

PR
electronics



5 3 3 3

**2-Draht Programmier-
barer Messumformer**

Nr. 5333V111-DE

Ab Seriennr.:

132094001 - 132094630

141115001 →



Revision Notes

The following list provides notes concerning revisions of this document.

Rev. ID	Date	Notes
111	13/45	IECEX and INMETRO approvals added

2-DRAHT PROGRAMMIERBARER MESSUMFORMER

PRetop 5333

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2-DRAHT PROGRAMMIERBARER MESSUMFORMER PRetop 5333

- *Eingang für WTH oder Ω*
- *Hohe Messgenauigkeit*
- *3-Leiter-Anschluss*
- *Programmierbare Sensorfehlanzeige*
- *Für Einbau in Anschlusskopf DIN Form B*

Verwendung

- Linearisierte Temperaturmessung mit Pt100...Pt1000, Ni100...Ni1000 Sensor.
- Umwandlung von linearer Widerstandsänderung in ein analoges Standard-Stromsignal, z.B. von Ventilen oder Niveau-Messwertgeber.

Technische Merkmale

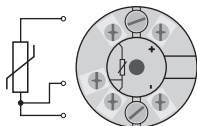
- PR5333 kann vom Benutzer innerhalb von wenigen Sekunden zur Messung in allen genormten WTH-Temperaturbereiche programmiert werden.
- Der WTH- und Widerstandseingang haben Leitungskompensation bei 3-Leiter-Anschluss.

Montage / Installation

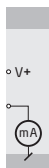
- Für DIN Form B Sensorkopf Montage. Im sicheren Bereich kann der 5333 auf einer DIN-Schiene mittels einer spezieller Armatur montiert werden.
- **NB:** Als Ex-Sicherheitsbarriere für 5333D empfehlen wir 5104B, 5114B oder 5116B.

ANWENDUNGEN

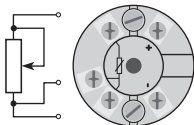
WTH in 4...20 mA



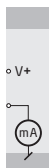
2-Draht-Installation
im Kontrollraum



Widerstand in 4...20 mA



2-Draht-Installation
im Kontrollraum



Bestellangaben: 5333

Typ	Version
5333	Standard : A CSA, FM, ATEX, IECEx & INMETRO : D

Elektrische Daten

Spezifikationsbereich:

-40°C bis +85°C

Gemeinsame Daten:

Versorgungsspannung DC

Standard.....	8...35 V
CSA, FM, ATEX, IECEx & INMETRO.....	8...30 V
Eigenverbrauch.....	25 mW...0,8 W
Spannungsabfall.....	8 VDC
Aufwärmzeit.....	5 Min.
Kommunikationsschnittstelle.....	Loop Link
Signal- / Rauschverhältnis.....	Min. 60 dB
Ansprechzeit (programmierbar).....	0,33...60 s
Signaldynamik, Eingang.....	19 Bit
Signaldynamik, Ausgang.....	16 Bit
Kalibrierungstemperatur.....	20...28 °C

Genauigkeit, höherer Wert von allgemeinen und Grundwerten:

Allgemeine Werte		
Eingangsart	Absolute Genauigkeit	Temperaturkoeffizient
Alle	$\leq \pm 0,1\%$ d. Messsp.	$\leq \pm 0,01\%$ d. Messsp./°C

Grundwerte		
Eingangsart	Grund-Genauigkeit	Temperaturkoeffizient
WTH	$\leq \pm 0,3^\circ\text{C}$	$\leq \pm 0,01^\circ\text{C}/^\circ\text{C}$
Lin. R	$\leq \pm 0,2 \Omega$	$\leq \pm 20 \text{ m}\Omega / ^\circ\text{C}$

EMV-Immunitätseinwirkung.....	$< \pm 0,5\%$ d. Messsp.
-------------------------------	--------------------------

Einfluss von Änderung der Versorgungsspannung.....	≤ 0,005% d. Messsp. / VDC
Vibration.....	IEC 60068-2-6 Test FC
2...25 Hz.....	±1,6 mm
25...100 Hz.....	±4 g
Max. Leitungsquerschnitt	1 x 1,5 mm ² Litzendraht
Luftfeuchtigkeit	< 95% RF (nicht kond.)
Maß.....	Ø 44 x 20,2 mm
Schutzart (Gehäuse / Anschluss).....	IP68 / IP00
Gewicht.....	50 g

Elektrische Daten, Eingang:

WTH- und linearer Widerstandseingang:

WTH-Typ	Min. Wert	Max. Wert	Min. Spanne	Norm
Pt100	-200°C	+850°C	25°C	IEC 60751
Ni100	-60°C	+250°C	25°C	DIN 43760
Lin. R	0 Ω	10000 Ω	30 Ω	-----

Max. Nullpunktverschiebung (Offset).....	50% des gewählten Max.-wertes
Leitungswiderstand pro Leiter (Max.).....	10 Ω
Fühlerstrom.....	> 0,2 mA, < 0,4 mA
Wirkung des Fühlerkabelwiderstandes (3-Leiter).....	< 0,002 Ω / Ω
Fühlerfehlererkennung.....	Ja

Ausgang:

Stromausgang:

Signalbereich	4...20 mA
Min. Signalbereich.....	16 mA
Aktualisierungszeit.....	135 ms
Belastungswiderstand.....	≤ (U _{Vers.} - 8) / 0,023 [Ω]
Belastungsstabilität	< ±0,01% d. Messsp. / 100 Ω

Fühlerfehlererkennung:

Programmierbar	3,5...23 mA
NAMUR NE43 aufsteuernd.....	23 mA
NAMUR NE43 zusteuern.....	3,5 mA

d. Messspanne = der gewählten Messspanne

Zulassungen:

EMV 2004/108/EG..... EN 61326-1

GOST R

Marine-Zulassung:

Det Norske Veritas, Ships & Offshore Stand. f. Certific. No. 2.4

Ex / I.S.:

ATEX 94/9/EG

5333A..... KEMA 10ATEX0003 X

5333D..... KEMA 03ATEX1535 X

FM-Zertifikat..... 2D5A7

CSA-Zertifikat..... 1125003

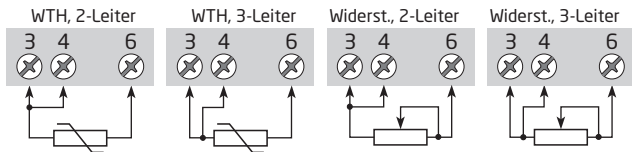
IECEX..... DEK 13.0036 X

INMETRO DEKRA 13.0002 X

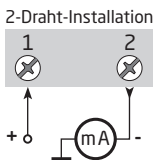
GOST Ex

ANSCHLÜSSE

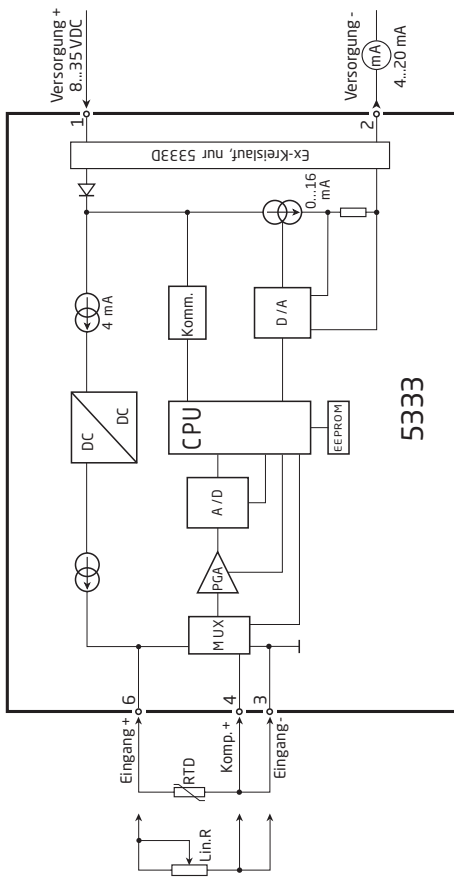
Eingang:



Ausgang:



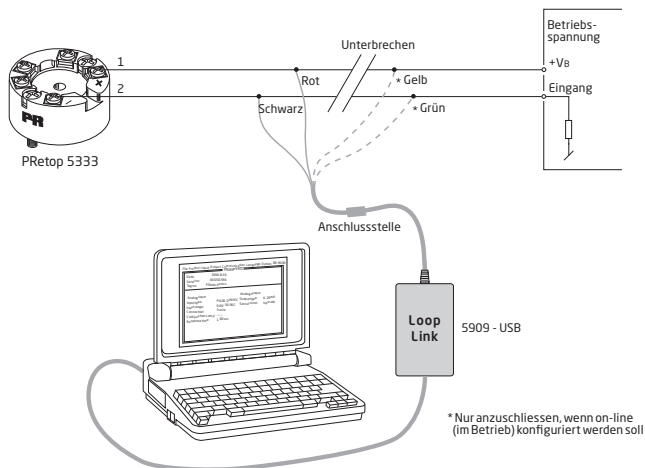
BLOCKDIAGRAMM



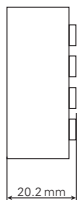
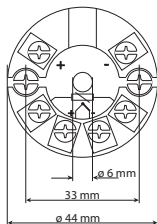
PROGRAMMIERUNG

- Loop Link ist eine batteriegespeiste Schnittstelle zur Programmierung des PRetop 5333.
- Bezüglich Programmierung verweisen wir auf die nachfolgende Zeichnung und die "Hilfe"-Funktion im PReset-Programm.
- Loop Link darf nicht zur Kommunikation mit Modulen, die in Ex-gefährdeten Bereichen installiert sind, benutzt werden.

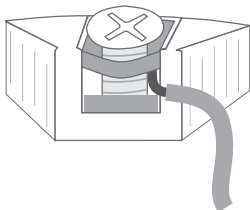
Bestellangaben: Loop Link



Abmessungen



Montage von Fühlerleitungen



Die Leitungen müssen zwischen den Metallplatten.

APPENDIX

ATEX Installation Drawing - 5333A

ATEX Installation Drawing - 5333D

IECEx installation drawing - 5333A

IECEx installation drawing - 5333D

FM Installation Drawing - 5333D

CSA Installation Drawing - 5333D

INMETRO Instruções de Segurança - 5333A

INMETRO Instruções de Segurança - 5333D

ATEX Installationszeichnung

Für die sichere Installation von 5333A ist Folgendes zu beachten: Das Gerät darf nur von qualifiziertem Personal eingebaut werden, das mit den nationalen und internationalen Gesetzen, Richtlinien und Standards auf diesem Gebiet vertraut ist. Das Baujahr kann aus den ersten beiden Ziffern der Seriennummer ersehen werden.

ATEX-Zertifikat KEMA 10ATEX 0003X

Markierung  II 3 G Ex nA [ic] IIC T4 ... T6 Gc
II 3 G Ex ic IIC T4...T6 Gc
II 3 D Ex ic IIIC Dc

Richtlinien EN 60079-0 : 2012, EN 60079-11 : 2012, EN 60079-15 : 2010

T4: $-40 \leq T_a \leq 85^{\circ}\text{C}$	Klemme: 3,4,6	Klemme: 1,2	Klemme: 1,2
T6: $-40 \leq T_a \leq 60^{\circ}\text{C}$	Ex nA [ic]	Ex nA	Ex ic
	Uo: 5 V	Umax. ≤ 35 VDC	Ui = 35 VDC
	Io: 4,0 mA		Ii = 110mA
	Po: 20 mW		Li = 10 μH
	Lo: 900 mH		Ci = 1,0 nF
	Co: 1000 μF		

Sonderbedingungen für sichere Anwendung:

Für Zündschutzart Ex nA muss der Messumformer in einem Gehäuse, welcher einen Schutzgrad von mindestens IP 54 gemäß EN 60529 besitzt, eingebaut werden.

Für Anwendung in die Präsenz von entflammaren Staub, muss der Messumformer in einem Gehäuse, welcher einen Schutzgrad von mindestens IP 6X gemäß EN 60529 besitzt, eingebaut werden. Die Oberflächentemperatur des Gehäuses ist 20 K über der Umgebungstemperatur.

Bei einer Umgebungstemperatur $\geq 60^{\circ}\text{C}$ müssen hitzebeständige Leitungen eingesetzt werden, welche für eine mindestens 20 K höhere Umgebungstemperatur zugelassen sind.

ATEX Installationszeichnung



Für die sichere Installation von 5333D ist Folgendes zu beachten: Das Gerät darf nur von qualifiziertem Personal eingebaut werden, das mit den nationalen und internationalen Gesetzen, Richtlinien und Standards auf diesem Gebiet vertraut ist.

Das Baujahr kann aus den ersten beiden Ziffern der Seriennummer ersehen werden.

ATEX-Zertifikat KEMA 03ATEX 1535 X

Markierung  II 1 G Ex ia IIC T4...T6 Ga
II 1 D Ex ia IIIC Da
II 1 M Ex ia I Ma

Richtlinien EN 60079-0 : 2012, EN 60079-11 : 2012, EN 60079-26 : 2007,
EN 60079-15 : 2010

Ex-Bereich

Zone 0, 1, 2, 20, 21, 22

T4: $-40 \leq T_a \leq 85^\circ\text{C}$

T6: $-40 \leq T_a \leq 60^\circ\text{C}$

Klemme: 3,4,6

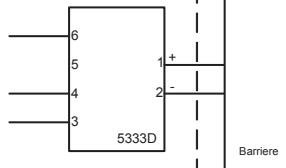
Uo: 27 VDC

Io: 7 mA

Po: 45 mW

Lo: 35 mH

Co: 90 nF



Klemme: 1,2

Ui: 30 VDC

Ii: 120 mA

Pi: 0,84 W

Li: 10 μH

Ci: 1,0 nF

Installationsvorschriften:

Für Anwendung in einer potentiellen explosiven Atmosphäre - basierend auf entflammaren Gas - muss der Messumformer in einem Gehäuse, welcher einen Schutzgrad von mindestens IP20 gemäß EN 60529 besitzt, eingebaut werden.

Für Applikationen in explosiver Atmosphäre, wo Kategorie 1 G, 1 M oder 2 M Geräte vorgeschrieben sind, und wenn das Gehäuse aus Aluminium ist, ist das Gehäuse so zu montieren, dass Zündquellen (Stöße und Reibungsfunken) selbst bei selten auftretenden Störungen vermieden werden; wenn das Gehäuse aus nichtmetallischen Bestandteile ist, muss die elektrostatische Ladung der Gehäuse vermieden werden.

Für Anwendung in einer potentiellen explosiven Atmosphäre - basierend auf entflammaren Staub - ist Folgendes zu beachten:

Der Messumformer muss in einem Metallkopf Form B gemäß DIN 43729 montiert werden. Das Gehäuse muss einen Schutzgrad von mindestens IP 6X gemäß EN 60529 besitzen und für den dementsprechenden Einsatz zugelassen werden.

Es dürfen nur Kabeleinführungen und Abdeckungen eingesetzt werden, welche für die jeweilige Anwendung zugelassen sind.

Bei einer Umgebungstemperatur $\geq 60^{\circ}\text{C}$ müssen hitzebeständige Leitungen eingesetzt werden, welche für eine mindestens 20 K höhere Umgebungstemperatur zugelassen sind.

Die Umgebungstemperatur der Gehäuse entspricht der Umgebungstemperatur plus 20K für eine Staubschicht mit einer Dicke von bis zu 5 mm.

IECEx Installation drawing



For safe installation of 5333A or 5343A 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 that apply to this area.
Year of manufacture can be taken from the first two digits in the serial number.

Certificate	IECEx DEK 13.0036X	
Marking	Ex nA [ic] IIC T6..T4 Gc	T4: $-40 \leq T_a \leq 85^\circ\text{C}$
	Ex ic IIC T6..T4 Gc	T6: $-40 \leq T_a \leq 60^\circ\text{C}$
	Ex ic IIIC Dc	
Standards	IEC 60079-0 : 2011, IEC 60079-11 : 2011, IEC 60079-15 : 2010	

Terminal	Ex nA [ic]	Ex ic
1,2	U _{max} = 35V	Ui : 35V, Ii:110mA, Ii:10μH, Ci:1,0nF
3,4,6	U _o : 5V, I _o : 4mA, P _o : 20mW, L _o : 900mH, C _o : 1000μF	

Installation note:

For installation in a potentially explosive gas atmosphere, the following instructions apply:

For nA installation the transmitter must be installed in an metal enclosure e.g. a form B enclosure, providing a degree of protection of at least IP54 according to IEC60529 or in an enclosure with type of protection Ex n or Ex e.

For ic installation the transmitter must be installed in enclosure providing a degree of protection of at least IP20 according to IEC60529 and that is suitable for the application.

Cable entry devices and blanking elements shall fulfill the same requirements

For an ambient temperature $\geq 60^\circ\text{C}$, heat resistant cables shall be used with a rating of at least 20 K above the ambient temperature.

For installation in a potentially explosive dust atmosphere, the following instructions apply:

The surface temperature of the enclosure is equal to the ambient temperature plus 20 K, for a dust layer with a thickness up to 5 mm.

The transmitter must be mounted in a enclosure according to DIN 43729 that provides a degree of protection of at least IP6X according to IEC60529, and that is suitable for the application. Cable entry devices and blanking elements shall fulfill the same requirements.

IECEx Installation drawing



For safe installation of 5333D or 5343B 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 that apply to this area.

Year of manufacture can be taken from the first two digits in the serial number.

Certificate	IECEx DEK 13.0036X
Marking	Ex ia IIC T4...T6 Ga Ex ia IIC Da Ex ia I Ma
Standards	IEC 60079-0 : 2011, IEC 60079-11 : 2011, IEC 60079-26:2006

Hazardous area
Zone 0, 1, 2, 20, 21, 22, M1

T4: $-40 \leq T_a \leq 85^\circ\text{C}$

T5: $-40 \leq T_a \leq 60^\circ\text{C}$

T6: $-40 \leq T_a \leq 45^\circ\text{C}$

Non Hazardous Area

Terminal: 3,4,6

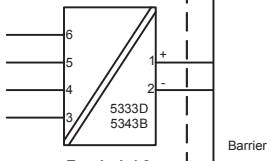
U_o: 30 VDC

I_o: 8 mA

P_o: 60 mW

L_o: 35 mH

C_o: 66 nF



Terminal: 1,2

U_i: 30 VDC

I_i: 120 mA

P_i: 0.84 W

L_i: 10μH

C_i: 1.0nF

Installation notes.

In a potentially explosive gas atmosphere, the transmitter shall be mounted in a metal form B enclosure in order to provide a degree of protection of at least IP20 according to IEC60529. If however the environment requires a higher degree of protection, this shall be taken into account.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Ga, Ma and Mb, and if the enclosure is made of aluminum, it must be installed such, that ignition sources due to impact and friction sparks are excluded.

For installation in a potentially explosive dust atmosphere, the following instructions apply:

For explosive dust atmospheres, the surface temperature of the outer enclosure is 20 K above the ambient temperature.

The transmitter shall be mounted in a metal enclosure form B according to DIN43729 that is providing a degree of protection of at least IP6X according to IEC60529, that is suitable for the application and correctly installed.

Cable entries and blanking elements shall be used that are suitable for the application and correctly installed.

For an ambient temperature $\geq 60^{\circ}\text{C}$, heat resistant cables shall be used with a rating of at least 20 K above the ambient temperature.

FM Installation Drawing 5300Q502 Rev AH

Model 5331C, 5331D, 5333C, 5333D and 5343B

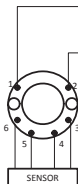
Hazardous (Classified) Location

Class I, Division 1, Groups, A, B, C, D
Class I, Zone 0, IIC

Ambient temperature limits
T4: -40 to +85 deg. Celsius
T6: -40 to +60 deg. Celsius

Terminal 1, 2
Vmax or Ui: 30 V
Imax or Ii: 120 mA
Pmax or Pi: 0.84 W
Ci: 1 nF
Li: 10 uH

Terminal 3, 4, 5, 6
Only passive, or non-energy storing devices such as RTD's and Thermocouples may be connected.



Non Hazardous Location

Associated Apparatus
or Barrier
with
entity Parameters:

$UM \leq 250V$
 $V_{oc} \text{ or } U_o \leq V_{max} \text{ or } U_i$
 $I_{sc} \text{ or } I_o \leq I_{max} \text{ or } I_i$
 $P_o \leq P_i$
 $C_a \text{ or } C_o \geq C_i + C_{cable}$
 $L_a \text{ or } L_o \geq L_i + L_{cable}$

This device must not be connected to any associated apparatus which uses or generates more than 250 VRMS

Model 5335C, 5335D, 5336D, 5337D

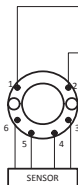
Hazardous (Classified) Location

Class I, Division 1, Groups, A, B, C, D
Class I, Zone 0, IIC

Ambient temperature limits
T4: -40 to +85 deg. Celsius
T6: -40 to +60 deg. Celsius

Terminal 1, 2
Vmax or Ui: 30 V
Imax or Ii: 120 mA
Pmax or Pi: 0.84 W
Ci: 1 nF
Li: 10 uH

Terminal 3, 4, 5, 6
Vi or Uo: 9.6 V
Ii or Io: 28 mA
Pi or Po: 67.2 mW
Ca or Co: 3.5 uF
La or Lo: 35 mH



Non Hazardous Location

Associated Apparatus
or Barrier
with
entity Parameters:

$UM \leq 250V$
 $V_{oc} \text{ or } U_o \leq V_{max} \text{ or } U_i$
 $I_{sc} \text{ or } I_o \leq I_{max} \text{ or } I_i$
 $P_o \leq P_i$
 $C_a \text{ or } C_o \geq C_i + C_{cable}$
 $L_a \text{ or } L_o \geq L_i + L_{cable}$

This device must not be connected to any associated apparatus which uses or generates more than 250 VRMS

The entity concept

The Transmitter must be installed according to National Electrical Code (ANSI-NFPA 70) and shall be installed with the enclosure, mounting, and spacing segregation requirement of the ultimate application.

Equipment that is FM-approved for intrinsic safety may be connected to barriers based on the ENTITY CONCEPT. This concept permits interconnection of approved transmitters, meters and other devices in combinations which have not been specifically examined by FM, provided that the agency's criteria are met. The combination is then intrinsically safe, if the entity concept is acceptable to the authority having jurisdiction over the installation.

The entity concept criteria are as follows:

The intrinsically safe devices, other than barriers, must not be a source of power.

The maximum voltage $U_i(V_{MAX})$ and current $I_i(I_{MAX})$, and maximum power $P_i(P_{MAX})$, which the device can receive and remain intrinsically safe, must be equal to or greater than the voltage (U_o or V_{OC} or V_i) and current (I_o or I_{SC} or I_i) and the power P_o which can be delivered by the barrier.

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

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

The entity parameters U_o, V_{OC} or V_i and I_o, I_{SC} or I_i , and C_a and L_a for barriers are provided by the barrier manufacturer.

NI Field Circuit Parameters

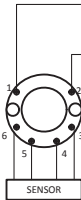
Model 5331C, 5331D, 5333C, 5333D, 5335C, 5335D, 5336D, 5337D and 5343B

Hazardous (Classified) Location

Class I, Division 2, Groups, A, B, C, D
Class I, Zone 2, IIC

Ambient temperature limits
T4: -40 to +85 deg. Celcius
T6: -40 to +60 deg. Celcius

Terminal 1, 2
 V_{max} : 35 V
 C_i : 0 μ F
 L_i : 10 μ H

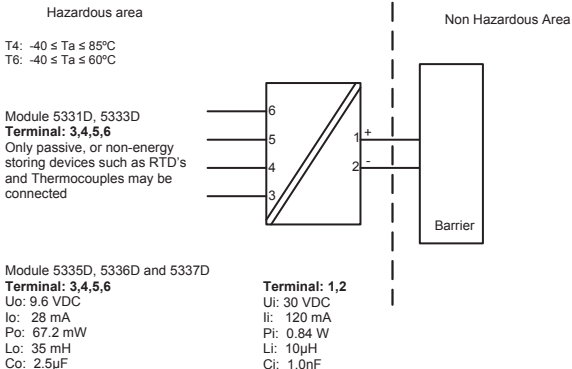


Non Hazardous Location

Associated Apparatus
or Barrier

This device must not be connected to any associated apparatus which uses or generates more than 250 VRMS

CSA Installation drawing 533XQC03



CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations
Class I, Division 1, Groups A, B, C and D
Ex ia IIC, Ga

CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations - Certified to US Standards
Class I, Division 1, Groups A, B, C and D
Class I, Zone 0, AEx ia IIC, Ga

Warning:

Substitution of components may impair intrinsic safety.

The transmitters must be installed in a suitable enclosure to meet installation codes stipulated in the Canadian Electrical Code (CEC) or for US the National Electrical Code (NEC).

Desenho de Instalação InMETRO



Para instalação segura do 5333A ou 5343A o seguinte deve ser observado. O modo deve apenas ser instalado por pessoas qualificadas que são familiarizadas com as leis nacionais e internacionais, diretrizes e padrões que se aplicam a esta área.
 Ano de fabricação pode ser pego dos dois primeiros dígitos do número de série.

Certificado	IECEX DEK 13.0002 X	
Indicação	Ex nA [ic] IIC T6..T4 Gc	T4: $-40 \leq Ta \leq 85^{\circ}\text{C}$
	Ex ic IIC T6..T4 Gc	T6: $-40 \leq Ta \leq 60^{\circ}\text{C}$
	Ex ic IIIC Dc	

Padrões ABNT NBR IEC 60079-0 : 2008, ABNT NBR IEC 60079-11 : 2009,
 IEC 60079-15 : 2010, ABNT NBR IEC 60079-26 : 2008

Terminal	Ex nA [ic]	Ex ic
1,2	U _{max} = 35V	Ui : 35V, Ii:110mA, Ii:10μH, Ci:1,0nF
3,4,6	Uo: 5V, Io: 4mA, Po: 20mW, Lo: 900mH, Co: 1000μF	

Notas para instalação

Para a instalação em uma atmosfera de gás potencialmente explosivo, se aplicam as instruções a seguir:

Para a instalação nA o transmissor deve ser instalado em um gabinete de metal, por exemplo, gabinete em forma B que forneça um grau de proteção de pelo menos IP54 de acordo com IEC60529 ou em uma caixa com tipo de proteção Ex n ou Ex e.

Para a instalação iC o transmissor deve ser instalado em um invólucro proporcionando um grau de proteção de IP20, pelo menos, de acordo com a norma IEC60529 que é adequado para a aplicação.

Dispositivos de entrada de cabos e elementos de supressão devem cumprir os mesmos requisitos.

Para uma temperatura ambiente $\geq 60^{\circ}\text{C}$, os cabos resistentes ao calor precisam ser utilizados com uma classificação de pelo menos 20 K acima da temperatura ambiente.

Para a instalação em uma atmosfera de poeira potencialmente explosiva, se aplicam as instruções a seguir:

A temperatura da superfície do invólucro é igual à temperatura ambiente mais 20 K, para uma camada de pó, com uma espessura superior a 5 mm.

O transmissor deve ser montado em um invólucro de acordo com a norma DIN 43729, que proporciona um grau de proteção de, pelo menos, IP6X de acordo com a norma IEC60529, e que seja apropriado para a aplicação.

Dispositivos de entrada de cabos e elementos de supressão devem cumprir as mesmas exigências

Desenho de Instalação InNMETRO



Para instalação segura do 5333D ou 5343B o seguinte deve ser observado. O modo deve apenas ser instalado por pessoas qualificadas que são familiarizadas com as leis nacionais e internacionais, diretrizes e padrões que se aplicam a esta área.
Ano de fabricação pode ser pego dos dois primeiros dígitos do número de série.

Certificado	DEKRA 13.0002 X
Indicação	Ex ia IIC T6...T4 Ga Ex ia IIIC Da
Padrões	ABNT NBR IEC 60079-0 : 2008, ABNT NBR IEC 60079-11 : 2009, IEC 60079-15 : 2010, ABNT NBR IEC 60079-26 : 2008

Áreas perigosas

Zona 0, 1, 2, 20, 21, 22, M1

T4: $-40 \leq T_a \leq 85^\circ\text{C}$

T5: $-40 \leq T_a \leq 60^\circ\text{C}$

T6: $-40 \leq T_a \leq 45^\circ\text{C}$

Sem áreas perigosas

Terminal: 3,4,5,6

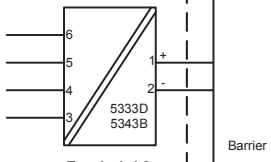
Uo: 30 VDC

Io: 8 mA

Po: 60 mW

Lo: 35 mH

Co: 66 nF



Terminal: 1,2

Ui: 30 VDC

Ii: 120 mA

Pi: 0,84 W

Li: 10 μH

Ci: 1,0 nF

Notas de Instalação.

Em uma atmosfera de gás potencialmente explosiva, o transmissor deve ser montado em um enclosure a fim de garantir um grau de proteção de no mínimo IP20 de acordo com EN60529. Se contudo o ambiente requer um nível de proteção maior, isso deve ser levado em conta

Se o transmissor é instalado em uma atmosfera explosiva exigindo o uso de equipamento de categoria Ga e se o enclosure é feito de alumínio, ele deve ser instalado de modo que, mesmo em caso de avaria rara, fontes de ignição devido a impacto e fricção, faíscas são eliminadas; se o enclosure é feito de materiais não metálicos, cargas eletroestáticas devem ser evitadas.

Para instalação em atmosfera de poeira potencialmente explosiva, as instruções a seguir:

O transmissor deve ser montado em enclosure de metal forma B de acordo com DIN43729 que está fornecendo um grau de proteção de pelo menos IP6X de acordo com EN60529. Isso é adequado para aplicação e corretamente instalado.

As entradas dos cabos e os elementos de obturação que podem ser utilizados são adequados para a aplicação e corretamente instalados.

Para temperatura ambiente $\geq 60^{\circ}\text{C}$, fios de resistência ao calor devem ser usados com uma faixa de pelo menos 20K acima da temperatura ambiente.

A temperatura da superfície do enclosure é igual à temperatura ambiente mais de 20 K, por uma camada de pó, com uma espessura até 5 mm.



Displays Programmable displays with a wide selection of inputs and outputs for display of temperature, volume and weight, etc. Feature linearisation, scaling, and difference measurement functions for programming via PReset software.



Ex interfaces Interfaces for analogue and digital signals as well as HART® signals between sensors / I/P converters / frequency signals and control systems in Ex zone 0, 1 & 2 and for some devices in zone 20, 21 & 22.



Isolation Galvanic isolators for analogue and digital signals as well as HART® signals. A wide product range with both loop-powered and universal isolators featuring linearisation, inversion, and scaling of output signals.



























Temperature A wide selection of transmitters for DIN form B mounting and DIN rail devices with analogue and digital bus communication ranging from application-specific to universal transmitters.



Universal PC or front programmable devices with universal options for input, output and supply. This range offers a number of advanced features such as process calibration, linearisation and auto-diagnosis.



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