

SmartNet-100 Smoke & Heat Combi-Detector with Sounder & Visual Indicator Radio Base

Part Number: S1.DTC0.RB20.1 / S1.DTC0.RB20.1A

Optical Smoke & Heat A1R Detector with Sounder & Visual Indicator Base

The Cygnus SmartNet wireless fire detection and alarm system is a network of battery powered, wireless fire detection and alarm products suitable for permanent installations, commercial premises and HMOs.

The Combi-Detector with Sounder and Visual Indicator ring is for use with up to 511 other devices, serving small and large sites. It provides smoke and heat detection with sounder and visual indication in a single device.

Other products in the range include: Smoke and Heat Detectors, Manual Call Points, First Aid Alarms, Alarm Interface Unit and Control Panel.



Overview

- Reliable wireless mesh radio technology
- Completely wireless – no cables required
- Sensitive radio with up to 350m range
- 868MHz radio (915MHz also available)
- 3+ year battery life
- Designed to be EN 54 compliant
- Certified by Intertek
- Easy configuration via the Windows based CygnusConfig application
- Compatible with other Cygnus SmartNet devices

Features

Smoke detector	Optical
Heat detector	Type A1R (rate of rise)
Sounder	Built into radio base (3 volume settings)
Visual indicator	Visual indicator ring around radio base
Silent test	Yes
Tamper detection	Two (radio base and head)

Parameters

Dimensions (mm)	123Ø x 101h (inc combi-detector head)
Weight	550g
Operating temperature	-10°C to +55°C
Storage temperature	-10°C to +55°C
IP rating	IP21C, Type A (Indoor)
Relative humidity	>95% @ 25°C to 55°C

Power	
Operating voltage range	2.5 to 3.8V (from lithium batteries)
Main battery	3x ER26500 Li-SOCl ₂ (lithium thionyl chloride)
Backup battery	1x CR123 (must be fitted)
Battery Voltages	ER26500 = 3.6V nom. CR123 = 3.0V nom.
Power consumption	3mW
Battery life	Min 3 years (normal operation)

Radio	
Radio operating frequency	865 to 868 MHz
Radio category	Category 1
Channels	10 (with channel hopping algorithm)
Bandwidth	250kHz
Channel spacing	300kHz
Transmit power	10mW (maximum)
Duty cycle	<0.1%
Protocol	Cygnus mesh protocol
Encryption	TDES (64-bit payload, 192-bit encryption key)
Self-forming	Cygnus self-forming algorithm
Self-healing	Cygnus self-healing algorithm

Additional Information	
Heat detector setpoint	Type A1R: 55°C (EN 54-5)
Smoke nominal response threshold value	0.12 dB/m (EN 54-7) TBC
Visual Indicator Ring Colour	RB20.1 = White ring. RB20.1A = Red ring

Compliance	Sounder	
Current: - ETSI EN 300 220-1 V3.1.1 (2017-02) - ETSI EN 301 489-1 V2.2.2 (2019-09) - ETSI EN 301 489-3 V2.1.1 (2019-03) - EN61000-6-3:2007 +A1:2011 - EN50130-4:2011 +A1:2014 - EN61000-3-2:2014 - EN61000-3-3:2013 - EN 54-3:2001+A1:2002+A2:2006 - EN 54-5:2017+A1:2018 - EN 54-7:2018 - EN 54-18:2005 - EN 54-25:2008	Sounder Output (configurable)	80 to 98dB(A) at 1m
	Volume Settings	3 levels
	Number of Tones	36 configurable tones (10 certified to EN 54)



Ordering Information

Detector Head Options	Combi Sensor Optical Smoke & A1R Heat	SN.DTC0.1
Device Base(s) Options	Sounder VID Radio Base White VID Ring	S1.RB20.1
	Sounder VID Radio Base (White) Red VID Ring	S1.RB20.1A

Sounder Tones – EN 54-3:2001+A1:2002+A2:2006 Approved

#	Description	Pattern	Low	Med	High
1	554Hz, 0.1s / 440Hz, 0.4s (AFNOR NF S 32 001)		81	87	91
4	500 – 1200Hz, 0.5s / 0.5s OFF x 3 / 1.5s OFF (AS1670 Evacuation)		83	90	93
7	1200Hz – 500Hz @ 1Hz (DIN 33 404)		82	90	94
8	500Hz – 1200Hz, 3.75s / 0.25s OFF (AS2220)		85	91	95
10	970 Hz 0.5s ON/0.5s OFF (ISO 8201 LF BS5839 Pt1 1988)		80	87	91
14	800Hz/970Hz @ 2Hz (FP 1063.1 Telecom) – Default Fire Tone		82	89	92
17	970Hz continuous		81	87	91
22	800Hz – 970Hz @1Hz		84	89	94
26	Dual tone 800/630 Hz @2Hz		80	86	91
30	550Hz, 0.7s / 1000Hz, 0.33s		84	90	94

Sounder Tones – Not Approved

#	Description	Pattern	Low	Med	High
2	500 – 1200Hz, 3.5s / 0.5s OFF (NEN 2575:2000)				
3	420Hz 0.625s ON / 0.625s OFF (Australia AS1670 Alert tone)				
5	970Hz, 0.5s ON / 0.5s OFF x 3 / 1.5s OFF (ISO 8201)				
6	2850Hz (2900), 0.5s ON / 0.5s OFF x 3 / 1.5s OFF (ISO 8201 (US temporal HF))				
9	800 Hz continuous (LF continuous tone BS5839)				
11	2850Hz 0.5s ON/OFF (ISO 8201 HF)				
12	660Hz 0.15s ON / 0.15s OFF (Swedish fire signal)				
13	660Hz (Swedish All clear signal)				
15	1000 – 2500Hz, 0.5s / 0.5s OFF x 3 / 1.5s OFF (AS1670 Evacuation)				
16	950Hz 0.5s ON/ 0.5s OFF x 3 / 1.5s OFF repeat (US temporal LF)				
18	800Hz – 970Hz @ 3Hz				
19	800Hz – 970Hz @ 9Hz				
20	2400Hz continuous				
21	970Hz, 0.5s / 630Hz, 0.5s				
23	800Hz / 970Hz @ 1Hz				
24	2400Hz – 2900Hz @ 9Hz				
25	2400Hz – 2900Hz @ 3Hz				
27	400Hz continuous				
28	550Hz / 440Hz @ 0.5Hz				
29	1500Hz – 2700Hz @ 3Hz				
31	250Hz – 1200Hz @ 12Hz				
32	800 / 1000Hz 0.5s each (1Hz)				
33	Dual tone 800/630 Hz @2Hz – 1s ON / 7s OFF – Default First Aid tone				
34	Silent tone				
35	Test tone 800Hz 0.1s ON / 2s OFF				
36	2200Hz – 3500Hz 125ms / 3500Hz – 2200Hz 125ms (Cygnus 1 tone)				

IO Functions (for EN 54-18:2005)

Inputs:

- Radio messaging from other devices
- Combi Heat A1R and Smoke detector
- Installation tamper switch

Outputs:

- Radio messaging to other devices
- Sounder
- Visual indicator beacon