

Eclipse SimaFlame Flame & Milliamp Tester

Version 1



The Eclipse SimaFlame is a multifunctional tester that simulates flamerod or UV scanner flame signals to all major brand combustion safeguard controls. It also functions as a current loop checker. SimaFlame provides a variable 4-20mA output and can read 4-20mA inputs at five signal levels indicated by lights on the front face. These functions make this tool ideal for troubleshooting combustion control systems, including the temperature control loop.

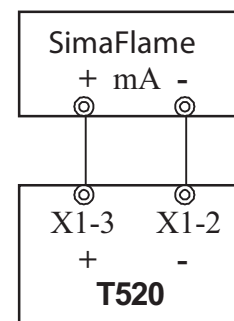
The unit is powered by 2 standard 9-volt batteries and has two separate connector terminals for use with standard hook-up wire. One connector is for the milliamp output and input functions and the other connector is for flame simulation. Two control knobs allow continuous adjustment of the milliamp output level and the flame signal intensity. A battery light illuminates when the switch is on and the battery power is sufficient for proper operation. The flamerod (FR) function does not use the batteries.

Specifications

Power	Two 9V Batteries, type 1604A
Temperature	0°F to 120°F (-18°C to 49°C)
Milliamp Indicator	5%
Accuracy	
Maximum Current Loop Resistance	300 Ohms for 20mA
Current Loop Input Resistance	250 Ohms
Dimensions	4" H x 2-7/8" W x 2-3/16" D (102 x 73 x 56 mm)
Weight	10 ounces (0.3 kg) with batteries
Case Material	Phenolic Plastic
Part Number	49004

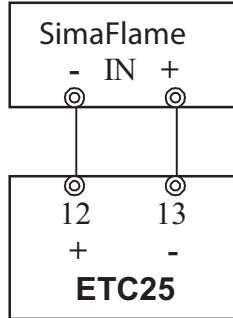
Milliamp Output (Current Source)

Connect wires from the +mA terminal to the device (+) input connector and the -mA terminal to the device (-) input connector. Be sure all external wires are disconnected from the device. Turn the selector switch to the OUT position (left). Adjust the 4-20mA output knob while observing the 5 signal level lights. When finished testing turn the switch to the center off position to prevent battery drain.



Milliamp Input (Current Read)

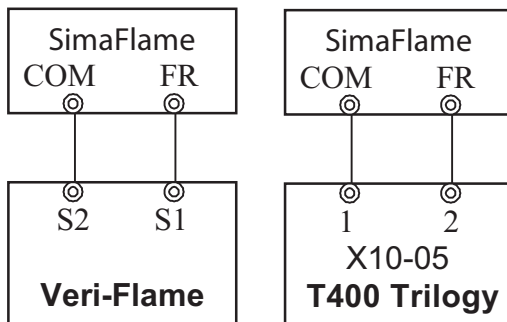
Connect wires from the -IN terminal to the device (+) output connector and the +IN terminal to the device (-) output connector. Turn the selector switch to the IN position (right). Adjust the device and observe the 5 signal level lights. The light will turn on when the device current is equal or above the light value.



- **Flame simulation must only be used for troubleshooting and testing by trained and qualified technicians experienced in combustion control. The flame simulator must not be used for the operation of a burner.**

Flame Rod Simulation

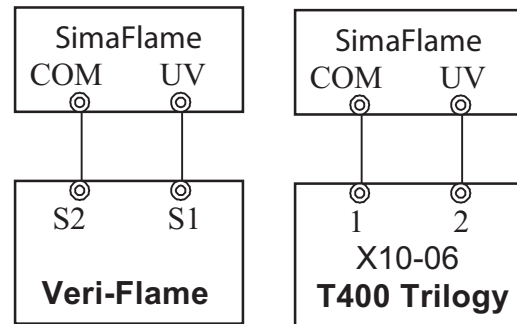
Connect wires from the COM terminal to the flame amplifier common or earth connector and the UV/FR terminal to the flame amplifier flamerod connector. Be sure all external flame sensor wires are disconnected from the flame amplifier. Keep the switch in the center FR position (Bat. Off) and adjust the FLAME SIGNAL knob until the flame amplifier responds.



UV Scanner Simulation

For Eclipse, Fireye, PCI, Siemens/Landis: Connect wires from the COM terminal to the flame amplifier common connector and the UV/FR terminal to the flame amplifier UV connector. Be sure all external flame sensor wires are disconnected from the flame amplifier. Turn the selector switch to either UV position (left or right) and adjust the FLAME SIGNAL knob until the flame amplifier responds.

For Honeywell: The connection polarity must be reversed so that the UV/FR terminal attaches to the G connection and the COM terminal attaches to the UV input connection.



Unit tested with the flame simulation include:

- Eclipse models Veri-Flame, Peek-A-Flame, Bi-Flame, Multi-Flame, T400 Trilogy
- Fireye models MicroM
- Honeywell series 7800 (R7849A and R7847C amplifiers)
- Protection Controls (PCI) models with SS100A Flame Pak
- Siemens / Landis models LFL

Battery Replacement

To replace batteries, remove the four screws at each corner of the front face. Separate the front assembly and rear cover to access the batteries. Observe the polarity direction and unplug the used batteries. Insert the new batteries in the proper polarity direction and turn on the switch to test that the BATTERY light comes on. Replace the rear cover and install the screws with little force to prevent damage to the threads in the plastic housing.

HINT: The drain on each battery is different according to usage. Measure each battery when removed to determine if one can be used further.