

**ตารางแสดงวงเงินงบประมาณที่ได้รับจัดสรรและราคากลาง(ราคาอ้างอิง)
ในการจัดซื้อจัดจ้างที่มีใ้ใช้งานก่อสร้าง**

๑. ชื่อโครงการ..... การจัดหา Distribution Board, Starter Boxes , Shock Mount
(Non Lock Out Equipments) โครงการเรือตรวจการณ์ไกลฝั่ง
กิจกรรมจัดหาการจัดหา Distribution Board, Starter Boxes , Shock Mount
(Non Lock Out Equipments) โครงการเรือตรวจการณ์ไกลฝั่ง
/หน่วยงานเจ้าของโครงการ สำนักโครงการเรือตรวจการณ์ไกลฝั่ง ลำที่ ๒ บริษัท อุ่กรุงเทพ จำกัด
๒. วงเงินงบประมาณที่ได้รับจัดสรร ๑๔,๔๔๕,๐๐๐ บาท (รวมภาษีมูลค่าเพิ่ม ๗%)
๓. วันที่กำหนดราคากลาง (ราคาอ้างอิง) วันที่ ๒๖ สิงหาคม ๒๕๕๙
เป็นเงิน ๑๔,๒๕๓,๔๗๐ บาท (รวมภาษีมูลค่าเพิ่ม ๗%)
๔. แหล่งที่มาของราคากลาง (ราคาอ้างอิง)
จากการสืบราคาปัจจุบัน จากบริษัทผู้แทนจำหน่าย ดังนี้
๔.๑ บริษัท ซีเมนส์ จำกัด
๕. รายชื่อเจ้าหน้าที่ผู้กำหนดราคากลาง (ราคาอ้างอิง)
๕.๑ นางจันทร์ทิพย์ ชำศิริพงษ์ หัวหน้าแผนกบริหารงานพัสดุ
๕.๒ นายธนาพิพัฒน์ วุฒิวิงศ์ พัสตุ ๑

Term of Reference (TOR)
Distribution Board, Starter Boxes , Shock Mount
(Non Lock Out Equipments)
For the Royal Thai Navy Offshore Patrol Vessel

1. Objective

The Bangkok Dock Company (1957) Limited (Buyer) wishes to announce this Term of Reference (TOR) for procuring Distribution Board, Starter Boxes , Shock Mount (Non Lock Out Equipments) for the construction of the Royal Thai Navy Offshore Patrol Vessel (OPV)

2. Requirement

- 2.1 Goods shall be 1 (one) set of SIEMENS Distribution Board, Starter Boxes , Shock Mount (Non Lock Out Equipments) including Factory Acceptance Test (FAT) Commissioning, Setting to Work, Harbour Acceptance Trial, Sea Acceptance Trial and Operation Training.
- 2.2 Marine Class approval by Lloyd's Register for Main Switch Boards shall be provided.
- 2.3 The detail and scope of supplies are in ANNEX A: Technical Requirement Specification
- 2.4 Goods shall be assembled in the Thailand.
- 2.5 Goods shall be new and never been used.

3. Condition of Bidding

- 3.1 The bid price shall include all costs, expenses, fees, insurance, Value Added Tax (VAT), (currently), and cost for all transportations. For imported goods, transportation shall be CIF Laem Chabang Port, Chonburi, Thailand in accordance with Incoterms 2010 (by vessel with Thai flag or same privilege).
- 3.2 This bid price shall exclude customs duty for the list of materials imported into the Kingdom of Thailand.
- 3.3 The enumeration of the bid price must be provided in Total Price
- 3.4 The price shall be separated per items as required in 2.1 and validity shall be until 31th October 2016.

4. Qualification of Bidder

- 4.1 Bidder must be a professional to sell goods in this bid.
- 4.2 Bidder has never been on the blacklist of the Thai Government, or as a result of not receiving orders to another entity or person who is blacklisted by the Thai Government.
- 4.3 Bidder must act as principal for its own account and not as agent or broker. If any Bidder has a coordinator in Thailand, the name and contact details of such coordinator must be clearly specified in the proposal.
- 4.4 Bidder must have own bank account where receive/payment shall be made, except, if each payment is not over 30,000 Bath, the counter party may receive/paid by cash.

5. Document for Consideration

5.1 Bidder's Qualification Document

- 5.1.1 Copy of Company Registration/Affidavit1 and certified true copy.
- 5.1.2 Letter of power of attorney, in case of the bidder is authorized the behalf to bid, sign in the bid, or in the other cases. The letter shall be affixed the duty and enclosed with the copy of the identity card or passport and/or household registration, which declare both of the authorizer and behalf. Notarisation is required.

5.2 Technical Specification Document

- 5.2.1 The details of specification of goods in this bid must meet the buyer's requirements. The bidder must clearly identify the manufacturer profile and the country of origin.
- 5.2.2 Copy of List of document showing that the bidder sold similar system to install in the Royal Thai Navy Offshore Patrol Vessel.
- 5.2.3 If the Technical Specification documents do not comply with item 5.2.1 - 5.2.2, the buyer reserves the right not to consider the bidder.

6. Delivery and Acceptance

- 6.1 If the goods are transported via sea freight that has Thai flag or the same privilege vessel in operation, Thai flag or the same privilege vessel shall be used. Relevant Bill of Lading shall also be provided.
- 6.2 In the event that the delivery will be delayed due to the non-availability of a Thai Registered Vessel, the bidder shall request an exemption from Bangkok Dock and will be responsible for any such costs incurred seeking such an exemption from the relevant authorities in Thailand. The bidder shall give a minimum of 30 days' notice of a request for an exemption.
- 6.3 The bidder must declare document and/or evidence of delivered goods that meet the specification and standard which specified in Contract or purchase order (PO) as stated in all respects.
- 6.4 If the delivered goods from bidder do not meet the requirements, buyer reserves the right to reject those goods. And in this case, the bidder must immediately take the right to change immediately.
- 6.5 Goods which successfully pass FAT shall be delivered to the Bangkok Dock Warehouse, Sattahip, Chonburi, not more than 7 Months after receiving Purchasing Order (PO) or Contract Effective Date (CED).

7. Warranty

Warranty period shall be not less than 12 months after the ship delivery to the RTN or 36 months after goods delivered to the Bangkok Dock Warehouse, Sattahip, Chonburi.

8. Assurance

All Main Switch Boards shall be according to class rules subjected to class approval. Bidder shall provide the class certificates in original. In some single cases only copies of class certificates could be accepted.

The bidder shall confirm the quality assurance by issuing a copy of its quality plan that complies with ISO (latest standard) at no extra cost to the buyer.

9. Penalty

If the bidder cannot deliver on time as buyer's scheduled, bidder must pay on a daily rate penalty of 0.2 percent of the goods value that are not delivered from the date of delivery until the date that the bidder has fulfilled the conditions in the contract or PO.

When the penalty reaches the maximum of 10% and if the equipment is still not delivered after this period then buyer shall be entitled to terminate the contract and seek further recompense if buyer has to source an alternative supplier for the equipment. In addition buyer would expect a refund of all payments made.

10. Performance Guarantee

At the time of execution of the contract, the bidder shall submit to buyer a Performance Guarantee in an amount of five percent (5%) of the contract value in favour of the buyer by a first class bank operating in Thailand. The Performance Guarantee shall valid until the end of the agreed warranty period.

In the event the bidder requires an advance payment, the bidder shall issue an Advance Payment Guarantee via a first class bank operating in Thailand and remain valid up to the point of delivery. No advance payment will be made until the Advance Payment Guarantee has been issued to buyer.

11. Condition of Payment

11.1 Payments shall be;

- 15% advance payment against an advance payment guarantee of 15 percent of contract value in favour of the buyer
- 80% on the delivery of goods at the Bangkok Dock warehouse, Sattahip Chonburi
- 5% after the successful Sea Acceptance Trial

11.2 Payments by this condition shall be made out of an Irrecoverable and Confirmed Letter of Credit. The bidder is responsible for any other charges related to the transfer of the bank levy, and consent to such deductions from the amount transferred in that period.

11.3 The bank must be a first class bank operating in Thailand.

12. Export Licenses/End User Certificate

In the event of the bidder's equipment requires bidder's Government to issue an Export License before the equipment can be shipped to Thailand, the bidder must advise buyer immediately and provide the required format of the End- User Certificate needed to satisfy its authorities. It should be noted that the issuing of an End-User certificate can take up to 90 days and this should be taken into consideration when requesting such a document from buyer.

13. Law of the Contract

The contract shall be subjected to the Laws of the Kingdom of Thailand with the right to go to Arbitration in the event a dispute cannot be resolved. Arbitration shall be in accordance with current ICC rules and shall take place in Bangkok, Thailand.

14. Technical Requirement

ANNEX A: Technical Requirement Specification

ANNEX A
Technical Requirement Specification
Distribution Board, Starter Boxes , Shock Mount (Non Lock Out Equipments)
For the Royal Thai Navy Offshore Patrol Vessel

1. Requirement

1 (one) set of SIEMENS Distribution Board, Starter Boxes and Shock Mount (Non Lock Out Equipments) including Factory Acceptance Test (FAT) Commissioning, Setting to Work, Harbour Acceptance Trial, Sea Acceptance Trial and Operation Training.

2. Technical Specifications

2.1 Equipment Design

The required Non lock out equipments shall be designed according to the following detail drawings:

- One line diagram for 3ph 380V 50Hz Mechanical workshop Power Panel (380MEPP)
DWG. No. B90-552-320-10-09-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3ph 380/220V 50Hz Galley Panel (380/220GP)
DWG. No. B90-552-320-10-10-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3ph 380V 50Hz Steering Gear Control Panel (SGCP)
DWG. No. B90-552-320-10-13-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3ph 220V 50Hz Power Switchboard No.1 (220PSB1)
DWG. No. B90-552-320-20-01-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3ph 220V 50Hz Power Switchboard No.2 (220PSB2)
DWG. No. B90-552-320-20-02-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3ph 220V 50Hz Power Switchboard No.3 (220PSB3)
DWG. No. B90-552-320-20-03-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3ph 220V 50Hz Power Switchboard No.4 (220PSB4)
DWG. No. B90-552-320-20-04-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3ph 220V 50Hz Power Panel No.1 (P1)
DWG. No. B90-552-320-20-05-00 Rev. A1, Date 04/03/16, 2 sheet
- One line diagram for 3ph 220V 50Hz Power Panel No.1/1 (P1/1)
DWG. No. B90-552-320-20-06-00 Rev. A1, Date 04/05/16, 2 sheet
- One line diagram for 3ph 220V 50Hz Power Panel No.2 (P2)
DWG. No. B90-552-320-20-07-00 Rev. A1, Date 05/05/16, 1 sheet
- One line diagram for 3ph 220V 50Hz Power Panel No.3 (P3)
DWG. No. B90-552-320-20-08-00 Rev. A1, Date 04/05/16, 2 sheet
- One line diagram for 3ph 220V 50Hz Power Panel No.4 (P4)
DWG. No. B90-552-320-20-09-00 Rev. A1, Date 04/05/16, 3 sheet
- One line diagram for 3ph 220V 50Hz Power Panel No.5 (P5)
DWG. No. B90-552-320-20-10-00 Rev. A1, Date 04/03/16, 2 sheet
- One line diagram for 3ph 220V 50Hz Power Panel No.6 (P6)
DWG. No. B90-552-320-20-11-00 Rev. A1, Date 04/05/16, 3 sheet
- One line diagram for 3ph 220V 50Hz Helicopter Landing Aids Panel (HLAP)
DWG. No. B90-552-320-20-12-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3ph 220V 50Hz Hospital Panel (HP)
DWG. No. B90-552-320-20-13-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3ph 220V 50Hz Laundry Panel (220LDP)
DWG. No. B90-552-320-20-14-00 Rev. A1, Date 04/03/16, 2 sheet
- One line diagram for 220V Canteen Panel (220CTP)
DWG. No. B90-552-320-20-15-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for Integrated Platform Management System Panel (IPMSP)
DWG. No. B90-552-320-20-16-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for Integrated Navigation System Panel (INSP)
DWG. No. B90-552-320-20-17-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for Integrated Communication System Panel (ICSP)

- DWG. No. B90-552-320-20-18-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 220V Bridge window Heats & Window Wiper Control panel
- DWG. No. B90-552-320-20-19-00 Rev. A1, Date 04/03/16, 2 sheet
One line diagram for 24VDC Distribution Board No. 1 (24DB1)
- DWG. No. B90-552-320-30-01-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Distribution Board No. 2 (24DB2)
- DWG. No. B90-552-320-30-02-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Distribution Board No. 3 (24DB3)
- DWG. No. B90-552-320-30-03-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Distribution Board No. 4 (24DB4)
- DWG. No. B90-552-320-30-04-00 Rev. A1, Date 04/03/16, 2 sheet
One line diagram for 24VDC Local Panel No.1 (24LCP1)
- DWG. No. B90-552-320-30-05-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Local Panel No.2 (24LCP2)
- DWG. No. B90-552-320-30-06-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Local Panel No.3 (24LCP3)
- DWG. No. B90-552-320-30-07-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Local Panel No.4 (24LCP4)
- DWG. No. B90-552-320-30-08-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Local Panel No.5 (24LCP5)
- DWG. No. B90-552-320-30-09-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Local Panel No.6 (24LCP6)
- DWG. No. B90-552-320-30-10-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Local Panel No.7 (24LCP7)
- DWG. No. B90-552-320-30-11-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Local Panel No.8 (24LCP8)
- DWG. No. B90-552-320-30-12-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Local Panel No.9 (24LCP9)
- DWG. No. B90-552-320-30-13-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Integrated Navigation System (24INS)
- DWG. No. B90-552-320-30-14-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 24VDC Deck Flood Light
- DWG. No. B90-552-330-20-08-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 3Ph 115V 60Hz Power Distribution Panel No.1 (PDP1)
- DWG. No. B90-552-320-40-02-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 3Ph 115V 60Hz Power Distribution Panel No.2 (PDP2)
- DWG. No. B90-552-320-40-03-00 Rev. A1, Date 04/03/16, 2 sheet
One line diagram for 3Ph 115V 60Hz Power Distribution Panel No.3 (PDP3)
- DWG. No. B90-552-320-40-04-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 3Ph 115V 60Hz Power Distribution Panel No.4 (PDP4)
- DWG. No. B90-552-320-40-05-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 3Ph 115V 60Hz Power Distribution Panel No.5 (PDP5)
- DWG. No. B90-552-320-40-06-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 3Ph 115V 400Hz Power Distribution Panel (115PDP)
- DWG. No. B90-552-320-50-01-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 3Ph 115V 400Hz Distribution Board (115DB)
- DWG. No. B90-552-320-50-02-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for Mechanical Workshop Test Panel (TP1)
- DWG. No. B90-552-320-90-01-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for Electrical Workshop Test Panel (TP2)
- DWG. No. B90-552-320-90-02-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for Helicopter Workshop Test Panel (TP3)
- DWG. No. B90-552-320-90-03-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 3Ph 220V 50Hz Lighting Panel No.1 (LP1)
- DWG. No. B90-552-330-10-01-00 Rev. A1, Date 04/03/16, 1 sheet
One line diagram for 3Ph 220V 50Hz Lighting Panel No.2 (LP2)
- DWG. No. B90-552-330-10-02-00 Rev. A1, Date 04/03/16, 3 sheet
One line diagram for 3Ph 220V 50Hz Lighting Panel No.3 (LP3)
- DWG. No. B90-552-330-10-03-00 Rev. A1, Date 04/03/16, 2 sheet
One line diagram for 3Ph 220V 50Hz Lighting Panel No.4 (LP4)
- DWG. No. B90-552-330-10-04-00 Rev. A1, Date 04/05/16, 3 sheet

- One line diagram for 3Ph 220V 50Hz Lighting Panel No.5 (LP5)
DWG. No. B90-552-330-10-05-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3Ph 220V 50Hz Lighting Panel No.6 (LP6)
DWG. No. B90-552-330-10-06-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 3Ph 220V 50Hz Lighting Panel No.7 (LP7)
DWG. No. B90-552-330-10-07-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 220V Deck Flood Light Panel (220DL)
DWG. No. B90-552-330-10-09-00 Rev. A1 Date 04/03/16, 1 sheet
- One line diagram for 220V CONTROL RED LIGHT (220 RL)
DWG. No. B90-552-330-10-10-00 Rev. A1 Date 04/05/16, 10 sheet
- One line diagram for 24VDC Emergency Lighting Panel No.1 (EL1)
DWG. No. B90-552-330-20-01-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 24VDC Emergency Lighting Panel No.2 (EL2)
DWG. No. B90-552-330-20-02-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 24VDC Emergency Lighting Panel No.3 (EL3)
DWG. No. B90-552-330-20-03-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 24VDC Emergency Lighting Panel No.4 (EL4)
DWG. No. B90-552-330-20-04-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 24VDC Emergency Lighting Panel No.5 (EL5)
DWG. No. B90-552-330-20-05-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 24VDC Emergency Lighting Panel No.6 (EL6)
DWG. No. B90-552-330-20-06-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for 24VDC Emergency Lighting Panel No.7 (EL7)
DWG. No. B90-552-330-20-07-00 Rev. A1, Date 04/03/16, 1 sheet
- One line diagram for Ceremonial Panel
DWG. No. B90-552-330-10-08-00 Rev. A1, Date 04/03/16, 2 sheet

3. Main Equipments

The main equipments shall be at least as followings:

3.1 Scope of Supply for Supply Portion (Non Lock out Equipment)

Item	Description	Brand	Q'Ty	Unit
A.	<u>SUPPLY PORTION (Non Lock out Equipment)</u>			
1.	AC Distribution Boards			
1.1	3Ph 380V 50Hz Mechanical Workshop Panel / MEPP		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	8	Ea
	Shunt Trip for MCB	SIEMENS	1	Ea
1.2	3Ph 380/220V 50Hz Galley Panel / 380/220GP		1	Set
	<u>Incoming 380V</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	6	Ea
	Shunt Trip for MCB	SIEMENS	2	Ea
	<u>Incoming 220V</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	5	Ea
1.3	Test Panel for Mechanical Workshop / TP1		1	Set
	<u>Incoming 380V :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 10A, Size 10x38mm	SIEMENS	3	Ea
	Fuse Base 3 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	2	Ea
	Power Socket 3P+E, 16A, 400V		2	Ea
	<u>Incoming 220V :</u>			

Item	Description	Brand	Q'Ty	Unit
	3P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 20A, Size 10x38mm	SIEMENS	3	Ea
	Fuse Base 3 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	Power Socket 2P+E, 20A, 230V		1	Ea
	<u>Incoming 24Vdc :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 25A, Size 10x38mm	SIEMENS	2	Ea
	Fuse Base 2 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	Power Socket 2P+E, 25A		1	Ea
1.4	Test Panel for Electrical Workshop / TP2		1	Set
	<u>Incoming 380V :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 10A, Size 10x38mm	SIEMENS	3	Ea
	Fuse Base 3 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	2	Ea
	Power Socket 3P+E, 16A, 400V		2	Ea
	<u>Incoming 220V :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 20A, Size 10x38mm	SIEMENS	3	Ea
	Fuse Base 3 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	Power Socket 2P+E, 32A, 230V		1	Ea
	<u>Incoming 24Vdc :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 25A, Size 10x38mm	SIEMENS	2	Ea

Item	Description	Brand	Q'Ty	Unit
	Fuse Base 2 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	Power Socket 2P+E, 25A		1	Ea
1.5	Test Panel for Helicopter Workshop / TP3		1	Set
	<u>Incoming 115V :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 10A, Size 10x38mm	SIEMENS	3	Ea
	Fuse Base 3 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Power Socket 3P+E, 16A, 400V		1	Ea
	<u>Incoming 380V :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 10A, Size 10x38mm	SIEMENS	3	Ea
	Fuse Base 3 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	2	Ea
	Power Socket 3P+E, 16A, 400V		2	Ea
	<u>Incoming 220V :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 20A, Size 10x38mm	SIEMENS	3	Ea
	Fuse Base 3 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	Power Socket 2P+E, 32A, 230V		1	Ea
	<u>Incoming 24Vdc :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	Cylindrical Fuse Link 16A, Size 10x38mm	SIEMENS	2	Ea
	Fuse Base 2 P/32 A, Size 10x38mm	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			

Item	Description	Brand	Q'Ty	Unit
	2P MCB 63AF	SIEMENS	1	Ea
	Power Socket 2P+E, 16A		1	Ea
1.6	3Ph 220V 50Hz Power Switch Board No.1 / 220PSB1		1	Set
	<u>Incoming :</u>			
	3P MCCB 160AF	SIEMENS	2	Ea
	Rear Interlock Module	SIEMENS	1	Ea.
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	12	Ea
	Shunt Trip for MCB	SIEMENS	1	Ea
1.7	3Ph 220V 50Hz Power Switch Board No.2 / 220PSB2		1	Set
	<u>Incoming :</u>			
	3P MCCB 160AF	SIEMENS	2	Ea
	Rear Interlock Module	SIEMENS	1	Ea.
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	9	Ea
1.8	3Ph 220V 50Hz Power Switch Board No.3 / 220PSB3		1	Set
	<u>Incoming :</u>			
	3P MCCB 160AF	SIEMENS	2	Ea
	Rear Interlock Module	SIEMENS	1	Ea.
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	15	Ea
	Shunt Trip for MCB	SIEMENS	3	Ea
1.9	3Ph 220V 50Hz Power Switch Board No.4 / 220PSB4		1	Set
	<u>Incoming :</u>			
	3P MCCB 160AF	SIEMENS	2	Ea

Item	Description	Brand	Q'Ty	Unit
	Rear Interlock Module	SIEMENS	1	Ea.
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	9	Ea
1.10	3Ph 220V 50Hz Power Panel No.1 / P1		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	2P MCB 63AF	SIEMENS	31	Ea
	Shunt Trip for MCB	SIEMENS	8	Ea
1.11	3Ph 220V 50Hz Power Panel No.1/1 / P1/1		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	13	Ea
1.12	3Ph 220V 50Hz Power Panel No.2 / P2		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	12	Ea
	Shunt Trip for MCB	SIEMENS	1	Ea
1.13	3Ph 220V 50Hz Power Panel No.3 / P3		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	18	Ea
	Shunt Trip for MCB	SIEMENS	3	Ea

Item	Description	Brand	Q'Ty	Unit
1.14	3Ph 220V 50Hz Power Panel No.4 / P4		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	25	Ea
	Shunt Trip for MCB	SIEMENS	5	Ea
1.15	3Ph 220V 50Hz Power Panel No.5 / P5		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	20	Ea
	Shunt Trip for MCB	SIEMENS	1	Ea
1.16	3Ph 220V 50Hz Power Panel No.6 / P6		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	31	Ea
	Shunt Trip for MCB	SIEMENS	4	Ea
1.17	3Ph 220V 50Hz Helicopter Landing Aids Panel / HLAP		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	12	Ea
1.18	Hospital Panel / HP		1	Set
	<u>Incoming 220V:</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Transformer 220V/24V		1	Ea

Item	Description	Brand	Q'Ty	Unit
	<u>Outgoing Feed 220V:</u>			
	2P MCB 63AF	SIEMENS	5	Ea
	<u>Incoming 24VAC:</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed 24VAC:</u>			
	Cylindrical Fuse Link 2A, Size 10x38mm	SIEMENS	4	Ea
	Fuse Base 2 P/32 A, Size 10x38mm	SIEMENS	2	Ea
	<u>Incoming 24VDC:</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed 24VDC:</u>			
	Cylindrical Fuse Link 2A, Size 10x38mm	SIEMENS	4	Ea
	Fuse Base 2 P/32 A, Size 10x38mm	SIEMENS	2	Ea
1.19	<i>Integrated Navigation System Panel / INSP</i>		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	11	Ea
1.20	<i>3Ph 220V 50Hz Laundry Panel / 220LDP</i>		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	16	Ea
1.21	<i>Integrated Communication System Panel / ICSP</i>		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	15	Ea
1.22	<i>Integrated Platform Management System Panel / IPMSP</i>		1	Set
	<u>Incoming :</u>			

Item	Description	Brand	Q'Ty	Unit
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	12	Ea
1.23	3Ph 220V 50Hz Canteen Panel / 220CTP		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	8	Ea
1.24	3Ph 220V 50Hz Bridge Window Heats & Window Wiper Control Panel / 220BWP		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	18	Ea
1.25	220V Deck Light / 220DL		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	17	Ea
	MAGNETIC CONTACTOR W/ Aux. Contact Block 2NO+2NC	SIEMENS	9	Ea
1.26	220V Red Light Panel / 220RL		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	MAGNETIC CONTACTOR W/ Aux. Contact Block 2NO+2NC	SIEMENS	44	Ea
1.27	3Ph 220V 50Hz Lighting Panel No.1 / LP1		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea

Item	Description	Brand	Q'Ty	Unit
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	20	Ea
1.28	3Ph 220V 50Hz Lighting Panel No.2 / LP2		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	17	Ea
	MAGNETIC CONTACTOR With Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
1.29	3Ph 220V 50Hz Lighting Panel No.3 / LP3		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	13	Ea
1.30	3Ph 220V 50Hz Lighting Panel No.4 / LP4		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	18	Ea
	MAGNETIC CONTACTOR With Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
1.31	3Ph 220V 50Hz Lighting Panel No.5 / LP5		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	11	Ea
1.32	3Ph 220V 50Hz Lighting Panel No.6 / LP6		1	Set
	<u>Incoming :</u>			

Item	Description	Brand	Q'Ty	Unit
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	12	Ea
	MAGNETIC CONTACTOR With Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
1.33	3Ph 220V 50Hz Lighting Panel No.7 / LP7		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	9	Ea
1.34	CEREMONIAL PANEL NO.1 / CP1		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	7	Ea
1.35	CEREMONIAL PANEL NO.2 / CP2		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	7	Ea
1.36	CEREMONIAL PANEL NO.3 / CP3		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	7	Ea
1.37	CEREMONIAL PANEL NO.4 / CP4		1	Set
	<u>Incoming :</u>			

Item	Description	Brand	Q'Ty	Unit
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	7	Ea
1.38	3Ph 115V 400Hz Power Distribution Panel / 115PDP		1	Set
	<u>Incoming :</u>			
	3P MCB 125AF	SIEMENS	2	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	3P MCCB 160AF		6	Ea
1.39	3Ph 115V 400Hz Distribution Board / 115DB		1	Set
	<u>Incoming :</u>			
	4P MCCB 160AF	SIEMENS	1	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	4P MCCB 160AF	SIEMENS	4	Ea
1.40	3Ph 115V 60Hz Power Distribution Panel No.1 / PDP1		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	6	Ea
	2P MCB 63AF	SIEMENS	9	Ea
1.41	3Ph 115V 60Hz Power Distribution Panel No.2 / PDP2		1	Set
	<u>Incoming :</u>			
	3P MCB 125AF	SIEMENS	1	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	4	Ea
	2P MCB 63AF	SIEMENS	27	Ea

Item	Description	Brand	Q'Ty	Unit
	2P MCB 80AF	SIEMENS	2	Ea
1.42	3Ph 115V 60Hz Power Distribution Panel No.3 / PDP3		1	Set
	<u>Incoming :</u>			
	3P MCB 63AF	SIEMENS	1	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	13	Ea
1.43	3Ph 115V 60Hz Power Distribution Panel No.4 / PDP4		1	Set
	<u>Incoming :</u>			
	3P MCB 125AF	SIEMENS	1	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	4	Ea
1.44	3Ph 115V 60Hz Power Distribution Panel No.5 / PDP5		1	Set
	<u>Incoming :</u>			
	3P MCB 125AF	SIEMENS	1	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	4	Ea
1.45	3Ph 380V 50Hz Steering Gear Control Panel / SGCP		1	Set
	<u>Incoming :</u>			
	3P MCB 16AT/63AF	SIEMENS	2	Ea
	3P MCCB 160AF	SIEMENS	2	Ea
	<u>Outgoing Feed :</u>			
	3P MCB 63AF	SIEMENS	4	Ea
	3P MCCB 100AF	SIEMENS	2	Ea
	2P MCB 63AF	SIEMENS	8	Ea
2.	DC Distribution Boards			
2.1	24VDC Distribution Board No.1 / 24DB1		1	Set

Item	Description	Brand	Q'Ty	Unit
	<u>Incoming :</u>			
	1P HRC fuse base 160A	SIEMENS	6	Ea
	HRC Fuse Link 100A	SIEMENS	6	Ea
	Power Diode 100A		1	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	13	Ea
2.2	24VDC Distribution Board No.2 / 24DB2		1	Set
	<u>Incoming :</u>			
	1P HRC fuse base 160A	SIEMENS	8	Ea
	HRC Fuse Link 100A	SIEMENS	8	Ea
	DIODE 100A		1	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	16	Ea
	2P MCB 80AF	SIEMENS	2	Ea
2.3	24VDC Distribution Board No.3 / 24DB3		1	Set
	<u>Incoming :</u>			
	1P HRC fuse base 160A	SIEMENS	8	Ea
	HRC Fuse Link 100A	SIEMENS	8	Ea
	DIODE 100A		1	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	14	Ea
2.4	24VDC Distribution Board No.4 / 24DB4		1	Set
	<u>Incoming :</u>			
	1P HRC fuse base 160A	SIEMENS	6	Ea
	HRC Fuse Link 100A	SIEMENS	6	Ea
	DIODE 100A		1	Ea

Item	Description	Brand	Q'Ty	Unit
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	23	Ea
2.5	24VDC Local Panel No.1 / 24LCP1		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	12	Ea
2.6	24VDC Local Panel No.2 / 24LCP2		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	9	Ea
2.7	24VDC Local Panel No.3 / 24LCP3		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	8	Ea
2.8	24VDC Local Panel No.4 / 24LCP4		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	6	Ea
2.9	24VDC Local Panel No.5 / 24LCP5		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			

Item	Description	Brand	Q'Ty	Unit
	2P MCB 63AF	SIEMENS	20	Ea
2.10	24VDC Local Panel No.6 / 24LCP6		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	16	Ea
2.11	24VDC Local Panel No.7 / 24LCP7		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	12	Ea
2.12	24VDC Local Panel No.8 / 24LCP8		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	18	Ea
2.13	24VDC Local Panel No.9 / 24LCP9		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	5	Ea
2.14	24VDC Integrated Navigation Aid Equipment / 24INS		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	10	Ea

Item	Description	Brand	Q'Ty	Unit
2.15	24VDC Emergency Lighting Panel No.1 / ELP1		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	DC MAGNETIC CONTACTOR 32A	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	6	Ea
2.16	24VDC Emergency Lighting Panel No.2 / ELP2		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	DC MAGNETIC CONTACTOR 75A	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	11	Ea
2.17	24VDC Emergency Lighting Panel No.3 / ELP3		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	DC MAGNETIC CONTACTOR 32A	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	9	Ea
2.18	24VDC Emergency Lighting Panel No.4 / ELP4		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	DC MAGNETIC CONTACTOR 32A	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	9	Ea
2.19	24VDC Emergency Lighting Panel No.5 / ELP5		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	DC MAGNETIC CONTACTOR 32A	SIEMENS	1	Ea

Item	Description	Brand	Q'Ty	Unit
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	7	Ea
2.20	24VDC Emergency Lighting Panel No.6 / ELP6		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	DC MAGNETIC CONTACTOR 32A	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	7	Ea
2.21	24VDC Emergency Lighting Panel No.7 / ELP7		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	DC MAGNETIC CONTACTOR 32A	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	6	Ea
2.22	24VDC Deck Flood Light / 24DFL		1	Set
	<u>Incoming :</u>			
	2P MCB 63AF	SIEMENS	1	Ea
	<u>Outgoing Feed :</u>			
	2P MCB 63AF	SIEMENS	6	Ea
	DC MAGNETIC CONTACTOR W/ Aux. Contact Block 2NO+2NC	SIEMENS	4	Ea
3.	Automatic Changeover Switch (ACOS)			
3.1	Automatic Changeover Switch No.1 / ACOS1		1	Set
	3P MCCB 160AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 80A / Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
3.2	Automatic Changeover Switch No.2 / ACOS2		1	Set

Item	Description	Brand	Q'Ty	Unit
	3P MCCB 250AF W/ Motorize operating Mechanisms	SIEMENS	2	Ea
	<u>Outgoing Feed :</u>			
	3P MCCB 250AF with shunt trip	SIEMENS	1	Ea
3.3	Automatic Changeover Switch No.3 / ACOS3		1	Set
	3P MCCB 160AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 80A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
3.4	Automatic Changeover Switch No.4 / ACOS4		1	Set
	3P MCCB 160AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 80A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
3.5	Automatic Changeover Switch No.5 / ACOS5		1	Set
	<u>Incoming:</u>			
	3P MCCB 160AF	SIEMENS	3	Ea
	MAGNETIC CONTACTOR 80A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
	Power Socket 3P+E, 32A, 400V		2	Ea
	<u>Outgoing Feed:</u>			
	3P MCCB 160AF	SIEMENS	4	Ea
3.6	Automatic Changeover Switch No.6 / ACOS6		1	Set
	<u>Incoming:</u>			
	3P MCCB 160AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 63A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
	<u>Outgoing Feed:</u>			
	3P MCCB 160AF	SIEMENS	1	Ea
3.7	Automatic Changeover Switch No.7 / ACOS7		1	Set
	<u>Incoming:</u>			
	3P MCCB 160AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 80A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea

Item	Description	Brand	Q'Ty	Unit
3.8	Automatic Changeover Switch No.8 / ACOS8		1	Set
	<u>Incoming:</u>			
	3P MCB 63AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 80A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed:</u>			
	3P MCB 63AF	SIEMENS	2	Ea
3.9	Automatic Changeover Switch No.9 / ACOS9		1	Set
	<u>Incoming:</u>			
	3P MCCB 160AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 80A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
	<u>Outgoing Feed:</u>			
	3P MCCB 160AF	SIEMENS	1	Ea
3.10	Automatic Changeover Switch No.10 / ACOS10		1	Set
	<u>Incoming:</u>			
	3P MCCB 160AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 80A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
3.11	Automatic Changeover Switch No.11 / ACOS11		1	Set
	<u>Incoming:</u>			
	3P MCB 63AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 80A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
	Metering device	DEIF	1	Lot
	<u>Outgoing Feed:</u>			
	3P MCB 63AF	SIEMENS	2	Ea
3.12	Automatic Changeover Switch No12 / ACOS12		1	Set
	3P MCCB 630AF W/ Motorize operating Mechanisms	SIEMENS	2	Ea
	<u>Outgoing Feed :</u>			

Item	Description	Brand	Q'Ty	Unit
	3P MCCB 630AF	SIEMENS	1	Ea
3.13	Automatic Changeover Switch No.13 / ACOS13		1	Set
	<u>Incoming:</u>			
	3P MCCB 160AF	SIEMENS	2	Ea
	MAGNETIC CONTACTOR 63A W/ Aux. Contact Block 2NO+2NC	SIEMENS	2	Ea
4.	Changeover Switch (COS)			
4.1	Changeover Switch No.1 / COS1		1	Set
	3P Changeover switch 20 A	K&N	1	Ea
4.2	Changeover Switch No.2 / COS2		1	Set
	3P Changeover switch 20 A	K&N	1	Ea
4.3	Changeover Switch No.3 / COS3		1	Set
	3P Changeover switch 20 A	K&N	1	Ea
4.4	Changeover Switch No.4 / COS4		1	Set
	3P Changeover switch 20 A	K&N	1	Ea
4.5	Changeover Switch No.5 / COS5		1	Set
	3P Changeover switch 40 A	K&N	1	Ea
4.6	Changeover Switch No.6 / COS6		1	Set
	3P Changeover switch 20 A	K&N	1	Ea
4.7	Changeover Switch No.7 / COS7		1	Set
	3P Changeover switch 26 A	K&N	1	Ea
4.8	Changeover Switch No.8 / COS8		1	Set
	3P Changeover switch 40 A	K&N	1	Ea
4.9	Changeover Switch No.9 / COS9		1	Set

Item	Description	Brand	Q'Ty	Unit
	3P Changeover switch 63 A	K&N	1	Ea
4.10	Changeover Switch No.10 / COS10		1	Set
	3P Changeover switch 63 A	K&N	1	Ea
4.11	Changeover Switch No.11 / COS11		1	Set
	3P Changeover switch 40 A	K&N	1	Ea
4.12	Changeover Switch No.12 / COS12		1	Set
	3P Changeover switch 100 A	K&N	1	Ea
5.	Shore Boxes			
5.1	Shore Box No.1 / SB1		1	Set
	<u>Incoming:</u>			
	3P MCCB 800AF	SIEMENS	1	Ea
	Metering device	DEIF	1	Ea
	Power socket 3P+E, 315A, 400V		3	Ea
5.2	Shore Box No.2 / SB2		1	Set
	<u>Incoming:</u>			
	3P MCCB 800AF	SIEMENS	1	Ea
	Metering device	DEIF	1	Ea
	Power socket 3P+E, 315A, 400V		3	Ea
6.	Starter Boxes			
6.1	Fire Pump Control Panel No.1 (30kW)		1	Set
	Soft Starter Set for Motor 30kW	SIEMENS	1	Set
6.2	Fire Pump Control Panel No.2 (30kW)		1	Set
	Soft Starter Set for Motor 30kW	SIEMENS	1	Set
6.3	Fire Pump Control Panel No.3 (30kW)		1	Set

Item	Description	Brand	Q'Ty	Unit
	Soft Starter Set for Motor 30kW	SIEMENS	1	Set
6.4	Gray Water Control Panel No.1 (7.5kW)		1	Set
	Star-Delta Set for Motor 7.5kW	SIEMENS	1	Set
6.5	Gray Water Control Panel No.2 (7.5kW)		1	Set
	Star-Delta Set for Motor 7.5kW	SIEMENS	1	Set
6.6	Gray Water Control Panel No.3 (7.5kW)		1	Set
	Star-Delta Set for Motor 7.5kW	SIEMENS	1	Set
6.7	Fuel Oil Transfer Pump Control Panel No.1 (2.2kW)		1	Set
	Direct online Set for Motor 2.2kW	SIEMENS	1	Set
6.8	Fuel Oil Transfer Pump Control Panel No.2 (2.2kW)		1	Set
	Direct online Set for Motor 2.2kW	SIEMENS	1	Set
6.9	Lube Oil Transfer Pump Control Panel (0.37kW)		1	Set
	Direct online Set for Motor 0.37kW	SIEMENS	1	Set
6.10	Waste Pump Control Panel (0.9kW)		1	Set
	Direct online Set for Motor 0.9kW	SIEMENS	1	Set
6.11	Helicopter Wash Down Pump (0.55kW)		1	Set
	Direct online Set for Motor 0.5kW	SIEMENS	1	Set
6.12	Fresh Water Pump Control Panel (0.3kW)		1	Set
	Direct online Set for Motor 0.3kW	SIEMENS	1	Set
7.	Shock Mounted			
7.1	Vibration Mount Maximum load: 420kg. (Floor mounted cabinets)		20	Ea.

Item	Description	Brand	Q'Ty	Unit
7.2	Vibration Mount Maximum load: 40kg. (Wall mounted cabinets)		552	Ea.

3.2 Scope of Supply for Service Portion

Item	Description	Unit	Q,ty
B.	<u>SERVICE PORTION</u>		
1.	Test & Commissioning	1	Job
2.	Support for Setting Work	1	Job
3.	Harbor Acceptance Test (4 man-day)	1	Job
4.	Sea Trial (2 man-day)	1	Job
5.	Operation Training for MSB, Distribution Boards (Maximum for 15 Person at Royal Navy Shipyards for 2 days)	1	Job
C.	<u>OPTIONAL</u>		
1.	Function Tester (ACB) and Operation Training (1 Day) Siemens / 3WL9111-0AT14-0AA0	1	Set

4 **Equipment Brands**

Brands of the equipments shall be as followings:

ITEMS	DESCRIPTION	BRANDS
1	AIR CIRCUIT BREAKER	SIEMENS
2	MOLDRD CASE CIRCUIT BREAKER	SIEMENS
3	MINIATURE CIRCUIT BREAKER	SIEMENS
4	STARTER	SIEMENS
5	METERING	DEIF
6	CURRENT TRANSFORMER	European Zone
7	CONTROL TRANSFORMER	SIEMENS
8	LOAD SHARING AND SYNCRONIZING	DEIF
9	ALARM INDICATION PANEL	DEIF
10	POWER TRANSFORMER	DOE

5 **Technical Documentation**

The following documents are required:

- Instruction Manual for Operating and Maintenance
- Drawings (Shop drawings, As-built drawings)
- ILS document
- Technical Manual
- Factory Acceptance Test Record
- All document, 1 original, 2 copies, 1 soft copy shall be provided

6 Support Services

Bidder shall provide support services for the commissioning, Setting to Work, Harbour Acceptance and Sea Acceptance Trials.

7 Factory Acceptance Test

Buyer and the Royal Thai Navy (RTN) reserve the right to attend Factory Acceptance Tests. The bidder will be responsible for all costs in their country, including provision of test fuel and labour in the event that we wish to attend Factory Acceptance Tests. Costs of personnel travel and accommodation shall be responsible of the buyer. If there is a failure of the equipment not to pass the Factory Acceptance Test, the bidder shall be responsible for all additional costs incurred by the party attending the tests.

The bidder shall give 90 days' notice of the intended date for the Factory Acceptance Test of the equipment to enable adequate planning to be made for a team to visit. The bidder shall provide all assistance required to obtain any visa that may be required to enter the bidder's country.

8 Spare Parts

Price and list of recommended base spare parts and carried on-board spare parts for 30 days operation shall be provided.

9 Training

The bidder shall provide Operator Training at the buyer training facilities in Sattahip, Chonburi.

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