MONO

Innovative equipment
for traditional baking

User Manual

Eco-Flow ZERO Water Meter

FG011-A06

/6.1 DQ0 HOT VALVE %QX0.2
/6.3 DQ2 MIXER 1 OUTPUT VALVE %QX0.4
NC
/6.4 DQ3 MIXER 2 OUTPUT VALVE %QX0.5
DQ5 %QX0.7
NC
/7.1
D
V-
FQ0 PT000
C0
DI0 %IX0.2
C1
DI2 %IX0.4
DI4 %IX0.6
/8.1 TI0-
EX0-
/8.2 TI1-
EX1-
C2
AIC0 %IW2
C3
/9.2 AQ1 HOT / CHILLED PROP VALVE %QW3
C
V+
EX0+ %IW4
/8.2 TI1+ WATER TEMPERATURE %IW5
EX1+ %IW5
AIV0 %IW2
AIV1 %IW3
AIC1 %IW3
/9.1 AQ0 AMBIENT PROP VALVE %QW2

www.monoequip.com

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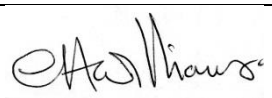
Declaration of Conformity 1

We hereby declare that this machine complies with the essential health and safety requirements of:-

- The Machinery Directive 2006 / 42 / EC
- The Low voltage Directive 2006 / 95 / EC
- The requirements of the Electromagnetic Compatibility Directive EN61326-1:2006, EN61326-1:2013
- The General Safety of Machinery and food processing Standards applicable
- Materials and Articles intended to come into contact with food Regulation (EC) No. 1935 / 2004

Signed	
G.A.Williams – Quality Manager	

Date	

Machine FG Code.		**Machine Serial No.**	

A technical construction file for this machine is retained at the following address:

MONO EQUIPMENT
Queensway,
Swansea West Industrial Park,
Swansea
SA5 4EB
UK

MONO EQUIPMENT is a business name of **AFE GROUP Ltd**
Registered in England No.3872673 VAT registration No.923428136

Registered office: Unit 35,
Bryggen Road, North Lynn Industrial Estate, Kings Lynn Norfolk, PE30 2HZ

Introduction to the Eco-Flow Zero Water Meter

2

Congratulations on the purchase of your Eco-Flow Zero Water Meter which has been manufactured to the highest standards by MONO Equipment; a water meter which we are proud to announce has ZERO Water Wastage.

Water is a commodity we cannot live without, and due to population growths, changing weather patterns and global warming etc. it is generally accepted around the world that we should try to conserve as much of this expensive resource as we can. Using the Eco-Flow Zero Water Meter will help towards this goal.

The state-of-the-art water meter features a full-colour touch-screen control panel which provides a simple user-friendly interface to the many features and benefits inherent in the Eco-Touch Zero, including the ability to manage product recipes and control up to 2 mixers simultaneously. Full details can be found online at **www.monoequip.com.**

This User Manual covers Eco-Flow Zero Water Meter models FG011-A06.

2.1 Key Features

ZERO Water Wastage technology combined with great energy efficiency

WRAS Approved

User-friendly, icon-driven, touch screen navigation with comprehensive recipe management facility

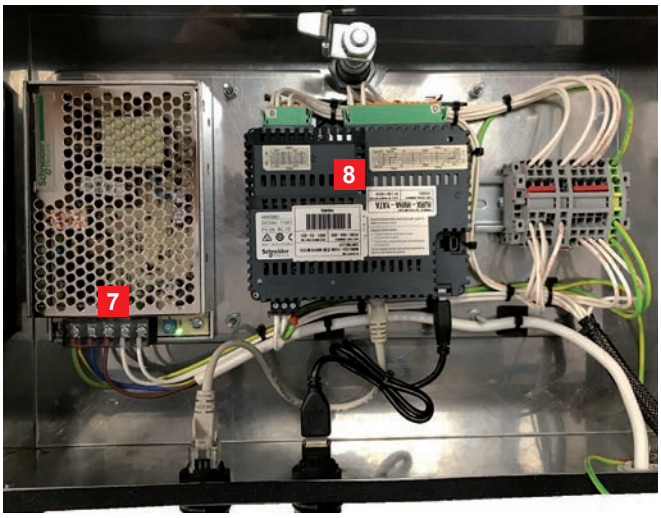
Tablet and smart phone display air mirroring capability

Energy Monitoring Software with real-time management information via KPI screens, including exceptions reporting on usage times, idling times etc.

Self-Diagnosis screens. Alarms/ run-time diagnostics

Ethernet and USB compatible

Product Design 3



3.1 Product Layout

1 HMI Touchscreen

2 Ethernet Port

3 USB Port

4 Water Outlet L

5 Water Outlet R

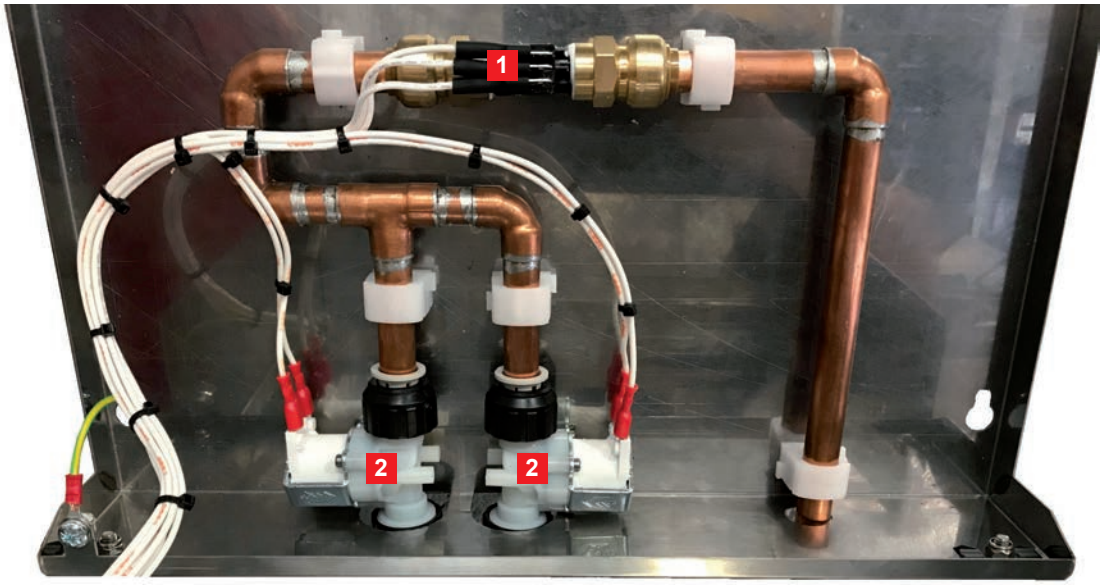
6 Ambient Water Inlet

7 Power Supply

8 HMI Touchscreen Controller Unit

Product Design 3

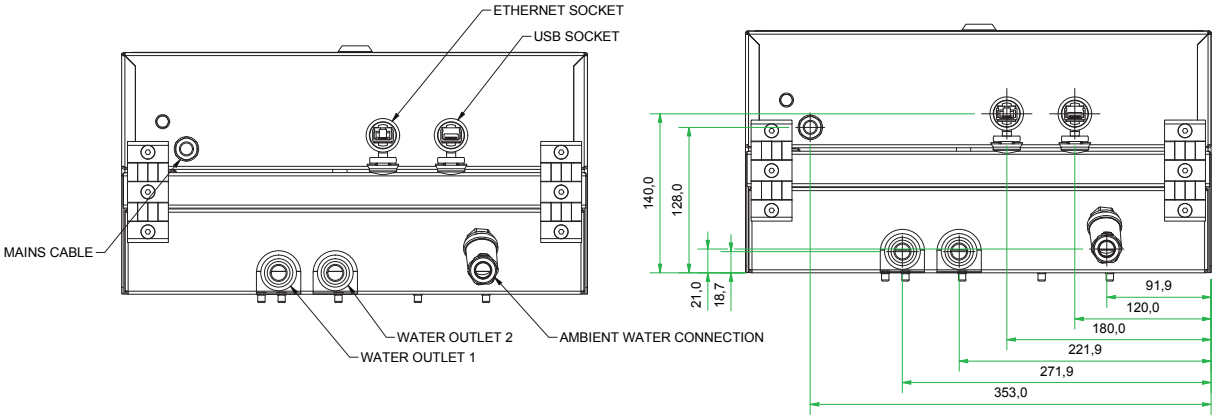
3.2 Product Diagramatics

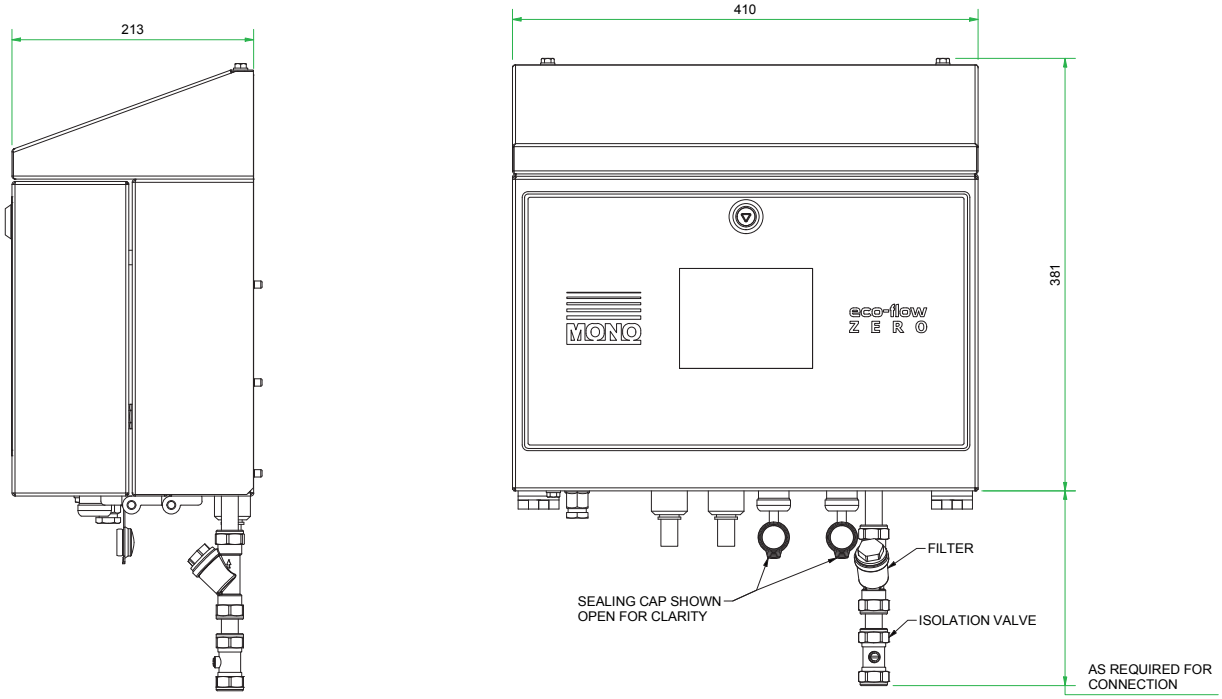


1 Flow Meter

2 Solenoid Valve

Product Design





Product Specifications FG011-A06 4

Item	Specification
Supply Voltage	230V AC - 240V AC / 110V AC
Fuse Rating	5A
USB	2.0
Display Size	5.7 inch
Display Type	Backlit Colour TFT LCD
Display Resolution	320 x 240 pixels QVGA
Operating Temperature Range	0°C to 50°C (32°F to 122°F)
Weight of Unit	14.5kg (plus additional 1kg with installation kit)
Weight of Unit (Packaged)	18kg (plus additional 1kg with installation kit)
Minimum Inlet Water Pressure	Flow 1 litre/minute
Maximum Inlet Water Pressure	Flow 20 litres/minute
Chilled Water Inlet Temperature Range	Optimum 1°C to 5°C (33.8°F to 41°F) Range 1°C to 10°C (33.8°F to 50°F)
Hot Water Inlet Temperature Range	Optimum 40°C (104°F) Range 30°C to 60°C (86°F to 140°F)
Ambient Water Inlet Temperature Range	Optimum 15°C to 30°C (59°F to 86°F)
Water Flow Rate	Optimum 10 litre/minute to 15 litres/minute Range 1 litre/minute to 20 litres/minute
Mixer Connectivity	Up to 2 - Escher M60 Premium

Safety Guide 5

5.1 General Safety Precautions

- This equipment must be installed by qualified personnel
- Disconnect all power before working on or inside equipment
- Ensure the mains power supply matches the power requirements of the product
- Do not strike the touch panel with a hard or pointed object, or press the touch panel with excessive force, since it may damage the touch panel or the display
- Do not use this unit in locations where large, sudden temperature changes may cause condensation inside
- Do not store or use the unit where chemicals (such as organic solvents, etc.) and acids can evaporate, or where chemicals and acids are present in the air
  - Corrosive chemicals; acids, alkalinise, liquids containing salt
  - Flammable chemicals: Organic solvents
- Do not use paint thinner or organic solvents to clean the screen. Avoid using cleaning agents.
- Do not store or operate the LCD display in areas receiving direct sunlight, since the sun's UV rays may cause the LCD displays quality to deteriorate
- After turning the unit OFF, be sure to wait 30 Seconds before turning it ON again
- Do not pressure wash or steam clean
- Please conform with storage recommendations as damage may occur if item is stored on its side
- All repairs and maintenance should be carried out by suitably qualified personnel.

Installation Instructions 6

6.1 Toolbox Required

- 1 x Flat Headed Screw Driver
- 1 x Fixing Template
- 1 x Electric / Battery Drill
- Suitable Drill Bit (depending on substrate)
- Suitable Rawlplugs (depending on substrate)
- Weighing Scales to Weigh 20+ kg
- Bucket to hold up to 20+ litre of liquid
- 1 x Pencil for marking the fixing positions on the wall
- Spirit level.

Please check that you have all the items listed above before starting the installation procedure.

6.2 General Installation Advice

- Suitable 13 amp socket / power supply
- Suitable access to ambient water supplies
- Ensure the wall on which the water meter is to be mounted is structurally stable and suitable to hold the weight of the unit
- Ensure the wall is clear of any debris and / or any obstructions (ie. Any old pipework etc)
- Ensure safe manual handling techniques are used throughout
- Hold the Fixing Template supplied at the correct height on the wall and mark the drill holes required using a pencil - ensuring the template is level
- Using the correct size drill bits, drill four holes produced using the Fixing Template and plug with the rawlplugs
- Carefully remove the water meter from the packaging and check that all the items are present
- Locate and mount the water meter on the wall, ensuring it is level.

Installation Instructions 6

— Once the water meter is securely fitted to the wall, the pipework can be installed and connected

— Once connected, you are now ready to commission the water meter.

6.3 Installing with Connections to Spiral Mixers Without Timers

— Connect the water inlet and outlets using the pipe and fixings supplied.

Cleaning Instructions 7

7.1 Daily Cleaning Procedures

This equipment should be cleaned daily using a soft cloth and approved chloride-free cleaning fluid.

NOTE: Do NOT use paint thinner, organic solvents, or a strong acid compound to clean the unit.

Setup Guide 8

Default screen for Eco-Flow Zero Water Meter with Non-Mixer Controls

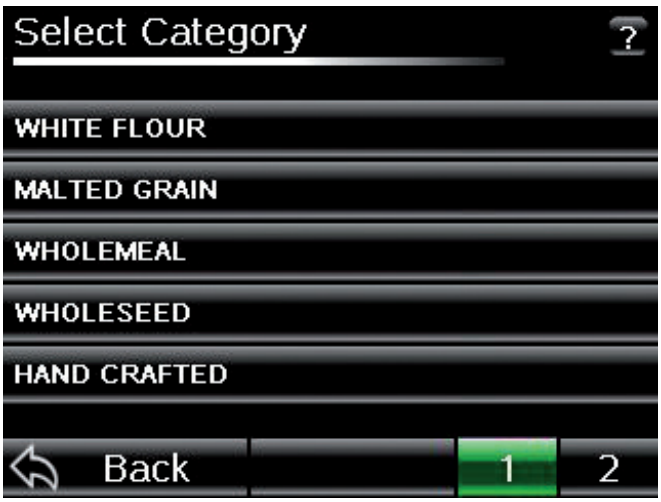
8.1 The Home Screen

— **STANDBY:** Pressing ‘Standby’ will take you back to the default home screen which is user - configurable

— **SLEEP:** Pressing ‘Sleep’ disables the backlight and switches the Eco -Touch Zero Water Meter to screensaver mode. After 10 minutes of inactivity (user-configurable), the screen will automatically enter Sleep Mode.

Operating Instructions 9

9.1.1 Mixers With Timer Controls



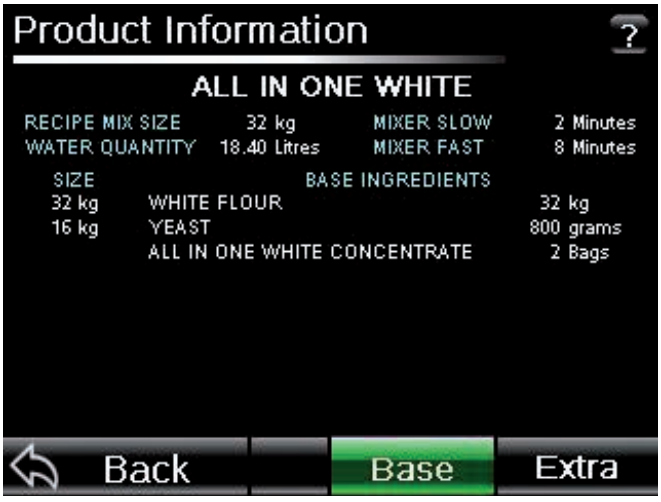
Procedure:

— Select Recipe (if only 1 mixer is set up then only 1 mixer icon will appear on the screen)

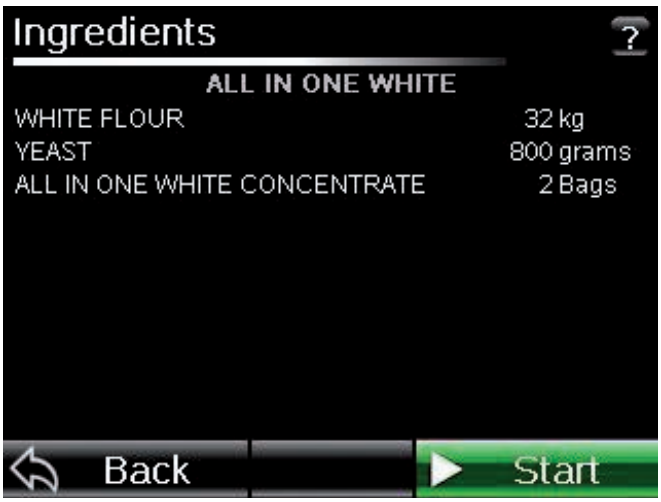
— Select Category (use Page Number at the bottom of the screen to navigate through the menus)

— Select Product (use Page Number at the bottom of the screen to navigate through the menus)

— Pressing the 'i' icon will display the Product Information prior to selection, including Base and Extra ingredients.



Operating Instructions 9



— Select ‘Mix Size’

— Load your ingredients in to mixer as displayed on the screen

— Press ‘Start’.

— Using the information provided set your mixer to operate for the set durations for slow and fast speeds

— Once you have done this press the ‘Next’ button

9.1.2 Adjusting the Mix (if Required)

— To add extra water at the end of a mix press the ‘Extra Water’ icon to add an additional 0.5 litres to a mix

— Start the mixer on Fast speed until the dough is the correct consistency

— Repeat the procedure as necessary to achieve the desired dough quality.

— Press the ‘Next’ button

Operating Instructions 9

9.1.3 Extra Ingredients

Upon completion of a mix, certain recipes will require ‘Extra Ingredients’

— On-screen will detail what additional ingredients are required

— Add the ingredients to the mixer

— After loading the extra ingredients set the mixer to mix for the desired amount of time

— Once the mix is complete press the ‘Next’ button

— Select if you wish to ‘Repeat the Recipe’ or ‘Finish’

9.1.4 Repeat Recipe

— Pressing the ‘Finish’ button takes you back to the home screen. Pressing the ‘Repeat’ button takes you back to the start of the mix.

Common Spare Parts 10

10.1 Electrical Spare Parts

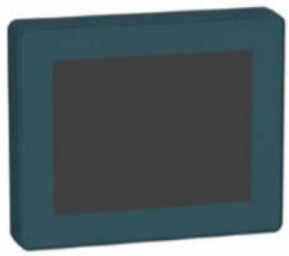
Flow Meter

Part no:	A900-34-396
Dimensions:	Inlet / Outlet: 3/8” 55mm(w) x 30mm(h)

Controller & HMI Screen

Part no:	B801-93-027
Dimensions:	5.7” Screen 169mm(w) x 129mm(h) x 75mm(d)

HMI Screen



Part no:	B801-93-029
Dimensions:	5.7” Screen 169mm(w) x 129mm(h) x 25mm(d)

Controller

Part no:	B801-93-031
Dimensions:	5.7” Screen 169mm(w) x 129mm(h) x 50mm(d)

Power Supply

Part no:	B801-93-005
Dimensions:	N/A

Solenoid Valve Push Fit

Part no:	A900-34-397
Dimensions:	Inlet/Outlet: 3/8”

USB Extension Cable

Part no:	B705-25-011
Dimensions:	N/A

3 Pin 13A Mains Plug

Part no:	B835-25-002
Dimensions:	N/A

Ethernet Socket

Part no:	B842-06-035
Dimensions:	Sealed 22mm

Common Spare Parts 10

10.1 Electrical Spare Parts Continued

USB Socket

Part no:	B842-06-036
Dimensions:	Sealed 22mm

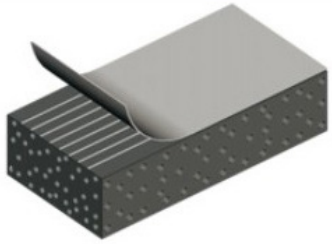
Ethernet Cable

Part no:	B705-25-012
Dimensions:	N/A

Common Spare Parts 10

10.2 Mechanical Spare Parts

Neoprene Door Seal Tape



Part no:	A900-12-036
Dimensions:	Length: 275mm x 2 Length: 410mm x 2

Chrome Pipe Installation Kit

Part no:	011-02-03400
Dimensions:	N/A

Chrome Pipe Installation Kit Straight Only

Part no:	011-02-01300
Dimensions:	Length: 1m

Polythene Tube

Part no:	A900-23-014
Dimensions:	Length: 1m Diameter: 19mm

Double Hinge

Part no:	A900-27-231
Dimensions:	N/A

Door Latch

Part no:	A900-27-232
Dimensions:	N/A

Door Key - Triangular

Part no:	A900-27-099
Dimensions:	N/A

Lanyard

Part no:	A900-34-412
Dimensions:	377mm Length

Lanyard

Part no:	A900-34-411
Dimensions:	456mm Length

Common Spare Parts 10

10.2 Mechanical Spare Parts Continued

Isolation Valve

Part no:	A900-34-406
Dimensions:	15mm Compression

Removable Filter

Part no:	A900-34-399
Dimensions:	15mm Compression

Mixer Hose

Part no:	011-02-03800
Dimensions:	N/A

Copperwork Backplate Complete

Part no:	011-02-03500
Dimensions:	N/A

Copperwork Backplate Section A

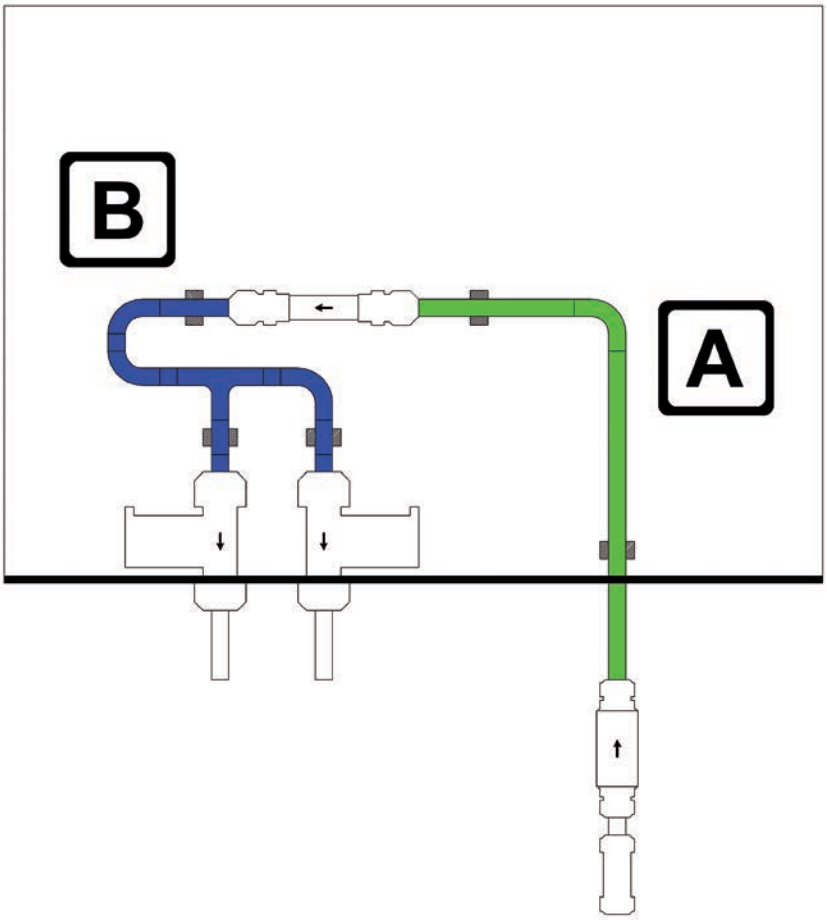
Part no:	011-02-03600
Dimensions:	N/A

Copperwork Backplate Section B

Part no:	011-02-03700
Dimensions:	N/A

Common Spare Parts 10

10.2 Mechanical Spare Parts Continued



Electrical Diagrams 11

11.1.1 Wiring Diagrams

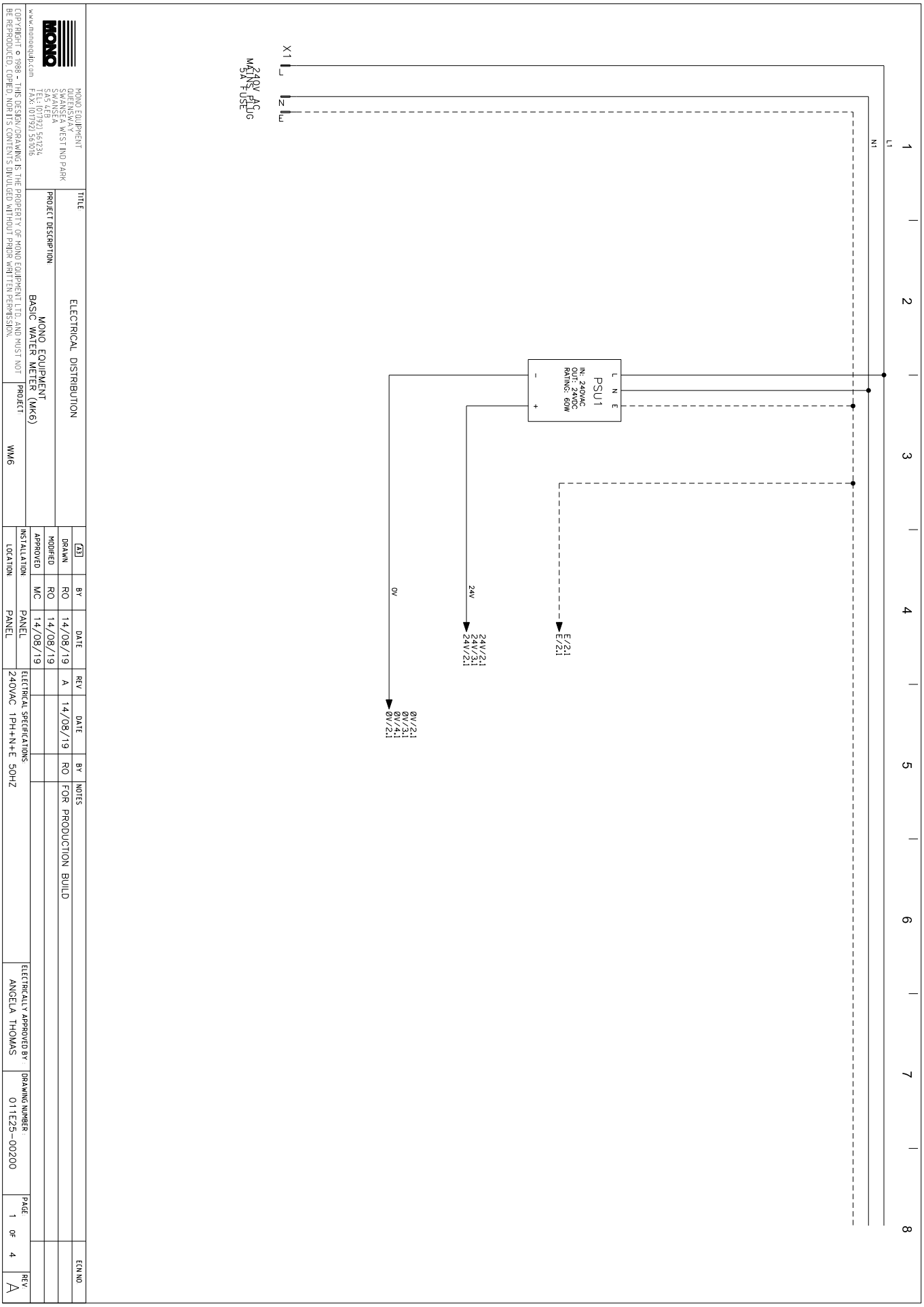
Page	Page Description
1	Electrical Distribution
2	HMI Controller Layout
3	Remote I/O Layout
4	Controller Inputs
5	Controller Inputs
6	Controller Outputs
7	Controller Outputs
8	Controller Analogue Inputs

Revision History

Revision	Date	Page Description
A	25/11/2013	As Built Wiring Diagrams
B	14/06/2016	Product Wiring Diagrams

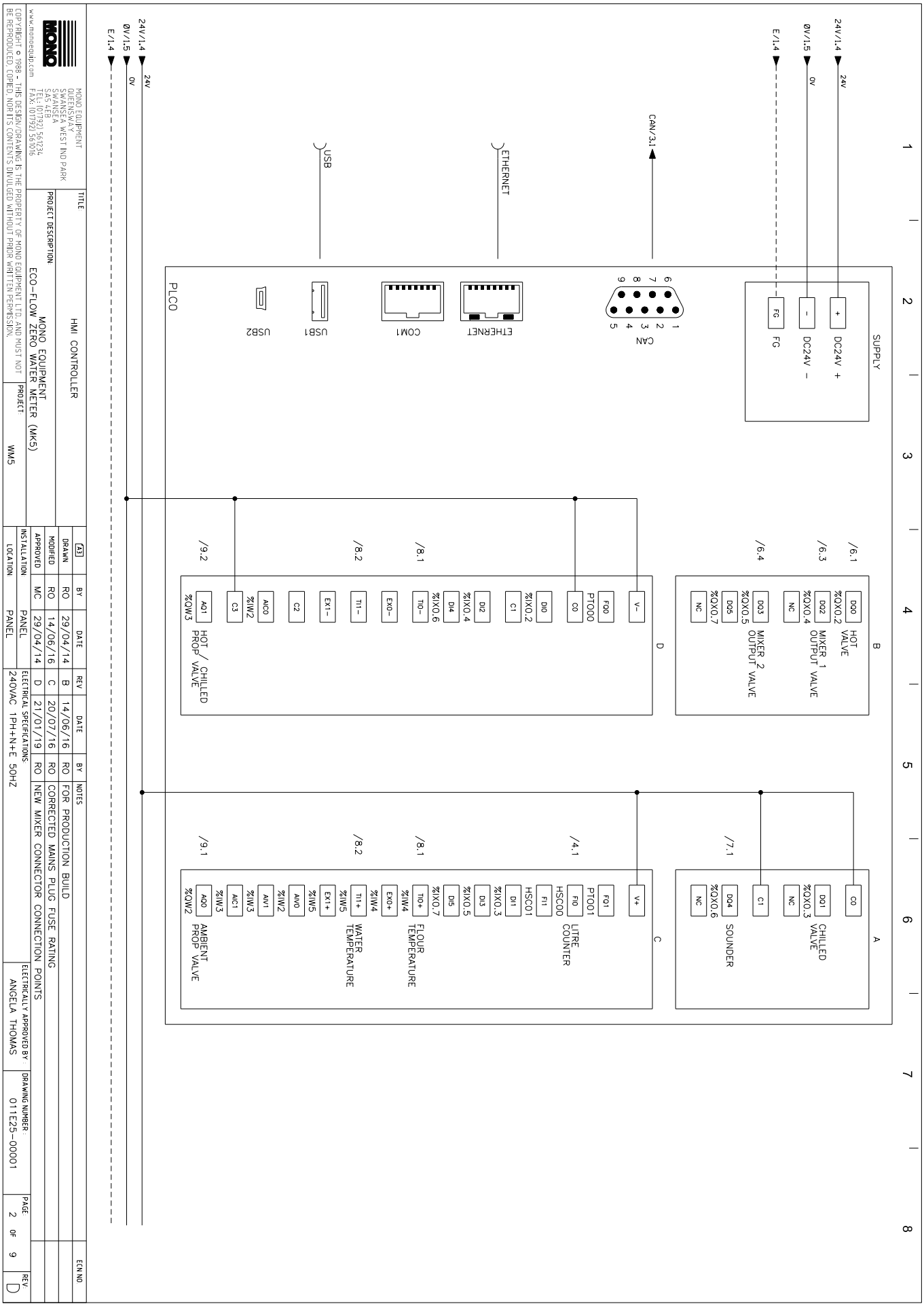
Electrical Diagrams

11



Electrical Diagrams

11



MONO EQUIPMENT
QUEENSWAY
SWANSEA WEST IND PARK
SWANSEA
SA5 4EB
TEL: (01792) 561234
FAX: (01792) 561016
www.monoequip.com

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TITLE: HMI CONTROLLER

PROJECT DESCRIPTION: ECO-FLOW ZERO WATER METER (MK5)

MONO EQUIPMENT

PROJECT: WM5

	BY	DATE	REV	DATE	BY	NOTES
DRAWN	RO	29/04/14	B	14/06/16	RO	FOR PRODUCTION BUILD
MODIFIED	RO	14/06/16	C	20/07/16	RO	CORRECTED MAINS PLUG FUSE RATING
APPROVED	MC	29/04/14	D	21/01/19	RO	NEW MIXER CONNECTOR CONNECTION POINTS

INSTALLATION: PANEL
LOCATION: PANEL

ELECTRICAL SPECIFICATIONS: 240VAC 1PH+N+E 50HZ

ELECTRICALLY APPROVED BY: ANGELA THOMAS

DRAWING NUMBER: 011E25-0001

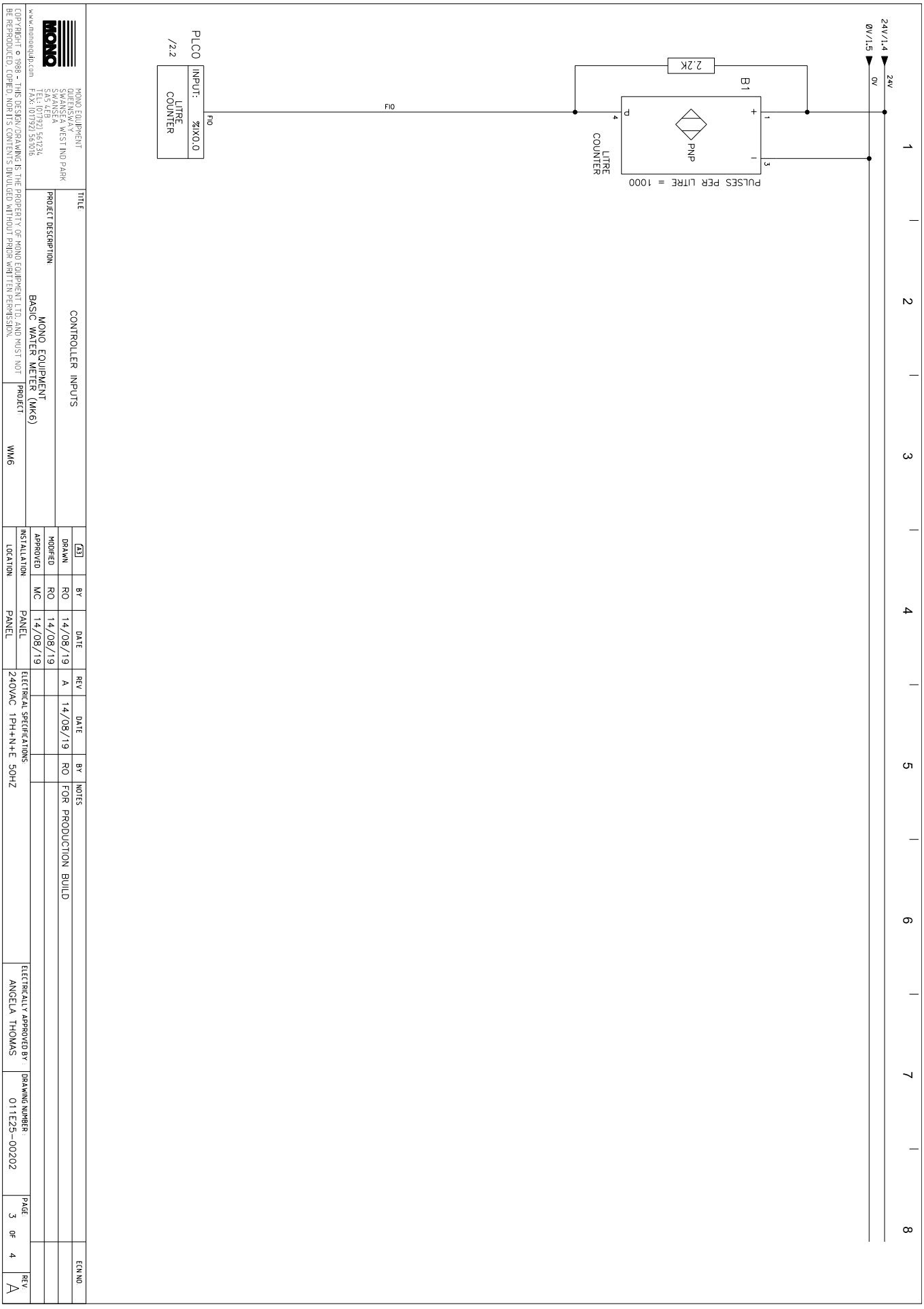
PAGE: 2 OF 9

REV: D

ECN NO:

Electrical Diagrams

11



MONO EQUIPMENT
QUEENSWAY
SWANSEA WEST IND PARK
SWANSEA
SA5 4EB
TEL: (01792) 561234
FAX: (01792) 561016
www.monoequip.com

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TITLE: CONTROLLER INPUTS

PROJECT DESCRIPTION: MONO EQUIPMENT BASIC WATER METER (MK6)

PROJECT: WM6

	BY	DATE
DRAWN	RO	14/08/19
MODIFIED	RO	14/08/19
APPROVED	MC	14/08/19

INSTALLATION LOCATION: PANEL / PANEL

ELECTRICAL SPECIFICATIONS: 240VAC 1PH+N+E 50HZ

REV	DATE	BY	NOTES
A	14/08/19	RO	FOR PRODUCTION BUILD

ELECTRICALLY APPROVED BY: ANGELA THOMAS

DRAWING NUMBER: 011E25-00202

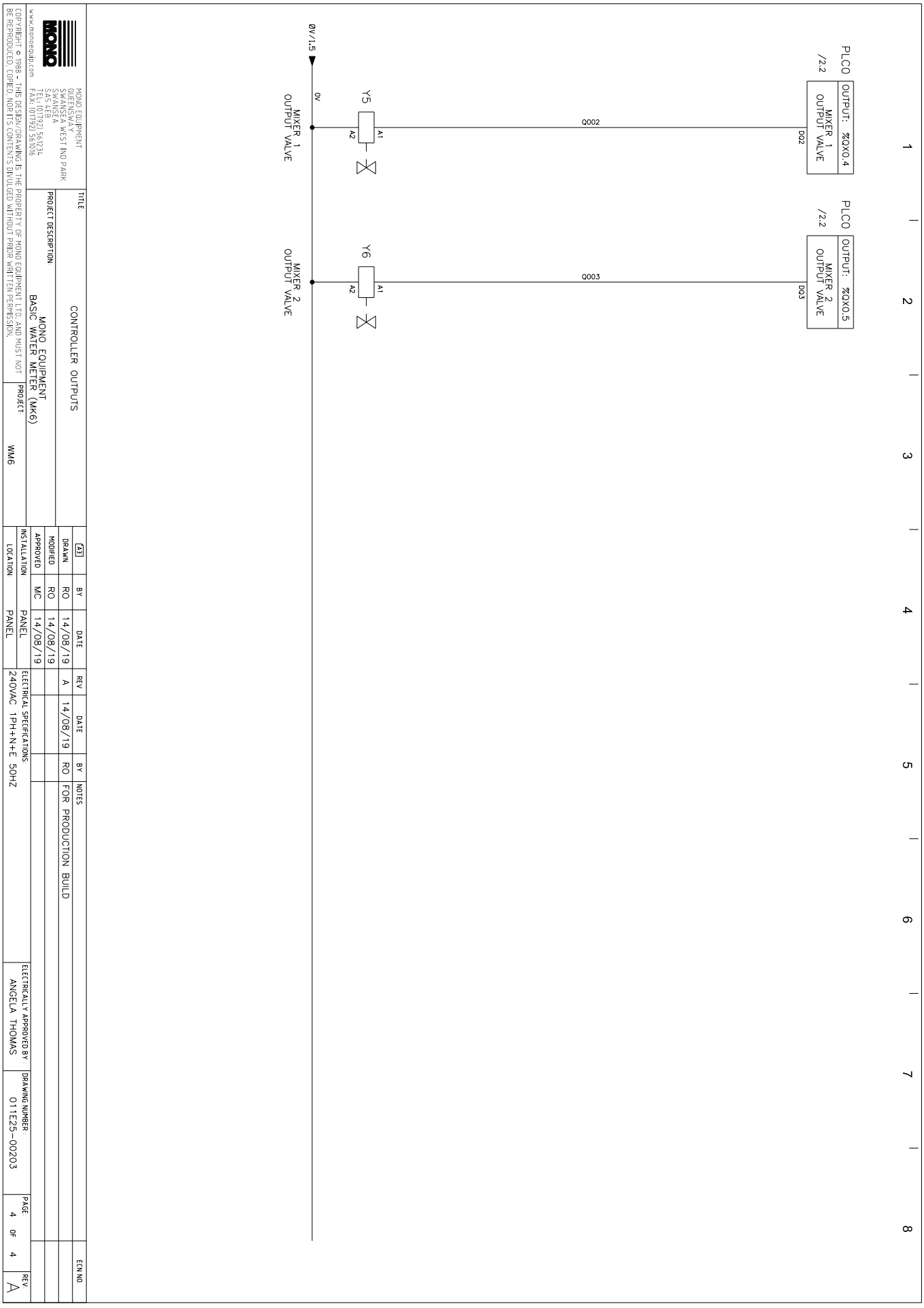
PAGE: 3 OF 4

REV: A

ECN NO:

Electrical Diagrams

11



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MONO EQUIPMENT
QUEENSWAY
SWANSEA WEST IND PARK
SWANSEA
SA5 4EB
TEL: (01792) 561234
FAX: (01792) 561016
www.monoequip.com

TITLE: CONTROLLER OUTPUTS

PROJECT DESCRIPTION: BASIC WATER METER (MK6) MONO EQUIPMENT

PROJECT: WM6

	BY	DATE	REV	DATE	BY	NOTES
DRAWN	RO	14/08/19	A	14/08/19	RO	FOR PRODUCTION BUILD
MODIFIED	RO	14/08/19				
APPROVED	MC	14/08/19				

A3

INSTALLATION: PANEL
LOCATION: PANEL

ELECTRICAL SPECIFICATIONS: 240VAC 1PH+N+E 50HZ

ELECTRICALLY APPROVED BY: ANGELA THOMAS

DRAWING NUMBER: 011E25-00203

PAGE: 4 OF 4

REV: A

ECN NO:

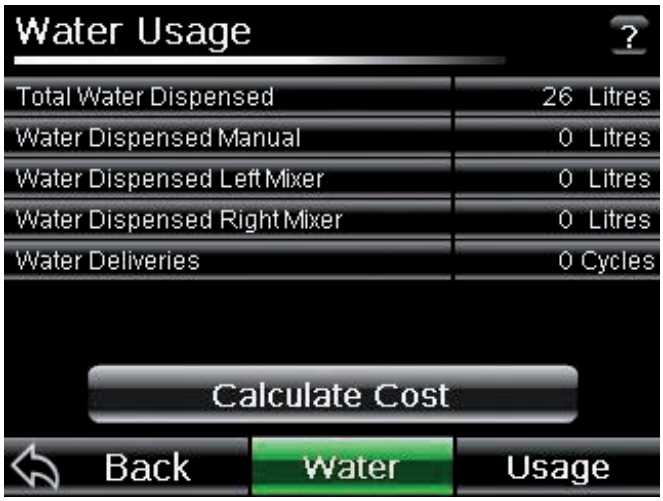
Troubleshooting 12

12.1 Statistics

Selecting ‘Statistics’ will present you with two icons, ‘Historic’ and ‘Batch’.

— Historic - This will display statistics from day 1 of operation of the device. Reset historical statistics (set Factory Default Menu).

— Batch - This will display statistics from the last time the Reset icon (pictured below) was selected.

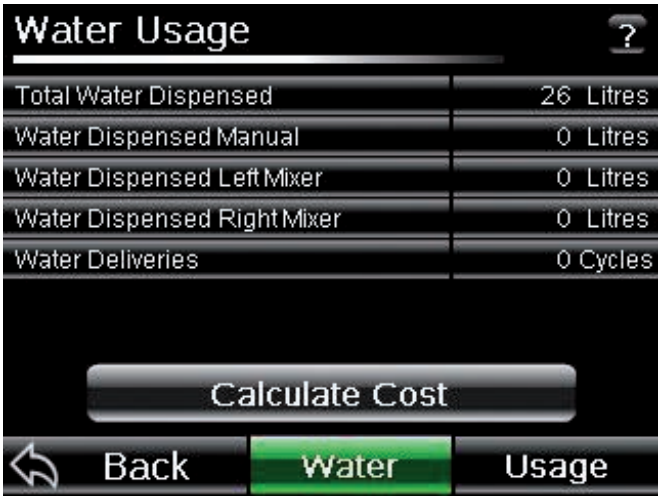


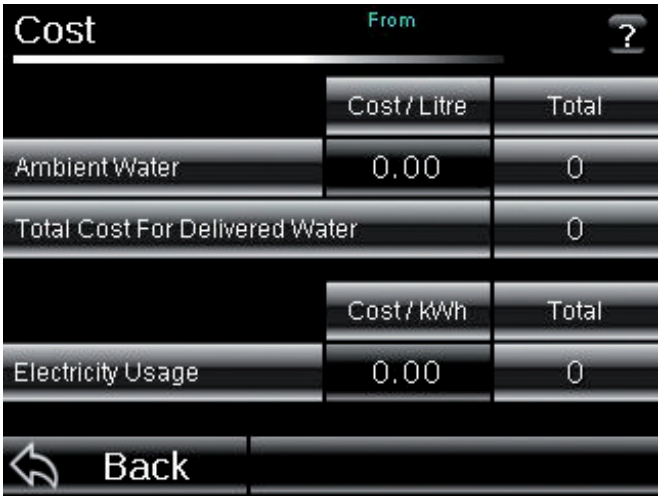
Above shows a ‘Batch Statistics’ screen which has the date in blue denoting when the batch counter was last reset.

Troubleshooting 12

12.1.1 Statistics - Water

— Displays water usage statistics. Cost can be calculated by entering values accordingly. Adjust costs by tapping the cost and entering a monetary value in pence.

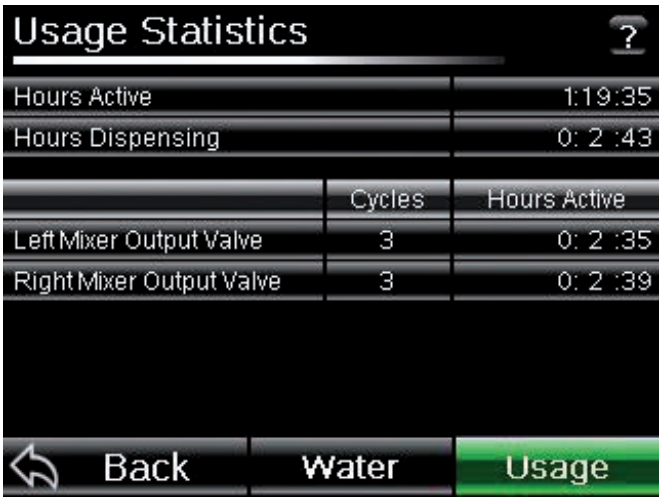




Troubleshooting 12

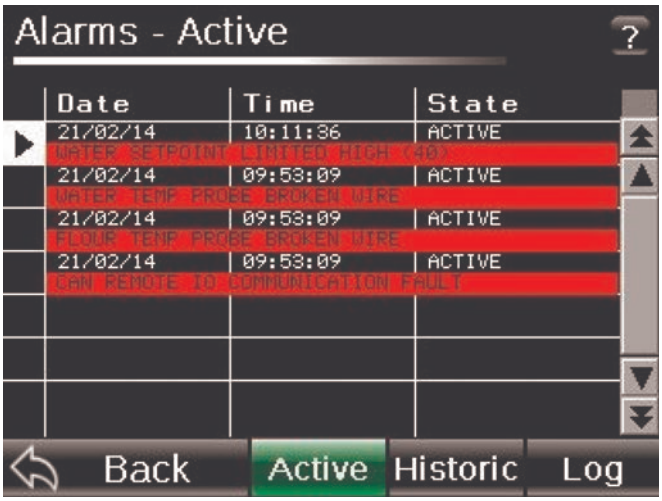
12.1.2 Statistics - Usage

— The usage statistics page will display how many times a valve has been cycled and how long that valve has been energised or in operation. This is accessible from the 'Usage' icon on the bottom of the screen.



Troubleshooting 12

12.2 Alarms



Active

— Current alarms and their status, with date and time.

Historic

— Will display cleared alarms and current alarms along with date/time etc.

Log

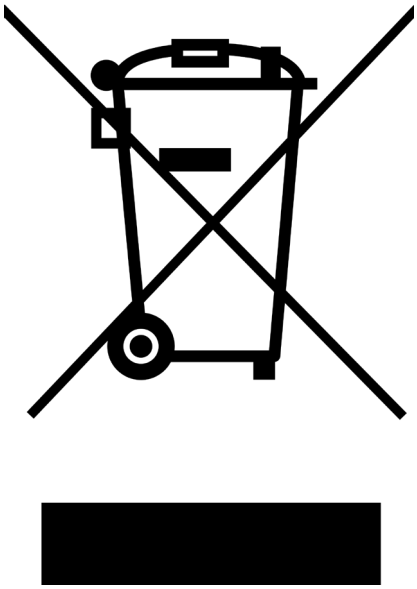
— Displays entire alarm history and allows the alarm log to be saved to USB via this icon.

Troubleshooting 12

12.2.1 Alarms List

Alarm	Alarm Description	Action
COPY RECIPE ERROR	Recipe copy error	Re-try copying recipe. If persistent problems call a service engineer
DELETE RECIPE ERROR	Recipe delete error	Re-try deleting recipe. If persistent problems call a service engineer
MOVE RECIPE ERROR	Recipe move error	Re-try moving recipe. If persistent problems call a service engineer
FILE TRANSFER ERROR	Data transfer to USB Memory Stick error	Check Memory Stick is formatted FAT32 and is situated correctly in the USB port
RECIPE ERROR	Recipe load error	Re-try loading recipe from main page. If persistent problems, call a service engineer
SAVE ALARM LOG ERROR	Alarm Log save error	Check Memory Stick is formatted FAT32 and is situated correctly in the USB port
SAVE ALARM LOG - USB MISSING ERROR	Saving Alarm Log to USB Memory Stick error	Check Memory Stick is formatted FAT32 and is situated correctly in the USB port
SOFTWARE VERSION MISMATCH	Software version between screen and controller are different	Reload software

Disposal Advice 13



The Eco-Flow Zero Water Meter must be removed by an approved Waste Carrier and disposed of in accordance with the WEEE Directive 2012/19EU.

Maintenance Procedures 14

14.1 Maintenance Procedures

— Check Filters are free from debris and cleaned annually

— Ensure hinges operate correctly and oil as required.

Notes

MONO Equipment
Queensway
Swansea West Industrial Park
Swansea
SA5 4EB
United Kingdom

Spare Parts Department:
Tel: +44 (0) 1792 564039 or +44 (0) 1792 564048
Email: spares@monoequip.com

Technical Support Department:
Tel: +44 (0) 1792 564041
Email: techsupport@monoequip.com

Service & Maintenance Department:
Tel: +44 (0) 1792 561000
Email: service@monoequip.com

Main Switchboard:
Tel: +44 (0) 1792 561234

Storegroup2

FM12346 EMS 595394