

# 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

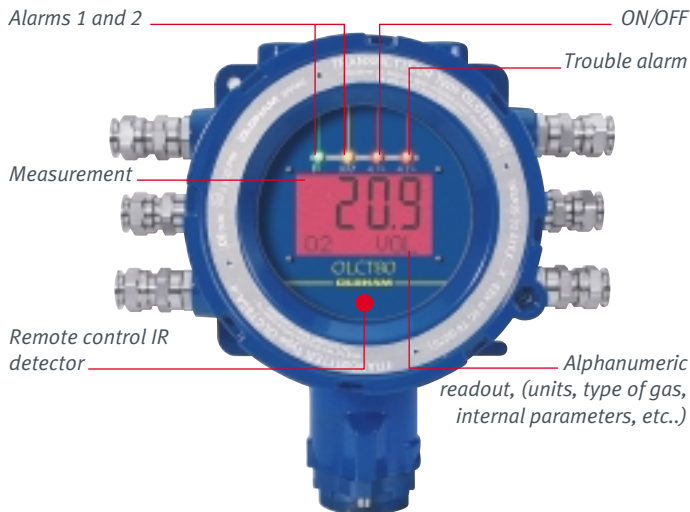
**OLDHAM**  
Group

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:

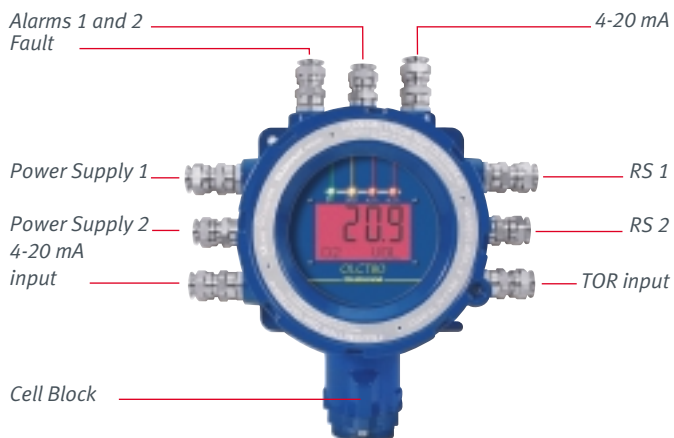
- unambiguous relationship between analogue and digital values
- homogeneity of digital resolution and response time with the specifications required by the metrological standards,
- permanent implementation of component test routines and parameter setting.

## Accessories

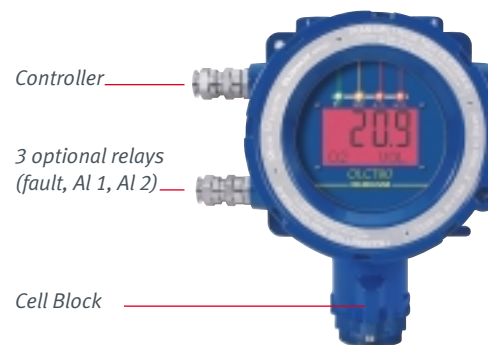
1. Infrared remote control
2. Tool kit
3. Gas infeed device
4. Cover key
5. Gas circulation head
6. Anti-splash device
7. Remote gas injection head
8. Gas collector

## Configuration Options

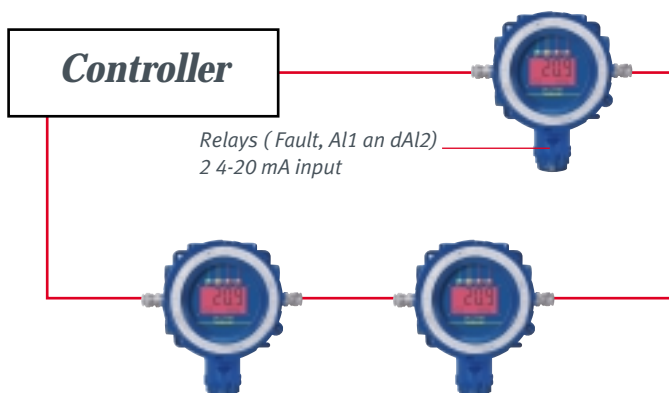
### Many possibilities



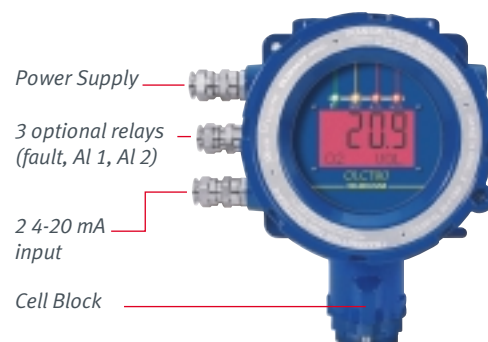
### Standard Version



### Digital Version



### Stand Alone Version





# Technical characteristics

Manufacturer :	• OLDHAM SA
Sensor :	• OLCT80 / OLCT80 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)
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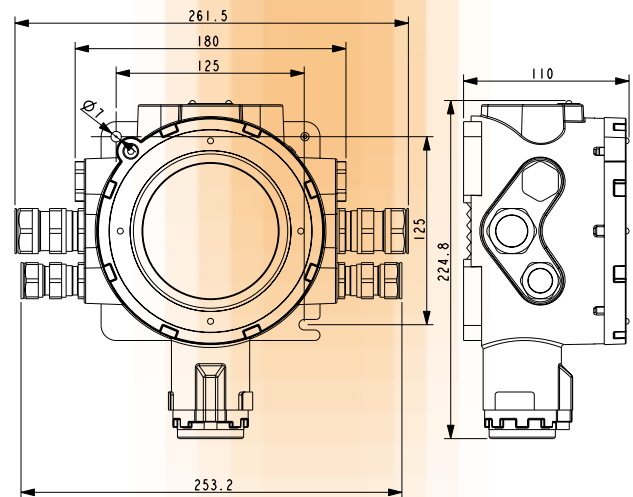
Dimensions :	• See drawings
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Weight :	OLCT 80 : 3,5 kg	OLCT80 version IR : 5,3 kg
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Certification Atex :	OLCT 80 d	OLCT 80 id (with intrinsic safety sensor block)
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	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
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## Series 80

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