

5437A / 5437B / 5437D



DK ADVARSEL

Følgende operationer bør kun udføres på modulet i spændingsløs tilstand og under ESD-sikre forhold. Installation, ledningsmontage og -demontage. Fejlfindning på modulet. Reparation af modulet må kun foretages af PR electronics A/S.

ADVARSEL

PR Loop Link programmeringsenheden må ikke benyttes til kommunikation med moduler installeret i Ex-område. Ved Ex-installation må kun godkendt udstyr anvendes. Enhederne skal installeres i henhold til den tilhørende installations vejledning ved montering i eksplosionsfarligt område.

SIKKERHEDSREGLER

Modtagelse og udpakning
Udpak modulet uden at beskadige det. Kontrollér ved modtagelsen, at modultypen svarer til den bestilte. Indpakningen bør følge modulet, indtil dette er monteret på blivende plads.

Miljøforhold
Undgå direkte sollys, kraftigt støv eller varme. mekaniske rystelser og stød, og udsæt ikke modulet for regn eller kraftig fugt. Om nødvendigt skal opvarmning, ud over de opgivne grænser for omgivelsestemperatur, forhindres ved hjælp af ventilation.

Installation
Modulet må kun tilsluttes af kvalificerede teknikere, som er bekendt med de tekniske udtryk, advarsler og instruktioner i installationsvejledningen, og som vil følge disse. Modulet må kun installeres af kvalificerede personer, som er bekendt med national og international lovgivning, direktiver og standarder i det land, hvor modulet skal installeres. Produktionsår fremgår af de to første cifre i serienummeret. Hvis der er tvivl om modulets rette håndtering, skal der rettes henvendelse til den lokale forhandler eller alternativt direkte til PR electronics A/S. Installation og tilslutning af modulet skal følge landets gældende regler for installation af elektrisk materiel. Beskrivelser af indgang / udgang og forsyningsforbindelser findes i produktmanualen, som kan hentes på www.prelectronics.dk.

Kalibrering og justering
Under kalibrering og justering skal måling og tilslutning af eksterne spændinger udføres i henhold til denne installationsvejledning, og teknikeren skal benytte sikkerhedsmæssigt korrekte værktøjer og instrumenter.

Renngøring
Modulet må, i spændingsløs tilstand, rengøres med en klud let fugtet med destilleret vand.

PC-programmering af SYSTEM 5437

Modulet konfigureres til den aktuelle opgave ved hjælp af en PC og PR electronics A/S' kommunikationsinterface Loop Link. Det er muligt at konfigurere modulet både med og uden tilsluttet forsyningsspænding. I det kommunikationsinterface leverer nødvendig forsyning til opsætningen. Kommunikationsinterface er galvanisk isoleret, så PC'ens port er optimalt beskyttet. Kommunikationen er 2-vejs, så modulets opsætning kan hentes ind i PC'en, og opsætningen i PC'en kan sendes til modulet. For de brugere, der ikke selv vil foretage opsætning, kan modulet leveres konfigureret efter oplyst specifikation: indgangstype, måleområde, falerfejlsdetektering og udgangssignal.

Elektriske specifikationer

Driftstemperaturområde:	Standard.....-50°C to +85°C
SIL.....	-40°C to +80°C
Lagringstemperatur.....	-50°C to +85°C
Forsyningsspænding:	5437A..... 7.5*-48** VDC
5437B & 5437D.....	7.5*-30** VDC
5437, EU-RO.....	8.3..33.6 VDC ±10%
Max. internt effekttab.....	≤ 850 mW
Min. belastningsstand v.....	> 37 V forsyning (Forsyning - 37)/23 mA
Isolationsspænd., test/oper.	5437A..... 2.5 kVAC / 55 VAC
5437B & 5437D.....	2.5 kVAC / 42 VAC
Kalibreringstemperatur.....	23..25°
Relativ fugtighed.....	< 99% RH (ikke kond.)
Mål.....	Ø44 x 21,45 mm
Centerhulmål.....	Ø 6,35 mm / ¼ in

Indgang for RTD-type:

Pt100 & Ni100

Indgang for TC-type:

B, E, J, K, L, N, R, S, T, U, W3, W5, Lr

Lin R:

Ohm & KOhm

Spændingsindgang:

mV

Strømutgang:

Normalområde..... 3.8..20.5/20.5..3.8 mA

Overholdte myndighedskrav:

EMC.....	2014/30/EU & UK SI 2016/1091
ATEX.....	2014/34/EU & UK SI 2016/1107
RoHS.....	2011/65/EU & UK SI 2012/3032
EAC.....	TR-CU 020/2011
EAC Ex.....	TR-CU 012/2011

Godkendelser:

EU RO Mutual Recognition Type Approval.....	MRA0000023
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Ex - / I.S.-godkendelser:

5437A:	ATEX.....	DEKRA 18ATEX0135 X
5437B:	ATEX.....	DEKRA 16ATEX0047 X
5437D:	ATEX.....	DEKRA 16ATEX0047 X
5437A og 5437D:	IECEx.....	IECEx DEK. 16.0029 X
	c FM us.....	FM16CA0146X / FM16US0287X
	c CSA us.....	16.70066266
	INMETRO.....	DEKRA 23.0002X
	NEPSI.....	GJ23.1227X
	EAC Ex TR-CU 012/2011.....	EAEU KZ 7500361.01.01.08756

Funktionel sikkerhed:

SIL 2-certificeret via Full Assessment iht. IEC 61508 : 2010 SFF> 93% - type B komponent
SIL 3 Muligt via redundant struktur (HFT=0; 1oo2)
FMEDA-rapport - www.prelectronics.com

* Note: Vær opmærksom på at minimum forsyningsspændingen måles på 5437-terminalerne, dvs. alle eksterne spændingsfald skal medregnes.
**Note: Beskyt enheden mod overspænding ved at anvende en spændingsforsyning af god kvalitet eller alternativt monter overspændingsbeskyttelsesudstyr.

* Note: Observe that the minimum Supply Voltage must be as measured at the terminals of the 5437, i.e. all external drops must be considered.
** Note: Make sure to protect the device from overvoltage by using a suitable power supply or by installing overvoltage protecting devices.

*NB: Observez que la tension d'alimentation minimale doit être mesurée aux bornes du 5437, c'est-à-dire que toutes les chutes externes doivent être prises en considération.
**NB: Assurez-vous de protéger l'appareil contre les surtensions en utilisant une alimentation électrique appropriée ou en installant des dispositifs de protection contre les surtensions.

*NB: Beobachten Sie, dass die minimale Versorgungsspannung an den Klammern des 5437 gemessen werden muss. D.h. dass alle externen Spannungsabfälle berücksichtigt werden müssen.
** Hinweis: Achten Sie darauf, das Gerät vor Überspannungen zu schützen, indem Sie ein geeignetes Netzteil verwenden oder Überspannungsschutzgeräte installieren.

*NB: Perhatikan bahwa tegangan pasokan minimum harus diukur pada terminal 5437, yaitu semua penurunan tegangan eksternal harus diperhitungkan.
** Catatan: Pastikan untuk melindungi perangkat dari voltase berlebihan dengan menggunakan pasokan tenaga yang sesuai atau dengan memasang perangkat pelindung voltase berlebihan.

*NB: Observe que a tensão de alimentação mínima deve ser medida nos terminais do 5437, ou seja, todas as quedas externas devem ser consideradas.
** Nota: Certifique-se de proteger o dispositivo de sobretensão usando uma fonte de alimentação adequada ou instalando dispositivos de proteção de sobretensão.

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UK WARNING

The following operations should only be carried out on a disconnected device and under ESD safe conditions:
General mounting, connection and disconnection of wires. Troubleshooting the device.
Repair of the device must be done by PR electronics A/S only.

ADVARSEL

Do not use the Loop Link programming interface to program the units in Ex area.
For hazardous area installation, only certified test equipment may be used.
For installation in classified area the devices must be installed according to the appropriate installation drawings.

SAFETY INSTRUCTIONS

Receipt and unpacking
Unpack the device without damaging it. The packing should always follow the device until this has been permanently mounted. Check at the receipt of the device whether the type corresponds to the one ordered.

Environment
Avoid direct sunlight, dust, high temperatures, mechanical vibrations and shock, as well as rain and heavy moisture. If necessary, heating in excess of the stated limits for ambient temperatures should be avoided by way of ventilation.

Mounting
Only qualified technicians who are familiar with the technical terms, warnings, and instructions in this installation guide and who are able to follow these should connect the device. The device 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.
Should there be any doubt as to the correct handling of the device, please contact your local distributor or, alternatively, PR electronics A/S.

Mounting and connection of the device should comply with national legislation for mounting of electric materials. Descriptions of input/output and supply connections are shown in the product manual found on www.prelectronics.com.

Calibration and adjustment

During calibration and adjustment, the measuring and connection of external voltages must be carried out according to the specifications of this installation guide. The technician must use tools and instruments that are safe to use.

Cleaning

When disconnected, the device may be cleaned with a cloth moistened with distilled water.

PC programming of SYSTEM 5437

The device is configured to the present task by way of a PC and PR electronics A/S' communications interface Loop Link. The device can be configured with or without a connected supply voltage as the communications interface supplies the necessary voltage to the set-up. The communications interface is galvanically isolated to protect the PC port. Communication is 2-way to allow the retrieval of the device set-up into the PC and to allow the transmission of the PC set-up to the device. For users who do not wish to do the set-up themselves, the device can be delivered configured according to customer specifications: input type, measurement range, sensor error detection, and output signal.

Electrical specifications

Ambient operating temperature range:	Standard.....-50°C to +85°C
SIL.....	-40°C to +80°C
Storage Temperature.....	-50°C to +85°C
Supply voltage:	5437A..... 7.5*-48** VDC
5437B & 5437D.....	7.5*-30** VDC
5437, EU-RO.....	8.3..33.6 VDC ±10%
Max. internal power dissipation.....	≤ 850 mW
Min. load resistance at > 37 V supply.....	(Supply voltage - 37)/23 mA
Isolation voltage, test/oper.	5437A..... 2.5 kVAC / 55 VAC
5437B & 5437D.....	2.5 kVAC / 42 VAC
Calibration temperature.....	23..25°
Relative humidity.....	< 99% RH (non-cond.)
Dimensions.....	Ø44 x 21,45 mm
Center hole dimensions.....	Ø 6,35 mm / ¼ in

Input for RTD type:

Pt100 & Ni100

Input for TC types:

B, E, J, K, L, N, R, S, T, U, W3, W5, Lr

Lin R:

Ohm & KOhm

Voltage input:

mV

Current output:

Normal range, programmable..... 3.8..20.5/20.5..3.8 mA

Extended range (output limits), programmable.....

3.5..23 / 23..3.5 mA

Observed authority requirements:

EMC.....	2014/30/EU & UK SI 2016/1091
ATEX.....	2014/34/EU & UK SI 2016/1107
RoHS.....	2011/65/EU & UK SI 2012/3032
EAC.....	TR-CU 020/2011
EAC Ex.....	TR-CU 012/2011

Approvals:

EU RO Mutual Recognition Type Approval.....	MRA0000023
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Ex / I.S. approvals:

5437A:	ATEX.....	DEKRA 18ATEX0135 X
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	INMETRO.....	DEKRA 23.0002X
	NEPSI.....	GJ23.1227X
	EAC Ex TR-CU 012/2011.....	EAEU KZ 7500361.01.01.08756

Functional safety:

SIL2 Certified & Fully Assessed acc. to IEC 61508:2010 SFF> 93% - type B component
SIL3 Applicable through redundant structure (HFT=0; 1oo2)
FMEDA report - www.prelectronics.com

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** Note: Make sure to protect the device from overvoltage by using a suitable power supply or by installing overvoltage protecting devices.

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** Catatan: Pastikan untuk melindungi perangkat dari voltase berlebihan dengan menggunakan pasokan tenaga yang sesuai atau dengan memasang perangkat pelindung voltase berlebihan.

*NB: Observe que a tensão de alimentação mínima deve ser medida nos terminais do 5437, ou seja, todas as quedas externas devem ser consideradas.
** Nota: Certifique-se de proteger o dispositivo de sobretensão usando uma fonte de alimentação adequada ou instalando dispositivos de proteção de sobretensão.

*NB: Beobachten Sie, dass die minimale Versorgungsspannung an den Klammern des 5437 gemessen werden muss. D.h. dass alle externen Spannungsabfälle berücksichtigt werden müssen.
** Hinweis: Achten Sie darauf, das Gerät vor Überspannungen zu schützen, indem Sie ein geeignetes Netzteil verwenden oder Überspannungsschutzgeräte installieren.

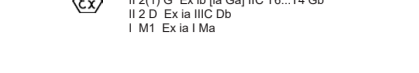
*NB: Perhatikan bahwa tegangan pasokan minimum harus diukur pada terminal 5437, yaitu semua penurunan tegangan eksternal harus diperhitungkan.
** Catatan: Pastikan untuk melindungi perangkat dari voltase berlebihan dengan menggunakan pasokan tenaga yang sesuai atau dengan memasang perangkat pelindung voltase berlebihan.

*NB: Observe que a tensão de

ATEX Installation drawing 5437QA01-V7R0

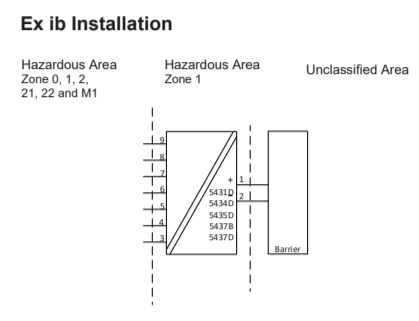
ATEX Certificate DEKRA 16ATEX 0047X
 Standards: EN 60079-0:2018, EN 60079-11:2012, EN 60079-15:2010, EN 60079-7:2015 + A1:2018

Ex ia Installation
 For safe installation of the 5431D...5434D... 5435D... 5437B... and 5437D... the following must be observed.



Terminal	Terminal
3,4,5,6 and 3,7,8,9	3,4,5,6,7,8,9
Uo: 7.2 VDC	7.2 VDC
Io: 7.3 mA	12.9 mA
Po: 13.2 mW	23.3 mW
Lo: 667 mH	200 mH
Co: 13.5 µF	13.5 µF

Ex ib Installation
 Hazardous Area Zone 0, 1, 2, 21, 22 and M1
 Unclassified Area

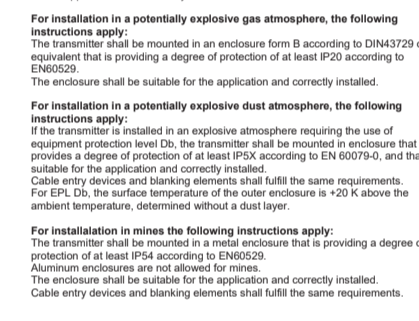


Terminal	Terminal
3,4,5,6 and 3,7,8,9	3,4,5,6,7,8,9
Uo: 7.2 VDC	7.2 VDC
Io: 7.3 mA	12.9 mA
Po: 13.2 mW	23.3 mW
Lo: 667 mH	200 mH
Co: 13.5 µF	13.5 µF

Terminal 1,2	Temperature Range
Ui: 30 VDC; II: 120 mA; LI: 0 µH; CI: 1 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Pi: 900 mW	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Pi: 750 mW	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Pi: 610 mW	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 75°C T6: -50 ≤ Ta ≤ 60°C

General installation instructions
 Year of manufacture can be taken from the first two digits in the serial number.
 If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.
 For EPL Ga, if the enclosure is made of aluminum, it must be installed such, that ignition sources due to impact and friction sparks are excluded.
 The distance between terminals, inclusive the wire's bare part, shall be at least 3 mm separated from any earthed metal.
 The test pins allow measurement of loop current directly while maintaining loop integrity. Power must be connected to the transmitter when using the test pins.
 For hazardous area installation, only certified test equipment may be used.
 If the transmitter was applied in type of protection Ex na or Ex ec, it may afterwards not be applied for intrinsic safety.
 For installation in a potentially explosive gas atmosphere, the following instructions apply:
 The transmitter shall be mounted in an enclosure form B according to DIN43729 or equivalent that is providing a degree of protection of at least IP20 according to EN60529.
 The enclosure shall be suitable for the application and correctly installed.
 For installation in a potentially explosive dust atmosphere, the following instructions apply:
 If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Db, the transmitter shall be mounted in enclosure that provides a degree of protection of at least IP54 according to IEC60079-0, and that is suitable for the application and correctly installed.
 Cable entry devices and blanking elements shall fulfill the same requirements.
 For EPL Dc, the surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.
 For installation in mines the following instructions apply:
 The transmitter shall be mounted in a metal enclosure that is providing a degree of protection of at least IP54 according to EN60529.
 Aluminum enclosures are not allowed for mines.
 The enclosure shall be suitable for the application and correctly installed.
 Cable entry devices and blanking elements shall fulfill the same requirements.

Ex na / Ex ec / Ex ic Installation
 ATEX Certificate DEKRA 18ATEX0135X
 For safe installation of the 5431A... 5434A... 5435A... and 5437A... the following must be observed.
 Marking: II 3 G Ex na IIC T6... T4 Gc
 II 3 G Ex ec IIC T6... T4 Gc
 II 3 G Ex ic IIC T6... T4 Gc
 II 3 D Ex ic IIIC Dc



Terminal 1,2	Terminal 1,2	Terminal 1,2	Temperature Range
Ex na & ec	Ex ic	Ex ic	
Vmax= 37 VDC	Ui = 37 VDC Li = 0 µH Ci = 1 nF	Ui = 48 VDC Pi = 851 mW Li = 0 µH Ci = 1 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Vmax= 30 VDC	Ui = 30 VDC Li = 0 µH Ci = 1 nF	Ui = 30 VDC Li = 0 µH Ci = 1 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 75°C T6: -50 ≤ Ta ≤ 60°C
Terminal 3,4,5,6,7,8,9	Terminal 3,4,5,6 and 3,7,8,9	Terminal 3,4,5,6,7,8,9	
Vmax = 7.2VDC	Uo: 7.2 VDC Io: 7.3 mA Po: 13.2 mW Lo: 667 mH Co: 13.5µF	Uo: 7.2 VDC Io: 12.9 mA Po: 23.3 mW Lo: 200 mH Co: 13.5µF	

General installation instructions
 If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.
 For an ambient temperature ≥ 60°C, heat resistant cables shall be used with a rating of at least 20 K above the ambient temperature.
 The enclosure shall be suitable for the application and correctly installed.
 The distance between terminals, inclusive the wire's bare part, shall be at least 3 mm separated from any earthed metal.
 TEST connection, may only be applied when the area is safe, or if supply / output circuit are the applied current meter are intrinsically safe.
 For installation in a potentially explosive gas atmosphere, the following instructions apply:
 The transmitter shall be installed in an enclosure providing a degree of protection of at least IP54 according to IEC 60079-0, which is suitable for the application and correctly installed.
 For EPL Dc, the surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.
 For installation in a potentially explosive dust atmosphere, the following instructions apply:
 If the transmitter is supplied with an intrinsically safe signal "ic" and interfaces an intrinsically safe signal "ic" (e.g. a passive device), the transmitter shall be mounted in a metal enclosure form B according to DIN 43729 or equivalent that provides a degree of protection of at least IP54 according to IEC 60079-0.
 Cable entry devices and blanking elements shall fulfill the same requirements.
 For installation in a potentially explosive atmosphere, the following instructions apply:
 The transmitter shall be 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 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.
 Cable entry devices and blanking elements shall fulfill the same requirements.
 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 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.
 Cable entry devices and blanking elements shall fulfill the same requirements.

General installation instructions
 If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.
 For an ambient temperature ≥ 60°C, heat resistant cables shall be used with a rating of at least 20 K above the ambient temperature.
 The enclosure shall be suitable for the application and correctly installed.
 The distance between terminals, inclusive the wire's bare part, shall be at least 3 mm separated from any earthed metal.
 TEST connection, may only be applied when the area is safe, or if supply / output circuit are the applied current meter are intrinsically safe.
 For installation in a potentially explosive gas atmosphere, the following instructions apply:
 The transmitter shall be 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 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.
 Cable entry devices and blanking elements shall fulfill the same requirements.

Part Name	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Printed circuit board	X	0	0	0	0	0

This table is prepared in accordance with the provisions of 5/17 11364
 O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.
 X: Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.

The product's Environmentally Friendly Use Period (EFUP) is 50 years

IECEX Installation drawing 5437QI01-V7R0

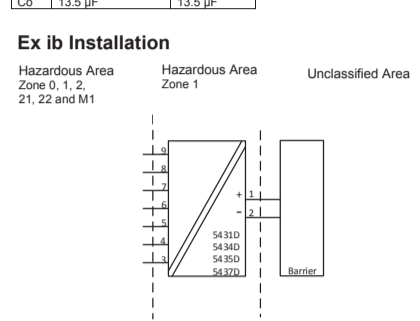
IECEX Certificate IECEX DEK 16.0029X
 Standards: IEC60079-0:2017, IEC60079-11:2011, IEC60079-15:2010, IEC60079-7:2017

For safe installation of the 5431D...5434D... 5435D... and 5437D... the following must be observed.



Terminal	Terminal
3,4,5,6 and 3,7,8,9	3,4,5,6,7,8,9
Uo: 7.2 VDC	7.2 VDC
Io: 7.3 mA	12.9 mA
Po: 13.2 mW	23.3 mW
Lo: 667 mH	200 mH
Co: 13.5 µF	13.5 µF

Ex ib Installation
 Hazardous Area Zone 0, 1, 2, 21, 22 and M1
 Unclassified Area

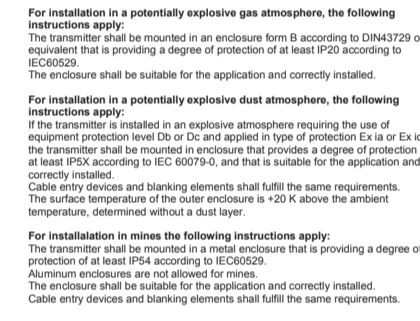


Terminal	Terminal
3,4,5,6 and 3,7,8,9	3,4,5,6,7,8,9
Uo: 7.2 VDC	7.2 VDC
Io: 7.3 mA	12.9 mA
Po: 13.2 mW	23.3 mW
Lo: 667 mH	200 mH
Co: 13.5 µF	13.5 µF

Terminal 1,2	Temperature Range
Ui: 30 VDC; II: 120 mA; LI: 0 µH; CI: 1 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Pi: 900 mW	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Pi: 750 mW	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Pi: 610 mW	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 75°C T6: -50 ≤ Ta ≤ 60°C

General installation instructions
 If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.
 For EPL Ga, if the enclosure is made of aluminum, it must be installed such, that ignition sources due to impact and friction sparks are excluded.
 The distance between terminals, inclusive the wire's bare part, shall be at least 3 mm separated from any earthed metal.
 The test pins allow measurement of loop current directly while maintaining loop integrity. Power must be connected to the transmitter when using the test pins.
 For hazardous area installation, only certified test equipment may be used.
 If the transmitter was applied in type of protection Ex na or Ex ec, it may afterwards not be applied for intrinsic safety.
 For installation in a potentially explosive gas atmosphere, the following instructions apply:
 The transmitter shall be mounted in an enclosure form B according to DIN43729 or equivalent that is providing a degree of protection of at least IP20 according to EN60529.
 The enclosure shall be suitable for the application and correctly installed.
 For installation in a potentially explosive dust atmosphere, the following instructions apply:
 If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Db or Dc and applied in type of protection Ex ia or Ex ic, the transmitter shall be mounted in enclosure that provides a degree of protection of at least IP54 according to IEC60079-0, and that is suitable for the application and correctly installed.
 Cable entry devices and blanking elements shall fulfill the same requirements.
 The surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.
 For installation in mines the following instructions apply:
 The transmitter shall be mounted in a metal enclosure that is providing a degree of protection of at least IP54 according to IEC60529.
 Aluminum enclosures are not allowed for mines.
 The enclosure shall be suitable for the application and correctly installed.
 Cable entry devices and blanking elements shall fulfill the same requirements.

Ex na / Ex ec / Ex ic Installation
 For safe installation of the 5431A... 5434A... 5435A... and 5437A... the following must be observed.
 Marking: Ex na IIC T6... T4 Gc
 Ex ec IIC T6... T4 Gc
 Ex ic IIC Dc



Terminal 1,2	Terminal 1,2	Terminal 1,2	Temperature Range
Ex na & ec	Ex ic	Ex ic	
Vmax= 37 VDC	Ui = 37 VDC Li = 0 µH Ci = 1.0 nF	Ui = 48 VDC Pi = 851 mW Li = 0 µH Ci = 1.0 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Vmax= 30 VDC	Ui = 30 VDC Li = 0 µH Ci = 1.0 nF	Ui = 30 VDC Li = 0 µH Ci = 1.0 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 75°C T6: -50 ≤ Ta ≤ 60°C
Terminal 3,4,5,6,7,8,9	Terminal 3,4,5,6 and 3,7,8,9	Terminal 3,4,5,6,7,8,9	
Vmax = 7.2VDC	Uo: 7.2 VDC Io: 7.3 mA Po: 13.2 mW Lo: 667 mH Co: 13.5µF	Uo: 7.2 VDC Io: 12.9 mA Po: 23.3 mW Lo: 200 mH Co: 13.5µF	

General installation instructions
 If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.
 For an ambient temperature ≥ 60°C, heat resistant cables shall be used with a rating of at least 20 K above the ambient temperature.
 The enclosure shall be suitable for the application and correctly installed.
 The distance between terminals, inclusive the wire's bare part, shall be at least 3 mm separated from any earthed metal.
 TEST connection, may only be applied when the area is safe, or if supply / output circuit are the applied current meter are intrinsically safe.
 For installation in a potentially explosive gas atmosphere, the following instructions apply:
 The transmitter shall be installed in an enclosure providing a degree of protection of at least IP54 according to IEC 60079-0, which is suitable for the application and correctly installed.
 For EPL Dc, the surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.
 For installation in a potentially explosive dust atmosphere, the following instructions apply:
 If the transmitter is supplied with an intrinsically safe signal "ic" and interfaces an intrinsically safe signal "ic" (e.g. a passive device), the transmitter shall be mounted in a metal enclosure form B according to DIN 43729 or equivalent that provides a degree of protection of at least IP54 according to IEC 60079-0.
 Cable entry devices and blanking elements shall fulfill the same requirements.
 For installation in a potentially explosive atmosphere, the following instructions apply:
 The transmitter shall be 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 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.
 Cable entry devices and blanking elements shall fulfill the same requirements.

General installation instructions
 If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.
 For an ambient temperature ≥ 60°C, heat resistant cables shall be used with a rating of at least 20 K above the ambient temperature.
 The enclosure shall be suitable for the application and correctly installed.
 The distance between terminals, inclusive the wire's bare part, shall be at least 3 mm separated from any earthed metal.
 TEST connection, may only be applied when the area is safe, or if supply / output circuit are the applied current meter are intrinsically safe.
 For installation in a potentially explosive gas atmosphere, the following instructions apply:
 The transmitter shall be 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 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.
 Cable entry devices and blanking elements shall fulfill the same requirements.

Terminal 1,2	Terminal 1,2	Terminal 1,2	Temperature Range
Ex na & ec	Ex ic	Ex ic	
Vmax= 37 VDC	Ui = 37 VDC Li = 0 µH Ci = 1.0 nF	Ui = 48 VDC Pi = 851 mW Li = 0 µH Ci = 1.0 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Vmax= 30 VDC	Ui = 30 VDC Li = 0 µH Ci = 1.0 nF	Ui = 30 VDC Li = 0 µH Ci = 1.0 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 75°C T6: -50 ≤ Ta ≤ 60°C
Terminal 3,4,5,6,7,8,9	Terminal 3,4,5,6 and 3,7,8,9	Terminal 3,4,5,6,7,8,9	
Vmax = 7.2VDC	Uo: 7.2 VDC Io: 7.3 mA Po: 13.2 mW Lo: 667 mH Co: 13.5µF	Uo: 7.2 VDC Io: 12.9 mA Po: 23.3 mW Lo: 200 mH Co: 13.5µF	

General installation instructions
 If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.
 For an ambient temperature ≥ 60°C, heat resistant cables shall be used with a rating of at least 20 K above the ambient temperature.
 The enclosure shall be suitable for the application and correctly installed.
 The distance between terminals, inclusive the wire's bare part, shall be at least 3 mm separated from any earthed metal.
 TEST connection, may only be applied when the area is safe, or if supply / output circuit are the applied current meter are intrinsically safe.
 For installation in a potentially explosive gas atmosphere, the following instructions apply:
 The transmitter shall be 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 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.
 Cable entry devices and blanking elements shall fulfill the same requirements.

Instalação INMETRO 5437QB01-V4R1

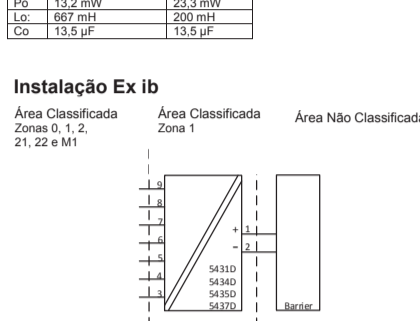
INMETRO Certificado DEKRA 23.0002X
 Normas: ABNT NBR IEC 60079-0:2020 Versão Corrigida:2023
 ABNT NBR IEC 60079-7:2018 Versão Corrigida:2022
 ABNT NBR IEC 60079-11:2019 Versão Corrigida:2017

Para a instalação segura do 5431D...5434D... 5435D... e 5437D... os seguintes pontos devem ser observados:



Terminal	Terminal
3,4,5,6 e 3,7,8,9	3,4,5,6,7,8,9
Uo: 7.2 VDC	7.2 VDC
Io: 7.3 mA	12.9 mA
Po: 13.2 mW	23.3 mW
Lo: 667 mH	200 mH
Co: 13.5 µF	13.5 µF

Instalação Ex ia
 Área Classificada Zona 0, 1, 2, 21, 22 e M1
 Área Não classificada

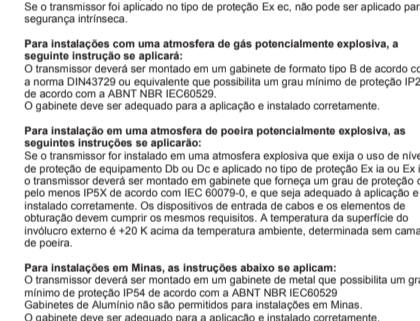


Terminal	Terminal
3,4,5,6 e 3,7,8,9	3,4,5,6,7,8,9
Uo: 7.2 VDC	7.2 VDC
Io: 7.3 mA	12.9 mA
Po: 13.2 mW	23.3 mW
Lo: 667 mH	200 mH
Co: 13.5 µF	13.5 µF

Terminal 1,2	Temperaturas
Ui: 30 VDC; II: 120 mA; LI: 0 µH; CI: 1.0nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Pi: 900 mW	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Pi: 750 mW	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Pi: 610 mW	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 75°C T6: -50 ≤ Ta ≤ 60°C

Instruções Gerais de Instalação
 Se o invólucro for feito de materiais não metálicos ou de metal com uma camada de tinta mais espessa que 0.2 mm (grupo IIC) ou 2 mm (grupo IIB, IIA, I) ou qualquer espessura (grupo III), cargas eletrostáticas devem ser evitadas.
 Para EPL Ga, se o invólucro for de alumínio, ele deve ser instalado de forma que as fontes de ignição devido a faíscas de impacto e fricção sejam excluídas.
 A distância entre terminais, inclusive não isolados, deve ser separada por pelo menos 3 mm de qualquer metal aterrado.
 Os pinos de testes para medição devem permitir os contatos de loop de corrente mantendo a integridade do loop. A energia deve estar conectada ao transmissor quando for usado os pinos de teste. Para instalações em áreas classificadas deve ser utilizado somente equipamentos certificados.
 Se o transmissor for aplicado no tipo de proteção Ex ec, não pode ser aplicado para segurança intrínseca.
 Para instalações com uma atmosfera de gás potencialmente explosiva, a seguinte instrução se aplica:
 O transmissor deverá ser montado em um gabinete de formato tipo B de acordo com a norma DIN43729 ou equivalente que possibilite um grau mínimo de proteção IP20 de acordo com a ABNT NBR IEC60529.
 O gabinete deve ser adequado para a aplicação e instalado corretamente.
 Para instalação em uma atmosfera de poeira potencialmente explosiva, as seguintes instruções se aplicam:
 Se o transmissor for instalado em uma atmosfera explosiva que exija o uso de nível de proteção de equipamento Db ou Dc e aplicado no tipo de proteção Ex ia ou Ex ic, o transmissor deverá ser montado em gabinete que forneça um grau de proteção de pelo menos IP54 de acordo com IEC 60079-0, o que seja adequado à aplicação e instalado corretamente. Os dispositivos de entrada de cabos e os elementos de obstrução devem cumprir os mesmos requisitos. A temperatura da superfície do invólucro externo é +20 K acima da temperatura ambiente, determinada sem camada de poeira.
 Para instalações em Minas, as instruções abaixo se aplicam:
 O transmissor deverá ser montado em um gabinete de metal que possibilite um grau mínimo de proteção IP54 de acordo com a ABNT NBR IEC60529.
 Gabinetes de Alumínio não são permitidos para instalações em Minas.
 O gabinete deve ser adequado para a aplicação e instalado corretamente.
 Os dispositivos de entrada de cabos e os elementos espaçadores devem satisfazer os mesmos requisitos.

Instalações Ex ec / Ex ic
 Para instalações seguras do 5431A... 5434A... 5435A... e 5437A... as seguintes instruções devem ser observadas:
 Notas: Ex ec IIC T6... T4 Gc
 Ex ic IIC T6... T4 Gc
 Ex ic IIIC Dc



Terminal 1,2	Terminal 1,2	Terminal 1,2	Faixa de Temperatura
Ex ec	Ex ic	Ex ic	
Vmax= 37 VDC	Ui = 37 VDC Li = 0 µH Ci = 1,0 nF	Ui = 48 VDC Pi = 851 mW Li = 0 µH Ci = 1,0 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Vmax= 30 VDC	Ui = 30 VDC Li = 0 µH Ci = 1,0 nF	Ui = 30 VDC Li = 0 µH Ci = 1,0 nF	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 75°C T6: -50 ≤ Ta ≤ 60°C
Terminal 3,4,5,6,7,8,9	Terminal 3,4,5,6 and 3,7,8,9	Terminal 3,4,5,6,7,8,9	
Vmax = 7.2VDC	Uo: 7.2 VDC Io: 7.3 mA Po: 13.2 mW Lo: 667 mH Co: 13.5µF	Uo: 7.2 VDC Io: 12.9 mA Po: 23.3 mW Lo: 200 mH Co: 13.5µF	

Instruções gerais de instalação:
 Se o invólucro for feito de materiais não metálicos, ou se for feito de metal com uma camada de tinta mais espessa que 0.2 mm (grupo IIC), ou 2 mm (grupo IIB, IIA, I) ou qualquer espessura (grupo III), cargas eletrostáticas devem ser evitadas.
 Para uma temperatura ambiente ≥ 60°C, cabos resistentes a aquecimento deverão ser usados com classificação de no mínimo 20 K acima da temperatura ambiente.
 O gabinete deve ser adequado para a aplicação e instalado corretamente.
 A distância entre terminais, inclusive não isolados, deve ser separada por pelo menos 3 mm de qualquer metal aterrado.
 A distância TESTE, deve ser utilizado somente quando a área é segura, ou quando a fonte / circuito de saída e o medidor de corrente aplicado seja do tipo intrinsecamente seguro.
 Para instalações em uma atmosfera de gás potencialmente explosiva, as instruções abaixo se aplicam:
 O transmissor deverá ser instalado em um gabinete que possibilite um grau de proteção de no mínimo IP54 de acordo com a ABNT NBR IEC 60079-0.
 Em adição, o gabinete deverá possibilitar um grau de poluição interna de 2 ou melhor, conforme definido na ABNT NBR IEC60529-1.
 Os dispositivos de entrada de cabos e os elementos espaçadores devem satisfazer os mesmos requisitos.
 Para a instalação em uma atmosfera de poeira potencialmente explosiva, as seguintes instruções se aplicam:
 Para EPL Dc, a temperatura da superfície do invólucro externo é +20 K acima da temperatura ambiente, determinada sem camada de poeira. Se o transmissor for fornecido com um sinal intrinsecamente seguro "ic" e fízer interface com um sinal intrinsecamente seguro "ic" (por exemplo, um dispositivo passivo), o transmissor deverá ser montado em um invólucro metálico forma B de acordo com DIN 43729 ou equivalente que forneça um grau de proteção de pelo menos IP54 conforme IEC 60079-0. Os dispositivos de entrada de cabos e os elementos de obstrução devem cumprir os mesmos requisitos.
 Se o transmissor for instalado em uma atmosfera explosiva que exija o uso de nível de proteção de equipamento Gc e aplicado no tipo de proteção Ex ec, o transmissor deverá ser montado em gabinete que forneça um grau de proteção de pelo menos IP54 de acordo com IEC 60079-0, o que seja adequado para o aplicativo e instalado corretamente. Os dispositivos de entrada de cabos e os elementos de obstrução devem cumprir os mesmos requisitos.

General installation instructions
 If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.
 For an ambient temperature ≥ 60°C, heat resistant cables shall be used with a rating of at least 20 K above the ambient temperature.
 The enclosure shall be suitable for the application and correctly installed.
 The distance between terminals, inclusive the wire's bare part, shall be at least 3 mm separated from any earthed metal.
 TEST connection, may only be applied when the area is safe, or if supply / output circuit are the applied current meter are intrinsically safe.
 For installation in a potentially explosive gas atmosphere, the following instructions apply:
 The transmitter shall be installed in