

CAST PRO Device Family Detector Settings

Mode	Applicable Devices*	Smoke Detection Characteristics	Smoke Level (dB/m)	Smoke Level (%)	Heat Class	Default Mode	CO Settings Included	Certificated Standards
1	CP416 CP414 CP411	High Sensitivity	0.1dB/m	2.3%	N/A	Default for CP416	N/A	EN 54-3 EN 54-7 EN 54-17 EN 54-23
2		Normal Sensitivity	0.24dB/m	5.4%	N/A			
3		Heat Only A1R	N/A	N/A	A1R			
4	CP402 CP414 CP411	Heat Only A2	N/A	N/A	A2	Default for CP402	N/A	EN 54-3 EN 54-5 EN 54-17 EN 54-23
5		Heat Only B	N/A	N/A	B			
6	CP414 CP411	High Sensitivity	0.1dB/m	2.3%	A1R	Default for CP414	N/A	EN 54-3 EN 54-5 EN 54-7 EN 54-17 EN 54-23 EN 54-29
7		Normal Sensitivity	0.24dB/m	5.4%	A1R			
8		Normal Sensitivity	0.24dB/m	5.4%	A2			
9	CP411	High Sensitivity	0.1dB/m	2.3%	A1R	Default for CP411	EN 54-26*** EN 54-30*** EN 54-31 EN 50291-Mimic**	EN 54-3, EN 54-5, EN 54-7, EN 54-17, EN 54-23, EN 54-29, EN 54-31 Class NT
10		Normal Sensitivity	0.24dB/m	5.4%	A2		EN 54-30*** EN 54-31 EN 50291-Mimic**	
11		Low Sensitivity	2.5dB/m	43.8%	N/A		EN 54-31 EN 50291-Mimic*	EN 54-3, EN 54-17, EN 54-23, EN 54-31 Class MT
12		Normal Sensitivity	0.24dB/m	5.4%	A2		EN 54-26*** EN 54-30*** EN 54-31 EN 50291-Mimic** CO Toxicity**	EN 54-3, EN 54-5, EN 54-7, EN 54-17, EN 54-23, EN 54-29, EN 54-31 Class NT

* Plus devices with sounder and sounder VAD (both white and red) where applicable, including black plastics

** Not an applicable standard *** Not a certified feature

CAST PRO Device Family AV Settings

Sounder	VAD
3 voice messages certified. 6 tones certified. - Class-leading max SPL of 92dB(A) @ 1m. - Maximum current consumption for sounder-only variants is only 5.4mA (max output) at the minimum voltage. - Sounder and VAD variants have automated testing. - Voice sounder variants certified with synchronisation.	- C-3-9.4 C-Class VAD. - All VAD variants certified with synchronisation. - Maximum VAD current consumption of only 7.7mA (max output) at the minimum voltage. - All white and black plastic variants fully certified. - Red variants fully certified with a cylindrical O-Class output.

EN 54-17 Short Circuit Isolator Specification (Controllable Isolator)

Maximum Loop Voltage (V max):	40Vdc
Nominal Loop Voltage (V nom):	40Vdc
Minimum Loop Voltage for detection-only variants (V min):	22Vdc
Minimum Loop Voltage for sounder and VAD variants (V min):	28Vdc
Maximum Current Device Isolates, switches from closed to open (Iso max):	55mA
Minimum Current Device Isolates, switches from closed to open (Iso min):	15mA
Maximum Rated Continuous Current with switch closed (Ic max):	1A
Maximum Rated Switching Current under short circuit conditions (Is max):	1.6A
Maximum Leakage Current with switch open (IL max):	20µA
Maximum Series Impedance with switch closed (Zc max):	120mΩ
Note: An EN 54-17 isolator is intrinsic to every variant	



Scan for full CAST PRO documentation, resources & declarations



Manufacturer: Compuionics Limited (C-TEC), Challenge Way, Martland Park, Wigan, Lancashire WN5 0LD. www.c-tec.com
E&OE. No responsibility can be accepted by the manufacturer or distributors of these devices for any misinterpretation of this instruction, or for the compliance of the system as a whole. The manufacturers policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice.



CAST PRO Device Family

Product Datasheet CAST Compatible

Product Description

The CAST PRO range of fire detection and alarm devices for C-TEC's CAST panels (compatible firmware only) are compatible with the CA408 CAST detector base. Detection elements include smoke, smoke/heat and smoke/heat/CO configurations. Variants are available with a sounder or sounder/VAD. CAST PRO devices are compatible with all existing CAST protocol devices on a CAST panel.



Illustration shows a CAST PRO CP414VV mounted on a CA408 base.

Using C-TEC's MASC® (Miniature Advanced Smoke Chamber) smoke chamber (patent GB2586784), the design achieves incredible dust tolerance and performance, whilst enhancing its performance with real-world fires. Combined with C-TEC's revolutionary SAFER (Safer Advanced False alarm Rejection) fire detection algorithms, detectors automatically adapt to changes in the environment in smoke, heat and CO levels, providing optimum performance and safety, including certified EN 54-31 Type NT and Type MT settings.

The SAFER smoke algorithms provide incredible transient tolerance levels (false-alarm rejection). The revolutionary HEART® (HEat Analysis Response Technology) heat algorithms (patent GB2618811 pending) aid heat detector reliability through automatically adjusting for obstructions to the detector, such as from cobwebs.

All 32 variants are fully certified and all selectable detection modes are certified for all variants. All white flashing variants come with a C-3-9.4 VAD classification, with red flash variants having an O-Classification.

Key Features

- Two ultra-bright red LED indicating strips.
- Integral short-circuit loop isolator.
- Simple 'click and twist' design and easy-fit base ensures reduced installation time.
- Compatible with C-TEC's CA408 CAST base.
- All variants are IP21C as standard.
- Loop powered with low current consumption.
- Multiple functionality at a single address meaning one common installation point and less wiring.
- Powered using C-TEC's CAST panels.
- Compatible with existing CAST devices.
- Powered by C-TEC's SAFER® heat, smoke and CO algorithms, making the product highly false-alarm resistant.
- World-beating false-alarm rejection.
- 92dB(A) tone sounder @ 1m.
- Uses C-TEC's ultra-efficient Generation-2 VAD to produce a white C-3-9.4 @ 13.2mA @ Vmin.
- All VADs also available with a certified red VAD.

Order Code*	Description
CP416	CAST PRO Smoke Detector
CP402	CAST PRO Heat Detector
CP414	CAST PRO Multisensor Detector (smoke and heat)
CP414T	CAST PRO Multisensor Detector (smoke and heat) plus Tone Sounder
CP414V	CAST PRO Multisensor Detector (smoke and heat) plus Voice Sounder
CP414TV	CAST PRO Multisensor Detector (smoke and heat) plus Tone Sounder plus VAD
CP414VV	CAST PRO Multisensor Detector (smoke and heat) plus Voice Sounder plus VAD
CP411	CAST PRO Multisensor Detector (smoke and heat and CO)
CP411T	CAST PRO Multisensor Detector (smoke and heat and CO) plus Tone Sounder
CP411V	CAST PRO Multisensor Detector (smoke and heat and CO) plus Voice Sounder
CP411TV	CAST PRO Multisensor Detector (smoke and heat and CO) plus Tone Sounder plus VAD
CP411VV	CAST PRO Multisensor Detector (smoke and heat and CO) plus Voice Sounder plus VAD

* Also supplied with certified black plastic variants (availability may vary), and/or certified red VAD variants.

Technical Specification for a selected range of CAST PRO devices

Device (white plastics):	CP416	CP402	CP414	CP414T	CP414V	CP414TV	CP414TVR	CP414VV	CP414VVR	CP411	CP411T	CP411V	CP411TV	CP411TVR	CP411VV	CP411VVR		
Device (black plastics):	CP416B	CP402B	CP414B	CP414BT	CP414BV	CP414BTV	CP414BTVR	CP414BVV	CP414BVVR	CP411B	CP411BT	CP411BV	CP411BTV	CP411BTVR	CP411BVV	CP411BVVR		
Description:	CAST PRO Optical Detector	CAST PRO Heat Detector	CAST PRO Multi Detector	CAST PRO Multi Detector Tone Sounder	CAST PRO Multi Detector Voice Sounder	CAST PRO Multi Tone Detector Sounder White VAD	CAST PRO Multi Detector Tone Sounder Red VAD	CAST PRO Multi Detector Voice Sounder White VAD	CAST PRO Multi Detector Voice Sounder Red VAD	CAST PRO Multi Detector CO Detector	CAST PRO Multi Detector CO Tone Sounder	CAST PRO Multi CO Voice Sounder	CAST PRO Multi CO Detector Tone Sounder White VAD	CAST PRO Multi CO Detector Tone Sounder Red VAD	CAST PRO Multi CO Detector Voice Sounder White VAD	CAST PRO Multi CO Detector Voice Sounder Red VAD		
Certified Standards:	EN 54-7:2018, EN 54-17	EN 54-5:2017+A1:2018, EN 54-17	EN 54-5:2017+A1:2018, EN 54-7:2018, EN 54-17, EN 54-29	EN 54-3, EN 54-5:2017+A1:2018, EN 54-7:2018, EN 54-17, EN 54-29		EN 54-3, EN 54-5:2017+A1:2018, EN 54-7:2018, EN 54-17, EN 54-23, EN 54-29				EN 54-5:2017+A1:2018, EN 54-7:2018, EN 54-17, EN 54-29, EN 54-31	EN 54-3, EN 54-5:2017+A1:2018, EN 54-7:2018, EN 54-17, EN 54-29, EN 54-31		EN 54-3, EN 54-5:2017+A1:2018, EN 54-7:2018, EN 54-17, EN 54-23, EN 54-29, EN 54-31					
UKCA Certificate Number:	PENDING																	
CPR Certificate Number:	0063-CPR-242190022	0063-CPR-242190023	0063-CPR-242190021	0063-CPR-242190019			0063-CPR-242190011			0063-CPR-242190020		0063-CPR-242190012		0063-CPR-212190016				
Declaration of Performance:	DoP0000091			DoP0000092		DoP0000093				DoP0000091		DoP0000092		DoP0000093				
Compatible Panels:	Compatible C-TEC CAST panels																	
Compatible Base:	CA408 CAST detector base, ceiling mounting only																	
Wiring & Connections:	Use CA408 CAST base (see Document No.DFU0002408 for wiring details)																	
LED Indicators:	Two red LED indicator strips offering 360° visibility																	
Dimensions (detector only):	105mm diameter, 48mm deep					105mm diameter, 51mm deep				105mm diameter, 48mm deep			105mm diameter, 51mm deep					
Dimensions (detector & CA408 base):	105mm diameter, 65mm deep					105mm diameter, 68mm deep				105mm diameter, 65mm deep			105mm diameter, 68mm deep					
Supply Voltage:	22 to 40Vdc			28 to 40Vdc						22 to 40Vdc		28 to 40Vdc						
I _{max} at V _{min} at Max Vol at Max VAD***:	<1mA			5.4mA	17.1mA	13.2mA		24.9mA		<1mA		5.4mA	17.1mA	13.2mA		24.9mA		
I _{ave} at V _{min} at Max Vol at Max VAD***:				5.0mA	9.1mA	10.8mA		14.6mA				5.0mA	9.1mA	10.8mA		14.6mA		
Power at 28V***:	<28mW			140mW	255mW	300mW		410mW		<28mW		140mW	255mW	300mW		410mW		
Environment Type:	Type A (Indoor Use)																	
Quiescent Current at 40Vdc***	570µA			590µA						630µA								
Max SPL (LAF _{max}) at V _{max} at 1m:	N/A			92dB(A)**	86dB(A)**	92dB(A)**		86dB(A)**		N/A		92dB(A)**	86dB(A)**	92dB(A)**		86dB(A)**		
IP Rating (EN 60529):	IP21C - no special plates/glanding/covers required																	
VAD Category (EN 54-23):	N/A					C-3-9.4	O-C-1.9-4*	C-3-9.4	O-C-1.9-4*	N/A			C-3-9.4	O-C-1.9-4*	C-3-9.4	O-C-1.9-4*		
VAD Efficiency:	N/A					10m²/mA	2m²/mA	10m²/mA	2m²/mA	N/A			10m²/mA	2m²/mA	10m²/mA	2m²/mA		
VAD Temporal Pattern:	N/A					0.5Hz synchronised				N/A			0.5Hz synchronised					
Construction Material:	Polycarbonate																	
Weight:	118g		119g		122g		130g		131g		122g		125g		133g		134g	
Operating Temperature & Humidity:	-10°C to +50°C with max. 95% RH (non-condensing)																	

* O-Class VAD shape is a solid cylinder of 1.9m height and 4m diameter with a red flash

** See DFU4110050 for sounder declaration of performance

*** See C-TEC's 'Loop and Battery Calculator' for accurate figures

Tone List

TONE #	TONE NAME	COUNTRY	TONE	TONE #	TONE NAME	COUNTRY	TONE	TONE #	TONE NAME	COUNTRY	TONE
1*	C-TEC Evacuation Tone	UK	535Hz for 0.5s, 800Hz for 0.5s	11	Swedish Turn Out	Sweden	554Hz for 1s, 440Hz for 1s	21	US Temporal HF(ISO 8201)	USA	3x(2850Hz, 0.5s on, 0.5 off), 1s off
2	Alert	All	825Hz, 1s on, 1s off	12	Swedish tone	Sweden	660Hz 0.5s on, 0.5s off	22	Simulated Bell	USA/General	n/a
3*	C-TEC Fast Warble	UK	800Hz for 0.25s, 645Hz for 0.25s	13	Evacuation Tone (Apollo Comparable)	UK	550Hz for 0.5s, 825Hz for 0.5s	23	Singapore Alert Tone	Singapore	1kHz, 2kHz 0.5s alternating
4	Medium Sweep	UK	800 - 970Hz at 1Hz	14	Alternating (Hochiki/Fulleon Comparable)	UK	925Hz for 0.25s, 626Hz for 0.25s	24	PFEER Alert Tone	All	950Hz, 0.25s on, 0.25Hz off
5*	Dutch Slow Whoop	Netherlands	500-1200Hz for 3.5s, 0.5s off	15*	French Fire Tone	France	554Hz for 100ms/440Hz for 400ms	25	PFEER Alert Tone	All	970Hz, 1s on, 1s off
6*	DIN Tone	Germany	1200Hz – 500Hz for 1s	16	Australian Alert Tone AS1670 (ISO7731)	Australia	420Hz 0.625s on/off	26	ISO 8201	All	970Hz, 0.5s ON/0.5s OFF x 3 / 1.5s OFF
7	Swedish Alternating Tone	Sweden	660Hz, 150ms on, 150ms off	17	Australian Evacuation Tone AS1670	Australia	500 – 1200Hz, 0.5s / 0.5s OFF x 3 / 1.5s OFF	27	ISO 8201	All	2850Hz, 0.5s ON/0.5s OFF x 3 / 1.5s OFF
8	Swedish all clear	Sweden	660Hz Constant On	18	Aus (fast rise sweep)	Australia	3x(500-1200Hz for 0.5s), 0.25s off	28	Misc Tone 1	All	925Hz continuous
9	Swedish Local Warning	Sweden	660Hz, 1.8s on, 1.8s off	19	NZ (slow rise sweep)	New Zealand	500-1200Hz for 3.75s, 0.25s off	29	Misc Tone 2	All	975Hz continuous
10	Swedish Pre-mess	Sweden	660Hz, 6.5s on, 13s off, 20s period	20*	US Temporal LF (ISO 8201)	USA	3x(970Hz, 0.5s on, 0.5 off), 1s off	30	Misc Tone 3	All	2850Hz continuous
* Tones 1, 3, 5, 6, 15 & 20 approved to EN 54-3. See Document No. DFU4110050 for SPL polar diagrams or follow the QR code (page 3)								31	Fast Sweep	N/A	2.5-2.85kHz at 9Hz

Voice Message List

MESSAGE #	TONE	MESSAGE	MESSAGE #	TONE	MESSAGE
0	Off	(Voice sounder turned off)	4	On-Off Tone	All Clear. The emergency has been resolved. It is safe to resume normal activities. All Clear. (repeated 2x)
1*	Fast Two Tone	Attention please. Attention please. Fire has been reported in the building. Please leave immediately by the nearest exit. (repeated 2x)	5	On-Off Tone	This is a test of the fire alarm system. Please do not take any action. (repeated 2x)
2*	On-Off Tone	This is a fire alert. This is a fire alert. Await further instructions. Await further instructions. (repeated 2x)	6	On-Off Tone	The fire alarm test is now complete. (repeated 2x)
3*	Fast Two Tone	In the interests of safety please evacuate the building now. (repeated 3x)	* Certificated to EN 54-3 (synchronised). See Document No. DFU4110050 for SPL Polar Diagrams or follow the QR code (page 3)		