Essentia smoke heat multi-criteria detector EDE223-I

The addressable Essentia smoke heat multi-criteria detector EDE223-I uses new optical sensing technology to detect smoke particles entering the chamber and is fitted with two thermistors for detecting heat.
It can be switched to detect smoke, heat or a combination of both offering greater flexibility.

Figure 1. Essentia smoke heat multi-criteria detector EDE223-I

Feature highlights

- Uses digital communications.
- Compatible with existing bases.
- It has tri-coloured LED status indicator and remote indicator output.
- Detector can be locked to the base.
- Detector has built-in drift compensation.

Applications

Fire detectors should always be installed in accordance with all local and national law and codes of practise.

The smoke heat detector can be switched between smoke and heat only modes making it suitable for a wide range of applications.

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Table 1. Essentia smoke heat multi-criteria detector

	TECHNICAL SPECIFICATIONS
Esmi product number	FFS06720303
Model number	EDE223-I
Detection principle	Smoke: Photo-electric light scattering Heat: Thermistor
Sampling frequency	Once per second
Dimensions incl. base (Ø x H)	100mm x 38,5mm (50,5mm with Intelligent mounting base)
Weight	83g
Color	White
Operating temperature	-40°C to 70°C
Humidity	0% to 95% RH (no condensation or icing)
Supply voltage (Vmin – Vmax)	17-35V DC
Protocol	5-13V
Quiescent current	Isolated detector: 350µA
Power-up surge current	560µA
Maximum power-up time	10s
Alarm current, LED illuminated	3.5mA
IP rating	IP54
Standards & approvals	EN 54-5, EN 54-7, EN 54-17, CPR & LPCB
Clean-air analogue value	23 +4/-0
Alarm level analogue value	55
Status indicator	Alarm - Red Fault - Flashing yellow Isolate - Yellow Poll – Green
Terminal functions	+L2 Loop in & out positive -L1 in Loop (isolated) negative -L1 out Loop (isolated) negative +R Remote indicator positive connection (internal connection possible) -R Remote indicator negative connection (4,7mA maximum)

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	TECHNICAL SPECIFICATIONS
Isolator data	
Maximum loop current ($I_c$max; L1 in/out)	1A
Maximum series resistance ($Z_c$max; L1 in/out)	80mΩ
Maximum switch current ($I_s$max; L1 in/out)	3A
Maximum leakage current ($I_l$max; during isolation)	33mA (100ms pulse every 2s)
Isolation voltage (V_{so}min –V_{so}max)	12,5-15V DC
Reconnect voltage (V_{sc}min – V_{sc}max)	12,8-19,1V DC

Specifications are typical at 24V, 25°C and 50% RH unless otherwise stated.

Figure 2. Essentia smoke heat multi-criteria detector response modes

Mode	Optical Sensor		Heat Sensor	Minimum Time to Alarm
	Response Value		Response type	
	%/m*	dB/m**		Seconds
1	1.1	0.08	>15°C rise	20
2	2.1	0.15	–	30
3	2.8	0.20	>21°C rise	20
4	4.2	0.29	>15°C rise	20
5	–	–	A1R	20

** Tested in grey smoke*
*** Tested in oil mist to EN 54-7 standard*

Figure 3. Dimensions