

WINDOW 141 Flame Scanning System

Complete Fail-Safe scanner with patented see-through window for easy alignment and visual monitoring of burner flames

With the Window 141, PIA offers to burner management specialists a fail-safe flame scanning system specially designed to facilitate adjustment and flame discrimination. Reducing to minimum adjustment and commissioning procedures, the scanner head is equipped with an exclusive window which permits naked eye observing of the flame. It also possesses a high precision infrared cell and amplification circuitry, and an extended-life UV tube system.

Ideal for gas, coal, oil and non-standard fuels, the system also features a special function for opposing flames for multi-fuel and multi-burner systems, as well as an easy adjustment via the intuitive menus of the DT-1 handheld data terminal.

The system includes the following components:

Flame Scanner Head

- Pure UV detection. Unaffected by fluorescent light, sunlight reflections or any foreign light sources
- Very stable IR detection up to 5,000Hz. Unaffected by visible radiations or temperature variations
- Independent adjustable UV and IR flame failure response time
- The flame can be viewed through the scanner head for ease of burner flame alignment and for observing cleanliness of scanner port and window, eventual obstructions, flame aspect, shutter operation and internal LED indicators
- Easy installation



Signal Processing Module

- Complete fail-safe operation, UL1998 compliant
- Digital adjustments
- Digital display of absolute UV and IR frequencies on front panel; bar graph for the signal strength relative to set points
- For more protection, adjustments are possible only through a plug in handheld programmer
- Recorded faults can be looked up and erased through the Data Terminal, such as scanner head temperature, module temperature, marginal flame for UV and IR, shutter leakage rate and artificial signals
- Special function for opposing flames
- Plug in unit, easy to install; a custom chassis provides one to eight slots for scanner module and termination hardware



Specifications

Scanner head	
Construction	Aluminum case (500g)
Size	2.5" x 2.1" x 4.6" (with cooling air connection)
Mounting	1" NPT female connection
Cooling air	3/8" NPT female connection
Environment	-13 to 185°F (-25 to 85°C)
Detection	UV at 220nm peak (for gas, igniters). IR at 1550nm peak (for oil, coal, etc).
Display	See-through window, blue LED for UV and red LED for IR signal
Self-checking	Mechanical shutter
Connector	Military 8 pin quick disconnect
Processing Module	
Size	6U Eurocard with plastic front panel 11" x 6.7" x 2"
Supply	120 or 240VAC, -15% to +10%, 50Hz (15VA) or 60Hz (12VA) max.
Signal input	IR and UV signals from scanner head
Environment	-4 to 158°F (-20 to 70°C)
Flame on response	1 second max.
Flame failure response time (FFRT)	0.5 to 3.5s (independent for UV and IR) +/- 0.5s, adjustable with 0.5s increments
Display	Two digital displays IR freq. and UV Intensity, two relative strength bar-graphs and 4 status LEDs.
Output contact	Individual UV, IR flame (NO) relay and system fault relay to be connected to burner management systems. Relay contact ratings: Max. switching power: 60W / 125VA Max. switching voltage: 220VDC / 250VAC Max. switching / carrying current: 2A
Analog output	0-20 or 4-20mA (500Ω max. load resistance) representing the highest IR or UV bar-graph level. Convertible to voltage output.
Output communication	Plug on module front for handheld Data Terminal.

DT-1 Data Terminal



The data terminal DT is for the adjustment and data diagnosis of the Window 141 system. Plug in type, hand held unit very easy to operate with four push buttons and a liquid crystal display providing an intuitive menu selection..

FS-2 Flame Simulator



Testing accessory with adjustable frequency and intensity for UV and IR sources. Just plug in the scanner head and the whole Window 141 system can be tested in the field.

Approvals

FM Standard 7610.

CSA Classes 2632-01, 2632-81, 2642-01, 2642-81.

Applicable Standards:

UL Std. No. 372

UL Std. No. 1998

CAN/CSA C22.2 No 0.8-M1986

CAN/CSA C22.2 No 199-M89

TIL H18A

Information

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