





**CML 14ATEX4076X  
Issue 0**

## 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 Document history and Evaluation Reports

Issue	Date	Associated report	Notes
0	13 Nov 2014	R217B/00	Issue of the prime certificate

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 Special Conditions For Safe Use (Conditions of Certification)

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
<b>Note: The worst case input limitation and ambient shall always apply if more than one limiting factor present in the sensor arrangement</b>					