Transmitter-sensors For combustible and toxic gases and oxygen

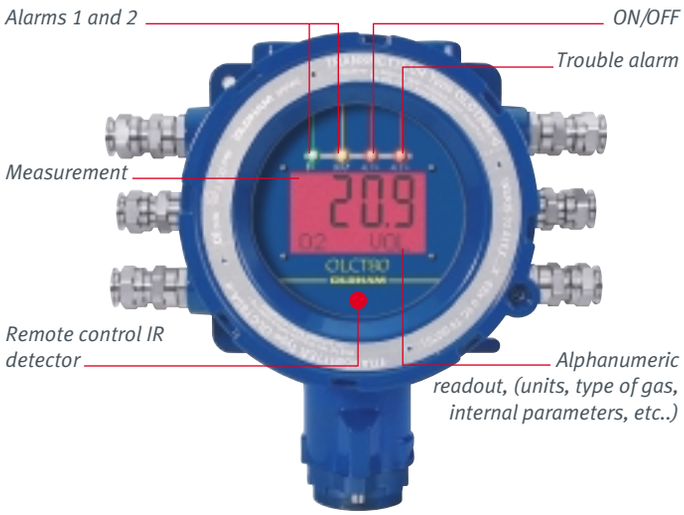
Series 80

- *The LOWEST electrical consumption on the market*
- *Consequent reduction in wiring cost*
- *Non-intrusive dialogue via intrinsically safe infrared remote control*
- *Integrated relays*
- *High level of measurement protection*
- *Direct link, 4-20 mA, loop and isolated sensor mode*

CE ATEX

OLDHAM Group

Gas detection / stack gas monitoring



The best in gas detection

Developed in compliance with the strictest specifications, Series 80 transmitter-sensors are the reference in the gas detection market.

Designed to meet the material, practical and financial needs of the largest industrial companies, the OLCT 80 is a major achievement in terms of technical performance and cost optimisation.

Unique, indisputable advantages providing the response you need!

Material advantages :

Pre-calibrated sensor blocks for detection of :

- combustible gases : LEL, catalytic and IR
- toxic gases : depending on the type of block used
- oxygen

Series 80 detectors accept all OLDHAM sensor blocks : series 20, MOS block, InfraRed block and explosive gas block (low consumption). The sensor blocks support remote control.

Sensor blocks are precalibrated.

Alarms :

- 2 integrated gas alarms with relays
- 1 trouble alarm with relay

Inputs :

Series 80 sensors have up to 9 glands dedicated to cable's wiring.

The minimum configuration includes :

- 1 electrical input dedicated to an Oldham series sensor.
- two 4-20 mA or binary inputs. This configuration allows any other sensor from the network to be picked up (e.g. temperature sensor, thrust button, emergency stop, flame detector, smoke detector).

Outputs :

- 4/20 mA with smart signal processing:
- analogue signal: 0... 4-20 mA...25 mA
- data signals between 0 and 4 - 20 and 25mA.

The transmitted signal, between 0 and 3,2 mA and above 20 mA, can be processed to interpret and identify a wide range of trouble parameters such as : line faults, sensor faults, embedded electronics faults, ambiguity resolution, inhibition of calibration, maintenance call (initial drift or drift over time).

- RS 485 (1200 bauds, 38kb Modbus ASCII for MX 62). The RS 485 link gives access to :
  - the measurement
  - status and default
  - internal relays management

Relays :
The relays are 2A / 250 VAC type with potential free SPDT contacts.
Two types of relay :
- 2 gas alarm relays or supplementary inputs
- 1 fault relays

The relays are actuated either :
- directly by the sensor electronics or supplementary inputs
- from the MX62 central unit or the control system to which the sensor is connected.

The relays can be :
- in positive safety, or not
- triggered on increasing or decreasing alarms
- manually* or automatically acknowledged.

** By remote control, by pressing an external pushbutton connected to the dedicated binary input, by acknowledging on the MX 62 unit or the control system to which the sensor is connected.*

Technical advantages

Stand-alone central unit :
For relay control, Series 80 can operate as a stand-alone unit : an indisputable advantage in a classified explosion risk zone.

Flexibility of connection modes :
Series 80 sensors can be connected either :
- in loop (opto-isolated - up to 16 sensors)
- in 4-20 mA
- under direct power and operate as a central unit.

Operation traceability :
The operator can make a local check of records of the most recent time-date stamped events.

Communication :
Remote dialogue with the sensor using IR remote control.

Measurement power supply redundancy :
Independent ports allow a redundant connection to the measurement unit.

Extremely low energy requirements :
The leading edge technology used in the Series 80 transmitter makes it very energy efficient.
This major advantage means that more sensors can be connected, with smaller wire cross-sections and over greater distances.

Assisted calibration
- Either in 100% AUTOMATIC mode on the sensor
- Or in SEMI-AUTOMATIC mode with confirmation on the central unit for consistency and validity of results.

Logistic advantages

Loop arrangement
The transmitter is perfectly adapted to mounting and connection to the digital fieldbus loop of the MX 62 unit.

Supporting 1 to 3 digital addresses :
- the sensor block (OLDHAM detection element)
- the two 4-20 mA auxiliary inputs.

Certification

The OLCT 80 series is certified to the specifications required by standards EN 50054, 45544 and 50104 (metrological qualities, explosive and toxic gases and oxygen) and to the specifications of standards EN 50270, EN 60529 (electromagnetic compatibility, degree of protection of casing).

Series 80 uses digital and software technologies. The sensors are therefore protected in compliance with the specifications of standard EN 51271:

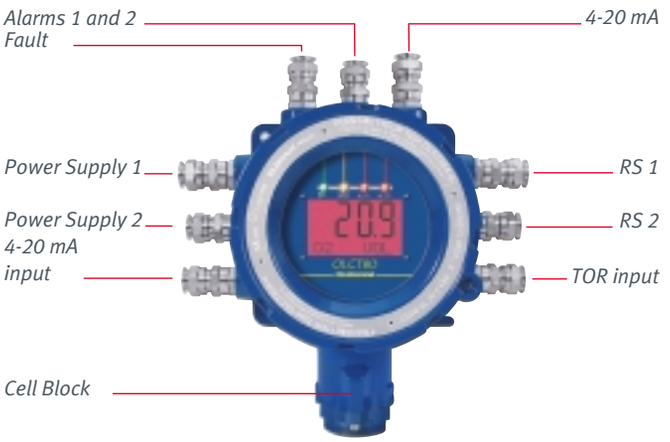
- unambiguous relationship between analogue and digital values
- homogeneity of digital resolution and response time with the specifications required by the metrological standards,
- permanent implementation of component test routines and parameter setting.

Accessories

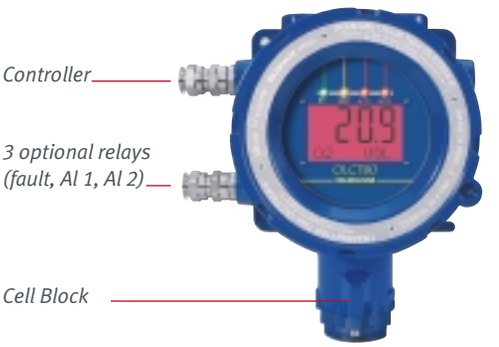
1. Infrared remote control
2. Tool kit
3. Gas infeed device
4. Cover key
5. Gas circulation head
6. Anti-splash device
7. Remote gas injection head
8. Gas collector

Configuration Options

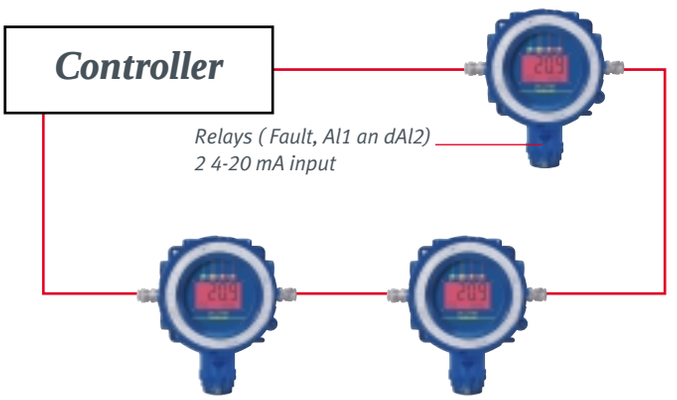
Many possibilities



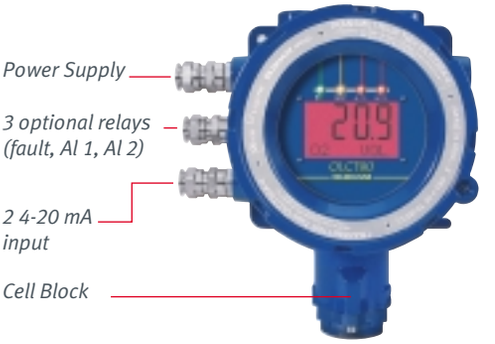
Standard Version



Digital Version



Stand Alone Version



Gases	Type of sensor	Range (ppm)	Operating temperature*	Relative humidity uncondensed	Pressure	Accuracy at full scale (at atmospheric pressure)	Life span (in month)	T (50)	IP
O_2	electrochemical	30,00%	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	from 5 to 30% = 0,4%vol	28	6	66
CO	electrochemical	100, 300 and 1000	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	+/- 2 ppm (range 0-100)	48	10	66
H_2 non-interfering CO sensor	electrochemical	1000 ppm	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	+/- 4 ppm if measure < 200 ppm +/-20 ppm if measure>200 ppm	36	25	66
H_2S	electrochemical	30, 100 and 1000	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	+/- 1,5 ppm (between 0-30 ppm)	48	15	66
NO	electrochemical	100, 300 and 1000	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	+/- 2 ppm (range 0-100)	36	15	66
NO_2	electrochemical	10 and 30,0	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	+/- 0,8 ppm	26	20	66
SO_2	electrochemical	10,0 30,0 and 100	-10°C to +50°C	10% to 95% RH	Atm +/- 10%	+/- 0,7 ppm range 0-10	36	15	66
Cl_2	electrochemical	10,0	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	+/- 0,5 ppm	26	50	66
H_2	electrochemical	2000	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	+/-5 ppm range 0-100	26	50	66
HCl	electrochemical	30,0 and 100	-20°C to +40°C	10% to 95% RH	Atm +/- 10%	+/- 0,5 ppm range 0-10	26	50	66
HCN	electrochemical	10,0 and 30,0	-20°C to +40°C	10% to 95% RH	Atm +/- 10%	+/- 0,3 ppm range 0-10	26	40	66
HF	electrochemical	10,0	-10°C to +30°C	10% to 95% RH	Atm +/- 10%	+/- 0,5 ppm	20	50	66
NH_3	electrochemical	100	-20°C to +40°C	10% to 95% RH	Atm +/- 10%	+/- 5 ppm	26	50	66
		1000	-20°C to +40°C	10% to 95% RH	Atm +/- 10%	+/- 10 ppm range 0-1000	26	50	66
ETO/PRO	electrochemical	30,0	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	+/- 1 ppm	36	50	66
O_3	electrochemical	1,00	-10°C to +40°C	10% to 95% RH	Atm +/- 10%	+/-0,05 ppm	20	50	66
PH_3	electrochemical	1,00	-20°C to +40°C	10% to 95% RH	Atm +/- 10%	+/- 0,05 ppm	20	40	66
ClO_2	electrochemical	3,00	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	+/- 0,3 ppm	26	50	66
SiH_4	electrochemical	50	-20°C to +40°C	10% to 95% RH	Atm +/- 10%	+/- 1 ppm	20	40	66
$COCl_2$	electrochemical	1,00	-10°C to +40°C	10% to 95% RH	Atm +/- 10%	+/- 0,05 ppm	20	50	66
AsH_3	electrochemical	1,00	-10°C to +40°C	20% to 95% RH	Atm +/- 10%	+/- 0,05 ppm	26	40	66
CH_4	catharometre	0-100%vol	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	1% vol	60	5	66
H_2	catharometre	0-100%vol	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	1 % vol	60	5	66
NH_3	catalytic	0-5000	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	100 ppm	36	8	66
Flammable gas	catalytic	0-100% LIE	-20°C to +70°C	10% to 95% RH	Atm +/- 10%	1 % lIE between 0- 60 %LIE	60	5	66
			-20°C to 200°C	10% to 95% RH	Atm +/- 10%	1 % lIE between 0- 60 %LIE	60	5	66
VOC	semi-conductor	500 ppm	-20°C to +50°C	10% to 95% RH	Atm +/- 10%	100 ppm +/-5 ppm	30	25	66

** temperature at 20°C and at Atmospheric Pressure*

Gases	O_2	H_2-non-interfering CO sensor	CO	H_2S	NO	NO_2	SO_2	Cl_2	H_2	HCl	HCN	NH_3	ETO	O_3	PH_3	AsH_3	ClO_2	$COCl_2$	SiH_4	HF	COV
SI	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO
ADF	YES	YES	YES	YES	YES	NO	NO	NO	YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES

Modular and Flexible

Technical characteristics

Manufacturer :	• OLDHAM SA
Sensor :	• OLCT 80 / OLCT 80 D
Type :	• Transmitter-sensor
Gases detected :	• Explosive, toxic and oxygen
Detection principles :	• Catalytic
	• Electrochemical
	• IR
	• Semiconductor
Range :	• See table
Sensor block :	• Pre-calibrated
Material :	• Stainless steel 316L
Casing :	• Aluminium
Visualisation :	• 4-digit LCD display for measurement and one alphanumeric line for texts,
	• Pictograms - backlighting
	• 4 indicator lamps : one green : "Operation OK", one yellow : "Fault", 2 red : "Alarm 1" and "Alarm 2"
Power supply to sensor terminals :	• Two independent inputs : 16 to 28 VDC (catalytic / IR / SM cells)
	• 12 to 28 VDC (electrochemical cell)
Maximum power with digital link :	• 0.2 W (electrochemical cell) - 1.3 W (catalytic / SM) - 4.5 W (IR)
with I output at 25 mA :	• 0.9 W (electrochemical cell) - 2 W (catalytic / SM) - 5.2 W (IR)
with I output at 25 mA and relays activated :	• 2.4 W (electrochemical cell) - 3.5 W (catalytic / SM) - 6.7 W (IR)
Inputs :	• Two analogue inputs 4-20 mA (load resistance 120 Ω, can be used as binary)

Signal outputs

Logic (relay contacts) :	• Potential-free relay
Analogue :	• Standardised 4-20 mA output
Digital :	• Two independent opto-isolated RS 485 ports
Signal faults :	• I < 0.5 mA
Alarms :	• 2 programmable thresholds per channel

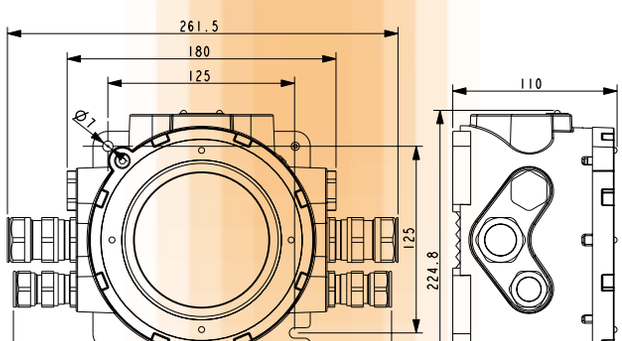
Relays

Type :	• 1 pole
Number :	• 3
Contact :	• RCT changer-over
Breaking capacity :	• 2A / 250 VAC / 30 VDC
Wiring / connection :	• Basic version, 6 inputs : 4 M20 and 2 M25
	• On request : 3 additional, 2 M20 and 1 M25

Load resistance on the 4-20 mA :	• 500 Ω
loop resistance (on OLDHAM central unit) :	• Under central unit 21 VDC: 128 ohms (electrochemical cell) - 32 Ω (catalytic / SM) - 16 Ω (IR)
Fastening system :	• See drawings
Protection number :	• IP 66
Operating temperatures :	• - 25 °C to +55 °C (electronics, see table for detection cells)
Dimensions :	• See drawings

Weight :	OLCT 80 : 3,5 kg	OLCT80 version IR : 5,3 kg
Certification Atex :	OLCT 80 d	OLCT 80 id (with intrinsic safety sensor block)
	II 2GD	II 2GD
	EEx d IIC T5(T100°C) or T6 (T85°C)	EEx d [ia] ia IIC T4 (T135 °C)
	INERIS 03ATEX0240X	INERIS 03ATEX0240X

Electromagnetic compatibility :	• Complies with EN 50270



Series 80

AFAQ ISO 9001

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