

ATEX Installation drawing 6437QA01-V4R0

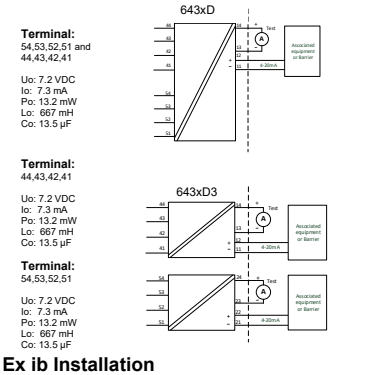
ATEX Certificate DEKRA 16ATEx 0047X
Standards: EN 60079-0:2018, EN60079-11:2012

Ex ia Installation

For safe installation of the 6431Dxxx and 6437Dxxx the following must be observed.

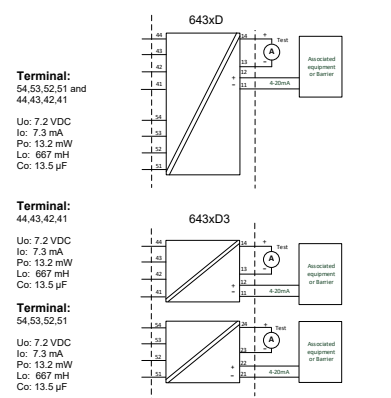
Marking 
II 1 G Ex ia IIC T6...T4 Ga
II 2 (1) G Ex ib [ia Ga] IIC T6...T4 Gb
II 2 D Ex ia IIC Db
I M1 Ex ia I Ma

Hazardous Area Zone 0, 1, 2, 21, 22 and M1



Ex ib Installation

Hazardous Area Zone 0, 1, 2, 21, 22 and M1



643xD1: Terminal: 11,12
643xD2: Terminal: 11,12
643xD3: Terminal: Ch1: 11,12 Ch2: 21,22

Ui: 30 VDC; li: 120 mA; Li: 0 µH; Ci: 1 nF	Pi	Temperature class	Maximum ambient temperature
per channel	900 mW	T5	+65°C
		T4	+85°C
		T6	+55°C
		T5	+70°C
		T4	+85°C
		T6	+55°C
		T5	+75°C
		T4	+85°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.
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.
The front connector and front test pads provide an intrinsically safe extension-port signal and may only be connected to dedicated equipment of PR electronics.

Warning: Do not connect or disconnect plugs and sockets when energized.

For installation in a potentially explosive dust atmosphere, 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. The enclosure shall be suitable for the application and correctly installed.
Cable entry devices and blanking elements shall fulfill the same requirements.
For EPL Db, 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.

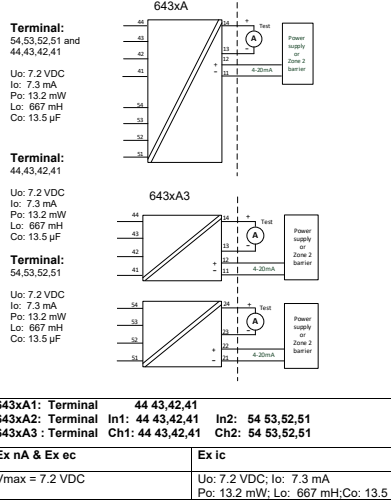
Ex na / Ex ec / Ex ic Installation

For safe installation of the 6431Axxx and 6437Axxx the following must be observed.

ATEX Certificate DEKRA 16ATEx0135X
Standards: EN 60079-0: 2018, EN 60079-11: 2012
EN 60079-7: 2015+A1:2018, EN 60079-15: 2010

Marking 
II 3 G Ex na IIC T6...T4 Gc
II 3 G Ex ec IIC T6...T4 Gc
II 3 D Ex ic IIC Db

Hazardous Area Zone 2 and 22



643xA1: Terminal 44,43,42,41
643xA2: Terminal In1: 44,43,42,41 In2: 54,53,52,51
643xA3: Terminal Ch1: 44,43,42,41 Ch2: 54,53,52,51

Ex na & Ex ec **Ex ic**
Vmax = 7,2 VDC **Ex ic** **Ex ic**
Ui: 7,2 VDC; li: 7,3 mA
Po: 13,2 mW; Lo: 667 mH; Co: 13,5 µF

Supply / output circuit			Maximum ambient temperature		
Ex na & Ex ec	Ex ic	Ex ic	Temperature class	Single and dual input	Two channel
	Li = 0 nH Ci = 1 nF	Ui= 48 VDC, Li = 0 nH, Ci = 1 nF			
Vmax= 37 VDC	Ui= 37 VDC	Pi= 851 mW per channel	T4	+85°C	+85°C
			T5	+70°C	+65°C
			T6	+55°C	+50°C
Vmax= 30 VDC	Ui= 30 VDC	Pi= 700 mW per channel	T4	+85°C	+85°C
			T5	+75°C	+70°C
			T6	+60°C	+55°C

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 and the applied current meter are intrinsically safe.

Warning: Do not connect or disconnect Terminal Blocks when energized.

For installation in a potentially explosive gas atmosphere, the following instructions apply:
The transmitter must be installed in an enclosure providing a degree of protection of at least IP54 in accordance with EN60079-0. In addition, the enclosure shall provide an internal pollution degree 2 or better as defined in EN 60664-1.
Cable entry devices and blanking elements shall fulfill the same requirements.

For installation in a potentially explosive dust atmosphere, the following instructions apply:
For EPL Dc, the surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.

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 an enclosure that provides a degree of protection of at least IP54 according to EN60079-0.
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 IEC 60079-0, and that is suitable for the application and correctly installed.
Cable entry devices and blanking elements shall fulfill the same requirements.

IECEx Installation drawing 6437QI01-V4R0

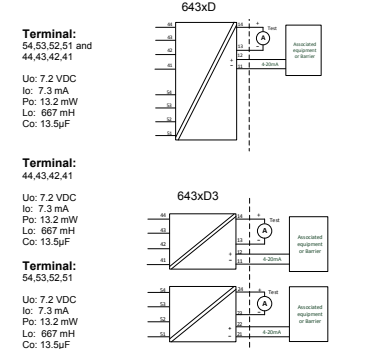
IECEx Certificate IECEx DEK 16.0029X
Standards: IEC 60079-0:2017, IEC 60079-11:2011,
IEC 60079-15:2010, IEC60079-7: 2017

Ex ia Installation

For safe installation of the 6431Dxxx and 6437Dxxx the following must be observed.

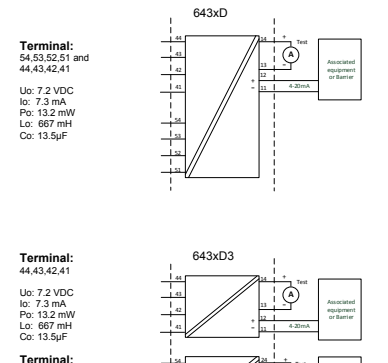
Marking 
Ex ia IIC T6...T4 Ga or
Ex ib [ia Ga] IIC T6...T4 Gb
Ex ia IIC Db
Ex ia I Ma

Hazardous Area Zone 0, 1, 2, 21, 22 and M1



Ex ib Installation

Hazardous Area Zone 0, 1, 2, 21, 22 and M1



643xD1: Terminal: 11,12
643xD2: Terminal: 11,12
643xD3: Terminal: Ch1: 11,12 Ch2: 21,22

Ui: 30 VDC; li: 120 mA; Li: 0 µH; Ci: 1 nF	Pi	Temperature class	Maximum ambient temperature
per channel	900 mW	T5	+65°C
		T4	+85°C
		T6	+55°C
		T5	+70°C
		T4	+85°C
		T6	+55°C
		T5	+75°C
		T4	+85°C

General installation instructions
If the enclosure is made of non-metallic plastic materials, electrostatic charges on the transmitter enclosure shall be avoided.
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.
The front connector and front test pads provides an intrinsically safe extension-port signal and may only be connected to dedicated equipment of PR electronics.

For EPL Ga, if the enclosure is made of aluminum, it must be installed such, that ignition sources tend 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.
The front connector and front test pads provides an intrinsically safe extension-port signal and may only be connected to dedicated equipment of PR electronics.

Warning: Do not connect or disconnect plugs and sockets when energized.

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 Dc or Db 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 IEC 60079-0, and that is suitable for the application and correctly installed.
Cable entry devices and blanking elements shall fulfill the same requirements.

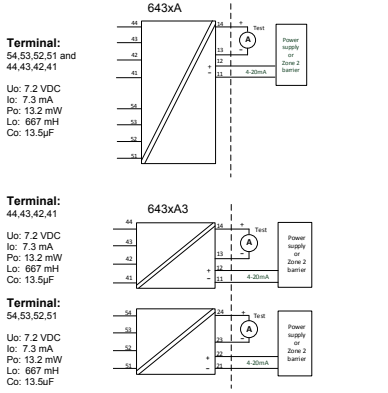
For installation in mines the following instructions apply:
The transmitter shall be mounted in a metal enclosure that is providing a degree of protection of at least IP54 according to IEC60529.
Aluminum enclosures are not allowed for mines.
The enclosure shall be suitable for the application and correctly installed.
Cable entry devices and blanking elements shall fulfill the same requirements.

Ex na / Ex ec / Ex ic Installation

For safe installation of the 6431Axxx and 6437Axxx the following must be observed.

Marking 
Ex na IIC T6...T4 Gc
Ex ec IIC T6...T4 Gc
Ex ic IIC Db

Hazardous Area Zone 2 and 22



643xA1: Terminal 44,43,42,41
643xA2: Terminal In1: 44,43,42,41 In2: 54,53,52,51
643xA3: Terminal Ch1: 44,43,42,41 Ch2: 54,53,52,51

Ex na & Ex ec **Ex ic**
Vmax = 7,2 VDC **Ex ic**
Ui: 7,2 VDC; li: 7,3 mA
Po: 13,2 mW; Lo: 667 mH; Co: 13,5 µF

Ex nA & Ex ec		Ex ic	
Uo: max = 7.2VDC		Uo: 7.2 VDC; Ii: 7.3 mA Po: 13.2 mW; Lo: 667 mH; Co: 13.5 nF	
43A1: Terminal: 11,12			
43A2: Terminal: 11,12			
43A3: Terminal: Ch1: 11,12		Ch2: 21,22	
Supply / output circuit		Maximum ambient temperature	
Ex nA & Ex ec	Ex ic	Ex ic	Temperature class
	Li = 0 uH Ci = 1 nF	Ui = 48 VDC, li = 0 uH, Ci = 1 nF	Single and dual input

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 and the applied current meter are intrinsically safe.

Warning: Do not connect or disconnect Terminal Blocks when energized.

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 not less than IP54 in accordance with IEC 60079-0, which is suitable for the application and correctly installed e.g. in an enclosure that is in type of protection Ex na or Ex ec. Additionally, the area inside the enclosure shall be pollution degree 2 or better as defined in IEC 60664-1.
Cable entry devices and blanking elements shall fulfill the same requirements.

For installation in a potentially explosive dust atmosphere, the following instructions apply:
For EPL Dc, the surface temperature of the outer enclosure is +20 K above the ambient temperature, determined without a dust layer.
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 an enclosure 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.

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 IEC 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 6437QB01-V4R1

INMETRO Certificado DEKRA 23.0002X

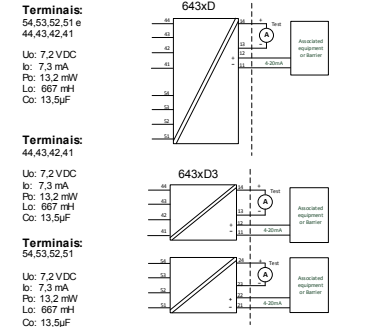
Normas: **ABNT NBR IEC 60079-0:2020 Versão Corrigida 2023**
ABNT NBR IEC 60079-7:2018 Versão Corrigida 2022
ABNT NBR IEC 60079-11:2013 Versão Corrigida 2017

Para a instalação segura do 6431Dxxx e 6437Dxxx os seguintes pontos devem ser observados

NOTAS 
Ex ia IIC T6...T4 Ga or
Ex ib [ia Ga] IIC T6...T4 Gb
Ex ia IIC Db
Ex ia I Ma

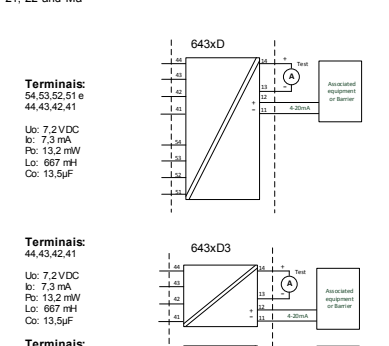
Instalação Ex ia

Área Classificada Zone 0, 1, 2, 21, 22 and M1



Instalação Ex ib

Área Classificada Zone 0, 1, 2, 21, 22 and Ma



643xD1: Terminais: 11,12
643xD2: Terminais: 11,12
643xD3: Terminais: Ch1: 11,12 Ch2: 21,22

Ui: 30 VDC; li: 120 mA; Li: 0 µH; Ci: 1,0nF	Pi	Classe de temperatura	Faixas de Temperaturas
per canal	900 mW	T6	+50°C
		T5	+65°C
		T4	+85°C
		T6	+55°C
		T5	+70°C
		T4	+85°C
		T5	+75°C
		T4	+85°C

Pi	Classe de temperatura	Entradas simples e dupla	Dois canais
900 mW	T6	+50°C	+45°C
	T5	+65°C	+60°C
	T4	+85°C	+85°C
750 mW	T6	+55°C	+50°C
	T5	+70°C	+65°C
	T4	+85°C	+85°C
610 mW	T6	+60°C	+55°C
	T5	+75°C	+70°C
	T4	+85°C	+85°C

Instruções Gerais de Instalação
O ano de fabricação pode ser obtido a partir dos dois primeiros dígitos do número de série. 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 deverá ser instalado de forma que as fontes de ignição devido a faíscas de impacto e fricção sejam excluídas.
A distância entre os terminais, incluindo a parte nua dos fios, deve ser pelo menos 3 mm separada de qualquer metal aterrado.
Os pinos de teste permitem leitura e controle do loop diretamente, mantendo a integridade do loop. A energia deve estar conectada ao transmissor ao usar os pinos de teste. Para instalação em áreas classificadas, somente equipamentos de teste certificados podem ser utilizados.
Se o transmissor foi aplicado no tipo de proteção Ex ec, pode não ser aplicado posteriormente para segurança intrínseca.
O conector frontal e os pads de teste frontal fornecem um sinal de porta de extensão intrínseca segura e só podem ser conectados a equipamentos dedicados da PR Electronics.

Atenção: Não conecte ou desconecte as fichas e as tomadas quando energizadas.

Para instalação em uma atmosfera potencialmente explosiva de poeira, as seguintes instruções se aplicam:
O transmissor deve ser montado em um gabinete que ofereça um grau de proteção de pelo menos IP54, de acordo com a ABNT NBR IEC 60529. O gabinete deve ser adequado para a aplicação e instalado corretamente.
Os dispositivos de entrada de cabos e os elementos de supressão devem cumprir os mesmos requisitos.
A temperatura da superfície do invólucro externo é +20 K acima da temperatura ambiente, determinada sem camada de poeira.

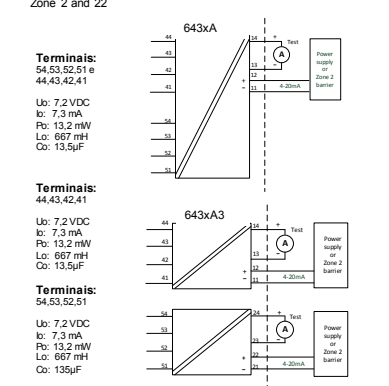
Para instalações em Minas, as instruções abaixo se aplicam:
O transmissor deverá ser montado em um gabinete de metal que possibilite um grau mínimo de proteção IP54 de acordo com a ABNT NBR IEC 60529.
Gabinetes de Alumínio não são permitidos para instalações em Minas.
O gabinete deve ser adequado para 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 6431Axxx e 6437Axxx as seguintes instruções devem ser observadas

Notas 
Ex ec IIC T6...T4 Gc
Ex ic IIC T6...T4 Gc
Ex ic IIC Db

Área Classificada Zone 2 and 22



643xA1: Terminal 44,43,42,41
643xA2: Terminal In1: 44,43,42,41 In2: 54,53,52,51
643xA3: Terminal Ch1: 44,43,42,41 Ch2: 54,53,52,51

Ex ec **Ex ic**
Vmax = 7,2VDC **Ex ic**
Ui: 7,2 VDC; li: 7,3 mA
Po: 13,2 mW; Lo: 667 mH; Co: 13,5µF

Supply / output circuit	Ex ec	Ex ic	Ex ic	Classe de temperatura	Entradas simples e dupla	Dois canais
	Li = 0 µH Ci = 1,0 nF	Ui = 48 VDC, li = 0 µH, Ci = 1,0 nF	Tempe rature ratura			
Vmax = 37 VDC	Ui = 37 VDC	Pi = 851 mW por canal	T4	+85°C	+85°C	+85°C
			T5	+70°C	+65°C	+65°C
			T6	+55°C	+50°C	+50°C
Vmax = 30 VDC	Ui = 30 VDC	Pi = 700 mW por canal	T4	+85°C	+85°C	+85°C
			T5	+75°C	+70°C	+70°C
			T6	+60°C	+55°C	+55°C

643xA1: Terminais: 11,12
643xA2: Terminais: 11,12
643xA3: Terminais: Ch1: 11,12 Ch2: 21,22

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, devem ser utilizados cabos resistentes ao calor com uma classificação de pelo menos 20 K acima da temperatura ambiente.
O gabinete deve ser adequado para a aplicação e instalado corretamente.
A distância entre terminais, nos inclusivos não isolados, deve ser separada por pelo menos 3mm de qualquer metal aterrado.
A conexão 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 intrínseca segura.

Atenção: Não conecte ou desconecte as fichas e as tomadas quando energizadas.

Para instalações em uma atmosfera de gás 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 intrínseco seguro "ic" e fazer interface com um sinal intrínseco seguro "ic" (por exemplo, um dispositivo passivo), o transmissor deverá ser montado em um gabinete que ofereça um grau de proteção de pelo menos IP54 de acordo com IEC 60079-0. Os dispositivos de entrada de cabos e os elementos de obstrução devem cumprir 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 intrínseco seguro "ic" e fazer interface com um sinal intrínseco seguro "ic" (por exemplo, um dispositivo passivo), o transmissor deverá ser montado em um gabinete que ofereça um grau de proteção de pelo menos IP54 de acordo com IEC 60079-0, e isso é adequado para o aplicativo e instalado corretamente.
Os dispositivos de entrada de cabos e os elementos de obstrução devem cumprir os mesmos requisitos.

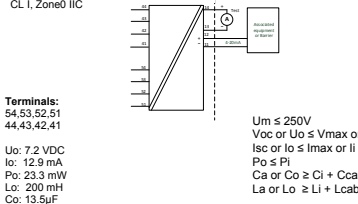
Se o transmissor for instalado em uma atmosfera explosiva que exija o uso de nível de proteção de equipamento Dc e aplicado no tipo de proteção Ex ec, o transmissor deverá ser montado em gabinete que ofereça um grau de proteção de pelo menos IP54 de acordo com IEC 60079-0, e isso é adequado para o aplicativo e instalado corretamente.
Os dispositivos de entrada de cabos e os elementos de obstrução devem cumprir os mesmos requisitos.

FM Installation drawing 6437QF01-V2R0

Division 1 / Zone 0, Intrinsic Safe Installation
For safe installation of the 6431Dxxx and 6437Dxxx the following must be observed.

Marking 
CL I, Div 1, Gp A,B,C,D
CL I, Zone 0 AEx ia IIC T6...T4
CL I, Zone 1 [0] AEx ib [ia] IIC T6...T4
Ex ia IIC T6...T4 Ga
Ex ib [ia Ga] IIC T6...T4 Gb

Hazardous Area CL I, Div 1, GP ABCD
CL I, Zone 0 IIC



Terminals: 54,53,52,51 and 44,43,42,41
Ui: 7,2 VDC
li: 7,3 mA
Po: 13,2 mW
Lo: 667 mH
Co: 13,5µF

Temperature Range	Temperature Range
Um ≤ 250V Voc or Uo ≤ Vmax or Ui Isc or Io ≤ Imax or Ii Po ≤ Pi Ca or Co ≥ Ci + Ccable La or Lo ≥ Li + Lcable	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 70°C T6: -50 ≤ Ta ≤ 55°C
Um ≤ 250V Voc or Uo ≤ Vmax or Ui Isc or Io ≤ Imax or Ii Po ≤ Pi Ca or Co ≥ Ci + Ccable La or Lo ≥ Li + Lcable	T4: -50 ≤ Ta ≤ 85°C T5: -50 ≤ Ta ≤ 75