



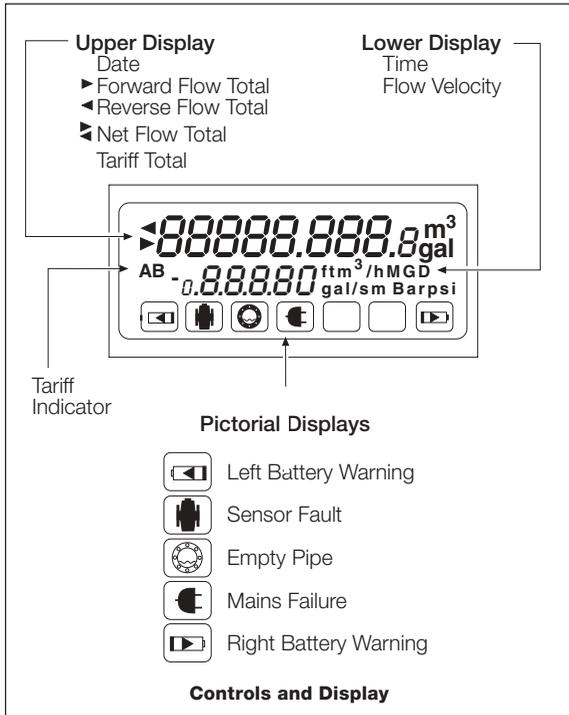
CONTROLS AND DISPLAY

This Quick Reference Guide is applicable to product firmware version 1.25 or greater. The transmitter version number can be obtained by keying >0 

When the unit is taken out of storage and installed for first use, remove the protective label (if fitted) from the front to allow light to activate the unit. If the instrument is not powered, connect any batteries or external supply as detailed in the Installation Manual.



Important. Read the manual for battery condition monitoring.



PROGRAMMING

Setting up the PC – HyperTerminal Setup

(Example from Windows NT – other versions of Windows vary)

From the Windows **Start** menu choose **Programs – Accessories – Hyperterminal – HyperTerminal.**

At 'New connection' enter : AquaMaster

At 'Connect using' choose : COM1 or COM2 (depending on the PC connection)

At 'Port setting' prompt choose Bits per second: 4800, Data bits: 8; Parity: None; Stop bits: 1; Flow control: none.

Programming the AquaMaster

To access programming mode, connect the AquaMaster to a computer via either of the serial port connections – see Instruction Manual ('Local or Remote Computer Connection' sections).

Use serial port settings: Baud: 4800; Data bits 8; Stop bits: 1; Parity: no.

Press **Tab** twice to activate the programming mode.

The following display appears on the computer screen:

AquaMaster...

Nav Mode: TAB, Disp Mode: Ctrl + W

Pressing the **Ctrl** + **W** keys simultaneously initiates display mode, with the same information as that on the transmitter display.

Press **Esc** to cancel display mode.

Pressing the **Tab** key produces the following screen:

[Next Menu=TAB][Next Item=ENTER]

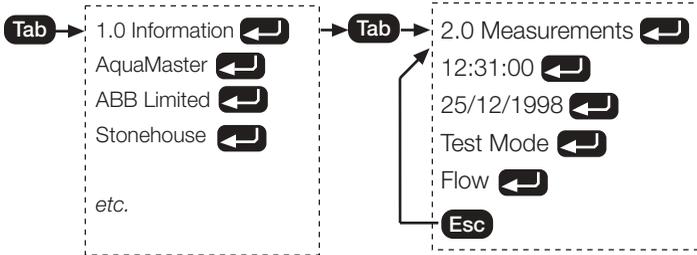
[Edit = SPACE][Exit = ESC]

1.0 Information

...PROGRAMMING

Further key operations access the menus as follows:

= Menu Displayed Text; = User entered data ; = **Function Key**



Note. Pressing **M** within a menu displays all the remaining parameters immediately.

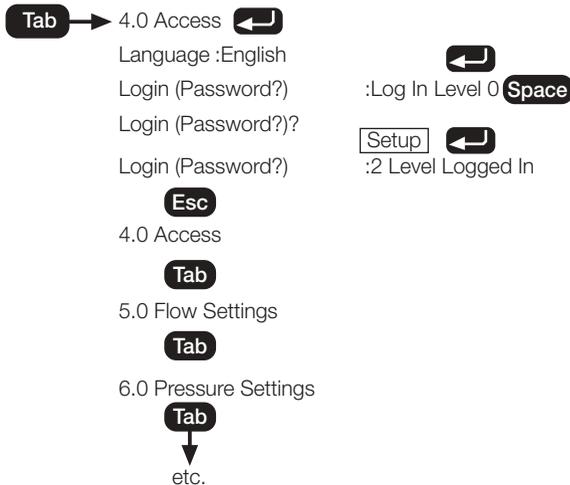
SECURITY ACCESS

There are two levels of password control:

Level	Default Password	Menus
2	setup	1 to 7
4	am2k	1 to 10

Note. Passwords are case sensitive and may be changed by the user in menu 4.0.

Logging In



PARAMETER CHANGES

Tab → Flow Units : l/s **Space**

Flow Units? l/s **Space** (Repeat space function key until required units are displayed)

Flow Units? l/m

Flow Units : l/m **↵**

↵

FSD(100% or URV) 200 l/m

Note. Use **Esc** to escape or cancel in input mode, or to exit a menu.

Changing Selections

Note. Ensure that the correct access level is selected.

It is possible to enter data directly into the AquaMaster without navigating the menu system. This is achieved by using the 'Command Line Interface' (CLI). To read the value of a variable, type **>** followed by the variable number (see overleaf), then press **↵**.

To write a new value to a variable, type **>**, the variable number, **=** and the new value required, followed by **↵**. In both cases the AquaMaster will reply with the new value of the variable (or a reason for failure) e.g.:

>217 **↵** <0>217=42

>217=42 **↵** <3>217=Write Access Denied

Where

217 is the number for the flow rate

<0> is the error code for 'no error'

42 is the current flow rate

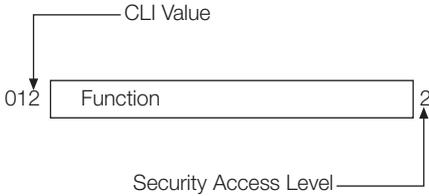
<3> is the error code for 'Write Access Denied', since writing to the flow rate is not allowed.

To change the flow FSD to 10 m³/min:

	Comments
>248=setup ↵ <0>248=2 logged in	<i>enter password</i>
>112 ↵ <0>112=1 l/s	<i>read present flow units</i>
>115 ↵ <0>115=250	<i>read present fsd</i>
>115=10 ↵ <0>115=10	<i>set new fsd value of 10</i>
>112=6 ↵ <0>112=6 m ³ /m	<i>set units to number 6 (m³/min)</i>

To cancel the password security, press **Esc** until the front screen is reached.

MENU LAYOUT



1.0 Information			
199	AquaMaster	R	
200	ABB Limited	R	
201	Stonehouse	R	
202	England, UK, GL10 3TA	R	
203	tel +44 (0)1453 826661	R	
204	flow@gb.abb.com	R	
163	Owner	:	2
162	Location	:	2
206	Message	:	2
Flow Sensor			R
1	I.D.	:	R
17	Contract	:	R
8	Meter Type	:	R
27	Cal. Date	:	4
28	Cert. No.	:	4
33	Flow Tag/Site ID	:	4
237	Bore (mm)	:	R
21	Lining	:	R
22	Electrodes	:	R
23	Flanges	:	R
24	Body	:	R
Transmitter			R
207	I.D.	:	R
208	P.I.N.	:	R
209	Contract	:	R
212	Transmitter Tag	:	2
	Exit	:	0

2.0 Measurements			
253	Time	:	4
254	Date	:	4
233	Test Mode	:	4*
246	Alarms	:	4
217	Flow	:	R
218	Flow %	:	R
219	Velocity	:	R#
258	Pulse Output	:	R
224	Fwd	:	4 ^Z
225	Rev	:	4 ^Z
226	Net	:	4 ^Z
227	Tariff A	:	4 ^Z
228	Tariff B	:	4 ^Z
231	Left Batt. (Days)	:	R
232	Right Batt./Mains (Days)	:	R
245	Prev. Left Batt. (Days)	:	R
299	Prev. Right Batt. (Days)	:	R
234	Sig A (kohm)	:	R
235	Sig B (kohm)	:	R
	Exit	:	0

* Test Mode sets the flow velocity to 1 m/sec for test purposes. Only affects Fwd, Rev, Net totalisers and Pulse Output.

Z Reset to Zero only.

Velocity units may be altered to ft/s as follows (Write Level Access 2):
 >109=5 <0>109=5 ft/s
 >109=1 for m/s

3.0 Display Options			
52	Fwd	:	0
53	Rev	:	0
54	Net	:	0
55	Tariff A	:	0
56	Tariff B	:	0
59	Flow	:	0
60	Velocity	:	0
62	Date/Time	:	0
159	Date Format	:	2
	Exit	:	0

Date Formats

DDMMYY
 YYMMDD
 MMDDYY

Note: Enter a new date in the same format as it is displayed, e.g. 2001/3/27

If the year is entered as two digits, it will be assumed to be in the range 1990 to 2089 inclusive.

MENU LAYOUT

4.0 System Access

248	Login (Password)	:	0
249	Change Password	:	4
250	Current Password	:	4
251	New Password	:	4
252	Confirm New Password	:	4
	Exit	:	0

5.0 Flow Settings

112	Flow Units	:	2
115	FSD (100% or URV)	:	2*
116	Zero (0% or LRV)	:	2
118	Cutoff (%)	:	2*
37	Totalizer Units	:	4
67	Pulse Units	:	2
68	Pulses/Unit	:	2
69	Pulse Max Freq.	:	2
113	Special Units (per m ³ /s)	:	2
114	Special Flow Name	:	2
38	Special Units (per m ³)	:	4
39	Special Totalizer Name	:	4
	Exit	:	0

*Only affects Fwd, Rev, Net totalizers and Pulse Output.

Flow Units		Totalizer Units or Pulse O/P Units
Special	Gal/m	Special
l/s	Gal/h	l
l/m	MGD	m ³
l/h	ft ³ /s	Gal
MLD	ft ³ /m	ft ³
m ³ /s	ft ³ /h	MI
m ³ /m	Ugal/s	
m ³ /h	Ugal/m	
m ³ /d	Ugal/h	
Gal/s	MUGD	

6.0 Pressure Settings

	Exit	:	0
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7.0 Outputs

70	Output 1	:	4
71	Output 2	:	4
	Exit	:	0

Output 1	Output 2
Off	Off
On	On
Pulse Fwd	Pulse Rev
Pulse F+R	Fwd
	Rev

8.0 Pressure Setup

Pressure Transducer Calibration (menu)			
	Exit	:	0

8.1 Pressure Transducer Calibration

	Exit	:	0
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9.0 Flow Cal

30	Profile Factor	:	4
31	Insertion Factor	:	4
32	Probe Pipe Bore (mm)	:	4*
102	Mode	:	4
256	Flow Response Time	:	4
25	Flow Span Trim	:	4
26	Flow Zero Trim (0.01mm/sec)	:	4
27	Cal. Date	:	4
28	Cert. No.	:	4
	Exit	:	0

* This parameter is ignored if the sensor is not an insertion probe (AquaProbe).

10.0 Tariff Control

42	Daily Cycle Start Time	:	4
43	Daily Cycle End Time	:	4
44	Weekly Cycle Start Day	:	4
45	Weekly Cycle End Day	:	4
46	Yearly Cycle Start Date	:	4
47	Yearly Cycle End Date	:	4
40	Mode	:	4
	Exit	:	0

TARIFF CONTROL

Notes to Tariff Control:

The Tariff Control menu is used for defining Tariff A only.

Tariff B is always the opposite of Tariff A.

Daily Cycle Start Time defines the start of normal day time.

Weekly Cycle Start Day defines the first day of the weekend (from 00:00). Weekly Cycle End Day defines the first day of the week (at 00:00).

[e.g. for a normal weekend (Saturday and Sunday only) set Weekly Cycle Start Day = Saturday and set Weekly Cycle End Day = Monday]

To use a Yearly Cycle set Weekly Cycle Start Day = None and set Weekly Cycle End Day = None.

Yearly Cycle Start Date defines the day and month of the start of summer. Yearly Cycle End Date defines the day and month of the start of winter.

Weekly Cycle Defined		
Mode	Tariff A	Tariff B
1	Day time during weekend	Night time at weekend + day and night during week
2	Day time during week	Night time during week + day and night during weekend
3	All day times	All night times
4	Night time during weekend	Day time during weekend + day and night during week
5	Day and night during weekend	Day and night during week
6	Day time during week + night time during weekend	Night time during week + day time during weekend
7	All day times + night time during weekend	Night time during week

Yearly Cycle Defined (Weekly Cycle = None)

Mode	Tariff A	Tariff B
1	Day time during summer	Night time during summer + day and night during winter
2	Day time during winter	Night time during winter + day and night during summer
3	All day times	All night times
4	Night time during summer	Day time during summer + day and night during winter
5	Day and night during summer	Day and night during winter
6	Day time during winter + night time during summer	Night time during winter + day time during summer
7	All day times + night time during summer	Night time during winter

SCANREADER OPTION INTERFACE SETTINGS

The ScanReader option interface is factory set and normally requires no changes. There is no user interface menu, but changes can be made using the method described in **Changing Selections** on page 4. The notes below define the permitted data entry values for the various parameters. The ScanReader options are at security access level 4.

325 **Serial Number 4**

10 character string. Allowed characters are the digits 0 to 9 and alphabets a to z.

Upper case will be transmitted as lower case.

Default setting is 0000000000

This is the serial number that is reported via the ScanReader interface.

If this is set to 0000000000 the rightmost 9 digits of the sensor ID number prefixed with a 7 will be used as the ScanReader serial number. Invalid characters will be ignored.

326 **Adapter Code 4**

0 = ScanCoder
1 = AquaMaster

Default setting is 0

Selects the error code capability of the interface.

'0' will provide no error code information.

'1' will provide extended error code information to enabled Readers.

327 **Totaliser Source and Range 4**

0 = Fwd	x1
1 = Rev	x1
2 = Net	x1
3 = Fwd	x10
4 = Rev	x10
5 = Net	x10
6 = Fwd	x100
7 = Rev	x100
8 = Net	x100

Default setting is 0

Selects the Totaliser source and resolution range for the Reader value field. Negative totals will be reported as 0.

ScanReader interface only has 6 digits defined for Totaliser value. Range setting defines how the 6 digits are used. For example, for range x100, a total of 12345678 would be conveyed to the Reader as 123456.