1. **EC-TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially explosive atmospheres Directive 94/9/EC**

3. Reference: **VTT 08 ATEX 035X**

4. Equipment: **Level Monitoring System**

Certified type: **GateWay model 10**

5. Manufactured by: **Oy ART-Advanced Remote Technology Ltd**

6. Address: **Kyrönsarventie 27**
FI-39100 HÄMEENKYRÖ
Finland

7. This equipment or protective system and any acceptable variations thereto is specified in the schedule and possible supplement(s) to this Certificate and the documents therein referred to.

8. VTT, notified body number 0537, in accordance with Article 9 of the Council Directive 94/9/EC of March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system 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. VTT-S-03584-08.

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with the standards:

EN 60079-0: 2006
EN 60079-11: 2006
EN 60079-18: 2004

VTT, Expert Services
Electrical Ex-Apparatus
Otakaari 7B, Espoo
P.O.Box 1000, FI-02044 VTT, Finland

Tel + 358 20 722111
Fax + 358 20 722 7042

10. If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11. This EC-Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. This certificate does not cover these.

12. The marking of the equipment or protective system shall include the following:

II 2(1)G Ex emb [ia] IIB T3 Gb (Ta = -40 °C … +50 °C)

Espoo, 18.04.2008

VTT Technical Research Centre of Finland

Risto Sulonen
Senior research scientist

Martti Siirola
Research scientist

13. # Schedule

14. **EC-TYPE EXAMINATION CERTIFICATE VTT 08 ATEX 035X**

15. Description of Equipment

The level monitoring system GateWay model 10 is used to survey tank filling. It can be used to create features for overfill monitor and prevention or product mixing and monitor and prevention or unloading overfill prevention up to three compartments.
The intrinsically safe circuits and the non–intrinsically safe inputs i.e. the power input line magnetic valve inputs and the magnetic valve controls have all common ground.

The nominal supply of the device is U = 24 V dc and nominal current is 1,5 A. The fuse interrupting rating is I_{kmax} = 50 A.

Intrinsically safe circuits and the non–intrinsically safe inputs i.e. the power input line magnetic valve inputs and the magnetic valve controls have all common ground.

Electrical data

The maximum electrical safety output values for the intrinsically safe connectors are mentioned in the Table 1. Optic loading connectors 4,5,6,8 and 9 are galvanically isolated and the maximum input voltage is Ui = 25 V.

Connector	Uo	Io	Co	Lo	
+ 24 Vi: A, B, C and D	25V	178 mA	0,85 µF	4 mH	
Sensors: YTE,P2,ALA	13,6 V	22 mA	5,2 µF	0,2 H	
Term +-: P1, P2, P3	20,5 V	130 mA	1,33 µF	8 mH	
PTE-kuittaus, Lastaus, Interlock A, B, C	6,5 V	6,5 mA	500 µF	1 H	
CAN H, L, sgn	6,5 V	150 mA	500 µF	7 mH	

Table 1. Maximum electrical values for the exi-connector circuits.

Documents:

Schedule drawings:
- GW102.schdoc, dated 15.11.2007
- GW10.2_Hybridit.SchDoc, 15.11.2007
- GW10.2_Input.SchDoc, 15.11.2007
- GW10.2_Ledit2.SchDoc, 15.11.2007
- GW10.2_Ledit3.SchDoc, 15.11.2007
- GW10.2_Ledit.SchDoc, 15.11.2007
- GW10.2_Liittimet.SchDoc, 15.11.2007
- GW10.2_MfOhjaus.SchDoc, 15.11.2007
- GW10.2_Muut.SchDoc, 15.11.2007
- GW10.2_OpticSocket.SchDoc, 15.11.2007
- GW10.2_Power.SchDoc, 15.11.2007
- GW10.2_Prosessori.SchDoc, 15.11.2007
- GW10.2_Purku_YTE.SchDoc, 15.11.2007
- GW10.2_TermisetAnturit.SchDoc, 15.11.2007
- Mikrokontrolliohjattu optinen anturihybridi, mch_anturihybridi_1.022.SchDoc, v1.022, 15.11.2007
- Purku YTE hybridi v1.00, purku_yte_1_01_-SchDoc, rev 000_17, 15.11.2007

Component list
- Gateway 10.2 Komponentit.pdf, mail 16.4.2008

Printed circuit board Laout drawings:
- Purku YTEHybLayOut.pdf, 2 pages, mail 15.2.2008
- GWv102MBLayOut.pdf, 2 pages, mail 15.2.2008
- SensorHybLayOut.pdf, 2 pages, mail 15.2.2008

Massausohje Gateway 10, dated 3.4.2008, Massausohje.pdf
Front label, GW10_2 kansi.pdf, mail 17.4.2008
Label inside the enclosure, Tarrat_sisa.pdf, mail 17.4.2008

16. Report No. VTT-S-03584-08

17. Special conditions for safe use:

The permissible ambient temperature range is $-40\ °C \leq T_a \leq +50\ °C$.

The RS232 connector may be used only when there is no potentially explosive atmosphere.

The use of the enclosure is limited to locations were there is a low risk of mechanical danger. The enclosure shall be installed in rigid base.

The nominal values of the magnetic valves output/inputs are Un =24 V and the lines and shall be protected with 3 A fuse.

18. Essential Health and Safety Requirements

Met by compliance with the standards referred in point 9.

Espoo, 18.04.2008

VTT Technical Research Centre of Finland

Risto Sulonen
Senior research scientist

Martti Siirola
Research scientist