Control Instruments Corporation

25 Law Drive, Fairfield, NJ 07004-3295 USA
Telephone 973-575-9114   Fax 973-575-0013
Email: sales@controlinstruments.com
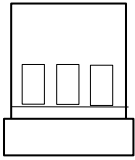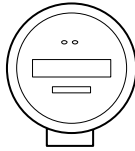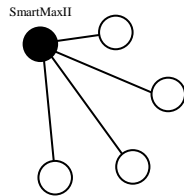Internet: www.controlinstruments.com

SmartMaxII

SIDE View   TOP View   Example showing 4 LFL sensors
reporting to a single SmartMaxII unit.

Standard Specifications

Input Power Required

DC power	18-24 VDC regulated, 20 Watts
AC power (optional)	85-250 VAC 50/60 Hertz

Outputs

Digital	RS-485 Modbus half-duplex 9600 Baud
Analog	4-20mA into 250 Ohms maximum +25 Ohm loop resistance
DC sensor power	24 VDC sensor power source

Internal Relays

One (1) Form C, 60 Watt contacts,
Two (2) Form A, 60 Watts contacts
Software configured to function as
Warning, Danger, Malfunction alarms, or
to activate Horn or indicate calibration

Wiring Line Lengths

Power	DC: 1000 FT/14 AWG (15 Ohm one way) AC: 4000 FT/14 AWG
Digital Signal	4000 FT/20-22 AWG twisted 3-conductor (lines can be longer using RS-485 repeaters)

Indicators

Status	8-character liquid crystal display
Alarm status	Red LED flashes on new alarm, constant for acknowledged alarm
Operating status	Green LED flashes during normal operation; winks when communicating

Controls

Power Switch	On/Off
Pushbuttons	Menu: to view menus and menu items Select: to enter and activate menu items
Photo-transistors	Activate a command via flashlight

Inputs

Sensors	Up to four (4) Control Instruments catalytic or electrochemical sensors
Remote input	External pushbutton contacts (optional)

Operating Parameters

Temperature Range	-40°C to +75°C
Humidity Range	5% to 95% RH, Non-condensing
Enclosure Rating	NEMA 1 panel mount, general purpose (standard) NEMA 4X watertight, dust-tight, field housing for indoor & outdoor (optional) Explosion-proof field enclosure, Class I, Div.1, Groups BCD (optional)

Approvals	FM

Monitor Design

The SmartMaxII is a microprocessor-controlled standalone monitor designed for all indoor & outdoor field installations.

The SmartMaxII generates three types of output signals: relay contacts from 3 relays, an analog 4-20mA output signal, and a digital serial link (RS-485 Modbus half duplex) which permits bi-directional digital communications. Multiple monitors can be arranged in any order on a single 3-wire communication line, thereby reducing wiring requirements.

The SmartMaxII microprocessor performs the following functions:

- elimination of signal noise
- linearization of readings
- cuts response time up to 90% (with catalytic sensors)
- processes up to 4 sensor signals and reports readings

Multiple sensor capability

The SmartMaxII reports the readings from up to four sensors. The SmartMaxII accepts catalytic sensors for LFL range monitoring of flammable gases and vapors; and electrochemical sensors for oxygen monitoring as well as parts per million range monitoring of several toxic gases, including hydrogen sulfide, carbon monoxide, hydrogen, and others.

Construction

The monitor consists of an electronics assembly. It is ready for panel mounting right out of the box. It is also available in a NEMA 4X wall mount housing, as well as an explosion proof Division 1 field enclosure for indoor and outdoor locations. The enclosure has an observation window to permit field inspection of the color-coded status LEDs and 8-digit alpha-numeric display.

The SmartMaxII employs a 3-wire communication loop as well as wires for power. Power wires may be shared; line lengths are based on the number of monitors and types of sensors. DC power is standard. An optional internal power module allows AC operation.

Non-Intrusive Calibration

The SmartMaxII can be calibrated by one person without declassifying a hazardous area. A window in the field enclosure housing permits the operator to simply shine a flashlight at photo-transistors to operate the command menu and initiate calibration.

Failsafe Features

The SmartMaxII has electronic circuits to detect failures in the monitor, sensor failure or open leads. Any of these conditions will produce a Malfunction alarm.

Factory Tested as a complete system

The SmartMaxII is completely factory assembled, calibrated and tested with its sensor(s) prior to shipment.