The Company

We are an established world force in the design and manufacture of instrumentation for industrial process control, flow measurement, gas and liquid analysis and environmental applications.

As a part of ABB, a world leader in process automation technology, we offer customers application expertise, service and support worldwide.

We are committed to teamwork, high quality manufacturing, advanced technology and unrivalled service and support.

The quality, accuracy and performance of the Company’s products result from over 100 years experience, combined with a continuous program of innovative design and development to incorporate the latest technology.

The UKAS Calibration Laboratory No. 0255 is just one of the ten flow calibration plants operated by the Company, and is indicative of our dedication to quality and accuracy.

**Health and Safety**

To ensure that our products are safe and without risk to health, the following points must be noted:

1. The relevant sections of these instructions must be read carefully before proceeding.
2. Warning labels on containers and packages must be observed.
3. Installation, operation, maintenance and servicing must only be carried out by suitably trained personnel and in accordance with the information given.
4. Normal safety precautions must be taken to avoid the possibility of an accident occurring when operating in conditions of high pressure and/or temperature.
5. Chemicals must be stored away from heat, protected from temperature extremes and powders kept dry. Normal safe handling procedures must be used.
6. When disposing of chemicals ensure that no two chemicals are mixed.

Safety advice concerning the use of the equipment described in this manual or any relevant hazard data sheets (where applicable) may be obtained from the Company address on the back cover, together with servicing and spares information.
1 INTRODUCTION

1.1 What is the SMS Logger Server?
The SMS Logger Server enables the monitoring and management of AquaMaster flow meters through an intuitive and user-friendly application. External client databases can be configured to receive the data from the Logger server.

Logger Server features:
- Integration with GPA SMS Gateway.
- An intuitive user interface.
- The capacity to administer up to 3000 AquaMasters.
- The ability to forward data to any ODBC compliant relational database (client database).
- An HTTP Interface to trigger requests.
- The ability to automatically transmit AquaMaster Firmware and SIM card changes.

The SMS Logger Server Application integrates with the GPA SMS Gateway. SMS Messages from the AquaMasters are received by the GPA SMS Gateway and forwarded to the Logger Server application.
...1.1 What is the SMS Logger Server?

The SMS Logger Server provides the means to edit many AquaMaster parameters remotely. It can also request and then forward the data to a client database.

In addition, you can use the Logger Server HTTP interfaces to request information from the AquaMasters. The response reports for these requests are then forwarded to the client database.

Note.

- The GPA SMS Gateway must be configured correctly before you can use the SMS Logger Server to receive data from the AquaMasters – see Appendix A.

- If this is the first time that you have used the SMS Logger Server, no AquaMasters are listed. Once the SMS Logger Server has been configured correctly, data from the AquaMasters appears in the list view. The rate at which data appears depends on the time that the AquaMasters have been set to send their data. Typically, AquaMasters are set to send a report once per day; therefore it could take a day for the SMS Logger Server to display the reports.
2 SMS LOGGER SERVER INTERFACE

2.1 Receiving AquaMaster Data

To open the SMS Logger Server Application, either select **Start | Programs | ABB | ABB SMS Logger Server**, or double-click on the SMS Logger Server shortcut icon on the desktop. The main application window appears with the default list view:

![Image of SMS Logger Server interface]

1. **Header Bar**
   Displays the title of the current view.

2. **Menu Bar**
   Provides access to all the menu commands for the SMS Logger Server – see page 6 for further details.

3. **Toolbar**
   The toolbar buttons provide quick access to the SMS Logger Server views and the on-line help:
   - List view.
   - Event Log view.
   - AquaMaster Administration view.
   - On-line help.

4. **Real-time Messages**
   An AquaMaster ID is displayed here if data is received while the SMS Data Logger is open.

5. **Filter Area**
   Controls for filtering data are displayed in this area when viewing the meter database and event log views.
2.1 Receiving AquaMaster Data

– Views

There are three views:

- **List** – The default view. Displays the latest flow, pressure and total records from the AquaMasters – see page 7 for further details.

- **Meter Database** – Displays a list of all the AquaMasters that are connected currently to the SMS Logger Server – see page 9 for further details.

- **Event Log** – List of errors that the AquaMasters have reported, as well as any requests made through the client interface – see page 12 for further details.

– Context Menus

The SMS Logger Server makes extensive use of context menus. A context menu appears when you right-click over a selected item.

– Status Bar

The status bar displays license availability.
3 MENUS

3.1 View Menu

<table>
<thead>
<tr>
<th>Menu Item</th>
<th>Description</th>
<th>Keyboard shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>List View</td>
<td>Opens the List view.</td>
<td>Ctrl + L</td>
</tr>
<tr>
<td>Meter Database</td>
<td>Opens the Meter Database view.</td>
<td>Ctrl + M</td>
</tr>
<tr>
<td>Event Log</td>
<td>Opens the Event Log view.</td>
<td>Ctrl + E</td>
</tr>
<tr>
<td>Exit</td>
<td>Closes the SMS Logger Server.</td>
<td>Ctrl + X</td>
</tr>
</tbody>
</table>

3.2 Configuration Menu

<table>
<thead>
<tr>
<th>Menu Item</th>
<th>Description</th>
<th>Keyboard shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Database</td>
<td>The SMS Logger Server is capable of forwarding the data received from the AquaMasters to an external client database. You can use this feature to populate a client database with the data from the flow meters. Any ODBC compliant data source is supported.</td>
<td>Ctrl+A</td>
</tr>
<tr>
<td>Advanced Settings</td>
<td>Used to configure various settings of the SMS Logger Server.</td>
<td>Ctrl+B</td>
</tr>
<tr>
<td>External Clients</td>
<td>It is possible to use a web interface to trigger requests to the AquaMasters. This dialog box is used to list the users that have permission to make these requests.</td>
<td>Ctrl+U</td>
</tr>
</tbody>
</table>

3.3 Request Menu

<table>
<thead>
<tr>
<th>Menu Item</th>
<th>Description</th>
<th>Keyboard shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Command</td>
<td>Sends text commands to the selected AquaMaster(s).</td>
<td>Ctrl+T</td>
</tr>
</tbody>
</table>

3.4 Help Menu

<table>
<thead>
<tr>
<th>Menu Item</th>
<th>Description</th>
<th>Keyboard shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help</td>
<td>Opens the on-line help.</td>
<td>F1</td>
</tr>
<tr>
<td>About SMS Logger Server</td>
<td>Opens the SMS Logger Server splash screen</td>
<td>Ctrl+U</td>
</tr>
</tbody>
</table>
4 LIST VIEW

4.1 Introduction

This view displays the latest flow, pressure and total records from the AquaMasters.

To open the list view, click the button, select View | List View or press Ctrl+L.

Note. None of the displayed information can be edited.

4.1.1 Context Menus

You can display additional information about an individual record by right-clicking over a record and selecting:

- View Flow Records.
- View Pressure Records.
- View Total Records.

4.1.2 View Flow Records

Displays the flow values for the selected AquaMaster:
4.1.3 View Pressure Records
Displays the pressure values for the selected AquaMaster:

![Pressure Records Screen]

4.1.4 View Total Records
Displays the Totalizer records for the selected AquaMaster:

![Total Records Screen]
5 FLOW METER ADMINISTRATION VIEW

5.1 Introduction

This view displays a list of all the AquaMasters that are currently connected to the SMS Logger Server.

To open the AquaMaster administration view, click the button, select View | Meter Database or press Ctrl+M.

5.2 Search for an AquaMaster

A search facility is available to make finding an AquaMaster easier. To search for one or more meters:

1. Type the text to search for.

   Note. Use * to search for one or more characters. For example, 68* finds all meter IDs that start with 68. Use ? to search for a single character. For example, 68?3 finds the meter IDs 6803 and 6873.

2. Select whether to search for a Meter ID or an SMS Address.

3. Click Search. The search results are displayed in the data table. Click Clear Search to display all records.
5.3 Context Menus

Edit the settings of individual AquaMasters by right-clicking over a selected AquaMaster and selecting:

- Set Password.
- Time Adjust.
- Send Request.
- Delete FlowMeter.

5.3.1 Set Password

You can set the password for single or multiple AquaMasters. To change the password:

1. Select the required AquaMaster(s).

   Note. To select multiple AquaMasters, click in the far-left column marked with an arrow and drag downwards to select a range of AquaMasters. You can also hold the shift key down to select a range of records or hold the Ctrl key to select individual records.

2. Right-click and select Change Password. A dialog box appears.
3. Type the new Password.
4. Click the Set Password button.
5. Click to close the dialog box. The new password is displayed for the selected AquaMaster(s).
5.3.2 Time Adjust
You can set enable or disable the time adjust for single or multiple AquaMasters.

If enabled, clock adjustments are sent automatically if the least time difference of the last ten logged values is negative or above a specified threshold limit. You can set the threshold value from the Configuration | Advanced settings dialog box.

To enable/disable the time adjust:

1. Select the required AquaMaster(s).

   **Note.** To select multiple AquaMasters, click in the far-left column marked with an arrow and drag downwards to select a range of AquaMasters. Hold the shift key down to select a range of records or hold the Ctrl key to select individual records.

2. Right-click and select Time Adjust and either Enable or Disable.

   **Note:** Clock adjustment requests can be sent using the Text Command (see Page 16 for details), pressing Ctrl+C or selecting Request | Clock Adjust Request.

5.3.3 Send Request
This is used to send a text request to a single AquaMaster. This request is similar to those sent via the requests menu, the only difference is that requests made using the menu also include the AquaMaster identification tags.

   **Note.** You can send a text request to only one AquaMaster at a time.

5.3.4 Delete AquaMaster
The SMS Logger Server manages a number of AquaMasters limited by the license. You may need to delete a AquaMaster in order to accommodate a new AquaMaster.

To delete an AquaMaster:

1. Select the AquaMaster.

2. Right-click and select Delete AquaMaster. A confirmation message box appears asking if you are sure that the selected AquaMaster is to be deleted. Click Yes to delete the AquaMaster.
6 EVENT LOG VIEW

6.1 Introduction

This view lists any errors that the AquaMasters have reported, as well as any requests made through the client interface.

To open the Event Log, Click the button, select View | Event Log, or press Ctrl+E.

Whenever the mouse pointer hovers over an error log entry, a tool tip appears that displays additional information.

6.2 Event Log Filter

You can filter the event logs using any one of the following criteria:

- Data Range.
- SMS ID.
- Meter ID.
- Source.

The available filter options change depending on which criterion you select.

Select the criterion and click View Log. The results are then displayed.

6.3 Purge Log

The Logger Server maintains a history of logs for a number days limited by the history limit setting (This can be set from the advanced settings dialog. Either select Configuration | Advanced Settings, or press Ctrl+A). Any logs older than this limit are automatically purged. It is also possible to purge logs between a selected date range.

To purge logs:

- Either type the From and To dates or use the drop-down date picker and click Purge Log. All logs between the selected dates are removed from the list.
7 CONFIGURATION

7.1 Introduction

The configuration menu is used to configure the following:

- External Database.
- Advanced Settings.
- External Clients.

7.2 External Database

The SMS Logger Server can be configured to forward the data received from the AquaMasters to an external client database. Any ODBC compliant data source is supported.

To open the configuration dialog box, select Configuration | External Database, or press Ctrl+B.

The Configure External Database dialog box appears:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSN</td>
<td></td>
</tr>
<tr>
<td>System DSN</td>
<td>The name of the system ODBC database.</td>
</tr>
<tr>
<td>User Name</td>
<td>If required, type the user name.</td>
</tr>
<tr>
<td>Password</td>
<td>If required, type the password.</td>
</tr>
<tr>
<td>Test Connection</td>
<td>Click this button to test the connection to an external database.</td>
</tr>
<tr>
<td>Client Database Table</td>
<td></td>
</tr>
<tr>
<td>- Column Mapping</td>
<td></td>
</tr>
<tr>
<td>Table Name</td>
<td>The name of the table into which data is to be appended. Select the table name from the drop-down list.</td>
</tr>
<tr>
<td>Column Name</td>
<td>The name of the column into which data is to be appended. Select the column name from the drop-down list.</td>
</tr>
<tr>
<td>Client Database Parsing option</td>
<td></td>
</tr>
<tr>
<td>Relational Tables</td>
<td>If selected, all XML coding is removed.</td>
</tr>
<tr>
<td>Single table XML data</td>
<td>If selected, the data is appended as XML.</td>
</tr>
</tbody>
</table>
7.3 Advanced Settings

This is used to configure various settings of the SMS Logger Server.

To open the Advanced Settings dialog box, select Configuration | Advanced Settings, or press Ctrl+A. The Advanced Settings dialog box appears:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>History Limit</td>
<td>The number of entries that can be held in the event log. As a new entry is received, the oldest entry is purged.</td>
</tr>
<tr>
<td>Default Password</td>
<td>The default password that is applied to new flow meters.</td>
</tr>
<tr>
<td>Positive Time Difference</td>
<td>An Aquamaster’s internal clock is automatically adjusted if the last ten values are either: Negative or Positive and are greater than the selected positive time difference.</td>
</tr>
<tr>
<td>SMS Gateway Url</td>
<td>Requests to flow meters sent from the SMS Logger Server or from a Client database are routed via this SMS Gateway. The format must be: <a href="http://ipAddress:Port">http://ipAddress:Port</a> where ipAddress = The IP Address of the system where the GPA SMS gateway is installed and Port = The port to which the gateway listens for http requests.</td>
</tr>
<tr>
<td>Update License</td>
<td>This displays the number of flow meters that the SMS Logger Server can monitor. If you require additional flow meters, contact ABB to obtain a new license key. Once obtained, type the name of your company and your license key and click Upgrade.</td>
</tr>
<tr>
<td>Automatic Time Adjustment</td>
<td>This is the default setting that is applied to new flow meters.</td>
</tr>
</tbody>
</table>
7.4 External Clients

It is possible to use the SMS Logger Server web interface to trigger requests to the AquaMasters (see Appendix B for details). This dialog box lists the users authorized to make these requests.

To add an authorised user:

1. Either select **Configuration | External Clients** or press **Ctrl+U**. The External Clients dialog box appears:

2. Type the user's **Name** and **Password** and click **Add User**. The new user is added to the list.

**Note.** To delete a user, right-click the user and select **Delete User**.
8 REQUESTS

8.1 Introduction
You can send a Text Command request to single or multiple AquaMasters. A text command request is similar to one sent via the Flow Meter Administration context menus.

Note. Requests made using this menu do not include the AquaMaster identification tags. You should therefore manually add the AquaMaster tags to the XML.

8.2 Text Commands
To send a text command:

1. Either select Request | Text Command or press Ctrl+T.

Note. You can also select a meter from the AquaMaster administration view (right-click and select Send Request | Text Command). The text command dialog box appears:

![Text Command dialog box](image)

2. Type the Sms ID, Password and the Command.

Note. If you requested a text command from the administration view context menu, the Sms ID field is not displayed as the Sms ID is populated automatically.

3. Click Send Command. The text command is sent to the AquaMaster.
Text Commands

A text command message is made from up to 10 commands with a semi-colon following each command.

A command is either an AquaMaster Command Line Interface (CLI) request or one of the special mnemonics (ALM, DIB, TOT, VER).

Note. The SMS Logger Server’s Text Command feature limits mnemonic requests to this subset of AquaMaster request mnemonics.

CLI commands are made up of a ‘>’ character followed by the required variable number. The CLI format can also be used to send a change request for a particular variable by appending an equals character and the new value to the variable number.

For example:

TOT;ALM; Requests a totaliser report and an alarm report.

>220; ALM; >255=1000; Requests the value of variable 220, an alarm report and changing variable 255 to the value 1000.

Supported text commands are:

- ALM – Alarm report
- DIB – Device Information Block report
- VER – Firmware versions report
- TOT – Totalizer report

(Refer to the AquaMaster Quick Reference Guide or User Manual for a list of variable IDs and their meanings).
A1 Configuring the GPA SMS Gateway

The GPA SMS Gateway must be set up and the Communication settings configured for the GSM device through which the SMS Gateway is listening to the Service provider.

To open the GPA SMS Gateway, either select Start | GPA SMS Gateway or double-click on the GPA SMS Gateway shortcut icon on the desktop.

A2 Communications Settings

Select Settings | Communications, the communications dialog box appears:

![Communications Settings Dialogue Box]

**Note.** Only the following communications settings may need to be configured:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default hardware settings</td>
<td>Select the GSM device to be used from the drop-down list.</td>
</tr>
<tr>
<td>Communications Port</td>
<td>Type the number of the COM port to which the GSM device is connected.</td>
</tr>
<tr>
<td>Speed</td>
<td>Select the speed of the GSM device.</td>
</tr>
<tr>
<td>Service Centre Address</td>
<td>Select the SIM provider from the drop-down list. The telephone number is automatically populated in the left-hand field.</td>
</tr>
</tbody>
</table>
### A3 HTTP Settings

Select **Settings | HTTP Settings**. The Http settings dialog box appears:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HTTP Interface</strong></td>
<td></td>
</tr>
<tr>
<td>Host / Port</td>
<td>The IP Address and Port of the system where the SMS Gateway is installed.</td>
</tr>
<tr>
<td><strong>Message Submission</strong></td>
<td></td>
</tr>
<tr>
<td>Allow XML POST submission</td>
<td>This must be enabled.</td>
</tr>
<tr>
<td>Allow Interactive HTML submission</td>
<td>This must be enabled.</td>
</tr>
<tr>
<td>Allowed IP Addresses</td>
<td>A list of addresses from which client requests can be triggered.</td>
</tr>
<tr>
<td></td>
<td>To add an address, type the IP address and click the + button.</td>
</tr>
<tr>
<td></td>
<td>To delete an address, select the address to be deleted and click the – button.</td>
</tr>
<tr>
<td>Blocked IP Addresses</td>
<td>A list of addresses that are not allowed to trigger requests.</td>
</tr>
<tr>
<td></td>
<td>To add an address, type the IP address and click the + button.</td>
</tr>
<tr>
<td></td>
<td>To delete an address, select the address to be deleted and click the – button.</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td></td>
</tr>
<tr>
<td>Enable HTML Management</td>
<td>If enabled, management requests can be sent via a web server.</td>
</tr>
<tr>
<td>User ID &amp; Password</td>
<td>The ID and password required to log on as a manager</td>
</tr>
<tr>
<td>Allowed IP Addresses</td>
<td>A list of addresses from which management requests can be triggered.</td>
</tr>
<tr>
<td></td>
<td>To add an address, type the IP address and click the + button.</td>
</tr>
<tr>
<td></td>
<td>To delete an address, select the address to be deleted and click the – button.</td>
</tr>
<tr>
<td><strong>Message Reception</strong></td>
<td></td>
</tr>
<tr>
<td>Enable XML POST forwarding</td>
<td>This must be enabled, with the Interval and Timeout set to 5 seconds.</td>
</tr>
<tr>
<td>URL</td>
<td>The URL of the SMS Gateway handler. For example:</td>
</tr>
<tr>
<td></td>
<td><a href="http://IpAddress/LoggerServer/GatewayHttpHandler.aspx">http://IpAddress/LoggerServer/GatewayHttpHandler.aspx</a></td>
</tr>
<tr>
<td></td>
<td>Where: IpAddress is the IP address of the system where the logger server is installed.</td>
</tr>
<tr>
<td>User ID &amp; Password</td>
<td>The ID and password required to log on to the GPA system.</td>
</tr>
</tbody>
</table>
APPENDIX B  CONNECTION TO THE GPA SMS GATEWAY

B1  Introduction

To open the GPA SMS Gateway, either select Start | GPA SMS Gateway or double-click on the GPA SMS Gateway shortcut icon on the desktop.

The communications and HTTP settings must be configured before you can connect to the GSM terminal – see pages 18 and 19.

The SMS Logger Server must be running before the SMS Gateway connects to the GSM terminal, otherwise retrieved messages from the SMS Gateway may be lost.

To connect to the GMS Terminal:

Click the  button. The status bar displays the progress of the connection.

Click the  button. The SMS Gateway retrieves and forwards SMS messages as they arrive.

Click the  button. The SMS Gateway retrieves and forwards any SMS messages that are waiting on the GSM terminal’s SIM card.
APPENDIX C  CLIENT HTML ACCESS

C1  Introduction

In addition to the SMS Logger Server, three web pages are also installed onto your web server in order to make sending requests to AquaMasters easy. Once installed to the web server, these pages can be made available to any user that has access to the web server via your company intranet. In order to send a request you need a user ID and password. These are set from the SMS Logger Server | Configuration | External Clients menu.

The three web pages are:

- Send DIB Request
- Send Data Request
- Send Settings Request

C2  Send DIB Request

1  – Open your web browser and in the address bar type: http://servername/loggerserver/dib.htm where 'servername' is the name of your web server provided by your web or system administrator. The dib request page appears:

2  – Type your User Id and Password.

3, 4  – Either type the SMS Address or the Meter Id of the AquaMaster.

5  – Click the Send Dib Request button. The request is sent to the AquaMaster via the SMS Logger Server.
C3  Send Data Request

To open this page:

1. Open your web browser and in the address bar type: http://servername/loggerserver/data.htm where 'servername' is the name of your web server provided by your web or system administrator. The data request page appears:

2. Type your User ID and Password.

3–4. Either type the SMS Address or the Meter ID.

5. Type the Meter Password.

6. Select the Record type from the drop-down list.

7. Type the Logger Channel Number. Note. If you selected Totalizer as the record type, type 1.

8. Type the Time from and Time to.

9. Click the Send Data Request button. The request is sent to the AquaMaster via the SMS Logger Server.
C4  Send Setting Request

1. – Open your web browser and in the address bar type: http://servername/loggerserver/dib.htm where ‘servername’ is the name of your web server provided by your web or system administrator. The dib request page appears:

- Type your **User Id** and **Password**.
- Either type the **SMS Address** or the **Meter Id** of the AquaMaster.
- Type the **Meter Password**.
- The following settings are optional:
  - Interval
  - Flow Schedule
  - Press Schedule
  - Log Hour
  - Schedule

7. – Click the **Send Settings Request** button. The request is sent to the AquaMaster via the SMS Logger Server.
XML commands are used when the Configure External Database dialog Single table XML data option is selected – see page 13.

<AckDib>
Set true to acknowledge a received DIB report.

Restriction = boolean

<Addr>
Destination / originating address (SMS phone number).

<Alarm>
AquaMaster meter alarm reporting. This is decoded from any alarm codes within the report message data. An alarm code may correspond to one or more alarm conditions.

Value = AlarmCode

Restriction = nonNegativeInteger

Value = AlarmInfo

<AppId>
AquaMaster application program ID string.

<BootId>
AquaMaster boot program ID string. AquaMaster’s Meter ID string.

<ChangeInfo>
String of changed settings that can be kept in an event log.

Maximum length value = 255

<CheckId>
Set true by the SMS Logger Server if the client databases should run meter ID / SMS address checks on the message data.

Restriction = boolean

<ClockAdjust>
Value for adjusting AquaMaster’s real-time clock:

+ve value for number of seconds to advance clock (Max. value 32400).

–ve value for number of seconds to rewind clock. (min value –32400).

Restriction = Integer

Min. value = –32400

Max. value = 32400

Log record request limits.

<ErrCode>
String holding specific error code.

Restriction = string

Value = LOGERR_UNDEFINED

Value = LOGERR_INVALID_SUPPLIER_CODE

Value = LOGERR_INVALID_REQUEST_FORMAT

Value = LOGERR_INVALID_REQUEST_PASSWORD

Value = LOGERR_INVALID_REQUEST_PARAMETER

Value = LOGERR_NO_DATA_IN_REQUEST_RANGE

Value = LOGERR_METER_ALARM_REPORTED

<ErrSrc>
String holding module name that detected the error (for information purposes only).

<ErrText>
String holding a more detailed explanation of the error condition (for information purposes only).
<FlowRec>
Flow record data.
  Value = Timestamp
  Value = FlowVal
</FlowRec>

<FlowRecData>
Flow record data.
  Value = FlowUnits
  Value = FlowRec
</FlowRecData>

<FlowUnits>
Units string for reported flow values.
  Restriction = string
  Value = l/s
  Value = l/h
  Value = MLD
  Value = m^3/h
  Value = Ugal/m
  Value = Ugal/h
  Value = MUGD
</FlowUnits>

<FlowVal>
Flow value.
  Restriction = decimal
</FlowVal>

<FpLogNo>
Acceptable range for specifying a flow / pressure logger channel number.
  Restriction = positiveInteger
  Min. value = 1
  Max. value = 2
</FpLogNo>

<FpSchedule>
Schedule for automatic reporting of flow and pressure reports.
  Restriction = string
  Value = off
  Value = daily
</FpSchedule>

<IsDib>
Set true by the SMS Logger Protocol Codec DLL if the received report is a DIB report.
  Restriction = boolean
</IsDib>

<Location>
Geographical location description for the AquaMaster.
</Location>

<LoggingInterval>
Flow / pressure logging interval in seconds.
  Restriction = nonNegativeInteger
  Min value = 60
  Max. value = 65535
</LoggingInterval>

<LOGERR_UNDEFINED>
This is used for any error that does not have its own error string defined.
</LOGERR_UNDEFINED>

<LogErr>
Logger Error Reports.
  Value = ErrCode
  Value = ErrSrc
  Value = ErrText
</LogErr>

<LogReq>
Used to specify the type and time range of required records. If flow or pressure records are required an optional logger channel number can be specified. If this is not specified, then the reported data is from logger 1. This is ignored if the record type is not for flow or pressure records.
</LogReq>
<LogSettings>
Used for changing logger settings. Note that if the flow/pressure logging interval is changed the logger is reset automatically.
Set the ResetFPLog attribute to true to reset the flow/pressure logger regardless of the logger settings.
  Value = FpLoggingInterval
  Value = FlowRptSchedule
  Value = PresRptSchedule
  Value = Tot Logging Hr
  Value = Tot Rpt Schedule
  Value = ResetFPLog

<MeterBore>
Pipe bore size (in mm) that the AquaMaster is configured to use.
  Restriction = decimal

<MeterId>
This can be used as a unique identifier for the meter.

<nonEmptyString>
Type for a string that has minimum of 1 character.

<Password>
AquaMaster admin level password string.

<PresRec>
Pressure record data.
  Value = Timestamp
type = Timestamp
  Value = PresVal
type = PresVal

<PresRecData>
Pressure record data.
  Value = PresUnits
  Value = PresRec

<PresUnits>
Units string for reported pressure values.
  Restriction = string
  Value = Bar
  Value = kPa
  Value = psi

<PresVal>
Pressure value.
  Restriction = decimal

<RecType>
String for associated record type.
  Restriction = string
  Value = flow
  Value = pressure
  Value = totals

<ReqDib>
Set true to request the meter send its Device Information Block which includes the Meter ID.
  Restriction = boolean

<ResetFPLog>
Set true in a request to indicate the flow-pressure log should be reset or indicates that it has been reset if in a report.
  Restriction = boolean

<SmsTimestamp>
Service centre timestamp in read SMS message.

<SupplierCode>
AquaMaster’s supplier code.
  Restriction = nonNegativeInteger

<TarUnits>
Units string for totalizer tariff values.
  Restriction = VolumeUnits
<TextCmd>
Text-based command string for request messages.

<TimeInterval>
TimeDiff is the difference in seconds between the Service Center Timestamp and the report’s own timestamp.
The SMS message includes the time difference along with the AquaMaster time in the report. This allows automatic time correction to be made if the difference gets too much.
Restriction = Integer

<TimeFrom>
TimeFrom used in requests for specifying the start time of a range.
Restriction = dateTime

<Timestamp>
Timestamp (used as record timestamps and report timestamp).
Restriction = dateTime

<TimeTo>
TimeTo used in requests for specifying the end time of a range.
Restriction = dateTime

<TotFwdRevType>
Totalizer’s total forward / reverse flow volume value type.
Restriction = Unsigned Integer
Min. value = 0
Max. value = 99999999

<TotLogHr>
Hour of day for that totalizer logger will write records.
Restriction = nonNegativeInteger
Min. value = 0
Max. value = 23

<TotNetType>
Totalizer’s total net / tariff flow volume value type.
Restriction = Integer
Min. value = -99999999
Max. value = 99999999
Type for valid volume units string used in totalizer and tariff records.

<TotRec>
Totalizer record data.
Value = Timestamp
Value = TotFwdVal
Value = TotRevVal
Value = TotNetVal
Value = TotTarAVal
Value = TotTarBVal

<TotRecData>
Totalizer record data.
Value = TotUnits
Value = TarUnits
Value = TotRec

<TotSchedule>
Schedule for automatic reporting of totalizer reports.
Restriction = string
Value = off
Value = daily
Value = weekly
Value = monthly

<TotUnits>
Units string for totalizer forward, reverse and net values.
Restriction = VolumeUnits
<UamId>
AquaMaster UAM program ID string.

<VolumeUnits>
Definitions have been included as MPAP system removes the caret.
   Restriction = string
   Value = m3
   Value = m^3
   Value = l
   Value = Ugal
   Value = Ml
   Value = ft3
   Value = ft^3
   Value = Gal

   Note. m3 and ft3 are equivalent to m^3 and ft^3 respectively.
PRODUCTS & CUSTOMER SUPPORT

Products

Controllers & Recorders
- Single and Multi-loop Controllers
- Circular Chart and Strip Chart Recorders
- Paperless Recorders
- Process Indicators

Flexible Automation
- Industrial Robots and Robot Systems

Flow Measurement
- Electromagnetic Flowmeters
- Mass Flow Meters
- Turbine Flowmeters
- Flow Elements

Marine Systems & Turbochargers
- Electrical Systems
- Marine Equipment
- Offshore Retrofit and Referbishment

Process Analytics
- Process Gas Analysis
- Systems Integration

Transmitters
- Pressure
- Temperature
- Level
- Interface Modules

Valves, Actuators and Positioners
- Control Valves
- Actuators
- Positioners

Water, Gas & Industrial Analytics

Instrumentation
- pH, Conductivity, and Dissolved Oxygen Transmitters and Sensors
- Ammonia, Nitrate, Phosphate, Silica, Sodium, Chloride, Fluoride, Dissolved Oxygen and Hydrazine Analyzers.

Customer Support

We provide a comprehensive after sales service via a Worldwide Service Organization. Contact one of the following offices for details on your nearest Service and Repair Centre.

United Kingdom
ABB Limited
Tel: +44 (0)1453 826661
Fax: +44 (0)1453 829671

United States of America
ABB Inc
Tel: +1 215 674 6000
Fax: +1 215 674 7183

Client Warranty

Prior to installation, the equipment referred to in this manual must be stored in a clean, dry environment, in accordance with the Company’s published specification. Periodic checks must be made on the equipment’s condition. In the event of a failure under warranty, the following documentation must be provided as substantiation:

1. A listing evidencing process operation and alarm logs at time of failure.
2. Copies of all storage, installation, operating and maintenance records relating to the alleged faulty unit.