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 12 ATEX 112883X**

[4] Equipment or Protective System: **Flameproof & Explosionproof Solenoid – Bottom Cable (Entry type 87)**

[5] Applicant – Manufacturer or Authorized representative: **Rotex Automation Limited**

[6] Address: **987/11, GIDC Makarpura, Vadodara – 390 010, India**

[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: 2009 EN 60079-1:2007 and EN 60079-31:2009.**

[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 2 GD **See page 2**

Høvik, 2012-11-12
for Det Norske Veritas AS

Geir Hørthe
Certification Manager

NORSK AKKREDITERING
PROD 019

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

[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE No.: DNV 12 ATEX 112883X**

Certificate History

Revision	Description	Report no.	Issue date
-	Original certificate	2012-9352	2012-11-12

[15] **Description of Equipment or Protective System**

The Explosion proof cum Weather proof Solenoid has 3 different coil size of II/III & IV which are designed to operate 2 / 3 / 4 / 5 port single or double solenoid valve in Gas & Dust hazardous atmospheres. These Explosion proof cum Weather proof Solenoids are suitable for use in hazardous locations classified as Zone 1 & 21 for Group IIC & IIIC and IP67 rated.

The solenoid has Bottom Cable Entry and has integral terminals for terminating cable. The enclosure has a threaded joint only for the cable entry, where an adaptor of various size M20 x1.5/ ½" NPT & ¾" NPT is used to suit the entry of M25x1.5 of the enclosure. LED can be optionally provided to check the availability of the electrical supply to the solenoid.

Solenoid is Enamelled Copper wire when wound on the bobbin. When electrical power supply passes through the winding it produces magnetic flux due to which plunger which remains in the centre of the solenoid get attracted by which flow of the fluid can be controlled.

These solenoids are suitable for varies wattages restricted up to 30W maximum and the ambient temperature is -60 °C ≤ Ta ≤ +100°C for power up to 20W and -60 °C ≤ Ta ≤ +70°C for power up to 30W. The Solenoid Enclosure normally constructed in Aluminium cast (ADC12) and the alternate material used is stainless steel cast (CF8M).

Type Identification
87

Ex Marking

Description	Type Designation	ATEX / Ex Marking
Ex d junction Box for Solenoid-power up to ≤20 W	Bottom cable entry – (Type 87)	Ex II 2 GD Ex d IIC T6~T3 Gb Ex t IIIC T80~T155 Db IP67 -60°C≤ Tamb ≤+100°C
Ex d junction Box for Solenoid - power for 30 W	Bottom cable entry- (Type 87)	Ex II 2 GD Ex d IIC T4~T3 Gb Ex t IIIC T135~T155 Db IP67 -60°C≤ Tamb ≤+70°C

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Electrical Parameters.

Coil Size	Max.Power	Max. Ambient Temperature				Max.AC voltage	Max DC Voltage
		T6 (80)	T5 (95)	T4(130)	T3 (155)		
III	5	65	80	100		240	256
	8	60	75	100		440	256
	15	50	65	100		240	256
II	8	65	80	100		240	256
	13	60	75	100		240	256
	20		45	80	100	240	256
	30			60	70	240	256
IV	5	70	85	100		240	256
	11	65	80	100		240	256

Degrees of protection (IP Code)
IP 67

[16] Project No.: PRJC-302492-2011-PRC-IND

Descriptive Documents

Number	Title	Rev.	Date
11-IEC-02-013-000	GA Drawing for Flameproof Junction Box – BCE (Size II/III/IV) Solenoid code - 87 (4sheets).	0	12-05-12

Routine test
A routine over pressure test is not required as solenoid enclosure has been tested for 48 bar (4 times the reference pressure).

[17] Special Conditions for Safe Use

1) Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 1 and 2 of EN/IEC 60079-1
2) Special type of cables/cable glands suitable for temperature higher than 70°C or as appropriate specified by manufacturer at the cable entry point shall be used.

[18] Essential Health and Safety Requirements
See part 9 of this certificate

END OF CERTIFICATE