

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

Requirements IEC 60269-1			N/A
--------------------------	--	--	-----

FUSE SYSTEM A – FUSES WITH FUSE-LINKS WITH BLADE CONTACTS (NH FUSE SYSTEM)

5	CHARACTERISTICS OF FUSES		N/A
5.2	Rated voltage (V) as specified	-	N/A
5.3.1	Rated current (A) of the fuse-link in accordance with specified values	-	N/A
5.3.2	Rated current (A) of the fuse-holder and the size of the fuse-link.....	-	N/A
5.5	Rated power (W) dissipation of fuse-link see Figure 101.....	-	N/A
	Rated acceptable power (VA) dissipation of fuse-bases given in Figure 102	-	N/A
5.6	Limits of time-current characteristics		N/A
5.6.1	Time-current characteristics, time-current zones and overload curves	-	N/A
5.6.2	Conventional times and current see Table 101 ..	-	N/A
5.6.3	Gates	-	N/A
5.7.2	Rated breaking capacity (A)	-	N/A

6	MARKING		N/A
	Markings are legible		N/A
6.1	Fuse-holders marked by:		N/A
	- IEC 60269-2	-	N/A
	- size.....	-	N/A
	Marking of rated current and rated voltage are discernible from the front		N/A
6.2	Fuse-links marked by:		N/A
	- IEC 60269-2	-	N/A
	- size or reference.....	-	N/A
	- rated breaking capacity	-	N/A
	Marking of rated current and rated voltage are discernible from the front		N/A
	Fuse-links marked as described in Table 104	-	N/A



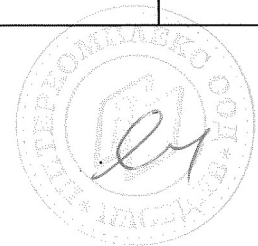
IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

7	STANDARD CONDITIONS FOR CONSTRUCTION		N/A
7.1	Mechanical design		N/A
	The dimensions of the fuse-links given in Figure 101		N/A
	Dimensions:		N/A
	dimension marking a_1 : prescribed (mm); measured (mm)	-	N/A
	dimension marking a_2 : prescribed (mm); measured (mm)	-	N/A
	dimension marking a_3 : prescribed (mm); measured (mm)	-	N/A
	dimension marking a_4 : prescribed (mm); measured (mm)	-	N/A
	dimension marking b_{1min} : prescribed (mm); measured (mm)	-	N/A
	dimension marking b_{2min} : prescribed (mm); measured (mm)	-	N/A
	dimension marking b_{3max} : prescribed (mm); measured (mm)	-	N/A
	dimension marking b_{4min} : prescribed (mm); measured (mm)	-	N/A
	dimension marking c_1 : prescribed (mm); measured (mm)	-	N/A
	dimension marking c_2 : prescribed (mm); measured (mm)	-	N/A
	dimension marking d : prescribed (mm); measured (mm)	-	N/A
	dimension marking e_{1max} : prescribed (mm); measured (mm)	-	N/A
	dimension marking e_{2max} : prescribed (mm); measured (mm)	-	N/A
	dimension marking e_3 : prescribed (mm); measured (mm)	-	N/A
	dimension marking e_4 : prescribed (mm); measured (mm)	-	N/A
	dimension marking f : prescribed (mm); measured (mm)	-	N/A
	dimension marking z : prescribed (mm); measured (mm)	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	The dimensions of the fuse-base given in Figure 102		N/A
	Dimensions:		N/A
	dimension marking g: prescribed (mm); measured (mm)	-	N/A
	dimension marking h: prescribed (mm); measured (mm)	-	N/A
	dimension marking n ₁ max: prescribed (mm); measured (mm)	-	N/A
	dimension marking n ₂ max: prescribed (mm); measured (mm)	-	N/A
	dimension marking p ₁ max: prescribed (mm); measured (mm)	-	N/A
	dimension marking p ₂ : prescribed (mm); measured (mm)	-	N/A
	dimension marking r min: prescribed (mm); measured (mm)	-	N/A
	dimension marking s max: prescribed (mm); measured (mm)	-	N/A
	dimension marking t min: prescribed (mm); measured (mm)	-	N/A
	dimension marking v: prescribed (mm); measured (mm)	-	N/A
	dimension marking w ₁ : prescribed (mm); measured (mm)	-	N/A
	dimension marking w ₂ : prescribed (mm); measured (mm)	-	N/A
	dimension marking x min: prescribed (mm); measured (mm)	-	N/A
	dimension marking y: prescribed (mm); measured (mm)	-	N/A
	dimension marking z max: prescribed (mm); measured (mm)	-	N/A
	dimension marking a min: prescribed (mm); measured (mm)	-	N/A
	dimension marking b min: prescribed (mm); measured (mm)	-	N/A
	dimension marking c min: prescribed (mm); measured (mm)	-	N/A

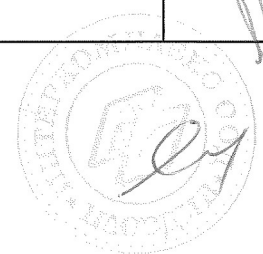
0.7.11.10



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	dimension marking d : prescribed (mm); measured (mm)	-	N/A
	dimension marking e : prescribed (mm); measured (mm)	-	N/A
7.1.2	Connections, including terminals cross-sectional ranges (Table 105)	-	N/A
	torques to be applied (Table 111) (lug terminal)	-	
7.1.3	Contact surfaces should be silver plated	-	N/A
	If no test according to 8.10 are passed with dummies described in 8.10.1		N/A
7.1.6	Dynamic short-circuit withstand shall meet cut-off currents (Table 112)	-	N/A
7.1.7	Construction of fuse-link		N/A
	Blade contacts made of solid material	-	N/A
	If any other construction, manufacturer demonstrate that construction adequate	-	N/A
	Endplates not permitted to protrude radially from insulation body	-	N/A
	preferable to insulate the gripping lugs from live parts		N/A
	Fuse-links has an indicator	-	N/A
	Electrically conductive parts of indicator not ejected from the fuse-link during operation	-	N/A
7.2	Insulating properties		N/A
	Creepage distances and clearances of fuses and fuse-accessories meet requirements of IEC 60664-1 for overvoltage category III and pollution degree 3	-	N/A
	Insulating parts of fuse-base supporting live parts meet the test at PTI 400 according to IEC 60112 (test solution A)	-	N/A
7.7	I^2t characteristics		N/A
	maximum pre-arcing I^2t (Table 7 of IEC 60269-1)	-	N/A
	rated currents lower than 16 A (Table 106)	-	N/A
	maximum operating I^2t for "aM" fuse-links (Table 107) test No. 2 of the largest rated current of each homogeneous series (Table 20 of IEC 60269-1)	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

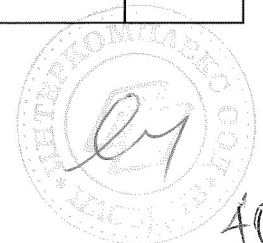
7.8	Overcurrent discrimination of "gG" fuse-links (see 8.7.4, Table 108) : -		N/A
7.9	Protection against electric shock		N/A
	increased by means of partition walls and covers of fuse-contacts : -		N/A
	operation by authorized persons, instructed in electrical matters, using replacement handles according to this fuse system : -		N/A
8	TESTS		N/A
	IEC 60269-1 applies with the following supplementary requirements		N/A
8.1.4	Arrangement of fuse and dimensions		N/A
	Requirements of 7.2 verified on fuse-bases : -		N/A
	Creepage distances and clearances of fuse-links according to 7.2 are verified : -		N/A
	Clearances verified on fuse-link inserted into model fuse-base according to Figure 111 : -		N/A
8.1.6	Testing of fuse-holders		N/A
	In addition to test given in IEC 60269-1 tested according to Table 109 : -		N/A
8.2.2.1	Points of application of test voltage		N/A
	In addition to IEC 60269-1 e) between isolated metal gripping-lugs and terminals of test fuse-bases : -		N/A
8.2.3.2	Value of test voltage		N/A
	rated impulse withstand voltage in Table 110 : -		N/A
8.2.3.3	Test method		N/A
	5 impulses of both polarities and of shape 1,2/50 μs and rated withstand voltage level according to Table 110 : -		N/A
	minimum period between impulses are 1 s : -		N/A
8.2.4	Acceptability of test results		N/A
8.2.4.3	No flash-over or puncture shall occur during test : -		N/A
8.2.5	Resistance to tracking		N/A
	insulating parts supporting live parts of fuse-links and fuse-bases tested according to IEC 60112 (test solution A) : -		N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Five specimens tested and passed at PTI 400 :		N/A
8.3	Verification of temperature rise and power dissipation		N/A
8.3.1	Arrangement of the fuse		N/A
	Tightened by torque (Nm) :	-	—
8.3.2	Measurement of the temperature rise		N/A
	Protective covers and fuse-carriers as provided by manufacturer mounted :	-	N/A
8.3.4.1	Temperature rise of the fuse-holder		N/A
	Dummy (Figure 105) Point at which temperature rise is measured (Figure 106)		N/A
8.3.4.2	Power dissipation of a fuse-link (Figure 106)		N/A
8.4.3.1	Verification of conventional non-fusing and fusing current		N/A
	non-fusing current test – second test specimen are used for b)		N/A
8.4.3.5	Conventional cable overload protection test (for “gG” fuse-links only)		N/A
	Details of special test are given in Annex A		N/A
Annex AA	Special test for cable overload protection		N/A
	For fuses with $I_n > 16$ A of the sizes 000, 00, 0, 1 and 2 :	-	N/A
AA.1	Arrangement of the fuse		N/A
	Three fuse-links in fuse-bases mounted in a box... :	-	N/A
	Ambient air temperature outside the fuse box shall be $(30^{+5}_0^{\circ}\text{C})$:	-	N/A
AA.2	Test method and acceptability of test results		N/A
	$1,13 I_n$ flowed through the fuse-links for conventional time (see Table 2 of IEC 60269-1) ... :	-	N/A
	None of fuse-links operated :	-	N/A
	Test current raised without interruption within 5 s to $1,45 I_n$:	-	N/A
	One fuse-link operated within conventional time :	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

8.5.5.1	Verification of the peak withstand current of a fuse-base		N/A
	not be carried out , if this has already been verified during the breaking capacity test of fuse-links with the highest rating of the size	-	N/A
8.5.5.1.1	Arrangement of the fuse		N/A
	single-phase type, 8.5.1 of IEC 60269-1		N/A
	peak values of the test currents (Table 112)	-	
	maximum values (see 8.5.5.1.3).....	-	
	dummy fuse-link (Figure 101)	-	
8.5.5.1.2	Test method		N/A
	fuse-base 1 (Figure107)		N/A
	resilient spring travel is limited to elastic range.....	-	
	contacts opened up three times	-	
	fuse-base 2 (see 8.11.1.2)		N/A
	F_{max} according to Table 118		
8.5.5.1.3	Acceptability of test results		N/A
	fuse-links not be ejected		N/A
	no signs of arcing or welding or other damage		N/A
8.5.8	Acceptability of test results		N/A
	Fuse or circuit-breaker not operate during this test		N/A
8.7.4	Verification of overcurrent discrimination		N/A
	verified by I^2t values evaluated from the recorded test results		N/A
	Arrangement of the samples as for the breaking capacity test		N/A
	two samples tested at the r.m.s. prospective test current I , corresponding to minimum pre-arcing I^2t		N/A
	the other samples tested at the r.m.s. prospective test current I , corresponding to operating I^2t		N/A
	test voltage (V)	-	-
	The values of I^2t lie within corresponding limits specified in Table 113.....	-	N/A
8.9	Verification of resistance to heat		N/A
	Tests apply to fuse-link and fuse-base		N/A
	Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment... :	-	N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	After cooling to normal temperature breaking capacity tested at I_1 (see 8.5)	-	N/A
	Fuse-links with organic material Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment....		N/A
	After cooling to normal temperature breaking capacity tested at I_1 and I_5 (see 8.5).....	$I_1 = -$ $I_5 = -$	N/A
8.9.1	Fuse-base		N/A
	test below apply if it is not obvious that components are not affected adversely by given temperature and withdrawal forces		N/A
8.9.1.1	Test arrangement		N/A
	Figure 105 and 108		N/A
	Test se-up in heating chamber		N/A
8.9.1.2	Test method		N/A
	Temperature of $(80^{+5}_0)^{\circ}\text{C}$ for 2 h		N/A
	160% rated current for 2 h.....	-	N/A
	Test voltage	-	—
	3 min after switching off tensile force F_{\max} (see Table 118) exerted for 15 s	$F_{\max} = -$	N/A
8.9.1.3	Acceptability of test results		N/A
	Contact pieces not have moved to affect the further use		N/A
	Dimensions of Figure 102 are considered		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.9.2	Fuse-links with gripping lugs of moulded material or of metal fixed in moulded material		N/A
8.9.2.1	Test arrangement		N/A
	Figure 108		N/A
8.9.2.2	Test method		N/A
	Temperature of $(80^{+5}_0)^{\circ}\text{C}$ for 2 h		N/A
	150% rated current for conventional time	-	N/A
	Test voltage	-	—

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	3 min after fuse-link operated or conventional time expired tensile force F_{max} (see Table 118) exerted for 15 s		N/A
8.9.2.3	Acceptability of test results		N/A
	Gripping lugs remain fully operational		N/A
	Dimensions of Figure 101 (d and c_2) not be exceeded by more than 2 mm		N/A
8.10	Verification of non-deterioration of contacts and direct terminal clamps		N/A
8.10.1	Arrangement of the fuse		N/A
	Figure 105		N/A
	for lug terminals, torque in Table 111..... : -		—
	Insulation of conductors removed over the whole length	-	N/A
	All covers of contacts and terminals are removed		N/A
8.10.1.2	Direct terminal clamps		N/A
	Test performed on 10 direct terminal clamps of five fuse-bases		N/A
	Distance between fuse-base centres of at least three times e_2 (see Figure 101)		N/A
	Torque of tightened of screws	-	—
	Conductor cross-section	-	—
8.10.2	Test method		N/A
	Test current (A) for load period	-	N/A
	Duration (s) of load period	-	N/A
	Duration (s) of no-load period	-	N/A
	Test voltage (V)	-	—
	a) Test of 50 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
	b) Test of 250 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
	c) Test of 500 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A

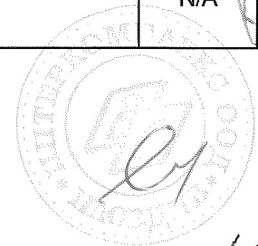
2023-07-11
07:17:33



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	d) Test of 750 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
8.10.2.1	Contacts		N/A
	Points between voltage drop is measured (A and B in Figure 106)		N/A
	Withdrawal force (Table 118); measured force after 250 cycles (N) : -		N/A
	Withdrawal force (Table 118); measured force after 750 cycles (N) : -		N/A
	If measured values too low, test of 8.5.5.1 : -		N/A
8.10.2.2	Direct terminal clamps		N/A
	Points between voltage drop is measured (Figure 110)		N/A
	Test sequence for all types conductors (see Table 116)		N/A
	Verification of temperature rise (see 8.3.4.1) (see figure 110) : -		N/A
8.10.3	Acceptability of test results		N/A
8.10.3.1	Contacts		N/A
	Limit value after 250 th cycle ≤ 15%		N/A
	Limit value after 500 th cycle ≤ 30%		N/A
	Limit value after 750 th cycle ≤ 40%		N/A
	Difference between last and first measurement of temperature rise less than 20 K : -		N/A
8.10.3.2	Direct terminal clamps		N/A
	Permissible tolerance for resistance R _{cl0} for Al conductors : R _{cl0max} ≤ 2 R _{cl0min} : -		N/A
	Permissible changes of the resistance from R _{cl50} to R _{cl750} : see Table 117 : -		N/A
	Copper or cleaned aluminium conductors : -		N/A
	Uncleaned aluminium conductor : -		N/A
	Change from 50 th to 250 th cycle		N/A
	Change after 250 th to 500 th cycle		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	Change after 500 th to 750 th cycle		N/A
	Change between 50 th to 750 th cycle		N/A
	Temperature rise at test spot F < 75K		N/A
8.11	Mechanical and miscellaneous tests		N/A
8.11.1.1	Mechanical strength of fuse-holders		N/A
	Test set-up subjected to temperature rise test at rated current : -		N/A
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times : -		—
	All parts are intact and function normally		N/A
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior)..... : -		N/A
8.11.1.2	Mechanical strength of the fuse-base		N/A
	Test-link inserted three times in the fuse-base : - (Dimensions of blade contacts see Figure 101) (Withdrawal force F within limits in Table 118)		N/A
	Steel screws are fastened three times at the terminals, torque of 1,2 times value specified by manufacturer or value of Table 111 : -		N/A
	Contact pieces not have moved to affect the further use		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.11.1.8	Impact resistance of gripping-lugs of moulded material or of metal fixed in moulded material		N/A
8.11.1.8.1	Test arrangement		N/A
8.11.1.8.2	Facility is given in Figure 109 : -		N/A
	One fuse-link ... (150±5)°C for 168 h		—
	Another one -15°C for 72 h		—
	One impact on each of gripping-lugs		N/A
8.11.1.8.3	Acceptability of test results		N/A
	No damage capable of hindering their further use		N/A
	No bent out by more than 3 mm		N/A
	Coupling with a handle (Figure 103) not are hindered		N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
8.11.2.3	Verification of resistance to rusting		N/A
8.11.2.3.1	According to ISO 6988 cyclic moist atmosphere containing 0,2% SO ₂ (SFW 0,2 S) for 1 cycle		N/A
8.11.2.3.2	Optional test (severe environmental conditions)		N/A
	Fuse-links and fuse-bases for used in environment of pollution degree ≥ 3 tested with SFW 2,0 S for 5 cycles	-	N/A
	They marked accordingly	-	N/A
8.11.2.4	Non-deterioration of insulating parts of fuse-link and fuse-base		N/A
8.11.2.4.1	Test method		N/A
	Period 168 h	-	—
	for equipment comprising moulded elements to support live parts (150 \pm 5) $^{\circ}$ C		—
	for covers (100 \pm 5) $^{\circ}$ C		—
	Period greater than 1 h.....	-	—
	for sealing compounds; stability of marking (150 \pm 5) $^{\circ}$ C		—
	After cooling to ambient temperature the following are tested.		N/A
	Fuse-links: breaking capacity with I_1 and I_2	-	N/A
	Fuse-base: mechanical strength in accordance with 8.11.1.2		N/A
8.11.1.2	Mechanical strength of the fuse-base		N/A
	Test-link inserted three times in the fuse-base	-	N/A
	(Dimensions of blade contacts see Figure 101) (Withdrawal force F lied within limits in Table118)		
	Steel screws are fastened three times at the terminals, torque of 1,2 times value specified by manufacturer or value of Table 111	-	N/A
	Contact pieces not have moved to affect the further use		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.11.2.4.2	Acceptability of test results		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	Not have changed of positions of fuse-base contacts to correct functioning		N/A
	No fracture nor any signs of fracture on insulating body with terminals		N/A
	Mechanical strength of cemented joints not impaired		N/A
	Sealing compounds not shifted to extent permitting live parts to exposed		N/A
	Fuse-links operate correctly		N/A
	Marking are durable and easily legible		N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	Requirements IEC 60269-1		N/A
--	---------------------------------	--	------------

FUSE SYSTEM B – FUSES WITH STRIKER FUSE-LINKS WITH BLADE CONTACTS (NH FUSE SYSTEM)

5	CHARACTERISTICS OF FUSES		N/A
5.2	Rated voltage (V) as specified	-	N/A
5.3.1	Rated current (A) of the fuse-link in accordance with specified values	-	N/A
5.3.2	Rated current (A) of the fuse-holder and the size of the fuse-link	-	N/A
5.5	Rated power (W) dissipation of fuse-link	-	N/A
	Rated acceptable power (VA) dissipation of fuse-holder	-	N/A
5.6	Limits of time-current characteristics		N/A
5.6.1	Time-current characteristics, time-current zones and overload curves	-	N/A
5.6.2	Conventional times and current.....	-	N/A
5.6.3	Gates	-	N/A
5.7.2	Rated breaking capacity (A)	-	N/A

6	MARKING		N/A
	Markings are legible		N/A
6.1	Fuse-holder marked by:		N/A
	- IEC 60269-2	-	N/A
	- size.....	-	N/A
	Marking of rated current and rated voltage are discernible from the front		N/A
6.2	Fuse-links marked by:		N/A
	- IEC 60269-2	-	N/A
	- size or reference.....	-	N/A
	- rated breaking capacity	-	N/A
	Marking of rated current and rated voltage are discernible from the front		N/A
	Fuse-links marked as described in Table 104	-	N/A




IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

7	STANDARD CONDITIONS FOR CONSTRUCTION		N/A
7.1	Mechanical design		N/A
	The dimensions of the fuse-links given in Figure 201		N/A
	Dimensions:		N/A
	dimension marking a ₁ : prescribed (mm); measured (mm)	-	N/A
	dimension marking a ₂ : prescribed (mm); measured (mm)	-	N/A
	dimension marking a ₃ : prescribed (mm); measured (mm)	-	N/A
	dimension marking a ₄ : prescribed (mm); measured (mm)	-	N/A
	dimension marking b min: prescribed (mm); measured (mm)	-	N/A
	dimension marking c ₁ : prescribed (mm); measured (mm)	-	N/A
	dimension marking c ₂ : prescribed (mm); measured (mm)	-	N/A
	dimension marking d: prescribed (mm); measured (mm)	-	N/A
	dimension marking e ₁ max: prescribed (mm); measured (mm)	-	N/A
	dimension marking e ₂ max: prescribed (mm); measured (mm)	-	N/A
	dimension marking e ₃ : prescribed (mm); measured (mm)	-	N/A
	dimension marking e ₄ : prescribed (mm); measured (mm)	-	N/A
	dimension marking f: prescribed (mm); measured (mm)	-	N/A
	dimension marking k: prescribed (mm); measured (mm)	-	N/A
	dimension marking l: prescribed (mm); measured (mm)	-	N/A
	dimension marking m: prescribed (mm); measured (mm)	-	N/A
	The dimensions of the fuse-base given in Figure 202		N/A
	Reference A / Reference B		N/A

Handwritten text and stamps at the bottom center.



Handwritten number 412 and other marks on the right margin.

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	Dimensions:		N/A
	dimension marking h: prescribed (mm); measured (mm) :	-	N/A
	dimension marking n ₁ max: prescribed (mm); measured (mm) :	-	N/A
	dimension marking n ₂ max: prescribed (mm); measured (mm) :	-	N/A
	dimension marking p ₁ max: prescribed (mm); measured (mm) :	-	N/A
	dimension marking p ₂ : prescribed (mm); measured (mm) :	-	N/A
	dimension marking r min: prescribed (mm); measured (mm) :	-	N/A
	dimension marking s max: prescribed (mm); measured (mm) :	-	N/A
	dimension marking t min: prescribed (mm); measured (mm) :	-	N/A
	dimension marking v: prescribed (mm); measured (mm) :	-	N/A
	dimension marking w ₁ : prescribed (mm); measured (mm) :	-	N/A
	dimension marking w ₂ : prescribed (mm); measured (mm) :	-	N/A
	dimension marking x min: prescribed (mm); measured (mm) :	-	N/A
	dimension marking y: prescribed (mm); measured (mm) :	-	N/A
	dimension marking z max: prescribed (mm); measured (mm) :	-	N/A
	dimension marking j1 min: prescribed (mm); measured (mm) :	-	N/A
	dimension marking j2 max: prescribed (mm); measured (mm) :	-	N/A
	dimension marking j3 : prescribed (mm); measured (mm) :	-	N/A
	dimension marking j4 : prescribed (mm); measured (mm) :	-	N/A




IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	fuse-base can receive any fuse-link with striker of the same reference complying with this fuse system :	-	N/A
	minimum clearances between the surface from protruding of striker considered as live part and all metallic parts comply with IEC 60664-1 :	-	N/A
7.1.2	Connections, including terminals cross-sectional ranges (Table 105) : torques to be applied (Table 111) (lug terminal) :	- -	N/A
7.1.3	Contact surfaces should be silver plated :	-	N/A
	If no test according to 8.10 are passed with dummies described in 8.10.1		N/A
7.1.7	Construction of fuse-link		N/A
	Blade contacts made of solid material :	-	N/A
	If any other construction, manufacturer demonstrate that construction adequate..... :	-	N/A
	Endplates not permitted to protrude radially from insulation body :	-	N/A
	preferable to insulate the gripping lugs from live parts		N/A
	Fuse-links has an indicator..... :	-	N/A
	Electrically conductive parts of indicator not ejected from the fuse-link during operation..... :	-	N/A
7.2	Insulating properties and suitability for insulation		N/A
	Creepage distances and clearances of fuses and fuse-accessories meet requirements of IEC 60664-1 for overvoltage category III and pollution degree 3 :	-	N/A
	Insulating parts of fuse-base supporting live parts meet the test at PTI 400 according to IEC 60112 (test solution A) :	-	N/A
7.7	I ² t characteristics		N/A
	maximum pre-arcing I ² t (Table 7 of IEC 60269-1) :	-	N/A
	rated currents lower than 16 A (Table 106) :	-	N/A
	maximum operating I ² t for "aM" fuse-links (Table 107) test No. 2 of the largest rated current of each homogeneous series (Table 20 of IEC 60269-1)..... :	-	N/A

Handwritten notes and stamps at the bottom of the page.



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
7.8	Overcurrent discrimination of "gG" fuse-links (see 8.7.4, Table 108)	-	N/A
7.9	Protection against electric shock		N/A
	increased by means of partition walls and covers of fuse-contacts	-	N/A
	operation by authorized persons, instructed in electrical matters, using replacement handles according to this fuse system	-	N/A
8	TESTS		N/A
	IEC 60269-1 applies with the following supplementary requirements		N/A
8.1.6	Testing of fuse-holders		N/A
	In addition to test given in IEC 60269-1 tested according to Table 109	-	N/A
8.3	Verification of temperature rise and power dissipation		N/A
8.3.1	Arrangement of the fuse		N/A
	Tightened by torque (Nm)	-	—
8.3.2	Measurement of the temperature rise		N/A
	Protective covers and fuse-carriers as provided by manufacturer mounted	-	N/A
8.3.4.1	Temperature rise of the fuse-holder		N/A
	Dummy (Figure 105) Point at which temperature rise is measured (Figure 106)		N/A
8.3.4.2	Power dissipation of a fuse-link (Figure 106)		N/A
8.4.3.6	Operation of indicating devices and strikers, if any		N/A
	After operation, striker remained captive		N/A
	Size : Reference A / Reference B		N/A
	S_{0max} / S_1	-	N/A
	F_{min} / F_{max}	-	N/A
8.5.5.1	Verification of the peak withstand current of a fuse- base		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

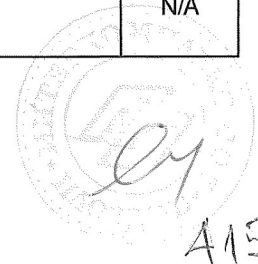
	not be carried out , if this has already been verified during the breaking capacity test of fuse-links with the highest rating of the size	-	N/A
8.5.5.1.1	Arrangement of the fuse		N/A
	single-phase type, 8.5.1 of IEC 60269-1		N/A
	peak values of the test currents (Table 112)	-	
	maximum values (see 8.5.5.1.3).....	-	
	dummy fuse-link (Figure 101)	-	
8.5.5.1.2	Test method		N/A
	fuse-base 1 (Figure107)		N/A
	resilient spring travel is limited to elastic range.....	-	
	contacts opened up three times	-	
	fuse-base 2 (see 8.11.1.2)		N/A
	F_{max} according to Table 118		
8.5.5.1.3	Acceptability of test results		N/A
	fuse-links not be ejected		N/A
	no signs of arcing or welding or other damage		N/A
8.7.4	Verification of overcurrent discrimination		N/A
	verified by I^2t values evaluated from the recorded test results		N/A
	Arrangement of the samples as for the breaking capacity test		N/A
	two samples tested at the r.m.s. prospective test current I , corresponding to minimum pre-arcing I^2t	1) - 2) -	N/A
	the other samples tested at the r.m.s. prospective test current I , corresponding to operating I^2t	3) - 4) -	N/A
	test voltage (V)	-	-
	The values of I^2t lie within corresponding limits specified in Table 113.....	-	N/A
8.9	Verification of resistance to heat		N/A
	Tests apply to fuse-link and fuse-base		N/A
	Fuse-holder with fuse-links having maximum power dissipation be cyclically loaded as pre-treatment....	-	N/A

2019.05.15
01.05.2019



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	After cooling to normal temperature breaking capacity tested at I_1 (see 8.5)..... :	-	N/A
	Fuse-links with organic material Fuse-holder with fuse-links having maximum power dissipation be cyclically loaded as pre-treatment.... :	-	N/A
	After cooling to normal temperature breaking capacity tested at I_1 and I_5 (see 8.5)..... :	-	N/A
8.9.1	Fuse-base		N/A
	test below apply if it is not obvious that components are not affected adversely by given temperature and withdrawal forces		N/A
8.9.1.1	Test arrangement		N/A
	Figure 105 and 108		N/A
	Test setup in heating chamber		N/A
8.9.1.2	Test method		N/A
	Temperature of $(80^{+5}_0)^{\circ}\text{C}$ for 2 h		N/A
	160% rated current for 2 h..... :	-	N/A
	Test voltage	-	—
	3 min after switching off tensile force F_{\max} (see Table 118) exerted for 15 s	-	N/A
8.9.1.3	Acceptability of test results		N/A
	Contact pieces not have moved to affect the further use		N/A
	Dimensions of Figure 202 are considered		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.9.2.1	Test arrangement		N/A
	Figure 108		N/A
8.9.2.2	Test method		N/A
	Temperature of $(80^{+5}_0)^{\circ}\text{C}$ for 2 h		N/A
	150% rated current for conventional time	-	N/A
	Test voltage	-	—
	3 min after fuse-link operated or conventional time expired tensile force F_{\max} (see Table 118) exerted for 15 s		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
8.9.2.3	Acceptability of test results		N/A
	Gripping lugs remain fully operational		N/A
	Dimensions of Figure 201 (d and c ₂) not be exceeded by more than 2 mm		N/A
8.11.1.1	Mechanical strength of fuse-holders		N/A
	Test set-up subjected to temperature rise test at rated current : -		N/A
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times : -		—
	All parts are intact and function normally		N/A
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior) : -		N/A
8.11.1.2	Mechanical strength of the fuse-base		N/A
	Test-link inserted three times in the fuse-base : - (Dimensions of blade contacts see Figure 201) (Withdrawal force F lied within limits in Table 118)		N/A
	Steel screws are fastened three times at the terminals, torque of 1,2 times value specified by manufacturer or value of Table 111 : -		N/A
	Contact pieces not have moved to affect the further use		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.11.1.8	Impact resistance of gripping-lugs of moulded material or of metal fixed in moulded material		N/A
8.11.1.8.1	Test arrangement		N/A
8.11.1.8.2	Facility is given in Figure 109 : -		N/A
	One fuse-link ... (150±5)°C for 168 h		—
	Another one -15°C for 72 h		—
	One impact on each of gripping-lugs		N/A
8.11.1.8.3	Acceptability of test results		N/A
	No damage capable of hindering their further use		N/A
	No bent out by more than 3 mm		N/A
	Coupling with a handle (Figure 103) not are hindered		N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
8.11.2.4	Non-deterioration of insulating parts of fuse-link and fuse-base		N/A
8.11.2.4.1	Test method		N/A
	Period 168 h	-	—
	for equipment comprising moulded elements to support live parts (150±5)°C		—
	for covers (100±5)°C		—
	Period greater than 1 h.....	-	—
	for sealing compounds; stability of marking (150±5)°C		—
	After cooling to ambient temperature the following are tested.		N/A
	Fuse-links: breaking capacity with I_1 and I_2	-	N/A
	Fuse-base: mechanical strength in accordance with 8.11.1.2		N/A
8.11.1.2	Mechanical strength of the fuse-base		N/A
	Test-link inserted three times in the fuse-base (Dimensions of blade contacts see Figure 101) (Withdrawal force F lied within limits in Table118)	-	N/A
	Steel screws are fastened three times at the terminals, torque of 1,2 times value specified by manufacturer or value of Table 111	-	N/A
	Contact pieces not have moved to affect the further use		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.11.2.4.2	Acceptability of test results		N/A
	Not have changed of positions of fuse-base contacts to correct functioning		N/A
	No fracture nor any signs of fracture on insulating body with terminals		N/A
	Mechanical strength of cemented joints not impaired		N/A
	Sealing compounds not shifted to extent permitting live parts to exposed		N/A
	Fuse-links operate correctly		N/A
	Marking are durable and easily legible		N/A

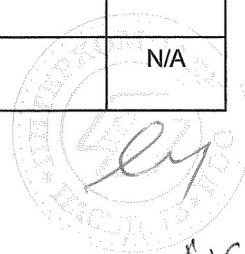
IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

FUSE SYSTEM C – FUSE-RAILS (NH FUSE SYSTEM)

5	CHARACTERISTICS OF FUSES		
5.2	Rated voltage (V) as specified	-	N/A
5.3.2	Rated current (A) of fuse-rails (see Figure 301)	-	N/A
5.5.1	Rated power (W) acceptance of fuse-rails (see Figure 301)	-	N/A

6	MARKING		
	Markings are legible		N/A
6.1	Fuse-holder marked by:		
	- IEC 60269-2.....	-	N/A
	- size.....	-	N/A
	Marking of rated current and rated voltage are discernible from the front		N/A
6.2	Fuse-links marked by:		
	- IEC 60269-2.....	-	N/A
	- size or reference.....	-	N/A
	- rated breaking capacity	-	N/A
	Marking of rated current and rated voltage are discernible from the front		N/A
	Fuse-links are marked as described in Table 104..		N/A

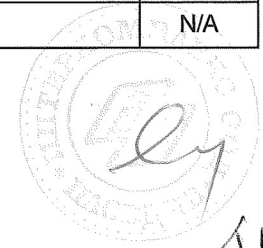
7	STANDARD CONDITIONS FOR CONSTRUCTION		
7.1	Mechanical design		N/A
	Reference A / Reference B /Reference C		N/A
	dimension marking c max: prescribed (mm); measured (mm)	-	N/A
	dimension marking d ₁ : prescribed (mm); measured (mm)	-	N/A
	dimension marking d ₂ min: prescribed (mm); measured (mm)	-	N/A
	dimension marking h ₁ min: prescribed (mm); measured (mm)	-	N/A
	dimension marking h ₂ max: prescribed (mm); measured (mm)	-	N/A
	dimension marking m ₁ : prescribed (mm); measured (mm)	-	N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	dimension marking m_2 : prescribed (mm); measured (mm)	-	N/A
	dimension marking m_3 max: prescribed (mm); measured (mm)	-	N/A
	dimension marking m_4 : prescribed (mm); measured (mm)	-	N/A
	dimension marking m_5 : prescribed (mm); measured (mm)	-	N/A
	dimension marking n_2 max: prescribed (mm); measured (mm)	-	N/A
	dimension marking r min: prescribed (mm); measured (mm)	-	N/A
	dimension marking s max: prescribed (mm); measured (mm)	-	N/A
	dimension marking t min max: prescribed (mm); measured (mm)	-	N/A
	dimension marking v : prescribed (mm); measured (mm)	-	N/A
	dimension marking z max: prescribed (mm); measured (mm)	-	N/A
7.1.2	Connections, including terminals cross-sectional ranges (Table 301) : torques to be applied (Table 111) (lug terminal) :	- -	N/A
7.2	Insulating properties		N/A
	Creepage distances and clearances of fuses and fuse-accessories meet requirements of IEC 60664-1 for overvoltage category III and pollution degree 3 . :	-	N/A

8	TESTS		
	IEC 60269-1 applies with the following supplementary requirements		N/A
8.1.6	Testing of fuse-holders		N/A
	Tested according to Table 302..... :	--	N/A
8.3	Verification of temperature rise and power dissipation		N/A
8.3.1	Arrangement of the fuse		N/A
	Tightened by torque (Nm)	-	—

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.2	Measurement of the temperature rise		N/A
	Protective covers and fuse-carriers as provided by manufacturer mounted : -		N/A
8.5.5.1	Verification of peak withstand current of a fuse-base		N/A
	Covered by verification of non-deterioration of contacts according to 8.10		N/A
8.5.5.1.1	Arrangement of the fuse		N/A
	three-phase type, 8.5.1 of IEC 60269-1 cut-off currents are below the values given in Table 112 : - Test set-up is given in figure 302 : - Cross-section of busbars (Figure 302) : -		N/A
8.5.5.1.2	Test method		N/A
	fuse-base 1 (Figure 107) resilient spring travel is limited to elastic range : - contacts opened up three times : -		N/A
	fuse-base 2 (see 8.11.1.2) F_{max} according to Table 118		N/A
8.10	Verification of non-deterioration of contacts and direct terminal clamps		N/A
8.10.1	Arrangement of the fuse		N/A
	Figure 301 and Figure 302		N/A
	for lug terminals, torque in Table 111 : -		—
	Insulation of conductors removed over the whole length : -		N/A
8.10.1.2	Direct terminal clamps		N/A
	Test performed on 9 terminal clamps of three fuse-rails		N/A
	Distance between fuse-rails centres of at least three times e_2 (see Figure 101)		N/A
	Torque of tightened of screws : -		—
	Conductor cross-section : -		—
8.10.2	Test method		N/A
	Test current (A) for load period : -		N/A
	Duration (s) of load period : -		N/A
	Duration (s) of non-load period : -		N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	Test voltage (V) :	-	—
	a) Test of 50 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
	b) Test of 250 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
	c) Test of 500 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
	d) Test of 750 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
8.10.2.1	Contacts		N/A
	Points between voltage drop is measured (A and B in Figure 106)		N/A
	Withdrawal force (Table 118); measured force after 250 cycles (N)	-	N/A
	Withdrawal force (Table 118); measured force after 750 cycles (N)	-	N/A
	If measured values too low, test of 8.5.5.1	-	N/A
8.10.2.2	Direct terminal clamps		N/A
	Points between voltage drop is measured (Figure 110)		N/A
	Test sequence for all types conductors (see Table 116)		N/A
	Verification of temperature rise (see 8.3.4.1) (see figure 110)..... :		N/A
8.10.3	Acceptability of test results		N/A
8.10.3.1	Contacts		N/A
	Limit value after 250 th cycle ≤ 15%		N/A
	Limit value after 500 th cycle ≤ 30%		N/A
	Limit value after 750 th cycle ≤ 40%		N/A
	Difference between last and first measurement of temperature rise less than 20 K	-	N/A

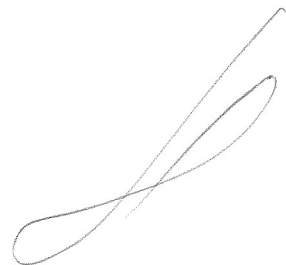
IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
8.10.3.2	Direct terminal clamps		N/A
	Permissible tolerance for resistance R_{cl0} for Al conductors : $R_{cl0\max} \leq 2 R_{cl0\min}$	-	N/A
	Permissible changes of the resistance from R_{cl50} to R_{cl750} : see Table 117	-	N/A
	Copper or cleaned aluminium conductors	-	N/A
	Uncleaned aluminium conductors		N/A
	Change from 50 th to 250 th cycle		N/A
	Change after 250 th to 500 th cycle		N/A
	Change after 500 th to 750 th cycle		N/A
	Change between 50 th to 750 th cycle		N/A
	Temperature rise at test spot F < 75K		N/A
8.11.1.1	Mechanical strength of fuse-holders		N/A
	Test set-up subjected to temperature rise test at rated current	-	N/A
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times	-	—
	All parts are intact and function normally		
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior)	-	N/A
8.11.1.2	Mechanical strength of the fuse-base		N/A
	Contact force are tested on all three phases of a new fuse-rail	-	N/A
	Test-link inserted three times in the fuse-base (Dimensions of blade contacts see Figure 101) (Withdrawal force F lied within limits in Table118)	-	N/A
	Steel screws are fastened three times at the terminals, torque of 1,2 times value specified by manufacturer or value of Table 111		N/A
	Contact pieces not have moved to affect the further use		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.11.2.3	Verification of resistance to rusting		N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
8.11.2.3.1	According to ISO 6988 cyclic moist atmosphere containing 0,2% SO2 (SFW 0,2 S) for 1 cycle		N/A
8.11.2.3.2	Optional test (severe environmental conditions)		N/A
	Fuse-links and fuse-bases for used in environment of pollution degree ≥ 3 tested with SFW 2,0 S for 5 cycles	-	N/A
	They marked accordingly	-	N/A
8.11.2.4	Non-deterioration of insulating parts of fuse-link and fuse-base		N/A
8.11.2.4.1	Test method		N/A
	One fuse-rail is tested	-	—
	Period 168 h	-	—
	for equipment comprising moulded elements to support live parts (150±5)°C		—
	for covers (100±5)°C		—
	Period greater than 1 h	-	—
	for sealing compounds; stability of marking(150±5)°C		—
	After cooling to ambient temperature the following are tested.		N/A
	Fuse-links: breaking capacity with I_1 and I_2	-	N/A
	Fuse-base: mechanical strength in accordance with 8.11.1.2		N/A
8.11.1.2	Mechanical strength of the fuse-base		N/A
	Test-link inserted three times in the fuse-base (Dimensions of blade contacts see Figure 101) (Withdrawal force F lied within limits in Table 118)	-	N/A
	Steel screws are fastened three times at the terminals, torque of 1,2 times value specified by manufacturer or value of Table 111	-	N/A
	Contact pieces not have moved to affect the further use		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.11.2.4.2	Acceptability of test results		N/A
	Not have changed of positions of fuse-base contacts to correct functioning		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	No fracture nor any signs of fracture on insulating body with terminals		N/A
	Mechanical strength of cemented joints not impaired		N/A
	Sealing compounds not shifted to extent permitting live parts to exposed		N/A
	Fuse-links operate correctly		N/A
	Marking are durable and easily legible		N/A



017



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

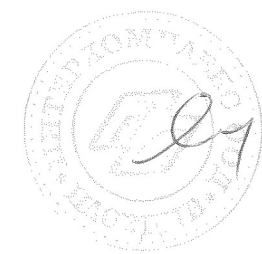
FUSE SYSTEM D – FUSE-BASES FOR BUSBAR MOUNTING (40 mm SYSTEM) (NH FUSE SYSTEM)

5	CHARACTERISTICS OF FUSES		
5.2	Rated voltage (V) as specified	-	N/A
5.3.2	Rated current (A) of tandem fuse-base size 00 is 63A for each outlet.....	-	N/A
5.5.2	Rated acceptable power dissipation (W) of tandem fuse-bases is 7,5 W per outlet	-	N/A

6	MARKING		
	Markings are legible		N/A
6.1	Fuse-holder marked by:		
	- IEC 60269-2.....	-	N/A
	- size.....	-	N/A
	Marking of rated current and rated voltage are discernible from the front		N/A
6.2	Fuse-links marked by:		
	- IEC 60269-2.....	-	N/A
	- size or reference.....	-	N/A
	- rated breaking capacity	-	N/A
	Marking of rated current and rated voltage are discernible from the front		N/A
	Fuse-links are marked as described in Table 104..	-	N/A

7	STANDARD CONDITIONS FOR CONSTRUCTION		
	Dimensions of fuse-bases for 40 mm busbar system given in Figures 401, 402 and 403		N/A
	Fig. 401 / Fig. 402 / Fig. 403		—
	dimension marking a: prescribed (mm); measured (mm)	-	N/A
	dimension marking v: prescribed (mm); measured (mm)	-	N/A
	dimension marking r min: prescribed (mm); measured (mm)	-	N/A
	dimension marking g: prescribed (mm); measured (mm)	-	N/A
	dimension marking h: prescribed (mm); measured (mm)	-	

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	dimension marking k: prescribed (mm); measured (mm)	-	N/A
	dimension marking e ₁ : prescribed (mm); measured (mm)	-	N/A
	dimension marking l: prescribed (mm); measured (mm)	-	N/A
7.1.2	Connections, including terminals cross-sectional ranges (Table 401)	-	N/A
7.1.5	Construction of a fuse-base for busbar mounting		N/A
	Busbar mounted fuse-bases according to Fig. 401, Fig 402 and Fig 403 have partition walls between adjacent live parts	-	N/A
	Partition walls can subsequently fixed	-	N/A
	Possibility to insert fuse-links into fuse-bases and to pull them out by means of replacement handle according to Figure 103	-	N/A
	Possibility to fix fuse-bases for busbar mounting by means of special clamps	-	N/A
	Constructional means provided to ensure fuse-base retained on busbars without fastening and contacting screws tightened	-	N/A
	Clamping screws of clamping means, terminal screws accessible from the front	-	N/A
	Contact pieces capable of accepting blade contacts of fuse-links according to Figure 101	-	N/A
	Dimensions not given in Figures 401, 402 and 403 see Figure 102	-	N/A
7.2	Insulating properties and suitability for insulation		N/A
	Creepage distances and clearances of fuses and fuse-accessories meet requirements of IEC 60664-1 for overvoltage category III and pollution degree 3. :	-	N/A
	Insulating parts of fuse-base supporting live parts meet the test at PT1 400 according to IEC 60112 (test solution A)	-	N/A

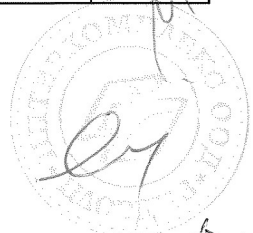


IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

8	TESTS		
	IEC 60269-1 applies with the following supplementary requirements		N/A
8.3	Verification of temperature rise and power dissipation		N/A
8.3.1	Arrangement of the fuse		N/A
	Test arrangement as specified Fig. 404 and 405		N/A
	For contact-making fastening of fuse-base achieved by screws, torque given in Table 402	-	—
8.3.2	Measurement of the temperature rise		N/A
	Protective covers and fuse-carriers as provided by manufacturer mounted	-	N/A
8.3.4.1	Temperature rise of the fuse-holder		N/A
	Dummy (Figure 407) Point at which temperature rise is measured (Figure 106)		N/A
8.3.4.2	Power dissipation of a fuse-link (Figure 106)		N/A
8.5.5.1.1	Arrangement of the fuse		N/A
	Test arrangement specified in Figure 406	-	N/A
	Test in a single-pole arrangement		N/A
	Cross-sections of busbars see Figure 406 or manufacturer's instructions	-	N/A
	For tandem fuse-bases ranges of cut-off currents given by Table 403	-	N/A
8.9.1	Fuse-base		N/A
8.9.1.1	Test arrangement		N/A
	Test arrangement for tandem fuse-bases given in Figure 405		N/A
	Dummy fuse-link described in Figure 407		N/A
	For contact-making fastening of fuse-base achieved by screws, torque given in Table 402		N/A
	Test set-up in heating chamber		N/A
8.9.1.3	See 8.9.1.3 section A with references to Figures 401 and 403		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	test below apply if it is not obvious that components are not affected adversely by given temperature and withdrawal forces		N/A
8.9.1.2	Test method		N/A
	Temperature of (80 ⁺⁵ ₀)°C for 2 h		N/A
	160% rated current for 2 h..... :	-	N/A
	Test voltage :	-	—
	3 min after switching off tensile force F _{max} (see Table 118) exerted for 15 s		N/A
8.9.1.3	Acceptability of test results		N/A
	Contact pieces not have moved to affect the further use		N/A
	Dimensions of Figures 401 and 403 are considered		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.10	Verification of non-deterioration of contacts and direct terminal clamps		N/A
8.10.1	Arrangement of the fuse		N/A
	Dummy fuse-link described in Figure 407		N/A
	Torque of contact making fastening for fuse-bases on 40mm busbar systems see Table 402		—
8.10.1.2	Direct terminal clamps		N/A
	Test performed on 10 direct terminal clamps of five fuse-bases		N/A
	Distance between fuse-base centres of at least three times e ₂ (see Figure 101)		N/A
	Torque of tightened of screws :	-	—
	Conductor cross-section :	-	—
8.10.2	Test method		N/A
	As far as single contact concerned, tap points for resistance measurement lied as close as possible to contact area		N/A
	Test current (A) for load period :	-	N/A
	Duration (s) of load period :	-	N/A
	Duration (s) of non-load period :	-	N/A

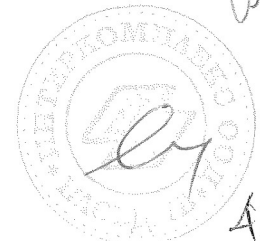
2023.06
01.07.2023



Handwritten initials or signature

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Test voltage (V)	-	—
	a) Test of 50 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
	b) Test of 250 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
	c) Test of 500 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
	d) Test of 750 cycles, measured values did not exceed the limits given in subsequent parts of IEC 60269		N/A
8.10.2.1	Contacts		N/A
	Points between voltage drop is measured (A and B in Figure 106)		N/A
	Withdrawal force (Table 118); measured force after 250 cycles (N)		N/A
	Withdrawal force (Table 118); measured force after 750 cycles (N)		N/A
	If measured values too low, test of 8.5.5.1	-	N/A
8.10.2.2	Direct terminal clamps		N/A
	Points between voltage drop is measured (Figure 110)		N/A
	Test sequence for all types conductors (see Table 116)		N/A
	Verification of temperature rise (see 8.3.4.1) (see figure 110)		N/A
8.10.3	Acceptability of test results		N/A
8.10.3.1	Contacts		N/A
	Limit value after 250 th cycle \leq 15%		N/A
	Limit value after 500 th cycle \leq 30%		N/A
	Limit value after 750 th cycle \leq 40%		N/A
	Difference between last and first measurement of temperature rise less than 20 K	-	N/A
8.10.3.2	Direct terminal clamps		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Permissible tolerance for resistance R_{cl0} for Al conductors : $R_{cl0max} \leq 2 R_{cl0min}$	-	N/A
	Permissible changes of the resistance from R_{cl50} to R_{cl750} : see Table 117	-	N/A
	Copper or cleaned aluminium conductors	-	N/A
	Uncleaned aluminium conductors		N/A
	Change from 50 th to 250 th cycle		N/A
	Change after 250 th to 500 th cycle		N/A
	Change after 500 th to 750 th cycle		N/A
	Change between 50 th to 750 th cycle		N/A
	Temperature rise at test spot F < 75K		N/A
8.11	Mechanical and miscellaneous tests		N/A
8.11.1.1	Mechanical strength of fuse-holders		N/A
	Test set-up subjected to temperature rise test at rated current	-	N/A
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times	-	—
	All parts are intact and function normally		N/A
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior).....	-	N/A
8.11.1.2	Mechanical strength of the fuse-base		N/A
	Test-link inserted three times in the fuse-base : (Withdrawal force F lied within limits in Table 404)	-	N/A
	Contact force tested on all outlets of one unused fuse-base	-	N/A
	Steel screws are fastened three times at the terminals, torque of 1,2 times value specified by manufacturer or value of Table 111	-	N/A
	Contact pieces not have moved to affect the further use		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.11.2.4	Non-deterioration of insulating parts of fuse-link and fuse-base		N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
8.11.2.4.1	Test method		N/A
	Three fuse-bases or one tandem fuse-base tested		N/A
	Period 168 h	-	—
	for equipment comprising moulded elements to support live parts (150±5)°C		—
	for covers (100±5)°C		—
	Period greater than 1 h.....	-	—
	for sealing compounds; stability of marking(150±5)°C		—
	After cooling to ambient temperature the following are tested.		N/A
	Fuse-links: breaking capacity with I ₁ and I ₂	-	N/A
	Fuse-base: mechanical strength in accordance with 8.11.1.2		N/A
8.11.1.2	Mechanical strength of the fuse-base		N/A
	Test-link inserted three times in the fuse-base : (Withdrawal force F lied within limits in Table 404)	-	N/A
	Contact force tested on all outlets of one unused fuse-base	-	N/A
	Steel screws are fastened three times at the terminals, torque of 1,2 times value specified by manufacturer or value of Table 111	-	N/A
	Contact pieces not have moved to affect the further use		N/A
	Insulating mounting part no broken and no show any signs of cracks		N/A
8.11.2.4.2	Acceptability of test results		N/A
	Not have changed of positions of fuse-base contacts to correct functioning		N/A
	No fracture nor any signs of fracture on insulating body with terminals		N/A
	Mechanical strength of cemented joints not impaired		N/A
	Sealing compounds not shifted to extent permitting live parts to exposed		N/A
	Fuse-links operate correctly		N/A
	Marking are durable and easily legible		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

**FUSE SYSTEM E – FUSES WITH FUSE-LINKS FOR BOLTED CONNECTIONS
(BS BOLTED FUSE SYSTEM)**

5	CHARACTERISTICS OF FUSES		
5.3.1	Rated current (A) of the fuse-link given in Figures 501 and 502.....:	-	N/A
5.3.2	Rated current (A) of the fuse-holder given in Figure 503.....:	-	N/A
5.5	Max. power (W) dissipation of fuse-link within specified limits given in Figure 501	-	N/A
	Rated power acceptable (W) dissipation of a fuse-holder within specified limits given in Figure 503	-	N/A
5.6	Limits of time-current characteristics		N/A
5.6.1	Time-current zones given in Figure 504 and 505:	-	N/A
	Tolerances on time current characteristics not deviate for more $\pm 10\%$ (for current)		N/A
5.6.2	In addition to values IEC 60269-1 see Table 501:	-	N/A
5.6.3	For "gG" fuse-links the gates in accordance with Table 502 and IEC 60269-1	-	N/A
5.7.2	Rated breaking capacity equal to 80 kA a.c		N/A
	Rated breaking capacity equal to 40 kA d.c		N/A

6	MARKINGS		
	Markings are legible		N/A
6.1	Fuse-holder marked by:		
	- size.....:	-	N/A
	Marking of rated current and rated voltage are discernible from the front		N/A
6.2	Fuse-links marked by:		
	- size or reference.....:	-	N/A
	- rated breaking capacity	-	N/A

2020.05.12



423

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

7	STANDARD CONDITIONS FOR CONSTRUCTION		N/A
7.1	Mechanical design		N/A
	The dimensions of the fuse-links given in Figure 501		N/A
	Fuse-link size		N/A
	dimension marking a max: prescribed (mm); measured (mm)	-	N/A
	dimension marking b max: prescribed (mm); measured (mm)	-	N/A
	dimension marking d max: prescribed (mm); measured (mm)	-	N/A
	dimension marking e max: prescribed (mm); measured (mm)	-	N/A
	dimension marking f max: prescribed (mm); measured (mm)	-	N/A
	dimension marking g nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking h nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking j min: prescribed (mm); measured (mm)	-	N/A
	dimension marking k max: prescribed (mm); measured (mm)	-	N/A
	dimension marking l nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking m max: prescribed (mm); measured (mm)	-	N/A
	The dimensions of the fuse-base in tolerances given in Figure 503		
	Fuse-link accommodated size / max rated current	-	N/A
	dimension marking A max: prescribed (mm); measured (mm)	-	N/A
	dimension marking B max: prescribed (mm); measured (mm)	-	N/A
	dimension marking B1max: prescribed (mm); measured (mm)	-	N/A
	dimension marking C max: prescribed (mm); measured (mm)	-	N/A
	dimension marking D: prescribed (mm); measured (mm)	-	N/A
7.2	Insulating properties and suitability for insulation		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Creepage distances and clearances of fuse parts meet requirements of IEC 60664-1 for overvoltage category III and pollution degree 3		N/A
7.9	Degree of protection against electric shock of standardized fuse-holder IP not lower than IP2x	IP	N/A
8	TESTS		N/A
	IEC 60269-1 applies with the following supplementary requirements		N/A
8.3	Verification of temperature rise and power dissipation		N/A
8.3.1	The test arrangement for verification of temperature rise and power dissipation as specified (Figure 506)		N/A
8.3.3	Measurement of the power dissipation of the fuse-link		N/A
	The points of measurement as specified (Figure 506)		N/A
8.4	Verification of operation		N/A
8.4.1	The test arrangement of the fuse-link given in Figure 506		N/A
8.5	Verification of breaking capacity		N/A
8.5.1	The test arrangement of the fuse-link given in Figure 507		N/A
8.5.8	Acceptability of test results		N/A
	Additionally to 8.5.8 of IEC 60269-1: the fuse-links operated without the melting of the fine fuse-wire and without mechanical damage to the rig		N/A
8.9	Verification of resistance to heat		N/A
	Tests apply to fuse-link and fuse-base		N/A
	Fuse-holder with fuse-links having maximum power dissipation be cyclically loaded as pre-treatment.....		N/A
	After cooling to normal temperature breaking capacity tested at I ₁ (see 8.5)		N/A
	Fuse-links with organic material		N/A
	Fuse-holder with fuse-links having maximum power dissipation be cyclically loaded as pre-treatment.....		N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	After cooling to normal temperature breaking capacity tested at I_1 and I_5 (see 8.5).....:	-	N/A
8.10	Verification of non-deterioration of contacts		N/A
8.10.1	Arrangement of the fuse		N/A
	Dummy fuse-link comply with dimensions Fig 501 for references accommodated in standardized fuse-holders Fig 503		N/A
	Power dissipation of dummy fuse-links equal to rated power dissipation of fuse-holder given in Fig 503 when tested in standardized power dissipation rig given in Fig 506		N/A
	Dummy fuse-link not operate during passage of overload current I_{nf}		N/A
8.10.2	Test method		N/A
	Test current: conventional non-fusing current		N/A
	Load period: 25% of conventional time		N/A
	No-load period: 10% of conventional time		N/A
	Test voltage lower rated voltage may be used		N/A
8.10.3	Acceptability of the results		N/A
	Temperature rise after 250 cycles not exceed temperature rise at beginning + 15K	-	N/A
	Temperature rise after 750 cycles not exceed temperature rise at beginning + 20K	-	N/A
8.11	Mechanical and miscellaneous tests		N/A
8.11.1.1	Mechanical strength of fuse-holders		N/A
	Test set-up subjected to temperature rise test at rated current	-	N/A
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times	-	—
	All parts are intact and function normally		N/A
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior).....:	-	N/A

104



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

**FUSE SYSTEM F – FUSES WITH FUSE-LINKS HAVING CYLINDRICAL CONTACT CAPS
(NF CYLINDRICAL FUSE SYSTEM)**

5	CHARACTERISTICS OF FUSES		P
5.2	Rated voltage (V)	690Va.c. or 24Vd.c.	P
5.3.1	Rated current (A) of the fuse-link in accordance with Table 601	-	N/A
5.3.2	Rated current (A) of the fuse-holder in accordance with Table 602	32A	P
5.5	Max. rated power (W) dissipation of the fuse-link within specified limits of Table 603	-	N/A
	Rated acceptable power (W) dissipation of the fuse-bases given in Table 604	3W	P
5.6	Limits of time-current characteristics		N/A
5.6.1	When applicable time-current zones given in Fig 104 of fuse system A	-	N/A
5.6.2	Conventional times and currents are given in Table 605	-	N/A
5.6.3	For gG fuse-link the gates given in Table 606	-	N/A
5.7.2	Min. rated breaking capacity (A) see Table 607	-	N/A

6	MARKING		P
	Markings are legible		P
6.1	Fuse-holder marked by:		P
	- IEC 60269-2	IEC 60269	P
	- size.....	10x38	P
6.2	Fuse-links marked by:		N/A
	- IEC 60269-2	-	N/A
	- size or reference.....	-	N/A
	- rated breaking capacity	-	N/A
	Fuse-links are marked as described in Table 608....		N/A



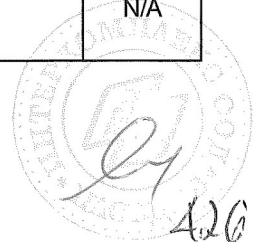
02700 C
R. 02700 A

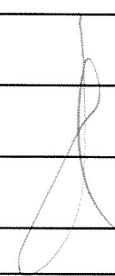
IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

7	STANDARD CONDITIONS FOR CONSTRUCTION		P
7.1	Mechanical design		P
	The dimensions of the fuse-links given in Figure 601		N/A
	Size:		N/A
	dimension marking a: prescribed (mm); measured (mm)	-	N/A
	dimension marking b max: prescribed (mm); measured (mm)	-	N/A
	dimension marking c: prescribed (mm); measured (mm)	-	N/A
	dimension marking d min: prescribed (mm); measured (mm)	-	N/A
	dimension marking r: prescribed (mm); measured (mm)	-	N/A
	The dimensions of the fuse links with striker in tolerances given in Figure 602		N/A
	dimension marking S ₀ max: prescribed (mm); measured (mm)	-	N/A
	dimension marking S ₁ : prescribed (mm); measured (mm)	-	N/A
	diameter marking Ø 3 to 6: prescribed (mm); measured (mm)	-	N/A
	diameter marking Ø 8: prescribed (mm); measured (mm)	-	N/A
	The dimensions of the fuse-bases in tolerances given in Figure 603		P
	Size:		P
	dimension marking G ₁ max: prescribed (mm); measured (mm)	13 max.; 10,5 measured	P
	dimension marking H ₁ min: prescribed (mm); measured (mm)	15,5 min.; 18,5 measured	P
	dimension marking L: prescribed (mm); measured (mm)	19,3 ^{0/+0,8} ; 20,0 measured	P
	dimension marking G ₂ max: prescribed (mm); measured (mm)	;31,5 max.; 31,4 measured	P
	dimension marking H ₂ min: prescribed (mm); measured (mm)	;34,5 min. 39,0 measured	P
7.1.2	The terminals capable to accept rigid copper conductors of cross-sectional areas (mm ²) as stated in Table 609	0,75mm ² to 16 mm ²	P

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
7.2	Insulating properties and suitability for insulation		P
	Creepage distances and clearances of fuse parts meet requirements of IEC 60664-1 for overvoltage category III and pollution degree 3	Overvoltage category: III Pollution degree: 3 > 10mm	P
7.7	Maximum pre-arcing I ² t given in Table 7 of IEC 60269-1 and for value lower than 16A in Table 610	-	N/A
	maximum operating I ² t for "aM" fuse-links (Table 611) test No. 2 of the largest rated current of each homogeneous series (Table 20 of IEC 60269-1) ...	-	N/A
7.8	Fuse-links gG in series rated current ratio 1:1,6 and rated current ≥16A discriminate up to values specified in 8.7.4	-	N/A
7.9	Protection against electric shock can be increased by means of partition walls and covers of fuse-contacts.....	-	N/A

8	TESTS		
	IEC 60269-1 applies with the following supplementary requirements		P
8.1.6	Testing of fuse-holders		P
	In addition to test given in IEC 60269-1 tested according to Table 612	Yes	P
8.3.1	The screws of the terminals are to be fastened by an applying torque (Nm) in accordance with Table 613 :	2,0Nm	P
8.3.4.1	Dummy fuse with dimensions of Fig 601	Size 10x38	P
	Rated power dissipation see table 604	3W	P
8.3.4.2	Points of measurement marked S in Fig 601	3W	P
8.4.3.6	Operation of indicating devices and strikers, if any		N/A
	before operation dimension marking S ₀ not exceed 1(mm); measured (mm)	-	N/A
	after operation dimension marking S ₁ : between 7 and 10 (mm); measured (mm)	-	N/A
	Force of striker at least 2,5 N and not exceed 20 N at end of travel	-	N/A
	After operation, striker remained captive		N/A
	Fuse-link with striker may have no indicating device other than striker		N/A



IEC 60269-2									
Clause	Requirement + Test	Result - Remark	Verdict						
8.5.5.1	Verification of the peak withstand current of a fuse-base		P						
	Peak withstand current of fuse-base in accordance with values given in Table 614	5kA ... 6kA	P						
8.5.5.1.1	Test in single-phase type		P						
	Test set-up for fuse-base in accordance to 8.5.1 of IEC 60269-1		P						
8.5.5.1.2	Peak values attained lie in the ranges in Table 614		P						
	Maximum values may be exceeded as long as requirements 8.5.5.1.3 met	<table border="1"> <tr> <td>PMX-10 1P</td> <td>PMX-10 2P</td> <td>PMX-10 4P</td> </tr> <tr> <td>6,52kA_{max}</td> <td>7,20kA_{max}</td> <td>10,29kA_{max}</td> </tr> </table>	PMX-10 1P	PMX-10 2P	PMX-10 4P	6,52kA _{max}	7,20kA _{max}	10,29kA _{max}	P
PMX-10 1P	PMX-10 2P	PMX-10 4P							
6,52kA _{max}	7,20kA _{max}	10,29kA _{max}							
8.5.5.1.3	Fuse-link not ejected		P						
	No signs of arcing or welding, no damage to prevent further use of fuse-base		P						
8.7.4	Verification of overcurrent discrimination		N/A						
	verified by I ² t values evaluated from the recorded test results		N/A						
	Arrangement of the samples as for the breaking capacity test		N/A						
	two samples tested at the r.m.s. prospective test current I, corresponding to minimum pre-arcing I ² t		N/A						
	the other samples tested at the r.m.s. prospective test current I, corresponding to operating I ² t		N/A						
	test voltage (V)		—						
	The values of I ² t lie within corresponding limits specified in Table 615.....		N/A						
8.9	Verification of resistance to heat		P						
	Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment....	100h ON PERIOD: 1h at 32A*1,05 = 33,6A OFF PERIOD: 1h*0,1= 6min	P						
	After cooling to normal temperature breaking capacity tested at I ₁ (see 8.5)	I ₁ = 65kA	P						

IEC 60269-2									
Clause	Requirement + Test	Result - Remark	Verdict						
	Fuse-links with organic material Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment.... :		N/A						
	After cooling to normal temperature breaking capacity tested at I ₁ and I ₅ (see 8.5)..... :	-	N/A						
8.10	Verification of non-deterioration of contacts		P						
8.10.1	Arrangement of the fuse		P						
	Dummy fuse links Figure 601..... :	10x38	P						
	rated power dissipation Table 604..... :	3W							
8.10.2	Test method	The measurement was made at the terminals.	P						
	Test current (A) for load period..... :	40A	P						
	Duration (s) of load period..... :	1h * 0,25 = 15min = 900s	P						
	Duration (s) of no-load period..... :	1h * 0,10 = 6min = 360s	P						
	Test voltage (V)..... :	5V	—						
8.10.3	Acceptability of test results		P						
	Temperature rise after 250 cycles not exceed temperature rise at beginning + 15K	<table border="1"> <tr> <td>PMX-10 N-pole</td> <td>PMX-10 2P</td> <td>PMX-10 3P+N</td> </tr> <tr> <td>4K_{max.}</td> <td>12 K_{max.}</td> <td>10K_{max.}</td> </tr> </table>	PMX-10 N-pole	PMX-10 2P	PMX-10 3P+N	4K _{max.}	12 K _{max.}	10K _{max.}	P
PMX-10 N-pole	PMX-10 2P	PMX-10 3P+N							
4K _{max.}	12 K _{max.}	10K _{max.}							
	Temperature rise after 750 cycles not exceed temperature rise at beginning + 20K		N/A						
8.11.1.1	Mechanical strength of fuse-holders		P						
	Test set-up subjected to temperature rise test at rated current..... :	32A	P						
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times..... :	fuse-link	—						
	All parts are intact and function normally		P						
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior)..... :	<table border="1"> <tr> <td>PMX-10 1P</td> <td>PMX-10 2P</td> </tr> <tr> <td>2k</td> <td>3k</td> </tr> </table>	PMX-10 1P	PMX-10 2P	2k	3k	P		
PMX-10 1P	PMX-10 2P								
2k	3k								

09

4590 C
1711A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

**FUSE SYSTEM G – FUSES WITH FUSE-LINKS WITH OFFSET BLADE CONTACTS
(BS CLIP-IN FUSE SYSTEM)**

5	CHARACTERISTICS OF FUSES		
5.2	Rated voltage (V) of fuse-link size E1	-	N/A
	Rated voltage (V) of fuse-link size F1/F2/F3	-	N/A
5.3.1	Rated current (A) of the fuse-link given in Figure 701	-	N/A
5.3.2	Rated current (A) of the fuse-holder given in Figure 702	-	N/A
5.5	Max. rated power (W) dissipation of the fuse-link given in Figure 701 when measured on standard rig Figure 705	-	N/A
	Rated acceptable power (W) dissipation of the fuse-holders given in Figure 702	-	N/A
5.6.1	Time-current zones given in Fig 703 and 704	-	N/A
	Tolerances on time current characteristics not deviate by more than ±10% (for current)		N/A
5.6.2	In addition to values IEC 60269-1 see Table 701 for "gG" fuse-link		N/A
5.6.3	For "gG" fuse-links the gates given in Table 702 ...		N/A
5.7.2	Rated breaking capacity (kA)	-	N/A

6	MARKINGS		
	Markings are legible		N/A
6.1	Fuse-holder marked by:		
	- size.....	-	N/A
6.2	Fuse-links marked by:		
	- size or reference.....	-	N/A
	- rated breaking capacity	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

7	STANDARD CONDITIONS FOR CONSTRUCTION		N/A
7.1	Mechanical design		N/A
	The dimensions of the fuse-links given in Figure 701		N/A
	Size:		—
	dimension marking a max: prescribed (mm); measured (mm)	-	N/A
	dimension marking b max: prescribed (mm); measured (mm)	-	N/A
	dimension marking d : prescribed (mm); measured (mm)	-	N/A
	dimension marking e : prescribed (mm); measured (mm)	-	N/A
	dimension marking f : prescribed (mm); measured (mm)	-	N/A
	dimension marking n : prescribed (mm); measured (mm)	-	N/A
	The dimensions of the fuse-holders given in Figure 702		
	dimension marking A max: prescribed (mm); measured (mm)	-	N/A
	dimension marking B max: prescribed (mm); measured (mm)	-	N/A
	dimension marking C max: prescribed (mm); measured (mm)	-	N/A
7.1.2	The terminals capable to accept rigid copper conductors of cross-sectional areas (mm ²) as stated in Table 703	-	N/A
7.2	Insulating properties and suitability for insulation	-	N/A
	Creepage distances and clearances of fuse- accessories meet requirements of IEC 60664-1 for overvoltage category III and pollution degree 3	-	N/A
7.7	Pre-arcing I ² t given in Table 7 of IEC 60269-1 and for value lower than 16A in Table 704	-	N/A
7.9	Degree of protection against electric shock of standardized fuse-holder IP not lower than IP2x :	-	N/A

h

0.7 11111

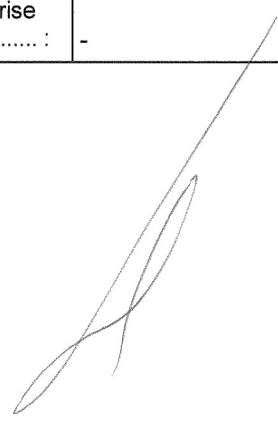


IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

8	TESTS		
	IEC 60269-1 applies with the following supplementary requirements		N/A
8.3.3	Fuse-link mounted on test rig shown in Fig. 705 The points of measurement as specified Figure 705		N/A
8.3.4.1	Dummy fuse-link with dimensions of Fig 701 ... :	-	N/A
	Fuse-holder with dimensions of Fig 702	-	N/A
	Power (W) dissipation of dummy fuse-link as rated acceptable power dissipation given in Fig 702 .. :	-	N/A
8.4.1	Test arrangement of fuse-link given in Figure 705		N/A
8.5.1	Arrangement of the fuse		N/A
	Conductor for connection of fuse-holder have a cross-section appropriate to fuse-holder terminal given in Table 703	-	N/A
8.7.4	Verification of overcurrent discrimination		N/A
	For rated current $\geq 16A$ see 8.7.4 IEC 60269-1		N/A
	For rated current $< 16A$ determined from manufacturer's data and verified by 8.7.1 of IEC 60269-1		N/A
8.9	Verification of resistance to heat		N/A
	Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment ... :	-	N/A
	After cooling to normal temperature breaking capacity tested at I_1 (see 8.5)	-	N/A
	Fuse-links with organic material Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment ...		N/A
	After cooling to normal temperature breaking capacity tested at I_1 and I_5 (see 8.5)	-	N/A
8.10	Verification of non-deterioration of contacts		N/A
8.10.1	Arrangement of the fuse		N/A
	Dummy fuse links Figure 701	-	N/A
	rated power dissipation Figure 702	-	N/A
8.10.2	Test method		N/A
	Test current (A) for load period	-	N/A
	Duration (s) of load period	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	Duration (s) of no-load period	-	N/A
	Test voltage (V)	-	—
8.10.3	Acceptability of test results		N/A
	Temperature rise after 250 cycles not exceed temperature rise at beginning + 15K		N/A
	Temperature rise after 750 cycles not exceed temperature rise at beginning + 20K		N/A
8.11.1.1	Mechanical strength of fuse-holders		N/A
	Test set-up subjected to temperature rise test at rated current	-	N/A
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times	-	—
	All parts are intact and function normally		N/A
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior)	-	N/A






2023-03-08
01.03.2023

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

FUSE SYSTEM H – FUSES WITH FUSE-LINKS HAVING “gD” AND “gN” CHARACTERISTICS (CLASS J, CLASS T AND CLASS L TIME DELAY AND NON TIME DELAY FUSE TYPES)

5	CHARACTERISTICS OF FUSES		N/A
5.2	Rated voltage is 600 V a.c. :	-	N/A
5.3.1	Rated current (A) of the fuse-link in accordance with IEC 60269-1, Fig 801, 802 and Fig 805 :	-	N/A
5.3.2	Rated current (A) of the fuse-holder in accordance with Fig 803, 804 and 806 :	-	N/A
5.5	Max. rated power (W) dissipation of the fuse-link given in Fig 801, 802 and Fig 805 :	-	N/A
	Rated power (W) acceptance of the fuse-holder		N/A
	Rated acceptable power (W) dissipation of the fuse-base not less than max rated power dissipation for the fuse-link of same rating :	-	N/A
5.6.1	Time-current zones given in Fig 810, Fig 811, Fig 812, Fig 813, Fig 814 and Fig 815		N/A
	Tolerances on time current characteristics not deviate for more $\pm 10\%$ (for current)		N/A
5.6.2	See Table 801 for “gD” and “gN” fuse-links	-	N/A
5.6.3	For “gD” and “gN” fuse-links the gates given in Table 802	-	N/A
5.7.2	Rated breaking capacity (kA) :	-	N/A

6	MARKINGS		N/A
	Markings are legible		N/A
6.1	Fuse-holder marked by:		
	- size..... :	-	N/A
6.2	Fuse-links marked by:		
	- size or reference..... :	-	N/A
	- rated breaking capacity	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

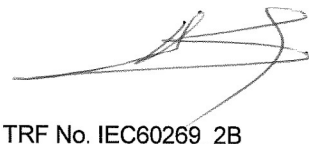
7	STANDARD CONDITIONS FOR CONSTRUCTION		N/A
7.1	Mechanical design		N/A
	The dimensions of the fuse-links given in Figure 801 and 802		
	Class J fuse-links (1-600 A) : Fig 801		N/A
	dimension marking a: prescribed (mm); measured (mm)	-	N/A
	dimension marking b: prescribed (mm); measured (mm)	-	N/A
	dimension marking c: prescribed (mm); measured (mm)	-	N/A
	dimension marking d: prescribed (mm); measured (mm)	-	N/A
	dimension marking e min: prescribed (mm); measured (mm)	-	N/A
	dimension marking f: prescribed (mm); measured (mm)	-	N/A
	dimension marking g : prescribed (mm); measured (mm)	-	N/A
	dimension marking h : prescribed (mm); measured (mm)	-	N/A
	Class L fuse-links (700-6000 A) : Fig 802		N/A
	dimension marking a: prescribed (mm); measured (mm)	-	N/A
	dimension marking b max: prescribed (mm); measured (mm)	-	N/A
	dimension marking c: prescribed (mm); measured (mm)	-	N/A
	dimension marking d: prescribed (mm); measured (mm)	-	N/A
	The dimensions of the fuse-base and contacts in tolerances given in Fig. 803 and Fig 804		
	Fuse-base and contacts for Class J fuse-links (1-600A) : Fig 803		N/A
	dimension marking a min: prescribed (mm); measured (mm)	-	N/A
	dimension marking b: prescribed (mm); measured (mm)	-	N/A

2019
11/11/19



430

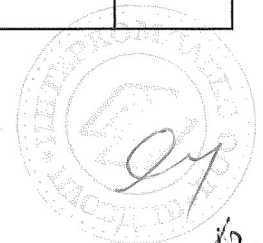
IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	dimension marking c min: prescribed (mm); measured (mm)	-	N/A
	dimension marking d: prescribed (mm); measured (mm)	-	N/A
	dimension marking e min: prescribed (mm); measured (mm)	-	N/A
	dimension marking f min: prescribed (mm); measured (mm)	-	N/A
	dimension marking g max: prescribed (mm); measured (mm)	-	N/A
	dimension marking h : prescribed (mm); measured (mm)	-	N/A
	dimension marking i : prescribed (mm); measured (mm)	-	N/A
	dimension "diameter of stud": prescribed (mm); measured (mm)	-	N/A
	Fuse-base and contacts for Class L fuse-links (700-6000 A) : Fig 804	-	N/A
	dimension marking a: prescribed (mm); measured (mm)	-	N/A
	dimension marking b min: prescribed (mm); measured (mm)	-	N/A
	dimension marking c: prescribed (mm); measured (mm)	-	N/A
	The dimensions of the fuse-links given in Figure 805		
	Class T fuse-links (1-1200 A) : Fig 805		N/A
	dimension marking a: prescribed (mm); measured (mm)	-	N/A
	dimension marking b: prescribed (mm); measured (mm)	-	N/A
	dimension marking c: prescribed (mm); measured (mm)	-	N/A
	dimension marking d: prescribed (mm); measured (mm)	-	N/A
	dimension marking e min: prescribed (mm); measured (mm)	-	N/A
	dimension marking f: prescribed (mm); measured (mm)	-	N/A




IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	dimension marking g : prescribed (mm); measured (mm)	-	N/A
	dimension marking h : prescribed (mm); measured (mm)	-	N/A
	dimension marking i min: prescribed (mm); measured (mm)	-	N/A
	The dimensions of the fuse-base and contacts in tolerances given in Fig. 806		
	Fuse-base and contacts for Class T fuse-links (1-1200A) : Fig 806		N/A
	dimension marking a min: prescribed (mm); measured (mm)	-	N/A
	dimension marking b: prescribed (mm); measured (mm)	-	N/A
	dimension marking c min: prescribed (mm); measured (mm)	-	N/A
	dimension marking d: prescribed (mm); measured (mm)	-	N/A
	dimension marking e min: prescribed (mm); measured (mm)	-	N/A
	dimension marking f min: prescribed (mm); measured (mm)	-	N/A
	dimension marking g max: prescribed (mm); measured (mm)	-	N/A
	dimension marking h : prescribed (mm); measured (mm)	-	N/A
	dimension marking i : prescribed (mm); measured (mm)	-	N/A
	dimension marking j min: prescribed (mm); measured (mm)	-	N/A
	dimension "diameter of stud": prescribed (mm); measured (mm)	-	N/A
7.2	Insulating properties and suitability for insulation		N/A
	Creepage distances and clearances of fuse-parts meet requirements of IEC 60664-1 for overvoltage category III and pollution degree 3	-	N/A
7.5	Breaking capacity		N/A
	Maximum arc voltage (Table 6 in IEC 60269-1) for gN and gD 600 V rated fuses is 3 000 V	-	N/A

Handwritten notes and dates: 2019.08.01, 2019.08.02



Handwritten number: 437

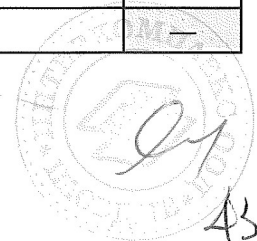
IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

7.6	Max values cut-off current characteristics given in Table 805		N/A
7.7	Pre-arcing I ² t given in Table 803	-	N/A
	Maximum operating I ² t given in Table 806	-	N/A
7.8	Overcurrent discrimination		N/A
	Discrimination between fuse links over 15 A is maintaining 2:1 ratio between upstream fuse and downstream fuse current ratings		N/A
	Ratio of 1,6:1 is possible between "gD" and "gN" fuse-links, provided "gD" fuse-link has the higher rated current		N/A
7.9	Protection against electric shock increased by means of partition walls and covers of fuse contacts		N/A

8	TESTS		
	IEC 60269-1 applies with the following supplementary requirements		N/A
8.3	Verification of temperature rise and power dissipation		N/A
8.3.1	Cross-sectional area of cable or bus bar in accordance with Table 804	-	N/A
8.3.4.1	Point of measurement marked A in Figure 809 :		N/A
	Dummy fuse-links for class J and T fuse links with dimensions of Figures 807 and 808	-	N/A
8.3.4.2	Points of measurement marked B in Figure 809:		N/A
8.4	Verification of operation		N/A
8.4.1	Test arrangement specified in 8.3.1		N/A
8.4.3.3.2	Verification of gates		N/A
	Test voltage (V)	-	—
	See tests specified in 8.4.3.3.1 and additional tests for "gD" and "gN" fuse-links		N/A
	a) Test current Table 802, column 3 for 10 s; fuse-link not operate	-	N/A
	b) Test current Table 802, column 4; fuse-link operate within 5 s	-	N/A
	c) Test current Table 802, column 5 for 0,1s; fuse-link not operate	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	d) Test current Table 802, column 6; fuse-link operate within 0,1 s	-	N/A
8.5.4	Recovery voltage		N/A
	Value of a.c. power-frequency recovery voltage (Table 20 in IEC 60269-1) replaced by (100 ⁺⁵ ₀)% of rated voltage 600 V for gN and gD fuse links ... :	-	—
	Mean value of d.c. recovery voltage (Table 21 in IEC 60269-1) replaced by (100 ⁺⁵ ₀)% of rated voltage for gN and gD fuse links	-	—
8.6	Max cut-off current limits given in Table 805		N/A
	Test arrangement for breaking capacity according to 8.5 and Table 20 of IEC 60269-1	-	N/A
8.7	Max operating I ² t given in Table 806	-	N/A
	Test arrangement for breaking capacity according to 8.5 and Table 20 of IEC 60269-1	-	N/A
8.9	Verification of resistance to heat		N/A
	Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment... :	-	N/A
	After cooling to normal temperature breaking capacity tested at I ₁ (see 8.5)	-	N/A
	Fuse-links with organic material Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment... :	-	N/A
	After cooling to normal temperature breaking capacity tested at I ₁ and I ₅ (see 8.5)	-	N/A
8.10	Verification of non-deterioration of contacts		N/A
8.10.1	Arrangement of the fuse		N/A
	Dummy fuse links Figures 807 and 808	-	N/A
	maximum power dissipation P _n (W) Figures 801, 802 and 805	-	N/A
	Dummy fuse-links are constructed of unplated copper , they not operated during passage of overload current I _{nf}	-	N/A
8.10.2	Test method		N/A
	Test current (A) for load period	-	N/A
	Duration (s) of load period	-	N/A
	Duration (s) of no-load period	-	N/A
	Test voltage (V)	-	—



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
8.10.3	Acceptability of test results		N/A
	Temperature rise after 250 cycles not exceed temperature rise at beginning + 15K		N/A
	Temperature rise after 750 cycles not exceed temperature rise at beginning + 20K		N/A
8.11.1.1	Mechanical strength of fuse-holders		N/A
	Test set-up subjected to temperature rise test at rated current :	-	N/A
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times :	-	—
	All parts are intact and function normally		N/A
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior) :	-	N/A
8.11.2.2	Resistance to abnormal heat and fire		N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

FUSE SYSTEM I – gU FUSE-LINKS WITH WEDGE TIGHTENING CONTACTS

3	CONDITIONS FOR OPERATION IN SERVICE		N/A
3.9	Discrimination of fuse-links		N/A
	Subclause 3.9 of IEC 60269-1 not apply..... :	-	N/A
	Correct discrimination is ensured by adherence to Table 2 of IEC 60269-1 and standard zones for time/current characteristics (see 5.6.1 and Figures 901, 902, 903 and 904 together with compliance with values given in Table 902 of 7.7)) :	-	N/A

5	CHARACTERISTICS OF FUSES		N/A
5.2	Rated voltage is 400 V a.c. :	-	N/A
5.3.1	Rated current (A) of the fuse-link with centres at 82 mm :	-	N/A
	Rated current (A) of the fuse-link with centres at 92 mm :	-	N/A
	Other rated current (A) of the fuse-link see 5.3.1 of IEC 60269-1 :	-	N/A
5.5	Max. rated power (W) dissipation of the fuse-link given in Table 901 when measured on standard rig Fig 906 :	-	N/A
5.6.1	Time-current zones given in Fig 901, Fig 902, Fig 903, and Fig 904		N/A
	Tolerances on time current characteristics not deviate for more $\pm 10\%$ (for current)		N/A
5.6.2	See Table 2 of IEC 60269-1		N/A
5.6.3	Subclause 5.6.3 of IEC 60269-1 not apply		N/A
	Correct discrimination ensured by adherence for zones time-current characteristics of 5.6.1 and given in Fig 901, 902, 903 and 904		N/A
5.6.3	For "gD" and "gN" fuse-links the gates given in Table 802 :	-	N/A
5.7.2	Rated breaking capacity (kA) :	-	N/A
5.8	See 5.8 of IEC 60269-1		N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

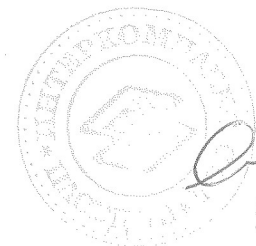
6	MARKINGS		N/A
	Markings are legible		N/A
6.1	Fuse-holder marked by:		
	- size.....	-	N/A
6.2	Fuse-links marked by:		
	- size or reference.....	-	N/A
	- rated breaking capacity	-	N/A

7	STANDARD CONDITIONS FOR CONSTRUCTION		N/A
7.1	Mechanical design		N/A
	The dimensions of the fuse-links given in Figure 905		
	Max current rating (A):		N/A
	dimension marking A max: prescribed (mm); measured (mm)	-	N/A
	dimension marking B nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking C max: prescribed (mm); measured (mm)	-	N/A
	dimension marking D max: prescribed (mm); measured (mm)	-	N/A
	dimension marking E max: prescribed (mm); measured (mm)	-	N/A
	dimension marking F max: prescribed (mm); measured (mm)	-	N/A
	dimension marking G nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking H nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking J nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking K max: prescribed (mm); measured (mm)	-	N/A
	dimension marking L nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking M: prescribed (mm); measured (mm)	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	dimension marking N nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking P nom: prescribed (mm); measured (mm)	-	N/A
	dimension marking Q nom: prescribed (mm); measured (mm)	-	N/A
7.2	Insulating properties and suitability for insulation		N/A
	Creepage distances and clearances of fuse- accessories meet requirements of IEC 60664-1 for overvoltage category III	-	N/A
7.5	Breaking capacity		N/A
	Max arc voltages given in Table 6 of IEC 60269 -1	-	N/A
	For a.c. arc voltage reach up to $\sqrt{2}$ times given values		N/A
7.7	Pre-arcing I ² t given in Table 7 of IEC 60269-1 replaced values given in Table 902 for gU fuse-links	-	N/A
7.8	Correct discrimination ensured by adherence for zones time-current characteristics of 5.6.1 and given in Figures 901, 902, 903 and 904.....	-	N/A

8	TESTS		N/A
	IEC 60269-1 applies with the following supplementary requirements		N/A
8.1.1	Kind of tests		N/A
	See 8.1.1 of IEC 60269-1		N/A
8.3.1	Arrangement of the fuse		N/A
	Fuse-links mounted in carrier and tested in test rig Fig 906	-	N/A
	For connections Table 17 of IEC 60269-1 not apply	-	N/A
	For standardized ratings connections comply with Table 903	-	N/A
8.3.3	Points of measurement of power dissipation given in Fig 906	-	N/A
8.4.1	Test arrangement given in Figure 906	-	N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
8.4.3.3.2	Verification of the gates		N/A
	Correct discrimination ensured by adherence for zones time-current characteristics of 5.6.1 given in Fig 901, 902, 903 and 904 verified as in 8.4.3.3.1 of IEC 60269-1.....:	-	N/A
8.5.1	Fuse-links tested for breaking capacity in test rig Figure 907		N/A
8.5.2	Characteristics of the test circuit		N/A
	See 8.5.2 of IEC 60269-1 except d.c. tests are omitted	-	N/A
8.5.5	Test method		N/A
	See 8.5.5.1 of IEC 60269-1 except d.c. tests are omitted	-	N/A
	See 8.5.5.2 of IEC 60269-1 except d.c. tests are omitted	-	N/A
8.5.8	Acceptability of test results		N/A
	Additionally to 8.5.8 of IEC 60269-1: the fuse-links operated without melting of the fine-wire fuse and without mechanical damage to the rig		N/A
8.7.3	Verification of compliance for fuse-links at 0,01 s		N/A
	See 8.7.3 of IEC 60269-1 except that compliance with Table 7 replaced by compliance with Table 902		N/A
8.9	Verification of resistance to heat		N/A
	Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment... :	-	N/A
	After cooling to normal temperature breaking capacity tested at I_1 (see 8.5)	-	N/A
	Fuse-links with organic material Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment...		N/A
	After cooling to normal temperature breaking capacity tested at I_1 and I_5 (see 8.5)	-	N/A
8.11.1.1	Mechanical strength of fuse-holders		N/A
	Test set-up subjected to temperature rise test at rated current	-	N/A
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times	-	—

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

	All parts are intact and function normally		N/A
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior)..... :	-	N/A
8.11.2.2	Resistance to abnormal heat and fire		N/A
	Subclause 8.11.2.2 of IEC 60269-1 not apply		N/A

Handwritten text: 17AAA



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

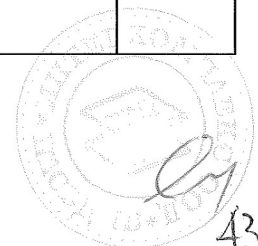
FUSE SYSTEM J – FUSES WITH FUSE-LINKS HAVING “gD CLASS CC” AND “gN CLASS CC” CHARACTERISTICS (CLASS CC TIME DELAY AND NON-TIME DELAY FUSE TYPES)

5	CHARACTERISTICS OF FUSES		N/A
5.2	Rated voltage is 600 V a.c.:	-	N/A
5.3.1	Rated current (A) of the fuse-link in accordance with IEC 60269-1, maximum rated current is 30 A (Fig 1001)	-	N/A
5.3.2	Rated current (A) of the fuse-holder , maximum rated current is 30 A (Fig 1002)	-	N/A
5.5	Max. rated power (W) dissipation of the fuse-link given in Fig 1001	-	N/A
	Rated power (W) acceptance of the fuse-holder		N/A
	Rated acceptable power (W) dissipation of the fuse-base not less than max rated power dissipation for the fuse-link		N/A
5.6.1	Time-current zones given in Fig 1005, Fig 1006, Fig 1007, Fig 1008 Fig 1009 and Fig 1010		N/A
	Tolerances on time current characteristics not deviate for more ±10% (for current)		N/A
5.6.2	See Table 1001 for “gD class CC” and “gN class CC” fuse-links		N/A
5.6.3	For “gD class CC” and “gN class CC” fuse-links the gates given in Table 1002	-	N/A
5.7.2	Rated breaking capacity (kA)	-	N/A

6	MARKINGS		N/A
	Markings are legible		N/A
6.1	Fuse-holders marked by:		
	- size.....:	-	N/A
6.2	Fuse-links marked by:		
	- size or reference.....:	-	N/A
	- rated breaking capacity	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict

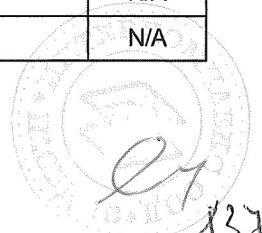
7	STANDARD CONDITIONS FOR CONSTRUCTION		N/A
7.1	Mechanical design		N/A
	The dimensions of fuse-links given in Figure 1001 and the dimensions of fuse-bases given in Figure 1002		
	Class CC fuse-links (1-30 A) : Fig 1001		N/A
	dimension marking a: prescribed (mm); measured (mm)	-	N/A
	dimension marking b: prescribed (mm); measured (mm)	-	N/A
	dimension marking c: prescribed (mm); measured (mm)	-	N/A
	dimension marking d min: prescribed (mm); measured (mm)	-	N/A
	dimension marking e min: prescribed (mm); measured (mm)	-	N/A
	Fuse-base and contacts for Class CC fuse-links (1-30 A) : Fig 1002		N/A
	dimension marking a: min prescribed (mm); measured (mm)	-	N/A
	dimension marking b: prescribed (mm); measured (mm)	-	N/A
	dimension marking c min: prescribed (mm); measured (mm)	-	N/A
	dimension marking d: prescribed (mm); measured (mm)	-	N/A
	dimension marking e min: prescribed (mm); measured (mm)	-	N/A
	dimension marking f max: prescribed (mm); measured (mm)	-	N/A
	dimension marking g min: prescribed (mm); measured (mm)	-	N/A
7.2	Insulating properties and suitability for insulation		N/A
	Creepage distances and clearances of fuse-accessories meet requirements of IEC 60664-1 for overvoltage category III	-	N/A
7.5	Breaking capacity		N/A
	Maximum arc voltage (Table 6 in IEC 60269-1) for "gN class CC" and "gD class CC" 600 V rated fuses is 3 000 V	-	N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
7.6	Max values cut-off current characteristics given in Table 1005		N/A
7.7	Pre-arcing I ² t given in Table 1003	-	N/A
	Maximum operating I ² t given in Table 1006	-	N/A
7.8	Overcurrent discrimination		N/A
	Discrimination between fuse links over 15 A is maintaining 2:1 ratio between upstream fuse and downstream fuse current ratings		N/A
	Ratio of 1,6:1 is possible between "gD class CC" and "gN class CC" fuse-links, provided "gD class CC" fuse-link has the higher rated current	-	N/A
	For rated currents smaller than 15 A, manufacturer are consulted	-	N/A
7.9	Protection against electric shock increased by means of partition walls and covers of fuse contacts	-	N/A


8	TESTS		N/A
	IEC 60269-1 applies with the following supplementary requirements		N/A
8.3	Verification of temperature rise and power dissipation		N/A
8.3.1	Cross-sectional area of conductor is 8,4 mm ² ..	-	N/A
8.3.4.1	Dummy fuse-links for class CC fuse links with dimensions of Figures 1003	-	N/A
	Point of measurement marked A in Figure 1004	-	N/A
8.3.4.2	Points of measurement marked B in Figure 1004 :	-	N/A
8.4	Verification of operation		N/A
8.4.1	Test arrangement specified in 8.3.1		N/A
8.4.3.3.2	Verification of gates		N/A
	Test voltage (V)	-	—
	See tests specified in 8.4.3.3.1 and additional tests for "gD class CC" and "gN class CC" fuse-links		N/A
	a) Test current Table 1002, column 3 for 10 s; fuse-link not operate	-	N/A
	b) Test current Table 1002, column 4; fuse-link operate within 5 s	-	N/A

IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	c) Test current Table 1002, column 5 for 0,1s; fuse-link not operate	-	N/A
	d) Test current Table 1002, column 6; fuse-link operate within 0,1 s	-	N/A
8.5.4	Recovery voltage		N/A
	The a.c. power-frequency recovery voltage (Table 20 in IEC 60269-1) for "gN class CC" and "gD class CC" fuse links is $(100^{+5}_0)\%$ of rated voltage 600 V.... :		—
	The d.c. mean value of recovery voltage (Table 21 in IEC 60269-1) for "gN class CC" and "gD class CC" fuse links is $(100^{+5}_0)\%$ of rated voltage		—
8.6	Max cut-off current limits given in Table 1005		N/A
	Test arrangement for breaking capacity according to 8.5 and Table 20 of IEC 60269-1	-	N/A
8.7	Max operating I^2t given in Table 1006	-	N/A
	Test arrangement for breaking capacity according to 8.5 and Table 20 of IEC 60269-1	-	N/A
8.9	Verification of resistance to heat		N/A
	Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment... :	-	N/A
	After cooling to normal temperature breaking capacity tested at I_1 (see 8.5)	-	N/A
	Fuse-links with organic material Fuse-holder with fuse-links having maximum power dissipation are cyclically loaded as pre-treatment....	-	N/A
	After cooling to normal temperature breaking capacity tested at I_1 and I_5 (see 8.5)	-	N/A
8.10	Verification of non-deterioration of contacts		N/A
8.10.1	Arrangement of the fuse		N/A
	Dummy fuse links Figure 1003..... :	-	N/A
	maximum power dissipation P_n (W) Figure 1001 :	-	N/A
	Dummy fuse-links are constructed of unplated copper , they not operated during passage of overload current I_{nf}	-	N/A
8.10.2	Test method		N/A
	Test current (A) for load period	-	N/A
	Duration (s) of load period	-	N/A
	Duration (s) of no-load period	-	N/A



IEC 60269-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Test voltage (V)	-	—
8.10.3	Acceptability of test results		N/A
	Temperature rise after 250 cycles not exceed temperature rise at beginning + 15K		N/A
	Temperature rise after 750 cycles not exceed temperature rise at beginning + 20K		N/A
8.11.1.1	Mechanical strength of fuse-holders		N/A
	Test set-up subjected to temperature rise test at rated current		N/A
	fuse-link or fuse-carrier are withdrawn and inserted into fuse-base 100 times		—
	All parts are intact and function normally		N/A
	Test set-up subjected to further temperature rise test at rated current (values obtained are not more than 5 K or 15 % above the values from temperature-rise test prior)		N/A
8.11.2.2	Resistance to abnormal heat and fire		N/A

На основании чл.36а ал.3 от
ЗОП



List of test equipment used:

Measured quantity	Device	Manufacturer	Code
Voltage (tests above 15kA)	3-channel insulating measuring amplifier Signal memory recorder Nicolet	Rohrer W&W	Arcus 930-2 2580-P
Current (tests above 15kA)	Lin. current transformer LGSSO Burden 0,7mΩ Signal memory recorder Nicolet	Ritz AIT W&W	WLIN6000.HVF/1...3 - 2580-P
Current (tests at reduced voltage)	Current transformer GE 4461 Current transformer AET110 True-RMS amperemeter Kl. 0,5 Digital multimeter Fluke 185	Goerz Siemens Norma Fluke	WI600/1...3 WI4000/1...3 A0,5/1 /4 FLUKE185/2
Dielectric properties	High-voltage test equipment 90-1F with measuring equipment Impulse tester 35 Impulse voltmeter SV642 Oscilloscope 9430	Elabo Haefely Haefely Le Croy	HSG5KV G304 G503 G805
Insulation resistance	MIT520 Insulation Tester	Megger	G518
Internal resistance	Resistance microhm 2316-1	Burster	Resistomat 2316-1
Time	Signal memory recorders TA 800 Stopwatch	W&W Quantum	TRA800 938-3
Temperature	Data Acquisition/Data Logger Switch Unit 34970A Temperature meter TESTO 901	Agilent Testoterm	942 TESTO
Abnormal heat and fire	Glow-wire test device with measuring equipment	Friborg	Glow
Resistance to heat	Heating cabinet UT 6060	Heraeus	95111474
Environmental tests	Environmental chamber HC7507 with measuring equipment	Heraeus Vötsch	M2
Mechanical strength of terminals	Test equipment	AIT	MSD
Strength of actuator mechanism	Test equipment	Sauter GmbH	FH1K
Degree of protection	Test probe	PTL	PTL 1...3
Clearances, creepage distances, dimensions	Digital slide gauge Tape measure 10m	Spiral Stanley	SCHUB-1 Maß1



Handwritten signature or mark.



Certificate of Compliance

Certificate: 2699564

Master Contract: 221680

Project: 70177698

Date Issued: 2018-05-03

Issued to: Df Electric df, S.A.
C/ Silici 67-69
Cornella De Llobregat, Barcelona 08940
SPAIN

Attention: Miquel Perez

The products listed below are eligible to bear the CSA Mark shown with adjacent indicator ▲



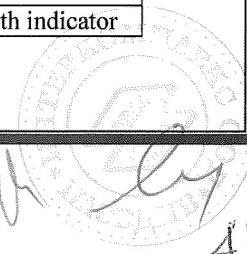
Issued by: Reddiprasad
Cheekoori
Reddiprasad
Cheekoori

PRODUCTS

CLASS - C622530 - FUSEHOLDER ASSEMBLIES: Cartridge Type-Component Acceptance Program

- Fuseholder Assemblies, Series PMX-10, Cat No.\Model 4851xx with or without Blown Fuse Indicator, DIN Rail Mounted, 1 to 4 pole, 30A, 750VAC or 24VDC, intended for use with Supplemental Fuses 10x38 mm. Part No's are as follows:

Model\Cat No.	Ratings				
	Amperes	Volts	Withstand rating	No. of Poles	Indicator
485101	30A	750 VAC	200kA rms sym	1 pole	no
485102	30A	750 VAC	200kA rms sym	neutral	no
485103	30A	750 VAC	200kA rms sym	1 pole + neutral	no
485104	30A	750 VAC	200kA rms sym	2 poles	no
485105	30A	750 VAC	200 kA rms sym	3 poles	no
485106	30A	750 VAC	200 kA rms sym	3 poles + neutral	no
485107	30A	750 VAC	200 kA rms sym	4 poles	no
485108	30A	750 VAC	200 kA rms sym	1 pole	with indicator
485109	30A	750 VAC	200 kA rms sym	1 pole + neutral	with indicator
485110	30A	750 VAC	200 kA rms sym	2 poles	with indicator
485111	30A	750 VAC	200 kA rms sym	3 poles	with indicator
485112	30A	750 VAC	200 kA rms sym	3 poles + neutral	with indicator



439



Certificate: 2699564
Project: 70177698

Master Contract: 221680
Date Issued: 2018-05-03

485113	30A	750 VAC	200 kA rms sym	4 poles	with indicator
485114	30A	24 VDC	10 kA DC	1 poles	with 24 VDC indicator
485116	30A	24 VDC	10 kA DC	2 poles	with 24 VDC indicator

Notes:

1. For assembly in equipment where the acceptability is evaluated by CSA and or the local inspection authority.
2. Not for interrupting current.
3. Fuseholders must be installed in an enclosure or other means must be provided for strain relief on the conductors to the wiring terminals restricting the movement of the conductors and transmission of strain to the termination.

APPLICABLE REQUIREMENTS

- CSA Standard C22.2 No. 4248.1 - Fuseholders, General Requirements
- *CSA Standard C22.2 No. 39 - Fuseholder Assemblies
- CSA Standard C22.2 No. 158 - Terminal Blocks
- * CSA Standard C22.2 No. 65 - Wire Connectors
- * Used as a guide