Thermostick
RIVELAZIONE INCENDI CON TECNOLOGIE NON CONVENZIONALI

TELEDYNE OLDHAM SIMTRONICS
Everywhereyoulook™

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

20037 PADERNO DUGNANO (MI)-ITALY
Via Sentirone, 10 (loc. Incirano)

Tel. +39 02 910.80.135 / +39 02 910.82.755
info@thermostick.com www.thermostick.com

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OLC(T) 100

Fixed Gas Detection

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	$0,189.10^{-6}$	$8.9\ 10^{-4}$	12 months
Oxygen [b]	Electrochemical	SIL 2	$0.76\ 10^{-6}$	$7.6\ 10^{-4}$	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

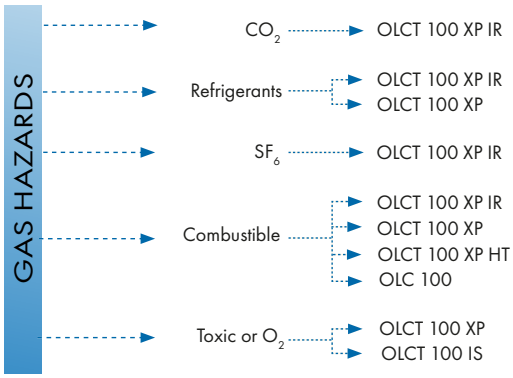
Intrinsically safe version is equipped with an electrochemical sensor for detection of toxic gases or oxygen.

OLCT 100 XP IR

Explosion-proof IR version is equipped with an infrared sensor for detection of CH_4, CO_2 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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Fixed Gas Detection

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	0-100% LEL	CB		-20 to +200	20 - 90	+/- 1% LEL (0 to 70% LEL)	40	6/15 (CH_4)	(b)
	Infrared	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_2O	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	100 300 1000	EC EC EC	EC EC EC	-20 to +50	15 - 90	+/- 3 (range 0-100)	40	15/40	(a)
CO_2	Carbon dioxide	0-5000 0-5% vol. 0-10% vol. 0-100% vol.	IR IR IR IR		-20 to +40	10 - 90	+/- 3%	48	20/120	(a)
$COCl_2$	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_2S	Hydrogen sulfide	30.0 100 1000	EC EC EC	EC EC EC	-40 to +50	15 - 90	+/- 1.5 (range 0-30)	36	15/30	(a)
HCl	Hydrochloric chloride	30.0 100		EC EC	-20 to +40	15 - 95	+/-5% relative (10-100)	24	10/50	(a)
HCN	Hydrogen cyanide	10.0 30.0		EC EC	-40 to +40	15 - 95	+/- 0.3 (range 0-10)	18	20/70	(c)
NH_3	Ammonia	1000	EC	EC	-40 to +40	15 - 90	+/- 20	24	--	(a)
		100 1000 5000	EC EC EC	EC EC EC	-20 to +40	15 - 90	+/- 5 +/- 20 +/- 150 or 10%	24	16/82 13/58 13/39	
NO	Nitrogen monoxide	100 300 1000	EC EC EC	EC EC EC	-20 to +50	15 - 90	+/- 2 (range 0-100)	36	8/15	(a)
NO_2	Nitrogen dioxide	10.0 30.0		EC EC	-20 to +50	15 - 90	+/- 0.8	24	20/51	(a)
O_2	Oxygen	0-30% vol	EC	EC	-20 to +50	15 - 90	0.4% Vol (from 15 to 22% O_2)	28	6-15	(a)
		0-30% vol	EC		-40 to +50	10 - 90	+/-1,5%	60	15/25	(a)
PH_3	Phosphine	1.00		EC	-20 to +40	20 - 90	+/- 0.05	18	30/120	
SiH_4	Silane	50.0		EC	-20 to +40	20 - 95	+/- 1.0	18	25/120	(a)
SO_2	Sulphur dioxide	10.0 30.0 100		EC EC EC	-20 to +50	15 - 90	+/- 0.7 (range 0-10)	36	15/45	(a)
CH_3Cl	Methyl chloride	500	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
CH_2Cl_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)
SF6		2000	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	50/160	(e)
R11		1% vol	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R12		1% vol	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R22		2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R23		1% vol	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R32		1000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R32		2000	IR		-20 to +50	0 - 95	+/- 40ppm (de 0 à 50% gamme)	60	25/120	(e)
R123		2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R134A		2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
		2000ppm	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	40/150	(e)
R143A		2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R404A		2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R407C		1000	SC		-20 to +60	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R407F		1000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
		2000	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	40/105	(e)
R408A		1000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R410A		1000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R449A		2000	IR		-20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	25/120	(e)
R507		2000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R1234YF(HFO)		1000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
		2000	IR		- 20 to +50	0 - 95	+/- 40ppm (from 0 to 50% range)	60	25/120	(e)
		0-100% LEL	IR		- 20 to +50	0 - 95	+/- 2% LEL (from 0 to 50% LEL)	60	30/115	(e)
R1234ZE		1000	SC		-20 to +55	20 - 95	+/- 15% (from 20 to 70% FS)	40	25/50	(d)
R1233ZD		5000	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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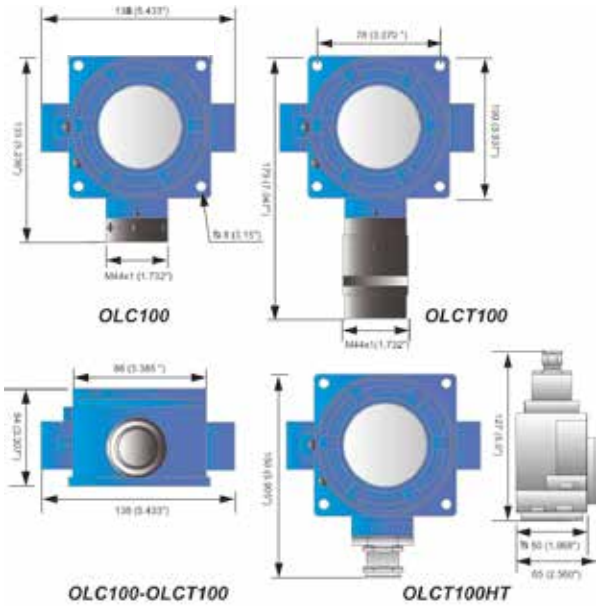
Fixed Gas Detection

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 7.05x5.43x5.31	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 Aluminum : 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



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OLC(T) 100

Fixed Gas Detection

Ordering Information

The reference is broken down as follows:

OLCT 100-XP-001-1

OLCT 100 XP Transmitter, 0-100% LEL CH_4, 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

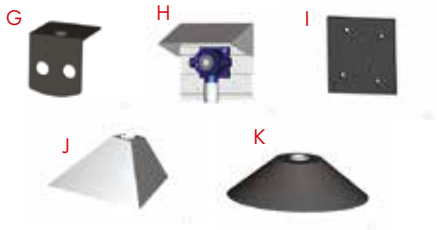
G Mounting bracket (6322420)
allows the mounting of the detector to the ceiling

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 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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GAS AND FLAME DETECTION
Everywhereyoulook™

AMERICAS
14880 Skinner Rd
Cypress, TX 77429
USA
Tel.: +1 713-559-9200

ASIA PACIFIC
Room 04, 9th Floor
275 Ruiping Road
Xuhui District, Shanghai, China
TGFD_APAC@teledyne.com

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gasandflamedetection@teledyne.com

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