

### تگهداشت و افزایش تولید میدان نفتی بینک فعالیتهای رو زمینی در بستههای کاری تحتالارض عمومی و مشترک



#### DATA SHEETS FOR 11 KV OVER HEAD LINE EQUIPMENT

شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهيلات	رشته	نوع مدرك	سريال	نسخه
·۵۳ - ·۷۳ - 9184	BK	SSGRL	PEDCO	110	EL	DT	0012	D04

شماره صفحه: ۱ از ۵۲

## طرح نگهداشت و افزایش تولید ۲۷ مخزن

### DATA SHEETS FOR 11 KV OVER HEAD LINE EQUIPMENT

## نگهداشت و افزایش تولید میدان نفتی بینک

Class: 2		CLIENT Doc. Number: F0Z-70	7397			
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
D00	Nov.2021	IFC	H.Shakiba	M.Fakharian	M.Mehrshad	
D01	Dec.2021	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D02	Jan.2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D03	Feb.2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D04	Jul.2022	AFC	H.Shakiba	M.Fakharian	M.Mehrshad	

status: IDC: Inter-Discipline Check

IFC: Issued For Comment
IFA: Issued For Approval

AFC: Approved For Construction
AFP: Approved For Purchase
AFQ: Approved For Quotation
IFI: Issued For Information

AB-R: As-Built for CLIENT Review

AB-A: As-Built -Approved



## نگهداشت و افزایش تولید میدان نفتی بینک فعالیتهای رو زمینی در بستههای کاری تحتالارض عمومی و مشترک



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· ۵۳ - · ۷۳ - ۹۱۸۴	BK	SSGRL	PEDCO	110	EL	DT	0012	D04

شماره صفحه: ۲ از ۵۲

### **REVISION RECORD SHEET**

				KE	VISION RE
Page	D00	D01	D02	D03	D04
1	Х	Х	Х	Х	Х
2	Х	Х	Х	Х	Х
3	Х	Х	Х	Х	
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8	Х	Х	Х	Х	
9	Х	Х	Х	Х	
10	Х	Х	Х	Х	
11	Х	Х	Х	Х	
12	Х	Х	Х	Х	
13	Х	Х	Х	Х	
14	Х	Х	Х	Х	
15	X	X	Х	X	
16	X	X	X	X	
17	X	X	X	X	
18	X	X	X	X	†
19	X	X	X	X	†
20	X	X	X	X	†
21	X	X	X	X	
22	X	X	X	X	
23	X	X	X	X	†
24	X	X	X	X	
25	X	X	X	X	
26	X	X	X	X	
27	X	X	X	X	
28	X	X	X	X	
29	X	X	X	X	
30	X	X	X	X	
31	X	X	X	X	
32	X	X	X	X	
33	X	X	X	X	
34	X	X	X	X	
35	X	X	X	X	
36	X	X	X	X	
37	X	X	X	X	
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41	<del>                                     </del>	X	X	X	
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RD SHEET					
Page	D00	D01	D02	D03	D04
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48			Х	Χ	Χ
49			Х	Х	
50			Х	Χ	
51			Х	Χ	
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### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری صادر كننده شماره پيمان: پروژه تسهيلات رشته نوع مدر ک سريال نسخه .04-.44-9146 DT 0012 ВК SSGRL PEDCO 110 EL D04

شماره صفحه: ۳ از ۵۲

DATA SHEET	FOD DIE	ACE CON	IDIICTOD	(DIZOF)
DATA SHEET	FUK PH	ASE CUP	NDUCIOK	IBKU51

	DATA SHEET FOR PHASE CONDUCTOR (BK05)					
Item	DESCRIPTION	CHARACTERISTIC	Vendor data			
1	Manufacture	By vendor	roman adda			
2	Year of Manufacture	By vendor				
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)				
4	Conductor Name	HYENA				
5	Applicable standard	ASTM B232, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427				
6	Max allowable temperature of conductor (°c)	85				
7	Reted short circuit current for 0.5 Sec. (KA)	18.8				
8	Max. temperature range (operation)	75				
9	Temperature range for installation(°c)	-5 ~ +55				
10	Stranding and wire diameter (nos./mm):					
11	Aluminium	7/4.39				
12	Steel	7/1.93				
13	Overall diameter(mm)	14.57				
14	Aluminium Area (mm²)	106				
15	Steel area (mm²)	20.48				
16	Total area (mm²)	126.2				
17	Weight (kg/km):					
18	Aluminium	290				
19	Steel	160				
20	Total	450				
21	Nominal current in 30° (A)	441				
22	Ultimate tensile Strength (kg)	4090				
23	Coefficient of linear expansion (1 /C° x 10-6)	18.8				
24	Initial modulus of elasticity (kg/mm²)	6000				
25	Final modulus of elasticity (kg/mm²)	7450				
26	DC resistance at 20°C(Ω/km)	0.2713				
27	AC resistance at 25°C(Ω/km)	0.277				
28	AC resistance at 75°C(Ω/km)	0.3142				
29	Temperature range (transport / storage)	By vendor				
30	Pollution condition	Heavy				
31	Routine tests & Type test	Acc To IEC 61089				



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

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#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری تسهيلات صادر كننده نوع مدرک شماره پيمان: پروژه رشته .04-.44-414 ВК SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۴ از ۵۲

	DATA SHEET FOR SHIELD WIR	E (BK05)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacture	By vendor	
2	Year of Manufacture	By vendor	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Code Name	7No.8 AWG	
5	Applicable standard	ASTM B416, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427	
8	Stranding and wire diameter (nos./mm):	7/3.26	
9	Overall diameter(mm)	9.78	
10	Total area (mm²)	58.43	
11	Weight (kg/km):	390	
12	Ultimate tensile Strength (kg)	7226	
13	Coefficient of linear expansion (1 /C° x 10-6)	13	
14	Initial modulus of elasticity (kg/mm²)	16000	
15	Final modulus of elasticity (kg/mm²)	16000	
16	DC resistance at 20°C(Ω/km)	1.467	
17	Pollution condition	Heavy	
18	Routine tests & Type test	Acc To IEC 61089	



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#### عمومي و مشترك





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#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری شماره پیمان: پروژه صادر کننده تسهيلات رشته نوع مدر ک سريال نسخه .04-.44-9146 DT ВК SSGRL PEDCO 110 EL 0012 D04

شماره صفحه: ۵ از ۵۲

DATA	SHEET	EOD	INICIII A	TOD	(DVAE)

	DATA SHEET FOR INSULATOR (BK05)					
Item	DESCRIPTION	CHARACTERISTIC	Vendor data			
1		BALL & SOCKET	venuor uata			
1	Туре	BALL & SOCKET				
2	Applicable Standard	IEC60120, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 426				
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)				
4	Material	Porcelain				
5	Nominal line to line voltage rating (kV)	11				
6	Maximum continuous line to line operating voltage (kV)	12				
7	Rated frequency (Hz)	50				
8	Creepage distance (mm/kV)	31				
9	Minimum creepage distance of insulator (mm)	372				
10	Minimum mechanical Failing Load (kN)	70				
11	Socket coupling size (IEC60120)	16				
12	Ball coupling size (IEC60120)	16	<u> </u>			
13	Rated lightning impulse withstand voltage to earth and between poles (kV peak)	60	<u> </u>			
14	Rated lightning impulse withstand voltage across the isolating dist. of Fuse base (kVpeak)	75	<u> </u>			
15	Rated one minute power frequency withstand voltage to earth and between poles (kV rms)	28	<u> </u>			
16	Rated one minute PF withstand voltage across the isolating dist. of Fuse base (kVrms)	32	<u> </u>			
17	Power Frequency Puncture Voltage (kV)	110	<u> </u>			
18	Metallic Part material	Malleable Cast Iron				
19	Insulator material	Brown Glazed Porcelain	<u> </u>			
20	Metallic parts	Malleable cast iron				
21	Washable in service	Yes				
22	Unit Spacing (mm)	By vendor				
23	Disc Diameter (mm)	By vendor				
24	Total Weight	By vendor				
25	Type and Material of Terminal	By vendor				
26	Pollution condition	Heavy				
27	Routine tests & Type test	Acc To IEC 383	<u> </u>			



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

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#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری صادر كننده نوع مدرک شماره پیمان: پروژه تسهيلات رشته سريال نسخه .04-.44-9146 0012 ВК SSGRL PEDCO 110 EL DT D04

شماره صفحه: ۶ از ۵۲

DATA SHEET FOR	FITTING	CHEDENCION &	TENCION CET	(BKUZ)
DATASHEEL FUR	. FIII IING	SUSPENSION &	I ENSIUN SET	IDNUSI

Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Туре	FORGED STEEL	
2	Applicable standard	IEC 61284, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 465	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Material:	-	
5	Outer Part	AL.ALLOY	
6	Iner Part	FORGED STEEL, Hot Deep Galvanized.	
7	Jumper Plate	ALALLOY	
8	Terminal Jumper	AL.ALLOY	
9	Bolts & Nuts & Washers	STEEL, Hot Deep Galvanized.	
10	Split Pin	STAINLESS STEEL	
11	Min breaking strength	95% OF CONDUCTOR U.T.S	
12	Coupling Standard IEC	16 mmA	
13	Short Circuit Current	25kA/0.4Sec.	
14	Arcing Horn	STEEL	
15	Min breaking strength (KN)	80	
16	Anti-Climbing Devices and Safety Signs for Lines up to 400kV	ENA TS 43-90	
17	Tower Identification	Steel Sheet with 2mm Thickness	
18	Danger Alarm	Steel Sheet with 1.2mm Thickness	
19	Pollution condition	Heavy	
20	Routine tests & Type test	Acc To IEC 61284	



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#### Data Sheets For 11 KV Over Head Line Equipment

نسخه سريال نوع مدر ک رشته تسهيلات صادر کننده بسته کاری پروژه شماره پيمان: BK SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۷ از ۵۲

	DATA SHEET FOR EARTHING SYS	TEM (BK05)				
Item	DESCRIPTION	CHARACTERISTIC	Vendor data			
1	GROUND WIRE :					
2	Туре	Copper Conductor				
3	Applicable standard	DIN 48201, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 409				
4	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)				
5	Stranding (No./mm)	7/2.5				
6	Total cross section (mm2)	35				
7	Overall Diameter (mm)	7.5				
8	Unit Weight (kg/m)	0.31				
9	Calculated breaking load (kN)	13.77				
10	DC Resistance At 20°C (ohm/km)	0.5265				
11	TOWER BONDING CLAMP:					
12	Type of Body	Forged Steel				
13	Surface Coating	HOT DIP. GALV. Acc to ASTM A123 & A153 or BS729				
14	Type of Bolt & Nut	Steel				
15	Torgue on Bolt	20 NM				
16	Applicable standard	ST37 & DIN931,934,125,127				
17	Diameter of Wire catcher	Ø 8-13 mm				
18	Pollution condition	Heavy				
19	Routine tests & Type test	Acc To DIN 48201				



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#### Data Sheets For 11 KV Over Head Line Equipment

نسخه سريال نوع مدرک رشته تسهيلات صادر کننده بسته کاری پروژه شماره پيمان:

BK SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۸ از ۵۲

	10-14-91/16	BK	SSGRL	PEDCO	110	EL	DT	0012	D04		
1			DAT	ra sheet fo	OR DISCON	NECTOR S	WITCH (BK	(05)			
•	DECOMPOSION								ID 10		
Item		DESCRIP		`				CHARACTE		Vendor data	
2	Installation (indoor / outdoor)  Standard						Outdoor  IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375			lanning hnical cedures ver	
3	Env	ironmental	conditions	S				to docume D-000-PR-D Basis of D	B-0001 (Pr		
4	Nomin	al system v	oltage, 3ph	iase				11 k			
5	Sys	stem voltage	e variation					± 100	<b>%</b>		
6	Nominal free	quency and	frequency	variation				50 ± 5	%		
7		of poles an						3pole / 6			
8		uit amper a						25 kA /			
9		peak withs						62.5 k	kΑ		
10		page distan						31			
11 12	Minimum cree Rated lightning impulse withsta			• • •	noloc (IrV	nak)		372 60			
13	Rated lightning impulse withstand v		oss the isol		` ` `			75			
14	Rated one minute power frequency v	withstand v	oltage to ea	arth and bety	ween poles	(kV rms)		28			
15	Rated one minute power frequency w	vithstand vo base (kV		ss the isolati	ing distance	e of Fuse -	32				
16	Mode of operation OPEN/CLOSE					-	e manual an d earth swit				
17	Disconnectors	s & Earthin	g switches	Operating				Hand ope	rating		
18	Accessories					with earth	blad and ea	rth switch	n manual		
19	Disc	connector I	Mechanism	l				Center b			
20		Constru	ction				Three pole operation Containing Earthing switch				
21	N No	tection of el tor status A lo. Of Make o. Of Break Rated Vo Rated Curren king Curren	uxiliary Co Contacts Contacts Iltage rrent	ontacts:			12	Min. IP55 (If 2NC (Norma 2NO (Norma 110V I 25 AE 5 AD	ally close) ally open) DC OC		
23	Earthing sw N No	vitch status Io. Of Make o. Of Break Rated Vo Rated Cu	Auxiliary ( Contacts Contacts Itage rrent	Contacts:				2NC (Norma 2NO (Norma 110V I 25 AE 5 AD	ally close) ally open) DC DC		
24	Breaking Current At 110V DC  Interlocks(Electrical & Mechanical)						Disconne To preve	c closure of e ector is not ent closure e earth switch position	in open pos of Disconne is not in op	osition nector	
25	Di	imensions &	& weights					By Ven	dor		
26		Pollution co	ondition					Heav	у		
27	Mini	imum Ratin	g plate dat	a			Rated lightn Rated light Rated powe Rated pow	Manufactu Type designation and Rated volt ning impulse withsta tning impulse withsta ter frequency withsta Rated normal Rated duration of ed no load transforme Year of manuf Relevant standard wit	serial number age d voltage across ope nd voltage between j d voltage across ope nd voltage between j current thort circuit r breaking current facture	n poles pen pole n poles	
28	Routine Tests:  a) dielectric test on the main circuit (clause 7.1 of IEC60694) b) tests on auxiliary and control circuits (Clause 7.2 of IEC60694) c) measurement of the resistance of the main circuit (Clause 7.3 of IEC60694); d) tightness test (Clause 7.4 of IEC60694) e) Design and visual checks (Clause 7.5 of IEC60694) f) Mechanical tests as per clause 7.101 of IEC62271-102							Witness &	•		
29		Type To	ests					rts of test on the		e according	



#### فعالیتهای رو زمینی در بستههای کاری تحتالارض

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### Data Sheets For 11 KV Over Head Line Equipment

شماره يىمان:	پروژه	بسته کاری	صادر كننده	تسهيلات	رشته	نوع مدرک	سريال	نسخه
سماره پیمان.	ВК	SSGRL	PEDCO	110	EL	DT	0012	D04

شماره صفحه: ۹ از ۵۲

	BK SSGRL PEDCO 110 EL	DT 0012 D04
	DATA SHEET FOR CUT OUT	JSE (BK05)
T	DECOMPRIAN	CHADACTEDICTIC
Item 1	DESCRIPTION  Class	CHARACTERISTIC Vendor data  Outdoor
2	Type	Channel Type
3	Manufacturer of Fuse base & link	By Vendor
3	Fighting Current of Fuse base & mik	
4	Applicable Standard	IEC60282 , IEC60787, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375
5	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)
6	Nominal line to line voltage rating (kV)	11
7	Maximum continuous line to line operating voltage (kV)	12
8	Rated frequency (Hz)	50
9	Color of Porcelain insulator	By Vendor
10	Rated current of Fuse base (A)	100
11	Rated current of Fuse link (A)	10
12	Creepage distance (mm/kV)	31
13	Minimum creepage distance of insulator (mm)	372
14	Rated maximum braking current (kA)	16
15	Rated lightning impulse withstand voltage to earth and between poles (kV peak)	60
16	Rated lightning impulse withstand voltage across the isolating distance of Fuse - base(kV peak)	75
17	Rated one minute power frequency withstand voltage to earth and between poles (kV rms	28
18	Rated one minute power frequency with stand voltage $\mbox{ across the isolating distance of Fuse} \mbox{ base (kV rms)}$	32
19	Fuse class	Full-range
20	Operating pole	Required
21	Mounting brackets and accessories	Required
22	Provision for mounting of surge arrester	Required
23	Weight of Fuse-base & Fuse link	By Vendor
24	Dimension of Fuse-base	By Vendor
25	Dimension of Fuse-link	By Vendor
26	Pollution condition	Heavy
		On the fuse base:     Manufacturer's name     Manufacturer's type designation     Rated insulation level     Rated voltage     Rated current  On the fuse carrier:
27	Minimum data required on rating plate	Manufacturer's name Rated voltage Rated current Rated breaking capacity and TRV class Rated frequency  On the fuse links: Manufacturer's name Manufacturer's type designation
_		Rated current and speed designation Rated voltage  Witness and Report according to IEC
28	Routine Tests	60282-2
29	Type Tests	Certified Report on the identical type according to IEC 60282-2



## فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC Data Sheets For 11 KV Over Head Line Equipment

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نسخه سريال نوع مدر ک رشته تسهيلات صادر کننده بسته کاری پروژه شماره پيمان:
8K SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۱۰ از ۵۲

	.04-14-114	BK	SSGRL	PEDCO	110	EL	DT	0012	D04		از ۵۲	شماره صفحه: ۱۰	
			DA	TA SHEET	FOR LIGHT	NING ARRI	ESTER (BKO	5)					
Item	DESCRIPTION							CHARACTE	RISTIC			Vendor data	a
1		Туре	9					ZnO					
2	Applicable Standard						IEC60099-4, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375			y for sion, and ad and			
3	Env	vironmental	conditions	5				to docume 0-000-PR-DI Basis of De	B-0001 (Pr				
4	Nominal li	ine to line v	oltage ratir	ng (kV)				11	coignij				
5	Maximum continu	ous line to l	ine operati	ing voltage (	(kV)			12					
6	Continuo	us Operatin	g Voltage (	(Ucov)				9.6					
7	R	Rated freque	ency (Hz)					50					
8	1	Material of i	nsulator					By vend	dor				
9		Earth faul	t factor					1.4					
10	Line disc	harge class	per IEC 60	099-4				2					
11	Minimum energy	discharge c	apability (	kJ/kV) U rat	ed			Acc. To	IEC				
12	Nominal discharge curr	ent with 8/2	20 microse	cond wave	(kA peak)			10					
13	Pre	essure relief	class (kA)					20					
14	Cree	page distan	ce (mm/k\	7)				31					
15	Minimum cree	epage distai	nce of insul	lator (mm)				372					
16	Rated lightning impulse withst	and voltage	to earth a	nd between	poles (kV pe	eak)	60						
17	Rated lightning impulse withstand voltage across the isolating distance of Fuse - base(kV peak)				75								
18	Rated one minute power frequency withstand voltage to earth and between poles (kV rms)				(kV rms)		28						
19	Rated one minute power frequency v	vithstand vo base (kV		ss the isolat	ting distance	e of Fuse -	32						
20	Whethe	er surge cou	ınter requi	red?			No						
21		Washable in						Yes					
22	Tempora	ary overvolt at 1 Se at 10 S at 100 :	ec. ec.	(Ktov)				By vend	dor				
23	5kA, 8/20μs l	ightning im	pulse prote	ective level				By vend	dor				
24	10kA, 8/20μs lightning	g impulse pr	otective le	vel (Ur 10k	A, 8/20)		Resi	idual voltag	e < 43.2kV				
25	20kA, 8/20μs							By vend					
26	125A, 30/60μs	switching i	mpulse pro	tective leve	ıl			By vend	dor				
27	Не	eight of Surg	e Arrester					By vend	dor				
28		Diameter o	f Sheds					By vend	dor				
29	Total	Weight of S	urge Arres	ter				By vend	dor				
30	Туре	and Materia	al of Termi	nal				By vend	dor				
31	Pollution condition  Minimum data required on rating plate				Heavy  Manufacturer  Manufacturer type designation Serial number Continuous operating voltage Rated voltage Rated frequency Nominal discharge current Pressure relief short time current Line discharge current Pollution degree Year of manufacture			t					
33	a) Measurement of referer b) Residual volta; c) Internal Partial Disr d) Leakage test for sealed h e) Design and visua	ge test (Clau charge test lousing arre	Uref (Claus use 8.1.b of (Clause 8.1 sters (Clau to purcha	FIEC 60099- .c of IEC 600 ise 8.1.d of I	·4) 099-4); EC 60099-4]	)	V Certified I	nt standard wi Witness and Report on th	ith date of issu Report ne identical	type			
L	1						acco	or uning to IE	C 00079-4				



### نگهداشت و افزایش تولید میدان نفتی بینک فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومی و مشترک





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

نسخه سريال نوع مدر ک رشته تسهيلات صادر کننده بسته کاری پروژه شماره پيمان: Δ۲--۷۲-4۱۸F BK SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۱۱ از ۵۲

	·0٣-·٧٣-91AF	ВК	SSGRL	PEDCO	110	EL	DT	0012	D04		شماره صفحه: ۱۱ از ۵۲
			DA	ATA SHEET	FOR LOAD	BREAK SV	VITCH (BKO	5)			
Item		DESCRIP	TION				(	CHARACTE	RISTIC		Vendor data
1	Ma	nufacturer	/ Country					By ven	dor		
2	Standard						IEC 62271-103, IEC 60694, IPS-E-EL- 160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375			fice g and ral edures er	
3	Env	rironmental	conditions	S					nt number: B-0001 (Pro esign)		
4		Туре	)					SF6			
5		Rated Vo						11k\			
6		Rated Fred						50H:			
7 8	1 minute p To ea Acr	o. of Phases ower freq. orth and betwoes isolatin	withstand ween phase g distance:	es:				3 Phase, 3 28kV 32kV	1		
9	To ear Acr	g impulse w rth and bety oss isolatin	ween phase g distance:	es:				60k\ 75k\	7		
10		ated Norma						630			
11 12	·	ctive load b d loop brea					В	y vendor ( By ven			
13		harging brea						By ven			
14		charging bre						By ven			
15	No load tr	ansformer	breaking c	urrent			В	y vendor (:	> 0.74A)		
16		ort Time Wi						25kA, 3			
17		Peak Withs						62.5k		-	
18		ort Circuit						62.5k			
19 20		r of breakin orting Struc					Hot d	By ven	anized steel	1	
21		page distan					11000	31	umzeu stee		
22		epage Distai		-				372m	m		
23	Ingress j	protection o	f el. Enclos	sures			Min. IP55				
24		perating me					Hand opera	three p	oles	ion for	
25		ole tensile fo		minals				By ven			
26	N N	Auxiliary Co lo. of Make o. of Break Rated Vo Rated Cur king Curren	ontacts: Contacts Contacts Itage rrent	OC .				Requir By vend Min. Min. 110V I Min. 1 Min. 2	lor: 4 4 OC 0A		
28	Ant	i-Condensat	tion Heater	ſ			2	30V AC, 1F	h, 50Hz		
29	Inter	locks with I	Earth Swite	ch					+ Earth Swi	tch	
30		mensions ar					ín	tegrated as By ven			
31							<u> </u>	Heav			
32	Pollution condition  Minimum data required on rating plate				Manufacturer Type designation and serial number Rated voltage One minute power frequency withstand voltage Lightning impulse withstand voltage Rated normal current Rated short time withstand current Mainly active load breaking current Closed loop breaking current Line charging breaking current Cable charging breaking current No load transformer breaking current Year of manufacture Relevant standard with date of issue						
33	a) Dielectric test on b) Tests on auxiliary a c) Measurement of the resis d) Tightn e) Design and v f) Mechanical tes	and control cir stance of the m ess test (Claus visual checks (	uit (Clause 7. cuits (Clause nain circuit (C e 7.4 of IEC60 Clause 7.5 of	7.2 of IEC 6069 Clause 7.3 of IE (0694) IEC60694)	94)			Vitness and	l Report	cording	
34		Туре Те	ests				сегинеа кер	to IEC 6227		orullig	



## فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

	شماره پيمان:	پروژه	بسته کاری	صادر کننده	تسهيلات	رشته	نوع مدرک	سريال	نسخه
.0444-146		ВК	SSGRL	PEDCO	110	EL	DT	0012	D04

شماره صفحه: ۱۲ از ۵۲

DATA SHEET FOR TOWER (BK05
----------------------------

	DATA SHEET FOR TOWER (		
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacturer / Country	By vendor	
2	Standard	IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 440	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Type of Steel: Analysis of steel Carbon Manganese Sulphur Phosphorus Silicon	MILD High Strength ST 37(235]R) ST 52(355]R) 0.17 0.2 1.4 1.6 0.045 0.05 0.045 0.05 0.3 0.55	
5	Thickness of steel (1.6-3.2mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	65 65 460	
6	Thickness of steel (3.2-4.8mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	75 75 530	
7	Thickness of steel (4.8-6.4mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	85 85 600	
8	Strength in Tension Standard Designation	BS 8100 – Lattice Towers and Masts	
9	Strength in Tension (Ultimate tensile stress)	340-470 490-630	
10	Strength in Tension (Yield stress)	235 355	
11	Strength in Compression (Elongation)	24% 22%	
12	Strength in Compression (Min zinc coating)	85μ 85μ	
13	Bolts & Nuts Characteristics: Standard designation Steel material Property class Ultimate shearing stress (On bolt shank) Ultimate Bearing stress Min zinc coating	ANSI C 135-1 (Galvanized Steel Bolts and Nuts for Overhead Lines) Steel Steel 5.6 5.8 2100kg/cm2 2800kg/cm2 5400kg/cm2 6000kg/cm2 46µ 46µ	
14	Pollution condition	Heavy	
15	Routine tests & Type test	According to ASCE1090 Manual 52	



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری صادر كننده نوع مدر ک شماره پيمان: پروژه تسهيلات رشته سريال نسخه .04-.44-9146 DT 0012 ВК SSGRL PEDCO 110 EL D04

شماره صفحه: ۱۳ از ۵۲

DATA SHEE	T FOR PHA	SE CONDUCTOR	R (BK12)

	DATA SHEET FOR PHAS		·
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacture	By vendor	
2	Year of Manufacture	By vendor	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Conductor Name	HYENA	
5	Applicable standard	ASTM B232, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427	
6	Max allowable temperature of conductor (°c)	85	
7	Reted short circuit current for 0.5 Sec. (KA)	18.8	
8	Max. temperature range (operation)	75	
9	Temperature range for installation(°c)	-5 ~ +55	
10	Stranding and wire diameter (nos./mm):		
11	Aluminium	7/4.39	
12	Steel	7/1.93	
13	Overall diameter(mm)	14.57	
14	Aluminium Area (mm²)	106	
15	Steel area (mm²)	20.48	
16	Total area (mm²)	126.2	
17	Weight (kg/km):		
18	Aluminium	290	
19	Steel	160	
20	Total	450	
21	Nominal current in 30° (A)	441	
22	Ultimate tensile Strength (kg)	4090	
23	Coefficient of linear expansion (1 /C° x 10-6)	18.8	
24	Initial modulus of elasticity (kg/mm²)	6000	
25	Final modulus of elasticity (kg/mm²)	7450	
26	DC resistance at 20°C(Ω/km)	0.2713	
27	AC resistance at $25^{\circ}$ C( $\Omega$ /km)	0.277	
28	AC resistance at $75^{\circ}$ C( $\Omega$ /km)	0.3142	
29	Temperature range (transport / storage)	By vendor	
30	Pollution condition	Heavy	
31	Routine tests & Type test	Acc To IEC 61089	



## فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری شماره پیمان: پروژه صادر کننده تسهيلات رشته نوع مدرک نسخه .04-.44-4146 ВК PEDCO 110 DT 0012 D04 SSGRL EL

شماره صفحه: ۱۴ از ۵۲

	DATA SHEET FOR SH	HELD WIRE (BK12)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacture	By vendor	
2	Year of Manufacture	By vendor	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Code Name	7No.8 AWG	
5	Applicable standard	ASTM B416, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427	
8	Stranding and wire diameter (nos./mm):	7/3.26	
9	Overall diameter(mm)	9.78	
10	Total area (mm²)	58.43	
11	Weight (kg/km):	390	
12	Ultimate tensile Strength (kg)	7226	
13	Coefficient of linear expansion (1 /C° x 10-6)	13	
14	Initial modulus of elasticity (kg/mm²)	16000	
15	Final modulus of elasticity (kg/mm²)	16000	
16	DC resistance at 20°C(Ω/km)	1.467	
17	Pollution condition	Heavy	
18	Routine tests & Type test	Acc To IEC 61089	



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

27

#### Data Sheets For 11 KV Over Head Line Equipment

نسخه سريال نوع مدرک رشته تسهيلات صادر کننده بسته کاری پروژه شماره پيمان: 110 BK SSGRL PEDCO 10 EL DT 0012 D04

Routine tests & Type test

شماره صفحه: ۱۵ از ۵۲

	BK SSGRL PEDCO 110 EL	DT 0012	D04	
	DATA SHEET FOR INSULATO	R (BK12)		
Item	DESCRIPTION		FERISTIC	Vendor data
1	Туре	BALL &	SOCKET	
2	Applicable Standard	IEC60120, IPS-E Republic of Iran V Strategic Planning General Technical Execution Procedur cable power distr 374,375 & Ger Specification and Ex for Transmission	ice Presidency and Supervis Specification es for overhea ibution lines l eral Technica ecution Proce	y for sion, and and and NO: al edures
3	Environmental conditions	BK-00-HD-000-PR	nent number: DB-0001 (Pro Design)	
4	Material	Porc	elain	
5	Nominal line to line voltage rating (kV)	1	1	
6	Maximum continuous line to line operating voltage (kV)	1	2	
7	Rated frequency (Hz)	5	0	
8	Creepage distance (mm/kV)	31		
9	Minimum creepage distance of insulator (mm)	3'	72	
10	Minimum mechanical Failing Load (kN)	7	0	
11	Socket coupling size (IEC60120)	1	6	
12	Ball coupling size (IEC60120)	1	6	
13	Rated lightning impulse withstand voltage to earth and between poles (kV peak)	6	0	
14	Rated lightning impulse withstand voltage across the isolating dist. of Fuse base (kVpeak)	7	5	
15	Rated one minute power frequency withstand voltage to earth and between poles (kV rms)	2	8	
16	Rated one minute PF withstand voltage across the isolating dist. of Fuse base (kVrms)	3	2	
17	Power Frequency Puncture Voltage (kV)	1:	10	
18	Metallic Part material	Malleable	Cast Iron	
19	Insulator material	Brown Glaz	ed Porcelain	
20	Metallic parts	Malleable	cast iron	
21	Washable in service	Y	es	
22	Unit Spacing (mm)	By ve	endor	
23	Disc Diameter (mm)	By ve	endor	
24	Total Weight	By ve	endor	
25	Type and Material of Terminal	By ve	endor	
26	Pollution condition	Не	avy	

Acc To IEC 383



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

20

#### Data Sheets For 11 KV Over Head Line Equipment

شماره پیمان:

بسته کاری پروژه صادر كننده تسهيلات رشته نوع مدر ک سريال نسخه PEDCO 110 EL DT 0012 ВК SSGRL D04

شماره صفحه: ۱۶ از ۵۲

	DATA SHEET FOR FITTING SUSPENSION & TENSION SET (BK12)							
_								
Item	DESCRIPTION	CHARACTERISTIC	Vendor data					
1	Туре	FORGED STEEL						
2	Applicable standard	IEC 61284, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 465						
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)						
4	Material:	-						
5	Outer Part	AL.ALLOY						
6	Iner Part	FORGED STEEL, Hot Deep Galvanized.						
7	Jumper Plate	AL.ALLOY						
8	Terminal Jumper	AL.ALLOY						
9	Bolts & Nuts & Washers	STEEL, Hot Deep Galvanized.						
10	Split Pin	STAINLESS STEEL						
11	Min breaking strength	95% OF CONDUCTOR U.T.S						
12	Coupling Standard IEC	16 mmA						
13	Short Circuit Current	25kA/0.4Sec.						
14	Arcing Horn	STEEL						
15	Min breaking strength (KN)	80						
16	Anti-Climbing Devices and Safety Signs for Lines up to 400kV	ENA TS 43-90						
17	Tower Identification	Steel Sheet with 2mm Thickness						
18	Danger Alarm	Steel Sheet with 1.2mm Thickness						
19	Pollution condition	Heavy						

Routine tests & Type test

Acc To IEC 61284



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری شماره پيمان: پروژه صادر كننده تسهيلات رشته نوع مدرک سريال نسخه .04-.44-174 PEDCO 110 DT ВК SSGRL EL 0012 D04

شماره صفحه: ۱۷ از ۵۲

DATA SHEET FOR EARTHING SYSTEM (BK12)									
Item	DESCRIPTION	CHARACTERISTIC	Vendor data						
1	GROUND WIRE:								
2	Туре	Copper Conductor							
3	Applicable standard	DIN 48201, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 409							
4	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)							
5	Stranding (No./mm)	7/2.5							
6	Total cross section (mm2)	35							
7	Overall Diameter (mm)	7.5							
8	Unit Weight (kg/m)	0.31							
9	Calculated breaking load (kN)	13.77							
10	DC Resistance At 20°C (ohm/km)	0.5265							
11	TOWER BONDING CLAMP:								
12	Type of Body	Forged Steel							
13	Surface Coating	HOT DIP. GALV. Acc to ASTM A123 & A153 or BS729							
14	Type of Bolt & Nut	Steel							
15	Torgue on Bolt	20 NM							
16	Applicable standard	ST37 & DIN931,934,125,127							
17	Diameter of Wire catcher	Ø 8-13 mm							
18	Pollution condition	Heavy							
19	Routine tests & Type test	Acc To DIN 48201							



## فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

نسخه سریال نوع مدر ک رشته تسهیلات صادر کتنده بسته کاری پروژه شماره پیعان: BK SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۱۸ از ۵۲

Item		.0444-9184	ВК	SSGRL	PEDCO	110	EL	DT	0012	D04		شماره صفحه: ۱۸ از ۵۲
Standard   IPS-ESL-160, Manier Proceed on the Process of the Pro				DAT	A SHEET FO	OR DISCONN	ECTOR S	WITCH (BK	12)			
Standard   IPS-ESL-160, Manier Proceed on the Process of the Pro												
PS-EAL-400 Manife Republish Cities   Ps-EAL-40	Item		DESCRIP	TION				(	CHARACTI	RISTIC		Vendor data
Standard   Special Company of Statistics Planning   Special Supervision, General Technical   Special Supervision, General Technical   Special Supervision, General Technical   Special Supervision, General Sci. 374,375	1	Instal	lation (indo	or / outdoo	or)			Outdoor				
Second Content	2	Standard					Vice President and Super Specification for over distrib	dency for S ervision, Ge on and Exec erhead and oution lines	trategic Pla neral Techi cution Proce cable powe NO: 374,3	nning nical edures er 75		
System voltage swratation   4 10%	3	Env	vironmental	conditions	;				-000-PR-D	B-0001 (Pr		
Section   Nominal frequency and frequency and acurrent rating   Spok / 650 A	4	Nomin	al system v	oltage, 3ph	ase				11 k	V		
7 Nombers of poles and current rating 3 pole / 630 A 8 Short circuit amper and time duration 25 km / 1 s 9 Reted pole withstand current 6.25 km / 1 s 10 Creepage distance (mm/kV) 3 31 11 Minimum creepage distance (mm/kV) 372 12 Rated lightning impulse withstand voltage aros the isolating distance of Fuse - have (W peak) 6.0 13 Rated lightning impulse withstand voltage aros the isolating distance of Fuse - have (W peak) 75 14 Rated one minute power frequency withstand voltage aros the isolating distance of Fuse - have (W peak) 75 15 Rated one minute power frequency withstand voltage aros the isolating distance of Fuse - have (W ma) 28 16 Mule of operation OPEN/CLOSE 9 16 Mule of operation OPEN/CLOSE 9 17 Disconnectors & Earthing switches Operating 18 Accessores 19 With earth blad and earth switch minute 19 Disconnector Mechanism 6 Center break 19 Disconnector Mechanism 7 Constitute (Barbing switches) 19 Disconnector Mechanism 7 Center break 19 Disconnector of electrical endosures 19 Min. 1953 (If Needed) 19 Disconnector disconnector disconnector disconnector Mechanism 19 Disconnector disconnector of electrical endosures 19 Min. 1953 (If Needed) 19 Disconnector disconnector disconnector disconnector disconnector of electrical endosures 10 Min. 1953 (If Needed) 110 Disconnector disconnec	5	Sys	stem voltag	e variation					± 10°	%		
Short circuit amper and time duration									50 ± 5	%		
Part												
10 Creepage distance (mm/kV) 31 11 Minimum creepage distance of insulator (mm) 372 12 Fated lightning impulse withstand voltage across the isolating distance of Fuse - base (kV peak) 60 13 Rated lightning impulse withstand voltage across the isolating distance of Fuse - base (kV peak) 75 14 Rated one minute power frequency withstand voltage across the isolating distance of Fuse - base (kV rms) 61 15 Rated one minute power frequency withstand voltage across the isolating distance of Fuse - base (kV rms) 61 16 Mode of operation OPEN/LOSE 32 17 Disconnectors & Barthing switches Operating 32 18 Accessories with a subject of the peak operating 41 19 Disconnectors & Barthing switches Operating 41 19 Disconnectors Mechanism 41 19 Disconnectors Mechanism 42 20 Construction 52 21 Ingress protection of clearisal enclosures 53 22 Mosconnector status (horlings contacts 12 23 Disconnector status (horlings contacts 12 24 No. Of Mack Contacts 12 25 No. Of Break Contacts 12 26 Rated Corrent A 110V DC 5 ADC 5 27 Rated Corrent A 110V DC 5 28 ADC 5 29 Rated Corrent A 110V DC 5 20 Dimensions & weights 61 20 Dimensions & weights 61 21 Interfocks [Electrical & Mechanical] 5 22 Dimensions & weights 61 23 Dimensions & weights 61 24 Dimensions & weights 61 25 Dimensions & weights 61 26 Poblation condition 7 27 Minimum Rating plate data 61 28 Dimensions & weights 7 29 Dimensions & weights 61 20 Dimensions & weights 61 20 Dimensions & weights 61 21 Dimensions & weights 61 22 Dimensions & weights 61 23 Dimensions & weights 61 24 Dimensions & weights 61 25 Dimensions & weights 61 26 Dimensions & weights 7 27 Minimum Rating plate data 61 28 Dimensions & weights 7 29 Dimensions & weights 7 20 Dimensions & weights 7 21 Dimensions & weights 7 22 Dimensions & weights 7 23 Dimensions & weights 7 24 Dimensions & weights 7 25 Dimensions & weights 7 26 Dimensions & weights 7 27 Dimensions & weights 7 28 Dimensions & weights 7 29 Dimensions & weights 7 20 Dimensions & weig			•									
11 Minimum creepage distance of insulator (mm) 372  12 Rated lightning impulse withstand voltage to earth and between poles (W peak) 60  13 Rated lightning impulse withstand voltage to earth and between poles (W peak) 75  14 Rated one minute power frequency withstand voltage a cross the isolating distance of Fuse - base (W rm)  15 Rated one minute power frequency withstand voltage a cross the isolating distance of Fuse - base (W rm)  16 Mode of operation OPEN/CLOSE 32  17 Disconnectors & Earthing switches Operating 4 Hand operating 4 Hand operating 4 Hand operating 5 and earth switch manual 4 and earth switch manual 7 Hand operating 7 Hand on the control of			-							kΑ		
Rated lightning impulse withstand voltage to earth and between poles (kt') peak)  Rated lightning impulse withstand voltage to searth and between poles (kt') peak)  Rated one minute power frequency withstand voltage to earth and between poles (kt') rms)  Rated one minute power frequency withstand voltage a crart and between poles (kt') rms)  Rated one minute power frequency withstand voltage a crart and between poles (kt') rms)  Rated one minute power frequency withstand voltage a crart and between poles (kt') rms)  Rated one minute power frequency withstand voltage a crart and between poles (kt') rms)  Rated one minute power frequency withstand voltage a crart and between poles (kt') rms)  Rated one minute power frequency withstand voltage a crart and between poles (kt') rms)  Rated one minute power frequency withstand voltage a crart and between poles (kt') rms)  Rated one minute power frequency withstand voltage and	-				-							
Rated lightning impulse withstand voltage across the isolating distance of Fuse - base (kV pros)   28						nalag (I-T)	1-)					
Rated one minute power frequency withstand voltage to earth and between poles (kV rms)  Rated one minute power frequency withstand voltage across the isolating distance of Fuse-base (kV rms)  16												
Rated one minute power frequency withstand voltage across the isolating distance of Puse- base (RV rus)  16	13	ngg impulse withstallu	_		and another	0.1.430 00	(		75			
16 Mode of operation OPEN/CLOSE open-close manual and with earth blad and earth switch manual 17 Disconnectors & Earthing switches Operating 18 Accessories with earth blad and earth switch manual 19 Disconnector Mechanism Center break 20 Construction Three pole operation Containing Earthing switch 21 Ingress protection of electrical endosures 22 Min. PSS (If Needed) 23 Disconnector stands Auxiliary Contacts: 24 No. Of Male Contacts 25 No. Of Male Contacts 26 Rated Current 27 Rated Voltage 28 Rated Voltage 29 Rated Current 20 No. Of Male Contacts 20 No. Of Male Contacts 21 No. Of Male Contacts 22 ADC 23 ADC 24 Earthing switch status Auxiliary Contacts: 25 ADC 26 Rated Current 27 No. Of Male Contacts 28 No. Of Male Contacts 29 No. Of Male Contacts 20 No. Of Male Contacts 20 No. Of Male Contacts 21 No. Of Male Contacts 22 ADC 33 Rated Voltage 31 No. Of Pacak Contacts 31 PROPER SADC 34 Rated Current 35 ADC 36 Rated Current 36 Proaking Current At 110V DC 37 ADC 38 Rated Voltage 39 No. Of Preak Contacts 30 No. Of Male Contacts 31 Provent Closure of earth switch when Disconnector is not in open position 30 To prevent closure of Earth switch when Disconnector is not in open position 36 Proaking Current At 110V DC 37 ADC 38 Dimensions & weights 39 Dimensions & weights 30 Dimensions & weights 40 Disconnector is not in open position 41 Pleavy 41 Disconnector is not in open position 42 Notes an additional decides 2 of Education of Sands and the American Sands and the Sands	14								28			
17   Disconnectors & Earthing switches Operating   Hand operating     18   Accessories   With earth blad and earth switch manual     19   Disconnector Mechanism   Center break     20   Construction   Three pole operation	15	Rated one minute power frequency v			ss the isolati	ing distance o	of Fuse -					
18 Accessories with earth blad and earth switch manual 19 Disconnector Mechanism Center break 20 Construction Three pole operation Containing Earthing switch 21 Ingress protection of electrical enclosures Min. 1955 (If Needed)  Disconnector status Auxiliary Contacts: No. Of Make Contacts No. Of Herak Contacts 12NC (Normally close) 12NO (Normally clos	16	Mode o	of operation	OPEN/CLO	OSE							
Disconnector Mechanism   Center break	17	Disconnector	rs & Earthin	g switches	Operating			Hand operating				
20 Construction Containing Earthing switch 21 Ingress protection of electrical enclosures  Disconnector status Auxillary Contacts:  No. Of Make Contacts  No. Of Make Contacts  Rared Voltage Rated Current  Breaking Current At 110V DC  Earthing switch status Auxillary Contacts:  No. Of Break Contacts  No. Of Break Contact	18		Accesso	ries				with earth blad and earth switch manual				
21 Ingress protection of electrical enclosures  Disconnector status Auxiliary Contacts:  No. Of Make Contacts No. Of Break Contacts No. Of Break Contacts 12NC (Normally close) 12NO (Normally open) 110V DC 12S ADC 12NO (Normally close) 12NO (Nor	19	Dis	connector I	Mechanism								
Disconnector status Auxiliary Contacts:  No. 0 M Make Contacts No. 0 Break Contacts No. 0 Break Contacts 12NC (Normally close) 12NO (Normally open) 110V DC 25 ADC Breaking Current At 110V DC 5 ADC  Earthing switch status Auxiliary Contacts: No. 0 Make Contacts 12NC (Normally close) 12N	20		Constru	ction						•	1	
No. Of Make Contacts   12NC (Normally close)   12NC (Normally close)   110V DC   Rated Current   25 ADC   110V DC   5 ADC   12NC (Normally close)	21							М	in. IP55 (If	Needed)		
No. Of Make Contacts No. Of Break Contacts No. Of Break Contacts Rated Voltage Rated Current Breaking Current At 110V DC  25 ADC To prevent closure of earth switch when Disconnector is not in open position To prevent closure of Disconnector when earth switch is not in open position To prevent closure of Disconnector when earth switch is not in open position To prevent closure of Disconnector when earth switch is not in open position To prevent closure of Disconnector when earth switch is not in open position To prevent closure of Disconnector when earth switch is not in open position To prevent closure of Disconnector when earth switch is not in open position To prevent closure of Disconnector when earth switch is not in open position To prevent closure of Disconnector when earth switch is not in open position To prevent closure of Disconnector when earth switch is not in open position To prevent closure of Disconnector when earth switch when earth switch is not in open position To prevent closure of Disconnector when earth switch when earth switch with the open position To prevent closure of Disconnector when earth switch earth switch when earth switch earth switch when earth switch when earth switch earth switch wh	22	N	lo. Of Make o. Of Break Rated Vo Rated Cu	Contacts Contacts oltage rrent					NO (Norm 110V 25 AI	ally open) DC DC		
Disconnector is not in open position To prevent closure of Disconnector when earth switch is not in open position  25 Dimensions & weights By Vendor  26 Pollution condition  Heavy  Manufacture Type designation and serial number Rated lightning impulse withstand voltage across open pole Rated lightning impulse withstand voltage across open pole Rated lightning impulse withstand voltage across open pole Rated power frequency vithstand voltage across open pole Rated on load transformer breaking current Ver or framschatture Relevant standard voltage across open pole Rated on load transformer breaking current Ver or framschatture Relevant standard voltage browner poles Rated on load transformer breaking current Ver or framschatture Relevant standard voltage dross open pole Rated on load transformer breaking current Ver or framschatture Relevant standard voltage dross open pole Rated on load transformer breaking current Ver or framschatture Relevant standard voltage dross open pole Rated on load transformer breaking current Ver or framschatture Relevant standard voltage dross open pole Rated power frequency vithstand voltage across open pole Rated power frequency vithstand voltage between poles Rated power frequency vithstand voltage across open pole Rated power frequency vithstand voltage between poles Rated power frequency vithstand voltage between pole	23	N	lo. Of Make o. Of Break Rated Vo Rated Cu	Contacts Contacts oltage rrent					NO (Norm 110V 25 AI	ally open) DC DC		
Pollution condition  Heavy  Manufacturer Type designation and serial number Rated voltage Rated lighting impulse withstand voltage across open pole Rated lighting impulse withstand voltage between poles Rated lighting impulse withstand voltage between poles Rated power frequency withstand voltage across open pole Rated	24							Disconne To preve	ector is not ent closure arth switch	in open pos of Disconne is not in op	ition ector	
Minimum Rating plate data  Routine Tests:  a) dielectric test on the main circuit (clause 7.1 of IEC60694) b) b) tests on auxiliary and control circuits (Clause 7.2 of IEC60694) c) measurement of the resistance of the main circuit (clause 7.3 of IEC60694) c) measurement of the resistance of the main circuit (clause 7.3 of IEC60694) c) measurement of the resistance of the main circuit (clause 7.3 of IEC60694) c) measurement of the resistance of the main circuit (clause 7.3 of IEC60694) d) tightness test (Clause 7.4 of IEC60694) e) Design and visual checks (Clause 7.5 of IEC60694) f) Mechanical tests as per clause 7.101 of IEC62271-102  Type Tests  Certified Reports of test on the identical type according	25	D	imensions &	& weights					By Ven	dor		
Type designation and serial number Rated voltage across open pole Rated lighting impulse withstand voltage across open pole Rated lighting impulse withstand voltage between poles Rated lighting impulse withstand voltage between poles Rated lighting impulse withstand voltage between poles Rated power frequency withstand voltage between poles Rated power frequency withstand voltage across open pole Rated power frequency withstand voltage between poles Rated no load transformer breaking current Year of manufacture Relevant standard with date of issue  Routine Tests:  a) dielectric test on the main circuit (clause 7.1 of IEC60694) b) tests on auxiliary and control circuits (Clause 7.2 of IEC60694) c) measurement of the resistance of the main circuit (Clause 7.3 of IEC60694); d) tightness test (Clause 7.4 of IEC60694) e) Design and visual checks (Clause 7.5 of IEC60694) f) Mechanical tests as per clause 7.101 of IEC62271-102  Type Tests  Certified Reports of test on the identical type according	26		Pollution co	ondition					Heav	у		
a) dielectric test on the main circuit (clause 7.1 of IEC60694) b) tests on auxiliary and control circuits (Clause 7.2 of IEC60694) c) measurement of the resistance of the main circuit (Clause 7.3 of IEC60694); d) tightness test (Clause 7.4 of IEC60694) e) Design and visual checks (Clause 7.5 of IEC60694) f) Mechanical tests as per clause 7.101 of IEC62271-102  Type Tests Certified Reports of test on the identical type according	27	Min	imum Ratin	g plate data	a			Rated lightni Rated lightr Rated power Rated power Rated	ype designation and Rated voli ng impulse withstan ning impulse withsta frequency withstan er frequency withsta Rated normal d no load transforme Year of manu	serial number age d voltage across oper d voltage between p d voltage across oper nd voltage between p current thort circuit r breaking current facture	oles pole	
	28	b) tests on auxiliary c) measurement of the re d) tight e) Design and	on the main circ y and control cir sistance of the m ness test (Claus I visual checks (	uit (clause 7.1 c cuits (Clause 7.1 ain circuit (Cla e 7.4 of IEC6069 Clause 7.5 of IE	2 of IEC60694) use 7.3 of IEC606 94) C60694)	94);						
	29		Type T	ests							ccording	



#### فعالیتهای رو زمینی در بستههای کاری تحتالارض







### NISOC

### Data Sheets For 11 KV Over Head Line Equipment

نسخه سريال نوع مدر ک رشته تسهيلات صادر کننده بسته کاری پروژه شماره پيمان: BK SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۱۹ از ۵۲

	— شماره پیمان:	BK	SSGRL	PEDCO	110	EL	DT	0012	D04		شماره صفحه: ۱۹ از ۵۲
				DATA SHE	EET FOR CU	T OUT FUS	SE (BK12)				
Item	DESCRIPTION						CHARACTERISTIC			Vendor data	
1		Class						Outdo			
2		Туре					Channel Type				
3	Manufact	turer of Fus	e base & l	link				By Ven	dor		
4	Applicable Standard				Islamic Rep for Strateg General T Execution I	oublic of Ira ic Planning Fechnical S Procedures	ution lines	idency vision, and ad and			
5	Envir	onmental co	onditions						ent number: B-0001 (Pr esign)		
6	Nominal line	e to line vol	tage ratin	g (kV)				11			
7	Maximum continuou	ıs line to line	e operatii	ng voltage (l	kV)			12			
8	Rat	ted frequenc	cy (Hz)					50			
9	Color	of Porcelain	insulato	r				By Ven	dor		
10	Rated c	urrent of Fu	se base (	A)				100	1		
11	Rated c	current of Fu	ıse link (	A)				10			
12	Creepa	age distance	(mm/kV	)				31			
13	Minimum creep	age distanc	e of insul	ator (mm)				372			
14	Rated maxi	mum brakir	ng curren	t (kA)				16			
15	Rated lightning impulse withstar	nd voltage to	earth an	d between	poles (kV po	eak)		60			
16	Rated lightning impulse withstand vo	oltage across peak)	s the isola	iting distanc	ce of Fuse -	base(kV		75			
17	Rated one minute power frequency wi	ithstand vol	tage to ea	rth and bet	ween poles	(kV rms)	28				
18	Rated one minute power frequency wit	thstand volt base (kV ri		ss the isolat	ing distance	e of Fuse -	32				
19		Fuse clas	s				Full-range				
20		Operating p	oole					Requi	red		
21	, and the second	brackets an						Requi	red		
22	Provision for	r mounting o	of surge a	rrester				Requi	red		
23	Weight o	of Fuse-base	& Fuse l	ink			By Vendor				
24	Dime	ension of Fu	ıse-base				By Vendor				
25	Dim	ension of Fu	use-link				By Vendor				
26	Po	ollution con	dition					Heav	у		
							Manufa	On the fus lanufacture cturer's ty ated insula Rated vo Rated cu	er's name pe designat tion level oltage	ion	
27	Minimum da	Minimum data required on rating plate				M	On the fuse Ianufacture Rated vo Rated cu aking capae Rated free	er's name oltage rrent city and TR'	/ class		
						Manufa		er's name pe designat peed desigr			
28		Routine Te	ests				Witness a	and Report 60282	according t 2-2	o IEC	
29		Type Test	ts						he identica EC 60282-2		

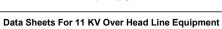


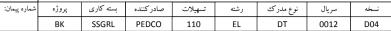
NISOC

# نگهداشت و افزایش تولید میدان نفتی بینک

## فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك







شماره صفحه: ۲۰ از ۵۲

DATA SHEET FOR LIGHTNING ARRI	ESTER (BK12)

	DATA SHEET FOR LIGHTNING ARRESTER (BK12)								
Item	DESCRIPTION	CHARACTERISTIC	Vendor data						
1	Туре	ZnO							
2	Applicable Standard	IEC60099-4, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375							
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)							
4	Nominal line to line voltage rating (kV)	11							
5	Maximum continuous line to line operating voltage (kV)	12							
6	Continuous Operating Voltage (Ucov)	9.6							
7	Rated frequency (Hz)	50							
8	Material of insulator	By vendor							
9	Earth fault factor	1.4							
10	Line discharge class per IEC 60099-4	2							
11	Minimum energy discharge capability (kJ/kV) U rated	Acc. To IEC							
12	Nominal discharge current with 8/20 microsecond wave (kA peak)	10							
13	Pressure relief class (kA)	20							
14	Creepage distance (mm/kV)	31							
15	Minimum creepage distance of insulator (mm)	372							
16	Rated lightning impulse withstand voltage to earth and between poles (kV peak)	60							
17	Rated lightning impulse withstand voltage across the isolating distance of Fuse - base(kV peak)	75							
18	Rated one minute power frequency withstand voltage to earth and between poles (kV rms)	28							
19	Rated one minute power frequency withstand voltage across the isolating distance of Fuse - base (kV rms)	32							
20	Whether surge counter required?	No							
21	Washable in service	Yes							
22	Temporary overvoltage factor (Ktov) at 1 Sec. at 10 Sec. at 100 Sec.	By vendor							
23	5kA, 8/20μs lightning impulse protective level	By vendor							
24	10kA, 8/20μs lightning impulse protective level (Ur 10kA, 8/20)	Residual voltage < 43.2kV							
25	20kA, 8/20μs lightning impulse protective level	By vendor							
26	125A, 30/60µs switching impulse protective level	By vendor							
27	Height of Surge Arrester	By vendor							
28	Diameter of Sheds	By vendor							
29	Total Weight of Surge Arrester	By vendor							
30	Type and Material of Terminal	By vendor							
31	Pollution condition	-							
32	Minimum data required on rating plate	Heavy  Manufacturer  Manufacturer type designation Serial number Continuous operating voltage Rated voltage Rated frequency Nominal discharge current Pressure relief short time current Line discharge current Pollution degree Year of manufacture Relevant standard with date of issue							
33	Routine Tests  a) Measurement of reference voltage Uref (Clause 8.1.a of IEC 60099-4) b) Residual voltage test (Clause 8.1.b of IEC 60099-4) c) Internal Partial Discharge test (Clause 8.1.c of IEC 60099-4); d) Leakage test for sealed housing arresters (Clause 8.1.d of IEC 60099-4) e) Design and visual checks acc. to purchase specifications	Witness and Report							
34	Type Tests	Certified Report on the identical type according to IEC 60099-4							



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC Data Sheets For 11 KV Over Head Line Equipment

.04-.44-114

شماره پیمان:

 نسخه
 سریال
 نوع مدر ک
 رشته
 تسهیلات
 صادر کننده
 بسته کاری
 پروژه

 BK
 SSGRL
 PEDCO
 110
 EL
 DT
 0012
 D04

شماره صفحه: ۲۱ از ۵۲

	- STVT-9/AF BK SSGRL PEDCO 110 EL	DT 0012 D04			
	DATA SHEET FOR LOAD BREAK SV	VII (DK12)			
Item	DESCRIPTION	CHARACTERISTIC	Vendor data		
1	Manufacturer / Country	By vendor	venuor uata		
2	Standard	IEC 62271-103, IEC 60694, IPS-E-EL- 160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375			
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)			
4	Туре	SF6			
5	Rated Voltage	11kV			
6	Rated Frequency	50Hz			
7	No. of Phases and Poles	3 Phase, 3 Pole			
8	1 minute power freq. withstand voltage To earth and between phases: Across isolating distance: Lightning impulse withstand voltage	28kV 32kV			
9	To earth and between phases: Across isolating distance:	60kV 75kV			
10	Rated Normal Current	630 A			
11	Mainly active load breaking current	By vendor (> 200A)			
12	Closed loop breaking current	By vendor			
13	Line charging breaking current	By vendor			
14 15	Cable charging breaking current	By vendor			
16	No load transformer breaking current Rated Short Time Withstand Current	By vendor (> 0.74A) 25kA, 3 Sec.			
17	Rated Short Time Whitstand Current  Rated Peak Withstand Current	62.5kA			
18	Rated Short Circuit Making Current	62.5kA			
19	Number of breaking operation CO	By vendor			
20	Supporting Structure Material	Hot dipped galvanized steel			
21	Creepage distance (mm/kV)	31			
22	Min. Creepage Distance of insulators	372mm			
23	Ingress protection of el. Enclosures	Min. IP55			
24	Operating mechanism	Hand operated mechanism, common for three poles			
25	Permissible tensile force on terminals	By vendor			
26	Gas pressure indicator	Required			
27	Auxiliary Contacts: No. of Make Contacts No. of Break Contacts Rated Voltage Rated Current Breaking Current at 110V DC	By vendor: Min. 4 Min. 4 110V DC Min. 10A Min. 2A			
28	Anti-Condensation Heater	230V AC, 1Ph, 50Hz			
29	Interlocks with Earth Switch	Load Break Switch + Earth Switch			
		integrated as one unit			
30 31	Dimensions and Weight  Pollution condition	By vendor			
32	Pollution condition  Minimum data required on rating plate	Heavy  Manufacturer Type designation and serial number Rated voltage One minute power frequency withstand voltage Lightning impulse withstand voltage Rated normal current Rated short time withstand current Mainly active load breaking current Closed loop breaking current Line charging breaking current Cable charging breaking current No load transformer breaking current Year of manufacture Relevant standard with date of issue			
33	Routine Tests  a) Dielectric test on the main circuit (Clause 7.1 of IEC 60694)  b) Tests on auxiliary and control circuits (Clause 7.2 of IEC 60694)  c) Measurement of the resistance of the main circuit (Clause 7.3 of IEC60694)  d) Tightness test (Clause 7.4 of IEC60694)  e) Design and visual checks (Clause 7.5 of IEC60694)  f) Mechanical tests as per clause 7.101 of IEC62271-100	Witness and Report			
34	Type Tests	Certified Report on the identical type according to IEC 62271-103			
		to IEC 022/1-103			



## فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

	شماره پيمان:	پروژه	بسته کاری	صادر کننده	تسهيلات	رشته	نوع مدر ک	سريال	نسخه
.0444-174		BK	SSGRL	PEDCO	110	EL	DT	0012	D04

شماره صفحه: ۲۲ از ۵۲

DATA	SHEET	FOR T	OWER (	(BK12)

	DATA SHEET FOR TOWER (	KIZ)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacturer / Country	By vendor	
2	Standard	IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 440	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Type of Steel: Analysis of steel Carbon Manganese Sulphur Phosphorus Silicon	MILD High Strength ST 37(235JR) ST 52(355JR) 0.17 0.2 1.4 1.6 0.045 0.05 0.045 0.05 0.3 0.55	
5	Thickness of steel (1.6-3.2mm):	65 65 460	
6	Thickness of steel (3.2-4.8mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	75 75 530	
7	Thickness of steel (4.8-6.4mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	85 85 600	
8	Strength in Tension Standard Designation	BS 8100 – Lattice Towers and Masts	
9	Strength in Tension (Ultimate tensile stress)	340-470 490-630	
10	Strength in Tension (Yield stress)	235 355	
11	Strength in Compression (Elongation)	24% 22%	
12	Strength in Compression (Min zinc coating)	85µ 85µ	
13	Bolts & Nuts Characteristics: Standard designation Steel material Property class Ultimate shearing stress (On bolt shank) Ultimate Bearing stress	ANSI C 135-1 (Galvanized Steel Bolts and Nuts for Overhead Lines) Steel Steel 5.6 5.8 2100kg/cm2 2800kg/cm2 5400kg/cm2 6000kg/cm2	
4.4	Min zinc coating	46μ 46μ	
14	Pollution condition	Heavy	
15	Routine tests & Type test	According to ASCE1090 Manual 52	



## تگهداشت و افزایش تولید میدان نفتی بینک فعالیتهای رو زمینی در بستههای کاری تحت الارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری صادر كننده نوع مدرک شماره پيمان: پروژه تسهيلات رشته سريال نسخه .04-.44-9146 DT 0012 ВК SSGRL PEDCO 110 EL D04

شماره صفحه: ۲۳ از ۵۲

DATA	SHEET FOR	PHASE CO	NDUCTOR	(RK15)

	DATA SHEET FOR PHASE CO	NDUCTOR (BR15)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacture	By vendor	
2	Year of Manufacture	By vendor	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Conductor Name	HYENA	
5	Applicable standard	ASTM B232, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427	
6	Max allowable temperature of conductor (°c)	85	
7	Reted short circuit current for 0.5 Sec. (KA)	18.8	
8	Max. temperature range (operation)	75	
9	Temperature range for installation(°c)	-5 ~ +55	
10	Stranding and wire diameter (nos./mm):		
11	Aluminium	7/4.39	
12	Steel	7/1.93	
13	Overall diameter(mm)	14.57	
14	Aluminium Area (mm²)	106	
15	Steel area (mm²)	20.48	
16	Total area (mm²)	126.2	
17	Weight (kg/km):		
18	Aluminium	290	
19	Steel	160	
20	Total	450	
21	Nominal current in 30° (A)	441	
22	Ultimate tensile Strength (kg)	4090	
23	Coefficient of linear expansion (1 /C° x 10-6)	18.8	
24	Initial modulus of elasticity (kg/mm²)	6000	
25	Final modulus of elasticity (kg/mm²)	7450	
26	DC resistance at 20°C(Ω/km)	0.2713	
27	AC resistance at 25°C(Ω/km)	0.277	
28	AC resistance at 75°C(Ω/km)	0.3142	
29	Temperature range (transport / storage)	By vendor	
30	Pollution condition	Heavy	
31	Routine tests & Type test	Acc To IEC 61089	



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومی و مشترک





### NISOC

18

#### Data Sheets For 11 KV Over Head Line Equipment

نسخه سریال نوع مدر ک رشته تسهیلات صادر کننده بسته کاری پروژه شماره پیمان: - BK SSGRL PEDCO 110 EL DT 0012 D04

Routine tests & Type test

شماره صفحه: ۲۴ از ۵۲

	DATA SHEET FOR SHIELD WIR	E (DV15)			
	DATA SHEET FOR SHIELD WIR	E (BK15)			
-					
Item	DESCRIPTION	CHARACTERISTIC	Vendor data		
1	Manufacture	By vendor			
2	Year of Manufacture	By vendor			
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)			
4	Code Name	7No.8 AWG			
5	Applicable standard	ASTM B416, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427			
8	Stranding and wire diameter (nos./mm):	7/3.26			
9	Overall diameter(mm)	9.78			
10	Total area (mm²)	58.43			
11	Weight (kg/km):	390			
12	Ultimate tensile Strength (kg)	7226			
13	Coefficient of linear expansion (1 /C° x 10-6)	13			
14	Initial modulus of elasticity (kg/mm²)	16000			
15	Final modulus of elasticity (kg/mm²)	16000			
16	DC resistance at 20°C(Ω/km)	s			
17	Pollution condition	Heavy			

Acc To IEC 61089



NISOC

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### نگهداشت و افزایش تولید میدان نفتی بینک

### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك







شماره صفحه: ۲۵ از ۵۲

## Data Sheets For 11 KV Over Head Line Equipment

Routine tests & Type test

شماره پیمان: .04-.44-4146

بسته کاری پروژه صادر کننده تسهيلات رشته نوع مدرک سريال نسخه ВК PEDCO 110 EL DT 0012 D04 SSGRL

	DATA SHEET FOR INSULATOR	t (BK15)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Туре	BALL & SOCKET	
2	Applicable Standard	IEC60120, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 426	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Material	Porcelain	
5	Nominal line to line voltage rating (kV)	11	
6	Maximum continuous line to line operating voltage (kV)	12	
7	Rated frequency (Hz)	50	
8	Creepage distance (mm/kV)	31	
9	Minimum creepage distance of insulator (mm)	372	
10	Minimum mechanical Failing Load (kN)	70	
11	Socket coupling size (IEC60120)	16	
12	Ball coupling size (IEC60120)	16	
13	Rated lightning impulse withstand voltage to earth and between poles (kV peak)	60	
14	Rated lightning impulse withstand voltage across the isolating dist. of Fuse base (kVpeak)	75	
15	Rated one minute power frequency withstand voltage to earth and between poles (kV rms)	28	
16	Rated one minute PF withstand voltage across the isolating dist. of Fuse base (kVrms)	32	
17	Power Frequency Puncture Voltage (kV)	110	
18	Metallic Part material	Malleable Cast Iron	
19	Insulator material	Brown Glazed Porcelain	
20	Metallic parts	Malleable cast iron	
21	Washable in service	Yes	
22	Unit Spacing (mm)	By vendor	
23	Disc Diameter (mm)	By vendor	
24	Total Weight	By vendor	
25	Type and Material of Terminal	By vendor	
26	Pollution condition	Heavy	

Acc To IEC 383



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری شماره پیمان: پروژه صادر کننده تسهيلات رشته نوع مدر ک سريال نسخه .04-.44-4146 ВК SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۲۶ از ۵۲

#### DATA SHEET FOR FITTING SUSPENSION & TENSION SET (BK15)

Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Туре	FORGED STEEL	
2	Applicable standard	IEC 61284, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 465	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Material:	-	
5	Outer Part	AL.ALLOY	
6	Iner Part	FORGED STEEL, Hot Deep Galvanized.	
7	Jumper Plate	AL.ALLOY	
8	Terminal Jumper	AL.ALLOY	
9	Bolts & Nuts & Washers	STEEL, Hot Deep Galvanized.	
10	Split Pin	STAINLESS STEEL	
11	Min breaking strength	95% OF CONDUCTOR U.T.S	
12	Coupling Standard IEC	16 mmA	
13	Short Circuit Current	25kA/0.4Sec.	
14	Arcing Horn	STEEL	
15	Min breaking strength (KN)	80	
16	Anti-Climbing Devices and Safety Signs for Lines up to 400kV	ENA TS 43-90	
17	Tower Identification	Steel Sheet with 2mm Thickness	
18	Danger Alarm	Steel Sheet with 1.2mm Thickness	
19	Pollution condition	Heavy	
20	Routine tests & Type test	Acc To IEC 61284	



#### فعالیتهای رو زمینی در بستههای کاری تحتالارض

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### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری صادر كننده نوع مدر ک شماره پيمان: پروژه تسهيلات رشته سريال نسخه .04-.44-9146 0012 ВК SSGRL PEDCO 110 EL DT D04

شماره صفحه: ۲۷ از ۵۲

TO A ITTI A	CHEER FOR	E A DELLINIC	CVCCCCC	(DIZAE)
DATA	SHEET FOR	EARTHING	SYSTEM	1BK151

		RETHING STOTEM (DRTS)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	GROUND WIRE:		
2	Туре	Copper Conductor	
3	Applicable standard	DIN 48201, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 409	
4	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
5	Stranding (No./mm)	7/2.5	
6	Total cross section (mm2)	35	
7	Overall Diameter (mm)	7.5	
8	Unit Weight (kg/m)	0.31	
9	Calculated breaking load (kN)	13.77	
10	DC Resistance At 20°C (ohm/km)	0.5265	
11	TOWER BONDING CLAMP:		
12	Type of Body	Forged Steel	
13	Surface Coating	HOT DIP. GALV. Acc to ASTM A123 & A153 or BS729	
14	Type of Bolt & Nut	Steel	
15	Torgue on Bolt	20 NM	
16	Applicable standard	ST37 & DIN931,934,125,127	
17	Diameter of Wire catcher	Ø 8-13 mm	
18	Pollution condition	Heavy	
19	Routine tests & Type test	Acc To DIN 48201	



## فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC Data Sheets For 11 KV Over Head Line Equipment

NW NW ALLE

بسته کاری پروژه شماره پیمان: BK SSGRL

بيلات صادر كننده PEDCO 110

رشته تسهیلات 110 EL نوع مدرک DT

ىخە سريال 0012 D0

نسخه D04\_\_\_

شماره صفحه: ۲۸ از ۵۲

DATA CHEET FO	R DISCONNECTOR	SWITCH (BK15)
DATA SHEET FU	R DISCUMNECTOR	3WILLIA IDNISI

Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Installation (indoor / outdoor)	Outdoor	
2	Standard	IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Nominal system voltage, 3phase	11 kV	
5	System voltage variation	± 10%	
6	Nominal frequency and frequency variation	50 ± 5%	
7	Numbers of poles and current rating	3pole / 630 A	
8	Short circuit amper and time duration	25 kA / 1 s	
9	Rated peak withstand current	62.5 kA	
10	Creepage distance (mm/kV)	31	
11	Minimum creepage distance of insulator (mm)	372	
12	Rated lightning impulse withstand voltage to earth and between poles (kV peak)	60	
13	Rated lightning impulse withstand voltage across the isolating distance of Fuse - base(kV peak)	75	
14	Rated one minute power frequency withstand voltage to earth and between poles (kV rms)	28	
15	Rated one minute power frequency withstand voltage across the isolating distance of Fuse - base (kV rms)	32	
16	Mode of operation OPEN/CLOSE	open-close manual and with earth blad and earth switch manual	
17	Disconnectors & Earthing switches Operating	Hand operating	
18	Accessories	with earth blad and earth switch manual	
19	Disconnector Mechanism	Center break	
20	Construction	Three pole operation Containing Earthing switch	
21	Ingress protection of electrical enclosures	Min. IP55 (If Needed)	
22	Disconnector status Auxiliary Contacts: No. Of Make Contacts No. Of Break Contacts Rated Voltage Rated Current Breaking Current At 110V DC	12NC (Normally close) 12NO (Normally open) 110V DC 25 ADC 5 ADC	
23	Earthing switch status Auxiliary Contacts: No. Of Make Contacts No. Of Break Contacts Rated Voltage Rated Current Breaking Current At 110V DC	12NC (Normally close) 12NO (Normally open) 110V DC 25 ADC 5 ADC	
24	Interlocks(Electrical & Mechanical)	To prevent closure of earth switch when Disconnector is not in open position To prevent closure of Disconnector when earth switch is not in open position	
25	Dimensions & weights	By Vendor	
26	Pollution condition	Heavy	
27	Minimum Rating plate data	Manufacturer Type designation and serial number Rated voltage Rated lightning impulse withstand voltage across open pole Rated lightning impulse withstand voltage across open pole Rated power frequency withstand voltage across open pole Rated duration of short dricuit Rated normal current Verar of manufacture Relevant standard with date of issue	
28	Routine Tests:  a) dielectric test on the main circuit (clause 7.1 of IEC60694) b) tests on auxiliary and control circuits (Clause 7.2 of IEC60694) c) measurement of the resistance of the main circuit (Clause 7.3 of IEC60694); d) tightness test (Clause 7.4 of IEC60694) e) Design and visual checks (Clause 7.5 of IEC60694) f) Mechanical tests as per clause 7.101 of IEC62271-102	Witness & Report	
29	Type Tests	Certified Reports of test on the identical type according to IEC62271-102 or IEC129	



#### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومی و مشترک



### NISOC

### Data Sheets For 11 KV Over Head Line Equipment

شماره يىمان:	پروژه	بسته کاری	صادر كننده	تسهيلات	رشته	نوع مدرک	سريال	نسخه
سماره پیمان.	BK	SSGRL	PEDCO	110	EL	DT	0012	D04

شماره صفحه: ۲۹ از ۵۲

		ВК	SSGRL	PEDCO	110	EL	DT	0012	D04		U1 )111.2220 0)423
			SE (BK15)								
		DESCRIPTI	, ou	_	OV. 4 D . C	ID VOME O		**			
Item	L	ION			CHARACTE			Vendor data			
2				Outdo							
3	Manufactur	-1-		Channel							
3	Manuractu	arer of Fuse	e base & III	пк				By Ven			_
4	Арр		Islamic Rep for Strateg General ' Execution I cable po	oublic of Ira pic Planning Technical S Procedures ower distrib 374,3		idency vision, and ad and NO:					
5	Enviro	onmental co	onditions						nt number: B-0001 (Pr esign)		
6	Nominal line	to line volt	tage rating	(kV)				11			
7	Maximum continuous	line to line	e operating	g voltage (l	kV)			12			
8	Rate	ed frequenc	cy (Hz)					50			
9	Color o	f Porcelain	insulator					By Ven	dor		
10	Rated cu	rrent of Fu	se base (A	)				100			
11	Rated cu	ırrent of Fu	ıse link (A)	)				10			
12	Creepag	ge distance	(mm/kV)					31			
13	Minimum creepa	ige distance	e of insulat	tor (mm)				372			
14	Rated maxin	num brakin	ng current	(kA)				16			
15	Rated lightning impulse withstand	d voltage to	earth and	l between j	poles (kV pea	ak)		60			
16	Rated lightning impulse withstand vol	tage across peak)	s the isolat	ing distanc	ce of Fuse - ba	ase(kV	75				
17	Rated one minute power frequency with	hstand volt	tage to ear	th and bet	ween poles (	[kV rms)	28				
18	Rated one minute power frequency with $$b$$	nstand volta pase (kV rr		s the isolat	ing distance	of Fuse -	32				
19		Fuse class	S					Full-ra	nge		
20	C	Operating p	oole					Requir	ed		
21	Mounting b	orackets an	nd accessor	ies				Requir	ed		
22	Provision for	mounting o	of surge ar	rester				Requir	ed		
23	Weight of	f Fuse-base	& Fuse lin	ık				By Ven	dor		
24	Dime	nsion of Fu	ıse-base					By Ven	dor		
25	Dime	ension of Fu	use-link					By Ven	dor		
26	Pol	llution con	dition					Heav	у		
							Manufa R	On the fus Ianufacture icturer's typ ated insula Rated vo Rated cu	r's name oe designati tion level ltage rrent	ion	
27							Rated bre	Ianufacture Rated vo Rated cu aking capac Rated frec On the fuse	r's name ltage rrent city and TRV luency	/ class	
								Manufacturer's name Manufacturer's type designation Rated current and speed designation Rated voltage		ation	
28	1	Routine Te	ests				Witness a	and Report 60282	according t !-2	o IEC	
29		Type Test	ts					Report on t	he identical CC 60282-2		



## فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC Data Sheets For 11 KV Over Head Line Equipment

.04-.44-174

شماره پیمان:

نسخه سريال نوع مدر ک رشته تسهيلات صادر کننده بسته کاری پروژه BK SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۳۰ از ۵۲

	·07-·V7-91/AF	BK S	SGRL	PEDCO	110	EL	DT	0012	D04	
			DA	TA SHEET	FOR LIGHTN	NING ARRI	ESTER (BK1	15)		
Item		DESCRIPTIO	ON	CHARACTERISTIC			Vendor data			
1					ZnO					
2	A	Applicable Stan	dard	IEC60099-4, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375			cy for ision, n and ead and			
3	Env	rironmental cor	nditions					to docume D-000-PR-D Basis of D	B-0001 (Pro	
4	Nominal li	ne to line volta	ge ratin	g (kV)				11		
5	Maximum continu	ous line to line	operatii	ng voltage (	(kV)			12		
6	Continuo	us Operating V	oltage (l	Jcov)				9.6		
7	R	ated frequency	/ (Hz)					50		
8	N	Material of insu	llator					By ven	dor	
9		Earth fault fac	ctor					1.4		
10	Line disc	harge class per	IEC 600	199-4				2		
11	Minimum energy	discharge capa	ability (k	J/kV) U rat	ed			Acc. To	IEC	
12	Nominal discharge curre	ent with 8/20 r	nicrosec	ond wave	(kA peak)			10		
13	Pre	ssure relief cla	ıss (kA)					20		
14	Cree	page distance (	(mm/kV	)				31		
15	Minimum cree	epage distance	of insula	ator (mm)				372		
16	Rated lightning impulse withsta	and voltage to	earth an	d between	poles (kV pe	eak)		60		
17	Rated lightning impulse withstand v	voltage across t peak)	the isola	ting distan	ce of Fuse - b	oase(kV		75		
18	Rated one minute power frequency v	withstand volta	ige to ea	rth and bet	ween poles	(kV rms)		28		
19	Rated one minute power frequency w	vithstand voltaş base (kV rm		ss the isolat	ting distance	of Fuse -		32		
20	Whethe	er surge counte	er requir	ed?				No		
21	Ţ	Washable in sei	rvice					Yes		
22	Tempora	ry overvoltage at 1 Sec. at 10 Sec. at 100 Sec.		Ktov)				By ven	dor	
23	5kA, 8/20μs li	ightning impuls	se prote	ctive level				By ven	dor	
24	10kA, 8/20μs lightning	impulse prote	ctive lev	el (Ur 10k	A, 8/20)		Res	sidual voltag	ge < 43.2kV	7
25	20kA, 8/20μs	lightning impul	lse prote	ctive level				By ven	dor	
26	125A, 30/60μs	switching impu	ulse prot	ective leve	·l			By ven	dor	
27		ight of Surge A						By ven		
28		Diameter of Sh						By ven		
29		Weight of Surg		er				By ven		
30		and Material of						By ven		
31		Pollution cond						Heav		
32	Minimum data required on rating plate						Cor N Press	Manufact nufacturer type Serial nur Serial nur ntinuous opera Rated vol Rated freq ominal dischar sure relief shor Line discharg Pollution d Year of manu	urer e designation nber sting voltage tage uency rge current t time current e current legree ufacture	nt
33	Routine Tests  a) Measurement of reference voltage Uref (Clause 8.1.a of IEC 60099-4) b) Residual voltage test (Clause 8.1.b of IEC 60099-4) c) Internal Partial Discharge test (Clause 8.1.c of IEC 60099-4); d) Leakage test for sealed housing arresters (Clause 8.1.d of IEC 60099-4) e) Design and visual checks acc. to purchase specifications						,	Witness and	l Report	
34		Type Tests	3					cording to IE		



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC Data Sheets For 11 KV Over Head Line Equipment

.04-.44-4146

شماره پیمان: پروژه بسته کاري صادر کننده تسهيلات رشته نوع مدر ک سريال نسخه SSGRL PEDCO 110 DT 0012 ВК EL D04

شماره صفحه: ۳۱ از ۵۲

	DATA SHEET FOR LOAD BREAK SV	VITCH (BK15)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacturer / Country	By vendor	
2	Standard	IEC 62271-103, IEC 60694, IPS-E-EL- 160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Туре	SF6	
5	Rated Voltage	11kV	
6	Rated Frequency	50Hz	
7	No. of Phases and Poles	3 Phase, 3 Pole	
8	1 minute power freq. withstand voltage To earth and between phases: Across isolating distance:	28kV 32kV	
9	Lightning impulse withstand voltage To earth and between phases: Across isolating distance:	60kV 75kV	
10	Rated Normal Current	630 A	
11	Mainly active load breaking current	By vendor (> 200A)	
12	Closed loop breaking current	By vendor	
13	Line charging breaking current	By vendor	
14 15	Cable charging breaking current  No load transformer breaking current	By vendor By vendor (> 0.74A)	
16	Rated Short Time Withstand Current	25kA, 3 Sec.	
17	Rated Short Time Withstand Current	62.5kA	
18	Rated Short Circuit Making Current	62.5kA	
19	Number of breaking operation CO	By vendor	
20	Supporting Structure Material	Hot dipped galvanized steel	
21	Creepage distance (mm/kV)	31	
22	Min. Creepage Distance of insulators	372mm	
23	Ingress protection of el. Enclosures	Min. IP55	
24	Operating mechanism	Hand operated mechanism, common for three poles	
25	Permissible tensile force on terminals	By vendor	
26	Gas pressure indicator	Required	
27	Auxiliary Contacts: No. of Make Contacts No. of Break Contacts Rated Voltage Rated Current Breaking Current at 110V DC	By vendor: Min. 4 Min. 4 110V DC Min. 10A Min. 2A	
28	Anti-Condensation Heater	230V AC, 1Ph, 50Hz	
29	Interlocks with Earth Switch	Load Break Switch + Earth Switch	
		integrated as one unit	
30 31	Dimensions and Weight	By vendor	
32	Pollution condition  Minimum data required on rating plate	Heavy  Manufacturer Type designation and serial number Rated voltage One minute power frequency withstand voltage Lightning impulse withstand voltage Rated normal current Rated short time withstand current Mainly active load breaking current Closed loop breaking current Line charging breaking current Cable charging breaking current No load transformer breaking current Year of manufacture Relevant standard with date of issue	
33	Routine Tests  a) Dielectric test on the main circuit (Clause 7.1 of IEC 60694) b) Tests on auxiliary and control circuits (Clause 7.2 of IEC 60694) c) Measurement of the resistance of the main circuit (Clause 7.3 of IEC60694) d) Tightness test (Clause 7.4 of IEC60694) e) Design and visual checks (Clause 7.5 of IEC60694) f) Mechanical tests as per clause 7.101 of IEC62271-100	Witness and Report  Certified Report on the identical type according	
54	Type Tests	to IEC 62271-103	



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





#### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

	شماره پيمان:	پروژه	بسته کاری	صادر کننده	تسهيلات	رشته	نوع مدر ک	سريال	نسخه
.0444-174		ВК	SSGRL	PEDCO	110	EL	DT	0012	D04

شماره صفحه: ۳۲ از ۵۲

	DATA SHEET FOR TOWER (	DK13)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacturer / Country	By vendor	Vendor data
2	Standard	IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 440	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Type of Steel: Analysis of steel Carbon Manganese Sulphur Phosphorus Silicon	MILD High Strength ST 37(235]R) ST 52(355]R) 0.17 0.2 1.4 1.6 0.045 0.05 0.045 0.05 0.3 0.55	
5	Thickness of steel (1.6-3.2mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	65 65 460	
6	Thickness of steel (3.2-4.8mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	75 75 530	
7	Thickness of steel (4.8-6.4mm):	85 85 600	
8	Strength in Tension Standard Designation	BS 8100 – Lattice Towers and Masts	
9	Strength in Tension (Ultimate tensile stress)	340-470 490-630	
10	Strength in Tension (Yield stress)	235 355	
11	Strength in Compression (Elongation)	24% 22%	
12	Strength in Compression (Min zinc coating)	85μ 85μ	
13	Bolts & Nuts Characteristics: Standard designation Steel material Property class Ultimate shearing stress (On bolt shank) Ultimate Bearing stress	ANSI C 135-1 (Galvanized Steel Bolts and Nuts for Overhead Lines) Steel Steel 5.6 5.8 2100kg/cm2 2800kg/cm2 5400kg/cm2 6000kg/cm2	

46µ

46µ

Heavy

According to ASCE1090 Manual 52

Min zinc coating

Pollution condition

Routine tests & Type test

14

15



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری صادر كننده شماره پيمان: پروژه تسهيلات رشته نوع مدر ک سريال نسخه .04-.44-9146 0012 ВК SSGRL PEDCO 110 EL DT D04

شماره صفحه: ۳۳ از ۵۲

	DATA SHEET FOR PHASE CONDUCTOR (W007S)						
Item	DESCRIPTION	CHARACTERISTIC	Vendor data				
1	Manufacture	By vendor	romor autu				
2	Year of Manufacture	By vendor					
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)					
4	Conductor Name	HYENA					
5	Applicable standard	ASTM B232, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427					
6	Max allowable temperature of conductor (°c)	85					
7	Reted short circuit current for 0.5 Sec. (KA)	18.8					
8	Max. temperature range (operation)	75					
9	Temperature range for installation(°c)	-5 ~ +55					
10	Stranding and wire diameter (nos./mm):						
11	Aluminium	7/4.39					
12	Steel	7/1.93					
13	Overall diameter(mm)	14.57					
14	Aluminium Area (mm²)	106					
15	Steel area (mm²)	20.48					
16	Total area (mm²)	126.2					
17	Weight (kg/km):						
18	Aluminium	290					
19	Steel	160					
20	Total	450					
21	Nominal current in 30° (A)	441					
22	Ultimate tensile Strength (kg)	4090					
23	Coefficient of linear expansion (1 /C° x 10-6)	18.8					
24	Initial modulus of elasticity (kg/mm²)	6000					
25	Final modulus of elasticity (kg/mm²)	7450					
26	DC resistance at 20°C(Ω/km)	0.2713					
27	AC resistance at 25°C(Ω/km)	0.277					
28	AC resistance at 75°C(Ω/km)	0.3142					
29	Temperature range (transport / storage)	By vendor					
30	Pollution condition	Heavy					
31	Routine tests & Type test	Acc To IEC 61089					



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری شماره پیمان: پروژه صادر كننده تسهيلات رشته نوع مدرک سريال نسخه .04-.44-9146 PEDCO 110 EL DT 0012 ВК SSGRL

شماره صفحه: ۳۴ از ۵۲ D04

DATA SHEET FOR SHIELD WIRE (W007S)						
Item	DESCRIPTION	CHARACTERISTIC	Vendor data			
1	Manufacture	By vendor				
2	Year of Manufacture	By vendor				
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)				
4	Code Name	7No.8 AWG				
5	Applicable standard	ASTM B416, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427				
8	Stranding and wire diameter (nos./mm):	7/3.26				
9	Overall diameter(mm)	9.78				
10	Total area (mm²)	58.43				
11	Weight (kg/km):	390				
12	Ultimate tensile Strength (kg)	7226				
13	Coefficient of linear expansion (1 /C° x 10-6)	13				
14	Initial modulus of elasticity (kg/mm²)	16000				
15	Final modulus of elasticity (kg/mm <sup>2</sup> )	16000				
16	DC resistance at $20^{\circ}$ C( $\Omega$ /km)	1.467				
17	Pollution condition	Heavy				
18	Routine tests & Type test	Acc To IEC 61089				



### فعالیتهای رو زمینی در بستههای کاری تحتالارض







#### NISOC Data Sheets For 11 KV Over Head Line Equipment

.04-.44-9114

بسته کاری نوع مدرک تسهيلات صادر كننده شماره پیمان: پروژه رشته سريال نسخه ВК SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۳۵ از ۵۲

	DATA SHI	EET FOR IN	<b>ISULATOR</b>	(W007S)

Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Туре	BALL & SOCKET	
2	Applicable Standard	IEC60120, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 426	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Material	Porcelain	
5	Nominal line to line voltage rating (kV)	11	
6	Maximum continuous line to line operating voltage (kV)	12	
7	Rated frequency (Hz)	50	
8	Creepage distance (mm/kV)	31	
9	Minimum creepage distance of insulator (mm)	372	
10	Minimum mechanical Failing Load (kN)	70	
11	Socket coupling size (IEC60120)	16	
12	Ball coupling size (IEC60120)	16	
13	Rated lightning impulse withstand voltage to earth and between poles (kV peak)	60	
14	Rated lightning impulse withstand voltage across the isolating dist. of Fuse base (kVpeak)	75	
15	Rated one minute power frequency withstand voltage to earth and between poles (kV rms)	28	
16	Rated one minute PF withstand voltage across the isolating dist. of Fuse base (kVrms)	32	
17	Power Frequency Puncture Voltage (kV)	110	
18	Metallic Part material	Malleable Cast Iron	
19	Insulator material	Brown Glazed Porcelain	
20	Metallic parts	Malleable cast iron	
21	Washable in service	Yes	
22	Unit Spacing (mm)	By vendor	
23	Disc Diameter (mm)	By vendor	
24	Total Weight	By vendor	
25	Type and Material of Terminal	By vendor	
26	Pollution condition	Heavy	
27	Routine tests & Type test	Acc To IEC 383	



### فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك



نسخه

D04



### NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری شماره پیمان: پروژه صادر كننده تسهيلات رشته نوع مدرک سريال .04-.44-9146 0012 ВК SSGRL PEDCO 110 EL DT

شماره صفحه: ۳۶ از ۵۲

DATA SHEET FOR FITTING SUSPENSION & TENSION SE	r (W007S)
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Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Туре	FORGED STEEL	
2	Applicable standard	IEC 61284, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 465	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Material:	-	
5	Outer Part	AL.ALLOY	
6	Iner Part	FORGED STEEL, Hot Deep Galvanized.	
7	Jumper Plate	AL.ALLOY	
8	Terminal Jumper	AL.ALLOY	
9	Bolts & Nuts & Washers	STEEL, Hot Deep Galvanized.	
10	Split Pin	STAINLESS STEEL	
11	Min breaking strength	95% OF CONDUCTOR U.T.S	
12	Coupling Standard IEC	16 mmA	
13	Short Circuit Current	25kA/0.4Sec.	
14	Arcing Horn	STEEL	
15	Min breaking strength (KN)	80	
16	Anti-Climbing Devices and Safety Signs for Lines up to 400kV	ENA TS 43-90	
17	Tower Identification	Steel Sheet with 2mm Thickness	
18	Danger Alarm	Steel Sheet with 1.2mm Thickness	
19	Pollution condition	Heavy	
20	Routine tests & Type test	Acc To IEC 61284	



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

نسخه سريال نوع مدرک رشته تسهيلات صادرکننده بسته کاری پروژه شماره پيمان: 110 BK SSGRL PEDCO 10 EL DT 0012 D04

شماره صفحه: ۳۷ از ۵۲

	DATA SHEET FOR EARTHING SYST	TEM (W007S)		
Item	DESCRIPTION	CHARACTERISTIC	Vendor data	
1	GROUND WIRE :			
2	Туре	Copper Conductor		
3	Applicable standard	DIN 48201, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 409		
4	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)		
5	Stranding (No./mm)	7/2.5		
6	Total cross section (mm2)	35		
7	Overall Diameter (mm)	7.5		
8	Unit Weight (kg/m)	0.31		
9	Calculated breaking load (kN)	13.77		
10	DC Resistance At 20°C (ohm/km)	0.5265		
11	TOWER BONDING CLAMP:			
12	Type of Body	Forged Steel		
13	Surface Coating	HOT DIP. GALV. Acc to ASTM A123 & A153 or BS729		
14	Type of Bolt & Nut	Steel		
15	Torgue on Bolt	20 NM		
16	Applicable standard	ST37 & DIN931,934,125,127		
17	Diameter of Wire catcher	Ø 8-13 mm		
18	Pollution condition	Heavy		
19	Routine tests & Type test	Acc To DIN 48201		



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





#### NISOC Data Sheets For 11 KV Over Head Line Equipment

						vei nedu	Line Equipi	_	ı		
	شماره پیمان: ۵۳-۰۷۳-۹۱۸۴	پروڙه BK	بسته کاری SSGRL	صادر کننده PEDCO	تسهیلات 110	رشته EL	نوع مدرک DT	سريال 0012	نسخه D04	-	شماره صفحه: ۳۸ از ۵۲
	E	DIV							D04		
DATA SHEET FOR DISCONNECTOR SWITCH (W007S)											
TA.		DECORT	TION					CHARACET	DICTIC		Wanda I I I
Item		DESCRIP		_				CHARACTE			Vendor data
1	Instal	lation (indo	oor / outdoo	or)				Outdo 160, Islamic idency for S	: Republic		
2		Standa	ard				Specificati for ov distri	ervision, Ge ion and Exec verhead and ibution lines	cution Proc cable pow NO: 374,3	edures er 75	
3	Env	vironmenta	l conditions	<b>.</b>				c. to docume D-000-PR-D Basis of D	B-0001 (Pi		
4	Nomin	ıal system v	oltage, 3ph	ase				11 k	J		
5	Sys	stem voltag	e variation					± 100	6		
6	Nominal free	quency and	frequency	variation				50 ± 5	%		
7	Numbers	s of poles ar	nd current i	rating				3pole / 6	30 A		
8	Short circ	uit amper a	and time du	ration				25 kA /	1 s		
9	Rated	d peak with	stand curre	nt				62.5 k	:A		
10	Cree	page distar	ice (mm/kV	7)				31			
11	Minimum cred			-				372			
12	Rated lightning impulse withst				poles (kV r	peak)		60			
13	Rated lightning impulse withstand		oss the isola					75			
14	Rated one minute power frequency	withstand v	oltage to ea	arth and bet	ween poles	s (kV rms)		28			
15	Rated one minute power frequency v	withstand v		ss the isolat	ing distanc	ce of Fuse -		32			
16	Mode o	of operation	n OPEN/CLO	OSE				e manual an			
17	Disconnector	s & Farthin	g switches	Onerating			an	d earth swit Hand ope			
18	Disconnectors & Earthing switches Operating  Accessories						with earth	blad and ea		manual	
19	Dis	connector	Mechanism					Center b	reak		
20		Constru						Γhree pole o taining Eart	peration	h	
21							N	Min. IP55 (If	Needed)		
22	Ingress protection of electrical enclosures  Disconnector status Auxiliary Contacts:  No. Of Make Contacts  No. Of Break Contacts  Rated Voltage  Rated Current					2NC (Norma 2NO (Norma 110V I 25 AD	ally open) DC DC				
23	Breaking Current At 110V DC Earthing switch status Auxiliary Contacts: No. Of Make Contacts No. Of Break Contacts Rated Voltage Rated Current							2NC (Norma 2NO (Norma 110V I 25 AE 5 AD	ally close) ally open) OC OC		
24	Breaking Current At 110V DC  Interlocks(Electrical & Mechanical)						Disconn To prev	t closure of e ector is not ent closure e earth switch position	earth switc in open po of Disconne is not in o	sition ector	
25	D	imensions	& weights					By Ven	dor		
26		Pollution c						Heav			
27	Minimum Rating plate data					Rated light Rated light Rated pow Rated pow Rated Rated	Manufactu Type designation and Rated volt ning impulse withstan ttning impulse withstan er frequency withstan Rated normal Rated duration of s ed no load transforme Year of manul Relevant standard wit	rer serial number age d voltage across ope d voltage between d voltage between urrent hort circuit r breaking current facture	poles en pole		
28	e) Design and	y and control cir	cuit (clause 7.1 c cuits (Clause 7.1 nain circuit (Clause 7.4 of IEC6069 (Clause 7.5 of IE	2 of IEC60694) use 7.3 of IEC606 94) C60694)	694);			Witness &	•		
29		Type T	ests					orts of test on the to IEC62271-102		according	
	•										



#### فعالیتهای رو زمینی در بستههای کاری تحتالارض

## عمومی و مشترک





## NISOC

## Data Sheets For 11 KV Over Head Line Equipment

151 l . 5	پروژه	بسته کاری	صادر كننده	تسهيلات	رشته	نوع مدر ک	سريال	نسخه
شماره پیمان:	BK	SSGRL	PEDCO	110	EL	DT	0012	D04

شماره صفحه: ۳۹ از ۵۲

	BK SSGRL PEDCO 110 EL	DT 0012 D04
	DATA SHEET FOR CUT OUT FUS	E (W007S)
Item	DESCRIPTION	CHARACTERISTIC Vendor data
1	Class	Outdoor Outdoor
2	Туре	Channel Type
3	Manufacturer of Fuse base & link	By Vendor
4	Applicable Standard	IEC60282 , IEC60787, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375
5	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)
6	Nominal line to line voltage rating (kV)	11
7	Maximum continuous line to line operating voltage (kV)	12
8	Rated frequency (Hz)	50
9	Color of Porcelain insulator	By Vendor
10	Rated current of Fuse base (A)	100
11	Rated current of Fuse link (A)	10
12	Creepage distance (mm/kV)	31
13	Minimum creepage distance of insulator (mm)	372
14	Rated maximum braking current (kA)	16
15	Rated lightning impulse withstand voltage to earth and between poles (kV peak)	60
16	Rated lightning impulse withstand voltage across the isolating distance of Fuse - base(kV peak)	75
17	Rated one minute power frequency withstand voltage to earth and between poles (kV rms)	28
18	Rated one minute power frequency with stand voltage $$ across the isolating distance of Fuse - base (kV rms)	32
19	Fuse class	Full-range
20	Operating pole	Required
21	Mounting brackets and accessories	Required
22	Provision for mounting of surge arrester	Required
23	Weight of Fuse-base & Fuse link	By Vendor
24	Dimension of Fuse-base	By Vendor
25	Dimension of Fuse-link	By Vendor
26	Pollution condition	Heavy
		On the fuse base: Manufacturer's name Manufacturer's type designation Rated insulation level Rated voltage Rated current
27	Minimum data required on rating plate	On the fuse carrier:  Manufacturer's name  Rated voltage  Rated current  Rated breaking capacity and TRV class  Rated frequency  On the fuse links:
		Manufacturer's name Manufacturer's type designation Rated current and speed designation Rated voltage
28	Routine Tests	Witness and Report according to IEC 60282-2
29	Type Tests	Certified Report on the identical type according to IEC 60282-2



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومی و مشترک





# NISOC Data Sheets For 11 KV Over Head Line Equipment

... ... ...

شماره پيمان:

نسخه سريال نوع مدرک رشته نسهيلات صادر کننده بسته کاری پروژه BK SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۴۰ از ۵۲

	.0444-174	BK	SSGRL	PEDCO	110	EL	DT	0012	D04		شماره صفحه: ۲۰ از ۵۲
			DAT	TA SHEET F	OR LIGHTNIN	G ARRE	STER (W00	7 <b>S</b> )			
Item		TION		CHARACTERISTIC				Vendor data			
1				ZnO							
2	Type  Applicable Standard							IEC60099-4, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375		y for sion, and ad and	
3	Env	vironmental	conditions	5					nt number: B-0001 (Pro	ocess	
4	Nominal li	ine to line vo	oltage ratin	ng (kV)				11	0 )		
5	Maximum continu	ous line to l	ine operati	ing voltage (	kV)			12			
6	Continuo	us Operatin	g Voltage (	Ucov)				9.6			
7	R	Rated freque	ncy (Hz)					50			
8	1	Material of i	nsulator					By ven	dor		
9		Earth fault	t factor					1.4			
10	Line disc	harge class	per IEC 60	099-4				2			
11	Minimum energy	discharge c	apability (l	kJ/kV) U rate	ed			Acc. To	IEC		
12	Nominal discharge curr	ent with 8/2	20 microse	cond wave (	(kA peak)			10			
13	Pre	essure relief	class (kA)					20			
14	Cree	page distan	ce (mm/kV	7)				31			
15	Minimum cree	epage distar	nce of insul	lator (mm)				372			
16	Rated lightning impulse withst	and voltage	to earth ar	nd between j	poles (kV peak	:)		60			
17	Rated lightning impulse withstand voltage across the isolating distance of Fuse - base(kV peak)						75				
18	Rated one minute power frequency	withstand v	oltage to ea	arth and bet	ween poles (k	V rms)		28			
19	Rated one minute power frequency withstand voltage across the isolating distance of Fuse - base (kV rms)							32			
20	Whethe	er surge cou	ınter requii	red?				No			
21	1	Washable in	service					Yes			
22	Tempora	ary overvolta at 1 Se at 10 S at 100 S	ec. ec.	(Ktov)				By ven	dor		
23	5kA, 8/20μs l	ightning im	pulse prote	ective level				By ven	dor		
24	10kA, 8/20μs lightning	g impulse pr	otective le	vel (Ur 10kA	A, 8/20)		Resi	dual voltag	ge < 43.2kV		
25	20kA, 8/20μs	lightning im	pulse prot	ective level				By ven	dor		
26	125A, 30/60μs				l			By ven			
27		eight of Surg						By ven			
28		Diameter o						By ven	dor		
29	Total	Weight of S	urge Arrest	ter				By ven	dor		
30	Туре	and Materia	al of Termin	nal				By ven	dor		
31		Pollution co	ondition					Heav	у		
32	Minimum	Pollution condition  Minimum data required on rating plate				Con No Pressi	Line discharge Pollution d Year of manu	e designation nber nting voltage tage uency rge current t time current e current			
33	a) Measurement of referer b) Residual volta c) Internal Partial Disc d) Leakage test for sealed h e) Design and visua	ge test (Clau charge test ( lousing arre	Uref (Claus ıse 8.1.b of (Clause 8.1 sters (Clau	TIEC 60099-4 .c of IEC 600 se 8.1.d of IE	4) )99-4); EC 60099-4)		Relevant standard with date of issue  Witness and Report				
34		Туре Те	ests						he identical C 60099-4	type	



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





# NISOC Data Sheets For 11 KV Over Head Line Equipment

شماره پیمان: ۱۸۴-۱۷۳-۹۱۸۴ 
 نسخه
 سریال
 نوع مدر ک
 رشته
 تسهیلات
 صادر کننده
 بسته کاری
 پروژه

 BK
 SSGRL
 PEDCO
 110
 EL
 DT
 0012
 D04

شماره صفحه: ۴۱ از ۵۲

	· ۵۳- · ۷۳- 9 1.۸۴	BK	SSGRL	PEDCO	110	EL	DT	0012	D04	
			DA	TA SHEET F	OR LOAD	BREAK SW	ITCH (WOO	)7S)		
Item		TION			CHARACTE	RISTIC	Vendor data			
1	Manufacturer / Country							By ven	dor	
2	Standard							71-103, IEC (lamic Republicy for Strate vision, General Executed and Executed and libution lines	lic of Iran V gic Plannin eral Technic cution Proce cable powe	Vice ng and ical cedures ver
3	Env	ironmental	condition	s				c. to docume D-000-PR-D Basis of D	B-0001 (Pr	
4		Тур	e					SF6		
5		Rated Vo						11k		
6	N.	Rated Free						50H		
7	No 1 minute p	o. of Phases						3 Phase, 3	3 Pole	
8	To ear Acr	rth and bet oss isolatin	ween phas g distance	es:				28k\ 32k\		
9	9 9	g impulse w		-				60k	1	
		oss isolatin						75k\		
10		ated Norma						630		
11	•	ctive load b						By vendor (		
12 13		d loop brea						By ven		
13		harging bre harging bre						By ven By ven		
15		ansformer						By vendor (		
16		ort Time W						25kA, 3		
17	Rated	Peak With	stand Curr	ent				62.5k		
18	Rated Sh	ort Circuit	Making Cu	ırrent				62.5k	A.	
19	Number	r of breakin	g operatio	n CO				By ven		
20		orting Struc					Hot	dipped galv	anized stee	el
21		page distan		-				31		
22		page Dista						372m		
23	Ingress	protection	of el. Encio	sures			Hand one	Min. IF		mon for
24 25	-	perating molecular perating mole		minals			mand open	three p	oles	11011101
26	Ga	as pressure	indicator					Requir	ed	
27	Gas pressure indicator  Auxiliary Contacts:  No. of Make Contacts  No. of Break Contacts  Rated Voltage  Rated Current  Breaking Current at 110V DC						By vend Min. Min. 110V Min. 1 Min. 2	4 4 DC 0A		
28		i-Condensa						230V AC, 1F	h, 50Hz	
29	Inter	locks with	Earth Swit	ch				reak Switch		vitch
30	**	mensions a					i	ntegrated as By ven		
31			_					Heav		
32	Pollution condition  Minimum data required on rating plate					One minu Ligh Rat Mai L Ca No lo	Manufact e designation an Rated vol te power freque thining impulse wi Rated normal ed short time wit nly active load by Closed loop breal ine charging bre sible charging bre Year of manu vant standard w	urer d serial number tage cy withstand voltage current hstand current reaking current king current aking current aking current aking current aking current aking current aking current	voltage ge ut ut	
33	a) Dielectric test on b) Tests on auxiliary a c) Measurement of the resis d) Tightne e) Design and v f) Mechanical tes	and control cir stance of the r ess test (Claus risual checks (	uit (Clause 7 cuits (Clause nain circuit ( se 7.4 of IEC6 Clause 7.5 of	e 7.2 of IEC 606 Clause 7.3 of IE 60694) f IEC60694)	94)			Witness and	•	
34		Type T	ests				Certified Re	port on the ide to IEC 6227		ccording



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





# NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

شماره پیمان: پروژه بسته کاری صادر كننده تسهيلات رشته نوع مدر ک سريال نسخه .04-.44-4176 DT ВК SSGRL PEDCO 110 EL 0012 D04

شماره صفحه: ۴۲ از ۵۲

				~
DATA	SHEET	FOR T	OWER	(W007S)

	DATA SHEET FOR TOWER (1		
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacturer / Country	By vendor	
2	Standard	IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 440	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Type of Steel: Analysis of steel Carbon Manganese Sulphur Phosphorus Silicon	MILD High Strength ST 37(235]R) ST 52(355]R) 0.17 0.2 1.4 1.6 0.045 0.05 0.045 0.05 0.3 0.55	
5	Thickness of steel (1.6-3.2mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	65 65 460	
6	Thickness of steel (3.2-4.8mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	75 75 530	
7	Thickness of steel (4.8-6.4mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	85 85 600	
8	Strength in Tension Standard Designation	BS 8100 – Lattice Towers and Masts	
9	Strength in Tension (Ultimate tensile stress)	340-470 490-630	
10	Strength in Tension (Yield stress)	235 355	
11	Strength in Compression (Elongation)	24% 22%	
12	Strength in Compression (Min zinc coating)	85μ 85μ	
13	Bolts & Nuts Characteristics: Standard designation Steel material Property class Ultimate shearing stress (On bolt shank) Ultimate Bearing stress Min zinc coating	ANSI C 135-1 (Galvanized Steel Bolts and Nuts for Overhead Lines) Steel Steel 5.6 5.8 2100kg/cm2 2800kg/cm2 5400kg/cm2 6000kg/cm2 46µ 46µ	
14	Pollution condition	Heavy	
15	Routine tests & Type test	According to ASCE1090 Manual 52	



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری صادر كننده تسهيلات نوع مدرک شماره پیمان: پروژه رشته سريال نسخه .04-.44-9146 DT 0012 ВК SSGRL PEDCO 110 EL D04

شماره صفحه: ۴۳ از ۵۲

DATA CHEET FOD	PHASE CONDUCTOR	(WOA6S)
DATASHELLEUK	PHASE CUNDUCTUR	I W U4031

	DATA SHEET FOR PHASE CO	NDUCTOR (WU465)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacture	By vendor	
2	Year of Manufacture	By vendor	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Conductor Name	HYENA	
5	Applicable standard	ASTM B232, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427	
6	Max allowable temperature of conductor (°c)	85	
7	Reted short circuit current for 0.5 Sec. (KA)	18.8	
8	Max. temperature range (operation)	75	
9	Temperature range for installation(°c)	-5 ~ +55	
10	Stranding and wire diameter (nos./mm):		
11	Aluminium	7/4.39	
12	Steel	7/1.93	
13	Overall diameter(mm)	14.57	
14	Aluminium Area (mm²)	106	
15	Steel area (mm²)	20.48	
16	Total area (mm²)	126.2	
17	Weight (kg/km):		
18	Aluminium	290	
19	Steel	160	
20	Total	450	
21	Nominal current in 30° (A)	441	
22	Ultimate tensile Strength (kg)	4090	
23	Coefficient of linear expansion (1 /C° x 10-6)	18.8	
24	Initial modulus of elasticity (kg/mm²)	6000	
25	Final modulus of elasticity (kg/mm²)	7450	
26	DC resistance at 20°C(Ω/km)	0.2713	
27	AC resistance at 25°C(Ω/km)	0.277	
28	AC resistance at 75°C(Ω/km)	0.3142	
29	Temperature range (transport / storage)	By vendor	
30	Pollution condition	Heavy	
31	Routine tests & Type test	Acc To IEC 61089	



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC

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#### Data Sheets For 11 KV Over Head Line Equipment

نسخه سريال نوع مدرک رشته تسهيلات صادرکننده بسته کاری پروژه شماره پيمان: BK SSGRL PEDCO 110 EL DT 0012 D04

Routine tests & Type test

شماره صفحه: ۴۴ از ۵۲

	5K 35GK2 1 25GG 110 EE	D1 0012 501	
	DATA SHEET FOR SHIELD WIR	E (W046S)	
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacture	By vendor	
2	Year of Manufacture	By vendor	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Code Name	7No.8 AWG	
5	Applicable standard	ASTM B416, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 427	
8	Stranding and wire diameter (nos./mm):	7/3.26	
9	Overall diameter(mm)	9.78	_
10	Total area (mm²)	58.43	
11	Weight (kg/km):	390	
12	Ultimate tensile Strength (kg)	7226	
13	Coefficient of linear expansion (1 /C° x 10-6)	13	
14	Initial modulus of elasticity (kg/mm²)	16000	
15	Final modulus of elasticity (kg/mm²)	16000	
16	DC resistance at 20°C(Ω/km)	1.467	
17	Pollution condition	Heavy	

Acc To IEC 61089



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری شماره پیمان: پروژه صادر کننده تسهيلات رشته نوع مدر ک سريال نسخه .04-.44-9114 DT ВК SSGRL PEDCO 110 EL 0012 D04

شماره صفحه: ۴۵ از ۵۲

	DATA SHEET FOR INSULATOR (W046S)									
Thomas	DESCRIPTION	CHADACTEDICTIC	Vdd-t-							
Item	DESCRIPTION	CHARACTERISTIC	Vendor data							
1	Туре	BALL & SOCKET								
2	Applicable Standard	IEC60120, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 426								
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)								
4	Material	Porcelain								
5	Nominal line to line voltage rating (kV)	11								
6	Maximum continuous line to line operating voltage (kV)	12								
7	Rated frequency (Hz)	50								
8	Creepage distance (mm/kV)	31								
9	Minimum creepage distance of insulator (mm)	372								
10	Minimum mechanical Failing Load (kN)	70								
11	Socket coupling size (IEC60120)	16								
12	Ball coupling size (IEC60120)	16								
13	Rated lightning impulse withstand voltage to earth and between poles (kV peak)	60								
14	Rated lightning impulse withstand voltage across the isolating dist. of Fuse base (kVpeak)	75								
15	Rated one minute power frequency withstand voltage to earth and between poles (kV rms)	28								
16	Rated one minute PF withstand voltage across the isolating dist. of Fuse base (kVrms)	32								
17	Power Frequency Puncture Voltage (kV)	110								
18	Metallic Part material	Malleable Cast Iron								
19	Insulator material	Brown Glazed Porcelain								
20	Metallic parts	Malleable cast iron								
21	Washable in service	Yes								
22	Unit Spacing (mm)	By vendor								
23	Disc Diameter (mm)	By vendor								
24	Total Weight	By vendor								
25	Type and Material of Terminal	By vendor								
26	Pollution condition	Heavy								
27	Routine tests & Type test	Acc To IEC 383								



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC

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#### Data Sheets For 11 KV Over Head Line Equipment

صادر کننده بسته کاری پروژه شماره پیمان:

Routine tests & Type test

نسخه سريال نوع مدر ک رشته تسهيلات صادر کننده بسته کاری پروژه BK SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۴۶ از ۵۲

	DATA SHEET FOR FITTING SUSPENSION & TENSION SET (W046S)								
Item	DESCRIPTION	CHARACTERISTIC	Vendor data						
1	Туре	FORGED STEEL							
2	Applicable standard	IEC 61284, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 465							
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)							
4	Material:	-							
5	Outer Part	AL.ALLOY							
6	Iner Part	FORGED STEEL, Hot Deep Galvanized.							
7	Jumper Plate	AL.ALLOY							
8	Terminal Jumper	AL.ALLOY							
9	Bolts & Nuts & Washers	STEEL, Hot Deep Galvanized.							
10	Split Pin	STAINLESS STEEL							
11	Min breaking strength	95% OF CONDUCTOR U.T.S							
12	Coupling Standard IEC	16 mmA							
13	Short Circuit Current	25kA/0.4Sec.							
14	Arcing Horn	STEEL							
15	Min breaking strength (KN)	80							
16	Anti-Climbing Devices and Safety Signs for Lines up to 400kV	ENA TS 43-90							
17	Tower Identification	Steel Sheet with 2mm Thickness							
18	Danger Alarm	Steel Sheet with 1.2mm Thickness							
19	Pollution condition	Heavy							

Acc To IEC 61284



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





## NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

بسته کاری شماره پیمان: پروژه صادر کننده تسهيلات رشته نوع مدرک سريال نسخه .04-.44-9146 PEDCO 110 EL DT 0012 ВК SSGRL D04

شماره صفحه: ۴۷ از ۵۲

	DATA SHEET FOR EARTHING SYSTEM (W046S)								
Item	DESCRIPTION	CHARACTERISTIC	Vendor data						
1	GROUND WIRE :								
2	Туре	Copper Conductor							
3	Applicable standard	DIN 48201, IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 409							
4	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)							
5	Stranding (No./mm)	7/2.5							
6	Total cross section (mm2)	35							
7	Overall Diameter (mm)	7.5							
8	Unit Weight (kg/m)	0.31							
9	Calculated breaking load (kN)	13.77							
10	DC Resistance At 20°C (ohm/km)	0.5265							
11	TOWER BONDING CLAMP:								
12	Type of Body	Forged Steel							
13	Surface Coating	HOT DIP. GALV. Acc to ASTM A123 & A153 or BS729							
14	Type of Bolt & Nut	Steel							
15	Torgue on Bolt	20 NM							
16	Applicable standard	ST37 & DIN931,934,125,127							
17	Diameter of Wire catcher	Ø 8-13 mm							
18	Pollution condition	Heavy							
19	Routine tests & Type test	Acc To DIN 48201							



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





#### NISOC Data Sheets For 11 KV Over Head Line Equipment

					JI 11 KV O	vei neau	Line Equipr	Hent	T		
	شماره پیمان: ۱۸۳-۹۱۸۴ م	پروژه BK	بسته کاری SSGRL	صادر کننده PEDCO	تسهیلات 110	رشته EL	نوع مدرک DT	سريال 0012	نسخه D04		شماره صفحه: ۴۸ از ۵۲
		DIV.							204		
DATA SHEET FOR DISCONNECTOR SWITCH (W046S)											
		DESCRIP	mro					OV. 1 = 1 ==	ID 10		
Item					CHARACTE			Vendor data			
1	Instal	lation (indo	oor / outdoo	or)				Outdo	or		
2	Standard							160, Islamio idency for S ervision, Ge on and Exec verhead and bution lines	trategic Pla neral Tech cution Proc cable pow	anning nical edures er	
3	Env	vironmenta	l conditions	3				to docume D-000-PR-D Basis of D	B-0001 (Pi		
4	Nomin	al system v	oltage, 3ph	ase				11 k			
5		stem voltag					± 10%				
6	Nominal free			variation			50 ± 5%				
7		-									
			nd current i				1	3pole / 6			
8			and time du				<b> </b>	25 kA /			
9		•	stand curre				ļ	62.5 l	KΑ		
10			nce (mm/k\	-			ļ	31			
11	Minimum cre							372			
12	Rated lightning impulse withst							60			
13	Rated lightning impulse withstand	voltage acr peak		ating distand	ce of Fuse -	base(kV		75			
14	Rated one minute power frequency	withstand v	oltage to ea	arth and bet	ween poles	s (kV rms)		28			
15	Rated one minute power frequency v	vithstand v base (kV		ss the isolat	ting distanc	ce of Fuse -		32			
16	Mode o	of operation	n OPEN/CLO	OSE				e manual an			
17	Disconnector	e & Farthin	a cwitches	Operating			alle	d earth swit Hand ope			
17	Disconnector	3 & Ear tilli	ig switches	Operating				manu ope	rating		
18		Accesso	ories				with earth	blad and ea	rth switch	manual	
19	Dis	connector	Mechanism					Center b	reak		
20		Constru	ction				Т	Three pole o	peration		
		Constru	ction					taining Eart		h	
21	Ingress pro						M	In. IP55 (If	Needed)		
22	N N Breal	No. Of Make o. Of Break Rated Vo Rated Cu king Currer	Contacts oltage errent ot At 110V I	OC .				2NC (Norma 2NO (Norma 110V) 25 AI 5 AD	ally open) DC DC		
23	N	No. Of Make Io. Of Break Rated Vo Rated Cu	Contacts Contacts oltage					2NC (Norma 2NO (Norma 110V   25 AI 5 AD	ally open) DC DC		
24	Interloc	ks(Electrica	al & Mechar	nical)			Disconne To preve	c closure of c ector is not ent closure earth switch positi	in open po of Disconne is not in o	sition ector	
25	D	imensions	& weights					By Ven	dor		
26		Pollution c						Heav			
27	Minimum Rating plate data						Rated light Rated light Rated powe Rated pow	Manufact: Type designation and Rated volt ning impulse withstan er frequency withstan rer frequency withstan Rated normal Rated duration of: ed no load transforme Year of manu Relevant standard wi	rer serial number age d voltage across ope d voltage between d voltage between current ehort circuit r breaking current facture	poles en pole	
28	e) Design and	y and control cir sistance of the n mess test (Claus d visual checks (	cuit (clause 7.1 c rcuits (Clause 7.	2 of IEC60694) use 7.3 of IEC606 94) C60694)	694);			Witness &	Report		
29		Туре Т	ests					rts of test on the		according	
	i .										



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





# NISOC Data Sheets For 11 KV Over Head Line Equipment

نسخه سربال نوع مدر ک رشته تسهیلات صادر کننده بسته کاری پروژه شماره پیمان:
| BK SSGRL PEDCO 110 EL DT 0012 D04

شماره صفحه: ۴۹ از ۵۲

		EDCO 110	EL	DT	0012	D04		ره صفحه. ۱۱۱ر ۱۵	
	DAT	A SHEET FOR CUT	OUT FUS	E (W046S)					
Item	DESCRIPTION			C	CHARACTE			Vendor	data
1	Class			Outdo					
2	Туре			Channel '					
3	Manufacturer of Fuse base & link		By Ven	dor					
4	Applicable Standard	Islamic Rep for Strategi General T Execution P cable pov	ublic of Ira ic Planning Pechnical Sp Procedures wer distrib 374,37	and Superv pecification for overhea ution lines 75	idency vision, and ad and NO:				
5	Environmental conditions			Acc. BK-00-HD					
6	Nominal line to line voltage rating (k	V)			11				
7	Maximum continuous line to line operating vo	oltage (kV)			12				
8	Rated frequency (Hz)				50				
9	Color of Porcelain insulator				By Ven	dor			
10	Rated current of Fuse base (A)				100				
11	Rated current of Fuse link (A)				10				
12	Creepage distance (mm/kV)				31				
13	Minimum creepage distance of insulator	(mm)			372				
14	Rated maximum braking current (kA				16				
15	Rated lightning impulse withstand voltage to earth and be		k)	1	60				
16	Rated lightning impulse withstand voltage across the isolating peak)			75					
17	Rated one minute power frequency withstand voltage to earth a	and between poles (l	kV rms)		28				
18	Rated one minute power frequency withstand voltage across th base (kV rms)	e isolating distance o	of Fuse -		32				
19	Fuse class			Full-range					
20	Operating pole				Requir	ed			
21	Mounting brackets and accessories				Requir	ed			
22	Provision for mounting of surge arres	ter			Requir	ed			
23	Weight of Fuse-base & Fuse link				By Ven	dor			
24	Dimension of Fuse-base				By Ven	dor			
25	Dimension of Fuse-link				By Ven	lor			
26	Pollution condition				Heav				
				Manufac	On the fuse	e base: r's name se designati ion level Itage	on		
27	Minimum data required on rating pla	Ma Rated brea	On the fuse anufacture Rated vo Rated cu aking capac Rated freq On the fuse	r's name Itage rrent ity and TRV uency	/ class				
			Manufa Manufa Rated curr	anufacture cturer's tyj rent and sp Rated vo	r's name oe designat oeed design Itage	ation			
28	Routine Tests			Witness a	nd Report a 60282	according to -2	o IEC		
29	Type Tests					ne identical C 60282-2	type		



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

نگهداشت و افزایش تولید میدان نفتی بینک

#### عمومي و مشترك





#### NISOC Data Sheets For 11 KV Over Head Line Equipment

.04-.44-9146

سريال نوع مدر ک رشته تسهيلات صادر کننده بسته کاری شماره پیمان: پروژه SSGRL PEDCO 110 EL DT 0012 D04 ВК

شماره صفحه: ۵۰ از ۵۲

	·07-·V7-91AF	BK	SSGRL	PEDCO	110	EL	DT	0012	D04	
			DA	TA SHEET F	OR LIGHTNIN	NG ARRES	STER (W04	(6S)		
Item		DESCRIP	TION					CHARACTE		Vendor data
1		Туре	)					Zn0		
2	Applicable Standard							of Iran Vice Planning a Technical S <sub>I</sub> Procedures	EL-160, Islami e Presidency fo nd Supervision pecification an for overhead a ution lines NO 75	or n, d and
3	Env	vironmental	condition	s				to docume D-000-PR-D Basis of D	B-0001 (Proce	ess
4	Nominal li	ne to line vo	oltage ratii	ng (kV)				11		
5	Maximum continu	ous line to l	ine operat	ing voltage (	(kV)			12		
6	Continuo	us Operatin	g Voltage (	(Ucov)				9.6		
7		lated freque						50		
8	I I	Material of i						By ven	dor	
9		Earth fault						1.4		
10		harge class						2		
11	Minimum energy							Acc. To	IEC	
12	Nominal discharge curre	essure relief			(ка реак)			20		
13								31		
		page distan		-						
15 16	Minimum cree Rated lightning impulse withst				nolog (ld/ nool	15)		372 60		
17	Rated lightning impulse withstand	voltage acro	ss the isol			-		75		
18	peak)  Rated one minute power frequency withstand voltage to earth and between poles (kV rms)							28		
19	Rated one minute power frequency w	vithstand vo		oss the isolat	ting distance o	of Fuse -		32		
20	Whethe	er surge cou	nter requi	red?				No		
21	7	Washable in	service					Yes		
22	Tempora	ary overvolta at 1 Se at 10 S at 100 S	ec.	(Ktov)				By ven	dor	
23	5kA, 8/20μs l:	ightning im	pulse prot	ective level				By ven	dor	
24	10kA, 8/20μs lightning	g impulse pr	otective le	vel (Ur 10k	A, 8/20)		Res	idual voltag	ge < 43.2kV	
25	20kA, 8/20μs	lightning im	pulse prot	tective level				By ven	dor	
26	125A, 30/60μs	switching in	mpulse pro	otective leve	el			By ven	dor	
27	Не	ight of Surg	e Arrester					By ven	dor	
28		Diameter o	f Sheds					By ven	dor	
29	Total	Weight of S	urge Arres	ter				By ven	dor	
30		and Materia		nal				By ven		
31		Pollution co	ondition				Man	Manufact uufacturer type	urer e designation	
32	Minimum data required on rating plate						N Press	Line discharge Pollution d Year of manu	ating voltage tage uency rge current t time current e current	
33	Routine Tests  a) Measurement of reference voltage Uref (Clause 8.1.a of IEC 60099-4)  b) Residual voltage test (Clause 8.1.b of IEC 60099-4)  c) Internal Partial Discharge test (Clause 8.1.c of IEC 60099-4);  d) Leakage test for sealed housing arresters (Clause 8.1.d of IEC 60099-4)  e) Design and visual checks acc. to purchase specifications							Witness and		
34		Туре Те	ests					Report on the ording to IE	he identical ty C 60099-4	pe



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





# NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

	شماره پیمان:	پروژه	بسته کاری	صادر كننده	تسهيلات	رشته	نوع مدر ک	سريال	نسخه
.0444-174		BK	SSGRL	PEDCO	110	EL	DT	0012	D04

شماره صفحه: ۵۱ از ۵۲

	100-100-9	BK	SSGRL	PEDCO	110	EL	DT	0012	D04		حه: ۵۱ از ۵۲	شماره صف
			DA	TA SHEET F	OR LOAD E	BREAK SW	ITCH (W046	iS)				
Item		DESCRIP	TION				(	CHARACTE	RISTIC		Ver	idor data
1		Manufacturer	/ Country					By ven	dor			
2	Standard							l-103, IEC of the leading of the lea	50694, IPS-lic of Iran V gic Planning eral Technic cution Proce cable powe NO: 374,37	fice g and ral edures er		
3	E	Environmental	conditions	5			Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)					
4		Туре	e					SF6				
5		Rated Vo	ltage					11k\	I			
6		Rated Free	quency					50H	Z			
7		No. of Phases	and Poles					3 Phase, 3	3 Pole			
8	To A	e power freq. earth and bet Across isolatin ling impulse w	ween phase 1g distance:	es:				28k\ 32k\				
9	То	earth and bet Across isolatin	ween phase	es:				60k\ 75k\				
10		Rated Norma						630				
11	·	y active load b					В	y vendor (				
12		osed loop brea						By ven				
13		e charging bre						By ven				
14		le charging bro					_	By ven				
15		d transformer					В	y vendor (				
16		Short Time W						25kA, 3				
17		ed Peak With						62.5k				
18 19		Short Circuit						62.5k				
20		ber of breakin pporting Struc					Hot d	By ven	anized stee	1		
21	-	eepage distan					1100 0	31	amzeu stee	1		
22		reepage Dista		-				372m	m			
23		ss protection (						Min. IF				
24	nigre.	Operating m		sures			Hand opera		nism, comm	ion for		
25	Permis	sible tensile fo	orce on teri	minals				By ven				
26		Gas pressure						Requir				
27	Br	Auxiliary C No. of Make No. of Break Rated Vo Rated Cu eaking Curren	ontacts: Contacts Contacts oltage rrent	OC .				By vend Min. Min. 110V Min. 1 Min. 2	lor: 4 4 DC 0A			
28	A	Anti-Condensa	tion Heater	r			2	30V AC, 1F	h, 50Hz			
29	In	terlocks with	Earth Swite						+ Earth Swi	tch		
				•			in	tegrated as				
30		Dimensions a						By ven				
32	Minimu	Pollution condition  Minimum data required on rating plate				One minute Lightn Rated Mainl Cle Lin Cab No load	Rated vol power frequer ing impulse wi Rated normal short time wit y active load bi osed loop breal e charging brea le charging brea tharging breat transformer l Year of manu	urer d serial number tage ucy withstand vo thstand voltage current hstand current reaking current king current aking current aking current	·			
33	Routine Tests  a) Dielectric test on the main circuit (Clause 7.1 of IEC 60694) b) Tests on auxiliary and control circuits (Clause 7.2 of IEC 60694) c) Measurement of the resistance of the main circuit (Clause 7.3 of IEC60694) d) Tightness test (Clause 7.4 of IEC60694) e) Design and visual checks (Clause 7.5 of IEC60694) f) Mechanical tests as per clause 7.101 of IEC62271-100							Vitness and	l Report	cording		
34		Туре Т	ests					to IEC 6227		ъ		



# فعالیتهای رو زمینی در بستههای کاری تحتالارض

#### عمومي و مشترك





# NISOC

#### Data Sheets For 11 KV Over Head Line Equipment

شماره پیمان: پروژه بسته کاری صادر كننده تسهيلات رشته نوع مدر ک سريال نسخه .04-.44-4176 DT ВК SSGRL PEDCO 110 EL 0012 D04

شماره صفحه: ۵۲ از ۵۲

DATA	CHEET	FOR	TOWER	CWO4	65)

	DATA SHEET FOR TOWER (V		
Item	DESCRIPTION	CHARACTERISTIC	Vendor data
1	Manufacturer / Country	By vendor	
2	Standard	IPS-E-EL-160, Islamic Republic of Iran Vice Presidency for Strategic Planning and Supervision, General Technical Specification and Execution Procedures for overhead and cable power distribution lines NO: 374,375 & General Technical Specification and Execution Procedures for Transmission Lines NO: 440	
3	Environmental conditions	Acc. to document number: BK-00-HD-000-PR-DB-0001 (Process Basis of Design)	
4	Type of Steel: Analysis of steel Carbon Manganese Sulphur Phosphorus Silicon	MILD High Strength ST 37(235]R) ST 52(355]R) 0.17 0.2 1.4 1.6 0.045 0.05 0.045 0.05 0.3 0.55	
5	Thickness of steel (1.6-3.2mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	65 65 460	
6	Thickness of steel (3.2-4.8mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	75 75 530	
7	Thickness of steel (4.8-6.4mm): Galvanizingdegree Coating thickness (μm) Coating thickness* gr/m² * Thickness amounts in μm are the galvanizing degree. this are calculated from gr/m2=μm*7.067	85 85 600	
8	Strength in Tension Standard Designation	BS 8100 – Lattice Towers and Masts	
9	Strength in Tension (Ultimate tensile stress)	340-470 490-630	
10	Strength in Tension (Yield stress)	235 355	
11	Strength in Compression (Elongation)	24% 22%	
12	Strength in Compression (Min zinc coating)	85μ 85μ	
13	Bolts & Nuts Characteristics: Standard designation Steel material Property class Ultimate shearing stress (On bolt shank) Ultimate Bearing stress Min zinc coating	ANSI C 135-1 (Galvanized Steel Bolts and Nuts for Overhead Lines) Steel Steel 5.6 5.8 2100kg/cm2 2800kg/cm2 5400kg/cm2 6000kg/cm2 46µ 46µ	
14	Pollution condition	Heavy	
15	Routine tests & Type test	According to ASCE1090 Manual 52	