



A new dimension of gas cooking technology and design possibilities combined with a maximum of safety!

SmartGas™ System by GloControls



The patented *SmartGas™* System provides a means for electronically controlling the heating rate in ovens and cooktops. It facilitates accurate, controlled cooking by replacing manual controls such as gas cocks. The *SmartGas* System consists of the following elements:

- *SmartGas™* Control Module that measures the air/gas flow into the burner and drives a Proportional Valve
- Gas Safety Module to manage the Shutoff Safety Valve and ignition
- Proportional Valve to vary the flow of the gas to the burner
- User Interface to provide control information to the system

Why *SmartGas™* System?

- ☑ Same convenient functions as known from electric cooking
- ☑ Increased Safety with all components complying to the latest more stringent Safety Standards
- ☑ Perfect and repeatable cooking results using electronic flame level control and cooking profiles
- ☑ Add gas cooking appliances to the new breed of internet connected home appliances
- ☑ Easily update appliances in the field to add new functionality and support new accessories

Benefits for appliance Manufacturer

- ☑ The *SmartGas™* System can be installed in most appliances with minimal modifications.
- ☑ Availability of wide range of sophisticated User Interfaces, matching existing concepts and styles used with “electric” cooking or other kitchen appliances (rotary encoder emulating traditional mechanical gas tap, touch control, Smart Phone Apps)
- ☑ User Interface can be positioned remotely
- ☑ No mechanical connection between knob/user interface and gas pipes - simplified and faster assembly process
- ☑ Gas cooking can now be controlled in the same manner as Hotplates and Induction – common user interfaces for mixed cooktops
- ☑ Scalable, flexible and modular platform – suitable for various cooktops and range types
- ☑ Easy configuration (system profiles)
 - Different gas types and pressures
 - Cooktop variants (number, position, type and size of burners)

Features of *SmartGas™* System

- ☑ Flame control enables precise and repeatable power levels = perfect and repeatable cooking results
- ☑ Temperature sensing
- ☑ Smart cooking technologies
- ☑ Cooking Profiles
- ☑ Pause Cooking / Recall Cooking Function
- ☑ Timer Function
- ☑ More power for cookers - Boost Function in gas
- ☑ Multi-burner control (Burner Bridge Function)
- ☑ Simmering/Melting
- ☑ Automatic Reignition – no more interruptions
- ☑ Residual heat indicator
- ☑ Child-lock
- ☑ Automatic shut-down after defined period
- ☑ Configuration profile



SmartGas™ System components

Shutoff Safety Valve

To meet the requirements of EN298 and Z21.20, it is necessary to install a gas Shutoff Safety Valve in each burner line. The Shutoff Safety Valve should be placed in the gas feed line to the burner and must completely stop the flow of gas to the burner when not activated. The Shutoff Safety Valve should be connected to the Gas Safety Module.

Proportional Valve

The Proportional Valve should be placed downstream of the shutoff valve in the gas feed line to the burner. For burners with a separate feed line for simmer and main, it is recommended to place the Proportional Valve in the main feed only. The Proportional Valve should be connected to the SmartGas™ Control Module.

Temperature Sensing

Depending on the Hardware Configuration, the SmartGas™ System can measure the temperature using PTC, NTC or thermocouples. Sensors are connected to the screw terminals provided on the SmartGas™ Control Module.

Flow Sensing

To enable flow sensing, a small port must be provided in the narrowest part of the venturi of the burner. The port is connected to one input of the flow sensor on the SmartGas™ Control Module. For improved accuracy, the other flow sensor input should have a tube running to location as close as practical to the measurement port.

GloControls Safety Control

The Gas Safety Module is a compact electronic device used in gas appliances. It provides two gas valve outputs and two interrupted, igniter outputs, controlled by rectification flame sense circuits using common ignition and sense electrodes. There are several options for the Gas Safety Module to suit specific appliance requirement:

- Hot Surface ignition for 120V applications
- Hot Surface ignition for 230V applications
- Spark Ignition for 120V applications
- Spark Ignition for 230V applications

The Gas Safety Module provide a line voltage input for each channel for initiating a call for heat as well as a communications port for providing status information. The Gas Safety Module is fully compliant to latest Z21.20 and EN298 safety standards

SmartGas™ Control Module

The SmartGas™ Control Module provides the connections for the Proportional Valves, User Interfaces, sensors, fan motor and safety control. The SmartGas™ Control Module is intended for use in gas cooktops and ovens. It contains all the necessary functionality to provide two channels of electronically controlled variable heating in gas cooking appliances. SmartGas™ Control Module incorporates a Proportional Valve drive and a flow sensor for measuring accurately the air/gas mixture flow rate. In response to an external user interface or serial commands, it will initiate a call for heat on an external gas safety control. Once ignition is detected, it will drive the Proportional Valve in accordance with the user setting to provide the desired heating rate.

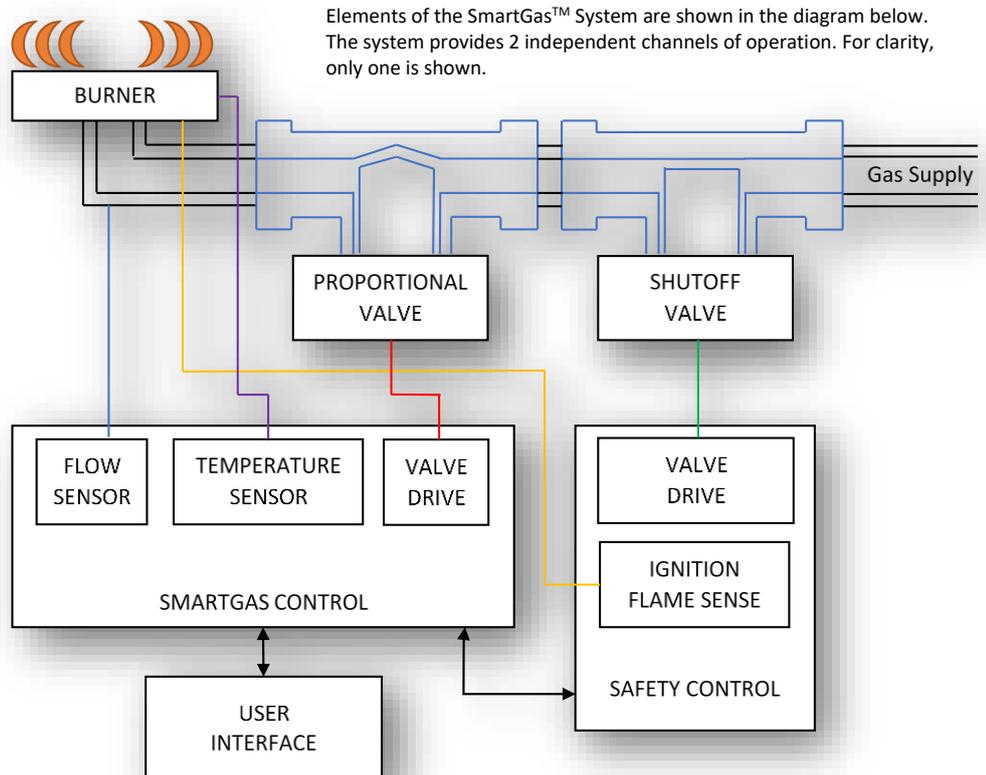
User Interfaces

The User Interfaces may be supplied by the customer or use one of Glo Controls Pty Ltd products. The SmartGas™ System is capable to work with several User Interfaces and communication protocols:

- Manual/Analog UI
- Serial Connections for digital UIs
- Bluetooth - Capability for remote control and configuration via Bluetooth.
- Wi-fi - Capability for remote control and configuration via Wi-Fi.

Fan motor output (optional)

For the oven application SmartGas™ Control Module is capable to control the fan motor. The control provides two channels switchable to line voltage by relays.



For more information contact Glo Controls:

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