

IRmax

Infrared Hydrocarbon Gas Detector



IRmax is a compact, low power and highly rugged infrared gas detector, that delivers rapid, fail safe detection of methane, butane, propane and many other hydrocarbon gases and vapours.

Simple to install

Compact size	Requires less space, effort and time to install	
Various installation options	Can be wall mounted, fitted to a 50mm (2 inch) pipe or connected to an auxiliary junction box using a choice of mounting acessories	
Industry standard 4-20mA output	IRmax is compatible with virtually any control system	
Options for HART communications and RS-485 Modbus		

Easy maintenance

Remote non-intrusive calibration	The Remote Display can be mounted up to 30 metres from the IRmax and test gas can be applied without requiring direct access to the detector	
Hand-held Intrinsically Safe (I.S) calibrator	IRmax detectors fitted with an I.S barrier module can be checked and calibrated using an I.S handheld display	
STAY-CLIR optics	Prevents condensation on optical components	

Low cost of ownership

Low power	IRmax only consumes 1W of power, enabling small power supplies and battery back up systems to be used	
Automatic optical obscuration monitoring	Minimal routine maintenance keeps costs to a minimum	
Annual proof-test interval		



Linearisation			Range
Acetone (C ₃ H ₆ O)	Pentane (C ₅ H ₁₂)	Paraxylene (C ₈ H ₁₀)	
Butane (C ₄ H ₁₀)	Petrol vapour	Ethane (C ₂ H ₆)	
Ethanol (C ₂ H ₅ OH)	Propane (C ₃ H ₈)	Ethylene dichloride (EDC)	
Ethylene (C ₂ H ₄)	Propylene (C ₃ H _e)	Cyclohexane (C ₆ H ₁₂)	
Ethyl acetate (C ₄ H ₈ O2)	THF (Tetrahydrofuran) (C ₄ H ₈ O)	Butadiene (C ₄ H ₆)	0-100% LEL
Heptane (C ₇ H ₁₆)	Xylene (C ₈ H ₁₀)	Toluene (C ₇ H ₈)	
Hexane (C ₆ H ₁₄)	Methyl acetate (C ₃ H ₆ O ₂)	Butene (C ₄ H ⁸)	
LPG	Propylacetate (C ₅ H ₁₀ O ₂)	Methyl Ethyl Ketone (MEK)	
Methanol (CH ₃ OH)	Hexene (C ₆ H ₁₂)	Isopropanol (IPA)	
Methane (CH ₄)			0-50, 100% LE

Other ranges & calibrations may be available, please contact Crowcon if your requirement is not shown.

Specification

Size Application of Part of Related Pa						
Megat Manual International Manual International Int	Size	IRmax	158 x 75 x 57mm (6.2 x 2.9 x 2.3ins)			
Manual R Despity Primary 1584 y 48mm (2.8 x 21 x 18mm) 1584 y 1		IRmax with Fixed IR display	230 x 75 x 57mm (9 x 2.9 x 2.3ins)			
Paris		IRmax with IS Barrier Module	261 x 75 x 57mm (2.3 x 2.9 x 2.3ins)			
Price with Teod IR Desity 26g (Ashbo)		Remote IR Display	60 x 54 x 48mm (2.3 x 2.1 x 1.9ins)			
Para with IS Barner Module 24kg (0.3bb)	Weight	IRmax	1.58kg (3.5lbs)			
Render IT Display		IRmax with Fixed IR Display	2kg (4.4lbs)			
Description Dual-beam infrared hydrocurbon gas detector with optional display		IRmax with IS Barrier Module	2.4kg (5.3lbs)			
Description Description Ingress protection IPB68 Connection One M20 or 197 NPT cable gland entry Power 12-30 Vot. < TW Betation output Betation betation in colspan="2">Betation betation in colspan="2">Betati		Remote IR Display	0.2kg (0.4lbs)			
PBG	Enclosure material		316 stainless steel			
Description	Description		Dual-beam infrared hydrocarbon gas detector with optional display			
Power	Ingress protection		IP66			
Februaria Diagram Feb	Connection		One M20 or ½" NPT cable gland entry			
Amount	Power		12-30 Vdc. < 1W			
DmA detector fault signal (at 90% obscuration, configurable)	Electrical output		4-20mA current sink or source			
Red splay IR display Red splay A digit LCD with back-light Function buttons can be de-activated if required Function between the connecting HART communicators (optional function) Red: Gas detected Amber: IRmax fault Green. Healthy Gas level, obscuration level, supply votage, signal current Amber: IRmax fault Green. Healthy Functional perparature And C to +75° C (-40°F to 16°°F) Amospheric +/- 10% Functional perparature Amospheric +/- 10% Functional softly			2mA dirty optics warning (a	at 75% obscuration, configu	rable)	
Red splay			0mA detector fault signal (at 90% obscuration, configurable)		rable)	
Function buttons can be de-activated if required Terminals for connecting HATT communicators (opto—1 function) LED Red: Gas detected Amber: IRmax fault Green: Healthy Display functions Gas level. obscuration level. supply voltage, signal currer Password protected functions Zero, calibrate, ramp output. trim zero mA, trim span mA Operating temperature 40 10 95% RH non-condensing Humidity 0 10 95% RH non-condensing Pressure range Atmospheric +/- 10% Repeatability +/- 2% FSD Zero drift +/- 2% FSD Zero drift Finctional safety Fince F			RS-485 Modbus (optional), HART 7 (optional)			
Terminals for connecting HART communicators (optional function)	IR display		4- digit LCD with back-ligh			
LED Red: Gas detected Amber: IRmax fault Green: Healthy			Function buttons can be de	e-activated if required	ctivated if required	
Display functions Gas level, obscuration level, supply voltage, signal current Zero, calibrate, ramp output, trim zero mA, trim span mA Operating temperature -40°C to +75°C (-40°E to 167°F) Humidity 0 to 95% RH non-condensing Pressure range Atmospheric +/- 10% Repeatability +/- 2% FSD Zero drift **FSD **Total Condition *			Terminals for connecting HART communicators (optional function)		al function)	
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Operating temperature -40°C to +75°C (-40°F to 167°F) Humidity 0 to 95% RH non-condensing Pressure range Atmospheric +/- 10% Repeatability +/- 2% FSD Zero drift +/- 2% FSD per year maximum Rresponse time T90 < 4 seconds		Display functions	Gas level, obscuration level, supply voltage, signal current		ent	
Humidity 0 to 95% RH non-condensing Pressure range Atmospheric +/- 10% Repeatability +/- 2% FSD Zero drift +/- 2% FSD per year maximum Rresponse time T90 < 4 seconds Functional safety IEC61508, EN50402 SIL2 Approvals ATEX & IECEX IRmax without Display £x II 2 GD Ex db IIC T4 Gb (Tamb -40°C < Ta < +75°C) Ex II 2 GD Ex tb IIIC T135°C Db (Tamb -40°C < Ta < +75°C) Ex II 2 GD Ex tb ia IIIC T4 Gb (Tamb -40°C < Ta < +75°C) IRmax with Remote and Handheld Display £x II 2 GD Ex db ia IIC T4 Gb (Tamb -40°C < Ta < +75°C) EMC Compliance EN50270, FCC CFR47 Part 15B, ICES-003 Accuracy +/- 2% of reading		Password protected functions	Zero, calibrate, ramp output, trim zero mA, trim span mA			
Pressure range Atmospheric +/- 10% Repeatability +/- 2% FSD Zero drift +/- 2% FSD per year maximum Rresponse time T90 < 4 seconds	Operating temperature		-40°C to +75°C (-40°F to 167°F)			
Repeatability +/- 2% FSD Zero drift +/- 2% FSD per year maximum Rresponse time T90 < 4 seconds	Humidity		0 to 95% RH non-condensing			
Zero drift +/- 2% FSD per year maximum Rresponse time T90 < 4 seconds	Pressure range		Atmospheric +/- 10%			
Rresponse time T90 < 4 seconds Eunctional safety IEC61508, EN50402 SIL2 Approvals ATEX & IECEX IRmax without Display Ex II 2 GD Ex db IIC T6 Gb (Tamb -40°C ≤ Ta ≤ +50°C) Ex II 2 GD Ex db IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C) Ex II 2 GD Ex db IIC T135°C Db (Tamb -40°C ≤ Ta ≤ +75°C) Ex II 2 GD Ex db ia IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C) Ex II 2 GD Ex db ia IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C) Ex II 2 GD Ex db ia IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C) Ex II 2 GD Ex db ia IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C) EMC Compliance EMC Compliance EN50270, FCC CFR47 Part 15B, ICES-003 +/- 2% of reading	Repeatability		+/- 2% FSD			
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Approvals ATEX & IECEX IRmax without Display Ex II 2 GD Ex db IIC T6 Gb (Tamb -40°C ≤ Ta ≤ +50°C) Ex II 2 GD Ex db IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C) Ex II 2 GD Ex db IIC T135°C Db (Tamb -40°C ≤ Ta ≤ +75°C) IRmax with Remote and Handheld Display Ex II 2 GD Ex db ia IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C) IRmax with Fixed Display EX II 2 GD Ex db ia IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C) IRmax with Fixed Display EX II 2 GD Ex db ia IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C) EMC Compliance EN50270, FCC CFR47 Part 15B, ICES-003 Accuracy +/- 2% of reading Accuracy -/- 2% of reading	Rresponse time		T90 < 4 seconds			
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EMC Compliance EN50270, FCC CFR47 Part 15B, ICES-003 Accuracy +/- 2% of reading						
Accuracy +/- 2% of reading		IRmax with Fixed Display	EX II 2G Ex db ia IIC T4 Gb (Tamb -40°C ≤ Ta ≤ +75°C)			
	EMC Compliance		EN50270, FCC CFR47 Part 15B, ICES-003			
Linearity +/- 3% of full-scale	Accuracy		+/- 2% of reading			
	Linearity		+/- 3% of full-scale			

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