GAS VENTILATION INTERLOCK & PRESSURE PROVING SYSTEMS

VENTILATION INTERLOCK KITCHEN EQUIPMENT - ENGINEERED IN THE UK TO MEET BS6173

THE MERLIN RANGE
DESIGNED FOR COMMERCIAL KITCHENS

S&S™
NORTHERN
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S&S NORTHERN

GAS VENTILATION, INTERLOCK SYSTEMS & PRESSURE PROVING SPECIALISTS

S&S Northern are the UK's leading designers, manufacturers & suppliers of the latest range of gas safety products including gas ventilation and gas interlock systems for use in commercial kitchens. We also design and manufacture a full range of gas pressure proving systems & gas detection systems for school laboratories and boiler houses.

S&S Northern was established in 1995 and has become the trusted name to provide gas safety and installation solutions to the commercial market throughout the UK. Our fully-qualified designers and engineers keep up to date with industry changes and health and safety requirements, meaning that our customers can rest assured that the service and technical back-up they receive is second to none. A family-run business with excellent customer service and value for money at its heart, S&S Northern's position as the UK's gas safety experts is based on nearly two decades of excellent customer service and satisfaction.

Meeting Gas Safety Standards Is Our Business And Our Passion

The gas ventilation and interlock panels we manufacture for commercial kitchen applications will allow you to fully meet the requirements of BS6173. We supply gas pressure proving systems for use when flame failure devices are not fitted to catering equipment, ensuring a safe working environment at all times. Also available is a full range of ventilation and gas interlock panels, which can be used if gas pressure proving is not required. Six of our systems have been installed in the Palace of Westminster, so whether it's a single gas system for a popular takeaway restaurant or a number of systems for the nation's seat of government, we are able to offer a complete gas system to suit every customer.

Advantages Of Working with S&S Northern Ltd

- Full technical team available
- Competitively priced
- Complete After Sales Care
- First rate customer service
- Full product catalogue available at www.snsnorthern.com
- Simple and easy installation
- All S&S Northern systems available on next day
- Web Support
- Full product operating and maintenance available online.
- Full UK coverage

CESA CATERING EQUIPMENT SUPPLIERS' ASSOCIATION

S&S Northern - Head Office

S&S Northern - Southern Office

CONTENTS
FIND THE PANEL YOU NEED IN AN INSTANT

THE MERLIN RANGE
MERLIN CT1200S SYSTEM

The Merlin CT1200S ventilation interlock system is designed specifically for use in commercial kitchens to meet BS6173. This panel is to be used when the kitchen appliances do have flame failure devices, therefore Gas proving is not a requirement.
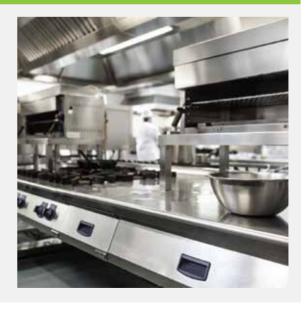
The Merlin CT1200S acts as an interlock between the ventilation system and the gas solenoid valve.

This system can work in conjunction with both external current monitors and air pressure differential switches in order to interlock with up to 2 fans.

Key Features of the Merlin CT1200S System

• Allows compliance with BS6173 for commercial kitchens

• To be used when all appliances have flame failure devices

• Interlocking with fans using Air pressure differential switches.

• Can also be used to interlocked with Merlin CS1 and CS2 Switches

• Reliable method of interlock, with no moving parts there's little to go wrong

• BMS Terminals Normally Closed or normally open and common.

• Will accept remote emergency knock-off buttons

• Clear LED display for system indications

• Easy installation

• Covered by S&S Northern Ltd 3 year warranty.

KITCHEN EQUIPMENT
ENGINEERED TO MEET BS6173

To operate the Merlin CT1200S the fans should be turned to the "on" position, once our panel receives a signal to indicate the fans are operating turn the key to the "on" position this will open the gas solenoid valve. If the fans should fail, the "fan fault" LED on the panel will illuminate and the gas solenoid valve will close. When there is a "fan fault" the supply fan or extract fan led will flash to inform the electrician or kitchen staff which fan has failed. Installation for the Merlin CT1200S is easy as there is no calibration. Wiring of the system is straightforward using volt free connections for all air pressure differential switches and remote emergency stops. A Gas Safe engineer would be required to fit the gas solenoid valve. All Gas solenoid valves supplied by S&S Northern carry a full 3-year manufactures warranty.

We only supply the highest quality air pressure differential switches for increased longevity and reliability. Electrical connections are made by use of two-core cable. Incorporated in the Merlin CT1200S is a 10 seconds Airflow dropout delay. In the event of interruptions to airflow for less than 10 seconds the panel will allow the gas solenoid valve to remain open, preventing nuisance tripping. Should the airflow be interrupted for 10 seconds or more the fan fail LED will illuminate and the gas solenoid valve will close.

Alternatively to air pressure differential switches, the Merlin CT1200S system can also be used to work in conjunction with external current monitors, the Merlin CS1 and CS2.

Merlin CT1200S System Wiring Diagram

1. 230v AC Supply

2. 230v AC output to valve

3. Terminal for BMS connections

4. Remote emergency stop Input

5. Fan sensor input- close when fan on -

   (for use with PD switches)

S&S Northern has a full technical team available on 01257 470 983 or if you are based in the South East please call 01702 291 725

Merlin CT1200S Box Dimensions

Height	140mm
Length	190mm
Depth	62mm

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THE MERLIN RANGE
MERLIN CT1250 SYSTEM

The Merlin CT1250 ventilation interlock system, with built in current monitoring, is designed specifically for use in commercial kitchens to meet BS6173. This panel is to be used when the kitchen appliances do have flame failure devices, therefore Gas proving is not a requirement.

The Merlin CT1250 acts as an interlock between the ventilation system and the gas solenoid valve.

The system has built in current monitors in order to interlock with up to 2 fans and offers an alternative to using air pressure differential switches.

Key Features of the Merlin CT1250 System

• Allows Compliance with BS6173 for commercial kitchens

• To be used when all appliances have flame failure devices

• 2 built in current monitors can be easily adjusted to the user's requirements

• Reliable method of interlock, with no moving parts there's little to go wrong

• BMS Terminals Normally Closed or Normally open and common.

• Will accept remote emergency knock-off buttons.

• Can monitor up to 20 amp running current.

• Clear LED display for system indications

• Can be used when pressure differential switches cannot be used e.g. wall-mounted fans

• Straightforward to install and calibrate. The CT1250 can be easily adjusted to the user's requirements

• Easy installation

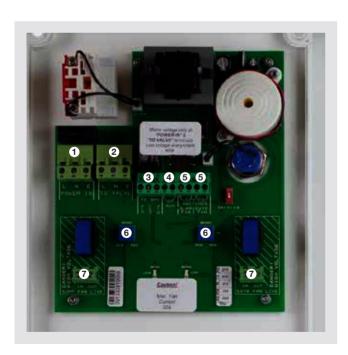• Covered by S&S Northern Ltd 3 year warranty.

KITCHEN EQUIPMENT
ENGINEERED TO MEET BS6173

When the fan is turned "on" the CT1250 monitors the electrical current going to the fan motor, when there is sufficient current going to the fan motor our panel receives a signal to indicate the fans are operating. Turning the key to the "on" position will open the gas solenoid valve. If the fans should fail, the "fan fault" LED on the panel will illuminate and the gas solenoid valve will close.

When there is a "fan fault" the supply fan or extract fan led on the Merlin CT1250 panel fascia will flash. This informs the electrician or kitchen staff which fan has failed. Operating the system in the above manner will ensure the requirements of BS6173 are fully met where all the catering equipment has flame failure devices fitted. Wiring of the system is straightforward using volt free connections for all BMS and remote emergency stops. A Gas Safe engineer would be required to fit the gas solenoid valve.

Calibration of the current monitor is easy, once wired set the fan speed controller to setting 1 (or low setting) for example. Turn the blue rotary switches anti-clockwise until the green LED goes out, and then slowly turn clockwise until the green LED is again illuminated. This indicates the current is being detected going to the fan motor, if the fan is turned off or faulty the LED will switch off and the system will go into a 'fan fault' and shut off the gas.

Merlin CT1250 System Wiring Diagram

1. 230v AC Supply

2. 230v AC output to valve

3. Terminal for BMS connections

4. Remote emergency stop Input

5. Fan sensor input- close when fan on -
   (for use with PD switches)

6. Pots are adjusted to increase or decrease sensitivity

7. Live wire going to the fan goes in and back out onto the fan

S&S Northern has a full technical team available on 01257 470 983 or if you are based in the South East please call 01702 291 725

Merlin CT1250 Box Dimensions

Height	**254mm**
Length	**178mm**
Depth	**62mm**

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THE MERLIN RANGE
MERLIN CT1650+ SYSTEM

The Merlin CT1650+ ventilation interlock system is specifically designed for use in commercial kitchens to meet BS6173 and IGEM UP19.

The Merlin 1650+ system displays the working current of the fans allowing the engineer to confidently and accurately calibrate the current monitors and interlock with the fans. The Merlin CT1650+ System acts as an interlock between the ventilation system and the gas solenoid valve. The Merlin CT1650+ system has built in current monitors to monitor the fans.

The current monitors can be calibrated to shut off the gas supply if the fan is working abnormally either below or above the fans normal current range. The 1650+ also has a built in 10% +/- threshold tolerance to eliminate nuisance momentary fan faults.

Key Features of the Merlin CT1650+ System

• Unique internal visual display showing the fan current.

• Allows Compliance with BS6173 for commercial kitchens.

• To be used when all appliances have flame failure devices.

• 2 built in current monitors can be easily calibrated to suit any fan.

• Reliable method of interlock, with no moving parts there is little to go wrong.

• BMS and fire alarm interface.

• Will accept remote and emergency knock-off buttons

• Can monitor up to 0.1 to 18 amp running current (per fan monitor)

• Carbon Dioxide detectors accepted.

• Calibration ranges to cover a wide variety of fans.

• Covered by S&S Northern Ltd 3-year warranty.

KITCHEN EQUIPMENT
ENGINEERED TO MEET BS6173

The Merlin 1650+ is able to work in conjunction with a Merlin Carbon Dioxide detector. If a Carbon Dioxide detector is fitted and a pre-determined level of CO2 is detected, a signal will be sent to the 1650+ panel which will send the panel into alarm and close the gas solenoid valve.

The valve cannot be reset until the CO2 reaches an acceptable level.

The Merlin 1650+ can be interfaced with building management systems and fire alarm systems to isolate the gas supply in event of a fire.

Merlin CT1650+ System Wiring Diagram

1. Remote Emergency Stop Input/Fire Alarm Low Voltage Connection

2. CO2 Monitor (External Part)

3. Terminal for BMS Connections

4. FS1&2 Output (External Part)

5. Mains Input 230V Single Phase

6. Gas Solenoid Valve Output, 230V

7. Fan 1 - Fan current monitor mains In/Out

8. Fan 2 - Fan current monitor mains In/Out

S&S Northern has a full technical team available on 01257 470 983 or if you are based in the South East please call 01702 291 725

Merlin CT1650+ Box Dimensions

Height	178mm
Length	254mm
Depth	62mm

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THE MERLIN RANGE
MERLIN CT1750 SYSTEM

The Merlin CT1750 System is an air quality control system.

This panel acts an interlock between the ventilation and the gas solenoid valve and also controls the fan speed via 0-10v DC output.

The 1750 also monitors carbon dioxide and carbon monoxide levels in the kitchen.
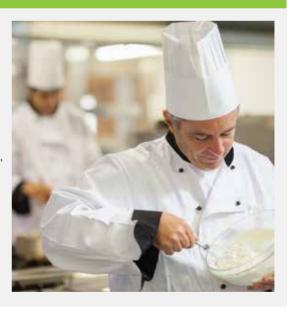
The system is compatible with both current monitors and air pressure differential switches and can interlock with up to 2 fans.

The 1750 can also incorporates gas proving for when the gas appliances do not have flame failure devices.

Key Features of the Merlin CT1750 System

· Complies with BS6173

. Carbon monoxide and Dioxide monitoring

. Allows manual fan speed control (via 0-10v dc output)

· Clear LED display for system indications

. ideal safety backup for solid fuel appliances

· Interlocking with fans using either Air PD Switches or Fan Current Sensors.

· Automatically increases the speed of the fans if used with CO2 and CO detectors, if detectors go into alarm , even if the panel is switched to the "off" position.

· Optional gas proving facility

· Easy Installation

· Will accept remote emergency knock-off buttons

· Can link to fire alarm or BMS systems

· Covered by S&S Northern Ltd 3 year warranty.

KITCHEN EQUIPMENT
ENGINEERED TO MEET BS6173

The Merlin CT1750 System has two built in 0-10V dc outputs, this is designed to control fan controllers which will in turn increase the speed of a fans should any Carbon Dioxide or Carbon Monoxide detector that is connected to the panel goes into an alarm condition. The fans can also be controlled manually from the panel using the up & down buttons located on the panel fascia.

The Merlin 1750 has the facility for connection of a Merlin Carbon Dioxide detector. Should the CO2 detector go into an alarm condition a signal will be sent to the 1750 panel, the CO2 LED on the panel will light and the gas solenoid valve will close. The 1750 will automatically increase the fans to reduce the CO2 levels. The gas supply can not be reinstated until the CO2 has reduced to an acceptable level.

If a gas solenoid valve is closed in a commercial kitchen that is fitted with standard gas ovens and grills the gas appliances will no longer give off dangerous gases such as Carbon Monoxide. However where solid fuel appliances such as charcoal ovens and grilles are installed there is a possibility that the coals will continue to smoulder and therefore produce harmful Carbon Monoxide even when the appliance is no longer being used.

If the detectors alarm due to higher than normal levels of gases being present in the kitchen, the fans will be instantly boosted to full speed, even if the Merlin CT1750 System is turned in the "off" position. Once the gases have been cleared, the fans will be shut down, ensuring the kitchen doesn't incur any unnecessary running costs.
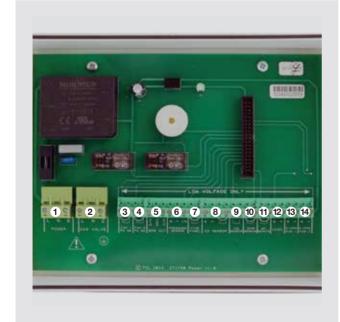
If the detectors go into an alarm condition during normal working conditions the fans will be boosted to maximum speed, the relevant "gas sensor" LED on the panel fascia will illuminate and the gas solenoid valve will automatically close. The gas valve cannot be reinstated until the gas has cleared.

Ventilation/gas Interlock ensures the gas solenoid valve cannot be opened until any fans connected to the panel are operating. If at any time the fan fails a signal will be sent to close any gas solenoid valve that is connected to the panel, the "fan fault" LED relating to the fan that has failed will flash and the gas solenoid valve will close.

The gas pressure proving can be used using our gas pressure transducer fixed into the downstream port of the gas solenoid valve. If the Merlin CT1750 is fitted with a gas pressure transducer and detects there is a drop in gas pressure , or a gas leak, within the 30 second start-up period, the gas solenoid valve will not be allowed to open and the panel will show "test fail". If the gas line is found to be sound during the 30 second test period the panel will go to "Gas on" and the gas solenoid valve will open. If the incoming gas pressure drops below 12mb, for more than 10 seconds, the gas valve will shut and the "pressure low" LED will illuminate.

Merlin CT1750 Box Dimensions

Height	**178mm**
Length	**254mm**
Depth	**62mm**

Merlin CT1750 System Wiring Diagram

1. 230V AC power supply
2. 230V AC output to gas valve (3A)
3. Fan 1 interlocking input – N/C when fan on, open when fan off (volt free)
4. Fan 2 interlocking input – As above
5. Terminal for BMS connections
6. Pressure transducer wired to terminal – (if pressure proving is req.)
7. Fire alarm connection – N/C, open in alarm condition (volt free)
8. CO (Carbon monoxide) terminal (+ & - is a 24VDC supply to power the sensor / N/C switch, open in alarm condition – Volt free)
9. CO2 (Carbon Dioxide) terminal - N/C switch, open in alarm condition (volt free)
10. For connecting a temperature duct sensor - N/C - open in alarm condition (volt free)
11. For connecting a remote knock off button - N/C switch, open in alarm condition (volt free)
12. 12VDC permanent output
13. Fan 1, 0-10V output (This voltage will be increased and decreased via the up/down switches located on the panel fascia. This enables us to regulate the fan speeds via an external speed controller which can accept this control signal)
14. Fan 2, 0-10V output (As above)

S&S Northern has a full technical team available on 01257 470 983 or if you are based in the South East please call 01702 291 725

THE MERLIN RANGE
MERLIN 1500S SYSTEM

The Merlin 1500S ventilation interlock system is specifically designed for use in commercial kitchens to meet BS6173. This panel is designed for use when the kitchen appliances do have flame failure devices fitted, therefore gas proving is a not a requirement.
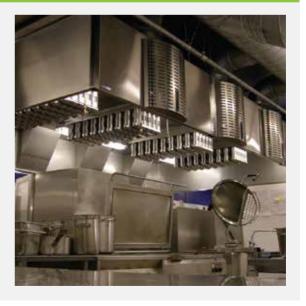
The Merlin 1500S System acts as an interlock between the ventilation system and the gas solenoid valve. The systems can work in conjunction with both current monitors and air pressure differential switches in order to interlock with up to 4 fans.

The Merlin 1500S can also work in conjunction with Merlin natural gas, carbon monoxide, carbon dioxide and LPG sensors.

Key Features of the Merlin 1500S System

• Allows Compliance with BS6173 for commercial kitchens.

• Clear LED display for system indications

• BMS Normally Closed or Normally Open and Common

• Interlocking with fans using either Air PD switches or fan current sensors

• Easy installation

• Will accept remote and emergency knock-off buttons

• Covered by S&S Northern Ltd 3 year warranty.

KITCHEN EQUIPMENT
ENGINEERED TO MEET BS6173

Ventilation/gas Interlock ensures the gas solenoid valve cannot be opened until any fans connected to the panel are operating. If at any time the fan fails a signal will be sent to close the gas solenoid valve, the panel will read "fan fault" and the "LED" relating to the fan that has failed will flash.

Natural gas, carbon monoxide, carbon dioxide and LPG detectors can be used with the Merlin 1500S. If the detector goes into alarm due to a build-up of gas the system will sound an alarm and shut the gas solenoid valve preventing further gas leakage and the "gas detected" light will be illuminated red.

Merlin 1500S System Wiring Diagram

1. 230v AC Supply

2. 230v AC output to valve

3. Input - close when fan on
   (for use with PD switches or current monitor)

4. Terminal for BMS connections

5. Disabled

6. Remote emergency stop button input

7. Gas detector input & Permanent 12v DC output

8. CO2 Monitor output

9. Permanent 12v DC output
   (normally used to power PM2 current monitor)

S&S Northern has a full technical team available on 01257 470 983 or if you are based in the South East please call 01702 291 725

Merlin 1500S Box Dimensions

Height	**178mm**
Length	**254mm**
Depth	**62mm**

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THE MERLIN RANGE
MERLIN 2000S SYSTEM

The Merlin 2000S ventilation interlock system is specifically designed for use in commercial kitchens to meet BS6173. This panel is designed for use when the kitchen appliances do not have flame failure devices fitted, therefore gas proving is a requirement.

The Merlin 2000S System acts as an interlock between the ventilation system and the gas solenoid valve.

The system is compatible with both current monitors and air pressure differential switches in order to interlock with up to 4 fans.

The Merlin 2000S can also work in conjunction with Merlin natural gas, carbon monoxide, carbon dioxide and LPG sensors.

Key Features of the Merlin 2000S System

• Allows Compliance with BS6173 for commercial kitchens.

• Clear LED display for system indications

• Gas proving for when kitchen appliances are not fitted with flame failure devices

• BMS Normally Closed or Normally Open and Common

• Low Pressure monitoring for incoming gas supply

• Interlocking with fans using either Air PD switches or fan current sensors to interlock up to 4 fans

• Easy Installation

• Will accept remote emergency knock-off buttons

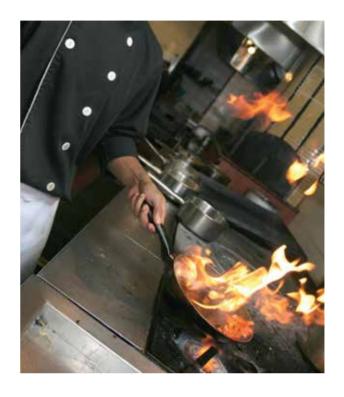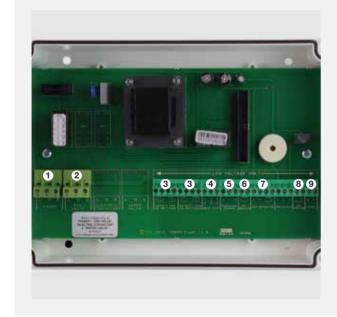• Covered by S&S Northern Ltd 3 year warranty.

KITCHEN EQUIPMENT
ENGINEERED TO MEET BS6173

Ventilation/gas Interlock ensures the gas solenoid valve cannot be opened until any fans connected to the panel are operating. If at any time the fan fails a signal will be sent to close the gas solenoid valve, the panel will read "fan fault" and the "LED" relating to the fan that has failed will flash.

The gas pressure proving is carried out using our gas pressure transducer fixed into the downstream port of the gas solenoid valve. If the Merlin 2000S detects there is a drop in gas pressure , or a gas leak, within the 30 second start-up period, the gas solenoid valve will not be allowed to open and the panel will show "test fail". Is the gas line is found to be sound the panel will go to "Gas on" and the gas solenoid valve will open. If the incoming gas pressure drops below 12mb, for more than 10 seconds, the gas valve will shut and the "pressure low" LED will illuminate.

Merlin natural gas, carbon monoxide, carbon dioxide and LPG detectors can be used with the Merlin 2000S. If the detector goes into alarm due to a build-up of gas the system will sound an alarm and shut the gas solenoid valve preventing further gas leakage and the "gas detected" light will be illuminated red.

Merlin 2000S System Wiring Diagram

1. 230v AC Supply

2. 230v AC output to valve

3. Input - close when fan on
(for use with PD switches or current monitor)

4. Terminal for BMS connections

5. Pressure sensor input
(wire to pressure transducer using 3 core wire

6. Remote emergency stop button input

7. Gas detector input & Permanent 12v DC output

8. CO2 Monitor output

9. Permanent 12v DC output
(normally used to power PM2 current monitor)

S&S Northern has a full technical team available on 01257 470 983 or if you are based in the South East please call 01702 291 725

Merlin 2000S Box Dimensions

Height	178mm
Length	254mm
Depth	62mm

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THE MERLIN RANGE
MERLIN CO2 MONITOR

The Merlin CO2 Monitor is designed specifically for use in commercial kitchens.

The Merlin CO2 Monitor gives a LED display reading to show the user a clear and precise reading of the CO2 level in the room and also uses a traffic light colour system to show the customer whether the air quality in the room is at a safe, adequate or dangerous level.

The Merlin CO2 Monitor can be used independently or can work in conjunction with one of our Merlin gas interlock systems. In the event where the CO2 levels increased to a dangerous level, the Merlin CO2 Monitor would sound an audible alarm to alert the customer of the danger and send a signal to the gas interlock system which will in turn close the gas solenoid valve.

Key features of the Merlin CO2 Monitor

• Clear digital readings of the CO2 levels.

• Can work independently or in conjunction with Merlin Gas Interlock System

• Audible alarm alerts user of dangerous levels

• Can be easily wall mounted

• Easy Installation

• Traffic light warning system very easy to understand

• Covered by S&S Northern Ltd 3 year warranty.

ANCILLARY PRODUCTS
FROM S&S NORTHERN

PM2 Current Monitor

The Merlin power monitor is a method used for interlocking a kitchens gas supply with the ventilation system. As an alternative to pressure differential switches the PM2 is designed to monitor the current going to a ventilation fan.

When the fan is turned on the PM2 monitors the electrical current going to the fan motor, when there is sufficient current going to the fan motor the PM2 send a signal back to the Merlin system indicating the fan is running. Gas can now be introduced into the kitchen.

Air Pressure Differential Switch

We only supply the highest quality air pressure differential switches for increased longevity and reliability, they measure between 20-300Pa. Electrical connections are made by use of two-core cable.

Incorporated in each Merlin Gas Interlock system is a 10 seconds Airflow dropout delay. In the event of interruptions to airflow for less than 10 seconds the delay will allow the gas solenoid valve to remain open, preventing nuisance tripping. Should the airflow be interrupted for 10 seconds or more the fan fault LED will illuminate and the gas solenoid valve will close.

Emergency Knock-Off Button

We only supply the highest quality emergency knock-off buttons for increased longevity and reliability. The Emergency Knock-off button uses a resettable Perspex screen to enable the customer to press multiple times without having to replace the button.

When the Perspex screen has been pressed inwards an activation indicator drops into view at the top of the window after the 'Reset' has been operated. The unit is then simply reset with a key and is ready for re-use straight away.