



# KE153 Flame Sensor Signal Processor

TO ENHANCE UV AND IR FLAME SENSOR SYSTEM PERFORMANCE AND CAPABILITY FOR INDUSTRIAL BURNERS, INCINERATIONS, PROCESS HEATERS, FURNACES, AND BOILERS

**POWER  
& INDUSTRIAL**

The KE153 Signal Processor is an optional supplement to AMETEK's SPECTRA™ BC10 and GT10 Flame Sensors. Used in conjunction with these flame sensors, the KE153 takes the 4-20 mA sensor output and provides signal gain, four (4) relay outputs, frequency discrimination, continuous system self-check, Modbus communication, a front panel display, and redundant power input for the sensor.

The KE153's frequency discrimination feature allows it to filter out background radiation from hot, glowing boiler walls and also the radiation interference from neighboring burners. This discrimination capability ensures that when a flame is extinguished, the relay trips immediately because there are no background radiation effects, i.e. no false positives and no false trips.

All of the functionality of the KE153 Signal Processor is easily programmable on the unit or using AMETEK's optional AmFlame™ PC interface software. In addition to remote programming, AmFlame™ provides remote PC monitoring of the flame sensor output and the condition of the four relays. AmFlame™ will also keep track of all program settings, changes, and can record sensor output data for analysis.



## FEATURES AND BENEFITS

- Multiple Outputs—interface to BMS or controller with relay contacts, analog signal, and via RS485 digital Modbus
- Discrimination—provides frequency discrimination for reliable burner management
- Redundant Power Supply—dual 24 VDC power inputs to Signal Processor provide backup power to flame sensor
- Local or Remote Programming—provides flexible and convenient monitoring & control
- Front Panel Display—bar graph indicates sensor output signal and LEDs provide relay status
- FM Approval—meets FM requirements for Flame Standard (FM7610) and Class I Div. 2 electrical safety (FM3611)

**AMETEK®**

Represented by:

**George R. Peters Associates** ENGINEERING SALES REPRESENTATIVES

(248) 524-2211 • Fax (248) 524-1758

Web Site: [www.grpeters.com](http://www.grpeters.com)

**POWER  
INSTRUMENTS**

Experience the Power™

## SPECIFICATIONS

### Power Requirements

- 21 – 32 VDC, 24 VDC nominal

### Fuse

- 1A SB Type 2AG

### Power Supply to Flame Sensor

- 24 VDC

### Available Outputs

- Relay Contacts (4)

Flame ON/OFF indication  
(two separate relays)

Marginal Flame Condition

System Self-Check status

Relay Contact Rating

- 125 VAC, 0.4A

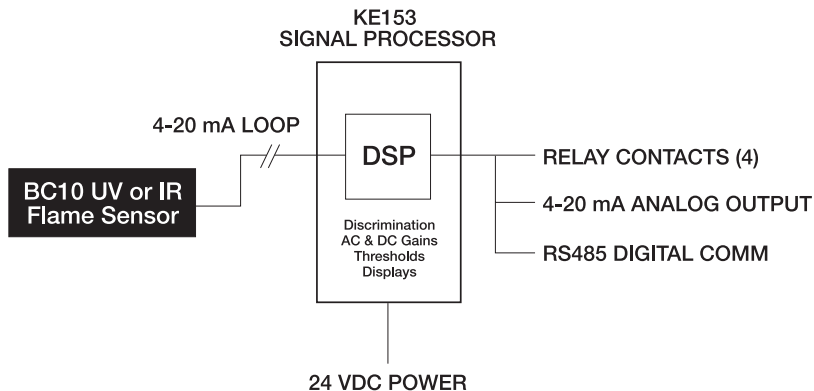
- 30 VDC, 2A

- 4-20 mA analog output

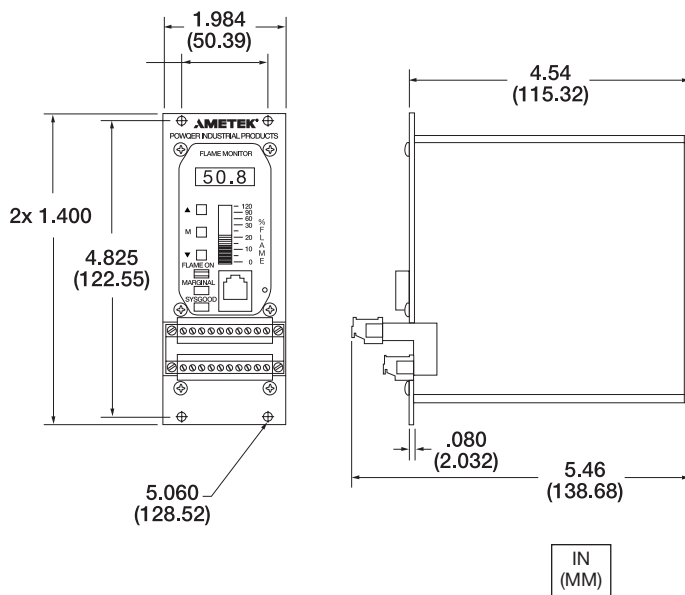
- RS485 bi-directional digital communications

### Accessories

- DIN rail or standard rack mount
- Front access terminal blocks



ELECTRICAL CONNECTIONS		
POSITION	CONNECTOR A-TOP	
1	RELAY K1-COMMON	"FLAME ON" RELAYS
2	RELAY K1-OUTPUT	
3	RELAY K2-COMMON	
4	RELAY K2-OUTPUT	
5	RELAY K3-COMMON	"MARGINAL" RELAY
6	RELAY K3-OUTPUT	
7	RELAY K4-COMMON	"SYSTEM GOOD" RELAY
8	RELAY K4-OUTPUT	
9	ANALOG (HIGH)	ANALOG OUTPUT/INPUT
10	ANALOG (LOW)	
CONNECTOR B-BOTTOM		
1	+24V POWER INPUT (A)	SYSTEM POWER SUPPLIES
2	+24V POWER INPUT (B)	
3	POWER COMMON (A)	
4	POWER COMMON (B)	
5	CASE GROUND	
6	SENSOR (PIN A, +24V)	CURRENT LOOP SENSOR CONNECTIONS
7	SENSOR (PIN B, RETURN)	
8	SENSOR (PIN C, CASE GROUND)	
9	CURRENT LOOP OUTPUT	4/20 MA OUTPUT (ISOLATED)
10	CURRENT LOOP RETURN	



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For customer support call:

**AMETEK POWER INSTRUMENTS**  
50 Fordham Road  
Wilmington, MA 01887  
Tel: 978.988.4903  
Fax: 978.988.4990  
[power.sales@ametek.com](mailto:power.sales@ametek.com)

**HEADQUARTERS**  
AMETEK Power Instruments  
50 Fordham Road  
Wilmington, MA 01887  
Tel: 978.988.4903  
Fax: 978.988.4990  
[power.sales@ametek.com](mailto:power.sales@ametek.com)

**EUROPEAN HEADQUARTERS**  
Unit 20, Ridgeway  
Donibristle Industrial Estate  
Dalgety Bay, Dunfermline, KY119JN  
Scotland U.K.  
Tel: 44.1383.825630  
Fax: 44.1383.825715  
[power.sales@ametek.com](mailto:power.sales@ametek.com)

**ASIA PACIFIC HEADQUARTERS**  
10 Ang Mo Kio Street 65  
#05-12 Techpoint  
Singapore 569059  
Tel: 65.6484.2388  
Fax: 65.6481.6588



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