PS ELECTRIC®

ПАПКА 17

ПРИЛОЖЕНИЕ 10 Други документи за Позиция1 и Позиция 2

ПРИЛОЖЕНИЕ 10.8 Комплект клемен блок и стопяеми цилиндрични предпазител-прекъсвач-разединители

Приложение 1

Приложение 2

Приложение 3

Приложение 4

Приложение 5

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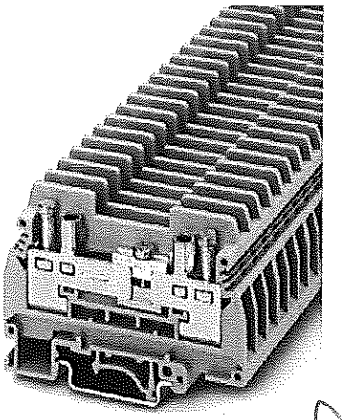
PHOENIX CONTACT

Extract from the online catalog

URTK/S

Order No.: 0311087



http://eshop.phoenixcontact.net/phoenix/treeViewClick.do?UID=0311087

Test disconnect terminal block, Connection method: Screw connection, Cross section: 0.5 mm² -10 mm² , AWG: 20 - 10, Width: 8.2 mm, Mounting type: NS 35/7.5, NS 35/15, NS 32, Color: gray

Commercial data	
EAN	4 017918 001292
Pack	50 pcs.
Customs tariff	85369010
Gross weight in pieces	0.035996 KG
Net weight per piece (exclusive packing)	0.03581 KG
Catalog page information	Page 463 (CL1-2011)

Product notes

WEEE/RoHS-compliant since: 01/01/2003

http://www.download.phoenixcontact.com
Please note that the data given here has been taken from the online catalog. For comprehensive information and data, please refer to the user documentation. The General Terms and Conditions of Use apply to Internet downloads.

Technical data

General

Number of levels	1
Number of connections	2
Color	gray

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Insulating material	PA
Inflammability class according to UL 94	V0

Dimensions

Length	72 mm
Width	8.2 mm
Height NS 35/7,5	51.5 mm
Height NS 35/15	59 mm
Height NS 32	56 mm

Technical data

Rated surge voltage	6 kV
Pollution degree	3
Surge voltage category	III
Insulating material group	I
Connection in acc. with standard	IEC 60947-7-1
Nominal current I_N	41 A
Nominal voltage U_N	400 V
Open side panel	ja
Shock protection test specification	DIN EN 50274 (VDE 0660-514):2002-11
Back of the hand protection	guaranteed
Surge voltage test setpoint	7.3 kV
Result of surge voltage test	Test passed
Power frequency withstand voltage setpoint	1.89 kV
Result of power-frequency withstand voltage test	Test passed
Checking the mechanical stability of terminal points (5 x conductor connection)	Test passed
Bending test rotation speed	10 rpm
Bending test turns	135
Bending test conductor cross section/weight	0.5 mm² / 0.3 kg
	6 mm² / 1.4 kg
	10 mm² / 2 kg
Result of bending test	Test passed
Conductor cross section tensile test	0.5 mm²
Tractive force setpoint	20 N
Conductor cross section tensile test	6 mm²
Tractive force setpoint	80 N

Conductor cross section tensile test	10 mm²
Tractive force setpoint	90 N
Tensile test result	Test passed
Tight fit on carrier	NS 32/NS 35
Setpoint	5 N
Result of tight fit test	Test passed
Result of voltage drop test	Test passed
Temperature-rise test	Test passed
Conductor cross section short circuit testing	6 mm²
Short-time current	0.72 kA
Conductor cross section short circuit testing	10 mm²
Short-time current	1.2 kA
Short circuit stability result	Test passed
Proof of thermal characteristics (needle flame) effective duration	30 s
Result of thermal test	Test passed
Temperature index, insulating material (DIN EN 60216-1 (VDE 0304-21))	130 °C
Static insulating material application in cold	-60 °C

Connection data

Conductor cross section solid min.	0.5 mm²
Conductor cross section solid max.	10 mm²
Conductor cross section stranded min.	0.5 mm²
Conductor cross section stranded max.	6 mm²
Conductor cross section AWG/kcmil min.	20
Conductor cross section AWG/kcmil max	8
Conductor cross section stranded, with ferrule without plastic sleeve min.	0.5 mm²
Conductor cross section stranded, with ferrule without plastic sleeve max.	6 mm²
Conductor cross section stranded, with ferrule with plastic sleeve min.	0.5 mm²
Conductor cross section stranded, with ferrule with plastic sleeve max.	4 mm²
2 conductors with same cross section, solid min.	0.5 mm²
2 conductors with same cross section, solid max.	2.5 mm²
2 conductors with same cross section, stranded min.	0.5 mm²

2 conductors with same cross section, stranded max.	6 mm²
2 conductors with same cross section, stranded, ferrules without plastic sleeve, min.	0.5 mm²
2 conductors with same cross section, stranded, ferrules without plastic sleeve, max.	4 mm²
2 conductors with same cross section, stranded, TWIN ferrules with plastic sleeve, min.	0.5 mm²
2 conductors with same cross section, stranded, TWIN ferrules with plastic sleeve, max.	4 mm²
Connection method	Screw connection
Stripping length	13 mm
Internal cylindrical gage	A5
Screw thread	M4
Tightening torque, min	1.2 Nm
Tightening torque max	1.5 Nm

Certificates / Approvals

Certification	CSA, cULus Recognized, GOST, KEMA-KEUR, DNV, LR, PRS, RS, CCA

Certifications applied for:

Certification Ex:

Accessories

Item	Designation	Description
Assembly		
3034361	AP-ME METER	Cover profile, for covering terminal strips, snapped onto APT-ME cover profile carrier or APH-ME end bracket. A cover profile carrier should be positioned at the ends and at intervals of around 40 cm. Length supplied: 1 m
3034374	APH-ME	Cover profile carrier for mounting on NS 35/7.5 DIN rail for attaching the cover profile AP-ME
3034358	APT-ME	Cover profile carrier for mounting on NS 35/7.5 DIN rail for attaching the cover profile AP-ME

0310224	ATS-RTK	Partition plate, Length: 72 mm, Width: 0.8 mm, Height: 51.5 mm, Color: gray
3022218	CLIPFIX 35	Snap-on end bracket, for 35 mm NS 35/7.5 or NS 35/15 DIN rail, can be fitted with Zack strip ZB 8 and ZB 8/27, terminal strip marker KLM 2 and KLM, width: 9.5 mm, color: gray
3022276	CLIPFIX 35-5	Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, can be fitted with ZB 5 and ZBF 5 zack marker strip, KLM 2, KLM3, and KML3L terminal strip marker, parking option for FBS...5, FBS...6, KSS 5, KSS 6, width: 5.15 mm, color: gray
0310020	D-URTK	End cover, Length: 72 mm, Width: 2.2 mm, Height: 41.5 mm, Color: gray
1201442	E/UK	End clamp, for assembly on NS 32 or NS 35/7.5 DIN rail
1201413	E/UK 1	End clamps, for supporting the ends of double-level and three-level terminal blocks, width: 10 mm, color: gray
1201002	NS 32 PERF 2000MM	G-profile DIN rail, material: Steel, perforated, height 15 mm, width 32 mm, length 2 m
1201015	NS 32 UNPERF 2000MM	G-profile DIN rail, material: Steel, unperforated, height 15 mm, width 32 mm, length 2 m
0801704	NS 35/ 7,5 AL UNPERF 2000MM	DIN rail, material: Aluminum, unperforated, height 7.5 mm, width 35 mm, length: 2 m
1206560	NS 35/ 7,5 CAP	DIN rail end piece, for DIN rail NS 35/7.5
0801762	NS 35/ 7,5 CU UNPERF 2000MM	DIN rail, material: Copper, unperforated, height 7.5 mm, width 35 mm, length: 2 m
0801733	NS 35/ 7,5 PERF 2000MM	DIN rail, material: steel galvanized and passivated with a thick layer, perforated, height 7.5 mm, width 35 mm, length: 2000 mm
0801681	NS 35/ 7,5 UNPERF 2000MM	DIN rail, material: Steel, unperforated, height 7.5 mm, width 35 mm, length: 2 m
1204119	NS 35/ 7,5 WH PERF 2000MM	DIN rail 35 mm (NS 35)
1204122	NS 35/ 7,5 WH UNPERF 2000MM	DIN rail 35 mm (NS 35)
1206421	NS 35/ 7,5 ZN PERF 2000MM	DIN rail, material: Galvanized, perforated, height 7.5 mm, width 35 mm, length: 2 m
1206434	NS 35/ 7,5 ZN UNPERF 2000MM	DIN rail, material: Galvanized, unperforated, height 7.5 mm, width 35 mm, length: 2 m
1201756	NS 35/15 AL UNPERF 2000MM	DIN rail, deep drawn, high profile, unperforated, 1.5 mm thick, material: aluminum, height 15 mm, width 35 mm, length 2000 mm
1206573	NS 35/15 CAP	DIN rail end piece, for DIN rail NS 35/15
1201895	NS 35/15 CU UNPERF 2000MM	DIN rail, material: Copper, unperforated, 1.5 mm thick, height 15 mm, width 35 mm, length: 2 m
1201730	NS 35/15 PERF 2000MM	DIN rail, material: steel galvanized and passivated with a thick layer, perforated, height 15 mm, width 35 mm, length: 2000 mm
1201714	NS 35/15 UNPERF 2000MM	DIN rail, material: Steel, unperforated, height 15 mm, width 35 mm, length: 2 m

0806602	NS 35/15 WH PERF 2000MM	DIN rail 35 mm (NS 35)
1204135	NS 35/15 WH UNPERF 2000MM	DIN rail 35 mm (NS 35)
1206599	NS 35/15 ZN PERF 2000MM	DIN rail, material: Galvanized, perforated, height 15 mm, width 35 mm, length: 2 m
1206586	NS 35/15 ZN UNPERF 2000MM	DIN rail, material: Galvanized, unperforated, height 15 mm, width 35 mm, length: 2 m
1201798	NS 35/15-2,3 UNPERF 2000MM	DIN rail, material: Steel, unperforated, 2.3 mm thick, height 15 mm, width 35 mm, length: 2 m
0310211	TS-RTK	Separating plate, Length: 72 mm, Width: 0.8 mm, Color: gray

Bridges

0311281	ASB 2-RTK/S	Switching jumper, Number of positions: 2, Color: silver
0202154	EB 2- 8	Insertion bridge, Number of positions: 2, Color: gray
0202141	EB 3- 8	Insertion bridge, Number of positions: 3, Color: gray
0202142	EB 4- 8	Insertion bridge, Number of positions: 4, Color: gray
0202138	EB 10- 8	Insertion bridge, Number of positions: 10, Color: gray
0311171	FB 10- RTK/S	Fixed bridge, Number of positions: 10, Color: silver
0308359	S	Switching lock, Length: 12 mm, Width: 8.2 mm, Color: white
0311236	SB 2-RTK/S	Switching jumper, Number of positions: 2, Color: silver
0311265	SB 4-RTK/S	Switching jumper, Number of positions: 4, Color: silver
0311278	USB 2-RTK/S	Switching jumper, Number of positions: 2, Color: silver

General

0800886	E/NS 35 N	End clamp, width: 9.5 mm, color: gray

Marking

1007235	SBS 8:UNBEDRUCKT	Marker cards, Card, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into tall marker groove, Snap into flat marker groove, For terminal block width: 8.2 mm, Lettering field: 6 x 8.1 mm
0818072	UC-TM 8	Marker for terminal blocks, Sheet, white, Unlabeled, Can be labeled with: BLUEMARK CLED, Bluemark, Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 7.6 x 10.5 mm
0824597	UC-TM 8 CUS	Marker for terminal blocks, Can be ordered: By sheet, white, Labeled according to customer specifications, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 7.6 x 10.5 mm
0828740	UCT-TM 8	Marker for terminal blocks, Sheet, white, Unlabeled, Can be labeled with: Thermomark C+, Thermomark C, BLUEMARK CLED, Bluemark, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 7.6 x 10.5 mm

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0829616	UCT-TM 8 CUS	Marker for terminal blocks, Can be ordered: By sheet, white, Labeled according to customer specifications, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 7.6 x 10.5 mm
0825011	ZB 8 CUS	Zack marker strip, Can be ordered: Strip, white, Labeled according to customer specifications, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 10.5 x 8.15 mm
1052002	ZB 8:UNBEDRUCKT	Zack marker strip, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 10.5 x 8.15 mm

Plug/Adapter

0311728	PSBJ-URTK/S BK	Female test connector, Color: black
0311757	PSBJ-URTK/S BU	Female test connector, Color: blue
0311760	PSBJ-URTK/S GN	Female test connector, Color: green
0311744	PSBJ-URTK/S RD	Female test connector, Color: red
0311773	PSBJ-URTK/S VT	Female test connector, Color: violet
0311731	PSBJ-URTK/S YE	Female test connector, Color: yellow

Tools

1205066	SZS 1,0X4,0 VDE	Screwdriver, bladed, VDE insulated, size: 1.0 x 4.0 x 100 mm, 2-component grip, with non-slip grip

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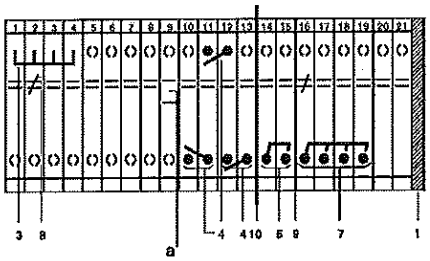
Diagrams/Drawings

Circuit diagram



a = open
1 = cover
3 = fixed bridge
4 = switch bar, for 2 terminal blocks, useable on both sides of the disconnect point, inward switching motion
5 = switch bar, for 2 terminal blocks, useable on both sides of the disconnect point, outward switching motion
7 = switch bar, for 3-phasige short-circuiting of linked current transformer sets, only on the right
8 = switching lock, prevents disconnect slide from being actuated
9 = separating plate, for electrical separation of neighboring bridges in terminal center
10 = partition plate

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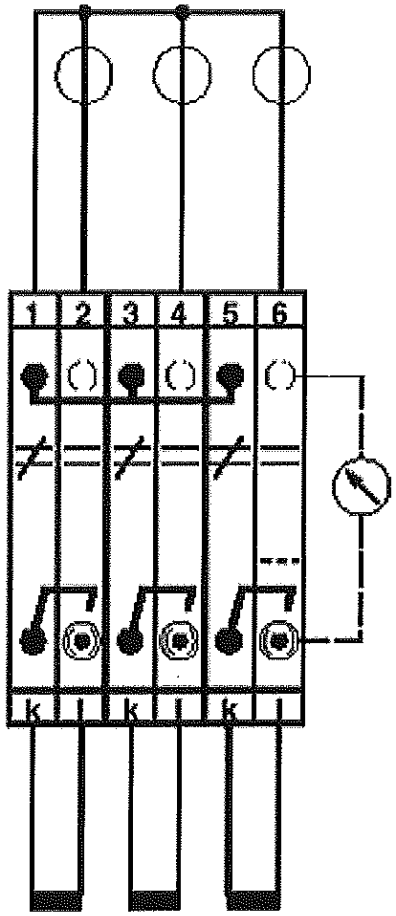
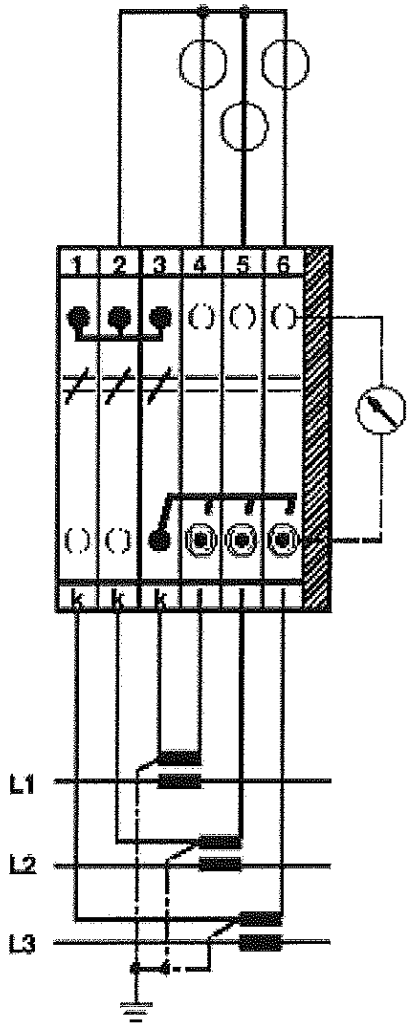
Schematic diagram



Three-phase transducer test set



Three-phase linked transducer test set

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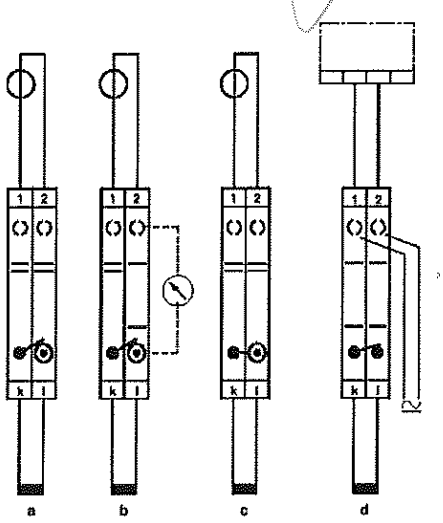

Simple current transformer test circuit
a = normal operation
b = measured value testing
c = transformer short-circuit
d = relay testing

ВЯРНО С
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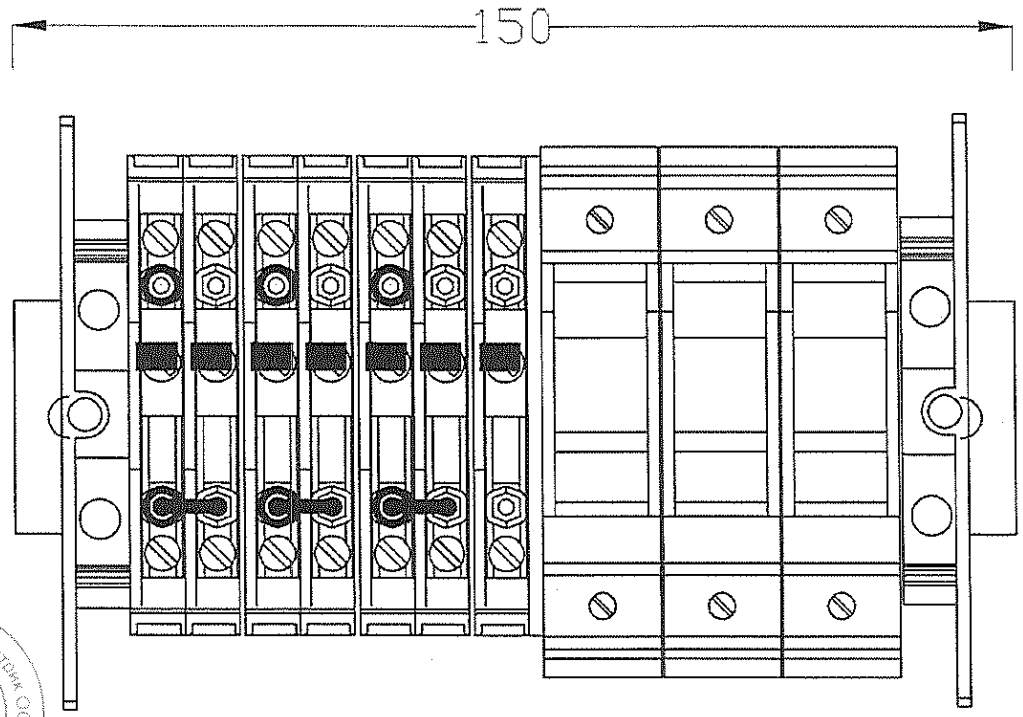

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ОБЕКТ: Измервателен клеморед ЧЕЗ		СЪГЛАСУВАЛИ:
част:	лист №: 1/ 1	
фаза: РП	мащаб: –	ВЪЗЛОЖИТЕЛ:
		Чертал:
		Р-л фирма: инж. Вл. Лазаров

ТЕХНИЧЕСКИ ХАРАКТЕРИСТИКИ

Предлаганите клеми са производство на фирма Phoenix Contact – Германия. Фирмата е сертифицирана по ISO 9001. Клемите са тествани и са в съответствие с IEC 60 947-7-1, IEC 60947-1, IEC 60695-2-2, EN 50019, а също така притежават и други сертификати, които са дадени за всяка клема в каталога.
Клемите на Phoenix Contact са с универсална основа за закрепване както към симетрична шина NS 35/7,5, NS 35/15, така и към несиметрична - NS 32. Кабелните входове на клемата са затворени фунии, което улеснява въвеждането на проводника. Всички клеми имат гнезда за индивидуално и рационално маркиране.
Предлаганите клеми, производство на Phoenix Contact притежават следните по-важни качества:

- **всички метални части са устойчиви на електролитна корозия и ръжда**

Всички метални елементи на клемите са изработени от медна сплав, с високо съдържание на мед, като напълно се избягва използването на стомана. Това елиминира две възможни причини за корозия: Едната е електролитна корозия, която възниква между медния проводник и стоманата, при наличие на влага. Втората е ръждата и последиците от нея – ненадежден електрически контакт, блокирани винтчета. Използването само на медна сплав има и допълнителни предимства като: 1) ниско температурно повишение, поради високата електрическа проводимост и 2) по-малко вероятно е разхлабване на винтчетата, тъй като практически няма относително термично разширение между проводника и притискащата част.
Повърхността на металните части е защитена с калаено или никелово галванично покритие.

- **блокиране на винтчетата срещу саморазвиване**

Phoenix Contact притежава патент, наречен "Reakdyn principle" за предпазване на винтчетата от саморазвиване. Конструкцията на притискащата част е на приципа на движеща се клетка. При завъртане на винта, той натиска тоководещата част и издърпва проводника в клетката към тоководещата част. Поради високата притискаща сила проводника се интегрира в мекото калаено покритие на тоководешата част. Така се постига контактно съпротивление което превишава изискванията на IEC 60 947-7-1, като за клема 4 mm^2 то е 0,3mΩ.
Поради специалната си форма при затягане на винтчето горната част на клетката се деформира еластично и предизвиква нарастваща триеща сила в главата на винтчето, която не му позволява да се саморазвие.

- **надежна механична и електрическа връзка, съгласно IEC 60 947-7-1**

Конструкцията на притискащата част на клемата не само удовлетворява тези изсквания, но дори ги надвишава, поради следните качества: 1) Равната основа на притискащата част гарантира, че дори и най тънкия проводник ще бъде стегнат както трябва., 2) напречните жлебове на тоководещата част гарантират нарушаване оксидацията по проводника, без да го извиват и така осигуряват добър контакт, 3) стабилната конструкция на притискащите части, заедно с високата точност при изработка, осигуряват връзка, недопускаща проникването на газ, както и голяма

сила на притискане. Това означава, че условията за контакт могат да се поддържат стабилни за дълъг период от време, дори в агресивна атмосфера.

- **качества на изолационния материал**

Изолационния материал на клемите, които са предмет на настоящия търг е Полиамид 6.6. Този материал е одобрен от всички оторизирани лаборатории като CSA, NEMKO, KEMA, VDE и др. Той има отлични електрически, механични, химически и други качества, дори при високи температури. Позволени са кратковременно температури до 200° С. Полиамида абсорбира вода до 2,8%, но тази влага не е във формата на кристализирана вода в пластмасата, а е химически свързана в молекулната структура. Това прави пластмасата гъвкава и нечуплива, дори при ниски температури от -40° С. Полиамида има клас на негоримост V0, съгласно UL 94.

Максималния допустим ток на клемите зависи от максимално допустимото сечение на проводника и е в съответствие с IEC 60947-7-1.

Съответствие на техническите изисквания

Съгласно горното, предлаганите клеми притежават следните характеристики в съответствие с техническите изисквания:

1. Проводниците се присъединяват към клемите чрез винтова връзка, осигуряваща необслабваща електическа връка при вибрации и стареене;
2. Проводимите и притискащи части са устойчиви срещу електролитна корозия и ръжда. Гарантиран клас на негоримост – V0 съгласно UL 94;
3. Повишена механична устойчивост;
4. Изолационният материал не абсорбира влага;
5. Клемите са с гнезда за поставяне на етикети от двете страни;
6. Клемите се монтират върху универсална монтажна рейка. Възможен е монтаж както както към симетрична шина NS 35/7,5, NS 35/15, така и към несиметрична - NS 32
7. Токови клеми:
   - Пофазно шунтиране на токовите вериги към ТТ с подвижни (фиксирани към клемата) или преносими изолирани мостове, съгласно приложената схема;
   - Видимо разкъсване на токовите вериги след шунтиране;
   - Включване на товарно устройство за тестване – монтирана или с възможност за монтаж на тест букса с диаметър 4mm;
   - Видимо разделяне на токовите вериги по предназначение (ядра);
8. Напреженови вериги:
   - Видимо разкъсване ;
   - Включване на товарно устройство за тестване – монтирана или с възможност за монтаж на тест букса с диаметър 4mm;
   - Възможност за видимо разделяне на напреженовите вериги по фази и предназначение;
   - Възможност за включване на измервателни уреди от двете страни на клемата;

ВЯРНО С ОРИГИНАЛА

Кратко описание на предложените клеми и аксесоари към тях

1. **URTK/S**

Клеми с винтова връзка за присъединяване на кръгъл твърд проводник до 10mm^2 или гъвкав проводник с/без накрайник до 6mm^2 . Клемата е с възможност за фиксирано разкъсване на връзката, с гнезда за присъединяване на тестови проводници или за поставяне на шунтиращи мостчета от двете страни на клемата - щифт 4mm. Тази клема е универсална и удовлетворява всички изисквания за яснота на веригата, удобства за превключване. Клемата предлага няколко типа на замостване: чрез конектори с изолирана ръкохватка (2, 4 поз.), превключващи мостове (2, 4 поз.) за окъсяване на трансформаторни вериги, фиксиран мост – 10 позиционен, делим, окомплектован с винтове. Гнездата за тестови проводник или шунтиращ конектор всяка страна са независими от винта за присъдиняване на проводника.

2. **URTK/SP**

Клеми с винтова връзка за присъединяване на кръгъл твърд проводник до 10mm^2 или гъвкав проводник с/без накрайник до 6mm^2 . Клемата е с възможност за фиксирано разкъсване на връзката, с гнезда за присъединяване на тестови проводници или за поставяне на шунтиращи мостчета от двете страни на клемата - щифт 4mm. Тази клема е универсална и удовлетворява всички изисквания за яснота на веригата, удобства за превключване и защита от допир до тоководещи части. Клемата предлага няколко типа на замостване: чрез изолирани превключващи мостове (2, 3, 4, 10 поз.), неизолиран фиксиран мост, конектори с изолирана ръкохватка (2, 4 поз.) Гнездата за тестови проводник или шунтиращ конектор са напълно изолирани.

3. **D-URTK**

Крайна капачка за клема URTK/S.

4. **Разделителна пластина ATP-URTK/SP.**

Секционна разделителна пластина за визуално и електрическо разделяне на клемни групи за директен монтаж на DIN шина. Дебелина: 2 мм.

Подходяща за използване с всички токови и напреженови клеми.

5. **Шунтиращ мост SB 2-RTK/S.**

Двупозиционен подвижен, шунтиращ мост за клеми URTK/S.

6. **Шунтиращ мост SB 2-URTK/SP.**

Двупозиционен изолиран, подвижен, шунтиращ мост за клеми URTK/SP.

ВЯРНО С ОРИГИНАЛА

7. **Фиксатор за клемен пакет CLIPFIX 35.**

Фиксатор със защипване за симетрични шини 35/7,5 мм, 35/15 мм.
Ширина: 9,5 мм. Материал: полиамид.
Клас на запалимост: V0. Цвят: сив.
Може да се маркира със стантартни клемни маркировки ZB, маркировки: KLM, KLM 2.

Съставил: [redacted]

На основание чл. 2 от ЗЗЛД

10.8.3

PHOENIX CONTACT LAPP KABEL

SGS WisoMatic ELECTRICAL DISTRIBUTION & CONTROL

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

Долуподписаният, Владимир Лазаров- Управител на ВИВ-ИЗОМАТИК ООД,

В качеството си на търговски представител на Phoenix Contact GmbH и Lovato Electric за България

Декларирам че, материалите, с които се асемблират клемореди тип ИК7ТК3Р, отговарят на следните стандарти и нормативни актове:

-Клеми тип URTK/S и аксесоари за тях, производство на Phoenix Contact GmbH отговарят на следните технически одобрения и нормативни актове
IEC 60947-7-1

-Разединяеми предпазител-разединители тип FB1, производство на Lovato Electric отговарят на следните технически одобрения и нормативни актове :
IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-1, IEC/EN 60947-3.

На основание чл. 2
от ЗЗЛД

25.10.2013

ВЯРНО С
ОРИГИНАЛА

KEMA
REGISTERED QUALITY

KEMA KEUR

CERTIFICATE

KEMA No.: 97.4117.13

Issued to:
Applicant:
Phoenix Contact GmbH & Co.
Flachsmarktstrasse 8-28
BLOMBERG, Germany

Manufacturer/Licensee:
Phoenix Contact GmbH & Co.
Flachsmarktstrasse 8-28
BLOMBERG, Germany

Product : terminal blocks

Trade name : PHOENIX CONTACT
Types/models : URTK/S-BEN BU, URTK/S-BEN, URTK/S, URTK/SP, USLKG 10, USLKG 6N

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

KEMA hereby declares that the above-mentioned product has been certified on the basis of:
- a type test according to the standard EN 60947-7-1:1991,EN 60947-7-2:1995
- an inspection of the production location according to CCA Group Operational Document CCA 204
- a certification agreement with the number 900469

KEMA hereby grants the right to use the KEMA certification mark

KEMA KEUR

The KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration of the KEMA-KEUR certification agreement and under the conditions of the KEMA-KEUR certification agreement.

This certificate is issued on: August 6, 1999

На основание чл. 2
от ЗЗЛД

ВЯРНО С ОРИГИНАЛА

N.V. KEMA
Utrechtseweg 310, 6812 AR Arnhem, The Netherlands
P.O. Box 9035, 6800 ET Arnhem, The Netherlands
Telephone +31 26 3 56 28 50, Telefax +31 26 3 51 49 22

ACCREDITED BY
THE DUTCH COUNCIL
FOR ACCREDITATION

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

product	:	terminal blocks
trade name	:	PHOENIX CONTACT
types	:	URTK/S-BEN BU, URTK/S-BEN, URTK/S, URTK/SP, USLKG 10, USLKG 6N
material	:	thermoplastic material
mounting	:	top hat rail 35 mm (EN 50022) and G-profile rail 32 mm (EN 50035)

Additional information

Markings

Trademark, type designation, rated connection capacity and rated insulation voltage are indented in the insulation material.

Product data – type USLKG 6N

rated connection capacity	:	6 mm²
connectable conductors	:	one conductor 0,2 - 10 mm² solid 0,2 - 6 mm² flexible without ferrule 0,25 - 6 mm² flexible with ferrule two conductors 0,2 - 2,5 mm² solid 0,2 - 2,5 mm² flexible without ferrule 0,25 - 1,5 mm² flexible with ferrule
description	:	protective conductor terminal block with 2 screw-type clamping units, 1-pole

Product data – type URTK/S

rated voltage	:	400 V
rated connection capacity	:	6 mm²
connectable conductors	:	one conductor 0,5 - 10 mm² solid 0,5 - 6 mm² flexible without ferrule 0,5 - 10 mm² flexible with ferrule two conductors 0,5 - 2,5 mm² solid 0,5 - 6 mm² flexible without ferrule 0,5 - 4 mm² flexible with ferrule
rated impulse withstand voltage	:	6 kV
description	:	disconnect terminal block with 2 screw-type clamping units, 1-pole

N.V. KEMA
Utrechtseweg 310, 6812 AR Arnhem, The Netherlands
P.O. Box 9035, 6800 ET ARNHEM, The Netherlands
Telephone +31 26 3562850, Telefax +31 26 3514922

Product data – type USLKG 10

rated connection capacity	:	6 mm²
connectable conductors	:	one conductor 0,5 - 10 mm² solid 0,5 - 6 mm² flexible without ferrule 0,5 - 6 mm² flexible with ferrule two conductors 0,5 - 2,5 mm² solid 0,5 - 2,5 mm² flexible without ferrule 0,5 - 2,5 mm² flexible with ferrule
description	:	protective conductor terminal block with 2 screw-type clamping units, 1-pole

Product data – type URTK/S-BEN

rated voltage	:	500 V
rated connection capacity	:	6 mm²
connectable conductors	:	one conductor 0,5 - 10 mm² solid 0,5 - 6 mm² flexible without ferrule 0,5 - 10 mm² flexible with ferrule two conductors 0,5 - 2,5 mm² solid 0,5 - 6 mm² flexible without ferrule 0,5 - 4 mm² flexible with ferrule
rated impulse withstand voltage	:	6 kV
description	:	disconnect terminal block with 2 screw-type clamping units, 1-pole

Product data – type URTK/S-BEN BU

rated voltage	:	500 V
rated connection capacity	:	6 mm²
connectable conductors	:	one conductor 0,5 - 10 mm² solid 0,5 - 6 mm² flexible without ferrule 0,5 - 10 mm² flexible with ferrule two conductors 0,5 - 2,5 mm² solid 0,5 - 6 mm² flexible without ferrule 0,5 - 4 mm² flexible with ferrule
rated impulse withstand voltage	:	6 kV
description	:	disconnect terminal block with 2 screw-type clamping units, 1-pole

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ВЯРНО С ОРИГИНАЛА

Product data – type URTK/SP

rated voltage	:	500 V
rated connection capacity	:	6 mm²
connectable conductors	:	one conductor 0,5 - 10 mm² solid 0,5 - 6 mm² flexible without ferrule 0,5 - 6 mm² flexible with ferrule two conductors 0,5 - 2,5 mm² solid 0,5 - 4 mm² flexible without ferrule 0,5 - 2,5 mm² flexible with ferrule
rated impulse withstand voltage	:	6 kV
description	:	disconnect terminal block with 2 screw-type clamping units, 1-pole

TESTS

Test requirements

EN 60947-7-1:1991 + C:1997-06 + A11:1997
EN 60947-7-2:1995 + C:1996-01

Test results
The test results are laid down in KEMA test file 97.4117.13.

Conclusion
The examination proved that all test requirements were met.

Tested by : H.L.

Checked by : L.J.V

На основание чл. 2
от ЗЗЛД

FACTORY-LOCATION(S)

Phoenix Contact GmbH & Co.
Flachsmarktstrasse 8-28, BLOMBERG, Germany

N.V. KEMA
Utrechtseweg 310, 6812 AR Arnhem, The Netherlands
P.O. Box 9035, 6800 ET ARNHEM, The Netherlands
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ВЯРНО С ОРИГИНАЛА

Annex to ISO/IEC 17025:2005 declaration of accreditation for registration number: **L 022**

of **DEKRA Certification B.V.**

This annex is valid from: **29-04-2015** to **01-03-2018** Replaces annex dated: **03-11-2014**

Location where activities are performed under accreditation

Head Office

Meander 1051
6825 MJ
Arnhem
The Netherlands

No.	Material or product	Type of activity	Reference number	Remarks
		A. Electrical Safety Tests		
1a	Cables and cords **(CABL)**	Type test of cables and cords according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	HD 21 HD 22 HD 603 HD 604 HD 605 EN 13501, EN 50143; EN 50214; EN 50267; EN 50525; EN 50288; EN 50399; EN 50618 NEN/EN 50200 NEN/EN/IEC 60228 NEN-EN 50525 NEN/EN 50266 NEN/EN 50362 NEN/EN /IEC 61034 IEC 60092; IEC 60227 *; IEC 60245 *; IEC 60331; IEC 60332; IEC 60502-1; IEC 60502-2; IEC 60754; IEC 60800; IEC 60840 IEC 62067	* see note 3

ВЯРНО С ОРИГИНАЛА

This annex has been approved by:

Ir. J.C. van der Poel
Chief Executive

Annex to ISO/IEC 17025:2005 declaration of accreditation for registration number: **L 022**

of **DEKRA Certification B.V.**

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No.	Material or product	Type of activity	Reference number	Remarks
1a	Cables and cords **(CABL)**	Type test of cables and cords according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	DEKRA K 42; DEKRA K 102 DEKRA K 145; DEKRA K 146 DEKRA K 151; DEKRA K 152 DEKRA K 156; DEKRA K 157 DEKRA K 158; DEKRA K160 DEKRA K 161; DEKRA K 162 DEKRA K 163; DEKRA K 164 DEKRA K 165; DEKRA K 167 DEKRA K 168; DEKRA K 169 DEKRA K 170; DEKRA K 171 DEKRA K 175; DEKRA K 176 DEKRA K 177; DEKRA K 178 DEKRA K 179 BS 6004; BS 6007; BS 4553; BS 5467; BS 6231; BS 6346; BS 6387; BS 6500; BS 6622; BS 6724; BS 6883; BS 7211; BS 7629; BS 7835; BS 7846; BS 7889; BS 8491; BS EN 50288-7 BS EN 50525 DIN VDE0815; DIN VDE0250	* see note 3
		Test methods for non-metallic materials	IEC 60811-201; IEC 60811-202 IEC 60811-203; IEC 60811-401 IEC 60811-402; IEC 60811-403 IEC 60811-404; IEC 60811-405 IEC 60811-406; IEC 60811-408 IEC 60811-409; IEC 60811-411 IEC 60811-412; IEC 60811-501 IEC 60811-502; IEC 60811-503 IEC 60811-504; IEC 60811-505 IEC 60811-506; IEC 60811-507 IEC 60811-508; IEC 60811-509 IEC 60811-510; IEC 60811-511 IEC 60811-605; IEC 60811-606 IEC 60811-607	
		Electrical test methods for low voltage energy cables	NEN-EN 50395	
		Non electrical test methods for low voltage energy cables	NEN-EN 50396	

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No.	Material or product	Type of activity	Reference number	Remarks
1b	Conduits	Type test of conduits according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	NEN/EN/IEC 61386 DEKRA K24 EN 50086	
1c	Installation systems Cable trays Cable ladders	Type test of cable trays and cable ladders, according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	KEMA 55 NEN/EN 50085 NEN/IEC/EN 61537 BS EN 61537	
1d	Boxes and enclosures for electrical installations	Type test of boxes and enclosures for electrical installations, according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	NEN/EN/IEC 60670	
2a	Switches for appliances and automatic controls for electrical household appliances **(CONT)**	Type test of switches according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests.	IEC/EN 60730*, 61095* IEC/EN 60691, 60934, 61058*, 60529 IEC 60265, 62271-1, 62271-100, 62271-101, 62271-102, 62271-105, 62271-110, 62271-200, 62271-201, 62271-202, 62271-203, EN 50152-1 IEEE Std C37.09, C37.081, 37.60, C37.013, C37.34, ANSI C37.41, C37.73, C37.20.2, C37.122 ANSI/IEEE C37.21 ANSI C37.54, C37.55, C37.20.2, C37.72	*** see note 3**

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No.	Material or product	Type of activity	Reference number	Remarks
3	Household and similar equipment **(HOUS)**	Type test of household equipment according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60335* IEC/EN 61770 IEC/EN 62233 EN 50366 IEC/EN 60204 IEC/EN 60730-1/ 2-8 / 2-9 IEC/EN 61558-1/ 2-3 / 2-6 / 2-5 / 2-6 / 2-16 IEC/EN 62061 EN/ISO 13849-1	*** see note 3**
		Low power measurements	IEC/EN 62301	
4	Installation accessories and connection devices **(INST)**	Type test of installation accessories and connection devices according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60309*, 60320*, 60669*, 60670*, 60799*, 60884*, 60998*, 61058*, 61242*, 61534*, 61984*, 62208*; IEC/EN 60335-2-76, 60974, 61316, 61386, 62094 EN 50075, 50066, 50146, 50250, 50393 NEN 1251, IEC 60884*, 61238, 62080 BS 1363-1, BS 1363-2, BS 1363-3, BS 1363-4 SS 145 BS 546 BS 4573 BS 5733 NEN 1020 NF C61-314 DIN VDE 0620-1 DIN VDE 0620-2-1 CEI 23-50 NBN C 61-112-1 NEK IEC 60884-1 NEK 502 ÖVE/ÖNORM E 8684-1 ÖVE/ÖNORM E 8620-2(-3,-4, -5) SFS 5610 SS 428 08 34 DS 60884-2-D1 SEV 1011 UNE 20315-1-1; UNE 20315-1-2 IEC/EN 61535 EN 50428 required with 60669	*** see note 3**

ВЯРНО С ОРИГИНАЛА

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No.	Material or product	Type of activity	Reference number	Remarks
5	Luminaires **(LITE)**	Type test of luminaires according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60155*, 60238*, 60400*, 60570*, 60598*, 60838*, 60921*, 60968*, 60969*, 61347*, 62471* IEC/EN 60929, 61184, 62031, 62035, 60923, 60925, 60927, 61047, 62384, 62560, 61195, 62493	* see note 3
6	Measurement, control and laboratory equipment **(MEAS)**	Type test of measurement-, control- and laboratory equipment according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 61010* IEC/EN 60044 IEC/EN 61243 IEEE Std C57.13	* see note 3
7	Electrical equipment for medical use **(MED)**	Type test of electrical equipment for medical use according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60601* IEC/EN/ISO 80601 HD 395	* see note 3
8	Miscellaneous equipment **(MISC)**	Type test of miscellaneous equipment according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60825*	* see note 3

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No.	Material or product	Type of activity	Reference number	Remarks
9	IT and office equipment **(OFF)**	Type test of IT and office equipment according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60950* IEC/EN 62040* IEC/EN 60825 IEC 62368 EN 41003	* see note 3
10	Low voltage, high power switching equipment **(POW)**	Type test of low voltage, high power switching equipment according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60439*, 61439, IEC/EN 60947* IEC/EN 60282, 62208 EN 50178, IEC 60470, 60549, 60644, EN 60282-1 IEEE Std C37.41, C37.60 ANSI C37.44 IEC 61921	* see note 3
11	Installation protective equipment **(PROT)**	Type test of installation protective equipment according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60127*, 60269*, 60529*, 60898*, 61008*, 61009*, 61643*, 60755, 62019 IEC 60099, 60137, 60168, 60383, 60507, 60660, 61109, 60815 HD 630, 639, 60269 IEEE Std 62.11 ANSI C29 CAN/CSA C411.1	* see note 3
12	Safety transformers and similar equipment **(SAFE)**	Type test of safety transformers and simillar equipment according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60044*, IEC/EN 61558* IEC/EN 62040, IEC/EN 60076, IEC/EN 60353 EN 50091, EN 50464-1 HD 538.1 IEEE Std. C57.12.90, C57.21 NEMA 107 CISPR 16	* see note 3

ВЯРНО С ОРИГИНАЛА

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No.	Material or product	Type of activity	Reference number	Remarks
13	Electric tools **(TOOL)**	Type test of electric tools according to the tests in the standard, among others: - electrical safety tests - mechanical tests - environmental tests	IEC/EN 60745* IEC/EN 61029* IEC/EN 60335* (Gardening) IEC/EN 62233, IEC/EN 60204 EN 50144 EN 50260-2-7 EN 792 EN/ISO 1114 IEC/EN 62061 EN/ISO 13849-1	*** see note 3**
14	Electronics, entertainment equipment **(TRON)**	Type test according to the tests as mentioned in the standard, except the following tests which are subcontracted: 60065, cl. 20.1.3 Pre-conditioning of printed circuit boards 60065, cl. 12.1.2 Vibration-sine	IEC / EN 60065* IEC / EN 60491 IEC 62368	*** see note 3**
15	Products within the scope of the EMC Directive 2004/108/EC **(EMC)**	Type test according to the tests as mentioned in the standard	CISPR11; CISPR12; CISPR13; CISPR14-*; CISPR15; CISPR16-*-*; CISPR20; CISPR22; CISPR24; CISPR25; IEC60601-*-*; IEC60945; IEC60947-*-*; IEC61000-*-*; IEC61008-1; IEC61009-1; IEC61131-2; IEC61204-3; IEC61326-*; IEC61543; IEC61547; IEC61800-*; IEC62040-2; IEC62052-*; IEC62053-*; IEC62054-*;	*** see note 3**
	B. Electromagnetic Compatibility (EMC): Automotive tests			
1	Vehicles, Motorcycles, Motorboats and Spark-ignited engine-driven devices	Radiated emission 30 to 1000 MHz OATS	European Directives 2004/104/EC, 97/24/EC European regulation ECE-R10.04 EN 55012, CISPR 12	
2	Vehicles, Motorcycles, Motorboats and Spark-ignited engine-driven devices	Radiated immunity up to 30 V/m 20 to 2000 MHz OATS	European Directive 2004/104, 97/24/EC European regulation ECE-R10.04	

ВЯРНО С ОРИГИНАЛА

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This annex is valid from: **29-04-2015** to **01-03-2018** Replaces annex dated: **03-11-2014**

No.	Material or product	Type of activity	Reference number	Remarks
3	Electrical/ electronic sub-assembly	Pulse emission for ESA's along supply lines 12V and 24V	European Directive 2004/104/EC European regulation ECE-R10.04 ISO 7637-1 ISO 7637-2	
4		Conducted emission for ESA's (V–method, LISN) 150 kHz to 108 MHz	European Directive 2004/104/EC European regulation ECE-R10.04 CISPR25	
5		Radiated emission for ESA's Anechoic Chamber method 30 to 1000 MHz	European Directive 2004/104/EC European regulation ECE-R10.04 CISPR25	
6		Radiated immunity for ESA's Anechoic Chamber method and GTEM method 20 to 2000 MHz up to 30V/m	European Directive 2004/104/EC European regulation ECE-R10.04 ISO 11452-1, ISO 11452-2, ISO 11452-3	
7	Electrical/ electronic sub-assembly	Bulk Current Injection for ESA's 20 to 400 MHz up to 100 mA	European Directive 2004/104/EC European regulation ECE-R10.04 ISO 11452-1, ISO 11452-4	
8		Pulse immunity for ESA's along supply lines 12V and 24V	European Directive 2004/104/EC European regulation ECE-R10.04 ISO 7637-1 ISO 7637-2	
		C. Electromagnetic Compatibility (EMC): EMF tests		
1	Electrical and electronic equipment	EMF measurements: 0-400 kHz	EN 62233 EN 62493	

ВЯРНО С ОРИГИНАЛА

Annex to ISO/IEC 17025:2005 declaration of accreditation for registration number: **L 022**

of **DEKRA Certification B.V.**

This annex is valid from: **29-04-2015** to **01-03-2018** Replaces annex dated: **03-11-2014**

No.	Material or product	Type of activity	Reference number	Remarks
D. Electromagnetic Compatibility (EMC): Emission tests				
1	Electrical and electronic equipment	Conducted emission 9 kHz to 30 MHz	EN 55011, CISPR 11 EN 55013, CISPR 13 EN 55014-1, CISPR 14-1 EN 55015, CISPR 15 EN 55022, CISPR 22	
2		Radiated Emission Electric (EM) Field 30 MHz to 18 GHz	EN 55011, CISPR 11 EN 55014-1, CISPR 14-1 EN 55022, CISPR 22	
3		Disturbance power 30 MHz to 300 MHz	EN 55014-1, CISPR 14-1	
4		Click disturbances 150 kHz to 30 MHz	EN 55011, CISPR 11 EN 55014-1, CISPR 14-1	
5		Radiated Emission Magnetic Field 9 kHz to 30 MHz	EN 55011, CISPR 11 EN 55015, CISPR 15	
6		Harmonic current emissions 0 Hz to 2 kHz up to 16 A per phase	IEC / EN 61000-3-2	
7		Pulse magnetic field immunity up to 1000 A/m	IEC/EN 61000-4-9	
8		Limitation of voltage fluctuations and flicker up to 16 A per phase	IEC / EN 61000-3-3	
E. Electromagnetic Compatibility (EMC): FCC tests (USA legislation)				
1	Radio-Frequency Devices Industrial, Scientific and Medical Equipment	Emission 9 kHz to 3 GHz	47 CFR FCC Part 15, Part B ANSI C63.4 FCC MP-5	
F. Electromagnetic Compatibility (EMC): Immunity test				
1	Electric and electronic equipment	Electrostatic discharge immunity up to 30 kV	IEC/EN 61000-4-2	
2		Radiated EM field immunity up to 2,5 GHz up to 30 V/m	IEC/EN 61000-4-3	
3		EFT Burst immunity up to 4 kV	IEC/EN 61000-4-4	

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No.	Material or product	Type of activity	Reference number	Remarks
4	Electric and electronic equipment	Surge immunity up to 10 kV	IEC/EN 61000-4-5	
5		Immunity to conducted RF disturbances up to 230 MHz, up to 30 Vrms	IEC/EN 61000-4-6	
6		Power frequency magnetic field immunity up to 100 A/m	IEC/EN 61000-4-8	
7		Voltage dips and interruptions Single phase equipment up to 16 A	IEC/EN 61000-4-11	
8		Ring wave immunity test	IEC/EN 61000-4-12	
		G. Electromagnetic Compatibility (EMC): MISC		
1	Railway applications - Electromagnetic compatibility	Electromagnetic compatibility testing according the listed product standards	EN 50121-1 to -5	
2	Road traffic signal systems	Electromagnetic compatibility testing according the listed product standard	EN 50293	
		H. Photometric Tests (all tests are in accordance with the reference method)		
1	Headlamps low and high beams and front fog lamps	All tests as mentioned in the ECE Regulations stated under Test method Photometry Colorimetry Heat tests Plastic tests	ECE Regulations Nos. 1, 5, 8, 19, 20, 31, 56, 57, 72, 76, 82, 98, 112, 113 and 123; European Directives 76/761, 76/762 and 97/24	**Note 1**
2	Signalling lamps	All tests as mentioned in the ECE Regulations stated under Test method Photometry Colorimetry Heat test	ECE Regulations Nos. 6, 7, 23, 38, 50, 77, 87 and 91 and European Directives 76/757, 76/759, 76/758, 77/538, 77/539, 77/540 and 97/24 ECE Regulation 38 (rear fog lamps only)	
3	Devices for the illumination of rear registration plates	All tests as mentioned in the ECE Regulations stated under Test method Luminance	ECE Regulations Nos. 4 and 50 European Directives 76/760 and 97/24	

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No.	Material or product	Type of activity	Reference number	Remarks
4	Retro-reflective devices	All tests as mentioned in the ECE Regulations stated under Test method Retro-reflection Colorimetry Water resistance test Corrosion Fuel and oil resistance Heat test UV resistance	ECE Regulations Nos. 3, 27, 69, 70, 88 and 104 European Directive 76/757	**Note 2**
5	Light Sources	All tests as mentioned in the ECE Regulations stated under Test method Geometry Photometry Colorimetry Optical quality Mechanical tests	ECE Regulations Nos. 37, 99 IEC 60809 IEC 60810 IEC 60983 IEC 60061	
6	Special warning lamps (beacons and flash lights)	All tests as mentioned in the ECE Regulations stated under Test method Photometry Colorimetry Water resistance test	ECE Regulation No. 65	
7	Cornering Lamps	All tests as mentioned in the ECE Regulation stated under Test method Photometry Colorimetry	ECE Regulation No.119	

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No.	Material or product	Type of activity	Reference number	Remarks
		I. Lighting testing: EPA ENERGY STAR Program		
1	Non-directional Fluorescent Luminaires	Specifications for Performance of Self-Ballasted Compact Fluorescent Lamps, Source Run-up Time (ms)	ANSI C78.5:2003	
		Method of Measurement of Fluorescent Lamp Ballasts, Power Factor, Operating Frequency	ANSI C82.2:2002	
		Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering (CRI)	CIE Pub. No.13.3:1995	
		Colorimetry, CCT	CIE Pub No. 15:2004	
		Electric and Photometric Measurements of Fluorescent Lamps, Efficacy, Light Output, Lumen Maintenance, CCT, CRI	IES LM-9:2009	
		Life Testing of Fluorescent Lamps, Light Source Life, Lumen Maintenance	IES LM-40:2010	
		Life Testing of Compact Fluorescent Lamps, Light Source Life, Lumen Maintenance	IES LM-65:2010	
		Electrical and Photometric Measurements of Single-Ended Compact Fluorescent Lamps, Efficacy, Light Output, Lumen Maintenance, CCT, CRI	IES LM-66:2011	

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No.	Material or product	Type of activity	Reference number	Remarks
2	Directional Fluorescent Luminaires	Specifications for Performance of Self-Ballasted Compact Fluorescent Lamps, Source Run-up Time (ms)	ANSI C78.5:2003	
		Method of Measurement of Fluorescent Lamp Ballasts, Power Factor, Operating Frequency	ANSI C82.2:2002	
		Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering (CRI)	CIE Pub. No.13.3:1995	
		Colorimetry, CCT	CIE Pub No. 15:2004	
		Electric and Photometric Measurements of Fluorescent Lamps, Efficacy, Light Output, Lumen Maintenance, CCT, CRI	IES LM-9:2009	
		Life Testing of Fluorescent Lamps, Light Source Life, Lumen Maintenance	IES LM-40:2010	
		Life Testing of Compact Fluorescent Lamps, Light Source Life, Lumen Maintenance	IES LM-65:2010	
		Electrical and Photometric Measurements of Single-Ended Compact Fluorescent Lamps, Efficacy, Light Output, Lumen Maintenance, CCT, CRI	IES LM-66:2011	
		Photometric Testing of Outdoor Fluorescent Luminaires, Efficacy, Light Output, Zonal Lumen Distribution	IES LM-10:2013	
		Approved Method for Photometric Testing of Indoor Fluorescent Luminaries, Efficacy, Light Output, Zonal Lumen Distribution	IES LM-41:2013	
3	Luminaires CSD - Fluorescent Ballasts	Method of Measurement of Fluorescent Lamp Ballasts, Power Factor, Operating Frequency	ANSI C82.2:2002	

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No.	Material or product	Type of activity	Reference number	Remarks
4	Luminaires CSD - Fluorescent Lamps	Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering	CIE Pub. No.13.3:1995	
		Colorimetry, CCT	CIE Pub No. 15:2004	
		Electric and Photometric Measurements of Fluorescent Lamps, Efficacy, Light Output, Lumen Maintenance, CCT, CRI	IES LM-9:2009	
		Life Testing of Fluorescent Lamps, Light Source Life, Lumen Maintenance	IES LM-40:2010	
		Life Testing of Compact Fluorescent Lamps, Light Source Life, Lumen Maintenance	IES LM-65:2010	
		Electrical and Photometric Measurements of Single-Ended Compact Fluorescent Lamps, Efficacy, Light Output, Lumen Maintenance, CCT, CRI	IES LM-66:2011	
5	Non-Directional HID Luminaires	High-Intensity Discharge (HID)—Methods of Measuring Characteristics, Operating Frequency	ANSI C78.389:2004 (R2009)	
		Ballasts for High Intensity Discharge (HID) Lamps - Methods of Measurement, Power Factor, Lamp Current Crest Factor	ANSI C82.6:2005	
		Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering	CIE Pub. No.13.3:1995	
		Life Testing of High Intensity Discharge (HID) Lamps, Light Source Life, Lumen Maintenance	IES LM-47:2012	
		Electrical and Photometric Measurements of High Intensity Discharge Lamps, Efficacy, Light Output, CCT, CRI	IES LM-51:2013	

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No.	Material or product	Type of activity	Reference number	Remarks
6	Directional HID Luminaires	High-Intensity Discharge (HID)—Methods of Measuring Characteristics, Operating Frequency	ANSI C78.389:2004 (R2009)	
		Ballasts for High Intensity Discharge (HID) Lamps - Methods of Measurement, Power Factor, Lamp Current Crest Factor	ANSI C82.6:2005	
		Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering	CIE Pub. No.13.3:1995	
		Life Testing of High Intensity Discharge (HID) Lamps, Light Source Life, Lumen Maintenance	IES LM-47:2012	
		Electrical and Photometric Measurements of High Intensity Discharge Lamps, Efficacy, Light Output, CCT, CRI	IES LM-51:2013	
		Photometric Testing of Roadway Luminaires Using Incandescent Filament and High Intensity Discharge (HID) Lamps, Efficacy, Output, Zonal Lumen Distribution	IES LM-31:2013	
		Photometric Testing of Indoor Luminaires Using High Intensity Discharge or Incandescent Filament Lamps, Efficacy, Light Output, Zonal Lumen Distribution	IES LM-46:2004	
7	Luminaires CSD - HID Ballasts	High-Intensity Discharge (HID)—Methods of Measuring Characteristics, Operating Frequency	ANSI C78.389:2004 (R2009)	
		High-Intensity Discharge (HID)—Methods of Measuring Characteristics, Operating Frequency	ANSI C78.389:2004 (R2009)	
		Ballasts for High Intensity Discharge (HID) Lamps - Methods of Measurement, Power Factor, Lamp Current Crest Factor	ANSI C82.6:2005	

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No.	Material or product	Type of activity	Reference number	Remarks
8	Luminaires CSD - HID Lamps	Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering	CIE Pub. No.13.3:1995	
		Life Testing of High Intensity Discharge (HID) Lamps, Light Source Life, Lumen Maintenance	IES LM-47:2012	
		Electrical and Photometric Measurements of High Intensity Discharge Lamps, Efficacy, Light Output, CCT, CRI	IES LM-51:2013	
9	Non-directional Solid State Luminaires and Subcomponents	Electrical and Photometric Measurements of Solid-State Lighting Products (section 10 not required for non-directional or subcomponents), Efficacy, Output, Lumen Maintenance, CCT, CRI, Color Maintenance	IES LM-79:2008	
		Harmonic Emission Limits—Related Power Quality Requirements for Lighting Equipment, Power Factor	ANSI C82.77:2002	
		Method of Measuring and Specifying Color Rendering of Light Sources, CRI	CIE Pub. No.13.3:1995	
		Colorimetry, CCT	CIE Pub No. 15:2004	
		Characterization of LED Light Engines and LED Lamps for Electrical and Photometric Properties as a Function of Temperature, Efficacy, Light Output, Lumen Maintenance, CCT , CRI, Color Maintenance, Light Source Life	IES LM-82-2012	
10	Directional Solid State Luminaires	Electrical and Photometric Measurements of Solid-State Lighting Products (Goniophotometer), Zonal Lumen Distribution, Color Angular Uniformity, Luminaire Photometry	IES LM-79:2008 sections 10 and 12	
		Guide to Spectroradiometric Measurements, Color Angular Uniformity	IES LM-58:2013	

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No.	Material or product	Type of activity	Reference number	Remarks
10	Directional Solid State Luminaires	Method of Measuring and Specifying Color Rendering of Light Sources, CRI	CIE Pub. No.13.3:1995	
		Colorimetry, CCT	CIE Pub No. 15:2004	
		Electrical and Photometric Measurements of Solid-State Lighting Products, Efficacy, Light Output, Lumen Maintenance, CCT, CRI, Color Maintenance	IES LM-79:2008	
11	Lumen Maintenance of LED Packages, Arrays, and Modules	Method for Measuring Lumen Maintenance of LED Light Sources, Light Source Life, Lumen Maintenance	IES LM-80:2008	
12	Non-Directional Outdoor Halogen Luminaires	Approved Method for Life Testing of Filament Lamps, Light Source Life Requirements	IES LM-49:2001, IES LM-49:2011	
13	Directional Outdoor Halogen Luminaires	Approved Method for Life Testing of Filament Lamps, Light Source Life Requirements	IES LM-49:2001	
		Photometric Testing of Outdoor Fluorescent Luminaires, Zonal Lumen Distribution	IES LM-10:1996	
		Photometric Testing of Roadway Luminaires Using Incandescent Filament and High Intensity Discharge (HID) Lamps, Zonal Lumen Distribution	IES LM-31:1991	
		Photometric Testing of Indoor Fluorescent Luminaires, Zonal Lumen Distribution	IES LM-41:1998	
		Photometric Testing of Indoor Luminaires Using High Intensity Discharge or Incandescent Filament Lamps, Zonal Lumen Distribution	IES LM-46:2004	
		Electrical and Photometric Measurements of Solid-State Lighting Products, Zonal Lumen Distribution	IES LM-79:2008 Section 10	

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No.	Material or product	Type of activity	Reference number	Remarks
14	CFL Directional Lamps	Electrical and Photometric Measurements of Single-Ended Compact Fluorescent Lamps, Efficacy, Light Output, Center beam Intensity, Lumen Maintenance, Lifetime, CCT, CRI	IES LM-66:2011	
		Life Testing of Compact Fluorescent Lamps, Lumen Maintenance, Lifetime, Rapid Cycle Stress Test	IES LM-65:2010	
		IEEE Recommended Practice on Characterization of surges in Low Voltage (1000V and Less) AC Power Circuits, Transient Protection	ANSI/IEEE C62.41.2-2002	
		Fluorescent Lamp Ballasts, Method of Measurement of Power Factor (included supplements)	ANSI C82.2:2002	
		Specifications for the Chromaticity of Fluorescent lamps, CCT	ANSI C78.376-2001	
		Colorimetry, CCT	CIE Pub No. 15:2004	
		Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering (CRI)	CIE Pub. No.13.3:1995	
		Tool for Calculating Minimum Center beam Intensity, Minimum Center Beam Intensity – PAR and MR Lamps	Energy Star Online CBCP Tool	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing, Lumen Maintenance, Lifetime	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing, ETLOR	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Light Output Ratio	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Start Time	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Start Time	

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No.	Material or product	Type of activity	Reference number	Remarks
14	CFL Directional Lamps	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Run-up Time	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Run-up Time	
15	CFL Omnidirectional and Decorative Lamps	Electrical and Photometric Measurements of Single-Ended Compact Fluorescent Lamps, Efficacy, Light Output, Center beam Intensity, Lumen Maintenance, Lifetime, CCT, CRI	IES LM-66:2011	
		Life Testing of Compact Fluorescent Lamps, Lumen Maintenance, Lifetime, Rapid Cycle Stress Test	IES LM-65:2010	
		IEEE Recommended Practice on Characterization of surges in Low Voltage AC Power Circuits, Transient Protection	ANSI/IEEE C62.41.2-2002	
		Specifications for the Chromaticity of Fluorescent lamps, CCT	ANSI C78.376-2001	
		Method of Measurement of Fluorescent Lamp Ballasts, Power Factor	ANSI C82.2:2002	
		Colorimetry, CCT	CIE Pub No. 15:2004	
		Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering (CRI)	CIE Pub. No.13.3:1995	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing, Lumen Maintenance, Lifetime	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Start Time	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Start Time	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Run-up Time	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Run-up Time	

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No.	Material or product	Type of activity	Reference number	Remarks
16	LED Directional Lamps	Electrical and Photometric Measurements of Solid-State Lighting Products, Efficacy, Output, Center Beam Intensity, Luminous Intensity Distribution, Lumen Maintenance, Lifetime, CCT, CRI, Color Maintenance, Color Angular Uniformity	IES LM-79:2008	
		Harmonic Emission Limits—Related Power Quality Requirements for Lighting Equipment, Power Factor	ANSI C82.77:2002 Sections 6 and 7	
		IEEE Recommended Practice on Characterization of surges in Low Voltage AC Power Circuits, Transient Protection	ANSI/IEEE C62.41.2-2002	
		Colorimetry, CCT	CIE Pub No. 15:2004	
		Chromaticity of Solid State Lighting Products, CCT	ANSI C78.377-2011	
		Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering (CRI)	CIE Pub. No.13.3:1995	
		Tool for Calculating Minimum Center beam Intensity, Minimum Center Beam Intensity – PAR and MR Lamps	Energy Star Online CBCP Tool	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing, Lumen Maintenance, Lifetime	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Ambient Temperature Life Testing, Lumen Maintenance, Lifetime	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Ambient Temperature Life Testing	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing, ETLOR	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Light Output Ratio	

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No.	Material or product	Type of activity	Reference number	Remarks
16	LED Directional Lamps	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Start Time	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Start Time	
17	LED Omnidirectional and Decorative Lamps	Electrical and Photometric Measurements of Solid-State Lighting Products, Efficacy, Output, Center Beam Intensity, Luminous Intensity Distribution, Lumen Maintenance, Lifetime, CCT, CRI, Color Maintenance, Color Angular Uniformity	IES LM-79:2008	
		Harmonic Emission Limits—Related Power Quality Requirements for Lighting Equipment, Power Factor	ANSI C82.77:2002 Sections 6 and 7	
		IEEE Recommended Practice on Characterization of surges in Low Voltage AC Power Circuits, Transient Protection	ANSI/IEEE C62.41.2-2002	
		Colorimetry, CCT	CIE Pub No. 15:2004	
		Method of Measuring and Specifying Color Rendering of Light Sources, Color Rendering (CRI)	CIE Pub. No.13.3:1995	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing, Lumen Maintenance, Lifetime	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Elevated Temperature Life Testing	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Ambient Temperature Life Testing, Lumen Maintenance, Lifetime	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Ambient Temperature Life Testing	
		ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Start Time	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Start Time	

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No.	Material or product	Type of activity	Reference number	Remarks
		I. Additional Standards related to Energy Star		
1	Reflector type lamps	Photometric Testing	IES LM-35:2002	
2	Floodlights Using Incandescent Filament of Discharge Lamps	Electrical and photometric measurements	IES LM-45:2009	
3	Fluorescent Lamps	Electrical measurements	ANSI C78.375:1997 ANSI C78.375:2014	
4	Fluorescent Lamps	Chromaticity of Fluorescent Lamps	ANSI C78.376-2001	
5	Fluorescent Lamps	Chromaticity of Solid State Lighting Products	ANSI C78.377-2011	
6	Mercury Lamps	Measuring Characteristics	ANSI C78.386:1989	
7	Metal-Halide Lamps	Measuring Characteristics	ANSI C78.387:1987	
8	High Pressure Sodium Lamps	Measuring Characteristics	ANSI C78.388:1990	
9	High-Frequency Fluorescent Lamp Ballast	Measurement of a High-Frequency Fluorescent Lamp Ballast	ANSI C82.11-2002	
10	Light sources	The measurement of luminous flux	CIE 84:1989	
11	Luminaires	The Photometry and goniophotometry of luminaires	CIE121:1996	
12	All LED Products	Measurements of LEDs	CIE127:1997 CIE127:2007	
13	All products	Transient protection	ANSI/IEEE C62.41.1 ANSI/IEEE C62.41.2	
14	Decorative Light Strings	Weathering Test	ASTM G154-06 ASTM G154-12a	
15	Decorative Light Strings	ENERGY STAR Test Method for Decorative Light Strings	ENERGY STAR Test Method for Decorative Light Strings	
16	All products	ENERGY STAR Program requirements Product Specification for Lamps Version 1.0: Final Test Methods and Recommended Practices	ENERGY STAR Program Requirements Product Specification for Lamps Version 1.0: Final Test Methods and Recommended Practices	

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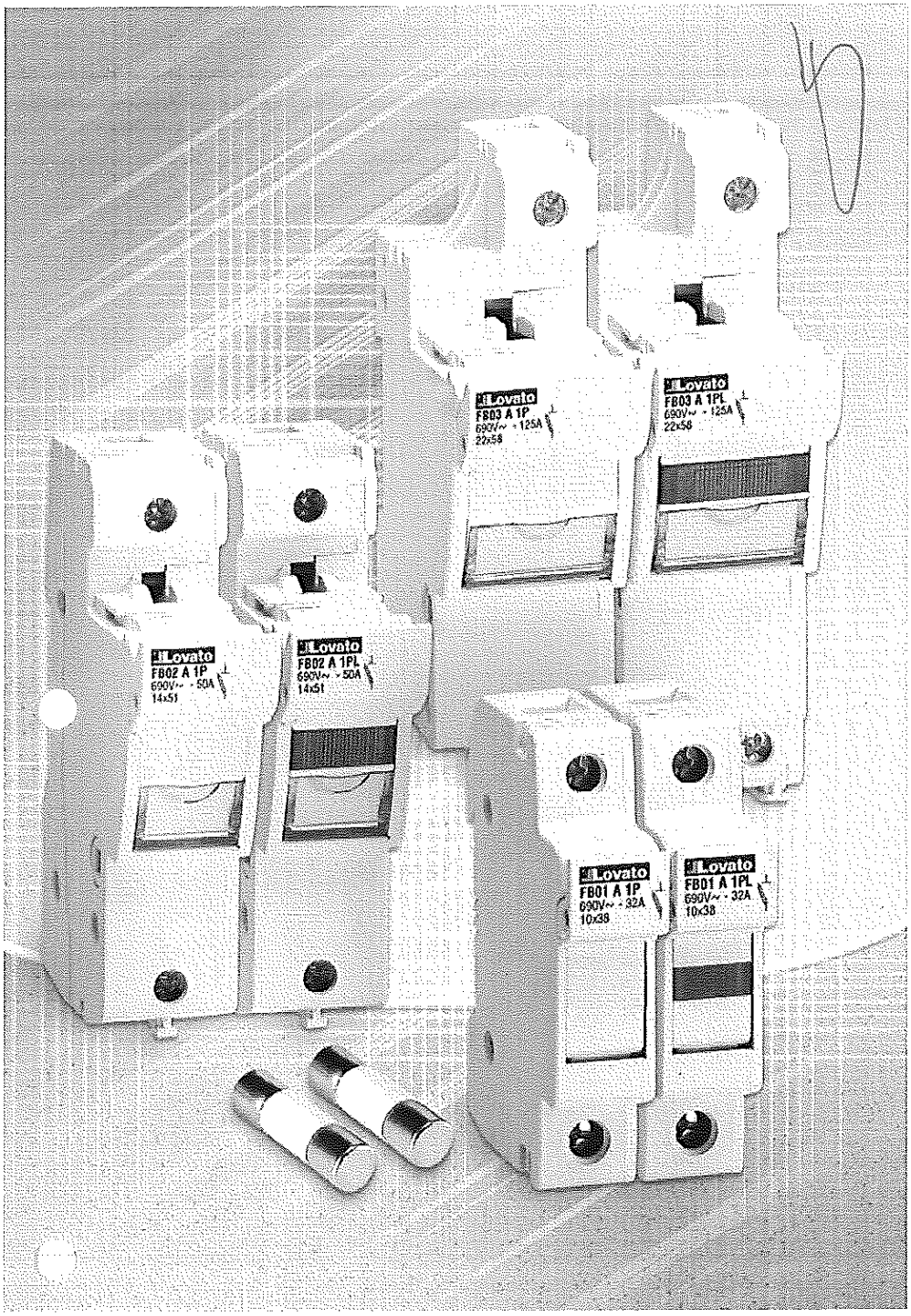
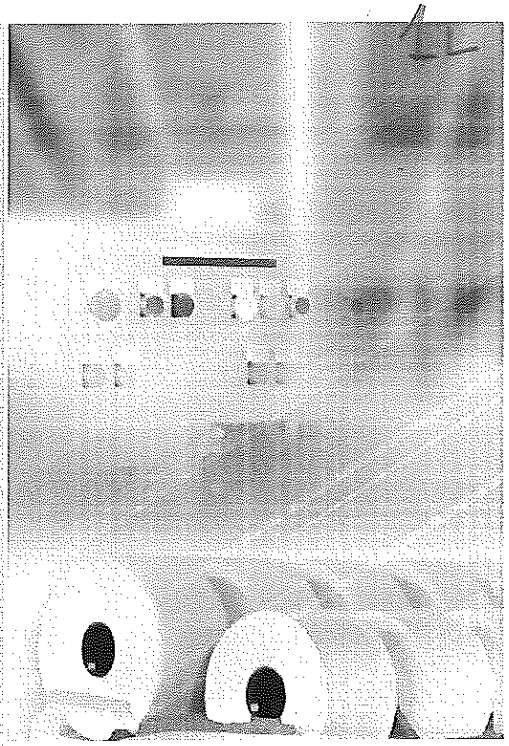
Note 1: Weather-beaten tests of synthetic lenses is subcontracted
Note 2: Salt-nebula test is subcontracted
Note 3: See current list of sub set of standards on the IECEE CBTL website





Fuse holders and fuses

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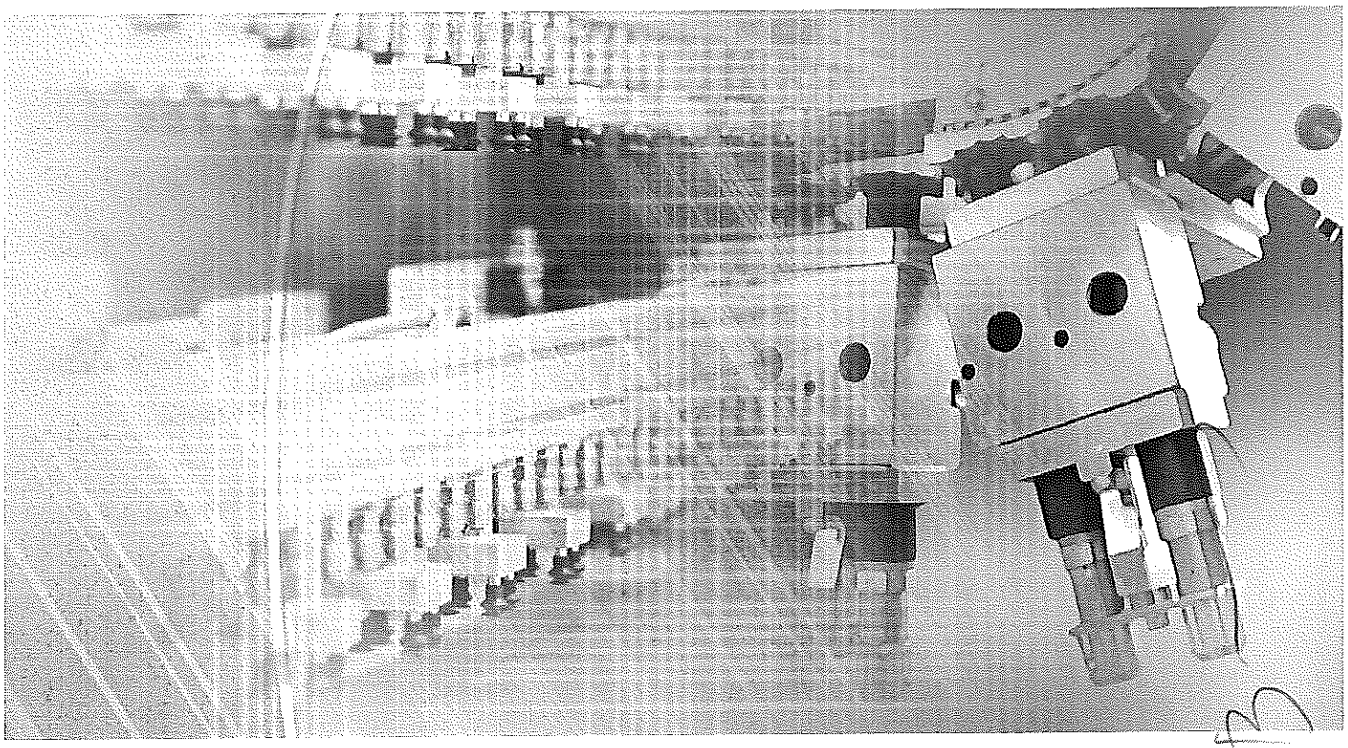
Lovato electric

100% electricity

Fuse holders



- Modular concept for quick assembly of different versions based on various requirements.
- Compact size compliant with standards for electrical equipment.
- DIN rail mounting and removal ease.
- IP20 protection degree, finger safe.
- Sealable cover in open or closed position to increase user's safety.
- Version with status indicator to quickly determine if the fuse is still operative or needs to be replaced.
- Ergonomic grip for easy cover opening.
- Dedicated cylindrical 10x38 DC fuses for photovolatic systems.
- UL and CSA certified versions.

Range	AC			DC	DC FUSES	CLASS CC
Fuse size	10x38	14x51	22x58	10x38	10x38	10x38
Type	gG or aM			gPV	gPV	Class CC
Rated voltage	690VAC			1000VDC / 690VAC	1000VDC	600VAC
Rated current	32A	50A	125A	32A	20A	30A
Utilisation category	AC-22B 500V AC-21B 690V		–	DC-20B 1000VDC AC-21B 690V	DC-20B 1000VDC	AC-22B 500V AC-21B 690V

and fuses

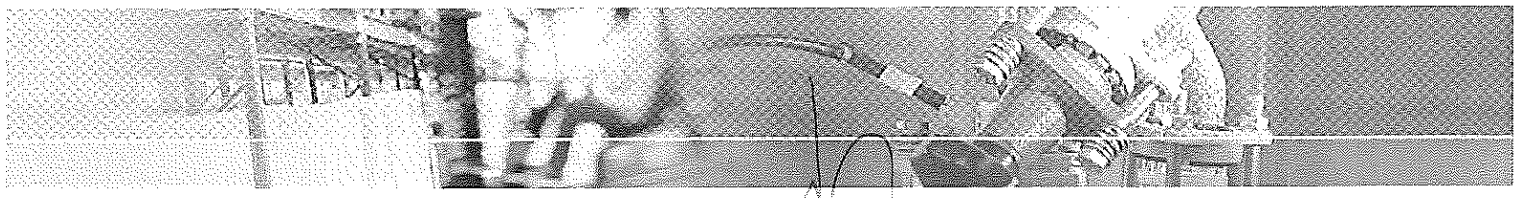
LOVATO Electric fuse holders can be used to protect against overloads and short circuits of electric lines, for motor protection and control and for the protection of electric installations.

This equipment can assure the disconnect function but is not suitable for isolation so cannot be used as switch disconnector.

The range is available in two versions: with or without fuse status indicator. If the fuse fitted on the holder blows, the failure status is shown by the indicator on the fuse-holder front.

All the fuse holders are certified for the North-American market (UL Listed, UL Recognized and CSA). Furthermore, there is a non-certified version in 10x38mm size available too.

Lovato electric

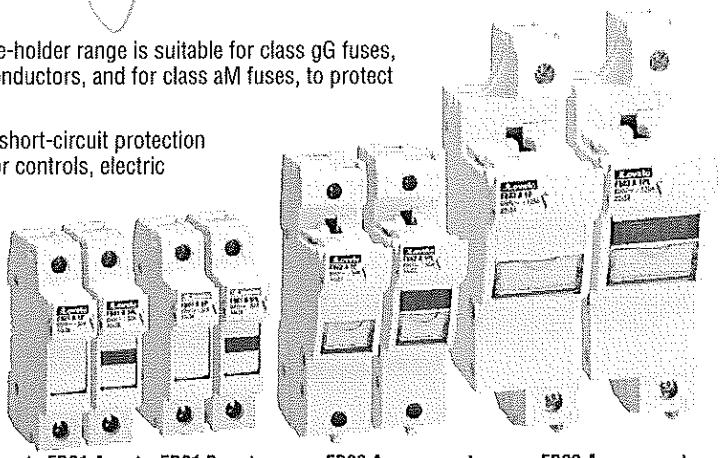


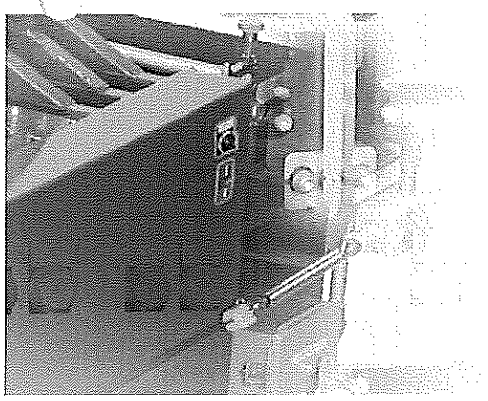
Fuse holders AC RANGE

LOVATO Electric AC fuse-holder range is suitable for class gG fuses, to protect cables and conductors, and for class aM fuses, to protect motor starting.

Function: Overload and short-circuit protection of control circuits, motor controls, electric installations.

Usage: Service industry, electric panels onboard machinery, electric installations in general.





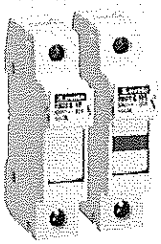
	FB01 A...	FB01 B...	FB02 A...	FB03 A...
Fuse size	10x38		14x51	22x58
Version without indicator	1P, 1P+N, 2P, 3P, 3P+N			
Version with indicator	1P			
Main characteristics				
- Rated voltage	690VAC			
- Rated current	32A		50A	125A
- Utilisation category	AC-22B 500V, AC-21B 690V		AC-22B 500V, AC-21B 690V	AC-21B 690V
- Suitable for fuses	10x38 gG or aM		14x51 gG or aM	22x58 gG or aM
- Maximum conductor cross section	16mm² flexible/stranded; 25mm² rigid/solid		25mm² flexible/stranded; 35mm² rigid/solid	35mm² flexible/stranded; 50mm² rigid/solid
Certifications obtained	UR, CSA	–	cURus	cURus
Compliant with standards	IEC/EN 60947-1, IEC/EN 60947-3, RoHS directive, UL512, CSA C22.2 n°39			

UR: UL Recognized; cURus: UL Recognized for USA and Canada.

CLASS CC Fuse holders RANGE

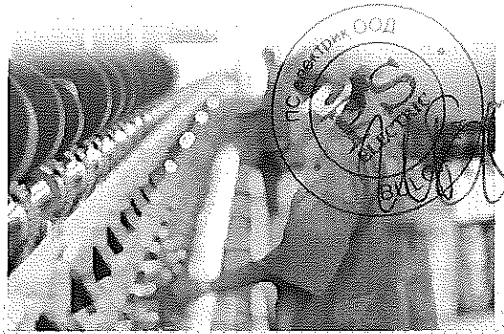
LOVATO Electric fuse holders for class CC fuses are used to protect branch circuits, consisting of conductors and components following the last overcurrent protective device protecting a load, in industrial applications which require high breaking capacity.
Suitable only and exclusively for fitting fuses defined as "class CC", quite common on the North American market.

Usage: Service industry, electric panels onboard machinery, electric installations in general.



FB01 C...

Fuse size	Class CC
Version without indicator	1P, 2P, 3P
Version with indicator	1P
Main characteristics	
- Rated voltage	600VAC
- Rated current	30A
- Utilisation category	AC-22B 500V, AC-21B 690V
- Suitable for fuses	10x38 class CC
- Maximum conductor cross section	16mm² flexible/stranded; 25mm² rigid/solid
Certifications obtained	UR, CSA
Compliant with standards	IEC/EN 60947-1, IEC/EN 60947-3, UL512, RoHS directives, CSA 22.2 n° 39



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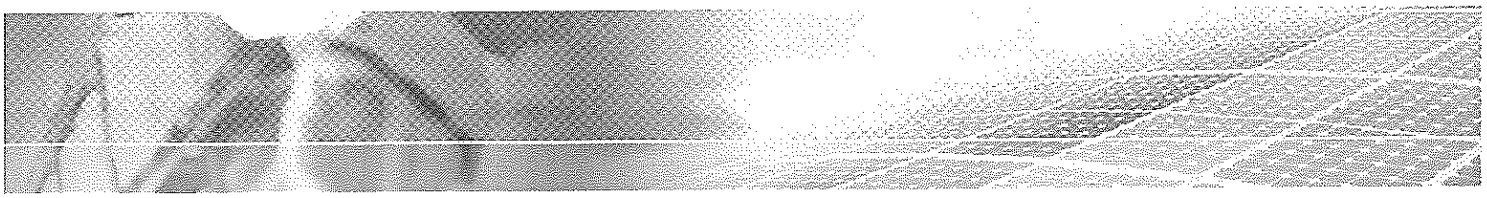
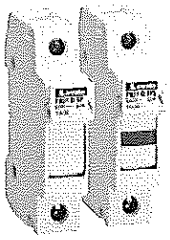


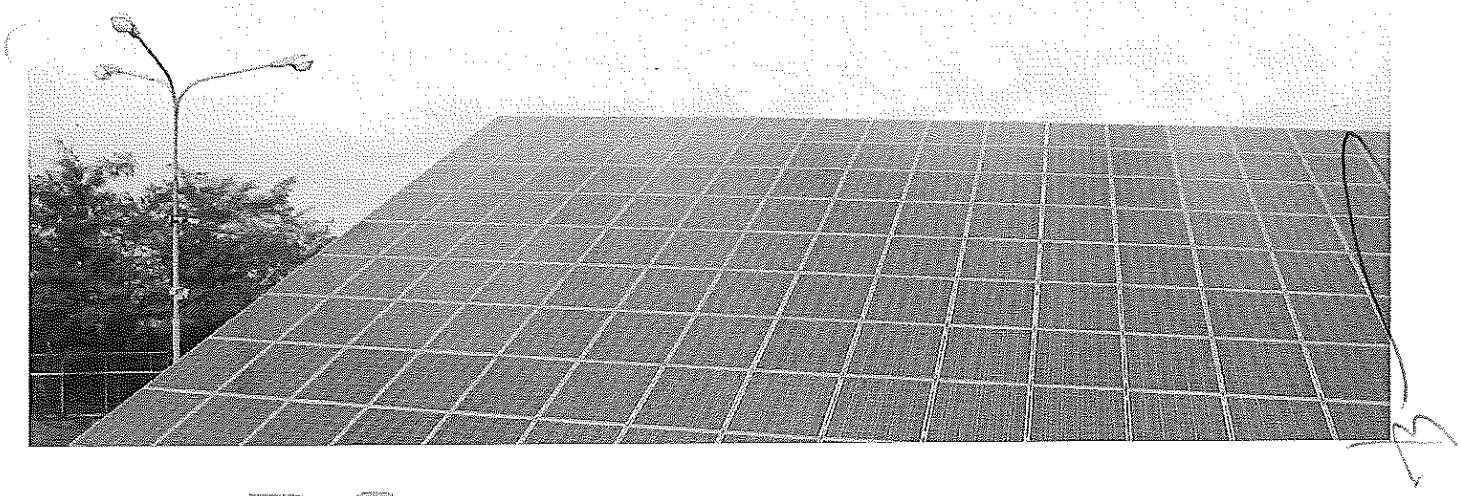
Fuse holders DC RANGE

LOVATO Electric DC fuse holder range is suitable for 1000VDC rated voltage and gPV class.
Used for overload and short-circuit protection of photovoltaic modules (strings) and the relative connecting cables.



FB01 D...

Fuse size	10x38
Version without indicator	1P, 2P
Version with indicator	1P
Main characteristics	
- Rated voltage	1000VDC / 690VAC
- Rated current	32A
- Utilisation category	DC-20B 1000VDC, AC-21B 690V
- Suitable for fuses	10x38 gPV
- Maximum conductor cross section	16mm² flexible/stranded, 25mm² rigid/solid
Compliant with standards	IEC/EN 60947-1, IEC/EN 60947-3, RoHS directive



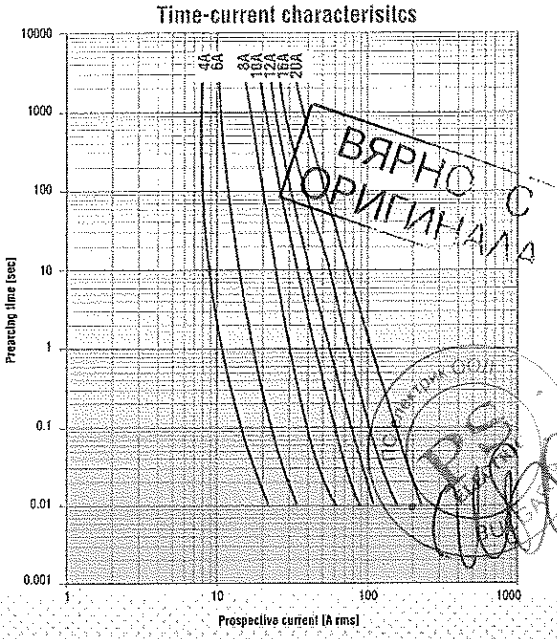
Fuses DC RANGE

LOVATO Electric offers a range of cylindrical 10x38 fuses dedicated to photovoltaic duty and designed for 1000VDC maximum use.
Contrary to AC type fuses that blow for high overcurrent values, this type of DC fuse is designed to blow with low-intensity overcurrent values, created on photovoltaic cells and panels.

FE01 D 0...

Fuses for photovoltaic application	
Breaking capacity	30kA
Mains characteristics	
- Rated voltage	1000VDC
- Rated current	2...20A

Time-current characteristics



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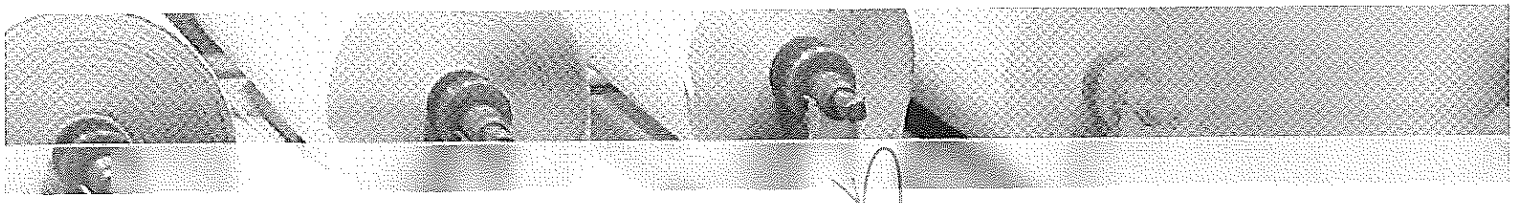
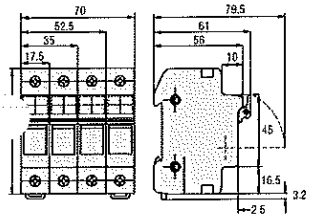


TECHNICAL CHARACTERISTICS

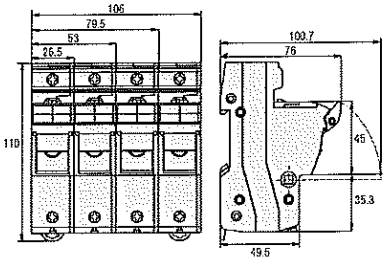
Type		FB01 A...	FB01 B...	FB02 A...	FB03 A...	FB01 C...	FB01 D...
Range		**AC**	**AC**	**AC**	**AC**	**Class CC (AC)**	**DC**
Certifications obtained		UR, CSA	–	cURus	cURus	UL, CSA	–
Maximum power dissipation		3W	3W	5W	9.5W	3W	4W
Derating factor of current Ie for different ambient temperatures	20°C	1	1	1	1	1	1
	30°C	0.95	0.95	0.95	0.95	0.95	0.95
	40°C	0.9	0.9	0.9	0.9	0.9	0.9
	50°C	0.8	0.8	0.8	0.8	0.8	0.8
	60°C	0.7	0.7	0.7	0.7	0.7	0.7
	70°C	0.5	0.5	0.5	0.5	0.5	0.5
Derating factor of current Ie for sid-by-side fuse holders - n° poles	1-3	1	1	1	1	1	1
	4-6	0.8	0.8	0.8	0.8	0.8	0.8
	7-9	0.7	0.7	0.7	0.7	0.7	0.7
	>10	0.6	0.6	0.6	0.6	0.6	0.6
Voltage for status indicator		120...690VAC	120...690VAC	230...690VAC	230...690VAC	120...600VAC	350...1000VDC
ONNECTIONS							
Maximum tightening torque		2.5Nm/22lbin	2.5Nm/22lbin	3Nm/26lbin	4Nm/35lbin	2.5Nm/22lbin	2.5Nm/22lbin
Maximum conductor cross section	flexible/stranded	1-16mm²/8 AWG	1-16mm²/6 AWG	1-25mm²/4 AWG	1-35mm²/2 AWG	1-16mm²/8 AWG	1-16mm²/6 AWG
	rigid/solid	1-25mm²/8 AWG	1-25mm²/4 AWG	1-35mm²/2 AWG	1-50mm²/1 AWG	1-25mm²/10 AWG	1-25mm²/4 AWG
AMBIENT CONDITIONS							
Operating temperature		-20...+70°C	-20...+70°C	-20...+70°C	-20...+70°C	-20...+70°C	-20...+70°C
Storage temperature		-40...+80°C	-40...+80°C	-40...+80°C	-40...+80°C	-40...+80°C	-40...+80°C
HOUSING							
Din rail mount version		Yes	Yes	Yes	Yes	Yes	Yes
Degree of protection		IP20	IP20	IP20	IP20	IP20	IP20

DIMENSIONS

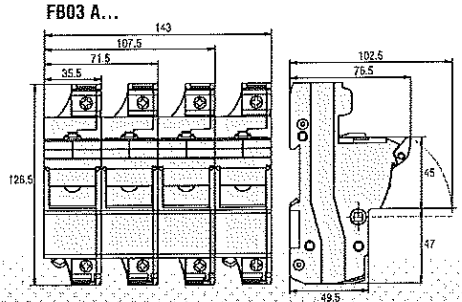
FB01 A... FB01 B... FB01 C... FB01 D...



FB02 A...

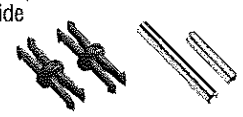


FB03 A...



ASSEMBLY

Accessories: Coupling elements (clips and pins) to mount and fix fuse holders side by side



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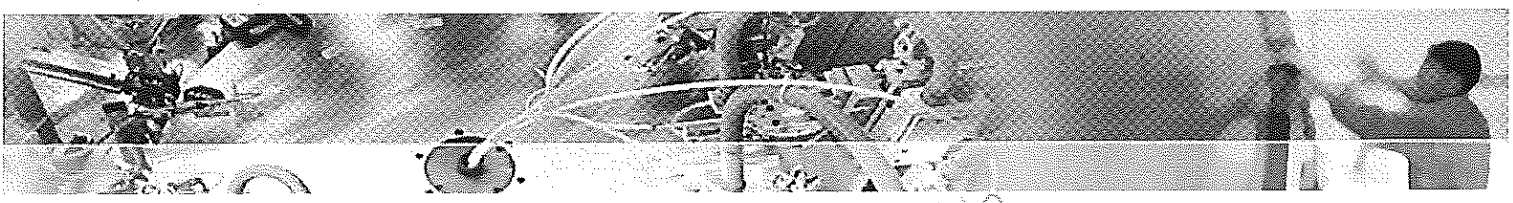
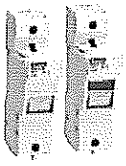
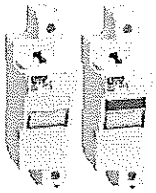


HOW TO ORDER





FUSE HOLDERS

Order code	Pole arrangement	DIN modules	Status indicator	Rated voltage Ue	Rated nominale Ie	Qty per pkg	Weight
		n°		[V]	[A]	n°	[kg]
Fuse holder (fuse disconnector), 10x38, certified by UR and CSA.							
FB01 A 1P	1 pole	1	–	690VAC	32	12	0.750
FB01 A 1PL	1 pole	1	Yes	690VAC	32	12	0.750
FB01 A 1N	1 pole + N	2	–	690VAC	32	6	0.750
FB01 A 2P	2 poles	2	–	690VAC	32	6	0.750
FB01 A 3P	3 poles	3	–	690VAC	32	4	0.750
FB01 A 3N	3 poles + N	4	–	690VAC	32	3	0.750
Fuse holder (fuse disconnector), 14x51, certified by cURus.							
FB02 A 1P	1 pole	1.5	–	690VAC	50	6	1.000
FB02 A 1PL	1 pole	1.5	Yes	690VAC	50	6	1.000
FB02 A 1N	1 pole + N	3	–	690VAC	50	3	1.000
FB02 A 2P	2 poles	3	–	690VAC	50	3	1.000
FB02 A 3P	3 poles	4.5	–	690VAC	50	2	1.000
FB02 A 3N	3 poles + N	6	–	690VAC	50	1	0.650
Fuse holder (fuse disconnector), 22x58, certified byt cURus.							
FB03 A 1P	1 pole	2	–	690VAC	125	6	1.050
FB03 A 1PL	1 pole	2	Yes	690VAC	125	6	1.050
FB03 A 1N	1 pole + N	4	–	690VAC	125	3	1.050
FB03 A 2P	2 poles	4	–	690VAC	125	3	1.050
FB03 A 3P	3 poles	6	–	690VAC	125	2	1.050
FB03 A 3N	3 poles + N	8	–	690VAC	125	1	0.70c
Fuse holder (fuse disconnector), class CC, certified by UL and CSA.							
FB01 C 1P	1 pole	1	–	600VAC	30	12	0.750
FB01 C 1PL	1 pole	1	Yes	600VAC	30	12	0.750
FB01 C 2P	2 poles	2	–	600VAC	30	6	0.750
FB01 C 3P	3 poles	3	–	600VAC	30	4	0.750
Fuse holder (fuse disconnector), 10x38.							
FB01 B 1P	1 pole	1	–	690VAC	32	12	0.750
FB01 B 1PL	1 pole	1	Yes	690VAC	32	12	0.750
FB01 B 1N	1 pole + N	2	–	690VAC	32	6	0.750
FB01 B 2P	2 poles	2	–	690VAC	32	6	0.750
FB01 B 3P	3 poles	3	–	690VAC	32	4	0.750
FB01 B 3N	3 poles + N	4	–	690VAC	32	3	0.750
Fuse holder (fuse disconnector), 10x38, for photovoltaic applications.							
FB01 D 1P	1 pole	1	–	1000VDC	32	12	0.750
FB01 D 1PL	1 pole	1	Yes	1000VDC	32	12	0.750
FB01 D 2P	2 poles	2	–	1000VDC	32	6	0.750

FUSES FOR PHOTOVOLTAIC APPLICATIONS

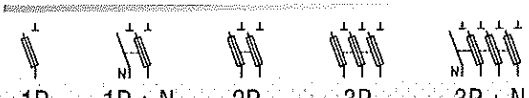
Order code	Rated breaking capacity	Rated voltage Ue	Rated current Ie	Qty per pkg	Weight
	[kA]	[V]	[A]	n°	[kg]
FE01 D 00200	30	1000VDC	2	10	0.130
FE01 D 00400	30	1000VDC	4	10	0.130
FE01 D 00600	30	1000VDC	6	10	0.130
FE01 D 00800	30	1000VDC	8	10	0.130
FE01 D 01000	30	1000VDC	10	10	0.130
FE01 D 01200	30	1000VDC	12	10	0.130
FE01 D 01600	30	1000VDC	16	10	0.130
FE01 D 02000	30	1000VDC	20	10	0.130

ACCESSORIES

Order code	Description	Qty per pkg	Weight
		n°	[kg]
FBX 00	Coupling clip for 10x38, 14x51 and 22x58 sizes	100	0.050
FBX 01	Coupling pin for 10x38 size	100	0.130
FBX 02	Coupling pin for 14x51 and 22x58 sizes	100	0.150

N.B. Two clips FBX 00 and one pin FBX 01 are needed to couple two fuse holder FB01... types.
Three clips FBX 00 and one pin FBX 02 are needed to couple two fuse holder FB02... and FB03... types.

WIRING DIAGRAMS



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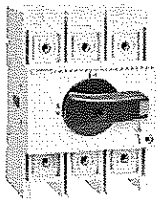
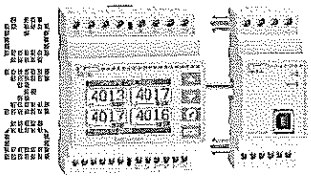
new

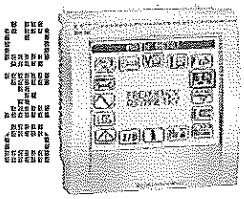
2011



Switch disconnectors
16 to 1600A

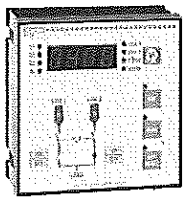


Modular digital multimeters



Flush-mount digital multimeters
and power analyzers

Energy meters



Automatic transfer switch
controllers

Switching power supplies

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100% electricity

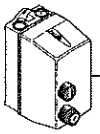
Planet switch


Motor protection circuit breakers


Switch disconnectors


Contactors


Motor protection relays


Electromechanical starters


Control and signalling units


Limit , micro and foot switches


Rotary cam switches

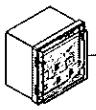
Planet din


Modular contactors


Time relays

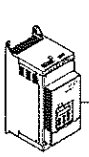

Protection relays

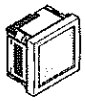

Level control relays

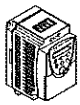

Earth leakage relays


Fuse holders

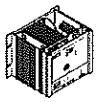
Planet Logic

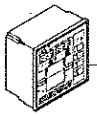

Metering instruments and current transformers


Soft starters

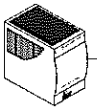

AC motor drives

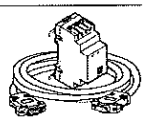

Automatic power factor controllers


Automatic battery chargers


Automatic transfer switch controllers


Programmable logic relays


Switching power supplies


Expansion modules and accessories

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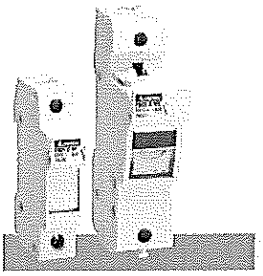
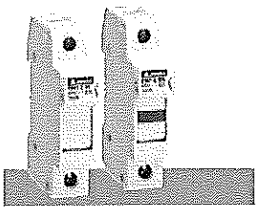


Page 12-2

AC FUSE HOLDERS

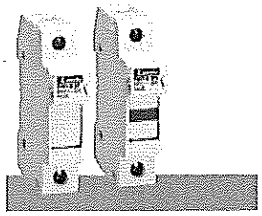
- Version without indicator: 1P, 1P+N, 2P, 3P, 3P+N
- Version with indicator: 1P
- For fuses 10x38, 14x51 and 22x58mm IEC class gG or aM.
- Rated current: 32A, 50A, 125A
- Rated voltage: 690VAC.



Page 12-2

AC FUSE HOLDERS CLASS CC FOR NORTH AMERICAN MARKET

- Version without indicator: 1P, 2P, 3P
- Version with indicator: 1P
- For 10x38mm UL/CSA class CC fuses
- Rated current: 30A
- Rated voltage: 600VAC.



Page 12-3

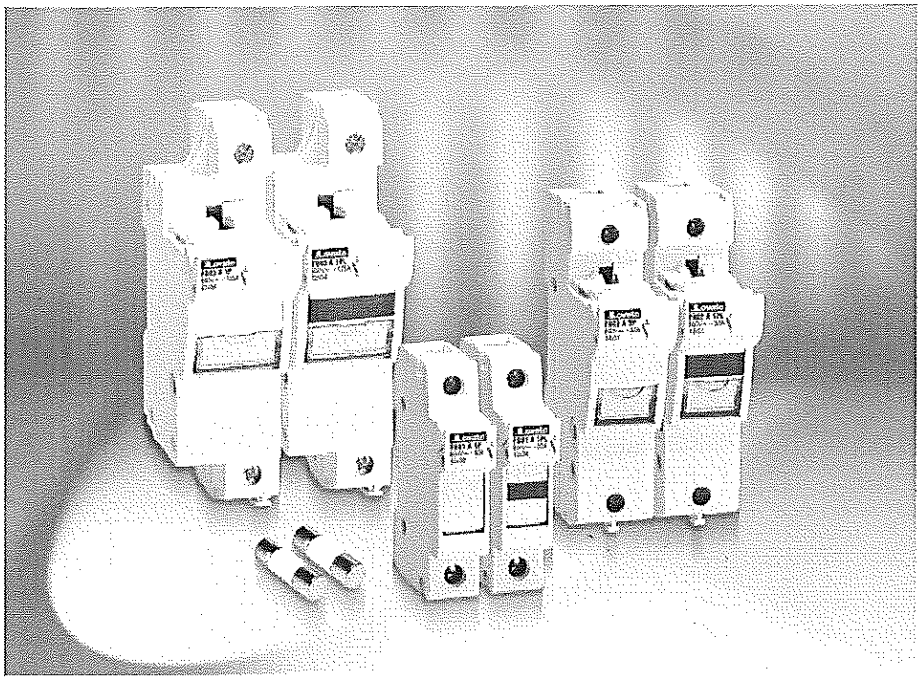
DC FUSE HOLDERS FOR PHOTOVOLTAIC APPLICATIONS

- Version without indicator: 1P, 2P
- Version with indicator: 1P, 2P
- For 10x38mm IEC class gPV fuses
- Rated current: 32A
- Rated voltage: 1000VDC
- IEC utilisation category: DC20B.

Page 12-3

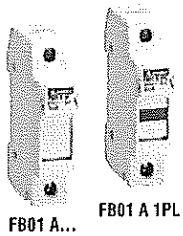
DC FUSES FOR PHOTOVOLTAIC APPLICATIONS

- 10x38mm, IEC class gPV
- Rated current: 20A
- Rated voltage: 1000VDC.



- Modular size for 10x38, 14x51 and 22x58mm fuses
- Finger safe - IP20 IEC degree of protection against accidental contact with live parts and with sealable cover for operators' safety
- Version with status indicator to quickly determine if the fuse is still operative or needs to be replaced
- UL and CSA certified versions.

Fuse holders UL Recognized and CSA certified


FB01 A...

FB01 A 1PL


FB02 A...


FB02 A 1PL


FB03 A...


FB03 A 1PL

Order code	Pole arrangement	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]
For 10x38mm fuses. 32A rated current at 690VAC.					
FB01 A 1P	1P	—	1	12	0.066
FB01 A 1PL	1P	YES	1	12	0.065
FB01 A 1M❶	1P+N	—	1	12	0.062
FB01 A 1N	1P+N	—	2	6	0.134
FB01 A 2P	2P	—	2	6	0.132
FB01 A 3P	3P	—	3	4	0.188
FB01 A 3N	3P+N	—	4	3	0.260
For 14x51mm fuses. 50A rated current at 690VAC.					
FB02 A 1P	1P	—	1	12	0.113
FB02 A 1PL	1P	YES	1	12	0.114
FB02 A 1N	1P+N	—	2	6	0.237
FB02 A 2P	2P	—	2	6	0.224
FB02 A 3P	3P	—	3	4	0.335
FB02 A 3N	3P+N	—	4	3	0.460
For 22x58mm fuses. 125A rated current at 690VAC.					
FB03 A 1P	1P	—	1	12	0.167
FB03 A 1PL	1P	YES	1	12	0.167
FB03 A 1N	1P+N	—	2	6	0.354
FB03 A 2P	2P	—	2	6	0.334
FB03 A 3P	3P	—	3	4	0.500
FB03 A 3N	3P+N	—	4	3	0.720

❶ Not certified.

Operational characteristics
- IEC rated voltage Ue:
  - 690VAC (FB01 A 1M excluded)
  - 400VAC (FB01 A 1M only)
- IEC rated current Ie:
  - FB01 A: 32A
  - FB02 A: 50A
  - FB03 A: 125A
- IEC utilisation category:
  - FB01 A: AC22B 500V, AC21B 690V (except FB01 A 1M: AC22B 400V)
  - FB02 A: AC22B 500V, AC21B 690V
  - FB03 A: AC21B 690V
- Suitable for IEC fuse class: gG and aM
- IEC degree of protection: IP20.

Certifications and compliance
Certifications obtained:

Type	UL Recognized for USA (File E343395)	CSA certified (File 252040 class 6255)	UL Recognized for USA and Canada (File E343395)
FB01 A 1P, FB01 A 1PL, FB01 A 1N	●	●	—
FB02 A...	—	—	●
FB03 A...	—	—	●

● Certification obtained.

"UL Recognized": Products having this type of marking are intended for use as components of complete workshop-assembled equipment.

Compliant with standards: IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-1, IEC/EN 60947-3, UL 4248-1, UL 4248-4, CSA C22.2 n°4248.1, CSA C22.2 n°4248.4.

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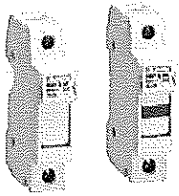
Fuse holders


FB01 B...

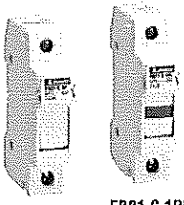
FB01 B 1PL

Order code	Pole arrangement	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]
For 10x38mm fuses. 32A rated current at 690VAC.					
FB01 B 1P	1P	—	1	12	0.062
FB01 B 1PL	1P	YES	1	12	0.064
FB01 B 1N	1P+N	—	2	6	0.127
FB01 B 2P	2P	—	2	6	0.128
FB01 B 3P	3P	—	3	4	0.185
FB01 B 3N	3P+N	—	4	3	0.247

Operational characteristics
- IEC rated voltage Ue: 690VAC
- IEC rated current Ie: 32A
- IEC utilisation category: AC22B 500V, AC21B 690V
- Suitable for IEC fuse class: gG and aM
- IEC degree of protection IP20.

Reference standards
Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-3, IEC/EN 60269-1, IEC/EN 60269-2.

Fuse holders UL Listed and CSA certified for class CC fuses for North American market


FB01 C...

FB01 C 1PL

Order code	Pole arrangement	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]
For 10x38mm fuses. 30A rated current at 600VAC.					
FB01 C 1P	1P	—	1	12	0.070
FB01 C 1PL	1P	YES	1	12	0.072
FB01 C 2P	2P	—	2	6	0.140
FB01 C 3P	3P	—	3	4	0.210

NOTE: UL Listed and CSA certified as "Fuseholders, Cartridge Fuse" for use with Class CC fuses. Interrupting rating 200,000 Amps rms symmetrical. Voltage rating 600V. Current rating 30A.

Operational characteristics
- IEC rated voltage Ue: 600VAC
- IEC rated current Ie: 30A
- IEC utilisation category: AC22B 500V, AC21B 690V
- Suitable for UL/CSA fuse class: CC
- IEC degree of protection IP20.

Certifications and compliance
Certifications obtained: UL Listed (File E343395) and CSA certified (File 252040 class 6225).
Compliant with standards: IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-1, IEC/EN 60947-3, UL 4248-1, UL 4248-4, CSA C22.2 n°4248.1, CSA C22.2 n°4248.4.

Fuse holders for photovoltaic applications

FB01 D...

FB01 D 1PL

Order code	Pole arrangement	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]
For 10x38mm fuses. 32A rated current at 1000VDC.					
FB01 D 1P	1P	—	1	12	0.064
FB01 D 1PL	1P	YES	1	12	0.065
FB01 D 2P	2P	—	2	6	0.127
FB01 D 2PL	2P	YES	2	6	0.130

Operational characteristics
- IEC rated voltage Ue: 1000VDC
- IEC rated current Ie: 32A
- IEC utilisation category: DC20B 1000VDC
- Suitable for IEC fuse class: gPV
- IEC degree of protection: IP20.

Reference standards
Compliant with standards: IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-1, IEC/EN 60947-3.

Fuses for photovoltaic applications

FE01 D...

Order code	Rated current In	Qty per pkg	Wt
	[A]	n°	[kg]
For 10x38mm fuses. 30kA breaking capacity at 1000VDC.			
FE01 D 00200	2	10	0.008
FE01 D 00400	4	10	0.008
FE01 D 00600	6	10	0.008
FE01 D 00800	8	10	0.008
FE01 D 01000	10	10	0.008
FE01 D 01200	12	10	0.008
FE01 D 01600	16	10	0.008
FE01 D 02000	20	10	0.008

Operational characteristics
- IEC rated voltage Ue: 1000VDC
- IEC rated current Ie: 2-20A
- IEC fuse class: gPV.

Reference standards
Compliant with standards: IEC/EN 60269-6.

Accessories

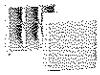
FBX 00

FBX 01
FBX 02

FBX 05

FBX 07

FBX 08



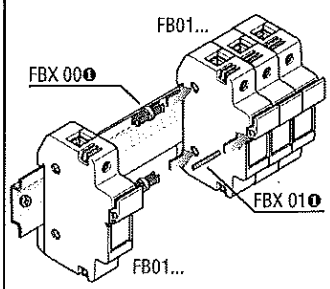
FBX 11

Order code	Description	Qty per pkg	Wt
	[A]	n°	[kg]
FBX 00❶	Coupling clip for 10x38, 14x51 and 22x58mm sizes❶	100	0.003
FBX 01❶	Coupling pin for 10x38mm size❶	100	0.005
FBX 02	Coupling pin for 14x51 and 22x58mm sizes	100	0.008
For FB01 A... and FB01 B... types.			
FBX 05	Three-phase connection busbar, for 57 modules in total, 1m/3.3ft long	10	0.465
FBX 07	One-pole terminal for 25mm² max conductor	25	0.010
FBX 08	One-pole terminal for 50mm² max conductor	25	0.020
FBX 11	End cap for FBX05 busbar	50	0.001

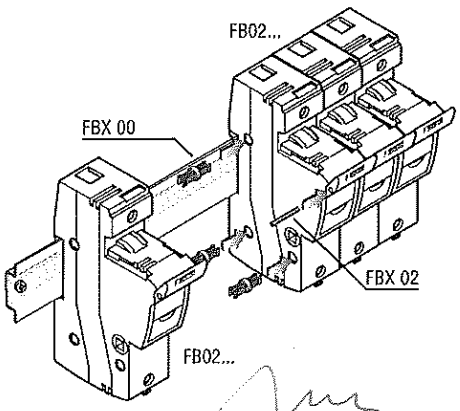
❶ Not suitable for FB01 B1N, FB01 B2P, FB01 B3P and FB01 B3N types.

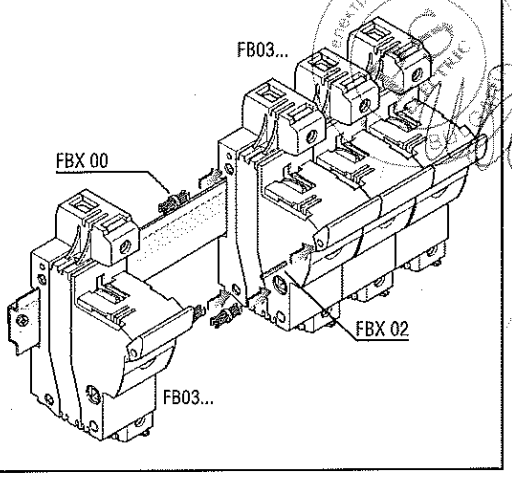
General and operational characteristics
THREE-PHASE BUSBAR
- Central point of power supply: 130A max
- Side point of power supply: 80A max
- Pitch: 18mm/0.7in
- Busbar section: 10mm²
- Number of modules/poles: 57
- For paralleling connection
- Length (standard supplied): 1m/3.3ft which can be cut in shorter sections.

Fuse holder assembly in multiple pole configuration



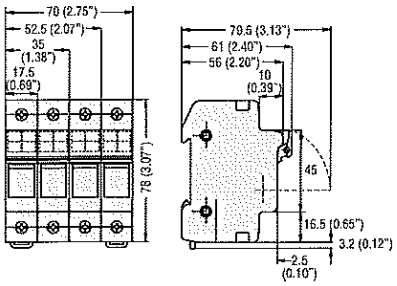
❶ Not suitable for FB01 B1N, FB01 B2P, FB01 B3P and FB01 B3N types.



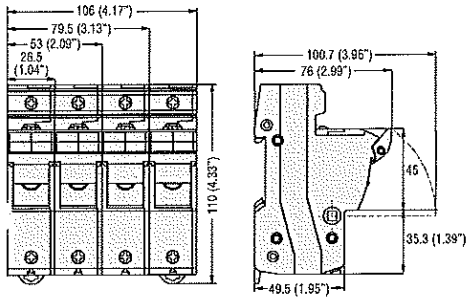


FUSE HOLDERS

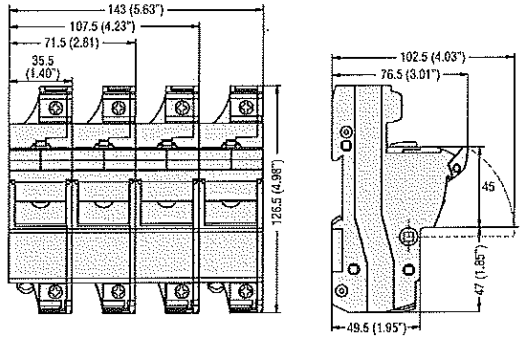
FB01 A... FB01 B... FB01 C... FB01 D...



FB02 A...



FB03 A...



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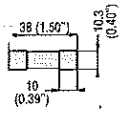
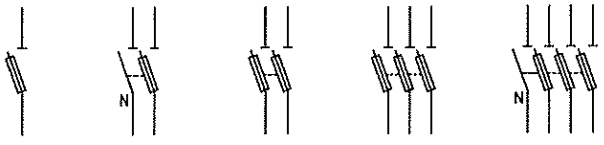
FUSES

FE01 D 0...



ВЯРНО С ОРИГИНАЛА

Wiring diagrams



1P 1P+N 2P 3P 3P+N

TYPE		FB01 A...	FB01 B...	FB02 A...	FB03 A...	FB01 C...	FB01 D...
Range		AC				Class CC (AC)	DC
IEC maximum rated current In		32A		50A	125A	30A	32A
IEC maximum rated voltage In		690VAC; 400VAC ❶	690VAC			600VAC	1000VDC
IEC utilisation category		AC22B 500V; AC21B 690V; AC22B 400V ❶			AC21B 690V	AC22B 500V; AC21B 690V	DC20B 1000VDC
Maximum power dissipation		3W		5W	9.5W	3W	4W
Derating factor of current In for different ambient temperatures	20°C	1					
	30°C	0.95					
	40°C	0.9					
	50°C	0.8					
	60°C	0.7					
	70°C	0.5					
Derating factor of current In for side-by-side fuse holders - n° poles	1-4	1					
	5-6	0.8					
	7-9	0.7					
	≥10	0.6					
Voltage for status indicator		120...690VAC		230...690VAC		120...600VAC	350...1000VDC

CONNECTIONS						
Maximum tightening torque	2.5Nm; 2Nm ❶ / 22lbin	3Nm / 26lbin	4Nm / 35lbin	2.5Nm / 22lbin		
Maximum conductor cross section	flexible/stranded	1x16mm²; 1-16mm² ❶ / 8AWG	1x25mm² / 6AWG	1x35mm² / 2AWG	1x16mm² / 8AWG	1x16mm² / 6AWG
	rigid/solid	1x25mm²; 1-10mm² ❶ / 8AWG	1x35mm² / 8AWG	1x50mm² / 1AWG	1x25mm² / 10AWG	1x25mm² / 4AWG

AMBIENT CONDITIONS	
Operating temperature	-20...+70°C
Storage temperature	-40...+80°C
Maximum altitude	3,000m
Operation position	Any
Fixing	On 35mm DIN rail (IEC/EN 60715)

❶ Values valid only for FB01 A 1M type.

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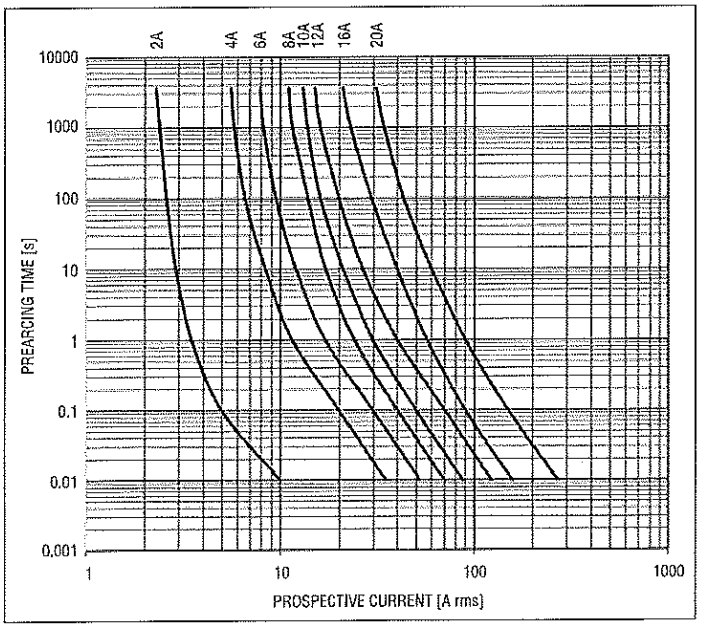
TECHNICAL CHARACTERISTICS FOR FE01 D... FUSES

TYPE	Rated current [A]	Power consumption at 0.7 In [W]	Power consumption at In [W]	Prearcing I²t [A²s]	Total I²t at 1000VDC [A²s]
FE01 D 00200	2	0.62	1.54	1.78	6.5
FE01 D 00400	4	0.73	1.84	3	11
FE01 D 00600	6	0.96	2.4	8.5	32
FE01 D 00800	8	1.02	2.55	25	93
FE01 D 01000	10	1.03	2.58	11	52
FE01 D 01200	12	1.04	2.6	25	116
FE01 D 01600	16	1.08	2.7	33	152
FE01 D 02000	20	1.16	2.9	85	390

TIME-CURRENT CHARACTERISTICS FOR FE01 D... FUSES



ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

Долуподписаният, Владимир Лазаров- Управител на ВИВ-ИЗОМАТИК ООД,

В качеството си на търговски представител на Phoenix Contact GmbH и Lovato Electric за България

Декларирам че, материалите, с които се асемблират клемореди тип ИК7ТК3Р, отговарят на следните стандарти и нормативни актове:

-Клеми тип URTK/S и аксесоари за тях, производство на Phoenix Contact GmbH отговарят на следните технически одобрения и нормативни актове
IEC 60947-7-1

-Разединяеми предпазител-разединители тип FB1, производство на Lovato Electric отговарят на следните технически одобрения и нормативни актове :
IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-1, IEC/EN 60947-3.

На основание чл. 2
от ЗЗЛД

25.10.2013

ВЯРНО С ОРИГИНАЛА

DEVICE UNDER TEST ..... **Fuse holder *FB01B types***

MANUFACTURER ..... Lovato Electric S.p.A.

TYPE OF TEST ..... **Temperature rise test on FB01B fuse holders**

DATE OF DEVICE RECEIPT 27/04/2011

START / END TESTING ..... 29/04/2011 – 13/05/2011

SAMPLES STORING ..... ☒ Eliminated / returned to customer ☐ Storage :

INDEX .....

ISSUE 16/05/2011

COMPILED ..... STAFF LPR

APPROVED ..... RESP. LPR

ВЯРНО С ОРИГИНАЛА

1. PURPOSE OF TESTING

Requested test (according to the customer specification):
Temperature rise at 690V – 32A on FB01B fuse holders

Test purpose:
"Verify the good function of FB01B fuse holders ."

Test target:
Pass the test.

2. TEST SAMPLES

N. 1 FB01B1P fuse holder - 32A (10 x 38 mm), batch production number ...[1]
N. 1 FB01B2P fuse holder - 32A (10 x 38 mm), batch production number ...[1]
N. 1 FB01B3P fuse holder - 32A (10 X 38 mm), batch production number ...[1]

3. TEST METHOD

IEC 60947-3 (2008-08) Ed. 3.0 + IEC 60947-1 Ed. 5.1 (2011-03)
Temperature rise (§ 8.3.3.1)

4. TEST PROCEDURES

Temperature rise..... Test instruction LPR 051-1, rev. 4, dated 11/10/2010.

ВЯРНО С ОРИГИНАЛА

[1] not available
[1] not available
[1] not available

5. TEST RESULTS

5.1 TEMPERATURE RISE

5.1.1 WITH LEGRAND FUSE 32 A gG 400 V

Sample under test.....N. 1 FB01B1P - 32A
N. 1 FB01B2P - 32A
N. 1 FB01B3P - 32A

Test conditions

Ambient temperature.....21 °C
Relative humidity.....46 %
Installation.....in vertical way, on DIN RAIL 35mm

Data sheet fusible used:
- Supplier .....Legrand
- Code .....cod. 133 32

Test parameters

Wiring of the main circuit
- cables section / length .....6,0 mm^2 / 1,0 m
- screws tightening nominal torque .....2,0 ÷ 2,5 N.m
- screws applied tightening torque .....2,0 N·m

Supply of the main circuit
- rated current.....Ith = 25 - 32 A
- test current.....I = 32 A
- supply frequency.....50 Hz

Test results

See next page.

ВЯРНО С ОРИГИНАЛА

Temperature rise main circuit

	[K]			Standard limit EN60947-1 tab. 2
	One pole fuse holder FB01B1P	2 pole fuse holder FB01B2P	3 pole fuse holder FB01B3P	
Terminal L1	43	54	57	65
Terminal T1	39	51	52	65
Terminal L2	-	55	61	65
Terminal T2	-	49	58	65
Terminal L3	-	-	57	65
Terminal T3	-	-	50	65
Note .....:	Silver plated-brass terminal			

Temperature rise for accessibile parts

	[K]			Standard limit EN60947-1 tab. 3
	One pole fuse holder FB01B1P	2 pole fuse holder FB01B2P	3 pole fuse holder FB01B3P	
Line side	14	24	29	40
Load side	10	19	21	40
Left side	24	30	32	40
Right side	22	30	31	40
On front	18	24	29	40
Lever	9	16	17	40

ВЯРНО С ОРИГИНАЛА

6. TEST EQUIPMENT AND INSTRUMENTS

6.1. TEST EQUIPMENT

Description	Used for	Full scale	Code
Current supply station	Power supply main circuit	20V – 50A	LPRA 065

6.2. MEASURING INSTRUMENTS

Description	Used to measure	Full scale	Code	Calibration expiration date
Thermohygrometer	Ambient temperature	-5 ÷ 50 °C	LPR 165	27/10/2011
Thermohygrometer	Relative humidity	10 ÷ 90%	LPR 165	27/10/2011
Termometric instrument	Temperature rise	-30 ÷ +200 °C	LPR 201	10/01/2012
Termocouple T type	Temperature rise	-30 ÷ +200 °C	L PR 201	10/01/2012
Termocouple T type	Temperature rise	-30 ÷ +200 °C	L PR 201.13	10/01/2012
Current transformer	Main circuit current	1.004/50 A	LPR 155	11/05/2014
Digital multimeter	Main circuit current	10 A	LPR 55	11/05/2012
Digital multimeter	Drop voltage	mV - Autom.	LPR 125	11/05/2012
Dynamometric screw driver	Main terminal screw tightening	6,0 Nm	LPR 231	07/01/2012

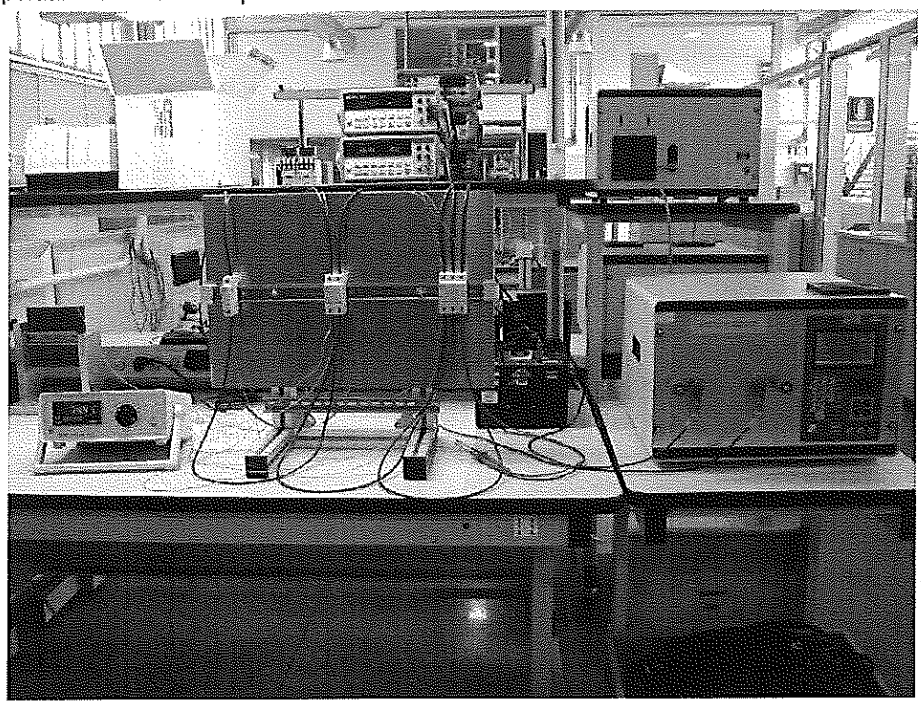
7. REMARKS & ANALYS

Temperature rise test 690V – 32A: test passed

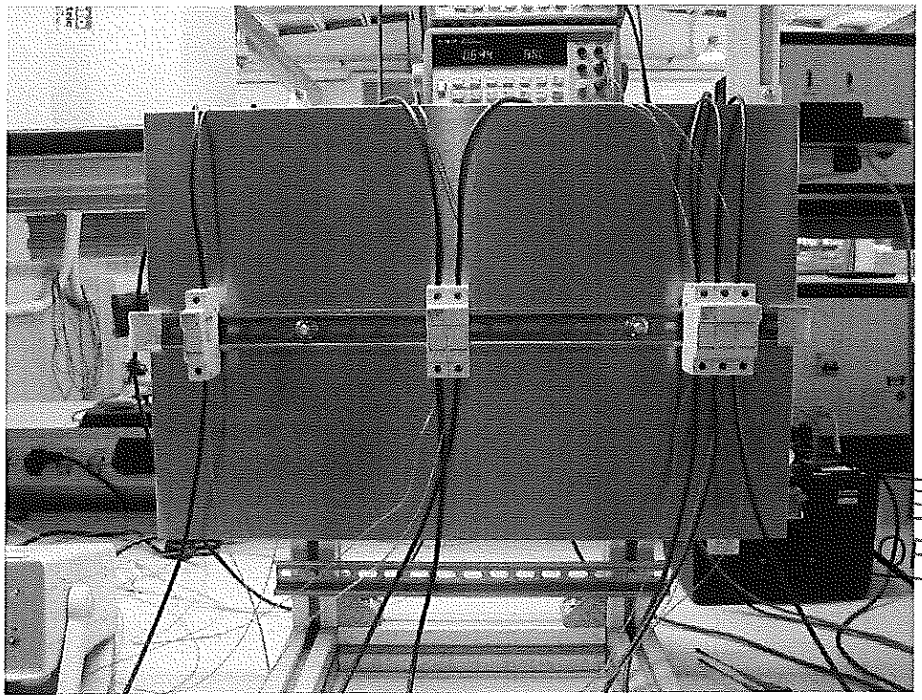
ВЯРНО С ОРИГИНАЛА

8. ANNEX

Picture 1: Temperature rise – test setup



Picture 1a: Temperature rise – test setup



ВЯРНО С ОРИГИНАЛА

Picture 2: Catalogue Legrand fuses

legrand

fusibili cilindrici

Informazioni tecniche, curve e quote (p. 122)

Tipo "gG"

B.C.R. (Bassa Capacità di Rottura)
Rispondenti alle norme CEI 32-1; CEI 32-5 - EN 60 269-1; EN 60 269-3

Imballo	Articoli: Senza segnalatore	Articoli: Con segnalatore	In nominale (A)	Tensione (V~)	Potere interruzione (kA)
			8,5 x 23 mm		
10	(1) 0113 02	0114 02 (1)	2	250	6
10	(1) 0113 04	0114 04 (1)	4		
10	(1) 0113 06	0114 06 (1)	6		
100	0113 10	0114 10	10		
			8,5 x 31,5 mm		
10	0123 01		1	400	20
10	0123 02	0124 02	2		
10	0123 04	0124 04	4		
10	0123 06	0124 06	6		
10	0123 08		8		
10	0123 10	0124 10	10		
10	0123 12		12		
100	0123 16	0124 16	16		
100	0123 20	0124 20	20		
			10,3 x 38 mm		
100/10	0133 32	0134 32	32	400	20

A.C.R. (Alta Capacità di Rottura)
Conformi alle norme CEI 32-1 e 32-4 - IEC 60 269.1,2 e 2,1 - EN 60 269.1
Approvazioni Bureau Veritas

Imballo	Articoli: Senza segnalatore	Articoli: Con segnalatore	In nominale (A)	Tensione (V~)	Potere interruzione (kA)
			10,3 x 38 mm		
10	0133 04		0,5	500	100
10	0133 01		1		
10	0133 02	0134 02	2		
10	0133 04	0134 04	4		
10	0133 06	0134 06	6		
10	0133 08	0134 08	8		
10	0133 10	0134 10	10		
10	0133 12	0134 12	12		
10	0133 16	0134 16	16		
10	0133 20	0134 20	20		
10	0133 25	0134 25	25		
	Senza percussore	Con percussore			
			14 x 51 mm		
10	0143 02		2	500	100
10	0143 04	0145 04	4		
10	0143 06	0145 06	6		
10	0143 10	0145 10	10		
10	0143 16	0145 16	16		
10	0143 20	0145 20	20		
10	0143 25	0145 25	25		
10	0143 32	0145 32	32		
10	0143 40	0145 40	40		
10	0143 50	0145 50	50	400	
			22 x 58 mm		
10	0153 10	0155 10	10	500	100
10	0153 16	0155 16	16		
10	0153 20	0155 20	20		
10	0153 25	0155 25	25		
10	0153 32	0155 32	32		
10	0153 40	0155 40	40		
10	0153 50	0155 50	50		
10	0153 63	0155 63	63		
10	0153 80	0155 80	80		
10	0153 96	0155 96	100		
10	0153 97	0155 97	125	400	

(1) Tipo g

Tipo "aM"

Rispondenti alla norma IEC EN 60269-1
Approvazione Bureau Veritas

Imballo	Articoli: Senza percussore	Articoli: Con percussore	In nominale (A)	Tensione (V~)	Potere interruzione (kA)
			8,5 x 31,5 mm		
10	0120 01		1	400	20
10	0120 02		2		
10	0120 04		4		
10	0120 06		6		
10	0120 08		8		
10	0120 10		10		

A.C.R. (Alta Capacità di Rottura)
Conformi alle norme IEC 60269-1,2 e 2-1; EN 60269-1; CEI 32,1 e 32.4
Approvazioni Bureau Veritas

Imballo	Articoli: Senza percussore	Articoli: Con percussore	In nominale (A)	Tensione (V~)	Potere interruzione (kA)
			10,3 x 38 mm		
10	0130 92		0,25	500	100
10	0130 95		0,50		
10	0130 01		1		
10	0130 02		2		
10	0130 04		4		
10	0130 06		6		
10	0130 08		8		
10	(1) 0130 10		10		
10	(1) 0130 12		12		
10	0130 16		16		
10	0130 20		20	400	
10	0130 25		25		
			14 x 51 mm		
10	0140 02	0141 02	2	500	100
10	0140 04	0141 04	4		
10	0140 06	0141 06	6		
10	0140 08	0141 08	8		
10	0140 10	0141 10	10		
10	0140 12	0141 12	12		
10	0140 16	0141 16	16		
10	0140 20	0141 20	20		
10	0140 25	0141 25	25		
10	0140 32	0141 32	32		
10	0140 40	0141 40	40		
10	0140 45	0141 45	45		
10	0140 50		50	400	
			22 x 58 mm		
10	0150 16	0151 16	16	500	100
10	0150 20	0151 20	20		
10	0150 25	0151 25	25		
10	0150 32	0151 32	32		
10	0150 40	0151 40	40		
10	0150 50	0151 50	50		
10	0150 63	0151 63	63		
10	0150 80	0151 80	80		
10	0150 96	0151 95	100		
10	0150 97	0151 97	125	400	

Neutri

10	0123 00	8,5 x 31,5
10	0133 00	10,3 x 38
10	0143 00	14 x 51
10	0153 00	22 x 58

(1) calibro non normalizzato

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ВЯРНО С ОРИГИНАЛА

International Electrotechnical Commission

IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE)

CERTIFICATE OF ACCEPTANCE

TO PARTICIPATE IN THE IECEE CB-SCHEME AND FACTORY SURVEILLANCE SERVICE

IMQ SpA

Via Quintiliano 43 I-20138 Milano, Italy

has been assessed and determined to fully comply with the requirements of ISO/IEC 17065: 2012, The Basic Rules, IECEE 01: 2014-11 and Rules of Procedure IECEE 02: 2015-06, and the relevant IECEE CB-Scheme Operational Documents.

IMQ SpA

is therefore entitled to operate as an Italian Issuing and Recognising National Certification Body within the IECEE CB Scheme for the Scope (Product Category(ies) and Standard(s)) as listed in the relevant part of the IECEE Web Site at www.iecee.org, and is subject to all other terms as set forth in the IECEE Basic Rules and Rules of Procedure.

This certificate remains valid until November 2nd 2018, at which time it will be reissued by the IECEE Executive Secretary upon successful completion of the normally scheduled 3-year Reassessment Programme administered by the IECEE CB Scheme.

Signed by:

На основание чл. 2 от ЗЗЛД

Date of Issue: 2016-06-16

ВЯРНО С ОРИГИНАЛА

ВЯРНО С ОРИГИНАЛА

Ref. No. IMQ-311/CTF2

RECOGNITION

WE DECLARE THAT

LOVATO ELECTRIC S.p.A.

IN ITS TESTING LABORATORY

LABORATORIO DI PROVA (LPR)
Via Don Emilio Mazza, 12
IT - 24020 Gorle (BG)

HAS BEEN RECOGNIZED FOR THE APPLICATION OF PROCEDURE

CUSTOMERS' TESTING FACILITIES (CTFs)
STAGE 2

AS DESCRIBED IN INTERNATIONAL DOCUMENTS IECEE OD-2048 / ETICS OD-ECS 032 AND IN IMQ RULES FOR RECOGNITION AND UTILIZATION OF TESTING FACILITIES IN THE PERFORMING OF TEST COVERED IN THE SCOPE REPORTED IN THE ANNEX OF THIS RECOGNITION

(PRODUCT CATEGORIES: POW)

IMQ S.p.A. will accept the test results of the above testing laboratory as basis to issue its own certification.

На основание чл. 2
от ЗЗЛД

First issue: 2017-11-06
Expiry date: 2018-11-05

ВЯРНО С ОРИГИНАЛА

THE VALIDITY OF THIS RECOGNITION IS SUBJECTED TO THE CONTINUOUS RESPECT OF RELEVANT IMQ RULES AND IT IS RELEVANT TO THE STANDARDS LISTED IN THE ANNEX TO THIS RECOGNITION

IECEE CTF | LOVATO ELECTRIC S.p.A. (LABORATORIO DI PROVA (LPR)) [311] | Standards in ScopeFacebookTwitterLinkedInFavoritesEmailPrint

Category	Standard	Tests/Clauses	Acceptance Date	Responsible National Certification Body(s)
POW	IEC 60947-1:2007	All clauses except 8.4	2017-11-06	IMQ S.p.A.
POW	IEC 60947-1:2007/AMD1:2010	All clauses except 8.4	2017-11-06	IMQ S.p.A.
POW	IEC 60947-1:2007/AMD2:2014	All clauses except 8.4	2017-11-06	IMQ S.p.A.
POW	IEC 60947-4-1:2009	All clauses except 9.4	2017-11-06	IMQ S.p.A.
POW	IEC 60947-4-1:2009/AMD1:2012	All clauses except 9.4	2017-11-06	IMQ S.p.A.
POW	IEC 60947-5-1:2016	All clauses	2017-11-06	IMQ S.p.A.
POW	IEC 60947-5-1:2003	All clauses	2017-11-06	IMQ S.p.A.
POW	IEC 60947-5-1:2003/AMD1:2009	All clauses	2017-11-06	IMQ S.p.A.

ВЯРНО С ОРИГИНАЛА

ВЯРНО С ОРИГИНАЛА