

# Merlin Utility Control

## Incorporating Gas Pressure Proving Technology



### Key Features



- Automatic Control of the gas, water and electricity supply
- UL Certified to 61010-3<sup>rd</sup> Edition
- Gas pressure drop test and continuous supply pressure check.
- Built-in connectivity to existing BAS and fire alarms
- Additional external gas detection sensors available.
- Key lock for authorization control

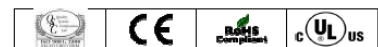
### Overview

The Merlin 1000SW+ utility control panel gives the user complete automatic control over the gas, water and electricity within the room. Utilizing a solenoid valve and a pressure transducer the Merlin 1000S will check for a pressure drop or leak in the downstream gas line before allowing the gas to be supplied. Once gas has been supplied the unit will constantly check the incoming gas supply pressure to ensure that a naked flame cannot be extinguished by a weak draft. The bench electric is controlled via a contactor. The water supply is controlled via a normally closed solenoid. The key lock ensures that only authorized personnel can operate the utilities. The emergency knock off button is shrouded to

ensure no accidental shutdowns occur. All the Merlin utility controls come with clearly labelled PCB boards to ensure easy installation. Additional gas detection sensors can be wired to the unit for extra safety. Built-in connectivity to existing BAS systems and inputs for existing fire alarms make the unit perfect for renovation projects as well as new build. Dip switches on the reverse side of the facia panel allow for on-site adjustments of various parameters including, the gas fill and prove times, how the unit communicates with the BAS system and the time-out function. The water and electricity can be selected to stay on in the event of an emergency shutdown.

### Application

- K-12 and Higher Ed Science Classrooms.
- Designed to meet NSTA guidelines.
- Isolation of the gas supply in the event of high CO or CO2 concentrations.
- Commercial industrial spaces.
- Automatic isolation of the gas supply upon EM stop or gas detection.



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### Technical Specifications

Power supply – 100/240vac 50/60Hz

Protection – Overvoltage, overcurrent, surge protection (3amp)

Enclosure – Wall mounted Fully UL certified enclosure. Flush Mount kit available.

Dimensions – W255 x H180 x D77 mm

Gas Solenoid Control Signal Output – 100/240vac 50/60Hz

Electric Control Signal Output – 100/240vac 50/60Hz

Water Solenoid Control Signal Output – 100/240vac 50/60Hz

BAS Output - N/c, Com, N/o Max 1A @ 120vac

EM Stop Input – Volt Free\*

Fan Switch Output – Volt Free\*

Sensor Power Output – 24VDC  
Sensor Signal Input – Volt Free\*

Gas Pressure Transducer Power Output – 12VDC  
Gas Pressure Transducer Signal Input – 0-5VDC

CO<sup>2</sup> Monitor Signal Input – Volt Free\*

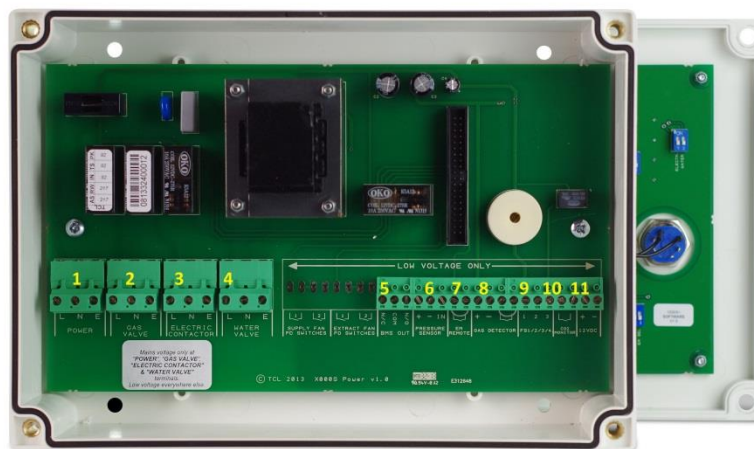
Adjustable Time-out period – 2hr, 4hr or 8hr or disabled

Adjustable Gas Fill Time – 5 seconds or 10 seconds

Adjustable Prove Time – 30 seconds or 60 Seconds

Adjustable BAS Signal Output – Alarm “on” or Gas “on” / Gas “off”

\* Volt Free. Do Not connect any device which generates a separate source of voltage on this circuit. Any voltage applied to these connections will damage the microcontroller.



1. Mains Supply Input
2. Gas Solenoid Valve Power Output
3. Electrical Contactor Output
4. Water Valve Output
5. BAS Output Contacts. Common, Normally Closed and Normally Open.
6. Gas Pressure Transducer, Power Supply and Return Signal.
7. Remote Emergency Stop Button and Fire Alarm input (wired in series) Volt Free
8. Gas Detector (Nat Gas, CO, LPG or NOX) power supply and returned signal.
9. Fan Switch Output (purchased separately) see Fan Switch User Manual for Wiring Diagram.
10. CO<sup>2</sup> Monitor Signal Return
11. Not Applicable