OLC(T) 100

Fixed Gas Detector

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

Electronics 3 years Warranty

Certifications

ISO 9001 · Ex · INERIS · Ex NEPSI · CE ATEX · IECEx · SIL INERIS

The Fixed Gas Detection People

OLDHAM
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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_2.

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 0.53 10^{-3} (corresponding to a failure rate of 1 out of 1887 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	λ_{DU}	Reduction Risk Factor	Test Period
Combustibles	Catalytic (C1000)	SIL 2	2.19 10^{-6}	418	3 months
Combustibles, CO_2	**Infrared**	**SIL 2**	**0.13 10^{-6}**	**1887**	**12 months**
O_2	Electrochemical	SIL 2	0.74 10^{-6}	1234	3 months
CO	Electrochemical	SIL 2	1.09 10^{-6}	840	3 months
H_2S	Electrochemical	SIL 2	2.98 10^{-6}	306	3 months
NH_3	Electrochemical	SIL 2	4.48 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_{50}/T_{90} (s)	Storage Condition
Explosive Gases	Infrared	0-100% LEL	■		-25 to +55	0 - 95	+/- 5%	48	11/30 (CH_4)	(a)
	Catalytic	0-100% LEL	■		-40 to +70	0 - 95	+/- 1% LEL (from 0 to 70% LEL)	40	6/15 (CH_4)	(b)
	Catalytic High Temperature	0-100% LEL	■		-20 to +200	0 - 95	+/- 1% LEL (from 0 to 70% LEL)	40	6/15 (CH_4)	(b)
AsH_3	Arsine	1.00		■	-20 to +40	20 - 90	+/- 0.05	18	30/120	(a)
Cl_2	Chlorine	10.0		■	-20 to +40	10 - 90	+/- 0.4	24	10/60	(a)
ClO_2	Chlorine dioxide	3.00		■	-20 to +40	10 - 90	+/- 0.3	24	20/120	(a)
CO	Carbon monoxide	100 300 1000	■ ■ ■	■ ■ ■	-20 to +50	15 - 90	+/- 3 (range 0-100)	40	15/40	(a)
CO_2	Carbon dioxide	0-5% vol 0-10% vol		■	-20 to+40	10 - 90	+/- 3	24	20/120	(a)
$COCl_2$	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_2	Hydrogen	2000	■	■	-20 to +50	15 - 90	+/- 5%	24	30/50	(a)
H_2S	Hydrogen sulfide	30.0 100 1000	■ ■ ■	■ ■ ■	-40 to +50	15 - 90	+/- 1.5 (range 0-30)	36	15/30	(a)
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 à +40	15 - 95	+/- 0.3 (range 0-10)	18	30/120	(c)
NH_3	Ammonia	100 1000 5000	■ ■ ■	■ ■ ■	-20 to +40	15 - 90	+/- 5 +/- 20 +/- 150 or 10%	24	25/70 20/60 60/180	(a)
NO	Nitrogen monoxide	100 300 1000	■ ■ ■	■ ■ ■	-20 to +50	15 - 90	+/- 2 (range 0-100)	36	10/30	(a)
NO_2	Nitrogen dioxide	10.0 30.0		■ ■	-20 to +50	15 - 90	+/- 0.8	24	30/60	(a)
O_2	Oxygen	0-30% vol	■	■	-20 to +50	15 - 90	0.4% Vol (from 15 to 22% O_2)	28	6-15	(a)
PH_3	Phosphine	1.00		■	-20 to +40	20 - 90	+/- 0.05	18	30/120	(a)
SiH_4	Silane	50.0		■	-20 to +40	20 - 95	+/- 1.0	18	25/120	(a)
SO_2	Sulphur dioxide	10.0 30.0 100		■ ■ ■	-20 to +50	15 - 90	+/- 0.7 (range 0-10)	36	15/45	(a)
CH_3Cl	Methyl chloride	500	■		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
CH_2Cl_2	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

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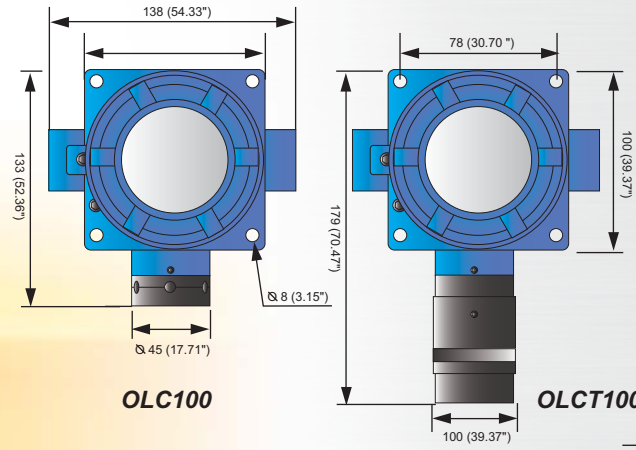
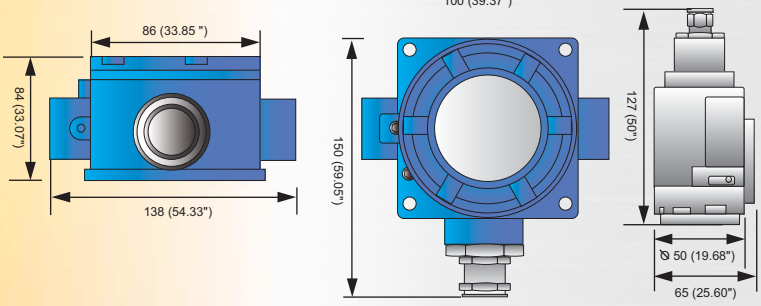
TECHNICAL SPECIFICATIONS

Model	OLC 100	OLCT 100 XP	OLCT 100 XP IR	OLCT 100 XP	OLCT 100 XP HT	OLCT 100 XP	OLCT 100 IS
Sensor	Catalytic bead	Catalytic bead	Infrared	Electrochemical	Catalytic bead	Semi-conductor	Electrochemical
Material	Epoxy-coated aluminium housing (Inox 316L optional). 316 stainless steel sensors						
Dimensions (mm) (inches)	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"
Weight (kg)	0.95	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	13.5 to 32 VDC	10 to 32 VDC	15.5 to 32 VDC	15.5 to 32 VDC	15.5 to 32 VDC
Average Consumption	340 mA	110 mA	60 mA	23.5 mA	100 mA	100 mA	23.5 mA
Pressure	atmospheric ± 10%						
Output signal	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						
Approvals	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_2, CO, NH_3 and H_2S SIL 2 according to EN 50402 / EN 61508 Metrological performances according to EN/IEC 60079-29-1 Electromagnetic compatibility according to EN 50270						
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



OLC100 *OLCT100*



OLC100-OLCT100 *OLCT100HT*

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ORDERING INFORMATION

The reference is broken down as follows:

OLCT100-XPIR-001-1

OLCT 100 XP IR Transmitter, 0-100% LEL CH_4, ATEX, M20 cable entry

Range:	Type:	Gas:	Approval and entry of cable range:
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

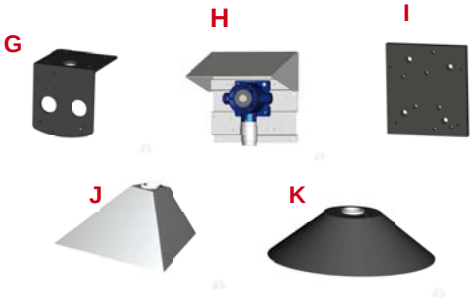
G Mounting bracket (6322420)
allows the mounting of the detector to the ceiling

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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REV 0710

OLDHAM
An Industrial Scientific Company

www.oldhamgas.com

AMERICAS
Phone: +1-412-788-4353
Fax: +1-412-788-8353
info@indsci.com

ASIA PACIFIC
Phone: +65-6561-7377
Fax: +65-6561-7787
info@ap.indsci.com

EUROPE
Phone: +33-3-21-60-80-80
Fax: +33-3-21-60-80-00
info@oldhamgas.com