VDE Prüf- und Zertifizierungsinstitut

VDE

VDE Prüf- und Zertifizierungsinstitut GmbH • Merianstraße 28 • D-63069 Offenbach

EINGEGANGEN
26. Feb. 2010

Hauff-Technik GmbH & Co. KG
In den Stegwiesen 18
Herrn Wolfgang Lange
89542 Herbrechtingen

Offenbach, 2009-10-05

Your ref.	Your letter	Our ref. - please indicate	Contact
Wolfgang Lange	2009-07-30	5011247-9010-0001/122140 FG34/bhl	Mr. Biehl Tel (+49) (69) 83 06-249 Fax (+49) (69) 83 06-716 gerhard.biehl@vde.com

Translation: In any case the German version shall prevail

P r ü f b e r i c h t
zur Information des Auftraggebers
Test Report for the Information of the applicant

Testing of Degree of protection provided by cable seal with segment rings
Type P-Cable Basic

Dieser Prüfbericht enthält das Ergebnis einer einmaligen Untersuchung an dem zur Prüfung vorgelegten Erzeugnis. Ein Muster dieses Erzeugnisses wurde geprüft, um die Übereinstimmung mit den nachfolgend aufgeführten Normen bzw. Abschnitten von Normen festzustellen.
Die Prüfung wurde durchgeführt von 2009-07-27 bis 2009-09-26.

This test report contains the result of a singular investigation carried out on the product submitted. A sample of this product was tested to found the accordance with the thereafter listed standards or clauses of standards resp.
The testing was carried out from 2009-07-27 to 2009-09-26.

Der Prüfbericht berechtigt Sie nicht zur Benutzung eines Zertifizierungszeichens des VDE und berücksichtigt ausschließlich die Anforderungen der unten genannten Regelwerke.

The test report does not entitle for the use of a VDE Certification Mark and considers solely the requirements of the specifications mentioned below.

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Wenn gegenüber Dritten auf diesen Prüfbericht Bezug genommen wird, muss dieser Prüfbericht in voller Länge an gleicher Stelle verfügbar gemacht werden.

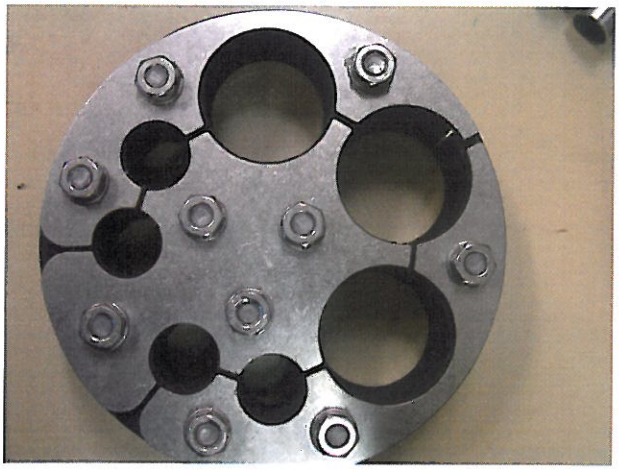
Whenever reference is made to this test report towards third party, this test report shall be made available on the very spot in full length.

1 Task

A test was carried out on the test samples indicated in No. 2, verifying the 'Degree of Protection Provided by IP66/68/X9K.

2 Test Sample

Cable seal with segment rings, type P-Cable Basic (HRD 200-SG-3/6-54-4/6-26)



2.1 Equipped with single wire Ø 6,0 mm (2x2x0,8)

2.2 Equipped with blank seal Ø 9,0 mm

2.3 Equipped with plastic bars Ø 14,0 mm; 2 x Ø 20,0 mm; 2 x Ø 24,0 mm 2 x Ø 32 mm und Ø 52,0 mm

2.4 Equipped with plastic bars 4 x Ø 26 mm und 3 x Ø 54 mm

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3 Basis of Assessment

DIN EN 60529 Part 1:2000-09
Degrees of Protection provided by enclosures (IP-code)
German Version EN 60529:1991 + A1:2000

and

DIN 40050 part 9:1993-05
Road vehicles;
Degrees of protection (IP code);
Protection against foreign objects; water and contact
Electrical equipment

4 Test Performance

The cable seals were put in a one-side-closed metal tube. The tightening of the screws was 25 Nm.

The dust test was carried out with talcum powder over the closed side of the metal tube according to category 1. The depression was set at 2 kPa, the test duration was 8 hours. The IPX8 test was carried out in a depth of 10 meters and 25 meters. The duration time in water was 2 hours per samples.

5 Test Result

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The following results were attained for the test sample indicated in item 2:

5.1 Cable seal with segment rings, equipped with single wire Ø 6,0 mm (2x2x0,8)

- Protection against access to hazardous parts and against ingress of solid foreign objects according to DIN EN 60529 Part 1:2000-09	**IP6X**	**fulfilled**
Protection against ingress of water according to DIN EN 60529 Part 1:2000-09	**IPX6**	**fulfilled**
Protection against ingress of water according to DIN EN 60529 Part 1:2000-09	**IPX8 (10 m)**	**fulfilled**
Protection against ingress of water according to DIN 40050 part 9:1993-05	**IPX9K**	**fulfilled**

The cable seal with segment rings in the presented version fulfills the requirements of IP66/68/X9K, depth max 10 meters.

After the test neither dust nor water could be detected in the metal tube.

5.2 Cable seal with segment rings, equipped with blank seal Ø 9,0 mm

- Protection against access to hazardous parts and against ingress of solid foreign objects according to DIN EN 60529 Part 1:2000-09	**IP6X**	**fulfilled**
Protection against ingress of water according to DIN EN 60529 Part 1:2000-09	**IPX6**	**fulfilled**
Protection against ingress of water according to DIN EN 60529 Part 1:2000-09	**IPX8 (25 m)**	**fulfilled**
Protection against ingress of water according to DIN 40050 partl 9:1993-05	**IPX9K**	**fulfilled**

The cable seal with segment rings in the presented version fulfills the requirements of IP66/68/X9K, depth max 25 meters.

After the test neither dust nor water could be detected in the metal tube.

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5.3 Cable seal with segment rings, equipped with plastic bars Ø 14,0 mm; 2 x Ø 20,0 mm; 2 x Ø 24,0 mm 2 x Ø 32 mm und Ø 52,0 mm

- Protection against access to hazardous parts and against ingress of solid foreign objects according to DIN EN 60529 Part 1:2000-09	**IP6X**	**fulfilled**
Protection against ingress of water according to DIN EN 60529 Part 1:2000-09	**IPX6**	**fulfilled**
Protection against ingress of water according to DIN EN 60529 Part 1:2000-09	**IPX8 (25 m)**	**fulfilled**
Protection against ingress of water according to DIN 40050 partl 9:1993-05	**IPX9K**	**fulfilled**

The cable seal with segment rings in the presented version fulfills the requirements of IP66/68/X9K, depth max 25 meters.

After the test neither dust nor water could be detected in the metal tube.

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5.4 **Cable seal with segment rings, equipped with plastic bars 4 x Ø 26 mm und 3 x Ø 54 mm**

- Protection against access to hazardous parts and against ingress of solid foreign objects according to DIN EN 60529 Part 1:2000-09	**IP6X**	**fulfilled**
Protection against ingress of water according to DIN EN 60529 Part 1:2000-09	**IPX6**	**fulfilled**
Protection against ingress of water according to DIN EN 60529 Part 1:2000-09	**IPX8 (25 m)**	**fulfilled**
Protection against ingress of water according to DIN 40050 partl 9:1993-05	**IPX9K**	**fulfilled**

The cable seal with segment rings in the presented version fulfills the requirements of IP66/68/X9K, depth max 25 meters.

After the test neither dust nor water could be detected in the metal tube.

With best regards

VDE Testing and Certification Institute
Section F34

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