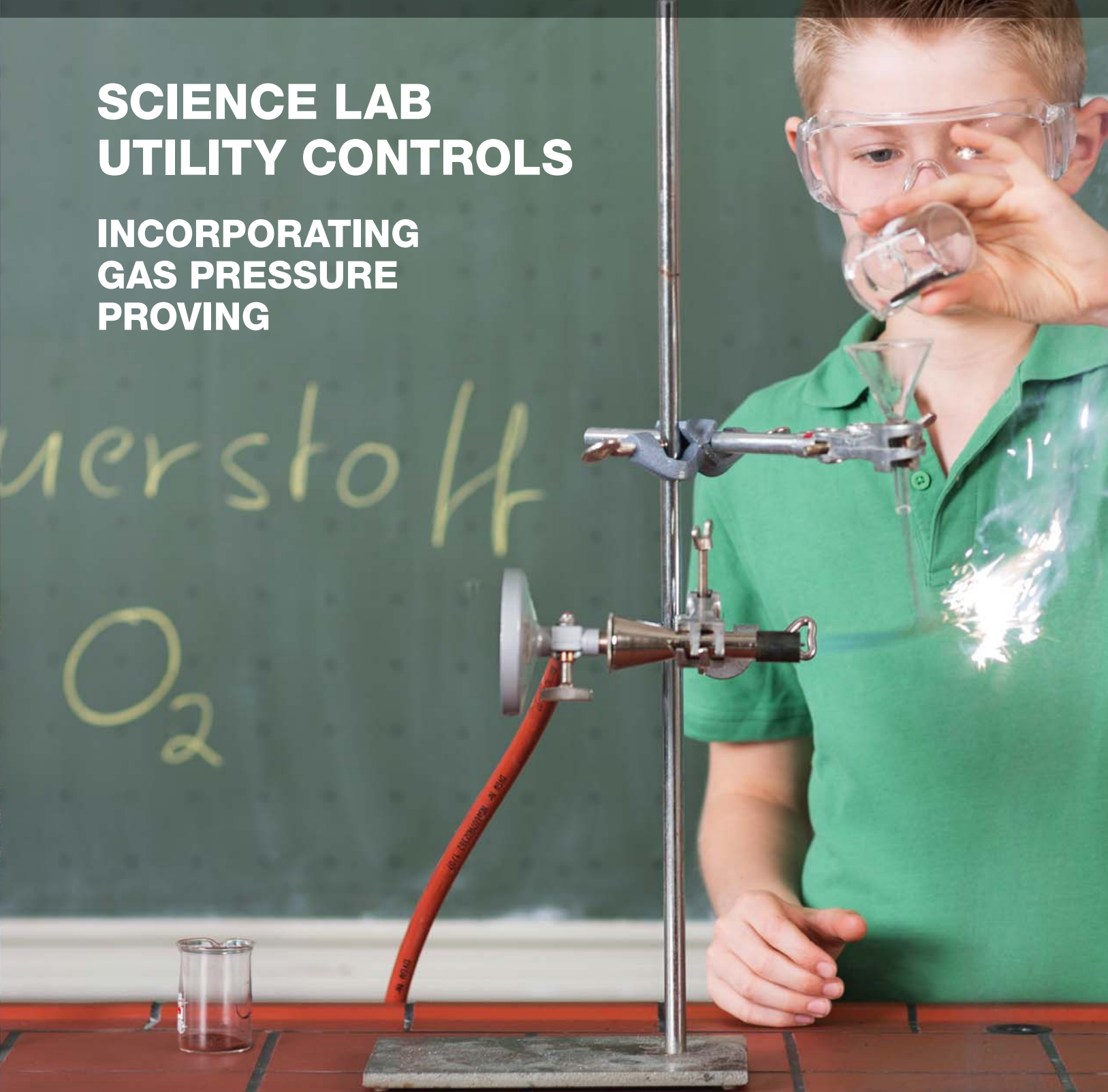


# SCIENCE LAB UTILITY CONTROLS

INCORPORATING  
GAS PRESSURE  
PROVING



*GAS PRESSURE PROVING EQUIPMENT - ENGINEERED TO DELIVER EXCEPTIONAL LEVELS OF SAFETY*

**THE MERLIN RANGE**  
DESIGNED FOR EDUCATIONAL LABORATORIES

**AGS**  
●●●●●●●●●●  
AMERICAN GAS SAFETY

# AMERICAN GAS SAFETY

## GAS PRESSURE PROVING SYSTEMS FOR LABORATORY APPLICATIONS

*American Gas Safety is becoming North America's leading designer, manufacturer, and supplier of modern gas safety products. These include gas ventilation and gas interlock systems for use in commercial kitchens. We also design and manufacture our own gas pressure proving systems and gas detection systems for boiler houses and school science laboratories.*

American Gas Safety has 30 years of experience in the gas industry and has become the trusted name to provide gas safety and installation solutions to the commercial market. Our fully qualified engineers and designers keep up to date with industry practices and developments, adhering to all health and safety legislation, as well as, building codes. Therefore our customers can feel assured that the solutions we are providing along with the technical backup are second to none. American Gas Safety is a family run and operated business with excellent customer service and value for money at its core.

### **Meeting Gas Safety Standards Is Our Business And Our Passion**

The Merlin range of gas pressure proving systems we supply for laboratory control applications are the most up to date in the market. Whether it is gas only, gas and bench electrics or gas, bench electrics and water you need to control we have a panel to meet your requirements. Designed to protect the students and teachers during lessons and the buildings out of hours, our panels have the added advantage of giving the teacher flexible and adjustable control over the use of utilities in the classroom. The Merlin range of products have been designed to be easy to install and are very user friendly. All American Gas Safety panels come with a three year warranty as standard.

### **Advantages Of Working with American Gas Safety LLC**

- Full technical support available
- Competitively priced
- Complete After Sales Care
- Full product catalogue available at [www.americangassafety.com](http://www.americangassafety.com)
- UL Certified Factory and Products
- Easy installation
- Express delivery available Nationwide
- Modern digital design
- Full product operating and maintenance available online.



**American Gas Safety - Head Office**

### **The Merlin Range**



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# THE MERLIN RANGE

## 1000S SYSTEM

*The Merlin 1000S gas pressure proving system is designed specifically for use in school, college & university laboratories. This panel is to be used to carry out a gas proving test on the pipe work in order to highlight if there is a gas appliance open or a gas leak in the laboratory at start-up. The Merlin 1000S is designed to give the teacher full control over the incoming gas supply with the lockable key-switch operation.*

The Merlin 1000S can work in conjunction with carbon dioxide, natural gas, carbon monoxide and LPG sensors. The Merlin 1000S also has a built in "timeout" facility which will automatically shut off the gas solenoid valve at the end of a specific time period, this time period can be adjusted to 2, 5, 8 hours or can be overridden if required.



### Advantages of the Merlin 1000S System

- Can work in conjunction with a Merlin CO2 Monitor.
- Protects people and property by testing for leaks before allowing the gas on.
- Reliable method of pressure proving using the gas pressure transducer.
- Key switch operation gives teacher full control.
- Quick proving test, typically 30 seconds from switch on to ready for use.
- Time out facility protects the building out of hours
- Low pressure indication, continual monitoring of gas pressure.
- Clear LED display for system indications.
- Compatible with both BMS and fire alarm systems.
- Additional sensors can be fitted to test for CO2, CO, Nat Gas, LPG
- Straightforward to install and calibrate, the Merlin 1000S can be easily adjusted to the user's requirements.
- Covered by American Gas Safety 3 year warranty





# LABORATORY EQUIPMENT ENGINEERED FOR PEACE OF MIND

## Gas Pressure Transducer

The gas pressure proving is carried out using our gas pressure transducer fixed into the downstream port of the gas solenoid valve or directly into the downstream gas line. When the panel is switched to the "on" position the Merlin 1000S will begin to carry out a gas proving test. If the Merlin 1000S 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 the panel will go to "Gas on" and the gas solenoid valve will open. At any time, whether during the testing procedure or when the gas solenoid valve is 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 and the gas solenoid valve will be closed.

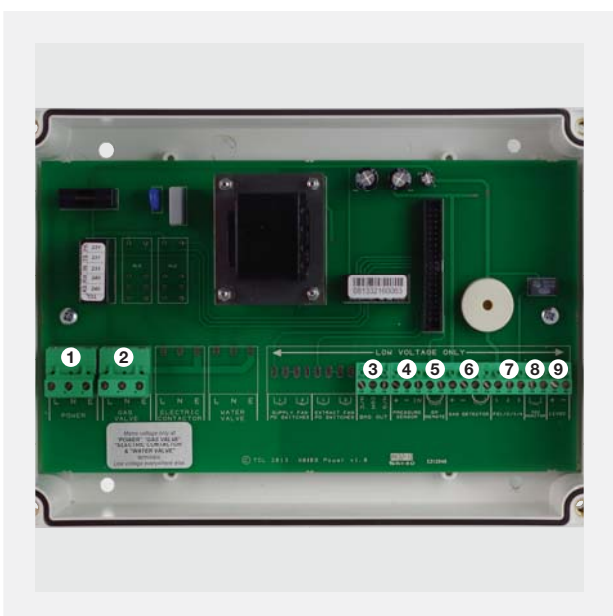
## Time Out

Another useful feature on the Merlin 1000S is the 'Time out' facility, which is simple and

straightforward to use. The 'Time out' feature switches the gas supply off after a pre-set period ensuring that if the user should forget to switch the system off then the gas supply will automatically be isolated at the end of the 'Time out' period. The Time out function can be set at 2, 5 or 8 hours and can be overridden if required.

## Carbon Dioxide Monitoring

Along with the various additional gas sensors the Merlin 1000S system can also work in conjunction with our CO2 Monitor. The CO2 Monitor will constantly measure the air quality in the classroom and give the teacher and students a visual read out of the parts per million of CO2 in the air. If at any point the CO2 rose to an unsafe level of 2800ppm, the Carbon Dioxide Monitor would send a signal to the Merlin 1000S which in turn would shut off the gas supply. The Merlin 1000S would show "CO2 High" on the LED display. The classroom would need to be ventilated before the CO2 Monitor would allow the Merlin 1000S to be re-set.



American Gas Safety has a full technical team available to help:  
Call us: +1 (727) 608 4375 or email: [info@americangassafety.com](mailto:info@americangassafety.com)

## Merlin 1000S System Wiring Diagram

1. Mains Input 120V Single Phase.
2. Gas Solenoid Valve Power Output, 120VAC, Max 3A.
3. BMS output contacts. Common, Normally Closed and Normally Open. Max.1A @ 120VAC.
4. Gas pressure transducer, power supply & returned signal
5. Remote EM Stop buttons and Fire Alarm input wired in series (purchased separately). VOLT FREE INPUT
6. Methane, CO or LPG Detector, power supply and volt free input (purchased separately).
7. Fan Switch output (purchased separately).
8. CO2 Monitor (purchased separately). VOLT FREE INPUT
9. Permanent 12VDC output.

## Merlin 1000S Box Dimensions

Height	7 inches
Length	10 inches
Depth	2.5 inches



# THE MERLIN RANGE

## 1000S+ SYSTEM

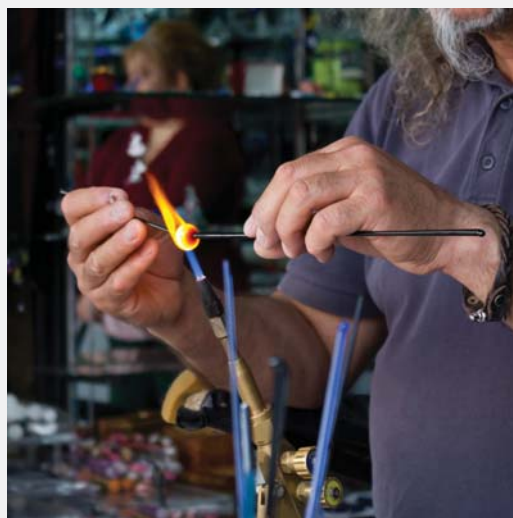
*The Merlin 1000S+ gas and electric isolation system with gas pressure proving is designed specifically for use in school, college & university laboratories. This panel will carry out a gas proving test on the pipe work in order to highlight an open gas appliance or a gas leak in the laboratory. The Merlin 1000S+ is designed to give the teacher full control over the incoming gas supply and bench electrics with the lockable main key-switch & touch sensor controls.*

The Merlin 1000S+ can work in conjunction with carbon dioxide, natural gas, carbon monoxide and LPG sensors. The Merlin 1000S+ also has a built in "timeout" facility which will automatically shut off the gas solenoid valve at the end of a specific time period, this time period can be adjusted to 2, 5, 8 hours or can be overridden if required.



### Advantages of the Merlin 1000S+ System

- Can work in conjunction with a Merlin CO2 Monitor.
- Protects people and property by testing for leaks before allowing the gas on.
- Reliable method of pressure proving using the gas pressure transducer.
- Key switch and touch sensors gives teacher full control of both gas supply and bench electrics.
- Quick proving test, typically 30 seconds from switch on to ready for use.
- Time out facility protects the building out of hours
- Low pressure indication, continual monitoring of gas pressure.
- Clear LED display for system indications.
- Compatible with both BMS and fire alarm systems.
- Straightforward to install and calibrate, the Merlin 1000S+ can be easily adjusted to the user's requirements.
- Covered by American Gas Safety 3 year warranty





# THE MERLIN RANGE

## 1000SW+ SYSTEM

*The Merlin 1000SW+ gas, electric & water isolating system with gas pressure proving is designed specifically for use in school, college & university labs. This panel will carry out a gas proving test on the pipe work in order to highlight an open gas appliance or a gas leak in the laboratory at start-up. The Merlin 1000SW+ is designed to give the teacher full control over the incoming gas supply, bench electrics and basin water supply with the lockable main key-switch & touch sensor controls.*

The Merlin 1000SW+ can work in conjunction with carbon dioxide, natural gas, carbon monoxide and LPG sensors. The Merlin 1000SW+ also has a built in "timeout" facility which will automatically shut off the gas solenoid valve at the end of a specific time period, this time period can be adjusted to 2, 5, 8 hours or can be overridden if required.



### Advantages of the Merlin 1000SW+ System

- Can work in conjunction with a Merlin CO2 Monitor.
- Protects people and property by testing for leaks before allowing the gas on.
- Reliable method of pressure proving using the gas pressure transducer.
- Key switch and touch sensors gives teacher complete control all facilities in the classroom.
- Quick proving test, typically 30 seconds from switch on to ready for use.
- Time out facility protects the building out of hours
- Low pressure indication, continual monitoring of gas pressure.
- Clear LED display for system indications.
- Compatible with both BMS and fire alarm systems.
- Straightforward to install and calibrate, the Merlin 1000SW+ can be easily adjusted to the user's requirements.
- Covered by American Gas Safety 3 year warranty





# LABORATORY EQUIPMENT ENGINEERED TO PROTECT

## Touch Sensor Control

When the key switch is turned to the “on” position the user then has 10 seconds to select the facilities they would like to use. At the end of the 10 seconds whichever facilities have been selected will be activated. If the user wishes to disable any of these facilities or use any other facilities they would have to turn the key switch to the “off” position and then back to the “on” position and the process will have to be repeated.

## Gas Pressure Transducer

The gas pressure proving is carried out using our gas pressure transducer fixed into the downstream port of the gas solenoid valve or directly into the downstream gas line. When the panel is switched to the “on” position the Merlin 1000SW+ will begin to carry out a gas proving test. If the Merlin 1000SW+ 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 the panel will go to “Gas on” and the gas solenoid valve will open. At any time, whether during the testing procedure or when the gas solenoid valve is 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 and the gas solenoid valve will be closed.



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## Water Isolation

The Merlin 1000SW+ system has the facility to control a solenoid valve allowing control over the water supply to the classroom. If the “Water” LED is illuminated the system will power the water solenoid valve and give the classroom access to the water supply.

## Electrical Isolation

The Merlin 1000SW+ has the facility to isolate any electrical circuits, such as bench electrics, that are connected to it. If the “Electric” LED is lit power is being supplied to any circuits that are connected to it.

## Carbon Dioxide Monitoring

Along with the various additional gas sensors the Merlin 1000SW+ system can also work in conjunction with our CO2 Monitor. The CO2 Monitor will constantly measure the air quality in the classroom and give the teacher and students a visual read out of the parts per million of CO2 in the air. If at any point the CO2 rose to an unsafe level of 2800ppm, the Carbon Dioxide Monitor would send a signal to the Merlin 1000SW+ which in turn would shut off the gas supply. The Merlin 1000SW+ would show “CO2 High” on the LED display. The classroom would need to be ventilated before the CO2 Monitor would allow the Merlin 1000SW+ to be re-set.

## Merlin 1000SW+ System Wiring Diagram

1. Mains Input 120V Single Phase.
2. Gas Solenoid Valve Power Output, 120VAC, Max 3A.
3. Electric Contactor Power Output, 120VAC, Max 3A.
4. Water Solenoid Valve Power Output, 120VAC, Max 3A.
5. BMS output contacts. Common, Normally Closed and Normally Open. Max.1A @ 120VAC.
6. Gas pressure transducer, power supply and returned signal
7. Remote EM Stop buttons and Fire Alarm input wired in series (purchased separately). VOLT FREE INPUT
8. Methane, CO or LPG Detector, power supply and volt free input (purchased separately).
9. Fan Switch output (purchased separately).
10. CO2 Monitor (purchased separately). VOLT FREE INPUT
11. Permanent 12VDC output.

## Merlin 1000SW+ Box Dimensions

Height	7 inches
Length	10 inches
Depth	2.5 inches



# THE MERLIN RANGE

## CO2 MONITOR

*The Merlin CO2 Monitor is designed specifically for use with the Merlin range of safety panels. The Merlin CO2 monitor has a LED display showing the user a clear and precise reading of the CO2 levels in a classroom. A traffic light color code system shows the user, at a quick glance, that the air quality in the room is at a safe, adequate, or dangerous level.*

The Merlin CO2 Monitor is a hard wire, 120V powered unit and can be used independently or in conjunction with one of the Merlin gas safety systems. In the event of high CO2 levels the Merlin CO2 Monitor would sound an audible alarm to alert the immediate vicinity, and send a signal to the gas safety panel (if fitted) which in turn will close the gas supply solenoid valve. The Merlin CO2 Monitor does not require on site or on-going calibration.



### 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
- Does not require additional or on-going calibration
- Covered by American Gas Safety 3 year warranty



# ANCILLARY PRODUCTS

## FROM AMERICAN GAS SAFETY

### **Gas Solenoid Valve**

We only supply the best quality Gas Solenoid Valves which are design for safety and the control of various gases, including Natural gas, Propane and LPG. They are safety shut off valves – Normally closed, so when power is supplied to the gas solenoid valve it will automatically open and as soon as that power is taken away the gas solenoid valve will close.

The valves supplied are all covered by the American Gas Safety 3 year warranty and are tested and certified to UL standards. The valves are also rated to IP65.



### **Merlin Gas Detector Range**

American Gas Safety supplies a full range of remote gas detectors for detecting CO, CO<sub>2</sub>, natural gas and LPG to compliment the Merlin range of panels. The detectors are designed using modern European digital components. If the relative gas is detected on the sensor head this will trigger the isolation of the power supply to the solenoid and isolate the gas supply.

This can then be rectified by resolving the leak, allowing the sensor head to clear and resetting the attached Merlin panel. There is no need for on-site calibration or re-calibration saving time and money.



### **Emergency Knock-Off Button**

We only supply the highest quality emergency knock-off buttons for increased longevity and reliability. The Emergency Knock-off button's can either be twist release type, twist key release type or use a resettable Perspex screen, whichever the governing code stipulates. Once the EM stop button has been depressed the Merlin panel will not function until the system has been reset both at the button and on the unit.

There is no limit to the number of additional EM stops that can be fitted per Merlin panel and they are connected with low voltage cabling.



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