

ADDENDUM FOR "EX SAFETY" ASPECTS AND "IP" PROTECTION (EUROPE)

- b) Certificate ATEX II 1/2 GD T50°C, EEx ia IIC T6 (-40°C ≤ Ta ≤ +40°C)
 respectively, GD T95°C, EEx ia IIC T4 (-40°C ≤ Ta ≤ +85°C)

ZELM certificate number ZELM 02 ATEX 0081



Note: this ATEX **Category** depends on the application (see below) and also on the intrinsic safety level of the transmitter supply (associated apparatus) which can sometimes suitably be [ib] instead of [ia]. As it is well known, the level of an intrinsic safety system is determined by the lowest level of the various apparatus used, i.e., in the case of [ib] supply, the system takes over this level of protection.

The meaning of ATEX code is as follows:

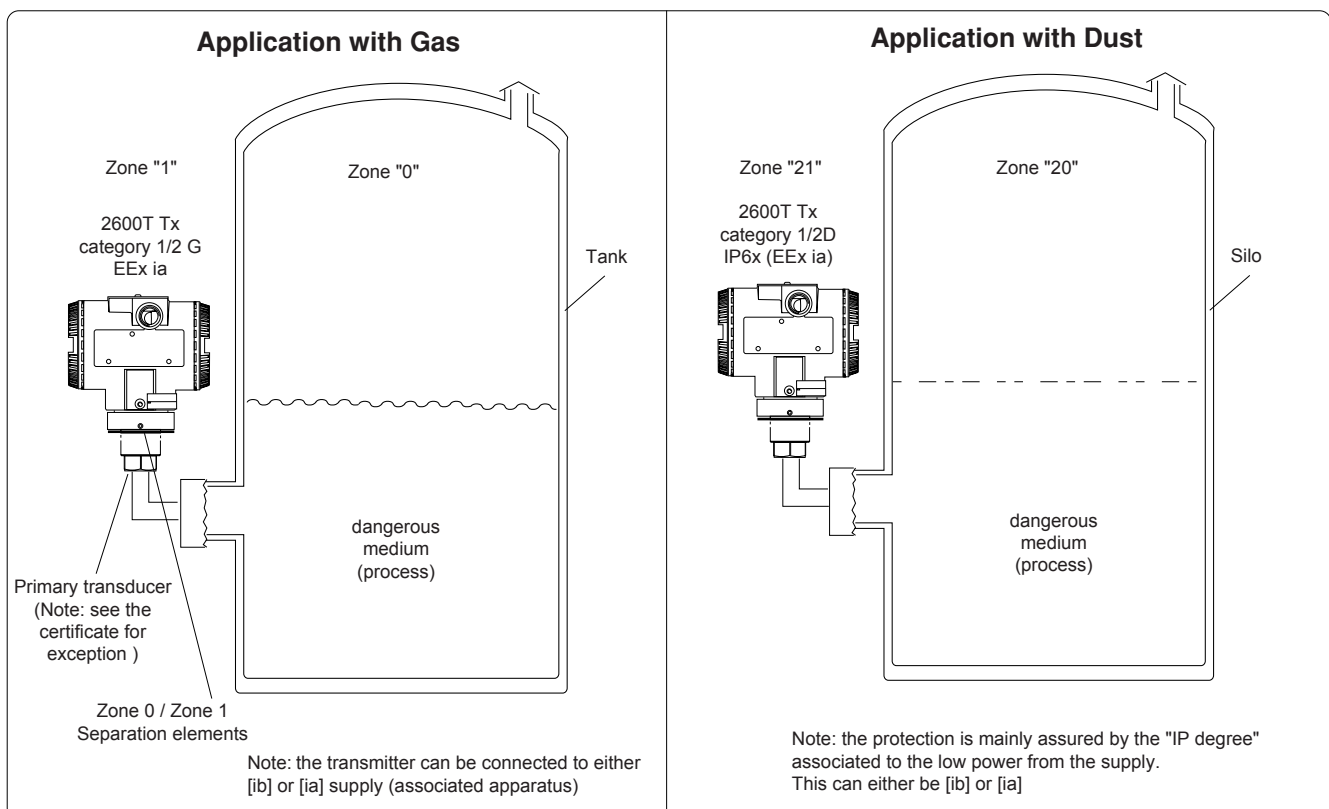
- II : Group for surface areas (not mines)
 - 1/2 : Category - It means that only a part of the transmitter complies with category 1 and a second part complies with category 2 (see next application sketch)
 - G : Gas (dangerous media)
 - D : Dust (dangerous media)
 - T50°C: Maximum surface temperature of the transmitter enclosure with a Ta (ambient temperature) +40°C for Dust (not Gas) with a dust layer up to 50 mm depth.
 - T95°C: As before for Dust for a Ta +85°C
- (Note: the number close to the CE marking of the transmitter safety label identifies the Notified Body which has responsibility for the surveillance of the production)

The other marking refers to the protection type used according to relevant EN standards:

- EEx ia : Intrinsic safety, protection level "a"
- IIC : Gas group
- T6 : Temperature class of the transmitter (which corresponds to 85°C max) with a Ta (ambient temperature) +40°C
- T4 : Temperature class of the transmitter (which corresponds to 135°C max) with a Ta (ambient temperature) +85°C

About the applications, this transmitter can be used in Zone "0" (Gas) classified areas (continuous hazard) with its "process part" only, whereas the remaining part of the transmitter, i.e. its enclosure, can be used in Zone 1 (Gas), only (see sketch below). Reason of this is the process part of the transmitter (normally called primary transducer) that provides inside separation elements to seal off the electrical sensor from the continuously hazardous process, according to the EN50284 and EN50018. About Dust application, the transmitter is suitable for "Zone 21" according to the EN 50281 as it is shown on the relevant part of the sketch:

APPLICATION FOR PRESSURE TRANSMITTER EEx ia CATEGORY 1/2 GD



ADDENDUM FOR "EX SAFETY" ASPECTS AND "IP" PROTECTION (EUROPE)

c) Certificate ATEX II 1/2 G Ex d IIC T4÷T6 and or
ATEX II 1/2 D Ex tD A21 IP67 T85°C (-50°C ≤ Ta ≤ +75°C)

CESI Certificate number CESI 02ATEX 027

The meaning of ATEX code is as follows:

- II : Group for surface areas (not mines)
- 1/2 : Category - It means that only a part of the transmitter complies with category 1 and a second part complies with category 2 (see next application sketch)
- G : Gas (dangerous media)
- D : Dust (dangerous media)
- T85°C: Maximum surface temperature of the transmitter enclosure with a Ta (ambient temperature) +75°C for Dust (not Gas) with a dust layer up to 50 mm depth.

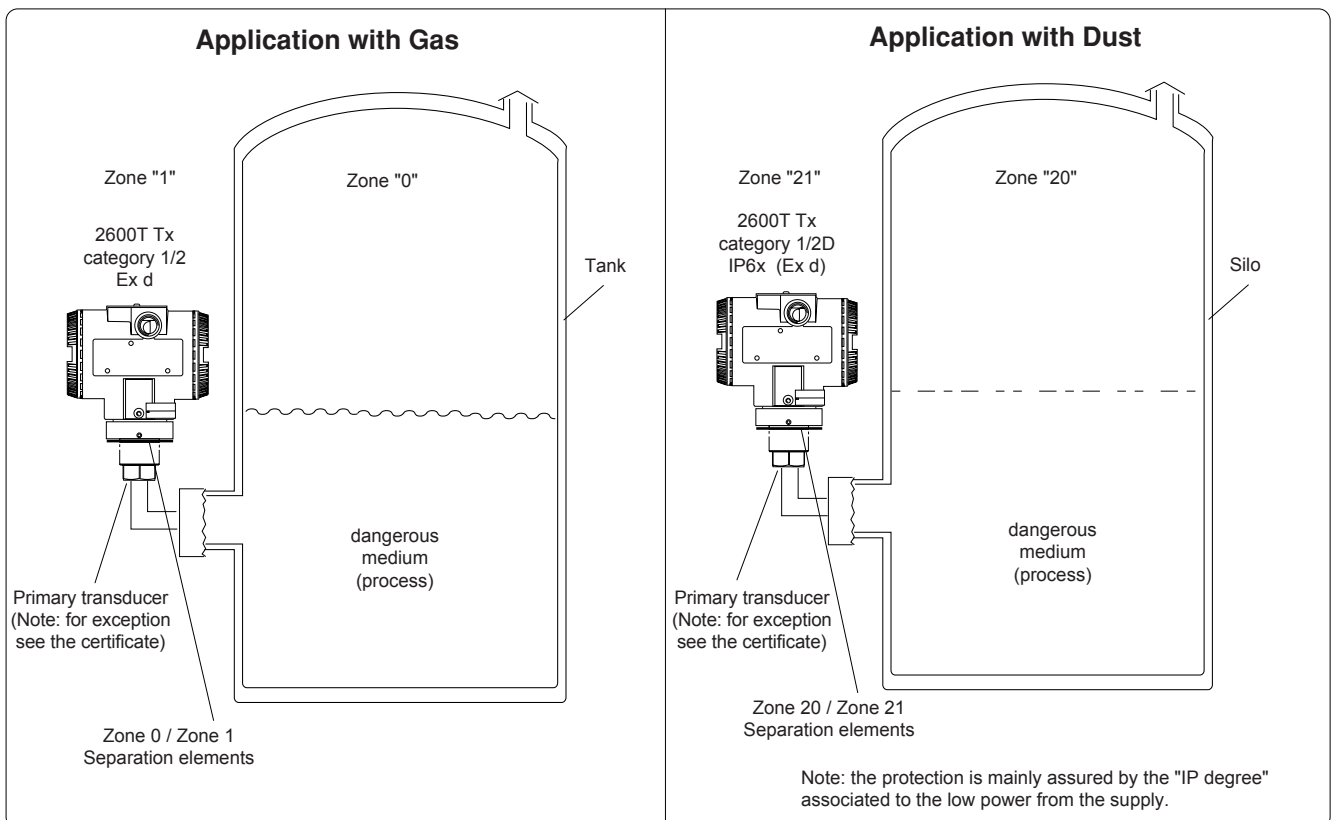
(Note: the number close to the CE marking of the transmitter safety label identifies the Notified Body which has responsibility for the Surveillance of the production)

The other marking refers to the protection type used according to relevant EN Standards:

- Ex d: Explosion proof
- IIC : Gas group
- T6 : Temperature class of the transmitter (which corresponds to 85C max) with a Ta (ambient temperature) +75°C.

About the applications, this transmitter can be used in Zone "0" (Gas) classified areas (continuous hazard) with its "process part" only, whereas the remaining part of the transmitter, i.e. its enclosure, can be used in Zone 1 (Gas), only (see sketch below). Reason of this is the process part of the transmitter (normally called primary transducer) that provides inside separation elements to seal off the electrical sensor from the continuously hazardous process, according to the EN 60079-26 and EN 60079-1. About Dust application, the transmitter is suitable for "Zone 21" according to the EN 61241-1 as it is shown on the relevant part of the sketch:

APPLICATION FOR PRESSURE TRANSMITTER Ex d CATEGORY 1/2 GD



IP code

About the degree of protection provided by the enclosure of the pressure transmitter, the 2600T SERIES has been certified IP67 according to EN 60529 standard.

The first characteristic numeral indicates the protection of the inside electronics against ingress of solid foreign objects including dusts. The assigned "6" means an enclosure dust-tight (no ingress of dust).

The second characteristic numeral indicates the protection of the inside electronics against ingress of water. The assigned "7" means an enclosure water-protected against a temporary immersion in water under standardized conditions of pressure and time.

ADDENDUM FOR "EX SAFETY" ASPECTS (EUROPE)

According to ATEX Directive (European Directive 94/9/EC of 23 March 1994) and relative Standards which can assure compliance with Essential Safety Requirements, i.e., EN 50014 (General requirements) EN 50021 (Specification for electrical apparatus with type of protection "n") EN 50281 (Apparatus for use with combustible dusts), the pressure transmitters of the 2600T SERIES have been certified for the following group, categories, media of dangerous atmosphere, temperature classes, types of protection. Examples of application are also shown below by simple sketches.

d) Certificate ATEX II 3 GD T50°C, EEx nL IIC T6 (-40°C ≤ Ta ≤ +40°C)
respectively, GD T95°C, EEx nL IIC T4 (-40°C ≤ Ta ≤ +85°C)

ZELM "Conformity Statement" number ZELM 02 ATEX 3088

(Note: It is the technical support for the ABB Declaration of Conformity)

The meaning of ATEX code is as follows:

- II : Group for surface areas (not mines)
- 3 : Category
- G : Gas (dangerous media)
- D : Dust (dangerous media)
- T50°C: Maximum surface temperature of the transmitter enclosure with a Ta (ambient temperature) +40°C for Dust (not Gas) with a dust layer up to 50 mm depth.
- T95°C: As before for Dust for a Ta +85°C

The other marking refers to the protection type used according to the standards:

- EEx nL : Type of protection "n" with "energy limitation" technique
- IIC : Gas group
- T6 : Temperature class of the transmitter (which corresponds to 85°C max) with a Ta (ambient temperature) +40°C
- T4 : Temperature class of the transmitter (which corresponds to 135°C max) with a Ta (ambient temperature) +85°C

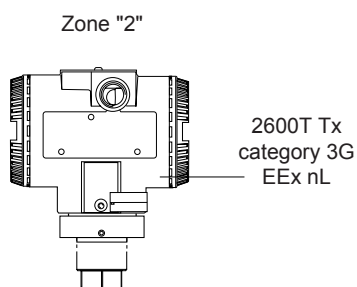


Note: when installed this transmitter must be supplied by a voltage limiting device which will prevent the rated voltage of 42 V d.c. being exceeded.

About the applications, this transmitter can be used in "Zone 2" (Gas) and "Zone 22" (Dust) classified areas (unlikely/infrequent hazard) as it is shown on the following sketch:

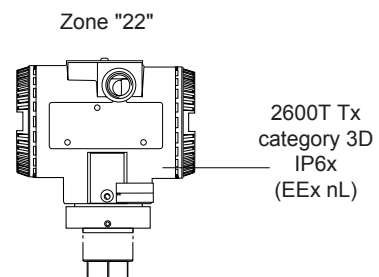
APPLICATION FOR PRESSURE TRANSMITTER EEx nL CATEGORY 3GD

Application with Gas



Note: the transmitter must be connected to a supply with 42 V d.c. max output voltage as above indicated. The Ii of the transmitter is less than 25 mA.

Application with Dust



Note: the protection is mainly assured by the "IP degree" associated to the low power from the supply.

ADDENDUM FOR "EX SAFETY" ASPECTS AND "IP" PROTECTION (EUROPE)

According to ATEX Directive (European Directive 94/9/EC of 23 March 1994) and relative European Standards which can assure compliance with Essential Safety Requirements, i.e., EN 50014 (General requirements) EN 50018 (Flameproof enclosures "d") EN 50020 (Intrinsic safety "i") EN 50284 (Equipments, group II, category 1G) EN 50281 (Apparatus for use with combustible dusts), the pressure transmitters of the 2600T SERIES have been certified for the following group, categories, media of dangers atmosphere, temperature classes, types of protection. Examples of application are also shown below by simple sketches.

Note for pressure transmitter with ATEX combined approval



WARNING - Before installation of the Transmitter, the customer should permanent mark his chosen Protection Concept on the safety label. The transmitter can only be used with according to this Protection Concept for the whole life. If both types of protection box (on safety label) are permanent marked, the pressure transmitter must be removed from hazardous classified locations. The selected Type of Protection is allowed to be changed only by manufacturer after a new satisfactory assessment.

- e) Certificate ATEX II 1 GD T50°C, EEx ia IIC T6 (-40°C ≤ Ta ≤ +40°C)
respectively, 1 GD T95°C, EEx ia IIC T4 (-40°C ≤ Ta ≤ +85°C)
and ATEX II 1/2 GD T50°C, EEx ia IIC T6 (-40°C ≤ Ta ≤ +40°C)
respectively, 1/2 GD T95°C, EEx ia IIC T4 (-40°C ≤ Ta ≤ +85°C)
and ATEX II 1/2 GD, EEx d IIC T6
IP67 T85°C (-40°C ≤ Ta ≤ +75°C)

ZELM certificate number ZELM 04 ATEX 0202 X (for HART)

ZELM certificate number ZELM 04 ATEX 0216 X (for PROFIBUS PA and FOUNDATION Fieldbus)

(X = Special conditions for safe use)

For special conditions for safe use see certificate

The meaning of ATEX code is as follows:

- II : Group for surface areas (not mines)
- 1 : Category
- 1/2 : Category - It means that only a part of the transmitter complies with category 1 and a second part complies with category 2 (see on application sketch)
- G : Gas (dangerous media)
- D : Dust (dangerous media)
- T50°C: Maximum surface temperature of the transmitter enclosure with a Ta (ambient temperature) +40°C for Dust (not Gas) with a dust layer up to 50 mm depth.
- T95°C: As before for Dust for a Ta +85°C

and for Flameproof protection type:

- T85°C: Maximum surface temperature of the transmitter enclosure with a Ta (ambient temperature) +75°C for Dust (not Gas) with a dust layer up to 50 mm depth.

(Note: the number close to the CE marking of the transmitter safety label identifies the Notified Body which has responsibility for the surveillance of the production)

The other marking refers to the Intrinsic safety protection type used according to relevant EN standards:

- EEx ia : Intrinsic safety, protection level "a"
- IIC : Gas group
- T6 : Temperature class of the transmitter (which corresponds to 85°C max) with a Ta (ambient temperature) +40°C
- T4 : Temperature class of the transmitter (which corresponds to 135°C max) with a Ta (ambient temperature) +85°C

The other marking refers to the Flameproof protection type used according to relevant EN standards:

- EEx d: Flameproof
- IIC : Gas group
- T6 : Temperature class of the transmitter (which corresponds to 85°C max) with a Ta (ambient temperature) +75°C.

About the applications of the transmitter see the relevant sketch.

ADDENDUM FOR "EX SAFETY" ASPECTS (NORTH AMERICA)

According to Factory Mutual Standards which can assure compliance with Essential Safety Requirements

FM 3600 : Electrical Equipment for use in Hazardous (Classified) Locations, General Requirements.

FM 3610 : Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, III, Division 1, and Class I, Zone 0 & 1 Hazardous (Classified) Locations.

FM 3611 : Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III Division 1 and 2 Hazardous (Classified) Locations.

FM 3615 : Explosionproof Electrical Equipment.

FM 3810 : Electrical and Electronic Test, Measuring and Process Control Equipment.

NEMA 250 : Enclosure for Electrical Equipment (1000 Volts Maximum)

The 2600T Series pressure transmitters have been certified by Factory Mutual for the following Class, Divisions and Gas groups, hazardous classified locations, temperature class and types of protection.

- Explosionproof for Class I, Division 1, Groups A, B, C and D, hazardous (classified) locations.
- Dust Ignition proof for Class II, III Division 1, Groups E, F and G, hazardous (classified) locations.
- Suitable for Class II, III, Division 2, Groups F and G, hazardous (classified) locations.
- NonIncendive for Class I, Division 2, Groups A, B, C and D, in accordance with Nonincendive field wiring requirements for hazardous (classified) locations.
- Intrinsically Safe for use in Class I, II and III, Division 1, Groups A, B, C, D, E, F, and G in accordance with Entity ~~requirements~~ requirements for hazardous (classified) locations.
- Temperature class T4 to T6 (dependent on the maximum input current and the maximum ambient temperature).
- Ambient Temperature range -40°C to +85°C (dependent on the maximum input current and the maximum temperature class).
- Electrical Supply range Minimum 10.5 Volts, Maximum 42 Volts (dependent on the type of protection, maximum ambient temperature, maximum temperature class and communication protocol).
- Type 4X applications Indoors/Outdoors.

For a correct installation in field of 2600T Series pressure transmitters please see the related control drawing.

Note that the associated apparatus must be FM approved.

... ADDENDUM FOR "EX SAFETY" ASPECTS (NORTH AMERICA)

According to CSA International Standards which can assure compliance with Essential Safety Requirements

C22.2

0-M1991 : General Requirements – Canadian Electrical Code Part II.

0.4-M1982 : Bonding and Grounding of Electrical Equipment (Protective Grounding)

0.5-M1982 : Threaded Conduit Entries

25-M1966 : Enclosures for use in Class II Groups E, F and G Hazardous Locations.

30-M1986 : Explosion-proof Enclosures for use in Class I Hazardous Locations.

94-M1991 : Special Purpose Enclosures.

213-M1987 : Non-Incendive Electrical Equipment for use in Class I Division 2 Hazardous Locations.

157-M1992 : Intrinsically Safe and Non-Incendive Equipment for use in Hazardous Locations.

CAN/CSA C22.2 No.1010.1-92

Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1 : General Requirements (includes Amendment 1)

CAN/CSA C22.2 No.1010.1B-97

Amendment 2 to CAN/CSA C22.2 No 1010.1-92

CAN/CSA E60079-0-00

Electrical apparatus for explosive gas atmosphere. Part 0 : General Requirements.

CAN/CSA E60079-1-01

Electrical apparatus for explosive gas atmosphere. Part 1 : Construction and verification test of flameproof enclosure of electrical apparatus.

CAN/CSA E60079-11-02

Electrical apparatus for explosive gas atmosphere. Part 11 : Intrinsic Safety "i"

The 2600T Series pressure transmitters have been certified by CSA International for the following Class, Divisions and Gas groups, hazardous classified locations, temperature class and types of protection.

- Explosionproof for Class I, Division 1 and 2, Groups A, B, C and D; Class II Groups E, F and G; Class III; Enclosure Type 4X Ex d IIC.
- Non incendive for Class I, Division 2, Groups A, B, C and D; Class II Groups E, F and G; Class III; Enclosure Type 4X Ex nL IIC.
- Intrinsically Safe for Class I, Division 1 and 2, Groups A, B, C and D; Class II Groups E, F and G; Class III; Enclosure Type 4X Ex ia IIC.
- Temperature class T4 to T6 (dependent on the maximum input current and the maximum ambient temperature).
- Ambient Temperature range -40°C to +85°C (dependent on the maximum input current and the maximum temperature class).
- Electrical Supply range Minimum 10.5 Volts, Maximum 42 Volts (dependent on the type of protection, maximum ambient temperature, maximum temperature class and communication protocol).
- Type 4X applications Indoors & Outdoors.
- Pollution Degree I
- Installation Category II
- Altitude 2000 m
- Humidity 0 to 80%

For a correct installation in field of 2600T Series pressure transmitters please see the related control drawing.

Note that the associated apparatus must be CSA approved.



EC DECLARATION OF CONFORMITY

We: ABB S.p.A. – ABB SACE Division
Business Unit Instrumentation
Via Statale, 113
22016 Lenno (Como)
Italy

declares under our sole responsibility that the products:

2600T EN Series (Transmitters models 262/264/266/268, Hand Held Terminal, Field Indicator) in all the communication configurations (4-20 mA + HART[®], Profibus, Foundation Fieldbus, Safety)

are in conformity with the following standards:

EN 61000-6-3 (2001) Electromagnetic compatibility (EMC) - Generic standards - Emission standard for residential, commercial and light-industrial environments
according to: EN55022 (2001)

EN 61000-6-2 (2001) Electromagnetic compatibility (EMC) - Generic standards - Immunity for industrial environments
according to: EN 61000-4-2 (2001)
EN 61000-4-3 (2002)
EN 61000-4-4 (2001)
EN 61000-4-5 (2001)
EN 61000-4-6 (2001)

following the provisions of the EMC Directives 89/336/EEC and 93/68/EEC.

ABB S.p.A. – ABB SACE Division
Business Unit Instrumentation

Eugenio Volonterio
Technical Manager

Lenno, 14th May 2008

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Codice Fiscale e n° di iscrizione del Registro
delle Imprese di Milano/Fiscal Code and
Official Company Book: 00736410150
R.E.A. Milano 1513225

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- *Zirconia oxygen analyzers, katharometers, hydrogen purity and purge-gas monitors, thermal conductivity.*

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We provide a comprehensive after sales service via a Worldwide Service Organization. Contact one of the following offices for details on your nearest Service and Repair Centre.

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ABB Inc.
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Client Warranty

Prior to installation, the equipment referred to in this manual must be stored in a clean, dry environment, in accordance with the Company's published specification.

Periodic checks must be made on the equipment's condition. In the event of a failure under warranty, the following documentation must be provided as substantiation:

1. A listing evidencing process operation and alarm logs at time of failure.
2. Copies of all storage, installation, operating and maintenance records relating to the alleged faulty unit.

ABB has Sales & Customer Support expertise in over 100 countries worldwide

www.abb.com/instrumentation

The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

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