

MERLIN RANGE



Merlin 2000GD

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.

KITCHEN EQUIPMENT

If the Merlin 2000GD detects there is a drop in the gas pressure due to an 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 byproducts 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 3 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

