Repeated for module number 85
F6D7	...Repeated for module number 86
F6EE	...Repeated for module number 87
F705	...Repeated for module number 88
F71C	...Repeated for module number 89
F733	...Repeated for module number 90

F74A	...Repeated for module number 91
F761	...Repeated for module number 92
F778	...Repeated for module number 93
F78F	...Repeated for module number 94
F7A6	...Repeated for module number 95
F7BD	...Repeated for module number 96
F7D4	...Repeated for module number 97
F7EB	...Repeated for module number 98
F802	...Repeated for module number 99
F819	...Repeated for module number 100
F830	...Repeated for module number 101
F847	...Repeated for module number 102
F85E	...Repeated for module number 103
F875	...Repeated for module number 104
F88C	...Repeated for module number 105
F8A3	...Repeated for module number 106
F8BA	...Repeated for module number 107
F8D1	...Repeated for module number 108
F8E8	...Repeated for module number 109
F8FF	...Repeated for module number 110
F916	...Repeated for module number 111
F92D	...Repeated for module number 112
F944	...Repeated for module number 113
F95B	...Repeated for module number 114
F972	...Repeated for module number 115
F989	...Repeated for module number 116
F9A0	...Repeated for module number 117
F9B7	...Repeated for module number 118
F9CE	...Repeated for module number 119
F9E5	...Repeated for module number 120
F9FC	...Repeated for module number 121
FA13	...Repeated for module number 122
FA2A	...Repeated for module number 123
FA41	...Repeated for module number 124
FA58	...Repeated for module number 125
FA6F	...Repeated for module number 126
FA86	...Repeated for module number 127
FA9D	...Repeated for module number 128

	Virtual Inputs (Read/Write Setting) (32 modules)					
FAB4	Virtual Input x Function	0 to 1	---	1	F102	0 (Disabled)
FAB5	Virtual Input x Name	---	---	---	F200	"Virtual Input 1 "
FAC9	Virtual Input x Programmed Type	0 to 1	---	1	F127	0 (Latched)
FACA	Virtual Input x Events	0 to 1	---	1	F102	0 (Disabled)
FACB	Virtual Input x Reserved (3 items)	---	---	---	F001	0
FACE	...Repeated for module number 2					
FAE8	...Repeated for module number 3					
FB02	...Repeated for module number 4					
FB1C	...Repeated for module number 5					
FB36	...Repeated for module number 6					
FB50	...Repeated for module number 7					
FB6A	...Repeated for module number 8					
FB84	...Repeated for module number 9					
FB9E	...Repeated for module number 10					
FBB8	...Repeated for module number 11					
FBD2	...Repeated for module number 12					
FBEC	...Repeated for module number 13					
FC06	...Repeated for module number 14					
FC20	...Repeated for module number 15					
FC3A	...Repeated for module number 16					
FC54	...Repeated for module number 17					
FC6E	...Repeated for module number 18					
FC88	...Repeated for module number 19					
FCA2	...Repeated for module number 20					
FCBC	...Repeated for module number 21					
FCD6	...Repeated for module number 22					
FCF0	...Repeated for module number 23					
FD0A	...Repeated for module number 24					
FD24	...Repeated for module number 25					
FD3E	...Repeated for module number 26					
FD58	...Repeated for module number 27					
FD72	...Repeated for module number 28					
FD8C	...Repeated for module number 29					
FDA6	...Repeated for module number 30					
FDC0	...Repeated for module number 31					
FDDA	...Repeated for module number 32					

Modbus Memory Map Format Codes

Format Name	Format Type/Bitmask	Format Definition
F001	UINT16	UNSIGNED 16 BIT INTEGER
F003	UINT32	UNSIGNED 32 BIT INTEGER (2 registers) High order word is stored in the first register. Low order word is stored in the second register.
F013	POWER_FACTOR	POWER FACTOR (SIGNED 16 BIT INTEGER) Positive values indicate lagging power factor; negative values indicate leading.
F050	UINT32	TIME and DATE (UNSIGNED 32 BIT INTEGER) Gives the current time in seconds elapsed since 00:00:00 January 1, 1970.
F060	FLOATING_POINT	IEEE FLOATING POINT (32 bits)
F072	HEX6	6 BYTES - 12 ASCII DIGITS
F102	ENUMERATION	DISABLED/ENABLED
	0	Disabled
	1	Enabled
F106	ENUMERATION	PHASE ROTATION
	0	ABC
	1	ACB
F108	ENUMERATION	OFF/ON
	0	Off
	1	On
F118	ENUMERATION	WAVEFORM CAPTURE MODE
	0	Automatic Overwrite
	1	Protected
F126	ENUMERATION	NO/YES CHOICE
	0	No
	1	Yes
F127	ENUMERATION	LATCHED OR SELF-RESETTING
	0	Latched
	1	Self-Reset
F131	ENUMERATION	FORCED CONTACT OUTPUT STATE
	0	Disabled
	1	Energized
	2	De-energized
	3	Freeze
F144	ENUMERATION	FORCED CONTACT INPUT STATE
	0	Disabled
	1	Open
	2	Closed
F176	ENUMERATION	SYNCHROCHECK DEAD SOURCE SELECT
	0	None
	1	LV1 and DV2
	2	DV1 and LV2
	3	DV1 or DV2
	4	DV1 xor DV2
	5	DV1 and DV2
F200	TEXT40	40 CHARACTER ASCII TEXT 20 registers -16 Bits: 1st Char MSB, 2nd Char. LSB

F203	TEXT16	16 CHARACTER ASCII TEXT
F204	TEXT80	80 CHARACTER ASCII TEXT
F205	TEXT12	12 CHARACTER ASCII TEXT
F300	UINT16	FLEXLOGIC BASE TYPE (6 bit type) The flexlogic BASE type is 6 bits and is combined with a 9 bit descriptor and 1 bit for protection element to form a 16 bit value. The combined bits are of the form : PTTTTTTDDDDDDDDD where P bit if set, indicates that the flexlogic type is associated with a protection element state and T represents bits for the BASE type, and D represents bits for the descriptor. The values in square brackets indicate the base type with P prefix [PTTTTTT] and the values in round brackets indicate the descriptor range. [0] Off(0) this is boolean FALSE value [0] On (1)This is boolean TRUE value [2] CONTACT INPUTS (1 - 96) [3] CONTACT INPUTS OFF (1-96) [4] VIRTUAL INPUTS (1-64) [6] VIRTUAL OUTPUTS (1-64) [10] CONTACT OUTPUTS VOLTAGE DETECTED (1-64) [11] CONTACT OUTPUTS VOLTAGE OFF DETECTED (1-64) [12] CONTACT OUTPUTS CURRENT DETECTED (1-64) [13] CONTACT OUTPUTS CURRENT OFF DETECTED (1-64) [14] REMOTE INPUTS (1-32) [28] INSERT (Via Keypad only) [32] END [34] NOT (1 INPUT) [36] 2 INPUT XOR (0) [38] LATCH SET/RESET (2 INPUTS) [40] OR (2-16 INPUTS) [42] AND (2-16 INPUTS) [44] NOR (2-16 INPUTS) [46] NAND (2-16 INPUTS) [48] TIMER (1-32) [50] ASSIGN VIRTUAL OUTPUT (1 - 64) [52] SELF-TEST ERROR (See F141 for range) [56] ACTIVE SETTING GROUP (1-8) [62] MISCELLANEOUS EVENTS (See F146 for range) [64-127] ELEMENT STATES (Refer to Memory Map Element States Section)
F500	UINT16	PACKED BITFIELD First register indicates I/O state with bits 0(MSB)-15(LSB) corresponding to I/0 state 1-16. Second register indicates I/O state with bits 0-15 corresponding to I/0 state 17-32 (if required). Third register indicates I/O state with bits 0-15 corresponding to I/0 state 33-48 (if required). Fourth register indicates I/O state with bits 0-15 corresponding to I/0 state 49-64 (if required). The number of registers required is determined by the specific data item. A bit value of 0 = Off, 1 = On
F701	BITFIELD	SRCx Node Internal Diagnostics Bit Mask
	0	Power-on Self Test Error Detected
	1	Built-In-Test Error Detected
	2	Invalid Data Detected
	3	Jamb sync occurred over threshold
	4	Invalid node configuration detected
	5	Invalid CRC check of node firmware

	6	IButton Missing
	7	EEPROM Configuration Invalid
	8	Not Used
	9	Not Used
	10	Not Used
	11	Not Used
	12	Not Used
	13	Not Used
	14	Not Used
	15	Not Used
F702	BITFIELD	SRCx Node System Diagnostics 1
	0	Node not receiving a broadcast message from CPU A
	1	Node not receiving a broadcast message from CPU B
	2	No link pulse from CPU A
	3	No link pulse from CPU B
	4	Invalid system frequency received from CPU A
	5	Invalid system frequency received from CPU B
	6	Invalid IOC pickup setting multiplier received from CPU A
	7	Invalid IOC pickup setting multiplier received from CPU B
	8	Invalid ST setting received from CPU A
	9	Invalid ST setting received from CPU B
	10	Invalid GF setting received from CPU A
	11	Invalid GF setting received from CPU B
	12	Invalid command received from CPU A
	13	Invalid command received from CPU B
	14	CPU A command not completed due to arbitration
	15	CPU B command not completed due to arbitration
F703	BITFIELD	SRCx Node System Diagnostics 2
	0	CPU A command timed out
	1	CPU B command timed out
	2	Node synch not locked
	3	Unknown Message Received on Port 0
	4	Unknown Message Received on Port 1
	5	Not Used
	6	Not Used
	7	Not Used
	8	Not Used
	9	Not Used
	10	Not Used
	11	Not Used
	12	Not Used
	13	Not Used
	14	Not Used
	15	Not Used
F704	BITFIELD	SRCx Node Hardware Diagnostics
	0	Secondary Control Power
	1	Not Used
	2	Not Used
	3	Not Used
	4	AD AIOC Failure
	5	Node Not Calibrated
	6	Not Used

	7	Not Used
	8	Not Used
	9	Control_Power1_Status
	10	Control_Power2_Status
	11	App Flash CRC Fail
	12	Boot Flash CRC Fail
	13	Option Box Failure
	14	Not Used
	15	Not Used
F705	BITFIELD	SRCx NodeProt Protection Function Configuration
	0	Ground Fault Protection Enabled
	1	Instantaneous Overcurrent Protection Enabled
	2	Short Time Protection Enabled
	3	Switchable ST/IOC Protection Enabled/Disabled
	4	Switchable GF
	5	Not Used
	6	Not Used
	7	Not Used
	8	Not Used
	9	Not Used
	10	Not Used
	11	Not Used
	12	Not Used
	13	Not Used
	14	Not Used
	15	Not Used
F706	BITFIELD	SRCx Reflected CPU Diagnostics
	0	CPU A is using the hardware clock
	1	CPU A is not receiving data from one or more nodes
	2	CPU A Identifier
	3	CPU A Running Flex Logic
	4	CPU B Running Flex Logic
	5	Not Used
	6	Not Used
	7	Not Used
	8	CPU B is using the hardware clock
	9	CPU B is not receiving data from one or more nodes
	10	CPU B Identifier
	11	CPU A Running Flex Logic
	12	CPU B Running Flex Logic
	13	Not Used
	14	Not Used
	15	Not Used
F707	BITFIELD	SRCx Reflected CPU Commands
	0	No Op
	1	Open
	2	Close
	3	Trip
	4	Network Interlock
	5	Reset Interlock
	6	Light LED
	7	ATO Mode

	8	Start Firmware Download
	9	Switch Firmware
	10	Cancel Firmware Download
	11	Ignore CPU Message
	12	Firmware Packet Present
	13	Flux Shifter Open
	14	Flux Shifter Trip
	15	Not Used
F708	BITFIELD	SRCx Node Physical Status
	0	Breaker Contacts Open
	1	Breaker Contacts Closed
	2	Lockout
	3	Closing Spring Charged
	4	Primary Connected
	5	Primary Disconnected
	6	Secondary Connected
	7	Door Interlock
	8	Analog IOC
	9	Not Used
	10	Not Used
	11	Not Used
	12	Not Used
	13	Not Used
	14	Not Used
	15	Not Used
F709	BITFIELD	SRCx Node Logic and Trip Status
	0	Synchronization Source Bit 0
	1	Synchronization Source Bit 1
	2	Download Source Bit 0
	3	Download Source Bit 1
	4	Download Complete
	5	Test Mode
	6	GF Suspend
	7	Not Used
	8	Trip Flag
	9	Trip due to LT
	10	Trip due to ST
	11	Trip due to GF
	12	Trip due to IOC
	13	Phase Indicator Bit 0
	14	Phase Indicator Bit 1
	15	Not Used
F711	ENUMERATION	SRCx Long Time Delay Band Setting
	0	BAND 1
	1	BAND 2
	2	BAND 3
	3	BAND 4
F712	ENUMERATION	SRCx Breaker Connection
	0	Forward
	1	Reverse
F713	ENUMERATION	Delay Band Settings
	0	BAND 1

	1	BAND 2
	2	BAND 3
	3	BAND 4
	4	BAND 5
	5	BAND 6
	6	BAND 7
F714	ENUMERATION	SRCx Ground Fault Protection or Alarm Select
	0	Trip
	1	Alarm
F715	ENUMERATION	UL or ANSI
	0	UL
	1	ANSI
F716	ENUMERATION	Product Type
	0	Low Voltage Switchgear
	1	Medium Voltage Switchgear
	2	Paralleling Switchgear
F717	ENUMERATION	CPU Identifier
	0	CPU A
	1	CPU B
F718	ENUMERATION	IOC Protection Type
	0	Disabled
	1	Enabled
F719	ENUMERATION	SRCx PT Wiring
	0	None
	1	PT Rating 600V Delta
	2	PT Rating 600V Wye
	3	PT Rating 480V Delta
	4	PT Rating 480V Wye
	5	PT Rating 240V Delta
	6	PT Rating 208V Wye
F722	UINT32	Node 0-29 Bit Field Vector
	0	Bit field representing a 0 or 1 for Node 0
	1	Bit field representing a 0 or 1 for Node 1
	2	Bit field representing a 0 or 1 for Node 2
	3	Bit field representing a 0 or 1 for Node 3
	4	Bit field representing a 0 or 1 for Node 4
	5	Bit field representing a 0 or 1 for Node 5
	6	Bit field representing a 0 or 1 for Node 6
	7	Bit field representing a 0 or 1 for Node 7
	8	Bit field representing a 0 or 1 for Node 8
	9	Bit field representing a 0 or 1 for Node 9
	10	Bit field representing a 0 or 1 for Node 10
	11	Bit field representing a 0 or 1 for Node 11
	12	Bit field representing a 0 or 1 for Node 12
	13	Bit field representing a 0 or 1 for Node 13
	14	Bit field representing a 0 or 1 for Node 14
	15	Bit field representing a 0 or 1 for Node 15
	16	Bit field representing a 0 or 1 for Node 16
	17	Bit field representing a 0 or 1 for Node 17
	18	Bit field representing a 0 or 1 for Node 18
	19	Bit field representing a 0 or 1 for Node 19
	20	Bit field representing a 0 or 1 for Node 20

	21	Bit field representing a 0 or 1 for Node 21
	22	Bit field representing a 0 or 1 for Node 22
	23	Bit field representing a 0 or 1 for Node 23
	24	Bit field representing a 0 or 1 for Node 24
	25	Bit field representing a 0 or 1 for Node 25
	26	Bit field representing a 0 or 1 for Node 26
	27	Bit field representing a 0 or 1 for Node 27
	28	Bit field representing a 0 or 1 for Node 28
	29	Bit field representing a 0 or 1 for Node 29
	30	Not Used
	31	Not Used
F726	ENUMERATION	SRCX curve type
	0	Inverse time curve
	1	Constant time curve
F727	ENUMERATION	SRCX Trip or Open setting
	0	Open and don't activate lockout
	1	Trip and activate lockout
F728	BITFIELD	Option Bit Vectors
F732	ENUMERATION	ZSI Option
	0	ST ZSI
	1	GF ZSI
	2	ST and GF ZSI
F733	ENUMERATION	ZSI Zone Tier Settings
	0	ZSI Tier 0
	1	ZSI Tier 1
	2	ZSI Tier 2
	3	ZSI Tier 3
F734	ENUMERATION	Contact IO Debounce values
	0	Disabled
	1	Enabled_00016
	2	Enabled_00104
	3	Enabled_04088
	4	Enabled_32760
F735	ENUMERATION	Multipoint delay band settings
	0	BAND 1
	1	BAND 2
	2	BAND 3
	3	BAND 4
	4	BAND 5
	5	BAND 6
	6	BAND 7
F736	UINT32	Contact Input Configuration Low Vector
	0	0 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	1	1 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	2	2 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	3	3 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	4	4 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	5	5 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	6	6 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	7	7 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	8	8 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	9	9 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output

	10	10 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	11	11 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	12	12 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	13	13 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	14	14 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	15	15 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	16	16 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	17	17 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	18	18 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	19	19 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	20	20 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	21	21 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	22	22 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	23	23 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	24	24 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	25	25 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	26	26 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	27	27 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	28	28 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	29	29 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	30	30 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	31	31 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
F737	UINT32	Contact Input Configuration High Vector
	0	32 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	1	33 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	2	34 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	3	35 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	4	36 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	5	37 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	6	38 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	7	39 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	8	40 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	9	41 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	10	42 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	11	43 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	12	44 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	13	45 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	14	46 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	15	47 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	16	48 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	17	49 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	18	50 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	19	51 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	20	52 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	21	53 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	22	54 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	23	55 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	24	56 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	25	57 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	26	58 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	27	59 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	28	60 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output

	29	61 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	30	62 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
	31	63 - I/O x + (bit number) Input, 1 - I/O x + (bit number) Output
F738	ENUMERATION	Option String Authentication Status
	0	New and Old Both Option strings Invalid
	1	Using Valid New Option String
	2	Using Valid Old Option String