IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx CML 14.0030X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 1	Issue 0 (2014-11-13)
Date of Issue:	2025-12-10		
Applicant:	**Braun GmbH Industrie-Elektronik** Esslinger Straße 26 DE 71334 Waiblingen **Germany**		
Equipment:	**A5S1 Series Hall-Effect Sensors**		
Optional accessory:			
Type of Protection:	**Intrinsic Safety or Increased Safety**		
Marking:	Ex ia IIC T* Ga or Ex ec IIC T* Gc Ta**= Up to -40°C to +125°C ** T4 or T6 depending on supply power and ambient temperature, see Specific Conditions of Use.* *** See Specific Conditions of Use for details.*		

Approved for issue on behalf of the IECEx Certification Body:	**Stelios Roumbedakis**
Position:	**Certification Manager**
Signature: (for printed version)	S.Roumbedakis
Date: (for printed version)	2025-12-10

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Eurofins E&E CML Limited
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Manufacturer: **Braun GmbH Industrie-Elektronik**
Esslinger Straße 26
DE 71334
Waiblingen
Germany

Manufacturing locations: **Braun GmbH Industrie-Elektronik**
Esslinger Straße 26
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This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/CML/ExTR14.0019/00 GB/CML/ExTR25.0139/00

Quality Assessment Report:

DE/TPS/QAR12.0006/13

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The A5S1 Series Hall-effect Sensors are non-contact measuring head sensors used to detect the movement of rotating ferromagnetic parts with profiling, eg rotating cog wheels.

See Certificate Annex for full Product Description and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:
See Certificate Annex.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1

This issue introduced the following changes:

1. Standards update: Update to IEC 60079-0:2017:Ed.7.0, Update to IEC 60079-7:2017 Ed. 5.1 standards; as a result, the marking was updated from “Ex nA” to “Ex ec”, Removal of IEC 60079-26 standard from the scope.
2. Trademark update.
3. Modification of AMB42 documents.

Annex:

Certificate Annex IECEx CML 14.0030X Issue 1.pdf

Annexe to:	**IECEx CML 14.0030X Issue 1**
Apparatus:	**A5S1 Series Hall-effect Sensor**
Applicant:	**Braun GmbH Industrie-Elektronik**

Description

The A5S1 Series Hall-effect Sensors are non-contact measuring head sensors used to detect the movement of rotating ferromagnetic parts with profiling, eg rotating cog wheels. The measuring head contains a hall-effect sensor, magnet and amplifier circuit encapsulated in a cylindrical stainless-steel enclosure with end cap. The power supply and signal output connections are made using either an attached cable or plug and socket connector depending on the model. The measuring head is supplied either as an intrinsically safe version (Ex ia) or an increased safety version (Ex ec). The design and construction of both versions are identical.

The A5S1 Series sensor has a number of options defined by the full model number:

A5S1 b c d e f g - xm -n

b	=	Signal frequency (up to 25kHz)
c	=	Signal output
d	=	Unit of shaft diameter
e	=	Thread of shaft diameter
f	=	Connection type
g	=	Nominal thread length in mm
x	=	Length of fixed Teflon® (PTFE/FEP) cable in m
-n	=	Protection Type Ex ec (none for Ex ia)

Alternative model coding may be used in line with specific customer orders.

I.S Versions (Ex ia):

The I.S versions are supplied from an intrinsically safe power source and connect to monitoring equipment located outside the hazardous area. The Sensors have the following safety description,

Ui	=	17V
Ii	=	100mA
Pi	=	125mW/250mW/500mW
Ci	=	0.131µF (including cable capacitance for up to 100m of attached cable)
Li	=	0

Increased Safety Versions (Ex ec):

The Sensors have the following ratings,

Rated voltage	=	32Vdc
Rated current	=	40mA/60mA/120mA

Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. The equipment shall be subjected to an electric strength test using a test voltage of 500 Vac or a 40% higher d.c voltage may be applied between the circuit and earth for 60 s. Alternatively, a voltage of 20% higher may be applied for 1 s. There shall be no evidence of flashover or breakdown and the maximum current flowing shall not exceed 5 mA.

For Ex ia Sensors only:

ii. When alternative model coding is used in line with specific customer orders, details of the specific construction shall be provided.

Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

i. The following ambient temperature and supply input limits are to be applied to the sensor arrangement as applicable:

a. Intrinsically Safe Modules (Ex ia):

Connection /Type	Temperature class	Minimum ambient temperature	Maximum ambient temperature	Maximum temperature at end cap	Pi
PTFE/FEP cable	T4	-40°C	+125°C	+125°C	125mW
			+115°C		250mW
			+100°C		500mW
PTFE/FEP cable with plug/socket	T4	-40°C	+85°C	+125°C	500mW
PVC cable	T4	-5°C if cable flexed -30°C if cable fixed	+70°C if cable flexed +80°C if cable fixed	+125°C	500mW
All Ex ia types	T6	≥-5°C	+60°C	+80°C	500mW
	T6	≥-5°C	+70°C	+80°C	250mW
Note: The worst-case limitation of power and ambient shall always apply if more than one limiting factor is present in the sensor arrangement					

b. Increased Safety Modules (Ex ec):

Connection /Type	Temperature class	Minimum ambient temperature	Maximum ambient temperature	Maximum temperature at end cap	Ratings
PTFE/FEP cable	T4	-40°C	125°C	+125°C	32Vdc 40mA
			115°C		32Vdc 60mA
			100°C		32Vdc 120mA
PTFE/FEP cable with plug/socket	T4	-40°C	85°C	+125°C	32Vdc 120mA
PVC cable	T4	-5°C if cable flexed	+70°C if cable flexed	+125°C	32Vdc 60mA
		-30°C if cable fixed	+80°C if cable fixed		
All Ex ec types	T6	≥-5°C	+70°C	+80°C	32Vdc 60mA
	T6	≥-5°C	+60°C	+80°C	32Vdc 120mA
Note: The worst case input limitation and ambient shall always apply if more than one limiting factor present in the sensor arrangement					

For Ex ia Sensors only:

ii. If a charge-generating mechanism is present, the exposed unearthed/ungrounded metallic enclosure is capable of storing a level of charge that could become incendive for IIC gases. Therefore, the user/installer shall implement precautions to prevent the build-up of electrostatic charge, e.g. earthing the metallic part. This is particularly important if the equipment is installed in a zone 0 location.

Components used which are covered by Ex Certificates issued to older editions of Standards

None.