



Combustion Controls for
Industrial Process Ovens and Heaters,
Furnaces, Kilns, Incinerators and Industrial Boilers



Combustion Control Products

Honeywell is the industry leader in burner and boiler control components and systems. These products and systems enhance safety in different industrial sectors.

Our key products include

- IR and UV Flame detectors.
- Flame switches and Burner sequence controllers.
- Modutrol Motor and actuators.
- UGV [Universal Gas Valves] & Gas Train Components.
- Adjustable port valves.
- Gas pressure switches.
- Ignition Transformers.
- Pressuretrol Proportional Pressure Controllers.
- Satronic Burner controls and components.
- Limits and pressure controls, communications and software.

Applications include burners, boilers, furnaces, Incinerators, packaged rooftop units, kilns, hot water heaters and pool & spa heaters, etc.

These products are offered directly and through authorized distributors to OEMs, System Integrators, Contractors, Boiler manufacturers, Burner manufactures and end users.

Flame Detectors

U2 Integrated Flame Detectors

The U2 all-in-one Viewing Head with integrated signal processor delivers flame discrimination in toughest environments. With automatic setup and the ability to monitor UV and IR flames simultaneously or separately, the all-in-one flame scanner offers improved burner up time and reliability.

Application:

- Industrial process burners
- Multiple burner system

Features:

1. Touch screen user interface: Tempered and fully sealed glass touch wheel sensor: no mechanical moving parts.
2. Protection class: NEMA 4x, IP66 Class 1, Div 1 / 2, IIC, T6 (approved by IECEx and CCoE).
3. Immune to X-Rays and Gamma radiation, making them ideal for critical applications.
4. U2 performs background pulse counting for UV tube health and therefore doesn't need a mechanical shutter system for self-checking.
5. Outputs: Flame Relay (Contact Output), Fault Relay (Contact Output) and 4-20mA (Current Output).



U2-1010-PF

Suitable for area classification – Class 1, Div 1, IIC, T6
Default cable length: 3 metres (extension cable and junction boxes available as separate accessories)



U2-1010

Suitable for area classification – Class 1, Div 2, IIC, T6
Default cable length: 3 metres (extension cable and junction boxes available as separate accessories)

S55X Series Flame Detector



S556BE – UV Detector



S550BE – UV + IR Detector



S552BE – IR Detector

S55xBE flame detector ensures flame discrimination in toughest environments and is capable to detect flame of almost every available fuel type or mixture. These Viewing Heads are suitable for Class 1, Div. 2 area classifications (approved by IECEx and CCoE). These are used in conjunction with P532, P531 or P522 Processors.

Processor Units



P522

- Provision for connecting 2 Viewing Heads at a time
- Single alphanumeric display available
- 2 SPDT contacts available per channel with 4-20mA outputs



P532

- Provision for connecting 3 Viewing Heads at a time
- Individual alpha numeric scrolling display for individual channels
- 2 SPDT contacts available per channel with 4-20mA outputs



P531

- Provision for connecting 3 Viewing Heads at a time
- Individual LED available for indicating flame status
- 2 SPDT contacts available per channel with 4-20mA outputs

700 Series Flame Detector With Processor Unit



S702 / 6 Flame Detectors

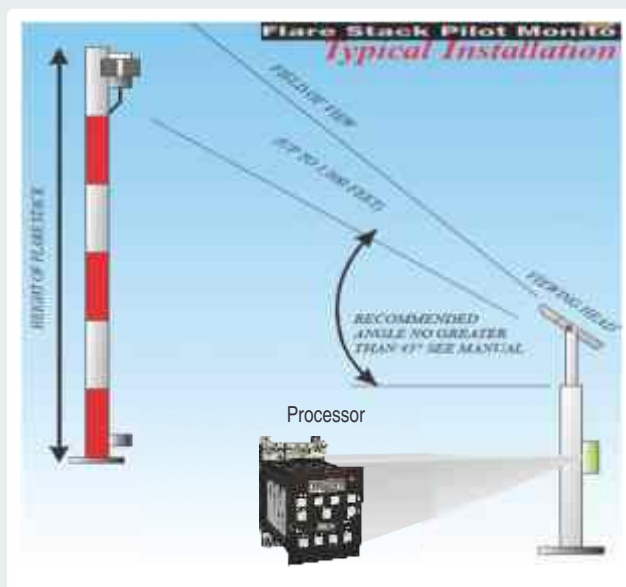
These compact Viewing Head detects the presence or absence of flame and features a quick disconnect plug with 2 embedded indicator LEDs. These viewing heads are used in conjunction with 700 Series Processor. Suitable for Class 1, Div. 2 area classifications (approved by IECEx and CCoE)



700 Series Processor

The 700 is a signal processor which amplifies and conditions the Viewing Head signal for use with a burner management system. It provides a 0/4-20mA output signal, two SPDT flame relay outputs and one SPDT self-check relay output.

Watchdog III-Flarestack Monitoring System



S256 Viewing Head with P222 Processor

- Monitors flame from a maximum distance of 1000 feet
- Immune to X-Rays and Gamma Rays
- Not affected by sunlight
- Field settable delay timers available to avoid nuisance tripping
- Viewing Head approved for Class 1, Div. 2 area classifications

UV flare stack Viewing Head is meant for detecting the presence or absence of flame at the flare stack tip. Used for continuous monitoring to ensure no unburned toxic or waste gas releases into the atmosphere.

Flame Detectors



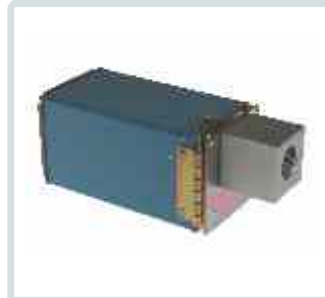
C7027/35

Model C7027/35 is a compact flame detector used in flame safeguard controls and compatible flame amplifier.



C7012

Model C7012 is a solid state electronic flame detector used with Honeywell flame safe guard controls and amplifiers. Sense ultraviolet radiation produced by combustion of gas, oil or other fuels. Weather proof & Ex proof versions also available.



C7076

Model C7076 is a solid state dynamic self check adjustable sensitivity flame detector, used with compatible Honeywell flame safe guard controls and amplifier. This is recommended for off-process fuels, such as H₂S or flames that are difficult to detect. eg. Coal, BF, Producer Gas, etc.



C7915

Model C7915 includes a lead sulfide photocell that is sensitive to infrared radiation emitted by combustion of fuels, such as natural gas, oil, and coal.

Flame Switches



R4343

Model R4343 performs flame detection function only. R4343D and R4343E are switches, when used with the appropriate sensors, can signal the presence or absence of flame.



R4348

Model R4348 is used for application in large commercial and industrial burner installation where they are used as simple flame switch. This can perform flame detection and burner safe start function. The potential free relay contacts, enables the use of this with wide range of logic schemes as per customers needs. The add-on features include; flame intensity bar graph display and 4-20 mA flame intensity out put.



EC/RM7823

Microprocessor-based integrated flame switch for detecting a flame using rectification, UV or IR sources. Can be fitted with any 7800 series amplifier to provide relay action from 2 single pole double throw [SPDT] relays when flame is present or not present. This is a flame detection relay only. 3 LEDs to indicate power, flame and alarm.



BC1000

The BC1000 series is a flame switch for intermittent operation to indicate presence or absence of a flame and to be applied in commercial or industrial burner installations. It can also be used as a primary control for manually operated burner systems using a start/stop station.

Burner Controllers

Burner Controllers

EC/RM7800

The 7800 series burner control comprises a relay module, wiring subbase, purge timer and amplifier. Available options allow 7800 series installation to perform intelligent controls.

Accessories

Subbase Q7800A

Key Board Display Module S7800A

Flame Amplifiers R7847/R7848/ R7886/R7861

Purge Timers ST7800A



DBC2000

DBC2000 series microprocessor based controllers, are used to control and monitor gas and oil burners for on/off or modulating control. Two models are available: "standard" model and "enhanced" model with integrated valve proofing system as well as Profibus or Modbus® (future feature) communication possibilities.

DBC2000 is suitable for use with both, Flame Rod and UV flame detectors (C7027, C7035, C7044). It has an integrated flame amplifier. A jumper located at the back of the device controls the selection of Flame Rod or UV Flame detector.

TBC1800

TBC1800 is a high-performance burner controller which is designed for pulse firing and modulating burner applications.

TBC1C00 has capability of providing fast on/off or low/high firing.

Features:

- Flame Value digital display
- Fault display on front plate
- Remote reset
- Simple setting of flame threshold (applicable incase of UV detectors are user for flame detection)





Gas Air Pressure Switches



C6097

These are safety devices used in positive pressure or differential pressure system to sense gas or air pressure.

C6097 Standard range

● 1-10 mbar ● 2.5-50 mbar ● 30-150 mbar ● 100-500 mbar

Gas Pressure Filters & Regulators

These are Gas Filters (HUF), Gas Pressure Regulators (HUP) and Gas Pressure Regulators with inbuilt Filter (HUPF).

Sizes: Upto 2" are available in threaded version and sizes from 2½" upto 4" in flange versions.

Separate springs are available for various outlet pressures (5-150mbar)



HUF/HUP/HUPF



VE4000C

Slow Opening Gas Valves

Solenoid gas valve, normally closed, with characterized opening, Class "A" Safety Shutoff Solenoid Gas Valve with threaded connection and maximum flow rate adjustment and characterized opening.

For control and regulation of gaseous fluids in gas power burn ovens, furnaces and other gas consuming appliances.

Gas valve type - non regulated normally closed, slow opening.

Media - natural gas, propane, air.

Normally Open Gas Valves

Solenoid gas valve normally open. The VE4000S1 and VE4000S2 series gas valves are safety relief used as vent valves in gas power burners, gas boilers, ovens, gas consuming appliances.

Gas valve type - non regulated ON/OFF normally open.

Media - natural gas, propane, air

VE4000S1- CPI Switch Optional

VE4000S2- CPI Switch Mounted



VE4000S



VE400AA

Safety Shutoff Gas Valves

AC solenoid gas valve, normally closed, Class "A" AC powered, Safety Shutoff Solenoid Gas Valve with threaded connections. For pilot and small burner applications in gas power burners, gas boiler, ovens, furnaces and other applications.

Gas Valve type - AC powered, non regulated ON/OFF normally closed, fast opening

Media - natural gas, propane, air

Solenoid gas valve, normally closed, Class "A" Safety Shutoff Solenoid Gas Valve with threaded connection. For control and regulation of gaseous fluids in gas power burners, ovens, furnaces and other gas consuming appliances.

Gas valve type - non regulated ON/OFF normally closed, fast opening

Media - natural gas, propane, air.



VE4000A



VE4000B1

Solenoid gas valve, normally closed, Class "A" Safety Shutoff Solenoid Gas Valve with threaded connection. For control and regulation of gaseous fluids in gas power burners, ovens, furnaces and other gas consuming appliances.

Gas valve type - non regulated ON/OFF normally closed, fast opening

Media - natural gas, propane, air.



VE4000B3

Solenoid gas valve, normally closed, Class "A" Safety Shutoff Solenoid Gas Valve with flanged connection.

For control and regulation of gaseous fluids in gas power burners, ovens, furnaces and other gas consuming appliances.

Media - natural gas, propane, air.

Manual Reset Gas Valves

Small manual reset gas valve, normally closed, Class "A", manually open, Safety Shutoff Solenoid Gas Valve.

For use in gas leak detection systems or other applications.

Gas valve type - non regulated ON/ OFF

Media - natural gas, propane, air.



VG400AA



VG4000A3

Manual reset gas valve, normally closed, Class "A", manually open, Safety Shutoff Solenoid Gas Valve with flange connections.

For use in gas leak detection systems or other applications

Gas valve type - non regulated ON/OFF

Media - natural gas, propane, air.

Manual reset gas valve, normally closed, Class "A", manually open, Safety Shutoff Solenoid Gas Valve.

For use in gas leak detection systems or other applications.

Gas valve type - non regulated ON/OFF

Media - natural gas, propane, air.



VG4000A1



VG4000S3

Manual reset gas valve, normally open. Manually opening/closing, Safety Shutoff Solenoid Gas Valve with flange connections.

For use in gas leak detection systems or other applications

Gas valve type - non regulated ON/OFF

Media - natural gas, propane, air.

Combustion Control Products

Combination Gas Valves

VQ400

Combination gas valve without pressure regulation, Class "A"
Combination Gas Valve.

For control and regulation of gaseous fluids in gas power burners, ovens,
furnaces and other gas consuming appliances.

Gas valve type - 2 safety shutoff valves in series

Media - natural gas, propane, air.



VR400

Combination gas valve with pressure regulation, Class "A" Servo Regulated
Combination Gas Valve.

For control and regulation of gaseous fluids in gas power burners, ovens,
furnaces and other gas consuming appliances.

Gas valve type - 2 safety shutoff valves in series with pressure regulation

Media - natural gas, propane, air.

Valve Proving System

V4021

V4021 is self-checking microprocessor based valve proving system.

This acts prior to firing of the burner, This checks the effective closure of
automatic shut-off valves for leakages with the help of pressure switches.
In case of leakage this will not allow firing of burner to take place.



Fluid Power Actuator



V4055/V4062/V9055

These are special actuators powered by a fluid pump used for on-off or
hi-low or modulation.

Slow opening & fast closing.

Fail safe duty.

Used to control gas supply or to provide manual reset, safety shut-off
functions for commercial & industrial burners.

Suitable for used with VE5065A/ VE5065C/V5055/ V5097 Valves.

Port Valve



V5197A

The V5197A is an integrated valve train butterfly gas valve. It is a firing rate valve used to provide variable flow control of air, natural gas, Liquefied Petroleum [LP] and manufactured gases.

The V5197A is actuated by a firing rate motor that can be mounted directly on the valve or can be actuated with Modutrol motors with proper linkages.

Butterfly Gas/Air Valve

V51E

V51E Butterfly gas/air valve provides modulating control of natural, manufactured, LP gases or air. Modutrol Motor can be fitted directly on the valve with proper linkages.



Pressuretrol Controllers



L404

Provides operating control, automatic or manual reset limit protection for pressure system upto 300 psi.

Use with steam, air, non combustible gases or other fluids non corrosive to pressure sensing elements.

L91

Provides modulating pressure operating control for regulation of liquid or air and other non corrosive gases.

Use with steam, air, non combustible gases or other fluids non corrosive to the brass or phos-bronze (300 psi model) bellows.

Siphon loop included with the models for 10 to 300 psi ranges.



C437D,E 2000 Series Gas Pressure Switches

The C437D, E Series 2000 Gas Pressure Switches are pressure actuated switching devices used in industrial gas system applications for safety shutoff, pressure control, and differential pressure control. All Series 2000 models have MicroSwitch™ snap switches to open or close a circuit on pressure rise or drop.

Actuators

Modutrol Motors

Modutrol IV Motors provide following features :
 Dual shaft/Nema 3 housing / Higher holding torques / Improved spring return holding torque/Reduced power consumption. Add on features available: Diff Voltage models with field addable Transformer / Diff strokes, timings and control inputs [On/Off, SPDT Floating / Modulating], Diff Torque ratings as per application.



OM Series Actuator

The OM series is equipped with standard on-off or modulating (4~20mA, 1~5V, or 0(2) ~10V select by DIP-switch) control quarter-turn electric actuator.
 Torque Range: 35- 3500Nm

The OM series can also provide feedback output signal:
 Dry contact for On-Off version;
 0~5V, 0~10V, 4~20mA (selected by DIP- switch) for modulating version,
 Auxiliary Switch is optional.

Spark Ignition Module

S87

Compact flame switches with built in spark generator (Ignition Transformer).
 Used with ionisation rods/unirod. Operates on a 24Vac power supply.
 Switches on valve, ignites spark, reattempts ignition in case of flame failure. Optional 30 seconds, Pre purging time. Typically suitable for smaller batch type furnaces, Ovens, Powder coating and surface treatment ovens. Cost effective



Satronic Burner Controls



DKO

For 1 or 2 stage oil burners of capacity 30 kg/hr and intermittent operation.
 Compatible flame detectors:
 - Photo resistor
 - Infrared flicker detector
 - UV flame sensor



TMO

For 1 or 2 stage oil burners with a capacity of over 30 kg/hr in intermittent operation.
 Compatible flame detector:
 - Photo resistor
 - Infrared flicker detector



TFI/MMI/MMG/TMG/DKG/DMG/DLG

For 1 or 2 stage gas burners.
Compatible flame detectors:
- Ionization probe
- Infrared flicker detector



IRD/MZ/UVZ

Flame detectors IR type, Photo Resistor type and UV type to be used with Satronic Burner Controllers

Ignition Transformers



ZT 871/900/930/931

Ignition transformers for oil and gas burner ignition

ET401/2

ET401 has single high voltage output pin connection, suitable for use with gas burners.

ET402 has double high voltage output pin connections, suitable for use with oil, gas and dual fuel burners.



Servomotors



LKS 118

For smaller burners with simple air damper control [open/close].

LKS 120/131

For 1 or 2 stage oil and gas burners with or without fully closing damper.



LKS 310

The LKS 310 air damper actuator is designed to be fitted to multi-stage or modulating oil and gas burners.



Combined Valve and Ignition System

VK41/VK81 Series Valve

The Combined Valve and Ignition (CVI) system has been developed for application in gas fired domestic central heating boilers, combi boilers and warm air furnaces or water heater appliances with an automatic ignition system.



S4565/75/85 Series Ignition Control

The VK41.../VK81.... series gas controls have been designed to have the S4565/S4575/S4585 series ignition control attached directly on to the valve.

Fema Pressure Switches

DCM/DNM

This universal pressure switch can be used in general mechanical engineering and printing machine industry, pneumatics and hydraulics.

Medium: Liquid and Gases,

Pressure range: 400mbar – 63bar, suitable for SIL 2 according ICE 61508-2



EX-DCM / EX-DNM

The given range of pressure switch is available in explosion proof versions certified for ATEX area classification EEx de IIC T6, PTB approval: PTB 02 ATEX 1121

DNS/VNS

Pressure switches of DNS series are suitable for monitoring and controlling pressures in chemical plants, process engineering and any situation where the pressure of aggressive liquids and gases are to be monitored. All components of the sensor system are made of high-quality stainless steel (1.4571) and welded, using latest methods without filler metals. Pressure sensor is gasket-free plasma-welded.





DDCM

FEMA differential pressure monitors are suitable for monitoring and controlling differential pressures, flow monitoring and automatic supervision of filter systems. A double chamber system with stainless steel bellows or Perbunan diaphragm detects the difference between the two applied pressures. The desired switching pressure is adjustable within the ranges mentioned. All differential pressure monitors can be used in vacuum range, hysteresis is not adjustable.

VCM/VNM

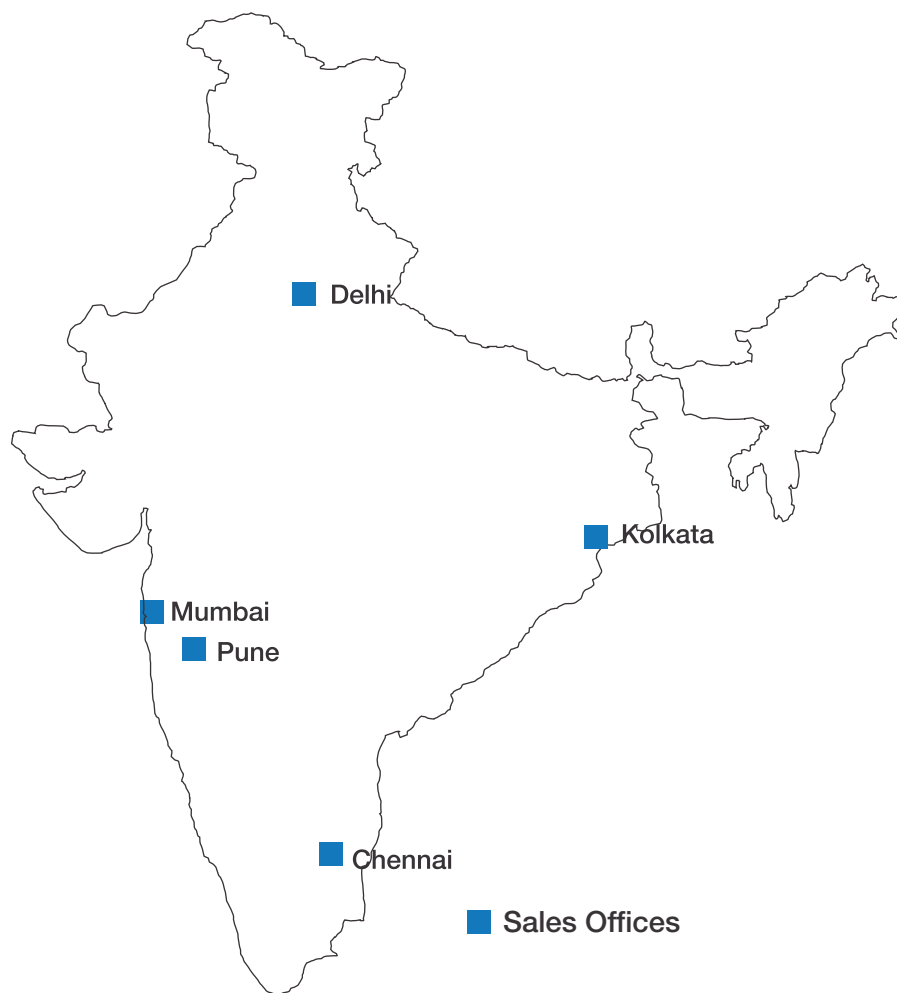
These pressure switches are used for vacuum applications. Range available from -15mbar to 0.1bar. The zero reference point on the scale of the unit corresponds to the relevant atmospheric pressure.



SMART DCM

The robust, microprocessor-supported electronic pressure switches in the Smart DCM series measure relative pressures in ranges from -1 to +1 bar and 0-40 bar.





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