AP200 SERIES DETECTORS

AP200 series detectors for FX NET Fire Detection Systems with FX-SLC protocol

AP200 series detectors are compatible with the FX-SLC loop controller (159+159 addresses per loop).

The new FX-SLC protocol delivers more devices on the loop and gives greater control, configurability and device management whilst enabling the overall system to optimised to the location.

AP200 series detectors are mechanically and electrically backwards compatible with Series 200 devices.

All detectors are environmentally friendly and meet the WEEE and RoHS legislative requirements, minimising end of life disposal costs.

The AP200 series detectors (except ESMI2251CTLE-W) have two integral tri-colour LEDs that provide 360° local visual indication of the de vice status. The LED colours are red for alarm, amber for fault and green for normal condition. The ESMI2251CTLE-W LED colour is red.

The detectors are available with or without single pole short circuit isolation.

ESMI 22051E Optical Smoke Detector

The ESMI 22051E photoelectric smoke detector has a completely new detection chamber design. This delivers improved responsiveness; reduced sensitivity changes caused by settling dust and reduced false alarms resulting from insect ingress and other debris. The plug-in unit uses sophisticated processing circuitry that incorporates smoothing filters to help eliminate transient environmental noise conditions that can be the cause of unwanted alarms.

The devices are managed by embedded software running complex algorithms that further improve resilience to false alarms and improve detection speed.

ESMI 22051TE Photo-Thermal Detector

The multi-criteria detector ESMI 22051TE photo-thermal detector uses thermal assistance to the core photoelectric smoke detector to give enhanced false alarm immunity and faster response to a wide range of incipient fires. The plug-in unit combines two separate sensing elements that are managed by embedded software to act as a single unit. The ESMI 22051TE conforms to EN54-7, a 58℃ fixed temperature and rate of rise thermal assistance conforming to EN54-5. In areas where the normal daytime activities may potentially create unwanted alarms, the detector can be programmed to operate in a "heat only" mode, automatically reverting to full photo-thermal operation during unoccupied periods.

Schneider Electric

ESMI 22051TLE 3-element Multi-Criteria Detector

The ESMI 22051TLE multi-criteria, Photo Thermal Infra Red (PTIR), detector is the environmentally friendly alternative to the ionisation detector. The "PTIR" offers comparable speed of response to the ionisation technology for a fast flaming fire and is less susceptible to false alarms. It can be deployed with confidence in locations where the main risk is from fast-developing flaming fires. In addition to being an effective alternative to ionisation units, "PTIR" offers better performance over the alternative technologies of dual angle or dual wavelength optical detectors and photo-thermal detectors.

The integration of continual monitoring for all three major elements of a fire enables the ESMI 22051TLE respond far more quickly to an actual fire and has the highest immunity to nuisances. Based upon the sensor signals, the program is dynamically changing sensor thresholds, sensor gain, time delays, combination, sampling rates, averaging rates and, if any sensor fails, changing sensitivity of the remaining sensors as well as indicating a fault condition.

ESMI 2251CTLE-W 4-element Multi-Criteria Detector

The ESMI 2251CTLE-W plug-in fire detector combines 4 separate sensing elements to act as a single unit. CO sensing for monitoring CO products from a smouldering fire, IR sensing for measuring ambient light levels and flame signatures, optical smoke detection and heat detection.

The 2251CTLE detector has been designed for indoor use. It responds far more quickly to an actual fire and has the highest immunity to nuisances. The operating philosophy behind the 2251CTLE detector was to configure it so that it normally operates at a high immunity level, changing to become very sensitive to fires when fire characteristics are sensed. In this way transient nuisances are monitored and ignored, reducing the false alarm rate.

In areas where the normal daytime activities are likely to create unwanted alarms, the detector can be programmed to operate in a "Heat only" mode, automatically reverting to optical-thermal operation during the unoccupied period. The 2251CTLE is thus able to offer exceptional false alarm immunity and excellent fire detection.
Note: The LED colour is red.

Temperature Sensors
ESMI 52051E, ESMI 52051RE and ESMI 52051HTE
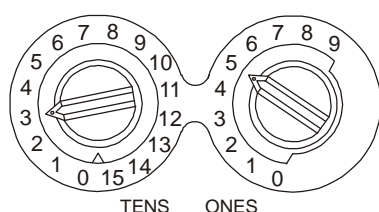
Detector base B501AP

The ESMI 52051E and ESMI 52051HTE are fixed temperature analogue addressable sensors employing low mass thermistors and microprocessor technology for fast response and linear temperature sensing. Their linear response allows these sensors to be used to signal temperatures over the range of 58℃ (Class A1S) to 78℃ (Class BS).

The ESMI 52051RE uses the same thermistor and microprocessor technology to provide an alarm when the rate of rise in temperature exceeds 10℃/minute (typical) or if the temperature exceeds a threshold of 58℃ (Response Class A1R).

Mechanical installation
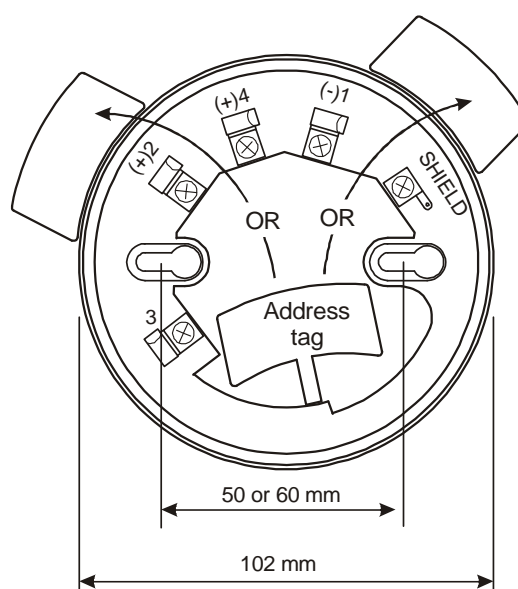
Address setting

The individual address of detectors is set using the rotary switches.

TENS   ONES

(+)2   (+)4   (-)1   SHIELD

OR   OR

3

Address tag

50 or 60 mm

102 mm

Electrical connections

Remote LED

FX SLC
addressable loop
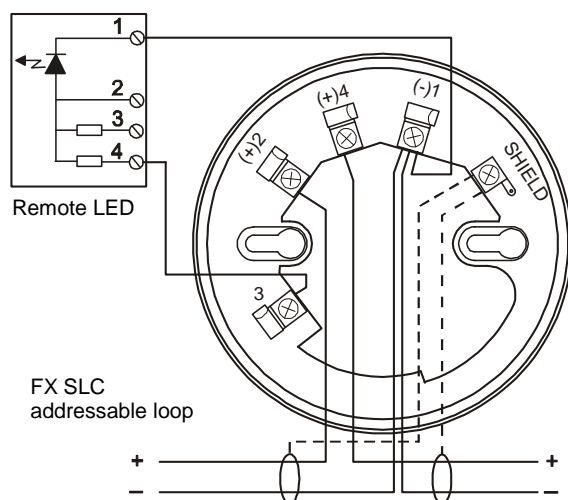
Technical data

	Detectors			
	ESMI 22051EI ESMI 22051E	ESMI 22051TEI ESMI 22051TE	ESMI 22051TLEI ESMI 22051TLE	ESMI 52051EI ESMI 52051E ESMI 52051REI ESMI 52051RE ESMI 52051HTEI ESMI 52051HTE
Operating voltage range with isolation	15…32 VDC 15…28,5 VDC			
Maximum standby current	200 µA@24 VDC (no communication) 300 µA@24 VDC (LED blinking enabled, every 5 s)			
Led Current	3,5 mA@24 VDC			
Remote output voltage	22,5 V@24 VDC			
Remote output current	10,8 mA@24 VDC			
Temperature range	-30…+70℃			
Humidity	10…93% relative humidity (non condensing)			
Height installed in base B501AP	52 mm	61 mm	63 mm	61 mm
Diameter installed in base B501AP	102 mm	102 mm	102 mm	102 mm
Weight incl. base	97 g	99 g	102 g	88 g
Colour	White			
Material	PC/ABC			
Compatible bases	B501, B501DG, B524RTE-W, B524HTR-W, B501AP			
Max. wire gauge for terminals/base	2,5 mm^2			

Detector ESMI 2251CTLE-W LED colour: red	
Operating voltage	15...32 VDC
Maximum standby current	200 µA at 24VDC (no communications)
Maximum average standby current	300 µA at 24VDC (one communication every 5 sec. with LED blink enabled)
Maximum alarm current	7 mA at 24 VDC
Humidity	15 to 90% RH (non-condensing)
Application temperature range	-20°C to +55°C
IR range	0-450 µW/cm^2
CO range	0-500 PPM
Temperature range	+58°C

Dimensions installed in B501 base
    height
    diameter
	
	66 mm
	102 mm

Weight
    with base
    without base
	
	176 g
	111 g

Materials	Bayblend FR110
Colour	White
Max. wire gauge for terminals	2,5 mm^2
Tested	EN54-5 EN54-7 LPS 1279 (CO, Photo, Thermal) CEA 402 (Photo, Thermal)
Compatible bases	B501AP, B500 Series (B501, B501DG, B524HTR-W, B524RTE-W, B524EFT-1)

Electrical specifications - Isolator version

Isolation current	15 mA@24 VDC
Maximum continuous current	1 A (switch closed)
Additional loop resistance	20 mΩ typical (max. 30 mΩ)

Thermal sensor performance

Thermal sensor	Performance
52051RE	Class A1R, 58°C Fixed temperature and Rate of Rise
52051E	Class A1S, 58°C Fixed temperature
52051HTE	Class BS, 78°C Fixed temperature

CO sensing element of the ESMI2251CTLE-W

The CO cell has an expected lifetime of approximately six years. The detector is programmed to signal the approach of end of this lifetime to the control panel. The CO cell is not a field replaceable component and on failure, you should contact the system supplier to arrange for replacement of the cell.

Product codes

Product	Product code
ESMI 22051EI (with isolator)	0671 0601
ESMI 22051E (without isolator)	0671 0602
ESMI 22051TEI (with isolator)	0671 0603
ESMI 22051TE (without isolator)	0671 0604
ESMI 22051TLEI (with isolator)	0671 0605
ESMI 22051TLE (without isolator)	0671 0606
ESMI 2251CTLE-W (without isolator)	0671 0607
ESMI 52051REI (with isolator)	0671 0611
ESMI 52051RE (without isolator)	0671 0612
ESMI 52051EI (with isolator)	0671 0613
ESMI 52051E (without isolator)	0671 0614
ESMI 52051HTEI (with isolator)	0671 0615
ESMI 52051HTE (without isolator)	0671 0616
B501AP	0671 0600