

**Societatea pentru Servicii de Mentenanță a Rețelei Electrice de Transport "Smart"- SA****Filiala a CNTEE Transelectrica SA**

Bucuresti, B-dul. Gen. Gh. Magheru nr. 33, sector 1, Cod postal: RO-010325

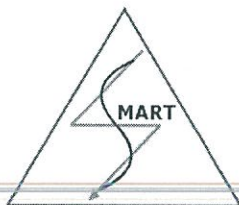
Nr. înmatriculare la Registrul Comerțului: J40/8613/2001; CUI: 14232728, CIF: RO14232728, CS: 38.528.600 lei

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Tel.: + 40 21 305.44.02; Fax: + 40 21 305.44.70; [www.smart-sa.ro](http://www.smart-sa.ro)**Sucursala Pitești**

oras Pitești, Str. Frații Golești nr. 25B; Cod postal: RO - 110174

Nr. înmatriculare la Registrul Comerțului: J07/103/2002; CUI: 14444771; CIF: RO 14232728

Tel.: + 40 348 457 140; Fax: + 40 348 457 141; [www.smartpitesti.ro](http://www.smartpitesti.ro)Nr. înreg. .... 1401 ..... din data de 27.03.2023 .....

<b>In atenția:</b>	<b>OPERATORILOR ECONOMICI INTERESAȚI</b>
<b>Instituția:</b>	<b>Societatea pentru Servicii de Mentenanță a Rețelei Electrice de Transport „Smart”S.A. – Sucursala Pitești</b>
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<b>Nr. pagini:</b>	<b>5</b>

**ANUNȚ DE INTENȚIE PRIVIND ACHIZIȚIA DE  
Serviciul de constatare deficiențe pierdere ulei Cutii terminale cablu**

Societatea pentru Servicii de Mentenanță a Rețelei Electrice de Transport "Smart" S.A. - Sucursala Pitești, având ca obiect de activitate mentenanța rețelei electrice de transport, organizează o consultare a pieței, în vederea pregătirii achiziției de servicii, conform listei de mai jos:

Nr crt	Denumire produs/serviciu/lucrare	um	Cantitate
1	Serviciul de constatare deficiențe pierdere ulei Cutie terminală cablu LEA 220 kV TGV 2 (faza R) și LEA 220 kV Stupărei (faza R, T)	buc	1

\*\*\* NOTĂ: cutiile terminale cap cablu 220 kV sunt de tipul PFISTERER I XOSIL

În acest context invităm operatorii economici interesați să depună oferte de preț în conformitate cu cele menționate mai sus și cu următoarele condiții:

1. Criteriul de atribuire: „prețul cel mai scăzut”
2. Modalitatea și termenul de plată
3. Valabilitate ofertă: 30 zile
4. Termen și condiții de prestare

Ofertele se vor depune la adresa la adresa de e-mail [emilia@smartpit.ro](mailto:emilia@smartpit.ro), până la data de **29.03.2023, ora 12:00.**

Persoană de contact Pană Marian – Director de Mentenanță – telefon 0745 025 143

**APROBAT**  
Director  
Nițu Marin

<b>Avizat</b>	<b>Avizat</b>	<b>Întocmit</b>
<b>Director Mentenanță Pană Marian</b>	<b>Sef S.F.C.P.</b>	<b>Șef S.C.A.A. Rădulescu Emilia</b>

Director sucursala

Tel.: + 40 348 457 140;

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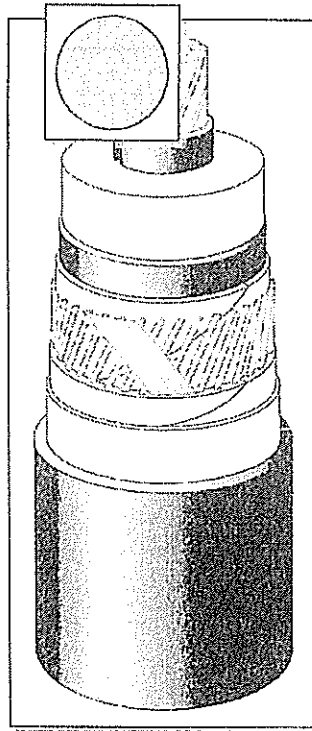


## TECHNICAL SPECIFICATION

ZXS(KL)ZY 1X2500RMS/110 127/220 (245)kV IEC 62067

### CONSTRUCTION <sup>(\*)</sup>

- Round, stranded and compressed copper conductor. Milliken type.
- Extruded semi-conducting conductor screen
- Insulation XLPE – dry cured
- Extruded semi-conducting insulation screen
- Semi-conducting swelling tapes
- Metallic screen:
  - copper wires screen and copper equalizing tapes
- Semi-conducting swelling tapes
- Longitudinal aluminum foil
- Sheath – Black HDPE



The picture is informative only  
– not in scale

### APPLICATION

- Laying in ground (wet or dry locations)
- Laying in air
- Laying in ducts

### Highest permissible conductor temperature

- Continuous operation 90°C
- Overload 105°C
- Short circuit 250°C (duration max 5 s)

Laying is possible without any special measures at natural cable temperatures and ambient temperature not lower than -5°C, with Tele-Fonika supervising

### MARKING

TF KABLE, product name, date of manufacture, standard, meter marking

DESCRIPTION	UNIT	DETAILS	
CONSTRUCTION DATA	$U_0/U_m$	127/220 (245)kV	
Conductor			
<input type="checkbox"/> material		Copper	
<input type="checkbox"/> number of segments	No	5	
Nominal cross sectional area	mm <sup>2</sup>	2500	
Conductor diameter and tolerance	mm	62.4 <sup>+1.0</sup>	
Min. / Nom. thickness semi-conducting XLPE on conductor	mm / Ø	1.0 / 2.0 / 66.2	
Nominal insulation thickness XLPE	mm	22.0	
Insulation thickness: minimum at a point	mm	19.8	
Diameter over insulation – nominal	mm	110.8	
Min. / Nom. thickness semi-conducting XLPE on insulation	mm / Ø	0.8 / 1.2 / 112.8	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Metallic screen	mm <sup>2</sup>	110	
<input type="checkbox"/> Copper wires	No x mm	70 x 1.44	
<input type="checkbox"/> Copper equalizing tape	No x mm x mm	2 x 10 x 0.18	
Mean diameter over metallic screen	mm	116.8	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Thickness of aluminum foil	mm	0.2	
Diameter over aluminum foil	mm	118.5	
Nominal outer sheath thickness / min.	mm	5.10 / 4.24	
Approximate overall diameter completed cable (D <sub>c</sub> )	mm	128.6	
Weight of complete cable (approx.)	kg/km	33537	
DELIVERY DATA			
Diameter of wooden drum	m	3.7	4.0
<input type="checkbox"/> type		37	40
Maximum length per drum	m	350	740
Weight of heaviest reel, including cable	kg	22420	29710

<sup>(\*)</sup> Diameters are calculated values and subject to manufacturing tolerances

ELECTRICAL DATA at 50Hz		
Maximum D.C. conductor resistance at 20°C	Ω/km	0.0072
Maximum A.C. conductor resistance at 90°C	Ω/km	0.0110
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.163
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	0.362
Operating inductance		
<input type="checkbox"/> trefoil formation	mH/km	0.333
<input type="checkbox"/> flat formation <sup>(*)</sup>	mH/km	0.518
Induction reactance		
<input type="checkbox"/> trefoil formation	Ω/km	0.105
<input type="checkbox"/> flat formation <sup>(*)</sup>	Ω/km	0.163
Capacitance	μF/km	0.262 (+ 8 %)
Capacitance reactance	kΩ/km	12.14
Impedance		
<input type="checkbox"/> trefoil formation	Ω/km	0.105
<input type="checkbox"/> flat formation <sup>(*)</sup>	Ω/km	0.163
Zero sequence reactance	Ω/km	0.054
Max. electric stress at conductor screen / (at insulation)	kV/mm	7.52 / 4.53
Dielectric losses (tg δ = 0.001) – per phase	W/m	1.329
Partial discharge test – at 1.5U <sub>0</sub>	pC	≤ 5
Charging current – per phase	A/km	10.46
Charging power	kVA/km	1329
Earth fault current – per phase	A/km	31.39
MECHANICAL DATA		
Recommended min. bending radius for laying	m	3.22
Recommended permissible bending radius at final installation	m	1.93
Maximum permissible pulling force:	kN	125.0
SHORT CIRCUIT CURRENTS		
Maximum permissible thermal short-circuit (IEC 60949) Current for 1.0 sec.		
Phase conductor 90 → 250°C	kA	359.4
Metallic screen 80 → 350°C	kA	22.4
AMPACITY <sup>(**)</sup> – Bonding of the metallic screens		Single-point
in earth		
<input type="checkbox"/> flat formation <sup>(*)</sup> – 1cct	A	1321
<input type="checkbox"/> trefoil formation – 1cct	A	1524
TESTS		
AC Test voltage – (2.5U <sub>0</sub> ; 30min)	kV	± 18
Impulse test	kV	1350
Partial discharge test	kV	190

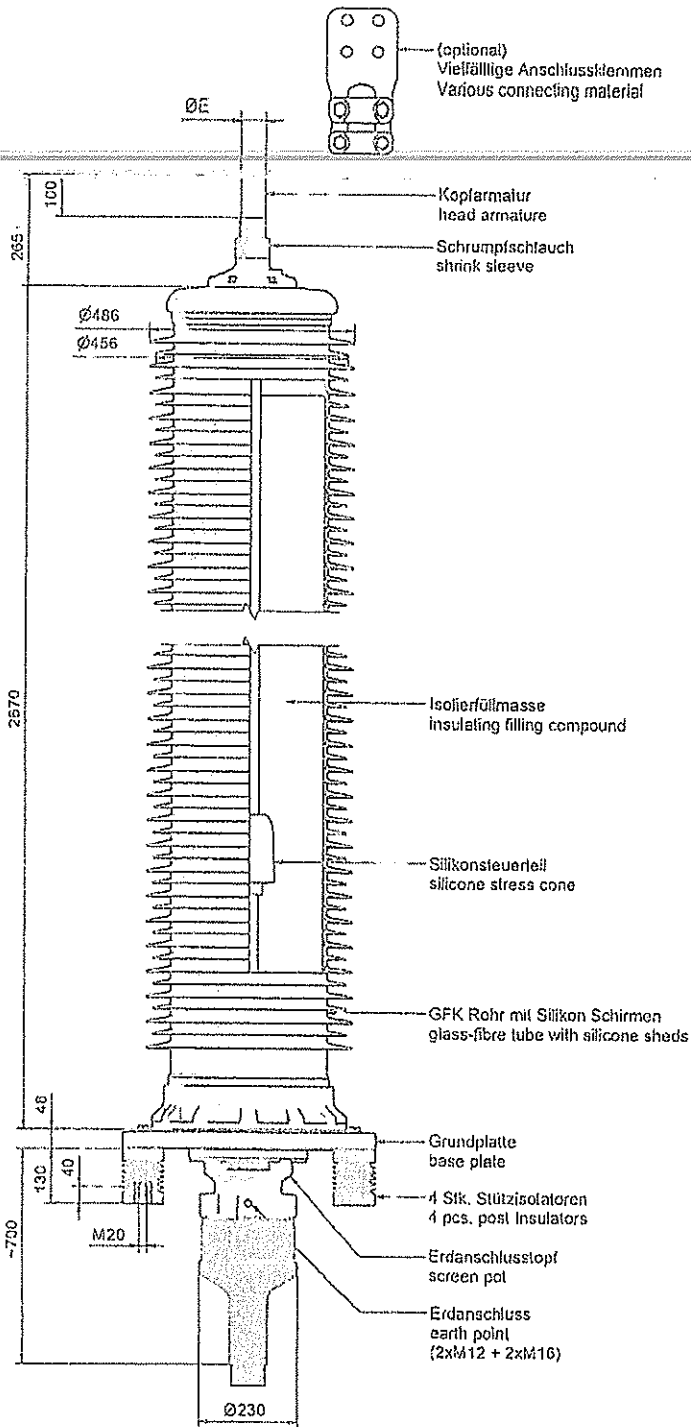
Marking: TF-KABLE 5 2XS(FL)2Y 1x2500RMS/110 127/220(245)kV IEC 62067 2015

<sup>(\*)</sup> Distance between cable axes laid in flat formation D<sub>e</sub>+D<sub>e</sub> mm, in trefoil formation D<sub>e</sub> mm

<sup>(\*\*)</sup> Current rating guideline (Calculated with Cymcap 5.3 based on IEC Pub. 6028<sup>1</sup> and the following conditions)

- Ground temperature 25°C (max)
- Laying depth 1.2 m (max)
- Ground thermal resistivity 1.0 K·m<sup>2</sup>/W
- Load factor 1.0

<sup>(\*)</sup> Diameters are calculated values and subject to manufacturing tolerances



(B) for  $\phi$  of cable insulation prepared  
für Kabelisolation  $\phi$  geschält 99 - 118mm

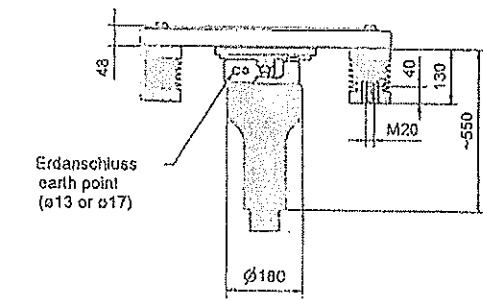
Höchste Spannung für Betriebsmittel (U <sub>m</sub> ) highest voltage for equipment (U <sub>m</sub> )		245kV
Mindest-Kriechweg minimal creepage distance		9650mm
Verschmutzungsstufe pollution class	IEC60815 IEC60815-3	35.8mm/kV 60.9mm/kV
Farbe des Isolators colour of insulator	grau grey	RAL 7032
Totalgewicht ohne Kabel (ca.) total weight without cable (approx.)		315kg

Kabelisolation $\phi$ geschält $\phi$ of cable insulation prepared	72-118mm
entspricht ca. Leiterquerschnitt conductor cross-section (approx.)	$\leq 2500\text{mm}^2$

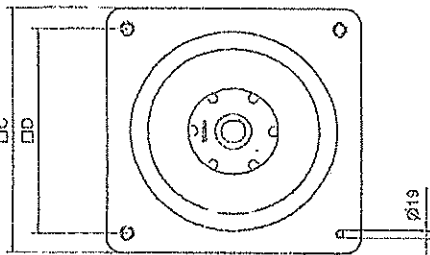
Kopfarmatur Bohrmaße head armature k p bolt dimensions	
Leiterquerschnitt conductor cross-section	$\phi E$ (mm)
$\leq 500\text{mm}^2$	30
$> 500\text{mm}^2 - < 1200\text{mm}^2$	40
$\geq 1200\text{mm}^2$	50,60

Grundplatte base plate (A)	C (mm)	D (mm)	$\phi E$ (mm)
Standard	600	500	19
auf Anfrage on request	500	400	19

Grundplatte base plate (B)	C (mm)	D (mm)	$\phi E$ (mm)
Standard	600	500	19



(A) for  $\phi$  of cable insulation prepared  
für Kabelisolation  $\phi$  geschält 72 - 99mm



ESS245-C97 Freiluft Endverschluss (Silikon) Outdoor termination (composite)		Erstellt durch created by	GubisM	2014-08-13
		Gerechtfertigt von approved by	GubisM	2014-12-03
		Daten für file is	SD4-145257	
CH-Altendorf	Switzerland	Zustimmung / PRO2580	In-Set / 01	

Die Abbildung zeigt die grundsätzliche Bauweise. Die Ausführung ist abhängig von den örtlichen Gegebenheiten.  
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**Technical data of ESS245-C97**  
High voltage composite termination with silicone rubber stress core

Manufacturer	Pfisterer Ixosil AG
Country	Switzerland
Type designation	ESS245-C97
Application	composite outdoor
Applied standard	IEC 62067

**Electrical levels (IEC 62067)**

Rated voltage (U)	220 - 230 kV
Highest voltage (Um)	245 kV
(U <sub>0</sub> ) for determination of test voltage	127 kV
Max. design voltage to ground	141 kV

**Electrical type test levels (IEC 62067)**

AC withstand voltage 30 min	318 kV
Lightning impulse voltage test (BIL)	1050 kV
Heating cycles (AC voltage, 2U <sub>0</sub> )	254 kV
Partial discharge test < 5pc at 1.5 U <sub>0</sub>	190 kV

**Electrical routine test levels (IEC 62067)**

AC withstand voltage 30 min	318 kV
Partial discharge test < 5pc at 1.5 U <sub>0</sub>	190 kV
Each stress cone routine tested	yes

**Current conditions**

Max. current rating	same as cable
Max. thermal short circuit current (1s)	63 kA
	max. same as cable

**Cantilever load on vertical installation**

mechanical connector	6.4 kN
compression sleeve	depending on conductor size

**Operation conditions**

Ambient temperature	- 30 / + 50 °C
Max. inclination	0 °

**Stress control**

Field control method	geometrical
Type	pre-moulded
Material	silicone rubber
Production method	injection moulding
Production environment	clean room

**Termination housing**

Filling compound	polybutene
on request	ester fluid
Overall length excl. head armature	2670 mm
Tube diameter with sheds	486 mm
Housing material	fibre glass
Sheds material	silicone rubber
Pollution level IEC60815 (First edition 1986)	35.8 mm/kV
Pollution level IEC60815-3 (Edition 2008)	60.9 mm/kV
Creepage distance	9650 mm
Flash over distance	2525 mm

**Head armature**

Material	aluminium
Conductor cross-section	240 - 2500 mm <sup>2</sup>
Connection methods	
bolted	240 - 2500 mm <sup>2</sup>

**Cable type**

Type	XLPE
Screen type	wire, lead sheath, corrugated Al&Cu
Diameter over prepared insulation	72 - 118 mm
Range of overall cable diameter	75 - 170 mm

**Base plate**

Material	aluminium
Fixing holes distance	
Standard	500 mm
On request	400 mm

**Post insulators**

included in scope of supply	4 pcs
Material	epoxy resin

**Screen pot**

Type of cable screen to be used	all types
Material of housing	aluminium
Earth point	50-630 mm <sup>2</sup>

**Earthing cable**

Material	supplied by customer
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**Installation**

Installation work	only by certified fitters
Installation temperature	min. 0 / max. +45 °C
Site conditions	clean environment

**Packing**

Gross weight (6 pcs - approx.)	2000 kg
Wooden box	standard
Installation instruction for each kit	yes

**Storage**

Conditions	clean and dry
Long-term storage temperature	min. 0 / max. +25 °C
Shelf life items	2 years
Non-shelf life items	10 years
Expected service life after installation	40 years

All information subject to change

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