

DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

[2] **EQUIPMENT OR PROTECTIVE SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC**

[3] EC-Type Examination Certificate Number: **DNV-2005-OSL-ATEX-0327X** Rev. 5

[4] Equipment or Protective System: **PAC 1278 2-wire IS.ALS subsystem**

[5] Applicant – Manufacturer or Authorized representative: **MISTRAS Group Inc.**

[6] Address: **195 Clarkesville Road,
Princeton Junction, New Jersey
USA**

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

[8] DNV, notified body number 0575 in accordance with Article 9 of Council Directive 94/9/EC of 23 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 systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.


The examination and test results are recorded in confidential reports listed in section 14.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2012 and EN 60079-11:2012

[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 and construction of the specified equipment or protected system. If applicable, further requirements of this Directive apply to the manufacturer and supply of this equipment or protective system.

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

 **II 1 G Ex ia IIC T4 Ga -40 °C ≤ Ta ≤ +70 °C**
Ex ia IIC T6 Ga -40 °C ≤ Ta ≤ +40 °C
II 1 D Ex ia IIIC T135°C Da -40 °C ≤ Ta ≤ +70 °C

Høvik, 2014-11-14
for Det Norske Veritas AS

Asle Kaastad
Certification Manager



Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

The digitally signed and electronically distributed document is the original and valid certificate. Ref.: www.dnv.com/digitalsignatures

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300.000. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



[13]

Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE No.:** DNV-2005-OSL-ATEX-0327X

Rev. 5

Certificate History

Revision	Description	Report no.	Issue date
-	Original certificate	2005-3340	2005-11-22
1	Supplement 1	2006-3010	2006-09-21
2	Updated to recent standards, minor changes on four drawings	2011-3336	2011-07-29
3	Correction to label drawings	2012-3404	2012-12-05
4	Reversal of label drawing correction	2012-3404	2013-03-01
5	Update dust rating and update to latest standard versions, add T6 rating for +40 °C ambient.	2013-3369	2014-11-13

[15] Description of Equipment or Protective System

The ASL Subsystem comprises an electronic circuit housed in aluminium enclosure. The circuit is partially encapsulated in an epoxy resin. The input of the ASL Subsystem must be connected to a power supply via an EC Type certified zener barrier with or without galvanic separation.

EC Type Examination Certified sensors that can be connected to the ASL subsystem output: ISR.45, ISR1.5, ISR3, ISR6, ISR15, ISR30, ISR50, ISWD, and ISD9203B.

Type Identification

Model 1278

GDU 1278

The ASL Subsystem GDU 1278 has the following alternative Authorized Representative:

Groverley Detection Limited

Anchor Works, Groverley Road, Christchurch, Dorset, BH23 3HB UK

Electrical Data

$U_i = 30V$, $I_i = 100mA$, $P_i = 0.9W$, $L_i = 100 \mu H$, $C_i = 0.05 \mu F$

Degrees of protection (IP Code)

IP66

[16] **Project No.:** PRJC-449152-2013-PRC-USA

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Descriptive Documents

Number	Title	Rev.	Date
1277-2011	Drill/fabrication drawing & Panel drawing 2-wire IS-ASL subsystem, (2 sheets)	0	2005-01-22
1278-2011	Drill/fabrication drawing & Panel drawing 2-wire IS-ASL subsystem, (2 sheets)	1A	2011-04-28
1278-2014-XX	Assembly Drawing, 2-wire IS-ASL subsystem	1B	2011-04-28
1278-5015-XXX	Assembly Drawing, 1278 2-wire IS-ASL subsystem	3	2014-06-04
1278-6000	1278 System Connections	1	2014-06-04
1278-3010	Schematic, 2-wire IS-ASL subsystem (3 sheets)	1B	2011-03-14
1277-2010	2-wire IS-ASL subsystem (PCB layout, 9 sheets)	0	2005-01-26
1278-2010	2-wire IS-ASL subsystem (PCB layout, 8 sheets)	1	2005-10-25

[17] Special Conditions for Safe Use

The enclosure is made of aluminium, and care must be taken due to the potential risk of sparks on avoid impact with iron or steel objects.

[18] Essential Health and Safety Requirements

See part 9 of this certificate

END OF CERTIFICATE

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300.000. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.