Troubleshooting Guide

Merlin 1000S+ Gas Proving & Electrical Isolation System

S&S NORTHERN™

Gas Safety Products

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1   General information

The Merlin 1000S+ is a gas proving and electric utility isolation panel.

The system comprises of a control panel and a gas pressure sensor. The Merlin 1000S+ can receive connections from remote emergency shut-off buttons, gas detectors and a CO2 monitor. It can also be integrated with a BMS and fire alarm.

2   Fault LED

2.1   No Power LED Illuminated

1   If the system is connected to the mains supply, the Power LED will illuminate. Please ensure there is in fact 230/240V going to the 'Power' terminal.
2   If the system is connected to the mains supply and the power LED, located at the bottom right side of the board, is not illuminated please check to see if the 3A fuse is still intact.
3   Please make sure the ribbon, which connects the front and back PCB's, is securely connected.
4   If none of the above have rectified the fault please contact S&S Northern for further assistance.

2.2   Emergency Stop Fault

1   If the front fascia emergency stop has been pressed, please re-press the button to release then reset the panel using the key switch.
2   If you have a remote emergency stop connected to the Merlin 1000S+ please ensure this has not been activated. If this has please reset the emergency stop then reset the 1000S+ with the key.
3   If you have multiple remote emergency stops connected to the same control panel, please ensure these have been wired in a loop series to our panel and connected to the 'EM REMOTE' terminal in the Merlin 1000S+.
4   If you are not using an additional emergency stop, please ensure the 'EM REMOTE' terminal is linked out. Check that the link is securely connected by ensuring you have continuity.
5   If none of the above have rectified the fault please contact S&S Northern for further assistance.

2.3   Pressure Low

1   Please check the gas line pressure, this fault generally means the pressure being detected is below 12mbar which is below the minimum gas working pressure of the Merlin 1000S+.
2   Ensure there is gas reaching the gas valve and no upstream quarter turn valves are closed during the panels working condition. Also, you may need to check to see if the gas solenoid valve is lifting.
3   If none of the above have resolved the error please contact S&S Northern for further assistance.

2.4   Test Fail

1   Please ensure all gas appliances from the downstream of the gas solenoid valve are isolated then reset the system by turning the key off and back on.
2   If there are no open appliances a gas engineer should investigate if there is a gas leak on the pipework.
3   Please check that the gas has not been isolated before the gas solenoid valve.

4   Please ensure the gas line pressure of the gas solenoid valve is above
12mbar, if it's not this will have to be increased as the Merlin 1000S+ has a minimum
working pressure of 12mbar.

5   Please check the wiring:
+ = RED
- = Black
IN = Yellow or Blue

6   Using the resistor supplied in the box please link between the '+' & 'IN' on the pressure
sensor terminal. If the panel completes the 30 second testing period and illuminates
'GAS ON', this shows the panel is working and the issue is transducer or gas related.
(Re-check point 1,2 and 3)

7   With the resistor in, please ensure this is securely connected, if this or any of the above
points raised does not result in the panel going to 'Gas On' please contact S&S
Northern for further assistance.

2.5 Gas Detected

1   Please ensure there is not an actual gas leak.

2   If you have any gas detectors connected to the panel such as Natural Gas, LPG or
Carbon Monoxide please ensure these are wired correctly to the 'Gas Detector'
terminal.

3   If you are not using any gas detectors please ensure that the ⌐⌐ terminal has been
linked out as factory set and is securely above the metal plate.

4   If none of the above have resolved the error please contact S&S Northern for further
assistance.

2.6 CO2 High

1   If the CO2 monitor is detecting levels of CO2 higher than the permitted alarm level
(generally 2800ppm) for this unit, which in turn is sending a fault signal to isolate the
gas supply. To prevent this please try increasing the ventilation or contact S&S for any
further back up.

2   If you are not using a CO2 monitor please ensure the 'CO2 Monitor' terminal
has been linked out and is securely above the metal plate.

3   Please make sure the wiring is correct between the Merlin 1000S+ and the CO2
monitor, this will be wired normally closed & common into the alarm or pre-alarm
terminals.

4   If none of the above have resolved the error please contact S&S Northern for further
assistance.

2.7 Timeout

1   If this fault is illuminated this means that the selected auto-shutdown time has elapsed.

2   If you do not require the timeout facility or you would like to amend the auto-shutdown
time please see below various timeout selections:
Time1 Off, Time2 Off – 2 hours
Time1 On, Time2 Off – 4 hours
Time1 Off, Time2 On – 8 hours
Time1 On, Time2 On – no timeout (auto-shut down disabled)

2.8 Additional Faults

1   If any electrical appliances being controlled through the panel are not operating when
the electric service LED, located on the front fascia is illuminated, please ensure 230V is
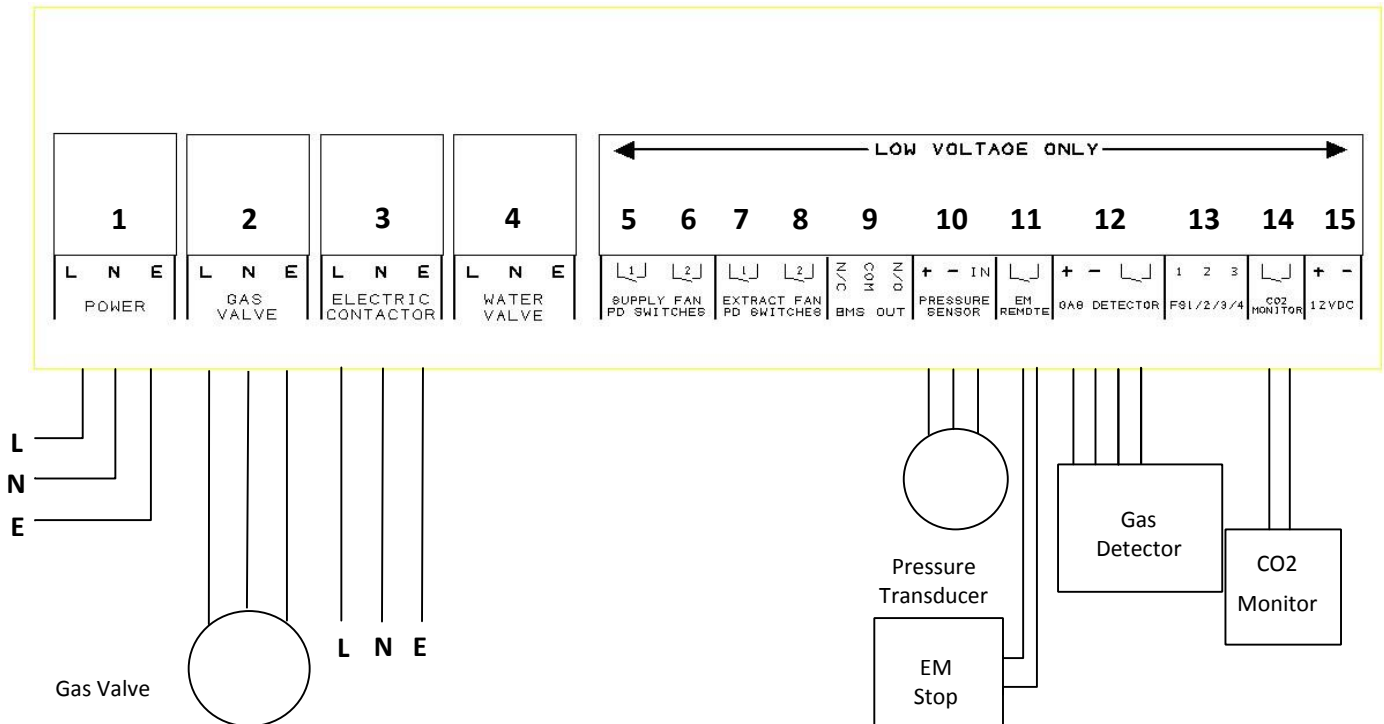being sent from the 'Electric Contactor' terminal.

3   Operation Instructions

3.1   How to turn the system on and off

1. Turn the key switch to on position.
2. Gas and electric will flash for 10 seconds.
3. Press the relevant service button to turn required utility on.
4. Turn the key switch to the off position to turn the panel off.

> **Please Note: All services can be turned on or off only within 10 secs of the key switch being turned on. After 10 secs, all utility buttons will be disabled. The user must turn the key off and back on to adjust any services. This prevents unauthorised isolation.**

1000S+ Wiring Diagram

1. Mains Input 230VAC.
2. Gas Solenoid Valve Power Output, 230VAC. Max 3A.
3. Electric Contactor Power Output, 230VAC, Max 3A.
4. This terminal is disabled on this system.
5. This terminal is disabled on this system.
6. This terminal is disabled on this system.
7. This terminal is disabled on this system.
8. This terminal is disabled on this system.
9. BMS output contacts. Normally Closed, Common and Normally Open.
10. Gas pressure transducer, Red + positive, Black – negative and Yellow or Blue IN.
11. Remote EM Stop buttons and Fire Alarm input wired in series (purchased separately). **VOLT FREE INPUT**
12. Methane, CO or LPG Detector, power supply and **volt free input** (purchased separately).
13. Fan Switch output (purchased separately). For wiring instruction see Fan Switch user manual.
14. CO2 Monitor (purchased separately). **VOLT FREE INPUT**
15. Permanent 12VDC output.

> Please note, Mains wires and low voltage wires should not be run in the same conduit as per the **LOW VOLTAGE DIRECTIVE**

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