

Part No:-500-0055-00
Model :- IRIS 120W-1

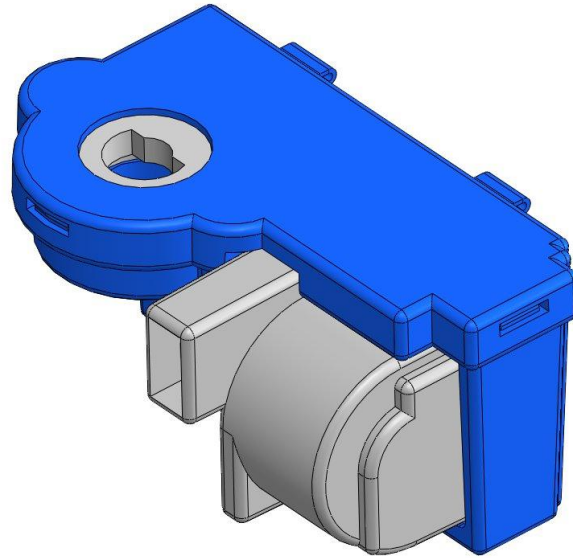
CUSTOMER SPECIFICATION

INTEGRATED RE-IGNITION SWITCH (IRIS)

120Vac Gas Re-igniter with Integrated Switch and Flame Re-Ignition for gas appliances

Contents

- Product description
- Functional Requirements
- Compliance standards
- Mechanical Requirements
- Technical Specification
- Environmental Specification
- Physical Dimensions
- Wiring Installation Schematic



Product

Direct valve mounted Re-igniter with integrated switch – Interrupted Direct Spark Ignition system for use with Natural, Manufactured, Mixed, Liquefied Petroleum and LP Gas-Air mixtures.

- *Direct valve mount design allows for reduced assembly costs.*
- *Integrated switch for simple operation*
- *Modular wiring harness for easy connection eliminates wiring errors.*

Operating Principles

The IRIS is mounted directly to the stem of the gas valve.

It contains an integrated switch that is activated by turning the gas tap.

On activating the IRIS it starts sparking at the individual burner, once the gas is lit the auto re-ignition circuit monitors the flame presence at the burner and commences sparking again if the 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.

Multiple units are connected using a simple wiring harness

Subject to change:-

Last Change:- Add Service info in French

Issue:- 01 **C/Note:-** 8672

Date:- 8-07-09

By:-SK

Auth.:DQ



Part No:-500-0055-00
Model :- IRIS 120W-1

CUSTOMER SPECIFICATION

Functional Requirements:

General

- The IRIS integrates a re-igniter and electric switch into a single part that is mounted directly on to the gas tap.
- The module operates in conjunction with a single burner.
- Connected to the IRIS is a single electrode at the burner providing a means of detecting the flame. The same electrode is also used to channel sparks through the gas medium and ignite the gas.
- The IRIS is directly mounted to the gas tap. Opening the gas tap will allow gas to flow to the burner and also turn on the integrated switch in the IRIS. When power is applied, and providing the IRIS does not sense flame, sparking will commence and the gas will ignite.

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 the specifications and provided the electrode and cable loading meet the maximum loading specifications.
- When power is switched to the re-igniter and no flame is detected, sparking will continue at a nominal rate until flame is sensed. The spark rate varies primarily due to changes in the applied voltage, however other factors including temperature and component tolerances have an influence.

Flame Detection

- The Flame detection utilises the superior 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.

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.

Features

- Multiple modules can be used within an application to provide individual re-ignition at multiple burners.

Subject to change:-

Last Change:- Add Service info in French

Issue:- 01 **C/Note:-** 8672

Date:- 8-07-09

By:-SK

Auth.:DQ



Part No:-500-0055-00
Model :- IRIS 120W-1

CUSTOMER SPECIFICATION

Compliance to Standards:

ANSI Z21.92 2001 Manual Operated Electric Gas Ignition Systems and Components
CSA 6.29 2001 Manual Operated Electric Gas Ignition Systems and Components
UL1054-2003 Special Use Switches
Updated to UL61058-1 Switches for Appliances-Part 1 General requirements

Mechanical Requirements

Terminations

HV Coil Output Terminal: 4.8*0.8mm (3/16"x 0.032') Quick Connect tab
Input Connector: RAST 2.5mm multi-way connector with locking and orientation
Lumberg 3516 03 K13 or equivalent

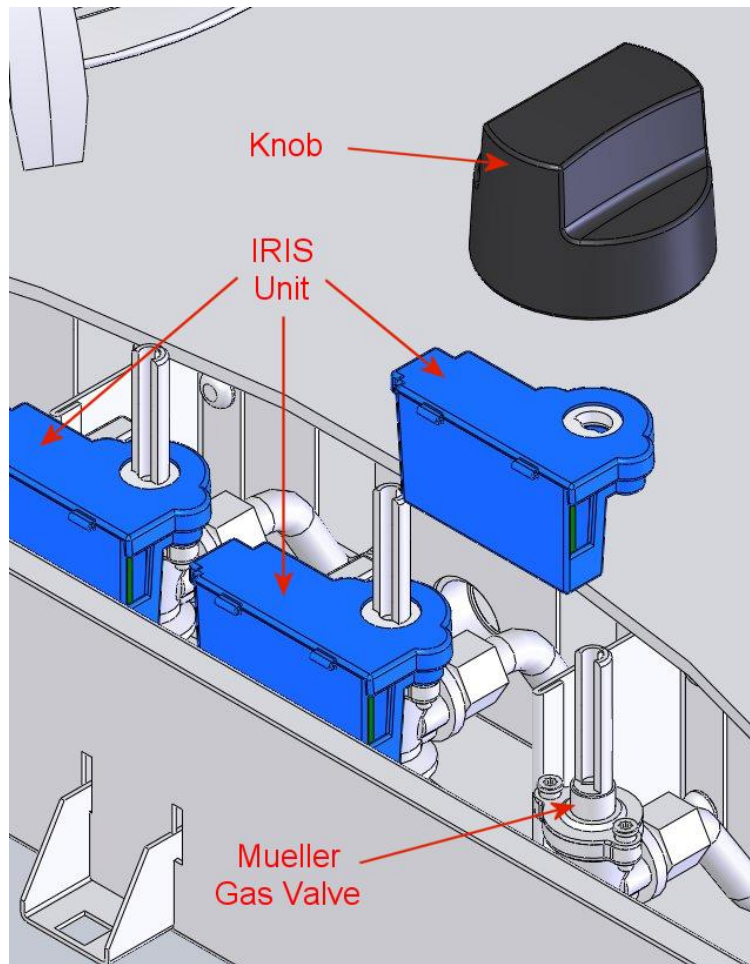
Material (Housing Detail)

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

Mounting Method (Housing Detail)

The IRIS is designed for quick easy assembly:

- The IRIS module can be fitted directly to the valve whilst the valve is situated on the gas rail.
- The IRIS module slips onto the gas valve shaft, clipping to the valve screw heads.
- Once HV and input leads are fitted to terminals, the cooktop panel is then screwed into position and the valve knob fitted to the shaft (as shown).
- **NOTE: HV and input leads are not illustrated.**
- **NOTE: Gas valve illustrated Mueller 817**



Subject to change:-

Last Change:- Add Service info in French

Issue:- 01 **C/Note:-** 8672

Date:- 8-07-09

By:-SK

Auth.:DQ

Part No:-500-0055-00
Model :- IRIS 120W-1

CUSTOMER SPECIFICATION

Module I/O- (Refer housing detail page 7)

Input – ACTIVE(Line)

A nominal 120Vac 60Hz signal to the line input, enables the high voltage transformer, activates flame detection which in turn controls the high voltage transformer and consequently sparking.

Input - Spark Terminal

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 – NEUTRAL

Neutral is connected to provide a reference for the circuit.

Input - EARTH

Makes a PCB track connection from HV Coil to chassis and earth. This references the High Voltage Coil Secondary to the same potential as the Burner, that is Earthed. Consequently the HV Coil Output will arc across Spark Gap to the grounded burner.

A small slot cut into the Earth connected PCB track isolates HV Coil from ground when operating in flame detection mode, allowing the flame current to flow through coil to circuit, but allows referencing to ground by arcing across this secondary slot when in spark mode. Also for reliable flame sense there must be at least a resistive connection from earth to neutral. Mains distribution networks with Line/Neutral have this characteristic.

Output - Spark Terminals

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

Labelling

Label(s) will identify Manufacturer, indicate the manufacturers Model and Part number, indicate the function of connector INPUT pins, and show Electrical ratings.

Barcode label will code Model ID, Date Code and a unique serial number.



CODE STRUCTURE:

1. XXXXX: Product description. No fixed number of digits
2. PPPPPP: 7-digit part identifier taken from last 7 digits of Tytronics product code (e.g. SQ120Q code 500-0007-00, PPPPPP = 0000700)
3. YY: Year (e.g. 2006, YY = 06)
4. DDD: Day within year (e.g. February 23rd, DDD = 054)
5. NNNNN: Unique ascending number (e.g. if 9,999 SQ120Q units are made on February 23rd 2006, the last product's serial number will be 0000700-06054-09999)

Subject to change:-

Last Change:- Add Service info in French

Issue:- 01 **C/Note:-** 8672

Date:- 8-07-09

By:-SK

Auth.:DQ



Part No:-500-0055-00
Model :- IRIS 120W-1

CUSTOMER SPECIFICATION

Technical Specifications

PARAMETERS @ 25 deg C	Min	Typ	Max	Units
GENERAL PARAMETERS				
Line Voltage	96	120	132	Vac
Frequency		60		Hz
Current Input		3	5	mA
SPARK PARAMETERS				
Spark Gap @ 40 pF load	2.5		4.0	mm
HV Cable length			1.2 *note 2	m
Electrode & Cable Load to earth			40	pF
Peak Voltage	12		22	kV
@ 40pf Load, Input=120Vac		14		kV
Spark Rate	200	300	400	Spk/min
FLAME SENSE PARAMETERS				
Flame Current (at 96Vac 60Hz)	0.2 *note 1			µA DC
Flame Failure Reignition Time	0.1		2.5	sec
@ 0.2uA Flame Current		0.7		sec
@ 2.5uA Flame Current		1.3		sec
Flame Verification Time			1.5	sec
Leakage tolerance @ 0.2uA flame current	30			MΩ
SWITCH RATING				
125Vac 60Hz 3A				

Note:- 1 Recommended systems be designed to maintain minimum flame current above 0.5uA. This ensures unit does not spark due to drafts blowing flame away from electrodes.

2 For cable length over 1.2 m consult manufacturer

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 effect the flame detection circuitry that could result in a false flame sense.

Environmental Specification

PARAMETERS	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	%

Subject to change:-

Last Change:- Add Service info in French

Issue:- 01 **C/Note:-** 8672

Date:- 8-07-09

By:-SK

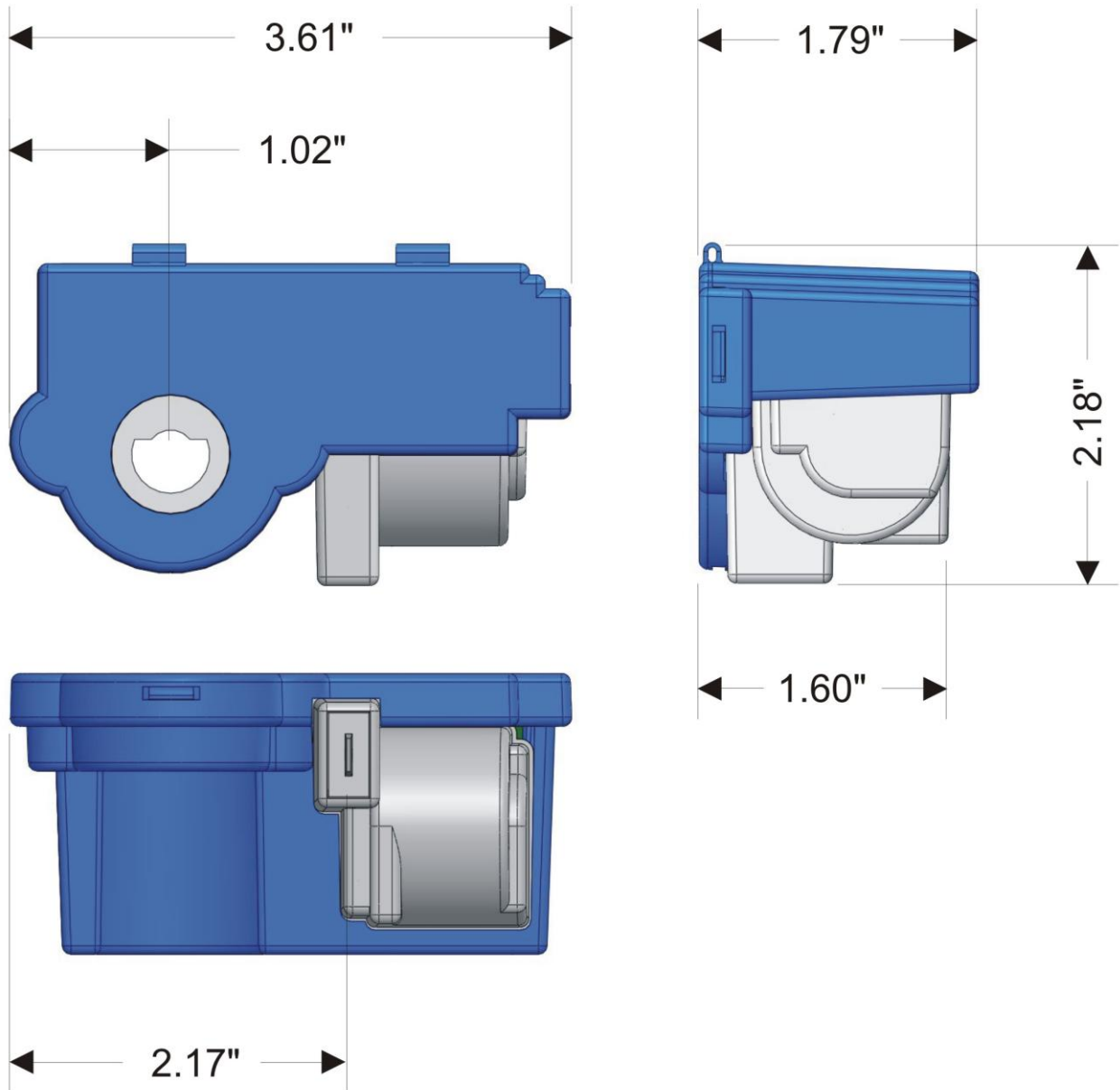
Auth.:DQ



Part No:-500-0055-00
Model :- IRIS 120W-1

**CUSTOMER
 SPECIFICATION**

Physical Dimensions



Subject to change:-

Last Change:- Add Service info in French

Issue:- 01 **C/Note:-** 8672

Date:- 8-07-09

By:-SK

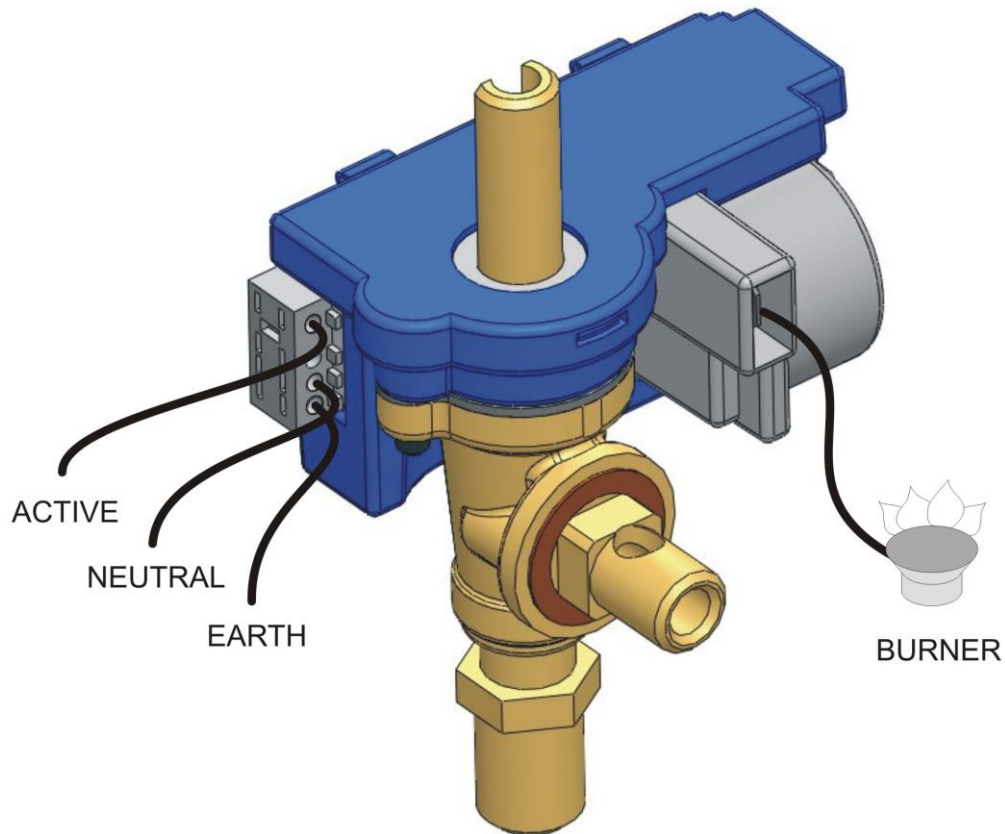
Auth.:DQ



Part No:-500-0055-00
Model :- IRIS 120W-1

CUSTOMER SPECIFICATION

Wiring Installation Diagram



CAUTION: Label all wires prior to disconnection when servicing ignition systems. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

ATTENTION. Au moment de l'entretien des commandes, étiquetez tous les fils avant le débranchement. Des erreurs de câblage peuvent nuire au bon fonctionnement. S'assurer que l'appareil fonctionne adéquatement une fois l'entretien terminé.

When Hi Pot testing Input / HV Coil Output or Input / GND ensure Micro Switch is closed and Line / Neutral are connected together or otherwise failures may occur

Subject to change:-

Last Change:- Add Service info in French

Issue:- 01 **C/Note:-** 8672

Date:- 8-07-09

By:- SK

Auth.: DQ

