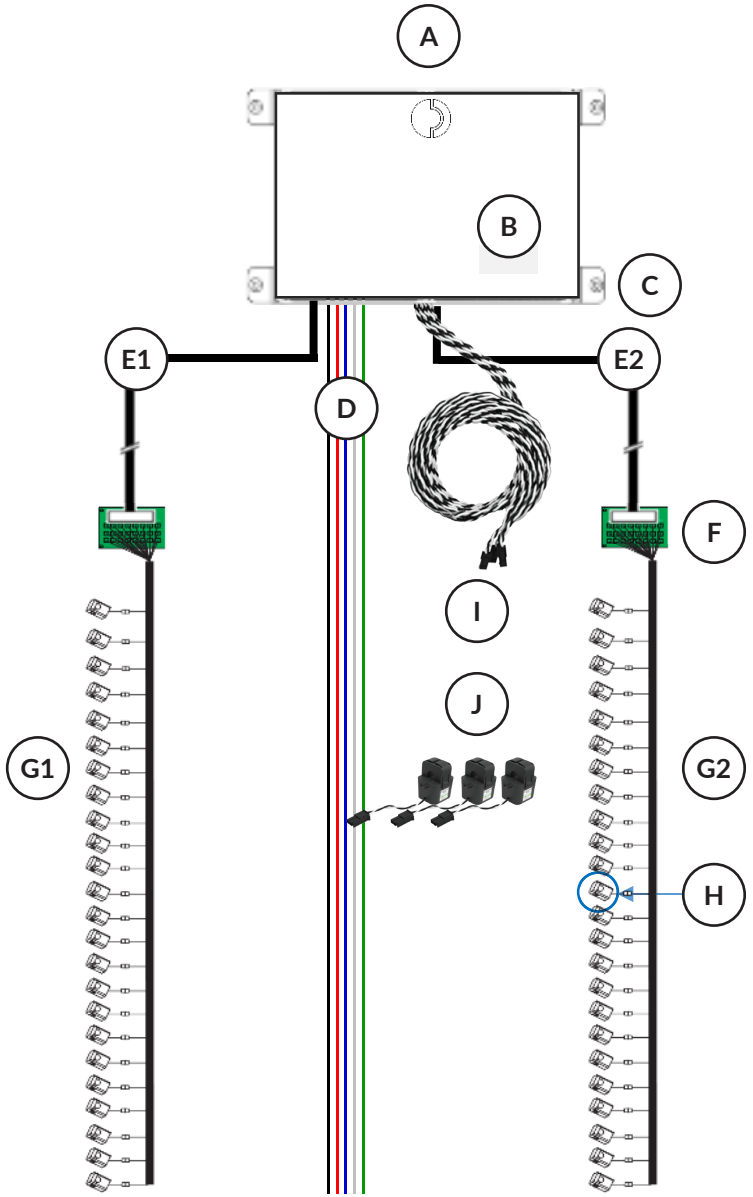
PACKETPOWER

BGP51 Model Components and *Monitoring Made to Measure* Specifications

BRANCH CIRCUIT MONITOR COMPONENTS

Packet Power's BGP51 wireless branch circuit monitor arrives fully configured to each customer's needs and includes the following components.

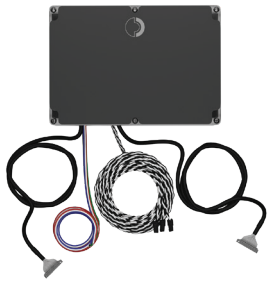


BGP51 COMPONENTS

(A)	Device:	Up to eight wireless power monitors in a polycarbonate enclosure (NEMA 4 available) 265 x 185 x 96 mm (10.4 x 7.3 x 3.8 in)
(B)	Power Meter*:	Wireless power meter in BGP51-3P48C model supporting up to 3 full power CTs
(C)	Mounting Tabs:	Four 21 x 21 mm (0.84 x 0.84 in) tabs included for mounting on wall or on device
(D)	Voltage Lead:	18 AWG 600V colored wire connected to a 6-position terminal block, 3m or 7m length; 5x20 mm 5A inline fuses on L1, L2, L3;
(E)	CT Interconnect Cables:	Two shielded cords in any mix of 1.5m lengths; terminate in a 26-pin connector that fastens to the CTInterconnect Board
(F)	CT Interconnect Boards:	Two 90 x 63 x 6.3 mm (3.5 x 2.5 x 0.2 in) acrylic-backed boards with VHB adhesive tape for mounting
(G)	Branch Circuit CT: Wire Harnesses	Up to two CT harnesses; 24 AWG 300V twisted pair wire; length varies by harness configuration (see page 4 for options)
(H)	Branch Circuit CTs:	Up to 48 split core CTs; Inside diameter: 10 mm; Outside dimensions: 39 x 23 x 26 mm; CT tail: 100 mm (4 in) to quick disconnect; Rated amperage: 15A, 30A or 50A
(I)	Infeed CT Leads*:	24 AWG 600V twisted pair with quick disconnects 0.5-5m length
(J)	Infeed Circuit CTs*:	Up to 3 split core CTs Rated amperage: 100A to 400A; Inside diameter and outside dimensions vary by amperage (see page 5 for options) CT tail: 500 mm (20 in) to quick disconnect

* Components B, I and J only available with BGP51-3P48C model

MODELS



BGP51-3P48C pictured

Model	Maximum Full Power CTs	Maximum Current Only CTs	Voltage Options
BGP51-48C	None	48	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
BGP51-3P48C	3	48	50/60 Hz Frequency

MONITORING MADE TO MEASURE

"Monitoring made to measure" means we fully configure each power monitor to meet your exact needs.

Here's what we need to know to cut your installation time in half.

- Voltage input service type and quantity (source power)
- Number of branch circuits (CTs) you want to monitor
- Branch circuit CT amperage
- If you want to monitor panel infeed circuits, what's the infeed circuit amperage
- Need for inline fuses on the voltage lead(s)
- Length of the cables to the CT interconnect board
- Placement of CT wire harnesses in relation to your panel (CT harness type)

Use the Configuration worksheet on page 5 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	Branch circuits: A, Ah (W, Wh using an arbitrary voltage) Infeed circuits: V, A, VA, W, Wh, Power Factor, Hz Accuracy: ±1.0%
Fusing	Optional inline 5A fuses
Current Range	Branch circuits: 15A, 30A, 50A Infeed circuits: 100A to 400A
Frequency	50/60 Hz
Monitor Dimensions	265 x 185 x 96 mm (10.4 x 7.3 x 3.8 in)
Monitor Weight	1.2 - 1.3 kg (2.7 - 2.8 lb)
Mounting	On wall or on device; mounting tabs included
Wire Exits	Two 35 mm (1.375 in) diameter openings on device bottom
Voltage Lead Wire	18 AWG 600V colored wire; 3m or 7m length
CT Interconnect Cable (from BGP51 to CT Interconnect Board)	Shielded cord; 1-5m length
Infeed Circuit CT Leads	24 AWG 600V twisted pair; quick disconnect; 0.5-5m length
Operating Environment	0° to 75°C (32° to 167°F); 5% to 95% non-condensing
Water and Dust Resistance	NEMA 1/IP20 (indoor use)
Power Usage	5-7W
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 11 BGP51 devices 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

CT LEAD WIRE OPTIONS

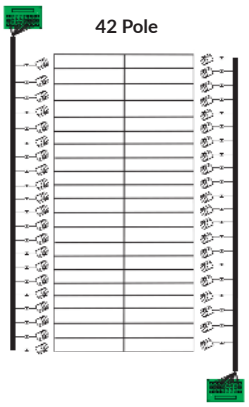
The BGP51 supports flexible, preconfigured CT wire harnesses as well as loose CT leads at a variety of lengths. Any infeed CT leads attach to Interconnect Boards.

Wire Harnesses

Side-by-Side

21 CT TOP

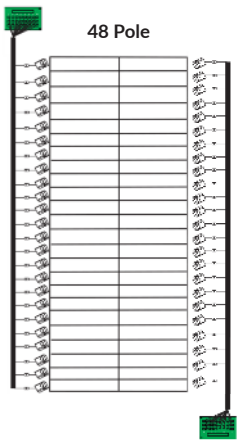
42 Pole



21 CT BOT

24 CT TOP

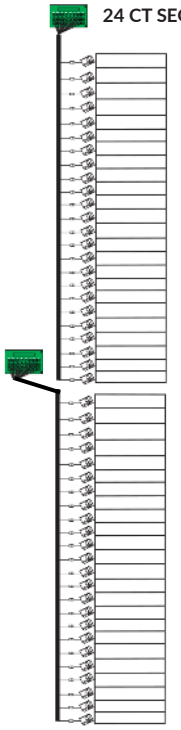
48 Pole



24 CT BOT

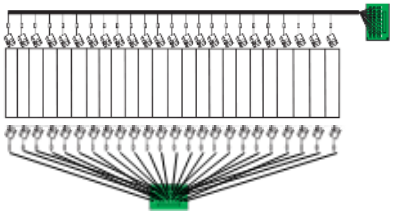
Sequential

24 CT SEQ



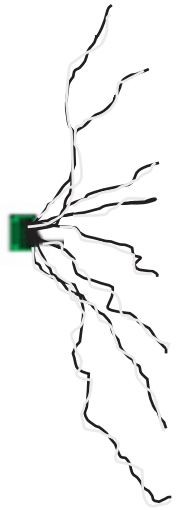
DIN

24 CT SEQ



24 CT MID

Loose Leads



Wire Harness Type	21 CT TOP	21 CT BOT	24 CT TOP	24 CT BOT	24 CT SEQ	24 CT MID
# CTs	21	21	24	24	24	24
Length to 1st CT	495 mm	495 mm	495 mm	495 mm	495 mm	521 mm
1st CT number	1 / 2	41 / 42	1 / 2	47 / 48	1	1
Length to last CT	1003 mm	1003 mm	1080 mm	1080 mm	1080 mm	521 mm
Last CT number	41 / 42	1 / 2	47 / 48	1 / 2	24	24
# CT Interconnect Boards & Interconnect Cables	1	1	1	1	1	1

Wire Harness Specifications	
	24 AWG 300V twisted pair wire with quick disconnects
	Wire lengths and lead labels vary by harness type
	Accommodates side-by-side, inline or DIN mount panels with 25 mm (1”) center-to-center breakers

Lead Wire Specifications
24 AWG 600V twisted pair wire with quick disconnects 0.5m, 1m, 1.5m, 2m, 3m or 5m lengths available

DESIGN YOUR BGP51 BRANCH CIRCUIT MONITOR

Customer _____ Panel _____ Qty _____

Model

Infeed CTs	Model
☐ None	BGP51-48C
☐ 1	BGP51-3P48C
☐ 2	BGP51-3P48C
☐ 3	BGP51-3P48C

Voltage Source

BGP51-48C

- ☐ 100-220V AC 1 Phase (2-wire LN + E)
- ☐ 230-240V AC 1 Phase (2-wire LL + E)
- ☐ 277V AC 1 Phase (2-wire LN + E)

BGP51-3P48C

- ☐ 100-220V AC 1 Phase (2-wire LN + E)
- ☐ 230-240V AC 1 Phase (2-wire LL + E)
- ☐ 277V AC 1 Phase (2-wire LN + E)
- ☐ 200-240V AC Delta (3-wire LLL + E)
- ☐ 240/120V AC Split (3-wire LLN + E)
- ☐ 208/120V AC Wye (4-wire + E)
- ☐ 415/240V AC Wye (4-wire + E)
- ☐ 480/277V AC Wye (4-wire + E)

Voltage Lead

Lead Length ☐ 3m ☐ 7m ☐ _____ m ☐ None

Fusing: ☐ Fused ☐ Not Fused

CT Interconnect Cable Length

BGP51 to CT Interconnect Board

1 (E1) ☐ 1m ☐ 1.5m ☐ 2m ☐ 3m ☐ 5m ☐ _____ m

2 (E2) ☐ 1m ☐ 1.5m ☐ 2m ☐ 3m ☐ 5m ☐ _____ m

Reference E1 and E2 on page 2

CT Harness Type

See page 4 for Harness options

1 (G1): _____

2 (G2): _____

Reference G1 and G2 on page 2

Branch Circuit Split Core CTs

Qty	Rated / Max Amperage	Inside Diameter	External Dimensions (H x W x D)	CT Tail
	☐ 15A / 18A	10 mm	39 x 23 x 26 mm	100 mm
	☐ 30A / 36A			
	☐ 50A / 63A			

Infeed Circuit Split Core CTs ☐ Not Applicable

Qty	Rated / Max Amperage	Inside Diameter	External Dimensions (H x W x D)	CT Tail	CT Lead Length (CT Interconnect Board to circuit)
	100A / 120A	☐ 16 mm	44 x 31 x 33 mm	500 mm	☐ 0.5 meter
		☐ 24 mm	65 x 46 x 35 mm		☐ 1 meter
	200A / 240A	☐ 24 mm	65 x 46 x 35 mm		☐ 1.5 meters
		☐ 36 mm	85 x 37 x 42 mm		☐ 2 meters
	400A / 480A	☐ 36 mm	85 x 37 x 42 mm		☐ 3 meters
		☐ 50 x 50 mm	125 x 120 x 30 mm		☐ 5 meters
	☐ _____ A	_____ mm			☐ _____ meters

BGP51 BRANCH CIRCUIT MONITOR MODEL CONFIGURATION INFORMATION

Packet Power's BGP51 wireless branch circuit monitor arrives fully configured to each customer's needs. The components selected in the Configuration worksheet (page 5) result in a unique product number. Please contact sales@packetpower.com with questions or if you have any additional customization needs not shown here.

Example:	42-pole, 120-240V single phase power service 3m fused lead, no infeed circuits, 42 50A CTs, 1 top down odd/even panel, and 3m Interconnect Cables
Product Number:	BGP5148C-S0-3F-C42-A1A1-33

Model	Voltage Source	V Lead	Branch Circuit CTs	CT Qty	Infeed Circuit CTs	Infeed CT Lead	CT Qty	CT Harness 1	CT Harness 2	CT Interconnect Cable 1	CT Interconnect Cable 2
BGP5148C	S0 = 120-240V AC 1 Phase (2-wire LN + E)	00 = None	A = 15A 10MM	1-48	00 = None	00 = None	Omit = None	A1 = 21 CT TOP	00 = None	1 = 1M	0 = None
BGP513P48C	S1 = 200-230V AC 1 Phase (2-wire LL + E)	0F = None, Fused	B = 30A 10MM		D1 = 100A 16MM	H = 0.5M	1-3	A2 = 21 CT BOT	A1 = 21 CT TOP	B = 1.5M	1 = 1M
	S2 = 277V AC 1 Phase (2-wire LN + E)	30 = 3M, Not fused	C = 50A 10MM		D2 = 100A 24MM	1 = 1M		A3 = 24 CT TOP	A2 = 21 CT BOT	2 = 2M	B = 1.5M
	D0 = 200-230V AC Delta (3-wire LLL + E)	3F = 3M, Fused			E1 = 200A 24MM	B = 1.5M		A4 = 24 CT BOT	A3 = 24 CT TOP	3 = 3M	2 = 2M
	T0 = 240/120V AC Split (3-wire LLN + E)	70 = 7M, Not fused			E2 = 200A 24MM	2 = 2M		A5 = 24 CT SEQ	A4 = 24 CT BOT	5 = 5M	3 = 3M
	Y0 = 208/120V AC Wye (4-wire + E)	7F = 7M, Fused			F1 = 400A 36MM	3 = 3M		A6 = 24 CT MID	A5 = 24 CT SEQ	C = Custom	5 = 5M
	Y1 = 415/240V AC Wye (4-wire + E)	C0 = Custom Not Fused			F2 = 400A 50x50MM	5 = 5M		CX = Custom	A6 = 24 CT MID		C = Custom
	Y2 = 480/277V AC Wye (4-wire + E)	CF = Custom Fused			CX = Custom	C = Custom			CX = Custom		