

CERTIFICATE

Railway application - Rolling stock equipment category 1B

According to DIN EN 50155 / DIN EN 50121

Certificate no:	U1982-50a-15
Date of issue:	12 November 2015
Number of pages:	2 page
Applicant's name:	JUMO Mess- und Regeltechnik AG
Address:	Laubisrütistrasse 70, CH-8712 Stäfa
Manufacturer:	JUMO Mess- und Regeltechnik AG
Address:	Laubisrütistrasse 70, CH-8712 Stäfa
Product description:	RTD temperature probe
Trademark:	JUMO
Model and/or type list:	902050 / 902150 / 902230 / 902240 / 902250 / 902550 / 902030 / 902815 with/without transmitter

Applied tests by QUINEL:

	Test	Standard	Result ¹
1	Cold, -60°C, 2h	EN 60068-2-1:2007	passed
2	Damp heat cyclic, 25°C/55°C, 95%r.H., 4cycles à 24h	EN 60068-2-30:2005	passed
3	Salt mist, 5% NaCl, 35°C, 96h	EN 60068-2-11:1999	passed
4	Dry Heat, 125°C, 18h	EN 60068-2-2:2007	passed
5	EMC	EN 61000-6-2:2005	passed
	RF conducted disturbances 10V RMS	IEC 61000-4-6:2008 EN 61000-4-6:2009	passed
	Radiated electromagnetic field 20V/m and 30V/m	IEC61000-4-3:2006+A1:2007 +A2:2010 EN 61000-4-3:2006+A1:2008 +A2:2010	passed
6	EMC	EN 61000-6-2:2005	passed
	Electrical fast transient burst ± 2kV	IEC 61000-4-4:2012 EN 61000-4-4: 2012	passed
	Electrostatic discharge 8kV air and 6kV contact	IEC 61000-4-2:2008 EN 61000-4-2:2009	passed
	Surge 1kV (42Ω) line to line 2kV (42Ω) line to earth	IEC 61000-4-5:2005 EN 61000-4-5:2006	passed

Applied tests by subcontractor: Mettler-Toledo AG, Heuwinkelstrasse, CH-8606 Nänikon

Test		Standard	Result ¹
1	Vibration random 5-150Hz, 1m/s ² , 10min/axis 5-150Hz, 7.9m/s ² , 5h/axis	EN 61373 Cat. 1B:1999 EN 60068-2-64:2008	passed
2	Shock half sinus 30g, 18ms, 3 shocks/direction total 18 shocks/test sample	EN 61373 Cat. 1B:1999 EN 60068-2-27:2009	passed


Applied tests by subcontractor: FAKT GmbH, Grüntenstrasse 3-5, D-87751 Heimertingen

Test		Standard	Result ¹
1	Vibration random 5...150Hz, 1m/s ² , 2 x 10min/axis 5...150Hz, 7.9m/s ² , 5h/axis	EN 61373 Cat. 1B:1999 EN 61373 Cat. 1B:2011 EN 60068-2-64:2008	passed
2	Shock half sinus 5g, 30ms 3 shocks/direction total 18 shocks/test sample	EN 61373 Cat. 1B:1999 EN 61373 Cat. 1B:2011 EN 60068-2-27:2009	passed

Applied tests by subcontractor: JUMO Mess- und Regeltechnik AG, Laubisrütistrasse 70, CH-8712 Stäfa

Test		Standard	Result
1	Temperature shock 20°C / 100°C (500 cycles)	EN 60068-2-14:2009	passed
2	IP68	EN 60529:2000	passed
3	DIN IEC 60751	EN 60751:2009	passed

Note 1: Final measurements by customer

 <p>STS 0037</p> <p>S T S</p> <p>Schweizerischer Prüfstellendienst Service Suisse d'essai Servizio di prova in Svizzera Swiss testing service</p>	<p>QUINEL AG</p> <p>Elsihof 3, CH-6035 Perlen</p>
	<p>DATE:</p> <p>Perlen, 12 November 2015</p>