

# OLC(T) 100

Fixed Gas Detector

- Detection of explosive gases, toxic gases or oxygen
- Infrared XP version
- SIL 2 high reliability
- IP 66



## Certifications



CE ATEX



The Fixed Gas Detection People

**OLDHAM**  
An Industrial Scientific Company

[www.oldhamgas.com](http://www.oldhamgas.com)

# OLC(T) 100



The OLC/OLCT 100 range of fixed detectors has been designed for detection of explosive gases, toxic gases or oxygen.

At Oldham, our products are always application-driven, solution-oriented. Options include

- OLCT 100 transmitter with 4-20 mA output
- OLC 100 detector with a Wheatstone bridge output for detection of explosive gases.

Available in explosion-proof or intrinsically safe versions, the OLC(T) 100 is suitable for detection of all gases in ATEX zones.

## APPLICATIONS

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



## IR SENSOR

The infrared sensor provides detection of explosive gases in more severe environmental conditions, where the presence of poisons could harm the use of a catalytic cell.

Our state of the art IR sensor with 3-year warranty offers outstanding reliability and long sensor life.



## OLCT 100 XP

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

## OLCT 100 IS

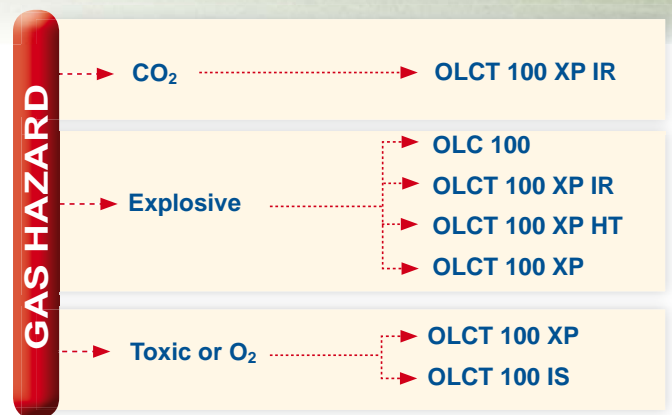
Intrinsically safe version is equipped with an electrochemical sensor for detection of toxic gases or oxygen.

## OLCT 100 XP IR

Explosion-proof IR version is equipped with an infrared sensor for detection of explosive gases or CO<sub>2</sub>.

## OLCT 100 XP HT

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



## 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.

With a probability of failure on demand of  $0.13 \cdot 10^{-6}$  (corresponding to a failure rate of 1 out of 2857 solicitations), the SIL 3 level of reliability would have been reached, if it was recognized by the EN 50402 standard, which just considers SIL 1 and SIL 2 levels.



Gas	Mesure	SIL Capability	$\lambda_{DU}$	Reduction Risk Factor	Test Period
Combustibles	Catalytic (C1000)	SIL 2	$2.19 \cdot 10^{-6}$	418	3 months
<b>Combustibles, CO<sub>2</sub></b>	<b>Infrared</b>	<b>SIL 2</b>	<b><math>0.13 \cdot 10^{-6}</math></b>	<b>2857</b>	<b>12 months</b>
O <sub>2</sub>	Electrochemical	SIL 2	$0.74 \cdot 10^{-6}$	1234	3 months
CO	Electrochemical	SIL 2	$1.09 \cdot 10^{-6}$	840	3 months
H <sub>2</sub> S	Electrochemical	SIL 2	$2.98 \cdot 10^{-6}$	306	3 months
NH <sub>3</sub>	Electrochemical	SIL 2	$4.48 \cdot 10^{-6}$	203	3 months

# SENSORS TECHNICAL SPECIFICATIONS

Gas		Measuring Range (ppm)	XP Version	IS Version	Temperature Range (°C)	% RH	Accuracy (ppm)	Average Life Expectancy (month)	Response Time T <sub>50</sub> /T <sub>90</sub> (s)	Storage Condition
Explosive Gases	Infrared	0-100% LEL	■		-25 to +55	0 - 95	+/- 5%	48	11/30 (CH <sub>4</sub> )	(a)
	Catalytic	0-100% LEL	■		-40 to +70	0 - 95	+/- 1% LEL (from 0 to 70% LEL)	40	6/15 (CH <sub>4</sub> )	(b)
	Catalytic High Temperature	0-100% LEL	■		-20 to +200	0 - 95	+/- 1% LEL (from 0 to 70% LEL)	40	6/15 (CH <sub>4</sub> )	(b)
AsH <sub>3</sub>	Arsine	1.00	■	■	-20 to +40	20 - 90	+/- 0.05	18	30/120	(a)
Cl <sub>2</sub>	Chlorine	10.0		■	-20 to +40	10 - 90	+/- 0.4	24	10/60	(a)
ClO <sub>2</sub>	Chlorine dioxide	3.00		■	-20 to +40	10 - 90	+/- 0.3	24	20/120	(a)
CO	Carbon monoxide	100	■	■	-20 to +50	15 - 90	+/- 3 (range 0-100)	40	15/40	(a)
		300	■	■						
		1000	■	■						
CO <sub>2</sub>	Carbon dioxide	0-5% vol 0-10% vol		■	-20 to +40	10 - 90	+/- 3	24	20/120	(a)
COCl <sub>2</sub>	Phosgene	1.00		■	-20 to +40	15 - 90	+/- 0.05	12	60/180	(c)
ETO	Ethylene oxide	30.0		■	-20 to +50	15 - 90	+/- 1.0	36	50/240	(a)
H <sub>2</sub>	Hydrogen	2000	■	■	-20 to +50	15 - 90	+/- 5%	24	30/50	(a)
H <sub>2</sub> S	Hydrogen sulfide	30.0	■	■	-40 to +50	15 - 90	+/- 1.5 (range 0-30)	36	15/30	(a)
		100	■	■						
		1000	■	■						
HCl	Hydrochloric chloride	30.0 / 100		■	-20 to +40	15 - 95	+/- 0.4 (range 0-10)	24	30/150	(a)
HCN	Hydrogen cyanide	10.0 30.0		■	-40 to +40	15 - 95	+/- 0.3 (range 0-10)	18	30/120	(c)
NH <sub>3</sub>	Ammonia	100	■	■	-20 to +40	15 - 90	+/- 5 +/- 20 +/- 150 or 10%	24	25/70 20/60 60/180	(a)
		1000	■	■						
		5000	■	■						
NO	Nitrogen monoxide	100	■	■	-20 to +50	15 - 90	+/- 2 (range 0-100)	36	10/30	(a)
		300	■	■						
		1000	■	■						
NO <sub>2</sub>	Nitrogen dioxide	10.0		■	-20 to +50	15 - 90	+/- 0.8	24	30/60	(a)
		30.0		■						
O <sub>2</sub>	Oxygen	0-30% vol	■	■	-20 to +50	15 - 90	0.4% Vol (from 15 to 22% O <sub>2</sub> )	28	6-15	(a)
PH <sub>3</sub>	Phosphine	1.00		■	-20 to +40	20 - 90	+/- 0.05	18	30/120	(a)
SiH <sub>4</sub>	Silane	50.0		■	-20 to +40	20 - 95	+/- 1.0	18	25/120	(a)
SO <sub>2</sub>	Sulphur dioxide	10.0		■	-20 to +50	15 - 90	+/- 0.7 (range 0-10)	36	15/45	(a)
		30.0		■						
		100		■						
CH <sub>3</sub> Cl	Methyl chloride	500	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
CH <sub>2</sub> Cl <sub>2</sub>	Methylene chloride	500	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R12		1% vol	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R22		2000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R123		2000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
FX56		2000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R134 a		2000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R142 b		2000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R11		1% vol	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R23		1% vol	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R141 b		2000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R143 a		2000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R404 a		2000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R507		2000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R410 a		1000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R32		1000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R227		1% vol	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R407 c		1000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Freon R408 a		1000	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Ethanol		500	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Toluene		500	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Isopropanol		500	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
2-butanone (MEK)		500	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
Xylene		500	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)

(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

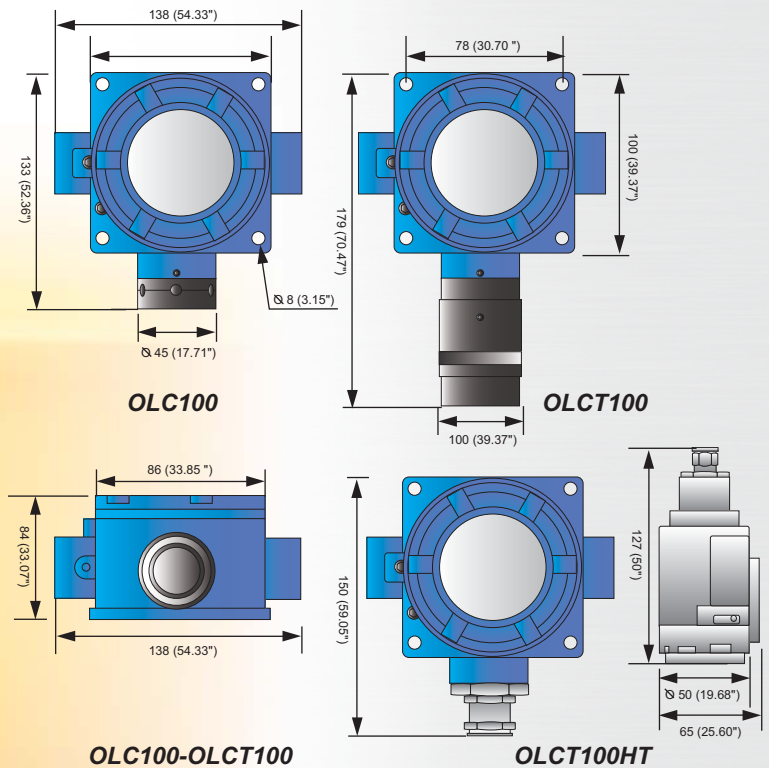
(c) +4°C to +20°C  
20 % to 60 % HR  
1 bar ± 10 %  
3 month maximum

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



# TECHNICAL SPECIFICATIONS

Model	OLC 100	OLCT 100 XP	OLCT 100 XP IR	OLCT 100 XP	OLCT 100 XP HT	OLCT 100 XP	OLCT 100 IS
<b>Sensor</b>	Catalytic bead	Catalytic bead	Infrared	Electrochemical	Catalytic bead	Semi-conductor	Electrochemical
<b>Material</b>	Epoxy-coated aluminium housing (Inox 316L optional). 316 stainless steel sensors						
<b>Dimensions (mm) (inches)</b>	138 x 133 x 84 5.43 x 5.24 x 3.31"	138 x 133 x 84 5.43 x 5.24 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"	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"
<b>Weight (kg)</b>	0.95	1	1.1	1.1	1.8	1.1	1.1
<b>Ingress Protection</b>	IP66						
<b>Cable Entry</b>	M20 or ¼ NPT						
<b>Supply Voltage</b>	only by OLDHAM Controller	15.5 to 32 VDC	13.5 to 32 VDC	10 to 32 VDC	15.5 to 32 VDC	15.5 to 32 VDC	15.5 to 32 VDC
<b>Average Consumption</b>	340 mA	110 mA	60 mA	23.5 mA	100 mA	100 mA	23.5 mA
<b>Pressure</b>	atmospheric ± 10%						
<b>Output signal</b>	Usual source encoded from 0 to 23 mA (not isolated) - linear 4 to 20 mA output, reserved for measurement - 0 mA : electronic fault or no power supply - < 1 mA: fault - 2 mA: initialization mode - > 23 mA: out of range						
<b>Approvals</b>	Compliant with European directive ATEX 94/9/CE and with IECEx schedule for explosion-proof detectors. OLC 100, OLCT 100 XP, OLCT 100 XP IR : ATEX II 2 GD / Ex d IIC T6 Gb / Ex t IIIC T85°C Db IP66 OLCT 100 IS : ATEX II 2 GD / Ex ia IIC T4 / Ex ia D 21 T135°C IP66 SIL 2 according to EN 50402 / EN 61508 for catalytic and infrared versions, O <sub>2</sub> , CO, NH <sub>3</sub> and H <sub>2</sub> S SIL 2 according to EN 50402 / EN 61508 Metrological performances according to EN/IEC 60079-29-1 Electromagnetic compatibility according to EN 50270						
<b>Cable</b>	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



The reference is broken down as follows:

# OLCT100-**XPIR**-001-1

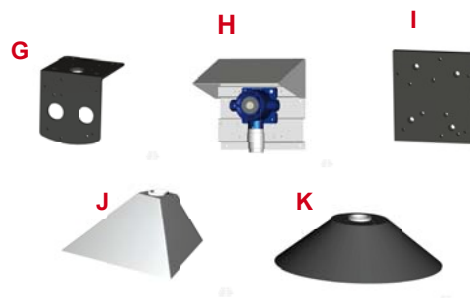
OLCT 100 XP IR Transmitter, 0-100% LEL CH<sub>4</sub>, ATEX, M20 cable entry

<b>Range:</b>	<b>Type:</b>	<b>Gas:</b>	<b>Approval and entry of cable range:</b>
OLC100 OLCT100 OLCT100 HT5* OLCT100 HT10* OLCT100 HT15*	XP IS XPIR	Codified from 1 to 999, includes gas and detection range	1 - ATEX and M20 cable entry 3 - ATEX and 3/4 NPT cable entry CSA approvals are pending.

\*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 re-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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