NEP Microinverter (BDM-800) Quick Installation Guide

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Pre-Installation:

● Measure service entrance voltage at site to verify it is within operating range of the microinverter and ensure optimal function of microinverter system.

● Acceptable ranges are shown in the table below for North America:
*BDM-800X (240V) or BDM-800X (208V). ***Not compatible with high-leg**.*

240 Volt AC Single Phase		208 Volt AC Single Phase	
L1 to L2	211 to 264 Vac	L1 toL2	183 to 229 Vac

● Verify functionality selected communication option for microinverter/gateway system (Ethernet, Wi-Fi, or Cellular).
● Verify correct materials (scanner, gateway w/appropriate accessories, combiner, sealing caps and # of microinverters are on hand as well as any/all accessories necessary to complete install.

Recommended Truck Stock:

- Scanner (1)
- Drill Battery AC Adapter (1)
- Female MC4 Seal (10)
- Male MC4 Seal (10)
- Trunk End Caps (10)
- Trunk T Seal Caps (10)
- Trunk Cable T (10)
- AC Cable (25’)
- Trunk Tools (Opener & Disconnecting)

NEP Microinverter Accessories/Components:

Microinverter (BDM-800)

Communication Gateway (BDM-256(3P))

Wi-Fi Dongle/Adapter

S/N Scanner

Wi-Fi booster

Accessories/Components Continued:

Trunk Seal Cap

Trunk End Cap

Trunk Cable
(12AWG/10AWG,
Portrait/Landscape)

Female Male

MC4
Seal Caps

Trunk Opening
Tool

Trunk
Disconnecting Tool

Consumption
Meter Kit

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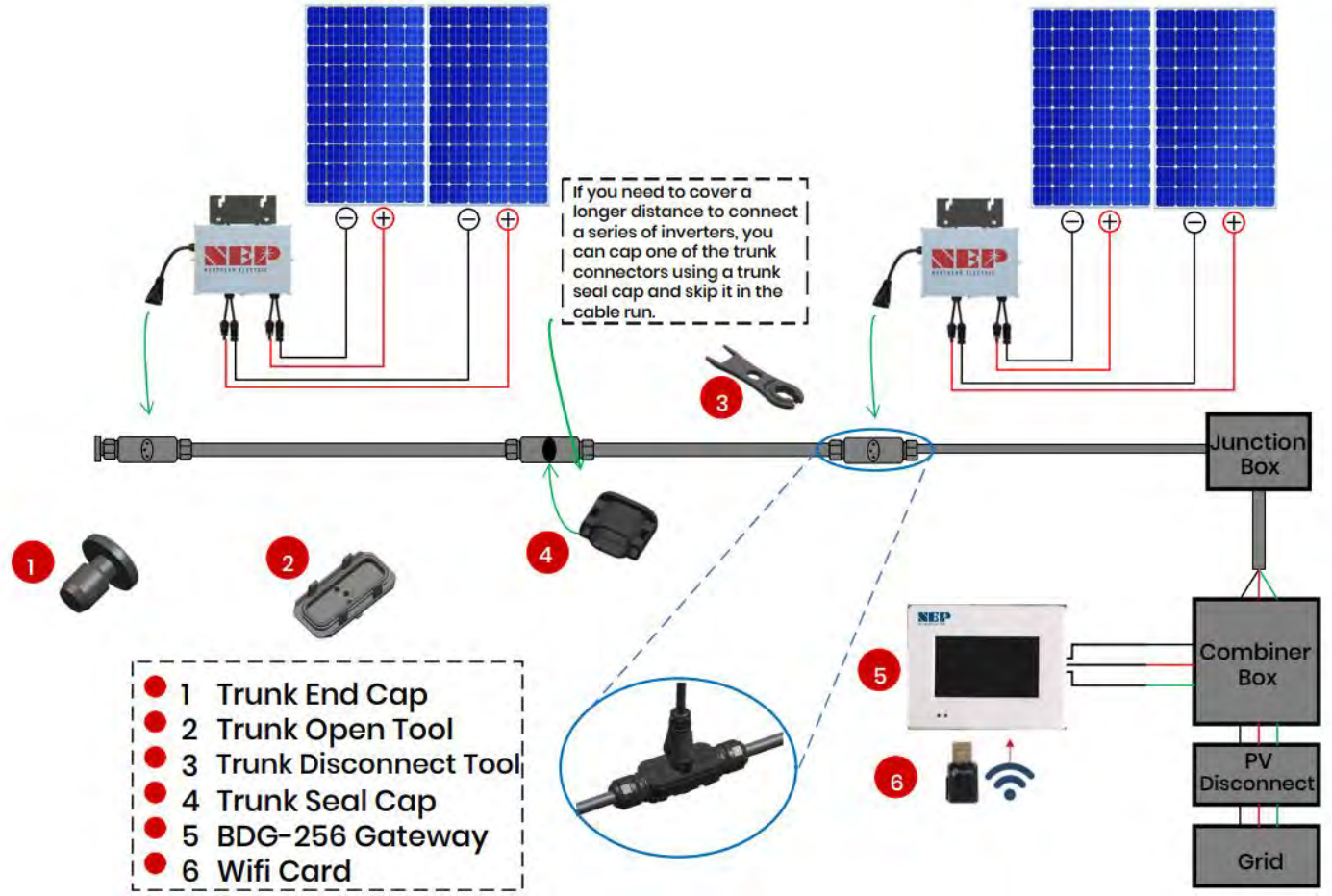
Quick Equipment Summary:

Parts/Tools Needed

- **Trunk Cable** *(12AWG or 10AWG, Portrait or Landscape).*
- **Trunk End Cap** *(One per branch circuit or split branch section of array).*
- **Trunk T Seal Cap** *(Recommended for unused trunk T connections)*
- **MC4 Seal Cap** *(Recommended for unused DC input terminals).*
- **Trunk Opening Tool**
- **Trunk T Disconnecting Tool**
- **BDG-256 Gateway w/Wi-Fi card** *(BDG-256P3 for 3phase).*
  - Recommended 240V power supply to Gateway
- **Combiner Panel** *(Needed when installing multiple branch circuits).*
- **Junction Box(s)**



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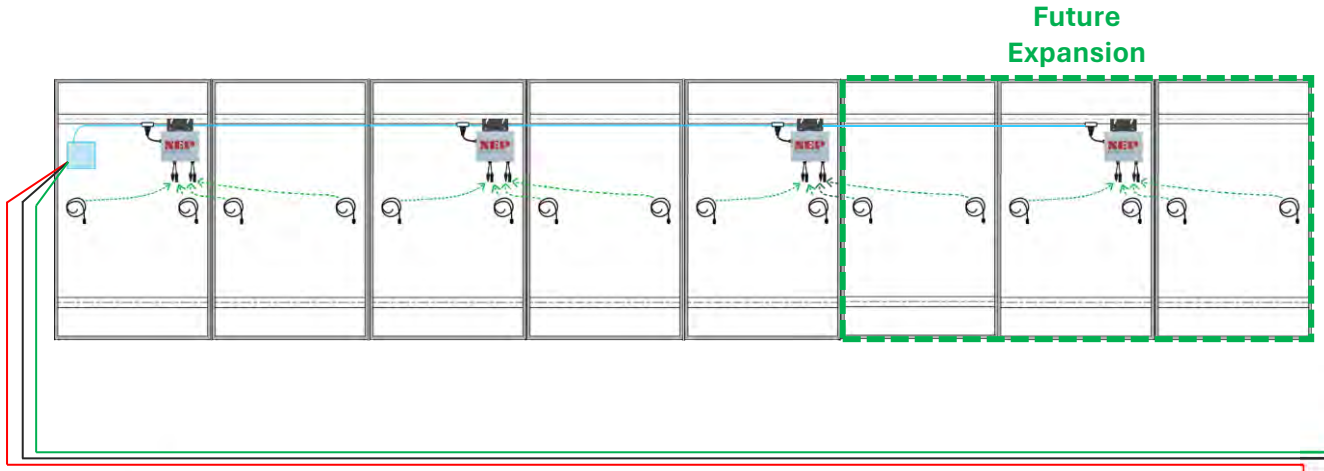
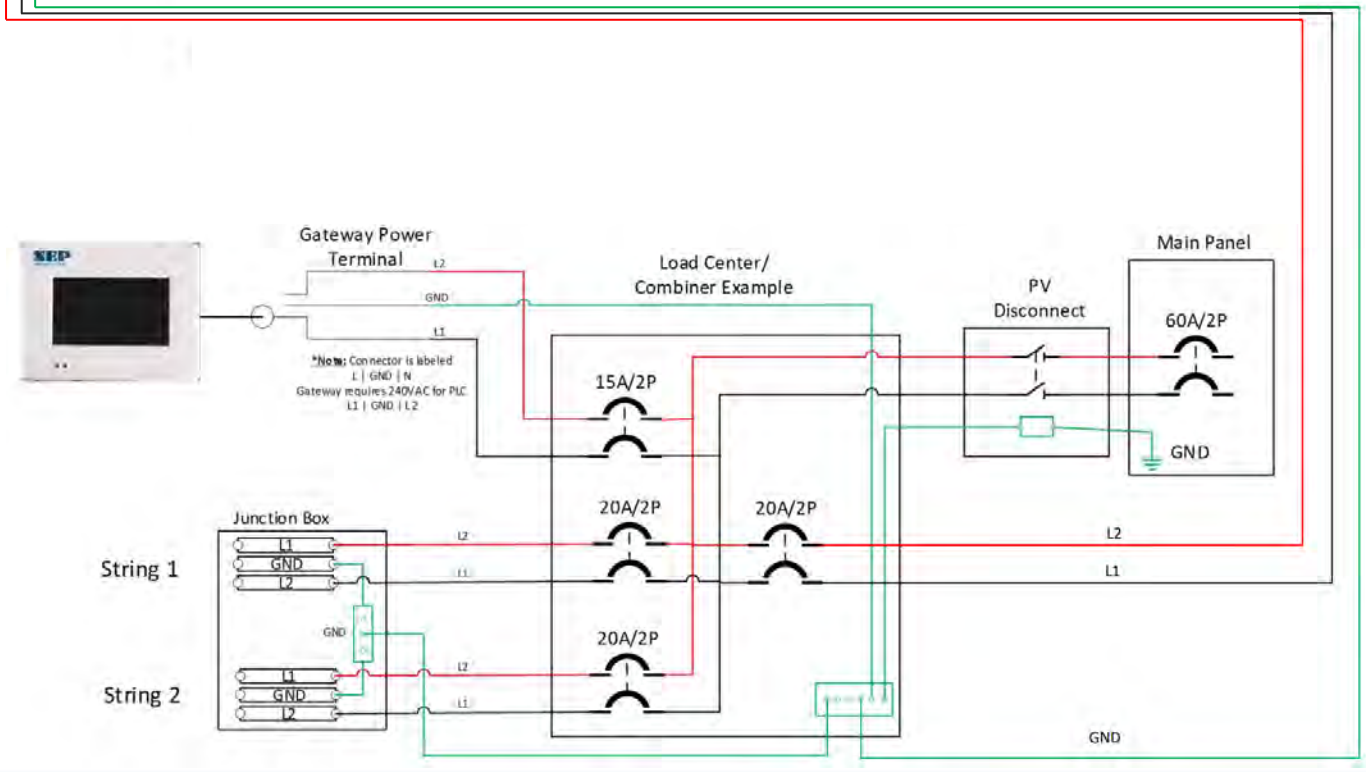
Tool/Equipment Continued:

Additional Parts/Tools Required

In addition to the PV modules, racking, and associated hardware, you'll need the following parts:

- MLPE rail or frame attach clamps *(2 per microinverter)*
- Cable clips/ties
- Cord-grip with strain relief fitting *(one per each AC cable entrance into junction box)*
- Sockets, wrenches, torque wrench, multimeter, small flat head screwdriver, and mirror with extension rod ● Lightning and surge suppressor (recommended)





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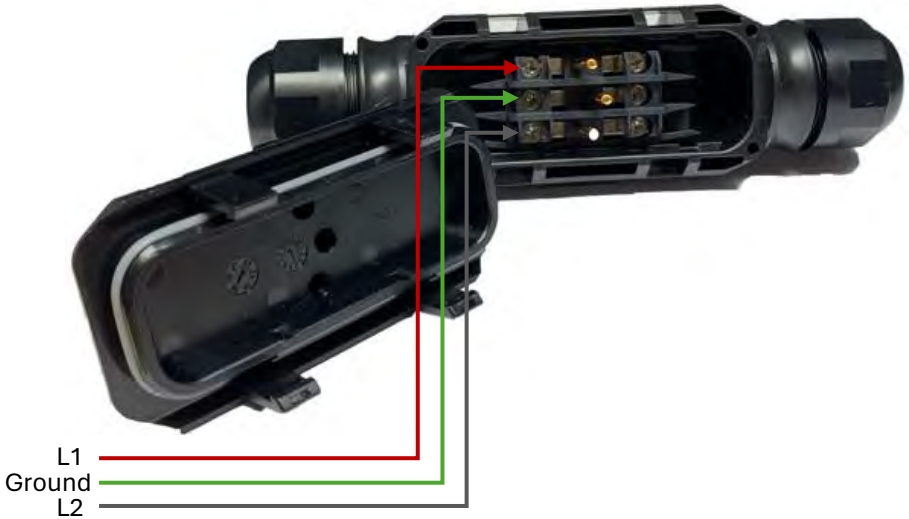
Electrical Connections/Seals:



Trunk T Terminations

BDM-800 (Trunk Version)

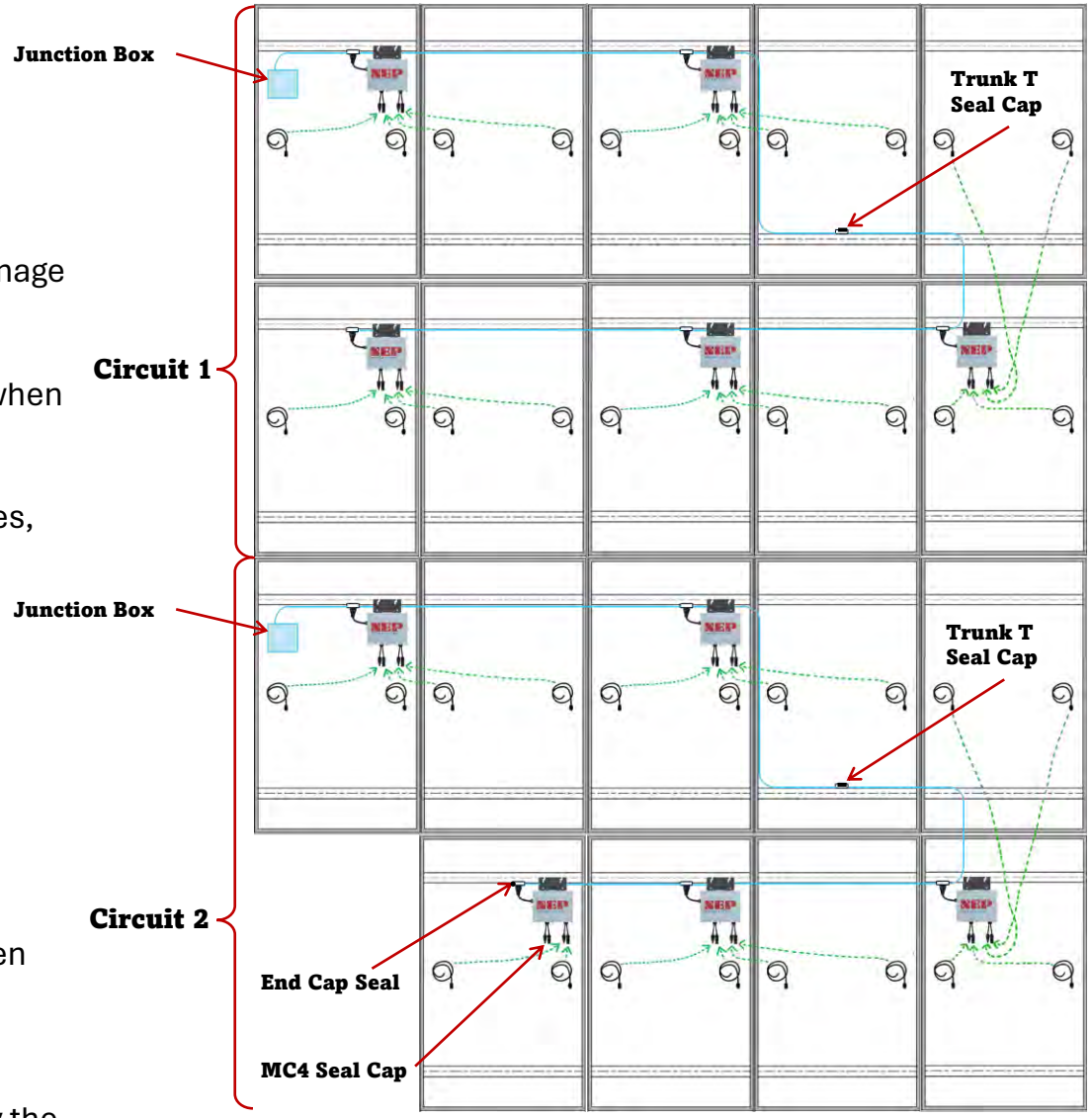
MC4 Seal Caps

Layout/Branch Circuit Recap:

Installing BDM-800:

- Secure trunk cable between microinverters, to the racking before laying modules, aligning the trunk T's just off center of the modules that are to be connected. (See image to the right for reference)
- Don't exceed 5 microinverters per branch circuit on a 20A OCPD (4 microinverters when 208V).
- To figure the # of microinverters needed. When installing an array of odd # of modules, divide the # of modules by 2 and round up to the nearest whole #.

  Example: An 11-module array / 2 = 5.5, rounded up to 6. This will be the # of microinverters needed for this array.
- Remember to use MC4 sealing caps to seal the unused DC input terminals on the microinverter and trunk T seal caps on any unused trunk T connections.
- If ever installing and array that has more than one branch/portion of branch circuit, include trunk end caps for correct sealing/protection of the branch/portion.
- When laying out/mounting microinverters, be sure to mount them as central between the connecting modules as possible, without interfering with the module frame and racking clamp.
- For ease of making module to microinverter connections and wire maintenance, lay the module that is not directly above the micro, first. Then lay the module that is directly above the microinverter.



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Technical Specification:

BDM-800 MICROINVERTER

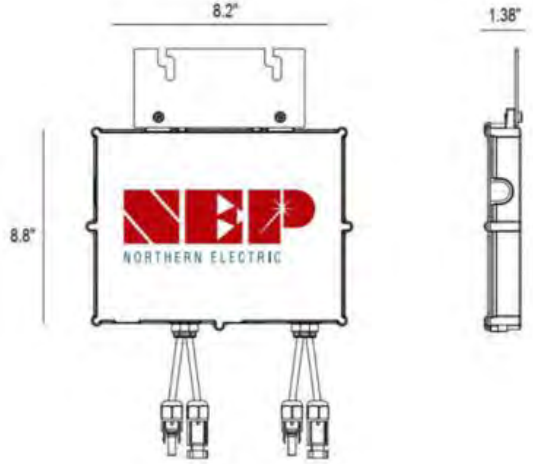
Input (DC)		
Recommended Max PV Power:	650 W x 2	
Max DC Open Circuit Voltage:	60 Vdc	
Max DC Input Current:	15.2 A	
MPPT Tracking Accuracy:	> 99.5%	
MPPT Tracking Range:	22 – 55 Vdc	
ISC PV (Absolute Maximum):	20 x 2 A	
Maximum Backfeed Current to Array:	0 A	

Output (AC)		
Peak AC Output Power:	800 W	
Max Continuous Output Power:	768 W	3φ: 700 W
Nominal Power Grid Voltage:	240 Vac	3φ: 208 Vac
Allowable Power Grid Voltage:	211-264 Vac	3φ: 183-228 Vac
Rated Output Current:	3.20 A	3φ: 3.36 A
Maximum Units Per Branch (20A):	5 units	3φ: 4 units
(All NEC adjustment factors considered)		
Allowable Power Grid Frequency:	59.3 - 60.5 Hz	
THD:	< 3% (at rated power)	
Power Factor (cos phi, fixed):	-0.99 > 0.9 (adjustable) (0.9un ~0.9ov)	
Current (inrush) (Peak and Duration):	9.4 A, 15 US	
Nominal Frequency:	60 Hz	
Max Output Fault Current:	9.6 A Peak	
Max Output Overcurrent Protection:	20 A	

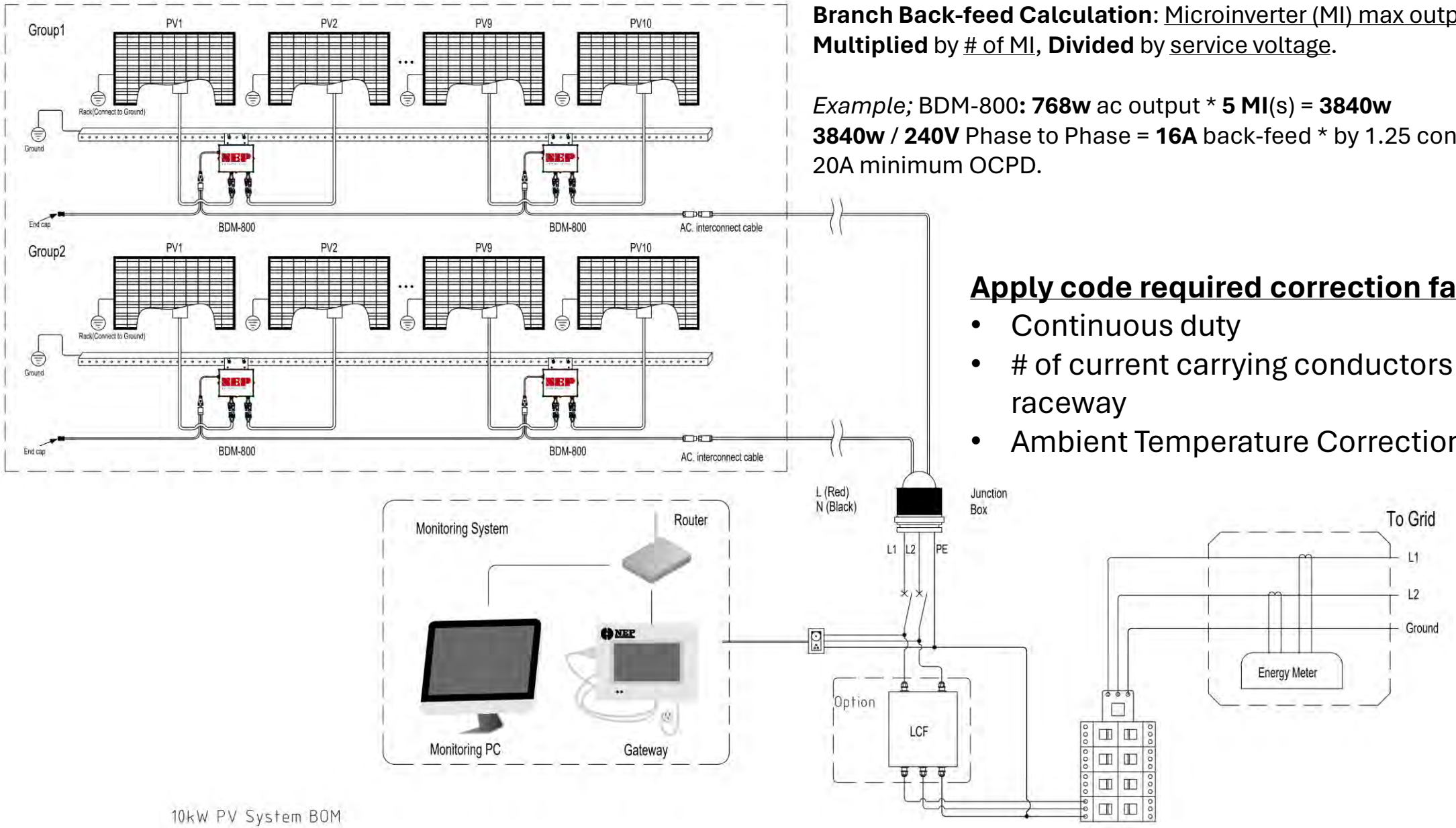
System Efficiency	
Weighted Average Efficiency (CEC):	96.5%

STANDARD DIMENSIONS

Inches



Weight: 6.4 lbs. (2.9 kg)



10kW PV System BOM

Branch Back-feed Calculation: Microinverter (MI) max output power **Multiplied** by # of MI, **Divided** by service voltage.

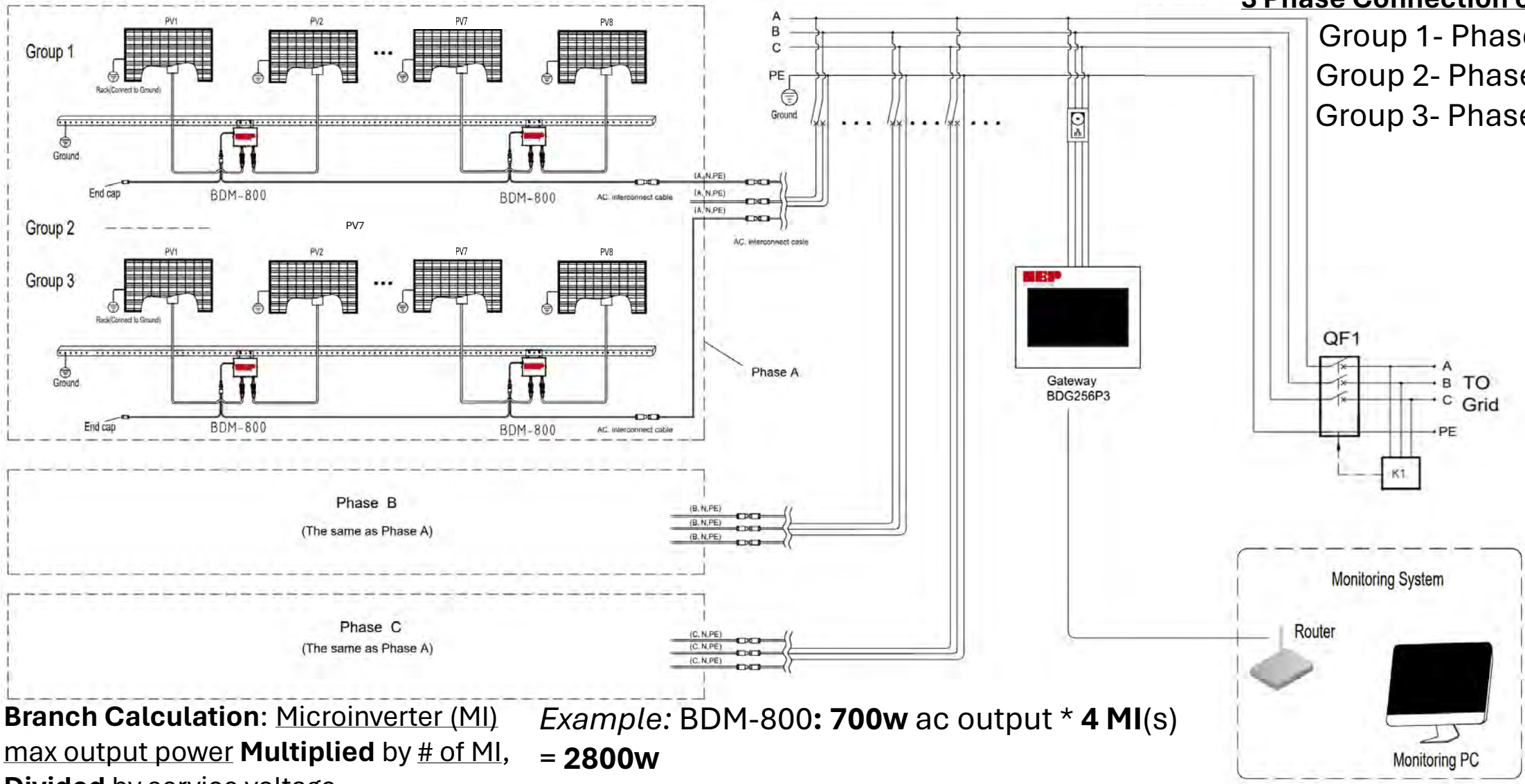
Example; BDM-800**: 768w** ac output * **5 MI**(s) = **3840w**
3840w / **240V** Phase to Phase = **16A** back-feed * by 1.25 continuous = 20A minimum OCPD.

Apply code required correction factors:

- Continuous duty
- # of current carrying conductors in raceway
- Ambient Temperature Correction

3 Phase Connection of Circuits

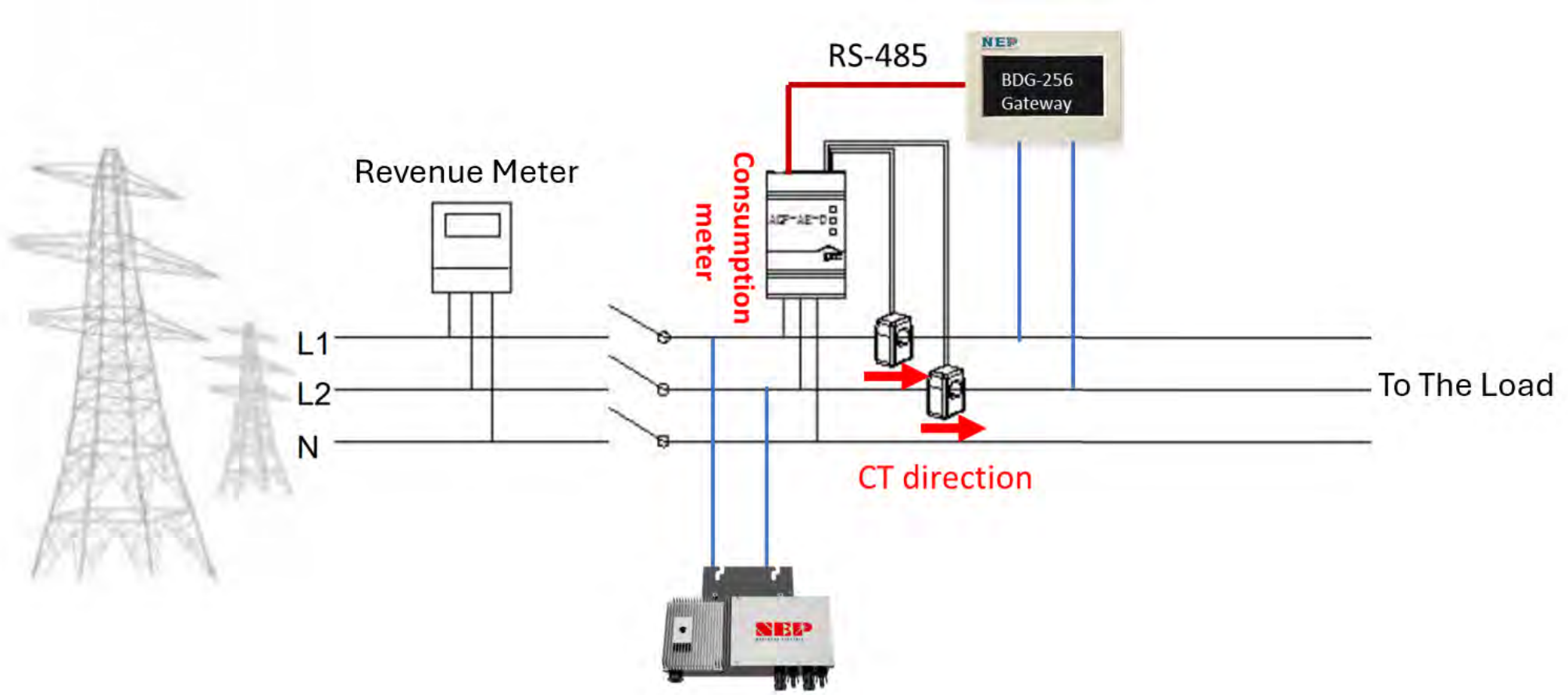
Group 1- Phase A and B
Group 2- Phase C and A
Group 3- Phase B and C



Branch Calculation: Microinverter (MI) max output power **Multiplied** by # of MI, **Divided** by service voltage.

Example: BDM-800**: 700w** ac output * **4 MI**(s) **= 2800w**
2800w / 208V Phase to Phase = **13.5A** back-feed

Consumption Metering:



Reference Links:

- BDM-800 Technical Specifications
- BDM-800 Installation Manual
- Example Diagram
- Accessory Information
- Consumption Metering Installation Guide
- Gateway Connectivity Guide
- Commissioning Step-by-Step
- Everything else NEP