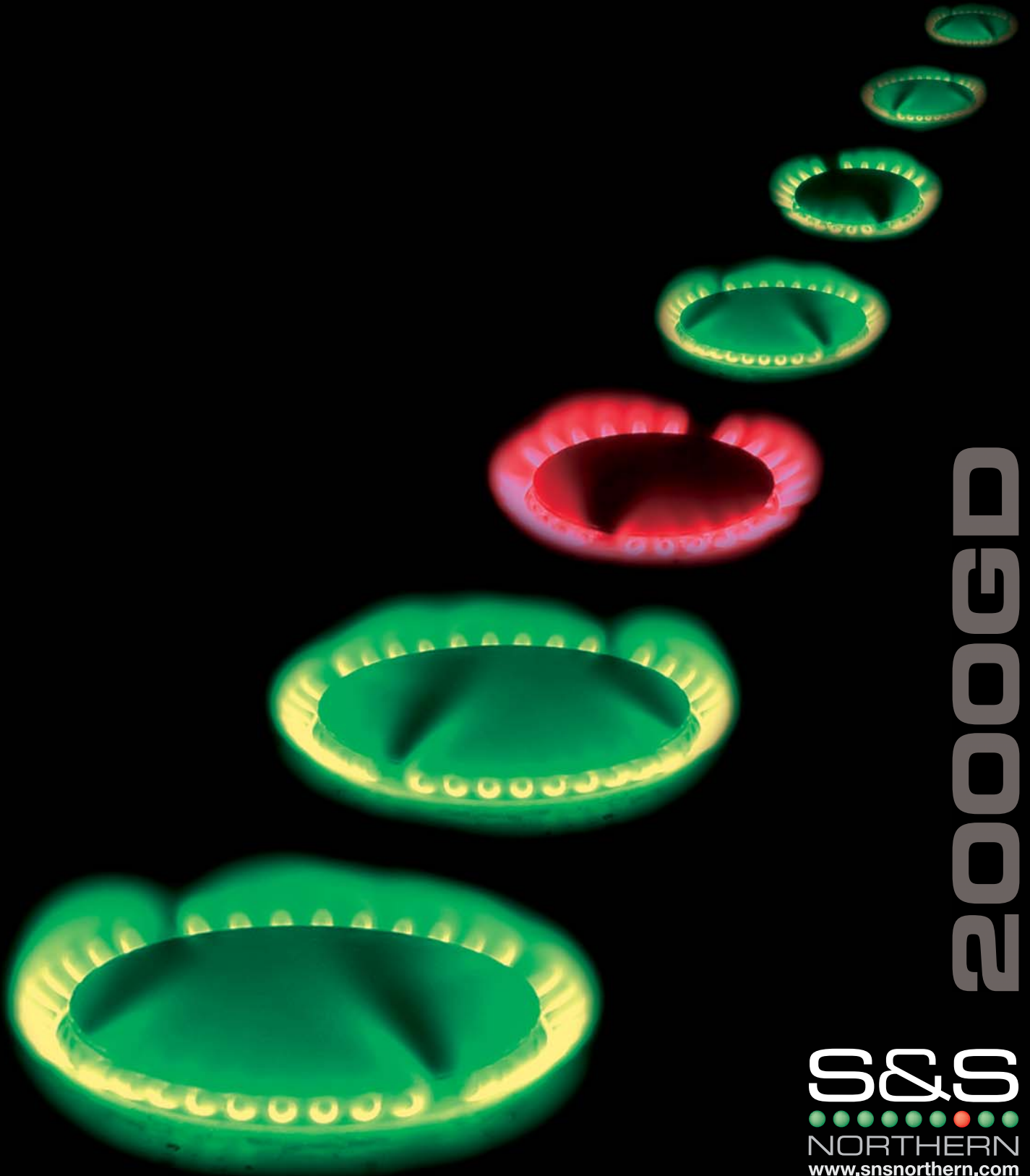


MERLIN RANGE

KITCHEN EQUIPMENT



2000002

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About S&S Northern

The Merlin 2000GD ventilation interlock system is specifically designed for use in commercial kitchens to meet **BS6173: 2001**. This British Standard is now a requirement for new commercial kitchens or when a commercial kitchen is having a major refurbishment or refit.

This panel is designed for use when the kitchen appliances **do not** have flame failure devices fitted. Therefore Gas pressure proving is required to meet **BS6173: 2001**. Even if the catering equipment has flame failure devices gas pressure proving is a good safety check for system leaks.

The Merlin 2000GD panel combines modern digital gas proving technology, along with reliable ventilation/gas interlocking connections in one clear concise panel. Combining these features provides initial capital cost savings and reduced installation time.

Gas pressure proving may be a requirement to meet **BS6173: 2001**, dependent upon the appliances fitted in the kitchen. The British Standard requires that when a commercial kitchen is having a major refurbishment, or when a new commercial kitchen is being fitted out, if any of the catering equipment does not have a flame failure device fitted, a gas pressure proving system should be used to ensure, at startup, the downstream gas line has no leaks and all gas appliances are in the "off" position.

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If the Merlin 2000GD detects there is a drop in gas pressure due to a appliance being open, 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”. Appliances must be checked to be in the closed position and the panel put through another testing procedure. Assuming the gas line is found to be sound the panel will go to “Gas on” and the gas solenoid valve will open.

Ventilation/gas Interlock ensures the gas solenoid valve cannot be opened until any fans connected to the panel are operating. This is to protect the kitchen users from harmful by-products of natural gas and is a requirement of **BS6173: 2001**

If at any time the fan fails a signal will be sent to close the gas solenoid valve, the panel will read “fan fail” and the “LED” relating to the fan that has failed will flash.

Unique Design

A main factor when designing the Merlin 2000GD was to make installation easy and cost effective. No calibration of the gas-proving device is required because there are no mechanical moving parts. The gas pressure proving is carried out using digital electronic proving technology.

Wiring of the system is straightforward as there is only one panel combining both Gas pressure proving and Ventilation/gas interlock. All electrical connections (excluding the gas solenoid valve) for airflow switches, remote emergency stops and the gas pressure proving sensor are low voltage. (See wiring diagrams)

Pressure Low

When the gas pressure drops below 12mb, for more than 10 seconds, the gas valve will shut and the “pressure low” LED will illuminate. This is because at a pressure as low as 12mb the flame is weak and could simply blow out, therefore gas could continue to leak out into the work environment. The supply gas pressure is constantly measured from start up.

Air PD Switch (Low Voltage)

We only supply the highest quality air PD switches for increased longevity and reliability. Electrical connections are made by use of two-core low voltage wiring.

Incorporated in the Merlin 2000GD is a ten second 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 fail” LED will illuminate and the gas solenoid valve will close.

Gas Pressure Sensor

As the Gas pressure sensor attaches directly to the valve there is no exposed copper connections. This makes the sensor much less vulnerable to being damaged. This also reduces installation costs as no copper brazing or brass connections are required.

The electrical connection between the 2000GD panel and the gas pressure sensor is made by 4 core low voltage connections. There are no distance limitations between where the Merlin panel is situated and the gas valve located. The gas pressure sensor should be fixed to the downstream port on the gas solenoid valve.



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Detectors

Natural gas, carbon monoxide and carbon dioxide detectors can be used with the Merlin 2000GD. 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.

References to BS6173: 2001

“Appliances shall be interlocked with any mechanical ventilation system that is fitted to enable the safe operation that appliance. Where appliances are not fitted with full flame safeguards, e.g. some second-hand appliances, the system shall also be fitted with a system to prove closure of all valves prior to the establishment or restoration of the gas supply.”

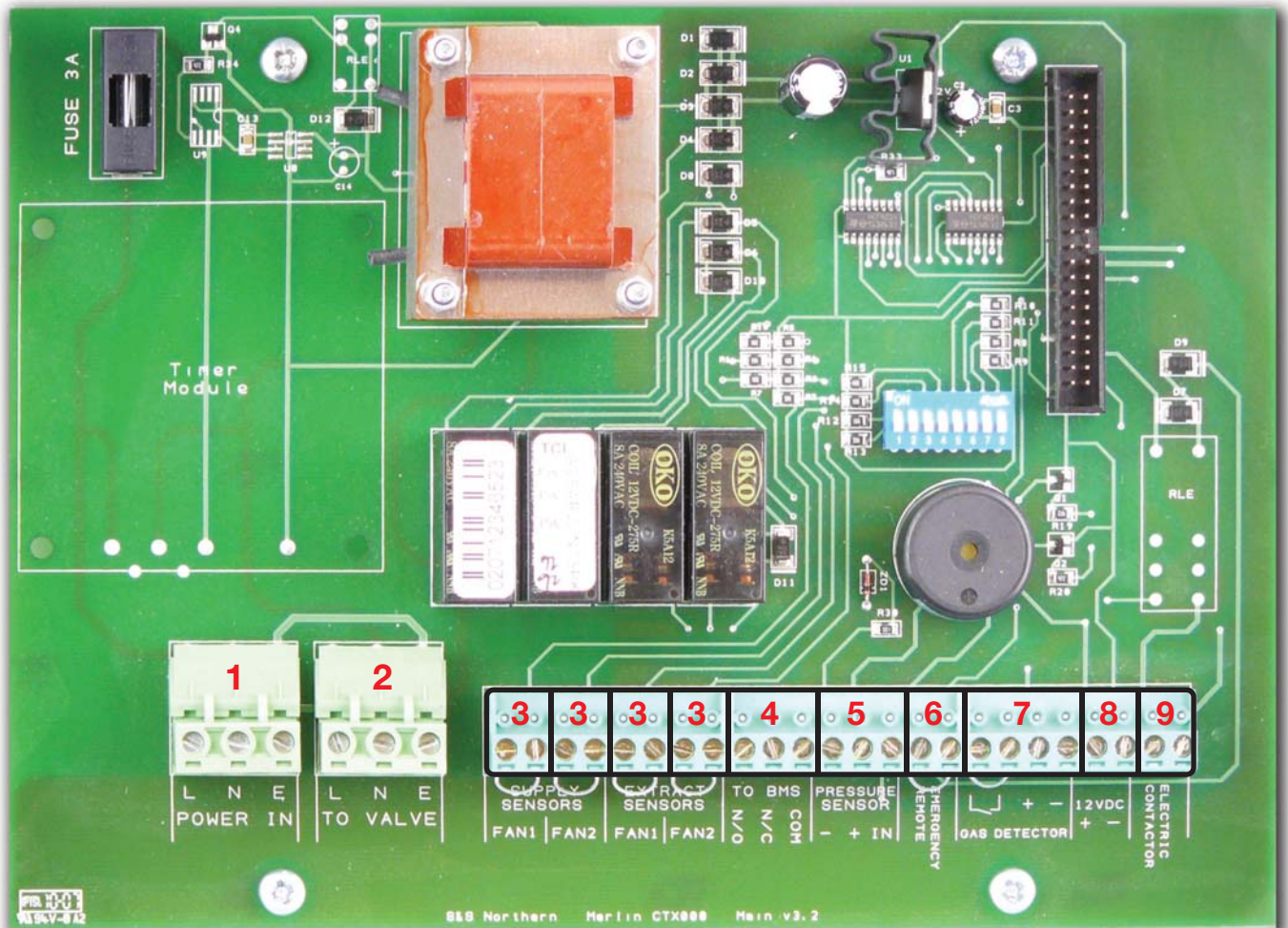
Key features of the Merlin 2000GD

- Complies with **BS 6173:2001** for commercial kitchens
- Gas Proving for when kitchen appliances are not fitted with flame failure devices
- Clear LED display for system indications
- Connections for BMS systems as standard
- Low Pressure monitoring for incoming gas supply
- Works with most Gas Solenoid Valves
- Interlocking with fans using either Air PD switches or fan current sensors (PM2 see misc section).
- Easy installation
- Key operation giving user full control
- 3 year warranty on all products



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Merlin 2000GD 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 Input for remote emergency stop button
- 7 Gas detector input open when operated & Permanent 12v DC output
- 8 Permanent 12v DC output (normally used to power PM2 current monitor)
- 9 Disabled

Merlin 2000GD Dimensions

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

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Technical Data Sheet

Merlin 2000GD Gas Pressure Proving & Ventilation Gas Interlock System.

The Merlin 2000GD control panel should be used in conjunction with a 230v normally closed gas solenoid valve. It can also be used with either air pressure differential switches or a fan current monitor.

The 230-volt mains supply to the panel should be externally fused at 3 amps and connected to the terminals marked "L.N.E. Power in" on the Merlin circuit board.

The gas solenoid valve should be wired from the terminals marked "L.N.E. to valve" on the Merlin circuit board. Valves should be 230v normally closed.

A gas proving transducer is supplied with the Merlin 2000GD. When being installed the gas pressure sensor should be screwed into the downstream port of the gas solenoid valve by a CORGI registered engineer. The downstream port is normally on the underside of the base of the valve. The gas proving transducer should be wired, on site, to the Merlin 2000GD panel with 3-core cable (3 core low voltage). Terminals are marked -, + and IN on the Merlin 2000GD circuit board and on the gas proving transducer.

Terminals marked "EM REM" are provided (voltage free) should additional emergency shut off buttons be required. Any number can be used and these should be wired in series as normally closed.

Terminals marked "Gas detector" and "12v dc" are available on the circuit board. These are used when remote "Merlin" gas detectors are to be used in conjunction with the 2000GD panel. Using 4-core low voltage cable electrical connections are made between the Merlin 2000GD panel and the remote detector. Merlin detectors are available for use with most gases.

The "fill time" is the amount of time allowed by the panel for the gas line to fill with gas. The "prove time" is the length of time the panel takes to go through the testing period. The "fill time" is factory set at 5 seconds, with the "prove time" being set at 30 seconds.

These settings can be changed on site by altering the dipswitches, which are located on the circuit board. (See operating instructions).

A master fuse, rated at 2 amps, is located on the circuit board.

The control panel housing is an IP65 rated ABS enclosure measuring 178mm high 254mm wide x 62mm Deep.

Air pressure differential switches can be used in conjunction with the Merlin 2000GD. Voltage free connections can be made from the air pressure differential switch to the Merlin 2000GD using 2-core cable.

As an alternative to air PD switches we are able to supply current monitors. (See PM2 information).

The PM2 will be powered by a 12v dc supply from the Merlin 2000GD, by using two core low voltage cable. An additional two-wire low voltage connection should be made from the current monitor to the 2000GD circuit board, this will send a signal back to the Merlin 2000GD informing the panel whether or not electrical current is being monitored. The live feed from the fan on/off controller to the fan should be interrupted by wiring it into the "L" terminal on the PM2, the live feed should then continue to the fan. In the case of a three-phase fan one of the three phases should be used. When the power monitor sends a signal indicating no current is going to the fan the gas solenoid valve will close, the "Fan Fail" LED on the Merlin 2000GD will illuminate and the LED of the fan that has failed will flash.

The complete system is designed to comply with the latest CE requirements and the low voltage directive.

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About S&S Northern

Here at S&S Northern we design, manufacture and supply the latest range of gas safety products for use in commercial kitchens, school laboratories and boilerhouses. We also design and manufacture a complete range of commercial gas detection panels.

Kitchens

The gas/ventilation interlock panels we manufacture for commercial kitchen applications will allow you to fully meet the requirements of BS6173:2001. We are able to supply gas pressure proving systems for use when flame failure devices are not fitted to the catering equipment. Also available is a full range of ventilation/gas interlock panels, which can be used if gas pressure proving is not a requirement. We have recently had six of our systems installed in the Palace of Westminster so whether it's a single system for the local Chinese takeaway or a number of systems for the Houses of Parliament we are able to offer you a system to suit.

Laboratories

We have, quite literally, thousands of our gas pressure proving systems installed in laboratories throughout the UK. These panels offer a safe start-up and not only protect the pupils during the course of a normal working day but also offer protection to buildings out of hours. Our gas proving range uses a single unique electronic pressure measuring system, which eliminates the problems associated with traditional "pressure switch" systems and double transducer installations

Gas Detection

Whether it is a boilerhouse, car park, shopping centre or a specialist application, we can normally supply a gas detection system to meet your requirement. The more common requirements are Methane, Carbon Monoxide, LPG or Carbon Dioxide.

Spec Wizard

We have a unique and simple way to make it easier for Design Engineers to create specifications. With spec wizard you can easily obtain details and information on which of our products is most suited to your specific needs. All you need to do is go to the product page, click on spec wizard, answer a few simple questions and the spec wizard will automatically send the details to your email for you to copy into your specification.

Warranty

All Merlin equipment is designed and manufactured in the UK and carries a three year warranty. The Merlin range was specifically designed to be user friendly and provide simple cost effective installation. The Merlin range of products is designed and manufactured to meet CE full requirements.





for safety & service contact: **s&s northern**

head office: moss lane - coppull - chorley - PR7 5AL

t • 01257 269 569 f • 01257 269 590 e • info@snsnorthern.com w • www.snsnorthern.com

southern division: 42 towerfield road - shoeburyness - essex - SS3 9QT

t • 01702 291 725 f • 01702 299 148