



Accredited by BMWA, number BMWA-92.714/5379-II/12/2004

Test Report

Project Designation

TYPE TEST
AT LOW-VOLTAGE HRC FUSE-LINKS
WITH COMBINED INDICATING DEVICES
TYPE NH0 – 500VAC / gG

Client

ETI Elektroelement d.d.
1411 Izlake, Obrezija 5
SLOVENIA

Order from / No 05/2006 / ---

Project number 2.03.00612.1.0/NH0/COMBI/500/gG

Test Engineer Ing. J. Ainetter

Date of issue	12.06.2007
Total number of issues / No	1 / 1
Number of pages	5
Annex	CB/CCA – Test Report No. 2.03.00612.1.0/NH0/COMBI/500/gG/CB/CCA (79 pages)

The results relate exclusively to the terms tested.

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Test item

Identification:

Low-voltage HRC fuse-links with combined indicating devices type

- NH0 (with energized gripping-lugs)

Technical data and description:

See page 4

Testing location, Period of testing

Testing location:

Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.
Business Field Monitoring, Energy and Drive Technologies – Power Service Center
Giefinggasse 2
A-1210 Wien

Period of testing:

05 ... 10/2006

Test(s)

Test(s) performed:

Type test

Test standard(s):

IEC 60269-1:2005 / EN 60269-1:1998+A1:2005
IEC 60269-2:1986+Corr.1:1996+A1:1995+A2:2001 / EN 60269-2:1995+A1:1998+A2:2002
IEC 60269-2-1:2004 / HD 60269-2-1:2005

Test procedure(s):

CB Scheme / CCA Scheme

Result

The low-voltage fuse-links type NH0 have passed the type test successfully.

Test Engineer



Ing. J. Ainetter



Project Engineer,
Technical responsibility



Ing. K. Farthofer

Testing laboratory



ACCREDITED according to EN ISO/IEC 17025 No. BMWA-92.714/5379-I/12/2004



CERTIFICATED according to ISO 9001 Reg. No. 12769-03



RECOGNIZED CB TESTING LABORATORY under the responsibility of OVE as National Certification Body



PSC – POWER SERVICE CENTER:



Control station for tests up to 15kA



Control station for tests above 15kA

Technical data and description

Test item	Low-voltage HRC fuse-links with combined indicating devices
Model/Type reference	NH0 (energized gripping-lugs)
Identification No.	6A: 4183203 10A: 4183204 16A: 4183205 20A: 4183206 25A: 4183207 32A: 4183208 35A: 4183209 40A: 4183210 50A: 4183211 63A: 4183212 80A: 4183213 100A: 4183214 125A: 4183215 160A: 4183216
Manufacturer	ETI Elektroelement d.d.
Place of manufacture	Obrezija 5, 1411 Izlake, SLOVENIA
Nature of supply	AC
Size	0
Utilization category	gL/gG
Rated current	6A, 10A, 16A, 20A, 25A, 32A, 35A, 40A, 50A, 63A, 80A, 100A, 125A, 160A
Rated voltage	500V
Rated frequency	45Hz to 62Hz
Rated breaking capacity	120kA
Homogeneous series	6A 10A to 20A 25A to 40A 50A to 63A 80A to 100A 125A to 160A
Indicating device	In the middle of ceramic body and on cover plate
Type of contacts	Blade contacts
Material of contacts	CuZn gal. Ag
Material of fuse-link body	Steatit C221
Material of cover plates	Al
Extinguishing means	Quartzsand

Measuring equipment

Measured quantity	Device	Manufacturer	Code
Voltage (tests up to 15kA)	Voltage divider 1:2000 Difference amplifier AM 502 Transient recorder SMR II	ÖFPZ Arsenal Tektronix W&W	- AM 502/1...3 SMRII32
Current (tests up to 15kA)	Lin. current transformer LGSSO Burden 1Ω Transient recorder SMR II	Ritz ÖFPZ Arsenal W&W	WLIN5000/1...3 - SMRII32
Voltage (tests above 15kA)	3-channel insulating measuring amplifier Transient recorder SMR II	Rohrer W&W	T908D SMRII64/1
Current (tests above 15kA)	Lin. current transformer LGSSO Burden 0,7mΩ Transient recorder SMR II	Ritz ÖFPZ Arsenal W&W	WLIN6000.HVF/1...3 - SMRII64/1
Current (tests at reduced voltage)	Current transformer GE 4461 Current transformer AETt10 True-RMS amperemeter KI. 0,5	Goerz Siemens Norma	WI600/1...3 WI4000/1...3 A0,5/1...3
Transient recovery voltage	Adjustment equipment for TRV Oscilloscope G 801.1	ÖFPZ Arsenal Tektronix	- G801.1
Voltage drop	Digital multimeter Fluke 185	Fluke	FLUKE185/1
Dielectric properties	High-voltage test equipment 90-1F	Elabo	HSG5KV
Internal resistance	Resistance meter microhm 300/0	Stetter	MICROHM
Time	Transient recorder SMR II Stopwatch	W&W Junghans	SMRII32, SMRII64/1 938-2
Temperature	24-channel recorder POLYCOMP SK 30 Temperature meter TESTO 901	H & B Testoterm	SK 30 TESTO
Heat	Heating cabinet UT 6060	Heraeus	-
Mechanical impact	Impact test apparatus	PTL	-
Resistance to rusting	Test chamber C330	Liebich	77
Dimensions	Digital slide gauge CD-20D	Mitutoyo	SCHUB

TEST REPORT

IEC 60269-2-1

Low-voltage fuses

Part 2-1: Supplementary requirements for fuses for use by authorized persons (fuses for industrial application)
Sections I to VI : Examples of types of standardized fuses

Report Reference No.	2.03.00612.1.0/NH0/COMBI/500/gG/CB/CCA
Tested by (name+ signature)	Ing.J.Ainetter 
Witnessed by (name+ signature).....	---
Supervised by (name+ signature)	---
Approved by (name+ signature).....	Ing.K.Farthofer 
Date of issue.....	12.06.2007
Number of pages	79
Testing laboratory	ÖFPZ Arsenal Ges.m.b.H.
Address.....	1210 Wien, Giefinggase 2, AUSTRIA
Testing procedure.....	CBTL <input checked="" type="checkbox"/> TMP <input type="checkbox"/> WMT <input type="checkbox"/> SMT <input type="checkbox"/>
Testing location.....	ÖFPZ Arsenal Ges.m.b.H.
Address.....	1210 Wien, Giefinggase 2, AUSTRIA
Applicant	ETI Elektroelement d.d.
Address.....	1411 Izlake, Obrezija 5, SLOVENIA
Test specification:	
Standard	IEC 60269-2-1:2004 (see also IEC 60269-1:2005; IEC 60269-2:1986+A1:1995+A2:2001) HD 60269-2-1:2005 (see also EN 60269-1:1998+A1:2005; EN 60269-2:1995+A1:1998+A2:2002)
Test procedure	CB Scheme / CCA Scheme
Non-standard test method	N.A.
Test Report Form No.	IEC60269_2_1B
TRF Originator.....	LCIE
Master TRF.....	Dated 2005-06
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Test Item description:	
Type of test object	Low-voltage HRC fuse-links with combined indicating devices
Trademark	ETI
Model/type reference.....	NH0
Manufacturer.....	ETI Elektroelement d.d.
Ratings.....	See page 3

Copy of marking plate:

ETI

NV 0

NH 0

160A gL /gG

~500V

120 kA

IEC / EN 60269

DIN 43620

4183216



Summary of testing:

The low-voltage HRC fuse-links with combined indicating devices type

NH0

were tested according to

IEC 60269-1:2005 and EN 60269-1:1998+A1:2005

IEC 60269-2:1986+A1:1995+A2:2001 and EN 60269-2:1995+A1:1998+A2:2002

IEC 60269-2-1:2004 and HD 60269-2-1:2005.

The fuse-links have passed the type test successfully.

Ratings:

Identification reference	6A: 4183203 10A: 4183204 16A: 4183205 20A: 4183206 25A: 4183207 32A: 4183208 35A: 4183209 40A: 4183210 50A: 4183211 63A: 4183212 80A: 4183213 100A: 4183214 125A: 4183215 160A: 4183216
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Utilization category	gL/gG
Rated currents	6A, 10A, 16A, 20A, 25A, 32A, 35A, 40A, 50A, 63A, 80A, 100A, 125A, 160A
Rated voltage	500V
Rated frequency	45Hz to 62Hz
Rated breaking capacity	120kA
Homogeneous series	6A 10A to 20A 25A to 40A 50A to 63A 80A to 100A 125A to 160A
Indicating device	In the middle of ceramic body and on cover plate
Gripping-lugs	Energized
Type of contacts	Blade contacts
Material of contacts	CuZn gal. Ag
Material of fuse-link body	Steatit C221
Material of cover plates	Al
Extinguishing means	Quartzsand

Test item particulars:

Fuse-holder	No
Fuse-base	No
Fuse-carrier	No
Fuse-link	Yes
Fuse for use by authorized persons	Yes
Fuse for use by unskilled persons	No
Fuse-link for the protection of semi-conductor devices	No

Possible test case verdicts:

- test case does not apply to the test object	N(.A.)
- test object does meet the requirement	P(ass)
- test object does not meet the requirement	F(ail)

Testing:

Date of receipt of test item	05/2006
Date(s) of performance of test	05...10/2006