

IRRIGATION DAYS

A

☀ DAY ON
● DAY OFF

1 2

DIAGNOSTIC

TIME / STATION TIME

B

HOURS MINUTES

3 4 5 6

MONITOR

ZONE No START No

C

ZONE STATION ON

7 8 9 10

RAIN SWITCH

ON OFF

11 12 13

A B C

IRRIGATION PROGRAMS

14 15 16

CLOCK START STATION

SET UP

17 18 19 20

OFF MANUAL AUTO SYRINGE

OPERATION

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IMPORTANT: THROUGHOUT THE MANUAL WHENEVER A BUTTON IS MENTIONED IT IS FOLLOWED BY []. THESE BRACKETS REFER TO THE BUTTON NUMBER WHICH IS FOUND ON THE DIAGRAM AT THE FRONT OF THE MANUAL.

AQUARIUS-2000: THIS MANUAL IS ALSO CORRECT FOR THE SINGLE ZONE VERSION OF THE AQUARIUS . ANY ASPECT OF THE MANUAL THAT DOES NOT APPLY TO THE AQUARIUS-2100 IS MARKED WITH #. IF # APPEARS THEN IGNORE THESE FACILITIES IF AN AQUARIUS-2100 IS BEING USED.

AQUARIUS OPERATING MANUAL.

The following booklet is intended to offer a guide to programming the Logic AQUARIUS controller. All information has been presented in good faith and Logic Irrigation cannot accept any liability arising from a wrongly programmed controller.

TERMINOLOGY

Before programming the AQUARIUS controller there are a few terms used which are specific to the AQUARIUS, and it is worth familiarising yourself with these terms from the start.

ENTERING INFORMATION INTO THE AQUARIUS: Unlike most computers, the AQUARIUS does not require the information to be entered by pressing an entry button. The information that is displayed is immediately in the memory of the controller.

In order to assist in the programming of the controller all button presses are marked with a number. This corresponds to the button marked with the appropriate number on the facia panel diagram. E.g.: Press The 'Off Button [17] means press the button marked 17 on the diagram.

ZONE: A zone is defined as 2 wires connected to the AQUARIUS and installed around the course. The controller can operate up to 4 different zones from the one unit. The amount of zones you have will depend very much on how many valves there are to be operated at any one time and how many valves are actually installed. **E.g.:** On a golf course, if the Greens only are irrigated there will almost certainly be one zone installed. However, if it is a Greens, Tees, and Fairways system there will probably be four zones and maybe even more (by having 2 AQUARIUS controllers installed).

STATION: A station is the name given to each valve installed. **E.g.:** Green No.1 may be called station No. 1, etc.

DECODER: A Decoder is the electronic device which is installed alongside the valve. It is given a unique code (like a telephone number) which, when signalled by the controller, operates and turns the valve on or off depending on the code from the controller. Each Decoder has four wires coming out of the unit. They are as follows:

RED: This is connected to the main red wire which is installed around the course.

BLACK: This is connected to the main black wire which is installed around the course.

YELLOW: This is connected to one of the wires which comes from each of the solenoids in the valve box.

YELLOW: This is connected to the remaining wire of the first solenoid.

Multi-way decoders [Two, Three and Four ways] will have additional wires.

Two way **ORANGE:** connect to the second solenoid.

Three way **GREEN:** connect to the third solenoid.

Four way **PURPLE:** connect to the fourth solenoid.

SOLENOID: This is the electrical device which is fitted to the valve and when switched on (energised) causes the valve to open automatically.

STATION TIMES: Each valve requires a time to irrigate. This time is the station time. Each valve can be programmed to run for any time from 1 Minute to 23 Hours 59 Minutes in 1 Minute steps.

START TIMES: These are the required times for the controller to commence watering (like the times for a video to start recording from). The AQUARIUS has 4 different start times in a 24 hour period for each zone. Each zone is started independently from the others.

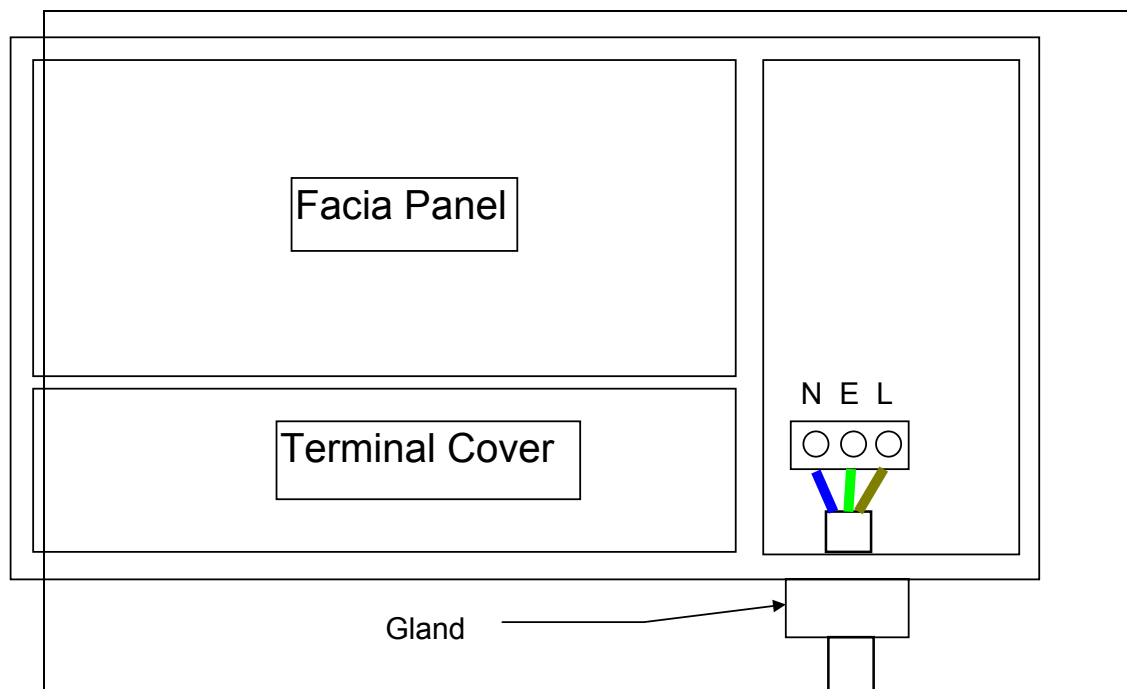
DAY: This is the button on the controller [1] which has an indicator in it to show if the controller will water on a specific day. If the indicator is on then the controller will water on that day, but if it is off then the controller will not irrigate that day.

SYRINGE: A small predetermined amount of water can be put down prior to the main program using the Syringe program. The Syringe can water each station for anything between 1 and 9 minutes. It can also be used as a supplement to the main watering program by watering each station for a length of time (between 1 and 9 minutes) before commencing the main watering program.

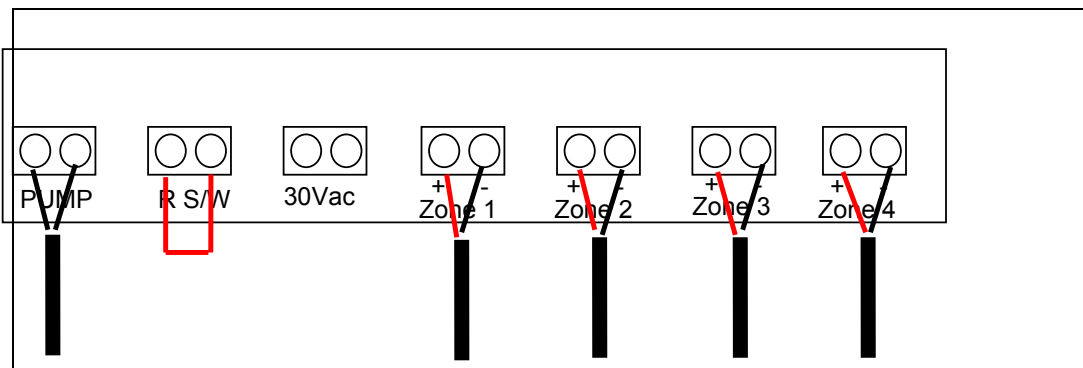
1.0 Installing the Controller

Installing an Aquarius 2400 series controller is very quick and simple.

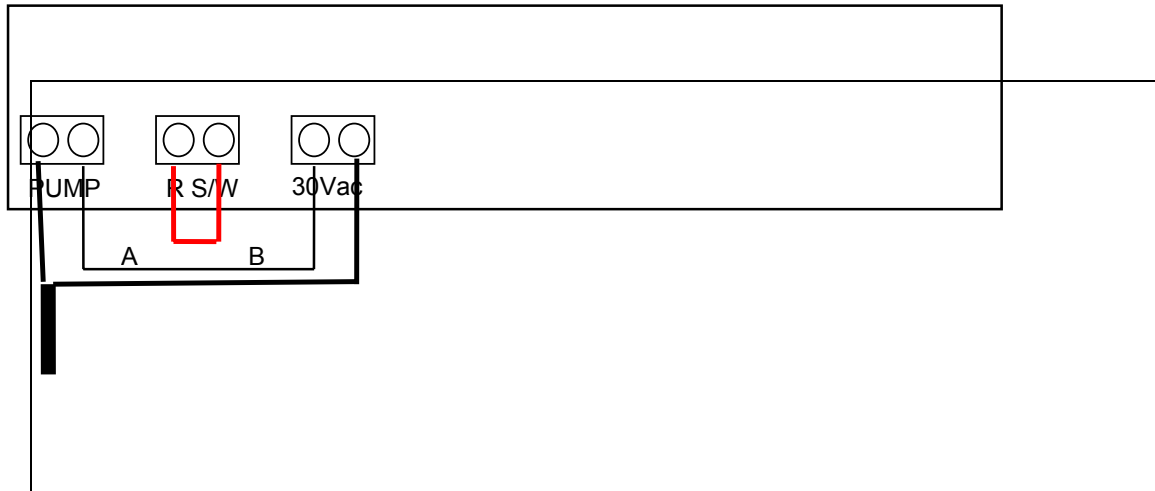
1. Mount the wall bracket at **Eye Level** and ensure that it well secured.
2. Set the controller onto the wall mounted bracket. Open up the lower left hand cover (terminal cover) and fix the controller to the wall through the screw hole provided.
3. Knock out the right hand 20mm hole for the electrical supply. Using either a 20mm compression gland or 20mm conduit pass a 3 core cable through to the controller for connection. Connect the wires as shown in the diagram below.



4. Connect the field wires as shown below. Please note that it is recommended that the cables between the controller and the point where they go under ground are best installed either in screened cable or inside steel conduit. This is to comply with the EMC directive on emissions.



5. Connect the pump control to the terminals marked 'PUMP'. The circuit supplied is a normally open contact to switch up to 40Vac ONLY! If a master valve circuit is required then connect the pump and 30Vac circuit as shown below:



If the output voltage from the controller is too high then a 100 Ω 4Watt resistor should be fitted between points A and B.

6. If a rain sensor is to be used then it must be a normally closed contact. Remove the link connected across the terminals marked R S/W and connect the Rain Sensor in its place.
7. Close the doors and replace the screws and the controller is now ready to switch on.

SETTING UP A PROGRAM

Always start programming the AQUARIUS from the 'OFF' position by pressing the 'OFF' button [17].

NOTE: The L.E.D illuminated in the bottom range [14-20] indicates the last button pressed and therefore the mode the controller is currently in, i.e. OFF MODE, STATION MODE, ETC.

SUGGESTION: It is advisable to plan the station times and start times required before beginning programming of the controller.

1.1 SETTING THE CLOCK

PRESS - CLOCK (SET TIME) [14]

Check the time in **display B**. If the time needs adjusting then the correct time can be entered using the buttons below each digit [3, 4, 5, 6]. When any of these buttons are pressed the seconds [**display c**] will be reset and will restart on release of the buttons.

To synchronise the clock with the current time you set the clock to 1 minute before the time required. By pressing the minutes button [6] the clock is stopped and remains stopped for the length of time that the button is pressed. On releasing the button the clock will restart.

1.2 SETTING THE STATION TIMES

The AQUARIUS controller has the facility to set three separate station times for each station. These are shown as program A, B & C. The program to be set is selected by pressing the appropriate button [11 (A), 12 (B), or 13 (C)] before commencing any station time programming.

Station times may be set from 1 minute to 23 hours 59 minutes in 1 minute increments. A station time set for zero will mean that the station is set to 'Off'.

The Pump is indicated by the letter 'P' in the station window [Display C]. This can be programmed for priming the system or controlling a pump in manual.

TO SET A STATION TIME

PRESS - STATION (SET TIME) [16]

PRESS - ZONE [7] To select which zone is required for programming.

PRESS - PROGRAM A [11] To select program A.

PRESS - STATION [8, 9] To index to desired station.

NOTE: Button [8] is for the station ten's and Button [9] is for station units.

(Remember that if a 2 figure station number is required, (i.e.: station 23), press button [8] to select the first figure '2', and [9] to index to '3'. This is because there is no roll on from station No. 9 to station No. 10).

PRESS - HOURS/MINUTES [3,4,5 & 6] To set the required time for that station.

NOTE: Button [3] is for ten's of hours, Button [4] is for hours units, Button [5] is for minutes ten's, and Button [6] is for minutes units.

Repeat the same procedure for all stations. Once all the stations on zone 1 program A are completed then zones 2, 3 & 4 [7] can be programmed in the same way. Once all the zones are set up for program A, a second or third program can be selected using B, or C, [12 or 13], and the run times set as before.

NB: If the same times are required for all stations then please see the next section entitled REPEAT STATION TIMES.

REPEAT STATION TIMES

To enter the same time for every station there is a quick method of entry.

PRESS - STATION [8, 9] To index to the first station required to have the standard time.

PRESS - HOURS/MINUTES [3,4,5 & 6] To set the time required for all stations.

PRESS - ON [10] Keep pressing until the final station has been reached. This will put the same time on all stations that were displayed.

ZONE TIME TOTAL

Once everything has been completely programmed, a check of the total time for each zone and program can be made by means of a simple key press.

PRESS - STATION (SET TIME) [16]

PRESS - ZONE [7] To select which zone time requires checking.

PRESS - PROGRAM A, B OR C [11,12 OR 13] To select which program is to be checked.

PRESS - DAY [1] The total time for the program and zone selected will now be shown in display B. The total number of stations programmed (including the pump station) will be shown in display C. Once the DAY [13] button is released, the display will disappear. Therefore, the button must be pressed continually for the full period required to read the display.

This operation should be repeated for the different zones and programmes that require checking.

NOTE: This total will not include any time set on *SYRINGE*. This must be added to the displayed time for the zone and program selected.

1.3 SETTING THE START TIMES

In order for the controller to operate a program, a time for starting the automatic cycle must be entered into the controller's memory. There are a maximum of 4 start times in any 24 hour period per zone. Each zone is operated and programmed independently from the others.

TO PROGRAM A START TIME

PRESS START (SET TIME) [15] To select the start time mode.

PRESS DAY [1] To turn on the red indicator in the button. This will permit the displayed day number to operate in automatic. To prevent the controller from operating on any particular day, press the DAY button once. The red indicator light will now switch off.

PRESS DAY [2] To index to the next day.

PRESS DAY [1] To turn on the red indicator in the button as before.

Repeat this procedure for all 14 days ensuring that all the days you want to operate have the red indicator '**ON**' in the **DAY [1]** button.

PRESS HOURS/MINUTES [3,4,5 & 6] To program the start time you require for **ZONE 1** (Remember that the clock is a 24 hour clock, and that 00:00 is the off time, i.e.: A program **cannot** be set to start at 00:00).

PRESS ZONE [7] To select the next zone (if you have more than one zone).

PRESS HOURS/MINUTES [3,4,5 & 6] To program the start time for this zone.

Repeat this procedure for all zones that you have (maximum of 4). #

PRESS ON [10] To index to the next start time number. There are a maximum of 4 start times per zone.

1.4 SETTING THE SYRINGE TIME (#)

The controller can be set to give a short initial irrigation period to each station in turn. It will only function on any station that has been programmed with a time in the main program. Therefore if a station has been set to zero it will not water in the syringe cycle. Syringe time can be set from 1 to 9 minutes.

The Syringe cycle can be used as a stand alone program set to a specific time for all stations, or it can be used in conjunction with Auto to run prior to the auto cycle, thus adding the Syringe time to the total run time of the program.

TO SET SYRINGE TIME

PRESS - START (SET TIMES) [15] KEEP THIS BUTTON PRESSED.

PRESS - SYRINGE [20]

In display B there will be the letter 'P' on the left hand side and a number between 1 and 9 above the minutes button [6].

TO CHANGE THE SYRINGE TIME

PRESS - MINUTES [6] To set the Syringe time required, from 1 to 9 minutes.

TO EXIT FROM SYRINGE SET UP

PRESS - OFF [17]

1.5 OPERATING THE CONTROLLER IN MANUAL.

It is possible to operate any station in a zone manually from the AQUARIUS. It is also possible to control all zones (up to the maximum of 4) in manual and independently of each other.

TO OPERATE ONE STATION IN MANUAL.

- PRESS MANUAL [18]** This selects the manual mode.
- # PRESS ZONE [7]** To select the zone you wish to operate.
- PRESS STATION [8, 9]** To select the station number you require to operate.
- PRESS ON [10]** To turn on the station.

REMEMBER: When you operate the controller in manual the station will continue to run as long as you leave the controller in manual.

TO OPERATE TWO OR MORE ZONES (#)

- PRESS ZONE [7]** To select the second zone you wish to operate in manual.
- PRESS STATION [8, 9]** To select the station number you require for the second zone.
- PRESS ON [10]** To turn on the station for that zone.

TO OPERATE A NEW STATION ON A ZONE WHICH IS ALREADY IN OPERATION.

- PRESS ZONE [7]** To select the zone that you wish to change.
- PRESS STATION [8, 9]** To select the station you now require to turn on.
- PRESS ON [10]** To turn on the new station. This will also turn off the station that was previously operating on that zone.

***TO SWITCH OFF A STATION ON ONE ZONE
AND LEAVE THE OTHER ZONES RUNNING. (#)***

- PRESS ZONE [7]** To select zone to switch off.
- PRESS STATION [8, 9]** To select the last station that was operated on that zone (This can be seen by the 'ON' light in the **ON BUTTON [10]** being illuminated).
- PRESS ON [10]** This will now switch off just that zone, leaving all other zones in operation.

TO SWITCH OFF ALL ZONES (#)

- PRESS OFF [17]** This switches all zones off. **NB:** This means that there is no voltage on the output of the controller.

REMEMBER: Manual does not let a station have a run time which counts down.

1.6 OPERATING THE CONTROLLER IN AUTOMATIC

The AQUARIUS can be operated from pre-programmed start times which turn on the controller when required.

TO OPERATE THE CONTROLLER IN AUTOMATIC.

PRESS AUTO [19]

The controller now waits for a start time and will run the automatic program.

OPERATING THE CONTROLLER IN SYRINGE (#)

The controller can be operated in Syringe in the same way as automatic.

TO OPERATE THE CONTROLLER IN SYRINGE.

PRESS SYRINGE [20]

To put the controller into Syringe mode. The controller now waits for a start time which will run the Syringe program. This will run between 1 and 9 minutes on all stations with times allocated to them depending on the time set (see section 1.3).

OPERATING THE CONTROLLER USING BOTH SYRINGE AND AUTOMATIC (#)

The controller can be operated using both Syringe and automatic. This means that a program can first have a Syringe program for anything between 1 and 9 minutes followed by the main automatic watering times. The Syringe time is added to the main time therefore increasing the total time to each station by the Syringe set time.

TO OPERATE THE CONTROLLER IN BOTH SYRINGE AND AUTOMATIC MODES.

PRESS SYRINGE [20]

To put the controller into Syringe mode.

PRESS AUTO [19]

To put the controller into automatic mode

1.7 STARTING AN AUTOMATIC OR SYRINGE (#) SEQUENCE FROM MANUAL

The AQUARIUS automatic or Syringe cycles can be started manually by first following the manual procedure for turning on any valve (see section 1.4). Once the stations of your choice are on:

PRESS AUTO [19]

To start the controller in the automatic cycle. The controller then waits for the next minute to pass and then commences the automatic program from the station(s) selected.

USER HINT: If you want to operate all your stations for the exact length of time programmed then select the station 'P'. This will allow the controller to start the main program from the very beginning.

The same procedure is also true for the Syringe cycle.

RAIN SWITCH: If a rain switch is fitted then the controller needs to have the 'Rain Switch' set to the 'ON' position for it to be able to switch off the controller in the event of rain.

2.0 DIAGNOSTIC MODE.

TO OPERATE THE DIAGNOSTIC MODE

PRESS OFF [17] To make sure the controller is in the **OFF** mode.

PRESS DAY [1] **KEEP THIS BUTTON PRESSED.**

PRESS DAY [2] To enter the diagnostic mode.

If successful the display will change to show **d1** in the day window [**display A**] and **1 - -** in the station window [**display C**]. If unsuccessful then just repeat the procedure.

You have a total of **5 Diagnostic Modes**:

DIAGNOSTIC MODE NUMBER.	DIAGNOSTIC FUNCTION
d1	This works any valve like manual, but without operating the pump.
d2	This pulses a selected valve on and off.
d3	This cycles through each station one at a time testing it for operation.
d4	This turns a selected valve on and then resets it by pulsing the station.
d5	This cycles through all the stations turning each one on and off 4 times. If a fault is detected then the controller stops showing the station and the fault.

1. Diagnostic mode No.1 (**d1** in the day window [**display A**]) works like manual.

PRESS ZONE [7] To select the zone you require to operate.

PRESS STATION [8, 9] To select the station required for testing.

PRESS ON [10] To turn on the station.

2. Diagnostic mode No.2 (**d2** in the day window [**display A**]) switches a selected station on and off rapidly.

PRESS DAY [2] To select **d2** in the day window [**display A**].

The controller will now pulse the selected station on and off until the **OFF BUTTON [17]** is pressed.

3. Diagnostic mode No.3 (**d3** in the day window [**display A**]) cycles through each station one at a time testing each one.

PRESS DAY [2] To select **d3** in the day window [**display A**].

The controller will now cycle through each station indicating whether they are operating or not. This test will only be stopped when the **OFF BUTTON [17]** is pressed.

4. Diagnostic mode No.4 (**d4** in the day window **[display A]**) pulses the selected station first on and the next time off. This is most useful for an engineer diagnosing possible cable faults.

PRESS DAY [2] To select **d4** in the day window **[display A]**.

The controller will now pulse the selected station on and off alternating each time the display comes on. To stop the test press the **OFF BUTTON [17]**.

5. Diagnostic mode No.5 (**d5** in the day window **[display A]**) cycles through each station, operating each one *four times* testing for any faults. If the controller detects a fault (either **Err1**, **Err4**, or **Err8**) it will stop, showing the station at which the fault was discovered.

PRESS DAY [2] To select **d5** in the day window **[display A]**.

The controller will now cycle through the stations operating each one four times. To stop the test press the **OFF BUTTON [17]**.

PUMP CONTROL WHEN IN DIAGNOSTIC.

The pump can be operated in diagnostic by the following method:

PRESS DAY [1] To switch the pump on manually. There will be a **'P'** displayed in the far right hand display of the station window **[display C]**.

2. 1 DIAGNOSTIC MODE ERROR CODES

The following information is intended to give the user an indication of what the different error codes mean. It is intended to be used in conjunction with the fault finding chart found at the back of the manual in section 2. 4.

All error codes are displayed in the time window **[display B]** and are cleared from the controller's memory by pressing the:

MINUTES [6]

To delete the error code.

THE ERROR CODES

ERR 1 The controller has detected a solenoid which is permanently on.

ERR 2 The controller has sent out a signal to a decoder and there has been no response to the controller.

ERR 4 The controller has detected a decoder which is operating on station '0'.

ERR 8 The controller has detected an external voltage which is trying to enter the controller from the outside world.

This information is intended to give some basic guidelines as to the meaning of the error codes. For more detailed information see the fault finding charts found in section 2. 4.

IMPORTANT INFORMATION REGARDING THE DIAGNOSTIC MODE.

When in diagnostic mode, *station '0' (in all zones) should always read ERR 2.* This is because there should never be a station responding to a zero code from the AQUARIUS.

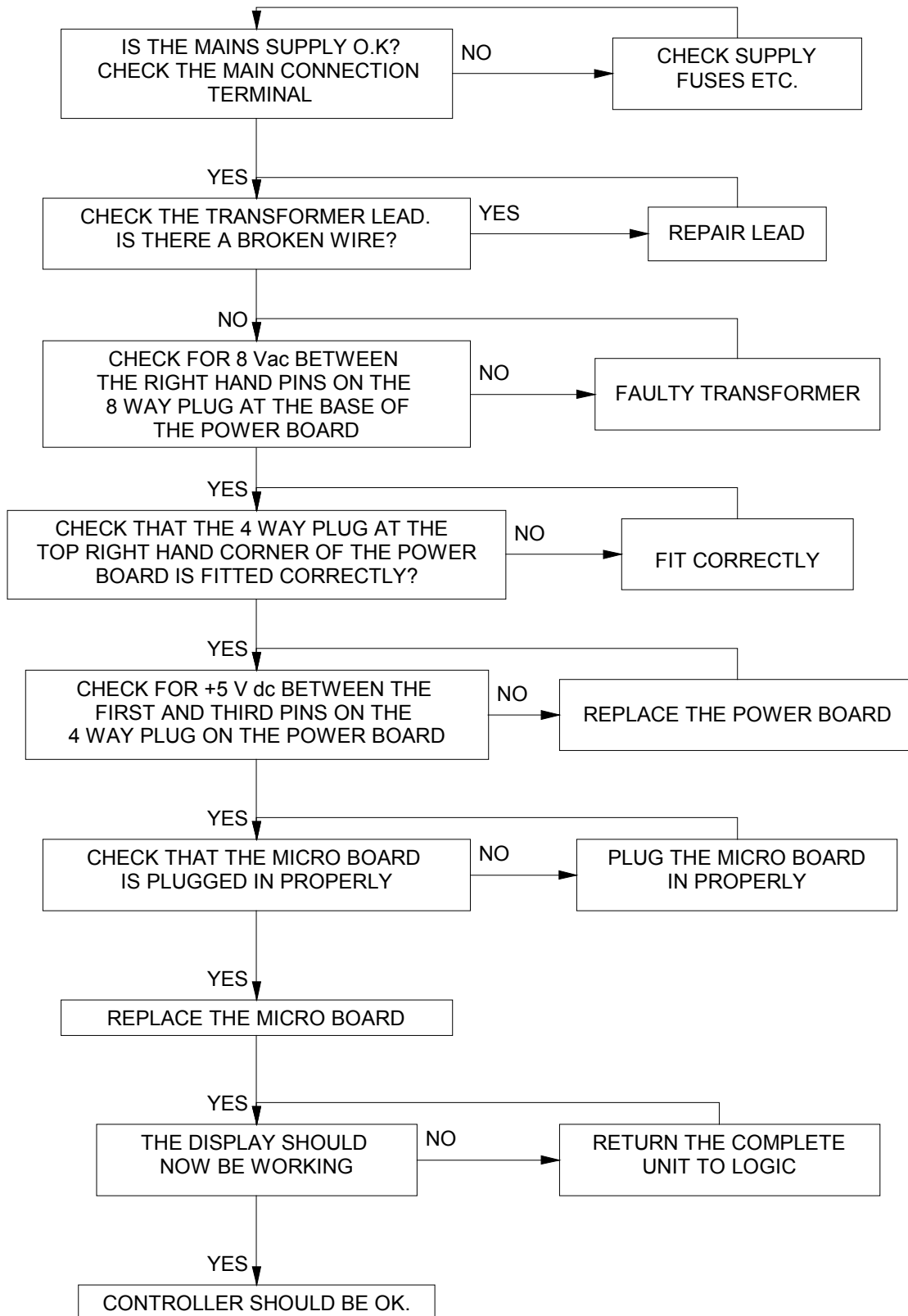
2.2 FAULT FINDING CHARTS

INDEX TO FAULT FINDING CHARTS.

	TYPES OF FAULT	DESCRIPTION OF FAULT	FAULT CHART NUMBER
1)	DISPLAY FAULTS	THE DISPLAY IS BLANK.	FAULT No.1
		SPURIOUS LETTERS ON THE DISPLAY:	FAULT No.2
		DISPLAY FLASHES ON AND OFF.	FAULT No.3 FAULT No.4
		DISPLAY SHOWS 'rAln'	FAULT No.5
		DISPLAY SHOWS 'triP'	FAULT No.6
		DISPLAY BLANKS OUT AND THEN RE-APPEARS.	FAULT No.7
		DISPLAY SHOWS 'Err 01', 'Err 02', 'Err 03', OR 'Err 04'.	FAULT No.8
		DISPLAY SHOWS 'E' IN THE RIGHT HAND WINDOW.	FAULT No.9
2)	OPERATING FAULTS:	DISPLAY FLASHES ON AND OFF.	FAULT No.3 FAULT No.4
		STATION MISSING	FAULT No.4 FAULT No.13
		'E' IN THE RIGHT HAND WINDOW WHEN IN AUTO, MANUAL, OR SYRINGE.	FAULT No.9
3)	DIAGNOSTIC FAULTS:	'Err 1'	FAULT No.10
		'Err 2'	FAULT No.13
		'Err 4'	FAULT No.11
		'Err 8'	FAULT No.12

FAULT: DISPLAY BLANK

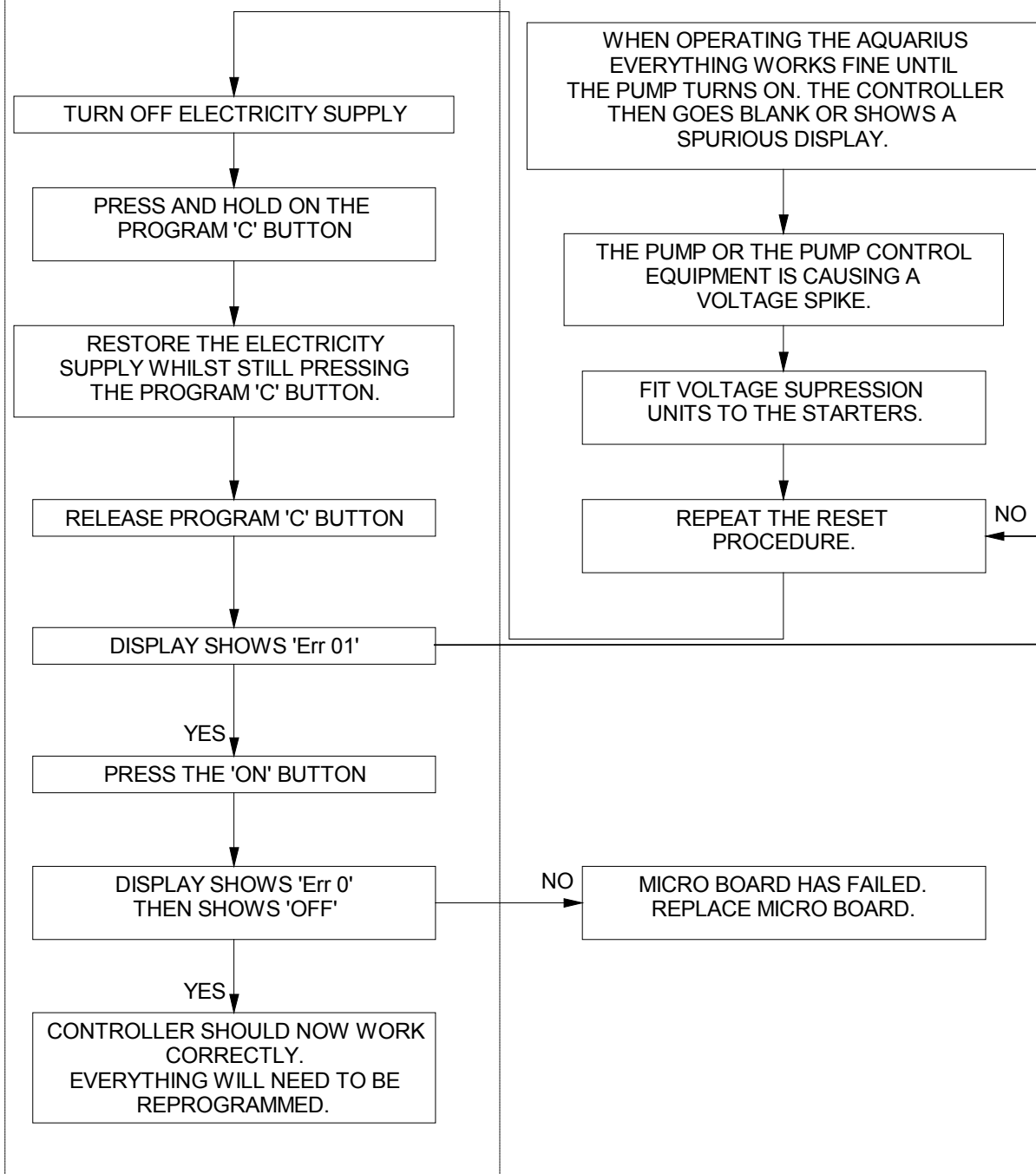
FAULT No. 1



FAULT: DISPLAY SHOWS SPURIOUS LETTERS OR NUMBERS (OTHER THAN 'trip', 'rAln', OR 'Err) or the DISPLAY is BLANK

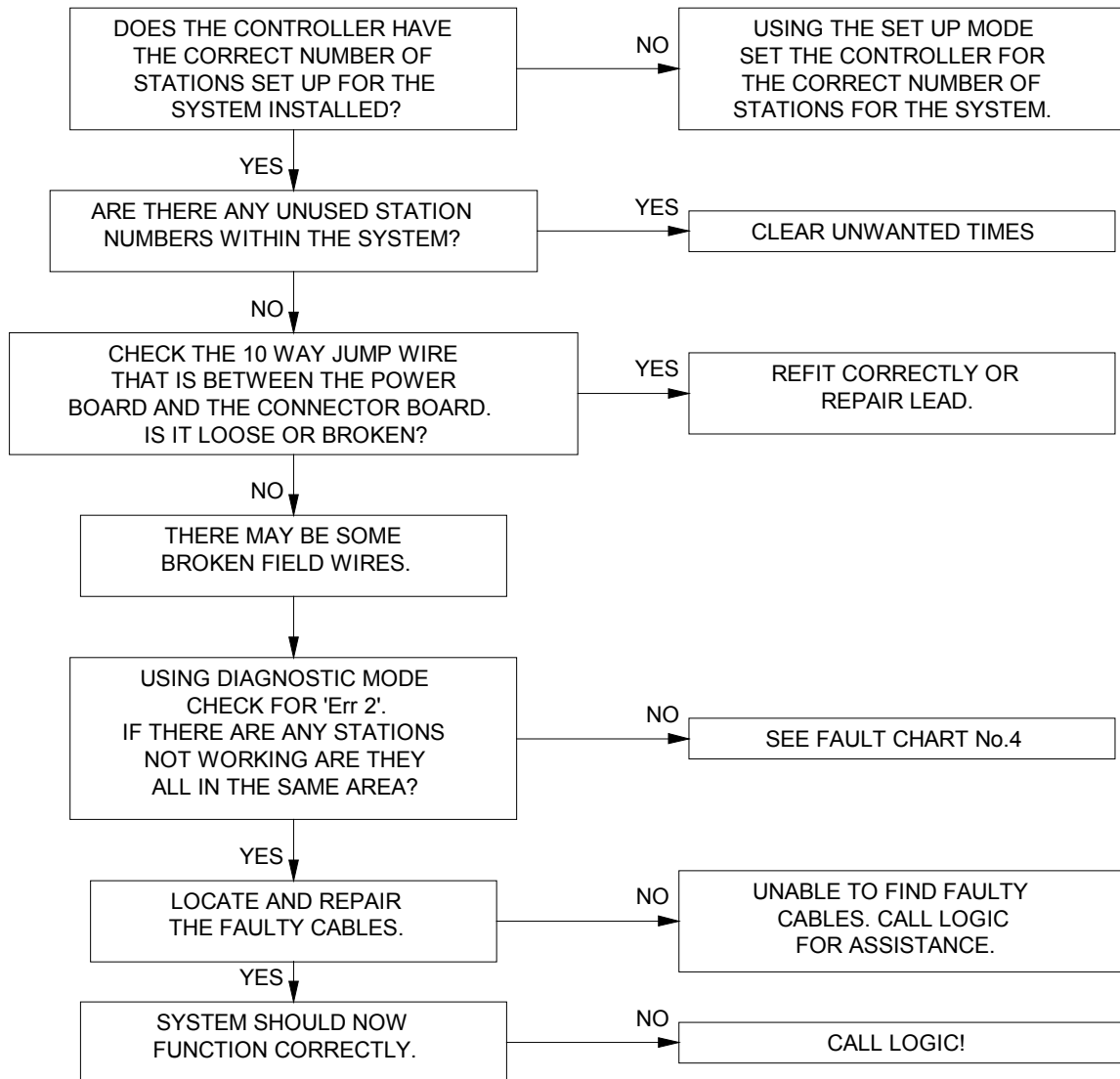
FAULT No.2

RESET PROCEDURE



FAULT: WHEN IN AUTO, MAN, OR P.WATER
THE DISPLAY FLASHES ON AND OFF BEFORE
TURNING A STATION ON.

FAULT No.3



FAULT: DISPLAY IS NORMAL,
BUT WHEN OPERATING IT SKIPS A
STATION(S) DURING A PROGRAM.

FAULT No.4

SWITCH TO DIAGNOSTIC MODE,
SELECT 'd3'. THE CONTROLLER
WILL CYCLE THROUGH THE ZONE.
STATIONS THAT DO NOT OPERATE
WILL SHOW 'Err 2' IN THE
CENTRE WINDOW.

GO TO THE VALVE BOX WHERE THE
SUSPECT DECODER IS LOCATED AND
MEASURE THE VOLTS ACROSS THE
RED AND BLACK WIRES.

NO VOLTS

SUSPECT BROKEN WIRES.
LOCATE THE BREAK AND
REPAIR. ENSURE THAT JOINT
IS LOCATED IN A CABLE
JUNCTION BOX.

SOME VOLTS

IF THE VOLTAGE IS LESS THAN
20Vac, BUT NOT ZERO, REMOVE
THE WIRES FROM THE CONTROLLER
AND, USING A METER, CHECK THE
RESISTANCE. REFER TO THE
MANUAL APPENDIX FOR FORMULA.

IS THIS VALUE CORRECT?

NO

IF THE VALUE IS TOO HIGH
THEN CHECK THE CABLE
SYSTEM DESIGN. TRY USING
AN UPGRATED TRANSFORMER
WITH A 40 Vac OUTPUT.

YES

MEASURE THE RESISTANCE
BETWEEN THE RED AND BLACK
WIRE AT THE DECODER. IS THERE
A DIFFERENCE GREATER THAN
40% OF THE RESISTANCE THAT
WAS MEASURED AT THE AQUARIUS?

YES

THERE IS A FAULTY JOINT
ON THE WIRES LEADING TO
THE DECODER. TRACE AND
REPAIR.

NO

USING DIAGNOSTIC MODE 'd1',
SELECT THE STATION NUMBER
OF THE DECODER THAT IS NOT
OPERATING. USING A VOLT
METER MEASURE THE VOLTAGE
BETWEEN THE YELLOW AND
BLACK WIRE OF THE DECODER.
IS IT GREATER THAN 20 Vac?

NO

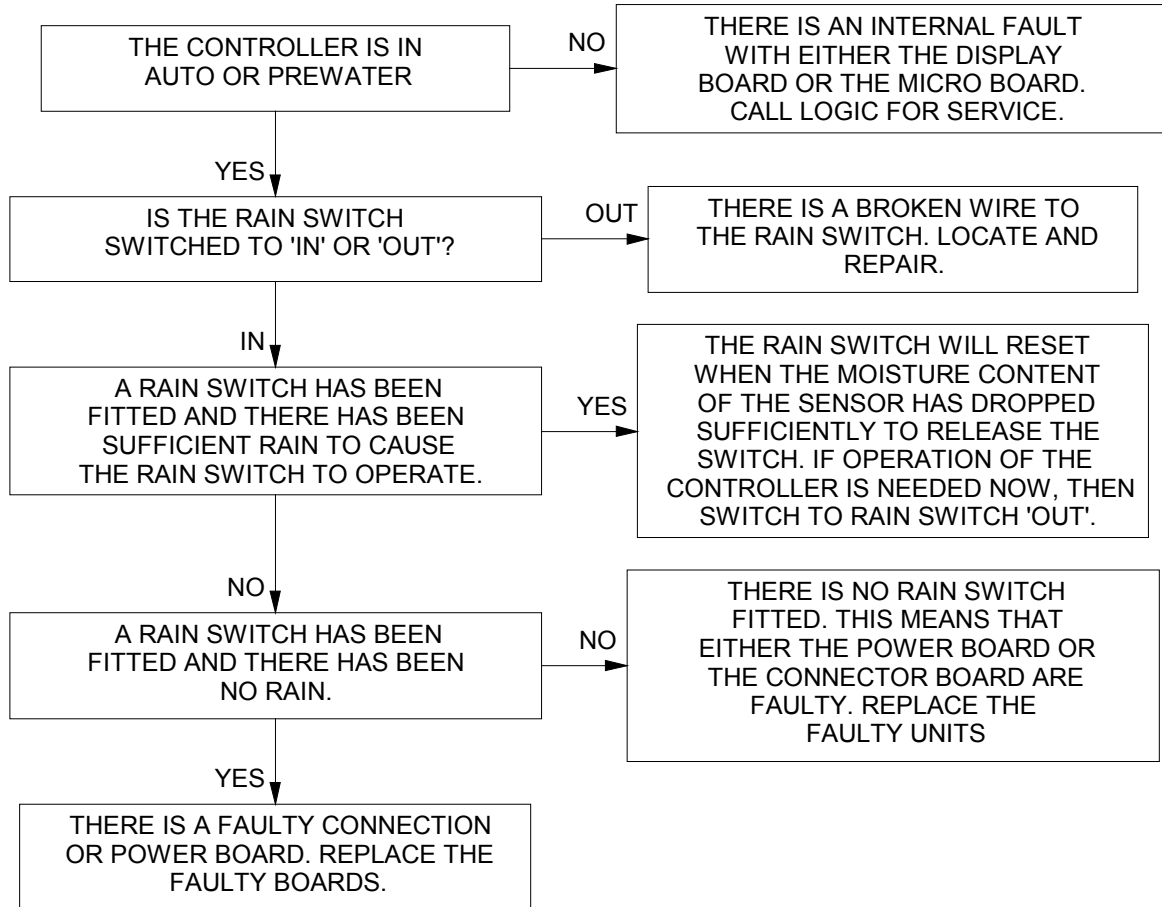
FAULTY DECODER.
REPLACE DECODER.

YES

THERE IS A FAULTY SOLENOID
COIL ON THE VALVE. REPLACE
THE SOLENOID AND RETEST.

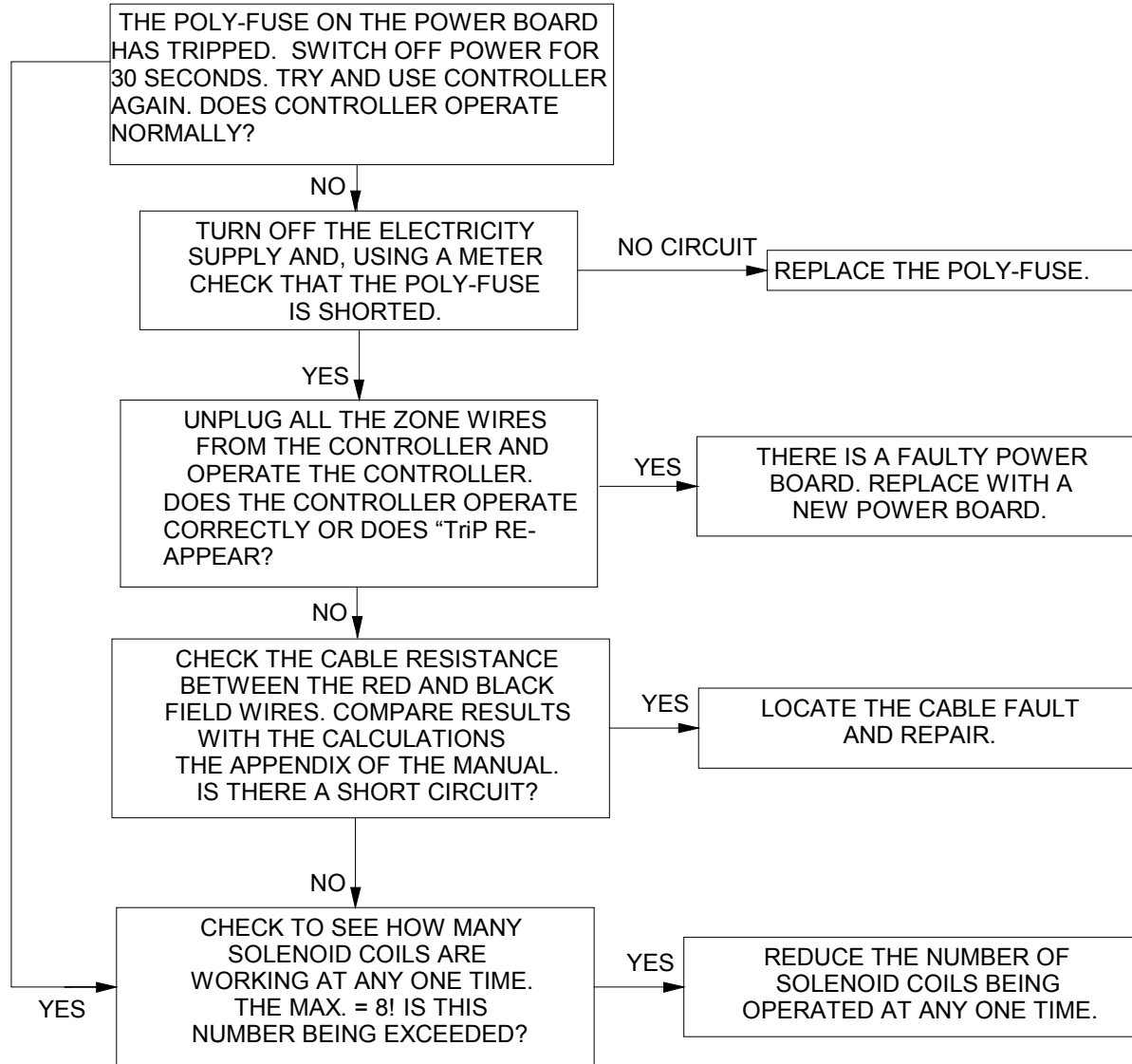
FAULT: DISPLAY SHOWS 'rAln'
IN THE MIDDLE WINDOW.

FAULT No.5



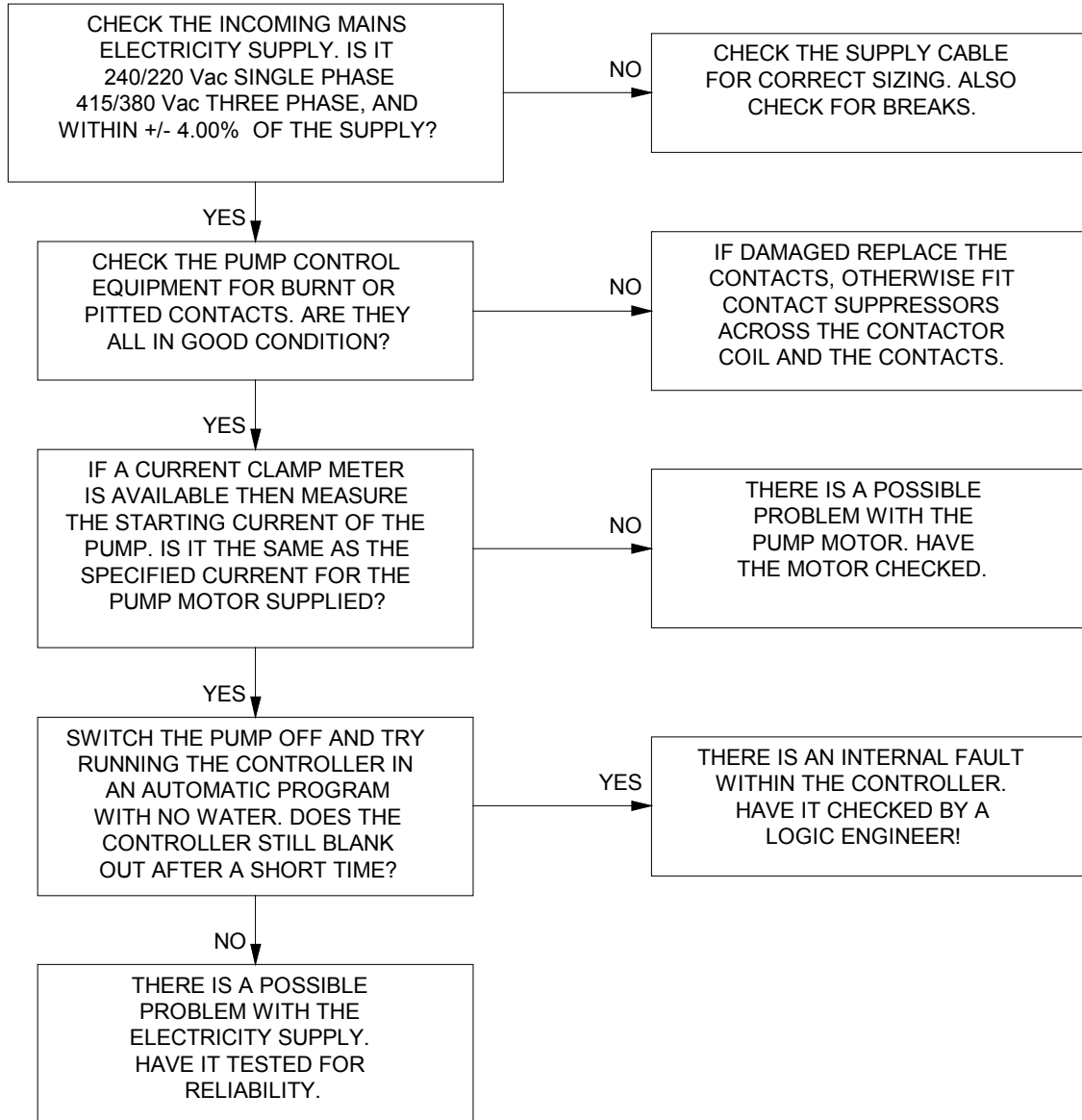
FAULT No.6

FAULT: DISPLAY SHOWS 'trip'



FAULT: DISPLAY SHOWS NORMAL BUT WHEN THE PUMP STARTS THE DISPLAY BLANKS AND A LETTER APPEARS IN RIGHT HAND WINDOW.

FAULT No.7



FAULT: DISPLAY SHOWS 'Err 01', 'Err 02', 'Err 03', OR 'Err 04', IN THE CENTRAL WINDOW.

FAULT No.8

THE DISPLAY WAS INFORMING YOU THAT THE MEMORY OF THE CONTROLLER HAS BEEN CORRUPTED. TO CLEAR THE MEMORY AND RESET THE AQUARIUS USING THE RESET PROCEDURE.

RESET PROCEDURE.

TURN OFF THE ELECTRICITY SUPPLY.

PRESS AND HOLD ON THE PROGRAM 'C' BUTTON.

RESTORE THE ELECTRICITY SUPPLY WHILST STILL PRESSING THE PROGRAM 'C' BUTTON.

RELEASE THE PROGRAM 'C' BUTTON.

THE DISPLAY NOW SHOWS 'Err 01'?

YES

PRESS THE 'ON' BUTTON.

DISPLAY WILL THEN SHOW 'Err 0' AND THEN GOES TO 'OFF'.

YES

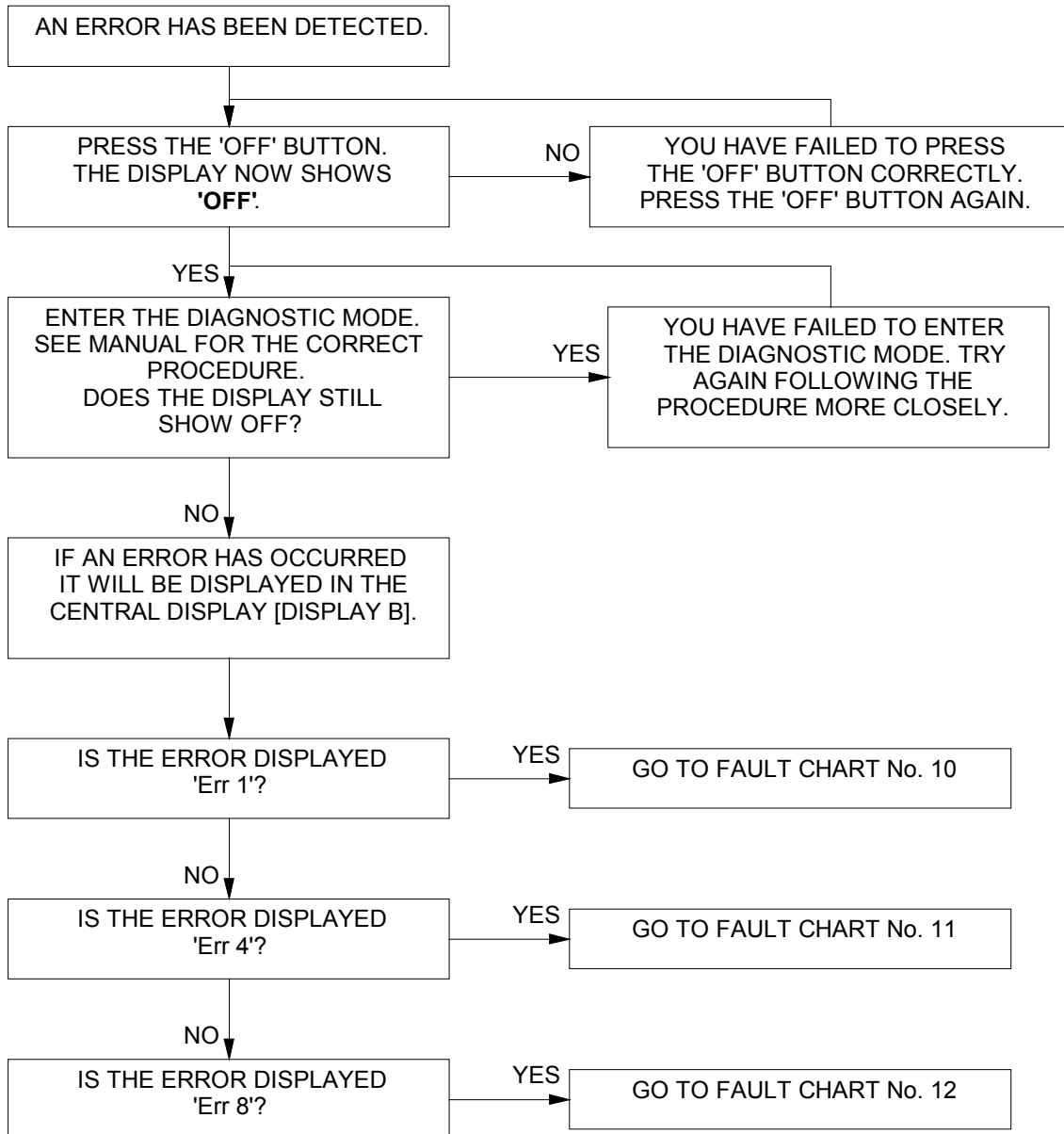
THE CONTROLLER SHOULD NOW WORK CORRECTLY. IT WILL NEED TO BE COMPLETELY REPROGRAMMED. SEE THE APPENDIX OF THE MANUAL FOR RESETTING THE CONTROLLER CONFIGURATION.

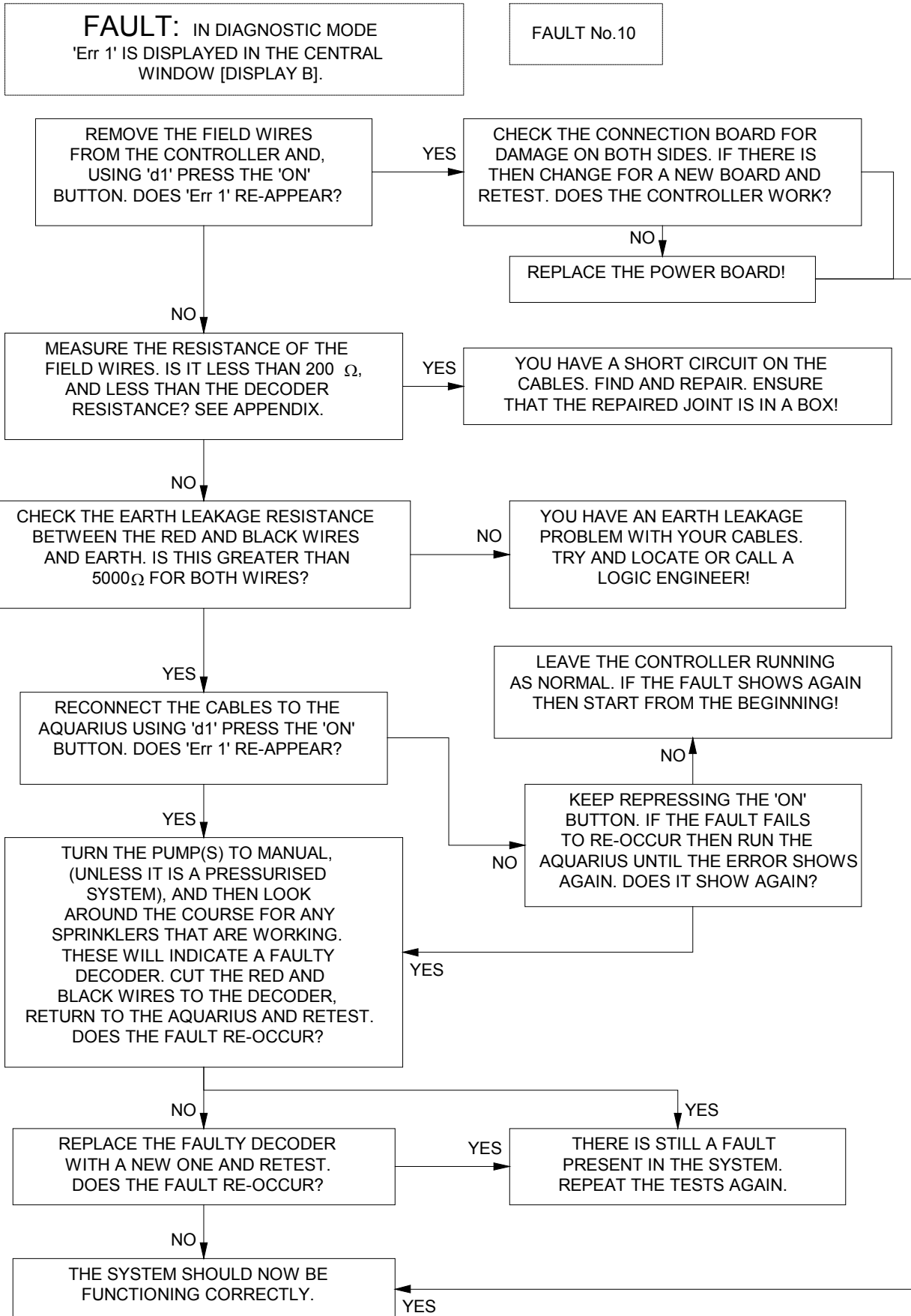
NO
YOU HAVE FAILED TO RESET THE CONTROLLER. REPEAT THE RESET PROCEDURE.

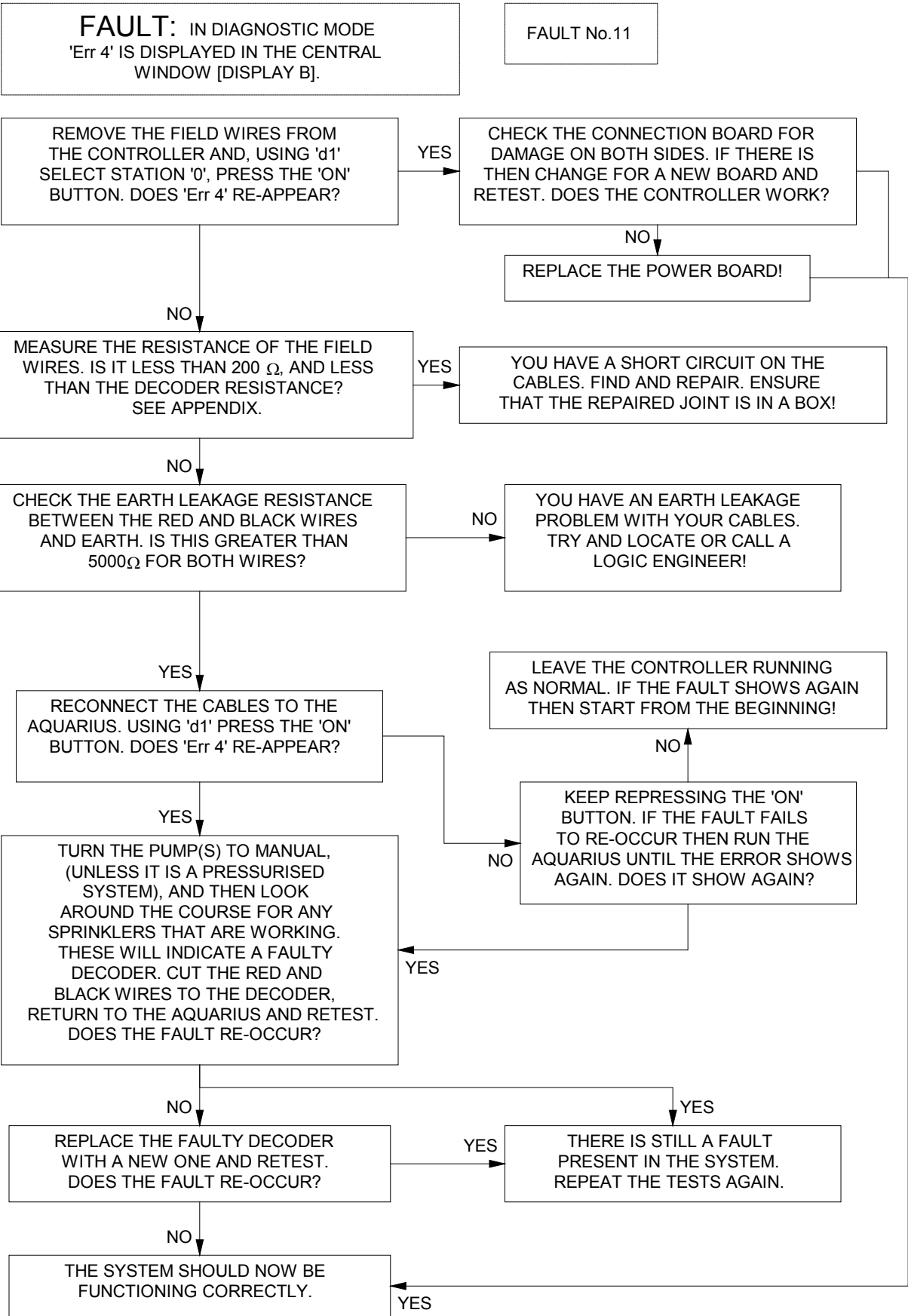
NO
TRY PRESSING THE 'ON' BUTTON AGAIN. IF THIS FAILS TO WORK THEN THE MICRO BOARD IS FAULTY. REPLACE!

FAULT: DISPLAY SHOWS 'E' IN THE RIGHT HAND WINDOW [DISPLAY C].

FAULT No.9

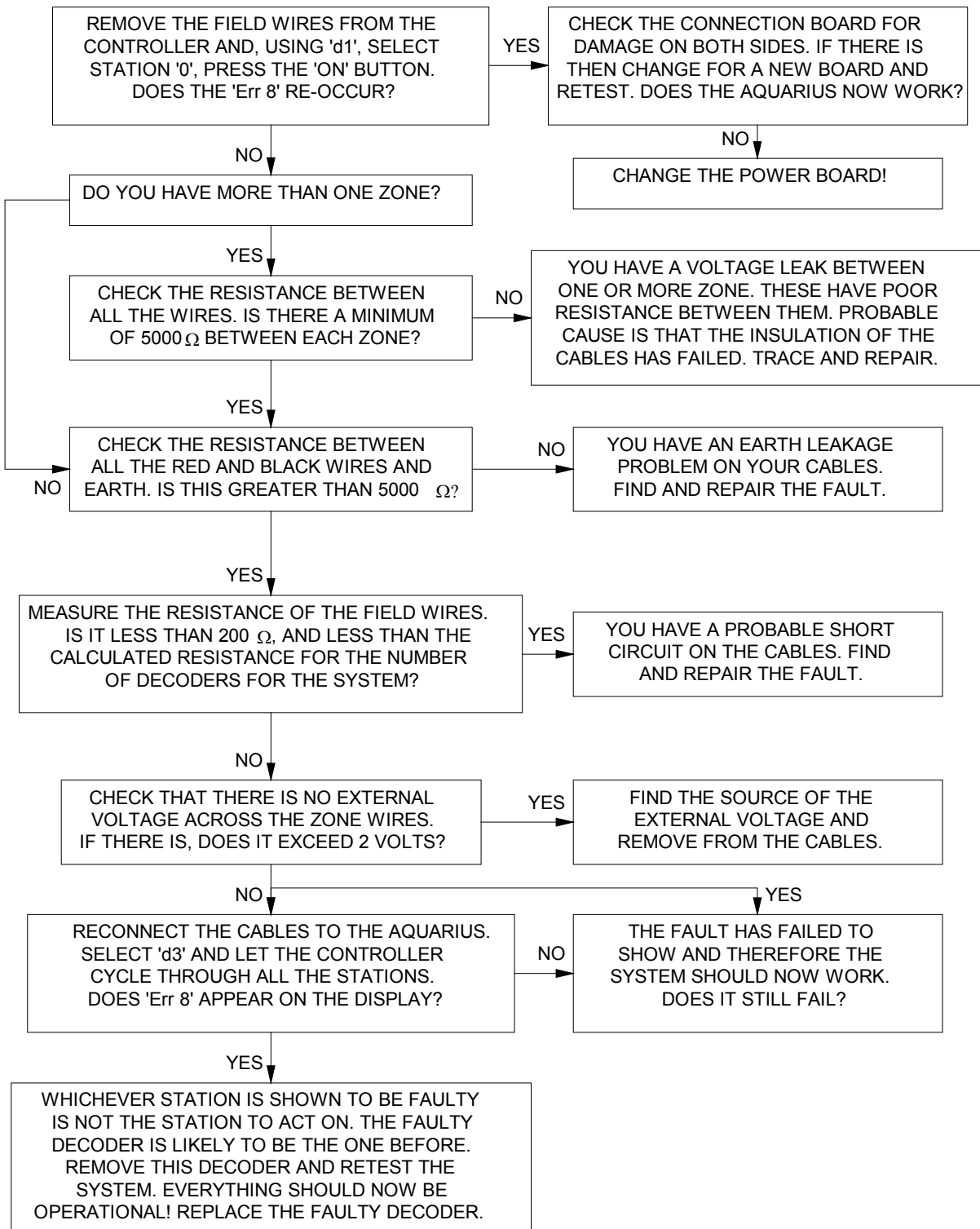






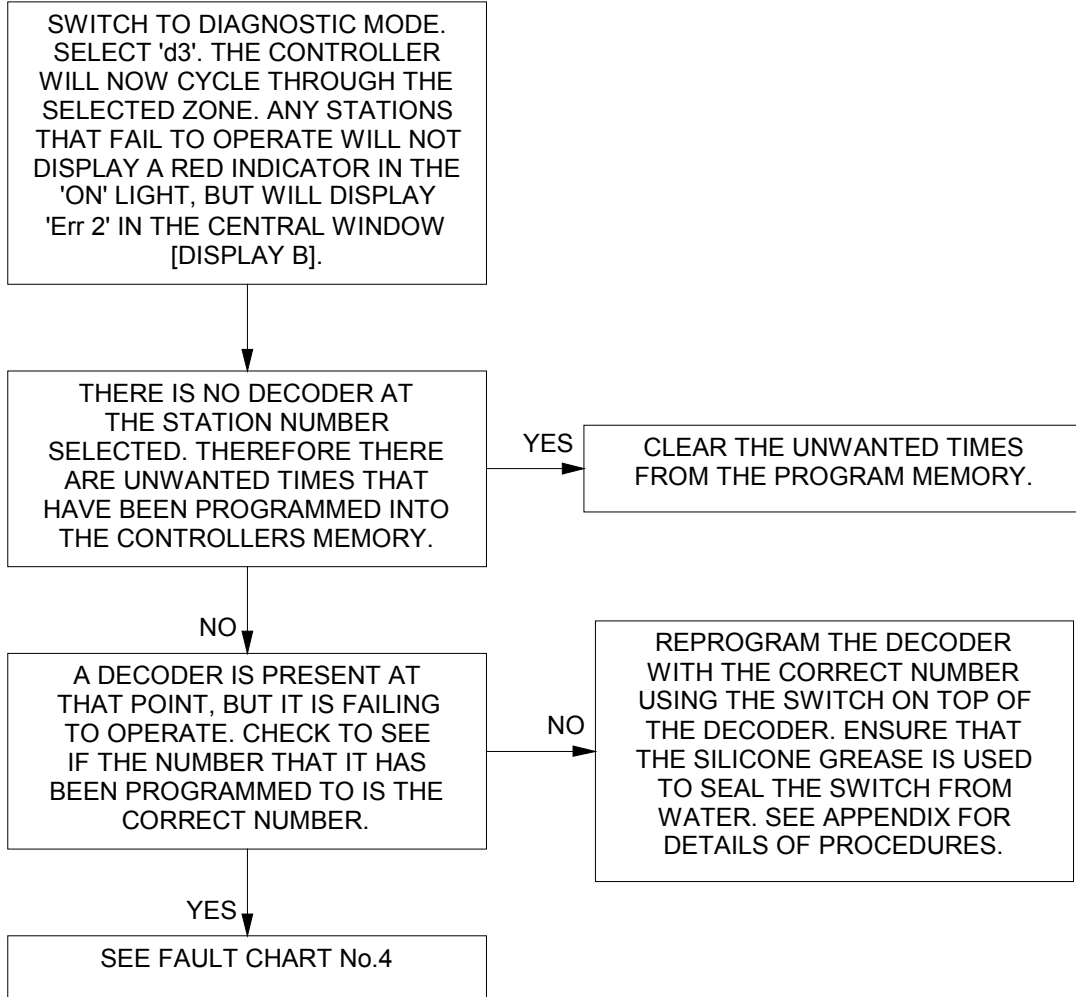
FAULTS: IN DIAGNOSTIC MODE
'Err 8' IS DISPLAYED IN THE CENTRAL
WINDOW [DISPLAY B]

FAULT No.12



FAULT: THE STATION IS NOT WATERING.
THERE IS NO RED 'ON' LIGHT, AND NO ERROR
MESSAGE SHOWN!

FAULT No.13



APPENDIX A

SET UP MODE (#)

The AQUARIUS has a set up mode which has been designed to allow both the installer and the user to be able to tailor the controller to suit the individual site.

To enter the set up mode the following key presses must be followed:

PRESS OFF [17]

The set up mode can only be accessed from the OFF mode.

PRESS ZONE, STATIONS, AND ON [7, 8 ,9, 10]

**ALL TOGETHER. KEEP THESE
BUTTONS PRESSED.**

PRESS DAY [1]

**KEEP THIS BUTTON PRESSED ALONG WITH THE
OTHERS.**

Whilst pressing these five buttons (if the correct buttons are pressed) the **PROGRAM A [11]** indicator will start to flash. When the light is **'ON'** then the **DAY BUTTON [1]** must be released. Successful entry into the set up mode will be indicated by the display changing from **OFF** and showing **'1' [IN DISPLAY A]**, and a number, usually **'99' [IN DISPLAY B]**.

There are 10 set up modes for the program version marked **'L1'**.

The software installed in the controller may be updated from time to time. To identify which version of software is installed into your AQUARIUS simply switch off the controller at the electricity supply. When it is off switch the supply back on. The controller will display the software version in the left hand window **[DISPLAY C]**.

THE SET UP MODES:

SET UP NUMBER	INITIAL (DEFAULT) VALUE	FUNCTION
1)	99	Number of stations in zone 1
2)	99	Number of stations in zone 2
3)	99	Number of stations in zone 3
4)	99	Number of stations in zone 4
5)	1	Program alternating mode. This alternates between programmes A and B at midnight. 0 = Alternating mode 1 = non alternating mode.
6)	4	Number of zones
7)	14	Number of days in the calendar. Maximum is 14 minimum is 1.
8)	1	Program lock mode. 0 = Program locked 1 = Program not locked
9)	0	Controller number for the AQUARIUS - PC The controller can have an address number set from 1 to 19. This should not be changed except by an authorised installer.
10)	1	Remote control time out reset. 0 = Long time out. (60 sec) 1 = Short time out. (0.5 sec) This should not be changed except by an authorised installer.

When you have finished setting up the controller for your system then simply press the **OFF BUTTON [17]** to exit the set up mode. All the information for the controller will now be automatically stored.

APPENDIX B

INSTALLING A DECODER.

These instructions are intended to inform the user in the correct method for the installation of the Logic decoder. If these instructions are not followed correctly, then the warranty of the decoder may be void.

When wiring the decoder into the system care must be taken to connect the wires correctly and with the right crimps or connectors. If wire crimps are used then there must be no bare copper showing at the base of the crimp when the wires are inserted into the crimp. The joint should be made using the correct tool for the crimp in order to ensure a secure joint. After completion of the joint it is recommended that the main wires are taped together below the crimp [not over it] to offer a mechanical support to the joint to prevent the joint from pulling apart.

Recommended crimp sizes are as follows.

1. To connect solenoid wires to decoder wires, use a BLUE crimp.
2. To connect decoder wires to the main 2.5 sq mm cables use an ORANGE crimp.
3. To connect 2 x 2.5 sq mm main cables and a decoder wire use a RED crimp.
4. To connect 3 x 2.5 sq mm main cables use RED crimps.

When using crimps it should be noted that trying to put too many wires into the joint is as bad as not making the joint properly.

Recommended Connector King sizes

1. To connect solenoid wires to decoder wires, use the SA 101, two way cable entry.
2. To connect decoder wires to the main 2.5 sq mm cables use the SA 102, three way cable entry.
3. To connect up to 4 x 2.5 sq mm main cables use the SA 3000, four way connector.

Instructions for connecting Logic Aquarius decoders

1. Black - connect to the black field wire.
2. Red - connect to the red field wire.
3. Yellow - connect both to the first solenoid.
4. Orange - connect to the second solenoid.
5. Green - connect to the third solenoid.
6. Violet - connect to the fourth solenoid.

ZONE 1

STAT.	LOCATION	A	B	C	STAT.	LOCATION	A	B	C
1)					51)				
2)					52)				
3)					53)				
4)					54)				
5)					55)				
6)					56)				
7)					57)				
8)					58)				
9)					59)				
10)					60)				
11)					61)				
12)					62)				
13)					63)				
14)					64)				
15)					65)				
16)					66)				
17)					67)				
18)					68)				
19)					69)				
20)					70)				
21)					71)				
22)					72)				
23)					73)				
24)					74)				
25)					75)				
26)					76)				
27)					77)				
28)					78)				
29)					79)				
30)					80)				
31)					81)				
32)					82)				
33)					83)				
34)					84)				
35)					85)				
36)					86)				
37)					87)				
38)					88)				
39)					89)				
40)					90)				
41)					91)				
42)					92)				
43)					93)				
44)					94)				
45)					95)				
46)					96)				
47)					97)				
48)					98)				
49)					99)				
50)									

ZONE 2 (#)

STAT.	LOCATION	A	B	C	STAT.	LOCATION	A	B	C
1)					51)				
2)					52)				
3)					53)				
4)					54)				
5)					55)				
6)					56)				
7)					57)				
8)					58)				
9)					59)				
10)					60)				
11)					61)				
12)					62)				
13)					63)				
14)					64)				
15)					65)				
16)					66)				
17)					67)				
18)					68)				
19)					69)				
20)					70)				
21)					71)				
22)					72)				
23)					73)				
24)					74)				
25)					75)				
26)					76)				
27)					77)				
28)					78)				
29)					79)				
30)					80)				
31)					81)				
32)					82)				
33)					83)				
34)					84)				
35)					85)				
36)					86)				
37)					87)				
38)					88)				
39)					89)				
40)					90)				
41)					91)				
42)					92)				
43)					93)				
44)					94)				
45)					95)				
46)					96)				
47)					97)				
48)					98)				
49)					99)				
50)									

ZONE 3 (#)

STAT.	LOCATION	A	B	C	STAT.	LOCATION	A	B	C
1)					51)				
2)					52)				
3)					53)				
4)					54)				
5)					55)				
6)					56)				
7)					57)				
8)					58)				
9)					59)				
10)					60)				
11)					61)				
12)					62)				
13)					63)				
14)					64)				
15)					65)				
16)					66)				
17)					67)				
18)					68)				
19)					69)				
20)					70)				
21)					71)				
22)					72)				
23)					73)				
24)					74)				
25)					75)				
26)					76)				
27)					77)				
28)					78)				
29)					79)				
30)					80)				
31)					81)				
32)					82)				
33)					83)				
34)					84)				
35)					85)				
36)					86)				
37)					87)				
38)					88)				
39)					89)				
40)					90)				
41)					91)				
42)					92)				
43)					93)				
44)					94)				
45)					95)				
46)					96)				
47)					97)				
48)					98)				
49)					99)				
50)									

ZONE 4 (#)

STAT.	LOCATION	A	B	C	STAT.	LOCATION	A	B	C
1)					51)				
2)					52)				
3)					53)				
4)					54)				
5)					55)				
6)					56)				
7)					57)				
8)					58)				
9)					59)				
10)					60)				
11)					61)				
12)					62)				
13)					63)				
14)					64)				
15)					65)				
16)					66)				
17)					67)				
18)					68)				
19)					69)				
20)					70)				
21)					71)				
22)					72)				
23)					73)				
24)					74)				
25)					75)				
26)					76)				
27)					77)				
28)					78)				
29)					79)				
30)					80)				
31)					81)				
32)					82)				
33)					83)				
34)					84)				
35)					85)				
36)					86)				
37)					87)				
38)					88)				
39)					89)				
40)					90)				
41)					91)				
42)					92)				
43)					93)				
44)					94)				
45)					95)				
46)					96)				
47)					97)				
48)					98)				
49)					99)				
50)									

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