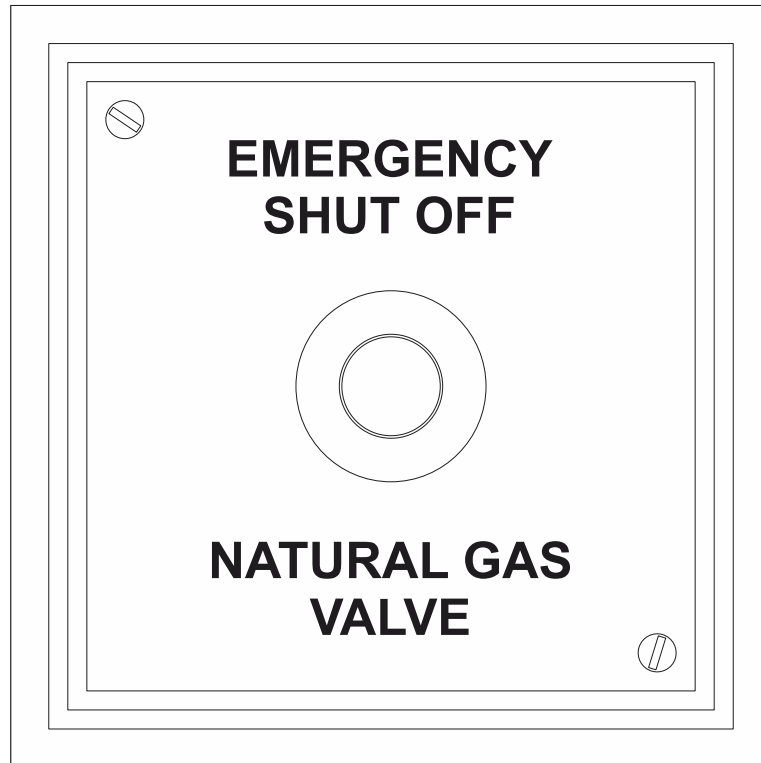


THIS BOOKLET CONTAINS PROPRIETARY INFORMATION OF BEACONMEDÆS AND IS PROVIDED TO THE PURCHASER SOLELY FOR USE IN CONJUNCTION WITH ESO SERIES RECESSED-MOUNTED EMERGENCY STOP SWITCHES.



Important

These instructions are for experienced operators who know the general principles and safety precautions to be observed in handling compressed gases. If you are not certain you fully understand the safety precautions for handling gases, we urge you to obtain and read the Material Safety Data Sheet (MSDS) for each gas being used.

Do not permit untrained persons to install, operate, or maintain these manifolds. Do not attempt to install or operate these manifolds until you have read and fully understand these instructions. If you do not fully understand these instructions, contact BeaconMedæS.

Be sure this information reaches the operator. Your supplier has extra copies.

1 - Safety Precautions

Protect yourself and others. Read and understand the following instructions before attempting to use this equipment. Failure to understand and follow these instructions could result in serious personal injury and/or damage to equipment. Because of the many potential hazards associated with gases, read the Material Safety Data Sheet for each gas you will be using.

- Know and understand the physical and chemical properties of the gas being used.
- Observe general precautions for the use of gases.
- Observe safety precautions for the gas being used.
- Read and follow precautions on cylinder labels.
- Never use equipment with gases not compatible with the materials of construction. The use of gases not compatible with the materials of construction may cause damage to equipment or injury to personnel.
- If flammable gases are used with gas equipment do not locate it near open flames or any other source of ignition.
- If toxic or flammable gases are used with gas equipment, emergency equipment applicable to the gases in use should be available in operating area.
- Many gases can cause asphyxiation by displacing oxygen in the atmosphere. Make certain the area where these manifolds are operated is well ventilated. Provide a device to warn personnel of oxygen depletion in the work area.
- Do not release toxic or flammable gases in the vicinity of personnel. Use this equipment only in well ventilated areas. Vent gases to the outside atmosphere, and in an area away from personnel. Be sure that venting and disposal methods are in accordance with Federal, State, Provincial and local requirements. Locate and construct vent lines to prevent condensation or gas accumulation. Be sure the vent outlet cannot be obstructed by rain, snow, ice, insects, birds, etc. Do not inter-connect vent lines; if more than one vent is needed, use separate lines.
- Relief devices should be installed and properly vented in all gas handling systems to protect against equipment failure and over-pressurization.
- Never connect gas equipment to a supply source having a pressure greater than the maximum rated pressure. Refer to the Product Specifications for maximum inlet pressures.
- Never permit oil, grease, or other combustible materials to come in contact with cylinders, manifolds, and connections. Oil and grease may react and ignite when in contact with some gases – particularly oxygen and nitrous oxide.
- Cylinder, header, and master valves should always be opened very s-l-o-w-l-y. Heat of recompression may ignite combustible materials.
- Flexible hoses should never be kinked, twisted, or bent into a radius smaller than 3 inches. Mistreatment may cause the flexible hoses to burst.
- Do not apply heat. Some materials may react and ignite while in contact with some gases – particularly oxygen and nitrous oxide.
- Cylinders should always be secured with racks, chains, or straps. Unrestrained cylinders may fall over and damage or break off the cylinder valve which may propel the cylinder with great force.
- Oxygen equipment and cylinders should be grounded. Static discharges and lightning may ignite materials in an oxygen atmosphere, creating a fire or explosive force.
- Welding should not be performed near nitrous oxide piping. Excessive heat may cause the gas to dissociate, creating an explosive force.
- Do not use leak test solution that contains ammonia. Solutions containing ammonia may cause brass tubing to crack.
- Always use oxygen compatible leak test solution on oxygen or nitrous oxide service equipment.



2 - Abbreviations

C	Common	OSHA	Occupational Safety & Health Administration
CGA	Compressed Gas Association	PSIG	Pounds per Square Inch Gauge
FT-LBS	Foot-Pounds	SCFH	Standard Cubic Feet per Hour
IN-LBS	Inch-Pounds	VAC	Voltage, Alternating Current
N/C	Normally Closed	VDC	Voltage, Direct Current
N/O	Normally Open	PCB	Printed Circuit Board
NPT	National Pipe Taper		

3 - Disclaimer

BeaconMedæS shall not be liable for errors contained herein or incidental or consequential damages in connection with providing this manual or the use of material in this manual.

4 - Manufacturer Statement

The information contained in this instruction booklet has been compiled by BeaconMedæS, from what it believes are authoritative sources, and is offered solely as a convenience to its customers. While BeaconMedæS believes that this information is accurate and factual as of the date printed, the information, including design specifications, is subject to change without prior notice.

5 - Introduction

These instructions are intended for use by experienced operators only. BeaconMedæS recessed-mounted emergency stop switches are tested and prepared for the indicated gas service and are built following National Fire Protection Association and Compressed Gas Association guidelines. This recessed-mounted emergency stop switch is composed of a stop-switch, an aluminum mounting plate, a fascia and a switch box with knockouts.

6 - Description

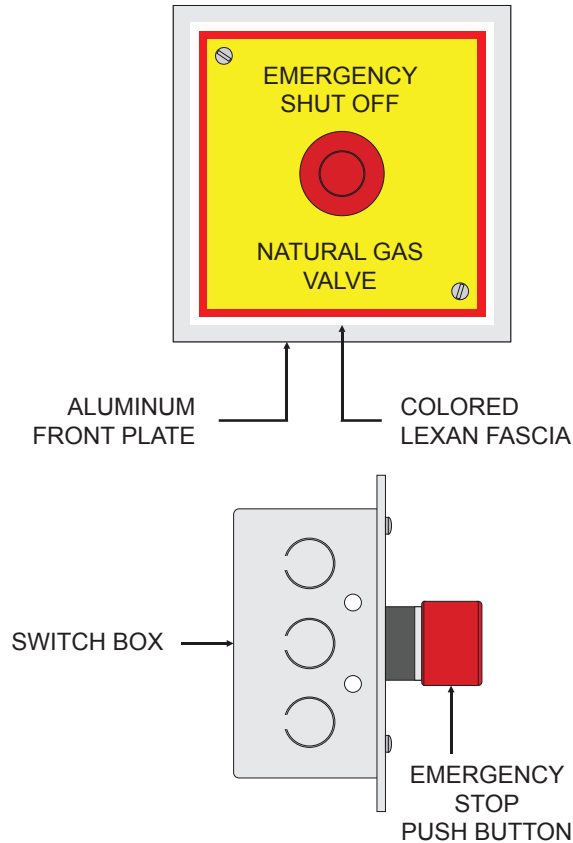
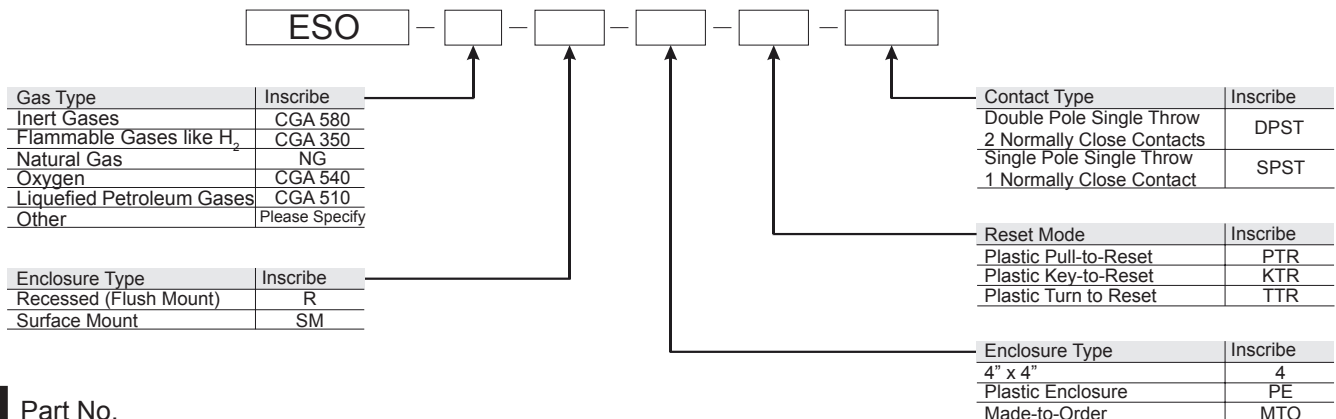


Figure 1: ESO Components

Immediately cut power with a single push. The ESO Series Recessed-Mount Emergency Stops stay switched (maintained) and have a red plastic button and screw terminal connections. The switches are oil- and watertight and corrosion resistant. The easy to mount switch box with knockouts are galvanized steel. The box has multiple knockouts to connect fittings.

The fascia is a water resistant Vinyl sticker protected with a Lexan over-laminate. The front mounting plate is a corrosion resistant aluminum plate. The gas service is clearly identified on the fascia for quick identification of the emergency shut off switch.

7 - Ordering Information



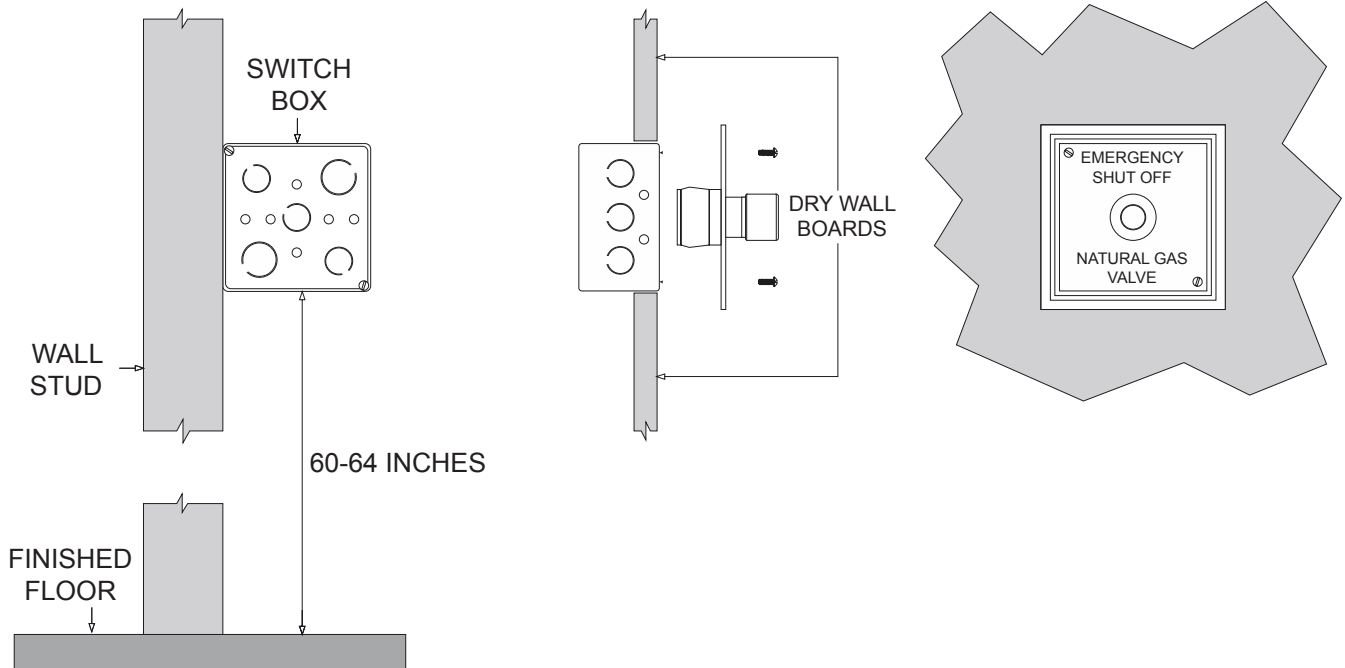
8 - Installation


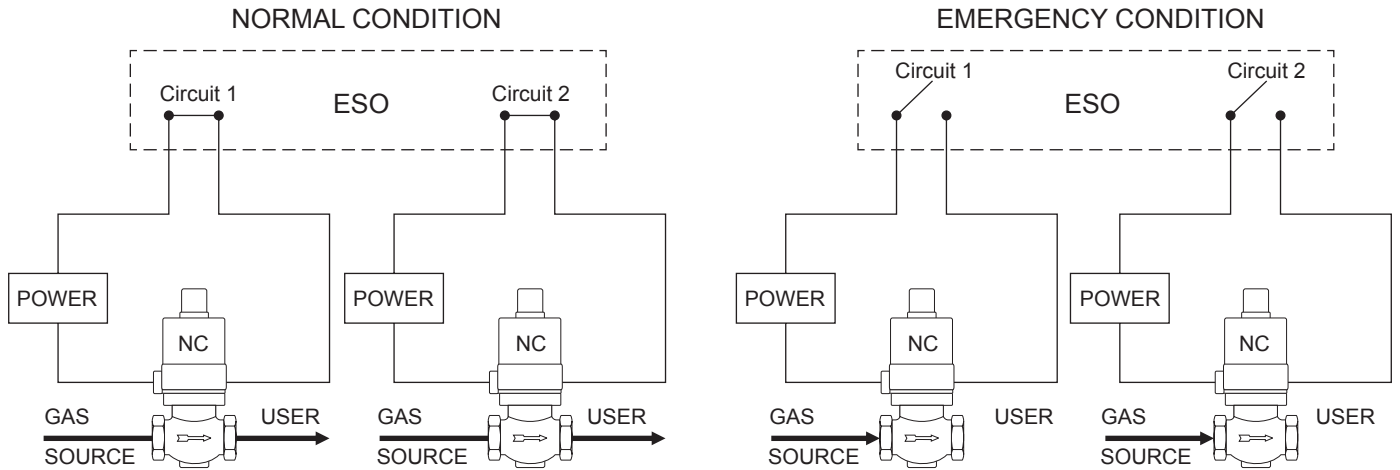
Figure 2 – Typical Installation

WARNING

This enclosure must be installed inside a building.

SWITCH BOX INSTALLATION

The ESO switch has been factory installed to the mounting panel. The mounting panel is screwed to the switch box upon reception. The first step is to separate the mounting panel from the switch box. Then, install the switch box at the recommended/appropriate height to a wall stud (any sides is satisfactory). Make sure that the switch box will be flush to the dry wall once the boards are installed.

9 - Wiring


Under normal condition, the emergency stop button is not pushed and the electrical circuit is closed, the solenoid valve is energized and lets the gas flow in the pipeline up to the point of use. Because the ESO Series has two circuits, it can accept up to two (2) solenoid valves.

Under emergency conditions, the emergency stop button is pushed and the electrical circuit opens, the solenoid valve is NOT energized and closes causing the flow of gas to stop at the inlet of the solenoid valve. Both solenoid valves are de-energized at the same time.

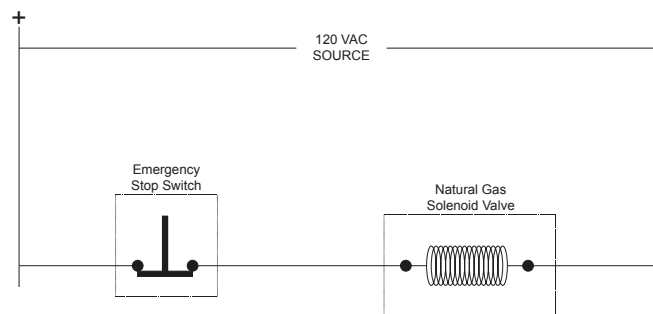


Figure 3 – Typical Wiring Diagrams

WARNING

Disconnect all supply circuits before wiring unit. Wire in accordance with local and national electrical codes. The wires shall be protected against mechanical damage. e.g. by use of a conduit.



Figure 4 – ESO Switch Block

TECHNICAL SPECIFICATIONS

FASCIA AND MOUNTING PLATE		
Mounting Plate		Aluminum (1-1/8" thick)
Sticker	Materials	Lexan over Vinyl
	Letters	Black
	Background	Yellow
	Trim	Red
SWITCH BOX		
Conduit Knockouts		3 (1/2"); 2 (3/4"); 8 (1")
Dimensions	Height	4"
	Width	4"
	Depth	2-1/8"
STOP SWITCH		
Certification	Enclosure	EN418 for Machine Safety NEMA 4X, NEMA 13, IP66 for wash down, oil and corrosion protection
	Electrical	UL Listed, CSA Certified CE Marked
Relay	Relay Type	Double Pole Single Throw (DPST)
	Contact	Normally Closed (NC)
	Capacity	6 amps @ 120 VAC 2.5 amps @ 24 VDC 600 Volts AC and DC
Circuit	Quantity	Two (2) DPST - NC Contacts
	Terminals	4
	Switch Action	Maintained (Stays Switched)

CONDUIT INSTALLATION

As mentioned in the above table, the switch box has several conduit knockouts located on the four sides and the back of the enclosure. Chose the proper size and location that fits your conduit size and your specific requirements (conduit and conduit fittings to be supplied by others).



Figure 5 – Switch Box

ELECTRICAL CONNECTIONS

There are two (2) wire landing locations on the switch block as shown on Figure 6. Insert the two wires in the slots and secure them by tightening their respective screws located at the back of the switch block.

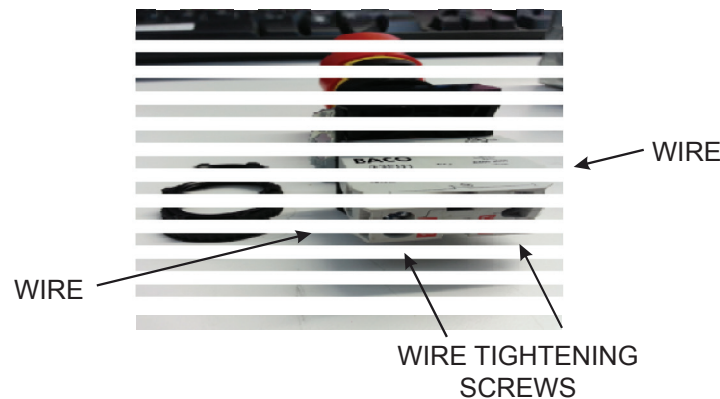


Figure 6 – Electrical Connections to Switch Block

10 - Warning

Our equipment is primarily intended for use in compressed gas systems. BeaconMedæs products are designed for use by persons technically trained in the proper use and safe handling of gas delivery systems. Due to the high pressure and hazardous gases employed in these processes, misapplication could result in injury or death. BEACONMEDÆS expressly warns against the sale to, or use of our products by, anyone other than professionally trained personnel. Do not use this equipment where pressures and temperatures can exceed those listed under the « Specifications » section.

Through misuse, age, or malfunction, components used with inert, combustible, corrosive, toxic, or oxidizing gases can fail in various modes. The system designer is warned to consider the failure modes of all component parts used with the above mentioned gases and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure modes. Adequate safeguards can be, but are not limited to:

- Pressure relief devices adequately piped to a safe location;
- Gas detection devices connected to a proper warning audible and visual alarm;
- Automatic shutoff valves and/or manual shutoff valves with an emergency stop push button;
- Self-contained breathing apparatus;
- Pipeline purge system with inert gas;
- Fire extinguishers and/or automatic sprinklers.

System designers must provide a warning to end users in the systems instructional manual if protection against a failure mode cannot be adequately provided for.

It should be recognized that warnings are valid for any equipment, regardless of manufacturer, and are not restricted to equipment manufactured by BeaconMedæs. BeaconMedæs's reputation for equipment quality performance is well established. We feel we have the additional obligation to provide information or warnings to customers to assist them in applying our equipment in a reasonable and safe manner.

11 - Design Changes

In line with our commitment to continuous improvement, BeaconMedæs reserves the right to make design modifications or discontinue manufacture of any equipment without prior notice.



LIMITED WARRANTY

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