Draeger x-am 2500 manual

I'm not robot!

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1 Dräger X-am 2500 (MQG 0011) Technical Manual i 2 3 Content Content 1 For your safety General safety statements Definitions of alert icons Description Product overview Front Rear side Display Special symbols Intended use Approvals Marking Permitted power packs Safety Instructions Use Preparations for use Charging the batteries Replacing
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sensitivity for an individual measuring channel Sensitivity calibration for CatEx Operation with pump Replacing the sensors Troubleshooting Warning messages Fault messages Fault messages Maintenance table Cleaning Disposal WEEE Battery disposal Electrochemical sensors Technical data X-am Sensor data Order list Declaration of conformity
Dräger X-am 4 For your safety 1 For your safety 1 For your safety 1.1 General safety statements Before using this product, carefully read the associated Instructions for Use. 1.2 Definitions of alert icons The following alert icons are used in this document to provide and highlight areas of the associated text that
require a greater awareness by the user. A definition of the meaning of each icon is as follows: i WARNING Indicates a potentially hazardous situation which, if not avoided, could result in physical injury, or damage to the product or
environment. It may also be used to alert against unsafe practices. NOTICE Indicates additional information on how to use the product. 4 Dräger X-am 2500 5 Description 2 Description Display 7 Tool for changing sensor eps Display for 4
measuring channels: 1 Measured gas display with unit 2 Measured gas display with unit 6 Special symbols The following only shows the instrument version with 4 measuring channels Special symbols Rear side IR interface 2 Fastening clip 3 Nameplate 4 Charging
contacts 5 Power pack 6 Serial no eps Fault message, see section 4.1 on page 15 The exposure evaluation display (TWA) for measured gases, e.g. H 2 S and, see section 4.1 on page 15 The exposure evaluation display (STEL) for
measured gases, e.g. H 2 S und, see section 4.1 on page 15 The instrument is set to the bump test function, see section 5.2 on page 17 The instrument is set to the single
gas calibration function, see section on page 17 Function for password input is active, see section 4.4 on page 15 Battery / rechargeable battery 1/3 full Battery / rechargeable battery 2/3 full Battery / rechargeable battery 1/3 full Battery / r
for the continuous monitoring of the concentration of several gases in the ambient air within the working area and in explosion-hazard areas. Independent measurement of up to 4 gases, in accordance with the installed Dräger sensors. Areas subject to explosion hazards, classified by zones The instrument is intended for the use in areas that are at
risk for explosions in Zone 0, Zone 1 or Zone 2 or in mines at risk due to black damp. It is intended for use within a temperature class T3 or T4 (depending on the batteries and rechargeable battery) may be present. For zone 0, the temperature
class is limited to T3. If used in mines, the instrument is only to be used in areas known to have a low risk of mechanical impact. Areas subject to explosions of Class I&II, Div. 1 or Div. 2. It is intended for use within a temperature range of 20 C
to +50 C, and for areas in which gases or dusts of groups A, B, C, D or E, F, G, and temperature class T3 or T4 (depending on the batteries and rechargeable battery) may be present. 2.3 Approvals CE marking: Marking Serial no. 1 on separate sticker Electromagnetic compatibility (Directive 2004/108/EC) Explosion protection (Directive 94/9/ EEC)
Permitted power packs Power pack; approved as type ABT 0100 Temperature class T3 20 C Ta +40 C use with NiMH rechargeable batteries Duracell Procell MN Temperature class T3 20 C Ta +40 C use with NiMH rechargeable batteries Duracell Procell MN Temperature class T3 20 C Ta +40 C use with NiMH power pack T4
(order no ); approved as HBT 0000 Temperature class T4 20 C Ta +50 C NiMH power pack T4 HC (order no ); approved as HBT 0100 Temperature class T4 20 C Ta +50 C Safety Instructions WARNING Do not replace or charge batteries in potentially explosive areas. Explosion hazard Charge the NiMH power pack T4 (type HBT 0000) or T4 HC (type
HBT 0100) with the associated Dräger charger. Charge NiMH single cells for ABT 0100 batteries and do not mix batteries made by different
manufacturers. Always disconnect the instrument from the power pack before carrying out any maintenance operations. Substitution of components may impair intrinsic safety. Only use power pack for approved batteries and related temperature
classes. Not tested in an oxygen-enriched atmosphere (>21 % O 2). High off-scale readings may indicate an explosive concentration. 1 The year of construction is coded by the third capital letter of the serial number: D = 2012, E = 2013, F = 2014, H = 2015, J = 2016, K = 2017, L = 2018, etc. Example: Serial number AREH-0054, the third letter is E,
so the year of manufacture is Not subject to BVS10 ATEX E 080X and PFG 10 G 001X performance approval. 6 Dräger X-am 2500 7 Use Note the following for CSA (Canadian Standards Association) applications: For the CSA approval only the functions of the device component that is used to measure flammable gases are tested. The device is not
approved by CSA for use in mining. WARNING Before daily use, test the sensitivity with a known concentration of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accuracy must be within a range of 0 to +20% of the accura
use Before using the instrument for the first time, insert the batteries provided or a charged NiMH power pack T4 (type HBT 0000; order no ), see section on page 8. The instrument is now ready for operation Charging the batteries WARNING Explosion hazard Do not charge underground or in explosion hazard
areas The chargers are not designed in accordance with the regulations for fire damp and explosion protection. Charge the NiMH power pack T4 (type HBT 0100) with the associated Dräger charger. Charge the NiMH single cells for ABT 0100 battery holder in accordance with the manufacturer's specifications. Ambient
temperature during the charging process: 0 to +40 C. i NOTICE Even if the instrument is not used, Dräger recommends storing the instrument in the charging cradle (charging module X-am 1/2/5000, order no ). To maintain the lifetime of the batteries, charging is temperature controlled and only performed in a temperature range of 5 to 35 C. When
outside this temperature range, the charging discharging time is typically 4 hours. A new NiMH power pack reached again. The charging/discharging cycles. Never store the instrument for extended periods
without being connected to a power source (maximum of 2 months) because the internal buffer battery will drain. Charging with the multiple charging station. When attaching the charging modules, disconnect the power pack
from the mains supply CAUTION Always connect or disconnect the charging modules individually and not in groups in order to prevent the charging station from becoming damaged. During transportation, the power pack and the charging station from becoming damaged. During transportation, the power pack and the charging station from becoming damaged.
C 0 X-am 2500 X-am 2500 X-am 2500 X-am 2500 Ex %UEG C 0 Ex %UEG eps Position the instrument on an even and level surface. 1. Turn the slots of the interlock into a horizontal position by using a screwdriver or coin. 2. Insert the
fastening lug (2) of the charger module (simultaneous power feed) until it engages. 3. Close the lock (1) with a quarter turn (slot is positioned vertically). 4. Attach additional charging modules in the same way. 5. Connect the power pack to the mains. The green "Mains" LED (1) is on. 6. Insert the switched off instrument into the charger module.
Display LED (5) on the charging readle: Charging Fault Full If a fault occurs: Remove the instrument from the charging module repaired. It takes approx. 4 hours to fully charge an empty rechargeable battery. CAUTION A short circuit of the charging contacts in the charging
modules, e. g., by metallic objects that have fallen in, does not result in damage to the charger module. In the event of a short circuit or if the power pack is overloaded: The red "Overload" LED (3) is on, and an audible alarm sounds. After the
fault has been corrected, the alarm is switched off automatically and the charging process is restarted. In the event of a power failure, the instruments already charged will be protected from discharging eps When using the power pack (order no ), up to 2 instruments.
The power pack contained in the rechargeable battery and charging set (order no ) is suitable for charging module separately. The charging module separately out analogous to charging with the multiple charging station Replacing
the batteries / rechargeable batteries WARNING Explosion hazard Do not throw used batteries into fire or try to open them by force. Do not replace or charge batteries in a hazardous area. Batteries into fire or try to open them by force. Do not replace or charge batteries in a hazardous area. Batteries into fire or try to open them by force. Do not replace or charge batteries in a hazardous area. Batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force. Do not replace or charge able batteries in a hazardous area. Batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force. Do not replace or charge able batteries into fire or try to open them by force.
Powerline Varta Type (power one) or Varta Type (industrial) Alkaline batteries T3 (rechargeable) Duracell Procell MN NiMHy rechargeable) Duracell Procell MN NiMHy rechargeable batteries T3 (rechargeable) Duracell Procell MN NiMHy rechargeable) Du
Charge NiMH rechargeable batteries for battery holder ABT 0100 in accordance with the manufacturer's specifications. Ambient temperature during the charging process: 0 to +40 C. 1) Not part of the measurement performance tests BVS10 ATEX E 080X and PFG 10 G 001X. 8 Dräger X-am 2500 9 Use Switching off the instrument Press and hold
the [OK] key and [+] key simultaneously until the countdown» 3.2.1 «shown on the display has elapsed. Before entering the workplace eps 1. Switching off the instrument: OK key and key are held down simultaneously. 2. Loosen the screw (2.0
mm hexagon socket) on the power pack and remove the power pack. With battery holder (order no ): Replace alkaline batteries or NiMHy rechargeable batteries or NiMHy rechargeable batteries. Ensure correct polarity. With the T4 NiMH power pack (type HBT 0000) / T4 HC (type HBT 0100): Completely replace the power pack. 3. Insert the power pack into the instrument and
tighten the screw, the instrument switches on automatically. After replaced: The settings and data are stored when the battery is replaced. The sensors warm up again Switching on the instrument 1. Hold down
the [OK] button for approx. 3 seconds until the *3.2.1 «countdown shown on the display segments, including the visual, audible and vibration alarms, are activated for a short time. The software version is displayed with the
remaining days until the next calibration/adjustment e. g.» Ex CAL20«. The time until the bump test interval elapses is displayed in days, e.g.» bt123«. All alarm thresholds A1 and A2 as well as» «(TWA) 1 and» «(STEL) 1) for H 2 S and are displayed consecutively. During the warm-up period of the sensors, the respective display of the measured value
flashes and the special symbol» «(for warning) is displayed. No alarms are issued during the warm-up period of the sensors. See the Technical Handbook for details regarding accelerated warm-up. 2. Press the [OK] key to cancel the display of the activation sequence. 3 WARNING Check the display and, if necessary, calibrate the instrument and check
all alarm elements before carrying out safety relevant measurements. A bump test must be performed according to the national regulations. 1. Switch on the instrument can be operated normally. If the warning message does not
disappear automatically during operation, the instrument must be serviced after the end of use. The instrument is not ready to measure and requires maintenance. WARNING Fractions of catalytic poisons in the measuring gas (e.g. volatile silicone, sulphur, heavy metal compounds or halogenated hydrocarbon) can damage the CatEx sensor. If the
CatEx sensor can no longer be calibrated to the target concentration, the sensor must be replaced. In case of measurements in an oxygen-deficient atmosphere (21 Vol.-% O 2), the electrical operational safety cannot be guaranteed; switch off instrument or leave work station. 3. Check that the gas inlet opening on the instrument is not covered. 1
Only when activated in the instrument configuration. Delivery status: not activated. Dräger X-am 10 Use 3.3 Configuration Standard gas configuration DrägerSensor Measuring range 1 Alarm A1 1) Alarm A2 1) threshold CatEx 125 PR [] 0 to yes no 40 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 60 no yes XXS [] 0 to yes no 90 no yes XXS [] 0 to yes no yes XX
no 10 no yes XXS NO 2 [] 0 to 50 5 yes no 10 no yes XXS SO 2 [] 0 to 50 5 yes no 10 no yes can be acknowledged self-latching 1) Different settings can be acknowledged self-latching 1 Different settings can be acknowledged self-latching 2.
CC-Vision software that can be used for Dräger X-am 2500 is available for download from the product page for the X-am 2500 at the following web address: 2) With O 2, A1 is the lower alarm threshold: an alarm is triggered if the value is too low. 10 Dräger X-am 2500 at the following web address: 2) With O 2, A1 is the lower alarm threshold: an alarm is triggered if the value is too low. 10 Dräger X-am 2500 at the following web address: 2) With O 2, A1 is the lower alarm threshold: an alarm is triggered if the value is too low. 10 Dräger X-am 2500 at the following web address: 2) With O 2, A1 is the lower alarm threshold: an alarm is triggered if the value is too low. 10 Dräger X-am 2500 at the following web address: 2) With O 2, A1 is the lower alarm threshold: an alarm is triggered if the value is too low. 10 Dräger X-am 2500 at the following web address: 2) With O 2, A1 is the lower alarm threshold: an alarm is triggered if the value is too low. 10 Dräger X-am 2500 at the following web address: 2) With O 2, A1 is the lower alarm threshold: an alarm is triggered if the value is too low. 10 Dräger X-am 2500 at the following web address: 2) With O 2, A1 is the lower alarm threshold: an alarm is triggered if the value is too low. 10 Dräger X-am 2500 at the following web address: 2) With O 3, A1 is the lower alarm threshold: A2 is the lower alarm threshold: A2 is the lower alarm threshold: A3 is the 
test Fresh air calibration in the ON Quick Menu 1) Life sign - visual only 1) ON Switching off 1) allowed LEL factor 1) (ch 4) 4.4 (vol. % corresponds to 100) Averaging time 1) 15 minutes for TWA 1) Different settings can be selected to meet customer requirements on delivery. The current setting can be checked and
changed with the Dräger CC Vision software. A version of the CC-Vision software that can be used for Dräger X-am 2500 at the following web address: Changing the configuration: see Replacing the sensors on page 19. WARNING After a basic initialisation has been carried out with
the PC software Dräger CC Vision, individual alarm settings may have been changed Configure a standard-configuration. X-am 2500 Calibration cradle (order no ) with inserted USB DIRA with USB cable
(order no ) IR E-Cal module Dräger X-am 125 (order no ) USB DIRA with USB cable (order no ) USB 1.1 US
following web address: Export data memory and display it graphically. To read the database of the instrument and displaying the database. Observe the documentation and online help of the software is used for exporting and displaying the database.
bump test Manual implementation without documentation of the results in the instrument memory 1. Prepare a test gas cylinder, 0,5 L/min and the gas concentration must be higher than the alarm threshold concentration that is to be tested. Example test gas cylinder = mixed gas with 50, 15 H 2 S, 2.5 vol. % CH 4,
18 vol. % O 2 2. Connect the test gas cylinder with the calibration cradle (order no ). 3. Vent the test gas into a fume cupboard or into the eps open air (with a hose connected to the second connector of the calibration cradle). CAUTION Never inhale the test gas. Health hazard Observe the hazard warnings of the relevant Safety Data Sheets. 4. Switch
on the instrument and insert it into the calibration cradle press downwards until it engages. 5. Open the test gas concentration with sufficient tolerance Ex: ±20 % of the test gas concentration 1 O 2: ±0.6 vol. % 1 TOX: ±20 % of the
test gas concentration 1 Wait until at least alarm threshold A1 or A2 has been exceeded, however. If the alarm thresholds are exceeded, the instrument displays the gas concentration in alternation with» A1 «or»A2 «depending on the test gas concentration in alternation with» A1 «or»A2 «depending on the test gas concentration in alternation with» A1 «or»A2 «depending on the test gas concentration in alternation with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with» A1 «or»A2 «depending on the test gas concentration with with a test gas concentration with with a test gas concentration with a test gas co
the concentration has now fallen under the A1 alarm threshold: Acknowledge the alarm. If the displays are outside of the above-mentioned ranges: Calibrating/adjusting the instrument, see section 5 on page Upon application of the Dräger mixed gas (order no ) the displays should be within this range. Dräger X-am 12 0 Ex %UEG 0 Use Menu
implementation with the documentation of results in the instrument memory The setting to "Quick bump test" or "Accelerated bump test" is made using the PC software Dräger CC Vision. In the "Quick bump test" a check is carried out as to whether or not the gas concentration has exceeded alarm threshold 1 (with oxygen, the test checks that alarm
threshold 1 has not been reached). In the "Accelerated bump test" a check is carried out as to whether or not the gas concentration has exceeded alarm threshold 1 (with oxygen, the test checks that the alarm threshold has not been reached) and whether or not the gas concentration has reached the set bump test concentration. Setting on delivery:
Quick bump test. 1. Prepare a test gas cylinder, the volume flow must be 0.5 l/min and the gas concentration must be higher than the alarm threshold concentration that is to be tested. Example test gas cylinder 0,5 L/min with the calibration cradle (order no
)). 3. Vent the test gas into a fume cupboard or into the open air (with a hose connected to the second connector of the calibration changes with
the display»ok«. The bump test that was carried out is documented with the result and date in the instrument memory. 8. Close the test gas cylinder valve and remove the instrument returns to the measuring mode. If the set bump
test concentration is not reached within the set time, an error is issued. The fault message» «appears and» «is displayed instead of the measured value on the faulty measuring channel. In this case, repeat the bump test or calibrate the instrument, page 19. CH_en.eps eps CAUTION Never inhale the test gas. Health hazard Observe the hazard
warnings of the relevant Safety Data Sheets en.eps The bump test can also be run automatically. The "Bump Test Station" is required for this function, see section on page Switch on the instrument and insert it into the calibration cradle press downwards until it engages. 5. Open the Quick menu and select the bump test, page 15. The current gas
concentration values and the special symbol» «(for bump test) flash. 6. Press the OK key to start the bump test of the corresponding alarm will occur. CH_en.eps Automatic implementation with the Bump Test Station eps
Prerequisite: The instrument first needs to be configured for the automatic bump test using the Dräger CC-Vision PC sofware. Activating the instrument for the automatic bump test. 12 Dräger X-am 2500 13 Use Composition of test gas (mixed gas) standard on delivery: 50, 15 H 2 S, 2.5 vol. % CH 4, 18 vol. % O 2 Define which measuring channels
should participate in the automatic bump test. All measuring channels participate in the bump test by default. 1. Prepare the Bump Test Station until it engages. The bump test will be started automatically. The special symbol» «(for
bump test) flashes. If a gas alarm (quick bump test) is initiated and the set bump test concentration will be displayed alternately with»ok«. 3. Remove the instrument from the Bump Test Station. If the concentration values have now fallen under the A1 alarm
thresholds, the instrument returns to the measuring mode. If there is no alarm during the bump test and the current measurements do not reach the set target concentration ("Accelerated bump test" only), an error is issued. The fault message and a current measurement returns to the measuring channel. In this case,
repeat the bump test or calibrate the instrument, page 19. CH4 CH _en.eps _en.eps The bump test can also be run manually, see section on page 11. The Dräger CC Vision PC software can be used to enable the "Automatic calibration after incorrect bump test" option. 3.5 During use During operation, the measured values for every measured gas are
displayed. If a measuring range is exceeded or not reached, the following displays are shown instead of the measuring range exceeded) or «(measuring range exceeded) or not reached) or a concentration of flammable materials can lead to a lack of oxygen. For O 2 concentrations under 8 vol. % an error is indicated with» «at
the ex-channel instead of the measuring value as long as the measuring value falls below the prewarning threshold. In the event of an alarm, the corresponding displays, including the visual, audible and vibration alarms, are activated, see section 6 on page 19. If the measuring range is exceeded significantly at the CatEx channel (very high
concentration of flammable materials), a blocking alarm is triggered. This CatEx blocking alarm can be acknowledged manually by switching the instrument off and back on again in fresh air. (blocking alarm). WARNING In the event of an impact load when using a CatEx sensor in the Dräger X-am 2500 that causes the fresh air display to deviate from
zero, the zero point and sensitivity must adjusted. After the measuring channels is not necessary. 3.6 Identifying alarms An alarm is displayed visually, audibly and through vibration in a specific pattern Concentration pre-alarm A1
Intermittent alarm: Display»A1 «and measured value alternating: The pre-alarm A1 is not latching and stops when the concentration has dropped below the alarm threshold A1. In case of A1, a single tone is audible alarm and the vibration alarm are switched
off. Dräger X-am 14 Use Concentration main alarm A2 WARNING Risk of fatal injury Leave the area immediately. A main alarm is self-latching and cannot be acknowledged or cancelled. Intermittent alarm: Display» A2 and measured value alternating: In case of A2, a double tone is audible and the alarm LED flashes twice Instrument alarm
Intermittent alarm: Special symbol» «displayed on the right side of the display: The instrument is not ready for operation. For corrective measures, see Replacing the sensors on page 19 to page 22. Contact maintenance or Draeger Service to rectify the problem. After leaving the area, when the concentration has dropped below the alarm threshold.
Press the OK key. The alarm messages are switched off. If the measuring range is exceeded significantly on the CatEx channel (very high concentration of flammable materials), a blocking alarm is triggered. This CatEx blocking alarm can be acknowledged manually by switching the instrument off and back on again in fresh air STEL / TWA exposure
alarm WARNING Leave the area immediately. After this alarm, the deployment of personnel is subject to the relevant national regulations. Intermittent alarm: Display» A2«and» «(STEL) or» «(TWA) and measured value alternating: The STEL and TWA alarm cannot be acknowledged or cancelled. Switch off the instrument. The values for the exposure
evaluation are deleted after the instrument is switched on again Battery pre-alarm Intermittent alarm: Flashing special symbol» side of the display: «on the right Acknowledging the pre-alarm intermittent alarm: Press the OK key. Only the audible alarm and the vibration alarm are switched off. The battery still lasts min. 20 minutes after the first battery pre-alarm.
Battery main alarm Intermittent alarm: Flashing special symbol» of the display: «on the right side The battery main alarm cannot be acknowledged or cancelled: The device automatically switches off after 10 seconds. Before the instrument is switched off, the visual, audible and vibration alarms are activated for a short time. 14 Dräger X-am 2500 15
Menu functions 4 Menu functions 4.1 Activating the Info mode In measuring mode, press the OK key for approx. 3 seconds. If any warning or fault messages exist, the corresponding information or error codes will be displayed (see section 8 on page 20). Press the OK key successively for the next display. The peak values and the exposition values
TWA 1 and STEL 1) are displayed. Numerical codes of fault messages are displayed.
values in the case of O 2 within the storage values of the exposure evaluation are displayed OK key The average values of the exposure evaluation of all the active sensors for the exposure evaluation are displayed OK key The average values of the concentrations over the average value duration of all the active sensors
for the exposure evaluation are displayed OK key The instrument is in measuring mode again to activate the bump test for the functions have been activated in the quick menu, the instrument remains in measuring mode. 2.
You can select the activated functions of the quick menu by pressing the key. Press the OK key to call the selected function. Press the key to cancel the active function and to switch to measuring mode. If no key is pressed for 60 seconds, the instrument returns automatically to measuring mode Quick menu "Displaying and deleting peak values" After
the function has been selected, the current peak values are displayed; the peak values special symbol appears in the display at the same time. 1. The peak values can be deleted by pressing the OK key for 5 sec. and the adjacent display at the same time. 2. Press the OK key to end the function. CH4 CH en.eps If no key is pressed for 10 seconds,
the instrument returns automatically to measuring mode. 4.2 Opening Info-Off Mode When the instrument is in a deactivated state, press the key. The name of the gas, measuring mode (or via timeout). 4.3 Quick Menu Quick menu
functions Bump test see section 3.4 on page 11 Fresh air calibration, see section 5.2 on page 16 Display and clearing the peak values, see section on page Opening the Quick Menu. The PC software Dräger CC Vision can be used 4.4 Calibration Menu Calibration menu functions
Fresh air calibration, see section 5.2 on page 16 1-button calibration, see section 5.3 on page 17 Single gas calibration menu can only be accessed by entering a password on delivery:» 001«The default password on delivery can be changed using the PC software
Dräger CCVision. 1 Only when activated in the instrument configuration. Delivery status: not activated. Dräger X-am 16 Calibrate instrument 1. In measuring mode, press the key for at least 4 seconds. The function for entering the password is selected. The special symbol» «(for the "enter password" function) is displayed. The displayed shows a configuration of the special symbol shows a configuration.
with the first digit flashing. 2. Use the key to set the flashing digit. 5. Press the OK key, the second digit starts flashing. 6. Use the key to set the flashing digit. 7. Press the OK key, the second digit starts flashing. 8. The calibration
menu functions can now be selected by pressing the key. Press the OK key to call the selected function. If no key is pressed for 10 minutes, the instrument automatically returns to measuring mode. 5 Calibrate instrument WARNING Always calibrate the zero-point before span. Otherwise, the calibration will
contain errors Adjustment may not be possible due to instrument and channel errors. Allow the sensors to warm up before the calibration Warming-up time: see instructions for use / data sheets for the Dräger sensors installed (product page for X-am 2500 at Adjustment interval: Observe the relevant specifications in the Instructions for Use/data
sheets of the Dräger Sensors installed. For critical applications, observe the recommendations in EN or EN and national regulations. We recommend that you adjust all the channels after 6months. Improving the zero point accuracy perform fresh air calibration, page 16. Set the sensitivity of all sensors to the value of the test gas carry out the 1-button
calibration, page 17. Set the sensitivity of a sensor to the value of the test gas span calibration To improve the zero-point accuracy, a fresh air calibration to the value of the test gas span calibration are not warmed up or which
are faulty prevent a calibration. In the case of sensors which are in the warm-up phase, the message» 159 «is displayed with the special symbol» «(for warning message). The message is cleared after 5 seconds and the function
is available again in the menu. During the fresh air calibration the zero point of all sensors (with the exception of the DrägerSensor XXS O 2) are set to 0. In the case of the DrägerSensor XXS O 2, the display is set to 20.9 vol. %. 1. Switch on instrument. 2. Depending on instrument configuration: Open the Quick menu and select the fresh air
calibration function, page 15. or Open the Calibration menu and select the fresh air calibration function, page 15. The current gas concentration values flash. When the measured values have stabilized: 3. Press the OK key to carry out the fresh air calibration function, page 15. or Open the Calibration menu and select the fresh air calibration function, page 15. The current gas concentration values flash. When the measured values have stabilized: 3. Press the OK key to carry out the fresh air calibration function, page 15. The current gas concentration function fu
relevant Safety Data Sheets. The display containing the current gas concentration or wait for approx. 5 seconds. CH en.eps 1 EN Guidelines for selection, installation, use and maintenance of instruments for the detection and measurement of flammable gases and oxygen. 2
EN Electrical instruments for the direct detection and direct concentration measurement of toxic gases and vapours Part 4: Guide for selection, installation, use and maintenance en.eps 16 Dräger X-am 2500 17 0 Calibrate instrument If a fault has occurred during the fresh air calibration: The fault message» «appears and» «is displayed for the
respective CH4 sensor instead of the measured value. In this case, repeat the fresh air calibration, the 1-button calibration will not be available. All sensors approved by the Dräger CC-Vision PC program for the 1 button calibration, the 1-button calibration will not be available. All sensors approved by the Dräger CC-Vision PC program for the 1-button calibration will not be available.
Vision PC program are included in the 1-button calibration. In the case of the 1-button calibration, the sensitivity of all sensors is set to the value of the test gas. When using test gas explined enter the composition is used, 0,5 L/min the specified concentration values in
the instrument must be changed to the target values of the mixed gas used using the PC software "Dräger CC- Vision". 1. Connect the test gas cylinder with the calibration cradle. 2. Vent the test gas into a fume cupboard or into the open eps air (with a hose connected to the second connector of the calibration cradle) en.eps CAUTION Never inhale
the test gas. Health hazard Observe the hazard warnings of the relevant Safety Data Sheets. 3. Switch on the instrument and insert it into the calibration function, page Press the OK key to start the 1-button calibration. 6. Open the test gas
cylinder valve to let test gas flow over the sensor. The currently displayed measured values start to flash. The displayed measured values according to the gas supplied. 7. The automatic stability monitoring can be
overridden by pressing the OK key. A calibration is carried out immediately. If it is detected that no test gas has been supplied, the 1-button calibration is carried out in any case when the OK key is pressed. When the calibration is
completed and the displayed measured values have stabilised: The display containing the current gas concentration changes to the measuring mode 9. Close the test gas cylinder value and remove the instrument from the calibration cradle.
CH4 CH4 If a fault occurs during the 1-button calibration: The fault message» «appears and» «is displayed for the respective CH4 sensor instead of the measured value. In this case, repeat the 1-button calibration or carry out a single gas calibration or carry out a single gas calibration or carry out a single gas calibration.
sensitivity for an individual measuring channel The span calibration can be carried out specifically for individual sensors. Dräger X-am 18 0 Calibrate instrument In the case of the span calibration, the sensitivity of the selected sensor is set to the value of the test gas used. Use a standard test gas. 0,5 L/min Allowed test gas concentration: Ex: 40 to
100 O 2 10 to 25 vol. %: 20 to 999 H 2 S: 5 to 99 Test gas concentration of other gases: see Instructions for Use for the respective DrägerSensors. 1. Connect the test gas eps cylinder with the calibration cradle. 2. Vent the test gas into a fume cupboard or into the open air (with a hose connected to the second connector of the calibration cradle).
CAUTION Never inhale the test gas. Health hazard Observe the hazard warnings of the relevant Safety Data Sheets. 3. Switch on the instrument and insert it into the calibration menu, enter the password and select the single gas calibration function, page Press the
OK key to start the channel selection. The display flashes the gas of the first measuring channel, or use the key to select another measuring channel, or use the Key to start the calibration function of this measuring channel, or use the key to select another measuring channel, or use the key to start the calibration function of this measuring channel, or use the key to select another measuring channel, or use the key to select another measuring channel, or use the key to select another measuring channel, or use the key to select another measuring channel (O 2 - vol. %, H 2 S - or - ). CH4 C NH3 The display containing the current gas concentration changes with the
display»ok«. 3. Press the OK key or wait for approx. 5 seconds to end the calibration of this measuring channel, the device changes to measuring mode. CH4 4. Close the test gas cylinder valve and remove the device from the calibration cradle. If
a fault occurred during the span calibration. The fault message» «appears and» «is displayed for the sensor, page 19. NH en.eps 5. Press the OK key to confirm the calibration gas concentration or use the [+] key to change the
calibration gas concentration and complete the process by pressing the OK key. The measurement value flashes. 6. Open the test gas flow over the supplied test gas. 7. Press the -key to select the next sensor en.eps Sensitivity
calibration for CatEx Display on channel selection: 1. Press the OK key to start ch4 the calibration for the heat tinting or press the OK key to perform the calibration. 18 Dräger X-am 2500 19 0 0 Operation with pump Notice for the adjustment of the
ex-channel to nonane as a measuring gas: During the ex-channel to nonane, the display must be set to twice the used test gas concentration. 7 Replacing the sensors X-am 2500 IR USB DIRA with USB cable (order no ) USB 1.1 Notice
for the use in subsurface mining: For the calibration of the ex-channel to the measuring gas methane, the display of the instrument must be set to a value of 5 % (relative) higher than the used test gas concentration. 6 Operation with pump Calibration cradle (order no ) WSB 1.1 With Dräger Pump X-
am 1/2/5000 Accessories: Dräger Pump X-am 1/2/5000, sampling hose and probes, see section 12 on page 29. Commissioning and performing the measurement: Refer to the Instructions for Use of the Dräger Pump X-am 1/2/5000. With manual pump adapter and rubber ball pump Accessories: For manual pump adapter, rubber ball pump, sampling
hose and probes, see section 12 on page 29. Commissioning and performing the measurement: Refer to the Instructions for Use of the accessories used. Observe the following during measuring mode with pump Wait for the flushing time to elapse: Before every measurement, flush the Dräger sampling hose or the Dräger probes with the air sample to
be measured. A flushing phase is necessary to eliminate or minimise all effects associated with the use of a sampling hose or a probe, e.g. memory effects, dead volume. The duration of the flushing phase depends on factors such as type and concentration of the gas or vapour to be measured, material, length, diameter, and age of the sampling hose or
probe. Generally, when using a sampling hose (new, dry, clean), a typical flushing time of approx. 3 seconds is required for each metre. This flushing time applies in addition to the sensor response time (see the Instructions for Use for the gas detection instrument used). Example: In the case of a sampling hose with a length of 10 m, the flushing time
is approx. 30 seconds and the sensor response time is in addition approx. 60 seconds. Therefore, the total time before reading the gas measuring instrument is approx. 90 seconds depending on the length of the hose. E-Cal module Dräger X-am 125 (order no ) USB 1.1 / M To replace the sensors of
the instrument, connect the instrument with a PC. Replace the sensors using the PC program Dräger CC Vision. Next: Conduct the fresh air calibration, see page en.eps Dräger X-am 20 Troubleshooting 8 Troubleshooting Fault Cause
Remedy Not possible to switch on the instrument Discharged power pack, page 7. Discharged alkaline batteries, page 7. Discharged power pack, page 7. Discharged alkaline batteries Insert new alkaline batteries, page 7. Discharged power pack, page 7.
messages in the info mode, see page Warning messages The instrument to "Disable prohibited" Measuring range calibrated/adjusted incorrectly Electronics or sensors defective Configure the instrument to "Disable prohibited" Measuring range, page 19. Must be repaired by Service. Special
symbol» «and displayed numerical code: Cause Remedy 152 Customer's service life counter using Dräger CC Vision. 153 Database 90 % full Read the database soon and clear memory. 155 Interval for bump test elapsed Conduct the bump
test page Calibration not possible. The menu function cannot be carried out because of a message Determine the mensage code via the info menu which is preventing the function (e.g. sensors and switch it off, if necessary. in warm-up phase). 251 DrägerSensor CatEx
125 PR warming up Wait until warm-up time is complete. 253 Ex concentration has drifted into the Conduct the fresh air calibration page 16. negative range 254 The temperature is too low Operate the instrument within the allowed temperature range.
256 Calibration interval for DrägerSensor CatEx 125 PR has expired 257 Alarm threshold A2 is set to greater than Heat conductance calibration for DrägerSensor CatEx 125 PR, page 17. Set alarm threshold to less than 60. Perform sensitivity calibration for
DrägerSensor CatEx 125 PR, page DrägerSensor XXS EC1 is warming up Wait until warm-up time is complete. 353 EC1 concentration has drifted into the Conduct the fresh air calibration page 16. negative range 354 The temperature is too high Operate the instrument warm-up time is complete. 352 DrägerSensor XXS EC1 is warming up Wait until warm-up time is complete. 353 EC1 concentration has drifted into the Conduct the fresh air calibration page 16. negative range 354 The temperature is too high Operate the instrument warm-up time is complete. 353 EC1 concentration has drifted into the Conduct the fresh air calibration page 16. negative range 354 The temperature is too high Operate the instrument warm-up time is complete. 355 EC1 concentration has drifted into the Conduct the fresh air calibration page 16. negative range 354 The temperature is too high Operate the instrument warm-up time is complete. 355 EC1 concentration has drifted into the Conduct the fresh air calibration page 16. negative range 354 The temperature is too high Operate the instrument warm-up time is complete. 355 EC1 concentration has drifted into the Conduct the fresh air calibration page 16. negative range 354 The temperature is too high Operate the instrument warm-up time is complete. 355 EC1 concentration has drifted into the conduct the fresh air calibration warm-up time is complete.
within the allowed temperature range. 355 The temperature is too low Operate the instrument within the allowed temperature range. 20 Dräger X-am 2500
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