



Sr. No	Description	Reference Specification
<b>1</b>	<b>33KV Line Remote Control Panel made of steel sheet</b>	
<b>1.1</b>	<b>Enclosure</b>	
	Maker	<b>Ample Engineering</b>
	Country of Origin	Thailand
	Standard	IEC
	Sheet Thickness	min; 2mm
	Coating Colour	Cement Gray
	Coating Thickness	50~86µ
<b>1.2</b>	<b>Discrepancy switch for GCB &amp; DS</b>	Included
	Maker	Fuji
	Country of Origin	Japan
	Type	DHL-Y3b4
	Interlock facility for DS	Included
<b>1.3</b>	<b>Annunciators Lamp (Including Low Gas Pressure Alarm Lockout for GCB)</b>	Included
	Maker	<b>ESPAN</b>
	Country of Origin	Thailand
	Type	ESPAN02E
	No; of window	16 windows
	Position Indicator for CB , DS ,ES ON/OFF Position	Included
	Bell for Trip,Buzzer for alarm	Included
	Master Trip Relay with Reset Button(86)	Included
	<b>Measuring Meters</b> ( The meters have day light reading LED or LCD Display. CT & VT ratio must be programmed and all values are displayed in primary values. )	
<b>1.4</b>	<b>Ammeter - 1 No</b>	Included
	Maker	<b>Iskra/MoGa</b>
	Country of Origin	Slovakia/Taiwan
	Type	FQ0207/AC96
	Class	1.5
<b>1.5</b>	<b>Voltmeter - 1 No ( 3 L-L Voltage (1 page display)) (3L-N Vtg (1 page display))</b>	Included
	Maker	<b>Iskra/MoGa</b>
	Country of Origin	Slovakia/Taiwan
	Type	FQ0207/AC96
	Class	1.5
<b>1.6</b>	<b>MW Meter - 1 No</b>	Included
	Maker	<b>Amptron/MoGa</b>
	Country of Origin	Singapore/Taiwan
	Type	DLMQB96/W96-33
	Class	1.5
<b>1.7</b>	<b>MVar Meter - 1 No</b>	Included
	Maker	<b>Amptron/MoGa</b>
	Country of Origin	Singapore/Taiwan
	Type	DLMQB96/Q96-33
	Class	1.5
<b>1.8</b>	<b>Power Factor Meter - 1 No</b>	Included
	Maker	<b>MoGa</b>
	Country of Origin	Taiwan
	Type	PF96
	Class	1.5
<b>1.8</b>	<b>Digital Frequency Meter - 1 No</b>	Included
	Maker	<b>Amtrol/MoGa</b>
	Country of Origin	Singapore/Taiwan
	Type	DPM96AK/H96
	Class	1.5
<b>1.9</b>	<b>Three phase Three wire kWhr Meter - 1 No</b>	Included
	Maker	<b>Landis+Gyr/EMH</b>
	Country of Origin	Switzerland/Germany



Sr. No	Description	Reference Specification
	Type	ZFD405CT44.0007/LZQJ (Panel Mounted Digital Type)
	Technical specifications for kWhr Meter are as follow;	
	(a)Conformed Standard - IEC 62053	Yes
	(b) Rated Input Voltage- 110 Vac (L-L)/63.5 Vac (L-N).	Yes
	For wide vtg range,110 Vac (L-L)/63.5 Vac (L-N) must be included in the input vtg range	
	(c)Rated Input crt - 5 A	Yes
	(d)Rated Input Frequency =50 Hz	Yes
	(e)V.T ratio = As Stated in Item No-4	Yes
	(f)C.T ratio = As Stated in Item No.5	Yes
	(g)Accuracy Class=0.5	Yes
	(h)Operating Voltage-	
	(1) 110 Vac (L-L)/63.5 Vac (L-N) fixed or must be included in the operating vtg range	Yes
	(2) Self powered	Yes
	(3) For wide range DC Operating Vtg,110 Vdc & 230 Vdc must be included	Yes
	(i)Day light reading liquid crystal display	Yes
	(j)Unidirection with reverse stop function or Bidirection ( $\pm$ Wh)	Yes
	(k)V.T ratio & C.T ratio must be programmed	Yes
	(l)Multifunction meters are products for medium Vtg	Yes
	<b>( Minimum 7 Digits for Energy Meter )</b>	
<b>1.10</b>	<b>kVarh Meter(Digital Type-Bidirectional )-1No</b> (Display with import 1 page and export 1 page)	<b>Included</b>
	Maker	<b>Landis+Gyr/EMH</b>
	Country of Origin	Switzerland/Germany
	Type	ZFD405CT44.0007/LZQJ (Panel Mounted Digital Type)
	Technical specifications for kWhr Meter are as follow;	
	(a)Conformed Standard - IEC 62053	Yes
	(b) Rated Input Voltage- 110 Vac (L-L)/63.5 Vac (L-N).	Yes
	For wide vtg range,110 Vac (L-L)/63.5 Vac (L-N) must be included in the input vtg range	
	(c)Rated Input crt - 5 A	Yes
	(d)Rated Input Frequency =50 Hz	Yes
	(e)V.T ratio = As Stated in Item No-4	Yes
	(f)C.T ratio = As Stated in Item No.5	Yes
	(g)Accuracy Class=0.5	Yes
	(h)Operating Voltage-	
	(1) 110 Vac (L-L)/63.5 Vac (L-N) fixed or must be included in the operating vtg range	Yes
	(2) Self powered	Yes
	(3) For wide range DC Operating Vtg,110 Vdc & 230 Vdc must be included	Yes
	(i)Day light reading liquid crystal display	Yes
	(j)Unidirection with reverse stop function or Bidirection ( $\pm$ Wh)	Yes
	(k)V.T ratio & C.T ratio must be programmed	Yes
	(l)Multifunction meters are products for medium	Yes
	<b>( Minimum 7 Digits for Energy Meter )</b>	
	<b>(Remark : kWhr meter and kVarh Meter are displayed with by seperated or combined meter)</b>	
<b>1.11</b>	<b>Three phase Digital Multifunction Meter -1No</b>	<b>Included</b>
	Maker	<b>Schneider</b>
	Country of Origin	France
	Type	PM5350(Panel Mounted Digital Type)
	Technical specifications for kWhr Meter are as follow;	
	(a)Conformed Standard - IEC 62053	Yes



Sr. No	Description	Reference Specification
	(b) Rated Input Voltage- 110 Vac (L-L)/63.5 Vac (L-N). For wide vtg range, 110 Vac (L-L)/63.5 Vac (L-N) must be included in the input vtg range	Yes
	(c) Rated Input crt - 5 A	Yes
	(d) Rated Input Frequency =50 Hz	Yes
	(e) V.T ratio = As Stated in Item No-4	Yes
	(f) C.T ratio = As Stated in Item No.5	Yes
	(g) Accuracy Class=0.5	Yes
	(h) Operating Voltage- (1) 110 Vac (L-L)/63.5 Vac (L-N) fixed or must be included in the operating vtg range	Yes
	(2) Self powered	Yes
	(3) For wide range DC Operating Vtg, 110 Vdc & 230 Vdc must be included	Yes
	(i) Communication interfaces - RS485 and Ethernet comply to IEC 61850	Yes
	(j) Measurement value (In primary value)	
	(i) Voltage- $V_{L-L}$ (L1-L2, L2-L3, L3-L1) (kV) - $V_{L-N}$ (L1-N, L2-N, L3-N) (kV)	
	(ii) Ampere- $L_1, L_2, L_3$ (A)	
	(iii) Frequency (Hz)	
	(iv) Three phase active power (W)	
	(v) Three phase reactive power (Var)	
	(vi) Three phase apparent power (VA)	
	(vii) Three phase power factor (pf)	
	(viii) Three phase active energy ( $\pm$ Wh)	
	(ix) Three phase reactive energy ( $\pm$ Varh)	
	(x) Maximum watt demand	
	(xi) Maximum current demand	
	(k) V.T ratio and C.T ratio must be programmed.	
	(l) Multifunction meters are products for medium voltage system	
	(m) Day light reading Liquid Crystal Display.	
<b>1.12</b>	<b>Combined Directional Three Phase Overcurrent &amp; Earth Fault relay- 1 No</b>	
	Maker	<b>Schneider</b>
	Country of Origin	France/UK
	Type	Micom P127
	All relays are to be compatible with SCADA system and 230VDC operation	
	All relays are to be equipped with RS 485 & ethernet port.	
	- Voltmeter, Ammeter and frequency meter must be separated with day light reading display.	
	- MW meter, Mvar meter and Power Factor meter are separated or combined with daylight reading display.	
	For combined meter, the values of three phase MW meter, Mvar meter and p.f meter are shown in one page.	
	Control Voltage	110Vdc
	Drawing (Circuit, Dimension,) must be state	Included