

出口电能表产品技术需求表

订单号: W20181022Y02(P18-020) 国别: 菲律宾 客户: PH01 版本号: V01.00

数量: 6 交货日期: 2018-11-30 产品类型: 整机 制单日期: 2018-10-22

产品基本参数	名称: 单相两线液晶圆表	客户型号:	内部型号:
	线制: 1P2W	产品标准: ANSI	频率: 60Hz
	电流: CL200	有功常数imp/kWh: 1000	有功精度: CA0.5
	电压: 240V	无功常数imp/kvarh: 无	无功精度: 无

产品功能配置表	电能计量: <input checked="" type="checkbox"/> 有功 <input type="checkbox"/> 反向单计 <input type="checkbox"/> 无功四象限 <input type="checkbox"/> 分相计量 <input checked="" type="checkbox"/> 计量方式可设 单相产品
	需量测量: <input checked="" type="checkbox"/> 有功 需量计算方式: <input checked="" type="checkbox"/> 可配置 <input type="checkbox"/> 手动复位 <input checked="" type="checkbox"/> 累计最大需量
	瞬时量测量: P+U+I+PF+Hz 瞬时量测量备注:
	月结算: 12个月 月结算备注: 结算日可设置
	TOU: <input checked="" type="checkbox"/> 4费率 <input type="checkbox"/> 周表 <input type="checkbox"/> 公共假日 <input type="checkbox"/> 副表 TOU备注:
	RTC: <input checked="" type="checkbox"/> 硬时钟 <input type="checkbox"/> 温补 <input type="checkbox"/> 测试输出 RTC备注:
	事件记录: <input checked="" type="checkbox"/> 日志+1类+2类 事件记录备注: 日志+单独设计各20次
	负荷曲线: <input checked="" type="checkbox"/> 4通道 容量说明: 5分钟, 60天 负荷曲线备注:
	通讯方式: TTL-UART+IR 通讯规约: IEC62056-21 通讯备注:
	显示: <input checked="" type="checkbox"/> 段码LCD 整数位数: 5 小数位数: 1 <input type="checkbox"/> 背光 <input type="checkbox"/> OBIS码 <input checked="" type="checkbox"/> 停电显示 <input type="checkbox"/> 按键显示 显示备注: 显示位数可设, 默认5位整, 下排默认功率
防窃电: <input checked="" type="checkbox"/> 无 旁路启动电流: <input checked="" type="checkbox"/> 无 <input checked="" type="checkbox"/> 开上盖 <input type="checkbox"/> 开尾盖 防窃电备注:	
预付费: <input checked="" type="checkbox"/> 无 安全机制: <input checked="" type="checkbox"/> 无 预付费备注:	


产品其他相关要求	主电源: 变压器电源 后备电源: 柱状锂电池 整机功耗: IEC标准 继电器: 无
	电流采样器件: 抗直流CT采样 接线方式: ANSI S <input checked="" type="checkbox"/> 电池可更换 <input checked="" type="checkbox"/> IP54 <input checked="" type="checkbox"/> 金属挂攀
	表壳材料: PC 表壳尺寸要求: 上盖材料: PC全透明 <input type="checkbox"/> 可铅封编程按键
	端钮盒材料: PC+FG 端子孔径: 美标圆表 电流线固定方式: 拔插式固定 电压连接钩: 无
	端钮盖材料: 无 <input type="checkbox"/> 长尾盖 <input type="checkbox"/> 接线槽 表壳密封方式: 美标圆表 <input type="checkbox"/> 铅封帽
	电流螺钉材质+镀层要求: 铅封螺钉材质+镀层要求:
	铭牌材质: 无铭牌 条码要求: 无要求
	包装要求:

市场部备注信息	具体其他需求详见附件。 结构由于要有光口和需量清零按钮, 所以要用三相圆表新开的结构。
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编制/日期: 周英文/2018-10-22

审核/日期: 沈学良/2018-10-22

批准/日期: 2018-10-22


	MERALCO METERING SERVICES ASSET MANAGEMENT	
Title	Technical Data Sheet	Doc. Code: TDS-7xxFA-R3
Subject	Meter, Single-Phase FM1S 2W Electronic with Demand	Date: September 19, 2018

Supplier: _____

Brand: _____

Country of Origin: _____

		MERALCO REQUIREMENT	VENDOR'S BID
I.	General		
1	Meter Form	ANSI Form 1S (2-wire L-N socket-mounted)	
2	Current Class (CL)	200 amps (CL200)	
3	Voltage		
3.1	Nominal System Voltage	240 volts Line-to-Neutral	
3.2	Operating Range	Shall operate continuously at $\pm 20\%$ of nominal voltage.	
3.3	Maximum Voltage	(please specify)	
4	Frequency	60 Hz ($\pm 5\%$)	
5	Test Ampere (TA)	30 amps (TA30)	
6	Accuracy		
6.1	Class Accuracy (CA)	0.5% or below (CL0.5). Accuracy shall also be true to all Meralco defined test points.	
6.2	Starting Current	50 mA or lower	
6.3	Current Sensor Response	Shall be linear from 0.01A up to its rated maximum current over randomly selected points.	
7	Application	Outdoor	
II.	Construction		
1	Display		
1.1	Solid State Type Display	Shall be Industrial grade LCD, configured in 5-digit (leading zeroes) and direct reading (5x1). Minimum digit height of 11mm. With electronic load indicator.	
1.2	Viewing Requirements	The display shall be readable at ± 30 degrees vertical viewing angle from a distance of at least 5 meters length without the aid of external visual amplification devices.	
1.3	Display Time of Measurable Quantities	N/A	
1.4	Status and Error Display	Meter shall be capable of displaying status and error messages.	
1.5	Unit of Measurement	Meter shall be able to indicate unit of measurement and the symbols for different TOU rates (if TOU is available).	
1.6	"Always-On" Display	N/A	
2	Nameplate		
2.1	Material	Shall be durable and will remain legible when exposed to sunlight. For sticker type nameplate, it shall use industrial grade adhesive that will not peel off on a typical field condition.	
2.2	Color	Regular black & white	


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2.3	Basic Information	Basic information shall also be printed in the nameplate: - Meter Form - Number of Wires - Current Class - Rated Voltage - Frequency - Test Amperes (TA) - Meter Internal Connection Diagram - Watthour Meter Constant (Kh) - Watthour Meter Test Constant (Kt) - Manufacturer's Name/Trademark - Manufacturer's Type	
2.4	Manufacturer's Number	Printed and barcoded using code 39 or 128 without special characters e.g. asterisks.	
2.5	Meralco Number	Printed and barcoded using code 39 or 128 without special characters e.g. asterisks. It shall also be printed sequentially with the Manufacturer's number. (Meralco number will be provided upon purchase order).	
2.6	Meralco Logo	With Meralco logo or name printed on the nameplate (or other approved equivalent labelling or marking). Meter face or circuit board cover may be marked with Meralco logo as well.	
3	Baseplate	Shall be made of thermoplastic or high engineering tough plastic with excellent dielectric properties. Shall be durable and shall not show signs of cracking overtime and/or when dropped at a height of 1 meter	
4	Meter Cover		
4.1	Material	SLX or other approved equivalent.	
4.2	UV Protection	With UV protection that will not experience discoloration (yellowish) when exposed in outdoor installations within five (5) years	
5	Ports		
5.1	Optical Port	ANSI Type 2 optical port. Optically isolated communication for calibration, programming and functionalities upgrade (ANSI C12.18 compliant).	
5.2	RS-232	N/A	
6	Sealing Provision		
6.1	Meter Cover Seal	With facilities for sealing the cover to the base.	
6.2	Demand Reset Lever Seal	With facilities for sealing the demand resetter lever.	
6.3	Other Option	Option for meter cover and meter base to be ultrasonically welded or permanently sealed.	
7	Operating Temperature	Meter shall be designed for +85 degree centigrade operating temperature (under cover) and 95% relative humidity (non-condensing).	


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8	Mechanical Sturdiness	Shall be able to withstand mechanical vibrations during shipment and transport (particularly the LCD module should not be affected).	
9	Life Expectancy	Designed for 20+ years life (in consideration of meralco service area's external conditions)	
10	Failure Rate	Offered model shall have a failure rate of less than 0.75% (specifically required in the MER-GMS-Rx document), with reference to the latest performance data of the previous deliveries as reported on MSAM's Monthly Monitoring Report	
III.	Electrical Parameters		
1	Current Coil	Shall use single piece current coil.	
2	Potential Test Link	Without potential test link.	
3	Power Supply	Shall not utilize series dropping capacitor that can be affected by transient surges.	
3.1	Neutral Connection	N/A	
4	Battery	Shall use Lithium Thionyl Chloride for functionality requiring time and data maintenance especially during outages. Spare batteries shall also be provided. Quantity of spare batteries is specified in the pre-bid document.	
5	Surge withstand capability	10kV minimum	
6	Effects of DC current	Shall be protected against the effects of DC currents (based on IEC 61036 or equivalent).	
7	Harmonics	Shall operate reliably under electrical conditions with significant harmonics.	
8	Effects of Radio Frequency	Shall not be affected against radio frequency in the range of 800-870Mhz with at least 5 watts power. Meter shall not be affected (no unacceptable response) when radio is operated at close contact with it at repeated intervals. If RF shielding is an option, shielding shall be made of one-piece material and must be factory installed.	
9	Effects of ESD/EMI	Shall not be affected (e.g., displays error message, freezes display, loses display, or any other response that gives the impression that the meter is no longer reliable) over ESD/EMI influence	
10	Total Burden, W	N/A	
IV.	Measurement & Data		
1	Memory	Non-volatile and can accurately retain data for not less than six (6) months that the meter has no power and the back-up battery is already consumed. (please specify size of memory, MB).	
2	Metrology	Shall use digital conversion and multiplication measurement.	
3	Data Tables	ANSI C12.19 compliant.	


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4	Measurable Quantities	Meter shall be capable of measuring, storing and displaying at least: - kWh, received & delivered - kW, received & delivered (block & rolling) - kVARh, received & delivered - kVAR, received & delivered (block & rolling)	
5	Default Registration Configuration	The factory pre-set configuration for kWh registration shall be DELIVERED+RECEIVED.	
6	Meter Test Constant (Kh)	Programmable	
7	Meter Multiplier	N/A	
8	Pulse Output	Preferably infrared and proportional to the programmed meter test constant (kh).	
9	Register Reset	Meter shall have the capability to reset the billing registers, preferably through the optical port.	
10	Time-of-Use	Shall be TOU capable with at least 4 rate buckets + 1 total for all energy and power parameters including cumulative demand data.	
11	Load Profile	N/A	
12	Self-Read	Programmable to store and display at least 4 self-reads or autoread of billing parameters on a user-selected time and day of the month or upon manual demand reset.	
V.	Advance Requirements		
1	Software	Application Programming Interfaces (API) used for the meter shall be provided to Meralco free of charge.	
2	Watchdog Timer	Meter shall have a watch dog timer.	
3	Meter Clock		
3.1	Clock Type	Shall utilize a time reference crystal oscillator component at ambient temperature range of 30-40 degrees centigrade at relative humidity of 50-100 non-condensing.	
3.2	Time Drift	Maximum allowable error drift is 20 ppm (not more than 60 seconds total drift per month).	
3.3	Time Synchronization	N/A	
4	Event Log	Meter shall be capable of logging (with date & time) events such as: - power outage - loss of connection to neutral/ground - hardware failure alarms	
4.1	Power Events	N/A	
4.2	Power Quality	N/A	
	i.) Voltage Sag	N/A	
	ii.) Voltage Swell	N/A	
	iii.) Undervoltage	N/A	
	iv.) Overvoltage	N/A	
4.3	Tamper Detection		
	i.) Meter Cover Removal	N/A	
	ii.) Tilt	N/A	
	iii.) Magnetic Field Detection	N/A	

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	iv.) Loadside Voltage Detection	N/A	
VI.	Communication		
1	Communication Module	N/A	
2	Communication of Meter to AMI Device	N/A	
3	Meralco MDCS Integration	N/A	
4	Remote Firmware Upgrades & Configuration	N/A	
VII.	Service Disconnect/Reconnect		
1	Switch	N/A	
2	Switch Status Indicator	N/A	
3	Load Limiter	N/A	
4	Switching with Loadside Voltage Present	N/A	

REMARKS: