


JUMO GmbH & Co. KG

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 36039 Fulda, Germany E-Mail: mail@jumo.net



**MORE THAN SENSORS
AND AUTOMATION**

	<h1>Certificate</h1>
Railway application According to EN 50155:2021	
Manufacturer Address	JUMO GmbH & Co. KG Moritz-Juchheim-Straße 1, 36039 Fulda, Germany
Product description Model and/or type	Float level switches and transmitters 408301 / 408302 / 408320 + extra code 950 railway application

Classification			
Nominal voltage:	Up to AC/DC 230 V	Fast temperature change class:	H1
Power supply interruption class:	---	PCB coating class:	PC1; PC2 ⁷⁾
Power supply switching class:	---	Mechanical category/class:	1/B ⁵⁾
Operation temperature class:	OT6	Lifespan:	L4
Switching temperature class:	ST0	Altitude class:	A1; AX ⁶⁾ (5300 m)

Tests performed

#	Test and requirements	Standard	Result
1	Visual inspection <i>No damage / change after each of the following tests</i>	EN 50155:2021	Passed
2	Performance Test <i>Switching function present properly after each of the following tests</i>	EN 50155:2021	Passed
3	Power supply test $0.6 * U_{Nenn}$ $1.4 * U_{Nenn}$	Not applicable	---
4	Low temperature test $-40\text{ °C}, 2\text{ h}$	EN 50155:2021 EN 60068-2-1:2007	Passed
5	Dry heat test $90\text{ °C}, 8\text{ h}$ ^{1), 2)} $125\text{ °C}, 8\text{ h}$ ³⁾ $100\text{ °C}, 8\text{ h}$ ⁴⁾	EN 50155:2021 EN 60068-2-2:2007	Passed
6	Low temperature storage test $-50\text{ °C}, 16\text{ h}$	EN 50155:2021 EN 60068-2-1:2007	Passed

1) For electrical connection M12x1
 2) For electrical connection RADOX cable
 3) For electrical connection Bajonett VG95235-14S
 4) For electrical connection connector housing, cuboid, small
 5) Maximum permissible guide tube length 1000 mm
 6) Only for class III equipment
 7) Only for type 408320

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7	Insulation test <i>0,5 kV DC, R > 20 MΩ, 1,5 kV AC, 1 min</i>	EN 50155:2021	Passed
8	Cyclic damp heat test <i>55 °C; 100 % RH; 2 x 24 h</i>	EN 50155:2021 EN 60068-2-30:2005	Passed
9	Electromagnetic compatibility test (EMC)	Not applicable	---
10	Shock and vibration test	EN 61373:2010	Passed
	Broadband random noise <i>vertical 1,01 m/s², transverse 0,7 m/s² longitudinal 0,7 m/s²; frequency 5 to 150 Hz; duration of test max. 30 min</i>	EN 61373:2010 EN 60068-2-64:2008	Passed
	Simulated Lifetime <i>vertical 5,72 m/s², transverse 3,96 m/s² longitudinal 3,96 m/s²; frequency 5 to 150 Hz; duration of test 15 h</i>	EN 61373:2010 EN 60068-2-64:2008	Passed
	Shock <i>vertical 30 m/s, transverse 50 m/s² longitudinal 50 m/s²; shock duration 30 ms; 18 shocks total</i>	EN 61373:2010 EN 60068-2-27:2009	Passed
11	Enclosure protection test (IP-Code) <i>IP66^{1),4)}, IP67³⁾ IP68 (168 h, 1.5m)²⁾</i>	EN 60529:1991+A2:2013/AC:2019	Passed
12	Stress screening test	Test on inquiry	---
13	Rapid temperature variation test	Test on inquiry	---
14	Salt mist test <i>35 °C, 48 h, 5 % NaCl Additionally increased exposure 35 °C, 960h, 5 % NaCl</i>	EN 50155:2021 EN 60068-2-11:2021	Passed
15	Fire behaviour of materials <i>HL1 to HL3 burning mass ≤ 100 g / ≤ 400 g⁵⁾</i>	EN 45545-1:2013 EN 45545-2:2020	Passed
16	Flowing mixed gas corrosion test <i>SO₂: 200±20 ppb, H₂S: 10±5 ppb NO₂: 200±20 ppb, Cl₂: 10±5 ppb Duration of test 21 days</i>	EN 60068-2-60	Passed

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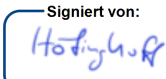
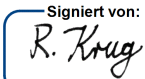
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Test laboratories used:	for test no.:
Internal laboratory JUMO	15
Internal accredited laboratory JUMO (IEC 17025)	---
External accredited laboratory (IEC 17025)	1-2, 4-8, 10-11, 14, 16

JUMO GmbH & Co. KG, Moritz-Juchheim-Strasse 1, 36039 Fulda, Germany	
Date	Signature
Fulda, April 10, 2025	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Signiert von:  o.b.o. Dr.-Ing Jan-Florian Höfinghoff <small>B4F6DC77AEAA4F...</small> test laboratory</p> </div> <div style="width: 45%;"> <p>Signiert von:  o.b.o. René Krug <small>FBA37761AF7B4D5...</small> product management</p> </div> </div>

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