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 detector 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.
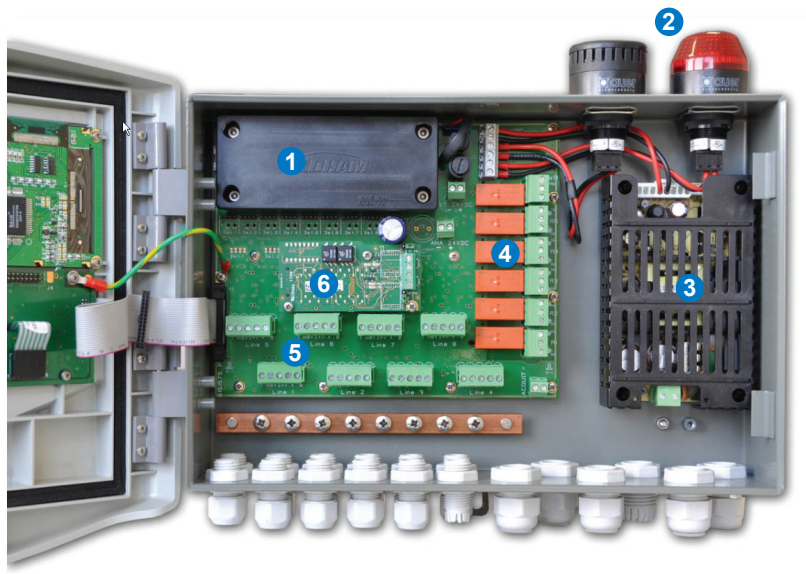
Large graphic display
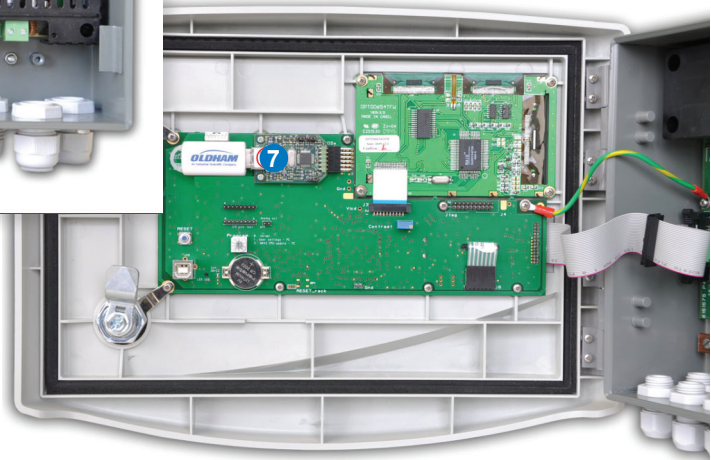
Smart keys make embedded menus simple to use

Front panel LEDs allow a quick and basic overview of the installation.

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.

1 Back-up battery
2 Strobe and horn
3 Power supply
4 On-board relays
5 Removable terminals
6 RS485 output
7 USB datalogging kit

Modules

Different modules can be connected to the controller :
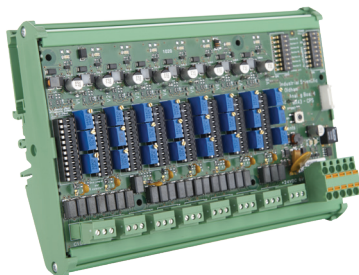
4 or 8-relay module

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.
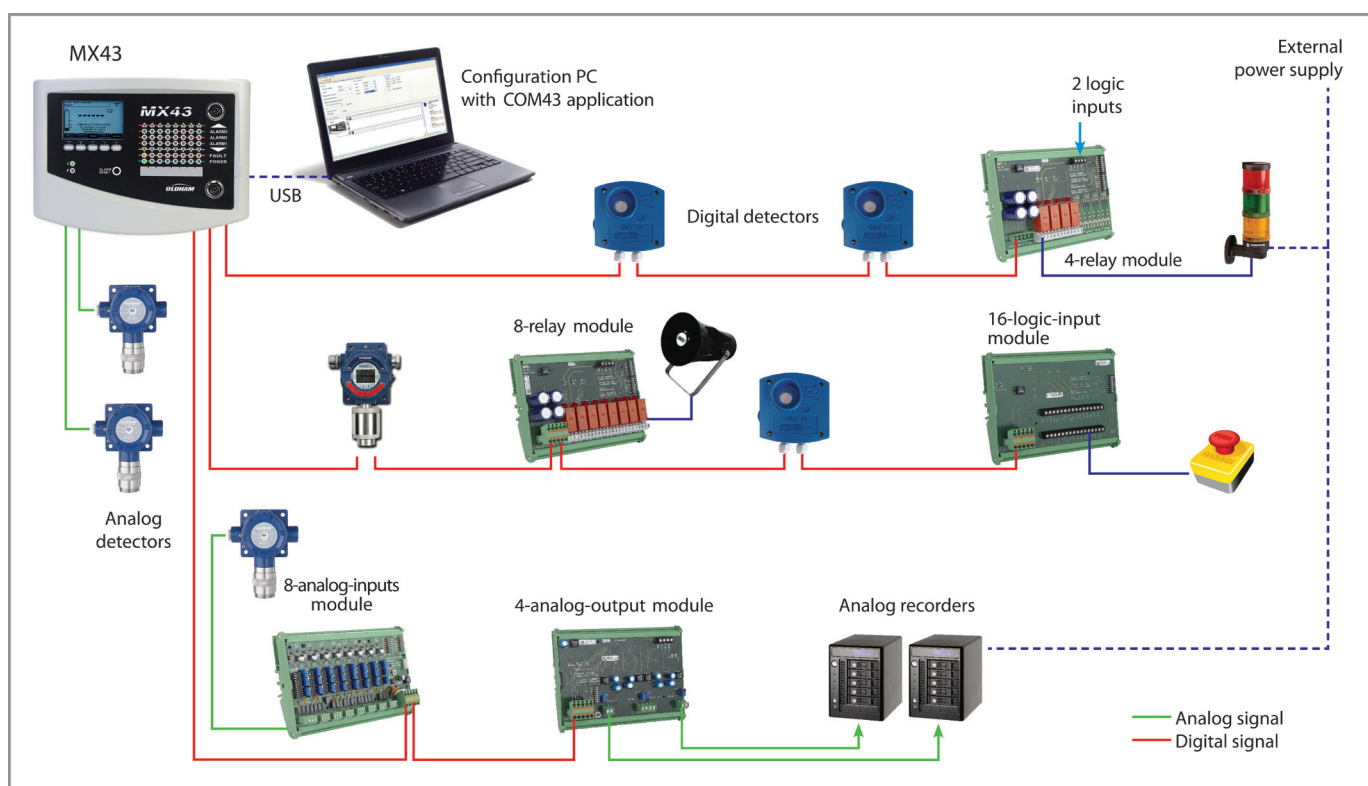
8-Analog-input module

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.
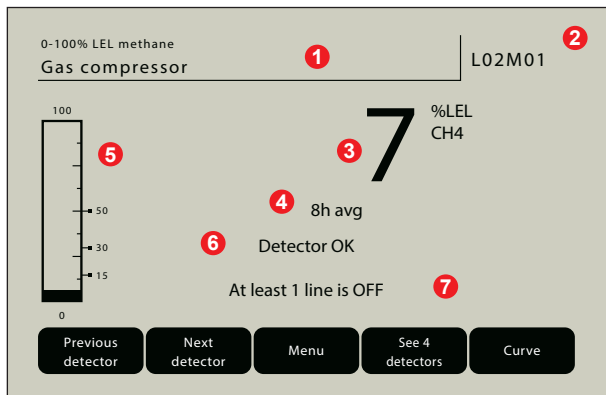
Configuration example

MX43

Configuration PC with COM43 application

External power supply

2 logic inputs

USB

Digital detectors

4-relay module

Analog detectors

8-relay module

16-logic-input module

8-analog-inputs module

4-analog-output module
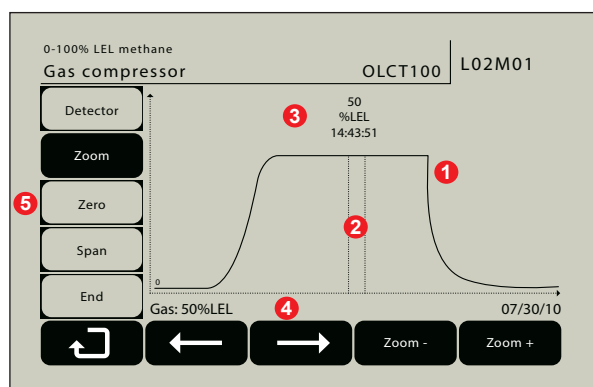
Analog recorders

Analog signal
Digital signal

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)
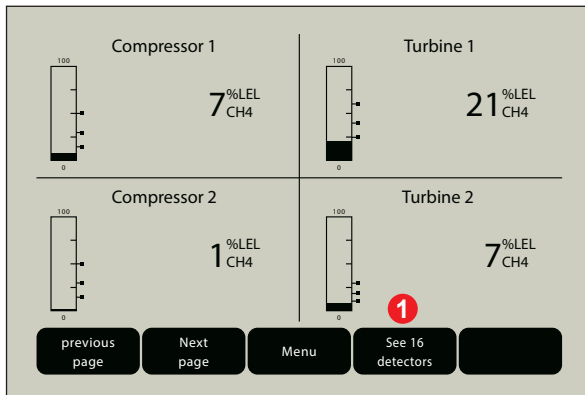
7 MX 43 status information

8 Records on progress

Calibration Curve

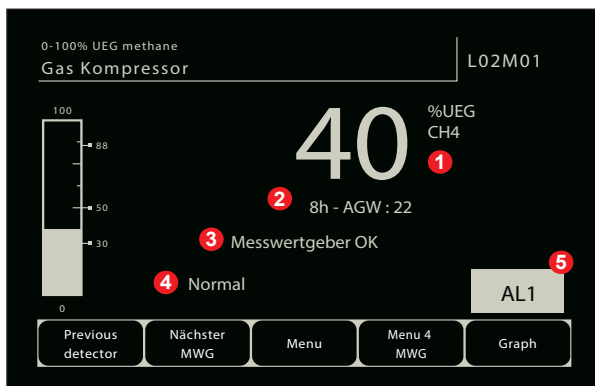Simplified procedure that enables time savings (i.e. non-intrusive and one-man calibration).

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

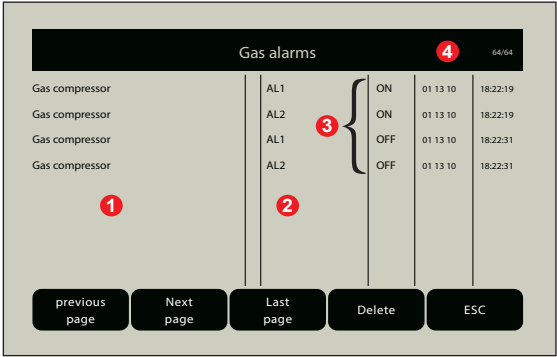1 Up to 16 detectors can be displayed simultaneously

Alarm mode

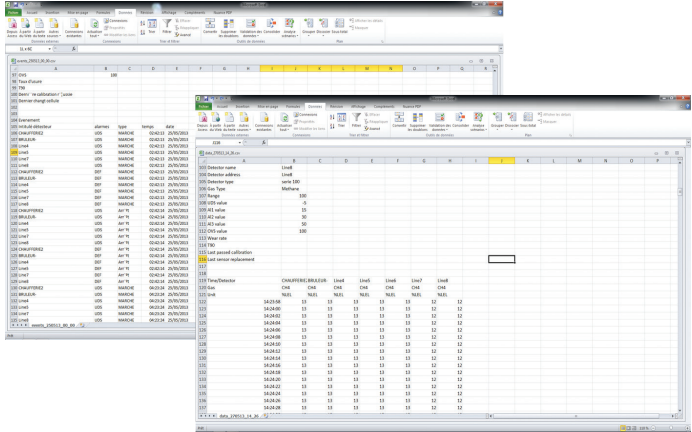Reverse video in alarm conditions for immediate identification of the concerned detector.

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.
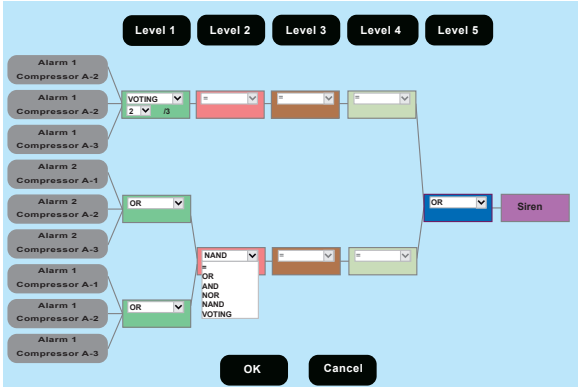

1 Detector tag

2 Event

3 Date and time of events appearance or clearance

4 Page number (up to 64 pages)

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)

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.

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Controller

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 mAa 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
CSA	Pending
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)
MED	According to marine equiment directive 96/98/EC. Fulfills the EMC requirements for installation in general power distribution zone and/or deck zone.

Our fixed detector range

OLCT 10

OLCT 10N

OLCT 100

iTrans 2

OLCT 80

OLCT 60

CTX 300

Meridian

Spyglass

Flamevision

MX 43
Controller

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