PowerLogic® ION7300 Profibus DP

Serial Communications Protocol

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Schneider Electric

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1. INTRODUCTION

The ION7300 performs Profibus DP communications using the Siemens SPC3 ASIC (Application Specific Integrated Chip) and Profibus DP Standard protocol (EN50170 Part 3). Profibus DP Enhanced V1 protocol is not supported in this release.

This document describes the communications messaging protocol employed by the ION7300 meter to pass information within a Profibus DP network. This protocol is called the **Meter Messaging Protocol** in the remainder of this document. The Profibus Register and Block maps are also included in this document.

It is assumed that the reader has a general understanding of Profibus DP protocol.

1.1 Profibus DP Standard

Profibus DP Standard is designed to support remote I/O on a Programmable Logic Controller. In this Master/Slave environment message sizes are small and of fixed length. The request packet is often no more than eight bytes and the response typically no more than 32 bytes although 244 bytes are available for each request and response. These small packets allow for very fast and deterministic update rates for the remote I/O.

The ION7300 has much more information to transfer than is directly supportable in Profibus DP. To make this information available a messaging protocol called Meter Messaging Protocol has been layered on top of the fixed sized packets of the Profibus DP protocol.

1.2 ION7300 Meter Messaging Protocol Revisions

March, 1998 Initial Release.

2. Sub-Protocols

The Meter Messaging protocol is handled by the Master and Slave applications and is independent of the Profibus DP protocol. The output (REQUEST) data is fixed at eight bytes and the input (RESPONSE) data is fixed at 32 bytes.

The Meter Messaging Protocol can be divided into two simpler protocols. The first allows the Master to access real-time meter parameters in blocks of six parameters each. This Protocol is called **Block Access Protocol** in the remainder of this document. The second protocol allows the Master to access setup and control registers in the ION7300 meter. This protocol is called **Register Access Protocol** in the remainder of this document.

2.1 Block Access Protocol

The ION7300 meter has 12 predefined blocks of data each with six real-time parameters. To read these parameters the Master must use the Block Access Protocol.

The Master must set the Block Field to the desired block. See section 3.1.4. The ION7300 meter will respond with the same Block Field, the requested data in the Block Data Field and Acknowledge With Data in the Block Acknowledge Field. See section 4.2.

See Appendix B for the default Block Map.

If the Master requests an invalid block the ION7300 will respond with the same Block Field, the Block Data Field cleared and Negative Acknowledgement in the Block Acknowledge Field.

2.2 Register Access Protocol

To access the setup and control registers of the ION7300 meter the master must use the Register Access Protocol.

To read a setup register the Master sets the Register Field to the desired register and the Command Field to Read Register. See section 4.3. The ION7300 meter will respond with the same Register Field, the request value in the Register Data Field and Acknowledge With Data in the Register Acknowledge Field. See section 4.1.

See Appendix C for the Default Register Map.

If the request is invalid the ION7300 will respond with the same Register Field, the exception in the Register Data Field and Negative Acknowledgement in the Register Acknowledge Field. See section 5. for a detailed description of the exceptions.

3. Packet Structures

3.1 Request Packet Structure (Output)

Every meter messaging request packet consists of four fields. See Appendix A for examples.

1. Data Field
2. Register Field
3. Control Field
4. Block Field

3.1.1 Data Field

This four byte field from bytes 0 to 3 is used to write a parameter or control a function within the slave. During a Read Register command this field is ignored by the

ION7300 meter. During a Write Register Command this field contains the integer value to be written.
Byte 0, the left most byte represents the most significant byte and byte 3, the least significant byte.

3.1.2 Register Field

This two byte field indicates which Profibus register the Master wishes to read or write. These registers represent the setup and control parameters of the ION7300 device. See Section 3.2.2 for more information on Profibus registers.

See Appendix C for the Default Register Map.

3.1.3 Control Field

This one byte field indicates the type of request. The acknowledgment bits are not used in this release.

See Section 4 for more details on this field.

3.1.4 Block Field

This one byte field indicates which fixed Block of real-time data the Master wishes to read. This field controls the last 24 bytes of the response packet which represents six values. See section 4. for more information.

See Appendix B for the default Block Map.

3.2 Response Packet Structure (Input)

Every meter messaging response packet consists of five fields. See the Appendix A for examples.

1. Data Field
2. Register Field
3. Control Field
4. Block Field
5. Block Data Field

3.2.1 Data Field

This four byte field from bytes 0 to 3 is used to pass back requested data or as part of a write acknowledgment. It is also used to return exception values. See Section 5. Byte 0, the left most byte represents the most significant byte and byte 3, the least significant byte.

3.2.2 Register Field

The Slave responds with the same register address that was sent by the Master so the Master will know that this packet is the response to the last request.

3.2.3 Control Field

This one byte field informs the Master which request was made and the acknowledgment value. See Section 4 for more details on this field.

3.2.4 Block Field

The Slave responds with the same Block number that was sent by the Master so the Master will know that this packet is the response to the last Block request.
Bytes 8 to 31 of the response packet are the Block Data Field and represent the six real-time parameters.

If an invalid Block is requested, the response packets Block Field will contain the invalid Block value and the Block Acknowledgment Field will contain Negative Acknowledgment. The Block Data will contain all zeros.

3.2.5 Block Data Field

Bytes 8 to 31 of the response packet represent the Block Data Field. This field is divided into six sections which represents a value within the requested Block. See section 4.

4. Control Field

The Control Field is made up of three sub-fields:
1. Register Acknowledgment Field
2. Block Acknowledgment Field
3. Command Field

4.1 Register Acknowledgment Field

The Register Acknowledgment Field is made up of bits 0 and 1 of the Control Field. The below sections illustrate the Meter Messaging Acknowledgments supported by the ION7300.

Acknowledgment	Value (Bits)
Null Acknowledgment	00
Acknowledge with Data	01
Negative Acknowledgment (exception response)	10
Not Used	11

4.1.1 Null Acknowledgment

After a successful register read or write the Master can request to read or write another parameter or enter into an Idle State. During an Idle State the request and response Data Field is set to zero and the Command Field is set to Null Command. The response Register Acknowledge Field is set to Null Acknowledgment.

4.1.2 Acknowledge with Data

The Slave sets the Register Acknowledgment Field to Acknowledge with Data on a successful register read or write.

4.1.3 Negative Acknowledgment

The Slave sets the Register Acknowledgment Field to Negative Acknowledgment on an unsuccessful register

read or write. For an unsuccessful request the Data Field contains the value of the exception. See Section 5.

4.2 Block Acknowledgment Field

The Block Acknowledgment Field is made up of bits 2 and 3 of the Control Field. The below sections illustrate the Meter Messaging Acknowledgments supported by the ION7300.

Acknowledgment	Value (Bits)
Not Used	00
Acknowledge with Data	01
Negative Acknowledgment	10
Block Value Not Available	11

4.2.1 Acknowledge with Data

The Slave sets the Block Acknowledgment Field to Acknowledge with Data on a successful Block request.

4.2.2 Negative Acknowledgment

The Slave sets the Block Acknowledgment Field to Negative Acknowledgment on an unsuccessful Block request. This can occur if the Master requests an out of bounds Block.

4.2.3 Block Value Not Available

The ION7300 meter will set the Block Acknowledgment Field to Block Value Not Available if one or more block values are not available within the meter.

All valid block values will be sent correctly and the not available values will be set to zero.

This condition can occur if the meter's Volts Mode is set to DELTA and the Master requests Block #1 (Volts line-neutral) which is not valid in this mode.

4.3 Command Field

The Command Field is bits 4 to 7 of the Control Field. The below sections illustrate the Meter Messaging commands supported by the ION7300.

Command	Value (Bits)
Null Command	0000
Read Register	0001
Write Register	0010

4.3.1 Null Command

This command allows the Master to clear a read or write request. This is also the command the Master and Slave are set to when the device enters Profibus DP Data Exchange mode. The Slave will respond with the Null Command in the Command Field and Acknowledge with Data in the Register Acknowledgment Field.

4.3.2 Read Register

This command allows the Master to read the value of a single register in the ION7300. With a successful read the Slave responds with a packet containing the single value of the register in the Data Field and an Acknowledge with Data in the Register Acknowledgment Field. See Appendix A-1 for an example.
If the request fails, the exception value is returned in the Data Field and a Negative Acknowledgment is set in the Register Acknowledgment Field. See Section 4.1.

4.3.3 Write Register

This command allows the Master to write a value to a single register. The Data Field of the request represents the value to be written. With a successful write the Slave responds with a packet containing the sent value in the Data Field and an Acknowledge with Data in the Register Acknowledgment Field. See Appendix A-1 for an example.

If the request fails, the exception value is returned in the Data Field and a Negative Acknowledgment is set in the Register Acknowledgment Field. See Section 4.1.

5. Exceptions

The below table lists the conditions that can cause exception responses. All exception responses are placed in the Data Field of the response packet and the Acknowledgment Field is set to Negative Acknowledgment.

Exception	Value (Hex)
Invalid Register Request	00 00 00 01
Invalid Command Request	00 00 00 02
Invalid Value Write Request	00 00 00 04
Register Not Available	00 00 00 08

5.1 Invalid Register Request

If the Master requests a register that is not in the register map or attempts to write to a read only register, the Slave will respond with this exception.

See Appendix C for the Default Register Map.

5.2 Invalid Command Request

If the Master sends a command that does not equal Read Register, Write Register, or Null Command the Slave will respond with this exception. See section 4.3

5.3 Invalid Value Write Request

If the Master sends a value that is out of bounds for the register to be written the Slave will respond with this exception.

See Appendix C for the Default Register Map.

5.4 Register Not Available

If the Master requests a register that is not available the Slave will respond with this exception. (E.g. External Boolean Register #4 is in the Profibus Register Map but is not created in the ION7300 meter.)

See Appendix C for the Default Register Map.

6. Diagnostics

The below table lists the extended diagnostic packet for the ION7300 meter. As the ION7300 meter does not maintain time during power down, the time must be sent by the Master after power up. Byte #1, Bit #1 indicates time is required by the meter. Once time has been sent this bit will be cleared. Byte #2 represents the number of power cycles that have occurred in the meter.

Extended Diagnostics	Description
Byte #1 – Bit #1 (LSB)	TRUE: Time required
Byte #1 – Bit #2	Future
Byte #1 – Bit #3	Future
Byte #1 – Bit #4	Future
Byte #1 – Bit #5	Future
Byte #1 – Bit #6	Future
Byte #1 – Bit #7	Future
Byte #1 – Bit #8 (MSB)	Future
Byte #2	Number of meter power cycles
Byte #3 to #7	Future

APPENDIX A-1 READ REGISTER

READ REGISTER

REQUEST PACKET (Master station to 73xx ION)		RESPONSE PACKET (73xx ION to Master station)	
Data (Not Used)	(4 bytes)	Data	(4 bytes)
Register Address	(2 bytes)	Register Address	(2 bytes)
Register Acknowledge (Not Used)	(2 bits)	Register Acknowledge	(2 bits)
Block Acknowledge (Not Used)	(2 bits)	Block Acknowledge	(2 bits)
Command	(4 bits)	Command	(4 bits)
Block	(1 byte)	Block	(1 byte)
		Block Data	(24 bytes)

Example 3.1:
A 7300 ION is configured as a Profibus slave device. The Master station requests to read PT Primary. The parameter is mapped to Register 7000 Hex. The Block value is set to 2, voltage line to line parameters.

Request Packet:

MSB			LSB	Register		Control	Block
00	00	00	00	70	00	01	02

Response Packet:

MSB			LSB	Register		Control	Block
00	00	04	B0	70	00	51	02

byte 8	byte 15
Block Data #1 (Vll AB)	Block Data #2 (Vll BC)

byte 16	byte 23
Block Data #3 (Vll CA)	Block Data #4 (Vll avg)

byte 24	byte 31
Block Data #5 (Vll avg MAX)	Block Data #6 (Vll avg MIN)

* Note: the values shown in illustrated packets are all represented in hexadecimal format.

APPENDIX A-2 WRITE REGISTER

WRITE REGISTER

REQUEST PACKET (Master station to 73xx ION)		RESPONSE PACKET (73xx ION to Master station)	
Data	(4 bytes)	Data	(4 bytes)
Register Address	(2 bytes)	Register Address	(2 bytes)
Register Acknowledge (Not Used)	(2 bits)	Register Acknowledge	(2 bits)
Block Acknowledge (Not Used)	(2 bits)	Block Acknowledge	(2 bits)
Command	(4 bits)	Command	(4 bits)
Block	(1 byte)	Block	(1 byte)
		Block Data	(24 bytes)

Example 3.1:
A 7300 ION is configured as a Profibus slave device. The Master station requests to change PT Primary (7000 hex) to 2400. The Block Value is set to 01 (Voltage line to neutral parameters).

Request Packet:

MSB			LSB	Register		Control	Block
00	00	9	60	70	00	02	01

Response Packet:

MSB			LSB	Register		Control	Block
00	00	9	60	70	00	52	01

byte 8	byte 15
Block Data #1 (Vln A)	Block Data #2 (Vln B)

byte 16	byte 23
Block Data #3 (Vln C)	Block Data #4 (Vln avg)

byte 24	byte 31
Block Data #5 (Vln avg MAX)	Block Data #6 (Vln avg MIN)

* Note: the values shown in illustrated packets are all represented in hexadecimal format.

APPENDIX A-3 CHANGE BLOCK

CHANGE BLOCK

REQUEST PACKET (Master station to 73xx ION)		RESPONSE PACKET (73xx ION to Master station)	
Data (Not Used)	(4 bytes)	Data (Not Used)	(4 bytes)
Register Address (Not Used)	(2 bytes)	Register Address (Not Used)	(2 bytes)
Register Acknowledge (Not Used)	(2 bits)	Register Acknowledge (Not Used)	(2 bits)
Block Acknowledge (Not Used)	(2 bits)	Block Acknowledge	(2 bits)
Command (Not Used)	(4 bits)	Command (Not Used)	(4 bits)
Block	(1 byte)	Block	(1 byte)
		Block Data	(24 bytes)

Example 3.1:
A 7300 ION is configured as a Profibus slave device. The Master station requests to change the Block Data to #12 (Total Harmonic Distortion values).

Request Packet:

MSB			LSB	Register		Control	Block
00	00	00	00	00	00	00	0C

Response Packet:

MSB			LSB	Register		Control	Block
00	00	00	00	00	00	10	0C

byte 8	Byte 15
Block Data #1 (Va THD)	Block Data #2 (Vb THD)
byte 16	**byte 23**
Block Data #3 (Vc THD)	Block Data #4 (Ia THD)
byte 24	**byte 31**
Block Data #5 (Ib THD)	Block Data #6 (Ic THD)

* Note: the values shown in illustrated packets are all represented in hexadecimal format.

APPENDIX B: DEFAULT BLOCK MAP

NB: This section applies only to an ION7300 device which has been factory-initialized. Any setup changes to the Profibus Export Modules negate the validity of this map.

Block: **#1**
Scaling: **Yes (x10)**
IONZero, IONFull: **0, 214748364**
ProfiZero, ProfiFull: **0, 2147483640**

Description	Display Label	Links
Volts line to neutral A	N/A	Power Meter
Volts line to neutral B	N/A	Power Meter
Volts line to neutral C	N/A	Power Meter
Volts line to neutral average	N/A	Power Meter
Vln avg Maximum	N/A	MAX #4
Vln avg Minimum	N/A	MIN #4

Block: **#2**
Scaling: **Yes (x10)**
IONZero, IONFull: **0, 214748364**
ProfiZero, ProfiFull: **0, 2147483640**

Description	Display Label	Links
Volts line to line AB	Vll ab	Power Meter
Volts line to line BC	Vll bc	Power Meter
Volts line to line CA	Vll ca	Power Meter
Volts line to line average	Vll avg	Power Meter
Vll avg MAX	N/A	MAX #8
Vll avg MIN	N/A	MIN #8

Block: **#3**
Scaling: **Yes (x10)**
IONZero, IONFull: **0, 214748364**
ProfiZero, ProfiFull: **0, 2147483640**

Description	Display Label	Links
Current A	I a	Power Meter
Current B	I b	Power Meter
Current C	I c	Power Meter
Current average	I avg	Power Meter
Current average MAX	N/A	MAX #13
Current average MIN	N/A	MIN #13

Block: **#4**
Scaling: **Yes (x10)**
IONZero, IONFull: **-214748364, 214748364**
ProfiZero, ProfiFull: **-2147483640, 2147483640**

Description	Display Label	Links
KW A	N/A	Power Meter
KW B	N/A	Power Meter
KW C	N/A	Power Meter
KW Total	kW tot	Power Meter
KW Total Thermal Demand	N/A	TD #1
KW Tot Thermal Demand MAX	N/A	MAX #30

Block: **#5**
Scaling: **Yes (x10)**
IONZero, IONFull: **-214748364, 214748364**
ProfiZero, ProfiFull: **-2147483640, 2147483640**

Description	Display Label	Links
KVAR A	N/A	Power Meter
KVAR B	N/A	Power Meter
KVAR C	N/A	Power Meter
KVAR Total	kVAR tot	Power Meter
KVAR Total Thermal Demand	N/A	TD #2
KVAR Tot Thermal Dmd MAX	N/A	MAX #31

Block: **#6**
Scaling: **Yes (x10)**
IONZero, IONFull: **-214748364, 214748364**
ProfiZero, ProfiFull: **-2147483640, 2147483640**

Description	Display Label	Links
KVA A	N/A	Power Meter
KVA B	N/A	Power Meter
KVA C	N/A	Power Meter
KVA Total	kVA tot	Power Meter
KVA Total Thermal Demand	N/A	TD #3
KVA Total Thermal Dmd MAX	N/A	MAX #32

Block: **#7**
Scaling: **Yes (x10)**
IONZero, IONFull: **-214748364, 214748364**
ProfiZero, ProfiFull: **-2147483640, 2147483640**

Description	Display Label	Links
Power Factor A	N/A	Power Meter
Power Factor B	N/A	Power Meter
Power Factor C	N/A	Power Meter
Power Factor Total	PF sign tot	Power Meter
Power Factor Lead MIN	N/A	MIN #22
Power Factor Lag MIN	N/A	MIN #23

Block: **#8**
Scaling: **Yes (x100)**
IONZero, IONFull: **0, 21474836**
ProfiZero, ProfiFull: **0, 2147483600**

Description	Display Label	Links
Volts unbalanced	N/A	Power Meter
Current unbalanced	N/A	Power Meter
Line Frequency	Freq	Power Meter
Line Frequency MAX	N/A	MAX #21
Line Frequency MIN	N/A	MIN #21
Not used		

Block: **#9**
Scaling: **NO (x1)**
IONZero, IONFull: **N/A, N/A**
ProfiZero, ProfiFull: **N/A, N/A**

Description	Display Label	Links
KW hour Total	N/A	INT #3
KVAR hour Total	N/A	INT #7
KVA hour	N/A	INT #9
Not used	N/A	
Not used	N/A	
Not used	N/A	

Block: **#10**
Scaling: **NO (x1)**
IONZero, IONFull: **N/A, N/A**
ProfiZero, ProfiFull: **N/A, N/A**

Description	Display Label	Links
KW hour Import	N/A	INT #1
KW hour Export	N/A	INT #2
KW hour Net	kWh net	INT #4
KVAR hour Import	N/A	INT #5
KVAR hour Export	N/A	INT #6
KVAR hour Net	N/A	INT #8

Block: **#11**
Scaling: **Yes (x10)**
IONZero, IONFull: **-214748364, 214748364**
ProfiZero, ProfiFull: **-2147483640, 2147483640**

Description	Display Label	Links
KW Sliding Demand	KW swd	SWD #1
KW Predicted Demand	N/A	SWD #1
KW Sliding Demand MAX	KW swd mx	MAX #27
KW Sliding Demand MIN	N/A	MIN #27
Not used		
Not used		

Block: **#12**
Scaling: **Yes (x100)**
IONZero, IONFull: **0, 21474836**
ProfiZero, ProfiFull: **0, 2147483600**

Description	Display Label	Links
Va Total Harmonic Distortion	V1 Total HD	V1 Harmonics
Vb Total Harmonic Distortion	V2 Total HD	V2 Harmonics
Vc Total Harmonic Distortion	V3 Total HD	V3 Harmonics
Ia Total Harmonic Distortion	I1 Total HD	I1 Harmonics
Ib Total Harmonic Distortion	I2 Total HD	I2 Harmonics
Ic Total Harmonic Distortion	I3 Total HD	I3 Harmonics

APPENDIX C-1: PROFIBUS REGISTER MAP - ENUMERATED

Profibus Register (Hex)	ION Handle	Read/ Write	Description	Default	Enumeration
7800	7800	R/W	Volts Mode	0 or 1 or 2 or 4	0='4W-WYE' 1='DELTA' 2='SINGLE' 3='DEMO' 4='3W-WYE' 5='DIRECT-DELTA'
7801 7802 7803	7801 7802 7803	R/W R/W R/W	I1 Polarity I2 Polarity I3 Polarity	0	0='Normal' 1='Inverted'
7A4A 7A4B 7A4C	7A4A 7A4B 7A4C	R/W R/W R/W	V1 Polarity V2 Polarity V3 Polarity	0	0='Normal' 1='Inverted'

APPENDIX C-2: PROFIBUS REGISTER MAP - NUMERIC

Profibus Register (Hex)	ION Handle (Hex)	Read/ Write	Description	Default	Low Bound	High Bound
7000	7000	R/W	PT Primary	120 or 277 or 347	1	999999
7001	7001	R/W	PT Secondary	120 or 277 or 347	1	999999
7002	7002	R/W	CT Primary	5	1	999999
7003	7003	R/W	CT Secondary	5	1	999999
FF40	N/A	RO	Profibus Software Version	10	10	2147483647
FF41	N/A	RO	Profibus Hardware Version	10	10	2147483647
FF42	N/A	RO	Meter Messaging Protocol Version	10	10	2147483647
FF43	N/A	RO	Meter Hardware Version	N/A	01	99
FF44	N/A	RO	Meter Serial Number Upper	N/A	0001	9912
FF45	N/A	RO	Meter Serial Number Lower	N/A	001	999
FF46	N/A	RO	ION Framework Version	10	10	2147483647
FF47	N/A	RO	Profibus Address	126	0	126
FF48	N/A	RO	Meter Type	1	1	2147483647
FFC0	N/A	R/W	Time of Day	N/A	0	2147483647
FFC1	70B4 to 70C3	R/W	Sliding Demand Sub-Intervals	900	1	5940
FFC2	70C4 to 70D3	R/W	Sliding Demand # of Sub-Intervals	2	1	15

APPENDIX C-3: PROFIBUS REGISTER MAP - CONTROL

External Numeric Modules

Module	Profibus Register (Hex)	ION Handle	Read / Write	Default Link	Low Bound	High Bound
#1	5ADC	5ADC	R/W	None	-2,147,483,648	2,147,483,647
#2	5ADD	5ADD	R/W	None	-2,147,483,648	2,147,483,647
#3	5ADE	5ADE	R/W	None	-2,147,483,648	2,147,483,647
#4	5ADF	5ADF	R/W	None	-2,147,483,648	2,147,483,647

External Boolean Modules

Turn OFF: Write to the register with a zero.
Turn ON: Write to the register with a non-zero value.

Module	Profibus Register (Hex)	ION Handle	Read / Write	Default Link
#1	608F	608F	R/W	Min/Max Enable
#2	6090	6090	R/W	None
#3	6091	6091	R/W	Energy Enable
#4	6092	6092	R/W	None
#5	6093	6093	R/W	None
#6	6094	6094	R/W	None
#7	6095	6095	R/W	None
#8	6096	6096	R/W	None

External Pulse Modules

Pulse: Write to the register with a non-zero value. A zero value returns an exception and does not pulse the register.

NOTE: Pulses will be generated once a second after the write request until a subsequent request is received.

Module	Profibus Register (Hex)	ION Handle	Read / Write	Default Link
#1	68AE	68AE	R/W	Peak Demand Reset
#2	68AF	68AF	R/W	Min/Max Reset
#3	68B0	68B0	R/W	Sliding Window Demand Reset
#4	68B1	68B1	R/W	Thermal Demand Reset
#5	68B2	68B2	R/W	None
#6	68B3	68B3	R/W	Harmonic Min/Max Reset
#7	68B4	68B4	R/W	Energy Reset
#8	68B5	68B5	R/W	None
#9	68B6	68B6	R/W	None
#10	68B7	68B7	R/W	None
#11	68B8	68B8	R/W	None
#12	68B9	68B9	R/W	None
#13	68BA	68BA	R/W	None
#14	68BB	68BB	R/W	None
#15	68BC	68BC	R/W	None
#16	68BD	68BD	R/W	None
#17	68BE	68BE	R/W	None
#18	68BF	68BF	R/W	None
#19	68C0	68C0	R/W	None
#20	68C1	68C1	R/W	None
#21	68C2	68C2	R/W	None
#22	68C3	68C3	R/W	None
#23	68C4	68C4	R/W	None
#24	68C5	68C5	R/W	None
#25	68C6	68C6	R/W	None
#26	68C7	68C7	R/W	None
#27	68C8	68C8	R/W	None
#28	68C9	68C9	R/W	None
#29	68CA	68CA	R/W	None
#30	68CB	68CB	R/W	None
#31	68CC	68CC	R/W	None
#32	68CD	68CD	R/W	None

For further assistance
please contact us at:

Schneider Electric
Power Monitoring and Control
2195 Keating Cross Road
Saanichton, BC
Canada V8M 2A5
Tel: 1-250-652-7100

295 Tech Park Drive, Suite 100
Lavergne, TN 37086
USA
Tel: 1-615-287-3400

Electropole (38 EQI)
31, rue Pierre Mendès France
F - 38050 Grenoble Cédex 9
Tel : + 33 (0) 4 76 57 60 60

Getting technical support:
Contact your local Schneider Electric sales representative for assistance or go to the www.powerlogic.com website.

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