# G161 Gas Safestart

- Pipework integrity system for kitchens and laboratories
- Simple to install and easy to operate
- Available from 1/2" BSP to 3" flanged
- Valve assembly is pressure tested and certified
- 230 Volt supply
- 50 mbar Maximum inlet pressure
- Suitable for Natural Gas and LPG
- Compatible with KS22 - V6 and KS23 - V6
- Required by IGEM UP/11 for laboratories where automatic gas isolation is used.

Application

The G161 Safestart is a pipework intergity system for kitchens and laboratories that checks all downstream pipework is secure before initiating the gas supply. In accordance with the requirements prescribed in UP/11 Gas Installations in Educational Establishments and UP/19 - Design and Installation of interlock devices and associated systems used with gas appliance installations in commercial catering establishments.

In accordance with these requirements, the Duomo Safestart system securely isolates and by checking the integrity of the downstream pipe work safely re-establishes the gas supply to any area which relies on manual isolation of gas outlets (e.g. in hotels, fast food restaurants, schools, colleges and canteens).

The control panel (KS22 - V6 for kitchens or KS23 - V6 for laboratories) ensures that only authorized personnel are able to initiate gas supply, thus preventing vandalism and misuse of gas appliances.
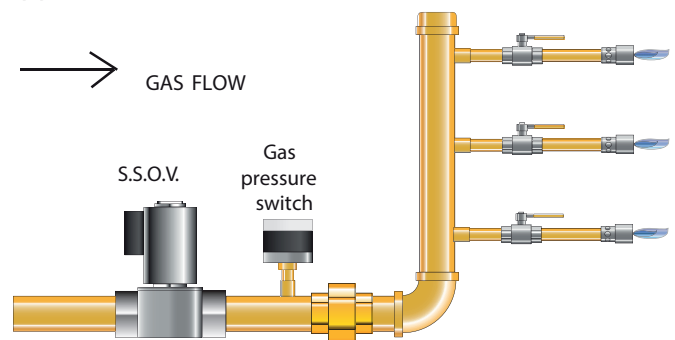
If the supply gas pressure drops below a preset threshold the system will automatically operate the low pressure cut off and the gas will be safely isolated.

Controller Options

KS22 - V6 Trio Safestart

The G161 is supplied as a complete kit with a control panel; either the KS22 - V6or KS23 - V6. It is important to recognise the differences between these when ordering a G161, to get the most appopriate control panel for your application. These controls can be interfaced with fire alarm systems to either raise an alarm at the fire alarm or isolate the gas valve under the control of the fire alarm.

KS22 - V6 Trio Safestart

This controller is used in kitchens and food technology classrooms. It has a unique touch control pad which is backlit for operation in dark environments. To start the proving system, the user must enter a password, programmable by the user at the time of set up. The proving sequence will then begin, and should it fail, the KS22 will display the type of failure (either Air or Gas). An audible notification is also provided to draw attention to this failure.

KS22 - V6 can be interlocked with extract and/or supply fans to prove ventilation before initiating the gas supply (see FP45 Current Monitors or ADP10 Air Pressure Switches).

KS23 - V6 Trio Labstart

KS23 - V6 Trio Labstart

This controller is for use in science laboratories, to control the flow of both gas and water. As with the KS22 - V6, it features a unique touch control pad. It also allows the isolation of individual services (i.e. power, water and gas) therefore allowing the user to initiate only those services required into the laboratory. The Labstart has an optional timed shutdown. The unit can automatically turn off after a given time period in 1 hour increments.

Both the KS22 and KS23 have a power saving function to reduce energy costs when the system is not in a run condition. The timed power-off can be selected at setup during the programming stage. All features (including password selection) for setup are detailed step-by-step in the datasheets supplied with these controllers.

Ventilation Interlock Options

ADP10 Differential Air Pressure Switch

- Switching point 20Pa
- Kit includes 2m plastic tubing and 2 x pitot connectors

FP45 Fan Current Monitor

- Available in single or double module
- IP65 enclosure

Installation

The gas valve component of this system must only be installed by a person or persons having a full Gas Safe Register installation certification. When installing in gas line note flow direction as indicated by an arrow on the valve body and install in approved position. Do not use the solenoid as a lever when fitting.
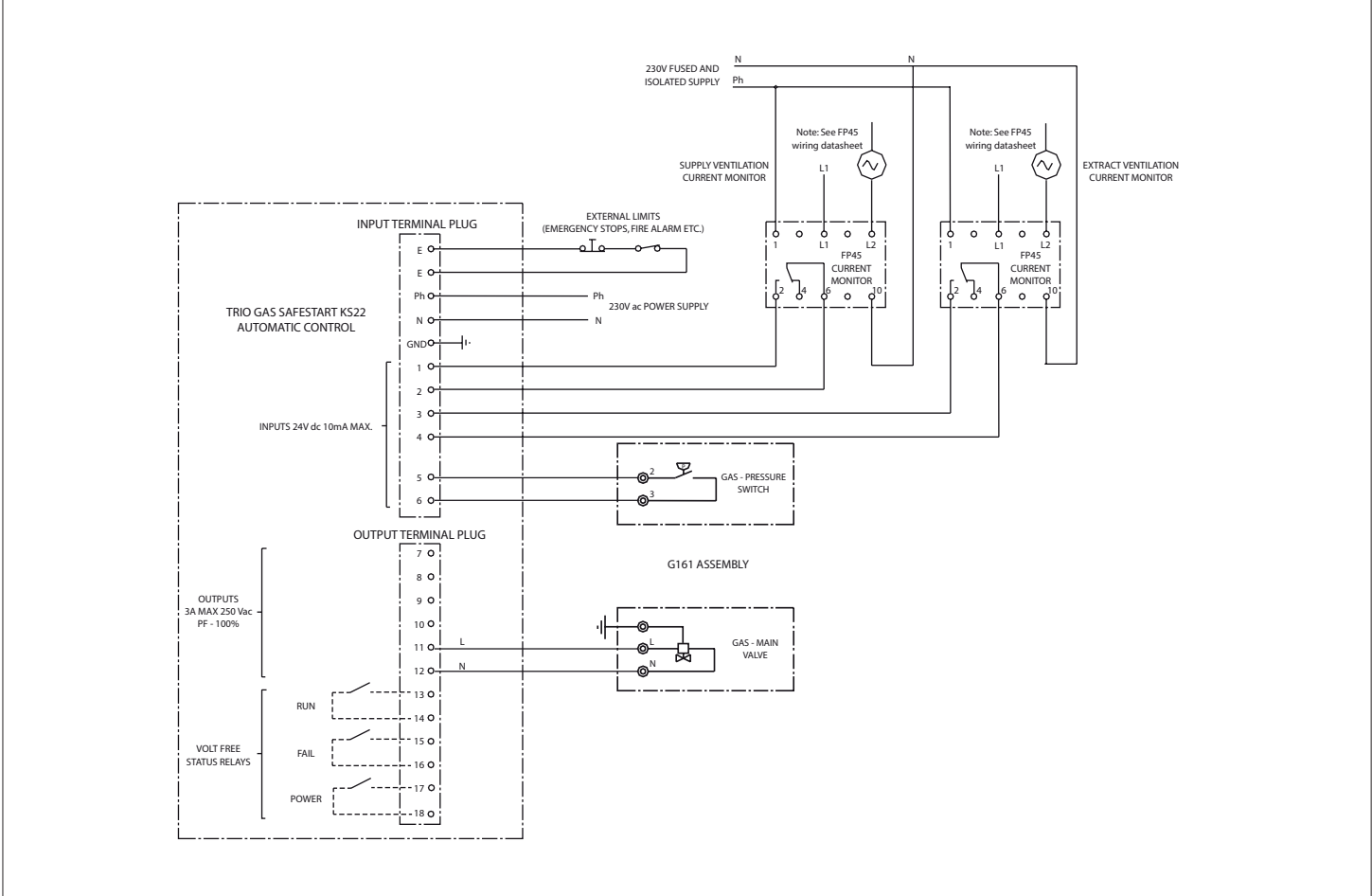
The pressure switch on this unit is set to 16 mbar as a factory default and should be set to 80% of running pressure upon installation. Maximum inlet pressure 50 mbar. After installation test for leaks and proper function.
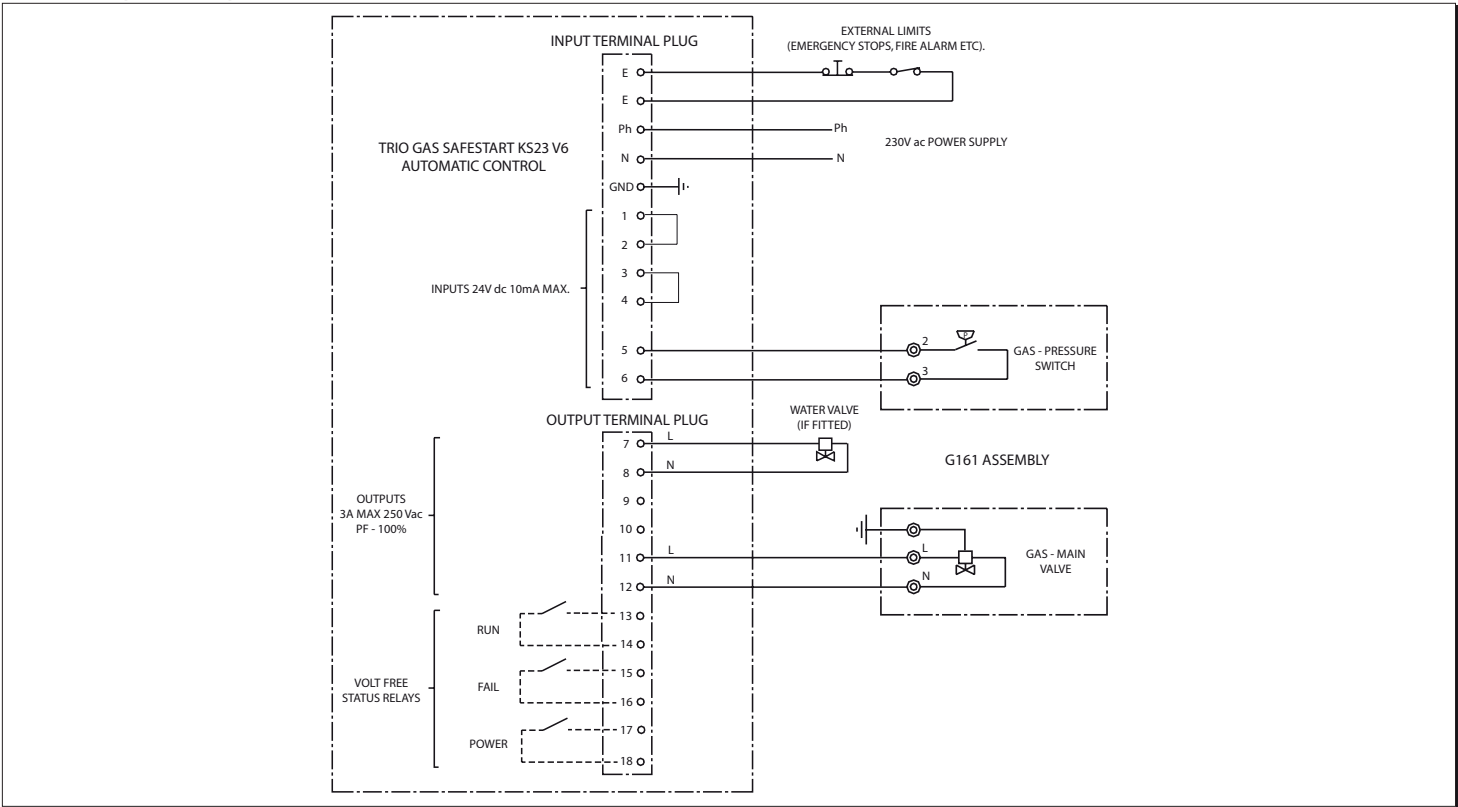

INCORRECT
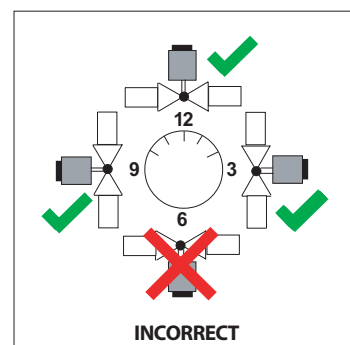
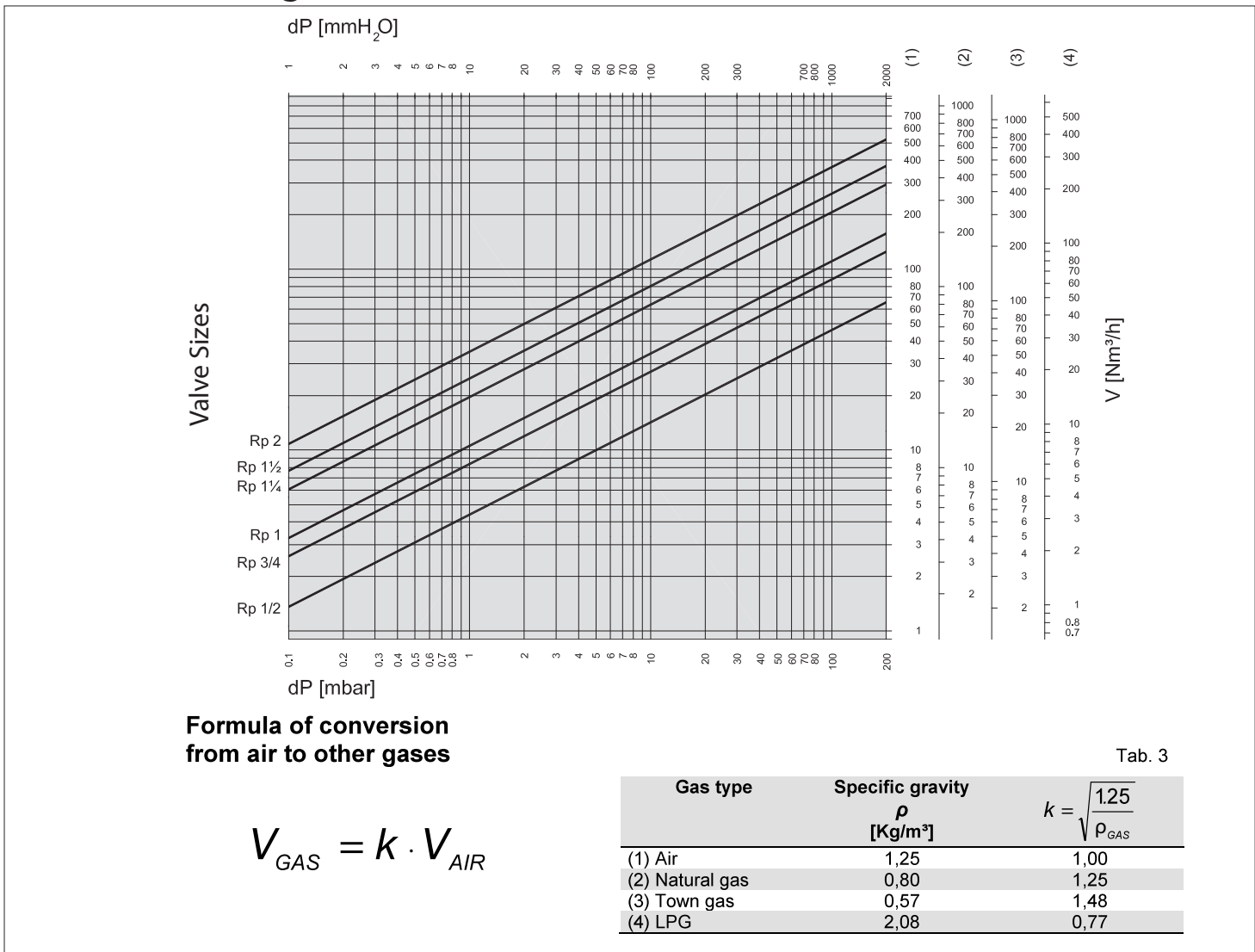# Wiring diagram of KS22 - V6 Trio Safestart Control Panel w/ADP10
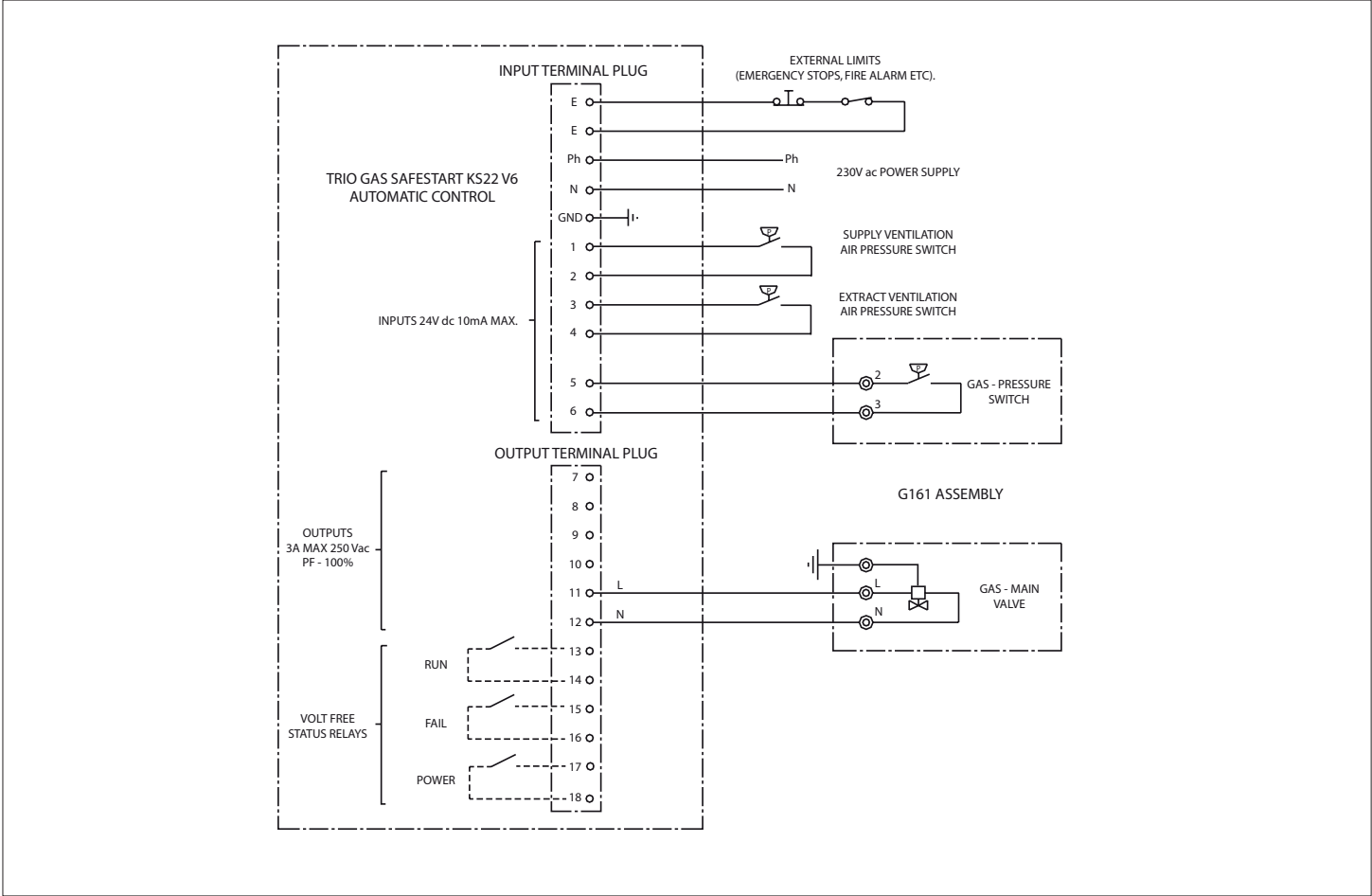
Wiring diagram of KS22 - V6 Trio Safestart Control Panel w/FP45

# Wiring diagram of KS23 - V6 Trio Labstart Control Panel

G161 Valve Sizing Table

Formula of conversion from air to other gases

$$V_{GAS} = k \cdot V_{AIR}$$

Tab. 3

Gas type	Specific gravity ρ [Kg/m³]	$k = \sqrt{\dfrac{1.25}{\rho_{GAS}}}$
(1) Air	1,25	1,00
(2) Natural gas	0,80	1,25
(3) Town gas	0,57	1,48
(4) LPG	2,08	0,77

Electrical Connection

This must only be performed by a qualified responsible person. The control panel should be protected by an external 4A fuse and isolator. Connect the G161 to the control panel as shown by the wiring diagrams using 1mm² csa cable. IF IN DOUBT ASK -   For technical guidance please call 01905 797989.

General arrangement of G161 valve assembly

GAS FLOW
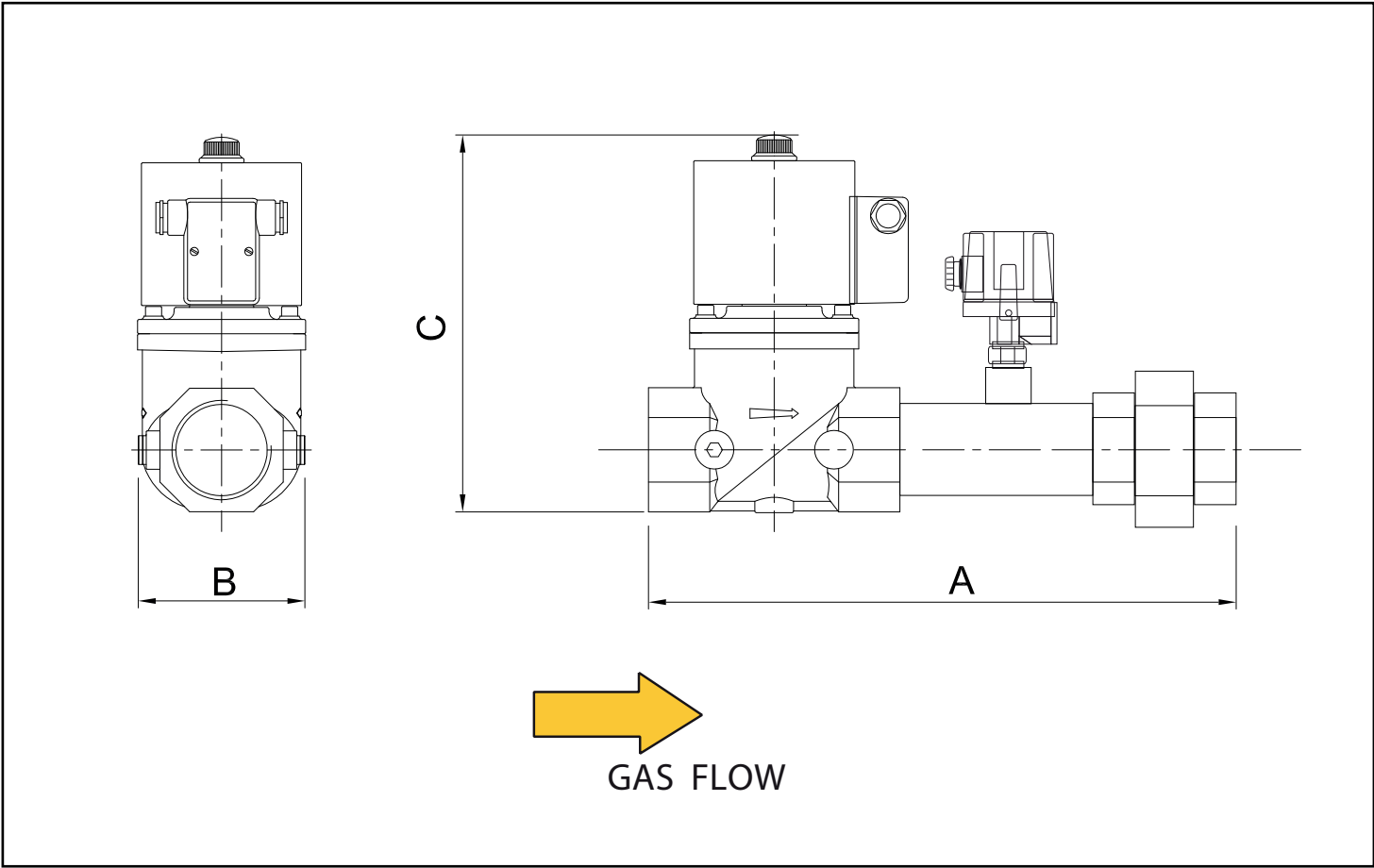
G161 Dimensions

Size of G161	Dimensions A	Dimensions B	Dimensions C
1/2"	220mm	115mm	168mm
3/4"	220mm	115mm	168mm
1"	220mm	115mm	168mm
1 1/4"	284mm	125mm	224mm
1 1/2"	290mm	125mm	224mm
2"	310mm	125mm	234mm