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## Test Report No. P50-11-0157e

## Environmental Tests

Order No.: 50-11-0137-2 (3039)  
Date: 13/07/2011  
Test engineer: Mr. Huster  
Documentation: hw/hb

This report contains  
4 pages.

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**Delivery date specimen:** 11/07/2011

**Test date:** 11/07/2011 until 12/07/2011

**Specimen:** 1 piece distribution board series "Vector II"  
VE412PN (specimen No. 50-11-3039-1)

**Relevant specification:** Degrees of protection provided by enclosures (IP-Code) according to DIN EN 60529 (edition 09/2000)  
(for details see page 2)

**Objective:** Proof of the degree of protection IP6X

**Results:** No dust penetrated into the distribution board VE412PN during the dust test. The access to the hazardous parts with an access probe was not possible.  
The protection degree IP6X is ensured for the tested distribution board series "Vector II" VE412PN (specimen No. 50-11-3039-1) (for details see page 4).

**Bernd Sommerfeld**  
**Head of the Environmental Lab**

The results refer only to the specimens above mentioned.

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## 1 Specimen

1 piece distribution board series "Vector II" VE412PN (specimen No. 50-11-3039-1)



fig. 1  
type plate

RST/5B50Q89L/25926

## 2 Relevant specification

2.1 Degrees of protection provided by enclosures (IP-Code) acc. IEC 60529 (edition 11/89)

2.1.1 First characteristic numeral: 6, protected against access to hazardous parts with a wire and dust-tight

### protection against access:

test means:	access probe (rigid steel wire 1.0 mm diameter, 100 mm length, edges rounded off)
test force:	1 N ± 10 %
acceptance conditions:	The access probe must not be able to penetrate.

### protection against foreign objects:

test means:	dust chamber
underpressure in the enclosure:	20 mbar
extraction rate:	≤ 60 enclosure volumes / hour
sucked air volume:	≤ 80 enclosure volumes
test duration:	2 hours ... 8 hours
test dust:	talcum powder
acceptance conditions:	no penetration of dust (dust-tight)

## 2.2 Visual evaluation

An evaluation of the specimen after the dust tests IP6X (according to clause 2.1) is to be carried out regarding the penetration of dust into the enclosure. The operability and the safety must not be reduced.

### 3 Test procedure

#### 3.1 Test setup

- test of the protection against access: see fig. 2
- dust test: see fig. 3



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fig. 2  
test of the protection against access with an  
access probe (IP6X)



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fig. 3  
specimen in the dust chamber after the dust  
test (IP5X)

#### 3.2 Test equipment

The test and measuring instruments as well as the calibration status were checked before using.

test instruments
access/object probe according to DIN EN 60529
dust test chamber according to DIN EN 60529

#### 3.3 Parameters for the dust test

For the specimen following parameters were determined:

- underpressure in the enclosure: 17 mbar
- extraction rate: 0,93 enclosure volumes / hour
- resulting test duration: 8 hours

## 4 Results

### 4.1 Visual examination

IP6X: No dust penetrated into the distribution board VE412PN during the dust test (see fig. 4 and fig. 5). The access to the hazardous parts with an access probe was not possible.

### 4.2 IP-degree of protection

The protection degree IP6X is ensured for the tested distribution board series "Vector II" VE412PN (specimen No. 50-11-3039-1).

### 4.3 Photographic representation of the results



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fig. 4  
after the dust test:  
no dust penetrated



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fig. 5  
after the dust test:  
seals of the distribution board are effective  
(no penetration of dust)