

1 EC-TYPE EXAMINATION CERTIFICATE



2 Equipment or Protective systems intended for use in Potentially
Explosive Atmospheres - Directive 94/9/EC

3 EC-Type Examination Certificate No: FM12ATEX0065X

4 Equipment or protective system: Model's 148, 248, 644 and 3144P Temperature
(Type Reference and Name) Transmitters and Model's 65, 68, 78, 85, 183, 185 and 1067
Temperature Sensor Assemblies

5 Name of Applicant: Rosemount Inc.

6 Address of Applicant: 6021 Innovation Blvd.
Shakopee, MN 55379-9795
United States

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

8 FM Approvals Ltd, notified body number 1725 in accordance with Article 9 of Directive 94/9/EC 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 intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3047081 dated 7 November 2012

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012, EN 60079-1:2007, EN 60079-31:2009 and EN 60529:1991 +A1:2000

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of 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. These are not covered by this certificate.

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



II 2 G Ex d IIC T6...T1 Gb Ta = -50°C to +40°C; T5...T1 Ta = -50°C to +60°C

II 2 D Ex tb IIIC T130°C Db Ta = -40°C to +70°C; IP66

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 09th April 2015

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FM Approvals Ltd. 1 Windsor Dials, Windsor, Berkshire, UK. SL4 1RS
T: +44 (0) 1753 750 000 F: +44 (0) 1753 868 700 E-mail: atex@fmapprovals.com www.fmapprovals.com

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13 Description of Equipment or Protective System:

The Model 148, 248, 644 and 3144P Temperature Transmitter accepts inputs from temperature sensors and then transmits the data to a computer via 4-23mA current loop or digital communication. The transmitters are required to be installed in a flameproof enclosure and can be provided with or without a cemented window cover (for optional LCD display). There are a number of flameproof enclosures available. They are called Universal Junction Box – 2 Entry, Universal Junction Box – 3 Entry, Rosemount Connection Head, 0079 Connection Head, 3144P enclosure and the 644 Head Mount and Field Mount enclosure with either a Single or Dual Sensor. The flameproof enclosures are also suitable for dust ignition protection by enclosure.

The Rosemount temperature sensors (Models 65, 68, 78, 85, 183, 185 and 1067) are temperature probes that are available as RTD's or thermocouples. The sensors are required to be assembled to a metallic flameproof enclosure.

The enclosures can have a either a transmitter or terminal block installed inside . Each enclosure option listed has been evaluated and tested for IP66.

Operation Temperature Ranges:

The ambient operating temperature range of the models described in this report is T6...T1 Ta = -50°C to +40°C, T5...T1 Ta = -50°C to +60°C for flameproof Ex d and -40°C to +70°C for dust Ex tb for EC-Type Examination Certificate.

Process Temperature Limits:

Transmitter with LCD Cover	Process Temperature [°C]			
	Gas			Dust
	T6	T5	T4...T1	T130°C
No Extension	55	70	95	95
3" Extension	55	70	100	100
6" Extension	60	70	100	100
9" Extension	65	75	110	110

Transmitter without LCD Cover	Process Temperature [°C]						
	Gas						Dust
	T6	T5	T4	T3	T2	T1	T130°C
No Extensin	55	70	100	170	280	440	100
3" Extension	55	70	110	190	300	450	110
6" Extension	60	70	120	200	300	450	110
9" Extension	65	75	130	200	300	450	120

Sensor Only (no transmitter installed)	Process Temperature [°C]						
	Gas						Dust
	T6	T5	T4	T3	T2	T1	T130°C
An Extension Length	85	100	135	200	300	450	130

Electrical data:

U =12-42.4Vdc, I = 4-23mA

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644abcdef. Temperature Transmitter.

- a=Transmitter Type: F, D, H or S.
- b= Transmitter Output: A, F or W.
- c= Approval Option: E1 ND, or KD.
- d= Enclosure: D1, D2, J1, J2, J3, J4, J5, J6, J7, J8, R1, R2, R3 or R4.
- e= Display and Interface: M5, M6 or blank.
- f = Assembly Options: XA or Blank.

148Habcd. Temperature Transmitter.

- a=Output: N.
- b=Approval Option: E1 or ND.
- c=Enclosure Option: A1, A2, G1, G2, U1, U2, H1 or H2.
- d=Assembly Option: XA or Blank.

248Habcd. Temperature Transmitter.

- a=Output: A or W.
- b=Approval Option: E1 and ND.
- c=Enclosure Option: A1, A2, G1, G2, U1, U2, H1 or H2.
- d=Assembly Option: XA or Blank.

3144Pabcde. Temperature Transmitter.

- a=Enclosure: D1, D2, D3, D4, D5, D6, D7 or D8.
- b= Transmitter Output: A or F.
- c= Approval Option: E1 or ND.
- d= Display and Interface: M5 or blank.
- e= Assembly Options: XA or blank.

0085abcde. Temperature Probe.

- a = Enclosure: C, D, 1, 2, G, H, 3 or 4.
- b = Sensor Type: 3 or 5.
- c = Extension Type: J.
- d = Approval Option: E1 or ND.
- e= Assembly Options: XA or blank.

0065abcde. Temperature Probe.

0185abcde. Temperature Probe.

- a = Enclosure: C, D, 1, 2, G, H, 3, 4 or N*.
- b = Sensor Type: 3 or 5.
- b = Sensor Lead Wire Type: 0, 1, 2, 3 or 4.
- c = Extension Type: J or N.
- d = Approval Option: E1, ND, or KD.
- e= Assembly Options: XA or blank.
- *= Only available with assembly option XA.

0068abcde. Temperature Probe

0078abcde. Temperature Probe

0183abcde. Temperature Probe

- a =Enclosure: R, P, D, G or N*.
- b = Sensor Type: 1x, 2x or 3x (x=1, 2, 3, 4, or 5).
- c =Extension Type: A, C or N.
- d= Approval Option: E1 or ND.
- e= Assembly Options: XA or blank.
- *= Only available with assembly option XA.

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1067 abcd, Temperature Probe.

- a = Enclosure: D.
- b = Sensor Lead Wire Termination: 0 or 2.
- c = Sheath Diameter: 3mm or 6mm.
- d = Approval Option: E1.

14 Specific Conditions of Use:

1. See certificate for ambient temperature range
2. The non-metallic label may store an electrostatic charge and become a source of ignition in Group III environments.
3. Guard the LCD cover against impact energies greater than 4 joules.
4. Consult the manufacturer if dimensional information on the flameproof joints is necessary.
5. A suitable certified Ex d or Ex tb enclosure is required to be connected to temperature probes with Enclosure option "N".
6. Care shall be taken by the end user to ensure that the external surface temperature on the equipment and the neck of DIN Style Sensor probe does not exceed 130 °C.

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 Test and Assessment Procedure and Conditions:

This EC-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body

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18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
8 th November 2012	Original Issue.
25 th April 2013	<u>Supplement 1:</u> Report Reference: 3047926 dated 15 th April 2013 Description of the Change: 1. The model 644 listing has been modified, and models 148, 248, 3144P, 68, 78, 183, 65, 185, and 85 have been added. The additions to the certificate include; Connections Heads: 2 Entry Universal Junction Box, Rosemount Connection Head, 0079 Aluminum Connection Head and 3144P Enclosure; Sensors: 0068 General Purpose and Spring Loaded, 0078 General Purpose and Spring Loaded, 0183 General Purpose and Spring Loaded, 0065 Spring Loaded, 0185 Spring Loaded, 0085 Pipe Clamp Sensor. 2. Update of EN60079-0 to 2012
31 st July 2014	<u>Supplement 2:</u> Report Reference: 3049986 dated 28 th July 2014 Description of the Change: Update model code for the equipment and Special Conditions of Use.
8 th August 2014	<u>Supplement 3:</u> Report Reference: 3006278rev140624 dated 4 th August 2014 Description of the Change: Minor drawing changes not affecting the safety of the product. Approval model code option KD and Display and Interface option M4 added to Model 644 Temperature Transmitter.
12 th September 2014	<u>Supplement 4:</u> Report Reference: 3051700 dated 12 th September 2014 Description of the Change: Added 644 Field Mount option to 644 Temperature Transmitter.
03 rd October 2014	<u>Supplement 5:</u> Report Reference: 3049986rev140902 dated 29 th September 2014. Description of the Change: No additional examination and testing required to qualify the addition of the 1067 Temperature Probe. Testing of the 1067 Temperature Probe is part of the PDR for Project ID 3049986. CDL updated with 00079-1041 Rev AC.
09 th April 2015	<u>Supplement 6:</u> Report Reference: 3006278rev150123 dated 26 th March 2015 Description of the Change: Changes to drawings and documentation not affecting safety or compliance.

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Blueprint Report

Rosemount Incorporated (1000001609)

Class No 3615

Original Project I.D. 3006278

Certificate I.D. FM12ATEX0065X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>	<u>Electronic Drawing</u>
00065-0303	AB	EXTERNAL CONNECTION HEAD LABEL FOR DIN STYLE SENSORS; PGS 1-3	3047926	Yes (pdf)
00079-0336	AK	NAMEPLATE, MODEL 79 CONNECTION HEAD, ATEX, FLAMEPROOF, E1; PGS 1-3	3049986	Yes (pdf)
00079-1040	AA	ROSEMOUNT TEMP SENSORS APPROVAL DRAWING; PGS 1-2	3047926	Yes (pdf)
00079-1041	AC	ROSEMOUNT TEMP ATEX/IECEX FLAMEPROOF DRW	3051700	Yes (pdf)
00079-1045	AB	ROSEMOUNT TEMP FM FLAMEPROOF DRW	3051700	Yes (pdf)
00079-1050	AB	ROSEMOUNT TEMP ATEX/IECEX FLAMEPROOF DRW	3051700	Yes (pdf)
00644-1014	AM	IDENTIFICATION LABEL FOR ROSEMOUNT ENCLOSURE; PGS 1-2	3047926	Yes (pdf)
00644-7010	AA	UNIVERSAL JUNCTION BOX, 3 ENTRIES ATEX & IECEX FLAMEPROOF APPROVAL, FM	3047081	Yes (pdf)
00644-7521	AD	NAMEPLATE, FM, 3-CONDUIT JUNCTION BOX ATEX & IECEX EXPLOSION PROOF AND DUST IGNITIONPROOF APPROVALS; PGS 1-6	3049986	Yes (pdf)
00644-7528	AF	NAMEPLATE 644 COMBINATION APPROVALS	6/24/14	Yes (pdf)
00825-0100-4021	JA	ROSEMOUNT 3144P TEMPERATURE TRANSMITTER WITH HART PROTOCOL	3047926	Yes (pdf)
00825-0100-4148	EA	ROSEMOUNT 148 TEMPERATURE TRANSMITTER	01/23/15	Yes (pdf)
00825-0100-4825	EB	ROSEMOUNT 248 TEMPERATURE TRANSMITTER	01/23/15	Yes (pdf)
00825-0200-2654	BB	ROSEMOUNT 0065/ 0185 SENSOR ASSEMBLY	3049986	Yes (pdf)
00825-0200-4728	CA	ROSEMOUNT 644H TEMPERATURE TRANSMITTER – QUICK START GUIDE	6/24/14	Yes (pdf)
00825-0300-2654	AB	ROSEMOUNT VOLUME 1 SENSOR ASSEMBLY	3049986	Yes (pdf)
03144-0140	AT	LABEL, NAMEPLATE (HART); PGS 1-3	6/24/14	Yes (pdf)
03144-0163	AP	NAMEPLATE, APPROVALS KEMA; PGS 1-3	3047926	Yes (pdf)