



OLC(T) 100

Fixed Gas Detector



Description

The OLC/OLCT 100 range of fixed detectors is designed to detect combustible, toxic, refrigerant or oxygen gases.

This detector can incorporate a wide range of detection technologies, including catalytic oxidation, infrared, electrochemical, semiconductor and MEMS, to guarantee the best detection performance for different gases, measurement ranges and environmental conditions.

The stainless steel version of the OLCT 100 offers enhanced resistance to corrosive environments (marine applications, purification plants, food processing, etc.).

Available in explosion-proof or intrinsically safe versions, the OLCT 100 is ATEX certified for zone 1 (gas) and zone 21 (dust).

The intrinsically safe OLCT 100 IS is certified for use in Zone 0 (gas) and Zone 20 (dust).

Features

- Detection of combustible, toxic, refrigerant or oxygen gases
- Infrared XP version
- SIL 2 high reliability
- IP 66
- Aluminium or stainless steel junction box

Applications

- Steel mills
- Petrochemical facilities
- Chemical industry
- Pharmaceutical industry
- Food industry
- Refrigeration industry
- Water treatment
- New energies



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Reliability

The OLC(T) 100 is SIL 2 certified by INERIS, according to the EN 50402 standard, which corresponds to IEC/EN 61508 for gas detectors.

Gas	Measure	SIL Capability	λ_{DU}	PFD _{avg}	Test Period
Combustibles ^(a)	Catalytic Oxydation	SIL 2	$0,189 \cdot 10^{-6}$	$8.9 \cdot 10^{-4}$	12 months
Oxygen ^(b)	Electrochemical	SIL 2	$0.76 \cdot 10^{-6}$	$7.6 \cdot 10^{-4}$	6 months

(a) complete unit, according to certificate INERIS No. 93664/2012

(b) software and hardware according to certificate INERIS No. 93664/2012, sensors data according to proven in use

OLCT 100 XP

Explosion-proof version is equipped with a catalytic, MEMS electrochemical or semiconductor sensor, for detection of combustible, toxic gases or oxygen.

OLCT 100 IS

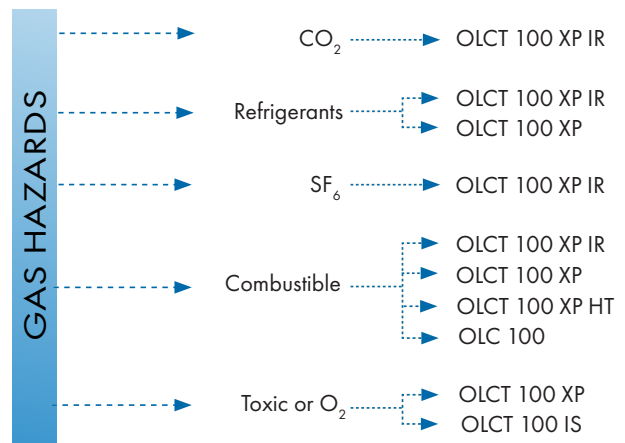
Intrinsically safe version is equipped with an electrochemical sensor for detection of toxic gases or oxygen.

OLCT 100 XP IR

Explosion-proof IR version is equipped with an infrared sensor for detection of CH₄, CO₂ and refrigerants.

OLCT 100 XP HT

High temperature explosion-proof version for detection of combustible gases up to 200°C. High temperature cable included: 5, 10, 15 meter lengths.



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Gas		Measuring Range (ppm)	XP Version	IS Version	Temperature Range (°C)	Humidity (% RH)	Accuracy (ppm)	Average Life Expectancy (month)	Response Time T_{50}/T_{90} (s)	Storage Condition
Combustible Gases	Catalytic	0-100% LEL	CB		-40 to +70	0 - 95	+/- 1% LEL (0 to 70% LEL)	40	6/15 (CH ₄)	(b)
	High Temperature Infrared	0-100% LEL	CB		-20 to +200	20 - 90	+/- 1% LEL (0 to 70% LEL)	40	6/15 (CH ₄)	(b)
		0-100% LEL	IR		-20 to +50	0 - 95	+/- 5% FS (50% - 100% LEL)	60	25/68 (CH ₄)	(e)
	MEMS	0-100% LEL	MEMS		-40 to +60	0 - 95	H ₂ : +/- 5% LEL, CH ₄ : +/- 3% LEL	120	< 22s (CH ₄)	(f)
AsH ₃	Arsine	1.00		EC	-20 to +40	20 - 90	+/- 0.05	18	30/120	(a)
CH ₂ O	Formaldehyde	50.0		EC	-20 to +50	15 - 90	+/- 1.0	36	50/240	(a)
Cl ₂	Chlorine	10.0		EC	-20 to +40	10 - 90	+/- 0.4	24	10/60	(a)
ClO ₂	Chlorine dioxide	3.00		EC	-20 to +40	10 - 90	+/- 0.3	24	20/120	(a)
CO	Carbon monoxide	100		EC	-20 to +50	15 - 90	+/- 3 (range 0-100)	40	15/40	(a)
		300		EC						
		1000		EC						
CO ₂	Carbon dioxide	0-5000		IR	-20 to +40	10 - 90	+/- 3%	48	20/120	(a)
		0-5% vol.		IR						
		0-10% vol.		IR						
		0-100% vol.		IR						
COCl ₂	Phosgene	1.00		EC	-20 to +40	15 - 90	+/- 0.05	12	60/180	(c)
ETO	Ethylene oxide	30.0		EC	-20 to +50	15 - 90	+/- 1.0	36	50/240	(a)
H ₂	Hydrogen	2000	E	EC	-20 to +50	15 - 90	+/- 5%	24	30/50	(a)
H ₂ S	Hydrogen sulfide	30.0		EC	-40 to +50	15 - 90	+/- 1.5 (range 0-30)	36	15/30	(a)
		100		EC						
		1000		EC						
HCl	Hydrochloric chloride	30.0		EC	-20 to +40	15 - 95	+/- 5% relative (10-100)	24	10/50	(a)
		100		EC						
HCN	Hydrogen cyanide	10.0		EC	-40 to +40	15 - 95	+/- 0.3 (range 0-10)	18	20/70	(c)
		30.0		EC						
NH ₃	Ammonia	1000		EC	-40 to +40	15 - 90	+/- 20	24	--	(a)
		100		EC						
		1000		EC						
		5000		EC						
NO	Nitrogen monoxide	100		EC	-20 to +50	15 - 90	+/- 2 (range 0-100)	36	8/15	(a)
		300		EC						
		1000		EC						
NO ₂	Nitrogen dioxide	10.0		EC	-20 to +50	15 - 90	+/- 0.8	24	20/51	(a)
		30.0		EC						
O ₂	Oxygen	0-30% vol		EC	-40 to +50	15 - 90	0.4% Vol (from 15 to 22% O ₂)	28	6-15	(a)
		0-30% vol		EC						
PH ₃	Phosphine	1.00		EC	-20 to +40	20 - 90	+/- 0.05	18	30/120	(a)
SiH ₄	Silane	50.0		EC	-20 to +40	20 - 95	+/- 1.0	18	25/120	(a)
SO ₂	Sulphur dioxide	10.0		EC	-20 to +50	15 - 90	+/- 0.7 (range 0-10)	36	15/45	(a)
		30.0		EC						
		100		EC						
CH ₃ Cl	Methyl chloride	500	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
CH ₂ Cl ₂	Methylene chloride	500	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
FX56		2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Ethanol		500	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Toluene		500	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Isopropanol		500	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
2-butanone (MEK)		500	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Xylene		500	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
SF ₆		2000	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	50/160	(e)
R11	1% vol	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R12	1% vol	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R22	2000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R23	1% vol	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R32	1000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R32	2000	2000	IR		-20 to +50	0 - 95	+/- 40ppm (de 0 à 50% gamme)	60	25/120	(e)
R123	2000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R134A	2000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
	2000ppm	2000	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	40/150	(e)
R143A	2000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R404A	2000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R407C	1000	2000	SC		-20 to +60	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R407F	1000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
	2000	2000	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	40/105	(e)
R408A	1000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R410A	1000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R449A	2000	2000	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	25/120	(e)
R507	2000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R1234YF(HFO)	1000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
	2000	2000	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	25/120	(e)
	0-100% LEL	2000	IR		-20 to +50	0 - 95	+/- 2% LEL (from 0 to 50% LEL)	60	30/115	(e)
R1234ZE	1000	2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R1233ZD	5000	2000	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	25/120	(e)

(a) +4°C to +20°C / 20% to 60% HR
1 bar ± 10% / 6 month maximum

(b) -50°C to +70°C / 20% to 60% HR
1 bar ± 10% / 6 month maximum

(c) +4°C to +20°C / 20% to 60% HR
1 bar ± 10% / 3 month maximum

(d) -20°C to +50°C / 20% to 60% HR
1 bar ± 10% / 6 month maximum

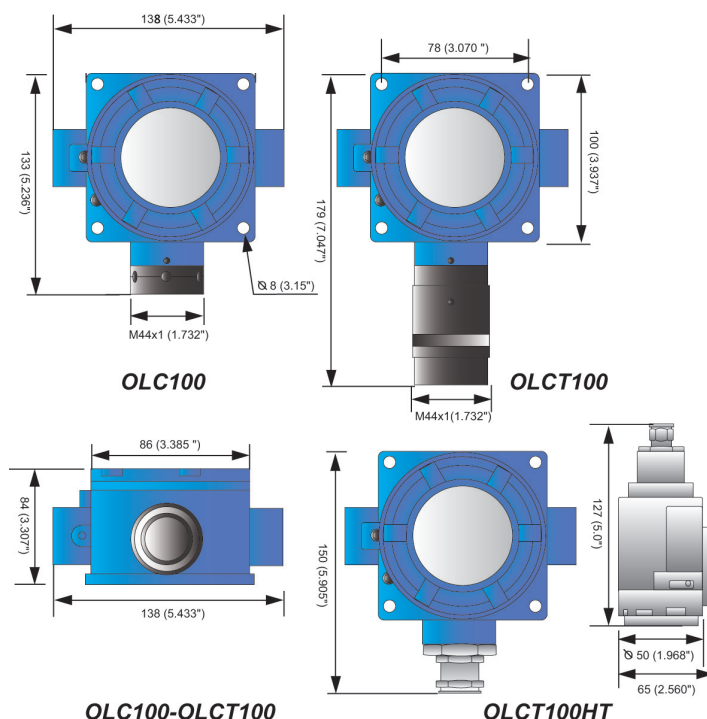
(e) -40°C to +85°C / 0-80% RH
1 bar ± 10% / 6 month maximum

(f) -40°C to +70°C / 20-60% RH
1 bar ± 10% / 6 month maximum

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Fixed Gas Detection

Model	OLC 100	OLCT 100 XP	OLCT 100 XP	OLCT 100 XP IR	OLCT 100 XP	OLCT 100 XP HT	OLCT 100 XP	OLCT 100 IS
Sensor	Catalytic bead	Catalytic bead	MEMS	Infrared	Electrochemical	Catalytic bead	Semi-conductor	Electrochemical
Material	Epoxy-coated aluminium housing (Inox 316L optional), 316 stainless steel sensors							
Dimensions (mm) (inches)	135 x 133 x 84 5.43 x 5.24 x 3.31	135 x 133 x 84 5.43 x 5.24 x 3.31	179x138x84 7.05x5.43x3.31	179 x 138 x 84 7.05 x 5.43 x 3.31	179 x 138 x 84 7.05 x 5.43 x 3.31	150 x 138 x 84 5.91 x 5.43 x 3.31	179 x 138 x 84 7.05 x 5.43 x 3.31	179 x 138 x 84 7.05 x 5.43 x 3.31
Weight (kg)	0.95	1	1.1	1.1	1.1	1.8	1.1	1.1
Ingress Protection	IP66							
Cable Entry	M20 or ¾ NPT							
Supply Voltage	only by OLDHAM Controller	15.5 to 32 VDC	15.5 to 32 VDC	13.5 to 32 VDC	11 to 32 VDC	15.5 to 32 VDC	15.5 to 32 VDC	15.5 to 32 VDC
Average Consumption	340 mA	110 mA	30 mA	80 mA	23.5 mA	110 mA	100 mA	23.5 mA
Pressure	atmospheric ± 10%							
Output signal	Connection to OLDHAM Controllers only	Analogic 4-20mA	Analogic 4-20mA	Analogic 4-20mA	Analogic 4-20mA	Analogic 4-20mA	Analogic 4-20mA	Analogic 4-20mA
Approvals	Compliant with European directive ATEX 2014/34/EU and IECEx OLC 100, OLCT 100 XP, OLCT 100 XP IR : ATEX II 2 GD / Ex d IIC T6 Gb / Ex tb IIIC T85°C Db IP66 OLCT 100 XP HT: ATEX II 2 GD / Ex d IIC T6 Gb / Ex tb IIIC T85°C Db IP66 (for the transmitter to be installed in a cold zone), ATEX II 2 G / Ex d IIC T4..T2 Gb (for the sensor to be installed in the hot zone) OLCT 100 IS Aluminium : ATEX II 2 GD / Ex ia IIC T4 Gb / Ex ia IIIC T135°C Db IP66 OLCT 100 IS Stainless Steel : ATEX II 1 GD / Ex ia IIC T4 Ga / Ex ia IIIC T135°C Da IP66 SIL 2 according to EN 50402 / EN 61508 for versions OLCT100 XP & IS (sensor type dependant) Metrological performances according to EN/IEC 60079-29-1 for catalytic versions Electromagnetic compatibility according to EN 50270							
Cable	3 active wires, shielded cable	3 active wires, shielded cable	3 active wires, shielded cable	3 active wires, shielded cable	2 active wires, shielded cable	3 active wires, shielded cable	3 active wires, shielded cable	2 active wires, shielded cable



Ordering Information

The reference is broken down as follows:

OLCT 100-**XP**-**001**-**1**

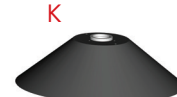
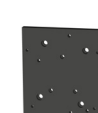
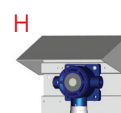
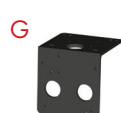
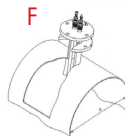
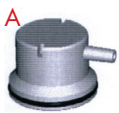
OLCT 100 XP Transmitter, 0-100% LEL CH₄, ATEX, M20 cable entry

Range:	Type:	Gas:	Approval and entry of cable range:
OLC 100 OLCT 100 OLCT 100 HT5* OLCT 100 HT10* OLCT 100 HT15*	XP IS XPIR	Codified from 1 to 999, includes gas and detection range MS1 MS2	1 - ATEX and M20 cable entry - Aluminium 3 - ATEX and 3/4 NPT cable entry - Aluminium 5 - ATEX and M20 cable entry - Stainless steel 7 - ATEX and 3/4 NPT cable entry - Stainless steel

* Sensor movable up to 5, 10, or 15 meters using a high temperature cable

Accessories

- A** Calibration cup (6331141)
allows introduction of calibration gas on the sensor
- B** Bypass adapter (6327910)
allows measurement of samples
- C** Splash guard system (6329004)
protects the detector from liquid projections
- D** Remote gas introduction head (6327911)
allows introduction of gas without opening the detector
- E** Removable protective filter (6335975)
protects the sensor against projections and dust
- F** Duct measurement kit (6793322)
allows gas monitoring in a duct
- G** Mounting bracket (6322420)
allows the mounting of the detector to the ceiling
- H** Protective cover (6123716)
protects the detector against bad weather conditions or against direct sun radiations
- I** Adapter plate (6793718)
allows the replacement of another OLDHAM detector without drilling
- J** Wall mounted collecting cone (6331169)
for use with lighter-than-air gases
- K** Ceiling mount collecting cone (6331168)
for use with lighter-than-air gases



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