



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-2007-OSL-ATEX-3697X** Rev. 1

[4] Equipment or Protective System: **Pressure Transducers, Model 311.I..... and Model 370.I.....**

[5] Applicant – Manufacturer or Authorized representative: **GP:50**

[6] Address: **2770 Long Road, Grand Island, NY
14072 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: 2006 and EN 60079-11:2007**

[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 T5, -40 °C ≤ T_a ≤ +85 °C

Høvik, 2010-09-20
for Det Norske Veritas AS

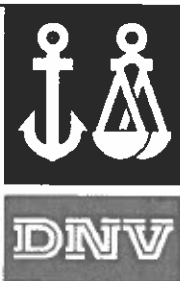

Mariann Spæren
Certification Manager



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-2007-OSL-ATEX-3697X

Rev. 1

Certificate History

Revision	Description	Report no.	Issue date
-	Original certificate	2007-3242	2007-06-26
1	EEx marking changed to Ex, slight modification to circuit, some changes in model number options, updated standards references.	2008-3481	2010-09-20

[15] Description of Equipment or Protective System

The Model 311 and 370 are pressure transmitters that output a continuous 4-20mA loop signal correspondent to a measured pressure. Both models utilize the same electronics, and differ only in the mechanical construction

Type Identification

Model 311aIbcdefgh, where:

a = Approvals:

A, ATEX, IEC

G, ATEX, IEC, FM, CSA

b = Accuracy:

B - $\pm 0.5\%$ FSO

C - $\pm 0.2\%$ FSO

D - $\pm 0.1\%$ FSO

c = Non-standard range (where applicable, range other than std. sensors or psi):

SZ

d = Standard sensor ranges (psi):

PJ	0-5	PO	0-25	RE	0-250	RR	0-2000	SD	0-20000
PL	0-7.5	PT	0-30	RF	0-300	RS	0-2500	SF	0-30000
PN	0-10	PV	0-50	RH	0-500	RT	0-3000	SH	0-50000
PP	0-15	PX	0-75	RJ	0-600	RV	0-5000	SK	0-75000
PQ	3-15	PZ	0-100	RK	0-750	RX	0-7500		
PR	0-20	RB	0-150	RM	0-1000	RZ	0-10000		
PS	3-27	RD	0-200	RO	0-1500	SB	0-15000		

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e = Pressure reference:

- 2 - Gauge
- 3 - Absolute
- 4 - Vacuum
- 6 - Sealed Gauge
- 7 - Sealed Gauge, non hermetic
- 8 - Elevated Zero
- 9 - Other
- 10 - Compound

f = Alternate Connectors (approved per satisfactory dielectric test):

- Bx (where x = A - Z)
- Cx (where x = A - Z)
- Dx (where x = A - Z)

g = Alternate Pressure Ports:

- Fx (where x = A - Z)
- Ix (where x = A - Z)
- Lx (where x = A - Z)

h = Options:

- GC - Special calibration run
- GD - 10X overpressure (or 22,500 whichever is less)
- GE - Improved temp. compensation
- GG - Alternate calibration signal (NC std. shunt)
- GH - 100% of FSPR shunt calibration (NC std. shunt)
- GJ - Zero and Span adjustments
- GK - Inconel wetted parts
- GL - Cleaned for oxygen service
- GP - Hastelloy C-276 wetted parts
- GR - Rangeability via zero and span adjusts
- GY - 316 SST wetted parts
- HE - Improved zero balance
- HX - Hastelloy diaphragm only
- JP - Type 316L wetted parts
- JS - Internal damping
- JY - Zero balance ≥ 4.0 mA
- ME - 80% of FSPR shunt calibration (NC std. shunt)
- NB - Powered isolated shunt calibration
- NC - Non-powered isolated shunt calibration
- G11 - Silicon sensor for pressure ranges < 300 PSI

An - Customer modification, where "n" represents a sequential number starting with 1 (e.g. A1, A2, A3, ...An). Controlled document that combines multiple option codes to minimize extended part number or for specific customer requirements that do not affect approved design as reviewed by Authorized Person. Mod. Code entered immediately after Reference Pressure. All additional option codes included in mod, not specified in part number.

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Rev. 1

Model 370albcdef, where:

a = Approvals:

A, ATEX, IEC
G, ATEX, IEC, FM and CSA

b = Sensors:

A - 2" 1502 WECO, Inconel X750
B - 2" 2002 WECO, Inconel X750
C - 2" 2202 WECO with Inconel 718, NACE MR0175 compliant
D - 2" 1502 WECO with Inconel 718, NACE MR0175 compliant
E - 2" 1502 Compatible, Inconel X750
F - 2" 1502 Compatible, Inconel 718, NACE MR0175 compliant
G - 2" 1502 Compatible, 17-4 SST, NACE MR0175 compliant
H - 2" 2002 Compatible, 17-4 SST, NACE MR0175 compliant

c = Nonstandard range (where applicable, range other than std. sensors or psi):

SZ

d = Standard sensor ranges:

RV - 5000 psi
RW - 6000 psi
RX - 7500 psi
RZ - 10,000 psi
SB - 15,000 psi
SD - 20,000 psi

e = Alternate Connectors (approved per satisfactory dielectric test):

Bx (where x = A - Z)
Cx (where x = A - Z)
Dx (where x = A - Z)

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Rev. 1

f = Options:

- GB – Alternate Electronic output
- GC – Special calibration run
- GE – Improved temperature compensation
- GG – Nonstandard shunt cal value
- GJ - Zero and span adjustments (Z & S)
- HE – Improved zero balance
- JS – Internal damping
- ME – 80% shunt cal
- MR – Alternate wiring
- NC – Comparator shunt cal (100% standard)
- NG - Removable carry handle
- NH - Non-removable welded carry handle
- QX – Extended operating temperature (-45F to 400F process, -45F to 185F electronics)
- QY – Remove shunt cal
- An – Customer modification, where “n” represents a sequential number starting with 1 (e.g. A1, A2, A3,...An). Controlled document that combines multiple option codes to minimize extended part number or for specific customer requirements that do not affect approved design as reviewed by Authorized Person. Mod. Code entered immediately after Reference Pressure. All additional option codes included in mod, not specified in part number.

Electrical Data

Pi=0.7W, Ui=28V, Ii=100mA, Ci=27.2nF, Li=0

Degrees of protection (IP Code)

IP20

[16] Project No.: PRJC-65307-2008-PRC-USA

Descriptive Documents

Number	Title	Rev.	Date
A8AD-311AI.A	Approval Summary Document, Model 311AI/GI (11 pages)	A	2008-05-16
8CI-55.01-2	ATEX/IEC Intrinsic Safety Models 311 AI/GI	A	2008-05-16
A8AD-370AI.A	Approval Summary Document, Model 370AI/GI (10 pages)	A	2008-05-16
8CI-55.00-2	ATEX/IEC Intrinsic Safety Models 370 AI/GI	A	2008-05-16
A3MG-33.10	Stencil Format Requirements for Model 370AI Transducers (3 pages)	A	2008-05-16
A3MG-33.11	Stencil Format Requirements for Model 370AI Transducers (3 pages)	A	2008-05-16
A3MG-39.10	Stencil Format Requirements for Model 311AI Transducers (3 pages)	A	2008-05-16
A3MG-39.11	Stencil Format Requirements for Model 311AI Transducers (3 pages)	A	2008-05-16
8W9-52.00-2	PC Board, Signal Conditioning Board	A1	2007-03-12
8W9-57.00-2	PC Board, 2 Layer, Intrinsic Safety Barrier	1	2007-03-12
8W9-53.00-2	PC Board, 2 Layer, Bridge Amp Board	A	2007-11-07
8W9-59-00-2	Printed Crictuit Board, Compensation	A1	2007-03-12

[17] Special Conditions for Safe Use

Equipment does not provide 500V isolation to the housing.

[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.