



## EX-METER II Series

[ Versatility in Explosive Atmospheres ]



# [ The flexible solution for all your needs ]



*After accidents with hazardous material the EX-METER II will provide reliable alarms and readings of the combustible gas or vapour in air, thanks to the safety approval.*



*A broad range of special calibrations is important to the chemical industry; every measurement situation can be solved with the appropriate EX-METER II.*



*The automatic range change and leak detection acoustic ticker in the EX-METER II series are important features to gas distributors.*



*Explosive gases are commonly found on waste disposal sites. The EX-METER II is usable around the clock with battery packs that can be changed in the potentially explosive area.*



*Hazards from combustible gases on board of ships are detected quickly and reliably. In addition, the EX-OX-METER II Series also monitors for oxygen deficiency or enrichment.*

Is there a potential explosion hazard? Is there a leak? Where exactly is it? The EX-METER II series from MSA provides a reliable answer.

The EX-METER II instruments measure and monitor combustible gases and vapors in one, two or three ranges.

For confined space entry the EX-OX-METER II instruments are the perfect solution – the only hand-held instruments on the market with three ranges plus oxygen.

The complete series is designed for comfort and reliability with simple two-button operation, automatic range change and display of the range in use.

Fire brigades, gas distributors and utilities, the chemical industry, merchant marine and waste disposal sites would ideally be equipped with the EX-METER II Series.

In order to meet all field requirements, instruments are available with standard calibration, safety calibration [nonane] and individual special calibrations for a large range of gases.

Each instrument version can be supplied with or without an integrated gas sampling pump – an unmatched broad range of hand-held instruments for increased safety of personnel, installations and the environment.



*As a further development and miniaturization of the Ex-Meter family, the EX-METER II Series, with "state of the art" measuring technology, incorporates all the advantages of its successful predecessor.*

# [ Reliable & sensitive sensor technology ]



In the explosive range, the EX-METER II series detects alternately from 0...4.4/5 vol.% methane [above] or from 0...100% LEL [below].



The measurement principle of thermal conductivity is used for the measuring range LEL...100 vol.%. The changeover from the explosive range to LEL...100 vol.% occurs automatically.



In the leak detection range 0...10% LEL the reading is shown by a bargraph as well as a proportional acoustic ticker signal.



The EX-OX-METER II series has a fourth measuring range for 0...25 vol.% oxygen incorporating an electrochemical O<sub>2</sub> cell.



The display is always non-ambiguous due to a combination of catalytic combustion and thermal conductivity. The LCD shows which range is used for the measurement.



The EX-METER II instruments are extremely robust. They resist the rough use during fires, accidents and on waste disposal sites and are dust and splashwater protected to IP54 as well as being temperature- and humidity-compensated.

**Fully ATEX compliant**  
 The EX/EX-OX-METER series is fully ATEX compliant and has been performance tested to EN 61779 [combustibles] and EN 50104 [oxygen]  
**EN 61779 · EN 50104**

Ex and performance testing was carried out by DMT to the latest European ATEX standards

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 DMT 99 ATEX G001x

## [ Easy to handle & robust construction ]

The complete EX-METER II series is safety and performance approved.

The combination of the measuring principles developed by MSA of catalytic combustion and thermal conductivity ensure that the instruments work non-ambiguously.

The MSA catalytic and thermal conductivity sensors for flammable gas and electrochemical oxygen sensor meet international standards.

The automatic range change and instrument self-check make the EX-METER II very easy to use.

There are three different alarm indications; two bright RED flashing LED's, flashing LCD reading and an intense audible alarm that increases with decreasing distance from the leak.

One to four integrated measuring ranges, calibrations of choice, pumped versions as standard and practically unlimited service time by intrinsically safe, rechargeable battery packs that can be changed in the hazardous area – all the above features of the EX-METER II are proof of the innovative design at MSA.



All EX-METER II and EX-OX-METER II instruments can be supplied with an integrated pump. The sampling is by diffusion; with the pumped version the attachment of a pump adapter [see above] permits sampling with an electric pump, sampling line and probe.

The automatic self-check includes not only a fresh air setup which sets the sensor zero points, but also a comprehensive instrument check.



Maintenance of the EX-METER II is extremely easy. The sensors are calibrated semi-automatically without potentiometers.



A practically unlimited service time is possible by carrying spare NiMH battery packs that can be easily changed – even in the hazardous area.



# EX-METER II and EX-OX-METER II

[ All calibrations and versions at a glance ]



**EX-METER II**  
Calibration:

**Methane**

Measuring range: LEL, Vol.-% and leak detection.  
Standard type:  
Part. no. D6172701  
Pump type:  
Part. no. D6172702



**EX-METER II**  
Calibration:

**Propane**

Measuring range: LEL, Vol.-% and leak detection.  
Standard type:  
Part. no. D6172703  
Pump type:  
Part. no. D6172704



**EX-METER II**  
Calibration:

**Nonane/  
fire brigade**

Measuring range:  
LEL  
Standard type:  
Part. no. D6172705  
Pump type:  
Part. no. D6172706



**EX-METER II**  
Calibration:

**Nonane**

Measuring range:  
LEL and leak detection.  
Standard type:  
Part. no. D6172709  
Pump type:  
Part. no. D6172710



**EX-METER II**  
Calibration:

**Special\***

Measuring range: LEL, Vol.-% and leak detection.  
Part no. on request



**EX-OX-METER II**  
Calibration:

**Methane**

Measuring range: LEL, Vol.-% and leak detection.  
Standard type:  
Part. no. D6172721  
Pump type:  
Part. no. D6172722



**EX-OX-METER II**  
Calibration:

**Propane**

Measuring range: LEL, Vol.-% and leak detection.  
Standard type:  
Part. no. D6172723  
Pump type:  
Part. no. D6172724



**EX-OX-METER II**  
Calibration:

**Nonane/  
fire brigade**

Measuring range:  
LEL  
Standard type:  
Part. no. D6172725  
Pump type:  
Part. no. D6172726



**EX-OX-METER II**  
Calibration:

**Nonane**

Measuring range:  
LEL and leak detection.  
Standard type:  
Part. no. D6172729  
Pump type:  
Part. no. D6172730



**EX-OX-METER II**  
Calibration:

**Special\***

Measuring range: LEL, Vol.-% and leak detection.  
Part no. on request

\*Special calibrations with requested calibration gases [Vol.-% dependent].

### [ EX-METER II Technical Data ]

<b>Measuring Range</b>	0... 4.4/5 Vol.-% methane or 0... 100% LEL, LEL... 100 Vol.-%, leak detection range 0... 10% LEL
<b>Display Accuracy</b>	± 2% LEL [± 0.1 Vol.-% CH <sub>4</sub> ] at 0... 40% LEL ± 5% from set value at 40... 100% LEL ± 2 Vol.-% at LEL... 100 Vol.-%
<b>Detection Resolution</b>	0.1% LEL or 0.05 Vol.-% CH <sub>4</sub>
<b>Response Time <math>\tau_{90}</math></b>	≤ 10 s [CC], ≤ 15 s [TC] for CH <sub>4</sub>
<b>Sampling</b>	Diffusion or with integrated electric gas sampling pump [sampling line and probe]
<b>Flow characteristics of integrated pump</b>	
	0.5... 0.8 l/min, 20 m sampling line possible
<b>Alarms</b>	Optical or acoustic, a latching gas alarm, fault alarms, i.e. low battery alarm, sensor alarm, flow alarm
<b>Alarm Thresholds</b>	2 adjustable alarm thresholds for each measuring range, alarm when measuring range is exceeded, leak-ticker signal relative to concentration
<b>Power Supply</b>	Intrinsically safe, replaceable in hazardous area, rechargeable NiMH pack [charging time < 3.5 h]
<b>Operating time per battery-pack charge</b>	
	> 5 h in pump mode, > 9 h in diffusion mode, ≤ 15 min after display "LoBat"
<b>Dimensions</b>	Height: 145 mm [160 mm with pump], Width: 71 mm, Depth: 32 mm
<b>Weight</b>	< 500 g [680 g with pump]
<b>Standard Calibration</b>	methane, propane, nonane
<b>Special Calibration</b>	hydrogen, ethanol, pentane, octane, hexane, isobutane, toluene, xylene, ethylene, ethyl acetate, FAM-gasoline, propylene, acetylene, other gases available on request.
<b>Certification</b>	EN 50014/EN 50018/EN 50019/EN 50020/EN 50054/EN 50270/EN 50271/EN 61779 Ⓢ II 2G EEx ia d IIC T6 Ⓢ 0736/No. 213.028 DMT 99 ATEX G001x

### [ EX-OX-METER II Technical Data ]

<b>Measuring Range</b>	0... 4.4/5 Vol.-% methane or 0... 100% LEL, LEL... 100 Vol.-%, 0... 25 Vol.-% O <sub>2</sub> , leak detection range 0... 10% LEL
<b>Display Accuracy</b>	± 2% LEL [± 0.1 Vol.-% CH <sub>4</sub> ] at 0... 40% LEL ± 5% from set value at 40... 100% LEL ± 2 Vol.-% at LEL... 100 Vol.-%, ± 0.1 Vol.-% O <sub>2</sub>
<b>Detection Resolution</b>	1% LEL or 0.05 Vol.-% CH <sub>4</sub> in Ex-range, ± 0.1 Vol.-% O <sub>2</sub>
<b>Response Time <math>\tau_{90}</math></b>	≤ 10 s [CC], ≤ 15 s [TC] for CH <sub>4</sub> , ≤ 25 s [O <sub>2</sub> ]
<b>Sampling</b>	Diffusion or alternatively with integrated electric gas sampling pump [sampling line and probe]
<b>Flow characteristics of integrated pump</b>	
	0.5... 0.8 l/min, 20 m sampling line possible
<b>Alarms</b>	Optical or acoustic, a latching gas alarm, fault alarms, i.e. battery low alarm, sensor alarm, flow alarm, temperature alarm
<b>Alarm Thresholds</b>	2 adjustable alarm thresholds for each measuring range, alarm when measuring range is exceeded, leak-ticker signal relative to concentration
<b>Power Supply</b>	Intrinsically safe, replaceable in hazardous area, rechargeable NiMH pack [charging time < 3.5 h]
<b>Operating time per battery-pack charge</b>	
	> 5 h in pump mode, > 9 h in diffusion mode, ≤ 15 min after display "LoBat"
<b>Dimension</b>	Height: 165 mm, 229 mm [with pump], Width: 72 mm, Depth: 32 mm
<b>Weight</b>	< 550 g, 800 g [with pump]
<b>Standard Calibration</b>	methane, propane, nonane
<b>Special Calibration</b>	hydrogen, ethanol, pentane, butane, toluene, jet fuel, xylene, ammonia, isobutane, heptane, FAM-gasoline, acetylene, other gases available on request
<b>Certification</b>	EN 50014/EN 50018/EN 50019/EN 50020/EN 50104/EN 50270/EN 50271/EN 61779 Ⓢ II 2G EEx ia d IIC T6 Ⓢ 0736/No. 213.028 DMT 99 ATEX G001x

### [ Accessories ]

10082040 [Fig. 1]	EX-METER II Akku 1500 NiMH/T6
10082041	EX-METER II Akku 1500 NiMH/LB/T6
10082221	EX-METER II Akku 2100 NiMH/T4
10082212	EX-METER II Akku 2100 NiMH/LB/T4
D6172760 [Fig. 2]	Delta charger hand-held instrument 12/24/230 V
D6079764 [Fig. 3]	Test gas station for EX-Sensor
D6099722	Carrying case for one EX-METER II and accessories
D6079763 [Fig. 4]	Sampling system for instrument without pump
on request	Span gas set EX-METER II methane in carrying case
D6172761	Adapter cable 12/24 V
D6172152	Leather carrying case for instrument without pump
D6172153	Leather carrying case for instrument with pump
D6079762	Test gas adapter
D6172771	Sampling line, 2 m, for instrument with pump
D6172772	Sampling line, 6 m, for instrument with pump
D6099940	Telescopic probe, length 1.10 m
D6059961	Telescopic probe, length 1.50 m
D5085832	Charcoal pre-filter tube for retention of silanes, silicans, silicates, Pkt of 10
D6099990	Pre-filter tube to protect sensor from lead and sulphur compounds, Pkt of 10



### Your direct contact

### MSA EUROPE Regional Head Offices & Great Britain [www.msa-europe.com]

**Northern Europe**  
MSA Nederland B.V., Hoorn  
Phone: +31 [229] 25 03 03  
E-Mail: info@msaned.nl

**Central Europe**  
MSA AUER GmbH, Berlin  
Phone: +49 [30] 68 86-0  
E-Mail: info@auer.de

**Eastern Europe**  
MSA AUER GmbH, Berlin  
Phone: +49 [30] 68 86-25 99  
E-Mail: mee@auer.de

**Southern Europe**  
MSA Italiana S.p.A., Rozzano  
Phone: +39 [02] 89 217-1  
E-Mail: info-italy@msa-europe.com

**International Sales**  
MSA EUROPE, Berlin  
Phone: +49 [30] 68 86-555  
E-Mail: contact@msa-europe.com

**Great Britain**  
MSA [Britain] Limited, Coatbridge  
Phone: +44 [12 36] 42 49 66  
E-Mail: info@msabritain.co.uk

