

**SANMAR PROPERTIES LIMITED****Purchase Order**

Sanmar Ocean City (7th Floor), 997 CDA Avenue, East Nasirabad, Chittagong 4000

Delivery Address

Hyde Park
Contact: Rafiqul Islam Mob: 01708-150728 House # 109-C, Road # 4, Khulshi R/A, Chittagong, CHITTAGONG, Bangladesh - 4225

Name of Supplier : Cross World Power Ltd.

Address: Plot#1/B, Road-90, Gulshan-2, Dhaka, Bangladesh, DHAKA, Dhaka-N/A
Contact Name: Mohammad Nurul Alam
Contact No : 01755514716
Email ID : info@cross-world.com

Purchase Order No:

PO/SPL/HYPA/HYPA/220

PO Date: Dec 06, 2020

Project		Sub-Project		Indent-Ref.		Indent Date	
Hyde Park		Hyde Park		IND/SPL/HYPA/HYPA/93		Sep 11, 2019	
Material Code	Material Description	Brand/Specification	Origin	Quantity	UOM	Unit Rate(BDT.)	Total Amount(BDT)
S630K	SUBSTATION 630 KVA		Material_Remarks]	1.000	Set	2,000,000.00	2,000,000.00
Material Cost					2,000,000.00		
Handling & Loading Charges					0.00		
Freight Charges					0.00		
Other Charges					0.00		
Total Material Cost (BDT)					2,000,000.00		
Grand Total (In Words) : BDT Two million only							

General Terms & Conditions :-

1. The material shall be inspected by our engineer in charge at factory or site and any material rejected has to be replaced by you.
2. Bill will be submitted at our head office along with a copy of Purchase Order & delivery challan duly stamped & signed by our Store In-charge.
3. Please Quote P/O number (PO/SPL/HYPA/HYPA/220) on Invoice & Delivery Challan.

Other Terms & Conditions

P.O. Validity	: 0 Days
Payment Terms	:
Credit Period	: 0 Days
Freight	: Inclusive
Taxes	: Inclusive
Packing & Forwarding Details	: Material should be packed properly in standard packing to avoid any damage in transit.
Retention % & Amount	: 0.00, 0.00
Carring:	: Up To Site
General Remarks	: SUBSTATION 630 KVA: Add Remarks AS per attach CS

For SANMAR PROPERTIES LIMITED

MashukHuck

Accepted all above by Supplier


6/12/2020
Uzzal Kumar Das
Assistant Manager
Supply Chain Management

PAYMENT TERMS

- ① 30% ADVANCE
- ② 40% BEFORE DELIVERY (AFTER INSPECTION FACTORY)
- ③ 30% AFTER DELIVERY, INSTALLATION, & COMMISSIONING.

Ref : CWPL/SS/SG/201018-01
Date : 18.10.2020

To
The Managing Director
Sanmar Properties Limited
Gulshan 2, Dhaka

FINANCIAL OFFER

Sub : Offer for supply, installation, testing & commissioning of 11/.415KV, 630KVA SS

**BILL OF QUANTITY OF 630 KVA SUBSTATION
SANMAR GRANDE**

Sl.	Description of the Item	Unit	Qty	Unit Price In	Total Price In BDT
a	MV Switchgear for Incoming (11KV)	3	4		
i	Supply, installation, testing & commissioning at site of 11 KV switchgear as	Each	1	225,000	225,000
1.1	11 KV SWITCHGEAR				
	Incoming (1 No.)				
i)	11KV, 630A, 350MVA, triple pole spring charged load break switch (LBS) with fuse.				
ii)	3 Nos. double wound, dual ratio C.T.'s 300/125/5+5				
	Core 1-15VA burden class 0.5 for metering.				
	Core 2-15VA burden class 5P10 for protection				
iii)	3 Nos. line PT 11KV / $\sqrt{3}$, 110V / $\sqrt{3}$, 100VA class 1.0 epoxy cast				
iv)	IDMT relay with 2 O/C and 1 E/F element with hand reset contacts & indicator				
v)	1 No. digital voltmeter (0-12 KV) with selector switch (96mm x				
vi)	1 No. digital ammeter (0-250 Amp) with selector switch (96mm x				
vii)	1 No. electronic digital type energy analyzer having 30 days memory and parameters of KW, KWH, KVAH, KVARH power factor, frequency etc. (energy				
viii)	1 No. breaker control switch				
ix)	1 set of following indicating lamps				
	- Red, Yellow and Blue for phase indication				
	- Amber for trip indication				
	- Red 'ON' Green 'OFF'				
	- Spring charge indication				
	- Auto trip indication				
x)	1 No. hooter				
xi)	8-window annunciation panel with audio and visual indicator.				
xii)	1 Set of fuses, ferrules, wiring etc. as required.				
xiii)	Suitable arrangement for termination of 1 No. 3 core 300 Sqmm 11 KV XLPE				
	Bus Bars				
	11KV, 1000 amp air insulated, encapsulated copper bus bars.				
b	11/0.415 KV TRANSFORMER Oil immersed	Set	1	780,000	780,000

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Sl.	Description of the Item	Unit	Qty		
	Supply, installation, testing & commissioning of 630 KVA capacity 11 KV/0.415 KV, 3 phase, 50 Hz copper wound step down, Delta/Star, OIL Cooled Indoor Type transformers, vector group Dyn-11. Off load Tap Changer arrangements in steps of 2.5% with range from +5% to -10%, bi-directional roller, diagram, rating plate, winding temperature indicator with Alarm & Trip wiring, marshalling box, lifting lugs and weather proof HT cable box, wiring for interlocking with the HT breakers as per specifications. Surge protection to be provided at HT side. LT Cable box disconnecting chamber minimum 8mm thick non magnetic gland plate etc. complete as per specification and as per IEC60076/ANSI/NEMA/BNBC/ Local Standards (The transformer shall be subject to all test specified in specification and test certificates shall be produced).				
	BRAND:				
	Temp of cooling: ONAN				
	Temp rise @ 50degC ambient in winding by resistance				
	Impedance : 6 %				
	Terminal arrangement (HV) : 3C x 95 Sqmm 11kV				
	Terminal arrangement (LV) : 2000 Amps TPN sandwich construction Copper				
	630 KVA Transformer as described above and as per technical specifications.				
	Transformer winding with all terminals must be Copper.				
	c Power Factor Panel(PFI): 380KVAR	Set	1	360,000	360,000
	Supply, installation, testing & commissioning of 380 KVAR capacitor bank type PFI unit accordance to the following parameters.				
	Incomming				
	One (1) No. 600 amps MCCB (adjustable) with built in release unit for overcurrent and short circuit and provided with standard metering and protection. Alternate: One(1) unit of 1000amps for foreign made on load type manual change over switch for isolation of PFI panel for any such maintenance				
	Design, manufacture, testing & commissioning of 380KVAR capacitor panel with capacitor unit in tier formation; housed in an integrated cubicle type, Indoor type automatic switching 'ON' and 'OFF' control panel with dust and vermin proof hinged and lockable doors complete with interconnections, bonding to earth and painting (suitable for 400/440 Volts, 3 phase 50 Hz supply system). Auto/Manual modes shall be available in the capacitor panel equivalent to Datar make APFC panels. The capacitor panel shall be provided at 380 KVAR in suitable No. of steps & of suitable rating of capacitors, as per specification with harmonic filters as per specification. The panel shall measure the various parameters like voltage, input current, capacitive current, KVA demand, KW, Power Factor, etc with RS 232C/RS-485 port. Controller shall be mounted on the front side of the panel. The capacitor panel shall be inclusive of the automatic control panel. The capacitor panel shall maintain an average power factor of 0.99.				
	II Metering:				
	One (1) No. (0-500 volts) voltmeter with 'ON' and 'OFF' selector				
	Phase indication lamps each backed up with 2 Amps MCB.				
	Indicating lamp to each capacitor unit to indicate that unit is				

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Sl.	Description of the Item	Unit	Qty		
1	One (1) No. 12 Steps Automatic Power Factor Correction Relay with 4000/5 15 VA CL : 1 CT's				
iii	Protection: Over voltage Protection ON/OFF/Phase Indication & digital dual energy meter with RS 485 port shall be provided on each outgoing except capacitor feeders.				
iv	Bus Bars: 800A, TPN Copper bus bars suitable for 415V, 50Hz with heat shrinkable colour coded sleeves. Suitable rating semiconductor fuse for group of capacitor banks with thyristor having suitable capacity to carry the current with necessary control and firing card with proper wiring. 4 Nos. - 415V, 750A hard drawn electrolytic copper busbar. 1 No. - 415V, 12.5 KVAR, 50 Hz TP power capacitor bank with built in /separate discharge coil for connection directly with line through fuse. 3 No. - 415V, 12.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 No. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 5 Nos. - 415V, 50 KVAR, 50 Hz TP power capacitor bank with built in /separate discharge resistor. 3 No. - 415V, 20 Amps, 50 Hz auto TP magnetic contactor with AC3 duty. 3 No. - 415V, 40 Amps, 50 Hz auto TP magnetic contactor with AC3 duty. 5 Nos. - 415V, 80 Amps, 50 Hz auto TP magnetic contactor with AC3 duty.				
d	LT PANEL (MAIN) Supply, installation, testing & commissioning of locally fabricated LT/LV panel in accordance to following accessories and parameters. fabricated as floor mounted, powder coated with 16SWG sheet Incomming Circuit Breaker: 1000 amps 3 Pole molded case circuit breaker (MCCB) with built in microprocessor based release unit for overcurrent, short circuit. One for PDB & One For Generator and will be Mechanical and Electrical interlock system. Outgoing Circuit Breaker: One(01) unit of 630amps,TP- MCCB-Adjustable for PFI One(01) unit of 320amps,TP-MCCB-Adjustable for B-2, Utility DB Three(03) unit of 320amps,TP-MCCB-Adjustable for Spare One(01) unit of 125amps,TP- MCCB-Adjustable for 5th Floor One(01) unit of 100amps,TP- MCCB-Adjustable for 6th Floor Eleven(11) unit of 63amps,TP- MCCB-Adjustable for SDB & Spare Four (04) unit of 40amps,TP- MCCB- for Gr. & Mezz Floor and Two (02) unit of 25amps,TP- MCCB- for Basement. Two (02) unit of 32amps,ASP- MCB- for Control Panel. 1200amps busbar sets with accessories.	Set	1	590,000	590,000
e	ELT PANEL Supply, installation, testing & commissioning of locally fabricated ELT panel in accordance to following accessories and parameters. fabricated as floor mounted, powder coated with 16SWG sheet metal One(01) unit of 125amp TP C.O.S One(01) unit of 100amp TP C.O.S Eleven(11) unit of 63amp TP C.O.S	Set	1	360,000	360,000

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Sl.	Description of the Item	Unit	Qty		
f.	Lighting Arrestor				
	Supply of outdoor type 11 KV, 50 Hz, 100A, (10 KA), 75 KV BIL lightning arrester complete with mounting accessories etc. manufactured by GEM Co. Ltd, Bangladesh /ENERGYPAC or equivalent product of USA EU Countries (3 Nos. in a set).	Set	1	6,000	6,000
g.	11 KV Dropout Fuse				
	Supply of outdoor type 11KV, 50 Hz, 5KA (20 KA) dropout fuse complete with mounting accessories etc. manufactured by GEM Co. Ltd, Bangladesh /ENERGYPAC or equivalent product of USA /EU Countries (3 Nos. in a set).	Set	1	6,000	6,000
h.	Delivery, Transportation	Job	1	50,000	50,000
h.	Installation and HT Cable Laying	Job	1	50,000	50,000
Total Price In BDT(Excluding VAT & AIT)=					2,427,000

Less, Special Discount after negotiation

427,000

Total Offer Value;

2,000,000

Taka Twenty Lac Only excludng VAT and AIT

Terms & Conditions :

- Validity :Our offer will remain valid for a period of 40 days from the date of this offer.
- Delivery :Within 90 days after receipt of confirmed order & payment as per clause # 3.
- Payment :50% as advance along with order & remaining 40% before delivery at the site. 10% after commissioning
- All Civil Works ,Cables are excluded
- Warranty :One year after commissioning or one & half year from the date of delivery which come earlier.

Ayan Ghosh
Manager Sales

Md.Shamsul Alam
Sr.Manager,EBS

12/12/20

TECHNICAL SPECIFICATION :

630 KVA SUB-STATION: PROJECT GRANDE

	Unit	Quantity
1 11KV DROP-OUT FUSE	Set	1

11kV Drop -Out Fuse of following specifications :-

Rated voltage (nominal)	: 11kV
Rated max. voltage	: 15kV
Rated current (cont.) RMS	: 40A
Interrupt current RMS	: 10kA
Rated frequency	: 50Hz
Withstand test voltage	: 75kV
Dry 1 Min.	: 33kV
Wet; 10 sec	: 30kV

2 11KV LIGHTNING ARRESTOR	Set	1
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11kV Lighting Arrestor of following specification :-

Rated voltage (Nominal)	: 9kV
Rated system voltage	: 12kV
Frequency	: 50Hz
Minimum spark over (Rms)	: 14kV
Maximum spark over (Rms)	: 40kV
Max. impulse spark (crest)	: 45kV
Withstand voltage (Power frequency 1 Min. dry)	: 28kV
Withstand voltage (Power frequency 10 sec. wet)	: 24kV
Nominal discharge current	: 5kA
Impulse current withstand	: 55kA

03) 11 KV HT SWITCHGEAR (LBS)	Set	1
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This specification cover the supply of 11KV Indoor, metal enclosed switchgear according to IEC publication-298

The medium voltage switchgear panel shall be used for secondary distribution sub-station upto 12KV and suitable for an ambient temperature of 45 deg.C and rated rupture capacity of 350 MVA complete with all accessories, diagrams, levels, wirings & terminals. The 11 KV, 350 MVA rated switchboard would comply compulsory electricity regulations by standards. All cubicles are fitted with security interlocks and earthing switch.

Technical Data :

Service voltage	: 11KV
Rated voltage	: 12KV
Rated current of LBS	: 630A
Insulation level :	
Impulse withstand voltage 1.2/50 micro-sec.	: 75KV (Peak)
Power frequency withstand voltage/1 min.	: 28KV rms.

The equipment proposed under this offer has been designed, manufactured & tested in accordance with the following applicable IEC standards.

- common clause for high voltage switchgear standards
- high voltage switchgear in metallic enclosure
- high voltage ac circuit breakers
- ac switches and earthing switches
- high voltage switches
- high voltage combined switch/fuse for ac current
- current transformers
- voltage transformers
- high voltage fuses
- control monitoring

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The panel shall comprise of :

11KV, 630A, 350MVA, triple pole spring charged load break switch (LBS) with fuse.

1 Set

Cast resin insulated dry type 11KV double core current transformer, ratio : 30/5/5A.

Set 3

Core 1 : 10VA, class 0.5M5 for metering

Core 2 : 15VA, class 10P10 for protection

Dry type cast resin insulated potential transformer for open delta connection.

Ratio : 11000/110V

Burden : 100VA, Class : 0.5

Set 2

cast resin insulated dry-type 11 kv double core CT - 3 nos

20A, HRC fuse.

3 Nos

Volt Meter with Selector switch (0-15KV)

1 Nos

TP MCB for PT secondary protection.

1 Nos

Indicating lamp RED/YELLOW/BLUE.

3 Nos

Panel Heater

1 Nos

Set TP busbar suitably sized & air insulated.

1 Nos

LBS Brand : F&G

4 630 KVA OIL IMMERSSED TRANSFORMER

Set 1

11/0.415 kV, 50 Hz, 3 Phase, 4 Wire oil immersed naturally cooled (ONAN) type transformer with 3 HT & 4 LT bushing arranged on tank top conservator, oil level indicator, drain & filling valves, lifting lugs with first filling of transformer.

TECHNICAL DATA

Rated Capacity	:630	kVA
Rated Frequency	:50	Hz
Rated Voltage		
~ Input Voltage	:11000	Volt
~ Output Voltage	:415	Volt
Vector Group	Dyn11	
Tapchanger (Off-Load)	5 Position (0, +/-2.5%, -5%, -7.5%)	
Ambient Temperature	:40	0 C
Temperature Rise		
~ In Oil (max)	:60	0 C
~ In Coil (max)	:65	0 C
Star point brought out and loadable upto	:100	%
Max Service Altitude	:1000	meter
Installation	Indoor	
No Load Loss	:1102	Watt
Load Loss	:6634	Watt
Impedance	:5.20	%
Accessories	:Silica Gel, Breather	
Tolerance	As Per IEC 60076	
STANDARD	IEC 60076	

ORIGIN

Silicon Steel	: Korea
Super Enamelled Wire	: BRB/Gazi (Bangladesh)/RR(India)/Equivalent
Insulating Materials	: Italy
Copper Wire/Strip	: Singapore/Malaysia/India(Processed in Bangladesh)
Transformer Oil	: Electrol/Sabita/Apar (India)

MANUFACTURED BY: SHAKTI ENGINEERING LTD.

Signature
2/2/20

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LT SWITCHGEAR

Set, # - 1

Sheet steel clad powder coated (14 & 16SWG), dust and vermin proof, free standing, floor mounting, 415V, 50 Hz, Indoor type LT Switchgear Panel with 1200A Hard Drawn Copper Busbar. Set of components required for the manufacture of LT Panel comprising :-

INCOMING:

1000A, TP, 100KA, 415V, 50Hz (MCCB) adjustable overcurrent & magnetic short circuit protection.

Pcs 2

Current transformer ratio: 1000A with suitable accuracy and burden.

Pcs 3

Digital Ammeter scaled (0 - 1000A) & Digital Voltmeter scaled (0 - 500V) with selector switch.

Pcs 1

Phase indicating lamp RED/YELLOW/BLUE.

Pcs 3

1x6A, TP MCB for the protection of control circuit

Pcs 1

1x2A, SP MCB for the protection of control circuit

Pcs 3

OUTGOING:

630A, TP, 65KA, 415V, 50Hz (MCCB) adjustable overcurrent & magnetic short circuit protection.

Pcs 1

(For PFI)

320A, TP, 65KA, 415V, 50Hz (MCCB) adjustable overcurrent & magnetic short circuit protection.

Pcs 4

125A, TP, 25KA, 415V, 50Hz (MCCB) adjustable overcurrent & magnetic short circuit protection.

Pcs 1

100A, TP, 25KA, 415V, 50Hz (MCCB) adjustable overcurrent & magnetic short circuit protection.

Pcs 1

63A, TP, 25KA, 415V, 50Hz (MCCB) adjustable overcurrent & magnetic short circuit protection.

Pcs 11

40A, TP, 25KA, 415V, 50Hz (MCCB) adjustable overcurrent & magnetic short circuit protection.

Pcs 4

40A, TP, 25KA, 415V, 50Hz (MCCB) adjustable overcurrent & magnetic short circuit protection.

Pcs 2

32A, TP, 6KA, 415V, 50Hz MCB.

Pcs 2

BUSBAR Details

1200A TP Common Busbar

600A TP Earthing Busbar

1x1000A TP Terminal Busbar

1x630A TP Terminal Busbar

4x320A TP Terminal Busbar

Enclosure As Standard

General Accessories

BRAND

CB: HYUNDAI, KOREA

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6 ELT SWITCHGEAR Set 1

Sheet steel clad powder coated (14 & 16SWG), dust and vermin proof, free standing, floor mounting, 415V, 50 Hz, Indoor type ELT Switchgear Panel with 200A Hard Drawn Copper Busbar. Set of components required for the manufacture of ELT Panel comprising :-

OUTGOING:

125A,AC3,Magnetic Contactor,HYUNDAI/DONGA, KOREA	Pcs	2
100A,AC3,Magnetic Contactor,HYUNDAI/DONGA, KOREA	Pcs	2
100A,AC3,Magnetic Contactor,HYUNDAI/DONGA, KOREA	Pcs	22
Timer With Base (230V AC 10 Amps 8 Pin Autonics)	Pcs	26
Relay With Base (230V AC 10 Amps 8 Pin Schnieder)	Pcs	13

BUSBAR Details

200A TP Common Busbar

100A TP Earthing Busbar

Enclosure As Standard

General Accessories

BRAND

CB:HYUNDAI,KOREA

7 380kVAR auto/manual PFI plant Set 1

Sheet steel clad powder coated (14 & 16SWG), dust and vermin proof, free standing, floor mounting, 415V, 50 Hz, Indoor type PFI Panel with.

Set of components required for the manufacture of PFI Panel comprising :-

The panel comprising of :

630A,TP, 36KA,415V,50Hz (MCCB) adjustable overcurrent & magnetic short circuit protection.

(For PFI)

5X50(25X2)kVAR,415V,50 Hz, 3 Phase, normal duty type, self healing compact PF capacitors bank with discharge resistor.	Nos.	10
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3X25 KVAR, 415V, 50 Hz, 3 Phase, dry type, self healing compact PF capacitors bank with discharge resistor.	Nos	3
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4X12.5 KVAR, 415V, 50 Hz, 3 Phase, dry type, self healing compact PF capacitors bank with discharge resistor.	Nos	4
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80A,AC3, Magnetic Contactor.	Nos	13
40A,AC3, Magnetic Contactor.	Nos	3
20A,AC3, Magnetic Contactor.	Nos	3
80A HRC Fuse with Base./CB	Nos	15
40A HRC Fuse with Base./CB	Nos	9
20A HRC Fuse with Base./CB	Nos	12
Indicating lamp	Nos	12
Auto/manual selector switch with adder block.	Nos	1
10A TP MCB	Nos	1
2A SP MCB	Nos	12

800A TP Common Busbar

Enclosure As Standard.

Accessories

12 Steps reactive power regulator which performs the switching of capacitor bank in automatic power factor correction equipments depending on charges of reactive power complete with p.f.lumini escent indicators & digital power factor meter

Brand

Capacitor Bank: Epcos,India

Magnetic Contactor:HYUNDAI/DONGA,KOREA

Circuit Breaker; Brand :HYUNDAI,KOREA

12 Steps reactive power regulator : Delab,Malaysia

Set 1

Need one year replacement warranty for Donga Magnetic Contactor.

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