

MPR-4X Series เป็นอุปกรณ์วัดและวิเคราะห์พลังงานไฟฟ้าที่สมบูรณ์แบบ ด้วยการออกแบบให้มีลักษณะที่สวยงาม พร้อมจอแสดงผล LCD ขนาดใหญ่ที่ช่วยในการแสดงผลมีความชัดเจน ซึ่งสามารถแสดงค่าพารามิเตอร์ต่าง ๆ ทางไฟฟ้า ตลอดจนการวัดค่า Harmonics ที่เกิดขึ้นในระบบ อีกทั้งยังมีพอร์ตสื่อสารข้อมูลอนุกรม RS-485 (MODBUS-RTU) สำหรับการเชื่อมต่อกับคอมพิวเตอร์ได้อีกด้วย

MPR-4X Series

- Modbus
- Harmonics
- Pulse Output
- Alarm Contact
- Memory
- Analogue Output
- MD Max Demand



MPR-4X Series (96x96)



I/O Modules (Optional)

MPR-4X series network analyzers can be customized for various applications with I/O modules.

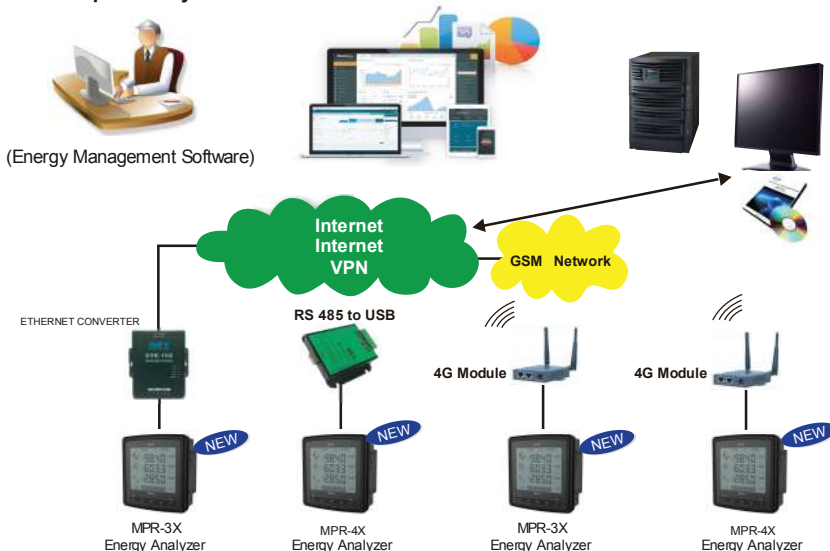
- Digital Input
- Digital Output
- Analog In mAV
- Pulse Output
- Analog Out mA
- Analog Out V
- Output Relay



I/O Module Selection Table

Type	Operating Range	Code	Price
Digital Output Module (2DO)	5-24 VDC	MM 102	5,700
Digital Input Module (2DI)	5-24 VDC	MM 120	5,700
Digital I/O Module (2DI-2DO)	5-24 VDC	MM 122	7,400
Digital I/O Module (4DI-4DO)	5-24 VDC	MM 144	9,300
Relay Output Module (2 Relays)	5A/250 VAC;NO	MM 002	6,400
Analog Output Module (2 AO)	(0/2-10V);(0/4-20mA)	MM 202	11,300

Users-pecific System Architecture



ค่าวัดทางไฟฟ้า (Electrical Measurement)

- Phase-Neutral Voltages (V L-N)
- Phase-Phase Voltages (V L-L)
- Phase Currents (I)
- Total Current (ΣI)
- Neutral Current (I_n)
- Power Factor (P.F)
- Cos ϕ
- Frequency (Hz)
- Active Power (P)
- Reactive Power (Q)
- Apparent Power (S)
- Average V L-N
- Average V L-L
- Total Active Power (ΣP)
- Total Reactive Power (ΣQ)
- Total Apparent Power (ΣS)

ค่าวัดพลังงานไฟฟ้า (Energy Measurement)

- Import Active Energy (kWh)
- Export Active Energy (kWh)
- Reactive Energy-Cap (KVArh)
- Reactive Energy-Ind (KVArh)

ค่าวัดคุณภาพไฟฟ้า (Quality Measurement)


- Total Harmonic Distortion for Current (% THD I)
- Total Harmonic Distortion for Voltage (% THD V)
- Partial Harmonic Distortion for Current 51 th
- Partial Harmonic Distortion for Voltage 51 th

ค่าความต้องการทางไฟฟ้า (Demand Measurement)


- Peak Demand
- Max / Min Values

ฟังก์ชันพิเศษ (Special Feature)

- 8 MB Internal Memory
- Voltage Unbalance
- Operation Hour Meter
- Alarm & Event Log

รุ่น	MPR-45	MPR-45S	MPR-45S-L
SPECIFICATIONS			
Measurements			
VOLTAGE			
Measurement Range	5 -690 VAC (L-L), 5 - 400 VAC (L-N)		
Measurement Range with VT	1 - 400 kV		
Voltage Accuracy	0.5% ± 1 digit		
Input Impedance	1.8 MΩ		
Burden (Input Load)	<0.5 VA		
CURRENT			
Current Accuracy	0.5% ± 1 digit		
Nominal Current	1A / 5A		
Minimum Current	5 mA		
Measurement Range	50mA - 6.0A , Accuracy: 0.5% ± 1 Digit		
Measurement with CT	50mA - 10000A		
Burden (Input Load)	0.5VA		
Overload Current	1.2 In continuous		
Short Time Overload (1S)	10 x In		
POWER/ENERGY			
Active Power Accuracy	Range: 0 - 4,000 MW,Accuracy: 0.5% ± 1 Digit		
Reactive Power Accuracy	Range: 0 - 4,000 MVar,Accuracy: 1.0% ± 1 Digit		
Apparent Power Accuracy	Range: 0 - 4,000 MVA,Accuracy: 1.0% ± 1 Digit		
Power Factor Accuracy	Range: ±1.00, Accuracy : ± 0.02		
Active Energy	Range: 0 - 99,999,999 kWh or MWh, Accuracy: 1% 1 class		
Reactive Energy	Range: 0 - 99,999,999 kWh or MVarh, Accuracy: 2% 2 class		
Demand Period	1,2,5,10,15,20,30,60 minimum adjustable		
Frequency	45 - 65 Hz		
Power Quality			
Partial Harmonic Distortion V&I	-		
Voltage & Current Unbalance	-		
Supply			
Operating Voltage	45 - 265 VAC/DC ; 50/60 Hz		
Network Type	3-phase / 4-wire (Star)	3-phase / 3-wire (Delta)	3-phase / 3-wire (Aron)
Pulse Output			
Energy Pulse Output	* Active Energy Output (1kWh/pulse - 50MWh/pulse) * Reactive Energy Input (1kVarh/pulse - 50MVarh/pulse)		
Switching Current	* Max. 50mA		
Switching Voltage	* 5 - 24 VDC		
Pulse Width	* 100 - 2500 ms		
Maximum Voltage	* Max. 30 VDC		
Internal Memory			
Internal Memory Size	-	16 MB	
Communication			
Communication	-	RS-485	RS-485
Baud Rate	-	2400 - 115000 bps	2400 - 115000 bps
Mechanical Parameters			
Equipment Protection	Double Insulation (), Measurement Category III		
Ambient Operating Temperature	-5°C, +55°C		
Degree of Protection	IP-51 (front panel)		
Panel Cut Out (mm.)	91x91mm.		
Dimensions	96x96mm		
มาตรฐานรองรับ	EN 61557-12, EN 61326-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 62053, EN 60068, EN 61010		
ราคา	11,800.-	16,600.-	14,000.-

* Provided with digital output I / O modules

รุ่น	MPR-46	MPR-46S	MPR-46S-L	MPR-47S
SPECIFICATIONS				
Measurements				
VOLTAGE				
Measurement Range	5 -690 VAC (L-L), 5 - 400 VAC (L-N)			
Measurement Range with VT	1 - 400 kV			
Voltage Accuracy	0.5% ± 1 digit			
Input Impedance	1.8 MΩ			
Burden (Input Load)	<0.5 VA			
CURRENT				
Current Accuracy	0.5% ± 1 digit			
Nominal Current	1A / 5A			
Minimum Current	5 mA			
Measurement Range	50mA - 6.0A , Accuracy: 0.5% ± 1 Digit			
Measurement with CT	50mA - 10000A			
Burden (Input Load)	0.5VA			
Overload Current	1.2 In continuous			
Short Time Overload (1S)	10 x In			
POWER/ENERGY				
Active Power Accuracy	Range: 0 - 4,000 MW, Accuracy: 0.5% ± 1 Digit			
Reactive Power Accuracy	Range: 0 - 4,000 MVar, Accuracy: 1.0% ± 1 Digit			
Apparent Power Accuracy	Range: 0 - 4,000 MVA, Accuracy: 1.0% ± 1 Digit			
Power Factor Accuracy	Range: ±1.00, Accuracy : ± 0.02			
Active Energy	Range: 0 - 99,999,999 kWh or MWh, Accuracy: 1% 1 class			
Reactive Energy	Range: 0 - 99,999,999 kWh or MVarh, Accuracy: 2% 2 class			
Demand Period	1,2,5,10,15,20,30,60 minimum adjustable			
Frequency	45 - 65 Hz			
Power Quality				
Partial Harmonic Distortion V&I	THD - V , THD - I			1-51 st
Voltage & Current Unbalance	-			V&I Unbalance
Supply				
Operating Voltage	45 - 265 VAC/DC ; 50/60 Hz			
Network Type	3-phase / 4-wire (Star) 3-phase / 3-wire (Delta) 3-phase / 3-wire (Aron)			
Pulse Output				
Energy Pulse Output	* Active Energy Output (1kWh/pulse - 50MWh/pulse) * Reactive Energy Input (1kVarh/pulse - 50MVarh/pulse)			
Switching Current	* Max. 50mA			
Switching Voltage	* 5 - 24 VDC			
Pulse Width	* 100 - 2500 ms			
Maximum Voltage	* Max. 30 VDC			
Internal Memory				
Internal Memory Size	-	16 MB	-	16 MB
Communication				
Communication	-	RS-485	RS-485	RS-485
Baud Rate	-	2400 - 115000 bps	2400 - 115000 bps	2400 - 115000 bps
Mechanical Parameters				
Equipment Protection	Double Insulation (), Measurement Category III			
Ambient Operating Temperature	-5°C, +55°C			
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ราคา	13,800.-	19,500.-	17,500.-	24,500.-

* Provided with digital output I / O modules