

Part No:-500-0013-00
Model :- RI230A 1 RoHS

CUSTOMER SPECIFICATION

SINGLE BURNER GAS RE-IGNITER 230Vac (RoHS)

Flame Re-Ignition for 1 Burner

For gas appliances



Contents

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Product

Reigniter – Interrupted Direct Spark Ignition system for use with natural, mixed, Liquified petroleum and LP Gas mixtures.

- *Compliant with European RoHS (Reduction of Hazardous Substances) Directive*
- *Multiple modules can be used within an application to provide individual reignition at multiple burners.*
- *230Vac operation for improved flame sensitivity.*

Operating Principles

The re-igniter monitors the flame presence at the burner and commences sparking if any flame fails. Correct operation of flame sense circuits requires the mains supply to the re-igniter to have at least a resistive connection to earth and the burners also to be earthed. An in-built delay of about one second between loss of flame sense and commencement of sparking on self re-ignition eliminates nuisance sparking if the flame is low and wavering.

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Compliance to Standards:

ANSI Z21.92 2001 Manually Operated Electric Gas Ignition Systems and Components

CSA-6.29-2001 Manually Operated Electric Gas Ignition Systems and Components

EN60730-2-1:1997 Specification for Automatic controls for household and similar use

EN50165: 1997 Clause 8.101 Electrical equipment of non-electric appliances for household and similar purposes. Energy limits for accessible ignition electrodes

RoHS Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical & electronic equipment

Functional Requirements:

General

- The module operates in conjunction with a single burner.
- Connected to the reigniter is a single electrode at the burner providing a means of detecting the flame. The same electrode is also used to spark through the gas/air medium surrounding the burner and ignite the mixture.
- The burner is controlled by a gas-cock. Opening the gas-cock will allow gas to flow to the burner and also switch power to the Re-igniter. When power is applied, and providing the re-igniter does not sense flame, sparking will commence and the gas will ignite. The circuit continues to monitor the flame presence at each burner and will recommence sparking at all burners if any flame fails.

Sparking

- The high voltage output coil provides sufficient voltage and energy to generate a spark from the electrode across the spark gap to the earthed burner. A spark is guaranteed, provided the spark gap is within specifications and provided the electrode and cable load resulting from the cooktop or range design meets the maximum loading specifications
- The spark rate varies primarily due to changes in the applied voltage, however other factors including temperature and component tolerance have an influence.

Flame Detection

- The Flame detection utilises the flame rectification principal, primarily due to its ability to tolerate leakage currents to earth significantly larger than the flame current itself. The circuit passes a current through the electrode, flame and burner to electrical earth. The power to provide the current flow is derived from the mains line voltage. Any significant leakage currents to earth that render the flame detection inoperative will result in continuous spark.
- The module detects a flame under all flame conditions provided the electrode is positioned such that the detected flame current exceeds the minimum specified flame current.
- The response time of the circuitry to detection and loss of flame is dependent primarily on the magnitude of the flame, and will meet the requirements as detailed within the technical specification.

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- It is recommended to design the burner and position the electrode to achieve a flame current greater than the specified minimum to increase the circuit's response time. On a burner with poor flame stability this will allow an increased time between loss of flame and re-establishment of flame signal before spark is generated.

Module I/O*Input – A(Active)*

A nominal 230Vac 50Hz signal to the Active input enables the high voltage transformer and activates flame detection. If no flame is detected sparking will occur.

Input - Spark Terminal S1

This connections has a dual function, to provide a high voltage, capable of generating a spark (refer Outputs – Spark Terminals) and as a means of detecting flame when operating in input mode.

Input – N(Neutral)

Neutral is connected to provide a reference for the circuit.

Input - Earth

For correct and reliable operation of the flame detection circuit an earth connection must be provided to the unit and the burners must be earthed. When mounted to grounded metal using the unit's mounting point (refer Physical Dimensions) an adequate earth connection to the unit is provided.

Also ensure at least a resistive connection from earth to neutral. Mains distribution networks with Line/Neutral have this characteristic.

Output - Spark Terminals S1

The output provides a high voltage peak at the connected electrode, sufficient to spark across the air gap from electrode to the earthed burner, provided the air gap and loading due to the electrode and cables, is lower than the specified maximum.

Mechanical Requirements**Terminations**

HV Coil Output Terminal: 2.8*0.8mm (0.11"x0.032') Quick Connect tab

Input Connector: 6.35mm x 0.8mm Quick Connect Tab.

Earth: Earth connection is at the mounting point with Spade Tab. Use 4mm screws.

Material (Housing Detail)

Flame Retardant to standard UL94V- 0: Self extinguishing within 10sec. No flame drips that ignite.

Mounting Method (Housing Detail)

Two screw mounting tabs diagonally opposite, integrated into the enclosure. Note the mounting tab adjacent to the input connector also acts as the earth connector.

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Technical Specifications

Parameter (@ 25°C)	Min	Typ	Max	Units
General Parameters				
Line Voltage	187	230	264	Vac
Frequency		50/60		Hz
Current Input		1.6	3	mA
SR -Spark Rate_ (0 - 105°C)	130	200	270	Spk/min
Electrode & Cable Load to earth			40	pF
Spark Gap @ Max Load (40pF) *Note 1	2.5		4.5	mm
SV -Spark Output Peak Voltage	10		20	kV
@ 40pf Load, Input=230Vac		12		kV
Spark Energy		7		mJ
Flame Sense Current	0.2 *Note 2			uA
FFRT -Flame Failure Reignition Time (0 - 105°C)	0.2		2.5	sec
@ 0.2uA Flame Current (R=340MΩ Note2)		0.5		sec
@ 5uA Flame Current (R=8MΩ Note2)		1.2		sec
FVT -Flame Verification Time (0 - 105°C)	0		1.5	sec
Leakage tolerance (@ 0.5uA flame current)	18			MΩ

Note 1 : Maximum spark gap may be increase if load capacitance is reduced lower than Maximum specification.

Note 2 : Manufacturer recommends that systems be designed to maintain the average minimum flame current above 0.5uA. This ensures the unit does not spark due to drafts blowing flame away from the electrodes.

Note 3 : Parameters measured with resistance R in series with diode to Earth to simulate flame.

Definitions

Flame Failure Re-ignition Time:

The period between loss of burner flame and a re-ignition attempt.

Flame Verification Time:

The period between detection of burner flame and when sparking ceases.

Spark Gap:

The closest distance from the electrode tip to any point on the cook-top range assembly that is connected to earth.

Electrode & Cable Load to Earth:

The capacitance measured from the electrode to earth.

Leakage tolerance:

The minimum impedance from the electrode to earth that does not cause loss of flame sense.

Environmental Specification

Parameter	Min	Typ	Max	Units
Operating Temperature (continuous)	0		100	°C
Operating Temperature (up to 1000 hours over life of product)			105	°C
Relative Humidity (at 40°C – non condensing)			95	%

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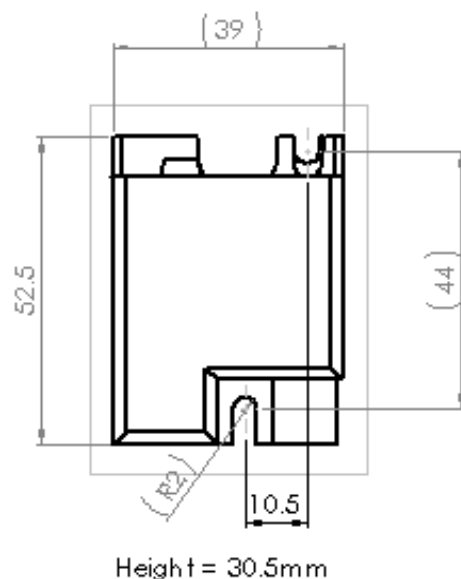
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Physical Dimensions



Wiring Installation Diagram

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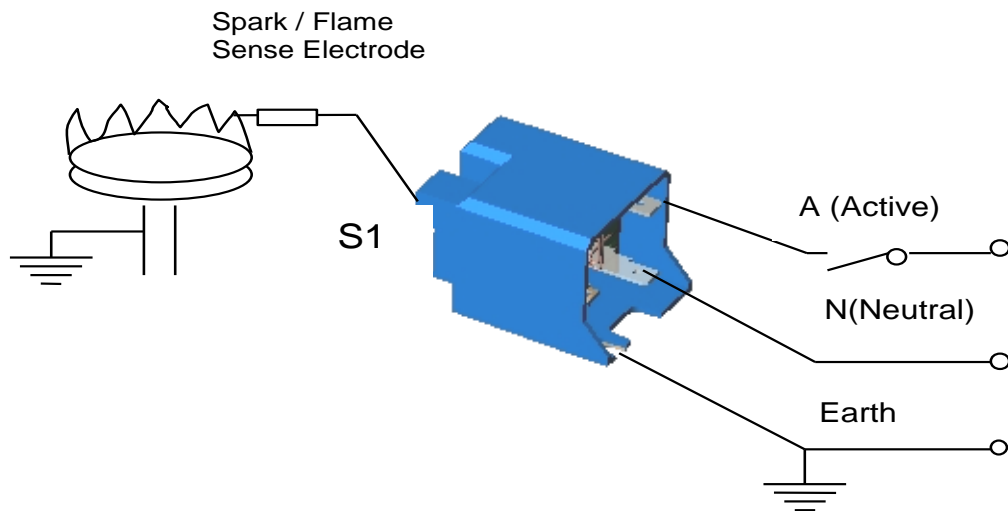
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