

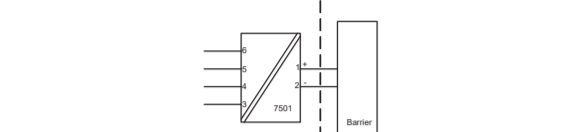
7501 IECEX Installation

For safe installation of 7501 the following must be observed. The module shall only be installed by qualified personnel who are familiar with the national and international laws, directives and standards (IEC60079-14) that apply to this area.
Year of manufacture can be taken from the first two digits in the serial number.

Ex ia installation:
Certificate IECEx DEK 15.0039 X
Marking Ex ia IIC T6, T4 Ga
Ex ia IIC T100°C Da
Ex ia I Ma (7501B)

Standards: IEC 60079-0:2011, IEC 60079-11:2011, IEC 60079-26:2007

Hazardous area
Zone 0, 1, 2, 20, 21, 22, Mines
Non Hazardous Area



Sensor Terminal: 3,4,5,6
Uo: 9.6 VDC
Io: 28 mA
Po: 67 mW
Li: 35 mH
Co: 3.5 µF

Supply Terminal: 1,2
Uo: 30 VDC
Io: 120 mA
Po: 0.84 W
Li: 0 µH
Co: 2 nF

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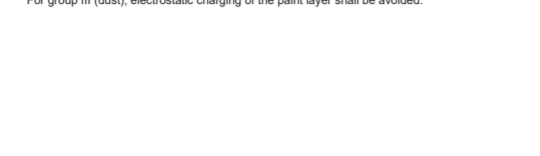
Ex ia installation

General installation instructions
The sensor circuit is not intrinsically isolated from the supply output circuit. However, the galvanic isolation between the circuits is capable of withstanding a test voltage of 500V_{ac} during 1 minute.

The enclosure must be connected to the potential matching line.
If the transmitter is physically connected to a possible source of heating or cooling, e.g. by mounting to a process pipe or a temperature sensor, the temperature at the point of connection shall be within the ambient temperature range as given in this manual.
Cable entries and blanking elements shall be used that are suitable for the application and correctly installed.

For installation of 7501A in zone 0 / EPL Ga, the transmitter must be installed such, that even in the event of rare incidents, ignition sources due to impact and friction, sparks are excluded.
Protection degree of IP 54 according to IEC 60529 is achieved if certified cable glands or conduit entry devices are used that are suitable for the application and correctly installed.

Protection degree of IP 68 according to IEC 60529 is only achieved if certified cable glands or conduit entry devices are used that are suitable for the application and correctly installed with sealing washers or Locite sealant added to the threads of the sensor, blanking elements and cable glands.
For group III (dust), electrostatic charging of the paint layer shall be avoided.



Sensor Terminal: 3,4,5,6
Uo: 9.6 VDC
Io: 28 mA
Po: 67 mW
Li: 35 mH
Co: 3.5 µF

Supply Terminal: 1,2
Uo: 30 VDC
Io: 120 mA
Po: 0.84 W
Li: 0 µH
Co: 2 nF

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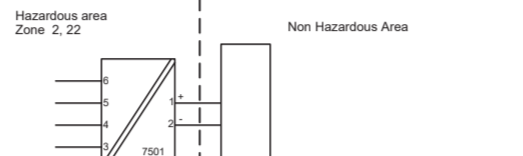
Ex nA, ic installation:

Certificate IECEx DEK 15.0039 X
Marking Ex nA IIC T6, T4 Gc
Ex ic IIC T6, T4 Gc
Ex ic IIC T100°C Dc

Standards: IEC 60079-0:2011, IEC 60079-11:2011, IEC 60079-15:2010
Type of protection Ex nA
O-ring Sealing: Silicone
T4: -40 ≤ Ta ≤ 85°C T4 (7501A)
T4: -40 ≤ Ta ≤ 80°C T4 (7501B)
T6: -40 ≤ Ta ≤ 60°C T6

Type of protection Ex ic
T4: -40 ≤ Ta ≤ 85°C T100°C (7501A)
T4: -40 ≤ Ta ≤ 80°C T100°C (7501B)
T6: -40 ≤ Ta ≤ 60°C T6

O-ring Sealing: FKM
T4: -20 ≤ Ta ≤ 80°C (7501A)
T4: -20 ≤ Ta ≤ 80°C (7501B)
T6: -20 ≤ Ta ≤ 60°C



Sensor Terminal: 3,4,5,6
Uo: 9.6 VDC
Io: 28 mA
Po: 67 mW
Li: 35 mH
Co: 3.5 µF

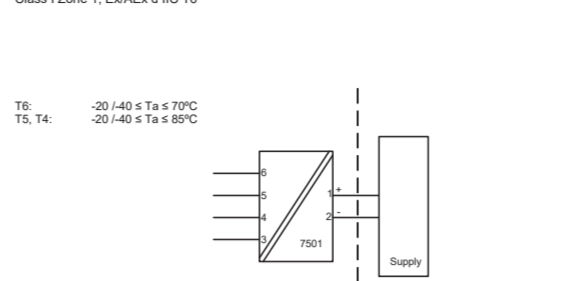
Supply Terminal: 1,2
Uo: 30 VDC
Io: 120 mA
Po: 0.84 W
Li: 0 µH
Co: 2 nF

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Explosion proof / Dust ignition proof installation

Hazardous area
Class I, II, III Division 1, Groups ABCDEFG
Class I Zone 1, ExIAXd IIC T6

Non Hazardous Area



Terminal: 3,4,5,6
Sensor: RTD or TC

Terminal: 1,2
Umax: 35 VDC

O-ring Sealings
Silicone rubber: -40°C Ta ≤ +85°C
FKM rubber: -20°C Ta ≤ +85°C

Protection: Indoor and Outdoor Type 4X or IP68

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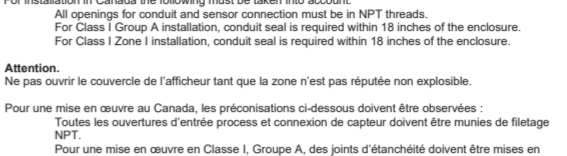
Explosion proof / Dust ignition proof installation

The enclosure must be installed such, that even in the event of rare incidents, ignition sources due to impact and friction, sparks are excluded.
Unused cable entries must be sealed by approved sealing plugs.

Certified cable and cable glands shall be used that are suitable for the application and correctly installed or the cables must be run in conduit.
For an ambient temperature exceeding 70 °C, heat resistant cables and cable glands suitable for at least 90°C shall be used.

For process temperatures above 85°C or below -20/-40°C installer must verify by measurements that the service temperature of the 7501 module is held within this range taking worst conditions into account.
The display cover must be screwed all the way in and the safety catch must be fastened before operation.

Protection degree of IP 68 or TYPEEX is only achieved if certified cable glands or conduit entry devices are used that are suitable for the application and correctly installed with sealing washers or Locite sealant is added to the threads of the sensor, blanking elements and cable glands.
The enclosure must be connected to the potential matching line.



Terminal do sensor: 3,4,5,6
Uo: 9.6 VDC
Io: 28 mA
Po: 67 mW
Li: 35 mH
Co: 3.5 µF

Terminal de alimentação: 1,2
Uo: 30 VDC
Io: 120 mA
Po: 0.84 W
Li: 0 µH
Co: 2 nF

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7501 Desenho de Instalação INMETRO

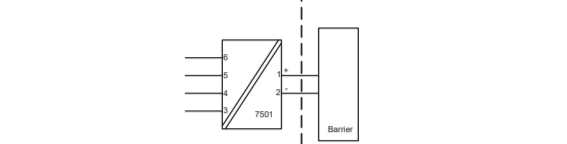
Para instalação segura do 7501 o seguinte deve ser observado. O módulo deve ser instalado, apenas por pessoas qualificadas as quais estão familiarizadas com as normas nacionais e internacionais, diretrizes e padrões (ABNT NBR IEC60079-14) que se aplicam a esta área.

Instalação Segura do Ex ia installation:

Certificado DEKRA 15.0014X
Marca Ex ia IIC T6, T4 Ga
Ex ia IIC T100°C Da
Ex ia I Ma (peças para Tipo 7501B...2.)

Normas: ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-11:2013, ABNT NBR IEC 60079-26:2008

Áreas classificadas
Zona 0, 1, 2, 20, 21, 22, Minas
Áreas não classificadas



Terminal do sensor: 3,4,5,6
Uo: 9.6 VDC
Io: 28 mA
Po: 67 mW
Li: 35 mH
Co: 3.5 µF

Terminal de alimentação: 1,2
Uo: 30 VDC
Io: 120 mA
Po: 0.84 W
Li: 0 µH
Co: 2 nF

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2015-11-04	V2R0	1/6

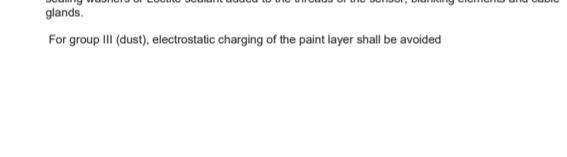
Ex nA, ic installation:

For an ambient temperature exceeding 70°C, heat resistant cables and cable glands suitable for at least 90°C shall be used.
If the transmitter is physically connected to a possible source of heating or cooling, e.g. by mounting to a process pipe or a temperature sensor, the temperature at the point of connection shall be within the ambient temperature range as given in the certificate.

Cable entries and blanking elements shall be used that are suitable for the application and correctly installed.
The enclosure must be connected to the potential matching line.
Applied screw terminal torque is max. 0.4 Nm on all terminals.

Protection degree of IP 54 according to EN 60529 is achieved if certified cable glands or conduit entry devices are used that are suitable for the application and correctly installed.

Protection degree of IP 68 according to EN 60529 is only achieved if certified cable glands or conduit entry devices are used that are suitable for the application and correctly installed with sealing washers or Locite sealant added to the threads of the sensor, blanking elements and cable glands.
For group III (dust), electrostatic charging of the paint layer shall be avoided.



Terminal: 3,4,5,6
Sensor: RTD or TC

Terminal: 1,2
Umax: 35 VDC

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Ex d, tb installation:

Certificate IEC DEK 15.0039 X
Marking Ex d IIC T6, T4 Gb
Ex ic IIC T100°C Db

Standards: IEC 60079-0:2011, IEC 60079-1:2007, IEC 60079-31:2013
Type of protection Ex d
T4 T5: -40 ≤ Ta ≤ 85°C (7501A)
T4 T5: -40 ≤ Ta ≤ 80°C (7501B)
T6: -40 ≤ Ta ≤ 70°C

Type of protection Ex tb
O-ring Sealing: Silicone
-40 ≤ Ta ≤ 85°C T100°C (7501A)
-40 ≤ Ta ≤ 80°C T100°C (7501B)
-20 ≤ Ta ≤ 70°C T85°C

O-ring Sealing: FKM
-20 ≤ Ta ≤ 85°C T100°C (7501A)
-20 ≤ Ta ≤ 80°C T100°C (7501B)
-20 ≤ Ta ≤ 70°C T85°C



Terminal: 3,4,5,6
Sensor: RTD or TC

Terminal: 1,2
Umax: 35 VDC

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Ex d, tb installation

The transmitter is intended, either to be connected via a cable, or to be mounted directly onto a temperature sensing probe.
Only IECEx equipment certified sensors, suitable for the application and correctly installed, may be mounted directly onto the Transmitter without additional certification of the combination.

If the transmitter is physically connected to a possible source of heating or cooling, e.g. by mounting to a process pipe or a temperature sensor, the temperature at the point of connection shall be within the ambient temperature range as given in the certificate. The sensor shall be suitable for use as any device on an Ex d enclosure and shall not add volume to the 7501 enclosure. The thread of the sensor must be in compliance with IEC60079-1/IEC60079-31

Unused cable entries must be sealed by the blanking elements 8550-xxx and 8551-xxx supplied with the 7501 or other Ex d and/or Ex tb certified blanking elements suitable for the application.

Only Ex d and/or Ex tb certified cable and cable glands shall be used that are suitable for the application and correctly installed.

Protection degree of IP 54 according to IEC 60529 is achieved if Ex d certified cable glands or conduit entry devices are used that are suitable for the application and correctly installed.

Protection degree of IP 68 according to IEC 60529 is only achieved if Ex d certified cable glands or conduit entry devices are used that are suitable for the application and correctly installed with sealing washers or Locite sealant added to the threads of the sensor, blanking elements and cable glands.

The display cover must be screwed all the way in and the safety catch must be fastened before putting into service. Do not open display cover until 30 minutes after disconnecting power to the equipment allowing internal capacitors to discharge, or do not open display cover unless area is known to be safe.

For an ambient temperature exceeding 70 °C, heat resistant cables and cable glands suitable for at least 90°C shall be used.
The enclosure must be connected to the potential matching line.

When the process temperature range exceeds the service temperature range it shall be verified by on-site temperature measurements, taking the worst case conditions into account, that the service temperature does not exceed the range of the module.

For group III (dust), electrostatic charging of the paint layer shall be avoided.
No modification to the enclosure is allowed by the customer except as mentioned in the manual or installation drawing.

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Instalação do Ex ia

instruções de instalação gerais
O circuito do sensor não é intrinsecamente galvanicamente isolado do circuito de saída de alimentação. Contudo, a isolamento galvanístico entre os circuitos é capaz de resistir a teste de tensão de 500V_{ac} durante 1 minuto.

O equipamento deve ser conectado à linha potencial correspondente
Se o transmissor estiver fisicamente conectado a uma possível fonte de calor ou resfriamento, por exemplo, através da montagem de um tubo de processo ou sensor de temperatura, a temperatura no ponto de conexão deve estar entre a faixa de temperatura ambiente determinada no certificado ou neste manual.

As entradas dos cabos e elementos de supressão devem ser usadas adequadamente para aplicação INMETRO, aprovada e instalada corretamente.

Para instalação 7501A em zona 0 / EPL Ga, se aplicam as seguintes instruções: O transmissor deve ser instalado de modo que, mesmo em um evento raro de incidente, fontes de ignição devido a impactos e fricção, faíscas sejam evitadas.

O grau de proteção do IP 54 de acordo com a ABNT NBR IEC 60529 é alcançado se o certificado prensa-cabos ou dispositivos de entrada de condutos são usados e adequados para a aplicação e instalados corretamente.

O grau de proteção do IP 68 de acordo com a ABNT NBR IEC 60529 é apenas alcançado se o certificado prensa-cabos ou dispositivos de entrada de condutos são usados e adequados para a aplicação e instalados corretamente com selos de vedação ou selante Locite adicionados para as linhas do sensor, elementos de supressão e prensa-cabos.

Para o grupo III (poeira), deve ser evitada a carga eletrostática da camada de tinta.

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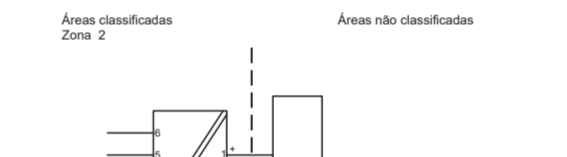
Instalação Ex ic, Ex nA:

Certificado DEKRA 15.0014X
Marca Ex nA IIC T6, T4 Gc
Ex ic IIC T6, T4 Gc

Normas: ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-15:2012
Ex ic
Anel de vedação O: Silicone
T4: -40 ≤ Ta ≤ 85°C (7501A)
T4: -40 ≤ Ta ≤ 80°C (7501B)
T6: -40 ≤ Ta ≤ 60°C

Anel de vedação O: FKM
T4: -20 ≤ Ta ≤ 85°C (7501A)
T4: -20 ≤ Ta ≤ 80°C (7501B)
T6: -20 ≤ Ta ≤ 60°C

Áreas classificadas
Zona 2
Áreas não classificadas



Terminal do sensor: 3,4,5,6
Ex ic
Uo: 9.6 VDC
Io: 28 mA
Po: 67 mW
Li: 45 mH
Co: 28 µF

Terminal de alimentação: 1,2
Ex ic
Uo: 35 VDC
Li: 0 µH
Co: 2 nF

Terminal de alimentação: 1,2
Ex nA
Uo: 35 VDC
Li: 0 µH
Co: 2 nF

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FM Installation drawing 7501

For safe installation of 7501 it must be observed. The module shall only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.

Pour une mise en œuvre du 7501 en toute sécurité, les préconisations ci-dessous doivent être observées. Le module doit être mis en œuvre par du personnel qualifié familier avec les Lois, Directives et Normes, nationales et internationales, qui s'appliquent à la zone d'installation.

Intrinsic safe installation:

Hazardous classified Location
Class I,II,III Division 1, Groups, ABCDEFG
Class I, Zone 0, IIC, Zone 20
T4: -40 ≤ Ta ≤ 85°C
T5: -40 ≤ Ta ≤ 80°C
T6: -40 ≤ Ta ≤ 40°C

Non classified Location
Zone 20 Temperature Class:
T4: -40 ≤ Ta ≤ 85°C
T5: -40 ≤ Ta ≤ 80°C
T6: -40 ≤ Ta ≤ 40°C

The sum of the maximum unprotected inductance (L) for each intrinsically device and the interconnecting wiring must be less than the inductance (L) which can be safely connected to the barrier.
The sum of the maximum unprotected capacitance (C) for each intrinsically device and the interconnecting wiring must be less than the capacitance (C) which can be safely connected to the barrier.

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