ModuLaser®

Aspirating Smoke Detection

Kidde Fire Systems

Effective: January 2023
K-76-1500

FEATURES

- ***Modular Design***
  Separate centrally-controllable detector modules allow efficient piping and discrete zones with no overlap.
- ***Zoned aspirating smoke detection***
  Individual detector modules provide detection for individual areas or zones. Specific zone alarm information can be transmitted to the fire alarm control unit through dedicated alarm relays within each detector module.
- ***Simplified Installation***
  Docking station design allows detectors to be easily removed to ensure they will not be damaged during installation. Aspirating pipework and cable entries can easily be made into either the top or the bottom of the unit.
- ***Intuitive User Interface***
  Bright, easy-to-use color TFT display and universal navigation and control buttons take the guesswork out of programming and diagnostics.
- ***Easy Pipe Connection***
  The quick fit pipe adapter system locks down securely, yet leaves plenty of room for easy pipe connection and removal.
- ***Quick Location of Smoke***
  Each detector module is self-contained, which means no delays in determining in which zone (sampling pipe) smoke is present.
- ***Connects From Relays on Module Backplane to Control Unit Initiating Device Circuit (IDC) or Signaling Line Circuit (SLC)***
  Three relays are included on each detector: Trouble (General Fault), Pre-Alarm and Fire Alarm. Additional relays are available on Minimum, Standard and Command Module backplanes.
- ***Use With Kidde Fire Systems Conventional and Addressable Control Units***
- ***Works with SmartOne® communication protocol when Addressable Protocol Interface Card (APIC) installed for Signaling Line Circuit connection*** (compatibility approvals pending)
- ***FM Approved***
- ***UL Listed to UL268, 7th edition***
- ***ULC Listed to ULC-S529, 4th edition***
- ***California State Fire Marshal Listed***

OVERVIEW

ModuLaser® is a scalable aspirating smoke detection solution that makes installation easier, maintenance quicker, and takes applications further than traditional air sampling detectors. Two basic module types comprise the ModuLaser solution: a Display Module, and a Detector Module. Each Detector Module can accommodate up to 820 feet (250m) of combined sampling pipe. Display Modules and Detector Modules communicate by RS485 interconnections. Display Modules are available in three configurations:

1) **Standard** with TFT color display, status LED's and navigation buttons,
2) **Minimum** with only status LED's, and
3) **Command** which is similar to the Standard display but with the added functionality to control various modules over SenseNET networking software.

The Minimum and Standard Display Modules can each support up to 8 Detector Modules, while the Command Display Module can support up to 127 modules across the SenseNET network.

PERFECT SOLUTION

Thanks to advanced features that make it virtually impervious to dust and dirt, ModuLaser is ideal for use in hostile environments that would disable other kinds of smoke detectors. Forward scattering optical detection adds early warning capability without the risk of nuisance alarms normally associated with high sensitivity smoke detection, while exclusive environmental compensation technology adds a high degree of reliability to an already solid detection solution.

ModuLaser Detector Module

DETECTOR MODULE

The Detector Module is a fully self-contained unit, which aspirates the sampled air from the protected area, analyzes the air and, based on ClassiFire,™ determines if a Pre-Alarm or Alarm should be raised (if smoke particles are determined to be present in the sampled air). If an alarm condition or fault condition occurs, the unit activates the corresponding local relay output, as per the programming of the relays. Simultaneously, the alarm or fault condition is reported to the Display Module to which the Detector Module is connected.

The modular nature of the ModuLaser allows maintenance (for example, routine filter replacement) to be performed on a module-per-module basis, rather than performed on a complete system, reducing the risk of the area which is unprotected during the maintenance period, as only one sampling pipe (protected zone) is affected at a time.

STANDARD DISPLAY MODULE

The Standard Display Module features a user interface which consists of a TFT color display, navigation buttons and status LEDs. Configuration of the Standard Display Module (and associated detector modules) can be done via the user interface, via a computer using Remote software or via SenseNET using a Command Display Module. The TFT color display supports simple operations like changing configuration options with a menu-driven structure and includes advanced features like viewing chart recording in a graphical format.

The Standard Display Module has two USB ports: one master and one slave. The master is used to connect a pen drive/memory stick, which can be used for storing the configuration, event logs or chart recordings, or for firmware upgrade purposes. The USB slave is used to connect to a computer.

MINIMUM DISPLAY MODULE

The ModuLaser Minimum Display Module offers a cost-effective alternative to the Standard Display Module. While the Standard Display Module features a user interface which consist of a TFT color display, navigation buttons and status LEDs, the Minimum Display Module only features status LEDs. Depending on the requirements of the installation, only having status LEDs might be sufficient to locally indicate faults or alarms while still reporting faults and alarms via the relay outputs. Due to the absence of a screen and navigation buttons, the Minimum Display Module (and associated detector modules) must be configured via a computer using Remote software or via SenseNET using a Command Module.

COMMAND MODULE

The Command Module features a user interface which consists of a TFT color display, navigation buttons and status LEDs (user interface looks identical to that of the Standard Display Module). Configuration of the Command Module (and associated detectors across the SenseNET network) can be done via the user interface or via a computer using Remote software. The TFT color display supports simple operations like changing configuration options with a menu-driven structure and includes advanced features like viewing chart recording in a graphical format.

The Command Module supports up to 127 modules across the SensetNET network. The 127 modules can be any combination of ModuLaser modules as well as Micra's and HSSD2s. The use of the Command Module creates an easy-to-use central point from where all modules and detectors on the network can be accessed and all alarms and faults are reported.

ModuLaser Command Module / Standard Display Module

ModuLaser Minimum Display Module

TECHNICAL SPECIFICATIONS

General:	
Status Indication	LEDs
User Interface	TFT and navigation buttons on Normal and Command Display Modules
Alarm Levels	4 (Aux, Pre-Alarm, Alarm and Alarm2)
Event Log	20,000 events per module
RS485 Support	Yes (SenseNET and SenseNET+)
Connectivity	USB (x2) on Display Module
Electrical:	
Operating Voltage	24 VDC nominal (18.0 to 30.0 VDC)
Current Consumption	Detector Module (at 18 VDC): 269 mA - fan speed 1 387 mA - fan speed 6 (default speed) 1028 mA - fan speed 16 All Display Modules (at 18 VDC): 266 mA in Standby, 266mA in Alarm
SenseNet, SenseNET+	Twisted pair wire, 32 ohms, 0.44 µf max
Detection:	
Detection principle	Laser light scattering mass detection and particle evaluation
Particle sensitivity range	0.003 to 10 microns
Sampling Pipe:	
Length	Up to 820 ft * (250m) combined per detector module
Number of Sampling Holes	Up to 50*
* Sampling pipe design with PipeCAD, including classification of configuration	
Inlet size	1.06 in (27mm) or 0.98 in (25mm) outer diameter
Inlet location	Top or bottom
Exhaust size	1.06 in (27mm) or 0.98 in (25mm) outer diameter
Exhaust location	Top or bottom
Inlet quantity	1 per detector module
Standards and Regulation:	
Certifications	FM, UL 268 (7th edition), ULC-S529 (4th edition), CSFM
Approved for use as open area protection and special application, as per UL268	

Input:	
Input quantity	2 per module
Input type and rating	Supervised
Termination	15 K, 5%, ¼W
Programmable	Yes
Output:	
Output quantity	3 per module
Output type and rating	Voltage free (contact rating 2A at 30 VDC, NO/NC/C)
Programmable	Yes
Physical:	
Dimensions	4.35 W x 5.25 D x 11.8 H (inches) 110.5 W x 133.5 D x 300 H (mm)
Net weight	Display Module: 2.6 lbs (1.18 Kg) Detector Module: 3.46 lbs (1.57 Kg)
Color	Cream (RAL 9016)
Mounting type	19 in. rack, surface mount
Cable entries	Display Module: 2 at bottom, 2 at rear, 2 at top Detector Module: 2 at bottom, 2 at rear, 3 at top
Cable entry size	0.5 in (20mm) - top and bottom
Detector module orientation	Vertical (0 deg or 180 deg)
Wire Size	14 to 18 AWG
Environmental:	
Operating temp	UL: 0 to 38 deg C (32 to 100 deg F) FM: 0 to 49 deg C (32 to 120 deg F)
Relative humidity	0 to 90% noncondensing
Environment	Indoor
IP rating	IP40
Chart Recorder:	
Sampling period	Adjustable between 1 and 60 seconds
Capacity	1 month at 1 second
Values recorded	Detector value, 4 Alarm Level values, Flow value and Temperature (all simultaneously)

ORDERING INFORMATION

9-30783-KID-ULF	ModuLaser Detector Module (5.3 lbs)
9-30782-KID-ULF	ModuLaser Command Module (4.4 lbs)
9-30781-KID-ULF	ModuLaser Standard Display Module (4.4 lbs)
9-30780-KID-ULF	ModuLaser Minimum Display Module (4.4 lbs)
9-30791-2	Detector Cover (2.2 lbs)
9-30794	Grommets (0.23 lbs)
9-30795	Pipe Adapter, angled (0.34 lbs)
9-30796	Pipe Adapter, straight (0.34 lbs)
9-30797	Accessory Kit (0.23 lbs)
9-30798-2	Wiring Housing, Gray (3.3 lbs)
9-30699N-P	Filter pack of 6 (0.56 lbs)
9-30792	Standard/Command Module Display Cover (2.2 lbs)
9-30793	Minimum Display Module Cover (2.2 lbs)

COMPATIBLE CONTROL UNITS

ModuLaser aspirating smoke detectors are compatible with all Kidde Fire Systems conventional and addressable Fire Alarm Control Units when connected via the provided detector relay contacts.

The following are additionally compatible for seamless integration using the APIC Card, P/N 76-333002-001 (agency approval pending):

Fire Alarm Control Unit (FACU) Type	**FACU Model**
Single Loop Intelligent	ARIES®-SLX
Multiple Loop Intelligent	ARIES®-MLX

EXPORT INFORMATION (USA)
Jurisdiction: EAR
Classification: EAR99
This document contains technical data subject to the EAR.

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