

#### U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Antimicrobials Division (7510P)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

EPA Reg. Number:

Date of Issuance:

12/7/16

NOTICE OF	<b>PESTICIDE:</b>
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X Registration
Reregistration
(under FIFRA, as amended)

rer	111 01	issuance:	
Ur	icoi	nditional	l

Name of Pesticide Product:

EFT-70/30

Name and Address of Registrant (include ZIP Code):

Eliot Harrison Agent for, Elemental Fluid Technologies 565 Metro Place South, Suite 300 Dublin, Ohio 43017

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Antimicrobials Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/registration/registration review of your product when the Agency requires all registrants of similar products to submit such data.

Signature of Approving Official:	Date:
E. Mideloff	
Eric Miederhoff, Product Manager 31	12/7/16
Regulatory Management Branch I	
Antimicrobials Division (7510P)	
Office of Pesticide Programs	

Page 2 of 2 EPA Reg. No. 92374-1 Decision No. 517467

EPA Form 8570-6

- 2. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, "EPA Reg. No. 92374-1."
- 3. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

• Basic CSF dated 05/11/2016

If you have any questions, please contact Tara Flint at <u>flint.tara@epa.gov</u> or Eric Miederhoff at <u>Miederhoff.eric@epa.gov</u>.

Enclosure

#### ACCEPTED

12/07/2016

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 92374-1

#### EFT-70/30

### **Electronic Ionization System**

EFT 70/30 is designed to generate biocidally active copper and silver ions in situ and must be installed and operated in accordance with the instructions provided.

#### **ACTIVE INGREDIENTS:**

	Copper (as metallic)	70.0%
	Silver (as metallic)	30.0%
TOTAL		

#### KEEP OUT OF REACH OF CHILDREN

#### CAUTION

SEE [BACK, SIDE, REAR] PANEL FOR ADDITIONAL PRECAUTIONARY **STATEMENTS** 

EPA Reg. No. 92374-1

EPA Est. No.: XXXX-XXX-XX

Net Contents: XXXX Copper-Silver Alloy Bars

Distributed by: Elemental Fluid Technologies 565 Metro Place South Suite 300 Dublin, OH 43017

#### **DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Prior to using this product, carefully review the entire label and the accompanying User Manual. This product must be installed and operated in accordance with the instructions presented in the User Manual. Installation of this product must be done by an individual trained in the proper installation of the product. Any adjustments or calibrations of the product must also be done by a trained individual.

This product is for secondary treatment of commercial potable water supplies and can be used to treat both hot and cold water. Upon use, this product is designed to generate biocidally active levels of copper and silver ions, which can prevent and control microbial contamination (i.e., odor, staining and corrosion inducing bacteria). This product can be used in hospitals, nursing homes, hotels, apartments, condominiums, office buildings, manufacturing plants, commercial buildings, government buildings, grocery stores, dental offices, training/workout facilities, showering facilities, dormitories, correctional facilities, retail facilities and amusement parks.

This product is comprised of three parts: 1) a Flow Cell, which is the electrolytic compartment and houses a series of copper/silver electrodes; 2) a Flow Measurement device, which continuously measures the water flow; and 3) a Control Panel, which supplies current to the electrodes based on the signal received from the Flow Measurement device. Each of these components is described in detail in the User Manual.

Once this product is operative, the target copper ion level in water is 0.20 to 0.80 parts per million (ppm), at point of use, and the resulting silver ion level is 0.02 to 0.08 ppm or greater. The copper and silver levels in treated water must not exceed 1.3 ppm and 0.1 ppm, respectively.

#### Monitoring Requirements

In order for the EFT-70/30 to perform at an optimal level, it is important that users carefully monitor the factors noted below and sample the treated water as described in the "Biocide Sampling" section.

#### pH Levels

High pH has been shown to effect copper and silver ionization. In situations where the pH of the target water exceeds 8.3, lower pH to 7.2 or less before ionization commences.

#### 2. Copper Levels

If sampling of the treated water shows that copper levels drop below 0.4 ppm, at the dose point, then adjust the EFT system to maintain a minimum concentration of 0.4 ppm copper.

#### 3. Lime-Scale Build Up and Water Hardness

To prevent lime-scale build up, softening treatment should be employed pre-ionization if the water hardness exceeds 200 mg/l of calcium. In addition, if scale build-up is observed on the electrodes, remove the scale by standard cleaning procedures.

#### Biocide Sampling Procedures

Sampling for copper levels should occur at a point within 3 feet of the flow cell installation. Testing of end point levels should occur at random points throughout the piping distribution network but must always include sampling from the furthest points away from dosing to ensure that target levels are being achieved consistently throughout the system. The number and location of sample points will depend on the facility size and the complexity of the piping distribution network. It is also advisable that the bacterial quality of the water system be tested in tandem with copper testing.

Both on and off-site testing for copper can be conducted. For on-site testing, use a photometric test kit. On-site testing should allow for calibration of dosing equipment on-site. The installation of an online copper level measurement system is recommended where feasible. On-site tested be conducted on a weekly basis.

For off-site testing, all sample points should be assayed on a monthly basis. Off-site testing for copper should be performed in accordance with ASTM 1688-12 "Standard Test Methods for Copper in Water". Sample containers should be pre-treated with nitric acid to allow for the sample to be reduced to a pH of 2 or less immediately at the time of sampling.

#### Storage and Disposal

Pesticide Storage: Store this product in a cool, dry place away from children. Pesticide Disposal: Non-reusable product. When spent, do not attempt to disassemble, recharge, or refill flow cells. Return flow cells to Elemental Fluid Technologies, Inc. for reconditioning or recycling.

#### Warranty

EFT warrants that this product complies with the specifications expressed on this label and is reasonably fit for the purposes stated on the label when used in accordance with all directions, instructions, and manuals and under normal use. To the extent consistent with applicable law, neither this warranty nor any other warranty of merchantability or fitness for any particular purpose, express or implied, extends to the use of the system or device in a manner contrary to this label, instructions and manuals.

#### Claims

- Generates biocidally active copper and silver ions.
- [Prevents] [Controls] [Inhibits] microbial contamination (i.e. odor, staining and corrosion inducing bacteria) in both hold and cold water systems.
- [Prevents][Controls] fouling microbial contamination in both hot and cold water systems.
- [Reduces] [Controls][Inhibits] algal and corrosion inducing bacterial contamination in water distribution networks and recirculation systems.
- Proprietary knowhow, precision engineered to deliver proper and consistent dosing of biocidally active copper and silver ions for antimicrobial control (i.e. odor, staining and corrosion inducing bacteria).
- Eliminates the need for manual addition of biocides into water systems. This product does it automatically.
- Consistent and accurate dosing = consistent and effective control
- Used in hundreds of facilities worldwide.



# EFT Control Units User Manual





Touch Screen Interface Control Units: <u>Contents:</u>

**Technical Specifications** 

Adjusting Settings / Programming Details

Data Logging

**Cable Connections** 



## Technical Specifications

Power supply : 110/230 V (100-260 VAC full range)

Frequency : 50/60 Hz

Power consumption : 700mA

Voltage supply to electrode : Max. 24 V or 12 depending on switch setting

Current supply to electrode : Depending on ampere setting and water conductivity.

Adjustable Settings:

Time: Day Time; up to 3 daily start time points (for recirculation systems).

Pump: up to 3 daily runtimes; "Permanent" shortcut setting.

Optional pump control: flow monitor and backwash control.

Ionization: One main electrode outputs; up to 3 daily runtimes amperage 1-10 A programmable or controlled by flow.

Optional: 1 AUX electrode output; up to 3 daily runtimes; amperage control 1-7A programmable.

Housing material: Sheet metal

Dimensions (mm): Width = 430, Depth = 140, Height = 220

Weight: 5.5 kg

Supported electrodes: Main and Auxiliary

Supported sensor types: Flow sensor, Temperature sensor and Conductivity sensor

Supported alarm types: Volt free contact

Processing Capacity: Windows CE Embedded c/c LAN/Ethernet connecitivy.

Interface: TFI Touchscreen



## Powering On

Prior to powering on the unit proper please select the Electrode Voltge output.

On the Right Hand Side of the control unit select either 12V or 24 V:

If no voltage is selected the unit will not power on.

Following voltage selection switch on the control unit using the power switch on the left hand side of the unit.



#### **Boot Sequence:**

A Windows CE screen will be flashed on the display for few seconds and the application software will start booting up the EFT Controller Unit.

On application software execution EFT logo will flash for 15 seconds on the TFT screen as per below screen shot:





## Adjusting the Settings



To enter the Home Screen, press either green button (Allow "Safe Setting") or press red button ("Cancel", with Previous Setting)

All control units are password protected.

A default password will be provided at installation.

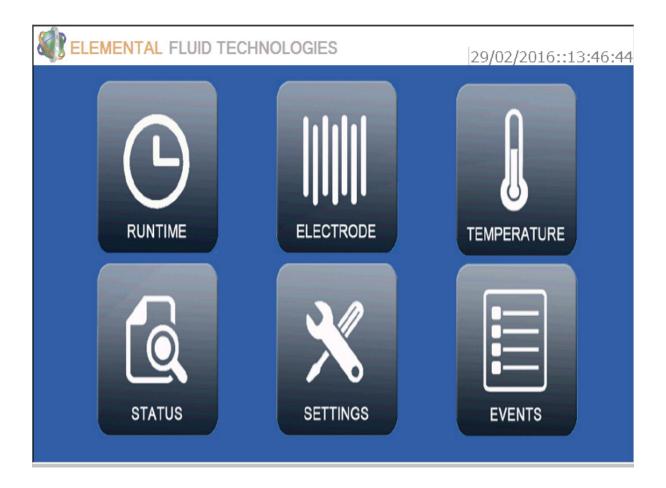
To ensure safe opperation no settings can be adjusted without a valid password.

To enter password tap on the password box and with the on screen keyboard enter the password.

Hit return on the on screen keyboard.

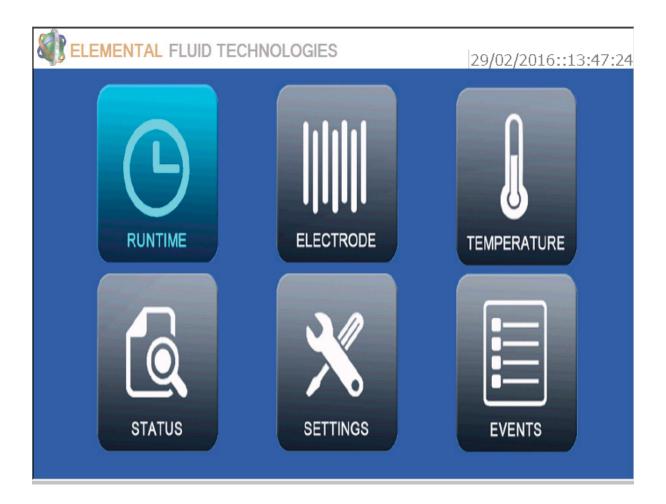


## Home Screen



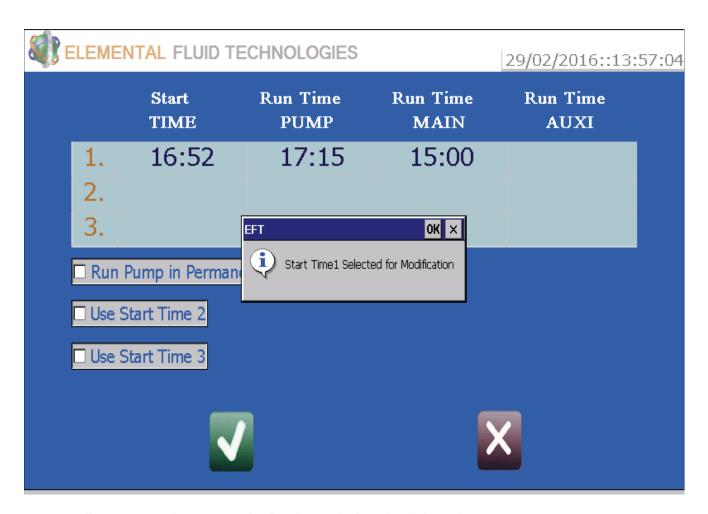
HOME SCREEN allows valid user to access operation, settings and view status. Invalid user can only view status and events, any other operations will redirected to authentication screen.





To access runtime options - for use in cooling towers or other recirculation systems - Tap RUNTIME

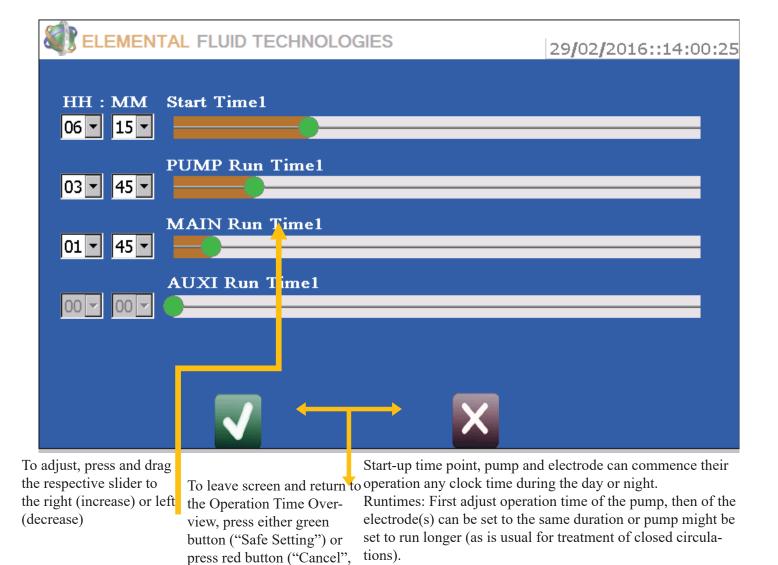




To Adjust 1st Run Time Tap on the time bar and when the dialogue box appears Tap OK. Adusts the Start and Run Time according to required parameters.

To use additional Run Times Tap the required Start Time Check Box Adjust as per Run Time 1





For sole pump operation, leave or move the electrode runtime slider all the way to the left of the bar (thus setting numeric values to "00:00").

Electrodes cannot exceed pump runtime, thus their runtime

bars cannot be moved beyond or right of the pump's set point.

will discard any changes)



ELEME	ELEMENTAL FLUID TECHNOLOGIES 29/02/2016::14:02:0								
	Start TIME	Run Time PUMP	Run Time MAIN	Run Time AUXI					
1.	06:15	03:45	01:45						
2.	12:30	04:45	04:45						
3.									
□ Run	Pump in Permane	ent Mode							
✓ Use	Start Time 2								
□ Use	☐ Use Start Time 3								
	V		2	<					

If Start Time 2 is enabled (box is checked) the second row will appear indicating the Time Settings for the second start time



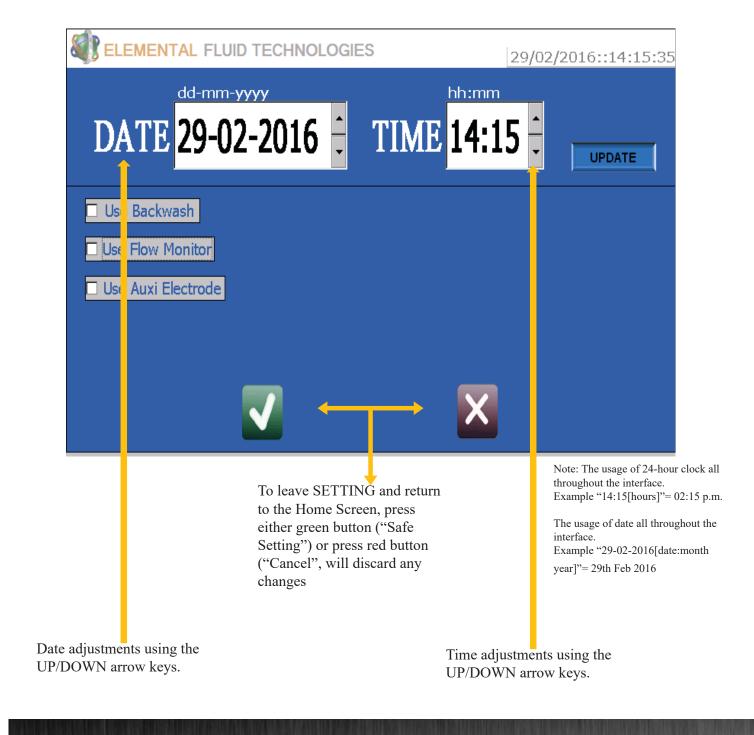
## Flow & Additional Settings



To Access Flow Meter and Additional Settings Tap SETTINGS

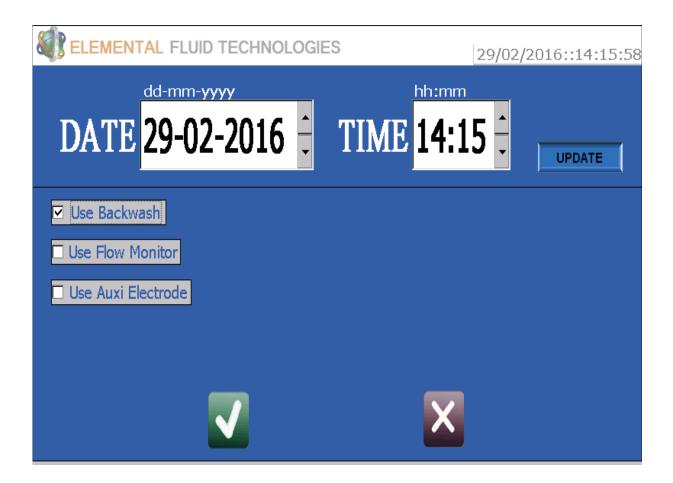


## Adjusting Time & Date





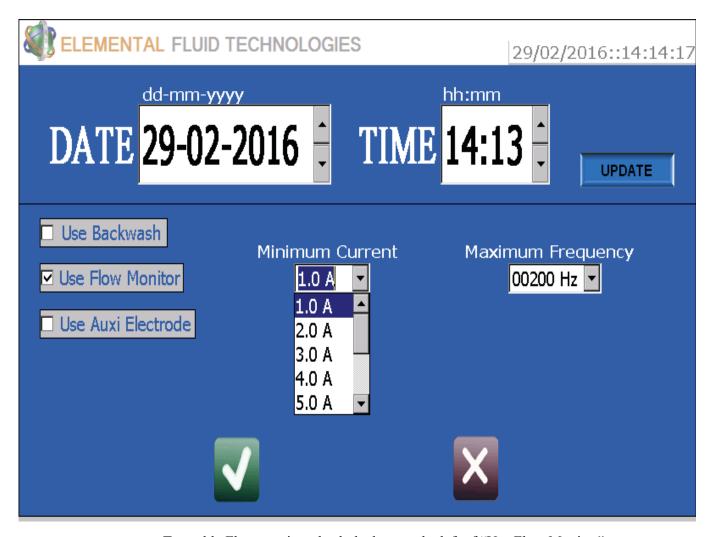
## Using Backwash



To allow for Backwashing of Filters (Cooling Tower Installations) TAP Backwash. If the Backwash is enabled then all the other modes (e.g. Pump, Main Electrode) go into IDLE mode



## Enabling Flow Meter & Proportional Dosing



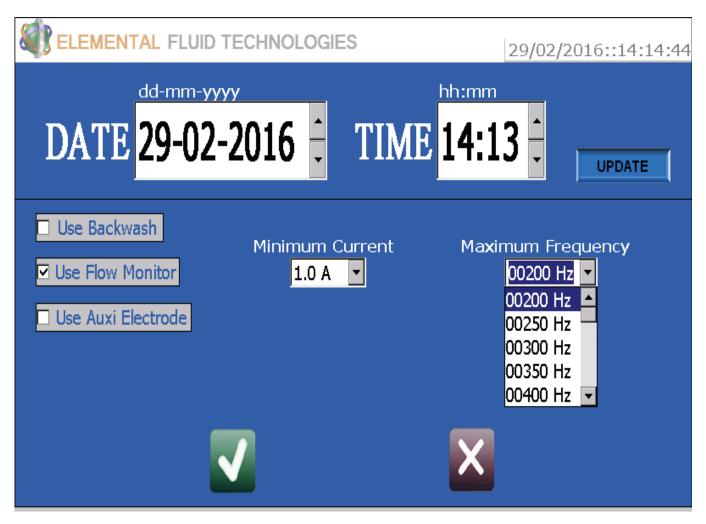
To enable Flow monitor check the box on the left of "Use Flow Monitor".

After Enabling the Use Flow Monitor set the Minimum Current value. Press the green Button (Safe Setting) or Red Button (Cancel the setting).

Note - Seek technical support on use of flow monitors. All monitors and meters must be calibrated on site and according to site parameters.



## Enabling Flow Meter & Proportional Dosing

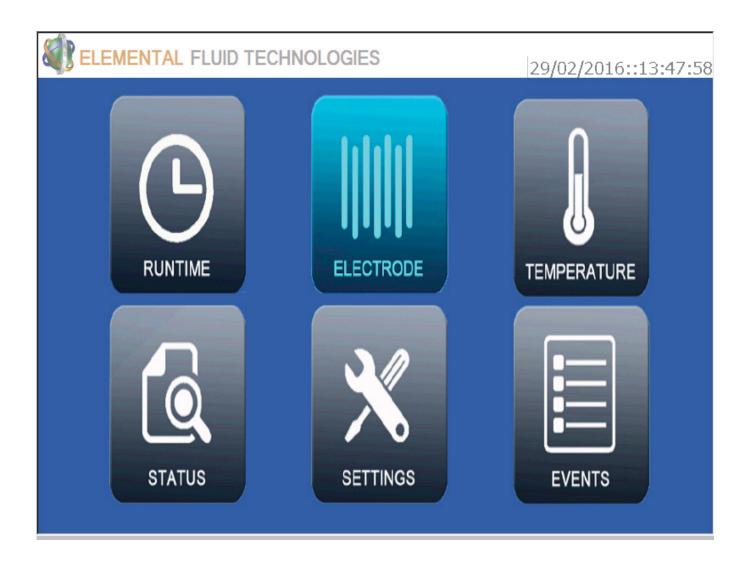


Set Frequency of flow meter using the drop down box. Frequency setting will depend on pipe size and flow rate.

Please refer to Technical Support during initial calibration.



## Adjusting Electrode Settings



To Access the Electrode Settings: In the Home screen, Tap ELECTRODE



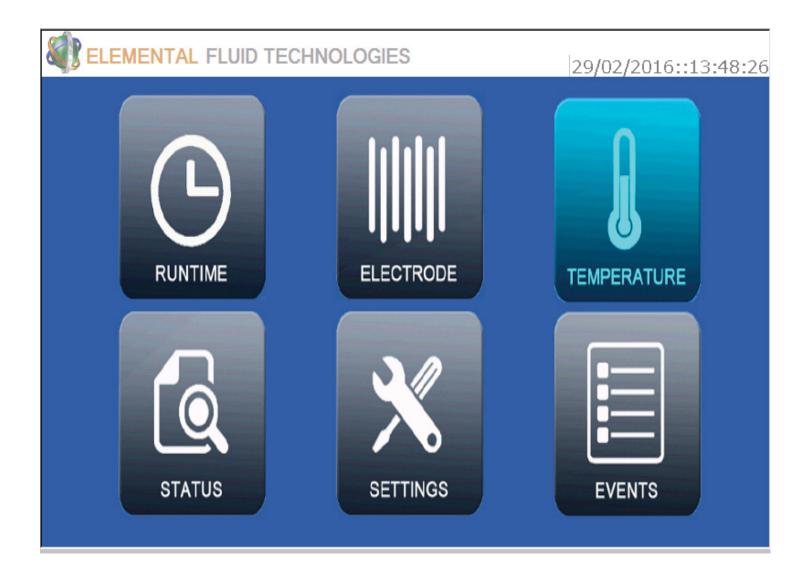
# Adjusting Electrode Settings

ELEMENTAL FLUID TECHNOLOGIES	29/02/2016::14:05:55
Electrode Current MAIN  5.0 A	
Electrode Current AUXI	
Copper PPM Setpoint	
	X

To Adjust the Electrode Current (in recirculation systems): Use the slider or the drop down box to select the required current.



## Adjusting Temperature Settings

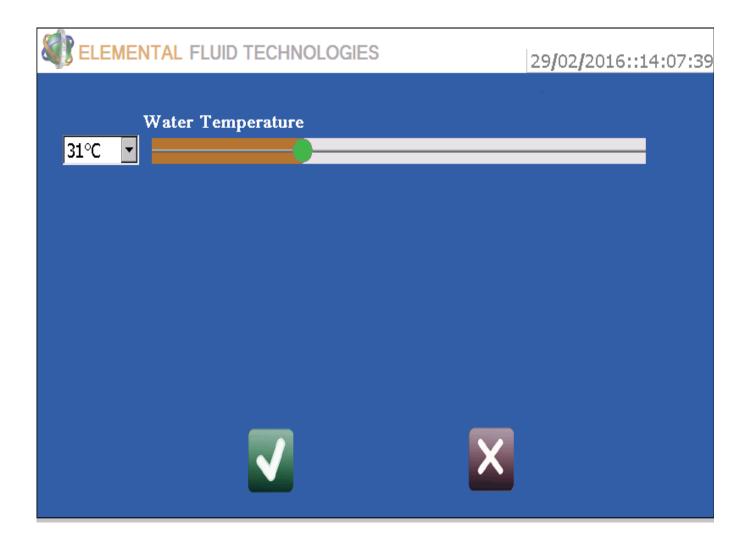


To Access the Temerature Settings and Adjustments Simply Tap TEMPERATURE on the Home Screen.

Note: Functions only available with systems which have had thermostat and or calorifier connections.



## Adjusting Temperature Settings

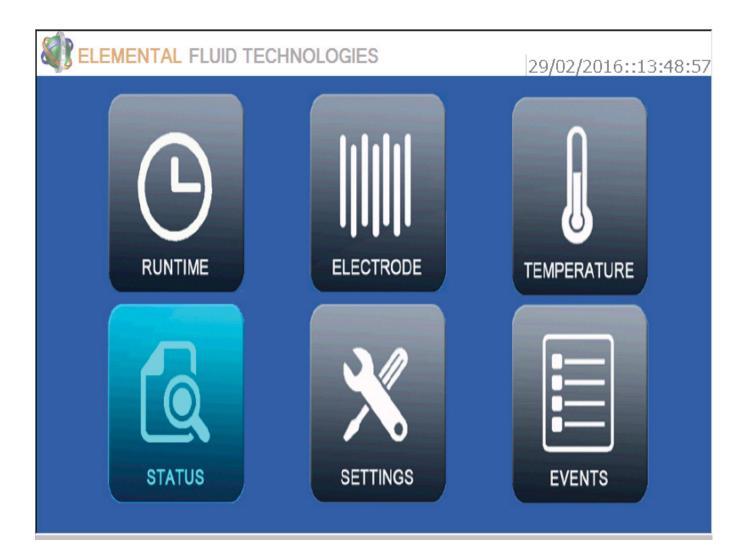


To Adjust the Temperature Setpoint for Calorifer Control: Use the slider or the drop down box to select the required temperature.

Note: Where thermostat is installed temperature readings will be logged regardless of calorifer connection.



## Accessing the Status Screen

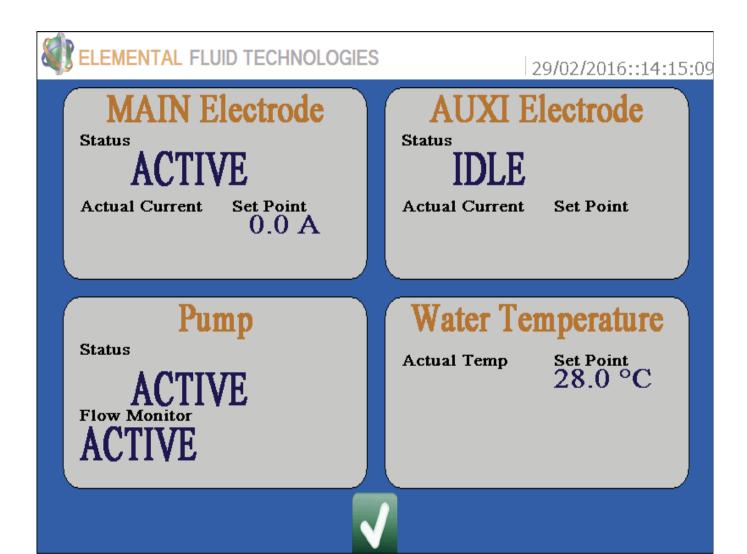


To Access the Current System Status Simply Tap STATUS on the Home Screen.

The Status Screen will display all current activity.



## Viewing the Status Screen



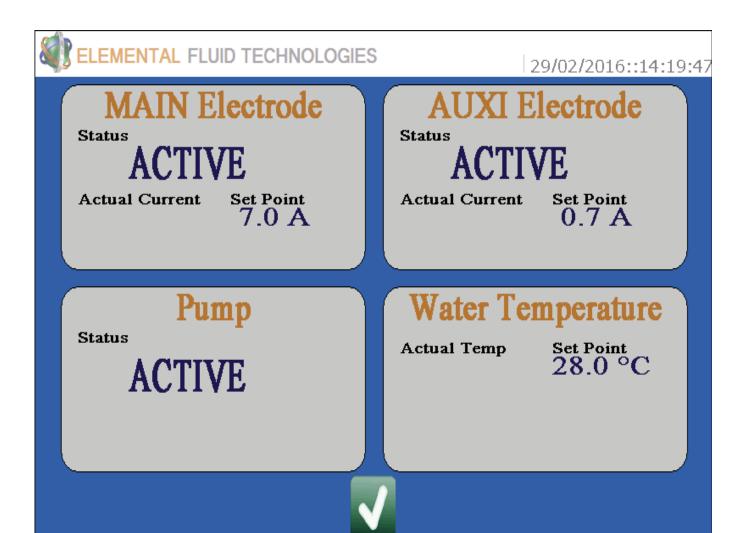
The above screen shot shows that the flow monitor is activly set and detecting flow.

The temperature is set to 28 but no thermostat is present or connected.

No Ionisaiton is occuring and the Actual Current is not displayed.



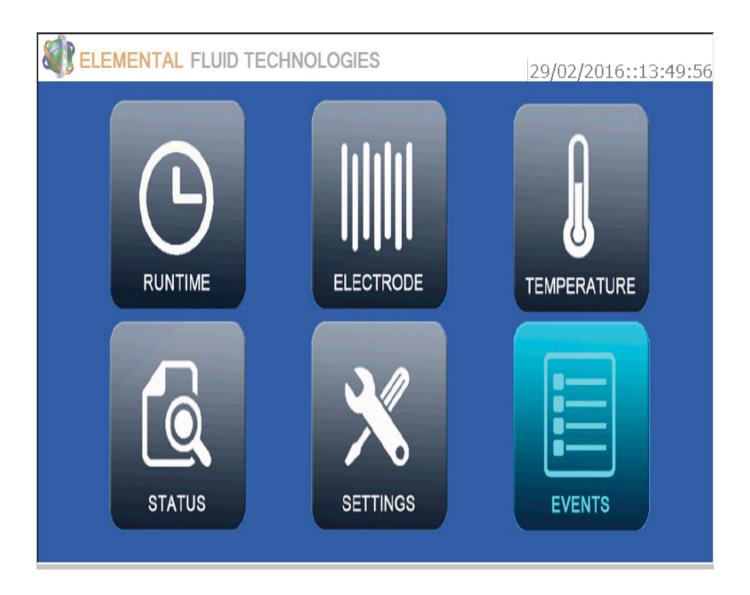
## Viewing the Status Screen



This example shows that the flow monitor is not being used (not displayed), that the main and auxiliary electrode are being used and have been set to 7 and 0.7 amps respectively.



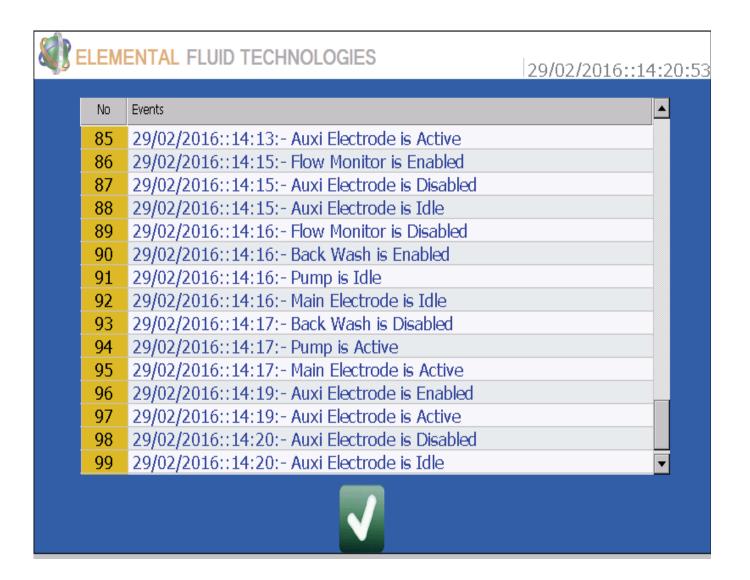
## Accessing the Data Log



To Access the Data Log Simply Tap Events on the Home Screen.



## Accessing the Data Log

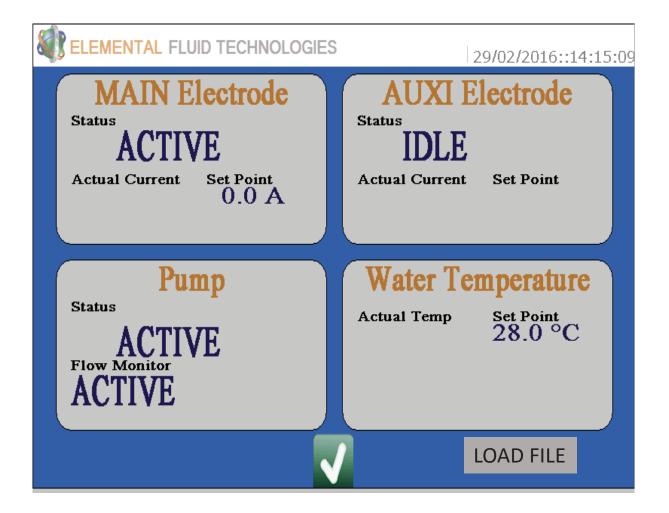


In the Events Screen the 100 most recent events are logged and displayed. If temperature is being monitored this will also be displayed. All set currents and outputs will be displayed.

A full data log - detailing events back to 1 year previous is available by remote access or SD Card loading.



## Accessing the Data Log





To download a full data file to USB or other portable device simple insert the device to the USB port (located to the left hand side of the control unit and then from the Status Screen Tap LOAD FILE.

The system will automaticly download all events to a text file on the device.





All external cables connections are located to the underside of the control unit. Please refer to the above image for exact location of each:

230V - Input Power

Pump - Power output (110V to 260V AC)

Temp - Power output to calorifier (7KW max)

Aux - Current Supply to Auxiliary Electrode

Main - Current Supply to Main Electrode

FSense - Input from external Flow Meter

BackW - Power Out to 24 V DC solenoid Valve

VLTF - Output to Volt Free connection for alarm reporting

TSENSE - Input from external Thermostat

Each connection is of a different type to assist in prevention of wrong connection.



2 Pin Connector - Electrodes



3 Pin Connector - Inputs & OutPuts



Output to Pump



#### **EFT -Pump Connector Details**

			Pump Cor	nector				
Station In	ıfo		Station -3	}				
Label ID			Pump					
Connection	Connection Type			Conn: Round Connector, 3Pin, Male				
	Source		Destination			Remarks		
Position	Signal	Wire Colour	Position	Signal	Wire Colour			
1	Line	RED		Line				
2	Neutral	BLACK		Neutral				
3	Ground	BLUE		Ground				

#### **EFT - Temp Connector Details**

			Temp Cor	nector				
Station In	Station Info			3				
Label ID	Temp							
Connection	onnection Type			Conn: Round Connector, 3Pin, Male				
Source		Destination			Remarks			
Position	Signal	Wire Colour	Position	Signal	Wire Colour			
1	Line	RED		Line				
2	Neutral	BLACK		Neutral				
3	Ground	BLUE		Ground				

#### EFT - Auxilary Electrode Connector Details

			Aux Con	nector				
Station In	Station Info		Station -3	Station -3				
Label ID	Label ID							
Connection	on Type		Conn: Round Connector, 2Pin, Male					
	Sourc	e	Destination Rem			Remarks		
Position	Signal	Wire Colour	Position	Signal	Wire Colour			
1	Line	RED		Positive				
2	Neutral	BLACK		Negative				



#### **EFT - Main Electrode Connector Details**

		M	ain Conne	ctor		
Station Info			Station -3			
Label ID			Main			
Connecti	Connection Type		Conn: Round Connector, 2Pin, Male			e
	Sourc	e		Destination		Remarks
Position	Signal	Wire Colour	Position	n Signal Wire Colour		
1	Line	RED		Positive		
2	Neutral	BLACK		Negative		

#### **EFT - Main Electrode Connector Details**

		Flow	Sensor Con	nector		
Station Info			Station -3			
Label ID			F Sense			
Connecti	on Type		Conn: Rou	und Conne	ctor, 3Pin, Mal	e
Source				Remarks		
Position	Signal	Wire Colour	Position	on Signal Wire Colou		
1	Flow Signal	RED		Flow Signal		
2	Flow Ground	BLACK		Flow Ground		
3	Flow Supply	Yellow Green		Flow Supply		Yellow Green (5 Volts)

#### EFT - Back Wash Connector Details

		Back	Wash Cor	nector					
Station Info			Station -3						
Label ID			Backw						
Connection Type			Conn: Round Connector, 3Pin, Male						
Source				Remarks					
Position	Signal	Wire Colour	Position	Signal	Wire Colour				
1	Line	RED		Line					
2	Neutral	BLACK		Neutral					
3	NC	Yellow Green		NC		NC - No Connection			



#### EFT - VoltFree Connector Details

			Volt Free Co	onnector		
Station Ir	nfo		Station -3	3		
Label ID			VLTF			
Connecti	on Type		Conn: Ro	und Coni	nector, 3Pir	, Male
	Source	e		Destinat	ion	Remarks
Position	Signal	Wire Colour	Position	Signal	Wire Colour	J.
1	NC	RED		NC		NC - Normally Closed
2	Zero Volts	BLACK		Zero Volts		Connects to modem ground
3	NO	BLUE		NO		NO - Normally Open

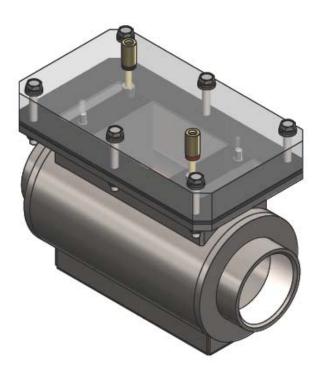
#### EFT – Temprature Sensor Connector Details

•		Ter	nperature Se	nse Conn	ector			
Station Info			Station -3					
Label ID			T Sense					
Connection Type			Conn: Round Connector, 3Pin, Male					
Source			Destination			Remarks		
Position	Signal	Wire Colour	Position	Signal	Wire Colour			
1	Sensor Input	RED		Sensor Input				
2	Ground	BLACK		Ground				
3	24 Volts	Yellow		24				
		Green		Volts				



### Flow Cell Installation

Typical 1 kg Flow Cell

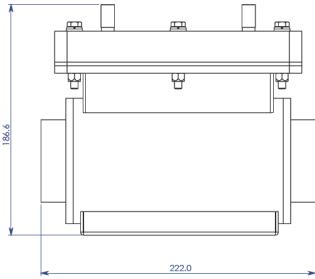


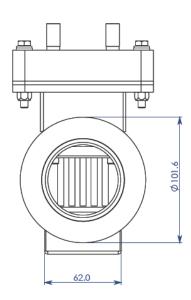
In general EFT flow cells are installed in a bypass configuration. This is to allow for ease of access and replacement of electrode cells.

Valves should be installed both before and after the flow cell and on the main line to be bypassed.

It is prefered to install flow cells vertically but it is not essential. Vertical installation reduces the amount of residue buildup within the flow cell.

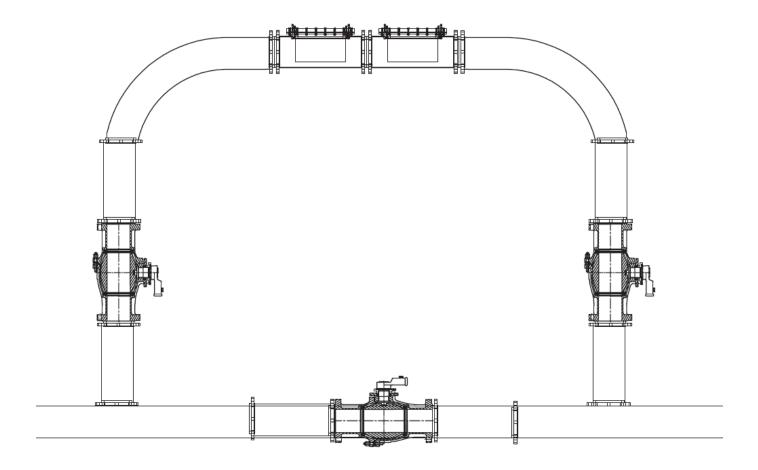
Flow cells are available with female PSP threaded fittings from 1" to 3". Larger sizes are available in flanged connections.







## Flow Cell Installation



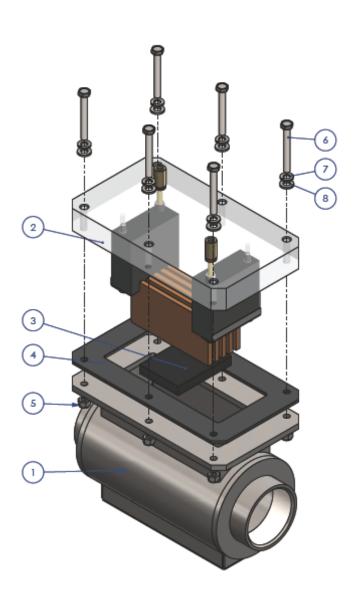
Typical Bypass Schematic:

Note: Two EFT Electrodes Depicted

Valves Installed on Main Line and Bypass to allow for electrode replacement without interuption of water flow.



# Flow Cell Assembly - Electrode Replacement



Parts Listing:

1: Main Flow Cell Body

2: Polycarbonate Flow Cell Lid

3: Flow Cell Base Plate Insulator

4: Flow Cell Gasket

5: M6 Nyloc Nut

6: M6 x 50 Hex Bolt

7: M6 Spring Washer

8: M6 Plain Washer

Electrode Plates Are Push fit. Simply remove old electrodes and press into place new metal. Hammer home using a Nylon hammer or mallet.

Assemble as per drawing.