

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک سطحالارض

شرکت تومد پترواران





احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

DATA SHEET FOR EXPANSION OF MV SWITCHGEAR

شماره پیمان: ۹۱۸۴ – ۷۷۳ – ۰۵۳

پروژه	بسته کاری	صادر كننده	تسهيلات	رشته	نوع مدرك	سريال	نسخه
BK	GCS	PEDCO	120	EL	DT	0004	D03

شماره صفحه: ۱ از ۱۰

طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATA SHEETS FOR EXPANSION OF MV SWITCHGEAR

نگهداشت و افزایش تولید میدان نفتی بینک

D02	Apr.2023	AFC	H.Shakiba	M.Fakharian	A.M.Mohseni	
D02	Jul.2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D01	Mar.2022	IFA	H.Shakiba	M.Fakharian	M.Mehrshad	
D00	Dec.2021	IFC	H.Shakiba	M.Fakharian	M.Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	Client Approval

Class: 1 Client Doc. Number: F0Z-709021

status: IDC: Inter-Discipline Check

IFC: Issued For Comment

IFA: Issued For Approval

AFD: Approved For Design

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







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DATA SHEET FOR EXPANSION OF MV SWITCHGEAR

شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهيلات	رشته	نوع مدرك	سريال	نسخه
•0T - •YT - 91A£	BK	GCS	PEDCO	120	EL	DT	0004	D03

شماره صفحه: ۲ از ۱۰

REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04
1	Χ	Х	Χ	Χ	
2	Χ	Х	Χ	Χ	
3	Х	Х	Χ		
4	Х	Χ	Χ		
5	Х	Χ	Χ		
6	Х	Х	Х		
7	Х	Χ	Х		
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Page	D00	D01	D02	D03	D04
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احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک





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DATA SHEET FOR EXPANSION OF MV SWITCHGEAR

شماره پیمان:	پروژه	بسته کاری	صادر كننده	تسهيلات	رشته	نوع مدرک	سريال	نسخه	,
سفاره پيمان.	ВК	GCS	PEDCO	120	EL	DT	0004	D03	۵: ۱۲ز ۱۰

شماره صفحه: ۳ از ۰

	Tachnical Data For Evancion of 11 VV MV Switchgary										
_	I -		Fechnical Data For Expansion of 11 KV MV Switchgear								
Rev	Item	Description	Required	Vendor Data							
Enviro	nmen	ital Data									
D00		Name of Project / Plant	Binak Oilfield in Bushehr Province								
D02	1.2	Ambient Temperature (Min/Max)	Min ~ Max: +5 ~ +52°C								
D00	1.3	Max.Design Temperature:	50 °c								
D00	1.4	Max. Sun Temperature:	+ 85 °c								
D00	1.5	Max.Relative Humidity:	100%								
D00	1.6	Mean Sea Level:	12.5 m Above Sea Level								
D00	1.7	Seismic Factor:	0.3g								
D00	1.8	Max. Wind Velocity(Max)	120 km/hr								
	chgea										
D00	2.1	Manufacturer	By Vendor								
D00	2.2	Standard(s)	IPS-M-EL-144(4), IPS-E-EL-100(1), BK-GNRAL-PEDCO-000-EL-SP-0005								
D00	2.3	Quantity	8 Feeders of Ougoing, Type C2 & C3								
D00	2.4	Service	Expansion of Exsiting MV Switchgear from Both Side								
D00	2.5	Tag Number	GCS-11-SWG-001A/B								
D00	2.6	Applicable SLD	BK-GCS-PEDCO-120-EL-SL-0001 BK-GCS-PEDCO-120-EL-SL-0003 BK-GCS-PEDCO-120-EL-DG-0001								
D00	2.7	Location	Indoor								
D00	2.8	Type and Construction	Metal Clad, Withdrawable								
D01	2.9	Rated Voltage & Variation	11 kV ± 10 %								
D00	2.10	Rated Frequency & Variation	50 Hz ± 5 %								
D00	2.11	No. of Phases	3 PH								
D02	2.12	Rated Insulation Levels between earth and phase One Minute Power Frequency Withstand Voltage (RMS) One Minute Power Frequency Withstand Voltage of Aux. Circuit (RMS) Impulse Withstand Voltage (Peak)	28 KV 75 KV 2 KV								
D00	2.13	Rated Normal Current of Busbars	1600 A								
D01	2.14	Rated Short Time Current of Busbar	25 kA; 1 sec (Note 9.2)								
D00	2.15	Rated Peak Withstand Current	63 kA								
D01	2.16	Busbars: • Material • Main Horizontal Bus Cross Section Area • Main Vertical Bus Cross Sectional Area • Earth Bus Cross Sectional Area • Busbars Color & Joints	Copper (Flame Retardant Non-Hygroscopic) Vendor to Advise Vendor to Advise Vendor to Advise Silver Plated								
D00		Maximum Tolerable Temperature Rise	Acc. to IEC62271 IPS-M-EL-144(4)								
D00	2.18	Rated Voltage for Control And Protection Circuits	110 V DC								
D00	2.19	Rated Voltage for Space Heaters and Panel Lighting	400 / 230 VAC								
D00	2.20	Enclosure	Withdrawable Metal Clad, Compartmented								
D01	2.21	Degree of Protection by Enclosure	External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X								
D00	2.22	Installation	Floor Self-Standing, Side by Side								
D00	2.23	Rear / Front Access	Rear and Front Access								
D00	2.24	Top / Bottom Cable Entry	Cables: Bottom Entry								
D00	2.25	Sheet Steel Thickness, Fram & Walls	Minimum 2.5 mm								
D00	2.26	Paint	Electrostatic Powder								
D00	2.27	Color finish Routine Tests	RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC								
D00		Type Tests	298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298,								
			IEC60694, and IPS-M-EL-144 (4)								
D00	2.30	1 11 1	Vendor to Advise								
D00		Total Weight [kg]	Vendor to Advise								
D00	2.32	Overall Dimensions of 1 Cubicle (HxWxD)	Vendor to Advise								
D00		Dynamic Load of One Cubicle [kg]	Vendor to Advise								
		Breaker	77 1 . 41.								
D00	3.1	Manufacturer	Vendor to Advise								
D00	3.2	Standard	IEC62271-100								
D00	3.3	Type	Vacuum								
D00	3.4	Fixed/Withdrawable	Withdrawable								
D02	3.5	Rated Voltage	12 kV ± 10 %								
D00	3.6	Rated Frequency	50 Hz ± 5 %								



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DATA SHEET FOR EXPANSION OF MV SWITCHGEAR

	DATA SHEET FOR EXPANSION OF MV SWITCHGEAR										
	نماره پیمان:		پروژه	بسته کاری	صادر کننده	تسهيلات	رشته	نوع مدرک	سريال	نسخه	1 1/2 1 1 1
		سعاره پیمان.	BK	GCS	PEDCO	120	EL	DT	0004	D03	شماره صفحه: ٤ از ١٠
	Technical Data For Expansion of 11 KV MV Switchgear										
Rev	Rev Item Description Required									Vendor Data	
		1									

	Tachnical Data For Evnancian of 11 VV MV Switchman										
_	_		Fechnical Data For Expansion of 11 KV MV Switchgear								
Rev	Item	Description	Required	Vendor Data							
D00	3.7	No. Of Phases and Poles	3-Phase								
		Rated Insulation Levels between earth and phase One Minute Power Frequency Withstand Voltage (RMS)	28 KV								
D00	3.8	One Minute Power Frequency	2 KV								
		Withstand Voltage of Aux. Circuit (RMS) Impulse Withstand Voltage (Peak)	75 KV								
D00	3.9	Rated Normal Current	630 A								
D00	3.10	Rated Short Time Current	25 kA								
D00	3.11	Rated Peak Withstand Current	62.5 kA								
D00	3.12	Rated Short Circuit Breaking Current	Vendor to Advise								
D00	3.13	Rated Short Circuit Making Current	Vendor to Advise								
D00		•	Acc. to IEC62271-100								
D00	3.15	Design Temperature Rise	Acc. to IEC62271-100								
D00			Motor & Hand operated Spring Charged Stored Energy Mechanism								
D00	3.17	Release type	Shunt Trip								
D00	3.18	Rated Operating Sequence	O-0.3S-CO-3MIN-CO								
D00	3.19	Rated Voltage of Auxiliary Equipment	110V DC								
D00	3.20	Rated Operating Voltage of Releases	110V DC								
D00	3.21	Rated Operating Voltage of Charging Motors	110V DC								
		Voltage Tolerances for Auxiliary Apparatus: Trip Circuit	70%-110%								
D00	3.22	• Close Circuit	85%-110%								
		Motor Running	85%-110% 70%-110%								
		Motor at the Instant of Start	7070 11070								
		Power consumption of Auxiliary Apparatus:[W]									
		Trip Circuit Closed Circuit	110V DC								
D00	3.23	Charging motor	1100 DC								
		Under voltage release	Vendor to Advise								
		Multifunction relay									
		• Transducers									
		1 C.B. Open/Close Auxiliary Contacts: No. Of Make Contacts	6								
DOO	2.24	No. Of Break Contacts	6 110V DC								
D00	3.24	Rated Voltage	110V DC VTA								
		Rated Current at 110V DCBreaking Current at 110V DC	VTA								
		Truck Position Auxiliary Contacts:	4NO 4NG								
		No of Make Contacts	1NO + 1NC 1NO + 1NC								
D00	3.25	No of Break Contacts Rated Voltage	110V DC								
		Rated Current at 110V DC	VTA								
		Breaking Current at 110V DC	VTA								
D00		Routine Tests	IEC62271-100								
D00		Type Tests	IEC62271-100								
		Transformers									
D00		Manufacturers Name	Vendor to Advise								
D00		Standard	IEC60044-2								
D00	4.3	Type	Epoxy Cast Resin								
D00	4.4	Fixed Withdrawable	Withdrawable								
D00	4.5	Highest System Voltage	12 kV								
D00	4.6	Rated Frequency	50 Hz								
D00	4.7	No. of Phase	Single Phase								
D00	4.8	Rated Primary Voltage [kV]	11/√3 kV								
D00	4.9	Rated Secondary Voltage [V]	110/√3 V								
		Rated Insulation Levels between earth and phase One Minute Power Frequency	28 kV / √3								
D00	4.10	Withstand Voltage (RMS) One Minute Power Frequency	2 kV / √3								
		Withstand Voltage of Aux. Circuit (RMS)	75 kV / √3								
		Impulse Withstand Voltage (Peak)	·								
D00	4.11	System Earthing	TNS								
D00	4.12	Rated Voltage Factor	Vendor to Advise								
D00	4.13	Rated Burden	Vendor to Advise								
		Accuracy Class:	GL OD								
D00	4.14	 for Protection (with separate Winding) for Measuring (with separate Winding) 	CL. 3P 1.0								
D00	415	Insulation Class & Temperature Rise	Class E, Temp. Rise Class Y								
200			Gado E, remp. rase Gaso 1	ļ							



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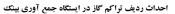
DATA SHEET FOR EXPANSION OF MV SWITCHGEAR

M. A. J.	پروژه	بسته کاری	صادر كننده	تسهيلات	رشته	نوع مدرک	سريال	نسخه	1 110 11 1 1
- شماره پیمان:	BK	GCS	PEDCO	120	EL	DT	0004	D03	شماره صفحه: ٥ ار ١٠

	Technical Data For Expansion of 11 KV MV Switchgear										
Rev	Item	Description	Required	Vendor Data							
5.MV (Curren	nt Transformers									
D00	5.1	Manufacturer's Name	Vendor to Advise								
D00	5.2	Standard	IEC60044-1								
D00	5.3	Туре	Dry Type								
D00	5.4	Highest System Voltage	11 kV								
D00	5.5	Rated Frequency	50 Hz								
D00	5.6	Rated Secondary Current:	1 A / 5 A According to SLD								
D00	5.7	Rated Continuous Thermal Current:	1.2 x Rated primary current								
D00	5.8	Rated Short Time, Current:	25 kA, 1 Sec								
D00	5.9	Rated Dynamic Current:	63 kA								
D00	5.10	Rated Burden	Vendor to Advise								
D00	5.11	Rated Transformation Ratio and No. of Cores	According to Single Line Diagram								
D00	5.12	Accuracy Class: • Measuring • Protection	Class 1: Class 1FS5 Class X: where required								
			Class 5P20 protections								
D00		Routine Tests	IEC60044-1								
D00	5.14	54	IEC60044-1								
		Rated Insulation Levels between earth and phase • One Minute Power Frequency	28 kV / √3								
D01	5.15	Withstand Voltage (RMS) One Minute Power Frequency	2 kV / √3								
		Withstand Voltage of Aux. Circuit (RMS) • Impulse Withstand Voltage (Peak)	75 kV / √3								
6.Eart	h Swite										
D00		Manufacturer's Name	Vendor to Advise								
D00		Manufacturer's Type Designation	Vendor to Advise								
D00	6.3	Standard	IEC62271-102								
D00	6.4	Type	Make Proof								
D00	6.5	Number Of Phase	3								
D00		Frequency	50 Hz								
D00		Rated Voltage	11 kV								
D00		Rated Lighting Impulse Withstand Voltage	75 kV								
D00											
D00		Rated 1 Minute Power Frequency Voltage Rated Short Time (1s) Current	28 kV 25 kA								
D00		Rated Peak Withstand Current	62.5 kA								
D00		Rated Short Circuit Making Current	62.5 kA								
D00		Actuation Mechanism									
D00			Pre-tension Spring 2NO + 2NC								
	-	No. of Auxiliary Contacts (Min.)									
D00	6.15	Aux. Contacts Rated Voltage Aux. Contacts Rated Current	110V DC 1A								
D00	6.17	Interlocks	According (but not limited) to Appendix B of IPS-M-EL-144 (4) specifically: To prevent closure of Earth Switch when CB is not in Test or withdraw position To prevent Insertion of CB when Earth Switch is connected. To prevent connection of Earth Switch when upstream Switch is not open i.e. electromagnetic coil (only for incoming)								
D00		Routine Tests	IEC62271-102								
D00		Type Tests (Certificates)	IEC62271-102								
		der Protection Relay									
D00	7.1		Vendor to Advise								
n -		Manufacturer's Name									
D00		Manufacturer's Type Designation	Vendor to Advise								
D00	7.3	Manufacturer's Type Designation Type	Digital Multi-Function Relay + Display with adjustment Menu								
D00	7.3 7.4	Manufacturer's Type Designation Type Installation	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted								
D00 D00 D02	7.3 7.4 7.5	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes)	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay)								
D00 D00 D02 D00	7.3 7.4 7.5 7.6	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A]	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5								
D00 D00 D02	7.3 7.4 7.5 7.6	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes)	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz								
D00 D00 D02 D00	7.3 7.4 7.5 7.6 7.7	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A]	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5								
D00 D00 D02 D00 D00	7.3 7.4 7.5 7.6 7.7	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz]	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz								
D00 D00 D02 D00 D00 D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA]	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise								
D00 D00 D02 D00 D00 D00 D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA] Overload Capability Of Current Path	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise 100xIn < 1 Sec.								
D00 D00 D02 D00 D00 D00 D00 D00 D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA] Overload Capability Of Current Path Rated Voltage Auxiliary Voltage [V]	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise 100xIn < 1 Sec. 110V DC								
D00 D00 D02 D00 D00 D00 D00 D00 D00 D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA] Overload Capability Of Current Path Rated Voltage Auxiliary Voltage [V] Auxiliary Voltage Permissible Range [V]	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise 100xIn < 1 Sec. 110V DC Min. ± 15% of Un								
D00 D00 D02 D00 D00 D00 D00 D00 D00 D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA] Overload Capability Of Current Path Rated Voltage Auxiliary Voltage [V] Auxiliary Voltage Permissible Range [V] Power Consumption [W]	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise 100xIn < 1 Sec. 110V DC Min. ± 15% of Un Vendor to Advise								
D00 D00 D02 D00 D00 D00 D00 D00 D00 D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11 7.12 7.13	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA] Overload Capability Of Current Path Rated Voltage Auxiliary Voltage [V] Auxiliary Voltage Permissible Range [V] Power Consumption [W] Trip Relay Contacts	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise 100xIn < 1 Sec. 110V DC Min. ± 15% of Un Vendor to Advise 2NO + 2NC at least 2NO + 2NC at least								
D00 D00 D02 D00 D00 D00 D00 D00 D00 D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11 7.12 7.13	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA] Overload Capability Of Current Path Rated Voltage Auxiliary Voltage [V] Auxiliary Voltage Permissible Range [V] Power Consumption [W] Trip Relay Contacts Alarm Relay Contacts Auxiliary Contacts Ratings • Contacts Voltage Rating [V]	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise 100xIn < 1 Sec. 110V DC Min. ± 15% of Un Vendor to Advise 2NO + 2NC at least 2NO + 2NC at least								
D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11 7.12 7.13 7.14	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA] Overload Capability Of Current Path Rated Voltage Auxiliary Voltage [V] Auxiliary Voltage Permissible Range [V] Power Consumption [W] Trip Relay Contacts Alarm Relay Contacts Auxiliary Contacts Ratings • Contacts Voltage Rating [V] • Contacts Rated Continuous Current	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise 100xIn < 1 Sec. 110V DC Min. ± 15% of Un Vendor to Advise 2NO + 2NC at least 110V DC Vendor to Advise								
D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11 7.12 7.13 7.14 7.15	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA] Overload Capability Of Current Path Rated Voltage Auxiliary Voltage [V] Auxiliary Voltage Permissible Range [V] Power Consumption [W] Trip Relay Contacts Alarm Relay Contacts Auxiliary Contacts Ratings • Contacts Voltage Rating [V] • Contacts Rated Continuous Current Ingress Protection	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise 100xIn < 1 Sec. 110V DC Min. ± 15% of Un Vendor to Advise 2NO + 2NC at least 110V DC Vendor to Advise								
D00	7.3 7.4 7.5 7.6 7.7 7.8 7.9 7.10 7.11 7.12 7.13 7.14 7.15	Manufacturer's Type Designation Type Installation Included Protection (ANSI Codes) Rated Current [A] Rated Frequency [Hz] Burden [VA] Overload Capability Of Current Path Rated Voltage Auxiliary Voltage [V] Auxiliary Voltage Permissible Range [V] Power Consumption [W] Trip Relay Contacts Alarm Relay Contacts Auxiliary Contacts Ratings • Contacts Voltage Rating [V] • Contacts Rated Continuous Current Ingress Protection	Digital Multi-Function Relay + Display with adjustment Menu Flush Mounted 50, 51, 46, 51LR, 49, 66, 50G, 51G, 26, 87M, 86 (Separate Relay) 5 50 Hz Vendor to Advise 100xIn < 1 Sec. 110V DC Min. ± 15% of Un Vendor to Advise 2NO + 2NC at least 110V DC Vendor to Advise								



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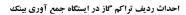
9.4 Accessories required for proper and safe operation of the switchgear shall be supplied by vendor

DATA SHEET FOR EXPANSION OF MV SWITCHGEAR نوع مدرک بسته کاری صادر کننده تسهيلات رشته سريال

		– شماره پیمان:		10000 7500	سهيرت		نی ساز ت	سريان		شماره صفحه: 3 از ۱۰			
<u> </u>		·	BK	GCS	PEDCO	120	EL	DT	0004	D03	J. 7		
	Technical Data For Expansion of 11 KV MV Switchgear												
Rev	Item	Description					Required	i		Vendor Data			
8. Trai	nsforn	ner Feeder Protection Relay								_			
D01	8.1	Manufacturer's Name			I	endor to Ad	vise						
D01	8.2	Manufacturer's Type Designation			1	endor to Ad	vise						
D01	8.3	Type			Digital Mu	lti-Function	Relay + Disp	lay with adjust	ment Menu				
D01	8.4	Installation					Flush Moun	ted					
D01	8.5	Included Protection (ANSI Codes)				50, 51, 5	1N,50G (Sep	arate Relay)					
D01	8.6	Rated Current [A]					5						
D01	8.7	Rated Frequency [Hz]					50 Hz						
D01	8.8	Burden [VA]				7	endor to Ad	vise					
D01	8.9	Overload Capability Of Current Path					100xIn < 15	Sec.					
D01		Rated Voltage Auxiliary Voltage [V]					110V DC						
D01		Auxiliary Voltage Permissible Range [V]			Min. ± 15% of Un								
D01					Vendor to Advise								
D01		F 7			2NO + 2NC at least								
D01	8.14	Alarm Relay Contacts			2NO + 2NC at least								
D01	8.15	Auxiliary Contacts Ratings • Contacts Voltage Rating [V] • Contacts Rated Continuous Current			110V DC Vendor to Advise								
D01	8.16	Ingress Protection					IP42						
D01	8.17	Routine Tests					IEC 255						
D01	8.18	Type Tests (Certificates)					IEC 255						
9.Note	s												
D00	9.1	According to "BK-GCS-PEDCO-120-EL-SL-00	003", in the	extension of	f existing MV s	witchgear, tl	nere are only	8 outgoing fee	eder for 11 K	V switchgea	r & no extension is required for incoming & outgoing.		
D01	9.2	9.2 The rated short time current of busbar & rated peak withstand current will be recheked after power system study.											
D01	9.3	Minimum conductor sizes shall be 2.5 mm2	for protect	ion (CT/PT)	and bonding o	onductors a	nd 1.5 mm2	for control and	l signal wirin	g.			



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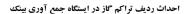
DATA SHEET FOR EXPANSION OF MV SWITCHGEAR

نوع مدرک نسخه پروژه بسته کاری صادر کننده تسهيلات سر يال شماره پیمان: شماره صفحه: ۱ از ۱۰ ВК GCS PEDCO 120 EL DT 0004 D03

	Technical Data for Starter Panel of Fire Water Pump								
Rev	Item	Description	Required	Vendor Data					
		tal Data	- Nequired	venuoi Data					
D00		Name of Project / Plant	Binak Oilfield in Bushehr Province						
D00	1.2	Ambient Temperature (Min/Max)	Min ~ Max: +5 ~ +52°C						
D02	1.3	Max.Design Temperature:	50 °c						
D00	1.4	Max. Sun Temperature:	+ 85 °c						
D00	1.5	Max.Relative Humidity:	100%						
D00	1.6	Mean Sea Level:	12.5 m Above Sea Level						
D00	1.7	Seismic Factor:	0.3g						
D00	1.8	Max. Wind Velocity(Max)	120 km/hr						
2-Switc			22.000						
D00	2.1	Manufacturer	By Vendor						
D00	2.2	Standard(a)	IPS-M-EL-144(4), IPS-E-EL-100(1),						
роо	2.2	Standard(s)	BK-GNRAL-PEDCO-000-EL-SP-0005						
D00	2.3	Quantity	1 Feeder of Outgoing, Type C3						
D00	2.4	Service	Expansion of Exsiting MV Switchgear from Both Side						
D00	2.5	Tag Number	GCS-3.3-SWG-001						
DOO	2.0	Ali-abl- CID	BK-GCS-PEDCO-120-EL-SL-0001						
D00	2.6	Applicable SLD	BK-GCS-PEDCO-120-EL-SL-0003 BK-GCS-PEDCO-120-EL-DG-0001						
D00	2.7	Location	Indoor						
D00	2.8	Type and Construction	Metal Clad, Withdrawable						
D01	2.9	Rated Voltage & Variation	3.6 kV ± 10 %						
-	2.10	Rated Frequency & Variation	50 Hz ± 5 %						
D00	2.11	No. of Phases	3 PH						
		Rated Insulation Levels between earth and phase	10 KV						
		One Minute Power Frequency	10 KV						
D02	2.12	Withstand Voltage (RMS) • One Minute Power Frequency	40 KV						
		Withstand Voltage of Aux. Circuit (RMS)							
		Impulse Withstand Voltage (Peak)	2 KV						
D00	2.13	Rated Normal Current of Busbars	630 A						
D01	2.14	Rated Short Time Current of Busbar	25 kA; 1 sec (Note 8.2)						
D00	2.15	Rated Peak Withstand Current	63 kA						
		Busbars: • Material	Copper (Flame Retardant Non-Hygroscopic)						
		Main Horizontal Bus Cross Section Area	Vendor to Advise						
D01	2.16	Main Vertical Bus Cross Sectional Area	Vendor to Advise						
		• Earth Bus Cross Sectional Area	Vendor to Advise						
		Busbars Color & Joints	Silver Plated Acc. to IEC62271						
D00	2.17	Maximum Tolerable Temperature Rise							
D00		Maximum Tolerable Temperature Rise	IPS-M-EL-144(4)						
D00	2.18	Rated Voltage for Control And Protection Circuits	IPS-M-EL-144(4) 110 V DC						
	2.18	-	1						
D00		Rated Voltage for Control And Protection Circuits	110 V DC						
	2.19	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure	110 V DC 400 / 230 VAC						
	2.19	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented						
D01	2.19 2.20 2.21	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between						
D01	2.19 2.20 2.21 2.22	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X						
D01 D00 D00	2.19 2.20 2.21 2.22	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side						
D01 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access						
D01 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry						
D01 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm						
D01 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder						
D01 D00 D00 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or						
D01 D00 D00 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC						
D01 D00 D00 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.28 2.29	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests Type Tests	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298, IEC60694, and IPS-M-EL-144 (4)						
D01 D00 D00 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.29 2.30 2.31	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests Type Tests Overall Dimensions (HxWxD) [mm] Total Weight [kg]	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298, IEC60694, and IPS-M-EL-144 (4) Vendor to Advise						
D01 D00 D00 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.29 2.30 2.31 2.32	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests Type Tests Overall Dimensions (HxWxD) [mm] Total Weight [kg]	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298, IEC60694, and IPS-M-EL-144 (4) Vendor to Advise						
D01 D00 D00 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.30 2.31 2.32 2.33	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests Type Tests Overall Dimensions (HxWxD) [mm] Total Weight [kg] Overall Dimensions of 1 Cubicle (HxWxD)	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298, IEC60694, and IPS-M-EL-144 (4) Vendor to Advise Vendor to Advise						
D01 D00 D00 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.30 2.31 2.32 2.33	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests Type Tests Overall Dimensions (HxWxD) [mm] Total Weight [kg] Overall Dimensions of 1 Cubicle (HxWxD) Dynamic Load of One Cubicle [kg]	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298, IEC60694, and IPS-M-EL-144 (4) Vendor to Advise Vendor to Advise						
D01 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.29 2.30 2.31 2.32 2.33 ircuit 3.1 3.2	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests Type Tests Overall Dimensions (HxWxD) [mm] Total Weight [kg] Overall Dimensions of 1 Cubicle (HxWxD) Dynamic Load of One Cubicle [kg] Breaker Manufacturer Standard	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298, IEC60694, and IPS-M-EL-144 (4) Vendor to Advise Vendor to Advise Vendor to Advise						
D01 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.29 2.30 2.31 2.32 2.33 ircuit 3.1 3.2	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests Type Tests Overall Dimensions (HxWxD) [mm] Total Weight [kg] Overall Dimensions of 1 Cubicle (HxWxD) Dynamic Load of One Cubicle [kg] Breaker Manufacturer	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298, IEC60694, and IPS-M-EL-144 (4) Vendor to Advise						
D01 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.29 2.30 2.31 2.32 2.33 ircuit 3.1 3.2	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests Type Tests Overall Dimensions (HxWxD) [mm] Total Weight [kg] Overall Dimensions of 1 Cubicle (HxWxD) Dynamic Load of One Cubicle [kg] Breaker Manufacturer Standard	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298, IEC60694, and IPS-M-EL-144 (4) Vendor to Advise IEC62271-100						
D01 D00 D00 D00 D00 D00 D00 D00	2.19 2.20 2.21 2.22 2.23 2.24 2.25 2.26 2.27 2.28 2.29 2.30 2.31 2.32 2.33 ircuit 3.1 3.2 3.3	Rated Voltage for Control And Protection Circuits Rated Voltage for Space Heaters and Panel Lighting Enclosure Degree of Protection by Enclosure Installation Rear / Front Access Top / Bottom Cable Entry Sheet Steel Thickness, Fram & Walls Paint Color finish Routine Tests Type Tests Overall Dimensions (HxWxD) [mm] Total Weight [kg] Overall Dimensions of 1 Cubicle (HxWxD) Dynamic Load of One Cubicle [kg] Breaker Manufacturer Standard Type	110 V DC 400 / 230 VAC Withdrawable Metal Clad, Compartmented External: IP 42, Internal: IP 20, Internal partitions between functional units and shutters for bus bar & cable side: IP 4X Floor Self-Standing, Side by Side Rear and Front Access Cables: Bottom Entry Minimum 2.5 mm Electrostatic Powder RAL 7032 Required (Withstand tests and reports as per IEC 62271-200 or IEC 298, IEC 60694, IPS-M-EL-144 (4) and Specification) Test certificates of the SWGR type as per IEC62271-200 or IEC 298, IEC60694, and IPS-M-EL-144 (4) Vendor to Advise						



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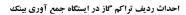
DATA SHEET FOR EXPANSION OF MV SWITCHGEAR

نوع مدر ک نسخه پروژه بسته کاری صادر کننده تسهيلات سر يال شماره پیمان: شماره صفحه: ۱۰ ز ۱۰ ВК GCS PEDCO 120 EL DT 0004 D03

	Technical Data for Starter Panel of Fire Water Pump								
Rev	Item	Description	Required	Vendor Data					
D00	3.7	No. Of Phases and Poles	3-Phase						
		Rated Insulation Levels between earth and phase One Minute Power Frequency	10 KV						
D00	3.8	Withstand Voltage (RMS) • One Minute Power Frequency	2 KV						
		Withstand Voltage of Aux. Circuit (RMS) Impulse Withstand Voltage (Peak)	40 KV						
D00	3.9	Rated Normal Current	630 A						
D00	3.10	Rated Short Time Current	10 kA						
D00	3.11	Rated Peak Withstand Current	62.5 kA						
D00	3.12	Č	Vendor to Advise						
D00	3.13	Rated Short Circuit Making Current	Vendor to Advise						
D00	3.14	Maximum Tolerable Temperature Rise	Acc. to IEC62271-100						
D00	3.15	Design Temperature Rise	Acc. to IEC62271-100 Motor & Hand operated Spring Charged Stored Energy						
D00	3.16		Mechanism						
D00	3.17	Release type	Shunt Trip						
D00	3.18	Rated Operating Sequence Rated Voltage of Auxiliary Equipment	0-0.3S-CO-3MIN-CO 110V DC						
D00	3.19	Rated Operating Voltage of Releases	110V DC						
D00	3.21		110V DC						
200	J.21	Voltage Tolerances for Auxiliary Apparatus:							
		Trip Circuit	70%-110% 85%-110%						
D00	3.22	Close Circuit Mater Brancia a	85%-110%						
		Motor Running Motor at the Instant of Start	70%-110%						
		Power consumption of Auxiliary Apparatus:[W] Trip Circuit							
D00	3 23	Closed Circuit Charging motor	110V DC						
D00	3.23	Under voltage release	Vendor to Advise						
		Multifunction relay							
		Transducers 1 C.B. Open/Close Auxiliary Contacts:							
		No. Of Make Contacts	6						
D00	3.24	No. Of Break Contacts	6 110V DC						
Doo	3.21	Rated Voltage Rated Current at 110V DC	VTA						
		Breaking Current at 110V DC	VTA						
		Truck Position Auxiliary Contacts:	1NO + 1NC						
		No of Make Contacts No of Break Contacts	1NO + 1NC						
D00	3.25	Rated Voltage	110V DC						
		Rated Current at 110V DC	VTA VTA						
		Breaking Current at 110V DC							
D00	3.26		IEC62271-100						
D00	3.27		IEC62271-100						
D00	4.1	Transformers Manufacturers Name	Vendor to Advise						
D00	4.1	Manufacturers Name Standard	IEC60044-2						
D00	4.2	Type	Epoxy Cast Resin						
D00	4.4	Fixed Withdrawable	Withdrawable						
D00	4.5	Highest System Voltage	3.6 kV						
D00	4.6	Rated Frequency	50 Hz						
D00	4.7	No. of Phase	Single Phase						
D00	4.8	Rated Primary Voltage [kV]	3.3/√3 kV						
D00	4.9	Rated Secondary Voltage [V]	110/√3 V						
		Rated Insulation Levels between earth and phase One Minute Power Frequency	10 kV / √3						
		One Minute Power Frequency Withstand Voltage (RMS)	2 kV / √3						
D00	4.10	One Minute Power Frequency	,						
		Withstand Voltage of Aux. Circuit (RMS)	40 kV / √3						
D01	411	Impulse Withstand Voltage (Peak) System Earthing	TNS by Resistor						
D01	4.11	Rated Voltage Factor	Vendor to Advise						
D00	4.13	Rated Burden	Vendor to Advise						
		Accuracy Class:	CL. 3P						
D00	4.14		1.0						
D00	4.15	for Measuring (with separate Winding) Insulation Class & Temperature Rise	Class E, Temp. Rise Class Y						
200			oldoo 2, reliip. Nioc oldoo 1	I					



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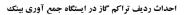
DATA SHEET FOR EXPANSION OF MV SWITCHGEAR

Mark the second of	پروژه	بسته کاری	صادر كننده	تسهيلات	رشته	نوع مدرک	سريال	نسخه	1 110 1 6		
—شماره پیمان: —	ВК	GCS	PEDCO	120	EL	DT	0004	D03	شماره صفحه: ۹ از ۱۰		

		Technical Data for Starter Panel of Fire Water Pump							
Rev	Item	Description	Required	Vendor Data					
5.MV C	urren	t Transformers							
D00	5.1	Manufacturer's Name	Vendor to Advise						
D00	_	Standard	IEC60044-1						
D00		Туре	Dry Type						
D00	_	Highest System Voltage	3.6 kV						
D00		Rated Frequency	50 Hz						
D00	-	Rated Secondary Current:	1 A / 5 A According to SLD						
D00	5.7	Rated Continuous Thermal Current:	1.2 x Rated primary current						
D00	_	Rated Short Time, Current:	10 kA, 1 Sec						
D00	_	Rated Dynamic Current:	63 kA						
D00	_	Rated Burden Rated Transformation Ratio and No. of Cores	Vendor to Advise According to Single Line Diagram						
D00	3.11	Accuracy Class:	Class 1: Class 1FS5						
D00	5.12	Measuring	Class X: where required						
		• Protection	Class 5P20 protections						
D00	_	Routine Tests	IEC60044-1						
D00	5.14	Type Tests	IEC60044-1						
		Rated Insulation Levels between earth and phase One Minute Power Frequency	10 kV / √3						
D01	5.15	Withstand Voltage (RMS)	2 kV / √3						
D01		One Minute Power Frequency	10.337.4.70						
		Withstand Voltage of Aux. Circuit (RMS) Impulse Withstand Voltage (Peak)	40 kV / √3						
6.Earth	n Switc								
D00	6.1	Manufacturer's Name	Vendor to Advise						
D00	6.2	Manufacturer's Type Designation	Vendor to Advise						
D00	6.3	Standard	IEC62271-102						
D00	6.4	Туре	Make Proof						
D00	6.5	Number Of Phase	3						
D00		Frequency	50 Hz						
D00	6.7	Rated Voltage	3.3 kV						
D00	_	Rated Lighting Impulse Withstand Voltage	40 kV						
D00	6.9	Rated 1 Minute Power Frequency Voltage	10 kV						
D00		Rated Short Time (1s) Current	10 kA						
D00	_	Rated Peak Withstand Current	62.5 kA						
D00		Rated Short Circuit Making Current	62.5 kA						
D00		Actuation Mechanism No. of Auxiliary Contacts (Min.)	Pre-tension Spring 2NO + 2NC						
D00		Aux. Contacts Rated Voltage	110V DC						
D00	-	Aux. Contacts Rated Current	1A						
D00	0.10	Aux. contacts nated current	According (but not limited) to Appendix B of IPS-M-EL-144 (4)						
			specifically:						
			To prevent closure of Earth Switch when CB is not in Test or						
D00	6.17	Interlocks	withdraw position To prevent Insertion of CB when Earth Switch is connected.						
			To prevent insertion of CB when Earth Switch is connected. To prevent connection of Earth Switch when upstream Switch is						
			not open i.e. electromagnetic coil (only for incoming)						
D00	6.18	Routine Tests	IEC62271-102						
D00	6.19	Type Tests (Certificates)	IEC62271-102						
		ler Protection Relay							
D00	-	Manufacturer's Name	Vendor to Advise						
D00	7.2	Manufacturer's Type Designation	Vendor to Advise						
D00		Type	Digital Multi-Function Relay + Display with adjustment Menu						
D00	-	Installation (ANGLG 1.)	Flush Mounted						
D00	7.5	Included Protection (ANSI Codes)	50, 51, , 50G, 51G, , 86 (Separate Relay)						
D00		Rated Current [A] Rated Frequency [Hz]	5 50 Hz						
D00		Burden [VA]	Vendor to Advise						
D00	7.8	Overload Capability Of Current Path	100xIn < 1 Sec.						
D00	-	Rated Voltage Auxiliary Voltage [V]	110V DC						
D00		Auxiliary Voltage Permissible Range [V]	Min. ± 15% of Un						
D00		Power Consumption [W]	Vendor to Advise						
D00		Trip Relay Contacts	2NO + 2NC at least						
D00		Alarm Relay Contacts	2NO + 2NC at least						
		Auxiliary Contacts Ratings	110V DC						
D00	7.15	Contacts Voltage Rating [V] Contacts Rated Continuous Current	Vendor to Advise						
D00	7.16	Contacts Rated Continuous Current Ingress Protection	IP42						
D00	_	Routine Tests	IEC 255						
D00		Type Tests (Certificates)	IEC 255						



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DATA SHEET FOR EXPANSION OF MV SWITCHGEAR

est and e	پروژه	بسته کاری	صادر كننده	تسهيلات	رشته	نوع مدرک	سريال	نسخه
شماره پیمان:	ВК	GCS	PEDCO	120	FI	DT	0004	DU3

شماره صفحه: ۱۰ از ۱۰

	Technical Data for Starter Panel of Fire Water Pump							
Rev	Item	n Description Required Vendor Data						
8.Note	8.Notes							
D00	8.1 According to "BK-GCS-PEDCO-120-EL-SL-0003", in the extension of existing MV switchgear, there is only 1 outgoing feeder for 3.3 KV switchgear & no extension is required for incoming & outgoing.							
D01	8.2	The rated short time current of busbar & rated peak withstand current will be recheked after power system study.						
D01	8.3	Minimum conductor sizes shall be 2.5 mm2 for protection (CT/PT) and bonding conductors and 1.5 mm2 for control and signal wiring.						
D01	8.4	Accessories required for proper and safe operation of the switchgear shall be supplied by vendor						