

Test report on explosion protection

No. SILZ 21B002

Manufacturer and customer	Reed Electronics AG Gewebering 2 CH-6105 Schachen
Order	dd. November 2, 2020
Testing time	April 2021
Testing location	SILZ – Engineering office Buchtalstraße 11 D-72461 Albstadt
Tester	Dipl.-Ing. (FH) Wilfried Silz
Tested products	Magnetic switch Type: RCM-EX...
Test specification	EN IEC 60079-0:2018 Explosive atmospheres Part 0: Equipment – General requirements EN 60079-11:2012 Explosive atmospheres Part 11: Equipment protection by intrinsic safety “i”
Task	Voluntary type examination Requirements: Ex ia IIC T6...T4 Ga Ex ia IIIC T135°C Da Ex ib IIIC T135°C Db
Test result	The test results show that the products meet the test specifications. According to ENTR/G/3/DE D(2003) of the European Commission, they do not come under Directive 2014/34/EU for devices to be used in potentially explosive atmospheres because the definition in Chapter 5.7 of EN 60079-11:2012 applies. Thus, all device markings according to the test specification are not mandatory.

Description of the product

The magnetic switches have a wide range of applications in potentially explosive areas. An external magnet switches the build-in reed contact when it approaches. Resistors can also be build-in.

Technical data

Ambient temperature range T_a from -20 °C to $+80\text{ °C}$ optionally up to 125 °C

Intrinsic safety data

Ex ia IIC T6...T4 Ga, Ex ia IIIIC T135°C Da und Ex ib IIIIC T135°C Db

Maximum applied voltage	$U_i = 30\text{ V}$
Maximum fed current	$I_i = 300\text{ mA}$
only with Ex ia IIIIC T135°C <u>Da</u>	$I_i = 250\text{ mA}$
Maximum fed power is only limited if resistors are built in	P_i acc. to tables
Internal capacity is negligible	$C_i = 0$
Internal inductivity is negligible	$L_i = 0$
Cable capacity: Conductor - Conductor	$C_C = 100\text{ pF/m}$
Cable inductivity: Conductor - Conductor	$L_C = 1\text{ μH/m}$

The connections are safely insulated from earth.

Intrinsic safety data Ex ia IIC T6 Ga

depending on the ambient temperature T_a , which is limited to 68 °C :

T_a	to 32 °C	40 °C	50 °C	60 °C	68 °C
P_i	0.4 W	0.33 W	0.25 W	0.16 W	0.1 W

Intrinsic safety data

Ex ia IIC T4 Ga, Ex ia IIIIC T135°C Da and Ex ib IIIIC T135°C Db
depending on the ambient temperature T_a , which is limited to 80 °C
(optionally up to 125 °C):

T_a	to 70 °C	80 °C	90 °C	100 °C	110 °C	120 °C	125 °C
P_i	0.4 W	0.353 W	0.306 W	0.259 W	0.212 W	0.165 W	0.1 W

Standards protocols SILZ 21B002-0 and SILZ 21B002-1

In addition to EN 60079-14, the following must be observed for the safe use of the products:

1. The metal housing requires an earth contact to dissipate electrostatic charges.
2. In the case of an aluminium housing, ignitable sparks are possible due to impact.
This must be considered when installing in zone 0.

Test documents

Photos of the products

Data sheets: Reed contacts, resistors, potting compounds, cables, insulating tubes, nameplate materials

SILZ – Engineering office: Buchtalstraße 11, D-72461 Albstadt, June 1, 2021



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