



**DK**

**ADVARSEL**

Følgende operationer bør kun udføres på modulet i spændingsløs tilstand og under ESD-sikre forhold. Installation, ledningsmontage og -demontage. Fejlfinding 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.

**SIKKERHEDSREGLER**

**Modtagelse og udpakning**  
Udpak modulet uden at beskadige det. Kontrollér ved modtagelsen, at modultypen svarer til den bestillede. 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 bekendte med de tekniske udtryk, advarsler og instruktioner i installationsvejledningen, og som vil følge disse. 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 bl.a. med hensyn til ledningsværnsnit, for-sikring og placering. Beskrivelse af indgang/udgangsforsyningsforbindelser findes i produktmanualen, som kan hentes på www.prellectronics.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.

**Rengøring**

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

**PC-programmering af SYSTEM 5300**

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 tilslutning af forsyningsspænding, idet kommunikationsinterface leverer nødvendig forsyning til opsettningen. Kommunikationsinterface er galvanisk isoleret, så PC'ens port er optimalt beskyttet. Kommunikationen er 2-vejs, så modulets opsettning kan hentes ind i PC'en, og opsettningen i PC'en kan sendes til modulet. For de brugere, der ikke selv vil foretage opsettning, kan modulet leveres konfigureret efter oplyst specifikation: indgangstyp, måleområde, følerlejsdetektering og udgangssignal.

**Elektriske specifikationer**

Specifikationsområde.....	-40°C til +85°C
Forsyningsspænding, 5333A & 5343A .....	8,0...35 VDC
Internt effekttab, 5333A & 5343A .....	25 mW...0,8 W
Forsyningsspænding, 5333D & 5343B .....	8,0...30 VDC
Internt effekttab, 5333D & 5343B .....	25 mW...0,7 W
Kalibreringstemperatur .....	20...28°C
Relativ fugtighed .....	< 95% RH (ikke kond.)
Mål .....	Ø44 x 20,2 mm
Kapslingsklasse (hus/klemme).....	IP68 / IP00

**Indgangstyper:**

*Pt100 .....	-200°C...+850°C
*Ni100 .....	-60°C...+250°C
Lin. R, 5333 .....	0 Ω...10000 Ω
Lin. R, 5343 .....	0 Ω...100 kΩ

**Strømodgang:**

Signalområde .....	4...20 mA
Min. signalområde .....	16 mA
Belastningsmodstand, Ω .....	≤ (Vforsyn-8,0 V)/0,023

**Godkendelser:**

DNV-GL, Ships & Offshore.....	Stand. f. Certific. No. 2.4
EAC .....	TR-CU 020/2011
EAC Ex .....	TR-CU 012/2011

**Overholdte myndighedskrav:**

EMC .....	2014/30/EU
ATEX .....	2014/34/EU
RoHS .....	2011/65/EU

\* Gælder kun 5333

**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.

**WARNING**

Do not use the Loop Link programming interface to program the units in Ex area. For installation in classified area the modules 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. 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, i.e. wire cross section, protective fuse, and location. Descriptions of input / output and supply connections are shown in the product manual found on www.prellectronics.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 5300**

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**

Specifications range.....	-40°C to +85°C
Supply voltage, 5333A & 5343A .....	8,0...35 VDC
Internal power dissipation, 5333A & 5343A .....	25 mW...0,8 W
Supply voltage, 5333D & 5343B .....	8,0...30 VDC
Internal power dissipation, 5333D & 5343B .....	25 mW...0,7 W
Calibration temperature .....	20...28°C
Relative humidity .....	< 95% RH (non-cond.)
Dimensions .....	Ø44 x 20,2 mm
Protection degree (encl./terminal).....	IP68 / IP00

**Input types:**

*Pt100 .....	-200°C...+850°C
*Ni100 .....	-60°C...+250°C
Lin. R, 5333 .....	0 Ω...10000 Ω
Lin. R, 5343 .....	0 Ω...100 kΩ

**Current output:**

Signal range .....	4...20 mA
Min. signal range .....	16 mA
Load resistance, Ω .....	≤ (Vsupply-8,0 V)/0,023

**Approvals:**

DNV-GL, Ships & Offshore.....	Stand. f. Certific. No. 2.4
EAC .....	TR-CU 020/2011
EAC Ex .....	TR-CU 012/2011

**Observed authority requirements:**

EMC .....	2014/30/EU
ATEX .....	2014/34/EU
RoHS .....	2011/65/EU

\* Only applies to 5333

**FR**

**AVERTISSEMENT**

Les opérations suivantes doivent être effectuées avec le module débranché et dans un environnement exempt de décharges électrostatiques (ESD): montage général, raccordement et débranchement de fils et recherche de pannes sur le module. Seule PR electronics SARL est autorisée à réparer le module.

**AVERTISSEMENT**

Ne pas utiliser le kit de programmation "Loop Link" en zone classée dangereuse Ex. Pour des installations en zone classée, les modules doivent être montés conformément aux plans appropriés.

**CONSIGNES DE SECURITE**

**Réception et déballage**  
Déballer le module sans l'endommager. Il est recommandé de conserver l'emballage du module tant que ce dernier n'est pas définitivement monté. A la réception du module, vérifiez que le type de module reçu correspond à celui que vous avez commandé.

**Environnement**

N'exposez pas votre module aux rayons directs du soleil et choisissez un endroit à humidité modérée et à l'abri de la poussière, des températures élevées, des chocs et des vibrations mécaniques et de la pluie. Le cas échéant, des systèmes de ventilation permettent d'éviter qu'une pièce soit chauffée au-delà des limites prescrites pour les températures ambiantes.

**Montage**

Il est conseillé de réserver le raccordement du module aux techniciens qualifiés qui connaissent les termes techniques, les avertissements et les instructions de ce guide et qui sont capables d'appliquer ces dernières. Si vous avez un doute quelconque quant à la manipulation du module, veuillez contacter votre distributeur local. Vous pouvez également vous adresser à PR electronics SARL. Le montage et le raccordement du module doivent être conformes à la législation nationale en vigueur pour le montage de matériaux électriques, par exemple, diamètres des fils, fusibles de protection et implantation des modules. Les connexions des alimentations et des entrées / sorties sont décrites dans le manuel du produit sur www.prellectronics.fr.

**Etalonnage et réglage**

Lors des opérations d'étalonnage et de réglage, il convient d'éviter les mesures et les connexions des tensions externes en respectant les spécifications mentionnées dans ce guide. Les techniciens doivent utiliser des outils et des instruments pouvant être manipulés en toute sécurité.

**Maintenance et entretien**

Une fois le module hors tension, prenez un chiffon imbibé d'eau distillée pour le nettoyer.

**Programmation par PC du SYSTEM 5300**

Le module peut être programmé en fonction d'une application donnée à partir d'un PC et le kit de programmation Loop Link de PR electronics A/S. Le module peut être programmé sans être alimenté car l'interface de communication fournit l'alimentation nécessaire pour la configuration. L'interface de communication est dotée d'une isolation galvanique pour protéger le port du PC. La communication est bidirectionnelle. Cela permet non seulement la programmation du module mais également la récupération d'une configuration existante ainsi que la lecture du numéro de série et du repère. Le module peut être livré déjà programmé, si l'utilisateur le souhaite.

**Spécifications**

Plage de température.....	-40°C à +85°C
Tension d'alimentation, 5333A & 5343A .....	8,0...35 Vcc
Puissance dissipée, 5333A & 5343A .....	25 mW...0,8 W
Tension d'alimentation, 5333D & 5343B .....	8,0...30 Vcc
Puissance dissipée, 5333D & 5343B .....	25 mW...0,7 W
Température d'étalonnage... ..	20...28°C
Humidité relative .....	< 95% HR (sans cond.)
Dimensions .....	Ø44 x 20,2 mm
Degré de protection (boîtier/bornier).....	IP68 / IP00

**Types d'entrée:**

*Pt100 .....	-200°C...+850°C
*Ni100 .....	-60°C...+250°C
Résistance linéaire, 5333 .....	0 Ω...10000 Ω
Résistance linéaire, 5343 .....	0 Ω...100 kΩ

**Sortie courant:**

Gamme de signal.....	4...20 mA
Plage de signal min.....	16 mA
Résistance de charge, Ω .....	≤ (Valim-8,0 V)/0,023

**Approbations:**

DNV-GL, Ships & Offshore.....	Stand. f. Certific. No. 2.4
EAC .....	TR-CU 020/2011
EAC Ex .....	TR-CU 012/2011

**Compatibilité avec les normes:**

CEM .....	2014/30/EU
ATEX .....	2014/34/EU
RoHS .....	2011/65/EU

\* Uniquement applicable pour 5333

**DE**

**WARNUNG**

Folgende Maßnahmen sollten nur in spannungslosem Zustand des Gerätes und unter ESD-sicheren Verhältnissen durchgeführt werden: Installation, Montage und Demontage von Leitungen. Fehlersuche im Gerät und Reparaturen des Gerätes dürfen nur von PR electronics A/S vorgenommen werden.

**WARNUNG**

Benutzen Sie die Programmierschnittstelle Loop Link nicht im Ex Bereich. Zur Montage in klassifizierten Zonen müssen die Geräte nach den dazugehörigen Einbauzeichnungen installiert werden.

**SICHERHEITSGEDELN**

**Empfang und Auspacken**  
Packen Sie das Gerät aus, ohne es zu beschädigen, und kontrollieren Sie beim Empfang, ob der Gerätetyp Ihrer Bestellung entspricht. Die Verpackung sollte beim Gerät bleiben, bis dieses am endgültigen Platz montiert ist.

**Umgebungsbedingungen**

Direkte Sonneneinstrahlung, starke Staubentwicklung oder Hitze, mechanische Erschütterungen und Stöße sind zu vermeiden; das Gerät darf nicht Regen oder starker Feuchtigkeit ausgesetzt werden. Bei Bedarf muss eine Erwärmung, welche die angegebenen Grenzen für die Umgebungstemperatur überschreitet, mit Hilfe eines Kühlgebläses verhindert werden.

**Installation**

Das Gerät darf nur von qualifizierten Technikern angeschlossen werden, die mit den technischen Ausdrücken, Warnungen und Anweisungen in dieser Installationsanleitung vertraut sind und diese befolgen. Sollten Zweifel bezüglich der richtigen Handhabung des Gerätes bestehen, sollte man mit dem Händler vor Ort Kontakt aufnehmen. Sie können aber auch direkt mit PR electronics GmbH Kontakt aufnehmen.

Die Installation und der Anschluss des Gerätes haben in Übereinstimmung mit den geltenden Regeln des jeweiligen Landes bez. der Installation elektrischer Apparaturen zu erfolgen, u.a. bezüglich Leitungsquerschnitt, (elektrischer) Vor-Absicherung und Positionierung. Eine Beschreibung von Eingangs- / Ausgangs- und Versorgungsanschlüssen befindet sich im Produkthandbuch, das unter www.prellectronics.de gefunden und abgerufen werden kann.

**Kalibrierung und Justierung**

Während der Kalibrierung und Justierung sind die Messung und der Anschluss externer Spannungen entsprechend dieser Installationsanleitung auszuführen, und der Techniker muss hierbei sicherheitsmäßig einwandfreie Werkzeuge und Instrumente benutzen.

**Reinigung**

Das Gerät darf in spannungslosem Zustand mit einem Lappen gereinigt werden, der mit destilliertem Wasser leicht angefeuchtet ist.

**PC-Programmierung des Systems 5300**

Das Gerät wird für die jeweilige Aufgabe mit Hilfe eines PCs und PR electronics A/S Kommunikations-schnittstelle Loop Link konfiguriert. Es ist möglich, das Gerät sowohl mit als auch ohne angeschlossene Versorgungsspannung zu konfigurieren, da die Kommunikationsschnittstelle die notwendige Versorgung für die Einstellung liefert. Die Kommunikationsschnittstelle ist galvanisch isoliert, sodass der Anschluss des PCs optimal geschützt ist. Die Kommunikation erfolgt in beiden Richtungen, sodass die Einstellung des Gerätes in den PC geholt, und die Einstellung im PC an das Gerät gesandt werden kann. Für diejenigen Anwender, welche die Einstellung nicht selbst vornehmen wollen, kann das Gerät nach folgenden Kundenspezifikationen konfiguriert geliefert werden: Eingangstyp, Messbereich, Fehlerföhererkennung und Ausgangssignal.

**Elektrische Daten**

Spezifikationsbereich.....	-40°C bis +85°C
Versorgungsspannung, 5333A & 5343A .....	8,0...35 VDC
Verlustleistung, 5333A & 5343A .....	25 mW...0,8 W
Versorgungsspannung, 5333D & 5343B .....	8,0...30 VDC
Verlustleistung, 5333D & 5343B .....	25 mW...0,7 W
Kalibrierungstemperatur.....	20...28°C
Luftfeuchtigkeit .....	< 95% RF (nicht kond.)
Maß .....	Ø44 x 20,2 mm
Schutzart (Gehäuse / Anschluss).....	IP68 / IP00

**Eingangstypen:**

*Pt100 .....	-200°C...+850°C
*Ni100 .....	-60°C...+250°C
Lin. R, 5333 .....	0 Ω...10000 Ω
Lin. R, 5343 .....	0 Ω...100 kΩ

**Stromausgang:**

Signalbereich .....	4...20 mA
Min. Signalbereich .....	16 mA
Belastungswiderstand, Ω .....	≤ (Vversor-8,0 V)/0,023

**Zulassungen:**

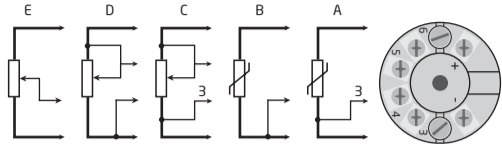
DNV-GL, Ships & Offshore.....	Stand. f. Certific. No. 2.4
EAC .....	TR-CU 020/2011
EAC Ex .....	TR-CU 012/2011

**Eingehaltene Behördenvorschriften:**

EMV .....	2014/30/EU
ATEX .....	2014/34/EU
RoHS .....	2011/65/EU

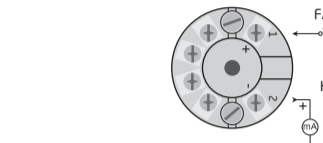
\* Gilt nur für 5333

(DK) Indgangssignaler (UK) Input signals (FR) Signaux d'entrée (DE) Eingangssignale



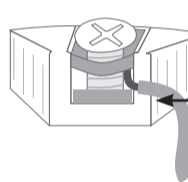
	DK	UK	FR	DE	5333	5343
A	RTD, 3-leder	RTD, 3-wire	RTD, 3-fils	WTH, 3-Leiter	x	
B	RTD, 2-leder	RTD, 2-wire	RTD, 2-fils	WTH, 2-Leiter	x	
C	Modstand, 3-leder	Resistance, 3-wire	Résistance, 3-fils	Widerstand, 3-Leiter	x	x
D	Modstand, 2-leder	Resistance, 2-wire	Résistance, 2-fils	Widerstand, 2-Leiter	x	x
E	Potentiometer, 3-leder	Potentiometer, 3-wire	Potentiomètre, 3-fils	Potentiometer, 3-Leiter		x

(DK) Udgangssignaler (UK) Output signals (FR) Signaux de sortie (DE) Ausgangssignale

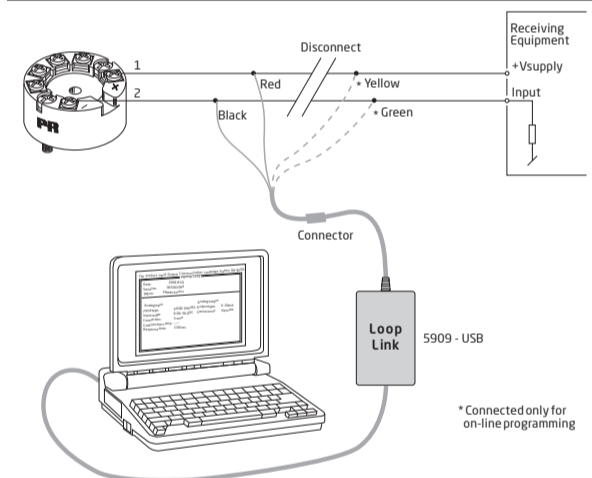


	DK	UK	FR	DE	5333A	5333D	5343A	5343B
F	Forsyning + 8,0...35 VDC	Supply + 8,0...35 VDC	Alimentation + 8,0...35 Vcc	Versorgung + 8,0...35 VDC	x		x	
G	Forsyning + 8,0...30 VDC	Supply + 8,0...30 VDC	Alimentation + 8,0...30 Vcc	Versorgung + 8,0...30 VDC		x		x
H	4...20 mA udgang	4...20 mA output	Sortie 4...20 mA	4...20 mA-Ausgang	x	x	x	x

- (DK) Mekaniske specifikationer.
- (UK) Mechanical specifications.
- (FR) Dimensions mécaniques.
- (DE) Abmessungen.



- (DK) **Montering af følerledninger**  
Ledninger monteres mellem metalplader. Ledningskvadrat (max.) 1 x 1,5 mm<sup>2</sup> flerleket ledning. Klemeskruetøjsspændingsmoment 0,4 Nm.
- (UK) **Mounting of sensor wires**  
Wires must be mounted between the metal plates. Max. wire size 1 x 1.5 mm<sup>2</sup> stranded wire. Screw terminal torque 0.4 Nm.
- (FR) **Montage des fils du capteur**  
Les fils doivent être montés entre les plaques métalliques. Taille max. des fils 1 x 1,5 mm<sup>2</sup> fils multibrins. Pression max. avant déformation de la vis 0,4 Nm.
- (DE) **Montage von Föhlerleitungen**  
Die Leitungen müssen zwischen den Metallplatten montiert werden. Leitungsquerschnitt (max.) 1 x 1,5 mm<sup>2</sup> Litzen draht. Klemmschraubenanzugsmoment 0,4 Nm.



- (DK) Loop Link er et kommunikationsinterface, der er nødvendigt for programmering af PRetop 53xx. Loop Link må ikke benyttes til kommunikation med moduler installeret i Ex-område.
- (UK) Loop

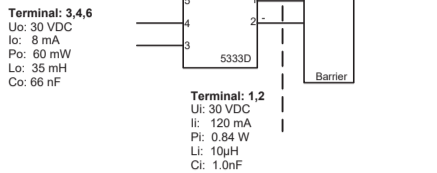
## ATEX Installation drawing 5333QA01-V2R0

For safe installation of 5333D 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 KEMA 03ATEX 1535 X  
 Marking II 1 G Ex ia IIC T4...T6 Ga  
 II 1 D Ex ia IIIC Da  
 II 1 M Ex ia I Ma  
 Standards EN 60079-0 : 2012, EN 60079-11 : 2012, EN 60079-26 : 2007, EN 60079-15 : 2010

Hazardous area Zone 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:  $-40 \leq T_a \leq 60^\circ\text{C}$



### Installation notes

In a potentially explosive gas atmosphere, the transmitter shall be mounted in an enclosure in order to provide a degree of protection of at least IP20 according to EN60529.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment of category 1 G, 1 M or 2 M, 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 enclosure is made of non-metallic materials, electrostatic charging shall be avoided.

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

The transmitter shall be mounted in a metal enclosure form B that is providing a degree of protection of at least IP6X according to EN60529, 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.

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

## ATEX Installation drawing 5333QA02-V2R0

For safe installation of 5333A 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 KEMA 10ATEX 0003X  
 Marking 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  
 Standards EN 60079-0 : 2012, EN 60079-11 : 2011, EN 60079-15 : 2010

T4:  $-40 \leq T_a \leq 85^\circ\text{C}$   
 T6:  $-40 \leq T_a \leq 60^\circ\text{C}$

Terminal: 3,4,6 Uo: 30 VDC  
 Io: 8 mA  
 Po: 60 mW  
 Lo: 900 mH  
 Co: 1000  $\mu\text{F}$

Terminal: 1,2 Uo: 5V  
 Io: 4.0 mA  
 Po: 20 mW  
 Lo: 900 mH  
 Co: 1000  $\mu\text{F}$

### Special conditions for safe use

For type of protection Ex nA, the transmitter shall be mounted in a metal enclosure providing a degree of protection of at least IP54 according to EN60529.

For use in the presence of combustible dusts the transmitter shall be mounted in an enclosure providing a degree of protection of at least IP6X in accordance with EN60529, the surface temperature of the outer enclosure is 20 K above the ambient temperature

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.

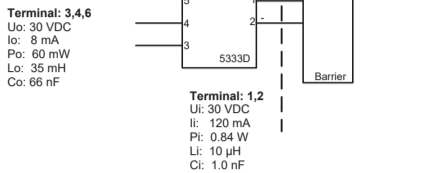
## IECEx Installation drawing 5333QI01-V1R0

For safe installation of 5333D 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:  $-40 \leq T_a \leq 45^\circ\text{C}$



### 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.

## IECEx Installation drawing 5333QI02-V1R0

For safe installation of 5333A 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  
 Ex ic IIC T6...T4 Gc  
 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 <sub>max</sub> = 35V	U <sub>i</sub> : 35V, I <sub>i</sub> :110mA, I <sub>i</sub> :10 $\mu\text{H}$ , C <sub>i</sub> :1,0nF
3,4,6	U <sub>o</sub> : 5V, I <sub>o</sub> : 4mA, P <sub>o</sub> : 20mW, L <sub>o</sub> : 900mH, C <sub>o</sub> : 1000 $\mu\text{F}$	

### Installation note:

For installation in a potentially explosive gas atmosphere, the following instructions apply:  
 For nA installation the transmitter must be installed in a metal enclosure e.g. a form B enclosure, providing a degree of protection of at least IP54 according to IEC60529 that is suitable for the application and correctly installed or in an enclosure with type of protection Ex n or Ex e.  
 For intrinsically safe 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.

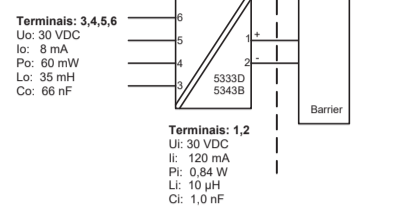
## Desenho de Instalação InMETRO 5333QB01-V2R0

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, diretivas e padrões que se aplicam a esta área. Ano de fabricação pode ser pego dos dois primeiros dígitos do número de série.

Certificado DEKRA 16.0014 X  
 Marcas Ex ia IIC T6...T4 Ga  
 Ex ia IIIC Da  
 Normas ABNT NBR IEC 60079-0 : 2013;  
 ABNT NBR IEC 60079-11 : 2013

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



### Notas de Instalação

Em uma atmosfera de gás potencialmente explosiva, o transmissor deve ser montado em um invólucro de metal forma B de acordo com a proteção de nível Ga e se o invólucro 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 invólucro é feito de materiais não metálicos, cargas eletroestáticas devem ser evitadas. Se o invólucro é feito de materiais não metálicos, cargas eletroestáticas devem ser evitadas.

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 de avaria rara, fontes de ignição devido a impacto e fricção, faíscas são eliminadas; Se o invólucro é feito de materiais não metálicos, cargas eletroestáticas devem ser evitadas. 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:

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 e instalado corretamente.

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 invólucro é igual à temperatura ambiente mais de 20 K, por uma camada de pó, com uma espessura até 5 mm.

## Desenho de Instalação InMETRO 5333QB02-V2R0

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, diretivas e padrões que se aplicam a esta área. Ano de fabricação pode ser pego dos dois primeiros dígitos do número de série.

Certificado DEKRA 16.0014 X

Marcas Ex nA [ic] IIC T6...T4 Gc  
 Ex ic IIC T6...T4 Gc  
 Ex ic IIIC Dc  
 Normas ABNT NBR IEC 60079-0 : 2013;  
 ABNT NBR IEC 60079-11 : 2013  
 ABNT NBR IEC60079-15 : 2012

Terminais	Ex nA [ic]	Ex ic
1,2	U <sub>i</sub> $\leq$ 35V	U <sub>i</sub> : 35 V, I <sub>i</sub> :110 mA, I <sub>i</sub> :10 $\mu\text{H}$ , C <sub>i</sub> :1,0 nF
3,4,6	U <sub>o</sub> : 5 V, I <sub>o</sub> : 4 mA, P <sub>o</sub> : 20 mW, L <sub>o</sub> : 900 mH, C <sub>o</sub> : 1000 $\mu\text{F}$	

### 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 invólucro de metal, por exemplo, gabinete em forma B que forneça um grau de proteção de pelo menos IP54 de acordo com 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 de IP20, pelo menos, de acordo com a norma ABNT NBR IEC 60529. E o invólucro deve 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, se aplicam as instruções a seguir:

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 e instalado corretamente.

As entradas dos cabos e os elementos de obturação que podem ser utilizados são adequados para a aplicação 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 até 5 mm.

## FM Installation Drawing 5300Q502 V2R0

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

Hazardous (Classified) Location Class I, Division1, Groups, A,B,C,D T4..T6  
 Class I, Zone 0, AEx ia IIC T4..T6

Ambient temperature limits  
 T4:  $-40 \leq T_a \leq 85^\circ\text{C}$   
 T6:  $-40 \leq T_a \leq 60^\circ\text{C}$

Terminal 1, 2  
 V<sub>max</sub> or U<sub>i</sub>: 30 V  
 I<sub>max</sub> or I<sub>i</sub>: 120 mA  
 P<sub>max</sub> or P<sub>i</sub>: 0.84 W  
 C<sub>i</sub>: 1 nF  
 L<sub>i</sub>: 10  $\mu\text{H}$

### Model 5335D, 5337D

Hazardous (Classified) Location Class I, Division1, Groups, A,B,C,D T4..T6  
 Class I, Zone 0, AEx ia IIC T4..T6

Ambient temperature limits  
 T4:  $-40 \leq T_a \leq 85^\circ\text{C}$   
 T6:  $-40 \leq T_a \leq 60^\circ\text{C}$

Terminal 1, 2  
 V<sub>max</sub> or U<sub>i</sub>: 30 V  
 I<sub>max</sub> or I<sub>i</sub>: 120 mA  
 P<sub>max</sub> or P<sub>i</sub>: 0.84 W  
 C<sub>i</sub>: 1 nF  
 L<sub>i</sub>: 10  $\mu\text{H}$

### 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<sub>i</sub>(V<sub>MAX</sub>) and current I<sub>i</sub>(I<sub>MAX</sub>), and maximum power P<sub>i</sub>(P<sub>MAX</sub>), which the device can receive and remain intrinsically safe, must be equal to or greater than the voltage (U<sub>o</sub> or V<sub>OC</sub> or V<sub>t</sub>) and current (I<sub>o</sub> or I<sub>SC</sub> or I<sub>t</sub>) and the power P<sub>o</sub> which can be delivered by the barrier.

The sum of the maximum unprotected capacitance (C<sub>i</sub>) for each intrinsically device and the interconnect-ing wiring must be less than the capacitance (C<sub>a</sub>) which can be safely connected to the barrier.

The sum of the maximum unprotected inductance (L<sub>i</sub>) for each intrinsically device and the interconnecting wiring must be less than the inductance (L<sub>a</sub>) which can be safely connected to the barrier.

The entity parameters U<sub>o</sub>,V<sub>OC</sub> or V<sub>t</sub> and I<sub>o</sub>,I<sub>SC</sub> or I<sub>t</sub>, and C<sub>a</sub> and L<sub>a</sub> for barriers are provided by the barrier manufacturer.

### NI Field Circuit Parameters

#### Model 5331D, 5333D, 5335D, 5337D and 5343B

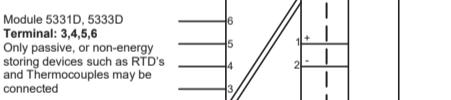
Hazardous (Classified) Location Class I, Division2, Groups, A,B,C,D T4..T6  
 Class I, Zone 2, IIC T4..T6

Ambient temperature limits  
 T4:  $-40 \leq T_a \leq 85^\circ\text{C}$   
 T6:  $-40 \leq T_a \leq 60^\circ\text{C}$

Terminal 1, 2  
 V<sub>max</sub>: 35 V  
 C<sub>i</sub>: 1.0 nF  
 L<sub>i</sub>: 10  $\mu\text{H}$

## CSA Installation drawing 533XQC03 – V4R0

Hazardous area Zone 0, 1, 2, 20, 21, 22  
 T4:  $-40 \leq T_a \leq 85^\circ\text{C}$   
 T6:  $-40 \leq T_a \leq 60^\circ\text{C}$



Module 5331D, 5333D  
 Terminal: 3,4,5,6  
 U<sub>o</sub>: 9.6 VDC  
 I<sub>o</sub>: 28 mA  
 P<sub>o</sub>: 67.2 mW  
 L<sub>o</sub>: 35 mH  
 C<sub>o</sub>: 2.5 $\mu\text{F}$

Terminal: 1,2  
 U<sub>i</sub>: 30 VDC  
 I<sub>i</sub>: 120 mA  
 P<sub>i</sub>: 0.84 W  
 L<sub>i</sub>: 10  $\mu\text{H}$   
 C<sub>i</sub>: 1.0nF

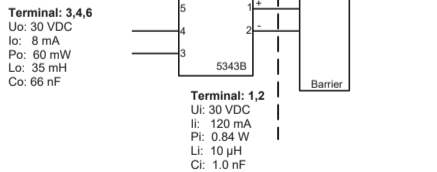
## ATEX Installation drawing 5343QA01-V2R0

For safe installation of 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.

ATEX Certificate KEMA 03ATEX 1538 X  
 Marking II 1 G Ex ia IIC T4...T6 Ga  
 II 1 D Ex ia IIIC Da  
 II 1 M Ex ia I Ma  
 Standards EN 60079-0 : 2012, EN 60079-11 : 2012, EN 60079-26 : 2007

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

T4:  $-40 \leq T_a \leq 85^\circ\text{C}$   
 T6:  $-40 \leq T_a \leq 60^\circ\text{C}$



### Installation notes

In a potentially explosive gas atmosphere, the transmitter shall be mounted in an enclosure in order to provide a degree of protection of at least IP20 according to EN60529.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment of category 1 G, 1 M or 2 M, 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 enclosure is made of non-metallic materials, electrostatic charging shall be avoided.

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

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 EN60529, 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.

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.

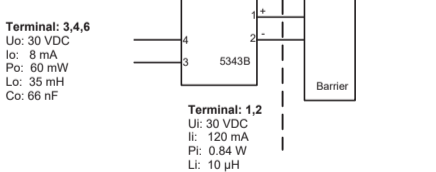
## IECEx Installation drawing 5343QI01-V1R0

For safe installation of 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 IIIC 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:  $-40 \leq T_a \leq 45^\circ\text{C}$



### 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.

## ATEX Installation drawing 5343QA02-V2R0

For safe installation of 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.

ATEX Certificate KEMA 10ATEX 0004X  
 Marking