

PERFORMANCE
MADE
SMARTER

Product manual

5334

2-wire programmable transmitter



TEMPERATURE | I.S. INTERFACES | COMMUNICATION INTERFACES | MULTIFUNCTIONAL | ISOLATION | DISPLAY

No. 5334V112-UK
From ser. no. 212022169

PR
electronics

6 Product Pillars

to meet your every need

Individually outstanding, unrivalled in combination

With our innovative, patented technologies, we make signal conditioning smarter and simpler. Our portfolio is composed of six product areas, where we offer a wide range of analog and digital devices covering over a thousand applications in industrial and factory automation. All our products comply with or surpass the highest industry standards, ensuring reliability in even the harshest of environments and have a 5-year warranty for greater peace of mind.



Temperature

Our range of temperature transmitters and sensors provides the highest level of signal integrity from the measurement point to your control system. You can convert industrial process temperature signals to analog, bus or digital communications using a highly reliable point-to-point solution with a fast response time, automatic self-calibration, sensor error detection, low drift, and top EMC performance in any environment.



I.S. Interface

We deliver the safest signals by validating our products against the toughest safety standards. Through our commitment to innovation, we have made pioneering achievements in developing I.S. interfaces with SIL 2 Full Assessment that are both efficient and cost-effective. Our comprehensive range of analog and digital intrinsically safe isolation barriers offers multifunctional inputs and outputs, making PR an easy-to-implement site standard. Our backplanes further simplify large installations and provide seamless integration to standard DCS systems.



Communication

We provide inexpensive, easy-to-use, future-ready communication interfaces that can access your PR installed base of products. All the interfaces are detachable, have a built-in display for readout of process values and diagnostics, and can be configured via push-buttons. Product specific functionality includes communication via Modbus and Bluetooth and remote access using our PR Process Supervisor (PPS) application, available for iOS and Android.



Multifunction

Our unique range of single devices covering multiple applications is easily deployable as your site standard. Having one variant that applies to a broad range of applications can reduce your installation time and training, and greatly simplify spare parts management at your facilities. Our devices are designed for long-term signal accuracy, low power consumption, immunity to electrical noise and simple programming.



Isolation

Our compact, fast, high-quality 6 mm isolators are based on microprocessor technology to provide exceptional performance and EMC-immunity for dedicated applications at a very low total cost of ownership. They can be stacked both vertically and horizontally with no air gap separation between units required.



Display

Our display range is characterized by its flexibility and stability. The devices meet nearly every demand for display readout of process signals and have universal input and power supply capabilities. They provide a real-time measurement of your process value no matter the industry and are engineered to provide a user-friendly and reliable relay of information, even in demanding environments.

2-wire programmable transmitter 5334

Table of contents

Application	4
Technical characteristics	4
Mounting / installation	4
Applications	4
Order	5
Electrical specifications	5
Connections	8
Block diagram	8
Programming	9
Mechanical specifications	9
Mounting of sensor wires	9
ATEX Installation Drawing - 5334A	10
ATEX Installation Drawing - 5334B	12
IECEX Installation Drawing - 5334A	14
IECEX Installation Drawing - 5334B	16
INMETRO Installation Drawing - 5334A	18
INMETRO Installation Drawing - 5334B	19
Document history	21

2-wire programmable transmitter 5334

- TC input
- H high measurement accuracy
- Galvanic isolation
- Programmable sensor error value
- For DIN form B sensor head mountings

Application

- Linearised temperature measurement with TC sensor.
- Amplification of bipolar mV signals to a 4...20 mA signal, optionally linearised according to a defined linearisation function..

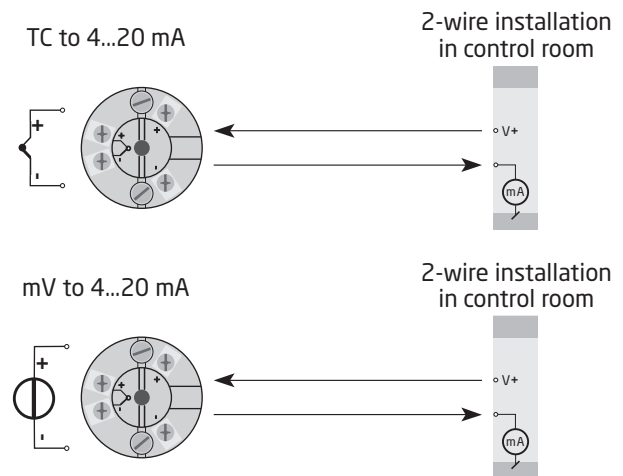
Technical characteristics

- Within a few seconds the user can program PR5334 to measure temperatures within all TC ranges defined by the norms.
- Cold junction compensation (CJC) with a built-in temperature sensor.
- Continuous check of vital stored data for safety reasons.

Mounting / installation

- For DIN form B sensor head mounting. In non-hazardous areas the 5334 can be mounted on a DIN rail with the PR fitting type 8421.

Applications



Order

Type	Version	Ambient temperature	Galvanic isolation
5334	Zone 2 / Div. 2 : A	-40°C...+85°C : 3	1500 VAC : B
	Zone 0, 1, 2, 21, 22, M1 : B		

Electrical specifications

Environmental conditions:

Operating temperature	-40°C to +85°C
Calibration temperature.	20...28°C
Humidity.	< 95% RH (non-cond.)
Protection degree, enclosure / terminals.	IP68 / IP00

Mechanical specifications:

Dimensions	Ø 44 x 20.2 mm
Weight	50 g
Max. wire size.	1 x1.5 mm ² stranded wire
Screw terminal torque.	0.4 Nm
Vibration.	IEC 60068-2-6
2...25 Hz.	±1.6 mm
25...100 Hz.	±4 g

Common specifications:

Supply voltage, DC	
5334A3B	7.2...35 VDC
5334B3B	7.2...30 VDC
Internal power dissipation	
5331A3B	25 mW...0.8 W
5331D3B	25 mW...0.7 W
Voltage drop	7.2 VDC
Isolation voltage, test / operation.	1.5 kVAC / 50 VAC
Warm-up time.	5 min.
Power on to stable output	4.5 s
Programming	Loop Link
Signal / noise ratio.	Min. 60 dB
Response time (programmable)	1...60 s
EEPROM error check	< 3.5 s
Signal dynamics, input	18 bit
Signal dynamics, output	16 bit
Effect of supply voltage variation.	< 0.005% of span / VDC

Accuracy, the greater of general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
All	≤ ±0.05% of span	≤ ±0.01% of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
Volt	$\leq \pm 10 \mu V$	$\leq \pm 1 \mu V / ^\circ C$
TC type: E, J, K, L, N, T, U	$\leq \pm 1^\circ C$	$\leq \pm 0.05^\circ C / ^\circ C$
TC type: B, R, S, W3, W5, Lr	$\leq \pm 2^\circ C$	$\leq \pm 0.2^\circ C / ^\circ C$
EMC - immunity influence. $< \pm 0.5\%$ of span		
Extended EMC immunity: NAMUR NE 21, A criterion, burst $< \pm 1\%$ of span		

Electrical specifications, input:

TC input:

Type	Min. temperature	Max. temperature	Min. span	Standard
B	+400°C	+1820°C	100°C	IEC584
E	-100°C	+1000°C	50°C	IEC584
J	-100°C	+1200°C	50°C	IEC584
K	-180°C	+1372°C	50°C	IEC584
L	-100°C	+900°C	50°C	DIN 43710
Lr	-200°C	+800°C	50°C	GOST 3044-84
N	-180°C	+1300°C	50°C	IEC584
R	-50°C	+1760°C	100°C	IEC584
S	-50°C	+1760°C	100°C	IEC584
T	-200°C	+400°C	50°C	IEC584
U	-200°C	+600°C	50°C	DIN 43710
W3	0°C	+2300°C	100°C	ASTM E988-90
W5	0°C	+2300°C	100°C	ASTM E988-90

Max. offset 50% of selec. max. value

Cold junction compensation $< \pm 1.0^\circ C$

Sensor error detection Yes

Sensor error current:

When detecting Nom. 33 μA

Else. 0 μA

Voltage input:

Measurement range -12...150 mV

Min. span 5 mV

Max. offset 50% of selec. max. value

Input resistance 10 M Ω

Output:

Current output:

Signal range. 4...20 mA

Min. signal range 16 mA

Updating time 440 ms

Output signal at EEprom error ≤ 3.5 mA

Load resistance. $\leq (V_{supply} - 7.2) / 0.023 [\Omega]$

Load stability $< \pm 0.01\%$ of span / 100 Ω

Sensor error detection:

Programmable 3.5...23 mA

Namur NE43 Upscale 23 mA

Namur NE43 Downscale 3.5 mA

Of span = Of the presently selected range

Observed authority requirements:

EMC	2014/30/EU
RoHS	2011/65/EU
ATEX	2014/34/EU
EAC	TR-CU 020/2011
EAC Ex	TR-CU 012/2011

Marine approval:

DNV, Ships & Offshore.	TAA0000101
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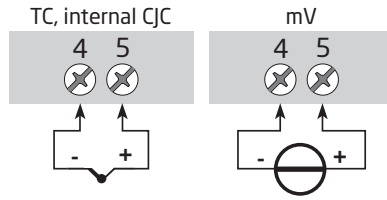
Ex / I.S. approvals:

ATEX:

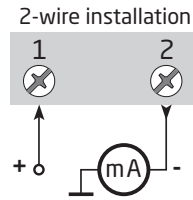
5334A	DEKRA 20ATEX0096 X
5334B	DEKRA 20ATEX0095 X
IECEx	DEK 20.0059 X
INMETRO	DEKRA 16.0013 X
EAC Ex	RU C-DK.HA65.B.00355/19

Connections

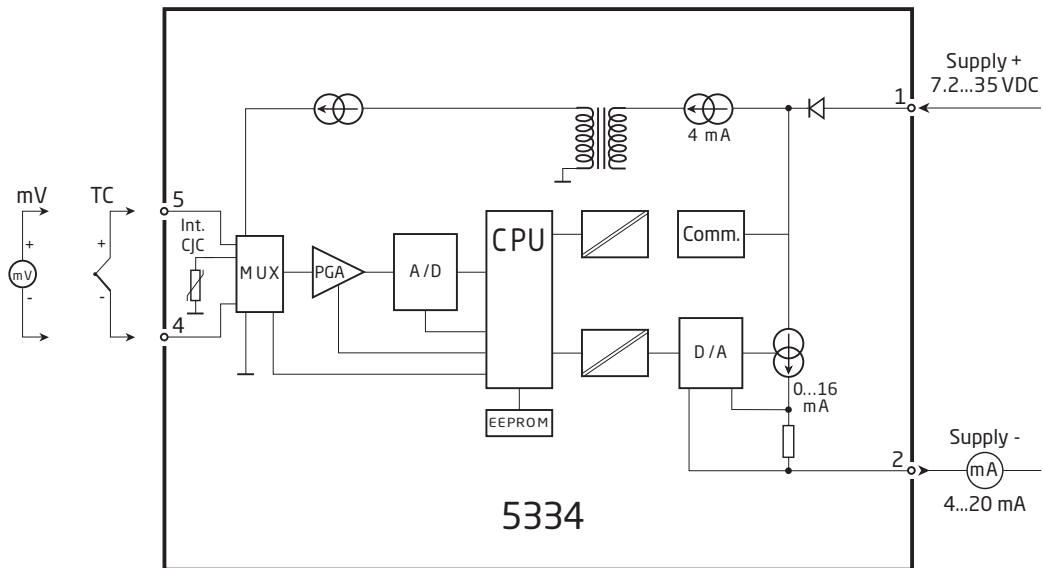
Input:



Output:

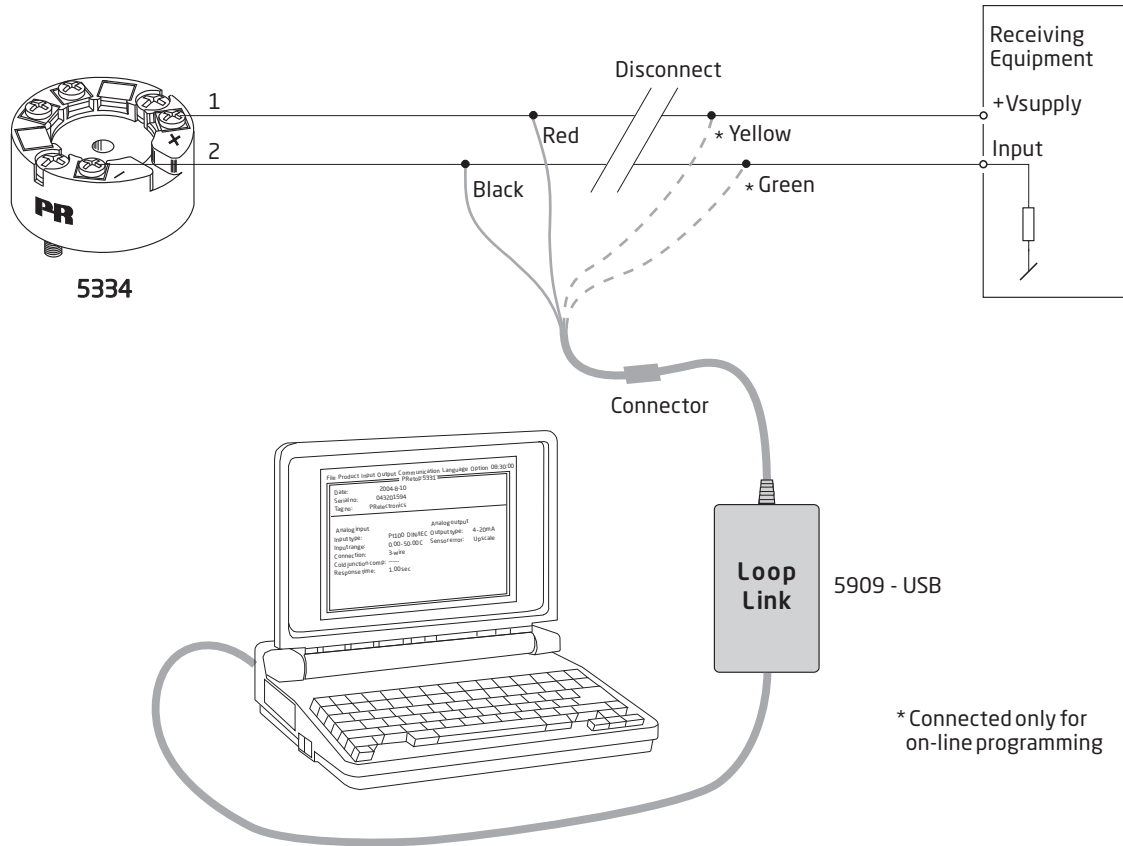


Block diagram

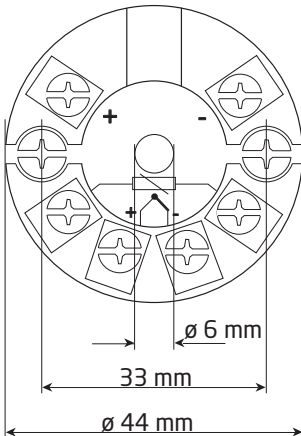


Programming

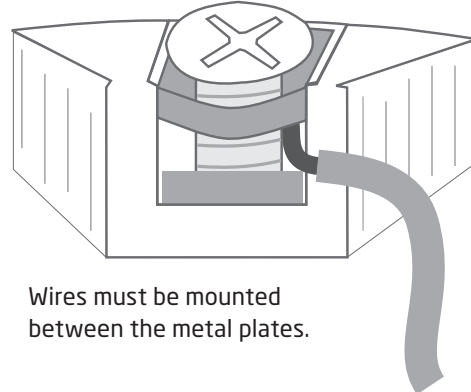
- Loop Link is a communications interface that is needed for programming 5334.
- For programming please refer to the drawing below and the help functions in PReset.
- Loop link is not approved for communication with devices installed in hazardous (Ex) areas.



Mechanical specifications



Mounting of sensor wires



ATEX-installation drawing 5331QA02-V3R0

For safe installation of 5331A or 5334A 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.

ATEX Certificate DEKRA 20ATEX0096 X

Marking



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

Standards

EN 60079-0: 2018, EN 60079-11: 2012,
 EN 60079-15: 2010, EN 60079-7:2015 +A1: 2018

Terminal 3,4,5,6	Terminal 1,2	Terminal 1,2	Terminal 1,2
Ex ic IIC, Ex ic IIIC	Ex ic IIC, Ex ic IIIC	Ex ic IIC, Ex ic IIIC	Ex nA, Ex ec
Uo: 9.6 V Io: 25 mA Po: 60 mW Lo: 33 mH Co: 2.4 μF	Ui = 35 V Ii = 110 mA Ci = 1 nF Li = 10 μH	Ui = 24 V Ii = 260 mA Ci = 1 nF Li = 10 μH	Umax ≤ 35 VDC or Umax ≤ 24 VDC

Ex ic IIC, Ex ic IIIC Temperature Class	Ambient temperature range	
	Ui=35 V	Ui=24 V
T6	-40°C to +54°C	-40°C to +63°C
T5	-40°C to +69°C	-40°C to +78°C
T4	-40°C to +85°C	-40°C to +85°C

Ex ec, Ex nA Temperature Class	Ambient temperature range	
	Vmax=35 V	Vmax=24 V
T6	-40°C to +43°C	-40°C to +55°C
T5	-40°C to +85°C	-40°C to +85°C
T4	-40°C to +85°C	-40°C to +85°C

Installation notes

If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Gc and applied in type of protection Ex ic, the transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP20 according to EN 60529, and that is suitable for the application and correctly installed.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Dc, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP5X according to EN 60079-0, and that is suitable for the application and correctly installed. The surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer. Ambient temperature range: -40°C to +85°C.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Gc and applied in type of protection Ex nA or Ex ec, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP54 according to EN 60079-0, and that is suitable for the application and correctly installed.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Gc and applied in type of protection Ex nA or Ex ec, the equipment shall only be used in an area of not more than pollution degree 2, as defined in EN 60664-1.

ATEX-installation drawing 5331QA01-V3R0



For safe installation of 5331D or 5334B 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.

ATEX Certificate DEKRA 20ATEX0095 X

Marking



II 1 G Ex ia IIC T6...T4 Ga
 II 2 D Ex ia IIIC Db
 I M1 Ex ia I Ma

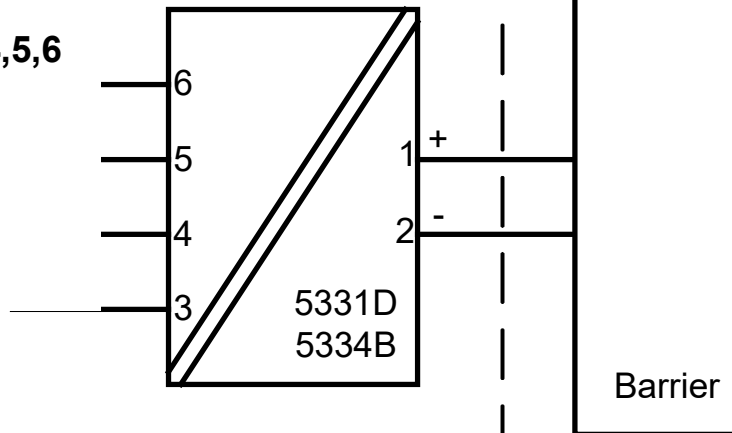
Standards EN 60079-0: 2018, EN 60079-11: 2012

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

Non Hazardous Area

Terminal: 3,4,5,6

Uo: 9.6 VDC
 Io: 25 mA
 Po: 60 mW
 Lo: 33 mH
 Co: 2.4 µF



Terminal: 1,2

Ui: 30 VDC
 li: 120 mA
 Pi: 0.84 W or 0.75 W
 Li: 10 µH
 Ci: 1.0 nF

Temperature Class	Ambient temperature range	
	Pi: 0.84 W	Pi: 0.75 W
T6	-40°C to +47°C	-40°C to +50°C
T5	-40°C to +62°C	-40°C to +65°C
T4	-40°C to +85°C	-40°C to +85°C

Installation notes

If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Ga, the transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP20 according to EN 60529, and that is suitable for the application and correctly installed.

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

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Db, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP5X according to EN 60079-0, and that is suitable for the application and correctly installed. The surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.
Ambient temperature range: -40°C to +85°C.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Ma, the transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP54 according to EN 60529, and that is suitable for the application and correctly installed.
Ambient temperature range: -40°C to +85°C.

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.

The sensor circuit is not infallibly galvanically isolated from the input circuit. However, the galvanic isolation between the circuits is capable of withstanding a test voltage of 500 VAC for 1 minute.

IECEx-installation drawing 5331QI02-V2R0

For safe installation of 5331A and 5334A 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 20.0059X

Marking Ex nA [ic] IIC T6 ... T4 Gc
Ex ec [ic] IIC T6 ... T4 Gc
Ex ic IIC T6 ... T4 Gc
Ex ic IIIC Dc

Standards IEC 60079-0: 2017, IEC 60079-11: 2011,
IEC 60079-15: 2010, IEC 60079-7:2017

Terminal 3,4,5,6	Terminal 1,2	Terminal 1,2	Terminal 1,2
Ex ic IIC, Ex ic IIIC	Ex ic IIC, Ex ic IIIC	Ex ic IIC, Ex ic IIIC	Ex nA, Ex ec
Uo: 9.6 V Io: 25 mA Po: 60 mW Lo: 33 mH Co: 2.4 µF	Ui = 35 V Ii = 110 mA Ci = 1 nF Li = 10 µH	Ui = 24 V Ii = 260 mA Ci = 1 nF Li = 10 µH	Umax ≤ 35 VDC or Umax ≤ 24 VDC

Ex ic IIC, Ex ic IIIC Temperature Class	Ambient temperature range	
	Ui=35 V	Ui=24 V
T6	-40°C to +54°C	-40°C to +63°C
T5	-40°C to +69°C	-40°C to +78°C
T4	-40°C to +85°C	-40°C to +85°C

Ex ec, Ex nA Temperature Class	Ambient temperature range	
	Vmax=35 V	Vmax=24 V
T6	-40°C to +43°C	-40°C to +55°C
T5	-40°C to +85°C	-40°C to +85°C
T4	-40°C to +85°C	-40°C to +85°C

Installation notes

If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Gc and applied in type of protection Ex ic, the transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP20 according to IEC 60529, and that is suitable for the application and correctly installed.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Dc, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP5X according to IEC 60079-0, and that is suitable for the application and correctly installed. The surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.
Ambient temperature range: -40°C to +85°C.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Gc and applied in type of protection Ex nA or Ex ec, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP54 according to IEC 60079-0, and that is suitable for the application and correctly installed.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Gc and applied in type of protection Ex nA or Ex ec, the equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.

IECEX-installation drawing 5331QI01-V2R0



For safe installation of 5331D or 5334B 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 20.0059X
Marking	Ex ia IIC T6...T4 Ga Ex ia IIIC Db Ex ia I Ma
Standards	IEC 60079-0: 2017, IEC 60079-11: 2011



Temperature Class	Ambient temperature range	
	Pi: 0.84 W	Pi: 0.75 W
T6	-40°C to +47°C	-40°C to +50°C
T5	-40°C to +62°C	-40°C to +65°C
T4	-40°C to +85°C	-40°C to +85°C

Installation notes

If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Ga, the transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP20 according to IEC 60529, and that is suitable for the application and correctly installed.

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

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Db, the transmitter shall be mounted in a separately certified enclosure that provides a degree of protection of at least IP5X according to IEC 60079-0, and that is suitable for the application and correctly installed. The surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.
Ambient temperature range: -40°C to +85°C.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Ma, the transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP54 according to IEC 60529, and that is suitable for the application and correctly installed.
Ambient temperature range: -40°C to +85°C.

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.

The sensor circuit is not infallibly galvanically isolated from the input circuit. However, the galvanic isolation between the circuits is capable of withstanding a test voltage of 500 VAC for 1 minute.

Desenho de Instalação INMETRO



Para instalação segura do 5331A ou 5334A o seguinte deve ser observado. O modelo 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.
O ano de fabricação pode ser pego dos dois primeiros dígitos do número de série.

Certificado DEKRA 16.0013 X

Marcas Ex nA [ic] IIC T4..T6 Gc
 Ex ic IIC T4..T6 Gc
 Ex ic IIIC Dc

Normas ABNT NBR IEC 60079-0 : 2013; ABNT NBR IEC 60079-11 : 2013
 ABNT NBR IEC60079-15 : 2012

T4: $-40 \leq T_a \leq 85^\circ\text{C}$	Terminais:	Terminais: 1,2	Terminais: 1,2
T6: $-40 \leq T_a \leq 60^\circ\text{C}$	3,4,5,6	Ex nA	Ex ic
	Uo: 9,6 V	U ≤ 35 VDC	Ui = 35 VDC
	Io: 25 mA		Ii = 110 mA
	Po: 60 mW		Li = 10 μH
	Lo: 33 mH		Ci = 1,0 nF
	Co: 2,4 μF		

Notas para instalação

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

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

Para a instalação Ex ic o transmissor deve ser instalado em um invólucro proporcionando um grau de proteção IP20 de acordo com a norma ABNT NBR IEC60529. E o invólucro deve, pelo menos, ser adequado para a aplicação e corretamente instalado.

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

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.

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

O transmissor deve ser montado em invólucro de metal forma B de acordo com DIN43729 que está fornecendo pelo menos um grau de proteção IP6X de acordo com ABNT NBR IEC60529.

O invólucro deve ser adequado para aplicação e instalado corretamente.

As entradas dos cabos e os elementos de obturação que podem ser utilizados devem ser adequados à aplicação pretendida e corretamente instalados.

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

Desenho de Instalação INMETRO



Para instalação segura do 5331D ou 5334B o seguinte deve ser observado. O modelo 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.
O ano de fabricação pode ser pego dos dois primeiros dígitos do número de série.

CertificadoDEKRA 16.0013 X

Marcas
Ex ia IIC T6...T4 Ga
Ex ia IIIC Da
Ex ia I Ma

Normas ABNT NBR IEC 60079-0: 2013; ABNT NBR IEC 60079-11: 2013

Áreas classificadas

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

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

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

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

Terminais 3,4,5,6

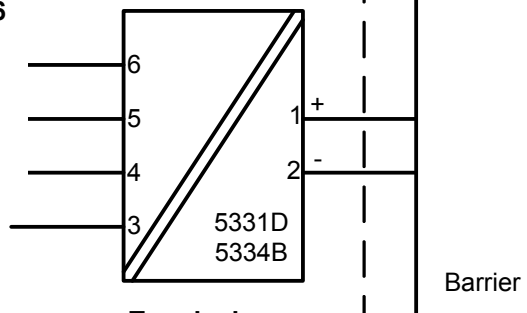
Uo: 9,6 VDC

Io: 25 mA

Po: 60 mW

Lo: 33 mH

Co: 2,4µF



Terminais:

1,2

Ui: 30 VDC

Ii: 120 mA

Pi: 0,84 W

Li: 10µH

Ci: 1,0nF

Notas de instalação

O circuito do sensor não é isolado galvanicamente do circuito de entrada de forma infalível. Contudo, a isolamento galvânica entre os circuitos é capaz de resistir a um ensaio de tensão de 500Vac durante 1 minuto.

Em uma atmosfera de gás potencialmente explosiva, o transmissor deve ser montado em um invólucro a fim de garantir um grau de proteção de no mínimo IP20 de acordo com a ABNT NBR IEC60529. Se contudo, o ambiente necessitar de um nível de proteção maior, isso deve ser levado em consideração.

Se o transmissor é instalado em uma atmosfera explosiva exigindo o uso de equipamento de proteção de nível Ga e se o invólucro é feito de alumínio, ele deve ser instalado de modo que, mesmo em caso remoto de avaria, fontes de ignição devido ao impacto e fricção, faíscas são eliminadas.

Se o invólucro é feito de materiais não metálicos, cargas eletroestáticas devem ser evitadas.

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

O transmissor deve ser montado em invólucro de metal forma B de acordo com DIN43729 que está fornecendo um grau de proteção de pelo menos IP6X de acordo com ABNT NBR IEC60529. O invólucro deve ser adequado para aplicação pretendida e instalado corretamente.

As entradas dos cabos e os elementos de obturação que podem ser utilizados devem ser adequados à aplicação pretendida 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 invólucro é igual à temperatura ambiente mais 20 K, por uma camada de pó, com espessura de até 5 mm.

Document history

The following list provides notes concerning revisions of this document.

Rev. ID	Date	Notes
108	1345	IECEX and INMETRO approvals added.
109	1514	PESO/CCOE approval added. GOST approval replaced with EAC approval.
110	1707	INMETRO installation drawings updated.
111	2004	PESO/CCOE approval discontinued. INMETRO installation drawing updated.
112	2145	ATEX and IECEX approvals updated - Ex na changed to Ex ec.

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