Quick Reference Guide

Electronic Commercial Water Meters with Integral Logger

AquaMaster S

IM/AMS/QRG Issue 5 08.04

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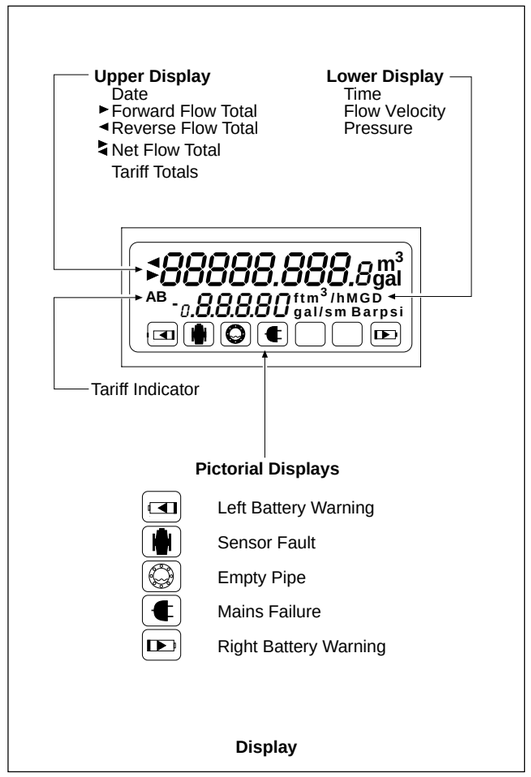
DISPLAY



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 Windows vary)
From the PC **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: 4800 Baud, 8 data bits,1 stop bit and no parity.
Press Tab twice to activate the programming mode.

…PROGRAMMING

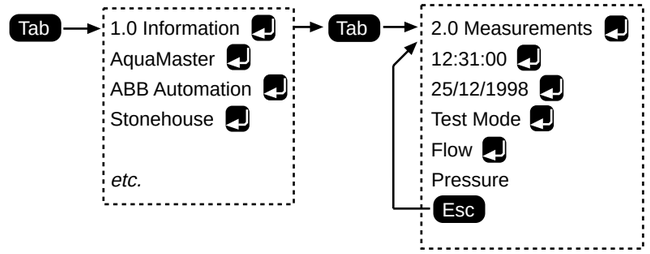
The following display appears on the computer screen:
AquaMaster…
Nav Mode: TAB, Disp Mode: Ctrl + W
Pressing the Ctrl + W keys simultaneously produces the display mode, with the same information as that on the transmitter display.

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

Further key operations access the menus as follows:

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



Note. Pressing M within a menu will list all the remaining parameters immediately.

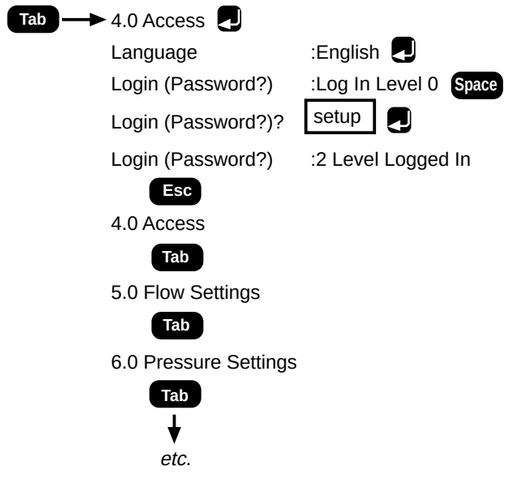
SECURITY ACCESS

There are two levels of password control:

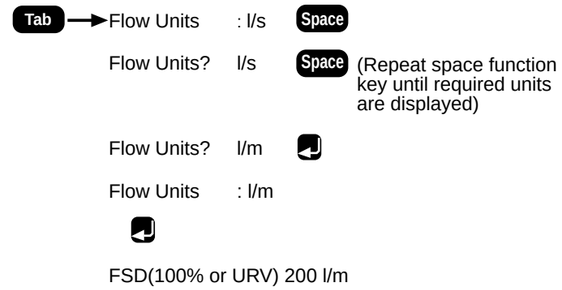
Level	Default Password	Menus
2	setup	1 to 7
4	am2k	1 to 11

Note. Passwords are case sensitive

Logging In



PARAMETER CHANGES



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 a right chevron > followed by the variable number (see overleaf), then press ↵.

To write a new value to a variable, type a right chevron >, the variable number, an equal sign = 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	*enter password*
>112 ↵	<0>112=1 l/s	*read present flow units*
>115 ↵	<0>115=250	*read present fsd*
>115=10 ↵	<0>115=10	*set new fsd value of 10*
>112=6 ↵	<0>112=6 m^3/m	*set units to number 6 (m^3/min)*

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

Menus 1 to 4: Free Access

Variable Number — Write Access Level — Parameter Value

	1.0 Information			
199	AquaMaster			R
200	ABB Limited			R
201	Stonehouse			R
202	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
	Pressure Sensor			R
171	I.D.	:		4
196	Cal. Date	:		4
197	Cert. No.	:		4
189	Contract	:		4
191	Wetted Parts	:		4
192	Seals	:		4
	Transmitter			R
207	I.D.	:		R
208	P.I.N.	:		R
209	Contract	:		4
212	Transmitter Tag	:		4
	Exit	:		0

	2.0 Measurements (see Notes)		
253	Time	:	4
254	Date	:	4
233	Test Mode	:	4*
246	Alarms	:	4
217	Flow	:	R
218	Flow %	:	R
219	Velocity	:	R#
222	Pressure	:	R
223	Pressure %	:	R
258	Pulse Output	:	R
224	Fwd	:	4Z
225	Rev	:	4Z
226	Net	:	4Z
227	Tariff A	:	4Z
228	Tariff B	:	4Z
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

Variable Number — Write Access Level — Parameter Value

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

	4.0 System Access		
161	Language	:	0
248	Login (Password)	:	0
249	Change Password	:	4
250	Current Password	:	4
251	New Password	:	4
252	Confirm New Password	:	4
	Exit	:	0

LEVEL 2

	5.0 Flow Settings (see Notes)		
112	Flow Units	:	2
115	FSD (100% or URV)	:	2+
116	Zero (0% or LRV)	:	2
118	Cutoff (%)	:	2+
37	Totaliser 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 Totaliser Name	:	4
	Exit	:	0

+ Only affects Fwd, Rev, Net Totalisers and Pulse Output.

	6.0 Pressure Settings (see Notes)		
66	Mode	:	2
119	Pressure Units	:	2
122	FSD (100% or URV)	:	2
123	Zero (0% or LRV)	:	2
120	Special Units (per Bar)	:	2
121	Special Pressure Name	:	2
	Exit	:	0

	7.0 Outputs (see Notes)		
70	Output 1	:	4
71	Output 2	:	4
	Exit	:	0

LEVEL 4

Variable Number — Write Access Level — Parameter Value

	8.0 Pressure Transducer Setup		
178	Pressure FSD Bar	:	4
176	Mode	:	4
255	Offset (mm)	:	4
257	Pres. Response Time	:	4
193	Span Trim	:	4
194	Zero Trim	:	4
196	Cal. Date	:	4
197	Cert. No.	:	4
179	Factory FSD (mV/V)	:	4
180	Factory Zero (mV@3V)	:	4
186	First Fact. Cal.	:	4
187	Last Fact. Cal.	:	4
188	Cert. No.	:	4
	Exit	:	0

	9.0 Flow Cal (see Notes)		
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

	10.0 Tariff Control (see Notes)		
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

	11.0 Logger		
166	Logger 1 Interval (s)	:	4
168	Logger 2 Interval (s)	:	4
	Exit	:	0

Notes

2.0 Measurements Notes

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

4Z 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 Notes

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.

5.0 Flow Settings Notes

Units		Totaliser 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	Ugal
m^3/m	Ugal/s	Ml
m^3/h	Ugal/m	
m^3/d	Ugal/h	
Gal/s	MUGD	

6.0 Units Notes

Units	
Special	mm Hg
Bar	m H2O
mBar	psi
kPa	ft H2O

7.0 Outputs Notes

Output 1	Output 2
Off	Off
On	On
Pulse Fwd	Pulse Rev
Pulse F+R	Fwd
AL-NO	Rev
AL-NC	AL-NO
	AL-NC

9.0 Flow Cal Notes

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

Notes to 10 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