



Technická inšpekcia, a.s.

Trnavská cesta 56, 821 01 Bratislava, Slovenská republika

[1] EU-TYPE EXAMINATION CERTIFICATE



[2] Equipment or Protective System Intended for use in potentially explosive atmospheres
Directive 2014/34/EU

[3] EU-Type Examination Certificate Number:

TI23ATEX 1679 X

[4] Product: **Tank cleaning robot V2**
Type: **P005**

[5] Manufacturer: **Unibose Technology Private Limited**

[6] Address: **No. 33, SIDCO industrial estate, CMDA Phase - 2, Maraimalai Nagar, Chengalpattu - 603209, Tamilnadu, India**

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Technická inšpekcia, a.s., Notified Body Number 1354 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of product intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report No. 1679/5/2023.

[9] Compliance with the Essential Health and safety Requirements has been assured by compliance with: **EN IEC 60079-0:2018, EN ISO 80079-36:2016, EN ISO 80079-37:2016**, except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific conditions of Use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of this Directive apply to the manufacturing process and supply of this product.

[12] The marking of the product shall include the following:

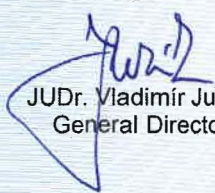


II 1G Ex h IIC T4 Ga -20°C ≤ Tamb ≤ +60°C

Technická inšpekcia, a.s.
Trnavská cesta 56
821 01 Bratislava, Slovakia
e-mail: tisr@tisr.sk
web: www.tisr.sk
Tel.: +421 2 49208 100



Bratislava, August 31st, 2023


JUDr. Vladimír Jurík
General Director



NB 1354



[13] **Schedule**

[14] **EU-Type Examination Certificate Number: TI23ATEX 1679 X**

[15] Description of product:

Tank cleaning robot V2

Type: P005

Tank cleaning Robot is non-electrical equipment with EPL Ga which can be used in Zone 0. Robot shall be operated through the operator desk located in Zone-1/ Zone-2 /safe area. Electrical ATEX certified components (CCTV camera and LED flood light) could be mounted on the camera arms according to Specific conditions of Use from cl. 17. Operator desk, hydraulic supply and electrical components are out of scope of this EU-Type Examination Certificate.

Tank cleaning robot consists of:

- a) Main body
- b) Track chain mechanism
- c) Camera Arm mechanism
- d) Wiper mechanism
- e) Anti-hose entanglement mechanism
- f) Suction system
- g) Provision for connecting On-board Camera & LED flood lighting system
- h) Sludge Cutter tool (Auxiliary Tool)
- i) Rotary Surface cleaner (Auxiliary Tool)

The entire robot is constructed in Stainless Steel SS 316. Other than stainless steel, the idle rollers are constructed in nylon and robot shoes are made with Anti-static nitrile rubber. The robot main frame consists of inner plate namely front, middle & rear plate. All the inner plates are connected to inner side plates.

The intermediate plates house the hose entry, camera arm and wiper assembly. The inner side plate houses the drive motors. Outer side plates and inner side plates are connected to Drive end & Non – Drive end sprockets assembly, nylon idle roller assembly and chain tensioner assembly. All the plates are interconnected to other plates with stainless steel fasteners.

Front wiper assembly is raised up, down & pan tilted with hydraulic actuators. The wiper has fixed rubber lining in the base to avoid any metal contact. Water injection nozzle fixed to the wiper assembly as default tool. In wiper tool, sludge cutter can be added when required. Additional tools such as rotary surface cleaner, bottom sludge scrapper, sludge disintegrator, water jet cannon & on-board peristaltic pump can be added in place of wiper tool.

The entire robot is moved with help of chain track mechanism. The stainless-steel chain is attached with Anti-static nitrile rubber shoes. It is operated with sprockets and driven by hydraulic motor.

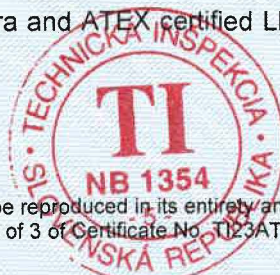
[16] Report Number:

Inspection report No: 1679/5/2023

Final Test Report No: 1679/5/2023

[17] Specific conditions of Use:

- Ambient temperature: $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +60^{\circ}\text{C}$.
- ATEX certified CCTV cameras and ATEX certified LED flood lights to be connected to the front camera arm.
- ATEX certified CCTV camera and ATEX certified LED flood light to be connected to the tail camera arm.



This certificate may only be reproduced in its entirety and change, schedule included.
Page 2 of 3 of Certificate No. TI23ATEX 1679 X

CSTA3-128



- Antistatic/conductive hydraulic hoses to be connected to the robot hookup point.
- Antistatic vacuum hose to be connected to the camlock connection in tail end.
- Electrical continuity of vacuum suction hose shall be checked prior to start of cleaning operation.
- Suction truck which is connected to vacuum hose should be earthed and regularly checked for earthing continuity.
- Ensure proper double earthing is done for hydraulic hose and suction hose.

[18] Essential Health and Safety Requirements:

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information: None.

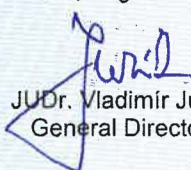
[19] Drawings and Documents:

Number	Sheet	Issue	Date	Description
UBT/NMER/P005/GAD/120	01/05	02	17.07.2023	Drawings of Tank cleaning robot
UBT/NMER/P005/GAD/120	02/05	01	17.07.2023	Drawings of Tank cleaning robot
MAEON/1122/472	1	-	19.11.2022	Nitrile Rubber Test Report
HONY@PA6 Test Certificate	1	-	-	Nylon HONY@PA6 Datasheet
JSL-JRD/QA/2020/21/DOM/ 00808618	2	-	19.09.2020	Chemical Composition of SS Certificate
Ignition Hazard Analysis and ATEX Conformity Evaluation of Tank cleaning robot V2	6	-	-	Ignition Hazard Analysis of Tank cleaning robot V2
Ignition Hazard Analysis and ATEX Conformity Evaluation of TMM-50 Hydraulic motor	6	-	-	Ignition Hazard Analysis of TMM-50 Hydraulic motor
UBT/NMER/P005/DOC/121	20	03	11.08.2023	User Manual for Tank Cleaning robot V2
Maintenance Schedule for Tank cleaning robot V2	3	01	28.07.2023	Maintenance Schedule list for NMER System
RV2-IMPT-01	6	-	03.08.2023	Tank cleaning robot impact test report
R-IMPT-01	4	-	12.01.2023	Hydraulic motor impact test report
R-MTT-03	3	-	13.01.2023	Hydraulic motor maximum surface temperature test
E-4200-M	7	-	24.01.2023	Hydraulic motor IP test

Technická inšpekcia, a.s.
Trnavská cesta 56
821 01 Bratislava, Slovakia
e-mail: tisr@tisr.sk
web: www.tisr.sk
Tel.: +421 2 49208 100



Bratislava, August 31st 2023


JUDr. Vladimír Jurík
General Director

