NORMAL STATE

COLD STATE

RELOAD

11:50
23°C

MANUAL

ƐFLAME

E-FLAME

AIR CONTROL SYSTEM FOR
WOOD & SOLID FUEL STOVES

MAXITROL®

www.maxitrol.com

CONTENT

⚠ **WARNING**

Service and installation must be performed by a trained/experienced service technician.
All products **must** be installed and used **strictly** in accordance with the instructions of the Original Equipment Manufacturer (OEM) and with all applicable government codes and regulations, e.g. plumbing, mechanical, and electrical codes and practices. Maxitrol products should be installed and operated in accordance with Maxitrol Safety Warning Instructions.

NOTICE

Maxitrol is NOT responsible for any errors or omissions in reliance by anyone of any information set forth in this catalog without additional reference to local requirements and applicable ordinances or codes.

DESCRIPTION

The E-Flame Air Control System enables appliances to run at peak efficiency. The system is battery-powered and used for automatic control of combustion air in wood and solid fuel stoves. The Controller drives an Actuator that controls the primary and secondary combustion air. The optimal air volume required for a clean and economic combustion is determined by using surface and exhaust temperature sensors.

The E-Flame Air Control System can be used with either Maxitrol's rotary damper or the OEM proprietary air control unit. It is programmable and can operate any appliance according to OEM specifications with minimal programming and installation effort by the manufacturer. In addition to automatic operation, E-Flame can operate the appliance manually with the RF handset.
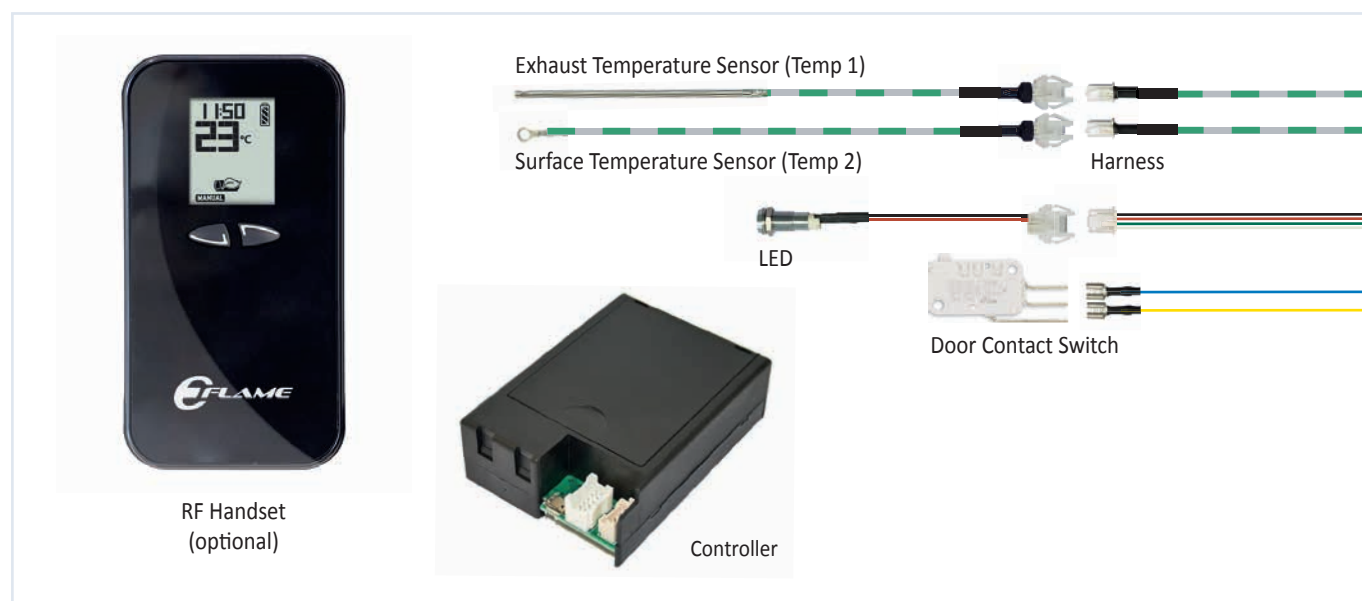
TYPICAL INSTALLATION

Surface Temperature Sensor

Door Contact Switch

LED Indicator

Exhaust Temperature Sensor

Controller

Air Damper with Actuator and Motor Cable

FEATURES

- For use with either Maxitrol's rotary damper or OEM proprietary air control unit
- OEM software configurable
- Controls primary and secondary combustion air
- Battery-powered or 5 V DC regulated power adapter with micro USB
- Help fulfill the requirements of the Ecodesign Directive
- LED status indicator (3-color)
- Automatic or manual operation
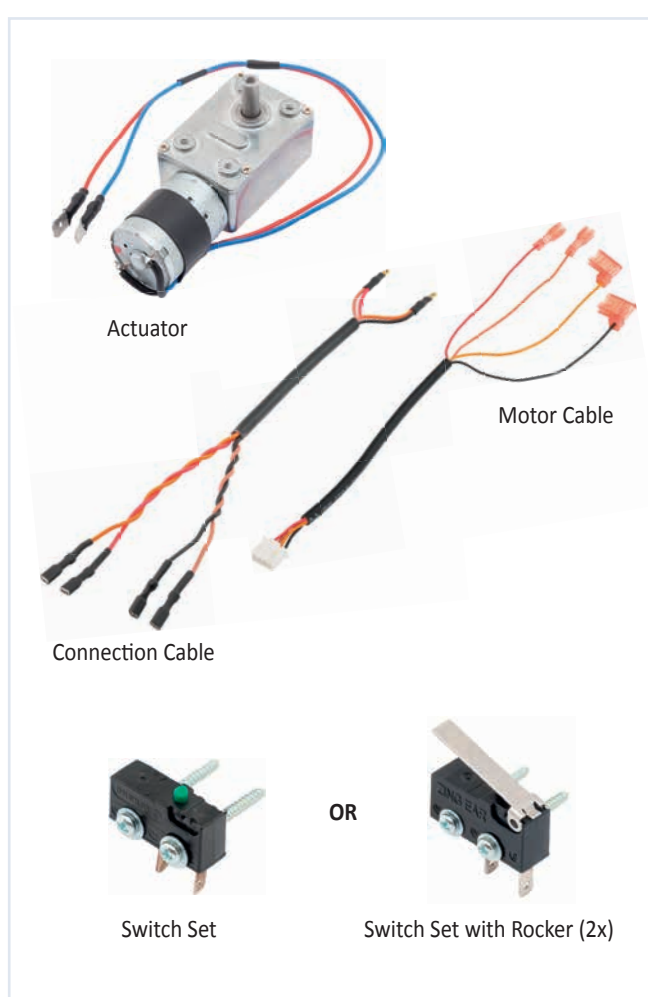- Data logging and fault diagnosis

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SYSTEM COMPONENTS

GENERAL COMPONENTS

Exhaust Temperature Sensor (Temp 1)

Surface Temperature Sensor (Temp 2)

Harness

LED

Door Contact Switch

RF Handset
(optional)

Controller

ROTARY DAMPER COMPONENTS

Air Damper with Actuator and Motor Cable

Manual Adjustment Knob
(optional)

OEM AIR CONTROL UNIT COMPONENTS

Actuator

Motor Cable

Connection Cable

Switch Set

OR

Switch Set with Rocker (2x)

SOFTWARE

The E-Flame Software Tool allows manufacturers to set and modify a stove's parameters. It also provides real-time data logging for performance evaluation.

STATUS
Gives an overview of surface and exhaust temperature, damper position, and motor movement in real-time. Graphs illustrate changes in real-time.

DAMPER CONFIGURATION
Easily program damper position and behavior.

CUSTOM PARAMETERS
Include start, control, general parameters, and an overload situation.

PROCESS CONTROL
Allows users to manually adjust the damper position.

COMMUNICATION SETTINGS
Shows baud rate and identifies the wood control mode.

HELP
Explains individual parameters used in the E-Flame Software Tool.

PROCESS DATA
Allows the export and import of parameters to a CSV file.

TECHNICAL SPECIFICATIONS

HANDSET
- Max. ambient temperature (with batteries):
  55 °C (131 °F)
- Batteries:
  2 x 1.5 V "AAA" (quality alkaline recommended)
- Radio Frequency frequency:
  868 MHz for EU; 915 MHz for US

CONTROLLER
- Max. ambient temperature with batteries:
  55 °C (131 °F)
- Max. ambient temperature without batteries:
  80 °C (176 °F)
- Batteries:
  4 x 1.5 V "AA" (quality alkaline recommended)
- 5 V DC regulated power adapter with
  micro USB

AIR DAMPER
- Max. ambient temperature:
  · Continuous heat stress up to 200 °C (392 °F)
  · Short-term heat up to 250 °C (482 °F)

ACTUATOR
- Max. ambient temperature:
  80 °C (176 °F)

MOTOR CABLE
- Max. ambient temperature:
  105 °C (221 °F)

HARNESS
- Max. ambient temperatures:
  · Connectors: 90 °C (194 °F)
  · Thermocouple: 700 °C (1292 °F)
  · Silicon cable: 120 °C (248 °F)

SURFACE & EXHAUST TEMPERATURE SENSORS
- Max. ambient temperatures:
  · Connector: 90 °C (194 °F)
  · Thermocouple: 700 °C (1292 °F)

LED
- Max. ambient temperatures:
  · Connector: 90 °C (194 °F)
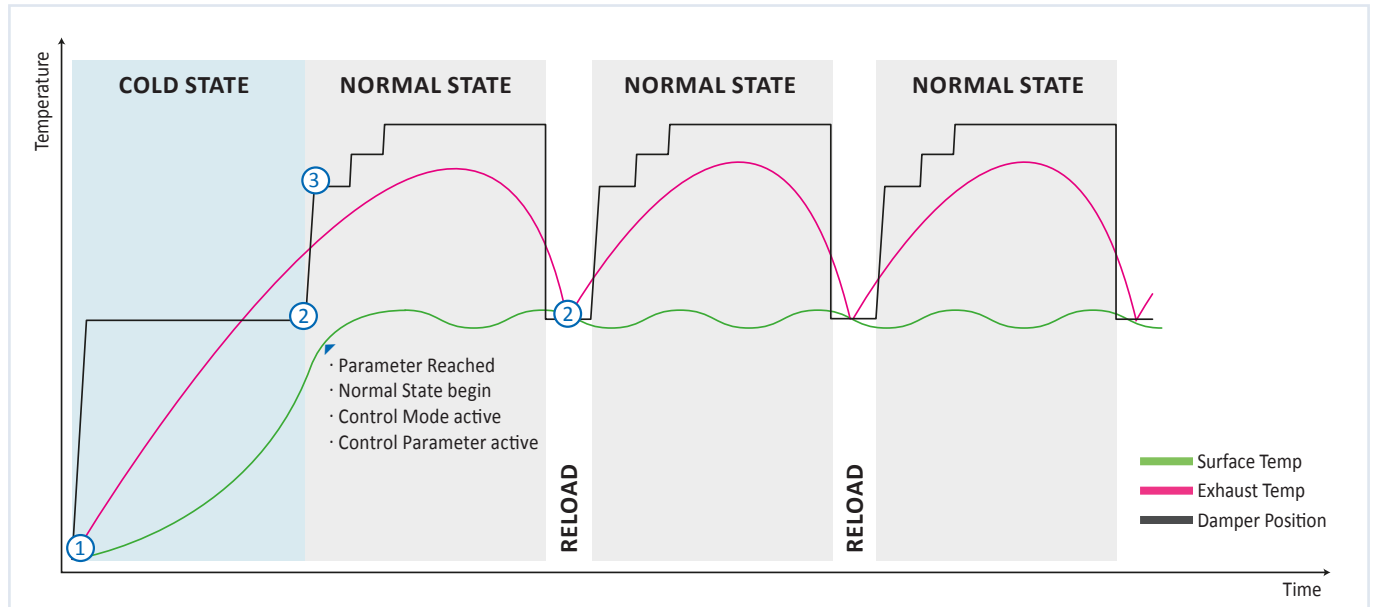 · Cable: 120 °C (148 °F)
  · LED: 80 °C (176 °F)

DOOR CONTACT SWITCH
- Max. ambient temperature:
  140 °C (284 °F)
- Contact switch functions as NO switch
- Connection: 2 x 6.3 mm (0.07 x 0.25 inch)
  blade terminal

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SOFTWARE GRAPHS

COLD START

The E-Flame Software displays a graph depicting the surface temperature, the exhaust temperature, and the damper position in real-time. When the stove reaches the set temperature, Control Mode is activated and the damper flap will adjust accordingly to increase or decrease the air-flow to the chamber.

COLD STATE

Fire chamber is cold.
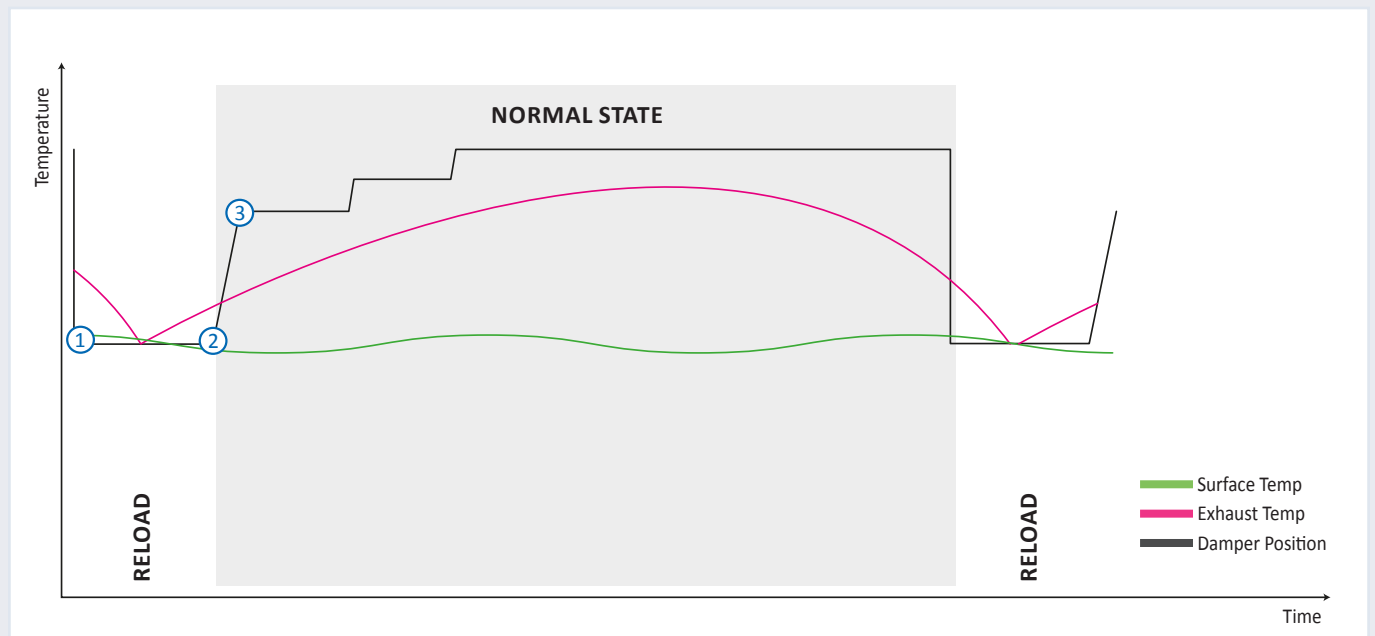
① Combustion is starting.

NORMAL STATE

Fire chamber is warm.

② Combustion is rising. Primary Combustion Air is closing.

③ Combustion is regulated. Secondary Combustion Air is regulated.

SINGLE LOAD OF FUEL

After reloading, the graph begins again, displaying the real-time changes to the surface temperature, the exhaust temperature, and the damper position.
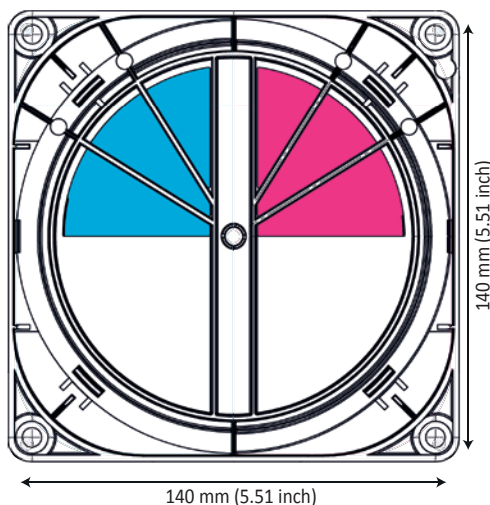
DAMPER

VERSION 1 (1:1)

- Primary and secondary air inlet are the same size **1:1**
- For small stoves, e.g. 6 kW
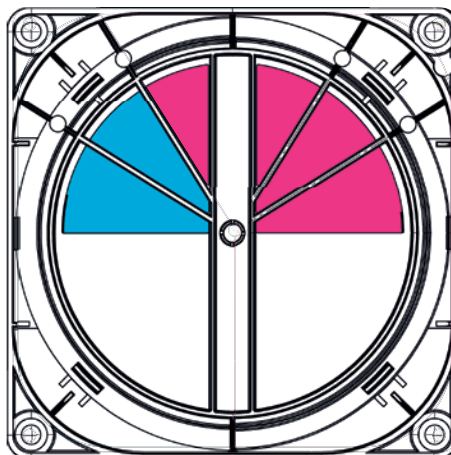
PRIMARY
COMBUSTION AIR

SECONDARY
COMBUSTION AIR

140 mm (5.51 inch)

140 mm (5.51 inch)

VERSION 2 (1:2)

- Primary to secondary air inlet size ratio **1:2**
- For medium stoves, e.g. 8 kW
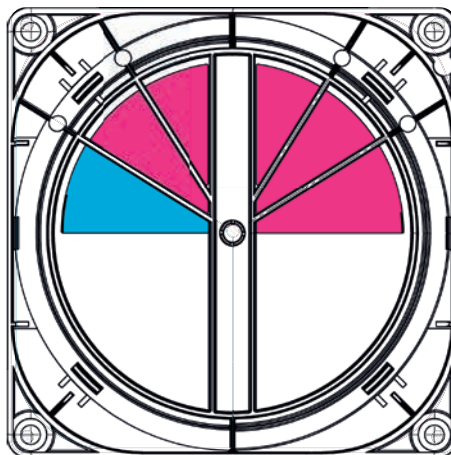
PRIMARY
COMBUSTION AIR

SECONDARY
COMBUSTION AIR

VERSION 3 (1:4)

- Primary to secondary air inlet size ratio **1:4**
- For large stoves, e.g. 12 kW

PRIMARY
COMBUSTION AIR

SECONDARY
COMBUSTION AIR

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