



EC-TYPE EXAMINATION CERTIFICATE

- Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC
- EC-Type Examination Certificate Number: ITS09ATEX26339X Issue 1
- 4. Equipment or Protective System: iCT 1000/I Series Intelligent Pressure / Temperature

Transmitter

- 5. Manufacturer: PSM INSTRUMENTATION LTD.
- 6. Address: Unit 3, Burrell Road Haywards Heath

West Sussex RH16 1TW

- 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. Intertek Testing and Certification Limited, notified body number 0359 in accordance with Article 9 of the 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 Intertek Report Ref G101436213 Issue 1 dated July 2014.

- Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN 60079-0:2012 and EN 60079-11:2012 except in respect of those requirements referred to at item 16 of the Schedule.
- 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. These are not covered by this certificate.
- 12. The marking of the equipment or protective system shall include the following:-

(Ex) II 1 G Ex ia IIC T4 Ga -20°C ≤ Ta ≤ 80°C

Intertek Testing & Certification Limited Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB Tel: +44 (0)1372 370900 Fax: +44 (0)1372 370977

Certification Officer 23 July 2014

www.intertek.com

Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

This certificate may only be reproduced in its entirety and without any change, schedule included and is subject to Intertek Testing and Certification's Conditions for Granting Certification.

Sheet 1 of 4





SCHEDULE

EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26339X Issue 1

13. Description of Equipment or Protective System

The PSM Instrumentation Ltd iCT 1000 Series are dual mode pressure and temperature transmitters designed for hydrostatic pressure and process temperature measurement.

The iCT 1000 electronics are housed within a submersible stainless steel cylindrical housing. A factory fitted cable is attached at one end through a cable gland and a process connection is provided at the other. Assembly of the housing is completed by welding. A seal is maintained at the face of the ceramic transmitter element to keep the process fluid out of the electronics housing. The supply cable includes a small diameter tube to provide an atmospheric reference for the transducer. When the cable is terminated, the vent tube shall be appropriately terminated to vent to atmosphere.

Intrinsic safety is assured by the use of limitation of voltage, current and power and the limitation of capacitance and inductance.

The iCT transmitter has a 4 wire connection, one pair providing power and / or 4-20 mA current loop signal, the other twisted pair providing RS485 data communication.

The Intrinsic Safety Equivalent Parameters are as follows:

Ui = 28V dc Ii = 150 mA Pi = 0.8W Ci = 49nF (at 28V) and 948nF at (11.8V)

14. Report Number

Intertek Report Ref: G101436213 Issue: 1 Dated: July 2014

15. Conditions of Certification

- (a). Special Conditions for safe use
 - When used with Zener Barriers instead of the PSM Instrumentation Ltd. proprietary IS interface, all
 devices must be supplied through one set of 28V and 9V barriers or each transmitter must have its
 own set of barriers. It is not permitted to use separate supply barriers and one communication
 barrier.
- (b). Conditions of Manufacture
 - None

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977

www.intertek.com

Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

This Certificate is the property of Intertek Testing and Certification Ltd and is subject to Intertek Testing and Certification's Conditions for Granting Certification.

Sheet 2 of 4





SCHEDULE

EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26339X Issue 1

16. Essential Health and Safety Requirements (EHSR's)

The relevant EHSR's have been identified and assessed in Intertek Report Ref: G101436213 Issue: 1 Dated: July 2014

17. Drawings and Documents

Title	Drawing No.:	Rev. Level:	Date:
ICT2.5 BOARD1: CAPACITANCE-TO-DIGITAL CONVERTER	P95021-1000-CD	С	9 June 2014
iCT2.5 BOARD 2: DIGITAL PROCESSOR SUBSYSTEM	P95021-1000-CD	С	9 June 2014
iCT2.5 BOARD3: 4-20mA CIRCUITRY	P95021-1000-CD	С	9 June 2014
iCT2.5 BOARD4: VOLTAGE REGULATOR	P95021-1000-CD	С	9 June 2014
iCT2.5 BOARD5: SAFETY/PROTECTION CIRCUIT	P95021-1000-CD	С	9 June 2014
ICT Board 1 Bottom Screen	P95028-1000-AW	С	24/06/14
ICT Board 1 Top Screen	P95028-1000-AW	С	24/06/14
ICT Board 2 Top Screen	P95028-1000-AW	С	24/06/14
ICT Board 2 Bottom Screen	P95028-1000-AW	С	24/06/14
ICT Board 3 Top Screen	P95028-1000-AW	С	24/06/14
ICT Board 3 Bottom Screen	P95028-1000-AW	С	24/06/14
ICT Board 4 Top Screen	P95028-1000-AW	С	24/06/14
ICT Board 4 Bottom Screen	P95028-1000-AW	С	24/06/14
ICT Board 5 Top Screen	P95028-1000-AW	С	24/06/14
ICT Board 5 Bottom Screen	P95028-1000-AW	С	24/06/14
ICT Complete Parts List	P95031-1000-BOM	В	20/11/2013
ICT 2.5 (components list)	P95007-1000-BOM	Е	29/05/2014
iCT Ceramic Sensor Pinout Details	P95029-1000-DT	В	20-11-13
iCT Main and interconnect boards outline	P95022-1000-GA	В	20-11-13
iCT PCB N1 connection to Ceramic sensor	P95030-1000-DT	В	20-11-13
iCT Exploded drawing\ parts List	P95006-1000-GA	С	20-11-13
ATEX Marking Label	p95015-1000-DT	В	24-06-14
ATEX Marking Label	p95019-1000-AW	В	24-06-14

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977

www.intertek.com

Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

This Certificate is the property of Intertek Testing and Certification Ltd and is subject to Intertek Testing and Certification's Conditions for Granting Certification.

Sheet 3 of 4





SCHEDULE

EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26339X Issue 1

18. Revisions

Issue 1 - July 2014

- Product name changed from iCT 1000 to iCT 1000/I
- Modification to the layout and arrangement of the PCB board.
- All components in the circuit were renumbered.
- Modification to the sensing circuit.
- New components added.
- Amended drawings to reflect all modifications listed above.
- Reassessment to latest edition of the standards.

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977

www.intertek.com

Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

This Certificate is the property of Intertek Testing and Certification Ltd and is subject to Intertek Testing and Certification's Conditions for Granting Certification.

Sheet 4 of 4





1. EC-TYPE EXAMINATION CERTIFICATE

- Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC
- 3. EC-Type Examination Certificate Number: ITS09ATEX26414X
- 4. Equipment or Protective System: RFM Series IS Interface
- 5. Manufacturer: PSM INSTRUMENTATION LTD.
- 6. Address: Unit 3, Burrell Road Haywards Heath West Sussex RH16 1TW
- 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. Intertek Testing and Certification Limited, notified body number 0359 in accordance with Article 9 of the 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 Intertek Report Ref 08035266 Issue 1 dated September 2010.

- Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2009, EN 60079-11:2007 and EN 60079-26:2007 except in respect of those requirements referred to at item 18 of the Schedule.
- 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. These are not covered by this certificate.
- 12. The marking of the equipment or protective system shall include the following:-



II (1) G Ex [ia Ga] IIB or IIC Tamb = -20°C to +50°C

A T Austin

Certification Officer 8 September 2010

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977

http://www.intertek.com

Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

This certificate may only be reproduced in its entirety and without any change, schedule included and is subject to Intertek Testing and Certification Conditions for Granting Certification.

Sheet 1 of 3



- 13. SCHEDULE
- 14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26414X
- 15. DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM

The PSM Instrumentation Ltd RFM IS Interface is an apparatus, mounted in the non-hazardous area, supplying power and data to a number of PSM Instrumentation Ltd iCT 1000 Series dual mode pressure and temperature transmitters located in the hazardous area. Each iCT Series transmitter is connected to the RFM IS Interface through an RFM Termination Unit, which is separately certified.

The RFM IS Interface electronics are housed within a metallic enclosure and is comprised of two printed circuit boards.

One printed circuit board performs the voltage and current limitation, the other provides termination facilities, by means of screw terminal blocks.

Intrinsic safety is assured by the use of limitation of voltage, current and power and the limitation of capacitance and inductance.

The RFM is supplied in 2 versions with differing output currents to cater for different Gas Groups.

The Intrinsic Safety Output Parameters are as follows:

IIC Gas Group

IIB Gas Group

Um = 250 V
Uo 14.8V
Io 1.414A
Lo 4.842W
Co 3.76μF
Po 0.06mH
Lo/Ro 20μΗ/Ω

Data (Gas Group IIB & IIC)

Um = 250 V

Uo 5.9

lo 84 mA (both data lines combined)

Notes: Lo, Co and Po are calculated based on the combination of the Power and Data outputs.

Main power lo figure includes lo from the data channels.

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977

http://www.intertek.com

Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

This Certificate is the property of Intertek Testing and Certification Ltd and is subject to Intertek Testing and Certification Conditions for Granting Certification.

Sheet 2 of 3



- 13. SCHEDULE
- 14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS09ATEX26414X
- 16. REPORT NUMBER

Intertek Report Ref 08035266 Issue 1 dated September 2010.

17. SPECIAL CONDITIONS FOR SAFE USE

The IS Earth connection within the RFM Interface Unit shall be connected to a dedicated IS Earth or to the Equipotential Bonding System, which shall extend over the entire area of the installation.

Wire links LK2, LK3, LK4 and LK5 must be removed from the baseboard PCB.

18. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (EHSR'S)

The relevant EHSR's have been identified and assessed in Intertek Report Ref 08035266 Issue 1 dated September 2010.

DRAWINGS

Number	Issue	Date	Description
P96000-RFM-GA	A	01-04-08	RFM Parts List Exploded View
P96012-RFM-GA	Α	01-04-08	RFM Deck Mount Parts List Exploded View
P96013-RFM-DT	Α	02-11-06	RFM Standard Enclosure
P96014-RFM-DT	A	02-09-08	RFM Deck Mount Enclosure
P96015-RFM-GA	Α	01-04-08	Barrier Module Outline
P96016-RFM-GA	A	01-04-08	Termination Module Outline
P96018-RFM-DT	C	30-03-09	RFM Mounting Bracket
P96001-RFMISR-BOM	В	25-02-2010	ISR Barrier Module
P96019-RFM-BOM	A	06-03-2008	Termination Module
P96010-RFM-CD	Α	28-09-2007	RFM Barrier Module (2 Sheets)
P96011-RFM-CD	A	28-09-2007	RFM BaseBoard
P96017-RFM-DT	Α	20-05-08	RFM Information Label
P96020-RFM-DT	D	09-06-10	ATEX Marking Labels
P96021-RFM-AW	Α	20-05-08	RFM Information Label
P96022-RFM-AW	C	07-06-10	ATEX Marking Labels
16293	-	01-06-2010	PSM Sensors Barrier Module (5 sheets)
16267	-	08-06-2010	PSM Sensors RFM Baseboard (3 Sheets)

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977

http://www.intertek.com

Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

This Certificate is the property of Intertek Testing and Certification Ltd and is subject to Intertek Testing and Certification Conditions for Granting Certification.

Sheet 3 of 3





EC-TYPE EXAMINATION CERTIFICATE

- Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC
- 3. EC-Type Examination Certificate Number: ITS10ATEX27051X
- 4. Equipment or Protective System: RFM Series Termination Unit
- 5. Manufacturer: PSM INSTRUMENTATION LTD.
- 6. Address: Unit 3, Burrell Road Haywards Heath West Sussex RH16 1TW
- 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. Intertek Testing and Certification Limited, notified body number 0359 in accordance with Article 9 of the 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 Intertek Report Ref 08035266 Issue 1 dated September 2010.

- Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2009, EN 60079-11:2007 and EN 60079-26:2007 except in respect of those requirements referred to at item 18 of the Schedule.
- 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. These are not covered by this certificate.
- 12. The marking of the equipment or protective system shall include the following:-



II 1 G Ex ia IIB or IIC T4 Tamb = -20°C to +50°C

> A T Austin Certification Officer 8 September 2010

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977

http://www.intertek.com

Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

This certificate may only be reproduced in its entirety and without any change, schedule included and is subject to Intertek Testing and Certification Conditions for Granting Certification.

Sheet 1 of 3



13. SCHEDULE

14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS10ATEX27051X

15. DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM

The PSM Instrumentation Ltd RFM Termination Unit is an apparatus, mounted in the hazardous area, supplying power and data to a PSM Instrumentation Ltd iCT 1000 Series dual mode pressure and temperature transmitter.

Power and data communication is provided to the termination unit by a PSM Instrumentation Ltd RFM-ISR Interface Unit, mounted in the non-hazardous area.

The RFM Termination Unit is housed within a metallic enclosure and is comprised of one printed circuit board which provides infallible current limitation and termination facilities, by means of screw terminal blocks.

The RFM Termination unit may be supplied from RFM-ISR unit with either IIB or IIC gas group output parameters. The output from the termination unit is intrinsically safe for the corresponding gas group output parameters as listed below.

Up to a maximum of 127 RFM Termination units may be connected to a RFM-ISR interface, subject to satisfactory aggregation of the IS parameters with the cable parameters.

The Intrinsic Safety Output Parameters are as follows:

IIB Gas Group			IIC Gas Group				
Power		Data		Power		Data	
Ui	14.8V	Ui	5.9 V	Ui	14.8V	Ui	5.9 V
li	1.33 A	li	84 mA	li	0.92 A	li	84 mA
Uo	14.8 V	Uo	5.9 V	Uo	14.8 V	Uo	5.9 V
lo	109 mA	lo	26 mA	lo	109 mA	lo	26 mA
Co	1.88 µF	Co	500 µF	Co	0.305 µF	Co	21.5 µF
Lo	4.0 mH			Lo	1.0 mH		
Po	0.344 W			Po	0.344 W		
Lo/Ro	158 μΗ / Ω			Lo/Ro	39.7 μΗ / Ω		

Note: Lo and Po are calculated based on the combination of the Power and Data outputs.

16. REPORT NUMBER

Intertek Report Ref 08035266 Issue 1 dated September 2010.

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977

http://www.intertek.com
Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

This Certificate is the property of Intertek Testing and Certification Ltd and is subject to Intertek Testing and Certification Conditions for Granting Certification.

Sheet 2 of 3



13. SCHEDULE

14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS10ATEX27051X

17. SPECIAL CONDITIONS FOR SAFE USE

The cable connecting the RMS-ISR supply to the RFM Termination units shall be Type A or Type B in accordance with EN 60079-14 and have a minimum radial insulation thickness on each core of 0.5mm or greater.

Wire links LK6, LK7 and LK8 must be removed from the baseboard PCB.

The RFM Termination Unit is housed within an Aluminium Alloy enclosure. When mounted in Zone 0 Hazardous Areas, precautions must be taken to ensure the risk of ignition from impact sparks is excluded. Alternatively, the RFM Termination unit housed within a stainless steel enclosure must be used.

18. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (EHSR'S)

The relevant EHSR's have been identified and assessed in Intertek Report Ref 08035266 Issue 1 dated September 2010.

DRAWINGS

Number	Issue	Date	Description
P96000-RFM-GA	Α	01-04-08	RFM Parts List Exploded View
P96012-RFM-GA	Α	01-04-08	RFM Deck Mount Parts List Exploded View
P96013-RFM-DT	Α	02-11-06	RFM Standard Enclosure
P96014-RFM-DT	A	02-09-08	RFM Deck Mount Enclosure
P96015-RFM-GA	Α	01-04-08	Barrier Module Outline
P96016-RFM-GA	Α	01-04-08	Termination Module Outline
P96018-RFM-DT	C	30-03-09	RFM Mounting Bracket
P96001-RFMISR-BOM	В	25-02-2010	ISR Barrier Module
P96019-RFM-BOM	Α	06-03-2008	Termination Module
P96010-RFM-CD	A	28-09-2007	RFM Barrier Module (2 Sheets)
P96011-RFM-CD	Α	28-09-2007	RFM BaseBoard
P96017-RFM-DT	Α	20-05-08	RFM Information Label
P96020-RFM-DT	D	09-06-10	ATEX Marking Labels
P96021-RFM-AW	Α	20-05-08	RFM Information Label
P96022-RFM-AW	C	07-06-10	ATEX Marking Labels
16293	-	01-06-2010	PSM Sensors Barrier Module (5 sheets)
i6267	-	08-06-2010	PSM Sensors RFM Baseboard (3 Sheets)

Note: These drawings are common to certificate number ITS09ATEX26414X

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Intertek Testing & Certification Limited
Intertek House, Cleeve Road, Leatherhead, Surrey, KT22 7SB
Tel: + 44 (0)1372 370900 Fax: +44 (0)1372 370977

http://www.intertek.com
Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

This Certificate is the property of Intertek Testing and Certification Ltd and is subject to Intertek Testing and Certification Conditions for Granting Certification.

Sheet 3 of 3