QUICK GUIDE

KA 9998 EN RFID Retrofit Kit

Translation of original instructions

RFID Retrofit Kit

Notes on this document

This document outlines all information on the RFID retrofit kit relevant to your safety and mounting it onto a device.

1 Safety instructions and measures

Intended use

This RFID retrofit kit comprises the RFID tag, a metal plate and a tubular rivet. The metal plate, tubular rivet and RFID tag are assembled together in the delivered state. Two stainless steel cable ties to attach the assembled RFID tag are included in the scope of the delivery.

A RFID reader is required to read out the tag. The RFID reader uses electromagnetic fields at short distance to activate the RFID tag. The reader powers the RFID tag as well as reads its data.

The RFID tag is used for a specific SAMSON product with a defined biunique serial number. The RFID tag is also designed to operate under exactly defined conditions (e.g. temperature). Therefore, operators must ensure that the RFID retrofit kit is only used in applications where the operating conditions correspond to the technical data. In case operators intend to use the RFID retrofit kit in applications or conditions other than those specified, contact SAMSON.

SAMSON does not assume any liability for damage resulting from the failure to use the device for its intended purpose or for damage caused by external forces or any other external factors.

➔ Refer to the technical data for limits and fields of application as well as possible uses. See Chapter 3.

Reasonably foreseeable misuse

The RFID retrofit kit is not suitable for the following applications:

– Use outside the limits defined during sizing and by the technical data

Furthermore, the following activities do not comply with the intended use:

– Use of non-original spare parts
– Performing service and repair work not described

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Qualifications of operating personnel

The RFID retrofit kit must be started up by fully trained and qualified personnel only; the accepted industry codes and practices must be observed. According to this document, qualified personnel refers to individuals who are able to judge the work they are assigned to and recognize possible dangers due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.

Personal protective equipment

SAMSON recommends wearing the following protective equipment to attach the RFID retrofit kit:

– The RFID retrofit kit must only be attached to devices in hazardous areas by personnel who has undergone special training or instructions or who is authorized to work on explosion-protected devices in hazardous areas.

➔ Check with the plant operator for details on further protective equipment.

Revisions and other modifications

Revisions, conversions or other modifications of the product are not authorized by SAMSON. They are performed at the user's own risk and may lead to safety hazards, for example. Furthermore, the product may no longer meet the requirements for its intended use.

Warning against residual hazards

Hazards resulting from the special working conditions at the installation site of the RFID retrofit kit must be identified in a risk assessment and prevented through the corresponding standard operating procedures drawn up by the operator.

SAMSON also recommends checking the hazards posed by the process medium in the plant being used (e.g. GESTIS hazardous substances database).

➔ Observe safety measures for handling the device as well as fire prevention and explosion protection measures.

Responsibilities of the operator

Operators are responsible for proper use and compliance with the safety regulations. Operators are obliged to provide this document as well as the referenced documents to the operating personnel and to instruct them in proper operation. Furthermore, operators must ensure that operating personnel or third parties are not exposed to any danger.

Responsibilities of operating personnel

Operating personnel must read and understand this document as well as the referenced documents and observe the specified hazard statements, warnings and caution notes. Furthermore, operating personnel must be familiar with the applicable health, safety and accident prevention regulations and comply with them.

Referenced standards, directives and regulations

The RFID tag with a CE marking fulfills the requirements of the following Directives and standards:

– 2014/53/EU (RED)
– 2011/65/EU (RoHS)
– IEC 61406-1

Referenced documents

The following documents apply in addition to this document:

- Mounting and operating instructions of the device to which the RFID retrofit kit is attached.
- If a device contains a substance listed as a substance of very high concern (SVHC) on the candidate list of the REACH regulation, the document "Additional Information on Your Inquiry/Order" is added to the SAMSON order documents. This document includes the assigned SCIP number, which can be entered into the database on the European Chemicals Agency (ECHA) website (▶https://www.echa.europa.eu/scip-database) to find out more information on the SVHC contained in the device.

  Further information on material compliance at SAMSON is available at ▶ www.samsongroup.com > About SAMSON > Environment, Social & Governance > Material Compliance.

The latest versions of the documents are available on our website at ***www.samsongroup.com > Downloads > Documentation***.

1.1 Notes on possible personal injury

⚠ WARNING

Risk of cut injury due to sharp edges on parts.

SAMSON's RFID retrofit kit contains two stainless steel cable ties and a metal plate, which may cause cut injuries if handled incorrectly.

➔ Wear cut-resistant gloves.

➔ Only use the intended tool to attach the RFID retrofit kit using the stainless steel cable ties.

Risk of burn injuries due to hot or cold components and pipelines.

Depending on the attachment situation, components and pipelines may get very hot or cold and cause burn injuries due to the process medium in the plant.

➔ Allow components and pipelines to cool down or warm up to the ambient temperature.

➔ Wear protective clothing and safety gloves.

1.2 Notes on possible property damage

NOTICE

Faulty data due to a RFID tag assigned to a different device.

The RFID tag is used for a specific device with a defined biunique serial number.

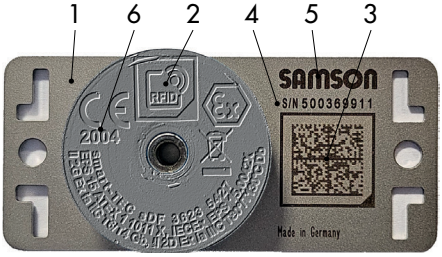
➔ Attach the RFID retrofit kit only to the device it is intended for.

➔ Check the serial number on the metal plate of the RFID retrofit kit with the serial number of the device it is being attached to.

2 Markings on the device

The metal plate shown was up to date at the time of publication of this document. The metal plate of the RFID retrofit kit may differ from the one shown.

2.1 Metal plate



1	Metal plate
2	RFID tag
3	2D code
4	Serial number
5	Manufacturer
6	Date of manufacture WWYY

Fig. 1: *Metal plate*

3 Technical data

Table 1: *Technical data*

RFID chip	*smart*-DOME HF by smart-**TEC**®
Model	ICODE SLIX (NXP)* · SL2S2002_SL2S2102 ICODE SLIX Rev. 3.4 · 10. August 2017 (178034)
ISO standard	ISO/IEC 15693
Frequency of the RFID system	13.56 MHz · HF
Memory	User memory 896 bit
Write cycles	Min. 100,000 during service life
Data retention	50 years' data retention according to NXP data sheet
RFID tag	
Diameter	30 mm (± 0.3 mm)
Height	10.5 to 11.5 mm (max. 11.5 mm)
Mounting hole	Ø4.5 mm (±0.3 mm)
Degree of protection (IP rating)	IP68
Conformity	See ▶ https://www.smart-tec.com/en/info/services/downloads

Table 2: *Temperature limits · Material resistance · Materials (material number according to DIN EN)*

Temperature ranges	
Max. operating temperature	–40 [1] to +85 °C
Max. storage temperature	–55 to +110 °C [2]
Maximum temperature	Successfully tested at 130 °C for 2.5 h
Material resistance	
UV radiation	Successfully tested according to DIN EN ISO 4892-2
Weather	Successfully tested according to Renault D27 1911 (02/95)
Climate	Successfully tested according to Renault 1309 (09/81)
Chemical resistance	Very good resistance after 120 h immersion in water, salt water, sulfuric acid, sodium hydroxide, ethylene glycol and 14W40 engine oil
	Good resistance after 120 h immersion in hydrochloric acid and ammonia water
	Not resistant to concentrated acids and alkalis, aromatic halogenated hydrocarbons, polar solvents (alcohols, esters and ketones), continuous exposure to hot water
Resistant to scratching, breakage and impact	Successfully tested according to PSA D15 1211 (03/81)
Form stability	Free of shrinkage after 17 days at 80 °C and 15 days rest at room temperature
Material data for RFID tag	
Enclosure	Material consisting of two-component hard elastic polyurethane (transparent/colored casting compound)
Material	ROYALPLAST®, hard, colored · ROYALPLAST®, soft, transparent
Color	Light blue RAL 5012
Hardness	Hardness 60 according to Shore D
Material data for SAMSON RFID retrofit kit	
Metal plate and tubular rivet	1.4404
Cable tie	1.4401

1) No special deactivation mechanism exists at –40 °C according to the RFID Solutions Product Manager at NXP Semiconductors.

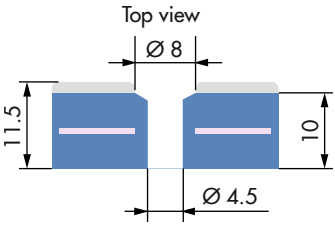
2) Storage 110 °C/48 h: electrical and mechnical properties found to be left unimpaired after cool down.

Table 3: *Explosion protection*

Certified according to following directives and standards: 94/91/EC, IEC 60079-0:2011 and IEC 60079-11:2011			
	ATEX	**IECEx**	**INMETRO**
Certificate	EPS 15 ATEX 1 1011 X	IECEx EPS 15.0042X	DNV 24.0224 X/00
Marking	II 2G Ex ia IIC T6/T4 Gb II 2D Ex ia IIIC T80°C/T130°C Db		
Designation	smart-DOME Freestyle Ex and smart-DOME Classic Ex		
Special conditions	Maximum operating temperature range between –55 and +110 °C for explosion-protection requirements		
	The RFID tags must not be used in environments with high electromagnetic field strengths according to EN 60079-14:2014.		
	Electrostatic charging must be prevented. The device must not be used near processes that generate severe charges.		

Dimensional drawings

RFID tag [1)]



Plate

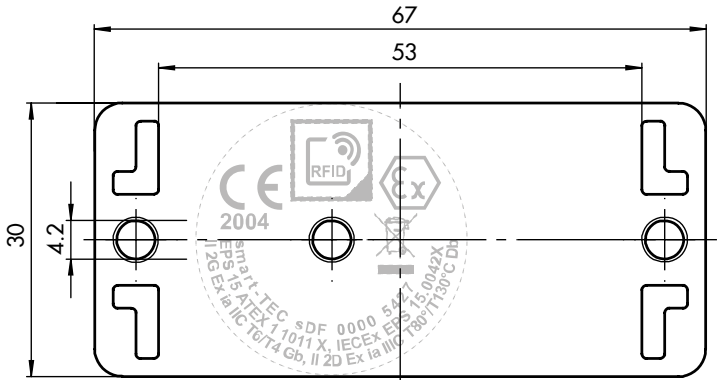


Fig. 2: *Dimensions of RFID tag*

[1)] Labeling according to EU specifications (example)

4 Transporting and lifting the RFID retrofit kit

Transport instructions

➔ Protect the RFID retrofit kit against external influences (e.g. impact).

➔ Do not damage the corrosion protection (paint, surface coatings). Repair any damage immediately.

➔ Observe the maximum storage temperature from –55 to +85 °C.

5 Mounting and removing the RFID retrofit kit

SAMSON's RFID retrofit kit is delivered already assembled. Proceed as follows to attach the RFID retrofit kit.

➔ Do not open or remove the packaging from the RFID retrofit kit until immediately before attaching it to the device.

⚠ WARNING

Risk of cut injury due to sharp edges on parts.

SAMSON's RFID retrofit kit contains two stainless steel cable ties and a metal plate, which may cause cut injuries if handled incorrectly.

➔ *Wear cut-resistant gloves.*

➔ *Only use the intended tool to attach the RFID retrofit kit using the stainless steel cable ties.*

Mounting conditions

➔ Attach the RFID retrofit kit to the device at an easily accessible place.

➔ Attach the RFID retrofit kit in such a way that the assignment to the device is clearly evident.

➔ Observe the maximum operating temperature from –40 to +85 °C.

Mounting

1. Take the RFID retrofit kit and stainless steel cable ties out of the packaging.
2. Guide the stainless steel cable ties through the holes in the metal plate and attach it to the device.
3. Use a cable tie tool to twist the stainless steel cable ties.

Removal

1. Cut through the stainless steel ties with pliers and remove the RFID retrofit kit. Dispose of it as described in Chapter 6.

6 Disposal

SAMSON is a producer registered at the following European institution ▶ https://www.samsongroup.com/en/about-samson/environment-social-governance/material-compliance/waste-electrical-and-electronic-equipment-weee-and-its-safe-disposal/.
WEEE reg. no.: DE 62194439

Information on substances listed as substances of very high concern (SVHC) on the candidate list of the REACH regulation can be found in the document "Additional Information on Your Inquiry/Order", which is added to the order documents, if applicable. This document includes the assigned SCIP number, which can be entered into the database on the European Chemicals Agency (ECHA) website (▶https://www.echa.europa.eu/scip-database) to find out more information on the SVHC.

Note

SAMSON can provide you with a recycling passport on request. Simply e-mail us at aftersalesservice@samsongroup.com giving details of your company address.

Tip

On request, SAMSON can appoint a service provider to dismantle and recycle the product as part of a distributor take-back scheme.

➔ Observe local, national and international refuse regulations.

➔ Do not dispose of components together with your other household waste.

7 Malfunctions

7.1 Troubleshooting

Malfunction	Possible reasons	Recommended action
RFID tag cannot be read.	RFID tag is located in a plant section with high radio interference	➔ Check the radio reception. ➔ Contact SAMSON's After-sales Service.
	RFID tag is defective	➔ Replace the RFID tag. ➔ Contact SAMSON's After-sales Service.
	Reader is too far away	➔ Move the reader closer to the RFID tag.

Note

Contact SAMSON's After-sales Service for malfunctions not listed in the table.

The malfunctions listed are caused by mechanical or electric faults.

Exceptional operating and installation conditions may lead to changed situations that may affect the RFID tag and lead to malfunctions. For troubleshooting, the conditions, such as installation, signal transmission (radio interference) and temperature, must be taken into account.

Tip

SAMSON's After-sales Service can support you in drawing up an inspection and test plan for your plant.

8 Certificates

8.1 EU certificates

The EU declarations of conformity are available on the Internet at ▶ https://www.smart-tec.com/en/info/services/downloads.

8.2 Certificates for Brazil

The declaration of conformity is provided on the next page.

Fig. 3: *Labeling of RFID tag according to specifications for Brazil (example)*

DNV

CERTIFICADO DE CONFORMIDADE
CERTIFICATE OF CONFORMITY

Certificado nº: DNV 24.0224 X/00 *Certificate nº* | **Revisão 00** *Revision* | **Emissão: 25/10/2024** *Issuance* | **Válido até: 25/10/2030** *Valid until*

Produto: *Product*
Tags RFID

Modelo: *Model*
smart-DOME Freestyle Ex e smart-DOME Classic Ex

Detentor do Projeto: *Project Owner*
smart-TEC GmbH & Co. KG
Kolpingring 3
DE-82041 Oberhaching
Germany

Fornecedor Solicitante: *Applicant Supplier*
SAMSON CONTROL LTDA
Rua Matrix, 159 – Moinho Velho
CEP: 06.714-360 – Cotia – SP
Brasil
CNPJ: 01.802.124/0002-34

Fabricante: *Manufacturer*
Rathgeber GmbH & Co. KG
Widdersteinstraße 2
DE-87719 Mindelheim
Germany

Normas Técnicas: *Standards*
ABNT NBR IEC 60079-0:2020 Versão Corrigida:2024
ABNT NBR IEC 60079-11:2013 Versão Corrigida:2017

Laboratório de Ensaio: *Testing Laboratory*
Bureau Veritas Consumer Products Services Germany GmbH

Nº do Relatório de Ensaios: *Test Report Number*
BVC nº DE/EPS/ExTR16.0003/00 de 20/01/2016
BVC nº DE/EPS/ExTR16.0003/01 de 12/07/2016
BVC nº DE/EPS/ExTR16.0003/02 de 19/10/2020
BVC nº DE/EPS/ExTR16.0003/03 de 21/01/2022

Nº do Relatório de Auditoria: *Audit Report Number*
FAB – 2024-8841 Revisão 00 de 30/08/2024
SAC – 2024-9041 Revisão 00 de 21/10/2024

Esquema de Certificação: *Certification Scheme*
Modelo de Certificação 5, conforme item 6.1 dos Requisitos de Avaliação da Conformidade, anexo à Portaria INMETRO nº 115/2022.

Notas: *Notes*
A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da DNV previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do INMETRO.

Portaria: *Ordinance*
INMETRO nº 115 de 21/03/2022.

ABNT NBR ISO/IEC 17065
OCP 0017

Adriano Marcon Duarte
Gerente de Operações
Operations Manager

Heleno dos Santos Ferreira
Especialista Atmosferas Explosivas
Specialist for Explosive Atmospheres

Nota: A falta de cumprimento das condições estabelecidas no contrato pode tornar este certificado inválido.
O documento assinado digitalmente e distribuído eletronicamente é o original do certificado e válido. Ref. https://www.dnv.com/assurance/general/validating_digital_signatures.html
Certificado de Conformidade válido somente acompanhado das páginas de 1 a 3

DNV

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Revisão 00 *Revision*
Emissão: 25/10/2024 *Issuance*
Válido até: 25/10/2030 *Valid until*

Marca Brand	Modelo Model	Descrição Description	Código de barras comercial GTIN Barcode
smart-TEC	smart-DOME Freestyle Ex smart-DOME Classic Ex	RFID Tags	N/A

Descrição do Equipamento:

O smart-DOME Freestyle Ex (versão metálica) e o smart-DOME Classic Ex são Tags de identificação por radiofrequência passiva (RFID) que se destina a instalação fixa em dispositivos para identificação de ativos em áreas classificadas. É utilizado para marcar dispositivos com seus dados eletrônicos para fins de rastreamento e identificação. Um leitor RFID devidamente aprovado é utilizado para escanear o dispositivo quando situado em uma área classificada.

Frequências Nominais:

(13,37 ± 0,35) MHz ou 125 kHz ou 860-960 MHz

Análises e ensaios realizados:

As análises e os ensaios realizados encontram-se no arquivo nº DNV 24.0224.

Documentação descritiva:

Documento	Páginas	Descrição	Rev.	Data
IECEx EPS 15.0042X	3	Certificado de Conformidade	0	01/02/2016
IECEx EPS 15.0042X	4	Certificado de Conformidade	1	20/10/2020
IECEx EPS 15.0042X	4	Certificado de Conformidade	2	28/01/2022
DE/EPS/ExTR16.0003/00	54	Relatório de ensaios	0	20/01/2016
DE/EPS/ExTR16.0003/01	59	Relatório de ensaios	1	12/07/2016
DE/EPS/ExTR16.0003/02	66	Relatório de ensaios	2	19/10/2020
DE/EPS/ExTR16.0003/03	79	Relatório de ensaios	3	21/01/2022

Marcação:

Os Tags RFID foram aprovados nos ensaios e análises, nos termos das normas adotadas, devendo receber a marcação, considerando o item observações.

Ex ia IIC T6/T4 Gb
Ex ia IIIC T80 °C/T130 °C Db

Observações:

1. O número do certificado é finalizado pela letra X para identificar as condições específicas de utilização:
   Faixa de temperatura ambiente:
   -55 °C a +80 °C (T6 / T80 °C)
   -55 °C a +110 °C (T4 / T130 °C)
   Os Tags RFID nunca devem ser expostos a altas intensidades de campo eletromagnético que excedam valores eficazes de 1 A/m ou 3 V/m, por exemplo, em plantas de eletrólise de alta corrente.
   Cargas eletrostáticas devem ser evitadas.
   Os Tags nunca devem ser utilizados próximos a processos com alta geração de carga.

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2. Este Certificado de Conformidade é válido para os produtos de modelo e tipo idêntico ao protótipo ensaiado. Qualquer modificação de projeto ou utilização de componentes e materiais diferentes daqueles descritos na documentação deste processo, sem autorização prévia da DNV, invalidará o certificado.

3. É responsabilidade do fabricante assegurar que os produtos estejam de acordo com as especificações do protótipo ensaiado, através de inspeções visuais e dimensionais.

4. Os produtos devem ostentar, na sua superfície externa e em local visível, a Marca de Conformidade e as características técnicas da mesma de acordo com as especificações das normas ABNT NBR IEC 60079-0 / ABNT NBR IEC 60079-11 e Requisitos de Avaliação da Conformidade, anexo à Portaria INMETRO nº 115, publicada em 21 de Março de 2022. Esta marcação deve ser legível e durável, levando-se em conta possível corrosão química.

5. Os produtos devem ser instalados em atendimento às Normas pertinentes em Instalações Elétricas em Atmosferas Explosivas.

6. As atividades de instalação, inspeção, manutenção, reparo, revisão e recuperação dos equipamentos são de responsabilidade dos usuários e devem ser executadas de acordo com os requisitos das normas técnicas vigentes e com as recomendações do fabricante.

Projeto nº: PRJC-521732-2015-PRC-BRA

Histórico:

Revisão	Descrição	Data
0	Certificação inicial – Efetivação	25/10/2024