OGS
OCEANIA GAS SAFETY

Merlin CT1250

Ventilation Interlock System with Current Monitoring

User Guide

📖 Please read this guide carefully and retain for future use.

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1   General Information

The Merlin CT1250 is a ventilation interlock panel with two built in current monitors.

The Merlin CT1250 can receive connections from either remote air pressure differential switches or the internal current monitor & remote emergency shut-off buttons. It can also be integrated with a Building Management System (BMS) and fire alarm system.

It is recommended that the user reads this guide before using the system.
Please do NOT attempt to operate the unit until the contents of this document have been read and are thoroughly understood.

1.1   Panel Mounting

The control panel is designed for surface mounting using 4 mounting screws.
Removing the cover on the panel gives access to the circuit board. The PCB should be removed before drilling entry holes into the case

⚠
Important Warning Statements

Never ignore your device when in alarm.

This device requires a continual supply of electrical power – it will not work without power.

This device should not be used to substitute proper installation, use and/or maintenance of fuel burning appliances including appropriate ventilation and exhaust systems.

Your product should reach you in perfect condition, if you suspect it is damaged, contact your supplier.

2   Circuit Board Terminals

2.1   Power

A 100-240VAC mains electrical supply should be supplied to the panel. This should be externally fused at 3 Amps connected to the terminal detailed [POWER IN].

2.2   Gas Valve Output

This is a 100-240VAC power output for connections to a gas solenoid valve detailed on the board [TO VALVE].

2.3   Building Management System (BMS)

Connections to Building Management systems.

This is a relay that changes state in alarm or when gas is on/off and other external relays that affect other devices and controls such as purge fans, audible alarms etc.

Detailed on the circuit board as [TO BMS] normally closed (N/C), common (COM) and normally open (N/O). These are volt free connections.
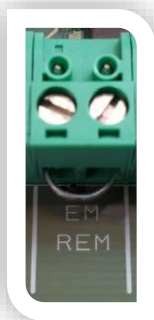
2.4   Remote Emergency Buttons

The terminal for remote emergency shut-off buttons is detailed on the circuit board as [EM REM].
These connections are linked out as a factory setting.

Remote emergency shut-off buttons should be volt free and wired to the CT1250.

2.5   Supply and Extract Fan PD Switches

These terminals are used to receive an input signal from external air pressure switches or external current monitors.
These are linked out as a factory setting as shown.

Wiring to switches & current monitors should be made using two-core volt free connections.

If only one fan is being used the terminals not in use should be left linked out.

2.6   Fan current monitoring

There are two terminals on the circuit board, one detailed as pictured [SUPP FAN LIVE] the other detailed [EXTR FAN LIVE].

If you are monitoring the fan by measuring the electrical current going to the fan then these terminals should be used.

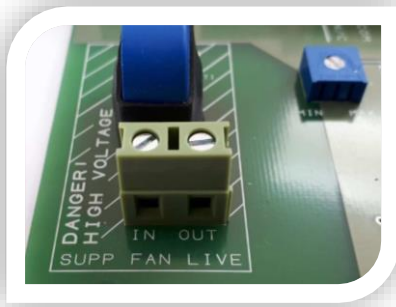The live feed from the fan controller should be taken to the Merlin CT1250 and connected to either the supply or extract side depending on which fan/s are being monitored - 20A max.

2.7   Potentiometers

[SUPP FAN LIVE] = [SENS1] Potentiometer
[EXTR FAN LIVE] = [SENS2] Potentiometer

The fan/s should be run at the minimum required speed and the relevant potentiometer turned slowly clockwise until the green LED on the circuit board lights up. This indicates the panel has detected the electrical current going to the fan.

⚠
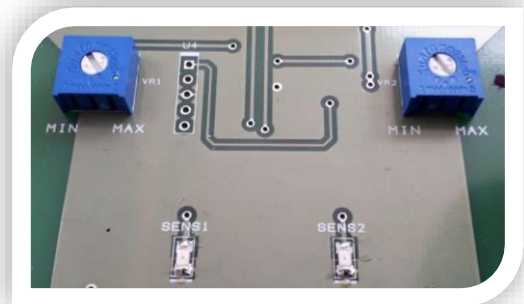
If both supply and extract fans are being monitored both links of [FAN PD SWITCHES] (5) should be removed. If only one fan is being monitored the relevant link should be taken out of this terminal connection.

⚠

Do not overturn the potentiometer. Any damage may void your warranty.

2.8   Service Mode Switch

The service dip switch (if ON) can be used to allow the gas valve to remain open for 4 hours without the fans running at each activation of the key.

At the end of the 4 hours the gas will shut off

3   Operation

3.1   System ON and OFF

 ➢ Turn the fans on.
 ➢ Turn the key switch to on position.
 ➢ To turn the system off, turn the key switch to off position.

3.2   Emergency Shut Off

The emergency shut off button is located on the front of the panel.
There is also a facility for remote shut off buttons to be wired in series on the circuit board.

The emergency shut off button(s) will cut off the gas supply when activated.

To reinstate the system, the emergency shut off button(s) will need to be reset and the panel restarted.

3.3   BMS Integration

The Merlin CT1250 can be integrated with a BMS to make or break a circuit on gas on/gas off, (valve open or valve closed). This will tell the BMS whether or not the kitchen has use of the gas supply.

3.4   Fire Alarm Integration

The Merlin CT1250 can be integrated with a fire alarm to close the gas supply automatically in the event of a signal from the fire alarm panel.

The volt free fire alarm signal can be wired in series with any remote shut off buttons.
If there are no remote buttons installed wire this directly to the terminal marked [EM REM].

3.5   Service Mode

The service dip switch (if ON) can be used to allow the gas valve to remain open for 4 hours without the fans running at each activation of the key.

At the end of the 4 hours the gas will shut off

3.6   Mute Button

Pressing the 'Mute' button on the front of the CT1250 panel will silence the system when in alarm status.

4   Panel LED Status

- **Power**

When the system is connected to the mains supply, the Power LED will illuminate.

If no power is present, this LED will not light up.

- **Gas on**

When the fans are running at the correct speed and the key switch is turned on, the CT1250 will open the gas valve and the green LED will illuminate.

ON = Gas On

OFF = Gas Off

- **EM Stop**

If an emergency shut off button (either remote or on the panel) is pressed, the LED will illuminate AMBER and the gas will be turned off.

OFF = OK

ON = Emergency Stop button pressed – De-press the button and reset the system.

- **Supply Fan**

Under normal working the LED will illuminate GREEN. If a supply fan fault is present, the LED will be flashing. If the LED flashes for more than 20 seconds, the gas will be shut off.

ON = OK

FLASHING = the supply fan is not running.

- **Extract Fan**

Under normal working the LED will illuminate GREEN. If a supply fan fault is present, the LED will be flashing. If the LED flashes for more than 20 seconds, the gas will be shut off.

ON = OK

FLASHING = the extract fan is not running.

- **Fan Fault**

Under normal working conditions this LED is off. If a fan fault is present for more than 20 seconds, the LED will illuminate AMBER.

OFF = OK

ON = the gas supply has been shut off due to a ventilation fault.

> IF A FAULT IS FOUND YOU WILL NEED TO CONTACT YOUR SERVICE/MAINTENANCE COMPANY.
> YOU SHOULD NOT ATTEMPT TO CARRY OUT A REPAIR UNLESS YOU ARE QUALIFIED TO DO SO.

- **Service LED**

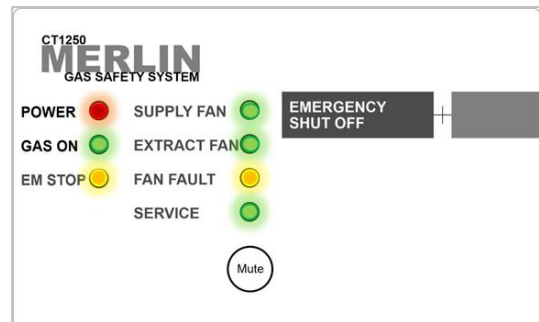When the service light is illuminated green this means the service dip switch inside the Merlin CT1250 has been placed in the ON position.

This will allows the gas valve to remain open for 4 hours without the fans running on each activation of the key.
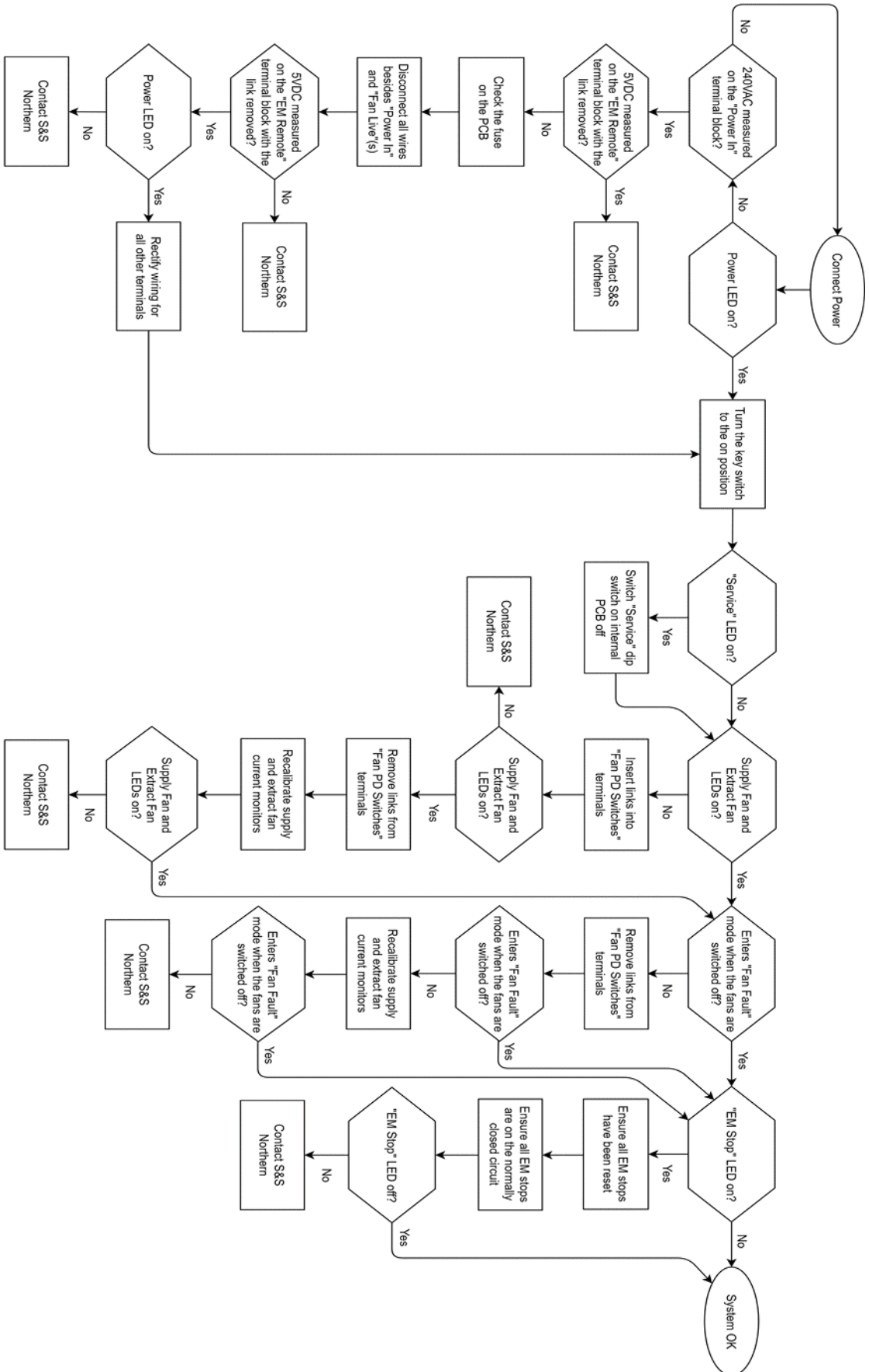
ON = Service switch activated.

OFF = Service switch de-activated.

FLASHING = at the end of the 4 hours the gas will shut off and the service LED will flash.

5   Troubleshooting

Connect Power

240VAC measured on the "Power In" terminal block? — No → Connect Power

240VAC measured on the "Power In" terminal block? — Yes → 5VDC measured on the "EM Remote" terminal block with the link removed?

5VDC measured on the "EM Remote" terminal block with the link removed? — No → Check the fuse on the PCB → Disconnect all wires besides "Power In" and "Fan Live"(s) → 5VDC measured on the "EM Remote" terminal block with the link removed?

5VDC measured on the "EM Remote" terminal block with the link removed? — Yes → Contact S&S Northern

5VDC measured on the "EM Remote" terminal block with the link removed? — Yes → Power LED on?

Power LED on? — No → Contact S&S Northern

Power LED on? — Yes → Rectify wiring for all other terminals

5VDC measured on the "EM Remote" terminal block with the link removed? — No → Contact S&S Northern

Power LED on? — No → Connect Power

Power LED on? — Yes → Turn the key switch to the on position

Rectify wiring for all other terminals → Turn the key switch to the on position

Turn the key switch to the on position → "Service" LED on?

"Service" LED on? — Yes → Switch "Service" dip switch on internal PCB off → Supply Fan and Extract Fan LEDs on?

"Service" LED on? — No → Supply Fan and Extract Fan LEDs on?

Supply Fan and Extract Fan LEDs on? — No → Insert links into "Fan PD Switches" terminals → Supply Fan and Extract Fan LEDs on?

Supply Fan and Extract Fan LEDs on? — Yes → Remove links from "Fan PD Switches" terminals → Supply Fan and Extract Fan LEDs on?

Supply Fan and Extract Fan LEDs on? — No → Contact S&S Northern

Supply Fan and Extract Fan LEDs on? — Yes → Recalibrate supply and extract fan current monitors → Supply Fan and Extract Fan LEDs on?

Supply Fan and Extract Fan LEDs on? — No → Contact S&S Northern

Supply Fan and Extract Fan LEDs on? — Yes → Enters "Fan Fault" mode when the fans are switched off?

Enters "Fan Fault" mode when the fans are switched off? — No → Remove links from "Fan PD Switches" terminals → Enters "Fan Fault" mode when the fans are switched off?

Enters "Fan Fault" mode when the fans are switched off? — Yes → Enters "Fan Fault" mode when the fans are switched off?

Enters "Fan Fault" mode when the fans are switched off? — No → Recalibrate supply and extract fan current monitors → Enters "Fan Fault" mode when the fans are switched off?

Enters "Fan Fault" mode when the fans are switched off? — Yes → Contact S&S Northern

Enters "Fan Fault" mode when the fans are switched off? — Yes → "EM Stop" LED on?

"EM Stop" LED on? — Yes → Ensure all EM stops have been reset → Ensure all EM stops are on the normally closed circuit → "EM Stop" LED off?

"EM Stop" LED off? — No → Contact S&S Northern

"EM Stop" LED off? — Yes → System OK

"EM Stop" LED on? — No → System OK

6 Maintenance

To keep your panel in good working order, you must follow these steps:

✓ DO carefully remove any accumulated dust from the outer enclosure once a month.
✗ NEVER use detergents or solvents to clean your device – this may permenantly or temporarily damage the panel
✗ NEVER spray air fresheners, hair spray, paint or other aerosols near the device.
✗ NEVER paint the device. Paint will seal vents and interfere with the device.

7 CT1250 Wiring Spec
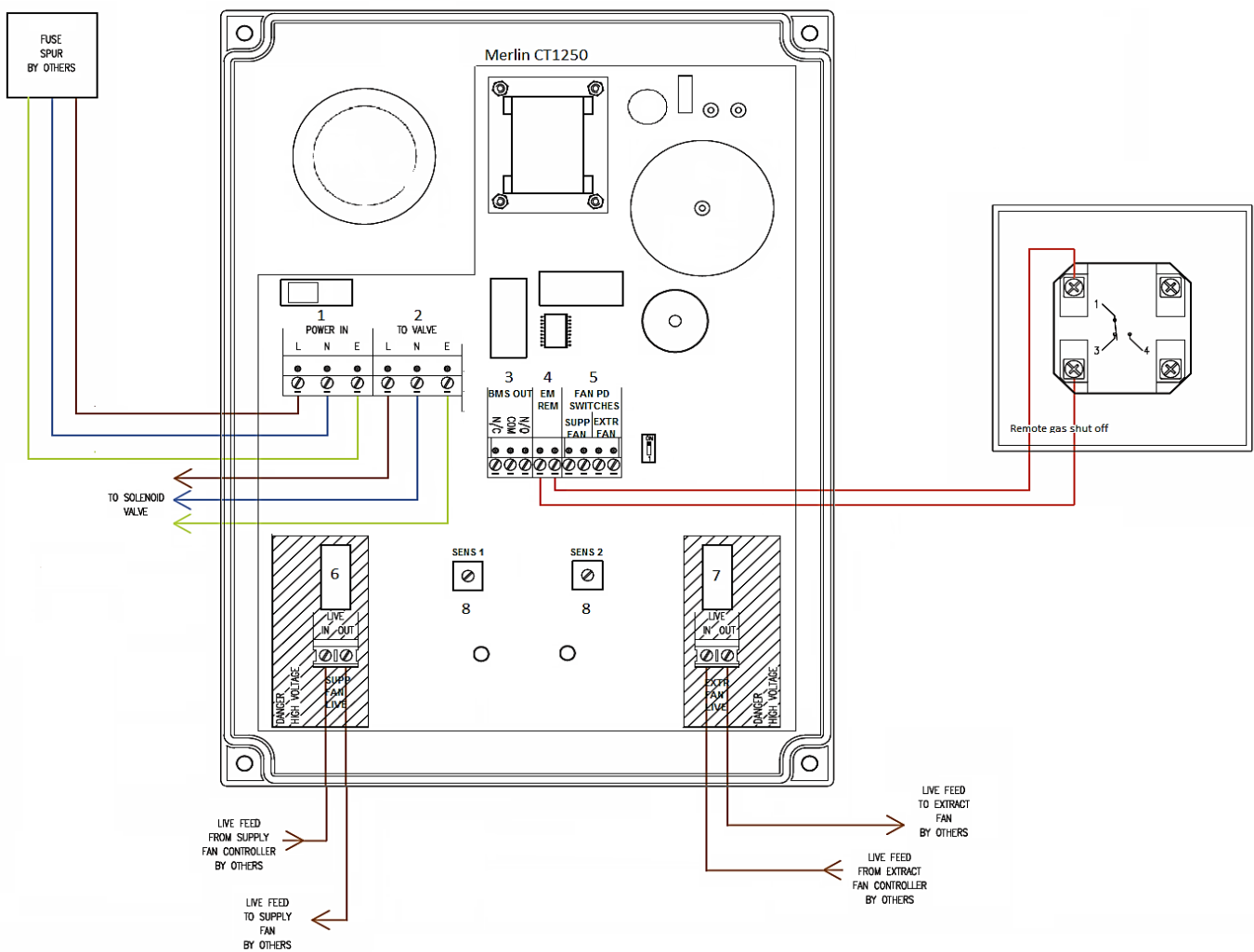
8   Manufacturer's Warranty

Warranty coverage: The manufacturer warrants to the original consumer purchaser, that this product will be free of defects in material and workmanship for a period of three (3) years from date of purchase. The manufacturer's liability hereunder is limited to replacement of the product with repaired product at the discretion of the manufacture. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other causes not arising from defects in material or workmanship. This warranty extends to the original consumer purchaser of the product only.

Warranty disclaimers: Any implied warranties arising out of this sale, including but not limited to the implied warranties of description, merchantability and intended operational purpose, are limited in duration to the above warranty period. In no event shall the manufacturer be liable for loss of use of this product or for any indirect, special, incidental or consequential damages, or costs, or expenses incurred by the consumer or any other user of this product, whether due to a breach of contract, negligence, strict liability in tort or otherwise. The manufacturer shall have no liability for any personal injury, property damage or any special, incidental, contingent or consequential damage of any kind resulting from gas leakage, fire or explosion. This warranty does not affect your statutory rights.

Warranty Performance: During the above warranty period, your product will be replaced with a comparable product if the defective product is returned together with proof of purchase date. The replacement product will be in warranty for the remainder of the original warranty period or for six months – whichever is the greatest.

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