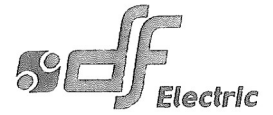


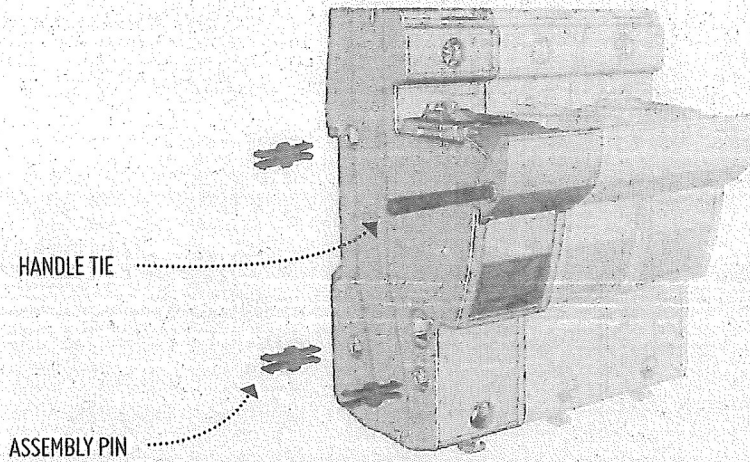
CYLINDRICAL FUSE HOLDERS



TECHNICAL
PMF
PMX
PMC

MODULAR FUSE HOLDERS MULTI-POLE ASSEMBLY

NEW

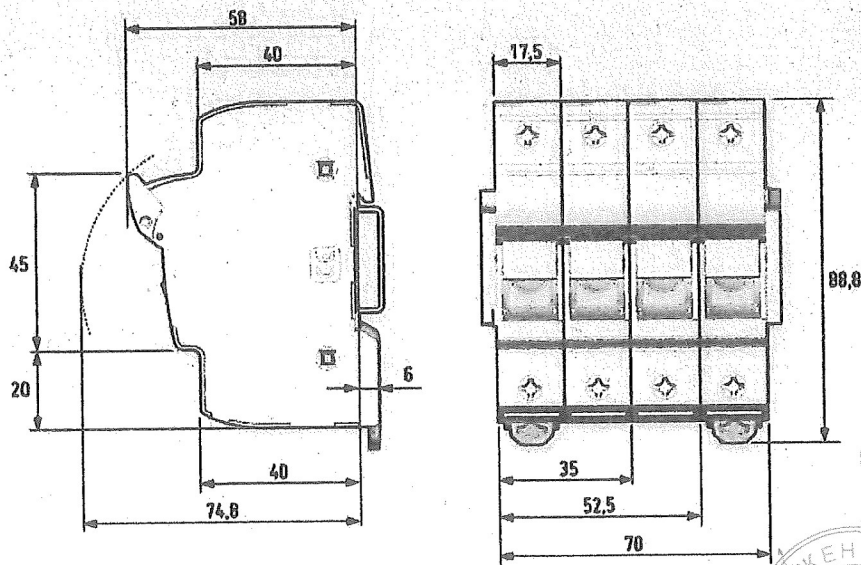


TECHNICAL

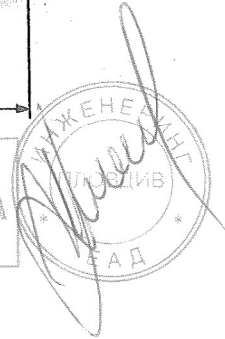
MODULAR FUSE HOLDERS DIMENSIONS

NEW

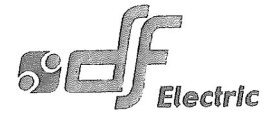
8x32
 10x38
 CC CLASS



ВЯРНО С ОРИГИНАЛА



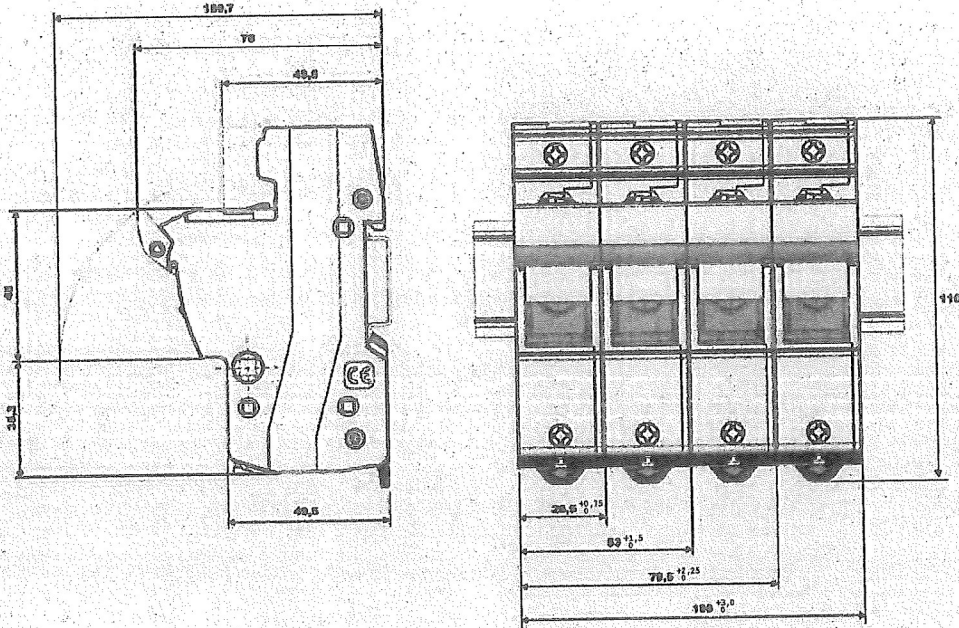
CYLINDRICAL FUSE HOLDERS



NEW

TECHNICAL
PMX MODULAR FUSE HOLDERS
DIMENSIONS

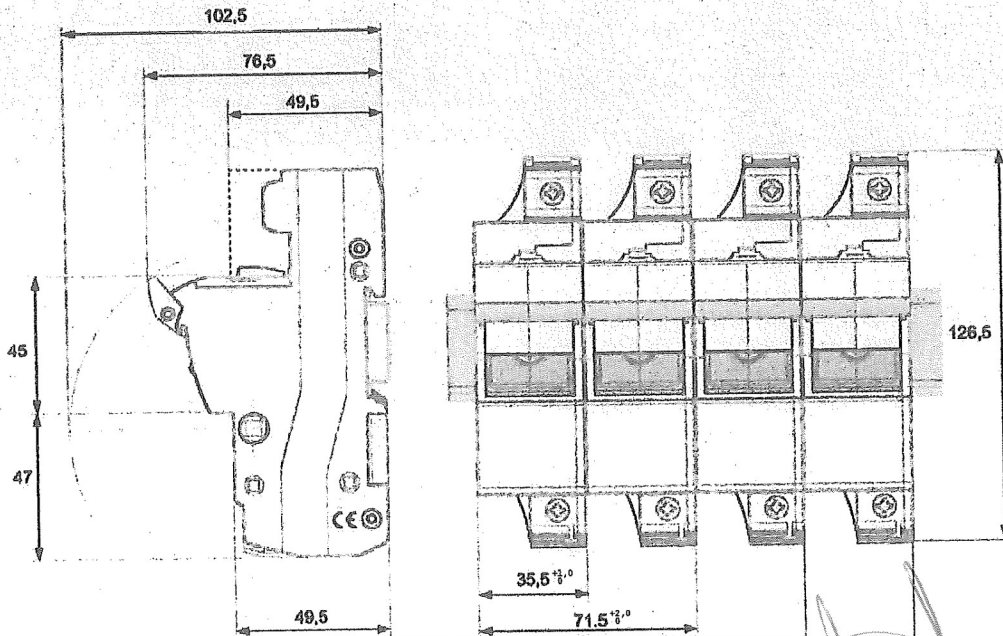
14x51



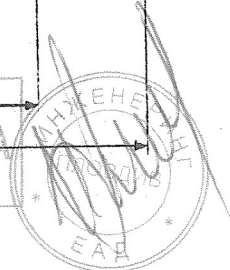
TECHNICAL
PMX MODULAR FUSE HOLDERS
DIMENSIONS

22x58

NEW

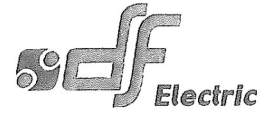


ВАРНО С ОРИГИНАЛА



442

CYLINDRICAL FUSE HOLDERS

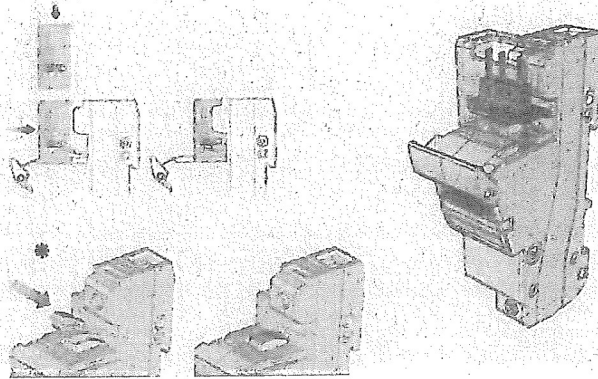
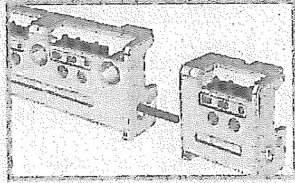


TECHNICAL

PMX MODULAR FUSE HOLDERS MICROSWITCH MOUNTING

14x51
22x58 Put on the **microswitch** on the guides, and push in horizontal movement to the final position.

* For **ONLY FUSION** accessory, first mount the lifter in his place.

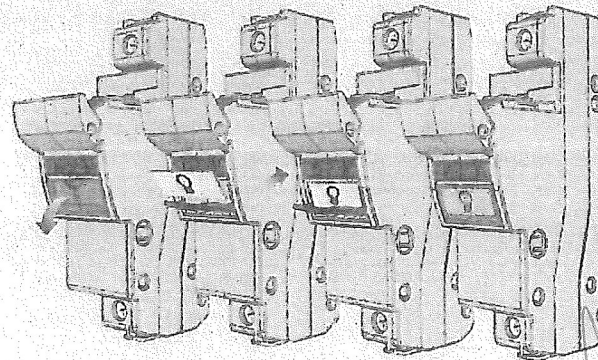


NEW

TECHNICAL

PMX MODULAR FUSE HOLDERS IDENTIFICATION BY LABEL

8x32
10x38
CC^{CLASS}
14x51
22x58 Open the **label-holder part** when the fuse holder is totally closed or totally open, put on the label and close.

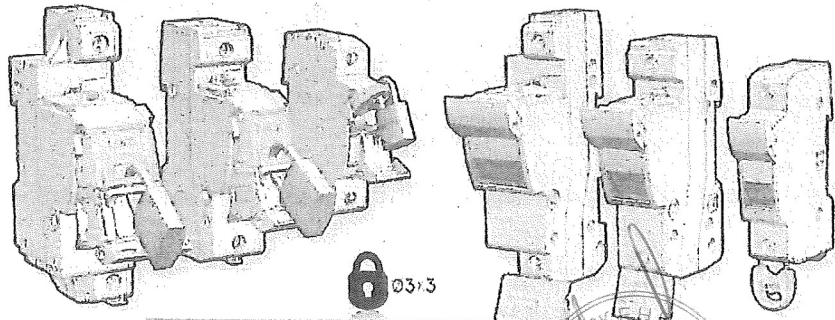


NEW

TECHNICAL

PMX MODULAR FUSE HOLDERS PADLOCK ACCESSORY

8x32
10x38
CC^{CLASS}
14x51
22x58 To avoid the operation and connection when the fuseholder is open, introduce the padlock accessory into the symmetrical holes.
All accessories allow using three padlocks at the same time and have a repose mode.



NEW

ВЯРНО С ОРИГИНАЛА



CYLINDRICAL FUSE HOLDERS

TECHNICAL
PMX MODULAR FUSE HOLDERS
 SPECIAL IP20 PROTECTION

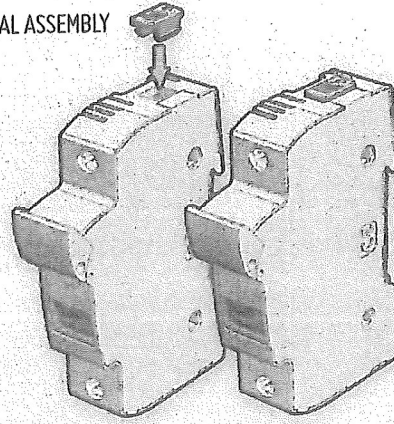
8x32
10x38
 CC CLASS
14x51
22x58

The accessory must be positioned in the wire entries, if it's necessary to achieve the IP20 degree of protection with thin wires.

SIZE	SECTION FLEXIBLE WIRE (mm ²)	SECTION SOLID WIRE (mm ²)	LENGTH (mm)
8x32	≤6	≤10	10
10x38	≤6	≤10	10
14x51	≤10	≤16	14
22x58	≤16	≤25	18

NEW

MANUAL ASSEMBLY



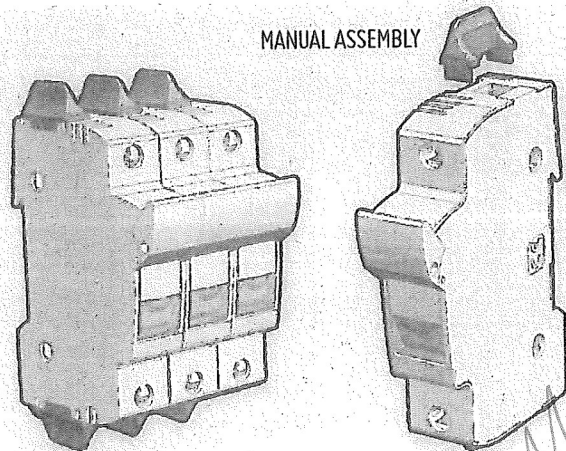
TECHNICAL
PMX MODULAR FUSE HOLDERS
 PHASE SEPARATORS ACCESSORY

8x32
10x38
 CC CLASS

The accessory increases the distance between phases in multipolar assemblies.

NEW

MANUAL ASSEMBLY



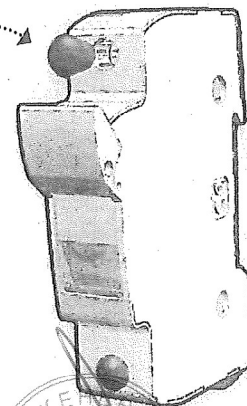
TECHNICAL
PMX MODULAR FUSE HOLDERS
 SCREW PROTECTION ACCESSORY

8x32
10x38
 CC CLASS
14x51

Protection accessory to avoid the screws manipulation and improve the protection degree.

NEW

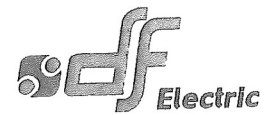
MANUAL ASSEMBLY



ВЯРНО С ОРИГИНАЛА

474

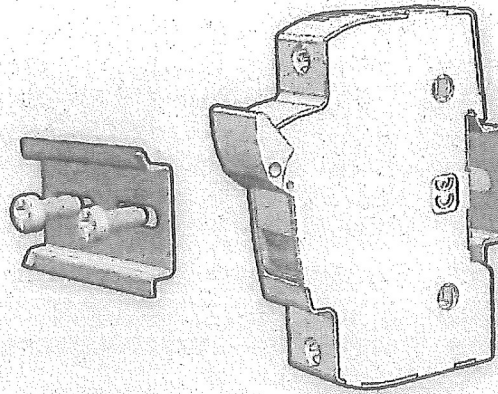
CYLINDRICAL FUSE HOLDERS



TECHNICAL
PMX MODULAR FUSE HOLDERS
 SCREW FIXATION ACCESSORY

8x32
10x38 First mount the accessory with screws, then mount the fuseholder (there are available different accessories depending the number of the fuseholder).

REFERENCE	DESCRIPTION
485650	25MM SCREW FIXATION ACCESSORY
485651	50MM SCREW FIXATION ACCESSORY
485652	75MM SCREW FIXATION ACCESSORY
485653	100MM SCREW FIXATION ACCESSORY
485654	125MM SCREW FIXATION ACCESSORY
485655	175MM SCREW FIXATION ACCESSORY

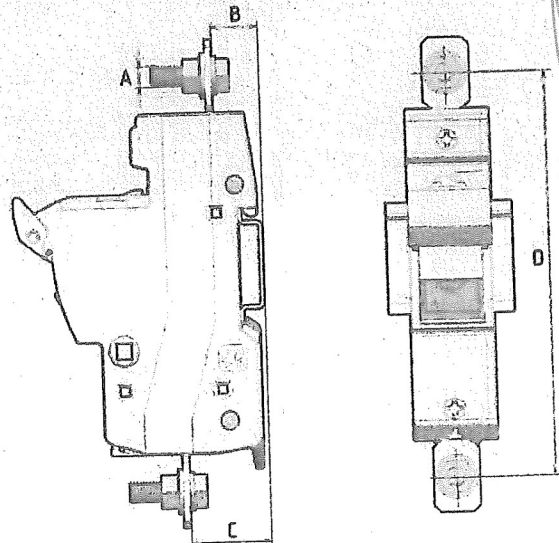


NEW

TECHNICAL
PMX MODULAR FUSE HOLDERS
 SPECIAL ACCESSORY FOR SCREW CONNECTION

14x51
22x58

SIZE	REFERENCE	A	B (mm)	C (mm)	D (mm)
14x51	485271	M6	14,5	25	128,5
22x58	485367	M8	15	23,5	154,5



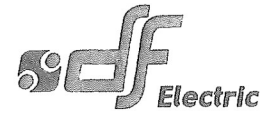
NEW

ВАРНО С ОРИГИНАЛА



475

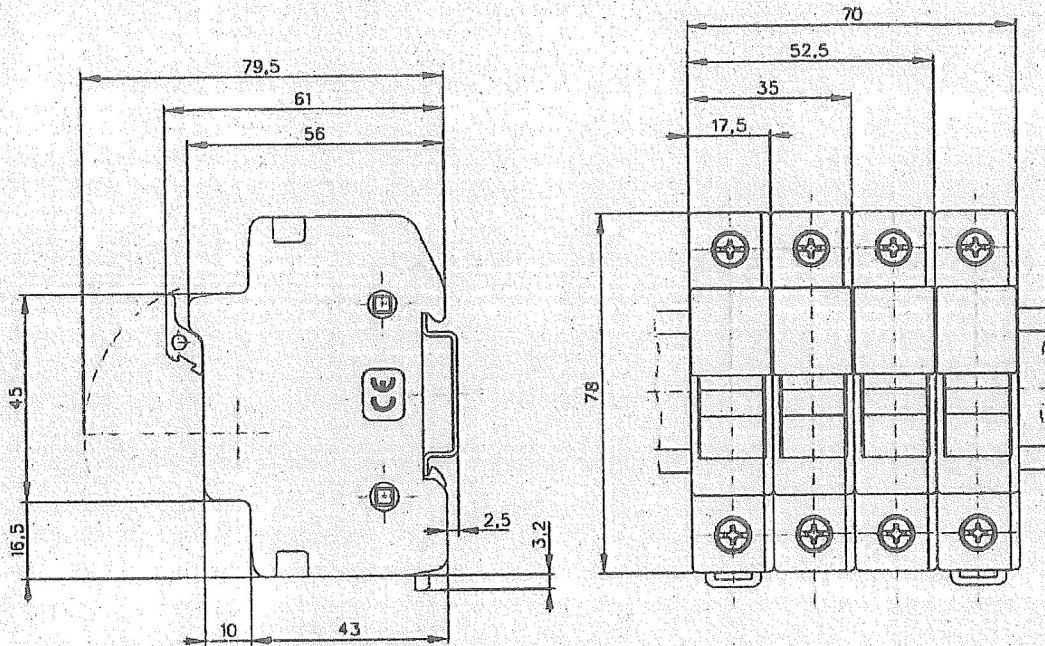
CYLINDRICAL FUSE HOLDERS



TECHNICAL

PMF MODULAR FUSE HOLDERS
DIMENSIONS

PMCC



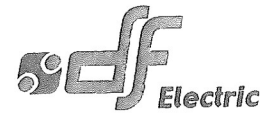
Handwritten signature

ВЯРНО С ОРИГИНАЛА

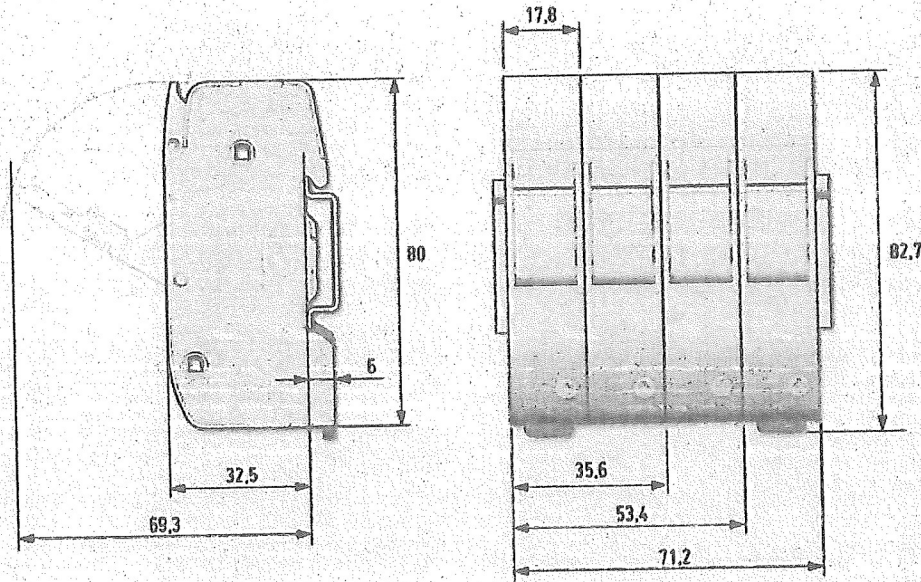


476

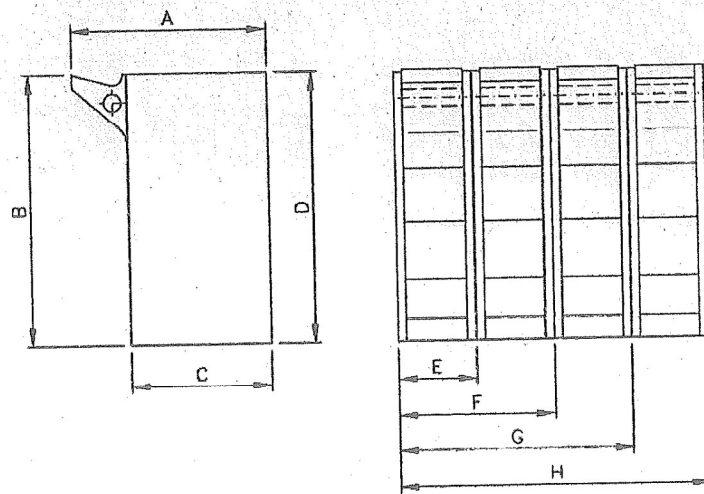
CYLINDRICAL FUSE HOLDERS



TECHNICAL
PMC COMPACT FUSE HOLDERS
DIMENSIONS



TECHNICAL
SC SCREW FIXING FUSE HOLDERS
DIMENSIONS



SIZE	A	B	C	D	E	F	G	H
8,5x32	45	61	32	61	18	36	54	72
10x38	50	78	34	75	21	42	63	84
14x51	58	98	42	95	30	60	90	120
22x58	71	108	56	108	36	72	108	144

ВЯРНО С ОРИГИНАЛА

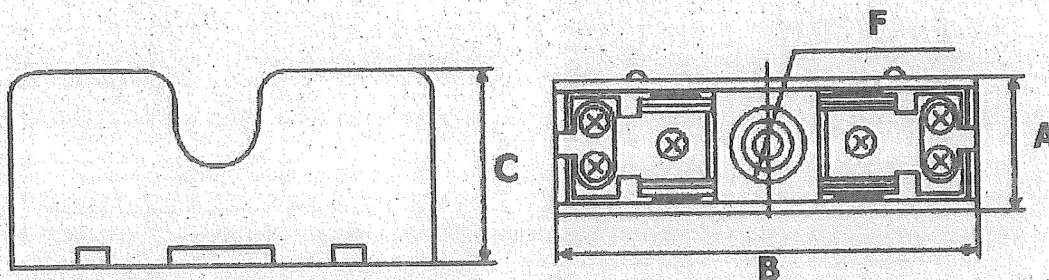


CYLINDRICAL FUSE HOLDERS



NEW

TECHNICAL
BAC OPEN FUSE HOLDERS
DIMENSIONS

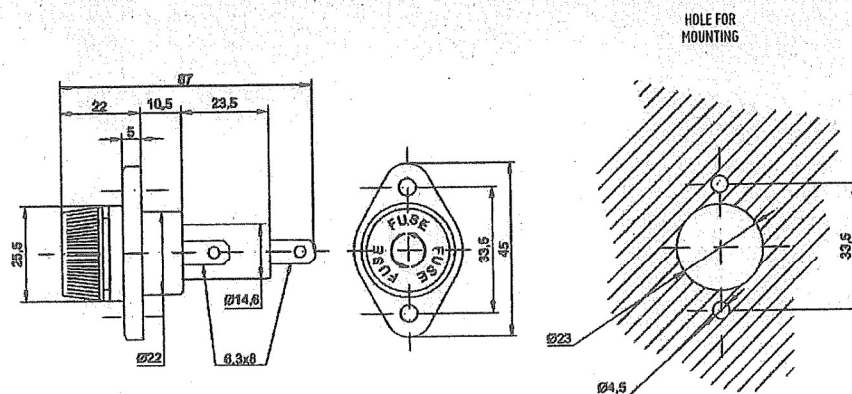


SIZE	A	B	C	ØF
10x38	24	81	35	4
14x51	30	91	37	5
22x58	37	108	48	6

TECHNICAL
PMP PANEL MOUNTING FUSE HOLDERS
DIMENSIONS

NEW

BAYONET



[Handwritten signature]

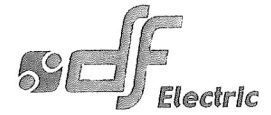
ВЯРНО С ОРИГИНАЛА

ИНЖЕНЕРИ
ПЛОДНИВ
БЕД

[Handwritten signature]

448

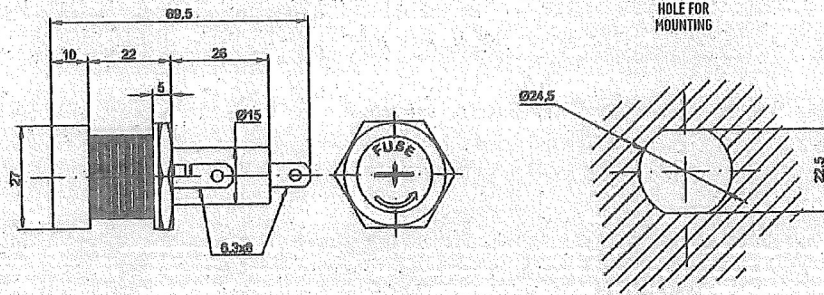
CYLINDRICAL FUSES



NEW

TECHNICAL PMP PANEL MOUNTING FUSE HOLDERS DIMENSIONS

SCREW

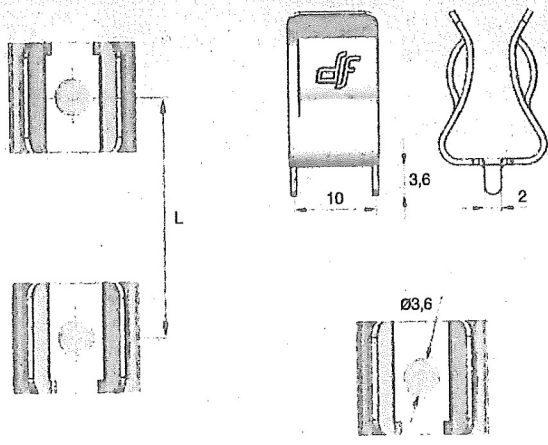


TECHNICAL CLIP CONTACT FOR Ø10 FUSE-LINKS DIMENSIONS

10x38
10x85

NEW

INSTALLATION INSTRUCTIONS



Ø10 CLIP CONTACT FOR PCB

SIZE	L
10x38	42
10x85	89,6

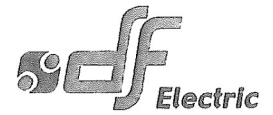
Ø10 CLIP CONTACT SCREW

SIZE	L
10x38	32
10x85	79,6

ВЕРНО С ОРИГИНАЛОМ

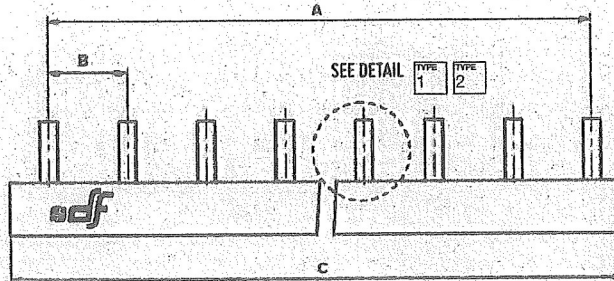


CYLINDRICAL FUSE HOLDERS



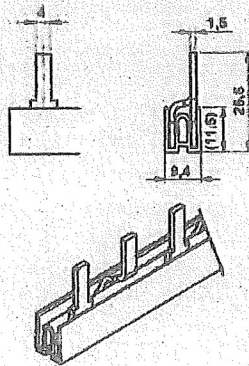
TECHNICAL
PMF
PMX
PMC
PMCC

PHASE BUSBARS DIMENSIONS

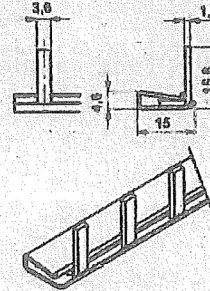


REFERENCE	MODULES	A	B	C	TYPE	END COVER
485600	13	213,6	17,8	229,8 ⁺²	2	485605
485601	57	996,8	17,8	1012 ⁺²	2	485605
485602	12	195,8	17,8	212 ⁺²	1	-

TYPE
1



TYPE
2

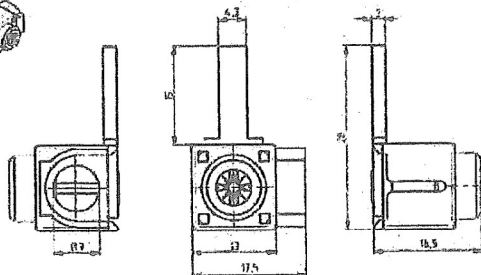


TECHNICAL
PMF
PMX
PMC
PMCC

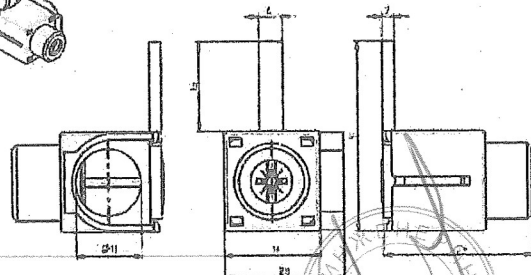
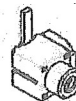
ACCESSORIES FOR PHASE BUSBARS DIMENSIONS



485603



485604



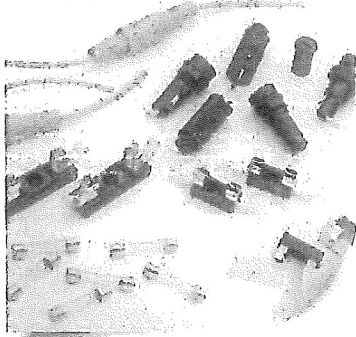
ВЯРНО С ОРИГИНАЛА



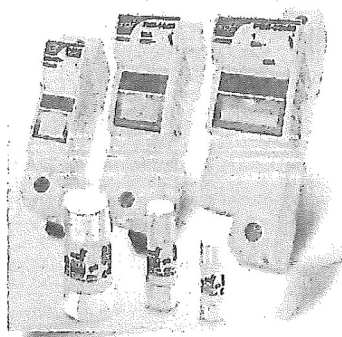
480

ds Electric

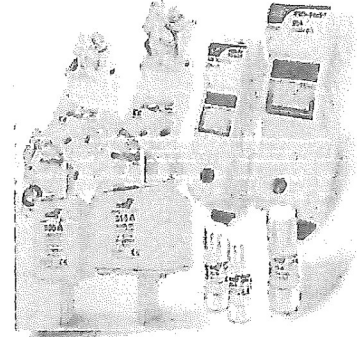
■ ELECTRONIC



■ CYLINDRICAL



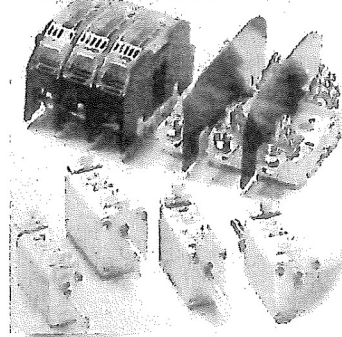
■ PHOTOVOLTAIC



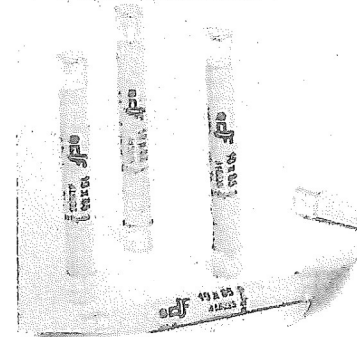
■ RAPIDPLUS



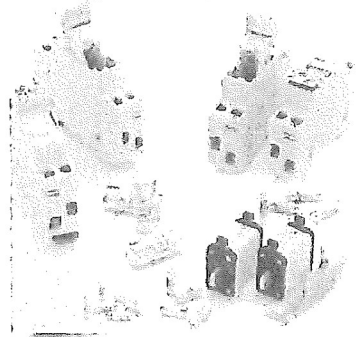
■ NH



■ SPECIAL FUSES



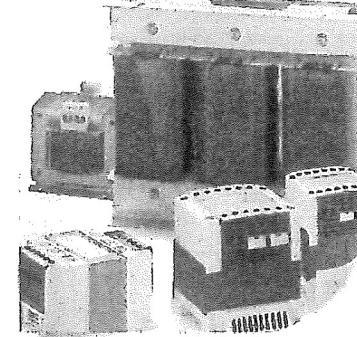
■ DOMESTIC



■ D & DO

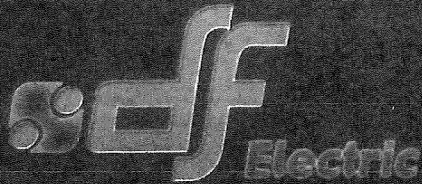


■ TRANSFORMERS



eXperts in
PROTECTION





HEAD OFFICE & FACTORY

SILICI, 67-69
08940 CORNELLA DE LLOBREGAT
BARCELONA
SPAIN
Tel. +34 93 377 85 85
Fax +34 93 377 82 82

EXPORT SALES

Tel. +34 93 475 08 64
Fax +34 93 480 07 75
export@df-sa.es

NATIONAL SALES

Tel. 93 475 08 64
Fax 93 480 07 76
comercial@df-sa.es

www.df-sa.es/cylindrical

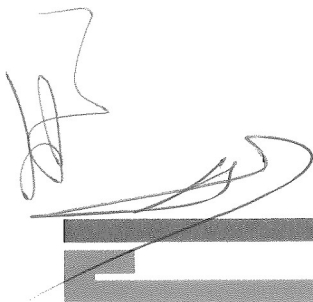
Приложение 2 към Техническо предложение

„Доставка на електромерни табла НН, за индиректно измерване“

ИЗИСКВАНИ ДОКУМЕНТИ ОТ ТЕХНИЧЕСКИ

ИЗИСКВАНИЯ И СПЕЦИФИКАЦИИ

Приложение 8



ДЕКЛАРАЦИЯ

за съответствие и произход на комплектуващите изделия и съоръжения

Долуподписаният **Ивелин Трендафилов Дончев** с ЕГН на основание чл. 36а, ал. от ЗОП

на основание чл. 36а, ал. от ЗОП

, в качеството си на Изпълнителен Директор и представляващ

„ИНЖЕНЕРИНГ“ ЕАД

ДЕКЛАРИРАМ, ЧЕ :

Предлаганите от „Инженеринг“ ЕАД“ електромерни табла НН за индиректно измерване са изцяло в съответствие с изискванията на техническите спецификации и на стандартите за материалите, включително на параграфи „Характеристика на материала“ и “Съответствие на предложеното изпълнение с нормативно – техническите документи” по процедура с реф. № PPD 19-138.

Произхода на комплектуващите изделия и съоръжения е посочен в следващата таблица:

№	Комплектуващо изделие	Производител	Произход
1.	Обвивка, Вътрешна врата, Монтажна плоча	DCK HOLOUBKOV BOHEMIA a.s.	Чешка република
2.	Автоматичен прекъсвач Compact NSX 250N	SCHNEIDER ELECTRIC INDUSTRIES SAS	Франция
3.	Автоматичен прекъсвач Compact NSX 630F	SCHNEIDER ELECTRIC INDUSTRIES SAS	Франция
4.	Товаров разединител Compact NSX 250 NA	SCHNEIDER ELECTRIC INDUSTRIES SAS	Франция
5.	Товаров разединител Compact NSX 630 NA	SCHNEIDER ELECTRIC INDUSTRIES SAS	Франция
6.	Кломоред – измервателен CEZB10E 6I-3FUS10x38-1N EPI	SMART METERING APPLICATIONS S.L. (предишно: PROMOTORA DE MERCADOS ELECTRICOS, S.A.)	Испания
7.	Проводници H07V-K , H07V-U	ЕЛКАБЕЛ АД	България
8.	Кабелни обувки и крайници	ZAE ERGOM sp.zo.o	Полша
9.	Щүцери тип Pg с мембрана	WENZHOU GAD TECHNOLOGICAL ELECTRICITY CO.,LTD	Китай
10.	V клеми	Roztocze	Полша
11.	PEN шини	Инженеринг ЕАД	България

на основание чл. 36а, ал. от ЗОП

Дата: 20.01.2020 г.

ПОДПИС И ПЕЧАТ:

гр. Пловдив

Ивелин Дончев
Изпълнителен директор
„Инженеринг“ ЕАД

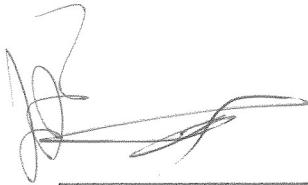
Приложение 2 към Техническо предложение

„Доставка на електромерни табла НН, за индиректно измерване“

ИЗИСКВАНИ ДОКУМЕНТИ ОТ ТЕХНИЧЕСКИ

ИЗИСКВАНИЯ И СПЕЦИФИКАЦИИ

Приложение 9



ОП 2

Инструкция за съхранение, транспортиране, монтиране и експлоатация на полиестерни електромерни табла НН за индиректно измерване, за монтиране на фасада

Предназначение на ел. таблата

Измерване на електроенергия и защита на ел. вериги

Експлоатационни условия

Температура на околната среда:	от -25° до +40°С
Относителна влажност :	100%
Надморска височина :	до 2000 m
Степен на замърсяване на околната среда съгласно БДС EN 61439-1:	3
Условия на работа:	на открито

Транспорт и опаковка

За предпазване от вредни въздействия ел. таблата са опаковани с велпапе и полиетиленово фолио .

При използване на транспорт, ел. таблата да бъдат добре укрепени върху европалети. При товаро-разтоварни работи да се избягват удари и сътресения. Транспорта на таблата да се извършва в закрити транспортни средства.

Съхранение

Електромерните табла да се съхраняват в закрити складови помещения, с нормална пожарна безопасност, влажност , без активни газове и пари. Не се препоръчва съхранение на открити площадки.

Монтаж и експлоатация

Монтажът на таблата, аксесоарите към тях и свързването им към електрическата мрежа да се извършва само от правоспособни лица, притежаващи удостоверение за съответната квалификационна група по безопасност за работа с ел. уредби с напрежение до 1000 V.

При монтажа да се спазват всички изисквания на Правилника за техническа безопасност и охрана на труда, както и всички действащи в момента нормативни документи за извършване на такъв род дейности.

Електромера и модема се монтират съгласно наличната на вътрешната страна на външната врата на таблото ел. схема от Електроразпределителното дружество (Възложителя).

При монтажа на таблата да се разпробие задната страна на таблото в четирите точки предвидени за тази цел. Не е необходимо да се демонтира монтажната плоча. Монтажът на електромера , модема и опроводяването се извършва от "ЧЕЗ Разпределение България" АД. Електромера се монтира в лявата част на таблото а модема в дясната част . Закрепването на апаратурата към монтажната плоча се извършва чрез самопробивните винтове 4,2x13 , които са доставени заедно с таблото.

Въртящ момент на затягане за клеморедата - на клемовите съединения 0,8...1,6 Nm , за разделителен елемент : 0,5...0,8 Nm .

Въртящ момент на затягане на клемите на прекъсвач разединителите /10x38/ - 2 Nm

Входящият и изходящите кабели преминават през кабелни входове (щучери) които се монтират на основата на таблото.

Монтажа на таблата към стена се извършва посредством 4 бр. добели и съответните крепежни елементи.

Таблата са изпълнени с две врати , като вътрешната врата е напълно прозрачна и има възможност за пломбиране в горния и долния ляв ъгъл от представител на Електроразпределителното предприятие . На вътрешната врата е направен прорез за осигуряване на достъп на абоната до палеца на изходящия автоматичен прекъсвач.

Препоръчват се регулярни технически проверки от квалифициран персонал, тъй като при повреда биха могли да възникнат материални щети или да бъде застрашен човешки живот.

Преди пускане в експлоатация да се проверят и притегнат всички електрически връзки !



ОП 2

Инструкция за съхранение, транспортиране, монтиране и експлоатация на полиестерни електромерни табла НН за индиректно измерване до 250А

Предназначение на ел. таблата

Измерване на електроенергия и защита на ел. вериги

Експлоатационни условия

Температура на околната среда:	от -25°до+40°С
Относителна влажност :	100%
Надморска височина :	до 2000 m
Степен на замърсяване на околната среда съгласно БДС EN 61439-1:	3
Условия на работа:	на открито

Транспорт и опаковка

За предпазване от вредни въздействия ел. таблата са опаковани с велпапе и полиетиленово фолио .

При използване на транспорт, ел. таблата да бъдат добре укрепени върху европалети. При товаро-разтоварни работи да се избягват удари и сътресения. Транспорта на таблата да се извършва в закрити транспортни средства.

Съхранение

Електромерните табла да се съхраняват в закрити складови помещения, с нормална пожарна безопасност, влажност , без активни газове и пари. Не се препоръчва съхранение на открити площадки.

Монтаж и експлоатация

Монтажът на таблата, аксесоарите към тях и свързването им към електрическата мрежа да се извършва само от правоспособни лица, притежаващи удостоверение за съответната квалификационна група по безопасност за работа с ел. уредби с напрежение до 1000 V.

При монтажа да се спазват всички изисквания на Правилника за техническа безопасност и охрана на труда, както и всички действащи в момента нормативни документи за извършване на такъв род дейности.

Монтажът на електромерите и токовете трансформатори се извършва съгласно наличната на вътрешната страна на външната врата на таблото ел. схема от Електроразпределителното дружество (Възложителя). Главните входящи комутационни защитни апарати са монтирани от производителя.

Монтажа на ел.таблата за стълб се извършва с предвидените от производителя комплекти за монтаж на стълб, включващи пластмасови държачи, стоманени ленти и крепежни елементи.

Монтажа на таблата към стена се извършва посредством 4 бр. дюбели и съответните крепежни елементи.

Монтажа на ел.таблата може да се извършва върху фундамент за вкопаване в земя. Фундаментът се заравя в земята до маркировките на страничните панели на фундамента и се нивелира върху пясък. Кабелите се укрепват със скоби към предвидения за целта профил. Фундаментът се пълни с пясък и филц. За уплътняване на кабелите е предвиден дунапреп, който се поставя в горния край на основата. След заравянето на фундамента отвън, почвата трябва добре да се трамбова. Препоръчва се стабилизиращата плоча да бъде циментирана. При опасност от поява на конденз, в горната част на основата може да се запълни с хидрофобен материал.

Таблата са изпълнени с две врати , като вътрешната врата е напълно прозрачна и има възможност за пломбиране в горния и долния ляв ъгъл от представител на Електроразпределителното предприятие . На вътрешната врата е направен прорез за осигуряване на достъп на абоната до палеца на изходящия автоматичен прекъсвач.

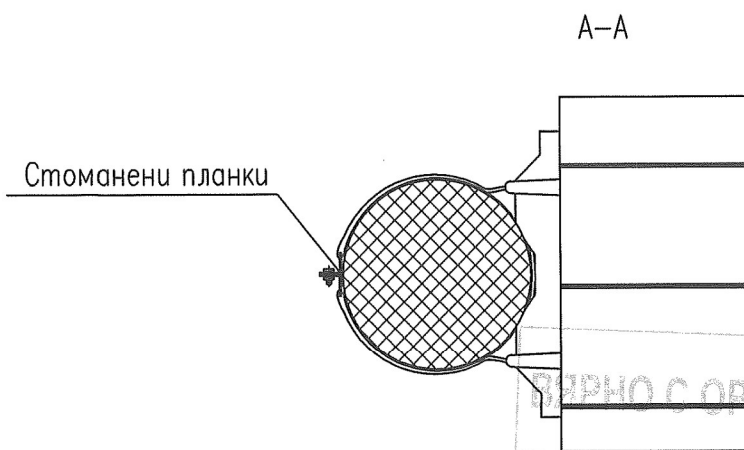
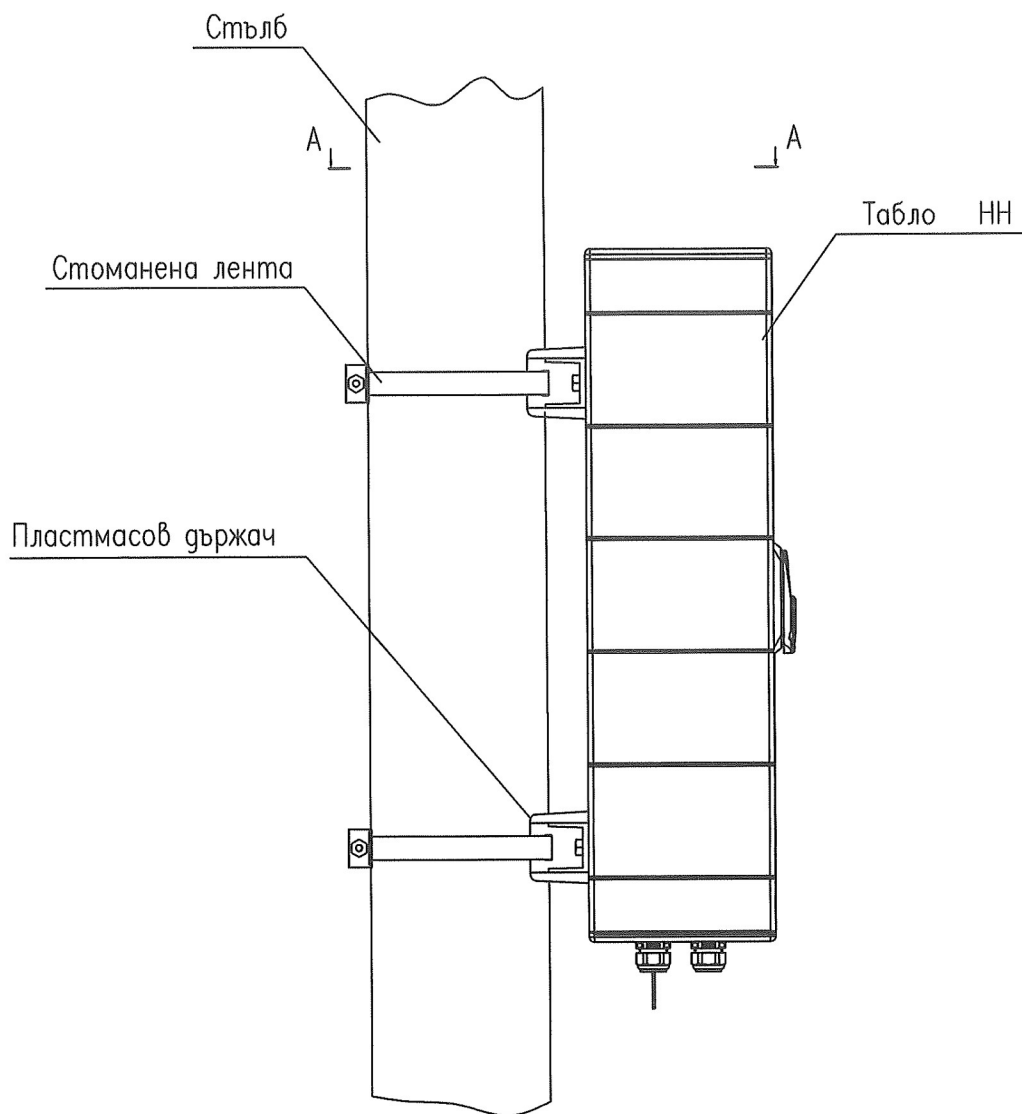
Препоръчват се регулярни технически проверки от квалифициран персонал, тъй като при повреда биха могли да възникнат материални щети или да бъде застрашен човешки живот.

Преди пускане в експлоатация да се проверят и притегнат всички електрически връзки !

ВЯРНО С ОРИГИНАЛА



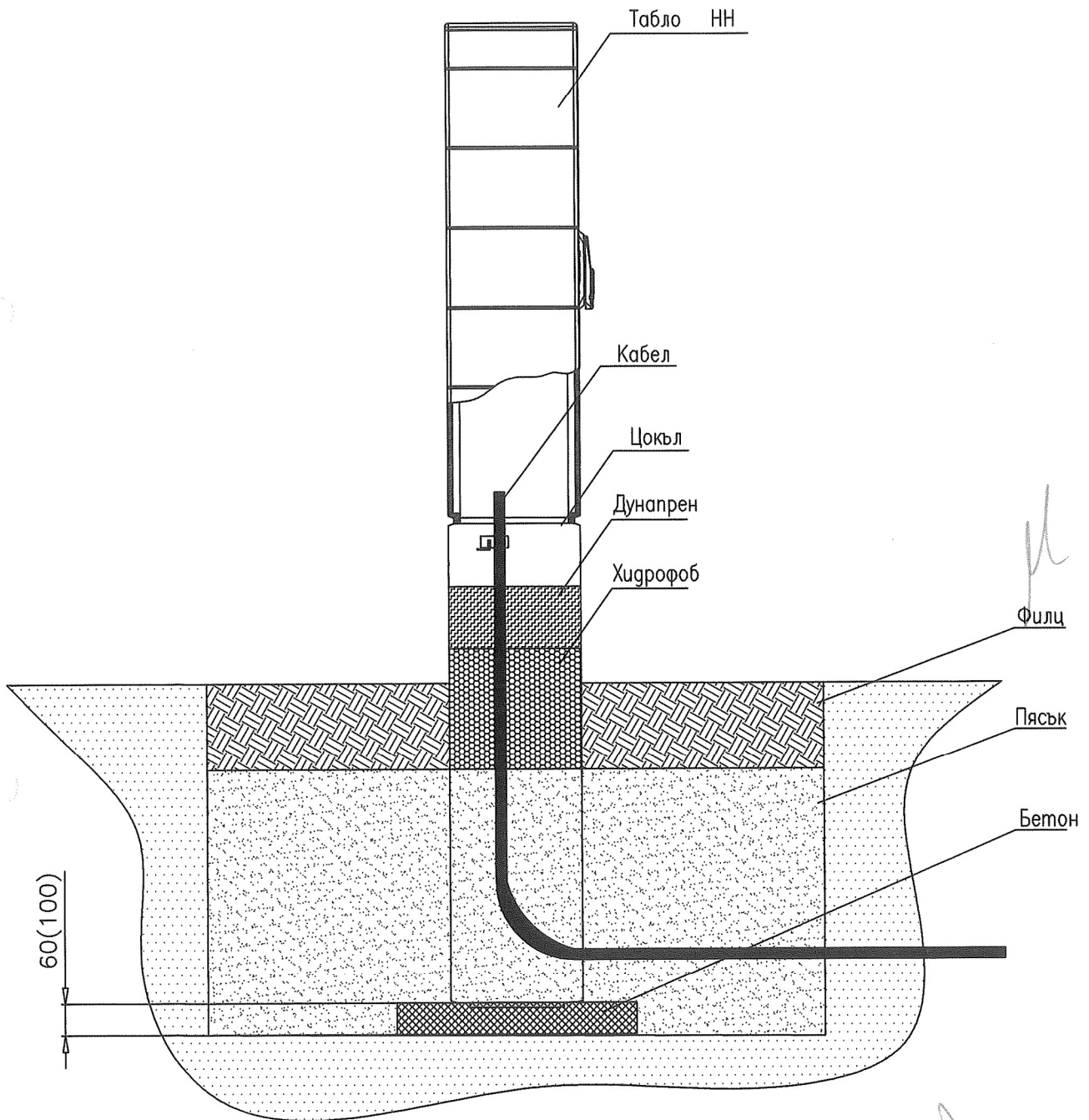
Схема за монтаж на електрическо табло НН на стълб



СЪВРЕДНО С ОРИГИНАЛА



Схема за монтаж на електрическо табло НН за вкопаване в земя



[Handwritten signature]

ВЯРНО С ОРИГИНАЛА

[Circular stamp: ИНЖЕНЕРСКИ ПЛОМБОВИ СЪВЕТ - БАНСКО]

[Handwritten signature]

487

ОП 2

Инструкция за съхранение, транспортиране, монтиране и експлоатация на полиестерни електромерни табла НН за индиректно измерване до 630А

Предназначение на ел. таблата

Измерване на електроенергия и защита на ел. вериги

Експлоатационни условия

Температура на околната среда:	от -25°до+40°С
Относителна влажност :	100%
Надморска височина :	до 2000 m
Степен на замърсяване на околната среда съгласно БДС EN 61439-1:	3
Условия на работа:	на открито

Транспорт и опаковка

За предпазване от вредни въздействия ел. таблата са опаковани с велпапе и полиетиленово фолио .

При използване на транспорт, ел. таблата да бъдат добре укрепени върху европалети. При товаро-разтоварни работи да се избягват удари и сътресения. Транспорта на таблата да се извършва в закрити транспортни средства.

Съхранение

Електромерните табла да се съхраняват в закрити складови помещения, с нормална пожарна безопасност, влажност , без активни газове и пари. Не се препоръчва съхранение на открити площадки.

Монтаж и експлоатация

Монтажът на таблата, аксесоарите към тях и свързването им към електрическата мрежа да се извършва само от правоспособни лица, притежаващи удостоверение за съответната квалификационна група по безопасност за работа с ел. уредби с напрежение до 1000 V.

При монтажа да се спазват всички изисквания на Правилника за техническа безопасност и охрана на труда, както и всички действащи в момента нормативни документи за извършване на такъв род дейности.

Монтажът на електромерите и токовите трансформатори се извършва съгласно наличната на вътрешната страна на външната врата на таблото ел. схема от Електроразпределителното дружество (Възложителя). Главните входящи комутационни защитни апарати са монтирани от производителя.

Монтажа на ел. таблата се извършва върху фундамент за вкопаване в земя. Фундаментата се заравя в земята до маркировките на страничните панели и се нивелира върху пясък в изкопа. Кабелите се укрепват със скоби към предвидения за целта профил. Фундаментата се пълни с пясък и филц. За уплътняване на кабелите е предвиден дунапрен, който се поставя в горния край на основата. След заравянето на фундаментата отвън, почвата трябва добре да се трамбова. Препоръчва се стабилизиращата плоча да бъде циментирана. При опасност от поява на конденз, в горната част на основата може да се запълни с хидрофобен материал.

Таблата са изпълнени с две врати , като вътрешната врата е напълно прозрачна и има възможност за plombиране в горния и долния ляв ъгъл от представител на Електроразпределителното предприятие . На вътрешната врата е направен прорез за осигуряване на достъп на абоната до палеца на изходящия автоматичен прекъсвач.

Препоръчат се регулярни технически проверки от квалифициран персонал, тъй като при повреда биха могли да възникнат материални щети или да бъде застрашен човешки живот.

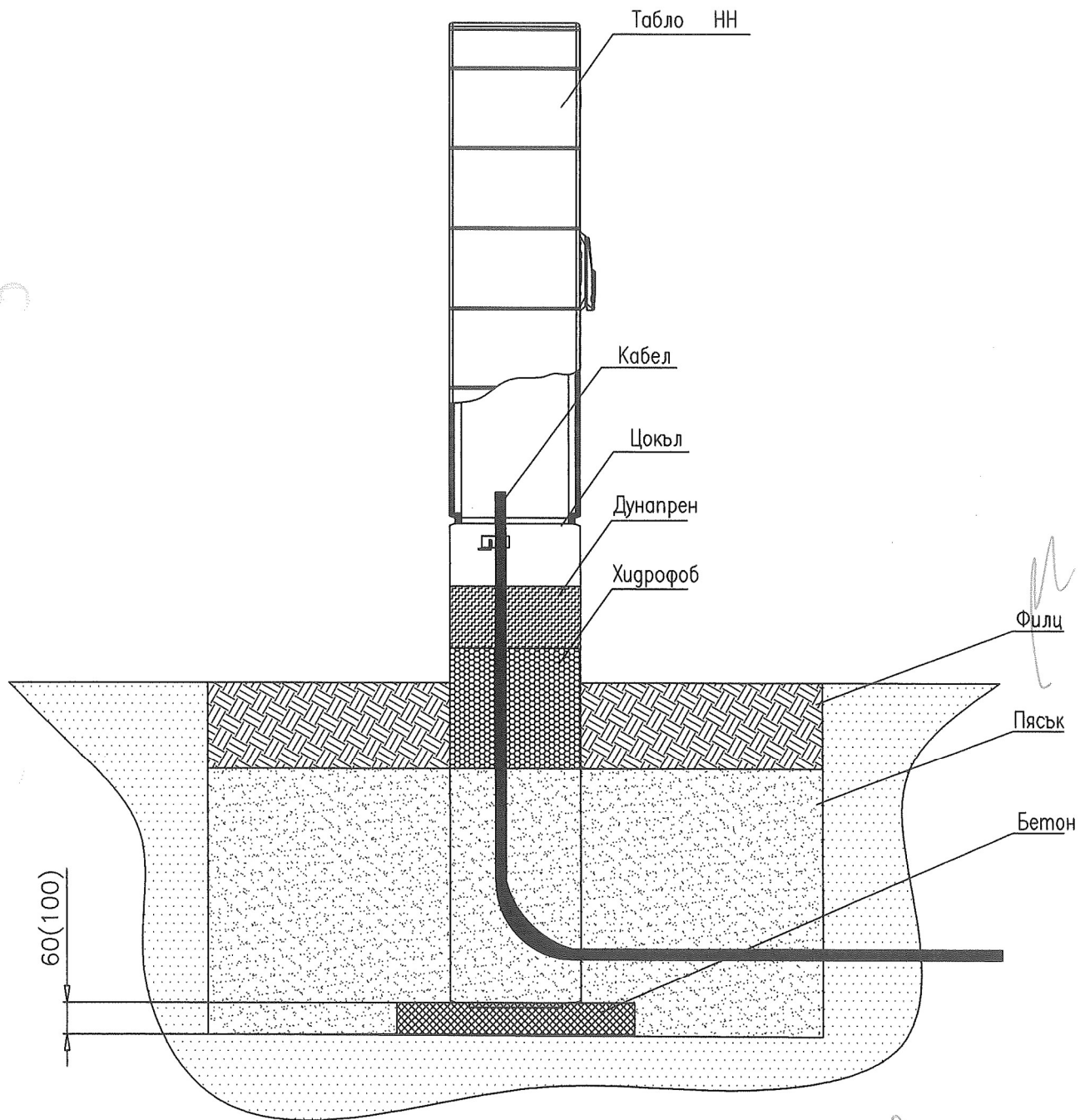
Преди пускане в експлоатация да се проверят и притегнат всички електрически връзки !

ВЪРНО С ОРИГИНАЛА



488

Схема за монтаж на електрическо табло НН за вкопаване в земя



ВЯРНО С ОРИГИНАЛА

489



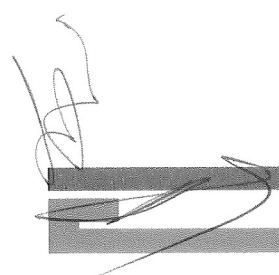
Приложение 2 към Техническо предложение

„Доставка на електромерни табла НН, за индиректно измерване“

ИЗИСКВАНИ ДОКУМЕНТИ ОТ ТЕХНИЧЕСКИ

ИЗИСКВАНИЯ И СПЕЦИФИКАЦИИ

Приложение 10



ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV



ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRUFANSTALT - TSCHHECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - RÉPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod liscem 129/2, 171 02 Praha 8 - Troja

CERTIFICATE

No.: 1190156

Product: Electrometer switchgear assembly

Type: TEPO
OP1, OP2, OP3

Rating: 230/400 V, 50 Hz, to 630 A, 20 kA, IP44/40/30, IK10

Ordering firm: Engineering EAD
Komatevsko Shose Str. 92, 4004 Plovdiv, Bulgaria

Manufacturer: Engineering EAD
Komatevsko Shose Str. 92, 4004 Plovdiv, Bulgaria

Factories: Engineering EAD
Komatevsko Shose Str. 92, 4004 Plovdiv, Bulgaria

Trade mark:

The test results are stated in the test-report No.: 910676-01/01 of: 11.03.2019

A sample of the product was found to be in conformity with:
ČSN EN 61439-3:12 (EN 61439-3:2012), ČSN EN 61439-5 ed. 2:15 (EN 61439-5:2015),
ČSN EN 61439-1 ed. 2:12 (EN 61439-1:2011)

Other data:

Certificate was issued on the basis of fulfillment of requirements of the "EZÚ certificate" certification scheme and on the basis of agreement No. 910676 between the client and the Electrotechnical Testing Institute.

Compliance of the product with mentioned standards and regulations ensures compliance of the product with essential requirements of Government Order No. 117/2016 Sb. (2014/30/EU), 118/2016 Sb. (2014/35/EU) as amended and the certificate may be used as a supporting document for the EU Declaration of Conformity under Act No. 90/2016 Coll., on Conformity Assessment of Products When Made Available on the Market, as amended.

The validity of the certificate is limited to: 31.03.2022

12.03.2019

Prague

на основание чл. 36а, ал. от ЗОП

Mgr. Miroslav Sedláček
Head of Certification Body



910676-01

490



ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRUFANSTALT - TSCHECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - REPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod lisem 129/2, 171 02 Praha 8 - Troja

Превод от английски език

СЕРТИФИКАТ

№: 1190156

Продукт: Електромерни табла

Тип: ТЕПО
ОР1, ОР2, ОР3

Класове: 230/400 V, 50 Hz, до 630A, 20 кА, IP44/40/30, Iк10.

Възложител: Инженеринг ЕАД
ул. Коматевско шосе № 92, 4004 Пловдив, България

Производител: Инженеринг ЕАД
ул. Коматевско шосе № 92, 4004 Пловдив, България

Производство: Инженеринг ЕАД
ул. Коматевско шосе № 92, 4004 Пловдив, България

Търговска марка:

Резултатите от изпитването са посочени в протокол за изпитване №.: 910676-01/01 от: 11.03.2019

Беше установено, че мостра на продукта е в съответствие с:
CSN EN 61439-3:12 (EN 61439-3:2012), CSN EN 61439-5 издание 2:15 (EN61439-5:2015),
CSN EN 61439-1 издание 2:12 (EN61439-1:2011)

Други данни:
Сертификатът е издаден въз основа на изпълнението на изискванията на сертификационната схема "EZU сертификат" и въз основа на договор № 910676 между клиента и Института за електротехнически изпитвания.

Съответствието на продукта със споменатите стандарти и разпоредби, гарантира съответствие на продукта със съществените изисквания на правителствената заповед № 117/2016 Sb. (2014/33/EU), 118/2016 Sb. (2014/35/EU), както и измененията, и сертификатът може да се използва като придружителен документ за ЕС Декларация за съответствие съгласно Закон № 90/2016 Coll., относно оценката на съответствието на продуктите, които се предлагат на пазара, както и измененията.

Валидността на сертификата е до: 31.03.2022

12.03.2019

(подпис – не се чете)

Прага

Маг. Мирослав Седлачек
Ръководител на Сертифициращ орган

ВЯРНО С ОРИГИНАЛА





TEST REPORT

Test Report No.: 910676-01/01

Issued: 11. 3. 2019

Name of product: Electrometer switchgears

Type of product: TEPO, variants: OP1, OP2, OP3

Ratings: 230/400 V, 50 Hz, to 630 A, 20 kA, IP44/40/30, IK10

Serial number: -

Manufacturer: Engineering EAD
Komatevsko Shose Str. 92 , 4004 Plovdiv, Bulgaria

Production site: Engineering EAD
Komatevsko Shose Str. 92 , 4004 Plovdiv, Bulgaria

Ordering firm: Engineering EAD
Komatevsko Shose Str. 92 , 4004 Plovdiv, Bulgaria

Number of tested samples: 0

Samples submitted on: -

Location of testing: Elektrotechnický zkušební ústav, s. p.

Tests performed from 7. 3. 2019 through 11. 3. 2019

Other data: The results of some tests were taken from the test reports EZÚ No.: 402753-01/01, 402753-01/02, 400503-01/01, 400503-01/02, 400502-01/03

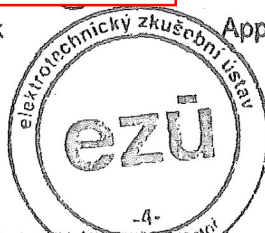
Tested according to: ČSN EN 61439-3:12 (EN 61439-3:2012).,
ČSN EN 61439-5 ed. 2:15 (EN 61439-5:2015),
ČSN EN 61439-1 ed. 2:12 (EN 61439-1:2011)

на основание чл. 36а, ал. от ЗОП

на основание чл. 36а, ал. от ЗОП

Compiled by: Ing. Vladimír Řehořek

Approved by: Ing. Petra Marie Tůmová
Testing laboratory technical manager



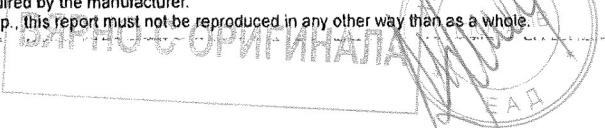
No. of pages: 13

No. of annexes: 0

No. of annexes pages: 0

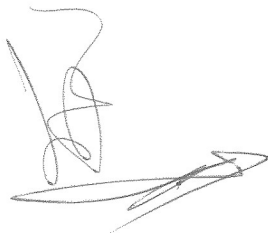
Test results stated in the test report apply only to the tested subject and unless specified otherwise in the test report, the tests were performed using the method and under the conditions determined in the test regulations, technical norm, instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer.
Without written consent of Elektrotechnický zkušební ústav, s. p., this report must not be reproduced in any other way than as a whole.

Tel.: 266 104 111, Fax: 284 680 070, www.ezu.cz



492

Product Name: Electrometer switchgears	
Type: TEPO: OP 1, OP 2, OP 3	
The supplied samples:	OP 1, OP 2/250, OP 3/630
Rated voltage (U_n):	230/400 V, AC
Rated current (I_n):	10 / 250 / 630 A
Degree of protection:	IP 44 / IP 40 / IP 30
Mechanical impact protection:	IK 10
Short-circuit withstand strength:	20 kA
Enclosure manufacturer:	DCK Holoubkov Bohemia a.s.
Type:	SS
Constr. material of the enclosure:	<input type="checkbox"/> sheet metal <input type="checkbox"/> concrete <input checked="" type="checkbox"/> plastic <input type="checkbox"/> stainless steel
Performance:	<input checked="" type="checkbox"/> surface <input type="checkbox"/> recessed <input checked="" type="checkbox"/> enclosure <input checked="" type="checkbox"/> on column
Total dimensions: (w x h x d):	470 x 620 x 250, 620 x 940 x 250 [mm]
Application:	<input checked="" type="checkbox"/> electricity meter distributor <input type="checkbox"/> instrument enclosure <input type="checkbox"/> socket enclosure <input type="checkbox"/> residential distributor
Documentation:	<input checked="" type="checkbox"/> enclosure certificate <input checked="" type="checkbox"/> type range table <input checked="" type="checkbox"/> catalog of enclosure <input type="checkbox"/> general assembly drawing <input checked="" type="checkbox"/> circuit diagram <input checked="" type="checkbox"/> others: operating and maintenance instructions for the distributor
Tested according to:	
ČSN EN 61439-1 ed.2:12, ČSN EN 61439-3:12, ČSN EN 61439-5 ed.2:15	
Art.: 5; 6; 10: 10.1, 10.2, 10.2.1, 10.2.2, 10.2.3, 10.2.5, 10.2.6, 10.2.7, 10.2.101, 10.3, 10.4, 10.5, 10.6, 10.6.2, 10.7, 10.8, 10.9, 10.9.2, 10.9.3, 10.9.4, 10.10, 10.10.4, 10.11, 10.11.5, 10.13	




493

ČSN EN 61439-1 ed.2:12, ČSN EN 61439-3:12, ČSN EN 61439-5 ed.2:15		
5	INTERFACE CHARACTERISTICS	
5.1	GENERAL	
	The characteristics of the ASSEMBLY shall ensure compatibility with the ratings of the circuits to which it is connected and the installation conditions and shall be declared by the assembly manufacturer using the criteria.	--
5.2	VOLTAGE RATINGS	
5.2.1	RATED VOLTAGE (U_n) (OF THE ASSEMBLY)	
	The rated voltage shall be at least equal to the nominal voltage of the electrical system.	$U_n = 230/400 \text{ V, AC}$
5.2.2	RATED OPERATIONAL VOLTAGE (U_e) (OF A CIRCUIT OF AN ASSEMBLY)	
	The rated operational voltage of any circuit shall not be less than the nominal voltage of the electrical system to which it is to be connected.	$U_e = 230/400 \text{ V, AC}$
5.2.3	RATED INSULATION VOLTAGE (U_i) (OF A CIRCUIT OF AN ASSEMBLY)	
	The rated insulation voltage of a circuit of an ASSEMBLY is the voltage value to which dielectric test voltages and creepage distances are referred. The rated insulation voltage of a circuit shall be equal or higher than the values stated for U_n and for U_e for the same circuit.	$U_i = 500 \text{ V, AC}$
5.2.4	RATED IMPULSE WITHSTAND VOLTAGE (U_{imp}) (OF THE ASSEMBLY)	
	The rated impulse withstand voltage shall be equal to or higher than the values stated for the transient overvoltages occurring in the electrical system(s) to which the circuit is designed to be connected. DBO's shall comply with a minimum overvoltage category III	$U_{imp} = 8,0 \text{ kV (1,2/50 } \mu\text{s)}$
5.3	CURRENT RATINGS	
5.3.1	RATED CURRENT OF THE ASSEMBLY (I_{nA})	
	The rated current of the ASSEMBLY is the smaller of: the sum of the rated currents of the incoming circuits within the ASSEMBLY operated in parallel; the total current which the main busbar is capable of distributing in the particular ASSEMBLY arrangement. This current shall be carried without the temperature rise of the individual parts exceeding the limits specified in 9.2.	$I_{nA} = 10/250/630 \text{ A, AC}$
5.3.5	RATED CONDITIONAL SHORT-CIRCUIT CURRENT OF AN ASSEMBLY (I_{cc})	
	The rated conditional short-circuit current shall be equal to or higher than the prospective r.m.s. value of short-circuit current (I_{cp}) for a duration limited by the operation of the short-circuit protective device that protects the ASSEMBLY.	$I_{cc} = 20 \text{ kA}$
5.4	RATED DIVERSITY FACTOR (RDF)	
	The rated diversity factor is the per unit value of the rated current, assigned by the ASSEMBLY manufacturer, to which outgoing circuits of an ASSEMBLY can be continuously and simultaneously loaded taking into account the mutual thermal influences.	1 Circuit: RDF = 1 2-3 circuits: RDF=0,8

Pass

Pass


Pass

ВІРНО С ОРИГІНАЛОМ

5.5	RATED FREQUENCY (f_n)		
	The rated frequency of a circuit is the value of frequency to which the operating conditions are referred. Where the circuits of an ASSEMBLY are designed for different values of frequency, the rated frequency of each circuit shall be given.	$f_n = 50$ Hz	Pass
5.6	OTHER CHARACTERISTICS		
	a) additional requirements depending on the specific service conditions of a functional unit	--	--
	b) pollution degree	3	Pass
	c) types of system earthing for which the ASSEMBLY is designed	TN-C	Pass
	d) indoor and/or outdoor installation	indoor/ outdoor	Pass
	e) stationary or movable	stationary	Pass
	f) degree of protection	IP 44/30	Pass
	g) intended for use by skilled or ordinary persons	for ordinary persons	Pass
	h) electromagnetic compatibility (EMC) classification	environment B	Pass
	i) special service conditions, if applicable	--	--
	j) external design	surface	Pass
	k) mechanical impact protection, if applicable	IK 10	Pass
	l) the type of construction – fixed or removable parts	fixed parts	Pass
	m) the nature of short-circuit protective device (s)	circuit breakers	Pass
	n) measures for protection against electric shock	automatic disconnection of supply	Pass
	o) overall dimensions, if required (w x h x d) [mm]	470 x 620 x 250 [mm]	Pass
	p) the weight, if required [kg]	16 [kg]	--
	q) type A or type B DBO	type B DBO	Pass

ВЯРНО С ОРИГИНАЛА



6	INFORMATION			
6.1	ASSEMBLY DESIGNATION MARKING			
	The ASSEMBLY manufacturer shall provide each ASSEMBLY with one or more labels, marked in a durable manner and located in a place such that they are visible and legible when the ASSEMBLY is installed and in operation. Compliance is checked according to the test of 10.2.7 and by inspection. The test of 10.2.7 only applies to DBOs intended for outdoor installation. The following information regarding the ASSEMBLY shall be provided on the designation label(s):	see fig No. 1	Pass	
	a) ASSEMBLY manufacturer's name or trade mark			
	b) type designation or identification number or any other means of identification, making it possible to obtain relevant information from the ASSEMBLY manufacturer	type: TEPO OP1 s. n.: 2453351		
	c) means of identifying date of manufacture	13. 02. 2019		
	d) IEC 61439-3	yes		
	e) rated current of the DBO using the symbol I_{nA}	$I_{nA} = 10 A$		
	f) degree of protection if greater than IP 2XC	IP 44/30		
6.2	DOCUMENTATION			
6.2.1	INFORMATION RELATING TO THE ASSEMBLY			
	All the interface characteristics according to chapter 5 can be contained in the distributor manufacturer's technical documentation delivered with it.	see chapter 5	Pass	
6.2.2	INSTRUCTIONS FOR HANDLING, INSTALATION, OPERATION AND MAINTENANCE			
	In the documentation or catalogs the distributor manufacturer shall determine eventually conditions of handling, installation, operation and maintenance of the distributor and devices contained in it.	catalogue		
6.3	DEVICE AND/OR COMPONENT IDENTIFICATION			
	It must be possible to identify particular circuits and their protective devices inside the equipment. Identification labels must be legible, durable and suitable for real environment.	devices are marked, wires are color-coded		

ВЯРНО С ОРИГИНАЛА



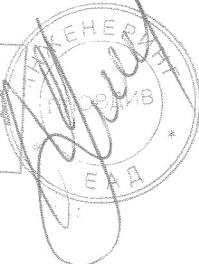
10	DESIGN VERIFICATION		
10.1	GENERAL		
	The design examination serves to a purpose whether the distributor or its system design meets regulations contained in this set of standards.		--
10.2	STRENGTH OF MATERIALS AND PARTS		
10.2.1	GENERAL		
	The mechanical, electrical and thermal capability of constructional materials and parts of the ASSEMBLY shall be deemed to be proven by verification of construction and performance characteristics.	enclosure: DCK Holoubkov Bohemia a.s. type: SS test reports EZÚ No.: 400503-01/01,02	Pass
10.2.2	RESISTANCE TO CORROSION		
10.2.2.1	TEST PROCEDURE		
	The resistance to corrosion of representative samples of ferrous metallic enclosures including internal and external ferrous metallic constructional parts of the assembly shall be verified.	tested hinges, locks and fasteners	--
10.2.2.2	SEVERITY TEST A		
	This test is applicable to: – metallic indoor enclosures; – external metallic parts of indoor assemblies; – internal metallic parts of indoor and outdoor assemblies upon which intended mechanical operation may depend.	test report EZÚ No.: 400502-01/05	Pass
10.2.2.3	SEVERITY TEST B		
	This test is applicable to: – metallic outdoor enclosures; – external metallic parts of outdoor assemblies	test report EZÚ No.: 400502-01/05	Pass
10.2.2.4	RESULTS TO BE OBTAINED		
	Compliance is checked by visual inspection to determine that: – there is no evidence of iron oxide, cracking or other deterioration more than that allowed by ISO 4628-3 for a degree of rusting Ri1. However surface deterioration of the protective coating is allowed. – the mechanical integrity is not impaired; – seals are not damaged, – doors, hinges, locks, and fastenings work without abnormal effort.	test report EZÚ No.: 400502-01/05	Pass
10.2.3	PROPERTIES OF INSULATING MATERIALS		
10.2.3.1	VERIFICATION OF THERMAL STABILITY OF ENCLOSURES		
	The thermal stability of enclosures manufactured from insulating material shall be verified by the dry heat test. The test shall be carried out according to IEC 60068-2-2 Test Bb, at a temperature of 70 °C, with natural air circulation, for a duration of 168 h and with a recovery of 96 h. The enclosure or sample shall show no crack visible to normal or corrected vision without additional magnification nor shall the material have become sticky or greasy.	test report EZÚ No.: 400503-01/02	Pass

ВЯРНО С ОРИГИНАЛА



10.2.3.2	VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO ABNORMAL HEAT AND FIRE DUE TO INTERNAL ELECTRIC EFFECTS		
	<p>The glow-wire test principles of IEC 60695-2-10 and the details given in IEC 60695-2-11 shall be used to verify the suitability of materials used:</p> <p>a) on parts of assemblies, or b) on parts taken from these parts.</p> <p>The temperature of the tip of the glow-wire shall be as follows:</p> <p>– 960 °C for parts necessary to retain current-carrying parts in position; – 850 °C for enclosures intended for mounting in hollow walls; – 650 °C for all other parts, including parts necessary to retain the protective conductor.</p>	<p>enclosure made of SMC mounting plate made of PC 960 °C / 650 °C</p> <p>960 °C: flame had extinguished in 1 second after removing the hot loop (SMC) flame had extinguished in 10 seconds after removing the hot loop (PC) tissue paper had not been lit 650 °C: sample had not been lit</p>	Pass
10.2.3.101	DRY WARM TEST		
	The complete distributor must be put into a furnace with its inner temperature being increased up to 100 (± 2) °C during 2 to 3 hours and this final temperature shall be then maintained during 5 hours.	test report EZÚ No.: 400503-01/02	Pass
10.2.3.102	CHECKING THE COMBUSTIBILITY CATEGORY		
	Typical samples from all materials of covers, separators and other insulating parts shall be exposed to the flammability test according to method A - i.e. the test by burning in the horizontal sample position according to IEC 60695-11-10.	test report EZÚ No.: 203464-01/02	Pass
10.2.5	LIFTING		
	For ASSEMBLIES with provision for lifting means compliance is verified by the following tests.	switchgear does not contain any lifting means	--
10.2.6	MECHANICAL IMPACT		
	Mechanical impact tests where required by the specific assembly standard are to be carried out in accordance with IEC 62262.	test reports EZÚ No.: 400503-01/01,02	Pass
10.2.7	MARKING		
	<p>Marking performed by shaping, pressing, engraving or similar procedures including labels with layered plastic coats must not be exposed to the following test.</p> <p>The test shall be performed by wiping marking by hand during 15 seconds with a textile piece moistened in water and then again during 15 seconds with a textile piece moistened in mineral spirit.</p> <p>After the test the marking shall be legible to normal or corrected vision without additional.</p> <p>This test only applies to DBO's intended for outdoor installation.</p>	small wear, marking is easy to read	Pass

ВЯРНО С ОРИГИНАЛА



10.2.101	CHECKING MECHANICAL STRENGTH		
	Tests must be performed at ambient temperature 10°C to 40°C All tests must be carried out with a switchgear mounted as for normal operation.	test reports EZÚ No.: 400503-01/01,02 art. 10.2.101.1 ÷ 8	Pass
10.3	DEGREE OF PROTECTION OF ASSEMBLIES		
	The protection degree must be estimated according to IEC 60529.	IP 44 (IP 40, IP 30)	Pass
	If an empty enclosure according to IEC 62208 is used, there is necessary to carry out an evaluation of the examination in order to state that any outer modification having performed has not decreased the protection code. In that case any other examinations are not required.	test report EZÚ No.: 402753-01/03	
10.4	CLEARANCES AND CREEPAGE DISTANCES		
	ČSN EN 61439-1 table 1 and 2	pollution degree 3	Pass
	a) $U_{imp} = 8,0 \text{ kV} \Rightarrow$ min. air clearance: 8,0 mm	test report EZÚ No.: 402753-01/01	
	b) $U_1 = 500 \text{ V} \Rightarrow$ min. creepage distance: 8,0 mm		
	The clearances and creepage distances are used among phases, between a phase and the zero conductor and, except for the case that an electric wire is connected directly with the earth, among a phase, the zero conductor and the earth.	insulating partitions are used	
10.5	PROTECTION AGAINST ELECTRIC SHOCK AND INTEGRITY OF PROTECTIVE CIRCUITS		
	It shall be verified that the different exposed conductive parts of the assembly are effectively connected to the terminal for the incoming external protective conductor and that the resistance of the circuit does not exceed 0,1 Ω .	all-plastic design without conductive parts	--
10.6	INCORPORATION OF SWITCHING DEVICES AND COMPONENTS		
	Meeting structural requirements on the switch instruments and components installed must be confirmed by scrutiny and verified according to this standard.	devices are in accordance with the standards, installation according to the instructions	Pass
10.7	INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS		
	Meeting structural requirements on the inner electric circuits and connections must be confirmed by scrutiny and verified according to this standard.	wires can be identified by means of marks and colors	Pass
10.8	TERMINALS FOR EXTERNAL CONDUCTORS		
	Meeting structural requirements on the terminals for external electric wires must be confirmed by scrutiny and verified according to this standard.	wires are not stressed, the terminals correspond to rated currents	Pass

ВЯРНО С ОРИГИНАЛА

10.11	SHORT-CIRCUIT WITHSTAND STRENGTH		Pass
	The short-circuit current ratings declared shall be verified except where exempt, see 10.11.2. Verification may be, by comparison with a reference design (10.11.3 and 10.11.4.) or by test (10.11.5).		
10.11.5	CIRCUITS OF ASSEMBLIES WHICH ARE EXEMPTED FROM THE VERIFICATION OF THE SHORT-CIRCUIT WITHSTAND STRENGTH		
	The assembly or its parts as necessary to complete the test shall be mounted as in normal use. It is sufficient to test a single functional unit if the remaining functional units are of the same construction.	test report IVEP, a.s. No.: 88-1000, 88-1001	
10.13	MECHANICAL OPERATION		Pass
	There must be a satisfactory mechanical function verified after the installation into distributors for parts which requires verifying by the test. Number of operational cycles must be 50.	tested locks and door hinges	

PHOTO-DOCUMENTATION

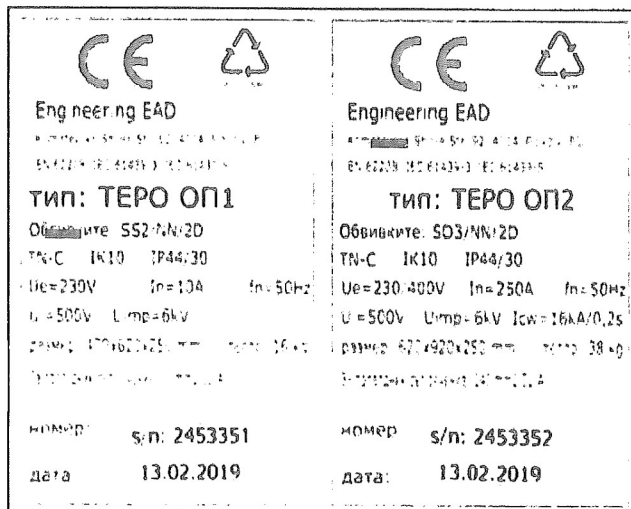


Fig. 1 – Labels

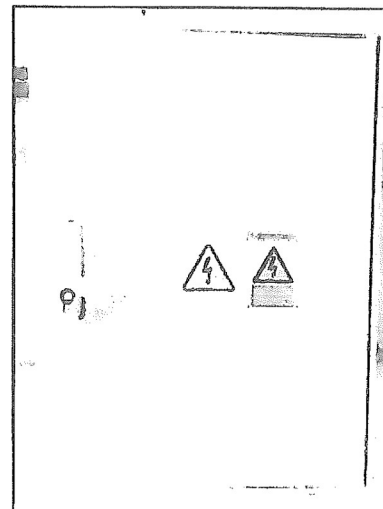


Fig. 2 – Switchgear OP 1

ВЯРНО С ОРИГИНАЛА



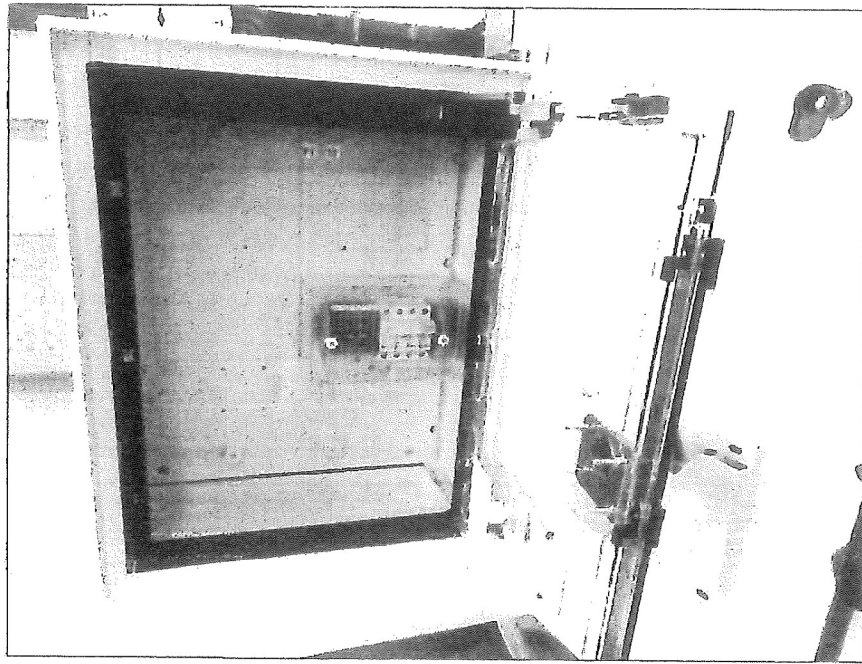


Fig. 3 – Switchgear OP 1 - open

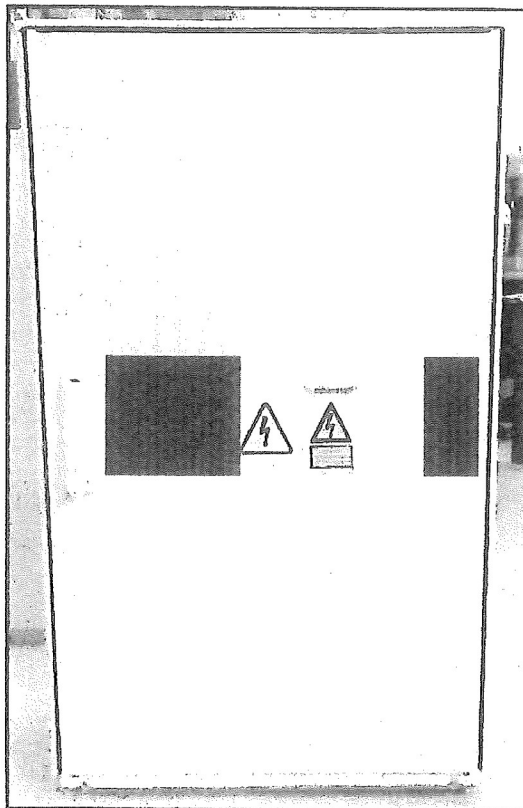


Fig. 4 – Switchgear OP 2 / OP 3

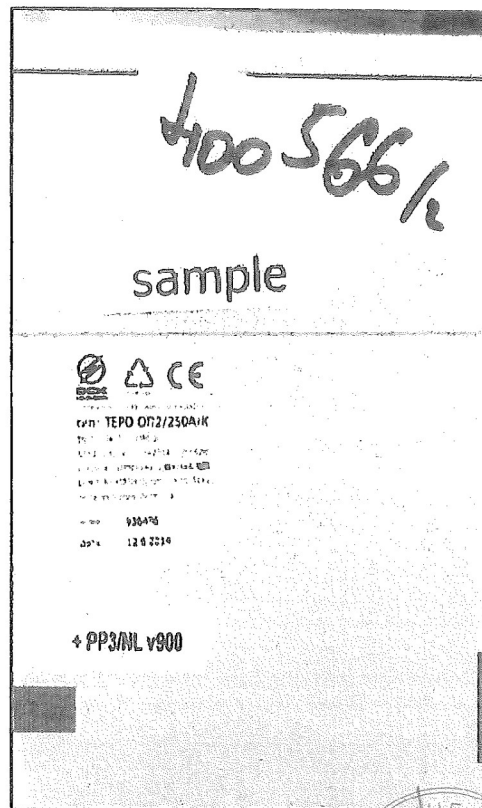
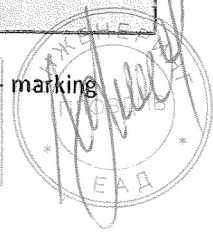


Fig. 5 – Switchgear OP 2 - marking

ВЯРНО С ОРИГИНАЛА



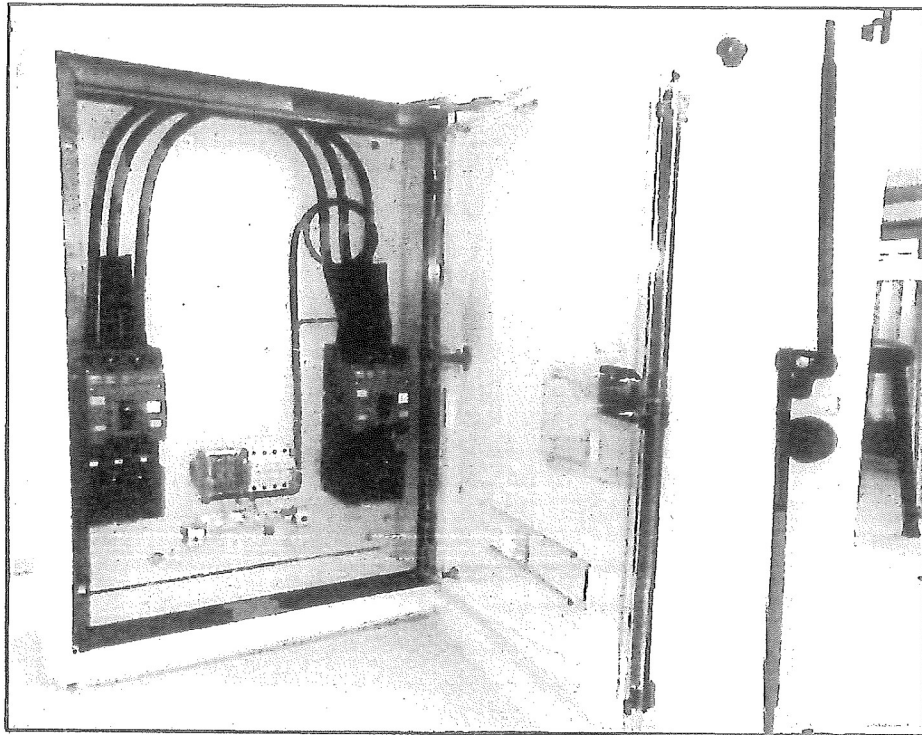


Fig. 6 – Switchgear OP 2 - open

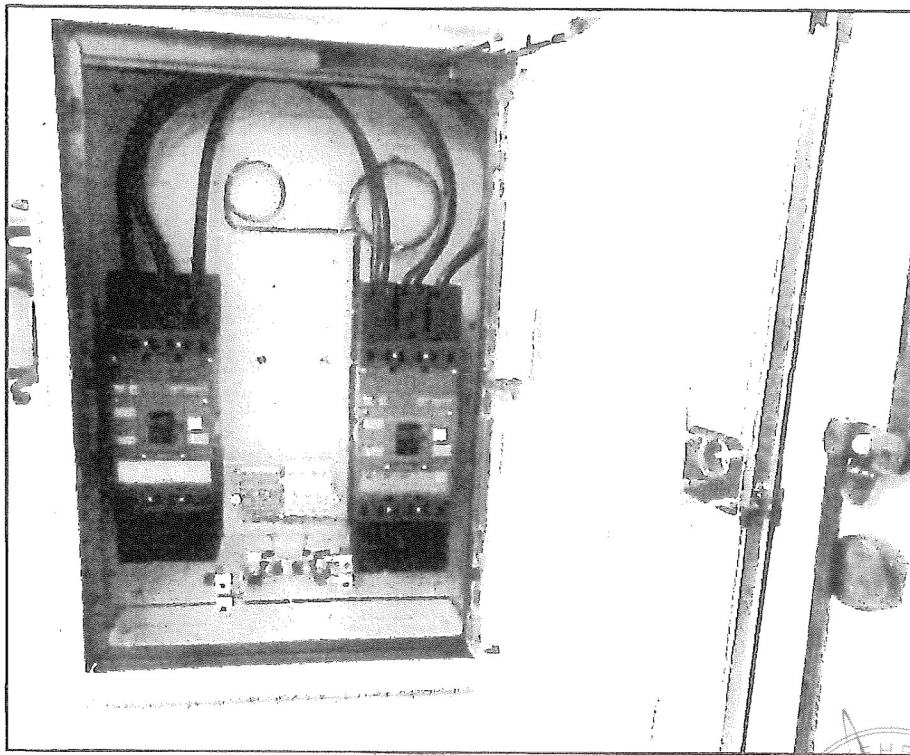
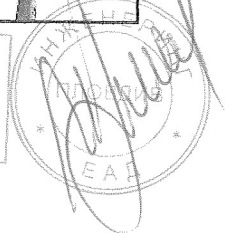


Fig. 7 – Switchgear OP 3 – open

ВЯРНО С ОРИГИНАЛА



503

INSTRUMENTS AND TESTING EQUIPMENT USED:

<u>Name, type</u>	<u>registration number</u>
HV source TOS 5301	110284
Impulse wave generator RG 542	110269
Digital slide gauge	551553
Tester Fluke T 100	551521
Electric furnace HS 202A	5844
Glow - wire test PTL 5090005 T 03.35	110195

на основание чл. 36а, ал. от ЗОП

Prepared by: Ing. Vladimír Řehořek

Dated: 11. 3. 2019

ВЯРНО С ОРИГИНАЛА



504

ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV



ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRUFANSTALT - ISCHECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - REPUBLIQUE TCHÉQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod lisem 129/2, 171 02 Praha 8 - Troja

CERTIFICATE

No.: 1180481

Product: Empty boxes and columns for LV switchboards

Type: SP, SS, SR, SD, SE, SV, ER, ES, EP, RVO, STR, ZS, NR,
NS, NP, RPO, SB, APZ, PP

Rating: 1000 V AC / 1500 V DC, IP44, IK10, (N material design, material SMC)

Ordering firm: DCK Holoubkov Bohemia a.s.
Holoubkov 336, 338 01 Holoubkov, Czech Republic

Manufacturer: DCK Holoubkov Bohemia a.s.
Holoubkov 336, 338 01 Holoubkov, Czech Republic

Trade mark:

The test results are stated in the test-report No.: 801456-01/01 of: 04.06.2018

A sample of the product was found to be in conformity with:
ČSN EN 62208 ed.2:12

Other data:

Certificate was issued on the basis of fulfillment of requirements of the "EZÚ certificate" certification scheme and on the basis of agreement No. 801456 between the client and the Electrotechnical Testing Institute.

Compliance of the product with mentioned standards and regulations ensures compliance of the product with essential requirements of Government Order No. 118/2016 Sb. (2014/35/EU) as amended and the certificate may be used as a supporting document for the EU Declaration of Conformity under Act No. 90/2016 Coll., on Conformity Assessment of Products When Made Available on the Market, as amended.

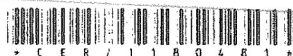
The validity of the certificate is limited to: 31.07.2021

03.07.2018

Prague

на основании чл. 36а, ал. от ЗОП

Mgr. Miroslav Sedláček
Head of Certification Body



801456-01

505

ELEKTROTECHNICKÝ ZKUSEBNÍ ÚSTAV



ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC ELEKTROTECHNISCHE PRUFANSTALT - TSCHHECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - REPUBLIQUE TSCHEQUE ZELEKTROTECHNICKÝ ÍSPYTATELŇNÝ ÍNSTITUT -
ЧЕШСКАЯ РЕПУБЛИКА

Pod lísem 129/2, 171 02 Praha 8 - Troja

Превод от английски език

СЕРТИФИКАТ

№.: 1180481

Продукт: Празни кутии и колони за табла НН

Тип: SP, SS, SR, SD, SE, SV, ER, ES, EP, RVO, STR, ZS, NR,
NS, NP, RPO, SB, APZ, PP

Класове: 1000 V AC / 1500 V DC. IP44. IK10. (N дизайн на материала, материал SMC)

Възложител: DCK. Holoubkov Bohemia a.s.
Holoubkov 336. 338 01 Holoubkov. Czech Republic

Производител: DCK Holoubkov Bohemia a.s.
Holoubkov 336. 338 01 Holoubkov. Czech Republic

Търговска марка:

Резултатите от изпитването са посочени в протокол за изпитване №.: 801456-01 01 от: 04.06.2018

Беше установено, че мостра на продукта е в съответствие с:

CSN EN 62208 издание.2:12

Други данни:

Сертификатът е издаден въз основа на изпълнението на изискванията на сертификационната схема "EZU сертификат" и въз основа на договор № 801456 между клиента и Института за електротехническо изпитване.

Съответствието на продукта със споменатите стандарти и разпоредби гарантира съответствие на продукта със съществените изисквания на правителствената заповед № 118/2016 Sb. (2014/35 / EL '), както и измененията, и сертификатът може да се използва като придружителен документ за ЕС Декларация за съответствие съгласно Закон № 90/2016 Coll., относно оценката на съответствието на продуктите, които се предлагат на пазара, както и измененията.

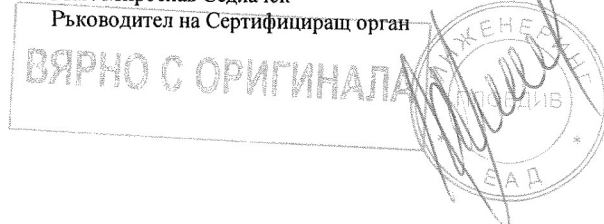
Валидността на сертификата е до: 31.07.2021

03.07.2018

(подпис – не се чете)

Прага

Маг. Мирослав Седлачек
Ръководител на Сертифициращ орган



506



TEST REPORT

Test Report No.: 801456-01/01

Issued: 4. 6. 2018

Name of product: Empty boxes and columns for LV switchboards

Type of product: SP, SS, SR, SD, SE, SV, ER, ES, EP, RVO, STR, ZS, NR, NS, NP, RPO, SB, APZ, PP

Ratings: 1000 V AC / 1500 V DC, IP44 (IP54), IK10
(N material design, material SMC)

Serial number: -

Manufacturer: DCK Holoubkov Bohemia a.s.
Holoubkov 336, 338 01 Holoubkov, Czech Republic

Production site: -

Ordering firm: DCK Holoubkov Bohemia a.s.
Holoubkov 336, 338 01 Holoubkov, Czech Republic

Number of tested samples: 0

Samples submitted on: -

Location of testing: Elektrotechnický zkušební ústav, s. p.

Tests performed from 28. 5. 2018 through 4. 6. 2018

Other data: Using the results of the test reports EZÚ No. 500908-01/01, 400503-01/06, 403894-01/01, 500285-01/01, 500945-01/01, 500945-01/03, 603947-01/01 and 700088-01/01

Tested according to: ČSN EN 62208 ed.2:12

на основании чл. 36а, ал. от ЗОП

на основании чл. 36а, ал. от ЗОП

Compiled by: Vladimír Řehořek

Approved by: Petra Marie Tůmová
Testing laboratory technical manager



No. of pages: 2

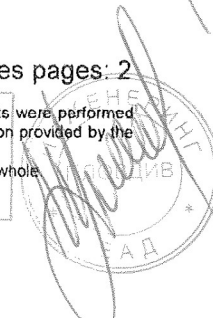
No. of annexes: 1

No. of annexes pages: 2

Test results stated in the test report apply only to the tested subject and unless specified otherwise in the test report, the tests were performed using the method and under the conditions determined in the test regulations, technical norm instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer. Without written consent of Elektrotechnický zkušební ústav, s. p., this report must not be reproduced in any other way than as a whole.

Tel.: 266 104 111, Fax: 284 680 070, www.ezu.cz

504



Name of product: **Empty boxes and columns for LV switchboards**

Type of product: **SP, SS, SR, SD, SE, SV, ER, ES, EP, RVO, STR, ZS, NR, NS, NP, RPO, SB, APZ, PP**

Ratings: **1000 V AC / 1500 V DC, IP44 (IP54), IK10
(N material design, material SMC)**

The product was certified with EZÚ test certificate No. 1150236 dated 8. 4. 2015 (corrigendum 23. 6. 2015). Results of the tests are listed in EZÚ test report No. 500908-01/01 dated 25. 03. 2015.

Tested according to ČSN EN 62208 ed. 2:12 with satisfactory result.

According to the manufacturer's statement were made no changes on the product which would affect the security or basic function.

The manufacturer asks for the addition of the test reports (IP code) of the tested cabinets and renewal of the certificate for the next period.

The results of the IP tests are given in the EZÚ test reports No:
400503-01/06 (8.7.2014), 403894-01/01 (3.10.2014), 500285-01/01 (11.2.2015), 500945-01/01 (26.3.2015), 500945-01/03 (27.3.2015), 603947-01/01 (30.11.2016) a 700088-01/01 (13.4.2017).

The standard used for certification is still valid.

на основание чл. 36а, ал. от ЗОП

Compiled by: Ing. Vladimír Řehořek

Date: 4. 6. 2018



empty boxes and columns for LV switchboards

Marking:

1	2	3	4	5	6
SS	I	N	V	7	
determination of the empty box and column	Size of the empty box and column	Type of material	Construction	Door closing of empty box	Specifications of the manufacturer
SP - SS - SR - SD - SV - ER - ES - EP - NR - NS - NP - RVO - STR - ZS - RPO - SB - RP - APZ - DIN - PP - KD -	00 - 0 - 1 - 2 - 3 - 11 - 12 - 21 - 22 - 23 - 32 - 33 -	N -	V - F - N - E - P - S - K - C - L - O -	1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 -	-C - -L - -DIN -
Marking according to PNE 35 7040 ed.3					

Explanatory notes:

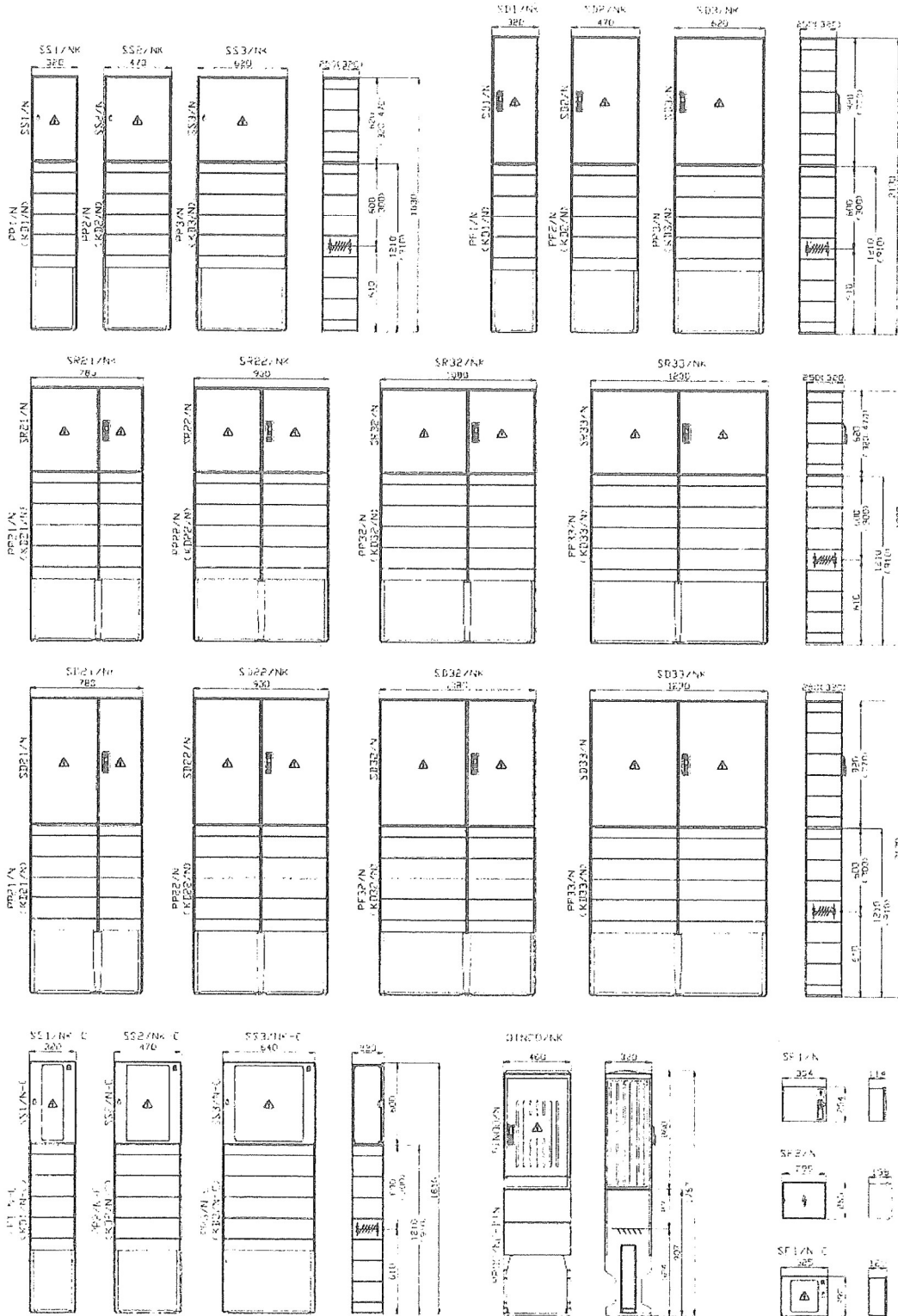
Column	Code	Code description
1	SP	Connection switchboards for electricity network for connecting (Connection box for connecting)
	SS	Determination for loop connection switchboards for electricity network (loop connection boxes)
	SR	Determination for disconnection switchboards for electricity network (disconnection boxes)
	SD	Same size as the SR types, Determination for disconnection switchboards for electricity network (disconnection boxes) with split busbar
	SV	Same size as the SS types, Disconnection switchboards and pillars for electricity network for overhead line (disconnection boxes) for overhead line
	ER	Same size as the SS types, Determination for electricity meter switchboards
	ES	Same size as the SS types, Determination for electricity meter switchboards - arrangement next them
	EP	Same size as the SS types, Determination for electricity meter switchboards - arrangement over them
	NR	Same size as the SS, SR types, Determination for electricity meter switchboards (indirect measuring)
	NS	Same size as the SS, SR types, Determination for electricity meter switchboards (indirect measuring) - arrangement next them
	NP	Same size as the SS, SR types, Determination for electricity meter switchboards (indirect measuring) - arrangement over them
	RVO	Same size as the SS, SR types, Determination for public lighting switchboards
	STR	Same size as the SS types, Building site switchboards
	ZS	Same size as the SP, SS types, Socket switchboards
	RPO	Same size as the SS types, Determination for overvoltage protections switchboards
	SB	Same size as the SS types, Determination for loop connection switchboards for electricity network with overvoltage protections
	RP	Same size as the SS, SR types, Determination for switchboards with electrical devices
APZ	Same size as the SS types, Determination for gas meter switchboards / cabinets (gas meter boxes), sign on the door - HLP	
DIN	Size and dimension of empty box and column according to DIN 43629	
PP	column / pedestal	
KD	column / pedestal - terminal part (part above the ground)	
3	N	All-plastic type made of thermoset / thermosetting material (SMC - polyester)
	V	For installation in an alcove in the wall (the brick pillars) materials of the reaction to fire class A1 according to ČSN EN 13501-1 + A1
4	F	For installation in an alcove in the wall (the brick pillars) materials of the reaction to fire class A1 according to ČSN EN 13501-1 + A1
	N	For wall mounting materials of the reaction to fire class A1 according to ČSN EN 13501-1 + A1
	E	For installation on a wall in cases of material design wall (base enclosure) different from the reaction to fire class A1 according to ČSN EN 13501-1 + A1
	P	For mounting on an pillar base
	S	For mounting on an electrical pole
	K	Compact column (compact finish of the box, terminal part and base part)
	C	Compact column (compact finish of the box, terminal part without base part)
5	I	Column (or column - terminal part) - 250mm
	O	Column (or column - terminal part) - 320mm
	1	Simple closing with locking system for the energetics field in accordance PN-DCK 01-2006 ed 2 and ČSN 35 9754 - appendix 1
	2	Three-point closing with locking system for the energetics field in accordance PN-DCK 01-2006 ed 2 and ČSN 35 9754 - appendix 1
	3	Sealing screw M6
	4	Dual closing (locking system) for the energetics field in accordance PN-DCK 01-2006 ed 2 and ČSN 35 9754 - appendix 1 / locking system for the other field in accordance PN-DCK 01-2006 ed 2 and ČSN 35 9754 - appendix 2)
	5	Three-point closing with cylinder lock
	6	Simple closing with cylinder lock
	7	closing with the spinous key 6x6 mm in accordance with PN-DCK 01-2006 ed 2 and ČSN 35 9756
8	closing with the spinous key 6x6 mm in accordance with PN-DCK 01-2006 ed 2 and ČSN 35 9756 - Simple closing with locking system for the energetics field in accordance PN-DCK 01-2006 ed 2 and ČSN 35 9754 - appendix 1	
9	Special closing according to agreement with the owner/manufacturer	
6	-C	All-plastic monolith design of box
	-L	Box with removable covering strip
	DIN	Size and dimension of empty box and column according to DIN 43629

ВЯРНО С ОРИГИНАЛА

509

empty boxes and columns for LV switchboards

Dimensions:



[Handwritten signatures]

ВЯРНО С ОРИГИНАЛА

510





ELECTROTECHNICAL TESTING INSTITUTE
Pod Lisem 129
171 02 Praha 8 - Troja

No. of pages:11
 No. of annexes/No. of an. pages:1/2

No. of the Test Report: 500908-01/01

Issued: 25.3.2015



TEST REPORT

Name of product: Empty boxes for LV switchboards
Type of product: SP, SS, SR, SD, SE, SV, ER, ES, EP, RVO, STR, ZS, NR, NS, NP, RPO, SB, RP, APZ, DIN, PP, KD
Ratings: 1000V AC / 1500V DC, IP44, IK10, (N material design, material SMC)
Serial number: 1739445, 1739436, 1739437, 937380
Manufacturer: DCK Holoubkov Bohemia a. s., Holoubkov 336, 338 01 Holoubkov, Czech Republic
Production site:
Ordering firm: DCK Holoubkov Bohemia a. s., Holoubkov 336, 338 01 Holoubkov, Czech Republic
Number of tested samples: 4
Samples submitted on: 5.3.2015
Location of testing: EZÚ
Tested from 10.3.2015 through 24.3.2015
Other data:
The product was tested according to: ČSN EN 62208 ed.2:12

на основании чл. 36а, ал. от ЗОП

на основании чл. 36а, ал. от ЗОП

Compiled by: Ing. Vladimír Rehořek

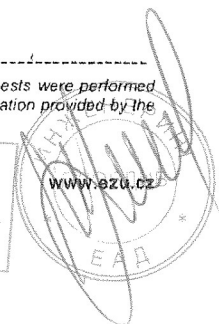
Approved by: Petra M. Slavková
 Testing laboratory
 technical manager

Test results stated in the test report apply only to the tested subject and unless specified otherwise in the test report the tests were performed using the method and under the conditions determined in the test regulations, technical norm, instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer
 Without written consent, this report must not be reproduced in any other way than as a whole

Phone: +420 266 104 111

Fax: +420 284 680 070

ВАРНО С ОРИГИНАЛА



511

PRODUCT NAME: Empty boxes for LV switchboards

TYPE: SP, SS, SR, SD, SE, SV, ER, ES, EP, RVO, STR, ZS, NR, NS, NP, RPO, SB, RP, APZ, DIN, PP, KD

The supplied samples: SP1/NV-1-C, SS2/NV-1, SS2/NV-1-C, DIN00/NK-2

Serial number-date of production: 1739445, 1739436, 1739437 – 2015; 937380 - 2014

Cabinet manufacturer: DCK Holoubkov Bohemia a.s.

Tested according to:

ČSN EN 62208 ed.2:12 art.: 4, 6: 6.2, 6.3, 9: 9.3, 9.4, 9.6, 9.7, 9.8, 9.9.1, 9.9.3, 9.10, 9.12, 9.13, 9.14

The protocol were taken from the test results protocols EZÚ no. 400502-01 / 05 (art. 9.13: corrosion tests) and 400503-01/06, 500285-01/01 (art. 9.8: test degrees of protection - IP code)

4 Classification

Cabinets are classified according to:

a) type of the material:

- insulation
- metal
- combination of an insulating material and metal

b) according to the method of attachment:

- standing on the floor
- mounted on the wall
- flush mounting
- pillar
- mounted on the mast

c) place of use:

- outdoor
- indoor

d) degree of protection:

IP code: IP 44
IK code: IK 10


e) rated insulation voltage:

$U_i = 1000 \text{ V, AC / } 1500 \text{ V, DC}$

ВЕРНО С ОРИГИНАЛОМ



ČSN EN 62208 ed.2:12			
Clause	Requirement + Test	Result - Remark	Verdict

6 INFORMATION TO BE GIVEN REGARDING THE ENCLOSURE			
6.2 Marking			
	The enclosure shall be identifiable, making it possible for the assembly manufacturer to obtain relevant information from the enclosure manufacturer. Such identification shall comprise:	--	Pass
	- either the name, trade mark or identification mark of the enclosure manufacturer;	 mark on label molding on cabinet - fig. No. 6	
	- type designation or identification number of the enclosure.	fig. No. 1	
	The marking shall be durable and easily legible and may be inside the enclosure.	art. No. 9.3	
6.3 Documentation			
	The manufacturer's documentation shall include all relevant constructional, mechanical characteristics, the enclosure classification (see Clause 4) and any instruction necessary for the correct handling, assembling, mounting and service conditions of the enclosure as well as reference to this standard:	--	Pass
	- dimensions	product label, catalog	
	- mounting arrangements	catalog	
	- permissible loads	the manufacturer's documentation	
	- lifting devices, if necessary	not required	
	- provisions for protection against electric shock	without any conductive parts protection class II	
	- applicable service conditions	-35°C až 40°C, 100% rel. humidity at 25 ° C	
	- location and size of protected space	interior of the enclosure outside the door	
	- data of thermal power dissipation capability	the manufacturer's documentation	
	- rated insulation voltage of enclosures constructed of an insulating material	U _n = 1000 V, AC (1500 V, DC)	
	- degree of protection (IK and IP codes)	IK 10, IP 44	

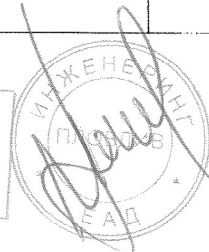
ВЯРНО С ОРИГИНАЛА

573

ČSN EN 62208 ed.2:12			
Clause	Requirement + Test	Result - Remark	Verdict
9	TYPE TESTS		
9.3	Marking		
	<p>Marking made by moulding, pressing, engraving or similar. Labels with a laminated plastic covering shall not be submitted to the following test.</p> <p>The test is made by rubbing the marking by hand for 15 s with a piece of cloth soaked in water and then for 15 s with a piece of cloth soaked with petroleum spirit. After the test the marking shall be easily legible.</p>	without damage	Pass
9.4	Static loads		
	<p>The enclosure fitted with all its required components to support the permissible load is loaded with a weight of 1,25 times the permissible load as declared by the manufacturer.</p> <p>The loads are arranged on the mounting plate or switchgear and controlgear supports and on the door evenly distributed as specified by the enclosure manufacturer.</p> <p>The loads are retained for 1 h in the closed position.</p> <p>For enclosures constructed of insulating material and metallic enclosures with parts (hinges, locks, etc.) of insulating material, this shall be carried out at 70 °C.</p> <p>The closed door is opened five times through 90 °, resting at least 1 min in the open position.</p> <p>For enclosures constructed of insulating material and metallic enclosures with parts (hinges, locks, etc.) of insulating material, this part of the test may be carried out at ambient temperature external to the heating cabinet.</p> <p>After the test, with the test loads in place, the enclosure shall show no cracks or permanent distortions and during the test no deflections which could impair any of its characteristics.</p>	<p>permissible load (enclosure / door):</p> <p>SP1/NV-1-C: 5 / 1 kg SS2/NV-1: 50 / 2 kg SS2/NV-1-C: 50 / 2 kg DIN00/NK-2: 50 / 2 kg</p> <p>without damage</p>	Pass
9.6	Axial loads of metal inserts		
	<p>This test applies to all kind of enclosures when threaded metal inserts are provided to retain the mounting plate or switchgear and controlgear supports in place.</p> <p>The test shall be carried out by applying an axial load for 10 s to representative samples.</p> <p>At the end of the test, the insert shall still be in its original position; any sign of movement is not acceptable.</p> <p>Cracks and splits in the material containing the insert are also not acceptable.</p>	<p>size inserts: M5 size of load: 350 N</p> <p>size inserts: M6, M8 size of load: 500 N</p> <p>not apparent damage</p>	Pass

ВЯРНО С ОРИГИНАЛА

514



ČSN EN 62208 ed.2:12			
Clause	Requirement + Test	Result - Remark	Verdict
9.7	Degree of protection against external mechanical impacts (IK code)		
	<p>The enclosure shall be fixed on a rigid support as for normal use.</p> <p>The impact energy shall be applied:</p> <ul style="list-style-type: none"> - three times to each exposed surface in normal use whose largest dimension is not above 1 m; - five times to each exposed surface in normal use whose largest dimension is greater than 1 m. <p>The test shall not be applied to the enclosure components (e.g. locks, hinges, etc.).</p> <p>The impacts shall be applied with even distribution over the faces of the enclosure.</p> <p>After the test, the enclosure shall continue to provide the IP code and dielectric strength. Removable covers can be removed and reinstalled, doors opened and closed.</p>	without damage	Pass
9.8	Degree of protection (IP-Code)		
9.8.1.1	Protection against access to hazardous parts		
	<p>Subclauses 12.1 and 12.2 of IEC 60529:1989 apply.</p> <p>The access probes shall not enter the protected space.</p>	<p>IP 4X</p> <p>Test reports EZÚ No. 400503-01/06 No. 500285-01/01</p>	Pass
9.8.1.2	Degree of protection against the ingress of solid foreign objects		
	<p>For IP 2X, IP 3X, IP 4X enclosures, 13.2 and 13.3 of IEC 60529:1989 apply.</p> <p>The protection is satisfactory if the probe does not penetrate tacted diameter into any opening.</p>	<p>IP 4X</p> <p>Test reports EZÚ No. 400503-01/06 No. 500285-01/01</p>	Pass
9.8.2	Degree of protection against ingress of water as indicated by second characteristic numeral		
	<p>Subclauses 14.1 and 14.2 of IEC 60529:1989 apply.</p> <p>After the test, water shall not have ingressed into the protected space.</p> <p>Immediately after the test, all indicator papers shall still be dry.</p>	<p>IP X4</p> <p>Test reports EZÚ No. 400503-01/06 No. 500285-01/01</p>	Pass

ВЯРНО С ОРИГИНАЛА



515

ČSN EN 62208 ed.2:12			
Clause	Requirement + Test	Result - Remark	Verdict
9.9	Properties of insulating materials		
9.9.1	Thermal stability		Pass
	<p>The thermal stability of enclosures manufactured from insulating material shall be verified by the dry heat test. The test shall be carried at a temperature of 70 °C, with natural air circulation, for a duration of 168 h.</p> <p>After the treatment, the enclosure or sample is removed from the cabinet and kept at ambient temperature for at least four days (96 h).</p> <p>The enclosure or sample shall show no crack visible to normal or corrected vision without additional magnification nor shall the material have become sticky or greasy.</p>	without damage and changes	
9.9.3	Resistance to abnormal heat and to fire		Pass
	<p>Compliance is checked by tests in accordance with the principles of IEC 60695-2-10.</p> <p>The temperature of the tip of the glow wire shall be as follows:</p> <ul style="list-style-type: none"> - for parts intended to retain current-carrying parts in position: (960 ± 15) °C - for parts intended to be installed in hollow walls: (850 ± 15) °C - for all other parts: (650 ± 15) °C 	<p>thermoset material (SMC):</p> <p>960 °C</p>	
	<p>The specimen is considered to have withstood the glow-wire test if:</p> <ul style="list-style-type: none"> - there is no visible flame and no sustained glowing, or if - flames and glowing of the specimen extinguish within 30 s after removal of the glow wire. <p>There shall be no burning of the tissue paper or scorching of the pinewood board.</p>	<p>the flame extinguished into 1s after withdrawing the glow-wire</p> <p>no ignition of the tissue paper</p>	
9.10	Dielectric strength		
	This test applies to enclosures where insulating material is used, even in combination with non-insulating materials.		Pass
9.10.2	Preconditioning		
	<p>The enclosures are placed in a humidity cabinet containing air with relative humidity maintained at between 91 % and 95 %. The air temperature, where the enclosures are placed, is maintained at (40 ± 2) °C. The enclosures are kept in the cabinet for two days (48 h).</p>	yes	

ВЯРНО С ОРИГИНАЛА



516

ČSN EN 62208 ed.2:12			
Clause	Requirement + Test	Result - Remark	Verdict
9.10.3	Enclosures without metal elements inside the protected space		Pass
	An r.m.s. voltage of substantially sine-wave form at a value according to 10.9.4 of IEC 61439-1:2011 is applied for 1 min between two metal foils, one in contact with the external surface and the other inside the enclosure at the limit of the protected space	$U_t = 1000 \text{ V, AC}$ $U_{dk} = 3300 \text{ V, AC}$	
9.10.5	Results to be obtained		Pass
	The samples shall show no damage impairing their further use; no flashover or breakdown shall occur during the test.	no flashover or breakdown	
9.11	The continuity of the protective circuit		--
	It shall be verified that the different exposed conductive parts of the enclosure are effectively connected to the earthing terminal or contact of the protective circuit and that the resistance of the circuit does not exceed 0,1 Ω .	all-plastic enclosure without conducting parts	
9.12	Resistance to ultra-violet (UV) radiation		Pass
	This test applies only to enclosures and external parts of enclosures intended to be installed outdoors and which are constructed of insulating materials or metals that are entirely coated by synthetic material. This test need not be carried out if the manufacturer can provide data from the material supplier to demonstrate that materials of the same thickness or thinner comply with this requirement.	test report SSOG: No. 14LA03899 29/09/2014	
9.13	Resistance to corrosion		Pass
	Ferrous metallic enclosures and external ferrous metallic parts of insulating and combined enclosures shall be tested to verify that they ensure protection against corrosion.	--	
9.13.2.1	Severity test A		
	This test is applicable to: - metallic indoor enclosures - external metallic parts of indoor enclosures - internal metallic parts of indoor and outdoor enclosures upon which intended mechanical operation may depend	tested hinges, locks and fastenings	

ВЕРНО С ОРИГИНАЛА



ČSN EN 62208 ed.2:12			
Clause	Requirement + Test	Result - Remark	Verdict
9.13.3	Results to be obtained		Pass
	Compliance is checked by visual inspection to determine that: - there is no evidence of iron oxide, cracking or other deterioration more than that allowed by ISO 4628-3 for a degree of rusting Ri1. However, surface deterioration of the protective coating is allowed; - the mechanical integrity is not impaired; - seals are not damaged; - door, hinges, locks, and fastenings work without abnormal effort.	Test report EZÚ No. 400502-01/05	
9.14	Thermal power dissipation capability		Pass
	Warming max [K]: Terminals for external conductors insulated 70 Busbars and conductors -- Manual control means: - metal 15 - insulating material 25 Accessible external enclosures: - metal 30 - insulating material 40	verified by calculation according to ČSN IEC 890 + A1 ($\Delta t_{1,0} = 40 \text{ K}$, $RDF = 0,8$) $P_{nr} = 90 \text{ W}$	

PHOTO-DOCUMENTATION

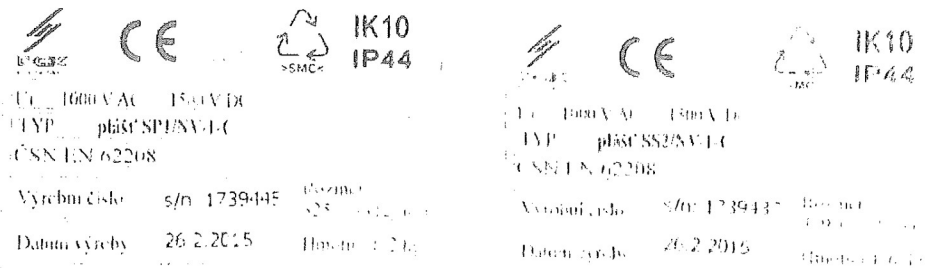






Fig. 1/1 - Product labels samples tested

 518

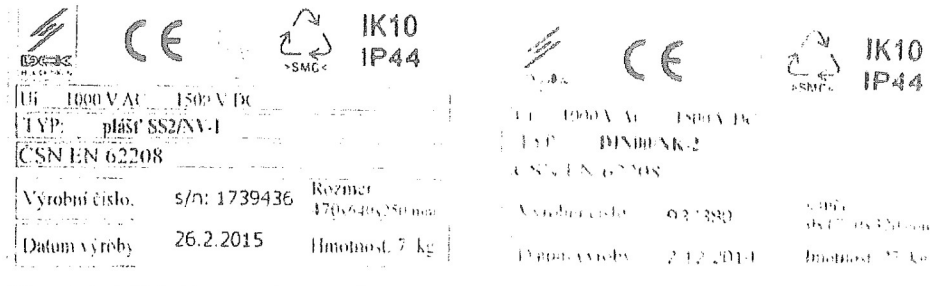


Fig. 1/2 - Product labels samples tested

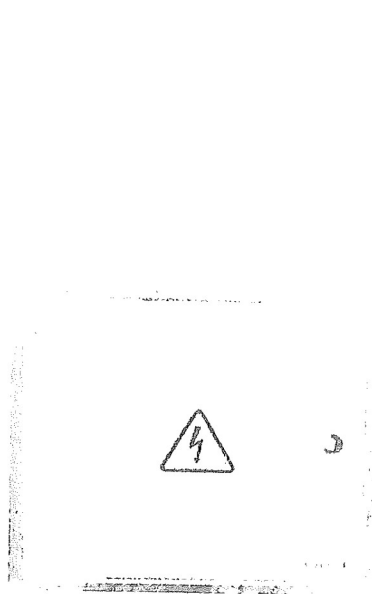


Fig. 2 – The enclosure SP1/NV-1-C

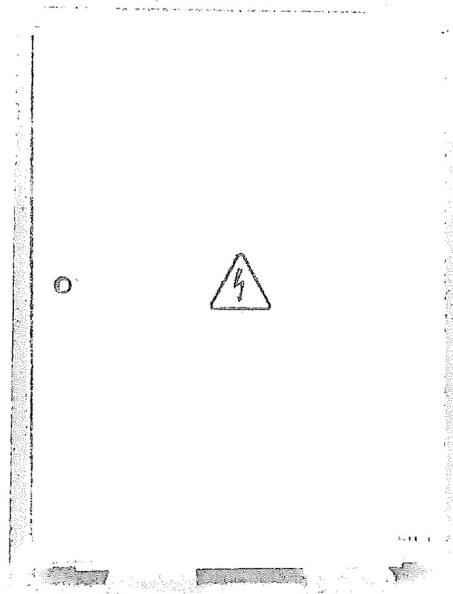


Fig. 3 – The enclosure SS2/NV-1-C

[Handwritten signature]

ВЯРНО С ОРИГИНАЛА

519

[Circular stamp with text: ИНЖЕНЕР, АД, АД]

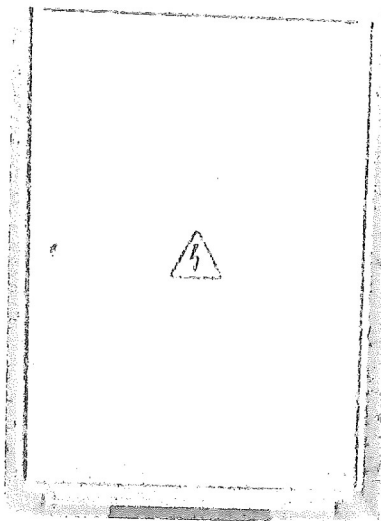


Fig. 4 - The enclosure SP1/NV-1

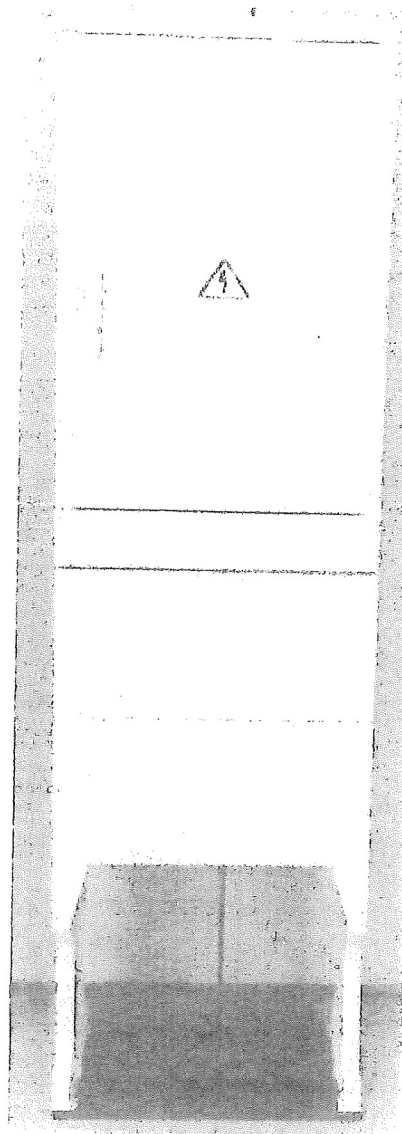
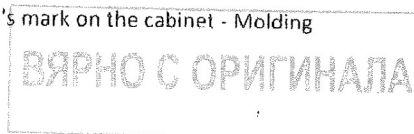


Fig. 5 - The enclosure DIN00/NK-2

Fig. 6 - Manufacturer's mark on the cabinet - Molding



A handwritten signature.

A handwritten signature.

520

<u>The name, type</u>	<u>registration number</u>
Electric strength WIP 6	ZP 76 – 3921
Electric furnace HS 202A	5844
Glow- wire test PTL 5090005 T 03.35	00110195
Test metallic ball	N 700729
Steel meter tape	N 400016
Set of weights 2,5 ÷ 20 kg	N 700088
Stopwatch Junso JS 6610	N 700263

на основании чл. 36а, ал. от ЗОП

Tested by: Ing. Vladimír Rehořek

Date: 24. 3. 2015



ВЯРНО С ОРИГИНАЛА



ENCLOSURE TO TEST REPORT 500908-01/01:

1/1

empty boxes and columns for LV switchboards

Marking:

1	2	3	4	5	6
SS	J	N	V	7	
determination of the empty box and column	Size of the empty box and column	Type of material	Construction	Door closing of empty box	Specifications of the manufacturer
SP	00 -	N	V -	1	-
SS	01		F -	2	-
SR	1 -		N -	3	-
SD	2		F -	4	-
SV	3		P -	5	-
ER	11 -		S -	6	-
ES	12		K -	7	-
EP	21 -		C -	8	-
NR	22		I -	9	-
NS	23		O -		-
NP	32 -				-
RVO	33				-
STR					-
ZS					-
RPO					-
SB					-
RP					-
APZ					-
DIN					-
PP					-
KD					-

Marking according to PN-35 7640 ed.3

Explanatory notes:

Column	Code	Code description
1	SP	Connection switchboards for electricity network for connecting (Connection box for connecting)
	SS	Determination for loop connection switchboards for electricity network (loop connection boxes)
	SR	Determination for disconnection switchboards for electricity network (disconnection boxes)
	SD	Same size as the SR types. Determination for disconnection switchboards for electricity network (disconnection boxes) with split busbar
	SV	Same size as the SS types. Disconnection switchboards and pillars for electricity network (disconnection boxes) for overhead line
	ER	Same size as the SS types. Determination for electricity meter switchboards - arrangement over them
	ES	Same size as the SS types. Determination for electricity meter switchboards - arrangement next them
	EP	Same size as the SS, SR types. Determination for electricity meter switchboards (indirect measuring)
	NR	Same size as the SS, SR types. Determination for electricity meter switchboards (indirect measuring) - arrangement next them
	NS	Same size as the SS, SR types. Determination for electricity meter switchboards (indirect measuring) - arrangement over them
	NP	Same size as the SS, SR types. Determination for electricity meter switchboards (indirect measuring) - arrangement over them
	RVO	Same size as the SS, SR types. Determination for public lighting switchboard.
	STR	Same size as the SS types. Building site switchboards
	ZS	Same size as the SP, SS types. Socket switchboards
	RPO	Same size as the SS types. Determination for overvoltage protection switchboards
	SB	Same size as the SS types. Determination for loop connection switchboards for electricity network with overvoltage protection
	RP	Same size as the SS, SR types. Determination for switchboards with electrical devices
APZ	Same size as the SS types. Determination for gas meter switchboards / cabinets (gas meter boxes), sign on the door - IUP	
DIN	Size and dimension of empty box and column according to DIN 43629	
PP	column - pedestal	
KD	column / pedestal - terminal part (part above the ground)	
3	N	All-plastic type made of thermoset - thermosetting material (SMC - polyester)
	V	For installation in an alcove in the wall (the brick pillars) materials of the reaction to fire class A1 according to ČSN EN 13501-1 - A1
4	F	For installation in an alcove in the wall (the brick pillars) in the case of design material lining panels or her base construction product different from the reaction to fire class A1 according to ČSN EN 13501-1 - A1
	N	For wall mounting materials of the reaction to fire class A1 according to ČSN EN 13501-1 - A1
	F	For installation on a wall in cases of material design wall (base enclosure) different from the reaction to fire class A1 according to ČSN EN 13501-1 - A1
	P	For mounting on an pillar base
	S	For mounting on an electrical pole
	K	Compact column (compact finish of the box, terminal part and base part)
5	C	Compact column (compact finish of the box, terminal part without base part)
	L	Column (or column - terminal part) - 250mm
	O	Column (or column - terminal part) - 320mm
	1	Simple closing with locking system for the energetics field in accordance PN-DCK 01-2006 ed.2 and ČSN 35 9734 - appendix 1
	2	Three-point closing with locking system for the energetics field in accordance PN-DCK 01-2006 ed.2 and ČSN 35 9734 - appendix 1
	3	Setling screw M6
	4	Diagonal closing locking system for the energetics field in accordance PN-DCK 01-2006 ed.2 and ČSN 35 9734 - appendix 1. Locking system for the other field in accordance PN-DCK 01-2006 ed.2 and ČSN 35 9734 - appendix 2)
	5	Three-point closing with cylinder lock
	6	Simple closing with cylinder lock
	7	closing with the spinous key 6x6 mm in accordance with PN-DCK 01-2006 ed.2 and ČSN 35 9734
6	8	closing with the spinous key 6x6 mm in accordance with PN-DCK 01-2006 ed.2 and ČSN 35 9734 - Simple closing with locking system for the energetics field in accordance PN-DCK 01-2006 ed.2 and ČSN 35 9734 - appendix 1
	9	Special closing according to agreement with the owner-manufacturer
	- C	All-plastic monolith design of box
- 1	Box with removable covering strip	
DIN	Size and dimension of empty box and column according to DIN 43629	

[Handwritten signatures]

ВЯРНО С ОРИГИНАЛА

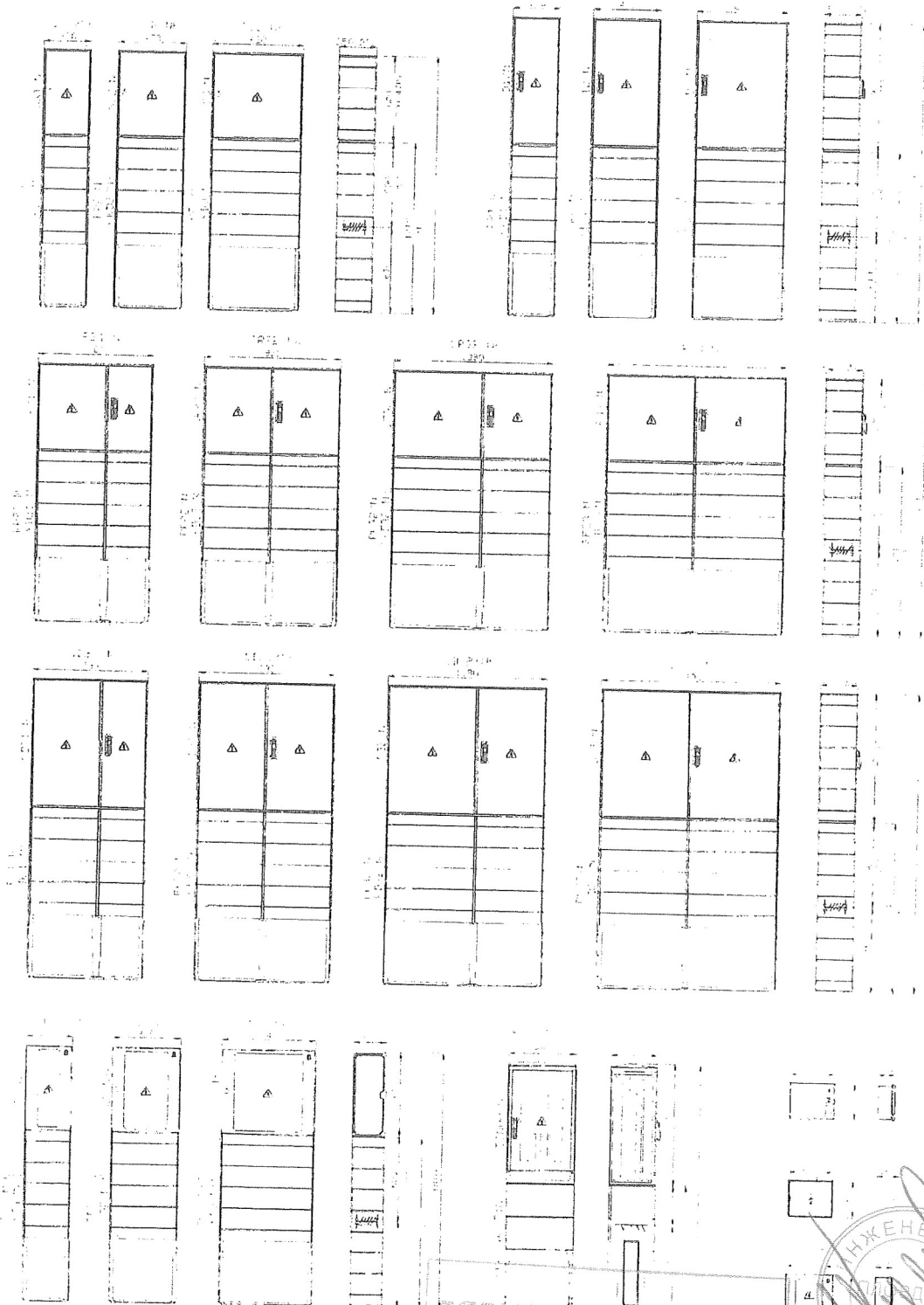
522

[Circular stamp: УНЖЕНЕЦ ИЛИОБРИВ ЕАД]

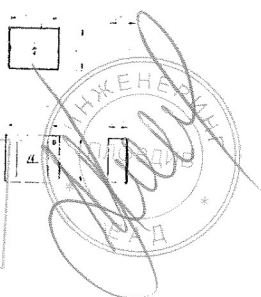
ENCLOSURE TO TEST REPORT 500908-01/01:

Dimensions:

empty boxes and columns for LV switchboards



ВАРНО С ОРИГИНАЛА





ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV, s.p.
 Pod Lisem 129
 171 02 Praha 8 - Troja

Počet stran: 3
 Počet příloh/Počet stran příloh: -/
 Zn.: Bz/Sa

Číslo protokolu: 004907-01/01

Datum vydání: 3. 2. 2011



PROTOKOL O ZKOUŠCE

Výrobek: Materiály rozváděčů a pilířů
Typ: PC DCK1, SMC 0200
Jmenovité hodnoty: vzorky 125 x 13,5 x 4 mm
Výrobní číslo: ---
Výrobce: DCK Holoubkov Bohemia a. s.,
 Holoubkov 79, 338 01 Holoubkov, Česká republika
Výrobní místo: dtto výrobce
Číselník výrobků EZÚ: 105001 - ostatní služby
Objednavatel: DCK Holoubkov Bohemia a. s.,
 Holoubkov 79, 338 01 Holoubkov, Česká republika
Počet zkoušených vzorků: 30
Vzorky předloženy dne: 9.12.2010
Místo provedení zkoušek: Elektrotechnický zkušební ústav, s.p.
Zkoušky prováděny v době od 10.1.2011 **do** 25.1.2011
Jiné údaje: ---
Zkušební předpis: ČSN EN 60695-11-10:00+A1:04 - metoda B

Výsledky zkoušek uvedené v protokolu se týkají pouze zkoušeného předmětu. Hodnoty v tomto protokolu jsou měřeny s přesností předepsanou ve zkušebním předpisu. Veškeré použité měřicí přístroje jsou řádně navázány.

Bez písemného souhlasu EZÚ nesmí být tento protokol reprodukován jinak než celý!

на основании чл. 36а, ал. от ЗОП

на основании чл. 36а, ал. от ЗОП

Zpracoval: J. Šašek

Schválil: Ing. J. Bažant
 technický vedoucí zkušební laboratoře

Tel.: 266104111

Fax: 284680070

E-mail: testing@ezu.cz
 http://www.ezu.cz

ВАРНО С ОРИГИНАЛА

524

Popis vzorku

Ke zkoušce byly předloženy dva materiály pro rozvaděče a pilíře ve formě zkušebních těles:

- I. polykarbonát PC DCK1 (barva: tmavě šedá)
- II. polyester SMC 0200 (barva: světle šedá)

Zkoušení

Zkoušky plamenem o výkonu 50 W

dle ČSN EN 60695-11-10:00+A1:04 (idt. EN 60695-11-10:99)

Zkušební metoda B – Zkouška ve svislé poloze

dle ČSN EN 60695-11-10:00+A1:04, odd. 9

Zkušební zařízení: Bunsenův kahan, inv. č. 19327
digitální stopky PRISMA 200, inv. č. 551705
mikrometr Schut, inv. č. 551764
termostat HS 201 A, inv. č. 4244
exsikátor se silikagelem

Parametry zkoušky: použitý plyn: metan
vzorky: 125 x 13,5 x 4 mm
kondicionování: a) 23 °C / 50 % RV / 48 h
b) 70 °C / 168 h + 4 h chlazení
doba přiložení plamene: 2 x 10 s

I. polykarbonát PC DCK1

1. sada vzorků:

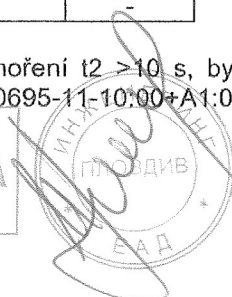
vz. č.	kondicionování	doba hoření (s)		doba žhnutí (s)	zapálení bavlny
		t ₁	t ₂	t ₃	
1	a)	3,2	5,9	0	ne
2		1,2	6,2	0	ne
3		1,4	12,4	0	ne
4		1,3	8,2	0	ne
5		1,1	9,9	0	ne
suma		8,2	42,6	0	-
6	b)	2,4	6,8	0	ne
7		1,5	6,8	0	ne
8		1	8,2	0	ne
9		1,5	8,6	0	ne
10		1	10,5	0	ne
suma		7,4	40,9	0	-

Protože u vzorků 3 a 10 byla zjištěna doba samovolného plamenného hoření t₂ > 10 s, bylo překročeno ke zkoušení druhé sady vzorků téhož materiálu dle ČSN EN 60695-11-10:00+A1:04, čl. 9.2.6.

ВЯРНО С ОРИГИНАЛА

2

525



2. sada vzorků:

vz. č.	kondicionování	doba hoření (s)		doba žhnutí (s)	zapálení bavlny
		t ₁	t ₂	t ₃	
11	a)	2	9,1	0	ne
12		1	6,5	0	ne
13		1	9,7	0	ne
14		1,5	6,8	0	ne
15		1,2	5,4	0	ne
suma		6,7	10	0	-
16	b)	1,8	9,3	0	ne
17		1	9,6	0	ne
18		1	9,8	0	ne
19		1,6	4,2	0	ne
20		1	9,8	0	ne
suma		6,4	42,7	0	-

Zjištění: Materiál PC DCK1 vyhovuje klasifikaci V-0.

II. polyester SMC 0200

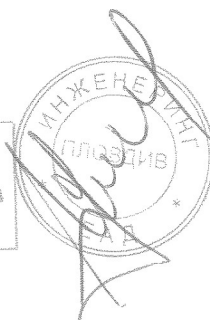
vz. č.	kondicionování	doba hoření (s)		doba žhnutí (s)	zapálení bavlny
		t ₁	t ₂	t ₃	
1	a)	0	<1	0	ne
2		0	<1	0	ne
3		0	<1	0	ne
4		0	<1	0	ne
5		0	<1	0	ne
suma		0	<5	0	-
6	b)	0	<1	0	ne
7		0	<1	0	ne
8		0	<1	0	ne
9		0	<1	0	ne
10		0	<1	0	ne
suma		0	<5	0	-

Zjištění: Materiál SMC 0200 vyhovuje klasifikaci V-0.

Zkoušel: J. Šašek

ВЕРНО С ОРИГИНАЛА
3

526



Превод от английски език

Протокол от изпитване № 004907-01/01

Издаден: 03.02.2011



ПРОТОКОЛ ОТ ИЗПИТВАНЕ

Име на продукта: Материали за корпус и колона
Тип на продукта: PC DCK1, SMC 0200
Класове: мостри 125 x 13,5 x 4 мм
Сериен номер:
Производител: DCK Holoubkov Bohemia a.s.
Holoubkov 336, 338 01 Holoubkov, Czech Republic
Производство: също като производител
EZU система за продуктов код: 105001 – други услуги
Възложител: DCK Holoubkov Bohemia a.s.
Holoubkov 336, 338 01 Holoubkov, Czech Republic
Брой проби за изпитване: 30
Пробите са дадени за изпитване на: 09.12.2010
Място на изпитването: Електротехнически изпитателен институт
Тестовите са извършени: от 10.01.2011 до 25.01.2011
Други данни: --
Регламент за изпитването: ČSN EN 60695-11-10:00+A1:04 – метод B

Резултатите от изпитването, посочени в този протокол се отнасят само за предмета на изпитването. Стойностите, посочени в този протокол са измерени с точността, посочена в регламентите за изпитване. Всички използвани средства за измерване са правилно проследими.

Без писменото съгласие на EZU този протокол не трябва да се възпроизвежда по никакъв друг начин, освен в неговата цялост.

(подписи – не се четат)

Съставен от: И. Шашек

Одобрен от: Инж. И. Базант

Tel.: 266104 111

Fax: 284680 070



527

Описание на пробата

Два материала за шкафове и колони под формата на образци за изпитване бяха подложени на изпитване

I. Поликарбонат PC DCK1 (цвет: тъмно сив)

II. Полиестер SMC 0200 (цвет: светло сиво)

Изпитване**Изпитване на пламък 50 W**

Съгл. ČSN EN 60695-11-10:00 + A1:04 (EN 60695-11-10:99)

Метод на изпитване В - изпитване във вертикална позиция

Съгл. ČSN EN 60695-11-10:00 + A1:04, сек. 9

Използвани средства за изпитване:

Горелка Bunsen, инв. № 19327

Цифров хронометър PRISMA 200, инв. № 551705

Микрометър Schut, инв. № 551764

Термостат HS 201 A, инв. № 4244

Ексикатор със силикагел

Параметри на изпитване:

Използван газ: метан

Проби: 125 x 13.5 x 4 mm

Околна среда: а) 23 ° C / 50% RV / 48 h

б) 70 ° C / 168 h + 4 h

време на приложение на пламъка: 2 x 10 s

I. Поликарбонат PC DCK1**1. Набор от мостри**

№	Околна среда	Времена горене (s)		Време на затиждане (s)	Запалване
		t ₁	t ₂		
1	а)	3,2	5,9	0	не
2		1,2	6,2	0	не
3		1,4	12,4	0	не
4		1,3	8,2	0	не
5		1,1	9,9	0	не
сума		8,2	42,6	0	-
6	б)	2,4	6,8	0	не
7		1,5	6,8	0	не
8		1	8,2	0	не
9		1,5	8,6	0	не
10		1	10,5	0	не
сума		7,4	40,9	0	-

Тъй като беше установено, че проби 3 и 10 имат време на спонтанно горене $12 > 10$ s, беше направено изпитване на втори комплект от проби съгласно ČSN EN 60695-11-10:00 + A1:04, сек. 9.2.6

ВАРНО С ОРИГИНАЛА



2. Набор от мостри

№	Околна среда	Времена горене (s)		Време на затиждане (s)	Запалване
		t ₁	t ₂		
11	a)	2	9,1	0	не
12		1	6,5	0	не
13		1	9,7	0	не
14		1,5	6,8	0	не
15		1,2	5,4	0	не
сума		6,7	10	0	-
16	b)	1,8	9,3	0	не
17		1	9,6	0	не
18		1	9,8	0	не
19		1,6	4,2	0	не
20		1	9,8	0	не
сума		6,4	42,7	0	-

Установено: Материал PC DCK1 отговаря на класификация V-0.

II. Полиестер SMC 0200

№	Околна среда	Времена горене (s)		Време на затиждане (s)	Запалване
		t ₁	t ₂		
1	a)	0	<1	0	не
2		0	<1	0	не
3		0	<1	0	не
4		0	<1	0	не
5		0	<1	0	не
сума		0	<5	0	-
6	b)	0	<1	0	не
7		0	<1	0	не
8		0	<1	0	не
9		0	<1	0	не
10		0	<1	0	не
сума		0	<5	0	-

Установено: Материал SMC 0200 отговаря на класификация V-0.

Съставил: И. Шашек

ВЯРНО С ОРИГИНАЛА



(Handwritten signature)

(Handwritten signature)