



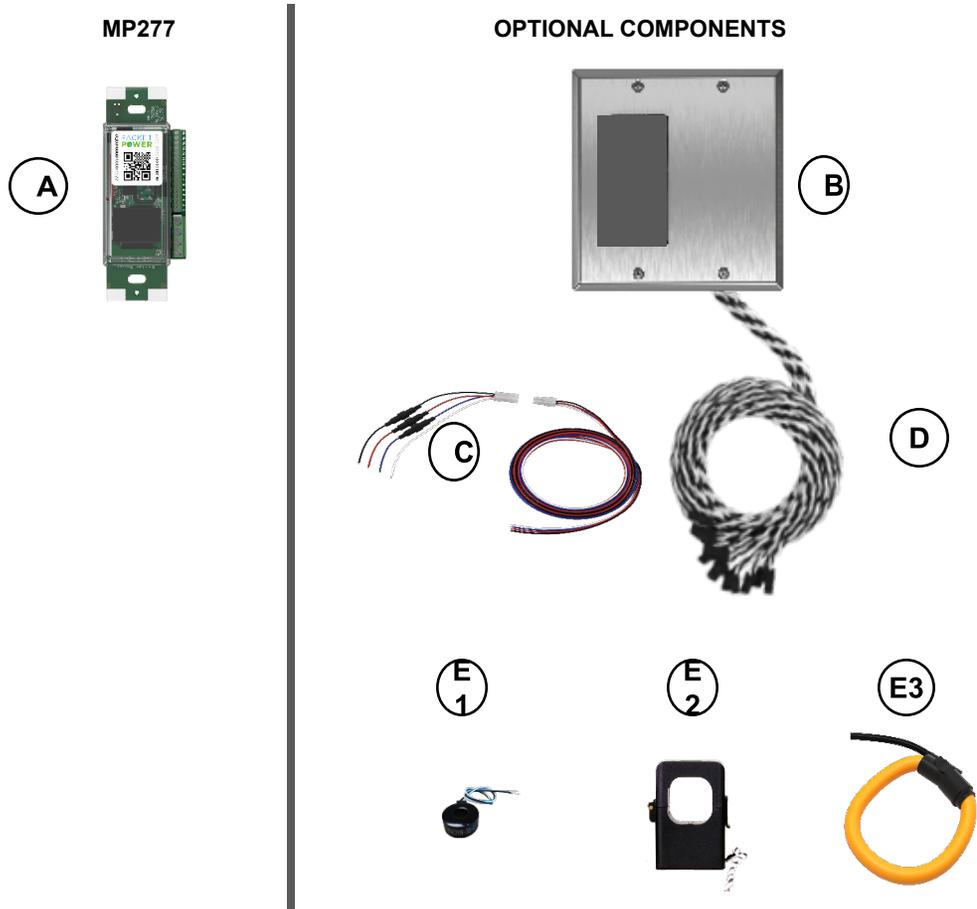
WIRELESS POWER MONITOR

MP277 Model Components and *Monitoring Made to Measure* Specifications



WIRELESS POWER MONITOR COMPONENTS

Packet Power's MP277 wireless power monitor can be ordered as a single meter (requires configuration prior to use) or fully configured and assembled with a choice of enclosures, power connections and current sensors. The optional components shown below include a double deep gangbox enclosure, fused voltage disconnects for a 277V power source, and a sample of each of the possible CT types available. Assembly at the factory requires purchase of an enclosure. All components are purchased separately.



MP277 COMPONENTS

(A) Monitor: Wireless power monitor

Optional Components

(B) Enclosure: A variety of enclosure options are available including

DIN rail clip, gangbox and NEMA 4
(see page 4 for options)

(C) Voltage Disconnect: 18 AWG 600V colored wire connected to a 4-position quick disconnect; 4m length;
Optional 5x20 mm 5A inline fuse on L1, L2, L3; ground wire (Earth) run separately

(D) Split Core CT Leads: 24 AWG 600V twisted pair with quick disconnects that connect to CT tail

(E) Current Sensors Up to 8 current sensors of varied amperage and size (see page 5 for options);

Cannot mix solid core, split core and Rogowski coil current sensors in one MP277 device

(E1) Solid Core CTs: Rated amperage 35A to 400A; mA or mV output
Dimensions vary by amperage

(E2) Split Core CTs: Rated amperage 15A to 4000A; mV output
Dimensions vary by amperage

(E3) Rogowski Coils: Rated amperage 100A to 10,000A;
Available in 4 different lengths

MODELS

	Model	Maximum Full Power CTs	CT Output	Source Power Options
	MP277-3MV	3	mV	120-240V AC 1Φ (LN) 200-230V AC 1Φ (LL) 277V AC 1Φ (LN) 200-230V AC Delta (LLL) 208/120V AC Wye 240/120V AC Split (LLN) 415/240V AC Wye 480/277V AC Wye 50/60 Hz Frequency
	MP277-8MV	8	mV	
	MP277-8RO	8	Rogowski	
	MP277-3MA MP277-6MA	3 6	mA mA	

MONITORING MADE TO MEASURE

"Monitoring made to measure" means we fully configure each power monitor to meet your exact needs. If you'd like to cut your installation costs in half by having Packet Power configure and assemble your wireless power monitor, here's what we need to know:

- Type of power source (three-phase wye, split phase, single phase, etc)
- Type of enclosure
- Desired wire exit location
- Number of circuits being measured
- Desired CT output
- Type and number of current transformers (CTs) and CT amperage(s)

Use the Configuration worksheet on page 6 to capture your needs.

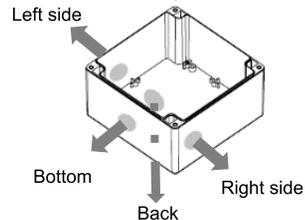
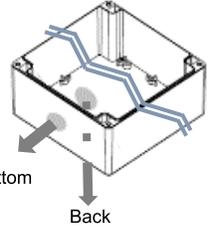
Enclosures, CTs and voltage disconnects are purchased separately from the meter. Use the Configuration worksheet on page 6 to capture your needs. Contact sales@packetpower.com with questions or if you need a different option than outlined in the rest of this document.

TECHNICAL SPECIFICATIONS

Measurements	V, A, VA, W, Wh, Power Factor, Hz, THDi, THDv, IR pulse output Accuracy: ±1.0% (CT dependent); ±0.5% available
Fusing	Optional inline 5A, 5x20mm time lag glass tube fuse in twist lock holder
Current Range	Up to 10,000A
Frequency	50/60 Hz
Monitor Dimensions	Varies by enclosure size (see page 4 for details)
Monitor Weight	Varies by enclosure size
Mounting	Varies by enclosure
Available Wire Exits	Varies by enclosure (see page 4 for details)
Voltage Disconnects	18 AWG 600V colored wire with 600V quick disconnects; optional inline fuses (see page 4 for details)
Split Core CT Leads	24 AWG 600V twisted pair; quick disconnect
Operating Environment	0° to 75°C (32° to 167°F); 5% to 95% non-condensing
Water and Dust Resistance	Indoor use for most enclosures, NEMA 4 available
Power Usage	1W
Wireless Network Protocol	Frequency hopping self-configuring load-balancing mesh; Operating frequency 860 to 930 MHz and 2.4 GHz (frequencies vary by region)
Wired Network Protocols	HTTPS to Packet Power EMX running locally or as cloud service; SNMP V1/V2c/V3; Modbus TCP/IP; Ethernet/IP; MTConnect; BACnet/IP; MQTT
Firmware Updates	Wireless
Typical Transmission Range	10 to 30 meters indoors between any two devices in mesh network
Antenna	Fully enclosed, fixed configuration
Monitor to Gateway Ratio	Up to 100 monitoring units per Ethernet Gateway with unlimited Gateways per site
Local Display	Volts, Amps and communication status
Made in USA	Yes
Product Warranty	1 year
Certifications	UL 508A and CE, FCC and other country communications standards

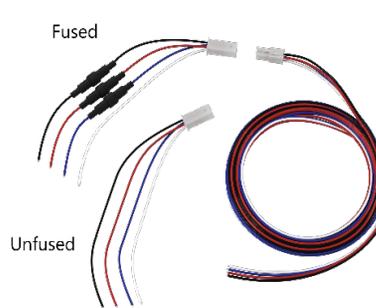
ENCLOSURE OPTIONS

Enclosure Type	None	DIN Clip	Double Deep Gangbox
			
Dimensions	106 x 45 x 40 mm (4.2 x 1.8 x 1.6")	Compatible with 35mm DIN rail	4.5 x 4.5 x 2.625"
Material	Lexan	Nylon	Heavy duty die-cast aluminum 0.94" thick, gray
Wire Exits	NA	NA	1" threaded knockout (bottom, top, back, left or right)

Enclosure Type	NEMA 4	Gateway + Meter (240V or 277V)
	 	 
Dimensions	160 x 160 x 92 mm (6.3 x 6.3 x 3.6")	241 x 160 x 96 mm (9.5 x 6.3 x 3.8")
Material	Polycarbonate, NEMA 4 / IP67 available	Polycarbonate, NEMA 1
Wire Exits	1" NPT (1.375" / 35 mm dia) hole (bottom, back, left, or right)	Bottom or back exit: One 1" NPT opening for CT and voltage leads and one 3/8" diameter opening for Ethernet Cable

Wire exit info has been updated

VOLTAGE DISCONNECTS



Voltage disconnects ("VDC") make it easy to stop power to the meter. The VDC consists of a 600V disconnect between two sets of 18 AWG 600V wire leads. Optional inline fuses are available on the meter (shorter) end. Can use either one or two VDCs (one for reference voltage and one for the meter's power source).

The VDC consists of a 200mm portion that connects to the meter and a 4m portion that connects to the power source. The quick disconnects are keyed to prevent incorrect connections. The 4m side of the VDC can easily be trimmed at installation.

NEMA enclosures include a 6-position terminal block. This makes it possible to run up to 10 AWG wire from the terminal block to the voltage source. If using a gangbox, V source wires run directly to the meter and are limited to 18 AWG.

Optional Fuse	5A 5 x 20mm time lag glass tube fuse in twist lock holder
Wire	18 AWG 600V colored wire
Wire Options	2-wire, 3-wire or 4-wire VDCs available in US or IEC wire colors
Meter end	200mm length connects to the power meter; includes optional 5A fuse, ends in quick disconnect
Source end	4m length starts with quick disconnect
Quick Disconnects	600V nylon resin male pin and female socket disconnects

SOLID & SPLIT CORE CTs

CT Type	Rated / Max Amperage	Inside Diameter	External Dimensions (H x W x D)	CT Output	CT Tail	CT Lead Length
Solid core	35A / 35A	9 mm	22 mm outside dia x 9 mm thick	mA or mV	200 mm	NA
Solid core	60A / 72A	15 mm	30 mm outside dia x 9 mm thick	mA or mV	200 mm	
Solid core	200A / 240A, 400A / 480A	32 mm	69 mm outside dia x 20 mm thick	mV	2000 mm	
Split core	15A / 18A	10 mm	39 x 23 x 26 mm	mV	100 mm	2 meters
Split core	30A / 36A	10 mm	39 x 23 x 26 mm	mV	100 mm	
Split core	50A / 63A	10 mm	39 x 23 x 26 mm	mV	100 mm	
Split core	100A / 120A	16 mm	44 x 31 x 33 mm	mV	500 mm	
		24 mm	65 x 46 x 35 mm		500 mm	
Split core	200A / 240A	24 mm	65 x 46 x 35 mm	mV	500 mm	
		36 mm	85 x 37 x 42 mm		500 mm	
Split core	300A / 360A	24 mm	65 x 46 x 35 mm	mV	500 mm	
		36 mm	85 x 37 x 42 mm		500 mm	
		75 x 125 mm	201 x 146 x 16 mm		500 mm	
Split core	400A / 480A	36 mm	85 x 37 x 42 mm	mV	500 mm	
		50 x 50 mm	125 x 120 x 30 mm		500 mm	
Split core	600A / 720A	36 mm	85 x 37 x 42 mm	mV	500 mm	
		50 x 50 mm	125 x 120 x 30 mm		500 mm	
		75 x 125 mm	201 x 146 x 16 mm		500 mm	
Split core	800A / 960A	50 x 50 mm	125 x 120 x 30 mm	mV	500 mm	
		75 x 125 mm	201 x 146 x 16 mm		500 mm	
		150 x 150 mm	225 x 219 x 30 mm		500 mm	
Split core	1000A / 1200A	150 x 150 mm	225 x 219 x 30 mm	mV	500 mm	
Split core	1200A / 1440A	150 x 150 mm	225 x 219 x 30 mm	mV	500 mm	
Split core	1600A / 1920A	150 x 150 mm	225 x 219 x 30 mm	mV	500 mm	
Split core	2000A / 2400A	150 x 150 mm	225 x 219 x 30 mm	mV	500 mm	
Split core	3000A / 3600A	150 x 150 mm	225 x 219 x 30 mm	mV	500 mm	
Split core	4000A / 4800A	150 x 150 mm	225 x 219 x 30 mm	mV	500 mm	



ROGOWSKI COILS

CT Type	Max Conductor Diameter	Coil Length	Typical Amperage	Coil Lead
Coil	68 mm (2.66")	250 mm	100A to 1000A	3 meters
Coil	147 mm (5.87")	500 mm	400A to 3000A	
Coil	211 mm (8")	700 mm	1000A to 5000A	

Coil	306 mm (12.6")	1000 mm	2000A to 10,000A	
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CTs sold separately

DESIGN YOUR MP277 WIRELESS POWER MONITOR

The MP277 wireless power monitor can be purchased by itself, with any of the available optional components, or fully configured and assembled.



- o **Ready for Field Configuration** Follow the wiring instructions at dox.packetpower.com/submeter to correctly configure the meter for your intended use.

- o **Monitoring Made to Measure** Meter is configured, fully assembled in the enclosure and tested prior to shipping

POWER SOURCE	VOLTAGE DISCONNECT WIRE COLOR
o 120-240V AC 1 Phase (2-wire LN + E)	o Black/White o Brown/Blue
o 200-230V AC 1 Phase (2-wire LL + E)	o Black/Red o Red/Blue o Black/Blue
o 277V AC 1 Phase (2-wire LN + E)	Brown/Gray
o 200-230V AC Delta (3-wire LLL + E)	Black/Red/Blue
o 240/120V AC Split (3-wire LLN + E)	Black/Red/White
o 208/120V AC Wye (4-wire + E)	Black/Red/Blue/White
o 415/240V AC Wye (4-wire + E)	Brown/Black/Gray/Blue
o 480/277V AC Wye (4-wire + E)	Brown/Yellow/Orange/Gray
Fusing: o Fused o Not Fused	

Customer _____

Location _____

CURRENT SENSORS	(see page 5 for options)
CT Type:	o Solid Core o Split Core o Rogowski Coil
CT Amperage:	
CT Inside Diameter:	
CT Qty:	
Split Core CT Lead Length:	o 0.5m o 1m o 2m o 3m o 5m o 10m o ___ m

ENCLOSURE & WIRE EXIT	(see page 4 for options)
o None	NA
o Din Clip	NA
o Double Deep Gangbox	o Top o Left o Right o Bottom o Back
o NEMA 4	o Left o Right o Bottom o Back
o Gateway + Meter (277V)	o Bottom o Back
o Gateway + Meter (240V)	o Bottom o Back



Monitoring Made to Measure
MP277-8MV

- o Double deep gangbox enclosure with bottom wire exit
- o 208/120V AC Wye fused voltage disconnect
- o Meter configured for 200A split core CTs (mV output)
- o Six 3m split core CT leads with quick disconnects

MP277 WIRELESS POWER MONITOR ORDERING INFORMATION

Packet Power's MP277 wireless power monitor can be ordered fully configured to each customer's needs. The components selected in the Configuration worksheet (page 6) result in a unique product number. All components including enclosure, CTs, leads and voltage disconnects are sold separately.

Example: Measure 6 circuits, 415/240 Wye power source (reference and meter), six 3000A Rogowski coils (come with a 3m coil lead), double gangbox enclosure with back wire exit
 Product Number: MP2778RO-Y1-30X6-G2X

Model	Power Source (Reference Voltage)	Power Source (Meter)	Amperage	CT Qty	CT Lead	Enclosure	Wire Exit
MP2773MV	S0 = 120-240V AC 1 Phase (2-wire LN + E)	Omit = Powered by reference voltage	015, 030, 035, 050, 060	1-8	H = 0.5M	D0 = DIN only	B = Bottom
MP2778MV	S1 = 200-230V AC 1 Phase (2-wire LL + E)	S0 = 120-240V AC 1 Phase (2-wire LN + E)	100, 200, 300		1 = 1M	G2 = Double Deep Gangbox	L = Left
MP2778RO	S2 = 277V AC 1 Phase (2-wire LN + E)	S1 = 200-230V AC 1 Phase (2-wire LL + E)	400, 600, 800		2 = 2M	N1 = NEMA 6x6	R = Right
MP2773MA	D0 = 200-230V AC Delta (3-wire LLL + E)	S2 = 277V AC 1 Phase (2-wire LN + E)	10X = 1000, 12X = 1200		3 = 3M	M1 = GW+ Meter combo (240V)	X = Back
MP2776MA	T0 = 240/120V AC Split (3-wire LLN + E)	D0 = 200-230V AC Delta (3-wire LLL + E)	16X = 1600, 20X = 2000		5 = 5M	M2 = GW+ Meter combo (277V)	T = Top
	Y0 = 208/120V AC Wye (4-wire + E)	T0 = 240/120V AC Split (3-wire LLN + E)	30X = 3000, 40X = 4000		A = 10M	Omit = None	Omit = None
	Y1 = 415/240V AC Wye (4-wire + E)	Y0 = 208/120V AC Wye (4-wire + E)	50X = 5000, 1XX = 10,000		C = Custom		
	Y2 = 480/277V AC Wye (4-wire + E)	Y1 = 415/240V AC Wye (4-wire + E)	C = Custom		Omit = None		
		Y2 = 480/277V AC Wye (4-wire + E)					

Please contact sales@packetpower.com with questions of if you have additional customization needs not shown here.