



Certificate

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**

Electronic thermostat eTRON T100
701052 + extra code 950 railway application

Classification

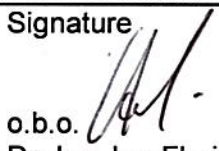
Nominal voltage:	DC 24 V	Fast temperature change class:	H1
Power supply interruption class:	S2	PCB coating class:	PC1
Power supply switching class:	C1	Mechanical category/class:	1/B
Operation temperature class:	OT2	Lifespan:	L4
Switching temperature class:	ST1	Altitude class:	A1

Tests performed

#	Test and requirements	Standard	Result
1	Visual inspection	EN 50155:2021	Passed
2	Performance Test	EN 50155:2021	Passed
3	Power supply test $0.6 \cdot U_{Nenn}$ $1.4 \cdot U_{Nenn}$	EN 50155:2021 EN 61000-4-29:2000	Passed
4	Low temperature test $-40\text{ }^{\circ}\text{C}$, min. 2 h	EN 50155:2021 EN 60068-2-1:2007	Passed
5	Dry heat test $55\text{ }^{\circ}\text{C}$, 8 h	EN 50155:2021 EN 60068-2-2:2007	Passed
6	Low temperature storage test	Test on inquiry	---
7	Insulation test 500 V AC, 1 min, 20 MOhm	EN 50155:2021	Passed
8	Cyclic damp heat test $55\text{ }^{\circ}\text{C}$; 100 % RH, 2 x 24 h	EN 50155:2021 EN 60068-2-30:2005	Passed
9	Electromagnetic compatibility test (EMC)	EN 50121-3-2:2016	Passed
	EMC: Emission	EN 50121-3-2:2016 EN 61000-6-4:2007+A1:2011	Passed
	EMC: Immunity ESD $\pm 6\text{ kV}$ Contact, $\pm 8\text{ kV}$ Air	EN 50121-3-2:2016 EN 61000-4-2:2009	Passed

#	Test and requirements	Standard	Result
	EMC: Immunity RF-Field 80-1000 MHz, 20 V/m, 1400-2000 MHz, 10 V/m 2000-2700 MHz, 5 V/m 5100-6000 MHz, 3 V/m	EN 50121-3-2:2016 EN 61000-4-3:2006+A1:2008+A2:2010	Passed
	EMC: Immunity Burst ±2 kV, 5 kHz	EN 50121-3-2:2016 EN 61000-4-4:2012	Passed
	EMC: Immunity Surge ±1 kV Line-Line ±2 kV Line-Earth	EN 50121-3-2:2016 EN 61000-4-5:2014	Passed
	EMC: Immunity Conducted-RF 0.15-80 MHz, 10 V, 80 % AM (1kHz)	EN 50121-3-2:2016 EN 61000-4-6:2014	Passed
10	Shock and vibration test	EN 61373:2010	Passed
	Broadband random noise 1,01 m/s ² , 5-150 Hz, ASD 0,03 (m/s ²)/Hz, 10 min	EN 61373:2010 EN 60068-2-64:2008	Passed
	Simulated Lifetime 5,72 m/s ² , 5-150 Hz, 5 h	EN 61373:2010 EN 60068-2-64:2008	Passed
	Shock 50 m/s ² , 24 ms, 3 Shocks	EN 61373:2010 EN 60068-2-27:2009	Passed
11	Enclosure protection test (IP-Code) IP20	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	Test on inquiry	---
15	Fire behaviour of materials HL1 to HL3, burning mass ≤ 100 g / ≤ 400 g	EN 45545-1:2013 EN 45545-2:2020	Passed

Test laboratories used:	for test no.:
Internal laboratory JUMO	11
Internal accredited laboratory JUMO (IEC 17025)	1-10
External accredited laboratory (IEC 17025)	15

JUMO GmbH & Co. KG, Moritz-Juchheim-Strasse 1, 36039 Fulda, Germany	
Date	Signature
Fulda, March 13, 2025	 o.b.o. Dr.-Ing Jan-Florian Höfinghoff test laboratory
	 o.b.o. Klaus Otto product management