Dossier / File : N° 39052

RAPPORT DE SYNTHÈSE / *SYNTHESIS REPORT*
N° RS39-08

délivré à / *issued to* : HBF SAS-INOTECH
719, rue Albert Camus, Z.I. du Midi
31190 AUTERIVE FRANCE

selon le(s) référentiel(s) / *according to standard(s)* :
EN 60269-1 :2007 + A1 :2009, HD 60269-3 :2010.

pour le matériel / *for the apparatus* : Eléments de remplacement cylindriques pour fusibles basse tension / *Low-voltage cylindrical fuse-links*.

Références / *References* : Gamme / *Series* 158xxx

Site de fabrication / *Factory* : ZHEJIANG MINGRONG ELECTRICAL PROTECTION CO., LTD
Wei 11th, Economic Devloping Zone
Yueqing Zhejiang 325600 CHINE

Marque commerciale / *Trademark* : INOTECH

Ce rapport comporte / *This report contains* : 33 pages

Fontenay-aux-Roses,
Le/*On* : 2012-09-27

Le Chargé de Certification / *Certification Officer*

Patrick LASNIER

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1 – OBJET / *SUBJECT*

Le présent rapport de synthèse concerne le complément d'évaluation de la gamme 158xxx couverte par le certificat ASEFA 052-09BT délivré au titulaire HBF SAS-INOTECH le 26-11-2009 (cf. dossier ASEFA 39052), pour prendre en compte l'évolution normative objet de l'amendement A1 (2009) de la norme EN 60269-1 et du document d'harmonisation HD60269-3 (2010).

This Synthesis Report is dealing with the complementary assessment of the series 158xxx covered by the ASEFA certificate 052-09BT issued to the holder HBF SAS-INOTECH on 2009-11-26 (cf. ASEFA file No.39052), to take into consideration the standard updating through amendment A1 (2009) of EN 60269-1 standard and Harmonization document HD60263-3 (2010).

2 - ÉVOLUTION DES PRODUITS / *EVOLUTION OF THE PRODUCTS*

Les modèles de la gamme 158xxx sont identiques aux échantillons essayés lors de la certification ASEFA initiale ; le site de fabrication est également identique.
Pour couvrir les exigences de l'amendement A1(2009) de la norme EN 60269-1 et du document d'harmonisation HD60269-3 (2010), les essais des articles 6.2 et 8.1.4 ont été réalisés sur les éléments de remplacement sans indicateur de fusion (références 158014, 158135, 158026, 158047 et 158058) et les essais des articles 6.2, 8.1.4,8.1.5.1et 8.7.4 ont été réalisés sur les éléments de remplacement avec indicateur de fusion (références 158114, 158135, 158126, 158147 et 158158).
Les résultats sont reportés dans le rapport ASEFA N° AT120502 émis par le laboratoire homologué ASEFA n° 08 (voir annexe 2 du présent rapport).
Les caractéristiques de la gamme 158xxx sont fournies en annexe 1.

Models of series 158xxx are identical to those samples which had been tested during the initial ASEFA certification; the factory is the same as well.
To cover the requirements of amendment A1(2009) of EN 60269-1 standard and harmonization document HD60269-3 (2010), tests of clauses 6.2 and 8.1.4 have been carried out on fuse-links without indicating device(references 158014, 158135, 158026, 158047 and 158058)and tests of clauses 6.2, 8.1.4,8.1.5.1et 8.7.4 have been carried out on fuse-links with indicating device (references 158114, 158135, 158126, 158147 and 158158).
Test results are reported in the ASEFA Report N°AT120502 issued by ASEFA approved Laboratory 08 (refer to the appendix 2 of this report).
Characteristics of the series 158xxx are given in the annex 1.

3 – CONCLUSION

Compte-tenu des éléments déclarés par HBF SAS-INOTECH, et en raison de l'identité des produits, la conformité de la gamme 158xxx à la norme EN 60269-1 :2007+A1 :2009 et au document d'harmonisation HD 60269-3 :2010 est établie via le certificat ASEFA 052-09BT et le présent rapport de synthèse.

Taking into consideration the statements from HBF SAS-INOTECH, and due to the identity of the products, the compliance of series 158xxx to EN 60269-1 :2007+A1 :2009 standard and harmonization document HD 60269-3:2010, is made through ASEFA certificate 052-09BT and this Synthesis Report.

Annexe 1 / *Annex 1*

CARACTÉRISTIQUES DE L'APPAREIL / *CHARACTERISTICS OF APPLIANCE*

Références / *References*	Taille / *Size*	Courant assigné / *Rated current* In (A)	Tension assignée / *Rated voltage* Un (V)	Pouvoir de coupure assigné / *Rated breaking capacity* (kA)	Puissance dissipée assignée / *Rated power dissipation* (W)	Indicateur de fusion / *Indicating device*
158014	8,5 x 23	10	230	50	1,5	Sans / *Without*
158114	8,5 x 23	10	230	50	1,35	Avec / *With*
158035	10.3 x 25,8	16	230	50	2,2	Sans / *Without*
158135	10.3 x 25,8	16	230	50	2,0	Avec / *With*
158026	8.5 x 31.5	20	400	50	2,6	Sans / *Without*
158126	8.5 x 31.5	20	400	50	2,5	Avec / *With*
158047	10.3 x 31.5	25	400	50	3,2	Sans / *Without*
158147	10.3 x 31.5	25	400	50	3,0	Avec / *With*
158058	10 x 38	32	400	50	2,9	Sans / *Without*
158158	10 x 38	32	400	50	2,8	Avec / *With*

Annexe 2 / *Annex 2*

Shanghai Testing & Inspection Institute for Electrical Equipment (STIEE)
505 Wu Ning Rd. Shanghai 200063, P.R. CHINA

Laboratoire d'essai homologué / *Test laboratory approved* par / *by* **ASEFA** sous référence / *under reference* : 08

Dossier ASEFA / *ASEFA File n°* : 39052

Accréditation n° Portée disponible sur / Scope available on www.cofrac.fr

CNAS 检测 CNAS L1145

RAPPORT D'ESSAI / *TEST REPORT* n° AT120502

Délivré à / ***Issued to*** : HBF SAS – INOTECH
719,RUE ALBERT CAMUS Z.I.DU MIDI 31190 AUTERIVE

Matériel essayé / ***Item tested*** : Cylindrical fuses(NF cylindrical system)

Référence / *Reference* : see page 3

Constructeur / *Manufacturer* : ZHEJIANG MINGRONG ELECTRICAL PROTECTION CO.,LTD

Date de réception / *Date of receipt* : July 20, 2012

Objet des essais / ***Purpose of the tests*** : EN 60269-1:2007 + A1:2009; HD 60269-3:2010

Caractéristiques assignées / ***Rated characteristics*** : see page 3

Date ou période des essais / ***Date or period of test*** : July 20, 2012 to August 27, 2012

Ce rapport d'essai comporte / ***This test report comprises*** : 30 pages

Les résultats obtenus au cours des essais consignés dans ce rapport d'essai justifient les caractéristiques assignées ci-dessus, annoncées par le constructeur / *The result obtained during the tests consigned in this test report justify the above assigned characteristics stated by the manufacturer.*

Date d'émission / ***Date of issue***: September 14, 2012

Le Responsable Technique / ***The Technical Manager,***

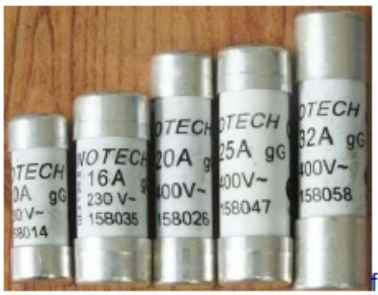
Nom / ***Name*** : **Zhu Gang** **Signature :**

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
ASEFA Certificate n°052-09BT dated 2009/11/26, test reports n°94417-588172 dated 2009/11/28 and n°AT090783 dated 2009/10/30 have been issued, according to EN 60269-1:2007 and HD 60269-3:2007. This test report include complementary tests according to EN 60269-1:2007 + A1:2009 and HD 60269-3:2010. Only the following test program has been performed: - clauses 6.2 and 8.1.4 on references 158014, 158035, 158026, 158047, 158058. - clauses 6.2, 8.1.4, 8.1.5.1 and 8.7.4 on references 158114, 158135, 158126, 158147, 158158.	Shanghai Testing & Inspection Institute for Electrical Equipment - No. 505, Wuning Road, Putuo District, Shanghai, CHINA

Summary of compliance with National Differences:N/A

Copy of marking plate and traceability plan



fuses without indicating device

fuses with indicating device

detail for traceability

Test item particulars ..... :	
Classification of installation and use ..... :	Fuse for use by unskilled persons - Cylindrical fuses(NF cylindrical fuse system)
Supply Connection..... :	N/A
Fuse system ..... :	B
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
- not demanded	ND
Testing ..... :	
Date of receipt of test item ..... :	July 20, 2012
Date (s) of performance of tests ..... :	July 20, 2012 to August 27, 2012

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

General product information:

reference	model	size	Rated current(A)	Rated voltage(V)	Rated breaking capacity(kA)	Rated power dissipation (W)	Indicating device
158014	15FI06	8.5 x 23	10	230	50	1,5	Without
158114	15FI28	8.5 x 23	10	230	50	1,35	With
158035	15FI15	10.3 x 25.8	16	230	50	2,2	Without
158135	15FI33	10.3 x 25.8	16	230	50	2,0	With
158026	15FI09	8.5 x 31.5	20	400	50	2,6	Without
158126	15FI30	8.5 x 31.5	20	400	50	2,5	With
158047	15FI18	10.3 x 31.5	25	400	50	3,2	Without
158147	15FI36	10.3 x 31.5	25	400	50	3,0	With
158058	15FI22	10 x 38	32	400	50	2,9	Without
158158	15FI38	10 x 38	32	400	50	2,8	With

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Requirements IEC 60269-1		
FUSE SYSTEM B – CYLINDRICAL FUSES (NF CYLINDRICAL FUSE SYSTEM)			
5	CHARACTERISTICS OF FUSES		ND
6	MARKINGS (158014, In=10A, #01-#03)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links..... :	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 ..... :	158014	P
	- rated voltage (V) ..... :	230V	P
	- rated current (A) ..... :	10A	P
	- breaking range and utilization category (if applicable) (5.7.1) ..... :	gG	P
	- kind of current ..... :	~	P
	- rated frequency (Hz), if applicable (5.4)	50Hz	N/A
	Small fuse-links marked by:		-
	- trademark ..... :		N/A
	- list reference of manufacturer ..... :		N/A
	- rated voltage (V) ..... :		N/A
	- rated current (A) ..... :		N/A
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
8	TESTS (158014, In=10A, #01-#03)		-
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 23,0(0/-0,8): 22,8mm;22,8mm;22,7mm b, 5,0(+0,2/-0,6): 4,8mm;4,6mm;4,7mm c, 8,5(±0,1): 8,5mm;8,5mm;8,5mm	P
8.1.5.1	Complete tests		ND
	Additional test according to Table 209 .....:		ND
8.7.4	Verification of overcurrent discrimination		ND
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested .....:		ND
	two samples tested at the minimum pre-arcing I^2t	1) 2)	ND
	the other samples tested at total I^2t	3) 4)	ND
	Arrangement of the samples as for the breaking capacity test		ND
	test voltage (V) .....:		—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 .....:		ND
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 .....:		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 .....:		ND
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 .....:		ND
8.3.1	Arrangement of the fuse		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 .....:		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 .....:		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece .....:		ND
	Ferrules not be silver-plated .....:		ND
	After each test, verification the good condition of the contact surface .....:		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND
5	CHARACTERISTICS OF FUSES		ND
6	MARKINGS (158035, In=16A, #04-#06)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links.....:	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 .....:	158035	P
	- rated voltage (V) .....:	230V	P
	- rated current (A) .....:	16A	P
	- breaking range and utilization category (if applicable) (5.7.1) .....:	gG	P

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- kind of current ..... :	~	P
	- rated frequency (Hz), if applicable (5.4)	50Hz	N/A
	Small fuse-links marked by:		-
	- trademark ..... :		N/A
	- list reference of manufacturer ..... :		N/A
	- rated voltage (V) ..... :		N/A
	- rated current (A) ..... :		N/A
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND
8	TESTS (158035, In=16A, #04-#06)		-
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 25,8(±0,4): 25,6mm;25,7mm;25,6mm b, 6,3(±0,4): 6,3mm;6,3mm;6,2mm c, 10,3(±0,1): 10,3mm;10,3mm;10,3mm	P
8.1.5.1	Complete tests		ND
	Additional test according to Table 209 ..... :		ND
8.7.4	Verification of overcurrent discrimination		ND
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested ..... :		ND
	two samples tested at the minimum pre-arcing I^2t	1) 2)	ND
	the other samples tested at total I^2t	3) 4)	ND
	Arrangement of the samples as for the breaking capacity test		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	test voltage (V) .....:		—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 .....:		ND
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 .....:		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 .....:		ND
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 .....:		ND
8.3.1	Arrangement of the fuse		ND
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 .....:		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 .....:		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece .....:		ND
	Ferrules not be silver-plated .....:		ND
	After each test, verification the good condition of the contact surface .....:		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND

5	CHARACTERISTICS OF FUSES	ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
6	MARKINGS (158026, In=20A, #07-#09)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links..... :	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 ..... :	158026	P
	- rated voltage (V) ..... :	400V	P
	- rated current (A) ..... :	20A	P
	- breaking range and utilization category (if applicable) (5.7.1) ..... :	gG	P
	- kind of current ..... :	~	P
	- rated frequency (Hz), if applicable (5.4)	50Hz	N/A
	Small fuse-links marked by:		-
	- trademark ..... :		N/A
	- list reference of manufacturer ..... :		N/A
	- rated voltage (V) ..... :		N/A
	- rated current (A) ..... :		N/A
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND
8	TESTS (158026, In=20A, #07-#09)		-
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 31,5(±0,5): 31,6mm;31,5mm;31,2mm b, 6,3(±0,4): 6,4mm;6,2mm;6,4mm c, 8,5(±0,1): 8,5mm;8,5mm;8,5mm	P
8.1.5.1	Complete tests		ND
	Additional test according to Table 209 .....:		ND
8.7.4	Verification of overcurrent discrimination		ND
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested .....:		ND
	two samples tested at the minimum pre-arcing I^2t	1) 2)	ND
	the other samples tested at total I^2t	3) 4)	ND
	Arrangement of the samples as for the breaking capacity test		ND
	test voltage (V) .....:		—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 .....:		ND
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 .....:		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 .....:		ND
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 .....:		ND
8.3.1	Arrangement of the fuse		ND
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 .....:		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 .....:		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece .....:		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Ferrules not be silver-plated ..... :		ND
	After each test, verification the good condition of the contact surface ..... :		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND
5	CHARACTERISTICS OF FUSES		ND
6	MARKINGS (158047, In=25A, #10-#12)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links..... :	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 ..... :	158047	P
	- rated voltage (V) ..... :	400V	P
	- rated current (A) ..... :	25A	P
	- breaking range and utilization category (if applicable) (5.7.1) ..... :	gG	P
	- kind of current ..... :	~	P
	- rated frequency (Hz), if applicable (5.4)		N/A
	Small fuse-links marked by:		-
	- trademark ..... :		N/A
	- list reference of manufacturer ..... :		N/A
	- rated voltage (V) ..... :		N/A
	- rated current (A) ..... :		N/A

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND
8	TESTS (158047, In=25A, #10-#12)		-
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 31,5(±0,5): 31,5mm;31,4mm;31,6mm b, 6,3(±0,4): 6,1mm;6,1mm;6,1mm c, 10,3(±0,1): 10,2mm;10,2mm;10,2mm	P
8.1.5.1	Complete tests		ND
	Additional test according to Table 209 .....:		ND
8.7.4	Verification of overcurrent discrimination		ND
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested .....:		ND
	two samples tested at the minimum pre-arcing I^2t	1) 2)	ND
	the other samples tested at total I^2t	3) 4)	ND
	Arrangement of the samples as for the breaking capacity test		ND
	test voltage (V) .....:		—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 .....:		ND
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 .....:		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 .....:		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 ..... :		ND
8.3.1	Arrangement of the fuse		ND
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 ..... :		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 ..... :		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece ..... :		ND
	Ferrules not be silver-plated ..... :		ND
	After each test, verification the good condition of the contact surface ..... :		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND

5	CHARACTERISTICS OF FUSES		ND
6	MARKINGS (158058, In=32A, #13-#15)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links..... :	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 ..... :	158058	P
	- rated voltage (V) ..... :	400V	P

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- rated current (A) ..... :	32A	P
	- breaking range and utilization category (if applicable) (5.7.1) ..... :	gG	P
	- kind of current ..... :	~	P
	- rated frequency (Hz), if applicable (5.4)		N/A
	Small fuse-links marked by:		-
	- trademark ..... :		N/A
	- list reference of manufacturer ..... :		N/A
	- rated voltage (V) ..... :		N/A
	- rated current (A) ..... :		N/A
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND
8	TESTS (158058, In=32A, #13-#15)		-
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 38,0(±0,6): 37,9mm;38,1mm;37,9mm b, 10,0(+0,5/-0,3): 9,9mm;10,0mm;10,0mm c, 10,3(±0,1): 10,4mm;10,3mm;10,3mm	P
8.1.5.1	Complete tests		ND
	Additional test according to Table 209 ..... :		ND
8.7.4	Verification of overcurrent discrimination		ND
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested ..... :		ND
	two samples tested at the minimum pre-arcing I^2t	1) 2)	ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	the other samples tested at total I^2t	3) 4)	ND
	Arrangement of the samples as for the breaking capacity test		ND
	test voltage (V) .....:		—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 .....:		ND
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 .....:		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 .....:		ND
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 .....:		ND
8.3.1	Arrangement of the fuse		ND
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 .....:		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 .....:		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece .....:		ND
	Ferrules not be silver-plated .....:		ND
	After each test, verification the good condition of the contact surface .....:		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
5	CHARACTERISTICS OF FUSES		ND
6	MARKINGS (158114, In=10A, #16-#18)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links..... :	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 ..... :	158114	P
	- rated voltage (V) ..... :	230V	P
	- rated current (A) ..... :	10A	P
	- breaking range and utilization category (if applicable) (5.7.1) ..... :	gG	P
	- kind of current ..... :	~	P
	- rated frequency (Hz), if applicable (5.4)		N/A
	Small fuse-links marked by:		-
	- trademark ..... :		N/A
	- list reference of manufacturer ..... :		N/A
	- rated voltage (V) ..... :		N/A
	- rated current (A) ..... :		N/A
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
8	TESTS (158114, In=10A, #16-#18)		-
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 23,0(0/-0,8): 22,7mm;22,7mm;22,8mm b, 5,0(+0,2/-0,6): 4,7mm;4,8mm;4,8mm c, 8,5(±0,1): 8,5mm;8,5mm;8,5mm	P
8.1.5	Testing of fuse-links		P
	Fuse-links tested with the kind(s) of current for which they are rated		P
	Fuse-links tested for a.c. with frequency for which they are rated		P
8.1.5.1	Complete tests	#31-#34	P
	Internal resistance R measured by a current ≤ 0,1 In		P
	Measuring current (A) .....:	0,6A	P
	Ambient air temperature in range of 20 ± 5 °C	20°C	P
	The values of resistance	see appended table	P
	Additional test according to Table 209 .....:		P
8.7.4	Verification of overcurrent discrimination		P
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested .....:		P
	two samples tested at the minimum pre-arcing I^2t	1)0,141kA² s>0,1 kA² s declared 2)0,138kA² s>0,1 kA² s declared	P
	the other samples tested at total I^2t	3) 0,222kA² s<0,576 kA² s declared 4) 0,216kA² s<0,576 kA² s declared	P

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Arrangement of the samples as for the breaking capacity test		P
	test voltage (V) ..... :	253V	—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 ..... :		ND
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 ..... :		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 ..... :		ND
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 ..... :		ND
8.3.1	Arrangement of the fuse		ND
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 ..... :		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 ..... :		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece ..... :		ND
	Ferrules not be silver-plated ..... :		ND
	After each test, verification the good condition of the contact surface ..... :		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
5	CHARACTERISTICS OF FUSES		ND
6	MARKINGS (158135, In=16A, #19-#21)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links..... :	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 ..... :	158135	P
	- rated voltage (V) ..... :	230V	P
	- rated current (A) ..... :	16A	P
	- breaking range and utilization category (if applicable) (5.7.1) ..... :	gG	P
	- kind of current ..... :	~	P
	- rated frequency (Hz), if applicable (5.4)	50Hz	N/A
	Small fuse-links marked by:		-
	- trademark ..... :		N/A
	- list reference of manufacturer ..... :		N/A
	- rated voltage (V) ..... :		N/A
	- rated current (A) ..... :		N/A
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND
8	TESTS (158135, In=16A, #19-#21)		-
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 25,8(±0,4): 25,7mm;25,7mm;26,0mm b, 6,3(±0,4): 6,3mm;6,1mm;6,1mm c, 10,3(±0,1): 10,3mm;10,3mm;10,2mm	P
8.1.5	Testing of fuse-links		P
	Fuse-links tested with the kind(s) of current for which they are rated		P
	Fuse-links tested for a.c. with frequency for which they are rated		P
8.1.5.1	Complete tests	#35-#38	P
	Internal resistance R measured by a current ≤ 0,1 In		P
	Measuring current (A) .....:	0,6A	P
	Ambient air temperature in range of 20 ± 5 °C	20°C	P
	The values of resistance	see appended table	P
	Additional test according to Table 209 .....:		P
8.7.4	Verification of overcurrent discrimination		P
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested .....:		P
	two samples tested at the minimum pre-arcing I^2t	1)0,433kA² s>0,3kA² s declared 2)0,394kA² s>0,3kA² s declared	P
	the other samples tested at total I^2t	3) 0,518kA² s<1,0 kA² s declared 4) 0,520kA² s<1,0 kA² s declared	P
	Arrangement of the samples as for the breaking capacity test		P
	test voltage (V) .....:	253V	—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 .....:		ND
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 .....:		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 .....:		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 ..... :		ND
8.3.1	Arrangement of the fuse		ND
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 ..... :		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 ..... :		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece ..... :		ND
	Ferrules not be silver-plated ..... :		ND
	After each test, verification the good condition of the contact surface ..... :		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
5	CHARACTERISTICS OF FUSES		ND
6	MARKINGS (158126, In=20A, #22-#24)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links.....:	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 .....:	158126	P
	- rated voltage (V) .....:	400V	P
	- rated current (A) .....:	20A	P
	- breaking range and utilization category (if applicable) (5.7.1) .....:	gG	P
	- kind of current .....:	~	P
	- rated frequency (Hz), if applicable (5.4)		N/A
	Small fuse-links marked by:		-
	- trademark .....:		N/A
	- list reference of manufacturer .....:		N/A
	- rated voltage (V) .....:		N/A
	- rated current (A) .....:		N/A
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND
8	TESTS (158126, In=20A, #22-#24)		-
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 31,5(±0,5): 31,4mm;31,7mm;31,5mm b, 6,3(±0,4): 6,3mm;6,3mm;6,2mm c, 8,5(±0,1): 8,5mm;8,5mm;8,6mm	P
8.1.5	Testing of fuse-links		P
	Fuse-links tested with the kind(s) of current for which they are rated		P
	Fuse-links tested for a.c. with frequency for which they are rated		P
8.1.5.1	Complete tests	#39-#42	P
	Internal resistance R measured by a current ≤ 0,1 In		P
	Measuring current (A) .....:	0,6A	P
	Ambient air temperature in range of 20 ± 5 °C	20°C	P
	The values of resistance	see appended table	P
	Additional test according to Table 209 .....:		P
8.7.4	Verification of overcurrent discrimination		P
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested .....:		P
	two samples tested at the minimum pre-arcing I^2t	1)0,626kA² s>0,5kA² s declared 2)0,668kA² s>0,5kA² s declared	P
	the other samples tested at total I^2t	3) 0,821kA² s<1,8 kA² s declared 4) 0,795kA² s<1,8 kA² s declared	P
	Arrangement of the samples as for the breaking capacity test		P
	test voltage (V) .....:	254V	—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 .....:		ND
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 .....:		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 .....:		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 ..... :		ND
8.3.1	Arrangement of the fuse		ND
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 ..... :		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 ..... :		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece ..... :		ND
	Ferrules not be silver-plated ..... :		ND
	After each test, verification the good condition of the contact surface ..... :		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND

5	CHARACTERISTICS OF FUSES		ND
6	MARKINGS (158147, In=25A, #25-#27)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links..... :	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 ..... :	158147	P
	- rated voltage (V) ..... :	400V	P

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- rated current (A) ..... :	25A	P
	- breaking range and utilization category (if applicable) (5.7.1) ..... :	gG	P
	- kind of current ..... :	~	P
	- rated frequency (Hz), if applicable (5.4)		N/A
	Small fuse-links marked by:		-
	- trademark ..... :		N/A
	- list reference of manufacturer ..... :		N/A
	- rated voltage (V) ..... :		N/A
	- rated current (A) ..... :		N/A
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND
8	TESTS (158147, In=25A, #25-#27)		-
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 31,5(±0,5): 31,7mm;31,8mm;31,5mm b, 6,3(±0,4): 5,9mm;6,0mm;5,9mm c, 10,3(±0,1): 10,2mm;10,3mm;10,4mm	P
8.1.5	Testing of fuse-links		P
	Fuse-links tested with the kind(s) of current for which they are rated		P
	Fuse-links tested for a.c. with frequency for which they are rated		P
8.1.5.1	Complete tests	#43-#46	P
	Internal resistance R measured by a current ≤ 0,1 In		P
	Measuring current (A) ..... :	0,6A	P

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	Ambient air temperature in range of 20 ± 5 °C	20°C	P
	The values of resistance	see appended table	P
	Additional test according to Table 209 .....:		P
8.7.4	Verification of overcurrent discrimination		P
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested .....:		P
	two samples tested at the minimum pre-arcing I^2t	1)1,36kA² s>1,0kA² s declared 2)1,44kA² s>1,0kA² s declared	P
	the other samples tested at total I^2t	3) 1,76kA² s<3,0 kA² s declared 4) 1,80kA² s<3,0 kA² s declared	P
	Arrangement of the samples as for the breaking capacity test		P
	test voltage (V) .....:	254V	—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 .....:		ND
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 .....:		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 .....:		ND
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 .....:		ND
8.3.1	Arrangement of the fuse		ND
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 .....:		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 .....:		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece .....:		ND
	Ferrules not be silver-plated .....:		ND
	After each test, verification the good condition of the contact surface .....:		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND
5	CHARACTERISTICS OF FUSES		ND
6	MARKINGS (158158, In=32A, #28-#30)		-
	Markings are durable and easily legible		P
6.1	Fuse-holders marked by:		ND
6.2	Fuse-link(s) except small fuse-link(s) marked by:		P
	- name of manufacturer or trade mark which enable identification of fuse-links ..... :	INOTECH	P
	- manufacturer's identification reference enabling to find all characteristics listed in 5.1.2 ..... :	158158	P
	- rated voltage (V) ..... :	400V	P
	- rated current (A) ..... :	32A	P
	- breaking range and utilization category (if applicable) (5.7.1) ..... :	gG	P
	- kind of current ..... :	~	P
	- rated frequency (Hz), if applicable (5.4)		N/A
	Small fuse-links marked by:		-
	- trademark ..... :		N/A
	- list reference of manufacturer ..... :		N/A
	- rated voltage (V) ..... :		N/A
	- rated current (A) ..... :		N/A
6.3	Symbols for the kind of current and frequency in accordance with IEC 60417		ND
7	STANDARD CONDITIONS FOR CONSTRUCTION		ND
8	TESTS (158158, In=32A, #28-#30)		-

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.4	Arrangement of the fuse and dimensions		P
	Except for degree of protection test (see 8.8), fuse are mounted in free air in draught-free surroundings in the normal operation position and on insulating material of sufficient rigidity		P
	Before tests are started, specified external dimensions are measured and results compared with dimensions specified in the relevant data sheet of the manufacturer or specified in subsequent parts	a, 38,0(±0,6): 38,1mm;37,9mm;38,1mm b, 10,0(+0,5/-0,3): 9,8mm;9,7mm;9,8mm c, 10,3(±0,1): 10,2mm;10,3mm;10,3mm	P
8.1.5	Testing of fuse-links		P
	Fuse-links tested with the kind(s) of current for which they are rated		P
	Fuse-links tested for a.c. with frequency for which they are rated		P
8.1.5.1	Complete tests	#47-#50	P
	Internal resistance R measured by a current ≤ 0,1 In		P
	Measuring current (A) .....:	0,6A	P
	Ambient air temperature in range of 20 ± 5 °C	20°C	P
	The values of resistance	see appended table	P
	Additional test according to Table 209 .....:		P
8.7.4	Verification of overcurrent discrimination		P
	To verify the requirements specified in 7.7.1 and 7.7.2 of this fuse system, 4 supplementary samples are tested .....:		P
	two samples tested at the minimum pre-arcing I^2t	1)3,29kA² s>1,8kA² s declared 2)3,28kA² s>1,8kA² s declared	P
	the other samples tested at total I^2t	3) 3,70kA² s<5,0 kA² s declared 4) 3,49kA² s<5,0 kA² s declared	P
	Arrangement of the samples as for the breaking capacity test		P
	test voltage (V) .....:	254V	—
8.1.6	Testing of fuse-holders		ND
	Additional test according to Table 210 .....:		ND

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Clause	Requirement + Test	Result - Remark	Verdict
8.12	Verification of the reliability of terminals		ND
	Follow tests described in IEC 60999, Clause 8 .....:		ND
8.2.4.1	This test are performed immediately after humidity treatment described in 8.2.4.2 of IEC 60269-1 .....:		ND
	Fuse-holder are submitted to test voltage given in Table 15 of IEC 60269-1 .....:		ND
8.3.1	Arrangement of the fuse		ND
	Torque applied to the screws of terminals is two-thirds of values given in Table 211 .....:		—
8.3.3	Measurement of the power dissipation of the fuse-link		ND
	Fuse-links are tested in open air, in vertical position in one of test rigs according to figures 203 and 204, according to indications given in Table 212 .....:		ND
	Ferrules and other parts of fuse-base are made from brass with 58 % to 70 % copper, except springs, screws for connections and test piece .....:		ND
	Ferrules not be silver-plated .....:		ND
	After each test, verification the good condition of the contact surface .....:		ND
8.3.4.1	Temperature rise of the fuse-holder		ND
	Dummy fuse-link (Table 201 and Figure 202)		ND
8.4	Verification of operation		ND
8.5	Verification of the breaking capacity		ND
8.8	Verification of the degree of protection of enclosures		ND
8.9	Verification of resistance to heat		ND
8.10	Verification of non-deterioration of contacts		ND
8.11.1.1	Mechanical strength of fuse-holders		ND
8.11.1.4	Mechanical strength of screw thread		ND
8.11.2.6	Dimensions and non-interchangeability		ND

IEC 60269-3			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX 1

8.1.5.1	TABLE: Internal resistance of the fuse-links												
	a) rated current (A) of the fuse-link :							158114, In=10A					—
	measuring current (A) :							0,6A					—
	ambient air temperature (°C) :							20°C					—
internal resistance	sample No.												
	#31	#32	#33	#34									
R (mΩ)	7,03	7,14	6,96	7,10									
	b) rated current (A) of the fuse-link :							158135, In=16A					—
	measuring current (A) :							0,6A					—
	ambient air temperature (°C) :							20°C					—
internal resistance	sample No.												
	#35	#36	#37	#38									
R (mΩ)	5,64	5,80	5,86	5,83									
	c) rated current (A) of the fuse-link :							158126, In=20A					—
	measuring current (A) :							0,6A					—
	ambient air temperature (°C) :							20°C					—
internal resistance	sample No.												
	#39	#40	#41	#42									
R (mΩ)	3,99	3,94	4,00	4,06									
	d) rated current (A) of the fuse-link :							158147, In=25A					—
	measuring current (A) :							0,6A					—
	ambient air temperature (°C) :							20°C					—
internal resistance	sample No.												
	#43	#44	#45	#46									
R (mΩ)	3,13	3,26	3,21	3,21									
	e) rated current (A) of the fuse-link :							158158, In=32A					—
	measuring current (A) :							0,6A					—
	ambient air temperature (°C) :							20°C					—
internal resistance	sample No.												
	#47	#48	#49	#50									
R (mΩ)	2,45	2,30	2,31	2,29									