Detectors

Remote detectors for flammable gas

Flamgard

CROWCON
Gas Detection You Can Trust

Flamgard

The Flamgard range of remote detectors for flammable gas have been designed with your problems in mind.

Flamgard is available in five models, each designed to meet the precise specification you need.

All models use a pellistor-based sensor to detect explosive levels of hydrocarbons, organics, hydrogen and ammonia, including aviation fuel and leaded petrol vapours.

Flamgard-EXE the simple low cost solution.

Flamgard-D certified flameproof.

Flamgard-HT for very high temperature applications.

Flamgard-4/20 with industry standard 4-20 mA output.

Flamgard-Plus with local display for one-man, non-intrusive calibration.

Whatever the application, you will find Flamgard is ideally suited.

Rugged and reliable

Most detectors need to function even in the harshest conditions.

Flamgard is manufactured with highly durable GRP, aluminium alloy or cast iron junction boxes and the sensor housing is made of stainless steel.

For particularly dusty or wet environments, Flamgard can be fitted with a weatherproof cover, so the whole unit is rated at IP66 for water and dust ingress.

Low cost of ownership

Flamgard detectors are engineered for ease of maintenance, to keep your running costs down...

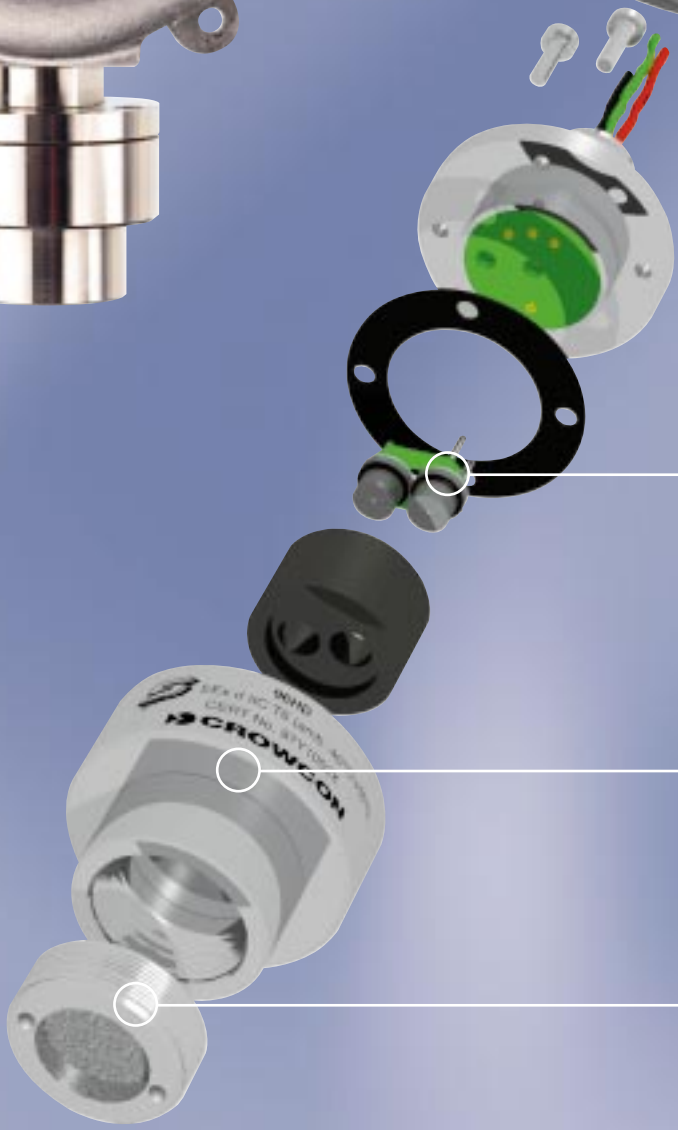
The whole range uses the same sensor housing designed for easy access so pellistors and sinters can be changed in a matter of moments. There is no need to change any part of the housing to replace the pellistors, they simply plug-in. Because the housing is universal (this applies to our toxic range, TXgard too) most of the spares are common.

Poison resistant pellistors

Flamgard utilises poison-resistant pellistors. This means you are assured of the best performance available. Pellistors operate by detecting a chemical reaction between a catalyst and a flammable gas. In ordinary pellistors, this catalyst may become poisoned or inhibited limiting its performance and shortening its life dramatically.

There are many occasions when the detector must operate even when there are very high levels of contaminating agents that would normally render the pellistor useless. Flamgard offers pellistors resistant to halogens, silicon and lead. So even in difficult conditions, you can rely on Flamgard.

Flexible output options



Allen screws are used to assemble the sensor housing

Poison resistant pellistor

Sensor body

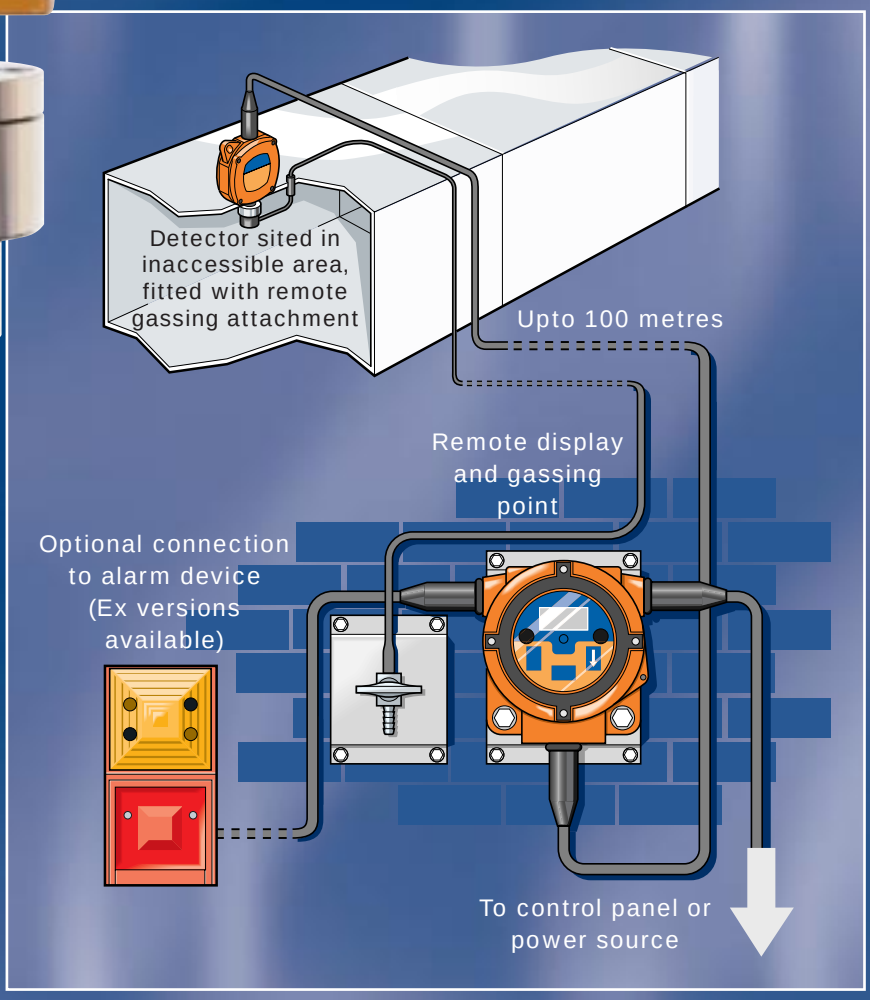
Sinter Assembly

Flamgard-Plus

Flamgard offers options with all the industry standard outputs.

So if your system requires a 3-wire mV bridge, 4-20 mA sink or source or volt-free contacts there will be a Flamgard model you can use.

Remote capability makes Flamgard Plus ideal for use in HVAC duct systems, wet wells, inaccessible spaces or classified areas.



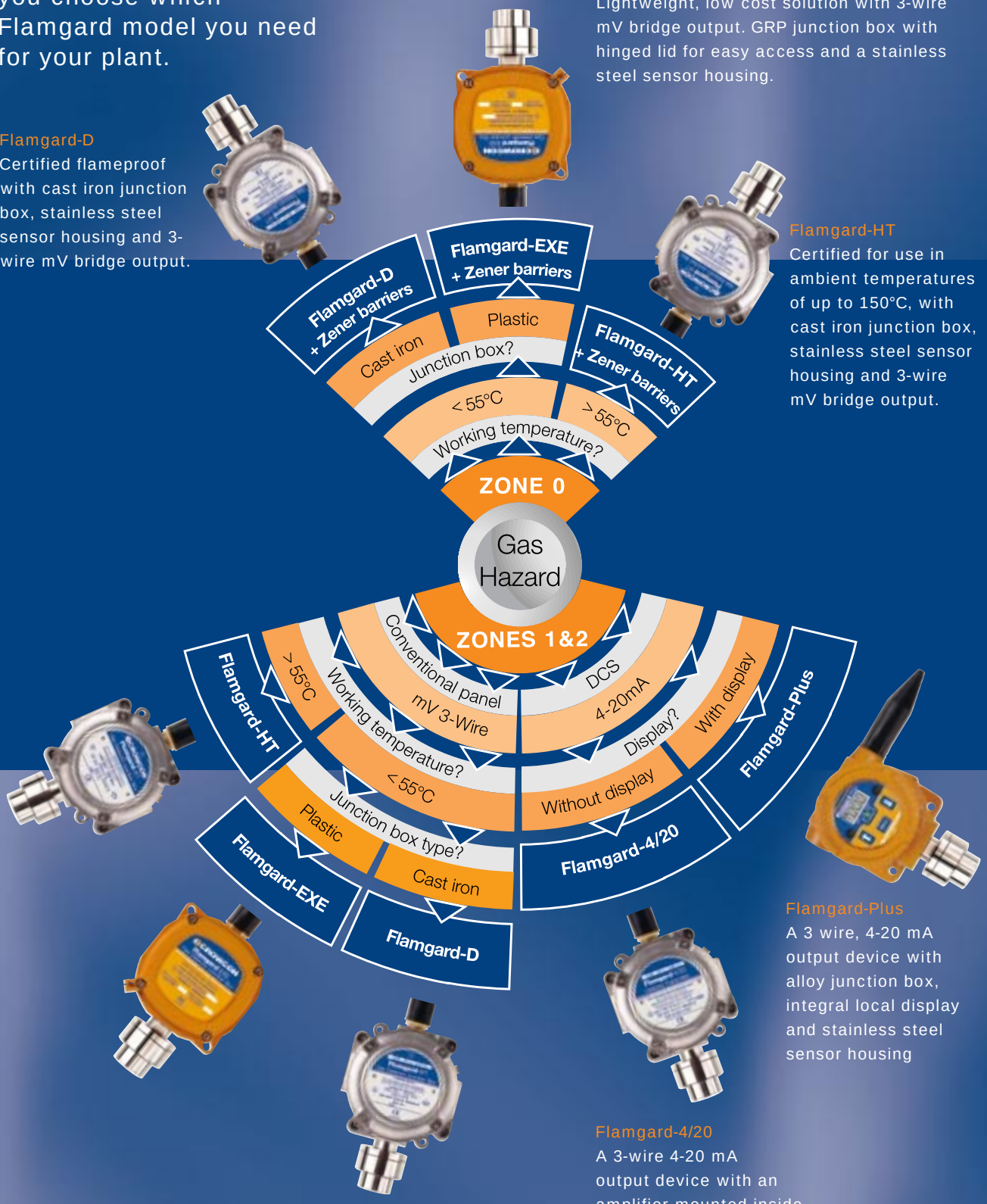
Flamgard-Plus offers one-man, non-intrusive calibration even in remote areas, and built-in alarm and fault relays.

- Local display and magnetic adjustment key; means that one man can calibrate the detector without opening the junction box.
- Optional separate detector and display; ideal for detecting gases in inaccessible areas.
- Remote gassing capability; greatly simplifies zero and span gas calibration of remotely located detectors.
- Built-in alarm and fault relays; can drive local alarm devices.

Which detector?

The Flamgard range comprehensively covers flammable gas detection requirements in many industries throughout the world.

This diagram will help you choose which Flamgard model you need for your plant.



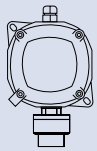
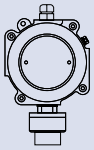
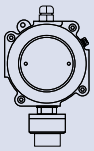
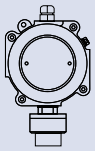
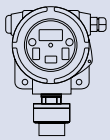
Flamgard-D
Certified flameproof with cast iron junction box, stainless steel sensor housing and 3-wire mV bridge output.

Flamgard-EXE
Lightweight, low cost solution with 3-wire mV bridge output. GRP junction box with hinged lid for easy access and a stainless steel sensor housing.

Flamgard-HT
Certified for use in ambient temperatures of up to 150°C, with cast iron junction box, stainless steel sensor housing and 3-wire mV bridge output.

Flamgard-Plus
A 3 wire, 4-20 mA output device with alloy junction box, integral local display and stainless steel sensor housing

Flamgard-4/20
A 3-wire 4-20 mA output device with an amplifier mounted inside the cast iron junction box for one man calibration and a stainless steel sensor housing.

Flamgard Model	 EXE	 D	 HT	 4/20	 Plus
Assembly					
Operating temperature range	-40 to 55°C	-40 to 55°C	-40 to 150°C	-40 to 55°C	-10 to 55°C
Operating humidity range	0–99% RH non-condensing	0–99% RH non-condensing	0–99% RH non-condensing	0–99% RH non-condensing	0–99% RH non-condensing
Dimensions	185 x 126 x 85 mm	185 x 126 x 85 mm	185 x 126 x 85 mm	185 x 126 x 85 mm	200 x 115 x 115 mm
Weight	1.10 kg	4.53 kg	4.53 kg	4.53 kg	2.2 kg
Display					LCD 3 digit display, LED status indicator
Repeatability	+/- 2% FSD	+/- 2% FSD	+/- 2% FSD	+/- 2% FSD	+/- 2% FSD
Zero drift	+/- 2% FSD, 6 months	+/- 2% FSD, 6 months	+/- 2% FSD, 6 months	+/- 2% FSD, 6 months	+/- 2% FSD, 6 months
Response time	<10 seconds typically	<10 seconds typically	<10 seconds typically	<10 seconds typically	<10 seconds typically
Zones	1 & 2 (0 option)	1 & 2 (0 option)	1 & 2 (0 option)	1 & 2	1 & 2
Electrical output	3 wire mV bridge	3 wire mV bridge Typical signal 1 mV/% LEL	3 wire mV bridge Typical signal 1 mV/% LEL	3 wire, 4-20 mA, (sink/source) Typical signal 1 mV/% LEL 4-20 mA = normal 25 mA = over range (clamp)	3 wire 4-20 mA (sink/source) 2 mA or 4 mA = inhibit 0 mA = fault 2 mA or 4 mA = inhibit 4-20 mA = normal 24 mA = over range (clamp)
Relay outputs					2 x Alarm relays SPNO (SPNC option) 1 x Fault relay SPNC (SPNO option) 1 A @ 30 V dc
Operating voltage (typical)	Head volts 2.0+/- 0.1 V dc	Head volts 2.0+/- 0.1 V dc	Head volts 2.0+/- 0.1 V dc	10–30 V dc	10-30 V dc
Power requirements (typical)	350 mA @ 2 V dc	350 mA @ 2 V dc	350 mA @ 2 V dc	140 mA @10 V dc 50 mA @ 24 V dc	Relay: 210 mA @ max Non-relay: 160 mA @ max
Junction box					
Cable entry	1 x M20	1 x M20	1 x M20	1 x M20	2 x M20, or NPT
Termination	3 x 2.5 mm2 csa	3 x 2.5 mm2 csa	3 x 2.5 mm2 csa	3 x 2.5 mm2 csa	3 x 1.5 mm2 csa
Material	GRP	Cast iron	Cast iron	Cast iron	Marine grade alloy
Ingress protection	IP66	IP66	IP66	IP66	IP66
Approvals	EEx e **II** T6	EEx d **IIC** T6	EEx e **II** T3	EEx d **IIC** T6	EEx d **IIC** T6 Tamb = + 55°C AEx d **IIC** T6
Detector					
Cable entry	1 x M20	1 x M20	1 x M20	1 x M20	1 x M20
Material	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
Ingress protection	IP66 when fitted with weatherproof cap	IP66 when fitted with weatherproof cap	IP66 when fitted with weatherproof cap	IP66 when fitted with weatherproof cap	IP66 when fitted with weatherproof cap
Approvals	EEx d **IIC** T6	EEx d **IIC** T6	EEx d **IIC** T3	EEx d **IIC** T6	EEx d **IIC** T6 Tamb = +55°C AEx d **IIC** T6
Gases detected by Flamgard (others available on request)					
	LEL (% vol) *	UEL (% vol) *	T class	Gas group	Rel. density (air=1)
Acetylene	2.5 (2.3)	100	T2	**IIC**	0.91
Ammonia	15	28 (33.6)	T1	**IIA**	0.59
Butane	1.8 (1.4)	9.0 (9.3)	T2	**IIA**	2.05
Ethane	3.0 (2.5)	15.5	T1	**IIA**	1.04
Ethylene	2.7 (2.3)	36	T2	**IIB**	0.98
Hydrogen	4.0	80 (77)	T1	**IIC**	0.07
LPG	2.0	10.0	T2	**IIA**	>1
Methane	5.0 (4.4)	15 (17.0)	T1	**IIA**	0.55
Pentane	1.5 (1.4)	7.8	T3	**IIA**	2.45
Petrol	1.3 (1.2)	6.0 (8.0)	T1	**IIA**	>1
Propane	2.2 (1.7)	10.0 (10.9)	T1	**IIA**	1.56

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