

MultiCubeX50 Range IP Meter

Ethernet System Meter Installation and Operation Manual

Revision 3

Published December 2017

MultiCubeX50 Range

Ethernet System Meter

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For further Information contact the manufacturer:

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Web: <http://www.ndmeter.co.uk>
Email: sales@ndmeter.co.uk

MultiCubeX50 Range

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1. Meter models covered by this manual

This manual covers the following products;

- MultiCube350-IP
- MultiCube650-IP
- MultiCube950-IP

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2. Introduction

The MultiCubeX50-IP meter range are Ethernet based sub-metering devices designed for inclusion in industrial and office computer networks. Depending on the topology and configuration of the network, access to the meter may be made within the Local Area Network (LAN) or over an organisational Wide Area Network (WAN) or globally via the Internet.

Connection to the meter is made via the integral RJ45 socket. Standard Ethernet cabling is then used to connect the meter to the network, which may be direct to a PC or via a router, wireless access point, mains signalling access point or similar.



Figure 1- Meter Network Options

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3. Installation

3.1. Wiring

For instructions on wiring the meter to the electrical system being measured refer to the *MultiCubex50 Installation Guide* document.

3.2. Network

3.2.1. Front Panel Configuration

The following network parameters can be viewed or changed via the front panel display:

- DHCP on/off
- IP Address
- Subnet Mask
- Default Gateway
- DNS Server

By default, the meter will attempt to configure itself automatically using the Dynamic Host Configuration Protocol (DHCP), the same method by which a desktop computer usually configures its network settings.

For details of using the front-panel to access network parameters, please refer to the *MultiCubex50 Installation Guide* document.

3.2.2. Standalone

In the absence of a network the meter can be connected directly to the Ethernet port of a PC or laptop. In this scenario, a static IP Address and a Subnet Mask should be chosen for the PC and the meter. Usually a Subnet Mask of 255.255.255.0 would be chosen and the two IP Addresses will have the first three bytes in common and differ in the last byte only (the Default Gateway is irrelevant and can be ignored). The method for setting the IP Address of the PC will vary depending upon the operating system.

3.2.3. Testing Network Connection

Once the Ethernet interface of the meter is configured it can be tested using the ping utility from the command prompt of a desktop PC on the same network. Start a command prompt and type the word 'ping' followed by a space and then the IP address of the meter. For example, if the IP address is 192.168.1.20 type the command:

```
ping 192.168.1.20
```

If the meter is correctly configured and on the local network then there should be a response indicating that the meter replied. For example:

```
Pinging 192.168.1.20 with 32 bytes of data:
```

```
Reply from 192.168.1.20: bytes=32 time=2ms TTL=64
Reply from 192.168.1.20: bytes=32 time=2ms TTL=64
Reply from 192.168.1.20: bytes=32 time=1ms TTL=64
Reply from 192.168.1.20: bytes=32 time=1ms TTL=64
```

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```
Ping statistics for 192.168.1.20:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
  Minimum = 1ms, Maximum = 2ms, Average = 1ms
```

If the meter is not responding then the response will indicate that the ping timed out. For example:

```
Pinging 192.168.1.20 with 32 bytes of data:

Request timed out.
Request timed out.

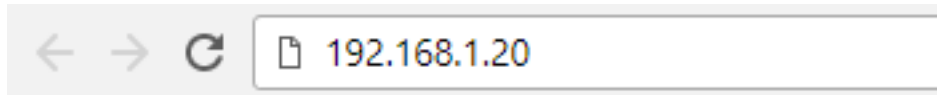
Request timed out.
Request timed out.

Ping statistics for 192.168.1.20:
  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

3.2.4. Web Browser Setup

The meter contains a built-in web server that can serve HTTP content to a standard web browser such as Google Chrome or Mozilla Firefox. Enter the IP Address of the meter into the address bar of the browser.

For example:



3.2.4.1. JavaScript

No browser extensions or plug-ins are required to view web interface. However, JavaScript is used by the web interface and should therefore be enabled in the browser.

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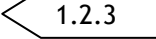
4. Web Interface

The web interface can be accessed using a web browser, such as Google Chrome or Mozilla Firefox, by typing the IP address of the meter into the browser.

Before access is granted, a valid username and password must be provided. See 6 *Passwords* for details.

When loaded, the Meter Homepage will appear as described below.

4.1. Screenshot Legend

An arrow with a number inside  alongside a screenshot indicates the section of the manual that explains that part of the screenshot.

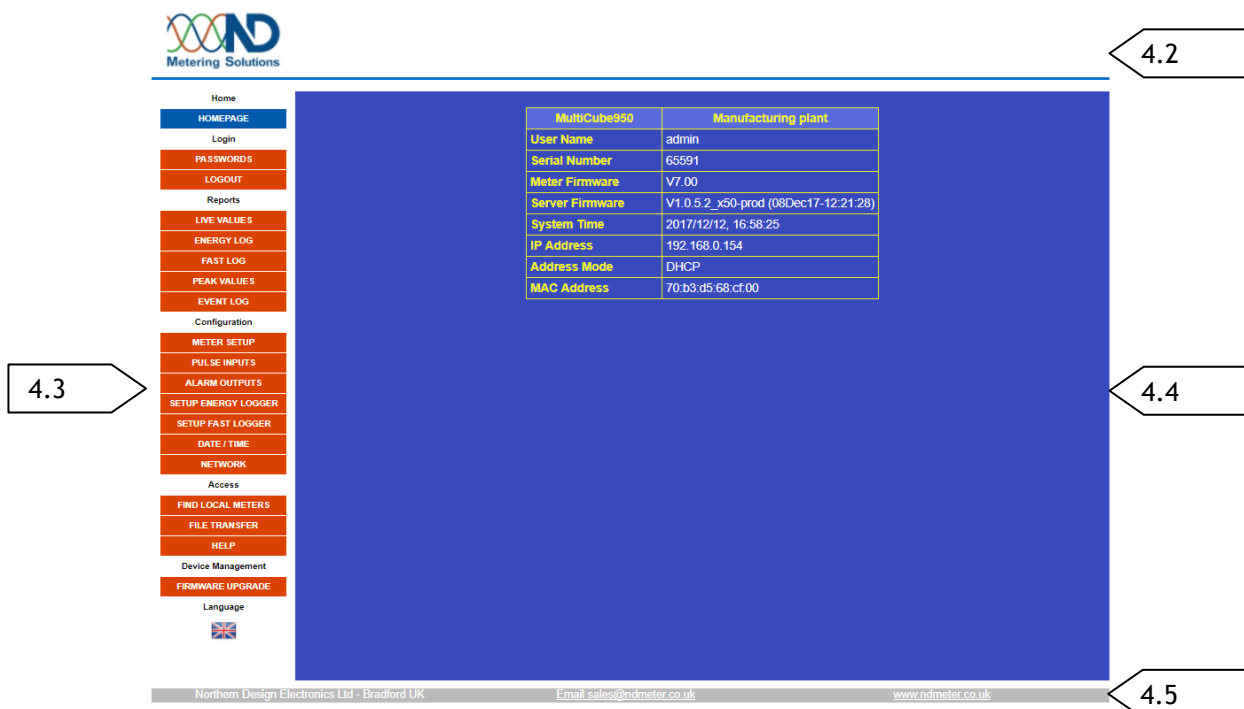


Figure 2- Web Interface Layout

4.2. Header

The product can be customised by changing the logo that appears here. See 20.3.1 *Customised Logo* for details.

If the connection between web browser and meter is lost, the following message will be displayed in the header area:

Meter not responding - retrying

The message will persist until the connection has been restored.

Loss of connection could be caused by a number of scenarios including network outages and loss of power at the meter.

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4.3. Menu

Allows selection of a specific view as detailed in *Figure 3- Web Interface Menu*.

4.4. Display Area

This is the main user interface where the current view is displayed and settings can be modified.

4.5. Footer

Identifies the company name, email and web address. This can be customised by the installer or end user. See *20.3.2 Customised Footer* for details.

Clicking on the middle element of the default footer will create an email to the ND Meter sales department using the default email client of the PC.

Clicking on the right-hand element of the default footer will use a new browser tab to navigate to the homepage of the ND Meter website.

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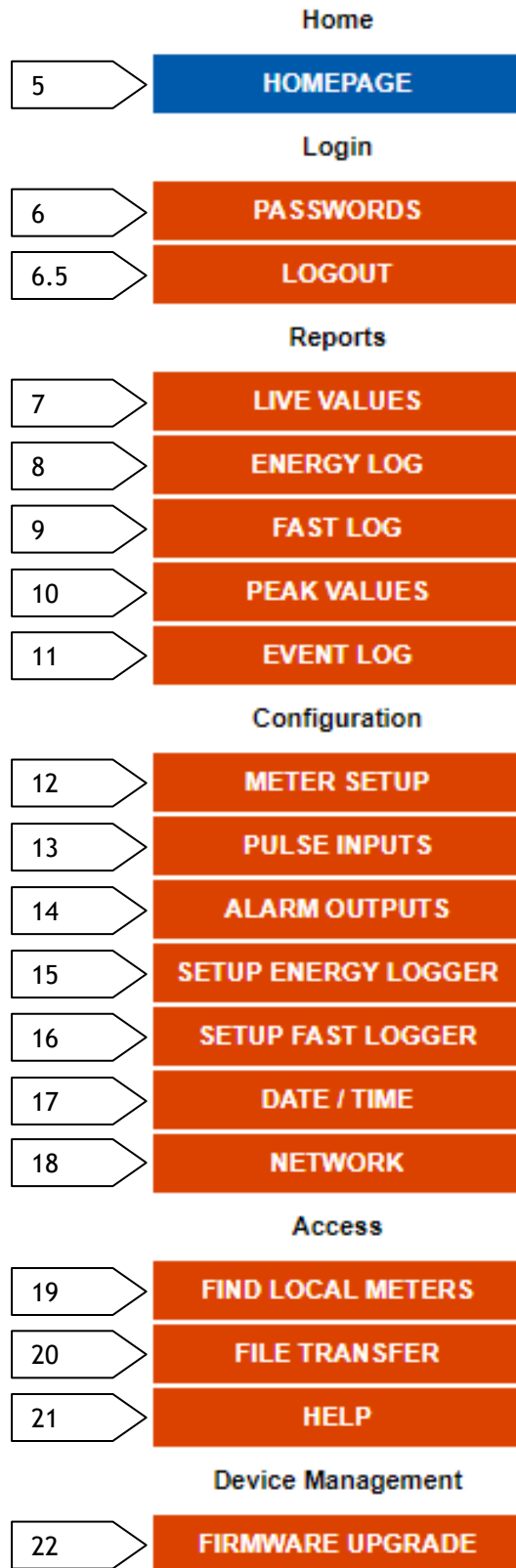


Figure 3- Web Interface Menu

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5. Meter Homepage

5.1. Summary

The *Meter Homepage* provides an overview of the identity and current state of the meter.

MultiCube950	Manufacturing plant	5.2
User Name	admin	5.3
Serial Number	65591	5.4
Meter Firmware	V7.00	5.5
Server Firmware	V1.0.5.2_x50-prod (08Dec17-12:21:28)	5.6
System Time	2017/12/12, 16:58:25	5.7
IP Address	192.168.0.154	5.8
Address Mode	DHCP	5.9
MAC Address	70:b3:d5:68:cf:00	5.10

Figure 4- Meter Homepage

5.2. Device Identification

The upper line of the table identifies the model type of the meter and the user-specified name for the meter. See 12.3 *Meter Name* for details of how to change this name.

5.3. User Name

The name of the currently logged-in user account.

5.4. Serial Number

The ND serial number of the MultiCubeX50 meter.

5.5. Meter Firmware

The version of firmware installed within the MultiCubeX50 meter display board.

5.6. Server Firmware

The version and build timestamp of firmware installed within the IP option board.

5.7. System Time

The current date and time of the meter. This indicates the time local to the meter incorporating the time zone setting. 17 *Date/Time* describes how the time settings can be modified.

5.8. IP Address

The current IPv4 address of the meter as defined statically or allocated via DHCP.

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5.9. Address Mode

Indicating either *DHCP* or *Static* depending upon the current network configuration. *18 Network* describes how the network configuration can be modified.

5.10. MAC Address

The hardware MAC (Media Access Control) address of the IP option board.

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6. Passwords

6.1. Summary

Users must be logged in using an account name and password before access is granted to the meter web interface.

After ten minutes of inactivity the account will be automatically logged out of the web interface.

Two accounts are associated with the meter.

The *admin* account provides full access to view and modify the state of the meter.

The *user* account provides reduced access to only view the state of the meter.

The meter is shipped with default passwords for each account. These passwords may be modified via the web interface.

6.2. Default Passwords

At manufacture, the passwords are configured as:

- Account: *admin*; Password: *admin*
- Account: *user*; Password: *user*

6.3. Security Transition

The majority of web pages are served as HTTP by the browser. To enable encryption of modified passwords during submission to the meter, the password update web page is served as HTTPS. This results in a security warning during the transition from HTTP to HTTPS. For a detailed discussion on this topic, refer to *Appendix A1 - Web Security Background*.

On selecting the *Password* menu option, the following message is displayed:

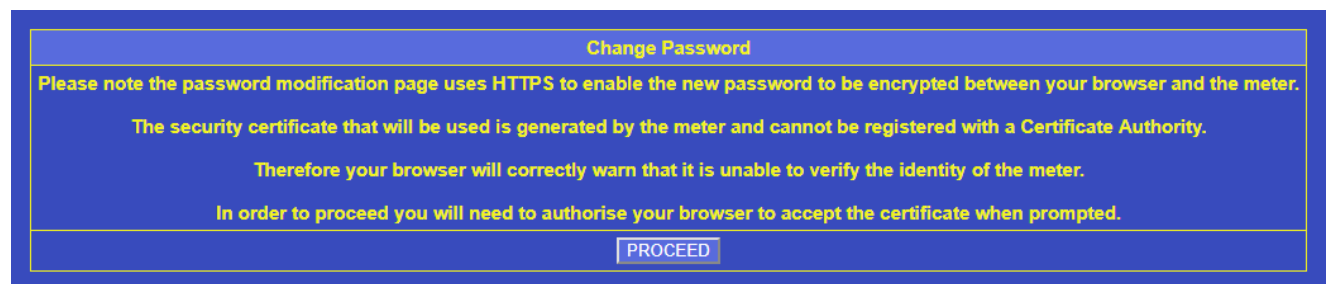


Figure 5- Security Message

When the *Proceed* button is pressed and the browser security warning is acknowledged, the current credentials must be provided again to access the secure area of the web interface. Once correct credentials are supplied, the password update web page is displayed.

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6.4. Password Update

The screenshot shows a 'Change Password' form with a blue header and yellow text. It contains three input fields: 'Account' with a dropdown menu showing 'User', 'New Password', and 'Confirm New Password'. A 'DONE' button is at the bottom. Callouts 6.4.1 through 6.4.4 point to the dropdown, the first input field, the second input field, and the 'DONE' button respectively.

Change Password	
Account	User ▼
New Password	<input type="password"/>
Confirm New Password	<input type="password"/>
<input type="button" value="DONE"/>	

Figure 6- Change Password Form

6.4.1. Account

When currently logged in as the *Admin* user, selection can be made which account the new password should be applied to (*User* or *Admin*).

When logged in as *User*, only the password for the *User* account can be modified.

6.4.2. New Password

The required new password should be entered in this field.

The password must be 4-16 characters long.

Passwords must contain alphanumeric, hyphen and underscore characters only.

6.4.3. Confirm New Password

The required new password should also be entered in this field.

The two entered passwords must be identical.

6.4.4. 'Done' button

When clicked, the *Done* button applies the modified password to the meter. A message will be displayed under the button to indicate whether the password modification attempt succeeded or failed.

6.5. Logout

In each of the following scenarios, the current account will be logged out and the login prompt will be redisplayed by the browser:

- The user selects the *Logout* option from the menu
- There is no activity from the user for 10 minutes

6.6. Password Recovery

If the password for the *Admin* user is lost/forgotten, there is a mechanism to reset the password to a known value. Contact sales@ndmeter.co.uk if this is required.

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7. Live Values

7.1. Summary

The *Live Values* view of the web interface provides a monitoring display for all loads measured by the meter.

Manufacturing plant																																		
Meter Model												MultiCube950																						
Serial Number												65591																						
Live Meter Readings														Meter Time								2017/12/13, 10:46:50												
Meter	Phase	Load	Type	CT	Volts			Amps			Power kW				kVAr				Power Factor				kWh	kVArh										
					1	2	3	1	2	3	1	2	3	Sys	1	2	3	Sys	1	2	3	Sys												
1	Sys	Processing	3-Ph	5	805.0	817.0	817.0	9.993	9.735	7.102	9.005	8.981	4.873	22.86	0.000	0.000	-3.143	-3.140	1.000	1.000	0.8400	0.9910	17636	416.0										
2	1	Conveyor 1	1-Ph	30	805.0	817.0	817.0	101.0			111.9				0.000				1.000				47540	3026										
2	2	Conveyor 2	1-Ph	30	805.0	817.0	817.0		99.13			126.9				0.000				1.000			45806	2889										
2	3	Conveyor 3	1-Ph	30	805.0	817.0	817.0			99.03			120.6				0.000				1.000		47446	3058										
3	1	Lighting	1-Ph	3500	805.0	817.0	817.0	8756			9798				0.000				1.000				5005680	187091										
3	2	Heating	1-Ph	3500	805.0	817.0	817.0		7831			13156				0.000				1.000			6064157	151363										
3	3	Cooling	1-Ph	3500	805.0	817.0	817.0			6658			10199				0.000				1.000		6079787	142505										
4(v)	Sys	Residual	3-Ph		805.0	817.0	817.0	150.1	166.3	153.7	120.9	135.9	125.5	382.3	0.000	0.000	-3.140	-3.100	1.000	1.000	1.000	1.000	1244042	22204										

Figure 7- Live Values Overview

7.2. Device Identification

Manufacturing plant		7.2.1
Meter Model	MultiCube950	7.2.2
Serial Number	65591	7.2.3

Figure 8- Live Values Device Identification

7.2.1. Meter Name

The user-specified name for the meter. See 12.3 *Meter Name* for details of how to modify this name.

7.2.2. Meter Model

The model name of the meter.

7.2.3. Serial Number

The ND assigned serial number of the meter.

7.3. Time

Meter Time	2017/10/19, 10:23:54	7.3.1
------------	----------------------	-------

Figure 9- Live Values Time Display

7.3.1. Meter Time

The current system time of the meter (meter local time) considering the set time zone.

MultiCubeX50 Range

Ethernet System Meter

7.4. Data Table

Live meter readings					Meter time										2017/12/10 10:49:59									
Meter	Phase	Load	Type	CT	Volts			Amps			Power kW				kVAr				Power Factor				kWh	kVArh
1	Sys	Processing	3-Ph	5	1	2	3	1	2	3	1	2	3	Sys	1	2	3	Sys	1	2	3	Sys	17636	416.0
2	1	Conveyor 1	1-Ph	30	805.0	817.0	817.0	9.993	9.735	7.102	9.005	8.981	4.873	22.86	0.000	0.000	-3.143	-3.140	1.000	1.000	0.8400	0.9910	47540	3026
2	2	Conveyor 2	1-Ph	30	805.0	817.0	817.0		99.13			126.9			0.000				1.000				45806	2889
2	3	Conveyor 3	1-Ph	30	805.0	817.0	817.0			99.03			120.6			0.000					1.000		47446	3058
3	1	Lighting	1-Ph	3500	805.0	817.0	817.0	8756			9798				0.000				1.000				5005680	187091
3	2	Heating	1-Ph	3500	805.0	817.0	817.0		7831			13156			0.000				1.000				6064157	151363
3	3	Cooling	1-Ph	3500	805.0	817.0	817.0			6658			10199			0.000					1.000		6079787	142505
4(v)	Sys	Residual	3-Ph		805.0	817.0	817.0	150.1	166.3	153.7	120.9	135.9	125.5	382.3	0.000	0.000	-3.140	-3.100	1.000	1.000	1.000	1.000	1244042	22204

7.4.1

Figure 10- Live Values Data Table

7.4.1. Live Data

Live meter data is shown and constantly updated.

Each load is displayed on a separate line. The load configuration can be modified, see *12 Meter Setup* for details.

The column headings have the following meanings.

7.4.1.1. Meter

The number of the meter point in which the load resides.

These will be numbered according to the meter model and options as shown below.

Model / Option	Meter Point Numbering
MultiCube350	1
MultiCube650	1, 2
MultiCube950	1, 2, 3
MultiCube950 + Virtual Meter	1, 2, 3, 4(v)

7.4.1.2. Phase

The phase number of the load within the identified meter point.

For single phase loads this will be numbered 1, 2, or 3.

For three phase loads this will be identified as Sys.

For a virtual load this will be identified as Sys.

7.4.1.3. Load

The user-specified load name. See *12 Meter Setup* for details of how to modify these names.

7.4.1.4. Type

The load type.

Single phase loads are marked *1-Ph*.

Three phase loads are marked *3-Ph*.

A virtual load is marked *3-Ph*.

MultiCubeX50 Range

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7.4.1.5. CT

The auto-detected CT primary current for the load.

7.4.1.6. Volts

The voltage value, scaled to display in Volts, for each phase of the meter.

7.4.1.7. Amps

The current value or values, scaled to display in Amps, for relevant phases of the load.

For single phase loads, only the phase applicable to the load will be displayed. Other phases will be blank.

For three phase loads, all phases will be populated with values.

For a virtual load, all phases will be populated with values.

7.4.1.8. kW/kVAr/Power Factor

The kW, kVAr and Power Factor values for relevant phases of the load and the system value if applicable.

The power values are scaled to display in kilo units.

For single phase loads, only the phase applicable to the load will be displayed. Other phases and the system value will be blank.

For three phase loads, all phases will be populated with values. In addition, the system value will be provided.

For a virtual load, all phases will be populated with values. In addition, the system value will be provided.

7.4.1.9. kWh/kVArh

The cumulative energy values for the load, scaled to kilo units.

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Ethernet System Meter

8. Energy Log

8.1. Summary

The *Energy Log* view of the web interface displays historical energy data measured by the meter for all configured loads, using filters specified by the user.

8.2. Data Selection

Select Period	Today ▼	8.2.1
Metered Parameter	kWh ▼	8.2.2
Virtual Meter	<input type="checkbox"/> Include in table	8.2.3
Pulse Inputs	<input type="checkbox"/> Include in table	8.2.4
Display	<input checked="" type="radio"/> Register Totals <input type="radio"/> Period Totals	8.2.5
UPDATE TABLE		8.2.6

Figure 11- Energy Log Data Selection

Select Period	Custom ▼
From	dd/mm/yyyy
To	dd/mm/yyyy

Figure 12- Energy Log Custom Period

8.2.1. Select Period

Choose the time period for which energy data should be displayed from the following options (note all times are with respect to meter local time):

- *Today* - The current day from 00:00hrs until the most recent energy logging event
- *Yesterday* - The previous day from midnight to midnight
- *This Week* - The current week from 00:00hrs on Monday until the most recent energy logging event
- *This Month* - The current month from 00:00hrs on the first day of the month until the most recent energy logging event
- *24 Hours* - Yesterday at the current time until the most recent energy logging event
- *7 Days* - Seven days ago at the current time until the most recent energy logging event
- *28 Days* - Twenty-eight days ago at the current time until the most recent energy logging event
- *Custom* - See *Figure 12- Energy Log Custom Period*

MultiCubeX50 Range

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- *From* - The start date of the required logging period. The period will commence from 00:00hrs at the start of this day.
- *To* - The end date of the required logging period. The period will run until midnight at the end of this day.

8.2.2. Metered Parameter

The measurement parameter to be displayed from the following options:

- *kWh*
- *kVArh*
- *kVAh*
- *Export kWh*
- *Export kVArh*

8.2.3. Virtual Meter

If the meter includes the virtual meter option, the box can be ticked to include computed measurements for the virtual meter in the displayed data.

8.2.4. Pulse Inputs

The box can be ticked to include cumulative pulse input totals in the displayed data.

8.2.5. Display

The logged energy data will be displayed using one of the following methods, which can be selected using the radio buttons:

- *Register Totals* - The cumulative ascending energy values will be displayed.
- *Period Totals* - The energy total accumulated during each period will be displayed. This is equivalent to subtracting the previous cumulative value from the current cumulative value for each logging point.

8.2.6. 'Update table' button

When clicked, submits the logging display query to the meter. Subsequently the requested data will be displayed beneath the data selection table.

MultiCubeX50 Range

Ethernet System Meter

8.3. Data Display

Manufacturing plant	8.3.1	Energy Profile				MultiCube950	8.3.2
Units	Metered Values					Pulse Inputs	8.3.3
	kWh	kWh	kWh	kWh	kWh	Cubic Mtr	
Load	Processing	Conveyor 2	Heating	Cooling	Residual	Burners	8.3.4
2017/12/13, 11:08:01	17644	45860	6070849	6084339	1244191	2.150	
2017/12/13, 11:08:16	8.3.5	45861	6070951	6084407	8.3.6	2.150	8.3.7
2017/12/13, 11:08:31	17644	45861	6071033	6084460	1244195	2.150	
2017/12/13, 11:08:46	17645	45862	6071129	6084522	1244197	2.150	

Figure 13- Energy Log Data Display

8.3.1. Meter Name

The user-specified name for the meter. See 12.3 *Meter Name* for details of how to change this name.

8.3.2. Model

The model type of the meter.

8.3.3. Units

The units of each displayed parameter, separated into those values derived from energy measurements and those based upon pulse input counts.

8.3.4. Load

The user-specified name for each displayed load. See 12 *Meter Setup* for details of how to change these names.

8.3.5. Logging Time

The date and time at which logging of selected parameters were recorded. The time is with respect to meter local time.

8.3.6. Energy Values

The cumulative or period accumulation value for each parameter, scaled to kilo units as indicated at the top of the column.

8.3.7. Pulse Counts

The cumulative or period count total for the indicated pulse input.

MultiCubeX50 Range

Ethernet System Meter

9. Fast Log

9.1. Summary

The *Fast Log* view of the web interface displays historical instantaneous data measured by the meter for a selected meter load, using filters specified by the user.

9.2. Data Selection

Select Period	Today ▼	9.2.1
Select Load	Processing ▼	9.2.2
UPDATE TABLE		9.2.3

Figure 14- Fast Log Data Selection

Select Period	Custom ▼
From	dd/mm/yyyy
To	dd/mm/yyyy

Figure 15- Fast Log Custom Period

9.2.1. Select Period

Choose the time period for which instantaneous data should be displayed from the following options (note all times are with respect to meter local time):

- *Today* - The current day from 00:00hrs until the most recent instantaneous logging event
- *Yesterday* - The previous day from midnight to midnight
- *This Week* - The current week from 00:00hrs on Monday until the most recent instantaneous logging event
- *This Month* - The current month from 00:00hrs on the first day of the month until the most recent instantaneous logging event
- *24 Hours* - Yesterday at the current time until the most recent instantaneous logging event
- *7 Days* - Seven days ago at the current time until the most recent instantaneous logging event
- *28 Days* - Twenty-eight days ago at the current time until the most recent instantaneous logging event
- *Custom* - See *Figure 15- Fast Log Custom Period*
 - *From* - The start date of the required logging period. The period will commence from 00:00hrs at the start of this day.

MultiCubeX50 Range

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- To - The end date of the required logging period. The period will run until midnight at the end of this day.

9.2.2. Select Load

The meter load for which instantaneous data will be displayed.

The available options will comprise the user-defined name for each configured load on the meter. See *12 Meter Setup* for details of how to change these names.

9.2.3. 'Update table' button

When clicked, submits the logging display query to the meter. Subsequently the requested data will be displayed beneath the data selection table.

9.3. Data Display

Manufacturing plant	Fast Logger Data Profile									Processing
Parameter	Line Volts (1-2)	Line Volts (2-3)	Line Volts (3-1)	kW (1)	kW (2)	kW (3)	Amps Demand (1)	Amps Demand (2)	Amps Demand (3)	kW (Sys)
2017/12/13, 12:00:15	1408	1422	1415	8.433	8.410	5.082	10.27	10.06	7.287	21.92
2017/12/13, 12:00:30	1388	1404	1395	8.591	7.790	4.940	10.22	10.05	7.262	21.32
2017/12/13, 12:00:45	1400	1398	8.628	8.320	4.562	10.22	10.03	7.281	21.51	
2017/12/13, 12:01:00	1401	1402	1394	8.668	8.294	4.420	10.21	10.02	7.313	21.38

Figure 16- Fast Log Data Display

9.3.1. Meter Name

The user-specified name for the meter. See *12.3 Meter Name* for details of how to change this name.

9.3.2. Load Name

The user-specified name for the selected meter load. See *12 Meter Setup* for details of how to change this name.

9.3.3. Parameter

The description of each displayed parameter.

Phase values are identified numerically as 1, 2 or 3.

System values are identified as Sys.

9.3.4. Logging Time

The date and time at which logging of selected parameters were recorded. The time is based upon meter local time.

9.3.5. Instantaneous Values

The instantaneous value for the parameter indicated at the top of the column.

Note that voltage and current values are scaled to Volts and Amps respectively. Power values are scaled to kilo units.

MultiCubeX50 Range

Ethernet System Meter

10. Peak Values

10.1. Summary

The *Peak Values* view of the web interface enables configuration and display of peak power events detected separately for each load within the meter.

10.2. Description

When the meter is powered, analysis of peak power takes place based upon instantaneous values sampled once per second.

Analysis is performed separately for each load configured within the meter.

For single phase loads, the analysis is based upon the kW value for that load.

For three phase loads, the analysis is based upon the System kW value for that load.

For a virtual load, the analysis is based upon the System kW value for that load.

The analysis identifies peaks in the relevant power value, and maintains a record of instantaneous values associated with the ten largest power peaks for each load.

Note that the absolute value of the relevant power parameter is used when analysing peaks. -5kW is considered to be larger than -4kW. -5kW is also considered to be larger than +4kW.

The instantaneous parameters recorded are: Amps; kW; Power Factor. Single phase loads record those parameters for that load only. Three phase and virtual loads record those parameters for all phases and the system parameter where applicable.

A peak is defined as any point in the series of power readings where the immediate preceding and succeeding points are both smaller. To avoid multiple peaks being associated with the same real-world event, a configurable time delay is available. This provides the ability to ignore minor peaks that may occur during the rise to a major peak and subsequent decline from that peak.

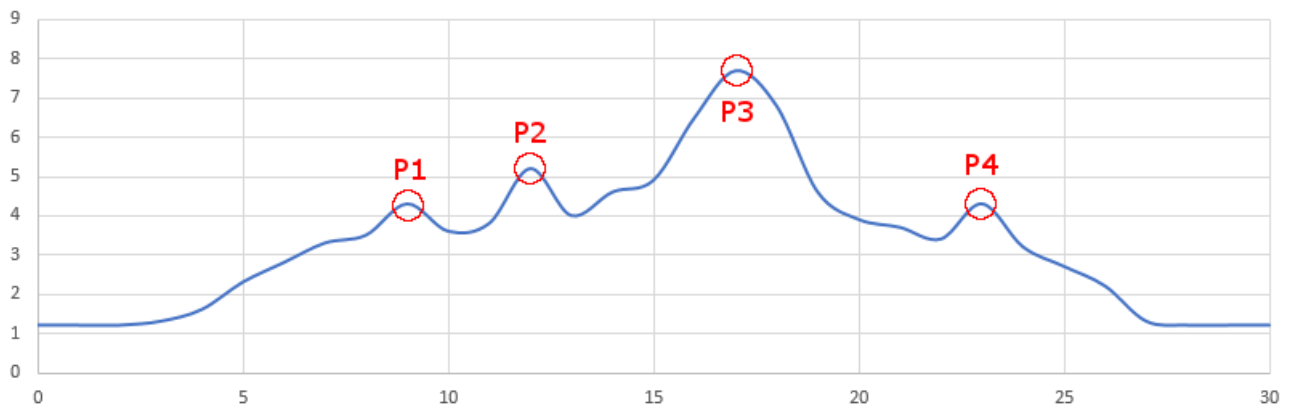


Figure 17- Multiple Peaks Example

Figure 17 shows a 30 second series of power readings which contains 4 peaks, P1 through P4. The peaks may be considered part of a single event. To adjust the analysis in this regard, a decision delay of 10 seconds would result in the following sequence:

- P1 is encountered and held temporarily
- A larger peak, P2, is encountered within 10 seconds of P1 and held temporarily; P1 is discarded

MultiCubeX50 Range

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- A larger peak, P3, is encountered within 10 seconds of P2 and held temporarily; P2 is discarded
- A peak, P4, is encountered within 10 seconds of P3; it is smaller than P3 and therefore ignored
- 10 seconds after the occurrence of P3, it is considered a valid peak; if the power value is equal to or greater than the tenth largest peak for this load:
 - The instantaneous values recorded for the tenth largest peak are discarded
 - The instantaneous values associated with P3 are recorded

10.3. Data Selection

Select Load	Processing ▼		10.3.1
Ignore Repeated Peaks	600	Seconds	10.3.2
Reset Peaks	<input type="checkbox"/>	(for this load)	10.3.3
UPDATE TABLE			10.3.4

Figure 18- Peaks Data Selection

10.3.1. Select Load

Choose the meter load for which peaks data will be displayed.

The list of options comprises the user-defined names for each configured load. See *12 Meter Setup* for details of how to changes these names.

10.3.2. Ignore Repeated Peaks

Defines the delay period in seconds that adjusts the method by which peak analysis is performed. See *10.2 Description* for a discussion on usage of this value.

The specified value must be in the range 0-1000 seconds.

10.3.3. Reset Peaks

The current list of recorded instantaneous values associated with the largest peak power events for this meter load will be discarded if this box is ticked.

10.3.4. 'Update table' button

When clicked, submits the defined query to the meter. Subsequently the requested data will be displayed beneath the data selection table.

MultiCubeX50 Range

Ethernet System Meter

10.4. Data Display

Peak Events 10.4.1				Manufacturing plant 10.4.2				MultiCube950 Processing 10.4.3			
Peak Time	Amps			Power kW				Power Factor 10.4.4			
	1	2	3	1	2	3	Sys	1	2	3	Sys
2017/12/14, 08:22:50	10.15	9.462	7.119	9.668	9.120	5.287	24.08	1.000	1.000	0.9040	0.9950
2017/12/14, 01:07:54	10.09	9.684	6.989	9.726	9.274	5.093	24.09	1.000	1.000	0.8990	0.9950
2017/12/14, 00:55:50	10.07	9.584	7.054	9.877	9.338	5.423	24.64	1.000	1.000	0.9390	0.9970
2017/12/14, 00:40:31	10.01	9.591	6.780	9.921	9.116	5.059	24.10	1.000	1.000	0.9220	0.9960
2017/12/14, 00:19:08 10.4.5	10.06	9.591	7.311	9.982	9.060	5.147	24.19	1.000	1.000	0.8660 10.4.6	0.9950
2017/12/13, 16:35:14	9.865	9.505	7.037	9.429	9.440	5.410	24.28	1.000	1.000	0.9400	0.9970
2017/12/13, 15:04:40	9.960	9.591	7.089	9.423	9.361	5.346	24.13	1.000	1.000	0.9160	0.9950
2017/12/13, 14:15:37	9.791	9.319	7.097	9.241	9.319	5.440	24.00	1.000	1.000	0.9450	0.9970
2017/12/13, 13:22:55	10.10	9.641	7.211	9.429	9.421	5.149	24.00	1.000	1.000	0.8780	0.9930
2017/12/13, 10:30:02	9.993	9.699	7.106	9.520	9.323	5.252	24.10	1.000	1.000	0.9070	0.9950

Figure 19- Peaks Data Display

10.4.1. Meter Name

The user-specified name for the meter. See 12.3 *Meter Name* for details of how to change this name.

10.4.2. Model

The model type of the meter.

10.4.3. Load Name

The user-specified name for this meter load. See 12 *Meter Setup* for details of how to change this name.

10.4.4. Parameter Identities

Identifies the type of each instantaneous parameter and source of measurement.

Phase sources are marked numerically as 1, 2, and 3.

System sources are marked Sys.

10.4.5. Peak Time

The date and time at which each peak event occurred. The time is with respect to local meter time.

10.4.6. Instantaneous Values

The values for each instantaneous parameter at the occurrence of each peak event.

For single phase loads, parameters not applicable to that load will display a blank value.

Note that current values are scaled to Amps. Power values are scaled to kilo units.

MultiCubeX50 Range

Ethernet System Meter

11. Event Log

11.1. Summary

The *Event Log* view of the web interface enables historical entries in the system event log to be displayed based upon a user-specified time period.

11.2. Event Selection

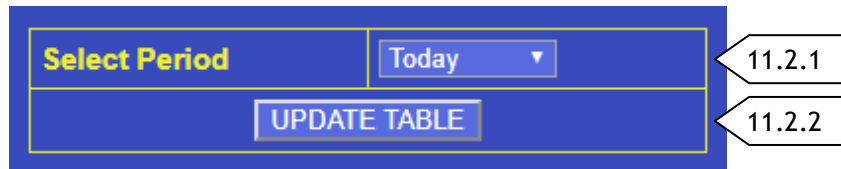


Figure 20- Event Log Data Selection

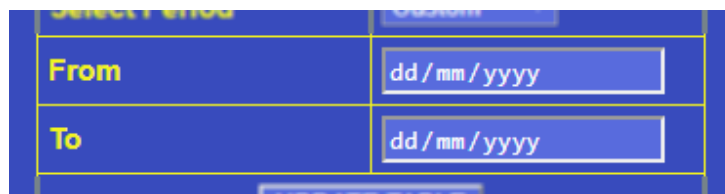


Figure 21- Event Log Custom Date

11.2.1. Select Period

Choose the time period for which system events should be displayed from the following options (note all times are with respect to meter local time):

- *Today* - The current day from 00:00hrs until the most recent system event
- *Yesterday* - The previous day from midnight to midnight
- *This Week* - The current week from 00:00hrs on Monday until the most recent system event
- *This Month* - The current month from 00:00hrs on the first day of the month until the most recent system event
- *24 Hours* - Yesterday at the current time until the most recent system event
- *7 Days* - Seven days ago at the current time until the most recent system event
- *28 Days* - Twenty-eight days ago at the current time until the most recent system event
- *Custom* - See *Figure 21- Event Log Custom Date*
 - *From* - The start date of the required logging period. The period will commence from 00:00hrs at the start of this day.
 - *To* - The end date of the required logging period. The period will run until midnight at the end of this day.

11.2.2. 'Update table' button

When clicked, submits the logging display query to the meter. Subsequently the requested data will be displayed beneath the data selection table.

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Ethernet System Meter

11.3. Data Display

11.3.1	Manufacturing plant	System Events Log	MultiCube950	11.3.2
	Date	Details		
	2017/12/14, 09:20:37	Setting changed: metcfg_cust_sys_volts (480)		
	2017/12/14, 09:21:08	Push energylog report using ftp		
	2017/12/14, 09:21:10	Push operation successful		
	2017/12/14, 09:22:57	Firmware upgrade attempt start		
	2017/12/14, 09:23:35	Firmware upgrade completed successfully		
	2017/12/14, 09:23:37	Reboot requested		
	2017/12/14, 09:24:22	System boot complete		
11.3.3	2017/12/14, 09:24:23	Current boot was planned		11.3.4
	2017/12/14, 09:24:24	Running firmware 1.0.5.2_x50-prod (08Dec17-12:21:28)		
	2017/12/14, 09:24:24	Network up; running - IP address 192.168.0.154		

Figure 22- Event Log Data Display

11.3.1. Meter Name

The user-specified name for the meter. See *12.3 Meter Name* for details of how to change this name.

11.3.2. Model

The model type of the meter.

11.3.3. Event Time

The date and time at which the system event was recorded. The time is with respect to meter local time.

11.3.4. Event Details

A description of the event.

The event types recorded are:

- Boot completion
- Running firmware version
- Meter configuration change
- Network status change
- Data-push attempt
- Firmware upgrade attempt
- Requested reboot
- Real-time clock battery low
- Unresponsive firmware component

MultiCubeX50 Range

Ethernet System Meter

12. Meter Setup

System		12.2
Meter Name	Manufacturing plant	12.3
Virtual System Meter Name	Residual	12.4
Auto CT Rotation	ON ▾	12.5
PT Ratio	1	12.6
Customer System Voltage	480	12.7
Voltage Demand Period (sec)	3000	12.8
Current Demand Period (sec)	60	12.9
Power Demand Period (sec)	900	12.10
Meter 1		12.11
Load Type	3-Phase ▾	12.12
System Load Name	Processing	12.13
CT Primary	5A (Auto)	12.14
Add to Virtual System Meter?	<input checked="" type="checkbox"/>	12.15
Meter 2		12.11
Load Type	1-Phase ▾	12.12
Phase 1 Load Name	Conveyor 1	12.16
Phase 2 Load Name	Conveyor 2	12.16
Phase 3 Load Name	Conveyor 3	12.16
CT Primary	30A (Auto)	12.14
Add to Virtual System Meter?	<input checked="" type="checkbox"/>	12.15
Meter 3		12.11
Load Type	1-Phase ▾	12.12
Phase 1 Load Name	Lighting	12.16
Phase 2 Load Name	Heating	12.16
Phase 3 Load Name	Cooling	12.16
CT Primary	3500A (Auto)	12.14
Add to Virtual System Meter?	<input type="checkbox"/>	12.15
UPDATE		12.17

Figure 23- Meter Setup

MultiCubeX50 Range

Ethernet System Meter

12.1. Summary

The *Meter Setup* view of the web interface enables configuration of the individual meter points and system settings of the meter.

12.2. System Table

The *System* table groups settings that impact the meter at a system level.

12.3. Meter Name

The user can specify the name for the meter.

The maximum length of the name is 25 characters.

12.4. Virtual System Meter Name

The user can specify the name for the virtual meter point.

The maximum length of the name is 25 characters.

This setting is only present for meters containing the virtual meter option.

12.5. Auto CT Rotation

Controls the *Auto CT Rotation* setting of the meter.

Select *ON* or *OFF*.

12.6. PT Ratio

Configure the *PT Ratio* setting of the meter.

The value must be in the range of 1 to 1000 in steps of 1.

12.7. Customer System Voltage

Configure the *System Voltage* setting of the meter.

The value must be in the range of 1 to 480 in steps of 1.

12.8. Voltage Demand Period

Configure the *Voltage Demand Period* setting of the meter.

The value must be either:

- In the range 1-60 seconds (in steps of 1), or
- In the range 300-3600 seconds (in steps of 300 seconds)

12.9. Current Demand Period

Configure the *Current Demand Period* setting of the meter.

The value must be either:

- In the range 1-60 seconds (in steps of 1), or
- In the range 300-3600 seconds (in steps of 300 seconds)

MultiCubeX50 Range

Ethernet System Meter

12.10. Power Demand Period

Configure the *Power Demand Period* setting of the meter.

The value must be either:

- In the range 1-60 seconds (in steps of 1), or
- In the range 300-3600 seconds (in steps of 300 seconds)

12.11. Metering Point Table

Each metering point table groups settings applicable to a specific metering point within the meter.

For the MultiCube350 there is one metering point table.

For the MultiCube650 there are two metering point tables.

For the MultiCube950 there are three metering point tables.

12.12. Load Type

The load type for this metering point.

Select *3-Phase* for a 1X3-phase metering point or *1-Phase* for a 3X1-phase metering point.

Note that any three-phase loads must occur before any single-phase loads.

For the MultiCube350 the metering point load type can be configured as [1] or [3].

For the MultiCube650 the metering point load types can be configured as [11], [31] or [33].

For the MultiCube950 the metering point load types can be configured as [111], [311], [331] or [333].

12.13. System Load Name

The user can specify the name for a three-phase load.

The maximum length of the name is 25 characters.

12.14. CT Primary

The *CT Primary* setting for this metering point.

This setting is auto-detected and cannot be modified via the web interface.

12.15. Add to Virtual System Meter

If ticked, the checkbox signals that this metering point should be incorporated in virtual meter calculations.

This setting is only present for MultiCube950 meters containing the virtual meter option.

12.16. Phase Load Name

The user can specify the name for a single-phase load.

The maximum length of the name is 25 characters.

MultiCubeX50 Range

Ethernet System Meter

12.17. 'Update' button

When clicked, entered parameters are checked for legality. If any values are out of range, a pop-up message will be displayed to indicate the affected setting and applicable limits.

If all values are in range, the settings are submitted to the meter.

12.17.1. Log Reset Warning

If the metering point load types have been modified, this will cause all historical energy and fast log data to be discarded. To prevent accidental loss of logging data, the warning shown in *Figure 24* will be displayed. To proceed with the change, click the *OK* button. To abort the change, click the *Cancel* button.

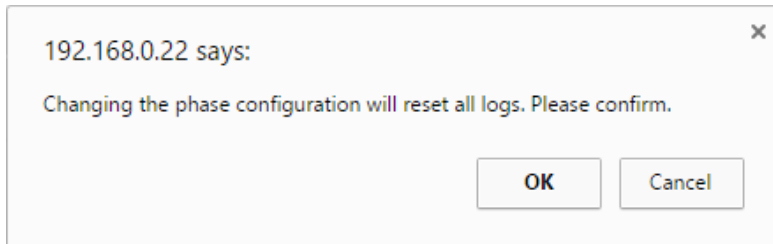


Figure 24- Meter Setup Log Reset Warning

12.17.2. Update Failed Message

When the meter receives changed settings from the web interface, an attempt will be made to apply relevant settings to the meter.

If the meter front-panel display is currently in setup mode or settings preview mode, it will reject the settings modification attempt via web interface to avoid potential configuration errors that could occur if settings were modified from both web interface and front-panel simultaneously.

In this scenario, the warning message shown in *Figure 25* will be displayed.

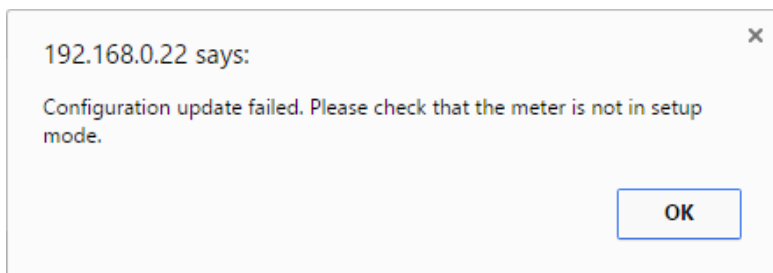


Figure 25- Meter Setup Update Failed Message

To rectify this issue, first click the *OK* button on the failure message. Then exit setup mode on the front-panel of the meter before reapplying the required changes from the web interface.

12.18. Configuration refresh

When the *Meter Setup* view of the web interface is initially accessed, the current settings will be displayed.

If the meter configuration is subsequently modified from the front-panel of the meter the settings shown on the web interface may be incorrect.

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In this scenario, there is a risk that misconfiguration could result if modifications are separately applied from the web interface. To ensure the user is aware of the situation, the warning shown in *Figure 26* will be displayed.

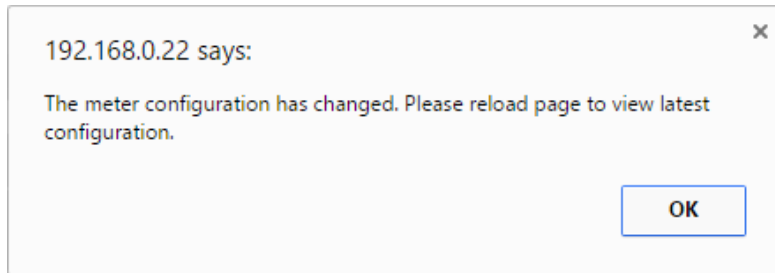


Figure 26- Meter Setup Configuration Changed Alert

To view the updated configuration, first click the *OK* button on the warning message. Then select the *Meter Setup* option from the web interface menu once again to cause the new settings to be displayed.

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13. Pulse Inputs

13.1. Connection

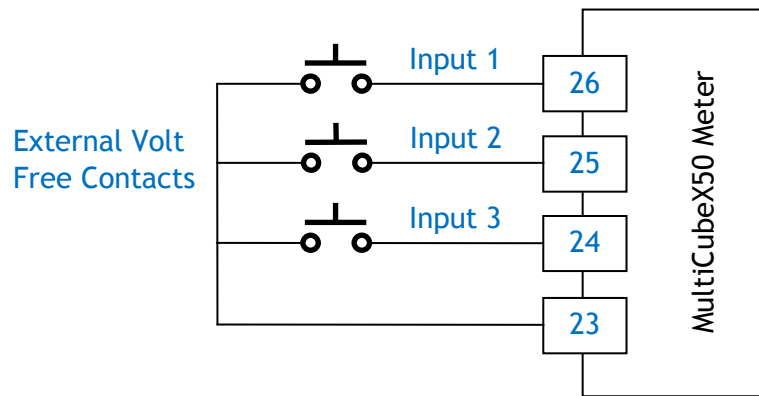


Figure 27 – Input connections

13.2. Summary

The three pulse inputs can be used to record pulses from external devices such as gas and water meters. The inputs are safety isolated at 2.5kV from the power metering circuits. Minimum pulse period required is 50mS.

The *Pulse Inputs* view of the web interface enables configuration and monitoring of the digital inputs provided with the IP option of the MultiCubeX50 range.

Pulse Input Settings				
Setting	Input 1	Input 2	Input 3	
Name	Burners	Hopper	Coolant	13.3
Measured Parameter	Gas	Custom	Water	13.4
Units	Cubic Mtr	kg	Litre	13.5
Multiplier	0.050	5.000	1.000	13.6
Current Total	1.25	1770	83467	13.7
New Total				13.8
UPDATE				13.9
				13.10

Figure 28 - Pulse Inputs Display

13.3. Input Identification

Identifies the three available pulse input channels.

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13.4. Name

The user can specify the name associated with each pulse input channel.

The maximum length of the name is 25 characters.

13.5. Measured Parameter

The parameter that is measured by each pulse input channel.

Select from:

- Electricity
- Gas
- Water
- Air
- Steam
- Custom

13.6. Units

The units of measurement for each pulse input channel.

These can be manually defined by the user or selected from the following list of predefined units:

- kWh
- Cubic Mtr
- Litre
- Custom

13.7. Multiplier

The number of units signified by each pulse count.

This value must be in the range 0.001 to 1 million.

13.8. Current Total

The running total for each pulse input channel in adjusted counts.

The value is equivalent to (number of pulses received) × (multiplier).

13.9. New Total

Values entered in these fields will replace the current total count for the corresponding pulse input channel(s).

This field is used to provide a starting point for the scaled counter value (by entering some preset value) or to reset the counters to zero (by entering 0).

13.10. 'Update' button

When clicked, submits modified settings to the meter.

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14. Alarm Outputs

14.1. Connection

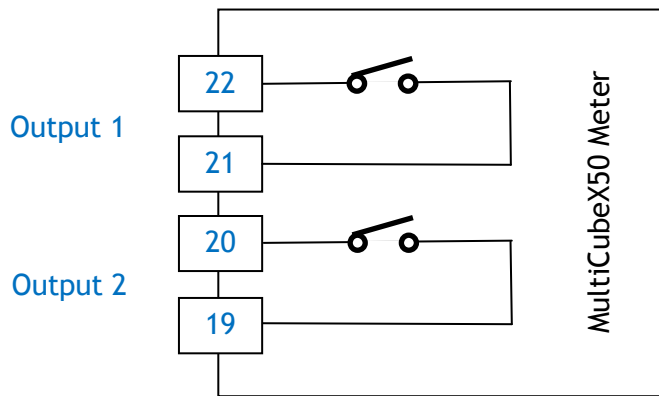


Figure 29 – Output connections

14.2. Summary

Each of the two outputs takes the form of an isolated normally open volt free contact pair.

The *Alarm Outputs* view of the web interface enables configuration and monitoring of the digital outputs provided with the IP option of the MultiCubeX50 range.

14.3. Description

14.3.1. Load Monitoring

Alarm Outputs functionality enables external equipment to be triggered by a specified parameter limit being breached on a load monitored by a meter.

Each of the two digital output channels can be associated with a user-defined load and instantaneous parameter combination. High and low trigger levels can then be configured for that parameter, together with hysteresis levels for release of the triggers.

When the instantaneous parameter value exceeds the *high set* level, the alarm condition will become *HIGH* and the corresponding digital output will be switched to closed circuit. Subsequently when the value falls below the *high release* point, the alarm condition will become *OFF* and the corresponding digital output will be switched to open circuit.

When the instantaneous parameter value falls below the *low set* level, the alarm condition will become *LOW* and the corresponding digital output will be switched to closed circuit. Subsequently when the value rises above the *low release* point, the alarm condition will become *OFF* and the corresponding digital output will be switched to open circuit.

Figure 30 illustrates the behaviour of the hysteresis levels.

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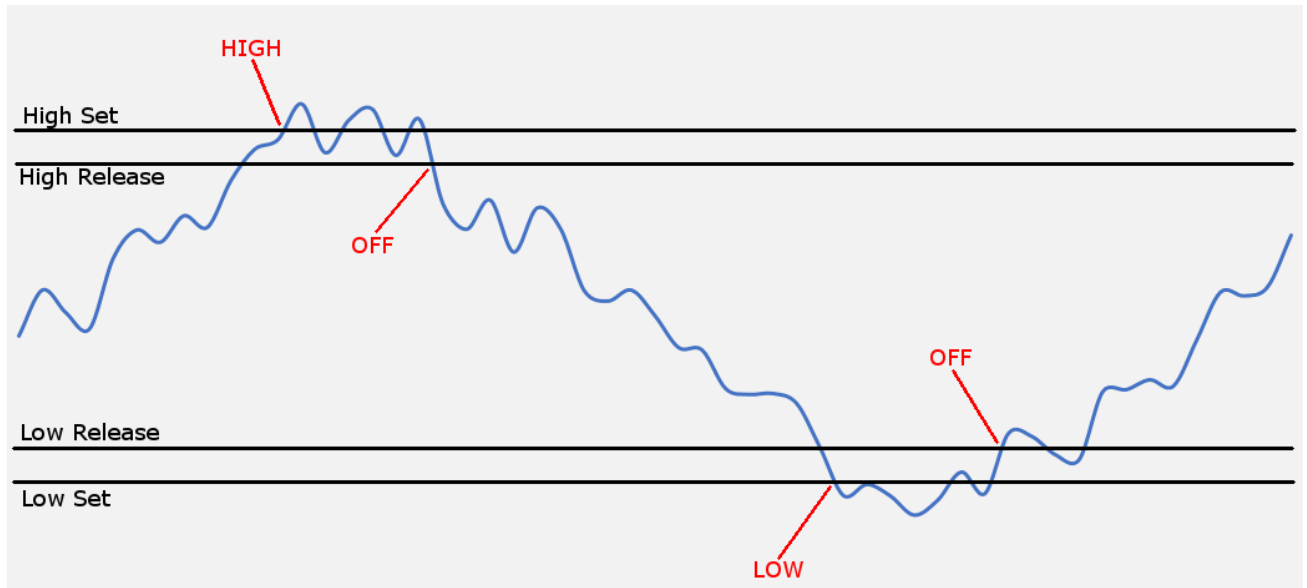


Figure 30- Alarm Outputs Example

14.3.2. Manual Configuration

The digital output channels can also be driven manually by the user to enable direct control of external equipment.

When a digital output channel is configured as a *Manual* load, the parameter can be selected as *SET* or *CLEAR*.

When *SET* is selected, the corresponding digital output will be switched to closed circuit.

When *CLEAR* is selected, the corresponding digital output will be switched to open circuit.

14.4. Configuration

Alarm Output Settings					
Digital Output	Output 1		Output 2		14.4.1
Load	Heating ▾		Manual ▾		14.4.2
Parameter	kW ▾		SET ▾		14.4.3
High Set Point (set/release)	200.000000	180.000000	0.000000	0.000000	14.4.4
Low Set Point (set/release)	75.000000	85.000000	0.000000	0.000000	14.4.5
Set/Release Delay (seconds)	10		1		14.4.6
Alarm Current Condition	HIGH		SET		14.4.7
UPDATE_METER					14.4.8

Figure 31- Alarm Outputs Display

14.4.1. Output identification

Identifies the two available digital output channels.

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14.4.2. Load

Select the load that will be monitored for each digital output.

The available choices comprise the user-defined name for each configured load in the meter, plus the following additional options:

- *None*
- *Manual*

Selecting *None* disables that digital output channel.

14.4.3. Parameter

14.4.3.1. Single-phase load

When a single-phase meter load is selected as *Load*, one of the following instantaneous parameters can be tracked:

- *Volts*
- *Amps*
- *kW*
- *kVA*
- *kVAr*
- *Power Factor*
- *System Frequency*

14.4.3.2. Three-phase load

When a three-phase meter load is selected as *Load*, one of the following instantaneous parameters can be tracked:

- *Phase Volts (1, 2 or 3)*
- *Phase Amps (1, 2 or 3)*
- *System kW*
- *System KVA*
- *System kVAr*
- *System kW Demand*
- *System kVA Demand*
- *System Power Factor*
- *System Frequency*

14.4.3.3. Manual load

When the *Manual* option is selected as *Load*, the following parameter options are available:

- *SET*
- *CLEAR*

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14.4.4. High Set Point

Configures the *high set* and *high release* points for each alarm output.

If the chosen *Load* is *Manual*, these fields will be disabled.

14.4.5. Low Set Point

Configures the *low set* and *low release* points for each alarm output.

If the chosen *Load* is *Manual*, these fields will be disabled.

14.4.6. Set/Release Delay

Configures the switch delay in seconds for each alarm output.

The switch delay applies whenever a change of state occurs on an alarm output and can be used to compensate for transient parameter spikes that are not of interest from an alarm perspective.

When a change of state takes place (e.g. *HIGH* to *OFF*), a timer will start. If the state change reverses (e.g. *OFF* to *HIGH*) before the delay period has elapsed then the state change will be assumed as transient and not applied to the digital outputs.

If the value of this setting is zero, then the delay functionality is disabled for that alarm output.

14.4.7. Alarm Current Condition

Displays the current state of each alarm output from the following possible conditions:

- *OFF* - Load parameter within expected range; digital output is open circuit
- *HIGH* - Load parameter above expected range; digital output is closed circuit
- *LOW* - Load parameter below expected range; digital output is closed circuit
- *CLEAR* - Manual configuration; digital output is open circuit
- *SET* - Manual configuration; digital output is closed circuit

14.4.8. 'Update Meter' button

When clicked, submits modified settings to the meter.

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15. Setup Energy Logger

15.1. Summary

The *Setup Energy Logger* view of the web interface enables logging of energy measurements to be managed from all configured meter loads and pulse inputs.

Additionally, scheduled upload of logging data to external servers can be configured.

The selected parameters can be logged at any required period from 10 seconds upwards.

Appendix A4 - Log storage management discusses the management of logged data.

15.2. Logging Configuration

Energy Logger Parameters						
Parameters to log	Type	kWh	kVArh	kVAh	Export kWh	Export kVArh
Residual	3-Phase	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.1 Processing	3-Phase	15.2.2 <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	15.2.3 <input type="checkbox"/>
Conveyor 1	1-Phase	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Conveyor 2	1-Phase	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Conveyor 3	1-Phase	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Lighting	1-Phase	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Heating	1-Phase	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Cooling	1-Phase	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Pulse Inputs	Burners <input type="checkbox"/>	Hopper <input checked="" type="checkbox"/>	Coolant <input type="checkbox"/>			
Energy Log Period	30 minutes ▾					
UPDATE LOGGING PARAMETERS						

Figure 32- Setup Energy Logger Parameters

15.2.1. Load Name

The user-defined name of each configured load within the meter. See *12 Meter Setup* for details of how to change these names.

15.2.2. Load Type

Single-phase and three-phase loads are identified as *1-Phase* and *3-Phase* respectively.

15.2.3. Parameter Selection

When ticked, a checkbox indicates that the corresponding parameter type at the top of the column will be included in the energy log for this load.

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Where the checkbox is absent, this indicates that the corresponding parameter type is not available for this load.

Clicking on a column header selects/deselects all parameters in that column.

Clicking on a row header selects/deselects all parameters on that row.

Clicking on the 'Parameters to log' cell selects/deselects all parameters in the table.

15.2.4. Pulse Inputs

When ticked, a checkbox indicates that the specified pulse input count will be included in the energy log.

15.2.5. Energy Log Period

The time period between successive log entries.

The minimum logging period is 10 seconds.

Logging entries are aligned depending upon the selected unit of time:

- *Seconds* - Aligned to the start of each minute; for example, a 15 second period would generate logs at 0, 15, 30 & 45 seconds past each minute
- *Minutes* - Aligned to the start of each hour; for example, a 20-minute period would generate logs at 0, 20 & 40 minutes past each hour
- *Hours* - Aligned to the start of each day; for example, a 6-hour period would generate logs at 00:00, 06:00, 12:00 & 18:00 every day
- *Days* - Aligned to the start of each year; for example, a 14-day period would generate logs at 00:00hrs on January 1st each year and at 14 day intervals until the end of the year

15.2.6. 'Update Logging Parameters' button

When clicked, submits modified settings to the meter.

If the set of logged parameters has been modified this will cause all existing energy log data to be discarded. To ensure the user is aware of this consequence, the warning shown in *Figure 33* will be displayed. To proceed with the changes, click the *OK* button. To abort the changes, click the *Cancel* button.

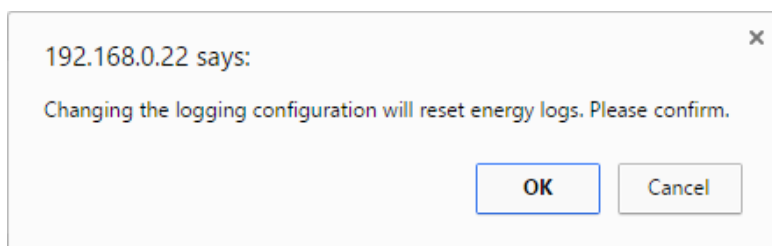


Figure 33- Energy Log Reset Warning

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15.3. Data Push Configuration

Energy Logger Posting Method	FTP ▾	15.3.1
File Post Period	1 days ▾	15.3.2
Energy Logger FTP Settings		
Server URL	ftp://192.168.0.3	15.3.3
Port Number	21	15.3.4
Remote Directory	energy_logs	15.3.5
Username	data	15.3.7
Password	15.3.8
Last Post	2017/10/19, 16:00:06	15.3.9
Post Count	1	15.3.10
15.3.11	TEST POST	15.3.12
	UPDATE POSTING PARAMETERS	

Figure 34- Data Push Settings

Resource	/svcs/proc_energy.php	15.3.6
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Figure 35- Data Push Resource Setting

15.3.1. Energy Logger Posting Method

Select the required upload protocol from:

- *Disabled*
- *FTP* (File Transfer Protocol)
- *SFTP* (Secure File Transfer Protocol)
- *HTTP* (HyperText Transfer Protocol)
- *HTTPS* (HyperText Transfer Protocol Secure)

If *Disabled* is selected, data push functionality will be disabled for energy logging.

15.3.2. File Post Period

The time period between successive upload attempts.

The minimum upload period is 1 minute.

Upload attempts are aligned depending upon the selected unit of time:

- *Minutes* - Aligned to the start of each hour; for example, a 30-minute period would result in upload attempts at 0 & 30 minutes past each hour
- *Hours* - Aligned to the start of each day; for example, a 12-hour period would result in upload attempts at 00:00 & 12:00 every day

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- *Days* - Aligned to the start of each year; for example, a 28-day period would result in an upload attempt at 00:00hrs on January 1st each year and at 28 day intervals until the end of the year

15.3.3. Server URL

The IP address or domain name of the remote server to which uploads will be made.

15.3.4. Port Number

The port number to use when connecting to the remote server.

Unless configured otherwise, the standard port number for each server type is usually:

- FTP: 21
- SFTP: 22
- HTTP: 80
- HTTPS: 443

15.3.5. Remote Directory

The path to the directory on the FTP/SFTP server where logging data should be uploaded.

If left blank, the logging data will be uploaded to the default directory associated with the FTP/SFTP account.

15.3.6. Resource

The path and filename of the script on the HTTP/HTTPS server that will process uploaded data.

15.3.7. Username

The username of the account that should be used when accessing the remote server.

15.3.8. Password

The password of the account that should be used when accessing the remote server.

15.3.9. Last Post

The date and time of the last successful data upload attempt. The time is with respect to meter local time.

15.3.10. Post Count

The number of successful data upload attempts.

The count is reset to zero when any of the following conditions apply:

- After a power-cycle
- When parameter selection is modified
- When data push settings are modified

15.3.11. 'Test Post' button

When clicked, submit the modified parameters to the meter and attempt to perform an energy data upload immediately.

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Once complete, the outcome of the upload attempt will be displayed beneath the button.

15.3.12. 'Update Posting Parameters' button

When clicked, submit the modified parameters to the meter.

15.4. Data Push Methodology

15.4.1. Report preparation

When an upload attempt takes place, a report is prepared by the meter.

The report contains logging data commencing with the first entry that has not yet been uploaded.

Entries continue to be added to the report until one of the following conditions is satisfied:

- There are no more entries (the report has consumed all available entries)
- The report size has exceeded 256kB

15.4.2. Report format

The report uses a Comma Separated Values (CSV) format with the following specification:

- The first line contains column headings for the timestamp and logged parameter definitions. Each parameter indicates:
 - The meter point associated with the parameter as *MeterX*; where *X* is 1, 2, 3 or 4 (4 signifies the virtual meter)
 - The load associated with the parameter as either (*3ph*) for three-phase loads, or *LoadY* for single-phase loads; where *Y* is 1, 2 or 3
 - Whether the parameter is a *System* value
 - The parameter type from: *kWh*, *kVArh*, *kVAh*, *Export_kWh* and *Export_kVArh*
 - For pulse inputs, the parameter indicates which digital input channel was used as *PulseInputZ*; where *Z* is 1, 2 or 3
- Each subsequent line comprises a log entry containing the date/time and decimal values for each parameter. Times are with respect to meter local time.

Figure 36 shows an example energy log report.

```
Date (local),Time (local),Meter1(3ph)-System-kVAh,Meter2Load1-kWh,Meter2Load3-kVArh,Meter4(3ph)-System-
kWh,Meter4(3ph)-System-Export_kVArh,PulseInput2
2017-04-28,18:17:20, 5600.170000,13279.190000,1767.030000,3579662.000000,1931893.000000,22
2017-04-28,18:17:40, 5600.190000,13279.200000,1767.030000,3579666.000000,1931903.000000,53
2017-04-28,18:18:00, 5600.200000,13279.220000,1767.030000,3579671.000000,1931914.000000,67
```

Figure 36- Energy Log Report Example

15.4.3. Upload via FTP/SFTP

For upload via FTP or SFTP, the report will be delivered with a filename of the following format:

energylog_mmmmmmmmmmmmm_nnnnnnnn_vvvv_yyyymmdd-hhmmss.csv

Where:

- *mmmmmmmmmmmmmm* is the 12 character MAC address of the IP option board
- *nnnnnnnn* is an 8 digit zero-padded report number

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- *vvvv* is a 4 digit zero-padded version number (used if several upload attempts are made for the same report)
- *yyyymmdd* is the date on which the report was prepared
- *hhmmss* is the meter local time at which the report was prepared

An example FTP/SFTP report filename is *energylog_70b3d568cff2_00000860_0000_20170428-181811.csv*

The meter uses the standard FTP response from the server to ascertain whether the upload was successful.

15.4.4. Upload via HTTP/HTTPS

For upload via HTTP or HTTPS the CSV data is submitted directly to the server using the script specified in the upload settings. If the first two bytes of the server response are 0x4F and 0x4B (i.e. the ASCII string 'OK'), then the meter will consider the upload attempt to have succeeded.

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16. Setup Fast Logger

16.1. Summary

The *Setup Fast Logger* view of the web interface enables logging of measured instantaneous parameters to be managed from all configured meter loads.

Additionally, scheduled upload of logging data to external servers can be configured.

The selected parameters can be logged at any required period from 1 second upwards.

Appendix A4 - Log storage management discusses the management of logged data.

16.2. Logging Configuration

Fast Logger Parameters															
Parameters to log	Type	Phase Volts	Line Volts	Amps	kW	kVA	kVAr	Amps Demand	Volts Demand	Peak Amps	Peak Volts	kW Demand	kVA Demand	kVAr Demand	Frequency
Residual	3-Phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Processing	3-Phase	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.2.1 Conveyor 1	16.2.2 1-Phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.2.3 <input type="checkbox"/>
Conveyor 2	1-Phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conveyor 3	1-Phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lighting	1-Phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heating	1-Phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cooling	1-Phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fast Log Period	16.2.4 15 seconds ▾														
16.2.5										UPDATE LOGGING PARAMETERS					

Figure 37- Setup Fast Logger Parameters

16.2.1. Load Name

The user-defined name of each configured load within the meter. See *12 Meter Setup* for details of how to change these names.

16.2.2. Load Type

Single-phase and three-phase loads are identified as *1-Phase* and *3-Phase* respectively.

16.2.3. Parameter Selection

When ticked, a checkbox indicates that the corresponding parameter type at the top of the column will be included in the fast log for this load.

Where the checkbox is absent, this indicates that the corresponding parameter type is not available for this load.

Clicking on a column header selects/deselects all parameters in that column.

Clicking on a row header selects/deselects all parameters on that row.

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Clicking on the 'Parameters to log' cell selects/deselects all parameters in the table.

16.2.4. Fast Log Period

The time period between successive log entries.

The minimum logging period is 1 second.

Logging entries are aligned depending upon the selected unit of time:

- *Seconds* - Aligned to the start of each minute; for example, a 15 second period would generate logs at 0, 15, 30 & 45 seconds past each minute
- *Minutes* - Aligned to the start of each hour; for example, a 20-minute period would generate logs at 0, 20 & 40 minutes past each hour
- *Hours* - Aligned to the start of each day; for example, a 6-hour period would generate logs at 00:00, 06:00, 12:00 & 18:00 every day
- *Days* - Aligned to the start of each year; for example, a 14-day period would generate logs at 00:00hrs on January 1st each year and at 14 day intervals until the end of the year

16.2.5. 'Update Logging Parameters' button

When clicked, submits modified settings to the meter.

If the set of logged parameters has been modified this will cause all existing fast log data to be discarded. To ensure the user is aware of this consequence, the warning shown in *Figure 38* will be displayed. To proceed with the changes, click the *OK* button. To abort the changes, click the *Cancel* button.

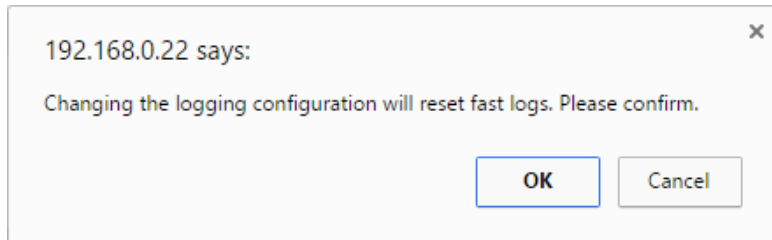


Figure 38- Fast Log Reset Warning

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16.3. Data Push Configuration

Fast Logger Posting Method	FTP	16.3.1
File Post Period	6 hours	16.3.2
Fast Logger FTP Settings		
Server URL	ftp://192.168.0.3	16.3.3
Port Number	21	16.3.4
Remote Directory	fast_logs	16.3.5
Username	data	16.3.7
Password	*****	16.3.8
Last Post	2017/10/20, 11:00:14	16.3.9
Post Count	115	16.3.10
16.3.11	TEST POST	UPDATE POSTING PARAMETERS 16.3.12

Figure 39- Data Push Settings

Resource	/svcs/proc_energy.php	16.3.6
----------	-----------------------	--------

Figure 40- Data Push Resource Setting

16.3.1. Fast Logger Posting Method

Select the required upload protocol from:

- Disabled
- FTP (File Transfer Protocol)
- SFTP (Secure File Transfer Protocol)
- HTTP (HyperText Transfer Protocol)
- HTTPS (HyperText Transfer Protocol Secure)

If *Disabled* is selected, data push functionality will be disabled for fast logging.

16.3.2. File Post Period

The time period between successive upload attempts.

The minimum upload period is 1 minute.

Upload attempts are aligned depending upon the selected unit of time:

- *Minutes* - Aligned to the start of each hour; for example, a 30-minute period would result in upload attempts at 0 & 30 minutes past each hour
- *Hours* - Aligned to the start of each day; for example, a 12-hour period would result in upload attempts at 00:00 & 12:00 every day

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- *Days* - Aligned to the start of each year; for example, a 28-day period would result in an upload attempt at 00:00hrs on January 1st each year and at 28 day intervals until the end of the year

16.3.3. Server URL

The IP address or domain name of the remote server to which uploads will be made.

16.3.4. Port Number

The port number to use when connecting to the remote server.

Unless configured otherwise, the standard port number for each server type is usually:

- FTP: 21
- SFTP: 22
- HTTP: 80
- HTTPS: 443

16.3.5. Remote Directory

The path to the directory on the FTP/SFTP server where logging data should be uploaded.

If left blank, the logging data will be uploaded to the default directory associated with the FTP/SFTP account.

16.3.6. Resource

The path and filename of the script on the HTTP/HTTPS server that will process uploaded data.

16.3.7. Username

The username of the account that should be used when accessing the remote server.

16.3.8. Password

The password of the account that should be used when accessing the remote server.

16.3.9. Last Post

The date and time of the last successful data upload attempt. The time is with respect to meter local time.

16.3.10. Post Count

The number of successful data upload attempts.

The count is reset to zero when any of the following conditions apply:

- After a power-cycle
- When parameter selection is modified
- When data push settings are modified

16.3.11. 'Test Post' button

When clicked, submit the modified parameters to the meter and attempt to perform a fast data upload immediately.

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Once complete, the outcome of the upload attempt will be displayed beneath the button.

16.3.12. 'Update Posting Parameters' button

When clicked, submit the modified parameters to the meter.

16.4. Data Push Methodology

16.4.1. Report preparation

When an upload attempt takes place, a report is prepared by the meter.

The report contains logging data commencing with the first entry that has not yet been uploaded.

Entries continue to be added to the report until one of the following conditions is satisfied:

- There are no more entries (the report has consumed all available entries)
- The report size has exceeded 256kB

16.4.2. Report format

The report uses a Comma Separated Values (CSV) format with the following specification:

- The first line contains column headings for the timestamp and logged parameter definitions. Each parameter indicates:
 - The meter point associated with the parameter as *MeterX*; where *X* is 1, 2, 3 or 4 (4 signifies the virtual meter)
 - The load associated with the parameter as either (*3ph*) for three-phase loads, or *LoadY* for single-phase loads; where *Y* is 1, 2 or 3
 - Whether the parameter is a *System* value
 - The parameter type from: *PhaseVolts*, *LineVolts*, *Amps*, *kW*, *kVA*, *kVAr*, *AmpsDemand*, *VoltsDemand*, *PeakAmps*, *PeakVolts*, *kWDemand*, *kVADemand*, *kVArDemand*, *PowerFactor*, *PeakHoldkWDemand*, *PeakHoldkVADemand*, *PeakHoldkVArDemand*, *NeutralCurrent* and *Frequency*
 - For per-phase measurements taken from a three-phase load, the phase is identified in brackets following the parameter type as (1), (2) or (3)
- Each subsequent line comprises a log entry containing the date/time and decimal values for each parameter. Times are with respect to meter local time.

Figure 41 shows an example fast log report.

Date (local),Time (local),Meter2Load1-PhaseVolts,Meter3Load1-kVAr,Meter3Load3-kWDemand,Meter4 (3ph) - kW (1),Meter4 (3ph) -kW (2),Meter4 (3ph) -kW (3),Meter4 (3ph) -System-kW
2017-05-02,10:34:40, 222.400000,-1928.000000,534.000000,597.000000,622.000000,425.000000,1640.000000
2017-05-02,10:35:00, 226.400000,-1968.000000,534.000000,513.000000,533.000000,673.000000,1720.000000
2017-05-02,10:35:20, 227.700000,2030.000000,535.000000,333.000000,391.000000,679.000000,1400.000000

Figure 41- Fast Log Report Example

16.4.3. Upload via FTP/SFTP

For upload via FTP or SFTP, the report will be delivered with a filename of the following format:

fastlog_mmmmmmmmmmmm_nnnnnnnn_vvvv_yyyymmdd-hhmmss.csv

Where:

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- *mmmmmmmmmmmmmm* is the 12 character MAC address of the IP option board
- *nnnnnnnn* is an 8 digit zero-padded report number
- *vvvv* is a 4 digit zero-padded version number (used if several upload attempts are made for the same report)
- *yyyymmdd* is the date on which the report was prepared
- *hhmmss* is the meter local time at which the report was prepared

An example FTP/SFTP report filename is *fastlog_70b3d568cff2_00000914_0000_20170502-103849.csv*

The meter uses the standard FTP response from the server to ascertain whether the upload was successful.

16.4.4. Upload via HTTP/HTTPS

For upload via HTTP or HTTPS the CSV data is submitted directly to the server using the script specified in the upload settings. If the first two bytes of the server response are 0x4F and 0x4B (i.e. the ASCII string 'OK'), then the meter will consider the upload attempt to have succeeded.

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17. Date/Time

17.1. Summary

The *Date/Time* view of the web interface enables settings associated with system time maintenance to be observed and modified.

Date / Time		
Hardware Clock Time (UTC)	Fri Oct 20 11:32:57 2017	17.3
System Time (UTC)	2017/10/20, 11:32:57	17.4
System Time (Meter-Local)	2017/10/20, 11:32:57	17.5
Hardware Clock Battery	OK	17.6
Hardware Clock Last Write	Succeeded	17.7
Time Zone (Meter-Local)	UTC +0:00 H ▾	17.8
Time Source	NTP ▾	17.9
NTP Server URL	pool.ntp.org	17.10
Last NTP Attempt (Meter-Local)	2017/10/20, 11:31:28	17.11
Last NTP Status	Completed, no time adjustment	17.12
<input type="button" value="UPDATE"/>		17.15

Figure 42- Date/Time View

Date (Meter-Local)	Y <input type="text"/> M <input type="text"/> D <input type="text"/>	17.13
Time (Meter-Local)	H <input type="text"/> M <input type="text"/> S <input type="text"/>	17.14

Figure 43- Date/Time Manual Settings

17.2. Hardware & System Clocks

The IP option board incorporates a battery-backed hardware Real-Time Clock (RTC) module.

The RTC module maintains the meter system time in the event that the auxiliary power supply to the meter is interrupted.

When the IP option board is powered, the Operating System maintains a separate 'system' clock that is initially derived from the hardware clock. If the system clock is subsequently modified, the new time is also written to the hardware clock.

17.3. Hardware Clock Time (UTC)

The current time as reported by the RTC module.

This time is with respect to Coordinated Universal Time (UTC).

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17.4. System Time (UTC)

The current time as reported by the Operating System on the IP option board.

This time is with respect to Coordinated Universal Time (UTC).

17.5. System Time (Meter-Local)

The current time as reported by the Operating System (OS) on the IP option board.

This time is with respect to meter local time and incorporates the specified time offset.

17.6. Hardware Clock Battery

The current state of the battery used by the RTC module to maintain time in the absence of auxiliary power.

The battery state is checked every 10 minutes.

The possible states are:

- *OK* - The RTC module responded to the status request, and reported that the battery is in satisfactory condition
- *WARNING: Low battery* - The RTC module responded to the status request, and reported that the rechargeable battery is having low voltage at present. This may occur if the meter has been unpowered for some time. This state will change eventually to OK after automatic recharging of the battery.
- *Check failed* - The RTC module failed to respond to the status request. If this message is displayed permanently it may indicate a fault with the RTC device.

17.7. Hardware Clock Last Write

The outcome of the last attempt to apply the system time to the RTC module. This only occurs when a significant modification is made to the system time, for example due to a correction made by the NTP system.

The possible results are:

- *Succeeded* - The most recent attempt completed without error
- *Failed* - The most recent attempt did not complete
- *No write since power-up* - There has been no reason to update the RTC module since the most recent power-on event

17.8. Time Zone (Meter-Local)

The time offset applicable at the location of the meter, with respect to Coordinated Universal Time (UTC).

The drop-down list includes all offset options from -12:00H to +13:00H in 15 minute increments.

This offset will be applied to all timestamps when data is viewed or exported from the meter.

17.9. Time Source

The source from which the meter should derive the system time.

The available options are:

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- *NTP* - Automatically via the Ethernet port using the Network Time Protocol
- *Manual* - The date and time will be entered manually via the web interface
- *This PC* - The current date and time of the PC being used to view the web interface will be applied to the meter (as a one-off operation when the 'update' button is clicked)

17.10. NTP Server URL

The network address of the server that will provide NTP services to the meter.

If the meter has access to the Internet, it is advised that this should be configured to use *pool.ntp.org*.

17.11. Last NTP Attempt (Meter-Local)

The date and time of the most recent attempt to derive system time using the Network Time Protocol.

This time is with respect to meter local time.

An NTP attempt takes place immediately when first enabled, and subsequently every 11 minutes.

17.12. Last NTP Status

The outcome of the most recent attempt to derive system time using the Network Time Protocol.

The possible results are:

- *Completed, no time adjustment* - The NTP attempt completed successfully; the system time did not need to be adjusted
- *Completed, time adjusted* - The NTP attempt completed successfully; the system time required adjustment
- *Attempt failed* - The NTP attempt did not complete
- *No attempt since power-up* - No NTP attempt has taken place since the last power-on event

17.13. Date (Meter-Local)

Enter the current date with respect to meter local time as Year, Month and Day.

This field is displayed when the *Manual* time source is selected.

17.14. Time (Meter-Local)

Enter the current time with respect to meter local time as Hour, Minute and Second.

This field is displayed when the *Manual* time source is selected.

17.15. 'Update' button

When clicked, submits modified settings to the meter.

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18. Network

18.1. Summary

The *Network* view of the web interface enables the network configuration of the meter to be viewed and modified.

18.2. DHCP

Domain Host Configuration Protocol (DHCP) allows networking equipment to obtain network settings automatically from a DHCP server.

This is a convenient configuration option that enables the installer or end-user to quickly deploy devices within a network with centralised configuration of how those devices will fit within the networking architecture of the site.

18.3. Manual Configuration

Specific network settings can be applied directly to the meter via the web interface by using the *manual* (or *static*) configuration option.

18.4. Proxy Server

Some installation sites require use of an HTTP Proxy Server to gain access to external HTTP/HTTPS servers.

Where an HTTP Proxy Server is present, the meter will need to be configured with details of the proxy server if HTTP or HTTPS will be used to upload logs from the meter.

The screenshot shows a web interface for 'Network Settings'. It contains a table with five rows for network configuration: Address Mode (set to AUTO - DHCP), IP Address (192.168.0.16), Subnet Mask (255.255.254.0), Default Gateway (192.168.1.254), and Primary DNS (192.168.1.254). Below this table is a checkbox for 'Enable Proxy Server' which is currently unchecked. At the bottom of the form is an 'UPDATE' button. Callout boxes with numbers 18.5 through 18.15 point to specific elements: 18.5 points to the Address Mode dropdown, 18.6 to the IP Address field, 18.7 to the Subnet Mask field, 18.8 to the Default Gateway field, 18.9 to the Primary DNS field, 18.10 to the Enable Proxy Server checkbox, and 18.15 to the UPDATE button.

Network Settings	
Address Mode	AUTO - DHCP
IP Address	192.168.0.16
Subnet Mask	255.255.254.0
Default Gateway	192.168.1.254
Primary DNS	192.168.1.254
Enable Proxy Server	<input type="checkbox"/>
<input type="button" value="UPDATE"/>	

Figure 44- Network Settings

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Enable Proxy Server	<input checked="" type="checkbox"/>	
IP/URL	192.168.0.48	18.11
Port Number	8080	18.12
Username	proxy_user	18.13
Password	18.14

Figure 45- HTTP Proxy Settings

18.5. Address Mode

Select the required network configuration mode from:

- *AUTO - DHCP* - Use DHCP to automatically obtain network settings from a DHCP server
- *MANUAL - STATIC* - Configure the network settings manually using a static IP address

When the address mode is changed to DHCP on the web interface, the IP address obtained by the meter can be viewed only in the setup preview menu through the meter front panel.

18.6. IP Address

The dotted numerical IPv4 address of the meter.

In *DHCP* addressing mode this is populated automatically based upon the DHCP response.

In *Manual* addressing mode this is entered by the user.

18.7. Subnet Mask

The dotted numerical subnet mask of the meter.

In *DHCP* addressing mode this is populated automatically based upon the DHCP response.

In *Manual* addressing mode this is entered by the user.

18.8. Default Gateway

The dotted numerical IPv4 address of the default gateway.

In *DHCP* addressing mode this is populated automatically based upon the DHCP response.

In *Manual* addressing mode this is entered by the user.

18.9. Primary DNS

The dotted numerical IPv4 address of the primary Domain Name Server (DNS).

In *DHCP* addressing mode this is populated automatically based upon the DHCP response.

In *Manual* addressing mode this is entered by the user.

18.10. Enable Proxy Server

When ticked, this checkbox indicates that an HTTP Proxy Server must be used for all outgoing HTTP/HTTPS connections.

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18.11. IP/URL

The domain name or IP address of the HTTP Proxy Server.

18.12. Port Number

The port number of the HTTP Proxy Server.

18.13. Username

The username of the account to be used when accessing the HTTP Proxy Server.

18.14. Password

The password of the account to be used when accessing the HTTP Proxy Server.

18.15. 'Update' button

When clicked, submits the modified settings to the meter.

Note that if the IP address of the meter changes as a result of the new settings, then the new IP address must be entered into the web browser address bar in order to reconnect to the web interface of the meter.

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19. Find Local Meters

19.1. Summary

The *Find Local Meters* view of the web interface enables other ND IP meters on the local network to be discovered, providing a convenient mechanism to access their web interfaces.

19.2. Mechanism

IP-enabled meters from ND support a proprietary mechanism for those meters to discover and identify each other. The detecting mechanism does not support Version 1 Cube IP meters.

Each meter listens on a pre-defined network port for broadcasts from other meters.

When such a broadcast is received, each meter responds to identify itself.

Meters on LAN			
UPDATE METER LIST			
Meter Name	Type	Firmware version	IP Address
THIS METER			
Manufacturing plant	950	V7.00	192.168.0.154
OTHER METERS ON NETWORK			
Manufacturing	352	V1.01	192.168.0.252

Figure 46- Local Meters Display

19.3. 'Update Meter List' button

When clicked, this causes the meter to broadcast a message on the local network to other IP-enabled ND meters.

Any responses to that broadcast are displayed beneath the button.

19.4. This Meter

A section of the table to display the response from this meter (it will respond to broadcasts made by itself). This enables the user to view how the meter identifies itself to other meters.

19.5. Other Meters On Network

A section of the table to display responses from other meters.

19.6. Response from MultiCubeX50-IP meter

Responses from this generation of IP-enabled ND meter will comprise:

- *Meter Name* - The user-specified name for the meter. See 12.3 *Meter Name* for details of how to modify this name when connected to the web interface of the relevant meter.
- *Type* - The model number of the meter.

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- *Firmware Version* - The version of firmware installed within the MultiCubeX50 meter display board.
- *IP Address* - The IPv4 address of the meter. For *other* meters, this is a hyper-link that when clicked will open the web interface for that meter in a new tab of the web browser.

19.7. Response from legacy meter

Responses from earlier generation IP-enabled ND meters will comprise:

- *Meter Name* - A fixed string identifying the meter as a legacy device
- *Type* - The model number returned by the meter
- *Firmware Version* - The firmware version of the meter
- *IP Address* - The IPv4 address of the meter. This is a hyper-link that when clicked will open the web interface for that meter in a new tab of the web browser.

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20. File Transfer

20.1. Summary

The *File Transfer* view of the web interface enables the user to download logs and settings from the meter, and to upload settings and customise the web interface.

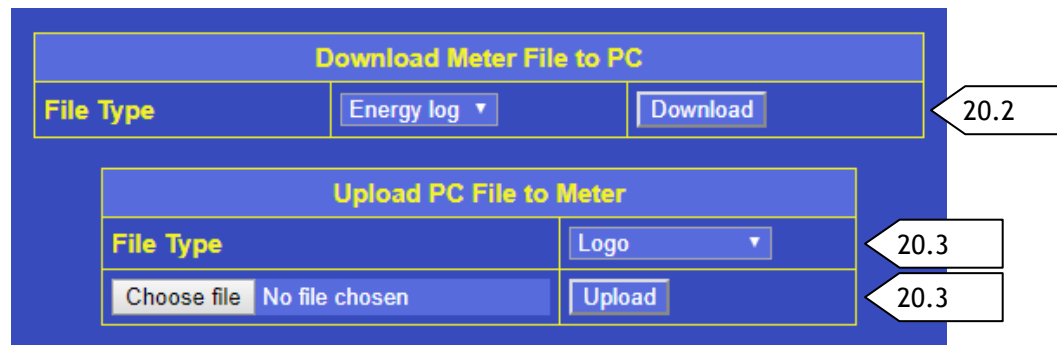


Figure 47- File Transfer Interface

20.2. Download Operations

Select the required download file type from:

- *Energy Log*
- *Fast Log*
- *Peak Log*
- *Event Log*
- *All Settings*

When the 'Download' button is clicked, the requested data is prepared and delivered to the PC via the web browser.

20.2.1. Energy Log

The downloaded file comprises an energy log report as detailed in *15.4 Data Push Methodology*.

The filename follows the convention detailed in *15.4.3 Upload via FTP/SFTP*.

Note that each log entry is reported only once. Log entries included in a report delivered via the file download mechanism will not subsequently be included in a report delivered via automated FTP/HTTP upload (and vice-versa).

As each log report size is limited to 256KB, multiple downloads will be required for log reports greater than 256KB.

20.2.2. Fast Log

The downloaded file comprises a fast log report as detailed in *16.4 Data Push Methodology*.

The filename follows the convention detailed in *16.4.3 Upload via FTP/SFTP*.

Note that each log entry is reported only once. Log entries included in a report delivered via the file download mechanism will not subsequently be included in a report delivered via automated FTP/HTTP upload (and vice-versa).

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As each log report size is limited to 256KB, multiple downloads will be required for log reports greater than 256KB.

20.2.3. Peak Log

The downloaded file comprises a peak log report as detailed in *Appendix A2 - Peak Log*.

20.2.4. Event Log

The downloaded file comprises an event log report as detailed in *Appendix A3 - Event Log Report*.

As each log report size is limited to 256KB, multiple downloads will be required for log reports greater than 256KB.

20.2.5. All Settings

The downloaded file contains all current settings in eXtensible Markup Language (XML) format.

The downloaded settings file can be retained as a backup of configuration for the meter.

Additionally, it may be used to upload settings to a new meter to apply an identical configuration.

The name of the file is *meter_settings.xml*. Note that if that file already exists on the PC, the name will be modified by the PC on arrival, normally by adding a numerical count in brackets (e.g. *meter_settings(2).xml*).

The file contains one element per line. Each element contains the value of a single named meter setting of the form:

```
<setting_name>setting_value</setting_name>
```

For example:

```
<metcfg_m2_ph2_name>Conveyor 2</metcfg_m2_ph2_name>
```

20.3. Upload Operations

Select the relevant upload type from:

- *Logo*
- *Footer Contents*
- *All Settings*

Click the 'Choose file' button and select the local file on the PC that is to be uploaded to the meter.

Click the 'Upload' button to transfer the file from the PC to the meter.

A message indicating the outcome of the upload attempt will be displayed beneath the 'Upload' button.

20.3.1. Customised Logo

Upload of a valid *Logo* file will replace the ND logo that normally appears in the upper left corner of the web interface.

The file must comply with the Joint Photographic Experts Group (JPEG) format.

The size of the file cannot exceed 50 kilobytes (50kB).

When displayed in the web interface, the image will be scaled to fit an area 150 pixels wide and 80 pixels high. When scaled, the aspect ratio of the image will be retained.

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Following logo upload, the web browser will need to be refreshed to display the new logo. On most browsers, this can be accomplished by holding down the CTRL key and pressing F5.

20.3.2. Customised Footer

Upload of a valid *Footer Contents* file will replace the ND information that normally appears at the bottom of the web interface.

The file must contain a single line of ASCII text in the following format:

organisation_name#contact_email_address#web_url

For example, uploading a file containing the following line of ASCII text results in the web interface footer shown in *Figure 48*:

Widget Corp. (UK) Ltd#sales@widget_corp.com#http://widget_corp.com/

Following upload of footer contents, the web browser will need to be refreshed to display the new footer. On most browsers, this can be accomplished by holding down the CTRL key and pressing F5.

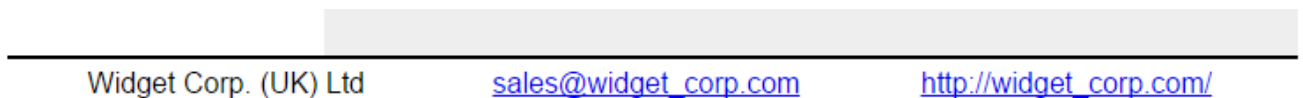


Figure 48- Custom Footer Example

20.3.3. All Settings

Upload of an *All Settings* file will replace settings values in the meter with those provided in the upload file.

The uploaded settings file must comply with the format used by the meter when settings are downloaded (see *20.2.5 All Settings*).

Any settings that are not present in the uploaded settings file will remain unchanged in the meter. Therefore, it is valid for the uploaded settings file to contain only a subset of all possible settings.


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21. Help

21.1. Summary

The *Help* view of the web interface provides links to useful documentation.



Help Shortcuts		
Manual	Meter Manual	View
Meter Installation	Installation Guide	View
Main Website	Other Metering Products	View

Figure 49- Help Shortcuts

21.2. Manual

When clicked, the 'View' button will open a new browser tab containing this manual.

21.3. Meter Installation

When clicked, the 'View' button will open a new browser tab containing the installation manual for the MultiCubeX50 meter range.

21.4. Main Website

When clicked, the 'View' button will open a new browser tab containing the homepage of the ND web-site.

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22. Firmware Upgrade

22.1. Summary

The *Firmware Upgrade* view of the web interface enables the installer / end-user to deploy new releases of firmware to the IP option board.

22.2. Description

The IP option board of the MultiCubeX50-IP meter range contains firmware that implements the logging functionality and web interface of the meter.

The meter supports a mechanism to upgrade the firmware of the IP option board. This enables improvements to the firmware to be deployed after the meter has been installed.

The IP option board contains two sets of firmware in flash memory, one in active use and one spare. During manufacture, both firmware sets will be programmed to the most recent release.

Once in the field, the current firmware can continue to run from the active firmware set, whilst the spare set can be replaced by a new firmware release.

To prevent both accidental and deliberate deployment of unauthorised firmware images, the mechanism uses strong cryptographic techniques to ensure only official releases by ND are accepted by the meter.

An upgrade package contains a number of files:

- *release_notes.txt* - The firmware version number and a human readable description of what is new in this release
- *manifest* - Identification of the meter type for which this release is applicable, the names and sizes of the images incorporated in the release, and cryptographic hashes of those images
- *signature* - A cryptographic signature of the *manifest* file using a strong key
- *ulimage* - The Linux kernel image for this release
- *rootfs.ubifs* - The root filesystem image for this release

When an upgrade attempt is requested by the user, the meter first obtains the signature and manifest files.

The signature is used to verify that the manifest was generated by ND.

The manifest is then checked to ensure that the release is appropriate for the meter type.

Subsequently, in turn, the Linux kernel and root filesystem images are downloaded. Each image is checked against the corresponding cryptographic hash in the manifest to confirm they have not been modified since generation by ND.

If everything has verified correctly then the images are trusted, written to flash memory within the IP option board and marked as the active firmware set.

At this point, the IP option board must be rebooted to begin using the new firmware.

22.3. Preparation For Upgrade

Firmware upgrades are deployed using an FTP or SFTP server.

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Ensure that the server is accessible to the meter, either within the local network or via a wider network such as the Internet.

Configure the server with a user account using known credentials.

Obtain the firmware upgrade package from ND and place into a known directory within the FTP/SFTP server that has read permission for the chosen user account. If the upgrade package was provided within an archive (e.g. .ZIP), then extract the individual files and make them accessible to the chosen user account.

22.4. Upgrade Parameters

The screenshot shows a web-based form titled "Upgrade Parameters". It contains the following fields and a button:

- Upgrade Method:** A dropdown menu currently showing "FTP". (Callout 22.4.1)
- Upgrade FTP Settings:** A section header for the following fields.
- Server URL:** A text input field containing "ftp://192.168.0.3". (Callout 22.4.2)
- Port Number:** A text input field containing "21". (Callout 22.4.3)
- Username:** A text input field containing "fwup". (Callout 22.4.4)
- Password:** A text input field with masked characters ".....". (Callout 22.4.5)
- Remote Directory:** A text input field containing "upgr". (Callout 22.4.6)
- START UPGRADE:** A button at the bottom of the form. (Callout 22.4.7)

Figure 50- Firmware Upgrade Parameters

22.4.1. Upgrade Method

Select the type of server used to host the upgrade package:

- *FTP* (File Transfer Protocol)
- *SFTP* (Secure File Transfer Protocol)

22.4.2. Server URL

The IP address or domain name of the server hosting the upgrade package.

22.4.3. Port Number

The port number to use when connecting to the server.

Unless configured otherwise, the standard port number for each server type is usually:

- *FTP*: 21
- *SFTP*: 22

22.4.4. Username

The username of the account that should be used when accessing the server.

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22.4.5. Password

The password of the account that should be used when accessing the server.

22.4.6. Remote Directory

The path to the directory on the server where the upgrade package has been placed.

22.4.7. 'Start Upgrade' button

When clicked, triggers the firmware upgrade mechanism.

22.5. Upgrade Status

Upgrade Status	
Started	2017/10/20, 13:26:32
Ended	
State	5: Acquiring rootfs image
Download Progress	<div><div></div></div>

Figure 51- Firmware Upgrade Status

22.5.1. Started

The date and time at which the most recent firmware upgrade attempt commenced. This field will be blank if no upgrade attempt has taken place since the last power-on event.

The time is with respect to meter local time.

22.5.2. Ended

The date and time at which the most recent firmware upgrade attempt finished. This field will be blank if no upgrade attempt has finished since the last power-on event.

This time is with respect to meter local time.

22.5.3. State

A numerical code and textual description of the current firmware upgrade status, from the following possible states:

- *0: No upgrade since boot* - There has been no firmware upgrade attempt since the most recent power-on event
- *1: Starting upgrade* - Preparing to perform an upgrade attempt
- *2: Acquiring crypto signature* - Downloading the signature file from the FTP/SFTP server
- *3: Acquiring manifest* - Downloading the manifest file from the FTP/SFTP server
- *4: Acquiring kernel image* - Downloading the Linux kernel image from the FTP/SFTP server
- *5: Acquiring rootfs image* - Downloading the root filesystem image from the FTP/SFTP server

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- **6: Completed successfully (reboot required)** - The firmware upgrade attempt was successful; the IP option board needs to be rebooted to use the new firmware; the *Reboot* button must be used to trigger the reboot
- **7: ERROR: Rootfs hash mismatch** - The cryptographic hash computed using the downloaded root filesystem image does not match the value published in the manifest
- **8: ERROR: Rootfs retrieval failure** - Failed to download the root filesystem image from the FTP/SFTP server
- **9: ERROR: Rootfs volume update failure** - The 'spare' root filesystem volume in flash could not be initialised for upgrade
- **10: ERROR: Kernel hash mismatch** - The cryptographic hash computed using the downloaded Linux kernel image does not match the value published in the manifest
- **11: ERROR: Kernel retrieval failure** - Failed to download the Linux kernel image from the FTP/SFTP server
- **12: ERROR: Kernel volume update failure** - The 'spare' Linux kernel volume in flash could not be initialised for upgrade
- **13: ERROR: Manifest parse failure** - The downloaded manifest file was invalid
- **14: ERROR: Signature check failure** - The cryptographic signature of the downloaded manifest file does not match that contained in the downloaded signature file
- **15: ERROR: Manifest read failure** - The downloaded manifest file could not be read
- **16: ERROR: Manifest retrieval failure** - Failed to download the manifest file from the FTP/SFTP server
- **17: ERROR: Manifest create failure** - Filesystem error whilst creating the local manifest file
- **18: ERROR: Signature read failure** - The downloaded signature file could not be read
- **19: ERROR: Signature retrieval failure** - Failed to download the signature file from the FTP/SFTP server
- **20: ERROR: Signature create failure** - Filesystem error whilst creating the local signature file
- **21: ERROR: Unable to identify rootfs volume** - Unable to identify the root filesystem volume within the 'spare' firmware set

22.5.4. Download Progress

Indicates progress during download of files and images from the FTP/SFTP server.

22.6. Trickle Refresh Status

Trickle Refresh Status	
Volume	RootFS A
Bytes Read	13312

22.6.1

22.6.2

Figure 52- Trickle Refresh Status

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The IP option board utilises standard technologies that maximise the lifetime of the NAND flash device used within the product. Those technologies are used whenever data is read from or written to the flash device.

The spare firmware set may remain unused for long periods of time, during which maintenance may be required to ensure the integrity of those areas of flash. To ensure the flash technologies have the opportunity to maintain the spare firmware set, the images within that set are sequentially read during normal operation.

The rate at which the images are read is configured to be very slow, taking several days to complete a full read of the images. A display of that read progress is included within the Firmware Upgrade view of the web interface.

22.6.1. Volume

The filesystem volume in flash that is currently being read, from:

- *Kernel A*
- *RootFS A*
- *Kernel B*
- *RootFS B*

22.6.2. Bytes Read

The number of bytes read during the current pass of this volume.

22.7. Reboot



Figure 53- Reboot Button

22.7.1. 'Reboot' Button

When clicked, the warning message shown in *Figure 54* will be displayed.

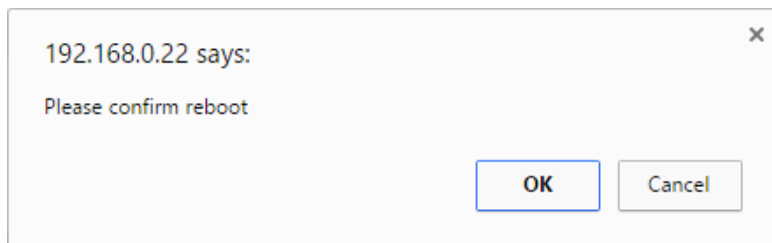


Figure 54- Reboot Warning

To proceed with the reboot, click the *OK* button.

To abort the reboot, click the *Cancel* button.

Note that once a reboot has been requested there will be a period of approximately one minute before the web interface of the meter becomes available once again.

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The new firmware version may contain modified web content which needs to be acquired by the web browser to correctly render the updated web interface of the meter. Therefore, following reboot it is advisable to clear the web browser cache for the meter IP address.

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23. Modbus TCP Interface

23.1. Summary

The measurement system of the meter can be accessed using the *Modbus TCP* protocol. The meter incorporates a Modbus TCP server providing access to all measured parameters.

23.2. Usage

The Modbus TCP server can be queried using a Modbus TCP application on a PC or PLC that is able to act as a Modbus master. The application should be configured to connect to the IP address of the meter on port number 502.

The Modbus TCP server implements Modbus commands 3, 4 and 6 (Read Holding Register, Read Input register and Write Holding Register).

In the Modbus master, set the slave ID to the following:

- 1 for master tables
- 2, 3, & 4 for each metering point to view meter point tables
- 5 for the virtual metering point (only present for MultiCube950 meters containing the virtual meter option)

The available Modbus tables are detailed in the *Cubex50 Modbus Guide* document.

23.2.1. Timeouts and retries

It is recommended to setup your Modbus TCP client to retry reads at least once, with a timeout of at least 500ms.

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24. SNMP

24.1. Summary

The *Simple Network Messaging Protocol* (SNMP) is an internet-standard for managing devices on IP networks. The meter acts as an SNMP agent exposing variables that can be inspected by network management systems.

24.2. Description

The available variables are organised in a tree structure that is represented as a series of integer numbers separated by dots. The series of numbers leading to a specific variable is called the object identifier (OID). Each number identifies a branch from the preceding node. Branches and variables are described in a *Management Information Base* (MIB). The MIB gives a name and description to each branch and gives information about the type of each variable. For example, the kWh High Word register at data address 7680 in the three-phase amalgamated data table 30 of meter point 1 is represented to a network management system by the OID:

1.3.6.1.4.1.37778.0.2.30.7680.0

The branches contained in this OID are named:

iso.org.dod.internet.private.enterprises.NDmeter.MultiCubeX50.Meter1.Meter1Table30.Meter1Table30kWhHigh.0

The first six numbers conform to the structure described in Internet Engineering Taskforce document RFC1155. The seventh number, 37778, is assigned by the Internet Assigned Numbers Authority (IANA) to represent the company Northern Design. The eighth number identifies the device type as 0 (representing the MultiCubeX50 range). The ninth number signifies the Modbus slave ID of the meter point (numbered incrementally from the master table at ID 1). The tenth number is the Modbus Table ID. The eleventh number is the data address of the variable in the table. The last number represents an instance of this variable; this will always be zero as there is only one instance of each variable.

In summary, the MIB mapping adheres to the following format:

1.3.6.1.4.1.37778.0.[Slave ID].[Table ID].[Data Address].0

A MIB describing these variables is provided in *Appendix A5 - SNMP MIB*.

Note: The community string of the SNMP agent is “nd”.

24.2.1. Timeouts and retries

It is recommended to setup your SNMP client to retry reads at least once, with a timeout of at least 1sec.

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25. Appendix A1 – Web Security Background

25.1. Password validation

When the username and password for the meter (the *credentials*) are entered into the browser, they need to be transmitted to the meter for validation.

If the credentials were transmitted in the clear (meaning without protection), an eavesdropper with the ability to capture Ethernet packets at some point in the network path between browser and meter could simply read them as plaintext. Subsequently the attacker could login to the meter themselves and modify settings as they wished.

To prevent such an attack, the meter web pages use HTTP Digest Authentication. This uses cryptographic hashing together with a challenge/response mechanism to avoid transmission of credentials in the clear.

25.2. Password modification and HTTPS

HTTP Digest Authentication can only be used for verification of existing credentials. It cannot be used to protect general data, such as a modified password that the user wishes to use in place of the current password.

To prevent eavesdropping of the modified password by an attacker, it must be encrypted during transmission from the browser to the meter. Encryption of such data is supported by HTTP over TLS (Transport Layer Security), better known as HTTPS.

HTTPS relies on a security certificate provided by the server (in this case the meter) to the client (the browser). The client can then use that certificate to establish a secure connection to the server and any data that is subsequently carried over that connection can only be read by the client and server.

HTTPS can also establish trust by the client in the identity of the server. This enables the client to validate that the server is what it claims to be and not an impersonator masquerading as that server. This trust mechanism is used by commercial websites such as banks and shops to give end-users confidence to enter valuable personal data such as credit card details, and results in the padlock symbol that is displayed by the browser.

The implementation of that trust mechanism depends upon the security certificate used by the server being registered with an organisation known as a *Certificate Authority* or CA. The CA is known to the browser/operating system of each PC and can *sign* the server security certificate to validate it is trusted by that CA. The registration process requires the security certificate to be bound to a unique public internet address or domain and for the CA to establish that the individual registering the certificate genuinely owns that address/domain.

This presents two problems for embedded devices containing a web server, such as the MultiCubeX50-IP meter. Firstly, the CA requires an ongoing annual fee to be paid for each registered security certificate, and therefore each meter, which would amount to a significant recurring customer cost particularly for sites utilising multiple meters.

Secondly, the security certificate must be bound to a unique public internet address or domain. That means each meter, at the point of manufacture, would need to be targeted for a customer specified unique public address/domain, and contain a security certificate bound to that address/domain which has been previously signed by a CA.

It is possible for an organisation such as the installer or end-user to act as a Certificate Authority in order to sign the security certificates itself. However, this would need to be handled with great care to avoid introducing substantial risk to any PC used to access the web server of a meter.

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Mistakes with such a scenario would enable a sufficiently sophisticated attack to compromise the security of those PCs and by implication any networks, systems or data to which those PCs have access.

Taken together, solving these issues is impractical for the majority of installations as it would add significant fixed and recurring costs for the customer in addition to substantial logistical hurdles.

With careful consideration of the issues raised in the preceding discussion, the approach taken for the MultiCubeX50-IP meter is as follows. The meter automatically generates a security certificate, which is not registered with a CA. Therefore, when pages are served over HTTPS (and that security certificate is used), the browser will be unable to verify the identity of the meter and will display a security warning to the user.

Were those security warnings regularly presented, the overall user experience would be substantively degraded. Therefore HTTPS (and hence the security certificate) is only used when modifying passwords on the meter. All other pages are served as HTTP.

Note that the security warning does not mean the new password is sent in the clear. On the contrary, the password is protected by strong encryption. However, the security message correctly indicates that the identity of the meter cannot be verified by the browser.

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26. Appendix A2 – Peak Log Report

26.1. File Format

The report uses a Comma Separated Values (CSV) format with the following specification:

- The report is split into sections, one section for each configured meter load
- Each section comprises
 - A title line containing the load type (single-phase load or three-phase load) and user-defined load name
 - A line containing column headings for the timestamp and parameter definitions
 - Subsequent lines each constitute a peak event providing the timestamp and parameter values associated with that event
 - A maximum of ten peak events will be present
 - Peak events are ordered by time, most recent first
 - Timestamps are with respect to meter local time

Figure 55 shows an excerpt from an example peak log report.

```
Three phase load: Processing
Peak date (local),Peak time (local),Amps (phase 1),Amps (phase 2),Amps (phase 3),kW (phase 1),kW (phase 2),kW (phase 3),kW (system),Power factor (phase 1),Power factor (phase 2),Power factor (phase 3),Power factor (system)
2017-10-20,01:55:39,108.63,108.23,108.63,38.74,38.23,38.18,38.75,1.00,1.00,1.00,1.00
2017-10-20,01:53:40,108.89,108.30,108.36,38.24,38.83,38.20,38.24,1.00,1.00,1.00,1.00
2017-10-20,01:48:15,107.84,107.80,107.30,38.89,38.25,38.62,38.95,1.00,1.00,1.00,1.00
```

Figure 55- Peak Log Report Example

26.2. Filename

The report will be delivered with a filename of the following format:

peaks_mmmmmmmmmmmm_yyyymmdd-hhmmss.csv

Where:

- *mmmmmmmmmmmm* is the 12 character MAC address of the IP option board
- *yyymmdd* is the date on which the report was prepared
- *hhmmss* is the meter local time at which the report was prepared

An example peak log report filename is *peaks_70b3d568cff2_20170503-093808.csv*

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27. Appendix A3 – Event Log Report

27.1. Report preparation

The report contains system event log entries commencing with the first entry that has not previously been included in a report.

Entries continue to be added to the report until one of the following conditions is satisfied:

- There are no more entries (the report has consumed all available entries)
- The report size has exceeded 256kB

27.2. File Format

The report uses a Comma Separated Values (CSV) format with the following specification:

- A line containing column headings for the timestamp and event details
- Subsequent lines each constitute a system event log entry providing the timestamp and textual description of the event
- Log entries are ordered by time, oldest first
- Timestamps are with respect to meter local time

Figure 56 shows an excerpt from an example event log report.

```
Date (local),Time (local),Details
2017-04-21,11:36:22, Firmware upgrade attempt start
2017-04-21,11:37:17, Firmware upgrade completed successfully
2017-04-21,11:37:19, Reboot requested
2017-04-21,11:38:17, System boot complete
2017-04-21,11:38:17, Current boot was planned
2017-04-21,11:38:17, Running firmware 1.0-prod (21Apr17-11:36:08)
2017-04-21,11:38:17, Network up; running - IP address 192.168.0.10
```

Figure 56- Event Log Report Example

27.3. Filename

The report will be delivered with a filename of the following format:

eventlog_mmmmmmmmmmmmm_nnnnnnnn_vvvv_yyyymmdd-hhmmss.csv

Where:

- *mmmmmmmmmmmmmm* is the 12 character MAC address of the IP option board
- *nnnnnnnn* is an 8 digit zero-padded report number
- *vvvv* is a 4 digit zero-padded version number (used if several download attempts are made for the same report)
- *yyymmdd* is the date on which the report was prepared
- *hhmmss* is the meter local time at which the report was prepared

An example event log report filename is *eventlog_70b3d568cff2_00000747_0000_20170503-102432.csv*

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28. Appendix A4 – Log storage management

Logged data is stored in long-term non-volatile memory that retains contents in the absence of power.

The storage capacity is large but will eventually fill. The speed at which storage becomes full is dependent upon the number of parameters that are selected for logging and the period between successive logs.

The following example usage profiles give an indication of how quickly storage capacity will fill:

- ~20 years for low intensity logging (25 parameters logged every 30 minutes)
- ~2 years for moderate logging (40 parameters logged every 5 minutes)
- ~40 hours for extreme logging (all parameters logged every second)

The MultiCubeX50 IP option board continuously monitors available storage space. When space begins to run low, the oldest logging data is gradually discarded until available storage is once again at an acceptable level. This mechanism proceeds indefinitely, with the logged data most distant in the past being gradually lost to make way for new data.

Therefore, if logged data needs to be retained indefinitely, it is important for the data to be exported regularly using either periodic data push or manual download via the file transfer facility.

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29. Appendix A5 – SNMP MIB

The following is the Management Information Base (MIB) for the variables accessible via the Simple Network Messaging Protocol (SNMP) agent in the meter.

NDMETER-MCX50-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY, OBJECT-TYPE,
Integer32, enterprises
FROM SNMPv2-SMI;

NDMeter MODULE-IDENTITY

LAST-UPDATED "201705080000Z"

ORGANIZATION "Northern Design (Electronics) Ltd."

CONTACT-INFO

" Northern Design (Electronics) Ltd.

Postal: 228 Bolton Road.

Bradford

BD3 0QW

UK

Tel: +44 1274 729533

E-mail: support@ndmeter.co.uk"

DESCRIPTION

"The Structure of Management Information for the
Northern Design MultiCubeX50 meter range"

REVISION "201705080000Z"

DESCRIPTION

"Initial version of this MIB module."

::= { enterprises 37778 } -- assigned by IANA

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MultiCubeX50 OBJECT-IDENTITY STATUS current DESCRIPTION "MultiCubeX50 Meter Range" ::= { NDMeter 0 }	DESCRIPTION "Meter 1 Table 30 kVArh High Word" ::= { Meter1Table30 7684 }	::= { Meter1Table30 7691 }
-- -- Meter Point 1 Tables --	Meter1Table30kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 kVArh Low Word" ::= { Meter1Table30 7685 }	Meter1Table30Phase2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 2 Volts" ::= { Meter1Table30 7692 }
Meter1 OBJECT-IDENTITY STATUS current DESCRIPTION "Meter 1" ::= { MultiCubeX50 2 }	Meter1Table30ExportkWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Export kWh High Word" ::= { Meter1Table30 7686 }	Meter1Table30Phase3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 3 Volts" ::= { Meter1Table30 7693 }
-- -- Meter 1 Table 30 --	Meter1Table30ExportkWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Export kWh Low Word" ::= { Meter1Table30 7687 }	Meter1Table30Phase1Phase2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 1-Phase 2 Volts" ::= { Meter1Table30 7694 }
Meter1Table30 OBJECT-IDENTITY STATUS current DESCRIPTION "Meter 1 Table 30" ::= { Meter1 30 }	Meter1Table30Phase1Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 1 Amps" ::= { Meter1Table30 7688 }	Meter1Table30Phase2Phase3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 2-Phase 3 Volts" ::= { Meter1Table30 7695 }
Meter1Table30kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 kWh High Word" ::= { Meter1Table30 7680 }	Meter1Table30Phase2Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 2 Amps" ::= { Meter1Table30 7689 }	Meter1Table30Phase3Phase1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 3-Phase 1 Volts" ::= { Meter1Table30 7696 }
Meter1Table30kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 kWh Low Word" ::= { Meter1Table30 7681 }	Meter1Table30Phase3Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 3 Amps" ::= { Meter1Table30 7690 }	Meter1Table30Frequency OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Frequency" ::= { Meter1Table30 7697 }
Meter1Table30kVAhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 kVAh High Word" ::= { Meter1Table30 7682 }	Meter1Table30Phase1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 1 Volts"	Meter1Table30Phase1PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION
Meter1Table30kVAhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 kVAh Low Word" ::= { Meter1Table30 7683 }		
Meter1Table30kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current		

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"Meter 1 Table 30 Phase 1 Power Factor" ::= { Meter1Table30 7698 }	::= { Meter1Table30 7705 }	::= { Meter1Table30 7713 }
Meter1Table30Phase2PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 2 Power Factor" ::= { Meter1Table30 7699 }	Meter1Table30Phase1kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 1 kVA" ::= { Meter1Table30 7706 }	Meter1Table30Phase1AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 1 Amps Demand" ::= { Meter1Table30 7714 }
Meter1Table30Phase3PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 3 Power Factor" ::= { Meter1Table30 7700 }	Meter1Table30Phase2kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 2 kVA" ::= { Meter1Table30 7707 }	Meter1Table30Phase2AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 2 Amps Demand" ::= { Meter1Table30 7715 }
Meter1Table30SystemPowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System Power Factor" ::= { Meter1Table30 7701 }	Meter1Table30Phase3kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 3 kVA" ::= { Meter1Table30 7708 }	Meter1Table30Phase3AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 3 Amps Demand" ::= { Meter1Table30 7716 }
Meter1Table30Phase1kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 1 kW" ::= { Meter1Table30 7702 }	Meter1Table30SystemkVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System kVA" ::= { Meter1Table30 7709 }	Meter1Table30Phase1VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 1 Volts Demand" ::= { Meter1Table30 7717 }
Meter1Table30Phase2kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 2 kW" ::= { Meter1Table30 7703 }	Meter1Table30Phase1kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 1 kVAr" ::= { Meter1Table30 7710 }	Meter1Table30Phase2VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 2 Volts Demand" ::= { Meter1Table30 7718 }
Meter1Table30Phase3kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 3 kW" ::= { Meter1Table30 7704 }	Meter1Table30Phase2kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 2 kVAr" ::= { Meter1Table30 7711 }	Meter1Table30Phase3VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 3 Volts Demand" ::= { Meter1Table30 7719 }
Meter1Table30SystemkW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System kW"	Meter1Table30Phase3kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Phase 3 kVAr" ::= { Meter1Table30 7712 }	Meter1Table30PeakHoldPhase1Amps OBJECT-TYPE
Meter1Table30SystemkVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System kVAr"	Meter1Table30SystemkVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System kVAr"	

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SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Peak Hold Phase 1 Amps" ::= { Meter1Table30 7720 }	"Meter 1 Table 30 System kW Demand" ::= { Meter1Table30 7726 }	SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Ki" ::= { Meter1Table30 7733 }
Meter1Table30PeakHoldPhase2Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Peak Hold Phase 2 Amps" ::= { Meter1Table30 7721 }	Meter1Table30SystemkVADemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System kVA Demand" ::= { Meter1Table30 7727 }	Meter1Table30Kvp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Kvp" ::= { Meter1Table30 7734 }
Meter1Table30PeakHoldPhase3Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Peak Hold Phase 3 Amps" ::= { Meter1Table30 7722 }	Meter1Table30SystemkVArDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System kVAr Demand" ::= { Meter1Table30 7728 }	Meter1Table30Kvl OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Kvl" ::= { Meter1Table30 7735 }
Meter1Table30PeakHoldPhase1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Peak Hold Phase 1 Volts" ::= { Meter1Table30 7723 }	Meter1Table30SystemkWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System kW Maximum Demand" ::= { Meter1Table30 7729 }	Meter1Table30Kpsys OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Kpsys" ::= { Meter1Table30 7736 }
Meter1Table30PeakHoldPhase2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Peak Hold Phase 2 Volts" ::= { Meter1Table30 7724 }	Meter1Table30SystemkVAMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System kVA Maximum Demand" ::= { Meter1Table30 7730 }	Meter1Table30Kesys OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Kesys" ::= { Meter1Table30 7737 }
Meter1Table30PeakHoldPhase3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Peak Hold Phase 3 Volts" ::= { Meter1Table30 7725 }	Meter1Table30SystemkVArMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 System kVAr Maximum Demand" ::= { Meter1Table30 7731 }	Meter1Table30Kp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Kp" ::= { Meter1Table30 7738 }
Meter1Table30SystemkWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION	Meter1Table30NeutralCurrent OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 30 Neutral Current" ::= { Meter1Table30 7732 }	-- -- Meter 1 Table 31 -- Meter1Table31 OBJECT-IDENTITY STATUS current DESCRIPTION "Meter 1 Table 31" ::= { Meter1 31 }
	Meter1Table30Ki OBJECT-TYPE	Meter1Table31Load1kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION

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"Meter 1 Table 31 Load 1 kWh High Word" ::= { Meter1Table31 7936 }	Meter1Table31Load1kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 kVArh Low Word" ::= { Meter1Table31 7943 }	STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 kW Maximum Demand" ::= { Meter1Table31 7949 }
Meter1Table31Load1kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 kWh Low Word" ::= { Meter1Table31 7937 }	Meter1Table31Load2kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 kVArh High Word" ::= { Meter1Table31 7944 }	Meter1Table31Load3kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 kW Maximum Demand" ::= { Meter1Table31 7950 }
Meter1Table31Load2kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 kWh High Word" ::= { Meter1Table31 7938 }	Meter1Table31Load2kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 kVArh Low Word" ::= { Meter1Table31 7945 }	Meter1Table31Load1kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 kW Demand" ::= { Meter1Table31 7951 }
Meter1Table31Load2kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 kWh Low Word" ::= { Meter1Table31 7939 }	Meter1Table31Load3kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 kVArh High Word" ::= { Meter1Table31 7946 }	Meter1Table31Load2kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 kW Demand" ::= { Meter1Table31 7952 }
Meter1Table31Load3kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 kWh High Word" ::= { Meter1Table31 7940 }	Meter1Table31Load3kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 kVArh Low Word" ::= { Meter1Table31 7947 }	Meter1Table31Load3kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 kW Demand" ::= { Meter1Table31 7953 }
Meter1Table31Load3kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 kWh Low Word" ::= { Meter1Table31 7941 }	Meter1Table31Load1kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 kW Maximum Demand" ::= { Meter1Table31 7948 }	Meter1Table31Load1kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 kW" ::= { Meter1Table31 7954 }
Meter1Table31Load1kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 kVArh High Word" ::= { Meter1Table31 7942 }	Meter1Table31Load2kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only	Meter1Table31Load2kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 kW" ::= { Meter1Table31 7955 }
		Meter1Table31Load3kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION

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<p>"Meter 1 Table 31 Load 3 kW" ::= { Meter1Table31 7956 }</p> <p>Meter1Table31Load1kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 kVAr" ::= { Meter1Table31 7957 }</p> <p>Meter1Table31Load2kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 kVAr" ::= { Meter1Table31 7958 }</p> <p>Meter1Table31Load3kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 kVAr" ::= { Meter1Table31 7959 }</p> <p>Meter1Table31Load1kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 kVA" ::= { Meter1Table31 7960 }</p> <p>Meter1Table31Load2kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 kVA" ::= { Meter1Table31 7961 }</p> <p>Meter1Table31Load3kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 kVA" ::= { Meter1Table31 7962 }</p> <p>Meter1Table31Load1Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 Amps" ::= { Meter1Table31 7963 }</p> <p>Meter1Table31Load2Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION</p>	<p>"Meter 1 Table 31 Load 2 Amps" ::= { Meter1Table31 7964 }</p> <p>Meter1Table31Load3Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 Amps" ::= { Meter1Table31 7965 }</p> <p>Meter1Table31Load1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 Volts" ::= { Meter1Table31 7966 }</p> <p>Meter1Table31Load2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 Volts" ::= { Meter1Table31 7967 }</p> <p>Meter1Table31Load3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 Volts" ::= { Meter1Table31 7968 }</p> <p>Meter1Table31Ke OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Ke" ::= { Meter1Table31 7969 }</p> <p>Meter1Table31Kp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Kp" ::= { Meter1Table31 7970 }</p> <p>Meter1Table31Ki OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Ki" ::= { Meter1Table31 7971 }</p> <p>Meter1Table31Kvp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION</p>	<p>"Meter 1 Table 31 Kvp" ::= { Meter1Table31 7972 }</p> <p>Meter1Table31Load1PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 1 Power Factor" ::= { Meter1Table31 7973 }</p> <p>Meter1Table31Load2PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 2 Power Factor" ::= { Meter1Table31 7974 }</p> <p>Meter1Table31Load3PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Load 3 Power Factor" ::= { Meter1Table31 7975 }</p> <p>Meter1Table31Frequency OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 1 Table 31 Frequency" ::= { Meter1Table31 7976 }</p> <p>-- -- Meter Point 2 Tables --</p> <p>Meter2 OBJECT-IDENTITY STATUS current DESCRIPTION "Meter 2" ::= { MultiCubeX50 3 }</p> <p>-- -- Meter 2 Table 30 --</p> <p>Meter2Table30 OBJECT-IDENTITY STATUS current DESCRIPTION "Meter 2 Table 30" ::= { Meter2 30 }</p> <p>Meter2Table30kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only</p>
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<p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 kWh High Word"</p> <p>::= { Meter2Table30 7680 }</p>		<p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 2-Phase 3 Volts"</p> <p>::= { Meter2Table30 7695 }</p>
<p>Meter2Table30kWhLow OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 kWh Low Word"</p> <p>::= { Meter2Table30 7681 }</p>	<p>Meter2Table30Phase1Amps OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 1 Amps"</p> <p>::= { Meter2Table30 7688 }</p>	<p>Meter2Table30Phase3Phase1Volts OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 3-Phase 1 Volts"</p> <p>::= { Meter2Table30 7696 }</p>
<p>Meter2Table30kVAhHigh OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 kVAh High Word"</p> <p>::= { Meter2Table30 7682 }</p>	<p>Meter2Table30Phase2Amps OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 2 Amps"</p> <p>::= { Meter2Table30 7689 }</p>	<p>Meter2Table30Frequency OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Frequency"</p> <p>::= { Meter2Table30 7697 }</p>
<p>Meter2Table30kVAhLow OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 kVAh Low Word"</p> <p>::= { Meter2Table30 7683 }</p>	<p>Meter2Table30Phase3Amps OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 3 Amps"</p> <p>::= { Meter2Table30 7690 }</p>	<p>Meter2Table30Phase1PowerFactor OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 1 Power Factor"</p> <p>::= { Meter2Table30 7698 }</p>
<p>Meter2Table30kVArhHigh OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 kVArh High Word"</p> <p>::= { Meter2Table30 7684 }</p>	<p>Meter2Table30Phase1Volts OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 1 Volts"</p> <p>::= { Meter2Table30 7691 }</p>	<p>Meter2Table30Phase2PowerFactor OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 2 Power Factor"</p> <p>::= { Meter2Table30 7699 }</p>
<p>Meter2Table30kVArhLow OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 kVArh Low Word"</p> <p>::= { Meter2Table30 7685 }</p>	<p>Meter2Table30Phase2Volts OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 2 Volts"</p> <p>::= { Meter2Table30 7692 }</p>	<p>Meter2Table30Phase3PowerFactor OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 3 Power Factor"</p> <p>::= { Meter2Table30 7700 }</p>
<p>Meter2Table30ExportkWhHigh OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Export kWh High Word"</p> <p>::= { Meter2Table30 7686 }</p>	<p>Meter2Table30Phase3Volts OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 3 Volts"</p> <p>::= { Meter2Table30 7693 }</p>	<p>Meter2Table30SystemPowerFactor OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 System Power Factor"</p> <p>::= { Meter2Table30 7701 }</p>
<p>Meter2Table30ExportkWhLow OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Export kWh Low Word"</p> <p>::= { Meter2Table30 7687 }</p>	<p>Meter2Table30Phase1Phase2Volts OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Phase 1-Phase 2 Volts"</p> <p>::= { Meter2Table30 7694 }</p>	<p>Meter2Table30Phase1kW OBJECT-TYPE</p>
	<p>Meter2Table30Phase2Phase3Volts OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p>	

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<p>SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 1 kW" ::= { Meter2Table30 7702 }</p> <p>Meter2Table30Phase2kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 2 kW" ::= { Meter2Table30 7703 }</p> <p>Meter2Table30Phase3kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 3 kW" ::= { Meter2Table30 7704 }</p> <p>Meter2Table30SystemkW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 System kW" ::= { Meter2Table30 7705 }</p> <p>Meter2Table30Phase1kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 1 kVA" ::= { Meter2Table30 7706 }</p> <p>Meter2Table30Phase2kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 2 kVA" ::= { Meter2Table30 7707 }</p> <p>Meter2Table30Phase3kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 3 kVA" ::= { Meter2Table30 7708 }</p> <p>Meter2Table30SystemkVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 System kVA" ::= { Meter2Table30 7709 }</p> <p>Meter2Table30Phase1kVAr OBJECT-TYPE</p>	<p>SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 1 kVAr" ::= { Meter2Table30 7710 }</p> <p>Meter2Table30Phase2kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 2 kVAr" ::= { Meter2Table30 7711 }</p> <p>Meter2Table30Phase3kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 3 kVAr" ::= { Meter2Table30 7712 }</p> <p>Meter2Table30SystemkVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 System kVAr" ::= { Meter2Table30 7713 }</p> <p>Meter2Table30Phase1AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 1 Amps Demand" ::= { Meter2Table30 7714 }</p> <p>Meter2Table30Phase2AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 2 Amps Demand" ::= { Meter2Table30 7715 }</p> <p>Meter2Table30Phase3AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 3 Amps Demand" ::= { Meter2Table30 7716 }</p> <p>Meter2Table30Phase1VoltsDemand OBJECT-TYPE SYNTAX INTEGER</p>	<p>MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 1 Volts Demand" ::= { Meter2Table30 7717 }</p> <p>Meter2Table30Phase2VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 2 Volts Demand" ::= { Meter2Table30 7718 }</p> <p>Meter2Table30Phase3VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Phase 3 Volts Demand" ::= { Meter2Table30 7719 }</p> <p>Meter2Table30PeakHoldPhase1Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Peak Hold Phase 1 Amps" ::= { Meter2Table30 7720 }</p> <p>Meter2Table30PeakHoldPhase2Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Peak Hold Phase 2 Amps" ::= { Meter2Table30 7721 }</p> <p>Meter2Table30PeakHoldPhase3Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 30 Peak Hold Phase 3 Amps" ::= { Meter2Table30 7722 }</p> <p>Meter2Table30PeakHoldPhase1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION</p>
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<p>"Meter 2 Table 30 Peak Hold Phase 1 Volts"</p> <p>::= { Meter2Table30 7723 }</p>	<p>Meter2Table30SystemkVAMaximumDemand OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 System kVA Maximum Demand"</p> <p>::= { Meter2Table30 7730 }</p>	<p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Kesys"</p> <p>::= { Meter2Table30 7737 }</p>
<p>Meter2Table30PeakHoldPhase2Volts</p> <p>OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Peak Hold Phase 2 Volts"</p> <p>::= { Meter2Table30 7724 }</p>	<p>Meter2Table30SystemkVArMaximumDemand OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 System kVAr Maximum Demand"</p> <p>::= { Meter2Table30 7731 }</p>	<p>Meter2Table30Kp OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Kp"</p> <p>::= { Meter2Table30 7738 }</p>
<p>Meter2Table30PeakHoldPhase3Volts</p> <p>OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Peak Hold Phase 3 Volts"</p> <p>::= { Meter2Table30 7725 }</p>	<p>Meter2Table30NeutralCurrent OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Neutral Current"</p> <p>::= { Meter2Table30 7732 }</p>	<p>--</p> <p>-- Meter 2 Table 31</p> <p>--</p>
<p>Meter2Table30SystemkWDemand OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 System kW Demand"</p> <p>::= { Meter2Table30 7726 }</p>	<p>Meter2Table30Ki OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Ki"</p> <p>::= { Meter2Table30 7733 }</p>	<p>Meter2Table31 OBJECT-IDENTITY</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 31"</p> <p>::= { Meter2 31 }</p>
<p>Meter2Table30SystemkVADemand</p> <p>OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 System kVA Demand"</p> <p>::= { Meter2Table30 7727 }</p>	<p>Meter2Table30Kvp OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Kvp"</p> <p>::= { Meter2Table30 7734 }</p>	<p>Meter2Table31Load1kWhHigh OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 31 Load 1 kWh High Word"</p> <p>::= { Meter2Table31 7936 }</p>
<p>Meter2Table30SystemkVArDemand</p> <p>OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 System kVAr Demand"</p> <p>::= { Meter2Table30 7728 }</p>	<p>Meter2Table30Kvl OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Kvl"</p> <p>::= { Meter2Table30 7735 }</p>	<p>Meter2Table31Load1kWhLow OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 31 Load 1 kWh Low Word"</p> <p>::= { Meter2Table31 7937 }</p>
<p>Meter2Table30SystemkWMaximumDemand OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 System kW Maximum Demand"</p> <p>::= { Meter2Table30 7729 }</p>	<p>Meter2Table30Kpsys OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 30 Kpsys"</p> <p>::= { Meter2Table30 7736 }</p>	<p>Meter2Table31Load2kWhHigh OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 31 Load 2 kWh High Word"</p> <p>::= { Meter2Table31 7938 }</p>
	<p>Meter2Table30Kesys OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p>	<p>Meter2Table31Load2kWhLow OBJECT-TYPE</p> <p>SYNTAX INTEGER</p> <p>MAX-ACCESS read-only</p> <p>STATUS current</p> <p>DESCRIPTION</p> <p>"Meter 2 Table 31 Load 2 kWh Low Word"</p> <p>::= { Meter2Table31 7939 }</p>

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Meter2Table31Load3kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 3 kWh High Word" ::= { Meter2Table31 7940 }	STATUS current DESCRIPTION "Meter 2 Table 31 Load 3 kVarh High Word" ::= { Meter2Table31 7946 }	Meter2Table31Load3kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 3 kW Demand" ::= { Meter2Table31 7953 }
Meter2Table31Load3kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 3 kWh Low Word" ::= { Meter2Table31 7941 }	Meter2Table31Load3kVarhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 3 kVarh Low Word" ::= { Meter2Table31 7947 }	Meter2Table31Load1kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 1 kW" ::= { Meter2Table31 7954 }
Meter2Table31Load1kVarhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 1 kVarh High Word" ::= { Meter2Table31 7942 }	Meter2Table31Load1kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 1 kW Maximum Demand" ::= { Meter2Table31 7948 }	Meter2Table31Load2kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 2 kW" ::= { Meter2Table31 7955 }
Meter2Table31Load1kVarhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 1 kVarh Low Word" ::= { Meter2Table31 7943 }	Meter2Table31Load2kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 2 kW Maximum Demand" ::= { Meter2Table31 7949 }	Meter2Table31Load3kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 3 kW" ::= { Meter2Table31 7956 }
Meter2Table31Load2kVarhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 2 kVarh High Word" ::= { Meter2Table31 7944 }	Meter2Table31Load3kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 3 kW Maximum Demand" ::= { Meter2Table31 7950 }	Meter2Table31Load1kVar OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 1 kVar" ::= { Meter2Table31 7957 }
Meter2Table31Load2kVarhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 2 kVarh Low Word" ::= { Meter2Table31 7945 }	Meter2Table31Load1kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 1 kW Demand" ::= { Meter2Table31 7951 }	Meter2Table31Load2kVar OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 2 kVar" ::= { Meter2Table31 7958 }
Meter2Table31Load3kVarhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only	Meter2Table31Load2kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 2 kW Demand" ::= { Meter2Table31 7952 }	Meter2Table31Load3kVar OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 3 kVar" ::= { Meter2Table31 7959 }
	Meter2Table31Load1kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 2 Table 31 Load 1 kVA" ::= { Meter2Table31 7960 }	

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Meter2Table31Load2kVA OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 2 kVA"
::= { Meter2Table31 7961 }

Meter2Table31Load3kVA OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 3 kVA"
::= { Meter2Table31 7962 }

Meter2Table31Load1Amps OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 1 Amps"
::= { Meter2Table31 7963 }

Meter2Table31Load2Amps OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 2 Amps"
::= { Meter2Table31 7964 }

Meter2Table31Load3Amps OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 3 Amps"
::= { Meter2Table31 7965 }

Meter2Table31Load1Volts OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 1 Volts"
::= { Meter2Table31 7966 }

Meter2Table31Load2Volts OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 2 Volts"
::= { Meter2Table31 7967 }

Meter2Table31Load3Volts OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 3 Volts"
::= { Meter2Table31 7968 }

Meter2Table31Ke OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Ke"
::= { Meter2Table31 7969 }

Meter2Table31Kp OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Kp"
::= { Meter2Table31 7970 }

Meter2Table31Ki OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Ki"
::= { Meter2Table31 7971 }

Meter2Table31Kvp OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Kvp"
::= { Meter2Table31 7972 }

Meter2Table31Load1PowerFactor
OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 1 Power
Factor"
::= { Meter2Table31 7973 }

Meter2Table31Load2PowerFactor
OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 2 Power
Factor"
::= { Meter2Table31 7974 }

Meter2Table31Load3PowerFactor
OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Load 3 Power
Factor"
::= { Meter2Table31 7975 }

Meter2Table31Frequency OBJECT-TYPE

SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 2 Table 31 Frequency"
::= { Meter2Table31 7976 }

--
-- Meter Point 3 Tables
--

Meter3 OBJECT-IDENTITY
STATUS current
DESCRIPTION
"Meter 3"
::= { MultiCubeX50 4 }

--
-- Meter 3 Table 30
--

Meter3Table30 OBJECT-IDENTITY
STATUS current
DESCRIPTION
"Meter 3 Table 30"
::= { Meter3 30 }

Meter3Table30kWhHigh OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 3 Table 30 kWh High Word"
::= { Meter3Table30 7680 }

Meter3Table30kWhLow OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 3 Table 30 kWh Low Word"
::= { Meter3Table30 7681 }

Meter3Table30kVAhHigh OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 3 Table 30 kVAh High Word"
::= { Meter3Table30 7682 }

Meter3Table30kVAhLow OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Meter 3 Table 30 kVAh Low Word"
::= { Meter3Table30 7683 }

Meter3Table30kVarhHigh OBJECT-TYPE
SYNTAX INTEGER
MAX-ACCESS read-only
STATUS current
DESCRIPTION

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"Meter 3 Table 30 kVArh High Word" ::= { Meter3Table30 7684 }	SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 2 Volts" ::= { Meter3Table30 7692 }	Meter3Table30Phase2PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 2 Power Factor" ::= { Meter3Table30 7699 }
Meter3Table30kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 kVArh Low Word" ::= { Meter3Table30 7685 }	Meter3Table30Phase3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 3 Volts" ::= { Meter3Table30 7693 }	Meter3Table30Phase3PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 3 Power Factor" ::= { Meter3Table30 7700 }
Meter3Table30ExportkWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Export kWh High Word" ::= { Meter3Table30 7686 }	Meter3Table30Phase1Phase2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 1-Phase 2 Volts" ::= { Meter3Table30 7694 }	Meter3Table30SystemPowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System Power Factor" ::= { Meter3Table30 7701 }
Meter3Table30ExportkWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Export kWh Low Word" ::= { Meter3Table30 7687 }	Meter3Table30Phase2Phase3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 2-Phase 3 Volts" ::= { Meter3Table30 7695 }	Meter3Table30Phase1kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 1 kW" ::= { Meter3Table30 7702 }
Meter3Table30Phase1Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 1 Amps" ::= { Meter3Table30 7688 }	Meter3Table30Phase3Phase1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 3-Phase 1 Volts" ::= { Meter3Table30 7696 }	Meter3Table30Phase2kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 2 kW" ::= { Meter3Table30 7703 }
Meter3Table30Phase2Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 2 Amps" ::= { Meter3Table30 7689 }	Meter3Table30Frequency OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Frequency" ::= { Meter3Table30 7697 }	Meter3Table30Phase3kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 3 kW" ::= { Meter3Table30 7704 }
Meter3Table30Phase3Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 3 Amps" ::= { Meter3Table30 7690 }	Meter3Table30Phase1PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 1 Power Factor" ::= { Meter3Table30 7698 }	Meter3Table30SystemkW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kW" ::= { Meter3Table30 7705 }
Meter3Table30Phase1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 1 Volts" ::= { Meter3Table30 7691 }	Meter3Table30Phase2Volts OBJECT-TYPE	Meter3Table30Phase1kVA OBJECT-TYPE SYNTAX INTEGER

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MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 1 kVA" ::= { Meter3Table30 7706 }	SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 1 Amps Demand" ::= { Meter3Table30 7714 }	"Meter 3 Table 30 Peak Hold Phase 1 Amps" ::= { Meter3Table30 7720 }
Meter3Table30Phase2kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 2 kVA" ::= { Meter3Table30 7707 }	Meter3Table30Phase2AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 2 Amps Demand" ::= { Meter3Table30 7715 }	Meter3Table30PeakHoldPhase2Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Peak Hold Phase 2 Amps" ::= { Meter3Table30 7721 }
Meter3Table30Phase3kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 3 kVA" ::= { Meter3Table30 7708 }	Meter3Table30Phase3AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 3 Amps Demand" ::= { Meter3Table30 7716 }	Meter3Table30PeakHoldPhase3Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Peak Hold Phase 3 Amps" ::= { Meter3Table30 7722 }
Meter3Table30SystemkVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kVA" ::= { Meter3Table30 7709 }	Meter3Table30Phase1VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 1 Volts Demand" ::= { Meter3Table30 7717 }	Meter3Table30PeakHoldPhase1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Peak Hold Phase 1 Volts" ::= { Meter3Table30 7723 }
Meter3Table30Phase1kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 1 kVA" ::= { Meter3Table30 7710 }	Meter3Table30Phase2VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 2 Volts Demand" ::= { Meter3Table30 7718 }	Meter3Table30PeakHoldPhase2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Peak Hold Phase 2 Volts" ::= { Meter3Table30 7724 }
Meter3Table30Phase2kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 2 kVA" ::= { Meter3Table30 7711 }	Meter3Table30Phase3VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 3 Volts Demand" ::= { Meter3Table30 7719 }	Meter3Table30PeakHoldPhase3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Peak Hold Phase 3 Volts" ::= { Meter3Table30 7725 }
Meter3Table30Phase3kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Phase 3 kVA" ::= { Meter3Table30 7712 }	Meter3Table30PeakHoldPhase1Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kW Demand" ::= { Meter3Table30 7726 }	Meter3Table30SystemkW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kW Demand" ::= { Meter3Table30 7726 }
Meter3Table30SystemkVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kVA" ::= { Meter3Table30 7713 }		
Meter3Table30Phase1AmpsDemand OBJECT-TYPE		

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<p>Meter3Table30SystemkVADemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kVA Demand" ::= { Meter3Table30 7727 }</p>	<p>"Meter 3 Table 30 Ki" ::= { Meter3Table30 7733 }</p>	<p>Meter3Table31Load1kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 kWh Low Word" ::= { Meter3Table31 7937 }</p>
<p>Meter3Table30SystemkVArDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kVAr Demand" ::= { Meter3Table30 7728 }</p>	<p>Meter3Table30Kvp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Kvp" ::= { Meter3Table30 7734 }</p>	<p>Meter3Table31Load2kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 kWh High Word" ::= { Meter3Table31 7938 }</p>
<p>Meter3Table30SystemkWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kW Maximum Demand" ::= { Meter3Table30 7729 }</p>	<p>Meter3Table30KvI OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 KvI" ::= { Meter3Table30 7735 }</p>	<p>Meter3Table31Load2kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 kWh Low Word" ::= { Meter3Table31 7939 }</p>
<p>Meter3Table30SystemkVAMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kVA Maximum Demand" ::= { Meter3Table30 7730 }</p>	<p>Meter3Table30Kpsys OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Kpsys" ::= { Meter3Table30 7736 }</p>	<p>Meter3Table31Load3kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 kWh High Word" ::= { Meter3Table31 7940 }</p>
<p>Meter3Table30SystemkVArMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 System kVAr Maximum Demand" ::= { Meter3Table30 7731 }</p>	<p>Meter3Table30Kesys OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Kesys" ::= { Meter3Table30 7737 }</p>	<p>Meter3Table31Load3kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 kWh Low Word" ::= { Meter3Table31 7941 }</p>
<p>Meter3Table30NeutralCurrent OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Neutral Current" ::= { Meter3Table30 7732 }</p>	<p>Meter3Table30Kp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 30 Kp" ::= { Meter3Table30 7738 }</p>	<p>Meter3Table31Load1kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 kVArh High Word" ::= { Meter3Table31 7942 }</p>
<p>Meter3Table30Ki OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION</p>	<p>-- -- Meter 3 Table 31 --</p>	<p>Meter3Table31Load1kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only</p>
	<p>Meter3Table31 OBJECT-IDENTITY STATUS current DESCRIPTION "Meter 3 Table 31" ::= { Meter3 31 }</p>	<p>Meter3Table31Load1kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 kWh High Word" ::= { Meter3Table31 7936 }</p>

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STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 kVArh Low Word" ::= { Meter3Table31 7943 }	::= { Meter3Table31 7949 } Meter3Table31Load3kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 kW Maximum Demand" ::= { Meter3Table31 7950 }	SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 kVAr" ::= { Meter3Table31 7957 }
Meter3Table31Load2kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 kVArh High Word" ::= { Meter3Table31 7944 }	Meter3Table31Load1kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 kW Demand" ::= { Meter3Table31 7951 }	Meter3Table31Load2kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 kVAr" ::= { Meter3Table31 7958 }
Meter3Table31Load2kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 kVArh Low Word" ::= { Meter3Table31 7945 }	Meter3Table31Load2kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 kW Demand" ::= { Meter3Table31 7952 }	Meter3Table31Load3kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 kVAr" ::= { Meter3Table31 7959 }
Meter3Table31Load3kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 kVArh High Word" ::= { Meter3Table31 7946 }	Meter3Table31Load3kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 kW Demand" ::= { Meter3Table31 7953 }	Meter3Table31Load1kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 kVA" ::= { Meter3Table31 7960 }
Meter3Table31Load3kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 kVArh Low Word" ::= { Meter3Table31 7947 }	Meter3Table31Load1kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 kW" ::= { Meter3Table31 7954 }	Meter3Table31Load2kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 kVA" ::= { Meter3Table31 7961 }
Meter3Table31Load1kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 kW Maximum Demand" ::= { Meter3Table31 7948 }	Meter3Table31Load2kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 kW" ::= { Meter3Table31 7955 }	Meter3Table31Load3kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 kVA" ::= { Meter3Table31 7962 }
Meter3Table31Load2kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 kW Maximum Demand"	Meter3Table31Load1kVAr OBJECT-TYPE	Meter3Table31Load1Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 Amps" ::= { Meter3Table31 7963 }
	Meter3Table31Load3kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 kW" ::= { Meter3Table31 7956 }	Meter3Table31Load2Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 Amps" ::= { Meter3Table31 7964 }
	Meter3Table31Load1kVAr OBJECT-TYPE	Meter3Table31Load3Amps OBJECT-TYPE

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<p>SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 Amps" ::= { Meter3Table31 7965 }</p> <p>Meter3Table31Load1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 Volts" ::= { Meter3Table31 7966 }</p> <p>Meter3Table31Load2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 Volts" ::= { Meter3Table31 7967 }</p> <p>Meter3Table31Load3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 Volts" ::= { Meter3Table31 7968 }</p> <p>Meter3Table31Ke OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Ke" ::= { Meter3Table31 7969 }</p> <p>Meter3Table31Kp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Kp" ::= { Meter3Table31 7970 }</p> <p>Meter3Table31Ki OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Ki" ::= { Meter3Table31 7971 }</p> <p>Meter3Table31Kvp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Kvp" ::= { Meter3Table31 7972 }</p>	<p>Meter3Table31Load1PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 1 Power Factor" ::= { Meter3Table31 7973 }</p> <p>Meter3Table31Load2PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 2 Power Factor" ::= { Meter3Table31 7974 }</p> <p>Meter3Table31Load3PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Load 3 Power Factor" ::= { Meter3Table31 7975 }</p> <p>Meter3Table31Frequency OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Meter 3 Table 31 Frequency" ::= { Meter3Table31 7976 }</p> <p>-- -- Virtual Meter Tables --</p> <p>VirtualMeter OBJECT-IDENTITY STATUS current DESCRIPTION "Virtual Meter" ::= { MultiCubeX50 5 }</p> <p>-- -- Virtual Meter Table 30 --</p> <p>VirtualMeterTable30 OBJECT-IDENTITY STATUS current DESCRIPTION "Virtual Meter Table 30" ::= { VirtualMeter 30 }</p> <p>VirtualMeterTable30kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION</p>	<p>"Virtual Meter Table 30 kWh High Word" ::= { VirtualMeterTable30 7680 }</p> <p>VirtualMeterTable30kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 kWh Low Word" ::= { VirtualMeterTable30 7681 }</p> <p>VirtualMeterTable30kVAhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 kVAh High Word" ::= { VirtualMeterTable30 7682 }</p> <p>VirtualMeterTable30kVAhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 kVAh Low Word" ::= { VirtualMeterTable30 7683 }</p> <p>VirtualMeterTable30kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 kVArh High Word" ::= { VirtualMeterTable30 7684 }</p> <p>VirtualMeterTable30kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 kVArh Low Word" ::= { VirtualMeterTable30 7685 }</p> <p>VirtualMeterTable30ExportkWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Export kWh High Word" ::= { VirtualMeterTable30 7686 }</p>
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VirtualMeterTable30ExportkWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Export kWh Low Word" ::= { VirtualMeterTable30 7687 }	VirtualMeterTable30Phase1Phase2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 1-Phase 2 Volts" ::= { VirtualMeterTable30 7694 }	DESCRIPTION "Virtual Meter Table 30 Phase 3 Power Factor" ::= { VirtualMeterTable30 7700 }
VirtualMeterTable30Phase1Amps OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 1 Amps" ::= { VirtualMeterTable30 7688 }	VirtualMeterTable30Phase2Phase3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 2-Phase 3 Volts" ::= { VirtualMeterTable30 7695 }	VirtualMeterTable30SystemPowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System Power Factor" ::= { VirtualMeterTable30 7701 }
VirtualMeterTable30Phase2Amps OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 2 Amps" ::= { VirtualMeterTable30 7689 }	VirtualMeterTable30Phase3Phase1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 3-Phase 1 Volts" ::= { VirtualMeterTable30 7696 }	VirtualMeterTable30Phase1kW OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 1 kW" ::= { VirtualMeterTable30 7702 }
VirtualMeterTable30Phase3Amps OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 3 Amps" ::= { VirtualMeterTable30 7690 }	VirtualMeterTable30Frequency OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Frequency" ::= { VirtualMeterTable30 7697 }	VirtualMeterTable30Phase2kW OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 2 kW" ::= { VirtualMeterTable30 7703 }
VirtualMeterTable30Phase1Volts OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 1 Volts" ::= { VirtualMeterTable30 7691 }	VirtualMeterTable30Phase1PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 1 Power Factor" ::= { VirtualMeterTable30 7698 }	VirtualMeterTable30Phase3kW OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 3 kW" ::= { VirtualMeterTable30 7704 }
VirtualMeterTable30Phase2Volts OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 2 Volts" ::= { VirtualMeterTable30 7692 }	VirtualMeterTable30Phase2PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 2 Power Factor" ::= { VirtualMeterTable30 7699 }	VirtualMeterTable30SystemkW OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System kW" ::= { VirtualMeterTable30 7705 }
VirtualMeterTable30Phase3Volts OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 3 Volts" ::= { VirtualMeterTable30 7693 }	VirtualMeterTable30Phase3PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current	VirtualMeterTable30Phase1kVA OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 1 kVA" ::= { VirtualMeterTable30 7706 }
		VirtualMeterTable30Phase2kVA OBJECT- TYPE SYNTAX INTEGER MAX-ACCESS read-only

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STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 2 kVA" ::= { VirtualMeterTable30 7707 }	DESCRIPTION "Virtual Meter Table 30 Phase 1 Amps Demand" ::= { VirtualMeterTable30 7714 }	VirtualMeterTable30PeakHoldPhase2Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Peak Hold Phase 2 Amps" ::= { VirtualMeterTable30 7721 }
VirtualMeterTable30Phase3kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 3 kVA" ::= { VirtualMeterTable30 7708 }	VirtualMeterTable30Phase2AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 2 Amps Demand" ::= { VirtualMeterTable30 7715 }	VirtualMeterTable30PeakHoldPhase3Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Peak Hold Phase 3 Amps" ::= { VirtualMeterTable30 7722 }
VirtualMeterTable30SystemkVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System kVA" ::= { VirtualMeterTable30 7709 }	VirtualMeterTable30Phase3AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 3 Amps Demand" ::= { VirtualMeterTable30 7716 }	VirtualMeterTable30PeakHoldPhase1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Peak Hold Phase 1 Volts" ::= { VirtualMeterTable30 7723 }
VirtualMeterTable30Phase1kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 1 kVAr" ::= { VirtualMeterTable30 7710 }	VirtualMeterTable30Phase1VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 1 Volts Demand" ::= { VirtualMeterTable30 7717 }	VirtualMeterTable30PeakHoldPhase2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Peak Hold Phase 2 Volts" ::= { VirtualMeterTable30 7724 }
VirtualMeterTable30Phase2kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 2 kVAr" ::= { VirtualMeterTable30 7711 }	VirtualMeterTable30Phase2VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 2 Volts Demand" ::= { VirtualMeterTable30 7718 }	VirtualMeterTable30PeakHoldPhase3Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Peak Hold Phase 3 Volts" ::= { VirtualMeterTable30 7725 }
VirtualMeterTable30Phase3kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 3 kVAr" ::= { VirtualMeterTable30 7712 }	VirtualMeterTable30Phase3VoltsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Phase 3 Volts Demand" ::= { VirtualMeterTable30 7719 }	VirtualMeterTable30SystemkWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System kW Demand" ::= { VirtualMeterTable30 7726 }
VirtualMeterTable30SystemkVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System kVAr" ::= { VirtualMeterTable30 7713 }	VirtualMeterTable30PeakHoldPhase1Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Peak Hold Phase 1 Amps" ::= { VirtualMeterTable30 7720 }	VirtualMeterTable30SystemkVADemand OBJECT-TYPE SYNTAX INTEGER
VirtualMeterTable30Phase1AmpsDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current		

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MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System kVA Demand" ::= { VirtualMeterTable30 7727 }	VirtualMeterTable30Kvp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Kvp" ::= { VirtualMeterTable30 7734 }	MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 kWh Low Word" ::= { VirtualMeterTable31 7937 }
VirtualMeterTable30SystemkVArDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System kVAr Demand" ::= { VirtualMeterTable30 7728 }	VirtualMeterTable30KvI OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 KvI" ::= { VirtualMeterTable30 7735 }	VirtualMeterTable31Load2kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 kWh High Word" ::= { VirtualMeterTable31 7938 }
VirtualMeterTable30SystemkWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System kW Maximum Demand" ::= { VirtualMeterTable30 7729 }	VirtualMeterTable30Kpsys OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Kpsys" ::= { VirtualMeterTable30 7736 }	VirtualMeterTable31Load2kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 kWh Low Word" ::= { VirtualMeterTable31 7939 }
VirtualMeterTable30SystemkVAMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System kVA Maximum Demand" ::= { VirtualMeterTable30 7730 }	VirtualMeterTable30Kesys OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Kesys" ::= { VirtualMeterTable30 7737 }	VirtualMeterTable31Load3kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 kWh High Word" ::= { VirtualMeterTable31 7940 }
VirtualMeterTable30SystemkVArMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 System kVAr Maximum Demand" ::= { VirtualMeterTable30 7731 }	VirtualMeterTable30Kp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Kp" ::= { VirtualMeterTable30 7738 }	VirtualMeterTable31Load3kWhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 kWh Low Word" ::= { VirtualMeterTable31 7941 }
VirtualMeterTable30NeutralCurrent OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Neutral Current" ::= { VirtualMeterTable30 7732 }	-- -- Virtual Meter Table 31 -- VirtualMeterTable31 OBJECT-IDENTITY STATUS current DESCRIPTION "Virtual Meter Table 31" ::= { VirtualMeter 31 }	VirtualMeterTable31Load1kVArHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 kVAr High Word" ::= { VirtualMeterTable31 7942 }
VirtualMeterTable30Ki OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 30 Ki" ::= { VirtualMeterTable30 7733 }	VirtualMeterTable31Load1kWhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 kWh High Word" ::= { VirtualMeterTable31 7936 }	VirtualMeterTable31Load1kVArLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION
	VirtualMeterTable31Load1kWhLow OBJECT-TYPE SYNTAX INTEGER	

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<p>"Virtual Meter Table 31 Load 1 kVArh Low Word" ::= { VirtualMeterTable31 7943 }</p> <p>VirtualMeterTable31Load2kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 kVArh High Word" ::= { VirtualMeterTable31 7944 }</p> <p>VirtualMeterTable31Load2kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 kVArh Low Word" ::= { VirtualMeterTable31 7945 }</p> <p>VirtualMeterTable31Load3kVArhHigh OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 kVArh High Word" ::= { VirtualMeterTable31 7946 }</p> <p>VirtualMeterTable31Load3kVArhLow OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 kVArh Low Word" ::= { VirtualMeterTable31 7947 }</p> <p>VirtualMeterTable31Load1kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 kW Maximum Demand" ::= { VirtualMeterTable31 7948 }</p> <p>VirtualMeterTable31Load2kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 kW Maximum Demand" ::= { VirtualMeterTable31 7949 }</p>	<p>VirtualMeterTable31Load3kWMaximumDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 kW Maximum Demand" ::= { VirtualMeterTable31 7950 }</p> <p>VirtualMeterTable31Load1kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 kW Demand" ::= { VirtualMeterTable31 7951 }</p> <p>VirtualMeterTable31Load2kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 kW Demand" ::= { VirtualMeterTable31 7952 }</p> <p>VirtualMeterTable31Load3kWDemand OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 kW Demand" ::= { VirtualMeterTable31 7953 }</p> <p>VirtualMeterTable31Load1kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 kW" ::= { VirtualMeterTable31 7954 }</p> <p>VirtualMeterTable31Load2kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 kW" ::= { VirtualMeterTable31 7955 }</p> <p>VirtualMeterTable31Load3kW OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION</p>	<p>"Virtual Meter Table 31 Load 3 kW" ::= { VirtualMeterTable31 7956 }</p> <p>VirtualMeterTable31Load1kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 kVAr" ::= { VirtualMeterTable31 7957 }</p> <p>VirtualMeterTable31Load2kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 kVAr" ::= { VirtualMeterTable31 7958 }</p> <p>VirtualMeterTable31Load3kVAr OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 kVAr" ::= { VirtualMeterTable31 7959 }</p> <p>VirtualMeterTable31Load1kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 kVA" ::= { VirtualMeterTable31 7960 }</p> <p>VirtualMeterTable31Load2kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 kVA" ::= { VirtualMeterTable31 7961 }</p> <p>VirtualMeterTable31Load3kVA OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 kVA" ::= { VirtualMeterTable31 7962 }</p> <p>VirtualMeterTable31Load1Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 Amps"</p>
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::= { VirtualMeterTable31 7963 }	MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 Volts" ::= { VirtualMeterTable31 7968 }	MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 Power Factor" ::= { VirtualMeterTable31 7973 }
VirtualMeterTable31Load2Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 Amps" ::= { VirtualMeterTable31 7964 }	VirtualMeterTable31Ke OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Ke" ::= { VirtualMeterTable31 7969 }	VirtualMeterTable31Load2PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 Power Factor" ::= { VirtualMeterTable31 7974 }
VirtualMeterTable31Load3Amps OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 Amps" ::= { VirtualMeterTable31 7965 }	VirtualMeterTable31Kp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Kp" ::= { VirtualMeterTable31 7970 }	VirtualMeterTable31Load3PowerFactor OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 3 Power Factor" ::= { VirtualMeterTable31 7975 }
VirtualMeterTable31Load1Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 1 Volts" ::= { VirtualMeterTable31 7966 }	VirtualMeterTable31Ki OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Ki" ::= { VirtualMeterTable31 7971 }	VirtualMeterTable31Frequency OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Frequency" ::= { VirtualMeterTable31 7976 }
VirtualMeterTable31Load2Volts OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Load 2 Volts" ::= { VirtualMeterTable31 7967 }	VirtualMeterTable31Kvp OBJECT-TYPE SYNTAX INTEGER MAX-ACCESS read-only STATUS current DESCRIPTION "Virtual Meter Table 31 Kvp" ::= { VirtualMeterTable31 7972 }	END
VirtualMeterTable31Load3Volts OBJECT-TYPE SYNTAX INTEGER	VirtualMeterTable31Load1PowerFactor OBJECT-TYPE SYNTAX INTEGER	

E. & O. E.
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