X-am 2500 / 5000 / 5600 | Notes on approval / Sensor data

Notes on approval

Marking

X-am 2500

Serial No.[1)]

X-am 5000

Serial No.[1)]

X-am 5600

Serial No.[1)]

X-am 5600 CSA

Serial No.[1)]

1) Serial Number key: The third letter of the serial number specifies the manufacturing year (M = 2019, N = 2020, P = 2021, R = 2022, S = 2023, T = 2024, U = 2025, W = 2026, X = 2027, Y = 2028, Z = 2029, etc.; Letters G, I, O, Q are omitted), the fourth letter the manufacturing month
(A = January, B = February, C = March, etc.; Letters G, I are omitted).
Example: Serial Number ARMB-0001: the third letter is M the fourth B, which means that the unit was manufactured in February 2019.

Only for USA:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

FCC responsible party:

Draeger Inc.

7256 S. Sam Houston W. Parkway

Suite 100

Houston, Tx 77085 USA

phone: +1 346-802-6111

e-mail: DIHouston.Approvals@draeger.com

Limited Manufacturer Guarantee

We are going paperless.

Scan the QR code and enter document number 9033743.

www.draeger.com/ifu

9033743

Declaration of conformity for X-am 2500 / 5000 / 5600

CE

EU-Konformitätserklärung
EU-Declaration of Conformity

Dräger

Dokument Nr. / *Document No.* SE26117-04

Wir / *we* Dräger Safety AG & Co. KGaA, Revalstraße 1, 23560 Lübeck, Germany

erklären in alleiniger Verantwortung, dass das Produkt
declare under our sole responsibility that the product

Gasmessgerät Typ MQG 0011, 0010, 01 (X-am 2500, 5000, 5600)**
*Gas Detection Instrument type MQG 0011, 0010, 01** (X-am 2500, 5000, 5600)*

mit der EU-Baumusterprüfbescheinigung / Expertise
is in conformity with the EU-Type Examination Certificate / Expertise
BVS 10 ATEX E 080 X
MEDB00002Z4

ausgestellt von der notifizierten Stelle mit der Kenn-Nr.
issued by the Notified Body with Identification No.
DEKRA Testing and Certification GmbH Handwerkstr. 15 D-70565 Stuttgart 0158
DNV GL SE Brooktorkai 18 D-20457 Hamburg 0098

und mit den folgenden Richtlinien unter Anwendung der aufgeführten Normen übereinstimmt
and is in compliance with the following directives by application of the listed standards

Bestimmungen der Richtlinie *provisions of directive*		**Nummer sowie Ausgabedatum der Norm** *Number and date of issue of standard*
2014/34/EU	**ATEX-Richtlinie** *ATEX Directive*	EN IEC 60079-0:2018, EN 60079-1:2014[1)], EN 60079-11:2012, EN 60079-29-1:2016, EN 50271:2018
2014/90/EU	**Schiffsausrüstungs-Richtlinie** *Marine Equipment Directive*	EN IEC 60079-0:2018, EN 60079-1:2014[1)], EN 60079-11:2012, EN 60079-29-1:2016, IEC 60945:2002+A1:2008, IEC 60533:2015, IEC 60092-504:2016
2014/30/EU	**EMV-Richtlinie** *EMC Directive*	EN 50270:2015+AC:2016 susceptibility: type 2 emission: type 1 EN 61000-3-2:2014, EN 61000-3-3:2013
2011/65/EU 2015/863/EU	**RoHS-Richtlinie** *RoHS Directive*	EN IEC 63000:2018

[1)] gilt nicht für MQG 01** (X-am 5600) / not applicable for MQG 01** (X-am 5600)

Überwachung der Qualitätssicherung Produktion durch
Surveillance of Quality Assurance Production by
DEKRA Testing and Certification GmbH Handwerkstr. 15 D-70565 Stuttgart 0158
DNV GL SE Brooktorkai 18 D-20457 Hamburg 0098

Zertifikat-Nr.:
Certificat No.:
MEDD00000TF, Rev. No.: xx

Lübeck, 2021-06-30

Ort und Datum (jjjj-mm-tt)
Place and date (yyyy-mm-dd)

Dr. Marcus Romba
Head of Electronic Engineering
Head of Product Qualification
Safety Products
Research & Development

Sensor data

Excerpt: For details, see instructions for use/data sheets for the respective sensor. The instructions for use, technical manual and data sheets for the utilized sensors can be downloaded from: www.draeger.com/ifu and the PC software CC-Vision from: www.draeger.com/software

									DUAL IR Ex / CO_2 (ES) 6811960 (6851880)	
	CatEx 125 PR 6812950	**CatEx 125 PR Gas 6813080**	**XXS H_2S 6810883**	**XXS H_2S-LC 6811525**	**XXS H_2-HC 6812025**	**XXS O_2 6810881**	**XXS CO 6810882**	**XXS CO-LC 6813210**	**IR Ex (ES) 6812180 (6851881)**	**IR CO_2 (ES) 6812190 (6851882)**
	X-am 2500/5000		**X-am 5000/5600**	**X-am 2500/5000/5600**	**X-am 5600**	**X-am 2500/5000/5600**			**X-am 5600**	
Measuring principle	Catalytic combustion	Catalytic combustion	Electrochemical	Electrochemical	Electrochemical	Electrochemical	Electrochemical	Electrochemical	Infrared	Infrared
Indication range	0 to 100 %LEL 0 to 100 Vol% (CH_4)	0 to 100 %LEL 0 to 100 Vol% (CH_4)	0 to 200 ppm	0 to 100 ppm	0 to 100 %LEL	0 to 25 Vol%	0 to 2000 ppm	0 to 2000 ppm	0 to 100 %LEL	0 to 5 Vol%
Measuring range (certified)	0 to 100 %LEL[1)]	0 to 100 %LEL[1)] 0 to 5 Vol%	1 to 100 ppm	0.4 to 100 ppm	0 to 100 %LEL	0 to 25 Vol%	3 to 500 ppm	3 to 500 ppm	0 to 100 %LEL (CH_4, C_3H_8, C_9H_{20})	0.01 to 5 Vol%
Capture range[2)]	+2 to -5 % LEL	+2 to -5 % LEL	±2 ppm	±0.4 ppm	±0.02 Vol%	20.9 Vol%[3)] ±0.4 Vol%	±6 ppm	±1.4 ppm	±1 %LEL	390 ppm ±100 ppm
Drift per month	≤±3 %LEL	≤±3 %LEL	≤1.9 % of measured value but not ≤0.2 ppm	≤1.9 % of measured value but not ≤0.2 ppm	±4 %LEL	±0.3 Vol%	≤1.2 % of measured value but not ≤1 ppm	≤1.2 % of measured value but not ≤1 ppm	≤±3 %LEL	≤1 % of measured value but not ≤0.025 %
Warm-up time	35 s	35 s	≤5 min	≤5 min	≤ 60 min	≤5 min	≤5 min	≤5 min	≤72 s	≤72 s
Effect of sensor poisons Effect of 400 ppm min HMDS in methane volatile silicon, sulphur, heavy metal compounds or halogenated hydrocarbons	≤1 %LEL/ Possible poisoning	≤1 %LEL/ Possible poisoning	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Linearity error	≤2 %LEL (CH_4) ≤5 %LEL (C_3H_8)	≤4 %LEL (CH_4) ≤1 %LEL (C_3H_8)	≤4 % of measured value but not ≤1≤ppm	≤4 % of measured value but not ≤1≤ppm	±1.5 %LEL	≤0.3 Vol%	≤2 % of measured value but not ≤2 ppm	≤2 % of measured value but not ≤2 ppm	≤4 %LEL	≤4 % of measured value but not ≤0.005 %
Standards Measuring function for explosive atmospheres, oxygen deficiency / enrichment and toxic gases, DEKRA Testing and Certification GmbH: BVS 10 ATEX E 080X [1)], PFG 10 G 001X	EN 60079-29-1 EN 50271	EN 60079-29-1 EN 50271	EN 45544-1:1999 EN 45544-2:1999 EN 50271	EN 45544-1:2015 EN 45544-2:2015 EN 45544-3:2015 EN 50271	EN 60079-29-1 EN 50271	EN 50104 EN 50271	EN 45544-1:1999 EN 45544-2:1999 EN 50271	EN 45544-1:2015 EN 45544-2:2015 EN 45544-3:2015 EN 50271	EN 60079-29-1 EN 50271	EN 45544-1:1999 (2015, ES) EN 45544-2:1999(2015, ES) EN 45544-3:1999(2015, ES) EN 50271
Cross-sensitivities	exist[4)]	exist[4)]	Additively affected by: SO_2, NO_2, H_2 Negatively affected by: Cl_2	Additively affected by: SO_2, NO_2, H_2 Negatively affected by : Cl_2	Additively affected by: C_2H_2, NO, CO[5)]	Negatively affected by: C_2H_6, C_2H_4, C_2H_2, CO_2, H_2 No O_2 measurement in He	Additively affected by: C_2H_2, H_2, NO	Additively affected by: C_2H_2, H_2, NO	exist[4)]	n/a
Diffusion										
Time of response $t_{0...90}$	≤17 s (CH_4) ≤25 s (C_3H_8)	≤10 s (CH_4) ≤18 s (C_3H_8)	≤15 s	≤18 s	≤20 s	≤10 s	≤25 s	≤25 s	≤20 s (CH_4) ≤40 s (C_3H_8)	≤33 s
Time of response $t_{0...50}$ (Ex, Tox) Time of response $t_{0...20}$ (O_2)	≤7 s (CH_4)	≤7 s (CH_4)	≤6 s	≤6 s	≤11 s	≤5 s	≤12 s	≤12 s	≤10 s (CH_4) / ≤12 s (C_3H_8)	≤15 s
Time of recovery $t_{0...10}$	≤17 s (CH_4) ≤25 s (C_3H_8)	≤10 s (CH_4) ≤18 s (C_3H_8)	≤18 s	≤21 s	≤20 s	n/a	≤26 s	≤25 s	≤20 s (CH_4) ≤40 s (C_3H_8)	≤35 s
Time of recovery $t_{0...50}$	≤7 s (CH_4)	≤7 s (CH_4)	≤11 s	≤15 s	≤11 s	n/a	≤15 s	≤15 s	≤10 s (CH_4) ≤12 s (C_3H_8)	≤15 s
Calibration adapter										
Time of response $t_{0...90}$	≤350 s (C_9H_{20})	≤29 s other certified gases ≤25 s (C_4H_8)	–	–	–	–	–	–	≤212 s (C_9H_{20})	–
Time of response $t_{0...50}$	≤91 s (C_9H_{20})	≤15 s other certified gases ≤14 s (C_4H_8)	–	–	–	–	–	–	≤24 s (C_9H_{20})	–

1) CatEx 125 PR: alkanes from methane to nonane
CatEx 125 PR Gas: methane, propane, ethane, ethene, ethine, propene, n-butane, i-butene, hydrogen
LEL values in accordance with EN 60079-20-1. At air speed of 0 to 6 m/s, the deviation of the reading is 5 to 10 % of the measured value. For an adjustment to propane, the deviation of the display in the range of 80 to 120 kPa can be up to 8 %LEL.
2) This range of measured values is known as capture range where minor measured value fluctuations (e.g. signal noise, concentration fluctuations) does not result in a changing display. Measured values outside the capture range are displayed using their actual measured values. By using Dräger CC-Vision the set capture range can be read out and activated/deactivated. The capture range is continuously activated in measuring mode and is disabled in calibration mode. The following capture range applies if the DrägerSensor CatEx 125 PR Gas is used for underground mining application: +0.1 or -0.2 Vol%, respectively.
3) For the fresh air calibration, it is assumed that the oxygen concentration in the ambient air is 20.9 Vol% O_2.
4) The instrument responds to most combustible gases (sensor 6813080) or most gases and vapours (sensor 6812950, 6851881). The sensitivities differ depending on the type of gas. Dräger recommends a calibration using the target gas to be measured. Regarding catalytic combustion sensors in the range of alkanes, the sensitivity decreases from methane to nonane.
5) Increased hydrogen concentrations within the range of XXS H_2-HC may result into false alarms by additive effect on the XXS H_2S and the XXS CO, as well as due to the negative effect on the XXS O_2

Note:

- For operation and storage within the limits of -20 to + 50 °C and 10 to 90 % (95 % briefly) r. F. the following pressure ranges applies: 800 to 1100 hPa (use in potentially explosive atmospheres) or 700 to 1300 hPa (measuring function).
- The sensor data applies for diffusion mode up to a max. air flow velocity of 6 m /s.
- The requirements of the standards regarding error limits are valid for the whole operating range of the device, deviations are:
  - XXS CO-LC sensor, increased indication at >40 °C; at zero-point ≤4 ppm, test gas concentration ≤14 %.
  - Dual IR (ES) and XXS H_2-HC sensors, the deviations of indication with pressure in test gas within the full pressure range is up to 1.5 times higher than within the range of the standard.
- In sub-zero temperatures, the response times of the XXS CO-LC and XXS O2 sensor may be increased compared to room temperature. If necessary, check response times (see instructions for use).

90 33 890 - ED 4638.222

Edition 07 - February 2023 (Edition 01 - Januar 2018)
Subject to alteration

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