



Type Examination Certificate CML 14ATEX4076X Issue 1

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **A5S1 Series Hall-effect Sensor**
- 3 Manufacturer **Braun GmbH Industrie-Elektronik**
- 4 Address Esslinger Straße 26,
DE 71334, Waiblingen, Germany
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 6738671, Koopvaardijweg 32, 4906CV Oosterhout The Netherlands, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II of Directive 2014/34/EU.

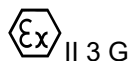
The examination and test results are recorded in the confidential reports listed in Section 12.

- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Annex VIII apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012:A11:2013

EN 60079-15:2010

- 10 The equipment shall be marked with the following:



Ex nA IIC T* Gc
(T* = T4 or T6 depending on supply power and ambient temperature, see Conditions of Safe Use)

Ta= Up to -40 °C ≤ Ta ≤ 125 °C



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11 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 a non-sparking version (Ex nA). 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 Db c d eeee f ggg h iii jj k

Db	=	static/dynamic and speed/frequency range (up to 25kHz)
c	=	frequency and output type
d	=	mechanical configuration
eeee	=	mechanical thread
f	=	cable/connector
ggg	=	sensor length
h	=	cable termination
iii	=	cable length
jj	=	protection type (ia or nA)
k	=	encapsulant type

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

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	13 Nov 2014	R217B/00	Issue of the prime certificate
1	22/04/2021	R13681D/00	Transfer to CML B.V.

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of Manufacture

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

- 13.1 The sensors 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.



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14 Specific Conditions of Use (Special Conditions)

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

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

Connection /Type	Temperature class	Minimum ambient temperature	Maximum ambient temperature	Maximum temperature at end cap	Ratings
PTFE cable	T4	-40 °C	125 °C	125 °C	32Vdc 40mA
			115 °C		32Vdc 60mA
			100 °C		32Vdc 120mA
PTFE 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 nA 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					