EU Declaration of Conformity and safety instructions

EU Conformiteitsverklaring en veiligheidsinstructies

UNIGAS 300

Wigersma & Sikkema

Since 1921

Explosion safety instructions (Ex)

(EN)

UNIGAS 300 is approved for use in potentially explosive atmospheres according to group II, category 1 where an explosive atmosphere is likely to occur through the presence of mixtures of air and gas, while the explosive atmosphere is present continuously or for long periods or frequently.

UNIGAS 300 is also approved for use in non-explosive atmospheres where the inputs of UNIGAS 300 may be connected with sensors placed in the potentially explosive atmosphere and where the outputs of UNIGAS 300 may be connected with other equipment in the non-explosive atmosphere without the use of intrinsically safe barriers.

The type of protection complies with the requirements of intrinsic safety.

The approval data are:

II 1 G Ex ia IIC T4 Ga

II (1) G [Ex ia Ga] IIC

The ambient temperature Ta is defined as:

Ta= -40 to +55 °C

The instructions for use must be read and understood completely before UNIGAS 300 is installed and taken into operation. These instructions (*DDG6004MHGB*) can be found on the website of Wigersma & Sikkema. If there should be any questions or ambiguities with regard to explosion safety in connection with UNIGAS 300, then please contact Wigersma & Sikkema (see the information at the back of this manual).

Special approval data:

1. Since the UNIGAS 300 housing is made of aluminium, when used in a potentially explosive atmosphere to which the use of equipment of category 1 G applies, installation must take place in such a manner that, even in the event of extraordinary incidents, it is prevented that ignition sources can develop that result from impact or friction with the housing
2. When using UNIGAS 300 in a potentially explosive atmosphere to which the use of equipment according to category 1 G applies, measures must be taken to prevent ignition due to electrostatic charges.
3. For the version with external pressure sensor, with a view to explosion safety, it must be taken into account that the pressure sensor circuit is connected to earth.

Additional instructions with regard to explosion safety:

1. Always prevent moisture from entering the housing when it has been opened.
2. On closing the housing, carefully check that the cover seal fits closely with the housing over the full edge. Also check that the two screws in the cover are placed and tightened.
3. When installed in a potentially explosive atmosphere, all connections with cables that carry signals to a space outside the potentially explosive atmosphere, must be fitted with intrinsically safe barriers that are carefully chosen and installed.
4. Only genuine batteries of type G8610070000(T)(E) or G8610080000 supplied by Wigersma & Sikkema can be used to replace the battery. Replacing can take place in a potentially explosive atmosphere. See chapter 8 of manual *DDG6004MHGB* for additional information.

Explosieveiligheidsinstructies (Ex)

(NL)

UNIGAS 300 is toegelaten voor gebruik in explosiegevaarlijke omgevingen volgens groep II, categorie 1 waarvan het waarschijnlijk is dat deze door aanwezigheid van mengsels van lucht en gas explosief worden en waarbij de explosieve omgeving voortdurend, langdurig of dikwijls bestaat.

UNIGAS 300 is tevens toegelaten voor gebruik in niet-explosiegevaarlijke omgevingen waarbij de ingangen van UNIGAS 300 verbonden mogen worden met sensoren die zich in de explosiegevaarlijke omgeving bevinden en waarbij de uitgangen van UNIGAS 300 verbonden mogen worden met andere apparatuur in de niet-explosiegevaarlijke omgeving zonder toepassing van intrinsiek veilige barrières.
De beschermingswijze is volgens intrinsieke veiligheid.

De gegevens van de toelating luiden:

II 1 G Ex ia IIC T4 Ga

II (1) G [Ex ia Ga] IIC

De omgevingstemperatuur Ta is vastgelegd op:

Ta= -40 tot +55 °C.

Voordat de UNIGAS300 geïnstalleerd en in gebruik genomen wordt dient de gebruiksaanwijzing (*DDG6004MHNL*) volledig gelezen en begrepen te worden.
Deze gebruiksaanwijzing is te downloaden Website van Wigersma & Sikkema. Indien er vragen of onduidelijkheden bestaan ten aanzien van explosieveiligheid in samenhang met UNIGAS 300 neem dan contact op met Wigersma & Sikkema (zie gegevens op achterzijde van deze gebruiksaanwijzing).

Speciale gegevens van de toelating:

1. Omdat de behuizing van UNIGAS 300 gemaakt is van aluminium dient, bij toepassing in een explosiegevaarlijke omgeving waarvoor toepassing van apparatuur volgens categorie 1 G geldt, de installatie op een dusdanige wijze plaats te vinden dat, zelfs bij uitzonderlijke incidenten, voorkomen wordt dat ontstekingsbronnen kunnen ontstaan als gevolg van inslag en wrijving met de behuizing.
2. Bij toepassing van UNIGAS 300 in een explosiegevaarlijke omgeving waarvoor toepassing van apparatuur volgens categorie 1 G geldt, dienen maatregelen genomen te worden om ontsteking door elektrostatische lading te voorkomen.
3. Bij de uitvoering met externe druksensor dient er rekening mee gehouden te worden dat, gezien vanuit explosieveiligheid, het circuit van de druksensor verbonden is met aarde.

Aanvullende instructies ten aanzien van explosieveiligheid:

1. Als de behuizing is geopend dient vermeden te worden dat er vocht in de behuizing komt.
2. Bij het sluiten van de behuizing dient zorgvuldig gecontroleerd te worden of de afdichtrand van de deksel over de volle omtrek goed aansluit op de behuizing. Ook dient gecontroleerd te worden of de twee schroeven in de deksel aanwezig zijn en zijn vastgezet.
3. Bij plaatsing in een explosiegevaarlijke omgeving dienen alle aansluitingen die door middel van kabels signalen voeren naar een plaats buiten de explosiegevaarlijke omgeving, voorzien te zijn van deugdelijk gekozen en geïnstalleerde intrinsiek veilige barrières.
4. Bij vervanging van de batterij mogen alleen originele en door Wigersma & Sikkema geleverde batterijen van het type G8610070000(T)(E) of G8610080000 toegepast worden. Het vervangen mag plaatsvinden in een explosiegevaarlijke omgeving. Zie hoofdstuk 8 van handleiding *DDG6004MHNL* voor aanvullende informatie.

Explosion safety instructions (Ex) (EN) Continued

5. All cables connected to the UNIGAS 300 must be stripped as short as possible and fixed thoroughly using cable glands. Unused cable glands must be sealed using the supplied blank plugs that must be fixed thoroughly.
6. Cables must only be fed through cable glands intended for that purpose, see figure 1.
7. The transparent synthetic covers of the inputs and outputs must be in place, see figure 1.
8. The shield of the shielded cable must securely be connected to the cable gland. See chapter 4 of manual *DDG6004MHGB*, Installation, and chapter 7.2, Replacing the pressure sensor or the temperature sensor of manual *DDG6004MHGB*.
9. When replacing a pressure sensor or a temperature sensor, all electrical cables connected with the appliance as well as the battery must be uncoupled.
10. If an external power supply is connected, it must be Ex certified and be in accordance with the Ex specifications of the connections. See chapter 11, Technical specifications of manual *DDG6004MHGB*.
11. External power supply and battery power can be used simultaneously.
12. If UNIGAS 300 is installed in a potentially explosive atmosphere, the front of the housing must be cleaned by only using a damp cloth to prevent generation of static electricity.
13. In the event of a malfunction, UNIGAS 300 must be repaired by Wigersma & Sikkema.

Explosieveiligheidsinstructies (Ex) (NL) Vervolg

5. Alle bekabeling die tijdens het installeren van UNIGAS 300 wordt aangesloten op UNIGAS 300 dient zo kort als mogelijk te worden gestript en deugdelijk te worden vastgezet door middel van de kabeldoorvoerwartels. Kabeldoorvoerwartels die niet worden gebruikt dienen afgesloten te zijn met de meegeleverde blindstoppen die deugdelijk dienen te worden vastgezet.
6. De bekabeling mag alleen door de kabeldoorvoerwartels worden gevoerd die bestemd zijn voor dat doel, zie figuur 1.
7. De transparante kunststof afdekkappen van de in- en uitgangen dienen aanwezig te zijn, zie figuur 1.
8. De afscherming van de kabel dient deugdelijk te worden verbonden met de kabeldoorvoerwartel. Zie hoofdstuk 4, Installatie, en hoofdstuk 7.2, Vervangen van de druk- of temperatuursensor van handleiding *DDG6004MHNL*.
9. Bij het vervangen van een druksensor of een temperatuursensor dienen alle elektrische verbindingen die door middel van kabels met het apparaat zijn verbonden en de batterij los te worden genomen.
10. Indien een externe voeding wordt aangesloten dient deze Ex-gecertificeerd te zijn en overeen te komen met de Ex-specificaties van de aansluiting. Zie hoofdstuk 11, Technische specificatie van handleiding *DDG6004MHNL*.
11. Externe voeding en batterijvoeding mogen gelijktijdig worden toegepast.
12. Indien UNIGAS 300 is geplaatst in een explosiegevaarlijke omgeving mag het voorfront van de behuizing alleen worden schoongemaakt met een vochtige doek, dit ter voorkoming van het opwekken van statische elektriciteit.
13. Bij een defect dient UNIGAS 300 door Wigersma & Sikkema gerepareerd te worden.

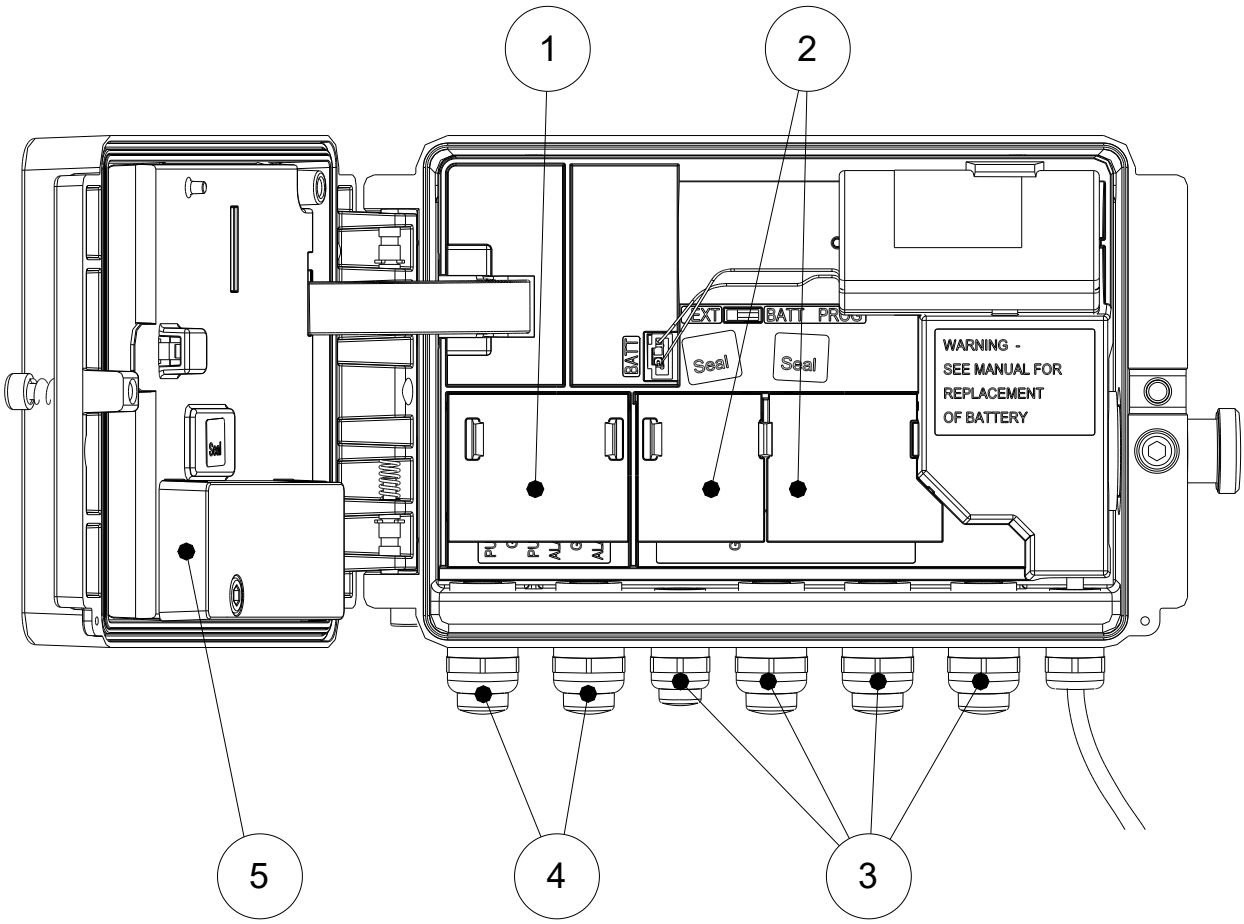

Figure 1. Covers and cable glands for inputs and outputs
Figuur 1. Afdekkappen en kabeldoorvoerwartels voor in- en uitgangen

1:	cover outputs	1:	afdekkap uitgangen
2:	cover inputs	2:	afdekkap ingangen
3:	cable glands for inputs	3:	kabeldoorvoerwartels voor ingangen
4:	cable glands for outputs	4:	kabeldoorvoerwartels voor uitgangen
5:	cover of module space	5:	afdekkap moduleruimte

EU-Declaration of Conformity

EU-conformiteitsverklaring / EU-Konformitätserklärung

We
(Wij / Wir)

Manufacturer (Fabrikant / Hersteller)	**Wigersma & Sikkema B.V.**
Address (Adres / Adresse)	**Leigraafseweg 4** **6983 BP DOESBURG**
Country (Land / Land)	**The Netherlands** (Nederland / Niederlande)

declare under our sole responsibility that the beneath mentioned product
(verklaren onder volledige eigen verantwoordelijkheid dat het hieronder beschreven product / erklären in alleiniger Verantwortung, dass das untern genannte Produkt)

Product name (productnaam / Produktname)	**UNIGAS 300**
Description (Beschrijving / Beschreibung)	**electronic volume conversion device** (elektronisch volumeherleidingsinstrument / elektronische Zustandsmengenumwerter)
Producttype (Product type / Produkt Typ)	**UNIGAS 300 model PTZ, model TZ, model PT en model T**

is in accordance with the following directives
(voldoet aan onderstaande richtlijnen / übereinstimmt mit den folgenden Richtlinien)

Directive 2014/32/EU	Measuring instruments (MID)
Directive 2014/34/EU	Equipment for explosive atmospheres (ATEX)
Directive 2011/65/EU	Restriction of the use of certain hazardous substances (RoHS)

and following standards and related documents
(en onderstaande normen en gerelateerde documenten / und folgenden Normen)

MID EN 12405-1: 2005+A2 October 2010

ATEX EN 60079-0: 2006
EN 60079-11: 2007
EN 60079-26: 2007
EN 60079-28: 2007

Some standards indicated above are no longer harmonised. A review against the standards listed below, which are harmonised, identified no significant changes relevant to this product. The previously applied standards continue to represent the 'state of the art'.
(Sommige van de hierboven aangegeven normen zijn niet langer geharmoniseerd. Een toetsing aan de onderstaande normen, die zijn geharmoniseerd, geven geen significante veranderingen aan relevant voor dit product. De oorspronkelijk toegepaste normen geven de stand der techniek aan. /
Einige der oben abgegeben Normen sind nicht mehr harmonisiert. Überprüfung mit der hierunten angegeben Normen, die harmonisiert sind, zeigen keinen relevanten Änderungen dieses Produktes. Die bisher angewandten Normen entsprechen der Stand der Technik.)

EN IEC 60079-0: 2018
EN 60079-11: 2012

and related documents
(en onderstaande gerelateerde documenten / und folgenden dazu gehörige Dokumenten)

EU-type examination certificate (certificaat van EU typeonderzoek / EU-Baumusterprüfbescheinigung)	**KEMA 08ATEX0015 X** Issued by DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem The Netherlands **T10132** Issued by NMi Certin B.V. Thijsseweg 11, 2629 JA Delft, The Netherlands
Notification Production Quality Assurance (notificatie kwaliteitsborging productie / Anerkennung eines Qualitätssicherungssystems)	**DEKRA 12ATEXQ0094** Issued by DEKRA Certification B.V. (Notified Body number 0344) Meander 1051, 6825 MJ Arnhem, The Netherlands
EU quality system approval	**CE-118** Issued by NMi Certin B.V. (Notified Body number 0122) Thijsseweg 11, 2629 JA Delft, The Netherlands

Doesburg,
Date **11-4-2024**
(Datum / Datum)

Sjaak Langeveld
CTO

CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **KEMA 08ATEX0015 X** Issue Number: **5**

(4) Product: **Gas Volume Corrector Unigas 300 Model PTZ, Model TZ, Model PT and Model T**

(5) Manufacturer: **Wigersma en Sikkema B.V.**

(6) Address: **Leigraafseweg 4, 6983 BP Doesburg, The Netherlands**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number 218090100, issue 5.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-11 : 2007**
EN 60079-26 : 2007 **EN 60079-28 : 2007**

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 1 G Ex ia IIC T4 or
II (1) G [Ex ia] IIC

Date of certification: 16 October 2023

DEKRA Certification B.V.

R. Schuller
Certification Manager

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(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 08ATEX0015 X** Issue No. **5**

(15) **Description**

The Gas Volume Corrector Unigas 300 Model PTZ, Model TZ and Model PT and Model T is used for accurate gas volume measurement. The measurement signal from a gas flow meter, connected to the apparatus is corrected for gas temperature and gas pressure (optional).

Correctors Model PTZ and Model PT are equipped with an integrally mounted Pt500 temperature sensor and a certified integrally or externally mounted pressure transducer.

Correctors Model TZ and Model T are equipped with an integrally mounted Pt500 temperature sensor.

The unit is provided with a display and keys for control. The output is a pulse signal and the unit is provided with data communication via 3 infrared interfaces.

The Gas Volume Corrector is supplied by an internal non-rechargeable lithium battery and optionally by an external supply unit.

Ambient temperature range -40 °C to +55 °C.

Electrical data

Power supply (Connector 4 pins 11 and 12):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:
U_i = 10 V; I_i = 600 mA; P_i = any; C_i = 1,7 µF; L_i = 0 mH.

Power supply (Connector 3 pins 1 and 3):
one Li-$SOCL_2$ Battery cell, nominal voltage 3,6 V, any of the following approved types:
- Saft LS33600C
- Tadiran TL-5937
- Tadiran TL2780
- EVE ER34615
- EVE ER341245

Input circuit LF1, LF2, LF3 (Connector 4 pins 4, 5, 6 and 3, 7):
in type of protection intrinsic safety Ex ia IIC, with the following maximum values, circuits combined:
U_o = 5,0 V; I_o = 32 mA; P_o = 40 mW; C_o = 1 µF; L_o = 30 mH,
and
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:
U_i = 5,0 V; I_i = 1 mA; P_i = 1 mW; C_i = 0 µF; L_i = 0 µH.

Input circuit Alarm1, Alarm2 (Connector 4 pins 8 and 10 and 9):
in type of protection intrinsic safety Ex ia IIC, with the following maximum values, per circuit:
U_o = 5,0 V; I_o = 34 mA; P_o = 43 mW; C_o = 1 µF; L_o = 30 mH.

(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 08ATEX0015 X** Issue No. **5**

Input circuit Namur (Connector 4 pins 1, and 2):
in type of protection intrinsic safety Ex ia IIC, with the following maximum values:
U_o = 9,6 V; I_o = 11 mA; P_o = 27 mW; C_o = 3,6 µF; L_o = 100 mH,
and
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:
U_i = 9,6 V; I_i = 1 mA; P_i = 1 mW; C_i = 0 µF; L_i = 0 µH.

Output circuit Alarm1, Alarm2, Pulse1, Pulse2 (Connector 11 pins 13, 15, 16, 18 and 14, 17):
in type of protection intrinsic safety Ex ia IIC, only for connection to certified intrinsically safe circuits, with the following maximum values, per circuit:
U_i = 20 V; I_i = 600 mA; P_i = 480 mW; C_i = 27 nF; L_i = 0 mH.

The input circuits are used for connection to passive or active circuits.
All electrical data listed here are valid for equipment with a year of production 2014 or later.
Three optical interfaces (IRDA):
Inherently safe; optical power < 35 mW.

If the Corrector is installed outside the hazardous area, the following electrical data apply for Output circuit Alarm1, Alarm2, Pulse1, Pulse2 (Connector 11 pins 13, 15, 16, 18 and 14,17):
U_n= 20 Vdc, U_m = 250 Vac.

All other electrical parameters apply unchanged.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. 218090100, issue 5.

(17) **Specific conditions of use**

1. Because the enclosure of the Gas Volume Corrector Unigas 300 is made of aluminium alloy, when used in a potentially explosive atmosphere requiring apparatus of equipment category 1 G, the Corrector must be installed so, that even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded.

2. On application of the Corrector in an explosive gas atmosphere requiring the use of apparatus of equipment category 1 G, precaution shall be taken to avoid danger of ignition due to electrostatic charges on the enclosure.

3. When used with an external pressure transducer (Model PTZ and Model PT), it must be taken into to account, that from a safety point of view, the circuit of the pressure transducer is connected to earth.

(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 08ATEX0015 X** Issue No. **5**

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).
The compliance with the Essential Health and Safety Requirements of the intrinsically safe pressure transducers type PDCR IS-0068 and type PDCR IS-0069 has been assured by compliance with EN 50014 : 1997 + A1, A2, EN 50020 : 1994 and EN 50284 : 1999.

(19) **Test documentation**

As listed in Report No. 218090100, issue 5.

EU-type examination certificate

Number **T10132** revision 14
Project number 3780091

Issued by	NMi Certin B.V., designated and notified by the Netherlands to perform tasks with respect to conformity assessment procedures mentioned in article 17 of Directive 2014/32/EU, after having established that the Measuring instrument meets the applicable requirements of Directive 2014/32/EU, to:
Manufacturer	Wigersma & Sikkema B.V. Leigraafseweg 4 6983 BP Doesburg The Netherlands
Measuring instrument	An **electronic gas volume conversion device (EVCD)**, intended to be used for gas volume conversion as a sub-assembly (according to article 4 of the MID) of a gas meter.

Type	:	UNIGAS 300
Manufacturer's mark or name	:	Wigersma & Sikkema or Kamstrup
Brand, type	:	Itron, Corus SC
Conversion principle	:	T, TZ, PT or PTZ
Ambient temperature range	:	–40 °C / +55 °C
Designed for	:	condensing humidity
Environment classes	:	M2 / E2

The intended location for the instrument is open.

Further properties are described in the annexes:
- Description T10132 revision 14;
- Documentation folder T10132-7.

Valid until	11 November 2028
Initial issued	11 November 2008
Remark	– This revision replaces the previous revisions; – The documentation folder replaces the previous documentation folder.

Issuing Authority

NMi Certin B.V., Notified Body number 0122
23 February 2024

Certification Board

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