X-am 3500 / 8000 | Notes on approval / Sensor data

Approvals / Marking

The following labels are examples only and may vary. With regard to the intended use in potentially explosive atmospheres, the content of the label corresponds to the current and certified marking.

X-am 3500

X-am 8000

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.

NOTICE

If the gas detector is used for offshore applications, a distance of 5 m to a compass must be complied with.

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

Only for Canada:

CAN ICES-3 (B)/NMB-3(B)

Only for CSA (Canadian Standards Association):

WARNING: Wireless communication is intended for use as a secondary remote alarm status notification only. Primary alarming of combustible gas hazards is provided locally by detector.

WARNING: Applicable to CLASS II DIV.1, GROUPS E, F, and G certification: CSA Std. 152 does not have any requirement for Class II environment and therefore this device has not been performance tested for Class II hazardous location. The sensor may become clogged and not detect gas properly or warn the user of its inability to detect gas.

AVERTISSEMENT: La communication sans fil est destinée à être utilisée uniquement comme notification d'état d'alarme secondaire à distance. L'alarme primaire des risques de gaz combustible est fournie localement par le détecteur.

AVERTISSEMENT: Applicable à la certification CLASSE II DIV.1, GROUPS E, F et G: CSA Std. 152 n'a pas d'exigence pour l'environnement de classe II et par conséquent, cet appareil n'a pas été testé pour un emplacement dangereux de Classe II. Le capteur peut se boucher et ne pas détecter correctement le gaz ou avertir l'utilisateur de son incapacité à détecter le gaz.

Only for EAC-Countries:

Срок службы: 10 лет

Максимальный срок хранения: 2 года (срок хранения может быть увеличен при сервисном обслуживании)

Хранение: Когда газоанализатор не используется, необходимо соблюдать условия и срок хранения.

Храните и транспортируйте оборудование в оригинальной упаковке и перевозите его только в крытых транспортных средствах (железнодорожных вагонах, крытых автомобилях, герметичных и отапливаемых отсеках самолетов, грузовых трюмах судов и т.п.).

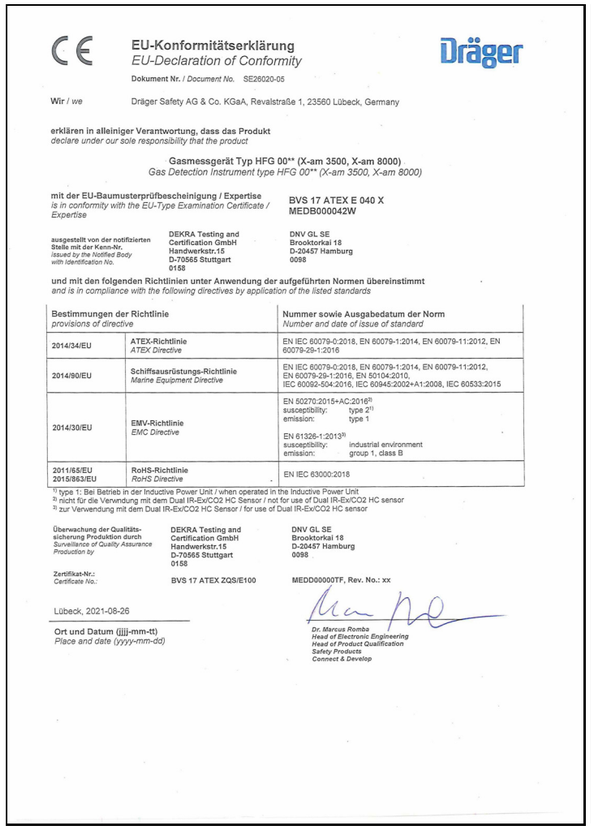
Qyzmet etu merzımı: 10 jyl

Maksimaldy saqtau merzımı: 2 jyl (servistık qyzmet körsetılse, saqtau merzımı ūzartyluy mümkın)

Saqtau: Eger gaz analizatory qoldanylmaityn bolsa, ony saqtau şarttary men saqtau merzımı oryndaluy tiıs.

Jabdyqty tüpnūsqa qaptamasyna salyp saqtañyz jäne tasymaldañyz jäne üstı jabyq kölık qūraldarymen (üstı jabyq temır jol vagondary, avtomobilder, ūşaqtardyñ bekıtıletın jäne jylytylatyn bölımderı, kemelerdıñ jük bölımderı jäne t.s.s.) ğana tasymaldañyz.

Declaration of conformity for X-am 3500 / 8000



EU-Konformitätserklärung
EU-Declaration of Conformity

Dräger

Dokument Nr. / *Document No.* SE26020-05

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 HFG 00** (X-am 3500, X-am 8000)
*Gas Detection Instrument type HFG 00** (X-am 3500, X-am 8000)*

mit der EU-Baumusterprüfbescheinigung / Expertise *is in conformity with the EU-Type Examination Certificate / Expertise*		BVS 17 ATEX E 040 X MEDB000042W
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, EN 60079-11:2012, EN 60079-29-1:2016
2014/90/EU	Schiffsausrüstungs-Richtlinie *Marine Equipment Directive*	EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-11:2012, EN 60079-29-1:2016, EN 50104:2010, IEC 60092-504:2016, IEC 60945:2002+A1:2008, IEC 60533:2015
2014/30/EU	EMV-Richtlinie *EMC Directive*	EN 50270:2015+AC:2016[2)] susceptibility: type 2[1)] emission: type 1 EN 61326-1:2013[3)] susceptibility: industrial environment emission: group 1, class B
2011/65/EU 2015/863/EU	RoHS-Richtlinie *RoHS Directive*	EN IEC 63000:2018

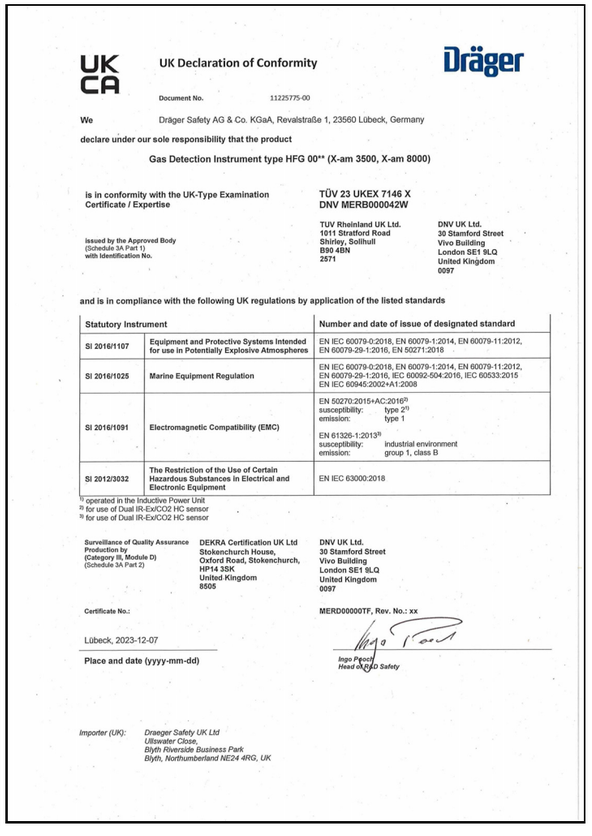
[1)] type 1: Bei Betrieb in der Inductive Power Unit / when operated in the Inductive Power Unit
[2)] nicht für die Verwendung mit dem Dual IR-Ex/CO2 HC Sensor / not for use of Dual IR-Ex/CO2 HC sensor
[3)] zur Verwendung mit dem Dual IR-Ex/CO2 HC Sensor / for use of Dual IR-Ex/CO2 HC sensor

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.: *Certificate No.:*	BVS 17 ATEX ZQS/E100	MEDD00000TF, Rev. No.: xx

Lübeck, 2021-08-26

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
Connect & Develop



UK Declaration of Conformity

Dräger

Document No. 11225775-00

We Dräger Safety AG & Co. KGaA, Revalstraße 1, 23560 Lübeck, Germany

declare under our sole responsibility that the product

Gas Detection Instrument type HFG 00** (X-am 3500, X-am 8000)

is in conformity with the UK-Type Examination Certificate / Expertise		TÜV 23 UKEX 7146 X DNV MERB000042W
issued by the Approved Body (Schedule 3A Part 1) with Identification No.	TUV Rheinland UK Ltd. 1011 Stratford Road Shirley, Solihull B90 4BN 2571	DNV UK Ltd. 30 Stamford Street Vivo Building London SE1 9LQ United Kingdom 0097

and is in compliance with the following UK regulations by application of the listed standards

Statutory Instrument		Number and date of issue of designated standard
SI 2016/1107	Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres	EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-11:2012, EN 60079-29-1:2016, EN 50271:2018
SI 2016/1025	Marine Equipment Regulation	EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-11:2012, EN 60079-29-1:2016, IEC 60092-504:2016, IEC 60533:2015 EN IEC 60945:2002+A1:2008
SI 2016/1091	Electromagnetic Compatibility (EMC)	EN 50270:2015+AC:2016[2)] susceptibility: type 2[1)] emission: type 1 EN 61326-1:2013[3)] susceptibility: industrial environment emission: group 1, class B
SI 2012/3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment	EN IEC 63000:2018

[1)] operated in the Inductive Power Unit
[2)] for use of Dual IR-Ex/CO2 HC sensor
[3)] for use of Dual IR-Ex/CO2 HC sensor

Surveillance of Quality Assurance Production by (Category III, Module D) (Schedule 3A Part 2)	DEKRA Certification UK Ltd Stokenchurch House, Oxford Road, Stokenchurch, HP14 3SX United Kingdom 8505	DNV UK Ltd. 30 Stamford Street Vivo Building London SE1 9LQ United Kingdom 0097
Certificate No.:		MERD00000TF, Rev. No.: xx

Lübeck, 2023-12-07

Place and date (yyyy-mm-dd)

Ingo Pecoll
Head of R&D Safety

Importer (UK): *Draeger Safety UK Ltd*
Ullswater Close,
Blyth Riverside Business Park
Blyth, Northumberland NE24 4RG, UK

Limited Manufacturer Guarantee

We are going paperless.

Scan the QR code and enter document number 9033743.

www.draeger.com/ifu

9033743

Digitally signed by Ermicev Alexandr
Date: 2024.11.20 11:41:01 EET
Reason: MoldSign Signature
Location: Moldova
MOLDOVA EUROPEANĂ

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

For the conversion of the test gas concentration between %LEL and Vol% see Information system on hazardous substances (GESTIS) of the German Social Accident Insurance (IFA) https://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp or LEL values in accordance with EN 60079-20-1.

								DUAL IR Ex / CO_2 (ES) 6811960 (6851880)	
	CatEx 125 PR 6812950	**CatEx 125 PR Gas 6813080**	**XXS H_2S-LC 6811525**	**XXS H_2-HC 6812025**	**XXS O_2 6810881**	**XXS O_2 PR 6800530**	**XXS CO-LC 6813210**	**IR Ex (ES) 6812180 (6851881)**	**IR CO_2 (ES) 6812190 (6851882)**
	X-am 3500/8000	**X-am 8000**	**X-am 3500/8000**	**X-am 8000**	**X-am 3500/8000**	**X-am 3500/8000**	**X-am 3500/8000**	**X-am 8000**	**X-am 8000**
Measuring principle	Catalytic combustion	Catalytic combustion	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 %LEL	0 to 25 Vol%	0 to 30 Vol%	0 to 2000 ppm	0 to 100 %LEL 0 to 100 Vol% (CH_4)	0 to 5 Vol%
Measuring range (certified)	0 to 100 %LEL[1)]	0 to 100 %LEL[1)]	0.4 to 100 ppm	0 to 100 %LEL	0 to 25 Vol%	0 to 25 Vol%	3 to 500 ppm	0 to 100 %LEL[2)] 0 to 5 Vol% (CH_4)	0.05 to 5 Vol%
Capture range[3)]	+2 to -3 % LEL	+2 to -3 % LEL	±0.4 ppm	±0.5 %LEL	20.9 Vol%[4)] ±0.4 Vol%	20.9 Vol%[4)] ±0.4 Vol%	±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	±4 %LEL	±0.3 Vol%	±0.3 Vol%	≤1.2 % of measured value but not ≤1 ppm	≤±3 %LEL	≤1 % of measured value but not ≤0.025 %
Warm-up time	≤85 s	≤85 s	≤85 s	≤85 s	≤120 s	≤120 s	≤85 s	≤85 s	≤85 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
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	±1.5 %LEL	≤0.3 Vol%	≤0.3 Vol%	≤2 % of measured value but not ≤2 ppm	≤4 %LEL	≤4 % of measured value but not ≤0.005 %
Standards Measuring function for flammable gases, oxygen deficiency / enrichment and toxic gases, DEKRA Testing and Certification GmbH: BVS 17 ATEX E 040 X [1)] PFG 19 G 001 X	EN 60079-29-1 EN 50271	EN 60079-29-1 EN 50271	EN 45544-1 EN 45544-2 EN 45544-3 EN 50271	EN 60079-29-1 EN 50271	EN 50104 EN 50271	EN 50104 EN 50271	EN 45544-1 EN 45544-2 EN 45544-3 EN 50271	EN 60079-29-1 EN 50271	EN 45544-1 EN 45544-2 EN 45544-3 EN 50271
Cross-sensitivities	exist[5)]	exist[5)]	Additively affected by: SO_2, NO_2, H_2 Negatively affected by : Cl_2	Additively affected by: C_2H_2, NO, CO 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	Negatively affected by: C_2H_6, C_2H_4, C_2H_2, CO_2, H_2 No O_2 measurement in He	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	exist[5)]	n/a
Diffusion									
Time of response $t_{0...90}$	≤20 s (CH_4) ≤30 s (C_3H_8)	≤15 s (CH_4) ≤29 s (C_3H_8)	≤20s	≤15s	≤9 s	≤15 s	≤21 s	≤21 s (CH_4) ≤57 s (C_3H_8)	≤48 s
Time of response $t_{0...50}$ (Ex, Tox) Time of response $t_{0...20}$ (O_2)	≤9 s (CH_4) ≤12 s (C_3H_8)	≤8 s (CH_4) ≤12 s (C_3H_8)	≤14 s	≤10 s	≤5 s	≤6 s	≤13 s	≤10 s (CH_4) ≤14 s (C_3H_8)	≤14 s
Time of recovery $t_{0...10}$	–	–	≤21 s	–	n/a	n/a	≤21 s	≤30 s (CH_4)	≤47 s
Time of recovery $t_{0...50}$	–	–	≤14 s	–	n/a	n/a	≤12 s	≤10 s (CH_4)	≤15 s
Pump									
Time of response $t_{0...90}$	≤12 s (CH_4) ≤15 s (C_3H_8)	≤10 s (CH_4) ≤13 s (C_3H_8)	≤20 s	≤15 s	≤8 s	≤13 s	≤16 s	≤11 s (CH_4) ≤15 s (C_3H_8)	≤14 s
Time of response $t_{0...50}$ (Ex, Tox) Time of response $t_{0...20}$ (O_2)	≤9 s (CH_4) ≤11 s (C_3H_8)	≤8 s (CH_4) ≤10 s (C_3H_8)	≤15 s	≤11 s	≤6 s	≤7 s	≤11 s	≤9 s (CH_4) ≤10 s (C_3H_8)	≤10 s
Time of recovery $t_{0...10}$	–	–	≤20 s	–	n/a	n/a	≤16 s	≤11 s (CH_4)	≤14 s
Time of recovery $t_{0...50}$	–	–	≤14 s	–	n/a	n/a	≤12 s	≤9 s (CH_4)	≤10 s
Calibration adapter									
Time of response $t_{0...90}$	≤160 s (C_9H_{20})	≤23 s other certified gases	–	–	–	-	–	≤105 s (C_9H_{20})	–
Time of response $t_{0...50}$	≤46 s (C_9H_{20})	≤12 s other certified gases	–	–	–	-	–	≤21 s (C_9H_{20})	–

1) CatEx 125 PR: alkanes from methane to n-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.
2) IR Ex: methane, propane, n-nonane; LEL values in accordance with EN 60079-20-1.
3) 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. By default, the capture range is continuously activated in measuring mode and is disabled in calibration mode.
4) For the fresh air calibration, it is assumed that the oxygen concentration in the ambient air is 20.9 Vol% O_2.
5) The instrument responds to most combustible gases (sensor 6813080) or most gases and vapours (sensor 6812950, 6851880, 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. The sensitivity ratios between different gases can change as a result of sensor aging or poisoning.

Note:
- The requirements of the standards regarding error limits are valid for the whole operating range of the device, deviations are:
  XXS H_2 HC sensor, increased indication at -20 °C; ≤ 4.5 %LEL between -10 °C and +50 °C
  XXS CO-LC sensor, increased indication at >40 °C; at zero-point <=7 ppm, test gas concentration ≤ 27 %
- Dual IR Ex Sensor at measuring range 0-5 Vol% methane (CH4), the deviation from the volume fraction at 1.46 Vol% CH4 caused by added 0.075 Vol% ethane (C2H6) in air, is about + 25 % rel.
- In sub-zero temperatures, the response times of the XXS CO-LC, XXS O_2 and XXS O_2 PR sensor may be increased compared to room temperature. If necessary, check response times (see instructions for use).

A translation of the notes and footnotes will be provided on request.

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