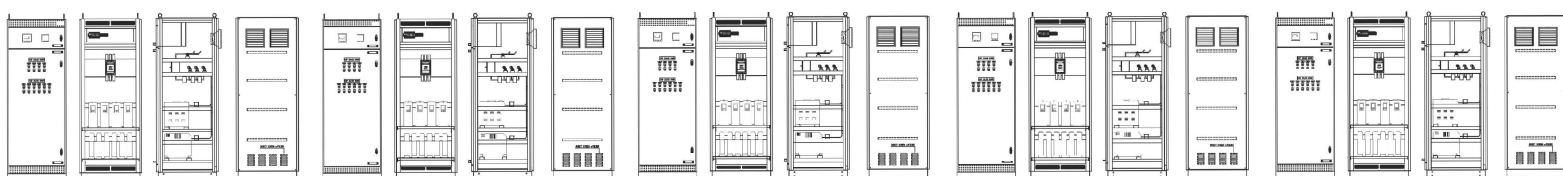




SFERE





SFERE MULTI FUNCTION POWER METER

Functions	SFERE Power Meter				SFERE TOU Meter	
	100	200	300	400	200-64MB	300-64MB
Real-Time Measurement						
Phase Voltage(Va,Vb,Vc)	O	O	O	O	O	O
Line Voltage(Vab,Vbc,Vca)	O	O	O	O	O	O
Phase Current(Ia,Ib,Ic,In)	O	O	O	O	O	O
Phase and Total Active Power(Pa,Pb,Pc,Ptotal)	O	O	O	O	O	O
Phase and Total Reactive Power(Qa,Qb,Qc,Qtotal)	O	O	O	O	O	O
Phase and Total Apparent Power(Sa,Sb,Sc,Stotal)	O	O	O	O	O	O
Phase and Total Power Factor(PFa,PFb,PFc,PFtotal)	O	O	O	O	O	O
Grid Frequency(Hz)	O	O	O	O	O	O
Load (%) & Voltage/Current Waveform & Phase Angle	-	O	O	O	O	O
TOU Function						
Memory	-	-	-	-	64MB	64MB
Energy Record(Every 15 Min.)	-	-	-	-	1 Year	1 Year
Fixed + Adjust holiday	-	-	-	-	15 Years	15 Years
Tariff	-	-	-	-	4	4
On-Peak/Off-Peak/Holidays/Special Holidays	-	-	-	-	O	O
Energy Metering						
Import and Export Active energy (kWhrtotal)	O	O	O	O	O	O
TOU (Time of use)	-	O	O	O	O	O
Auto-metering	-	O	O	O	O	O
Fundamental/Harmonic/Synchronous/Spare Energy	-	-	O	O	-	O
Four-quadrant Reactive Energy	-	O	O	O	O	O
Phase Separation Energy	-	O	O	O	O	O
Demand Record						
Voltage, current, active power, reactive power, apparent	-	O	O	O	O	O
Load Curve						
Voltage, current, active power, reactive power, apparent	-	O	O	O	O	O
Max/Min Value Record						
V, I, P, Q, S, PF, F, Unbalance and Harmonic	-	O	O	O	O	O
SOE Recording						
Record up to 248 event	-	O	O	O	O	O
Power Quality Analysis						
Three phase voltage/current unbalance	-	O	O	O	O	O
Voltage and current sequence component	-	O	O	O	O	O
Individual harmonics of Voltage and current	-	39 orders	39 orders	50 orders	39 orders	39 orders
Crest Factor & K-Factor & Telephone interference factor	-	O	O	O	O	O
Energy Pulse						
Two optoelectronic coupler outputs	O	O	O	O	O	O
Communication Interface						
RS-485 interface, MODBUS-RTU protocol	O	O	O	O	O	O
Display Mode						
Highlight LED	O	-	-	-	-	-
Dot matrix LCD backlight	-	O	O	O	O	O
Outline Dimension						
Panel (mm)	96*96*65	96*96*65	96*96*65	96*96*65	96*96*65	96*96*65
Module (mm)	20	20	20	20	20	20



Items			Parameters	
Accuracy	Model		Sfere100, Sfere200, Sfere300	Sfere400
	Voltage/Current		0.2%	0.1%
	Active/Reactive/Apparent Power		0.5%	0.2%
	Power Factor		0.5%	0.2%
	Frequency		0.02 Hz	0.01 Hz
	Energy	Active Energy	IEC 62053-22 Class 0.5S	IEC 62053-22 Class 0.2S
		Reactive Energy	IEC 62053-23 Class 2	IEC 62053-23 Class 1
Signal Input	Wiring Mode		Single phase, Three phase Three wire, Three phase Four wire	
	Voltage	Rated voltage	Line to neutral = 400VAC, Line to line = 690VAC	
		Overload	Continuous: 120% of normal; instantaneous: 200% of normal during 10 sec.	
		Power Consumption	<0.4VA (per phase)	
		Impedance	>1MΩ	
	Current	Rated current	1A/5A	
		Overload	Continuous 120% of normal; instantaneous: 1000% of normal during 3 sec.	
		Power Consumption	<0.4VA	
		Impedance	<20MΩ	
	Grid frequency		50/60 Hz	
Power Supply	Working range		100-415VAC, 100-350VDC	
	Frequency		45-65 Hz	
	Power Consumption		≤5VA	
Output	Energy Pulse		Optoelectronic coupler output, pulse width 80ms±20%	
	Relay Output	Capacity AC250V 5A or DC30V 5A		
		Isolation voltage between contact and coil 2,500VAC RMS		
	Analog Output	Accuracy 0.5%		
		Load resistance ≤350Ω		
Input	Digital Input		Passive optocoupler isolation input 2,000VAC rms	
Communication	RS485 interface		MODBUS-RTU protocol, communication speed 1200~19200bps, no check,	
			odd check, even check optional	
Mechanical Features	Dimension		Panel : 96x96mm	
			Cutout : 91x91mm	
			Total length : 65mm (without module)	
			Module : 20mm	
	Protection Degree		Panel : IP66	
			Case : IP20	
Environment Condition	Operation Temperature		Sfere100	Sfere200, Sfere300, Sfere400
			-40~70°C	-10~55°C
	Storage Temperature		-50~85°C	-20~75°C
	Relative Humidity		0~90% (no condensation at 50°C)	
	Anti-pollution		Class 2	
	Measurement Type		III	
	Insulation		Between signal, power supply, output terminal and case resistance >100MΩ	
			Between signal, power supply and output > AC2kV	
EMC		>Class III		



SFERE MULTI FUNCTION POWER METER : ตัวอย่างการติดตั้งใช้งาน @ABB(Thailand)



SFERE MULTI FUNCTION POWER METER : ตัวอย่างการติดตั้งใช้งาน @ชลประทานซีเมนต์



SFERE MULTI FUNCTION POWER METER : ตัวอย่างการติดตั้งใช้งาน @การประปาส่วนภูมิภาค



SFERE MULTI FUNCTION POWER METER : ตัวอย่างการติดตั้งใช้งาน @กรุงเทพโทรทัศน์และวิทยุ

