

## AquaGuard Fire Pump Controller Troubleshooting Guide

Issue	Possible Cause	Action
Controller not powering on	Power supply to controller not on or wired incorrectly.	Check all connections, fuses and MCB/RCBO.
Controller powers on, then goes off when pump start requested/trips MCB.	Pump wired incorrectly  Fuse or MCB/RCBO not sized correctly for pump.	Check pump motor wiring  Replace fuse, MCB/RCBO for an adequately sized C rated type.
Pump running not pressurising system	Suction/delivery valves closed  Pump not adequately primed of all air.	Check all suction and delivery valves are open.  Open all pump bleed screws until water flows freely. Flow large amounts of water from test valve.
Pump not generating design flow/pressure	Pump not adequately primed of all air.  Obstruction in suction or delivery pipe work.  Suction pipe diameter too small or pipe run too long	Open all pump bleed screws until water flows freely. Flow large amounts of water from test valve. Check pipe work and clear if necessary.  Pump suction must never be smaller than pump inlet diameter. If long suction pipe run then increased pipe size should be used.
Pump not running when pressure low or at zero	Pressure switches not wired correctly or pressure switch setting too low.  Pressure switch cable wired to flow switch	Wire pressure switches between COM and 1 (normally closed).  Set correct pressure on pressure switch adjustment screws.
Pump running and not shutting off	Pressure switches not wired correctly or pressure switch setting too high.	Wire pressure switches between COM and 1 (normally closed). Set correct pressure on pressure switch adjustment screws.
External Fire Panel in fault when pump controller displays no fault on the LCD Display.	Incorrect wiring of fault output  Pump controller switched off	Fault output must be wired normally closed (NC)  Turn pump controller on
Faults - A11 Current too low, A12 Current too high, Power too high, Power too low.	Correct pump current and power not input correctly  Possible pump fault	Change saved current and power settings in Setup Menu.  Check current/power reading if vastly different to pump data plate call pump manufacturer.
230v Solenoid valve fails to operate on weekly test followed by voltage fault on controller	Incorrect wiring to solenoid	Check wiring – may have blown 1.6A fast blow fuse in controller, replace if necessary.

<b>Issue</b>	<b>Possible Cause</b>	<b>Action</b>
Pump running fault indicated.	Pump running for more than 62 seconds.	Normal under fire pump condition if pump running for more than 1 minute.  Faulty component – Investigate.
'A01 Low mains voltage' Fault	Fuse blown inside controller	Check 1.6A fast blow fuse inside controller, replace if necessary.
'UA6 Jockey Limit' Fault	Too many pump starts within 7 days	Force weekly test by pressing and holding the black button for 10+ seconds. Procedure in section 5.3
'UA8 PS2 not detected' Fault	PS2 not seen within 3 seconds of PS1 on weekly test	Raise pressure of PS2 closer to PS1 (Switch labelled high – Screw adjustment clockwise)
'UA7 PS1 not detected' Fault	PS2 is seen before PS1 on weekly test	Either raise pressure of PS1 (Low) or Lower pressure of PS2 (High)
'A38 Pressure test input failed'	Weekly test timed out, pressure switches not seen within the test period – System pressure dropping too slowly on test.	Test return pipe work too small, recommend a minimum of 3/4". Too much air in system – Bleed air if no luck call Aquaguard technical.
'FS not detected'	Flow switch not detected on weekly test	Check flow switch operates correctly
'UA2 Fire Pump on' 'UA3 Sprinkler Activated' when pump not running or after weekly test, triggering the alarm.	Flow switch triggered for more than 20 seconds – Possibly stuck open.	Check flow switch is operating correctly and not stuck open or contacts faulty.
'UA1 Tank Level Low' Fault	Tank Level low or wired incorrectly	Check tank water level or tank switch wiring contact requires normally closed switch – open on low level
'A07 Incorrect Phase Sequence' Fault	Phases wired incorrectly to isolator – Three phase pumps only.	Check wiring in pump isolator from controller, swap phases if required.
Any Fault present on controller not listed in table below.	Refer to fault alarm table below to identify fault and possible action required.	Undertake action if possible.  Call Aquaguard if problem persists.

If you have followed the above steps and controller is suspected to be faulty call Aquaguard on 0800 040 7738 for advice.

## Alarm Table

COD	DESCRIPTION	ALARM EXPLANATION
A01	Low mains voltage	Mains voltage lower than the threshold set in P05.01.
A02	High mains voltage	Mains voltage higher than the threshold set in P05.02.
A03	Low mains frequency	Mains frequency lower than the threshold set in P05.03.
A04	High mains frequency	Mains frequency higher than the threshold set in P05.04.
A05	Voltage asymmetry mains	Mains voltage asymmetry higher than the threshold set in P05.05.
A06	Phase failure	Missing of one of the phases.
A07	Incorrect phase sequence	The phase sequence is not correct.
A08	Pump starting failure	Either the electrical parameters did not enter the limits and/or delays defined in menu M05 or the programmable input with function <i>Pump pressure switch</i> did not activate.
A09	Locked rotor	Motor current higher than 500% of rated $I_n$ for a time longer than 5s.
A10	Dry running	Pump dry running. The measured power factor is lower than the threshold set in P05.13.
A11	Current too low	Motor current lower than the threshold set in P05.06
A12	Current too high	Motor current higher than the threshold set in P05.07
A13	Unbalanced current	The current asymmetry has exceeded the threshold set in P05.14.
A14	Unexpected current	The system detects a current higher than 5% of rated current $I_n$ even if there is no command to run the motor.
A15	Wrong CT connection	One or more current transformers (CT) are not connected in the correct way (system measures negative active power). Check the connections at terminals 57, 58, 59, 60.
A16	System error	Internal error. Please contact Lovato Electric Technical Support (tel. 035 4282422; e-mail: <a href="mailto:service@LovatoElectric.com">service@LovatoElectric.com</a> ).
A17	Low temperature in pump room	The room temperature is lower than the threshold set in P04.02 for a time longer than P04.03.
A18	High temperature in pump room	The room temperature is higher than the threshold set in P04.04 for a time longer than P04.05.
A19	Water reserve	Alarm generated by the input programmed with the <i>Water supply</i> function
A20	Low water tank level	Water level in the tank lower than the threshold set in P02.18.
A21	Water tank empty	Water level in the tank lower than the threshold set in P02.19.
A22	Low level priming tank	The programmable input with function <i>Priming tank level</i> is active
A23	System is not in automatic mode	System not in automatic mode for more than 24 hours
A24	Fire pump running	Alarm generated by the input programmed with the 'Pressure switch start' function.
A25	Fire pump not in pressure	Alarm generated by the programmed input with the function <i>Pump pressure switch</i> not active after 1min with motor running.
A26	Pump in pressure	Alarm generated by the programmed input with the function <i>Pump pressure switch</i> active for 1 minute without motor running.
A27	Maintenance 1 requested	Alarm generated when the maintenance intervals of its

<b>A28</b>	Maintenance 2 requested	range reach zero. See menu M08. Use the command menu to reset the hours and reset the alarm.
<b>A29</b>	Maintenance 3 requested	
<b>A30</b>	Suction valve partially opened	Alarm generated by the programmed input with the function 'Suction valve partially open', in this situation the suction valve is not capable of delivering the maximum flow rate of water needed to the pump.
<b>A31</b>	Discharge valve partially opened	Alarm generated by the programmed input with the function 'Delivery valve partially open', in this situation the delivery valve is not capable of delivering the maximum flow rate of water needed to the sprinkler system.
<b>A32</b>	Sprinkler in pump room activated	Alarm generated by the programmed input with the function ' <i>Sprinkler activated</i> '
<b>A33</b>	Max number of start-up jockey pump	Alarm generated when the threshold set to parameter P02.20 is exceeded and if there is a programmed input with the function ' <i>Jockey pump activated</i> '.
<b>A34</b>	Jockey pump alarm failure	Alarm generated by the programmed input with the function ' <i>Jockey pump failure</i> '.
<b>A35</b>	Timeout jockey pump	Alarm generated when the threshold set to parameter P02.21 is exceeded and if there is a programmed input with the function ' <i>Jockey pump activated</i> '.
<b>A36</b>	Drainage pump alarm failure	Alarm generated by the programmed input with the function ' <i>Drainage pump failure</i> '.
<b>A37</b>	Communication error	RS-485 communication among different FFL... is not working properly. Check wiring and communication settings in M11 menu.
<b>A38</b>	Pressure input test failed	During automatic test (in ON-OUT mode) the pressure switch remains closed for more than 1 minute.
<b>UA1</b> ... <b>UA8</b>	User alarms	The user alarm is generated by enabling the variable or associated input in menu M18.

<b>COD</b>	<b>DESCRIPTION</b>	<b>ALARM EXPLANATION</b>
UA1	Tank Level Low	Tank Level Low
UA2	Fire Pump On	Pump in Fire Mode - running for more than 20s
UA3	No FS detected	No flow switch detected on weekly test
UA4	Pump Running	Pump running for more than 60 seconds
UA5	Auto Test On	Weekly automatic test activated
UA6	Jockey Limit	Too many <u>pump</u> starts in 7 days
UA7	PS1 Not Detected	Pressure switch 1 not seen on weekly test
UA8	PS2 Not Detected	Pressure switch 2 not seen on weekly test