Pushing Performance
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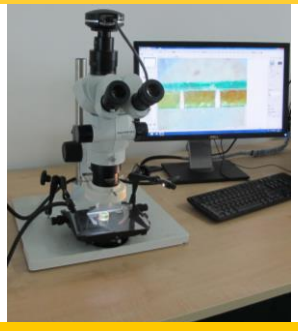
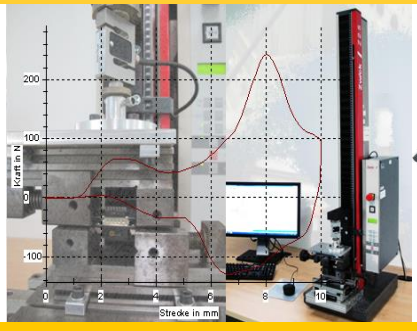
检测
TESTING
CNAS L11131

HARTING Technology Services China

Service Catalogue

September. 2024

Version: 09

Content

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Technology Services China

The Technology Service China of HARTING (Zhuhai) Manufacturing Co., Ltd is an internal laboratory of HARTING, provides independent tests service to HARTING Technology Group especially the products in Asia market. The laboratory is accredited according to ISO/IEC 17025 for the testing of electromechanical components.

The accreditation is valid only for the scope listed in the annex of the accreditation certificate CNAS L11131.

China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(Registration No. CNAS L11131)

Technology Services China of HARTING (Zhuhai) Manufacturing Co., Ltd.

(Legal Entity: HARTING (Zhuhai) Manufacturing Co., Ltd.)

No.19, Phase 1, Chuangxin Silu, Zhuhai, Guangdong, China

is accredited in accordance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake the service described in the schedule attached to this certificate.

The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.

Effective Date：2024-06-25

Expiry Date：2030-06-24

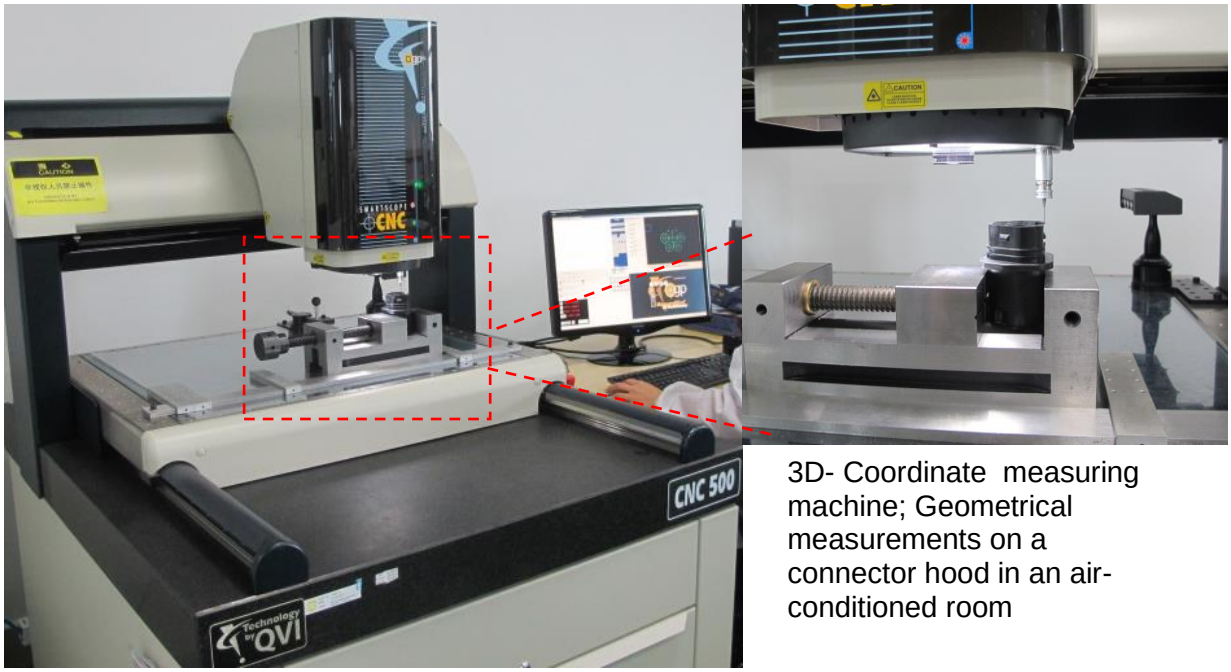
Signed on behalf of China National Accreditation Service for Conformity Assessment 张朝华

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is a signatory of the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) and the Asia Pacific Accreditation Cooperation Mutual Recognition Arrangement (APAC MRA).

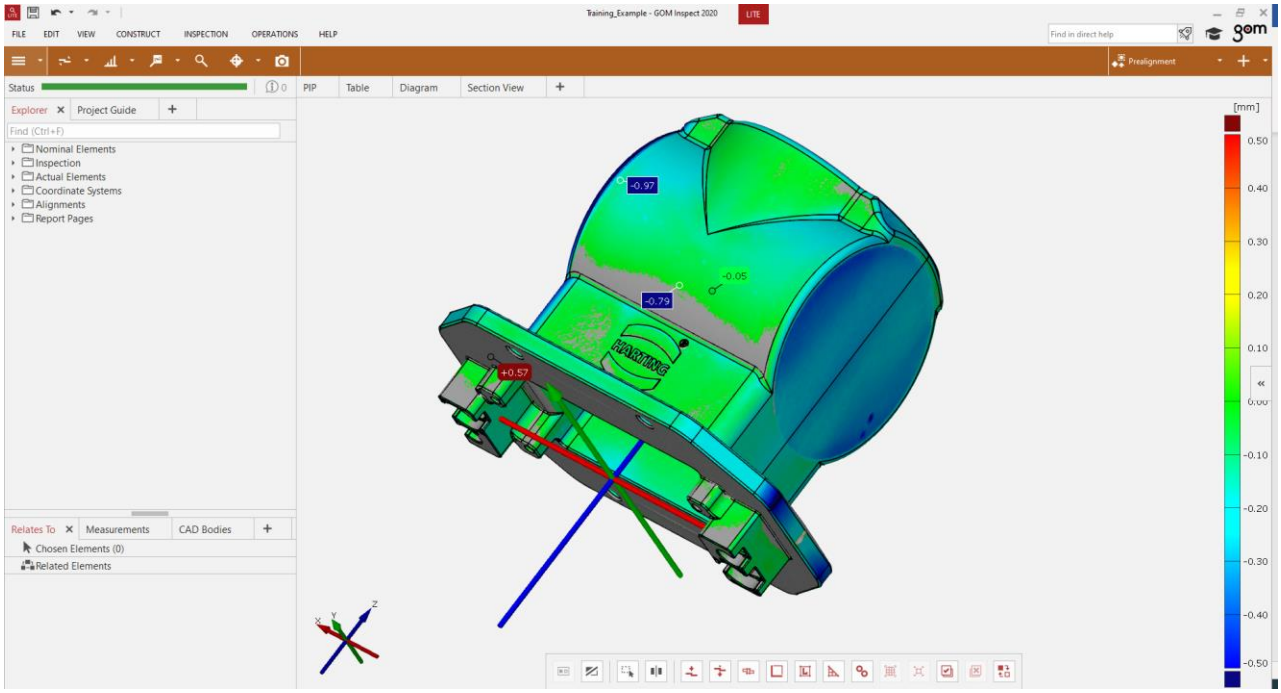
The validity of the certificate can be checked on CNAS website at http://www.cnas.org.cn/english/findanaccreditedbody/index.shtml.

Dimensional measuring technology

2D-,3D- Coordinate and GOM measurements



3D- Coordinate measuring machine; Geometrical measurements on a connector hood in an air-conditioned room

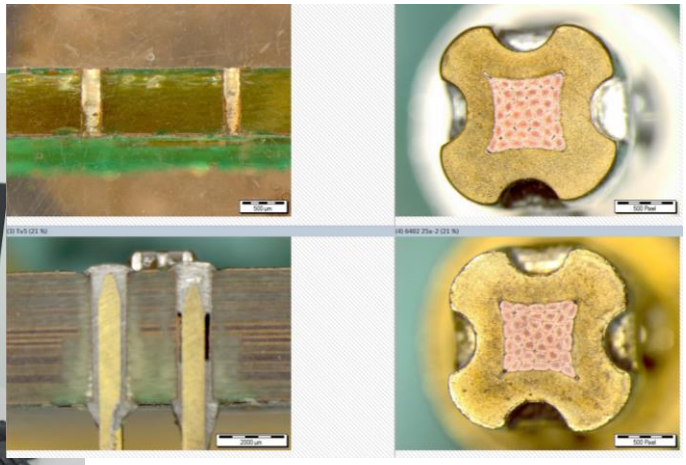


Technical specifications and test ranges:

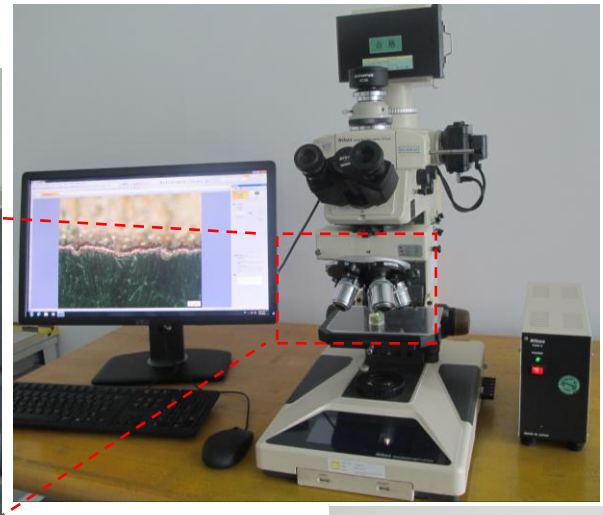
Coordinate measurements (3D ,2D- Coordinate measuring machine; 1D-,2D- hand-held test equipment)	Accuracy of measurement X-Y axis U2=(2.5+5L/1000) μm Z axis U1=(2.0+8L/1000) μm Resolution 0.1 μm 500(X) x 400(Y) x 250 (Z) mm	GB/T 1958
GOM measurements	Accuracy of measurement 0.02mm	

Layer and Material analysis

Microscopic examinations and hardness measurement



Microscopic examination on the grinded cross section of a multi- layer backplane soldering hole and a crimping connection



Microscopic examination on a grinded & polished cross section of a through hole layer

Vickers hardness tester

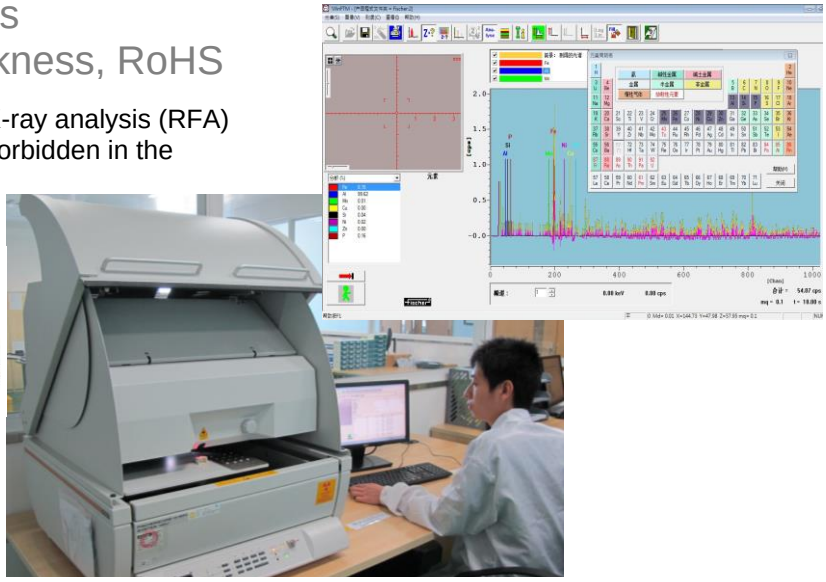
Technical specifications and test ranges:

Visual examination	Spectrum of enlargements:12.5X- 2000X	IEC 60512-1-1 GB/T 5095.2
Hardness according to Vickers	HV0.3- HV50	ISO 6507-1 GB/T4340.1

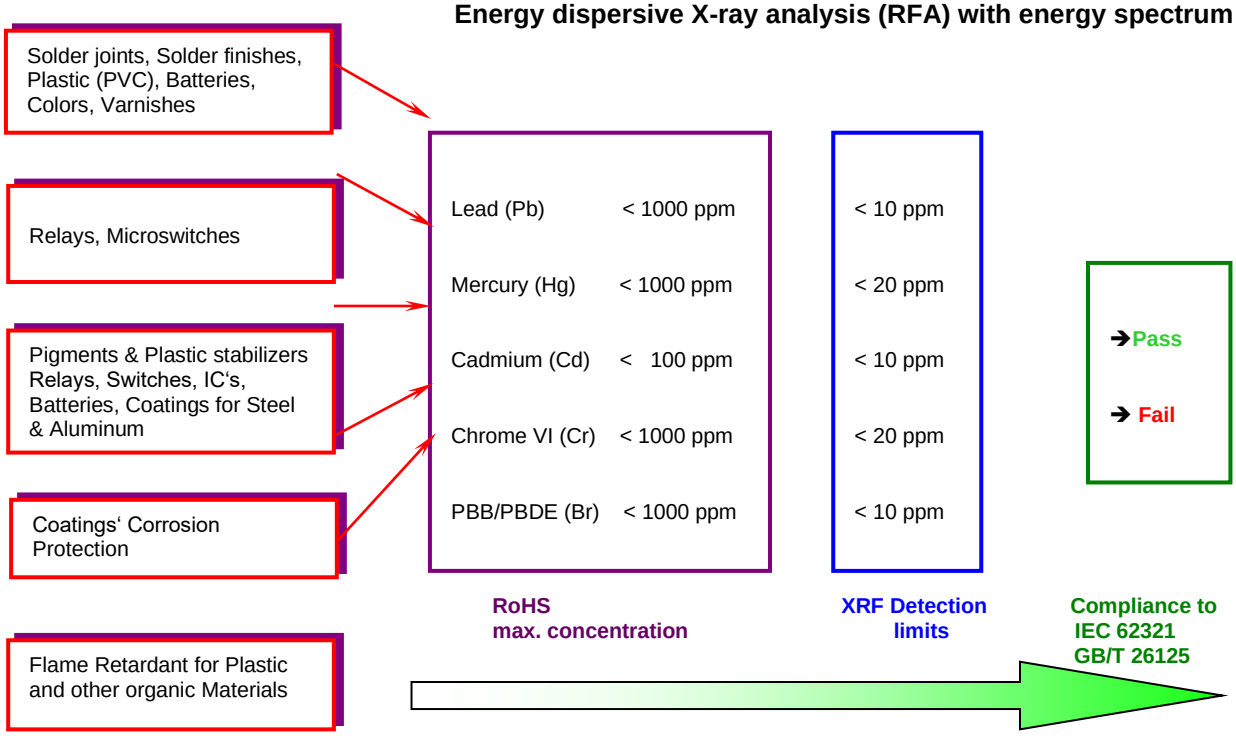
Layer and Material analysis

X-ray fluorescence analysis measurement of layer thickness, RoHS

With the help of the energy dispersive X-ray analysis (RFA) substance can be identified, which are forbidden in the context of RoHS guideline (IEC 62321)



Energy dispersive X-ray analysis (RFA) with energy spectrum



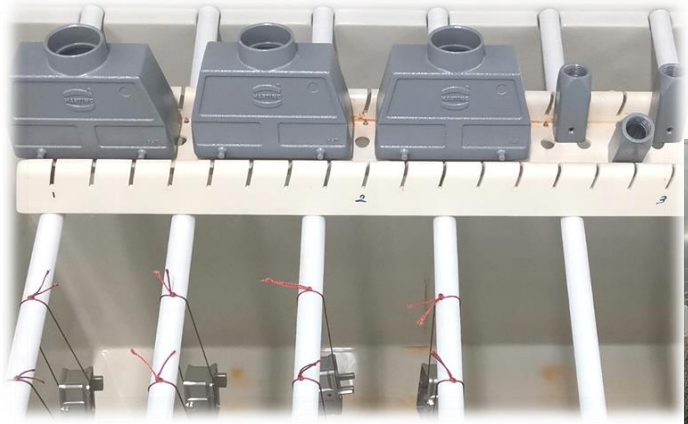
Overview on the RoHS guideline

Technical specifications and test ranges:

Material analysis from atomic number 13 with X-ray fluorescence	resolution ≤140 eV	
Metallic measuring of layer Thickness	Nondestructive measurement of 24 elements in 24 monolayers	ISO 3497 GB/T 16921
RoHS conformity assessment		IEC 62321 GB/T 26125

Climatic and Environmental tests

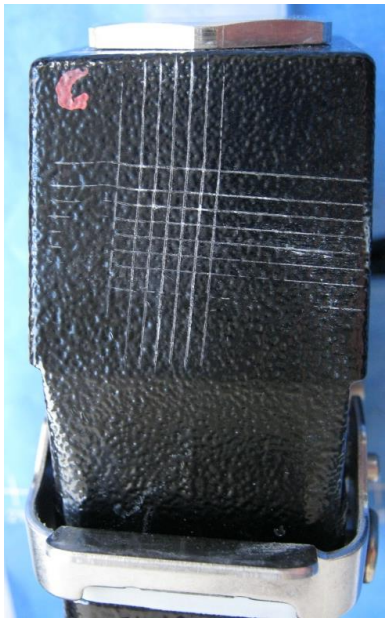
Corrosion tests- **Salt mist & Condensation water**



Salt mist:
salt solution (5%)
pH-value of the solution 6,5 – 7,2
test chamber temperature 35 °C

Condensation water test:
test chamber temperature & Humidity
40 °C, 100%RH

Cross cut after salt mist



Classification of test results:

Classification	Description	Appearance of surface of cross-cut area from which flaking has occurred[a] (Example for six parallel cuts)
0	The edges of the cuts are completely smooth; none of the squares of the lattice is detached.	
1	Detachment of small flakes of the coating at the intersections of the cuts. A cross-cut area not greater than 5 % is affected.	
2	The coating has flaked along the edges and/or at the intersections of the cuts. A cross-cut area greater than 5 %, but not greater than 15 %, is affected.	
3	The coating has flaked along the edges of the cuts partly or wholly in large ribbons, and/or it has flaked partly or wholly on different parts of the squares. A cross-cut area greater than 15 %, but not greater than 35 %, is affected.	
4	The coating has flaked along the edges of the cuts in large ribbons and/or some squares have detached partly or wholly. A cross-cut area greater than 35 %, but not greater than 65 %, is affected.	
5	Any degree of flaking that cannot even be classified by classification 4.	—

[a] The figures are examples for a cross-cut within each step of the classification. The percentages stated are based on the visual impression given by the pictures and the same percentages will not necessarily be reproduced with digital imaging.

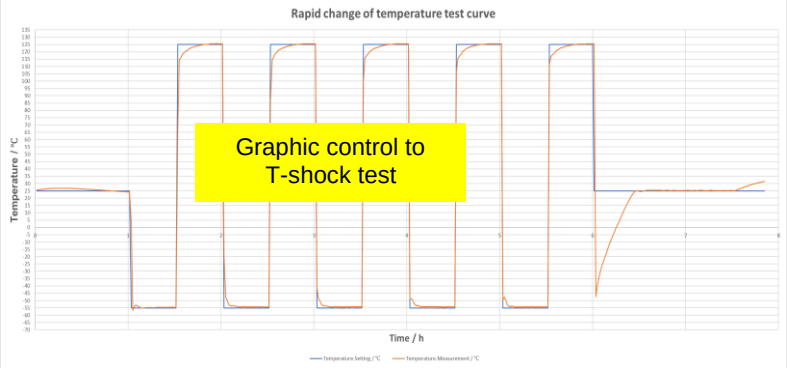
Technical specifications and test ranges:

Salt mist	+50 °C max NSS	IEC 60512-11-6, ISO 9227 GB/T 2423.17, GB/T 5095.6
Condensation water	+40 °C ,100%RH	ISO 6270
Cross cut test		ISO 2409

Climatic and Environmental tests

Environment tests- **Rapid change of Temperature**

Graphic Control Profile of tests



Vötsch T- Shock chamber

Two chambers (air to air)
Test chamber volume 125 l
Change rate 1/3 s
Temperature heat chamber 50 °C to 220 °C
cold chamber -80 °C to 70 °C

Environment tests- **Dry heat**

Test chamber volume up to 250 l
Temperature up to 250 °C

Technical specifications and test ranges:

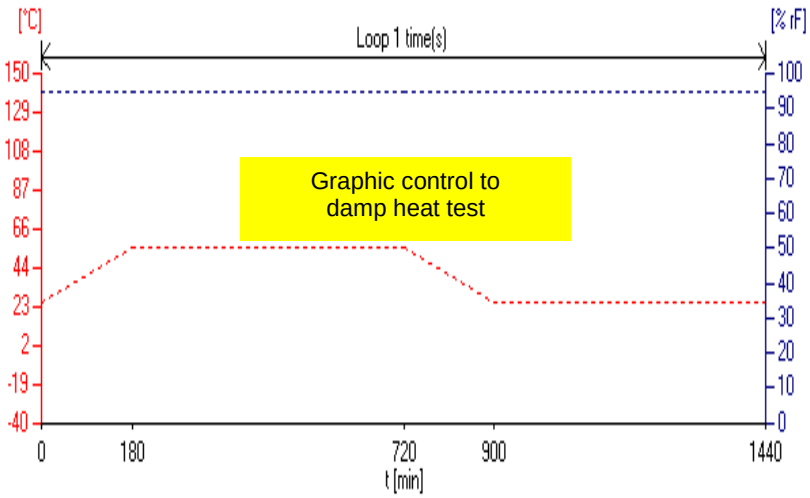
Rapid change of temperature (two chamber process)	-80°C up to +220 °C	IEC 60512-11-4, IEC 60068-2-14 GB/T 2423.22, GB/T 5095.6
Dry heat	+250 °C	IEC 60512-11-9, IEC 60068-2-2 GB/T 2423.2, GB/T 5095.6
Cold	-80 °C	IEC 60512-11-10, IEC 60068-2-1 GB/T 2423.1, GB/T 5095.6
Climatic sequence	-55 °C-125°C (85-98) % R.H.	IEC 60512-11-1, IEC 60068-2-61 GB/T 2423.45, GB/T 5095.6

Climatic and Environmental tests

Environment tests- **Damp heat**

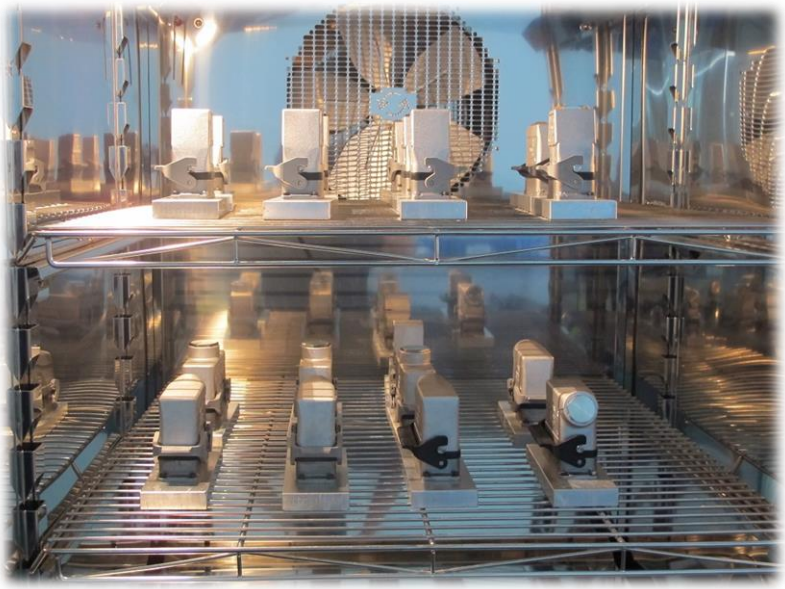
Vötsch damp heat chamber

Graphic Control Profile of tests



Test chamber volume up to 600 l
Temperature up to 100 °C
Humidity up to 98%

Vötsch T- profile chamber

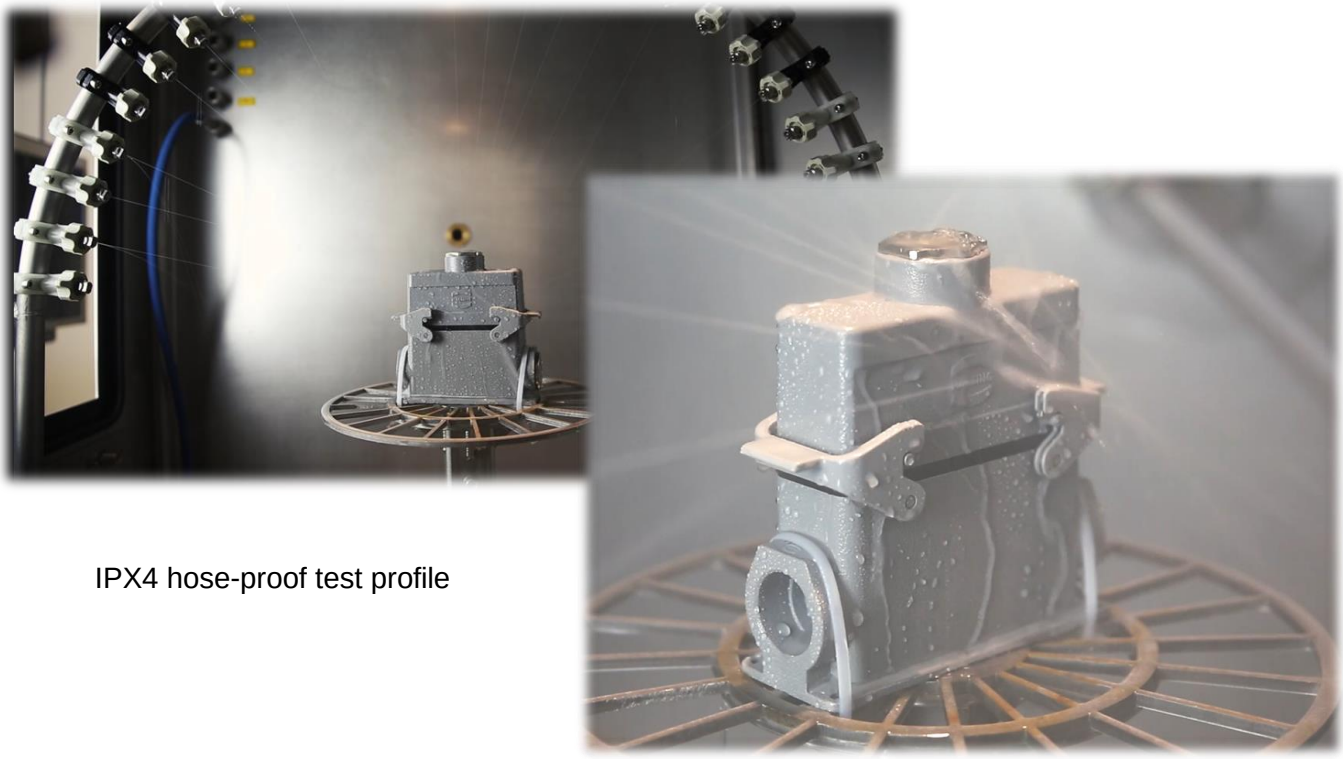


Technical specifications and test ranges:

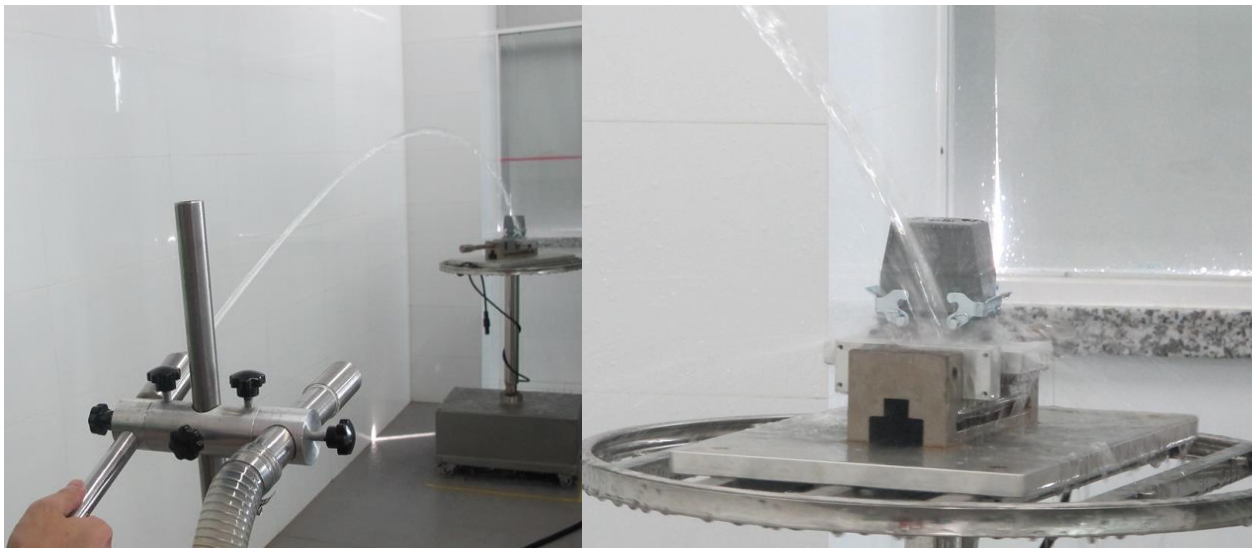
Damp heat steady, cyclic	15-85 °C (30-98)% rel. humidity	IEC 60512-11-3, IEC 60512-11-12, GB/T 2423.3, GB/T 5095.6	IEC 60068-2-78 IEC 60068-2-4 GB/T 2423.4
Cold	-70 °C	IEC 60512-11-10, GB/T 2423.1,	IEC 60068-2-1 GB/T 5095.6
Climatic sequence	-55 °C-125°C (85-98) % R.H.	IEC 60512-11-1, GB/T 2423.45,	IEC 60068-2-61 GB/T 5095.6

Climatic and Environmental tests

Degree of protection (IP tests)



IPX4 hose-proof test profile



IPX5 hose-proof test on a Han® 16B housing

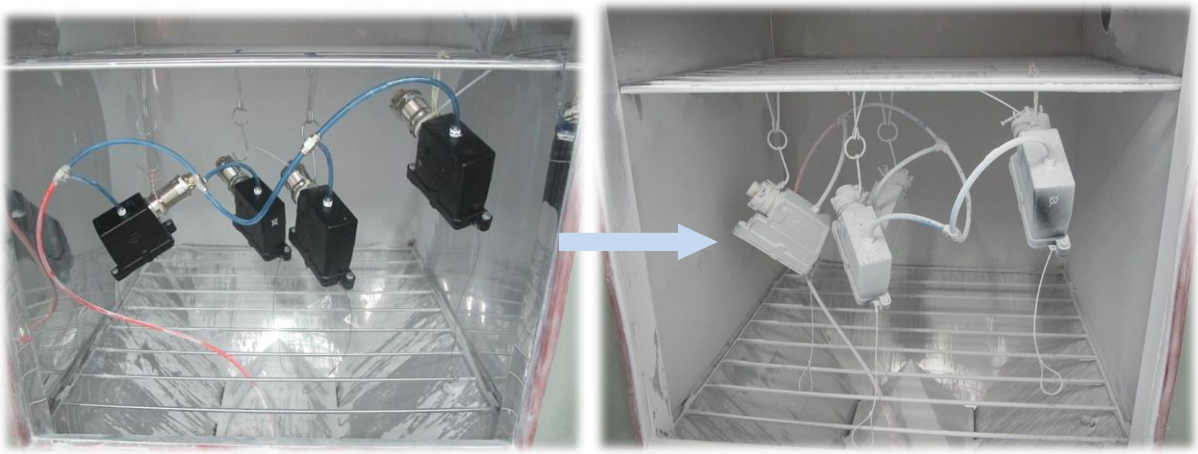
Technical specifications and test ranges:

IP-Test	IP 5X - IP6X (dust - proof) IP X3 - IPX9 (water tight) IPX9K	IEC 60529 GB/T 4208 ISO 20653

Climatic and Environmental tests

Degree of protection (IP tests)

IPx9 test chamber



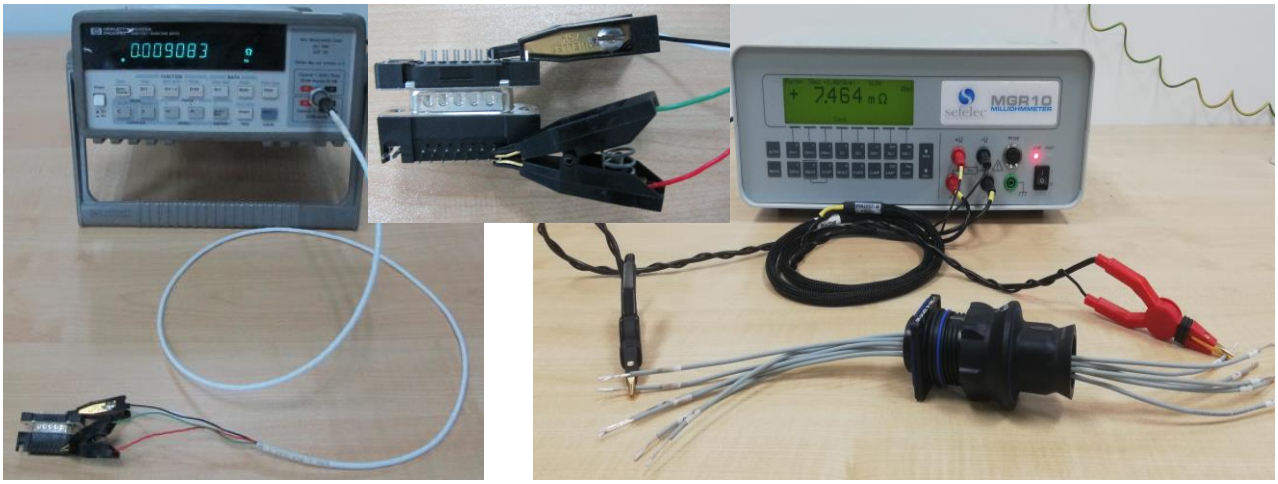
IP6X dust test arrangement on a Han® Hood/Cable gland assembly

Technical specifications and test ranges:

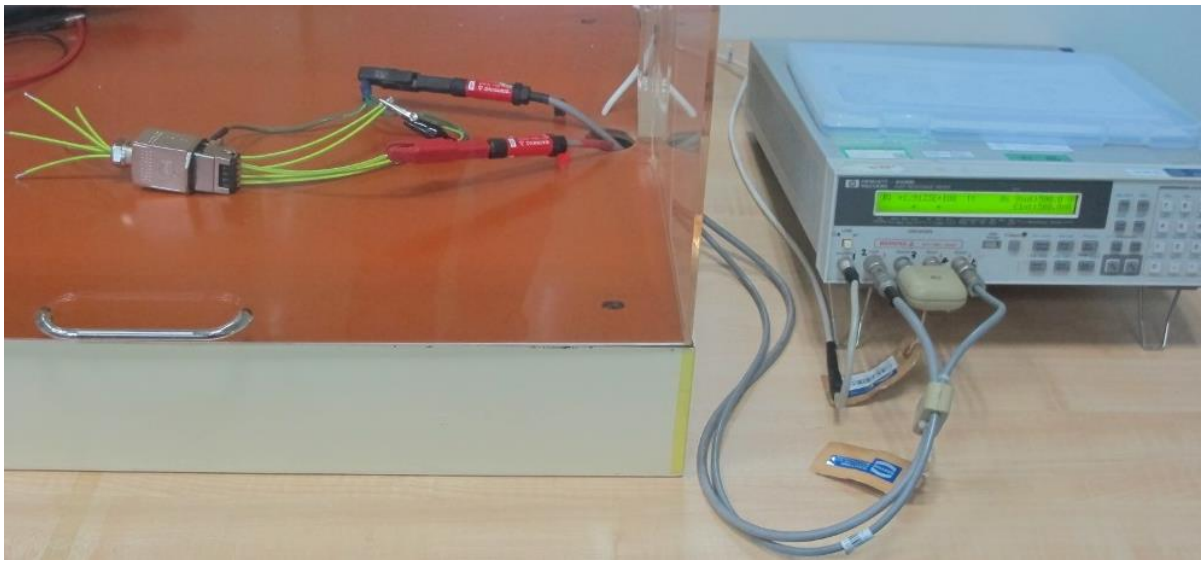
IP code Test	IP 5X - IP6X (dust - proof) IP X3 - IPX9 (water tight) IPX9K	IEC 60529 GB/T 4208 ISO 20653

Electrical tests

Electrical resistance tests



Contact resistance test setup



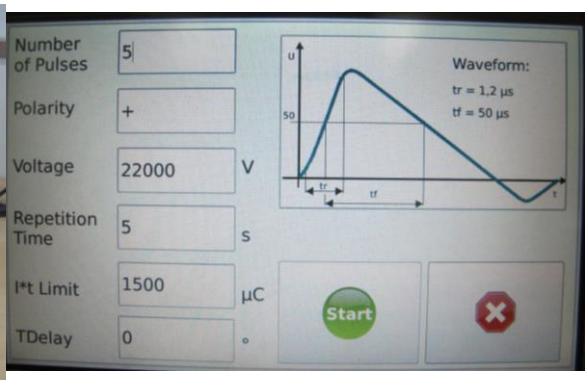
Insulation proof of a Push Pull connector

Technical specifications and test ranges:

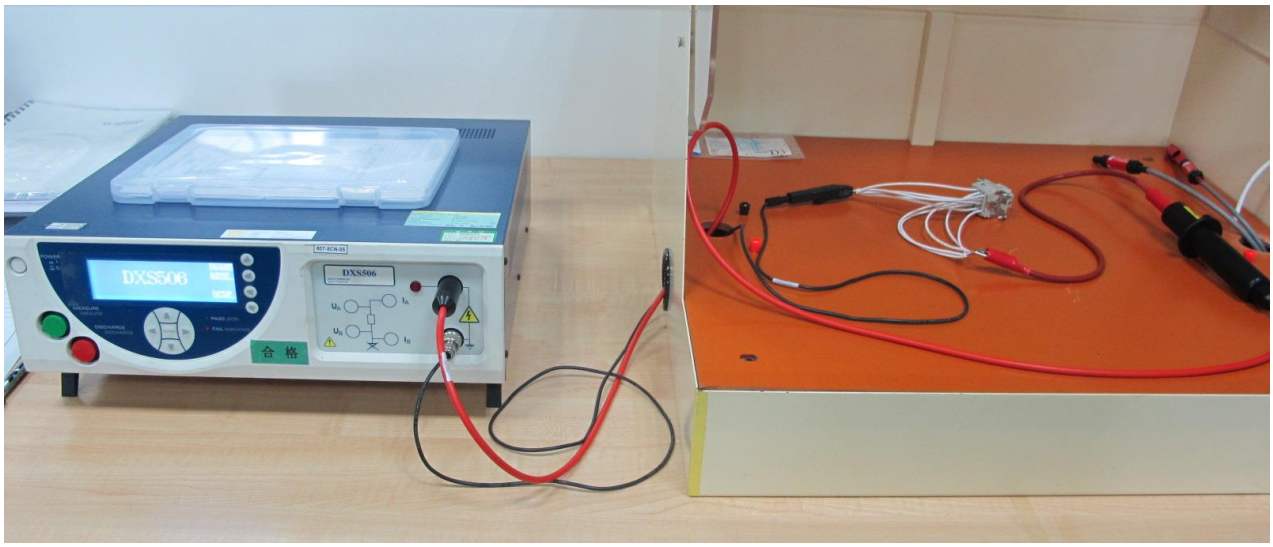
Contact resistance	≥ 0.01 mΩ	IEC 60512-2-1 IEC 60512-2-2 GB/T 5095.2
Insulation resistance	10^3 Ω-10^{16}Ω	IEC 60512-3-1 GB/T 5095.2

Electrical tests

Impulse withstand voltage and voltage proof tests



Impulse withstand voltage test arrangement on a Han® HPR 3A Hood Modular



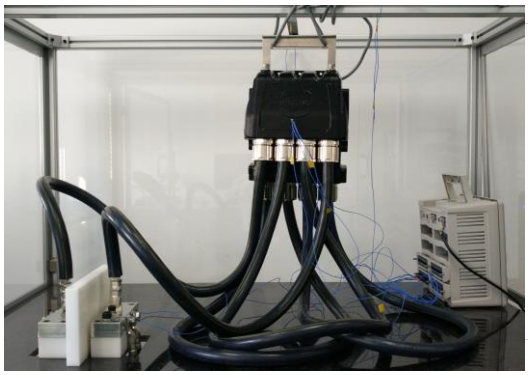
Voltage proof test arrangement on a Han® inserts

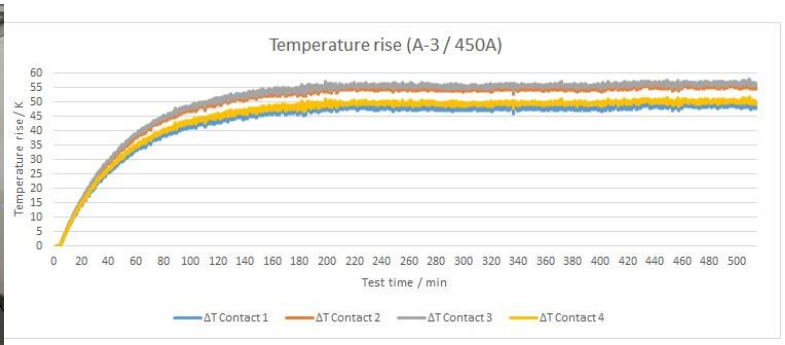
Technical specifications and test ranges:

Impulse withstand voltage	0.5KV- 24KV 1.2/50 µs waveform	IEC 61984
Voltage proof	DC 6KV/AC 20KV	IEC 60512-4-1 GB/T5095.2

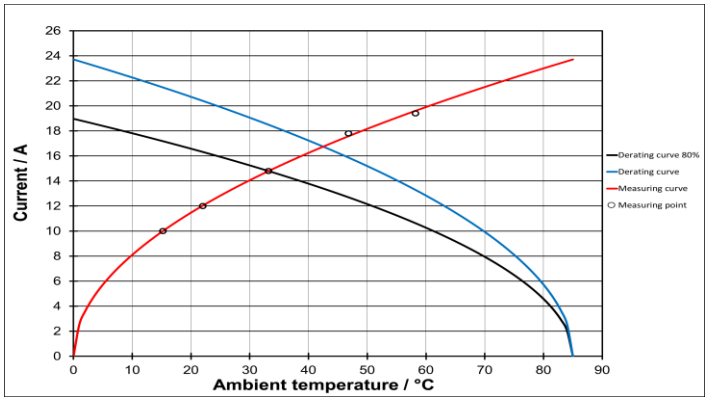
Electrical tests

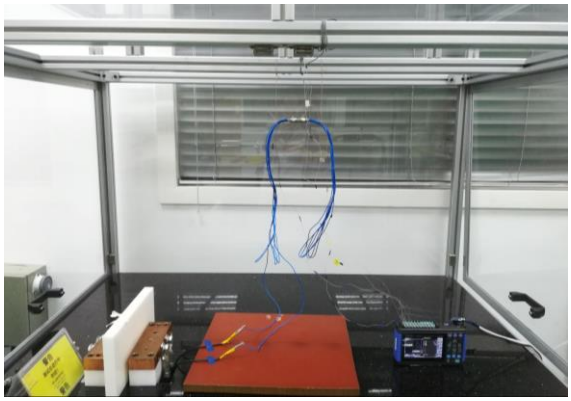
Temperature rise and derating tests





Temperature rise test arrangement on a Han® HPR connector





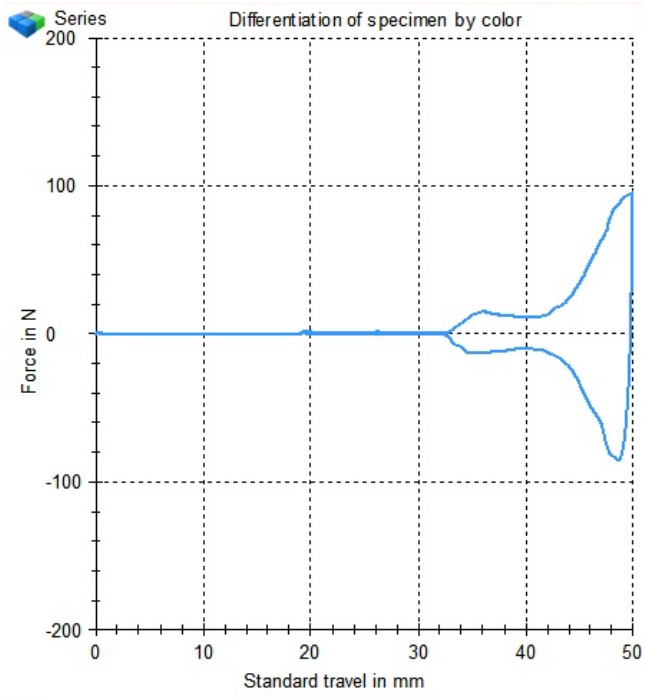
Derating test result on a Han® modular connector

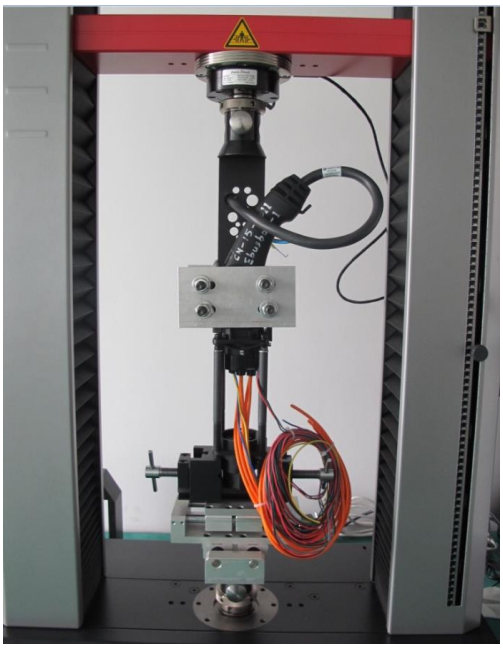
Technical specifications and test ranges:

Current –carrying capacity (derating curve)	Up to 1000 A	IEC 60512-5--2
Temperature rise	Up to 1000 A	IEC 60512-5-1
Electrical load at high temperature	Up to 1000 A, 220°C	IEC 60512-9--2

Mechanical tests

Insertion- and withdraw- force and basic tensile & compressive stress tests





Insertion and withdrawal force performance of a HARTING vehicle connector after 10000 cycles durability test

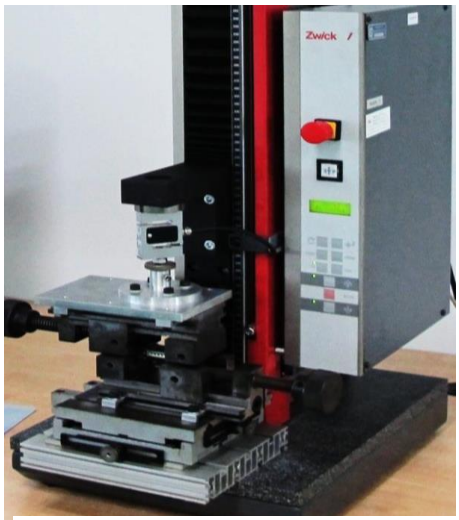
Basic materials testing –
tensile & compressive stress

Technical specifications and test ranges:

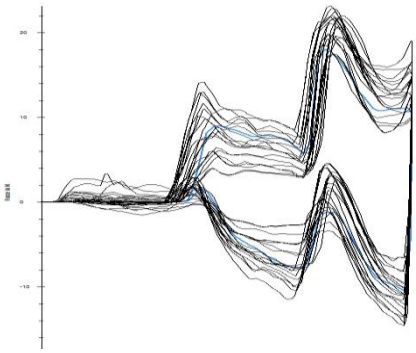
Load-extension-diagrams Insertion- and withdrawal- force; Spring characteristics	0.004kN- 20kN Force sensor: 0.2kN 1kN,2.5kN,20kN	IEC 60512-13-2 GB/T 5095.7
Mechanical life time (Mating cycles)	600 mm/min	IEC 60512-9-1

Mechanical tests

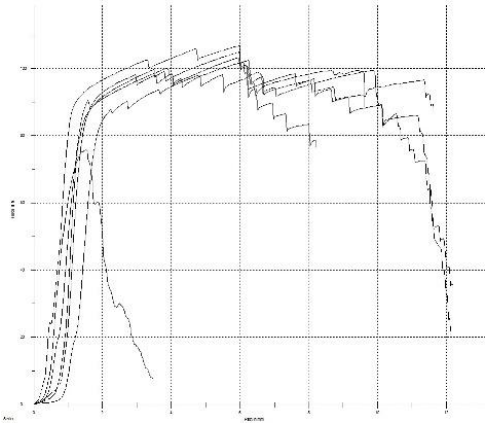
Mating cycle and Crimping qualification tests



Material testing machine, Zwick



Mating cycle test with insertion and withdrawal force profile of a HARTING D-Sub male and female connector



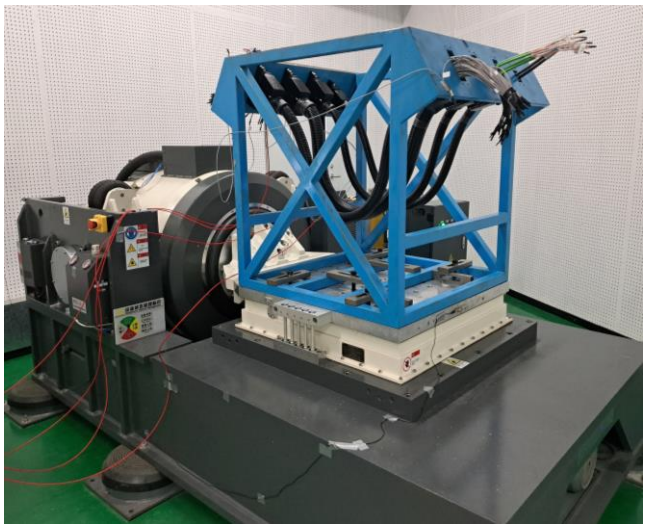
Pull out force test of a crimping terminal

Technical specifications and test ranges:

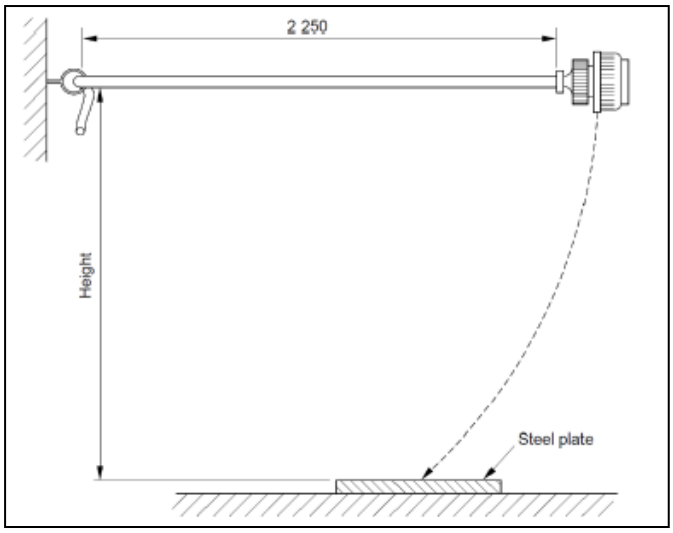
Load-extension-diagrams Insertion- and withdrawal- force; Spring characteristics	0.004kN- 20kN Force sensor: 0.2kN 1kN,2.5kN,20kN	IEC 60512-13-2 GB/T 5095.7
Mechanical life time (Mating cycles)	600 mm/min	IEC 60512-9-1
Crimping pull out force	0.004kN- 20kN	IEC 6512-16-4

Electrical tests

Impact tests and customer specific movement tests



Vibration and shock tests



Mechanical strength impact (free fall) test

Custom X-Y movement tester for a railway jumper cable

Technical specifications and test ranges:

Vibration, sinusoidal test Vibration, noise profile		IEC 60068-2-6 IEC 60068-2-64
Mechanical shock	5g/6ms Max Weight 500KG (Specimen + Mounting device)	IEC 60068-2-27 IEC 61373
Impact test	Free fall IK06~10	IEC 60512-7-2 DIN EN 50102
X – Y movement test	moved distance 500 mm Max. 15KG load Max	

Contact us

Pushing Performance

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