



MX 43

Controller



Description

Fully scalable, and designed to functional safety performance level 1 standards, the MX 43 is an analog and digital controller that continuously measures and controls gases in the atmosphere.

The MX 43 gas controller manages both digital lines and analog channels, and covers all needs for a wide variety of gas monitoring applications.

The MX 43 digital technology allows up to 32 detectors to be distributed on 8 lines for increased cost savings.

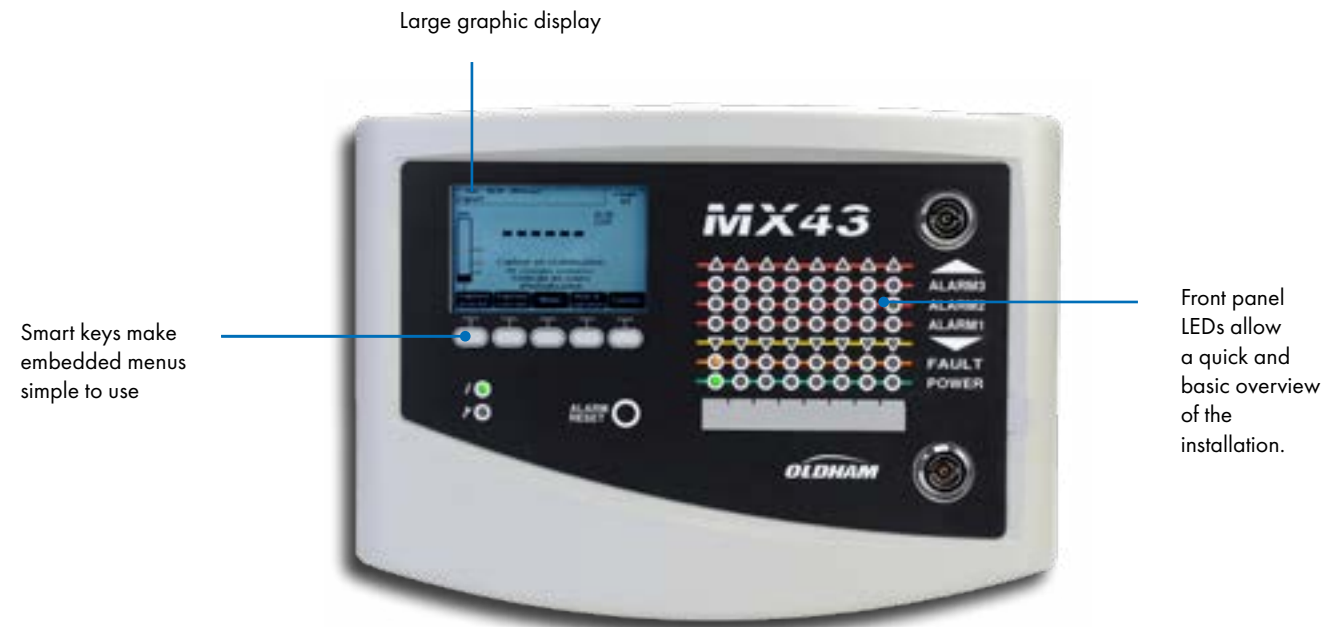
Features

- Analog and digital controller
- 4 or 8 lines / 16 to 32 detectors max
- Highly versatile controller
- SIL 1 reliability



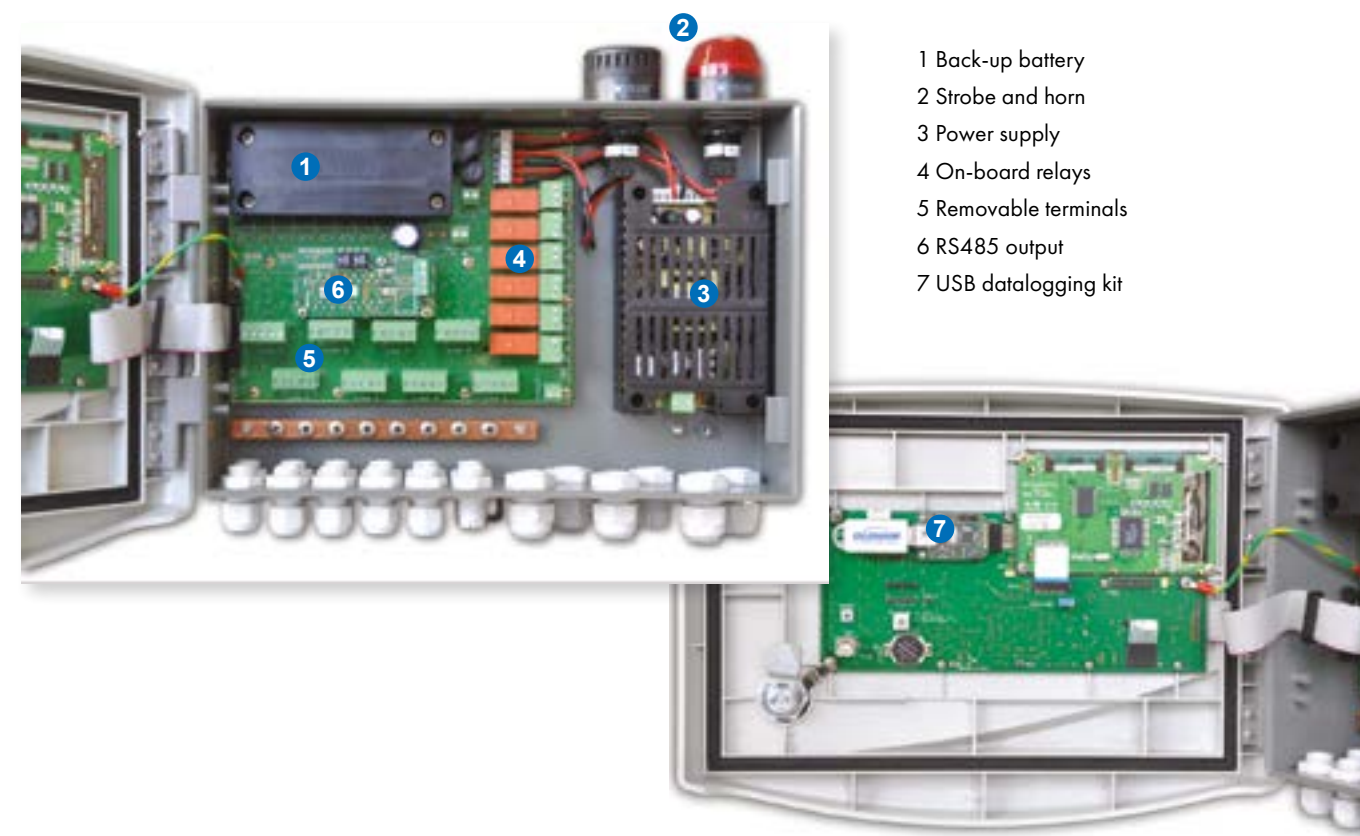
Controller presentation

The MX 43 is an analog and digital controller designed for the continuous measurement and control of the gases present in the atmosphere and for 4-20 mA or digital contact signal.



MX 43 manages both digital lines and analog channels, and covers all needs for a wide variety of applications.

The MX 43 digital technology allows up to 32 detectors to be distributed on 8 lines for increased cost savings.



Modules

Different modules can be connected to the controller :

4 or 8-relay module



4 or 8-programmable-relay module can be located closer to the actuators for cost savings.

16-logic-input module



Addressable module of 16 logic input for recovery of digital information such as fire or intrusion alarms, emergency stop, limit switch activation, etc.

8-Analog-input module



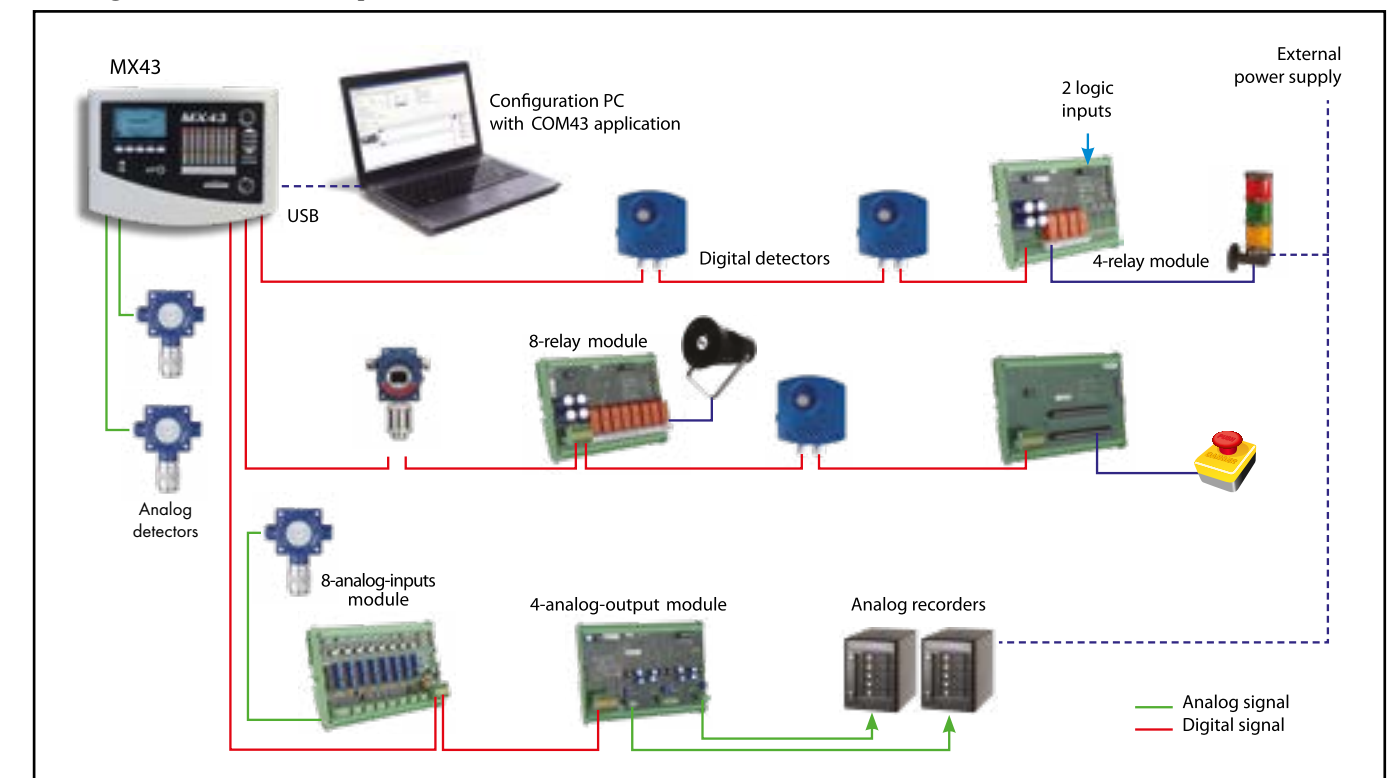
This module enables standard analog transmitters (gas or flame detectors for instance) to be connected on a digital line for cost savings.

4-Analog-output module

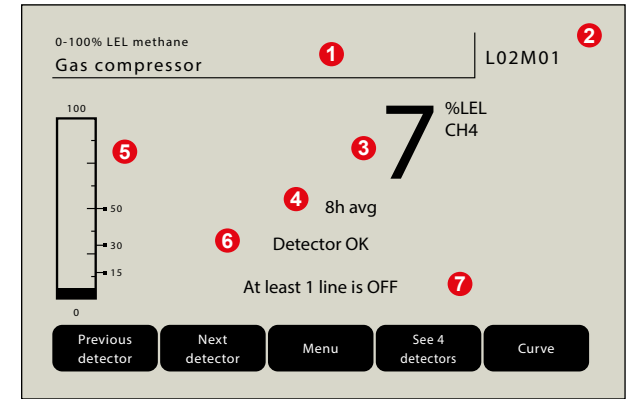


Addressable 4- analog output module which delivers 4 analog 4-20mA signal outputs (detector output copy, min, max, average of a group of detectors) for connection to a datalogger, a PLC, a building Management System (BMS), etc.

Configuration example



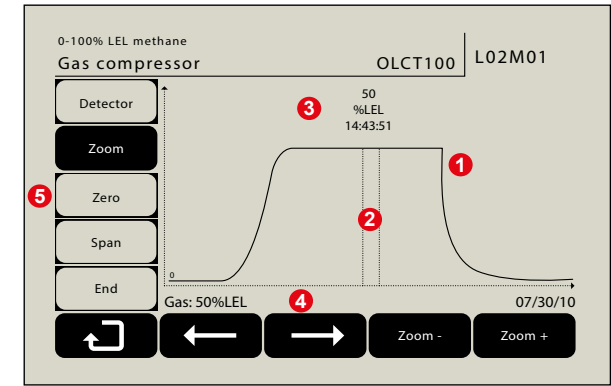
Normal Mode



- 1 Measurement range, gas and detector tag
- 2 Detector address
- 3 Current value with unit and detected gas
- 4 Averaged value on the last 8 hours
- 5 Bar graph with alarm thresholds
- 6 Detector status (OK, OFF, fault)
- 7 MX 43 status information
- 8 Records on progress

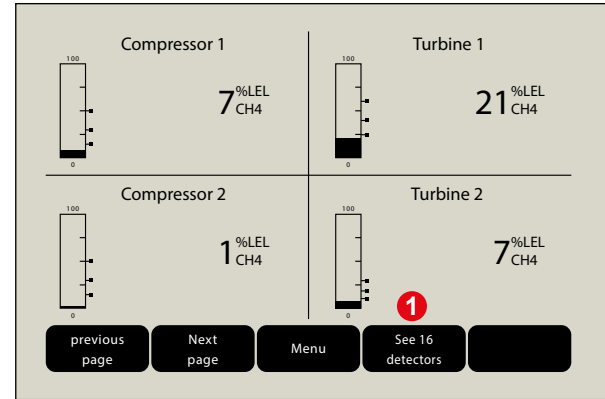
Calibration Curve

Simplified procedure that enables time savings (i.e. non-intrusive and one-man calibration).



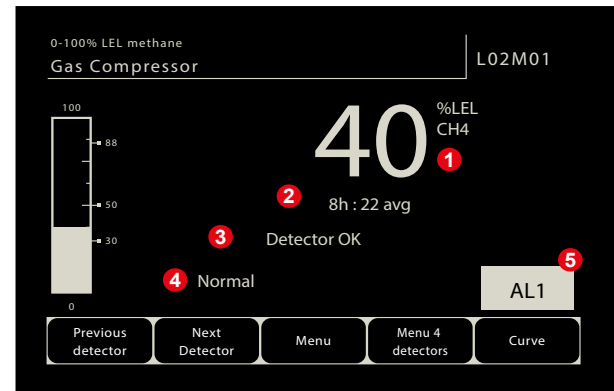
- 1 Calibration curve
- 2 Cursors for span settings
- 3 Measured value
- 4 Calibration gas value
- 5 Detector selection, zeroing and spanning

In 4-channel display



- 1 Up to 16 detectors can be displayed simultaneously

Alarm mode

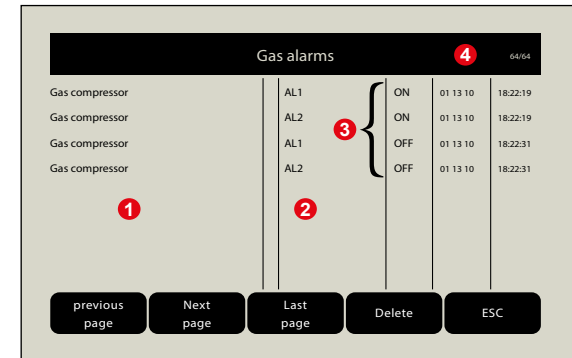


Reverse video in alarm conditions for immediate identification of the concerned detector.

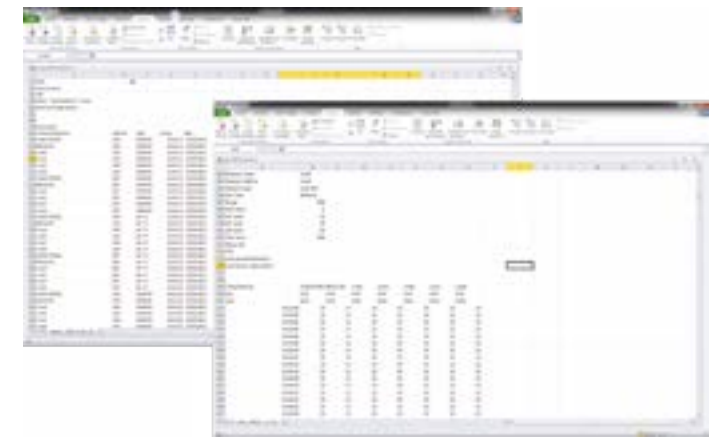
- 1 Current value with unit and detected gas
- 2 Averaged value on the last 8 hours
- 3 Detector status (OK, OFF, fault)
- 4 MX 43 status information
- 5 Detector in alarm

Data-logging

By default, the MX 43 can store up to 512 alarm events, 512 fault events and 512 system events.



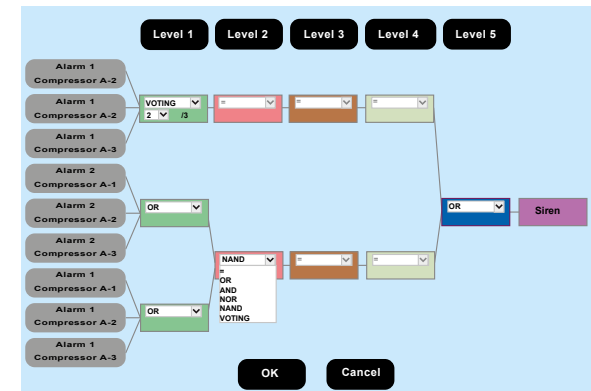
- 1 Detector tag
- 2 Event
- 3 Date and time of events appearance or clearance
- 4 Page number (up to 64 pages)



The USB option enables gas measurements to be saved at a sampling rate of 2 seconds to 15 minutes while events are saved when they happen.

The 4 Gb USB drive provides more than 2 years of storage in most of configurations. The USB option also delivers the ability to save and restore configuration and firmware files.

COM 43 configuration software



- 1 Simple relay programming
- 2 Up to 5 embedded functions: OR, AND, NOR, NAND, VOTING
- 3 Several timers available
- 4 Advanced management of audible alarms (acknowledgment, reactivation, evacuation)

Which part number to order?

The reference is broken down as follows: WMX43A-B-C-D-E-F

Version & number of lines	Language of the Control unit	Sound and light alarm kit and light kit	Battery	Option	RS 485 output
M-4 - 4-line wall-mounted version M-8 - Wall-mounted version 8 lines R-8 - Rack-mounted 8-line version E-4 - Wall-mounted version with 4-channel analogue board ⁽¹⁾ E-8 - Wall-mounted version with 8-channel analogue card ⁽¹⁾	3 - English, French, German	0 - without A - red B - blue	0 - without B - with ⁽²⁾	0 - without 1 - with software COM43 2 - with USB acquisition 3 - with COM43 software & acquisition on USB	0 - without 1 - with

⁽¹⁾ Version intended exclusively for replacing an existing MX42 or MX48 central unit and connected to 'bridge' sensors

⁽²⁾ Battery pack not available in the WMX43E-8 version controller

e.g. WMX43M-8-3-A-B-0-0 for a MX 43 wall-mounted 8-channel controller, delivered with audible and luminous alarm kit, battery pack

Model	MX 43 gas detection control panel
Dimensions (wall-mounted version)	370 x 299 x 109 mm (14.6 X 11.8 X 4.3 Inches)
Dimensions (rack)	19", 4U ; 482.8 X 177 x 192.5 mm (19.1 X 7 x 7.6 Inches)
Ingress protection	IP55 (wall-mounted), IP31 (rack)
Cable entries (wall-mounted version)	12 M16 cable glands, 4 to 8 mm² (8 to 11 AWG) outer diameter cable 6 M20 cable glands, 6 to 12 mm² (7 to 9 AWG) outer diameter cable
Display	LCD back-lit display + smart keys Display in video inverse in case of fault Customizable by user (display 1 to 16 channels simultaneously, fixed or scrolling, on events...) Bar graph with alarm threshold
Visual indicators	7 LEDs per line for detector status 1 Common LED for fault condition 1 Common LED for power indicator
Buttons	5 Smart keys 1 Audible alarm accept/reset button
Operating use	
Operating temperature	-20°C to +50°C
Storage temperature	-20°C to +50°C
Humidity	5 to 95% RH
Power	100-240 Vac 50-60 Hz or 21-28 vdc, 112 W max
Battery	Embedded back up power supply in option (0.6 Ah)
Consumption	500 mA min (without module)
Measurement lines	
Digital lines	8 Maximum RS-485 communication, proprietary protocol, 9600 baud 2 Twisted shielded-pair cable
Analog channels	8 Maximum 0-23 mA analog signal input (4 to 20 mA reserved for measurement) 120 Ohm load resistance 2 Or 3-core shielded cable
Voltage (typical)	21 to 28Vdc
Maximum current output per line	1.2 A (1.5 A intermittently)
Maximum current output in total	2.4 A permanent (3.2 A intermittently)
Alarms	
Per channel	5 Alarm levels (A1, A2, A3, overscale, underscale) + fault Non-ambiguity reading option for combustible gases monitoring
Programmable thresholds	On instantenous or averaged values, rising or falling alarms, manual or automatic acknowledgement
On-board relays	5 Fully programmable alarm relays 1 Fault relay (non-configurable) Dry contact relay DPCO relays with contact rating of 250 Vca 2 A (inductive)
Digital outputs	Rs-485 modbus RTU serial link
Approvals	
EMC	According to EN50270
ATEX	EN50271 and metrological performances according to EN60079-29-1
Low voltage directive	According to EN61010
FM	FM Class 3600:2018, FM Class 6320:2018, ANSI/FM-60079-29-1:2019, ANSI/IEC 60529:2004
Functional safety (Reliability data)	SIL1 capability according to EN50271:2010 du =2,29.10-6, PFDavg=1,03.10-2, Ti=1 year, MTBF=20 years, SFF 60% (data for 4 channel version, 24 vdc powered)

Our fixed detector range



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Teledyne Oldham Simtronics quality assurance programmes demand the continuous assessment and improvement of all our products. Information in this leaflet could thus change without notification and does not constitute a product specification. Please contact Teledyne Oldham Simtronics or their representative if you require more details.

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