

3DLevelScanner



Safety Instructions

BVS 08 ATEX E 038 X



II 1/2D Ex iaD/ibD 20/21 T110 °C



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Declaration of conformity



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our sole responsibility that our product:

3DLevelScanner S, M, MV
4...20mA/HART/RS485

to which this declaration relates is in conformity
with the following standards

EMC: EN61326:1997 + A1: 1998 + A2: 2001 + A3: 2003
Safety: IEC / EN 61010 – 1:2001

following the provision
of Directives

73/23/EEC
89/336/EEC

Tel- Aviv 30/10/08

Ofir Perl



Translation

(1) **EC-Type Examination Certificate**

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use
in potentially explosive atmospheres

(3) **BVS 08 ATEX E 038 X**

(4) **Equipment:** **3D-Level-Scanner type S DX B * V * A B, type M DX B * V * A B and**
type MV DX B * V * A B

(5) **Manufacturer:** **A.P.M. Automation Solutions Ltd.**

(6) **Address:** **69710 Tel Aviv**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the test and assessment report BVS PP 08.2200 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 61241-0:2006 General requirements
EN 61241-11:2006 Protection by IS
EN 60079-11:2007 Intrinsic safety 'i'.

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12) The marking of the equipment shall include the following:

II 1/2D Ex ibD/iaD 20/21 T110°C

DEKRA EXAM GmbH

Bochum, dated 19. January 2009

Signed: Dr. Eickhoff

Signed: Ruhнау

Certification body

Special services unit

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This certificate may only be reproduced in its entirety and without change.

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1. Area of applicability

These safety instructions apply to the 3DLevelScanner of type S/M/MV according to the EC type approval BVS 08 ATEX E 038 X (certification number on the type label).

If the 3DLevelScanner S/M/MV are installed and operated in hazardous areas, the general Ex mounting instructions and these safety instructions must be observed.

These safety instructions are part of the Operating Instructions:

- 40969-10-01
- MAN0000250
- MAN0000350
- MAN0000450

2. General information

The volume measuring instrument 3DLevelScanner is based on acoustic technology and is used to measure the volume of product using low frequency, acoustic waves in the 3-10KHz range. The electronics uses the running time of the signals reflected by the product surface to calculate the volume of the product.

The 3DLevelScanner S/M/MV is suitable for use in hazardous atmospheres for applications requiring instruments of category 2G or 1/2D. If the 3DLevelScanner S/M/MV are installed and operated in hazardous areas, the general Ex mounting instructions and these safety instructions must be observed.

If the 3DLevelScanner are installed and operated in hazardous areas, the general Ex installation regulations EN 60079-14 as well as these safety instructions must be observed.

The operating instructions as well as the valid Ex mounting regulations and standards for electrical equipment must be observed.

The installation of explosion-endangered systems and explosion-protected systems must always be carried out by qualified personnel.

3. Technical data

In ignition protection type intrinsic safety Ex ia IIB Only for connection to a certified intrinsically safe circuit. Maximum values:

a. Power Supply:

$U_i = DC\ 24\ V$; $I_i = 70\ mA$; $P_i = 3\ W$;
Terminals J12.1 (+), J12.2 (GND)

Do not use J13.1, J13.2 (24 VDC output voltage)

b. 4-20mA/HART Communication circuit (ports 3,4 – 2 right ports in the left green connector on the back side of the electronic card)

$U_i = DC\ 10.5\ V$; $I_i = 106\ mA$; $P_i = 1.1\ W$;

c. RS485 / Modbus RTU Communication circuit (ports 3,4 – 2 right ports in the right green connector on the back side of the electronic card)

$U_i = DC\ 24\ V$; $I_i = 0.5\ A$; $P_i = 625\ mW$;

d. Sonic radiation

Radiated power (average power density) $\leq 0.1 \text{ W/cm}^2$

Pulse radiation $\leq 2 \text{ mJ/cm}^2$

Frequency range $3.5 \text{ kHz} \leq f \leq 10 \text{ kHz}$

4. Application conditions

a. Ambient temperature range: $-40 \text{ }^\circ\text{C} \leq T_a \leq +85 \text{ }^\circ\text{C}$

b. The pressure range must be $-0.2 \text{ bar} \leq P_i \leq 1 \text{ bar}$
($-20 \text{ kPa} \leq P_i \leq 100 \text{ kPa}$ or $-2.9 \text{ Psi} \leq P_i \leq 14.5 \text{ Psi}$)

5. Opening the housing

The electronics compartment may be opened for configuration via the key pads. If the instrument is operated with opened cover, or its keys pressed, please make sure that no hazardous atmosphere exists.

The cover has to be screwed tightly after connection and adjustment.

6. Impact and friction sparks

The 3DLevelScanner S/M/MV must be mounted in such a way that sparks from impact and friction between the aluminum body and other material will not occur.

7. Grounding

The 3DLevelScanner S/M/MV have to be grounded electrostatically e.g. via the ground terminal.

8. Cable entries

A tight and tension-free cable entry must be provided. The outer diameter of the connection cable must be adapted to the cable gland. The gland pressure screw has to be tightened carefully.

Unused openings for cable entries have to be sealed tightly.

The cable wires must be at least 22 AWG and cable O.D. 8-12mm.

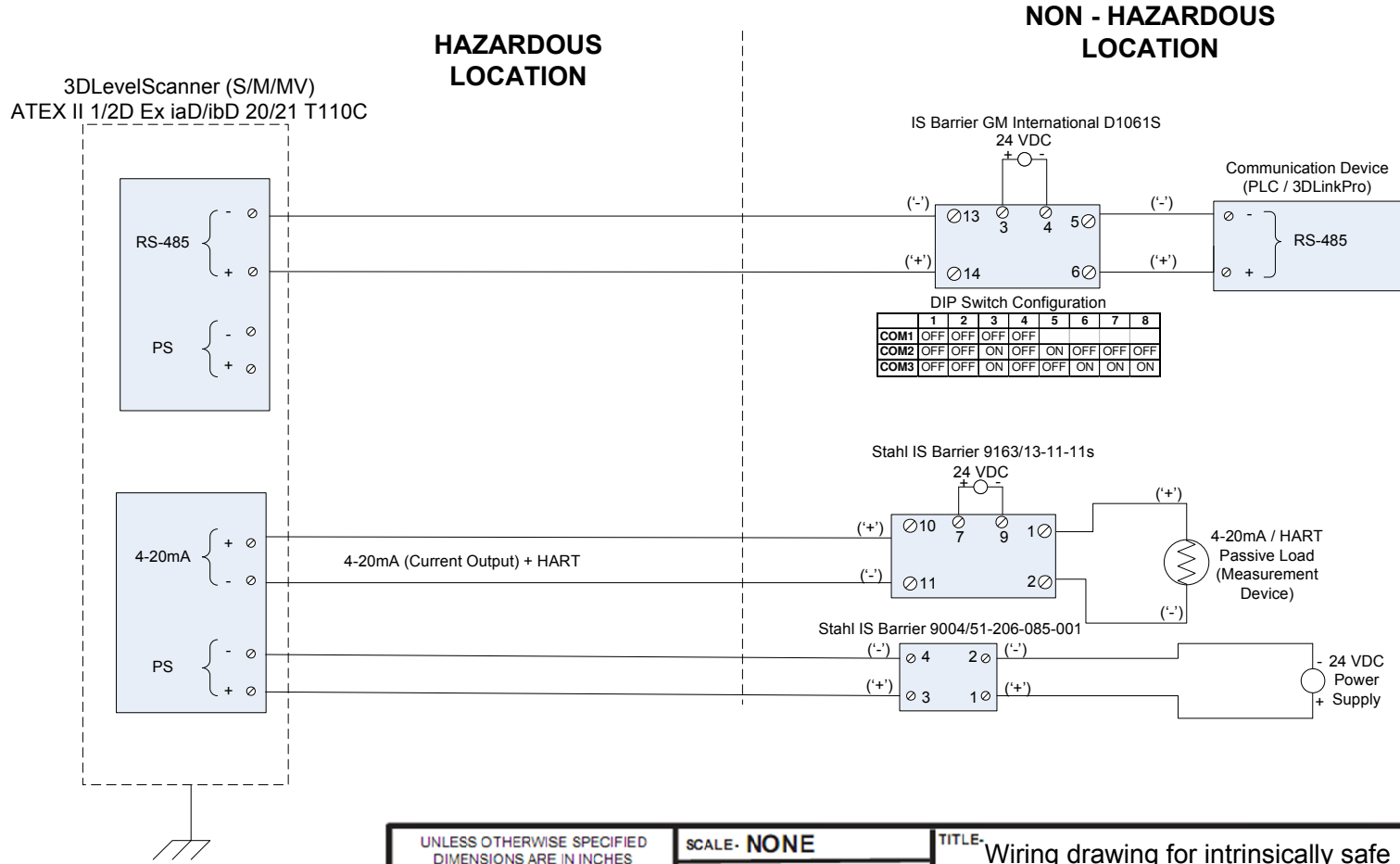
9. Selection of the cables and wires

Make sure that the cables and wires used meet the operating temperature requirements and are suitable for these temperatures.

10. Special features

- The instrument must be installed and operated in a way that ensures there is no danger of ignition from electrostatic charge.
- The seal between lower part of the housing and cover must be correctly in place and in faultless condition. The cover must be tightened carefully.
- Unused openings for cable entries have to be sealed tightly.

- Mount 3DLevelScanner S/M/MV in a way that adequately ensures that the scanner will not touch the vessel wall due to the movements of other vessel installations and flow conditions in the vessel.



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES LIMITS ON FRACTIONS ±1/64" DEC. ±0.005	SCALE - NONE	TITLE - Wiring drawing for intrinsically safe 3DLevelScanner (S/M/MV)	
	DRAWN - Alexander Teryohin		
	CHECKED - Yossi Zlotnik	A.P.M. Automation Solutions Ltd.	DRAWING NO.
	DATE - 1/07/2009		REV. 2
	FINISH -		

