

AS230 Power Master Unit

Chapter 4 - Software Support

M200 001 4A
2/09

CONTENTS

Software Installation.....	3
System Requirements	3
Power Master Unit	7
1.1 Power Master Unit Introduction	7
1.2 Logging On	7
Logging on as a Standard User.....	7
Logging On as an Administrator	7
1.3 Features of the Main Master Unit Window (Standard User)	8
Main Menu Bar	8
1.4 Scheme Editor Pages.....	10
Check Panels & Check Boxes.....	10
Page Components	11
About Help	11
Scheme Manager	12
2.1 Introduction	12
2.2 Scheme Manager Components.....	12
Scheme Editor.....	13
3.1 Main Menu	13
3.2 Creating a New Scheme.....	14
3.3 To Edit a Scheme	14
3.4 Sending a Scheme to a Meter	15
3.5 Meter Pages	15
3.5.1 Summary	15
3.5.2 Meter Identifiers	16
3.5.3 Passwords	16
3.5.4 Tariff/Display.....	17
3.5.5 Deferred Setup	21
3.5.6 Deferred Tariff.....	21
3.5.7 Billing	22
3.5.8 Relay (Optional).....	23
3.5.9 Contactor	23
3.5.10 Load Profile Definition (4 Channels).....	24
3.5.11 Meter Options	25
3.5.12 Meter UI Options.....	27
3.5.13 Time & Date.....	29
3.5.14 Instrumentation Profile Configuration	30
3.5.15 Alarm Reporting.....	30
Data to Read.....	31
4.1 Saving a New Reading	31
Readings.....	32
5.1 Viewing Readings	32
Meter Manager	33
6.1 Meter Manager Introduction	33
Meter Information Editor	33
6.2 Live Link.....	35
Meter List.....	36
7.1 The Meter List Components	36

System Administration	37
8.1 Changing Passwords.....	37
8.2 System User Administration	37
Appendix 1	39
A1 Contactor Control.....	39
Appendix 2	40
A.2 Meter Alarms	40

Software Installation

System Requirements

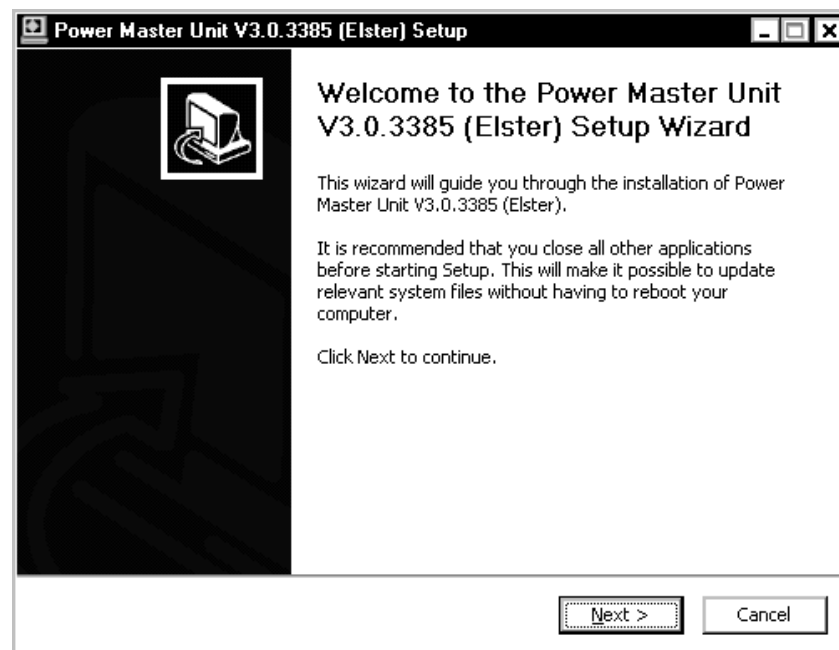
Windows™ 2000 or a later

.Net 2.0

Installing the Software

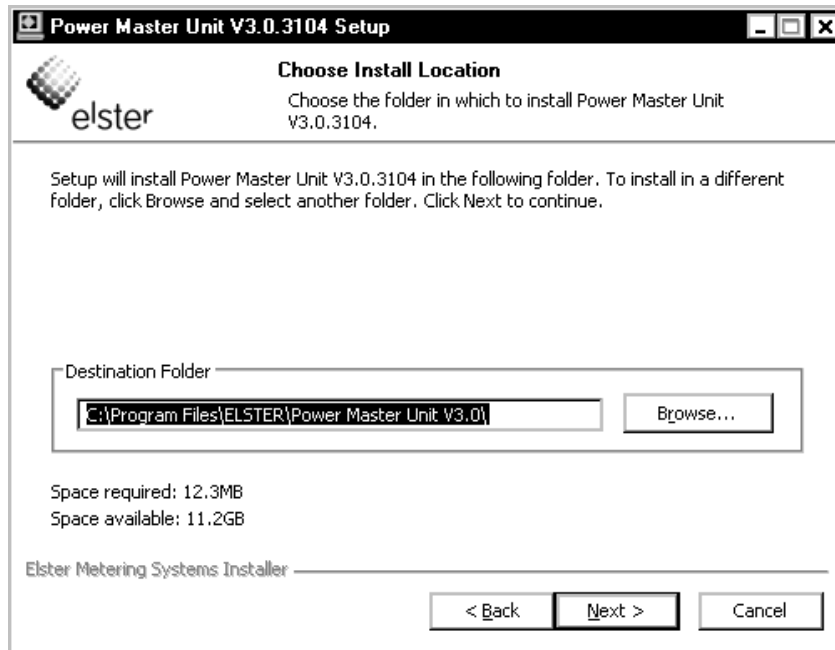
Double Click on Setup.exe

The following screen is displayed



Click Next

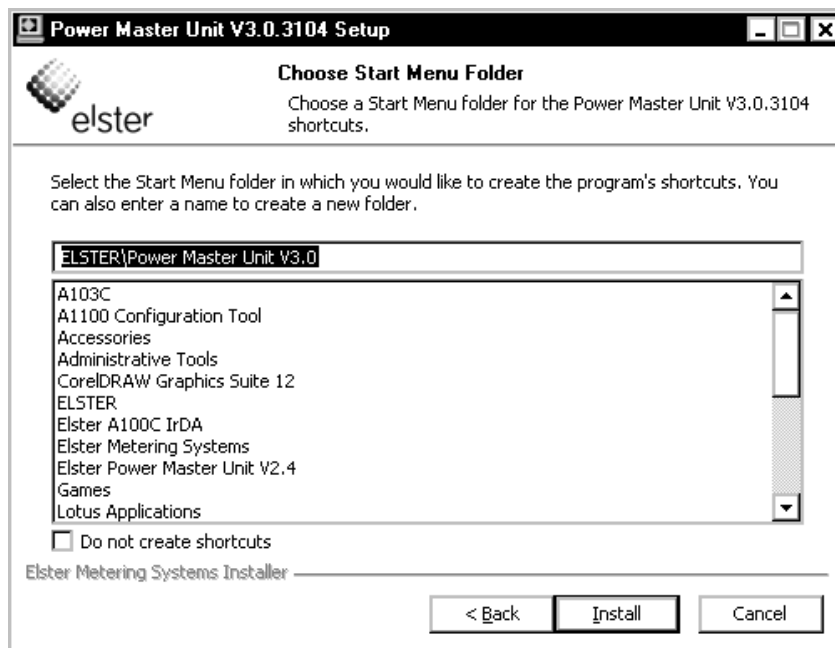
The Choose Installation Page will be displayed



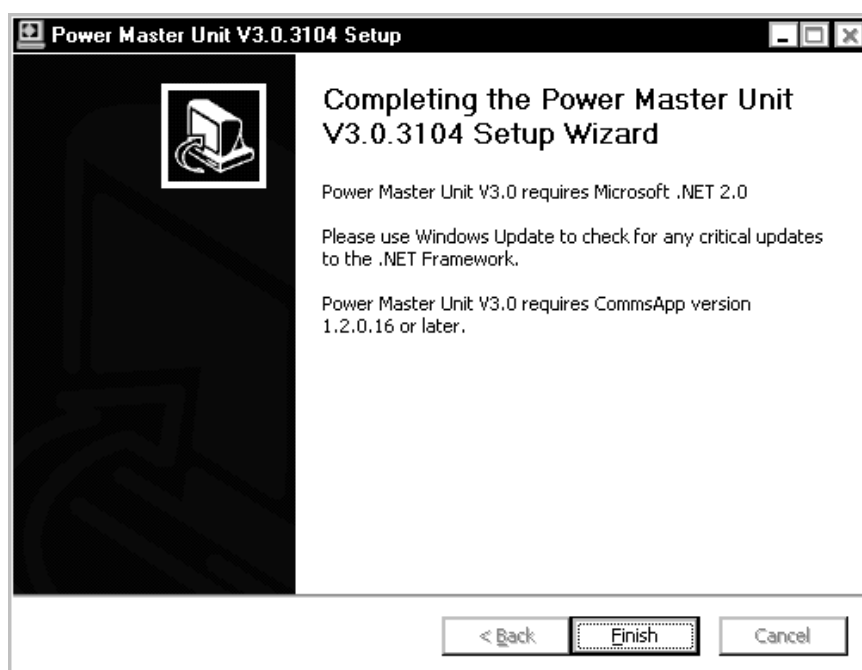
Select the folder for the installation

Click Next

The Choose Start Menu Page is displayed



Click Install



The PMU is installed

Click Finish

1 Power Master Unit

1.1 Power Master Unit Introduction

This Section gives the basics on how to use Power Master Unit 3.0 Software

Features of the Master Unit

Menu driven, using Microsoft® Windows based operating software to guide the user through the process of setting up a meter for any particular application

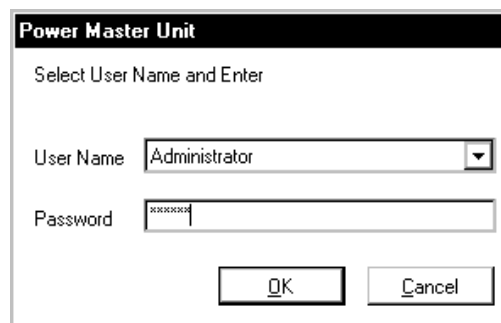
Programming structure to ensure that, if an attempt is made to program a feature that is not present in a meter, erroneous data cannot be programmed. All other features are programmed normally

1.2 Logging On

Open the Power Master Unit from the appropriate directory to display the Master Unit Logon dialog

For security reasons, only users with a direct knowledge of the correct User Name and Passwords will be permitted to Log On to the software

To enter the system a User Name with the correct Password must be entered. Three attempts to match the Password with the User Name are allowed before access is denied. If a match is not found, a message is displayed and the program exits



The Power Master Unit Software has two levels of access, Standard User and Administrator

Logging on as a Standard User

The Password is initially set to Elster. This should be changed as soon as possible to prevent unauthorised access to the software. The password may be changed using the System/Change Password dialog from the Main Menu bar

Select the User Name and enter the password. The system enters the Master Unit Main Menu

The default password is:

User Name Elster

Password Elster

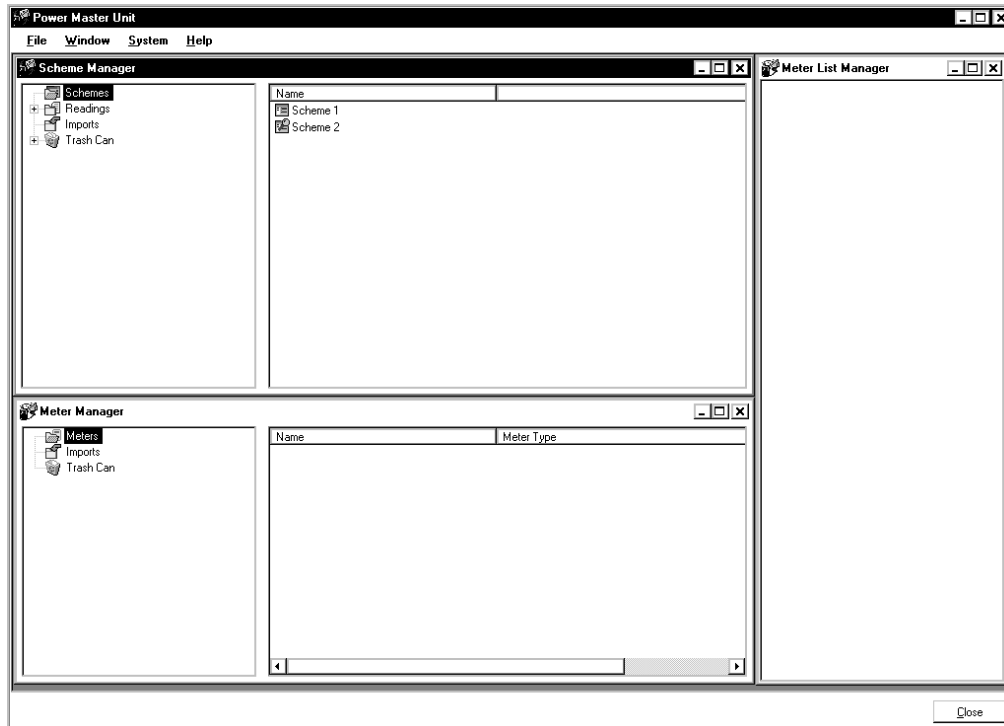
Logging On as an Administrator

For details on how to use the Administration Facilities, see Section 8

For details of passwords for Administrator Access, contact Elster Metering Systems

1.3 Features of the Main Master Unit Window (Standard User)

When the software is first entered, the Main Window containing the Scheme Manager, Meter Manager and Meter List Manager is displayed



Main Menu Bar

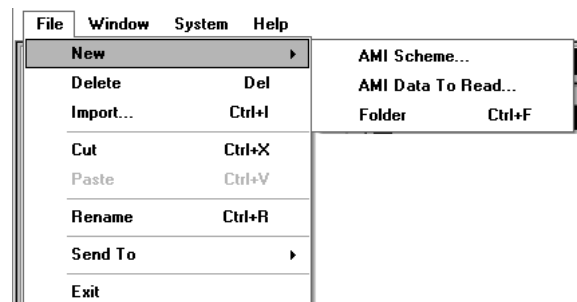
File

New

AMI Scheme - Sets up a new scheme for a meter

AMI Data to Read - Sets up the data to be read from the meter

Folder - Creates a folder for schemes/readings etc.



Delete - Allows Folders/Schemes/Readings to be deleted and sent to the Trash Can

Import - Allows Readings/Schemes to be imported

Cut - Allows a Folder/Scheme/Reading to be cut ready for pasting into another folder or the Trash Can

Paste - Allows a Cut Folder/Scheme/Readings to be pasted into another folder or the Trash Can

Rename - Rename a selected file

Send To - Sends the file to option as shown opposite

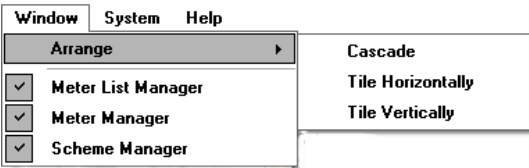
Exit - Quits the Master Unit

Send To Printer...	Ctrl+P
Send To Meter...	Ctrl+M
Send To HTML...	Ctrl+H
Send To CSV...	Ctrl+E
Send To Quick-Command...	Ctrl+Q
Send To Export File...	Ctrl+O

Window

The Scheme Manager, Meter Manager and Meter List Manager can be customised to be viewed as Cascade, Tile Horizontally or Tile Vertically

The Windows can also be sized by placing the cursor on the edge of the Window, then dragging



System

Configure Auto-Import - Allows the scanning frequency for the system to be set. If zero is entered Configure Auto Imports is disabled

Configure Database Locations - Allows a database in a different location to be configured. Click on [...] to the right of the window to select the location of the database

Communications Server Setup - Allows the communications server to be viewed

View Communications Server Log - Allows a log of the communications sessions to be viewed

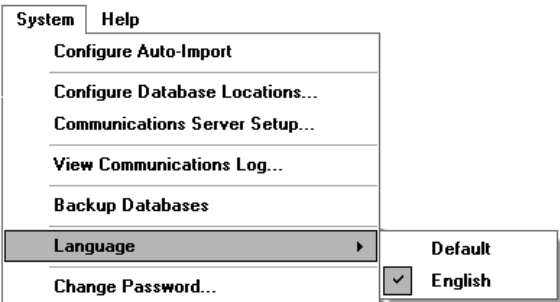
Backup Database - Allows the Database to be backed up

Language - Allows menus to be displayed as the Windows (Language) setup. The default language is English

Change Password - This allows the User Password to be changed (See Section 8)

User Administration (System Administration only) - Allows passwords and new users to be defined (See Section 8)

Role Administration (System Administration only) - Used to alter access (See Section 8)



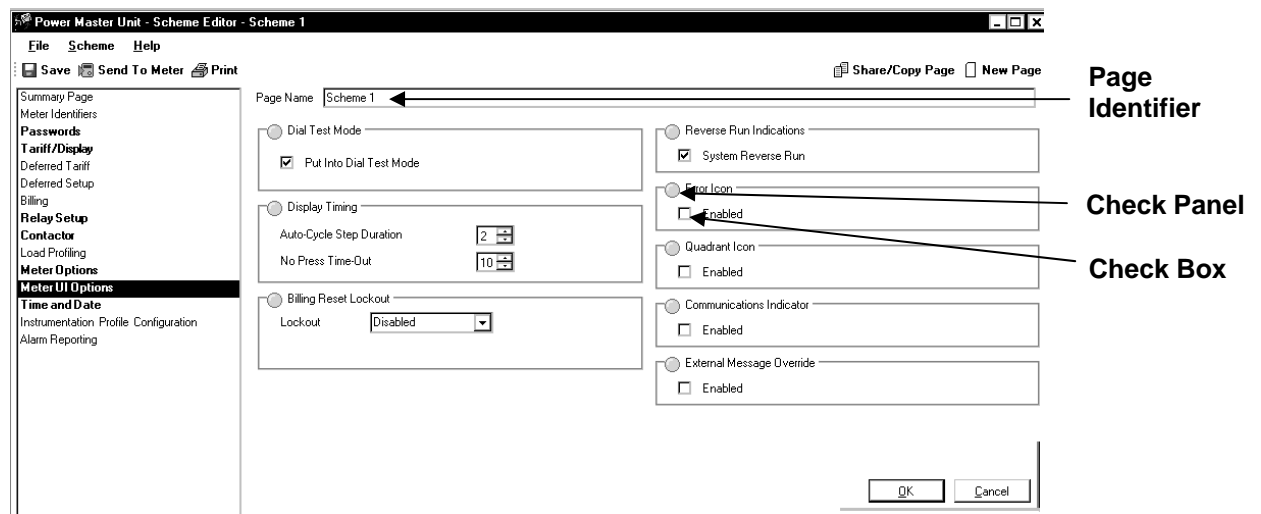
Help

Help on the Power Master Unit

Use the F1 key for Context Sensitive help



1.4 Scheme Editor Pages



Each page in the Scheme Editor is similar in construction with all fields and controls being used in the same way

The Meter UI Options page is shown above

Page Name Identifier

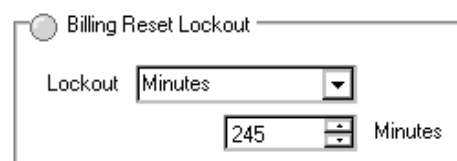
This identifier is unique to the page currently being edited. Other pages of this type can be selected using the share/copy page (See Section 3.1)

Check Panels & Check Boxes

Check Panels

The Billing Reset Lockout Check Panel is shown opposite. The Panels are selected or deselected as follows:

- ☐ If the Panel is disabled (Grey) the contents of the panel cannot be altered and the meter functionality or data will remain unchanged
- ☐ If the Panel is enabled (Green), the panel becomes operable and the meter functionality or data can be changed

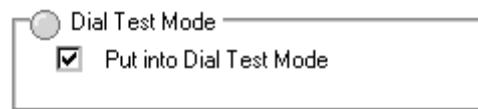


Check Boxes

Check boxes operate within Check panels

☒ If the Panel is operable (Green) and the box is checked, the box task (Put into Dial Test Mode) will be programmed to the meter

☐ If the Panel is operable and the box is unchecked, the box task will be removed from the meter (The meter will be taken out of Dial Test Mode)



Toolbar

Save

Send to meter

Print



About Help

All information required to program a meter is contained in the Help

Pressing F1 whilst a topic is selected in the Master Unit Software displays the related topic Help information

2 Scheme Manager

2.1 Introduction

The Scheme Manager allows schemes to be organised or read

A scheme can consist of an individual entry, such as a Tariff/Display Sequence.

This may be used to program a number of different meters with the same Tariff/Display Sequence. This gives the advantage of changing only one set of parameter in the meter, all other parameters remaining unchanged

2.2 Scheme Manager Components

The Scheme Manager is divided into four components -

Schemes - Used to store and organise schemes

To create a new Scheme/Data to Read, right click on scheme/new and select the required option from the list provided

Readings - Allows Readings to be viewed (See Section 5.1)

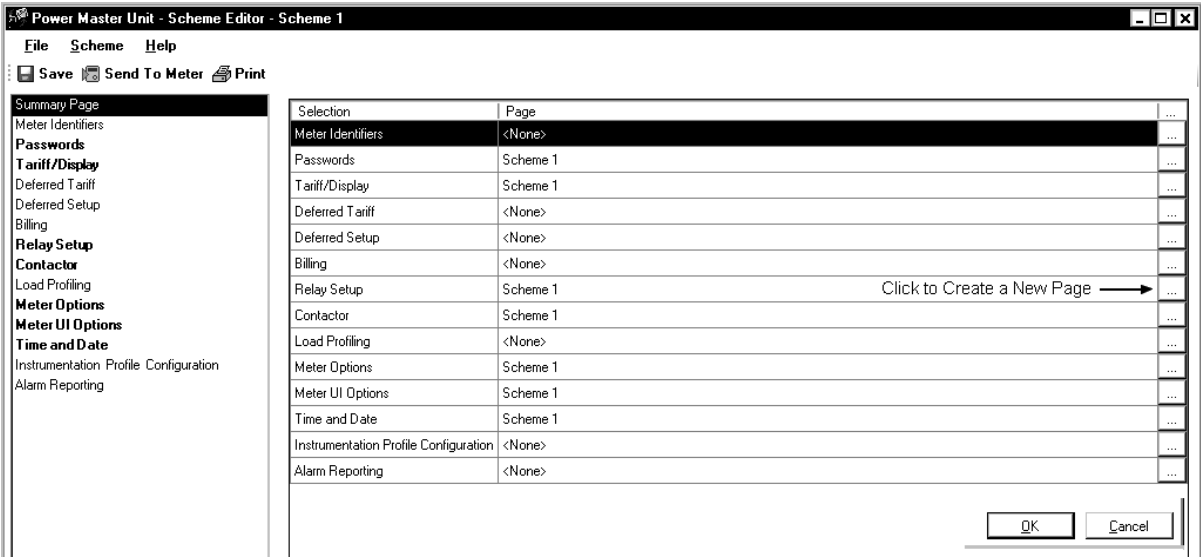
Import - Allows schemes to be imported

Trash Can - Contains deleted or pasted Schemes/Readings etc.



3 Scheme Editor

3.1 Main Menu



File/Scheme Main Menu Options are shown in Section 1.3

Tool Bar

The toolbar offers a quick method to -


Save a Scheme

Send the Scheme to the Meter

Print the Scheme



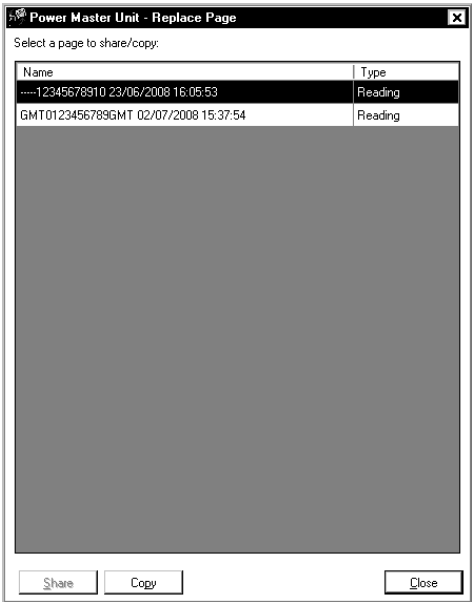
New Page

New Page allows a New Page to be created. The New Page is selected by clicking  to the right of the Scheme Editor

Share/Copy Page

Copy - Copies the selected Page

Share - Shares a Page with other schemes. The schemes that share the Page will be shown at the bottom of the page



3.2 Creating a New Scheme

In the Scheme Manager, right click and select New/AMI scheme

Enter the Name of the scheme. The PMU will switch to the Scheme Editor

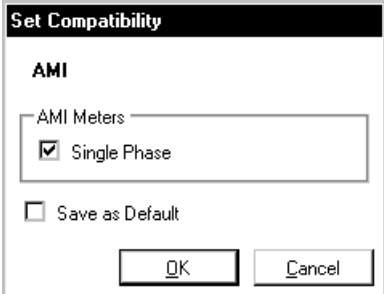
Meter Compatibility

Before creating a Scheme, the type of meter to be programmed must be selected

Select Scheme/Compatibility from the menu bar

The Set Compatibility Checkbox opposite is displayed

Only AMI Meters can be programmed using the PMU



Set Compatibility

AMI

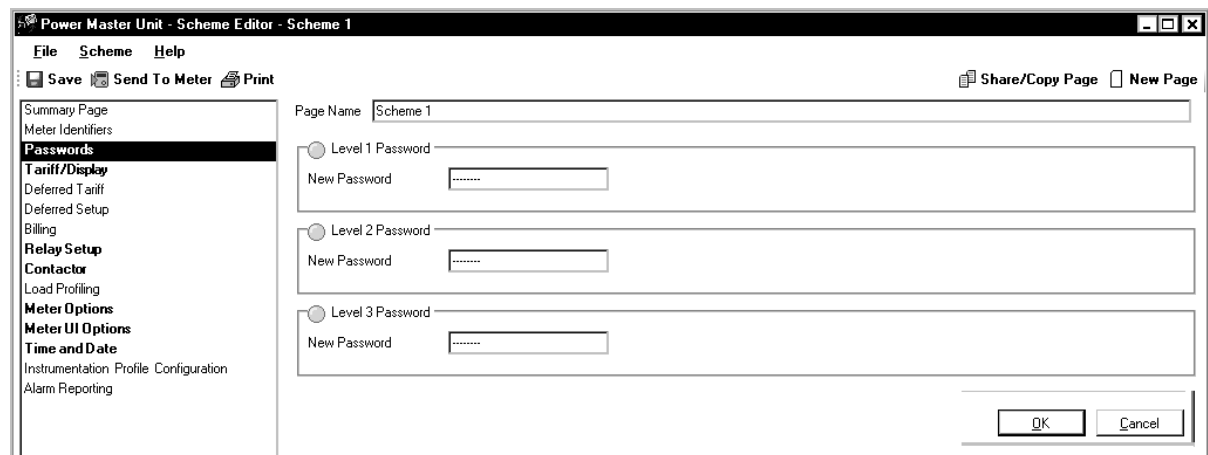
AMI Meters

☒ Single Phase

☐ Save as Default

OK Cancel

Selecting Scheme Pages



Power Master Unit - Scheme Editor - Scheme 1

File Scheme Help

Save Send To Meter Print Share/Copy Page New Page

Page Name Scheme 1

Summary Page
Meter Identifiers
Passwords
Tariff/Display
Deferred Tariff
Deferred Setup
Billing
Relay Setup
Contactor
Load Profiling
Meter Options
Meter UI Options
Time and Date
Instrumentation Profile Configuration
Alarm Reporting

Level 1 Password
New Password

Level 2 Password
New Password

Level 3 Password
New Password

OK Cancel

Select the Page to be Edited (Passwords)

Edit the Page (Password changes to Bold to highlight it is part of the Scheme)

Edit each page that will form part of the Scheme

Save the Scheme

3.3 To Edit a Scheme

Double click the Scheme in the right panel of the Scheme Manager

Select and edit each Page to be changed

Save the Page

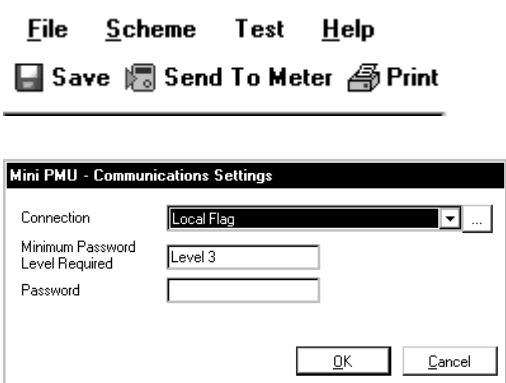
Note - Use the File/Save As option to save the Scheme as a New Scheme

3.4 Sending a Scheme to a Meter

Select Send to Meter from the Main Menu

Enter the correct minimum password level to match the password that has been programmed to the meter

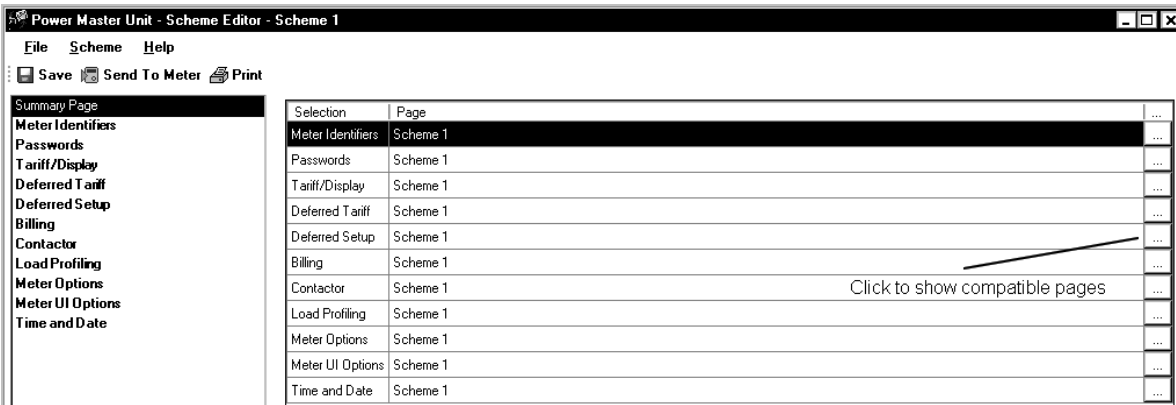
Press OK



3.5 Meter Pages

3.5.1 Summary

The Summary gives a quick preview of all pages to be programmed to the meter. Only pages shown in **Bold** will form part of the scheme



3.5.2 Meter Identifiers

Page Name

☒ Meter Scheme ID

Meter Scheme ID

☒ Outstation Number

Outstation Number

This Page allows the Scheme id and Outstation Number to be entered

The Meter Scheme id is 8 alphanumeric characters long. An un-programmed meter will have a Scheme id of 00000000. A Scheme id must be entered if it is to appear when the meter is read

The Outstation Number is 3 digits long. The default is 001

3.5.3 Passwords

All meter types

Page Name

☒ Level 1 Password

New Password

☒ Level 2 Password

New Password

☒ Level 3 Password

New Password

Three levels of Password Security protect the meter. Each level of password consists of eight characters. The Passwords are right padded with dashes

Note - The integrity of the meter passwords should always be protected. This can be best achieved by ensuring the ability to change passwords is controlled and only made available to Administrative personnel. The level 3 password should be changed at regular intervals

3.5.4 Tariff/Display

3.5.4.1 Register Sources (8 Rates, 1 Maximum Demand)

Tariff

Register Sources | Season Definition | Season Changeover | Automatic | Manual | Utility | Defaults

Rate	Source
1	Import varh
2	No Source
3	No Source
4	No Source
5	No Source
6	No Source
7	No Source
8	No Source

Maximum Demand	Source
1	No Source

Import varh

Capacitive/Leading	Inductive/Lagging
Export Wh	Import Wh
Q2	Q1
Q3	Q4
Inductive/Lagging	Capacitive/Leading
Export varh	

The source of each of the Rate Registers and the MD Register must be defined

To Select Rate and MD Sources - Double click the source for the required rate to reveal the dropdown list then select the required source. Repeat for each required rate's and MD's. Press OK

Import Wh

Import Wh

Export Wh

Q1 varh

Q2 varh

Q3 varh

Q4 varh

VAh 1

Import varh

Export varh

No Source

3.5.4.2 Season Definition (12 Seasons)

Tariff

Register Sources | Season Definition | Season Changeover | Automatic | Manual | Utility | Defaults

Season: 1

Name: Season 1

New Day... Delete Day...

Add Rate Delete Rate

Minimum Step

☒ 5 Minutes

☐ 10 Minutes

☐ 15 Minutes

☐ 30 Minutes

Monday	Mon
Tuesday	<No Rates Set>
Wednesday	<No Rates Set>
Thursday	<No Rates Set>
Friday	<No Rates Set>
Saturday	<No Rates Set>
Sunday	<No Rates Set>

Sources	18:45	Text
Rate 1: No Source		06:00-20:00;
Rate 2: No Source		06:54-18:11;

Type Value

This Tab allows the Tariff which runs for a particular Season to be created. The Seasons applied to the appropriate tariff must then be given a unique name

The resolution of a tariff between its start and end time can be defined using minimum step (5, 10, 15 or 30 minutes)

The resolution can be set to one minute by typing the value in the right panel of the sources window (Example 22:03 - 23:06)

Defining a Season - Select the required Season and name the Season

Click on New Day, name the Day, Press the Add button

Double click on Monday to reveal the dropdown list, select New Day

Click on the Add Rate button. The Rate Source Clock is displayed

Place the cursor on the leading edge of the active time (a double arrow will be displayed), then drag to the start time for the Rate. Repeat for the end time of the rate. Alternatively time may be entered directly on the right hand side

Click on the Add Rate button and repeat for all required Rates and MD's for this Season

Repeat for all required Days and Seasons

Select Scheme/Save page as from the Main Menu and save the page

Note 1 - Use copy of existing day type allows a similar day type to be created and saved as a new name

To create a similar day type, press the New Day button and Check the Use Selected Item as Template box. Select the Day type from 'Existing day types' then Type the New day name, then press the 'OK' button

3.5.4.3

Season Changeover (24 Dates)

Season Changeover Dates are the dates on which a new season begins. Season Changeover Dates are defined by day or by month and season number

Entering the seasons changeover dates

To enter a fixed date - Select the first season then click on the Season Dates column at the start of the required Season

Click and drag to the Season End Date

Repeat for all Seasons

Select Scheme/Save page

If a date other than the first day of the month is required for the Season Start Date, click on the 'Day' tab and use the scroll bar to find the start of the Season. Click and drag to the Season End Date

Billing Reset

A Billing Reset can be activated by selecting 'Perform a Billing Reset on Change Season'

3.5.4.4 Exclusion Dates

32 Exclusion Dates

Exclusion Dates are the dates when the normal switching times for that season are not to be adopted i.e. Public Holidays. Instead, Switching Times with defined actions take over

A Switching Time for the 1 Jan is shown opposite

The shaded box indicates the Season or Day to switch to i.e. Holiday is the day type selected to use

1 Jan	Holiday
2 Jan	
3 Jan	
4 Jan	
5 Jan	

Choosing the Exclusion Date Type

The Exclusion Date can be set to one of the following options:

Set to day type – this sets an Exclusion Date to a particular day as defined in the Define Season Day List

Set to specific season – this sets the Exclusion Date to the day currently selected of a Specific Season

Exclusion Date Repetition

This can be set to Every Year or to a Specific Year

3.5.4.5 Advanced Season Change

A Season Change can be initiated on an Exact Date or on the 'same day of the week' each year. This allows the meter to respond to a Daylight Savings Event

Exact Date - Enter the exact date in the Season Start dropdown list

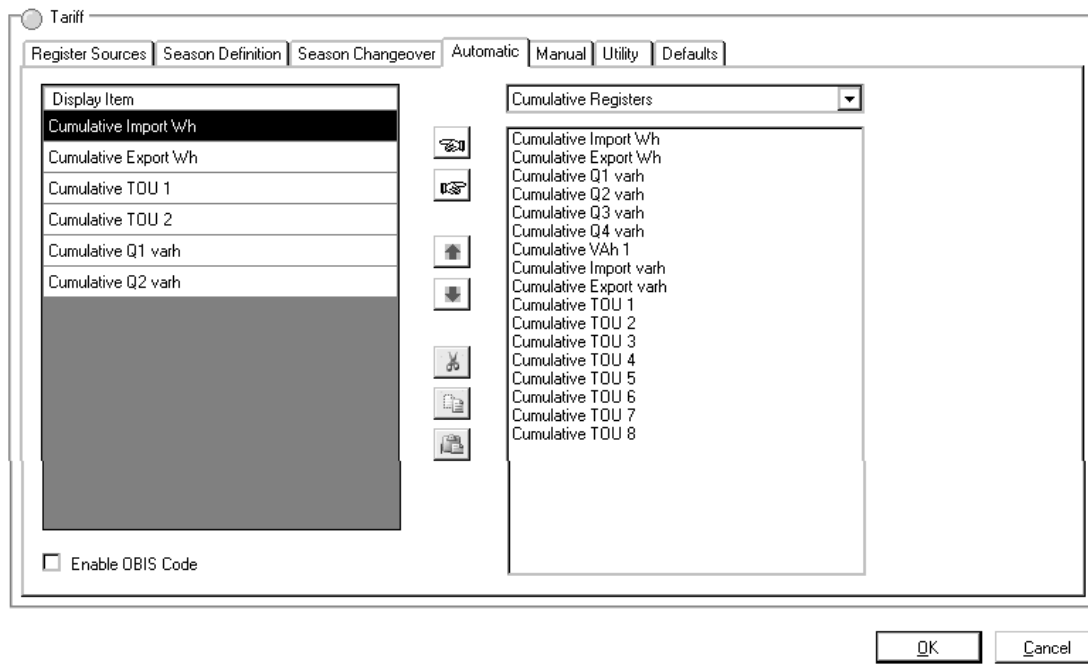
Enter the exact date in the Next Season dropdown list. Press OK

Advanced - Enter the Week (first, second, third, fourth or last), Week day and Month for the Season Start Date

Enter the Week, Weekday and Month for the next Season

Press OK

Display/Automatic



Building the display

A list of possible displays is shown on the right hand side of the dialogue and can be made available for display by using the ➡ Button

To transfer a group of sequential displays - Click on the first display in the list

Hold down the shift key

Click the last display required in the list (the displays will appear highlighted) then use the ➡ button to transfer the displays to the display list

Using the Buttons

To Transfer a display - Select the required display from the Available Display List

Click the ➡ button. The display is transferred from the Available Display List to the Display List

To Remove a display from the display list - Click on the required display

Click the ⇐ button. The display is removed from the Display List

To Change the display order - Click on the required display and click the ⬆ button to move the display upwards in the display order

Click on the required display and click the ⬇ button to move the display downwards in the display order

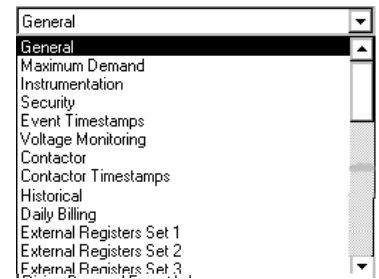
OBIS Codes

To enable OBIS Codes, check the Enable OBIS codes checkbox. The meter display will be identified by an OBIS Code as well as English Descriptors. The OBIS Code is shown next to the display item

Register Sources		Season Definition	Season Changeover	Automatic	Manual	Utility	Defaults
Display Item		OBIS Text					
Cumulative TDU 3		#.8.3					
Cumulative TDU 4		#.8.4					

Selection

The displays have been split into groups for ease of handling. Select the required group to add items to the display sequence



Manual/Utility Displays

Manual and Utility display sequences can be changed in the same way as the Automatic Display Sequence

Defaults

Defaults show a list of all displays available to the AS230 with their OBIS Codes

3.5.5 Deferred Setup

Deferred Tariff Changeover Date

Page Name

☐ Deferred Tariff Change-Over Date

Change-Over

Change-Over Date

Change-Over Time Hours Minutes

Perform a Billing Reset when switching to deferred tariff? ☐

This Page allows the Deferred Tariff/Display to be disabled, or enabled on a specified date
A Billing Reset on switching to Deferred Tariff can also be actioned

3.5.6 Deferred Tariff

The Deferred Tariff operates in exactly the same way as the Tariff Page

3.5.7 Billing

Page Name

☐ Manual Billing Reset

Carry Out Manual Billing Reset

☐ Automatic End of Billing Dates

Billing Dates

31	January
29	February
31	March
30	April
31	May
30	June
31	July
31	August
30	September
31	October
30	November
31	December
	[None]

☐ Daily Billing

Enable Daily Billing? ☒

Reset Maximum Demands? ☐

Manual Billing Reset - executes a Billing Reset via the IEC 62056-21 port or module port at the end of a Communications Session

Automatic End of Billing Dates - Up to 13 End of Billing Dates can be activated at the end of each month or by User Defined Sort Dates

Daily Billing - allows the Billing Data to be recorded at midnight every day. The meter stores the last 14 sets of Daily Billing Data, overwriting the oldest set with the newest set

Reset Maximum Demand - the Maximum Demand can be reset with the Daily End of Billing

3.5.8 Relay (Optional)

As an option, the meter may be built with a 100mA, mains rated relay output

The relay may be programmed to close if any of the rate registers or the maximum demand register is active

To select a value, use the < button

To deselect a value, use the > button

To select all value, use the << button

To deselect all value, use the >> button

There is an option to keep the relay permanently closed

3.5.9 Contactor

Load Limiting

The load limiting can be enabled or disabled

The meter opens the contactor if the average value of the system power is above the lower threshold level for a long period of time, or exceeds the higher threshold for a short period of time

Lower trip level threshold - Range 0 - 120% (in 0.5% steps) of system rating (balanced load, U_n , I_{max} , UPF)

Lower trip level duration - 1 to 10 minutes (Duration in which the average system power is allowed to exceed the lower trip level before the contactor opens)

Contactor open enabled - Load limiting can be configured to open the contactor and log the event if levels are exceeded (box checked) or leave the contactor closed and log the event (box unchecked)

Auto arm period - The time that must elapse before the contactor can be closed (Range 1 to 255 minutes). Set to zero to disable the Auto Arm Period

Higher trip level threshold - Range 0 - 150% (in 0.5% steps) of system rating (balanced load, Un, I_{max}, UPF)

Higher trip level duration - 1 to 8 minutes (Duration in which the average system power is allowed to exceed the upper trip level before the contactor opens)

Contactor open enabled - Load limiting can be configured to open the contactor and log the event if levels are exceeded (box checked) or leave the contactor closed and log the event (box unchecked)

Auto arm period - The time that must elapse before the contactor can be closed (Range 1 to 255 minutes). Set to zero to disable

Contactor Disconnect After Remote Closure

Limits can be applied to the contactor auto-disconnect after the contactor has been closed remotely

☐ Contactor Auto-Disconnect after Remote Closure

Threshold	<input type="text" value="42.0"/>	Amps
Duration	<input type="text" value="01:00:06"/>	Set to 00:00 to disable Auto-Disconnect
Auto-Arm Period	<input type="text" value="04:12"/>	Set to 00:00 to disable Auto-Arm

Threshold - If the contactor current is above the set threshold (Range 0 to 120A) and set duration, the contactor will open

Duration - The duration (Range 00:00 to 18:12:15) the contactor current must be above the set threshold before the contactor will automatically disconnect. The auto-disconnect can be disabled by setting the duration to 0

Auto-arm Period - The period (Range 0 to 04:15) before the contactor can be auto-armed after the expiry of the set duration

3.5.10 Load Profile Definition (4 Channels)

Page Name

☐ Demand Period

Demand Period

☐ Load Profile Definition (max. 4 channels)

☐ Import W ☐ Export var

☐ Export W

☐ Q1 Inductive Import

☐ Q2 Capacitive Import

☐ Q3 Inductive Export

☐ Q4 Capacitive Export

☐ VA 1

☐ Import var

☐ Clear Load Profile Data

Clear all load profile data (WARNING: data cannot be recovered after this operation)

Demand Period - The Demand Period can be set to 1, 2, 3, 4, 5, 6, 10, 15, 20, 30 or 60 minutes

Load Profile Definition - Up to 120 days of data for any 4 channels listed below

Import

Export

Q1 inductive import

Q2 capacitive import

Q3 inductive export

Q4 capacitive export

VA 1

Import var

Export var

Clear Load Profile Data (Administrator only)

This option allows an Administrator to clear the meter load profile data. Note that this option should be used with care, as once load profile data has been cleared it cannot be recovered

3.5.11 Meter Options**Clock**

The Clock Source can be set to Crystal or a.c. supply. The source is normally set to a.c. supply. In the event of a power failure the crystal will support meter timekeeping until power is restored

Load/Instrumentation Profile Daylight Savings

Load Profiling and Instrumentation Profiling Daylight Savings can be programmed independently

They can be programmed to:

Observe Daylight Savings

No Daylight Savings

Page Name

Clock | Register Format | Date Format | Communications | Error-Handling

☐ Clock Source

Clock Source

☐ Load Profiling DLS

Daylight Savings Configuration

☐ Instrumentation Profiling DLS

Daylight Savings Configuration

Register Formats

Clock Register format Date format Communications Error handling

Register format

Decimal point style 123.45

Cumulative registers

Number of digits 7

Number of decimals 2

Example Register Value 1234567890123.456

Displayed As 67890.12 k

Demand registers

Number of digits 5

Number of decimals 2

Example Register Value 34567890123.456

Displayed As 890.12 k

Decimal Point Style - The Decimal Point Style can be set to a Full Stop or a Comma

Number of Digits - The Number of Digits for both Cumulative and Demand Registers can be configured to 5, 6 or 7

Number of Decimals - The number of Decimal Places for both Cumulative and the Demand Register can be configured to 0, 1 or 2

Date Format

Date Format - The Date Field Order can be configured to mm dd yy or dd mm yy

Page Name Scheme 2

Clock Register Format Date Format Communications Error-Handling

Date Format

Date Field Order mm dd yy

Communications

Serial Port Baud Rate - The Communications Baud Rate between the meter and the module can be configured to 300, 600, 1200, 2400, 4800 or 9600 baud

Clock Register format Date format Communication

Serial Port Baud Rate

Baud Rate 2400 Baud

300 Baud

600 Baud

1200 Baud

2400 Baud

4800 Baud

9600 Baud

Error Handling

Clock Fail Action Mode - If the clock fails the clock fail action mode can be set to:

Continue as normal

Do Billing Reset then Continue

Do Billing Reset then Freeze the Tariff

Reverse Run Configuration - can be configured to:

☒ Log events

☐ Do not log events

Voltage Monitoring - The voltage monitoring can be set within the following limits:

Under-voltage Threshold - 150 to 300 Volts

Confirmation Time - 2 to 65535 seconds

Over-voltage Threshold - 150 to 300 Volts

Confirmation Time - 2 to 65535 seconds

Long Power Fail

The AS230 meter can be programmed to record a long power fail if the meter has lost power for a time greater than the programmed threshold

Threshold Duration 0 to 65535 minutes

The screenshot shows the 'Error-Handling' tab selected. The 'Clock Fail Action Mode' is set to 'Continue as normal'. The 'Reverse Run Configuration' has 'Log Reverse Run Events?' checked. The 'Voltage Monitoring' section shows 'Under-Voltage' at 210 Volts and 'Over-Voltage' at 250 Volts, both with a 'Confirmation Time' of 15 Seconds. The 'Long Power Fail Threshold' is set to 3 Minutes.

3.5.12 Meter UI Options

The screenshot shows the 'Page Name' set to 'Scheme 2'. The 'Dial Test Mode' has 'Put Into Dial Test Mode' checked. The 'Display Timing' section shows 'Auto-Cycle Step Duration' at 2 and 'No Press Time-Out' at 10. The 'Billing Reset Lockout' is set to 'Minutes' with a value of 0. The 'Reverse Run Indications' has 'System Reverse Run' checked. The 'Error Icon' is 'Enabled'. The 'Quadrant Icon' is 'Enabled'. The 'Communications Indicator' is 'Enabled'. The 'External Message Override' is 'Enabled'.

The Meter UI Options are shown above

Dial Test Mode

Enables or Disables the Dial Test Mode

Display Options

Auto-Cycle Step Duration - can be set between 2 and 30 seconds in two second steps. This is the time each display is displayed in auto-cycle mode

No Button Time-out - can be set between 5 and 600 seconds in 5 second steps. The meter will switch from step mode to auto-cycle mode if the pushbutton has not been pressed for the selected time

● Display Timing

Auto-cycle step duration	<input type="text" value="30"/>
No button time-out	<input type="text" value="60"/>

Billing Reset Lockout

The Billing Reset Lockout - can be set to minutes (0 to 254), Until the End of the Hour or Until the End of the Day

● Billing Reset Lockout

Lockout	<input type="text" value="Minutes"/>
	<input type="text" value="245"/> Minutes

Reverse Run Indications

The Reverse Indications - displays the Reverse Run Icon on the display (if enabled)



Error Icon

The Error Icon - displays the Error Icon if an error occurs (If enabled)



Quadrant Icon

The Quadrant Icon - displays the Power Flow Direction Indication (If enabled)



Communication Indicators

The Communication Indicators - shows the icon for the current communications session (Optical, HAN, or WAN if enabled)



External Message Override

An external message can be sent by the Head End System that will override all displays. The message can only be cancelled by a long press of the pushbutton

The message is enabled by checking the external message override checkbox

3.5.13 Time & Date

☐ Meter Time Adjustment

☒ Set to PC/HHU clock

☐ Gradually adjust to PC/HHU clock

Daylight saving dates for the current year(2008). These will automatically adjust for different years

☐ Daylight Saving Setup

Daylight Saving

	Week	Week Day	Month	At (hour)
Advance On	Last	Sunday	March	1
Retard On	Last	Sunday	October	3
Adjust By	1 hour(s)			

Meter Time & Date allows the meter time to be adjusted in the following ways:

1. Set the Meter Time to the PC (or HHU) Clock Time
2. Gradually adjust the Meter Time (by 5 seconds every integration period), until the Meter Time matches the PC Clock Time. The maximum time a meter can be adjusted is 7.5 minutes. Password Level 2 allows Time Adjust

Daylight Savings

Daylight Savings can be advanced or retarded by 1 or can be disabled

Enter the Week (First to fourth, last), Week day, Month and Hour for Advance and Retard for Daylight Savings. Week/Last will action Daylight Savings on the last Week day of the month

Daylight saving dates for the current year(2009). These will automatically adjust for different years

☐ Daylight Saving Setup

Daylight Saving

	Week	Week Day	Month	At (hour)
Advance On	Last	Sunday	March	1
Retard On	Last	Sunday	October	3

Note. Daylight Saving cannot be set to Advance or Retard across a midnight boundary

Example: Set Advance on Week (Last), Weekday (Sunday), Month (March) at Hour (1). Adjust by Hour (1). The hour time advances to 2

3.5.14 Instrumentation Profile Configuration

Up to 8 Instrumentation Channels can be configured for the following values:

Current
Volts
Power Factor
Active Power
Reactive Power
Apparent Power
Frequency
Phase Angle

Page Name:

Channel Definition

Channel 1: Current: System: Average
Channel 2: Volts: System: Average
Channel 3: Power Factor: System: Average
Channel 4: Active Power: System: Average
Channel 5: Reactive Power: System: Average
Channel 6: Apparent Power: System: Average
Channel 7: Phase Angle: System: Average
Channel 8: Frequency: System: Average

Channel: Value: Storage:

Instrumentation Period

Instrumentation Period:

The values can be stored as:

Average
Maximum
Minimum
Last

Instrumentation Period

The available Instrumentation Periods are shown opposite

Instrumentation Period

Instrumentation Period:

- 4 Minutes
- 5 Minutes
- 6 Minutes
- 10 Minutes
- 15 Minutes
- 20 Minutes
- 30 Minutes**
- 60 Minutes

3.5.15 Alarm Reporting

The Alarm Reporting Mask allows the User to select which alarms are to be reported to the Head End System

Use < to select an alarm to be reported

Use > to remove an alarm from the available alarms list

A full list of alarms is given in Appendix 2

Alarm Reporting Mask

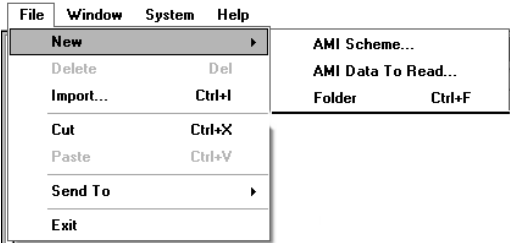
Selected Alarms		Available Alarms
DLS In Force	<	Maximum Demand Reset
Active Anti-Creep	>	Contactor Arm
Reactive Anti-Creep	<<	Instrumentation Valid
Active Power Flow Direction	>>	Programming Event
Reactive Power Flow Direction		Password Change Event
System Reverse Run		Long Power Fail Event
Data Changed		Power Fail Event
Transient Reset		Contactor Disconnect Auto-Arm
System Reverse Run Latch		Load Monitor High Auto-Arm
Daily Billing Request		Terminal Cover Tamper Event
Time Synchronisation		Main Cover Tamper Event
Software Link Active		Magnetic Tamper Event
Dial Test		Reverse Run Event
Turbo Mode		Transient Reset Event
Local Comms In Progress		Billing Event
Remote Comms In Progress		Firmware Download Event
Contactor Position		Meter Error Event
Request Contactor Open		Battery Voltage Low Event
Contactor Disconnect Active		Optical Communications Session Event
Request Contactor Close		Module Communications Session Event
WAN Connected		

4 Data to Read

4.1 Saving a New Reading

Right click on Scheme/New/AMI Data to Read

Name the Page and select the Readings to be read



Page Name

Register Values

- ☒ Current Values
- ☒ Instantaneous Parameters

Other Information

- ☒ Hardware
- ☒ Security Data

☐ Instrumentation Profile Data

- ☒ All Data
- ☐ Number of Days
- ☐ By Date

☐ Load Profile Data

- ☒ All Data
- ☐ Number of Days
- ☐ By Date

☐ Historical Registers

- ☒ All Historical Values
- ☐ Specified Number of Sets

Scheme Pages

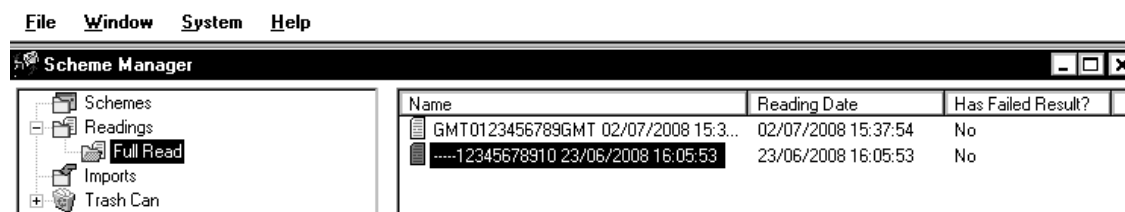
- ☒ Meter Identifiers
- ☒ Tariff/Display
- ☒ Deferred Tariff
- ☒ Deferred Setup
- ☒ Billing
- ☒ Relay Setup
- ☒ Contactor
- ☒ Load Profiling
- ☒ Meter Options
- ☒ Meter UI Options
- ☒ Time and Date
- ☒ Instrumentation Profile Configuration
- ☒ Alarm Reporting

Save the Page

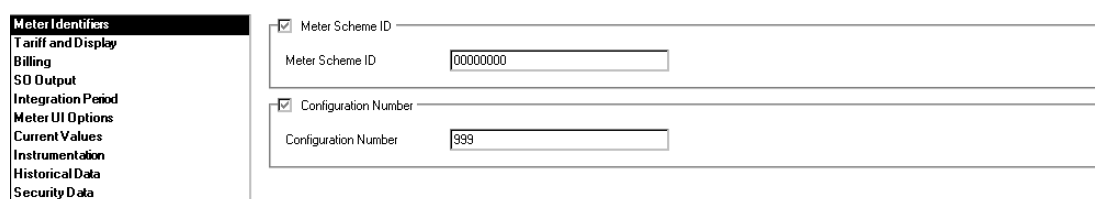
5 Readings

5.1 Viewing Readings

To view Readings, select the Reading to be viewed



Double click on the Reading



Has Failed Result? - This will be set to **Yes** if one (or more) items have failed to read

Select the Required Reading

Reading Options

Right click on the Reading to display the dialog opposite

Open - Opens the File

New - Allows a New Folder to be created

Delete - Deletes the File

Cut - Selects the File ready for pasting to the Clipboard

Paste - Pastes the File from the Clipboard

Rename - Allows the Reading to be Renamed

Send to Printer - Sends the Reading to the Printer

Send to HTML - Saves the File as an HTML File

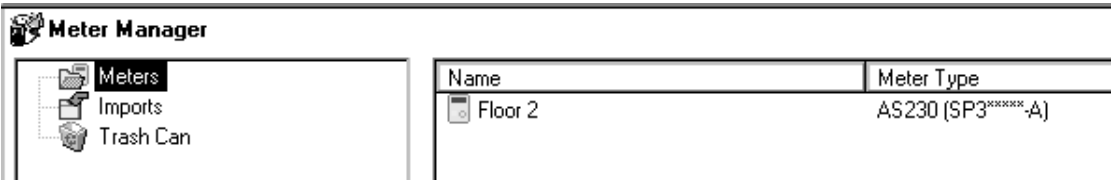
Send to CSV - Saves the File as a CSV File

Open...	Enter
New	►
Delete	Del
Cut	Ctrl+X
Paste	Ctrl+V
Rename	Ctrl+R
Send To Printer...	Ctrl+P
Send To HTML...	Ctrl+H
Send To CSV...	Ctrl+E

6 Meter Manager

6.1 Meter Manager Introduction

The Meter Manager is used to organise the systems meters. It is used to invoke the Meter Information Editor



The Meter Manager consists of three components

Meters - This is a list of meters available on the system. It allows Meter Connection Information, Identifiers and Security Information to be stored

To Enter a New Meter - Right click in the right hand pane of the Meter Manager

Select New Meter and name the meter

Import - Schemes/meter that have been set up in other AMI Master Units can be imported and placed in the Schemes/meter Import folder

Trash Can - All files deleted from the Meter Manager are transferred to the Trash Can. They can be transferred back to the Meter Manager if required. Once deleted from the Trash Can the files are no longer available to the system

Meter Manager Context Menu

The features of the Context Menu are shown opposite. The menu is made available by selecting a meter and right clicking the mouse in the right pane of the Meter Manager

Live Link (See Section 6.2)

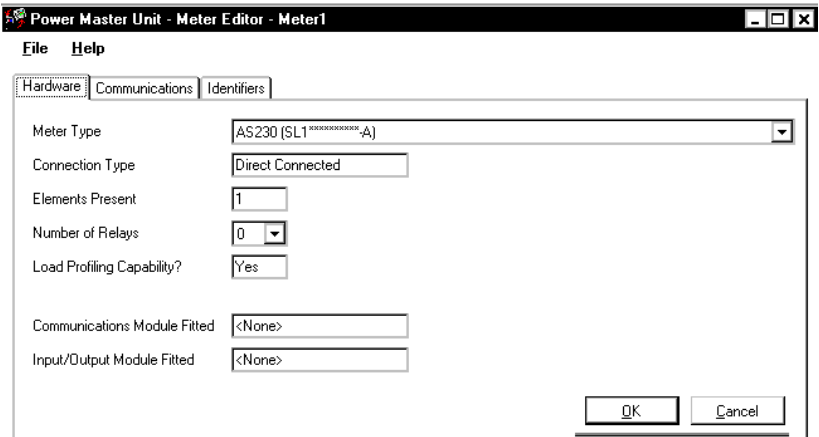
Contactor Control (See Appendix 1)

Open...	Enter	
New		Folder Ctrl+F
Delete	Del	Meter... Ctrl+N
LiveLink	Ctrl+L	
Contactor Control	Ctrl+T	
Cut	Ctrl+X	
Paste	Ctrl+V	
Rename	Ctrl+R	
Send To Export File...	Ctrl+O	

Meter Information Editor

This Editor is used to reference data related to a specific meter and its location, the type of communications and security information. To open the Information Editor, in the Meter Editor, double click on a meter

The dialog is divided into three Tabs, Communications, Hardware and Identifiers



Hardware

Information on the Meter Type, Connection Type, Number of Elements, Number of Internal Relays and Plug in Modules can be entered (see above)

Communications

This page allows the Communications Parameters to be entered

File Help

Hardware **Communications** Identifiers

Type

Name

COM Port

Password (Level 1)

Password (Level 2)

Password (Level 3)

To Enter a Connection - Press the Select Connection button

Select New

Select the Type of Connection (Optical, RS232, Modem, Network)

Fill in the Meter Information Editor

Use Amend to change details in the Information Editor

Use View to View the information

Power Master Unit - Select a Connection

Connection Name Type

Local Flag

New Connection 2

Power Master Unit - Create a Connection

Type

Name

COM Port

Bits

Parity

Baud Rate

Outstation

Telephone

Modem Init. String

Use DSM? ☐ (if available)

Identifiers

Identifiers allow the Meter Serial Number, the Site id and a description of the meter to be entered

File Help

Hardware Communications **Identifiers**

Serial Number

Meter Site Identifier (MSID)

Description

6.2 Live Link

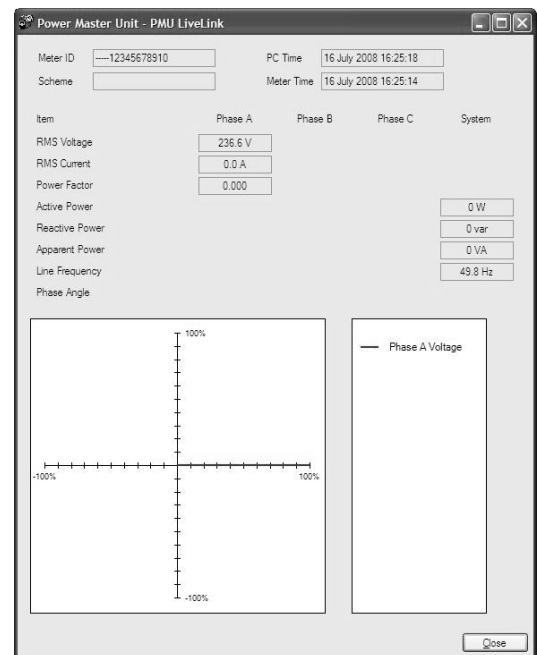
The Live Link software displays instrumentation details as shown in the display opposite

Using the software

Select a Meter from the Meter Manager

Right click and select Live Link

Note: Each line of text may take a few seconds to be displayed

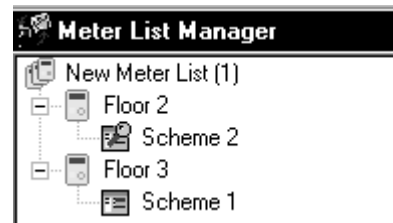


7 Meter List

7.1 The Meter List Components

The Meter List consists of a List of Meters with their associated Schemes. The Meter List brings together meters configured in the Meter Manager, and Schemes created in the Scheme Manager, to create a list of meters and their associated schemes

This is achieved by copying a Meter and a Scheme into the Meter List



Note: Multiple schemes can be sent to a meter as a single communications session by attaching the schemes to the meter using drag and drop. It should be noted that if the same scheme page (e.g. display page) is contained in more than one of the schemes, only the page from the last scheme attached is programmed to the meter

Meter List Context Menu

The options available from the dropdown list are shown opposite. The Context Menu list is made available by right clicking the mouse in the right pane of the Meter List

New Meter List...	Ctrl+N
Open Meter List...	Ctrl+O
Save Meter List	Ctrl+S
Save Meter List As...	Ctrl+A
Close	Ctrl+L
Delete	Del
Show Conflicts...	Ctrl+E
Execute Meter List	Ctrl+M

New Meter List

The New option clears the Meter List ready for a new Meter List to be created

Open Meter List

This allows information on the Meter or Meter Scheme to be viewed or edited using Save. A new Meter List can also be created by editing the Meter List and Using the Save As facility

The Scheme is displayed which can now be edited

Save Meter List - Allows the current Meter List to be Saved

Save Meter List As - Allows the selected Meter List to be saved as a new name

Close - Closes an open Meter List

Delete - Deletes the selected Meter from the Meter List

Show Conflicts - Shows any discrepancies between the scheme and the meter

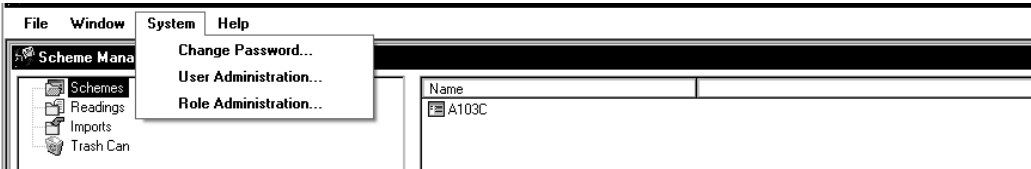
Execute Meter List - Execute Meter List is used for communicating with a meter

It is used with the Meter Communications Server to Program or Read

8 System Administration

For Administrator Passwords, contact Elster Metering Systems

The Main Toolbar is the same as for Standard User with the exception of the System Menu



8.1 Changing Passwords

Changing Passwords is available to both Standard Users and Administrators

To change passwords -

- Type in your Old Password
- Type in your New Password
- Confirm your New Password
- Press OK

Note: All Passwords are case sensitive

Mini PMU

Enter User Name, Old Password and New Password:

User Name

Elster

Old Password

New Password

Confirm Password

OK

Cancel

8.2 System User Administration

User Administration allows the System Administrator to change password and New Users to be added with their roles defined

Mini PMU - Maintain Users

File

Help

User Name	User Description	Active?
Administrator	Administrator	<input checked="" type="checkbox"/>
Elster	Standard User	<input checked="" type="checkbox"/>

Delete

Available Roles:

Standard User

Power User

>

>>

<

<<

Selected Roles:

System Admin

OK

Cancel

Change Password for Selected User

The Selected User Password is changed in exactly the same way as Change Password above



Add New User

Only the Administrator can add a New User

To add a New User -

Select File/Add New User (the dialogue opposite is displayed)

Enter the New User Name, Description and Password. Confirm the Password

Select the New User from the List

Select the Role(s) for the New User from the Available Role list using the < or > buttons

Press OK

 A screenshot of a dialog box titled 'Mini PMU'. It contains the text 'Enter details of the new user:'. Below this are four input fields: 'Name' (containing 'Meter Reader 1'), 'Description' (containing 'Meter Reader'), 'Password' (containing 'xxxxxxxx'), and 'Confirm' (containing 'xxxxxxxx'). At the bottom right are 'OK' and 'Cancel' buttons.

Copy New User

Copy New User allows an Existing user Profile to be edited to create a New User

To Copy and Edit an Existing Profile -

Select the User to be copied from the user list

Select File/Copy User

Enter the details for the New User

Role Administration

Role Administration can be amended to alter access. It defines the Access Level of a selected group for each Role

Power User

Only a Power User can be given permission to change a meters sensitive data such as the meter serial number. Power User must appear in the User Administration/Selected Roles Panel for the role to be available

Appendix 1

A1 Contactor Control

The Meter Contactor State can be read remotely and the Contactor State changed using the Contactor Control facility

In the Meter Manager, click on a meter and right click the mouse button

Select Contactor Control from the dropdown list

Comms App will run to display the Contactor Control dialogue

Enter the serial number of the meter

The current state of the contactor will be shown

Check the contactor is enabled

If enabled the contactor state can be changed using the Open Contactor, Arm Contactor or Close Contactor buttons

Load limiting parameters can be changed using the Contactor Dialogue

Note - The state of the contactor will be indicated in the right hand boxes

The screenshot shows a window titled "Power Master Unit - PMU Contactor Control". It contains the following fields and controls:

- Serial Number: A text input field.
- Contactor Enabled?: A checkbox that is checked.
- Contactor State: A dropdown menu showing "Closed".
- Contactor is Armed?: A checkbox.
- Contactor is Open?: A checkbox.
- Contactor is Opening?: A checkbox.
- Lock-Out is Active?: A checkbox.
- Contactor is Closing?: A checkbox.
- Open Contactor: A button.
- Arm Contactor for Closure: A button.
- Close Contactor: A button.
- Close: A button in the bottom right corner.

Appendix 2

A.2 Meter Alarms

Manufacturing Link Present DLS In Force Active Anti-Creep Remote Comms In Progress Contactor Arm Contactor Position Request Contactor Open Contactor Disconnect Active Request Contactor Close Instrumentation Valid WAN Connected WAN Communications In Progress HAN Connected HAN Communications In Progress Programming Event Password Change Event Long Power Fail Event Power Fail Event Contactor Disconnect Auto-Arm Load Monitor Low Auto-Arm Load Monitor High Auto-Arm Terminal Cover Tamper Event Main Cover Tamper Event Magnetic Tamper Event Reverse Run Event Transient Reset Event Billing Event Firmware Download Event Meter Error Event Battery Voltage Low Event Optical Communications Session Event Module Communications Session Event Overvoltage Event Undervoltage Event Main Cover Tamper In Progress Terminal Cover Tamper In Progress Magnetic Tamper In Progress Overvoltage Detected Overvoltage Confirmed Undervoltage Detected	Undervoltage Confirmed Load Monitor Low Trip Event Load Monitor High Trip Event Contactor Open Optical Contactor Open Module Contactor Open Load Monitor Low Contactor Open Load Monitor High Contactor Open Disconnect Contactor Arm Optical Contactor Arm Module Contactor Arm Load Monitor Contactor Arm Disconnect Contactor Close Optical Contactor Close Module Contactor Close Button Error IFC Device 0 Error IFC Device 1 Error IFC Device 2 Error IFC Device Unknown Error IFC Error Contactor Error RTC Error Power Fail Backup Error Backup Error Load Profile Error Invalid Demand Period Configuration Error Estimated Battery Life Exceeded Error Instrumentation Profile Error Invalid Instrumentation Period Configuration Error Firmware Checksum Error Error Manufacturing Configuration CE Error Manufacturing Configuration REG_SP Error Manufacturing Configuration REGISTRATION Error Manufacturing Configuration PROFILES Reactive Anti-Creep Active Power Flow Direction Reactive Power Flow Direction System Reverse Run Data Changed Transient Reset
Transient Reset System Reverse Run Latch Daily Billing Request Maximum Demand Reset Time Synchronisation Software Link Active Dial Test Turbo Mode Local Comms In Progress	

