

FAULT FINDING ON TSHR AND TSHRE CONTROL SYSTEMS

<u>Symptom</u>	<u>Possible Cause</u>	<u>Remedy</u>
<p>Temperature display blank</p> <p>“OR” on Temperature display</p> <p>Negative value on Temperature display.</p>	<p>230V mains supply turned off/ failed</p> <p>Temperature control module turned off</p> <p>Supply fuse in control cabinet tripped</p> <p>4 amp control board fuse in cabinet tripped</p> <p>Temperature control module failed</p> <p>Temperature sensor disconnected, or broken.</p> <p>Reverse connection of temperature sensor.</p>	<p>Check supply fuse/turn on etc</p> <p>Turn on temperature control module using “X” button. <i>(Note. in normal operation the “X” button is disabled and unit supply is on when mains supply is connected to system)</i></p> <p>Re-set fuse</p> <p>Re-set fuse</p> <p>If 230V present on wire 20 (terminal 7 on control unit) then controller module failed, controller should be replaced</p> <p>Check sensor is plugged into control box or if sensor wires are broken, plug in or replace sensor. <i>(Note. fan and pump will default to ON until fault rectified)</i></p> <p>Check sensor plug is inserted into connector socket on control box correctly, one pin is smaller than the other.</p> <p>Swap over sensor input connectors on rear of temperature controller</p>
<p>Fan not running</p>	<p>Supply fuse in control cabinet tripped</p> <p>6 amp fan supply fuse in cabinet tripped</p> <p>Fan speed control potentiometers set to 0</p>	<p>Check & re-set fuse</p> <p>Check & re-set fuse (TSHR systems)</p> <p>Adjust fan speed controls to required speed.</p>

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<p><u>3 Phase FAN Systems Only</u> System is fitted with a single phase to 3 three phase converter for motor control. Extreme care should be taken when servicing this module as high voltages may be present on the control inputs etc.</p>	Fan on/off switch in OFF position	Turn fan on/off switch to ON position
	Green "Fan Timer Finished" indicator ON.	Boiler cycle completed press Green button when ready to start next cycle.
	Boiler temperature above set temperature (OUT1), amber "Control Temperature Achieved" indicator ON	Wait for boiler temp. to drop below set temp (OUT1), fan will automatically re-start
	Fan speed control potentiometer failed	Replace fan speed control potentiometer
	Fan control relay failed, (<i>Note. check relay pushed fully into mounting socket</i>)	230V present on wire 2 but not on wire 7. replace relay
	Fan control relay supply failed	230V not present on wire 3, replace 12 hour timer
	Fan Failed	230V present on wire 7 AND speed control potentiometer OK, replace fan
	20 amp supply fuse in cabinet tripped	Check system and re-set fuse.
3 phase module failed or in fault condition	Check green status light on control module is ON	
	Check red fault light on control module, count number of flashes before contacting FARM2000 for advice.	
Motor control overheated	Clean/replace ventilation filters	
	Replace external cooling fan	

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Fan runs for 2-3 mins and stops	Press and hold Green Button for min 5 secs.	Re-try, if problem persists replace 12 timer assembly.
Fan runs continuously regardless of timer setting	12 hour fan timer board failed	Replace 12 hour timer assembly
Fan ONLY operates in Soft Start mode	<p>Soft Start timer failed (check timer delay period completed)</p> <p>Soft Start control relay failed, <i>(Note. check relay pushed fully into mounting socket)</i></p>	<p>If 230V present on wire 4 but not on wire 14 and RED fan control relay status light OFF replace timer</p> <p>230V present on wire 2 but not on wire 7 Red relay status light ON. Replace relay</p>
Fan ONLY runs at Full Speed	One or both fan speed control potentiometers have lost the ground signal (blue wires)	<p>If both soft start and main speed controls run at full speed only check soft start relay is pushed fully home.</p> <p>If soft start only or main speed only controls run at full speed check soft start relay is pushed fully home and/or check specific control potentiometer wiring (blues wire specifically)</p>
Pump not operating	<p>Pump failed</p> <p>Supply fuse in control cabinet tripped</p> <p>6 amp pump protection fuse failed</p> <p>Boiler temperature less than pump operating temperature set on temperature controller (OUT2)</p>	<p>Check and/or replace pump</p> <p>Check and re-set fuse</p> <p>Check and re-set fuse (TSHRE systems)</p> <p>Wait for boiler to achieve set pump operating temperature.</p>

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	<p>Temperature controller failed</p> <p>Pump control relay failed, <i>(Note. check relay pushed full into mounting socket)</i></p>	<p>Adjust OUT2 to lower value.</p> <p>230V present on wire 20 but not on wire 19, replace temperature controller. Red pump control relay light not illuminated</p> <p>230V present on wire 2 but not on wire 8, red pump control relay status lamp on. Replace relay</p>
<p>Damper not operating</p>	<p>Damper mechanism mechanically jammed</p> <p>Damper plug loose or fallen out</p> <p>Damper motor failure</p> <p>Damper delay timer failed</p> <p>Damper control timer failed</p> <p>Damper control relay failed, <i>(Note. check relay pushed full into mounting socket)</i></p>	<p>Check mechanism and clear any blockage, by depressing clutch on motor, damper should be free to rotate by hand.</p> <p>Push damper connector fully home and tighten locking collar</p> <p>230V present on wire 11, no damper rotation. Replace damper motor</p> <p>230V present on wire 12 but not on wire 15, replace timer. Red delay timer status lamp on</p> <p>230V present on wire 15 but not on wire 17 when green status lamp on timer is on, replace timer</p> <p>230V present on wire 17 but not on wire 11, Red damper control lamp illuminated. Replace relay</p>

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<p>Damper not re-setting (homing)</p>	<p>Green button pressed to re-start combustion cycle, or power supply is interrupted, before total time set on main timer has elapsed (i.e. green fan timer finished indicator not on)</p> <p>Damper mechanism mechanically jammed</p> <p>Damper control relay failed, (<i>Note. check relay pushed full into mounting socket</i>)</p> <p>Damper motor failure</p>	<p>Damper will only automatically re-set after the main timer has completed the set period.</p> <p>If the green button is pressed or the power supply is interrupted before the timer has finished, the damper must be manually re-set</p> <p>Check mechanism and clear any blockage, by depressing clutch on motor, damper should be free to rotate by hand.</p> <p>230V present on wire10 but not on wire 18. Replace relay.</p> <p>230V present on wire 18, no damper rotation. Replace damper motor</p> <p>230V present on wire 18 when green home lamp illuminated, no damper rotation (this assumes damper is not already at home/start position). Replace damper motor</p>
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