

# SABS

Your ref.: Order 20130819/1  
Our ref.: HV/107284  
Enquiries: G W Bourn  
Date: 24 October 2013

JoynX (Pty) Ltd.  
Attention: Mr Danie Stander  
P.O. Box 38128  
Booyens  
2016

Dear Sir **DIELECTRIC TESTS ON CABLE COUPLER**

--- With reference to your Order 20130819/1 we have pleasure in enclosing our test report No. HV/107284 on the above tests.

Our invoice covering the cost of the tests will be forwarded to you under separate cover.

Yours faithfully



**JP Fourie**  
Specialist: High Voltage Laboratory  
NETFA

**SABS COMMERCIAL SOC Ltd.** Reg. No. 2000/013581/07

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## TEST REPORT

**Client** : JoynX (Pty) Ltd.  
9 Data Crescent, Ormonde  
**Manufacturer** : JoynX (Pty) Ltd.  
**Apparatus** : Cable Coupler  
**Model** : 35BU

**Ratings assigned by the manufacturer:**

**Rated voltage** : 35 kV  
**Current rating** : 800A  
**LI Insulation level** : 200 kV  
**AC Insulation level** : 72 kV

Tests have been carried out in accordance with the client's instructions.  
Test procedures and test parameters were based on:

**SANS 1489-1:2009** *Electrical connectors in groupe I and II hazardous locations.  
Part 1 : General requirements for groupe I hazardous locations*

Clause 6.5 Voltage withstand  
Clause 6.7 Impulse voltage test  
Clause 6.8 Partial discharge

**Date of tests** : 16 September 2013

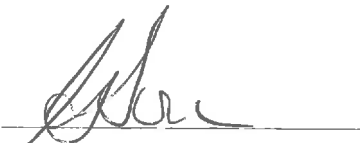
**Conclusion** : The results are shown in section 5 of this report.

**This report consists of the following pages:**

**Report forms** 3  
**Photographs** 1  
**Data sheets** 7



**JP Fourie**  
Specialist: High Voltage Laboratory  
NETFA



**GW Bourn (Technical Signatory)**  
Specialist: High Voltage Laboratory  
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Olifantsfontein, 24 October 2013

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The test work relating to this report was performed by SABS Commercial SOC Ltd. This report and its test results relate only to the specific sample(s) identified herein. They do not imply SABS approval of the quality and/or performance of the item(s) in question and the test results do not apply to any similar item that has not been tested. This report may not be reproduced except in full. The authenticity of this report and its contents can be confirmed by contacting the person who signed it.

**1 Test method**

The test procedures used were based on the clauses of the specification listed on page 1 of this report.

1.1 Power frequency withstand test and partial discharge measurement.

1.11 Acceptance criteria .

Connection	Pre-stress voltage (kV)	Time (withstand)
Phase to earth	72 kV	60s

1.12 Partial discharge measurements

No acceptance criteria is stated in clause 6.8 of specification SANS 1489-1: 2009

1.2 Impulse voltage test

1.21 Acceptance criteria .

The test sample to successfully withstand 10 positive and 10 negative impulses on each phase at the specified impulse voltage.

System voltage kV	Max. operating voltage kV	Impulse voltage kV
33	36	200

**2 Sampling procedure and sample condition**

The sample was submitted by Mr D Stander of JoynX (Pty) Ltd.  
Condition of sample: New

**3 Measuring equipment**

The following equipment was used for the measurements:

Type	Make and model	Identification	Calibration expiry date	Accuracy (±)
Impulse Voltage divider	Ferranti	11651	May-14	1.0%
Oscilloscope	Tektronics DPO 3032	10667	Feb-14	1.0%
PD Bridge	Tettex Model	21230	--	
PD Calibrator	Robinson	753175	Jan-14	5.0%
AC Divider	Conelectric	10676	May-14	2.0%
AC Voltmeter	Fluke 177	25598	Jul-14	1.0%
Coupling capacitor	MWB	17741-A	May-14	1.0%

Calibration of the equipment listed above is traceable to national standards.

3.1 Tolerance on measurements

Peak impulse voltage: 2%  
AC Voltage 3%

**4 Test conditions**

The tests were conducted at the National Electrical Test Facility of the South African Bureau of Standards

The laboratory is situated at an altitude of 1540 m.

The tests were witnessed by Mr Philip Marks of JoynX (Pty) Ltd.

**5 Results**

5.1 Power frequency withstand test

Voltage Applied	Earthed	Pre-stress voltage (kV)	Time (sec.)	Observation
A	B,C, & F	72	60	No voltage breakdown

5.2 Partial discharge measurement

Voltage kV		Phase A pC	Phase B pC	Phase C pC	pC limit
Ur/√3	19	150	30	2.5	ns
Inception (kV)		18.9	20	21.3	--
Extinction (kV)		18.5	19.6	20	--

ns - not specified

Note : Inception voltage was defined as the voltage at which discharges exceeded 100 pC

5.3 Lightning impulse test results

Voltage Applied	Earthed	Positive kV <sub>pk</sub>	Negative kV <sub>pk</sub>	Waveshape μs	Observation
A, B & C	Frame	202	202	1.0 / 51	Withstand