



NEP Microinverter (BDM-600X) Quick Installation Guide



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-600X (240V) or BDM-600X (208V)*. ***Not compatible with high-leg.**

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

- Verify selected communications option for microinverter/gateway system (Ethernet, Wi-Fi, or Cellular).
- Verify correct materials 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)
- Female End Caps (10)
- Male End Caps (10)
- Female AC Connectors (5)
- Male AC Connectors (5)
- AC Cable-12 AWG or 10 AWG (50')



NEP Microinverter Accessories/Components:



**Microinverter
(BDM-600X)**



**Communication
Gateway
(BDM-256(3P))**



**S/N
Scanner**



**Wi-Fi
Dongle/Adapter**



**Wi-Fi
booster**



Accessories/Components Continued:

Female

Male



**BQ
End Caps**

Female

Male



**BQ
Connectors**

Female

Male



**MC4
Seal Caps**



**BQ
Tail Cable**



**AC
Cable**

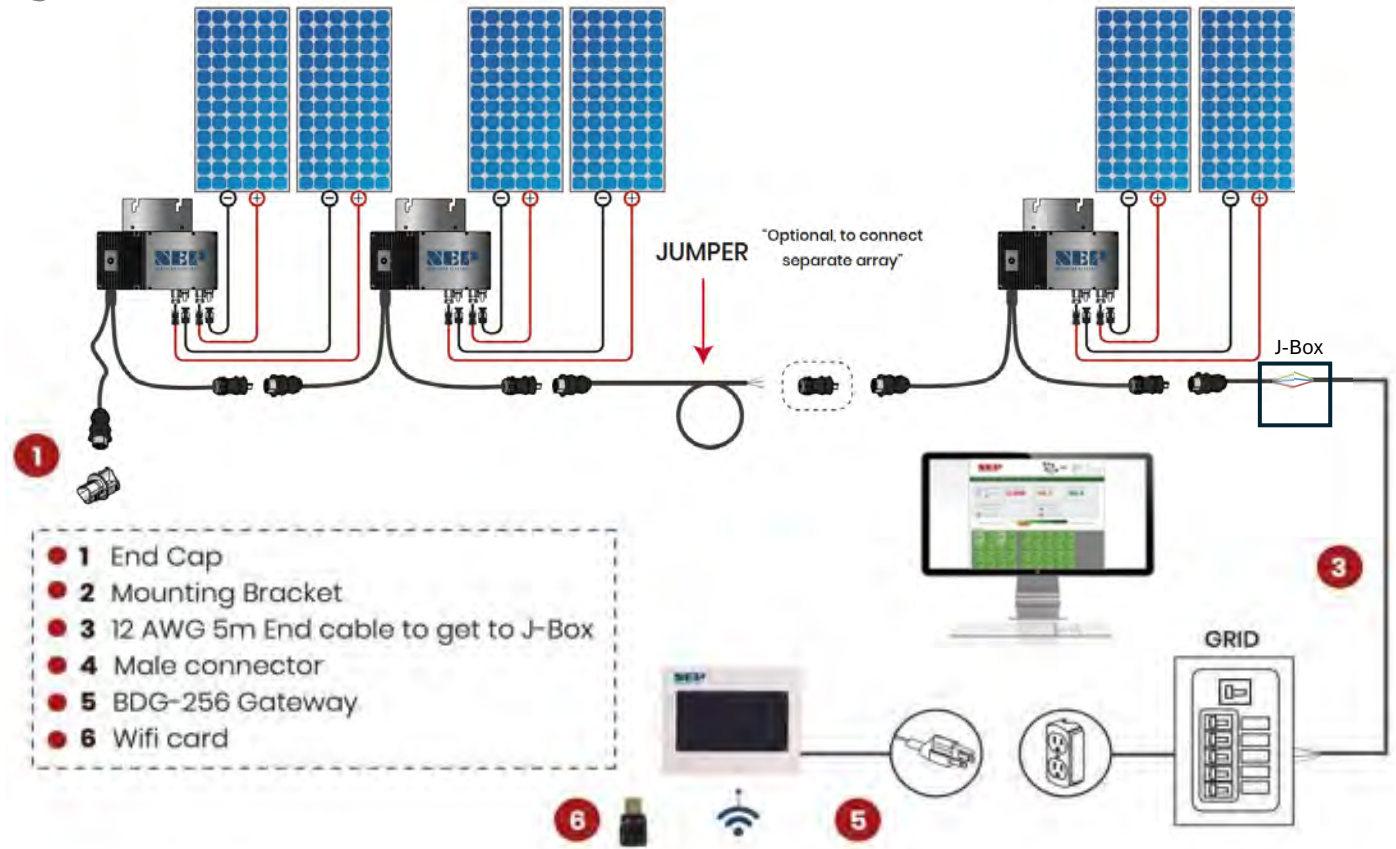


**Consumption
Meter Kit**

Quick Equipment Summary:

Parts/Tools Needed

- **AC cable** (12AWG or 10AWG).
- **BQ End Cap** (One per branch circuit or split branch section of array).
- **BQ Tail cable -16'** length - 'Built on Female connector' (One per branch circuit or split branch section of array).
- **MC4 Seal Cap** (Recommended for unused DC input terminals).
- **Male connector** (Recommended when making extension cables).
- **BDG-256 Gateway w/Wi-Fi card** (BDG-256P3 for 3phase).
- Recommended 240V power supply to Gateway. (Alternating reporting)
- **Combiner Panel** (Needed when multiple branch circuits).



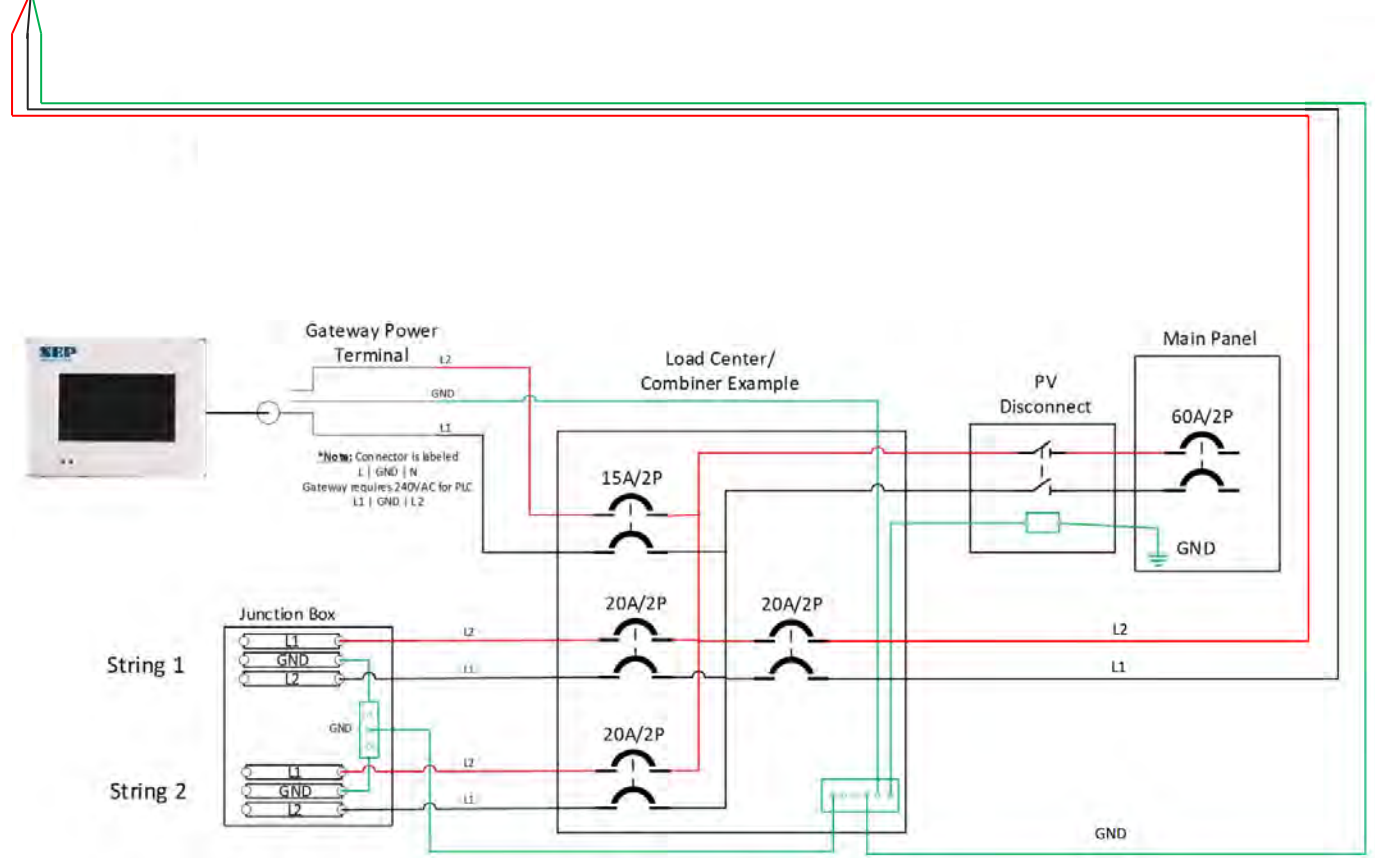
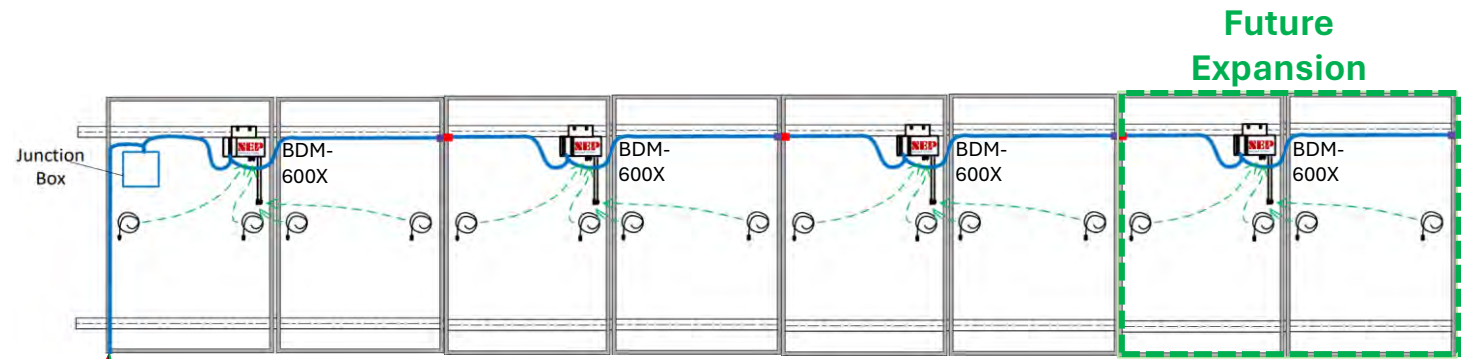


Electrical Install:

Additional Parts/Tools Required

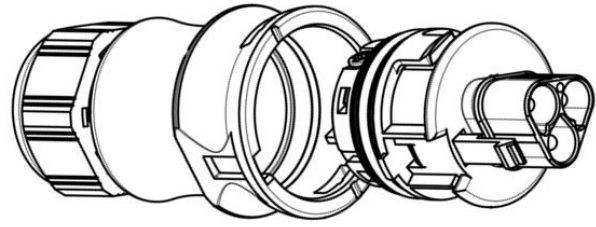
In addition to the PV modules, racking, and associated hardware, you'll need the following parts:

- MLPE rail or frame attach clamps (2 per microinverter)
- AC junction boxes (multiple options possible)
- Cord-grip with locknut or strain relief fitting (one per branch circuit)
- A subpanel may be required for systems with multiple branch circuits.
- Cable clips
- Sockets, wrenches, torque wrench, multimeter, small flat head screwdriver, and mirror with extension rod • Lightning and surge suppressor (recommended)

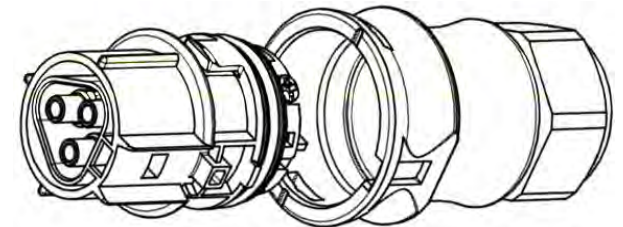




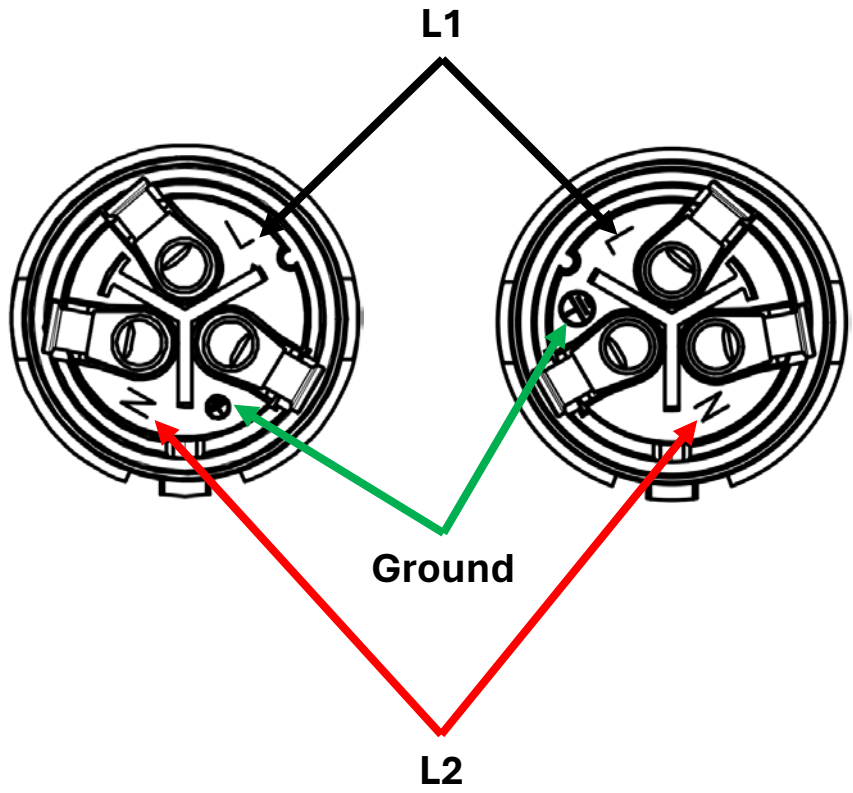
Electrical Connections/Seals:




Male Connector

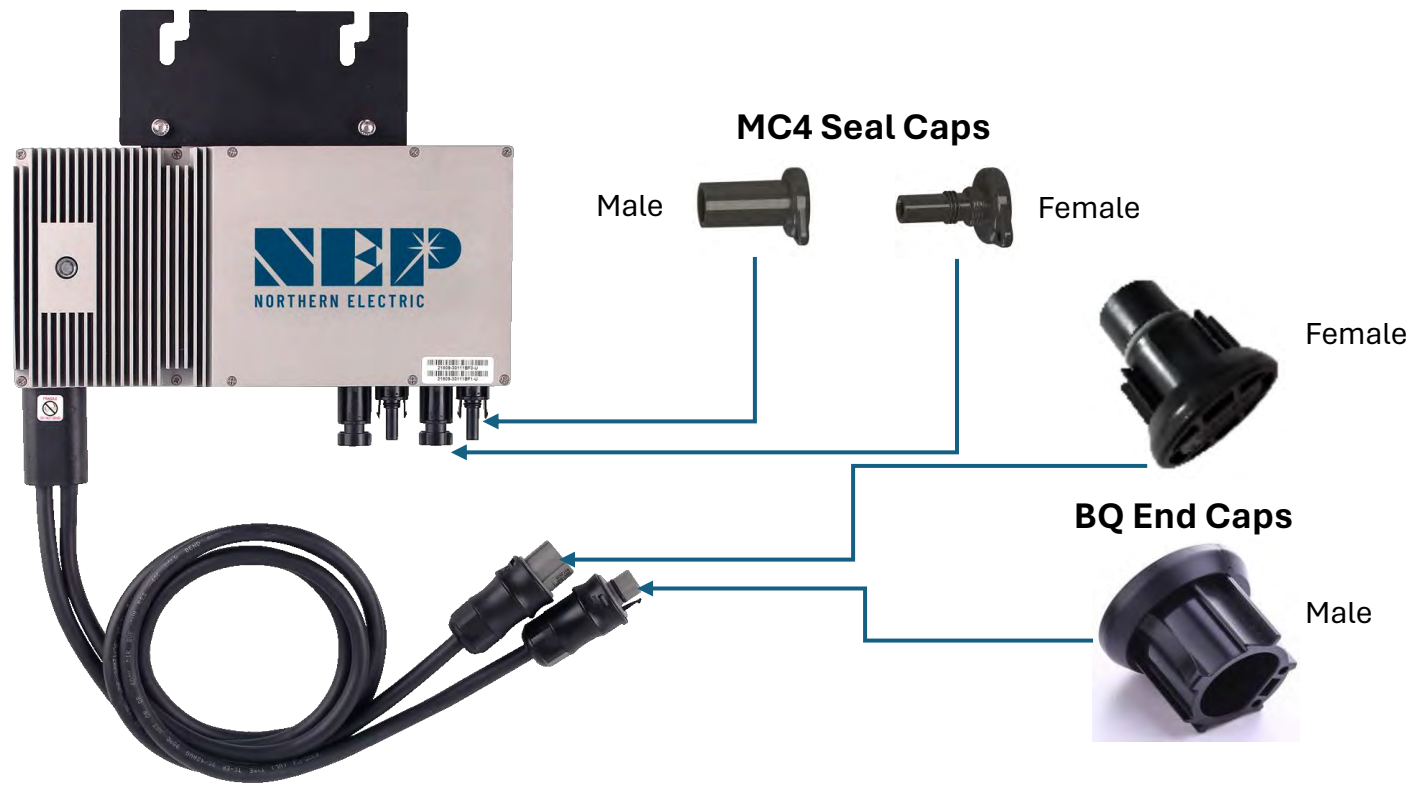


Female Connector



Connectors/Splices in 240V systems:

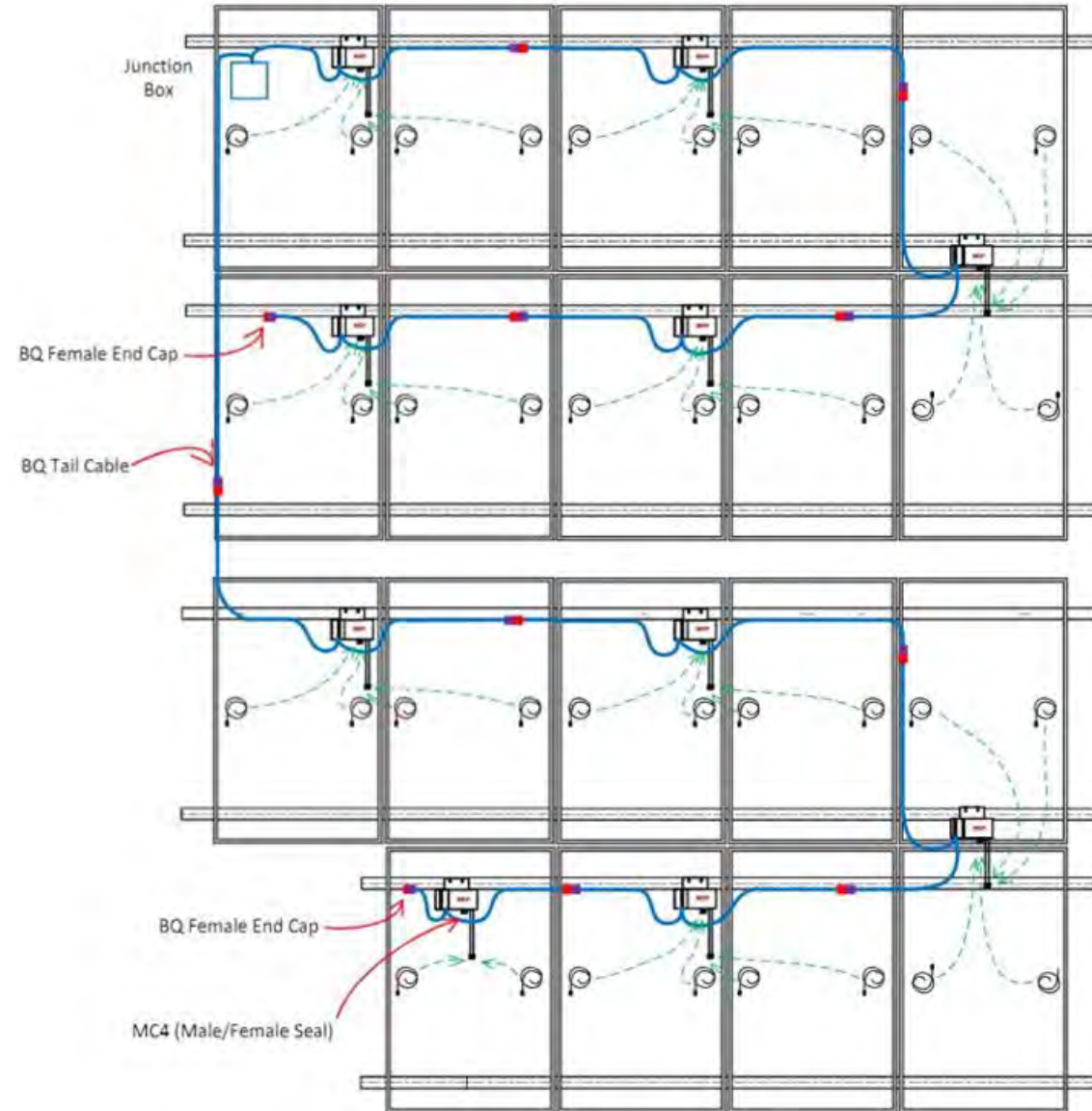
- L1 to L terminal
- L2 to N terminal
- Ground to  symbol



Layout/Branch Circuit Recap:

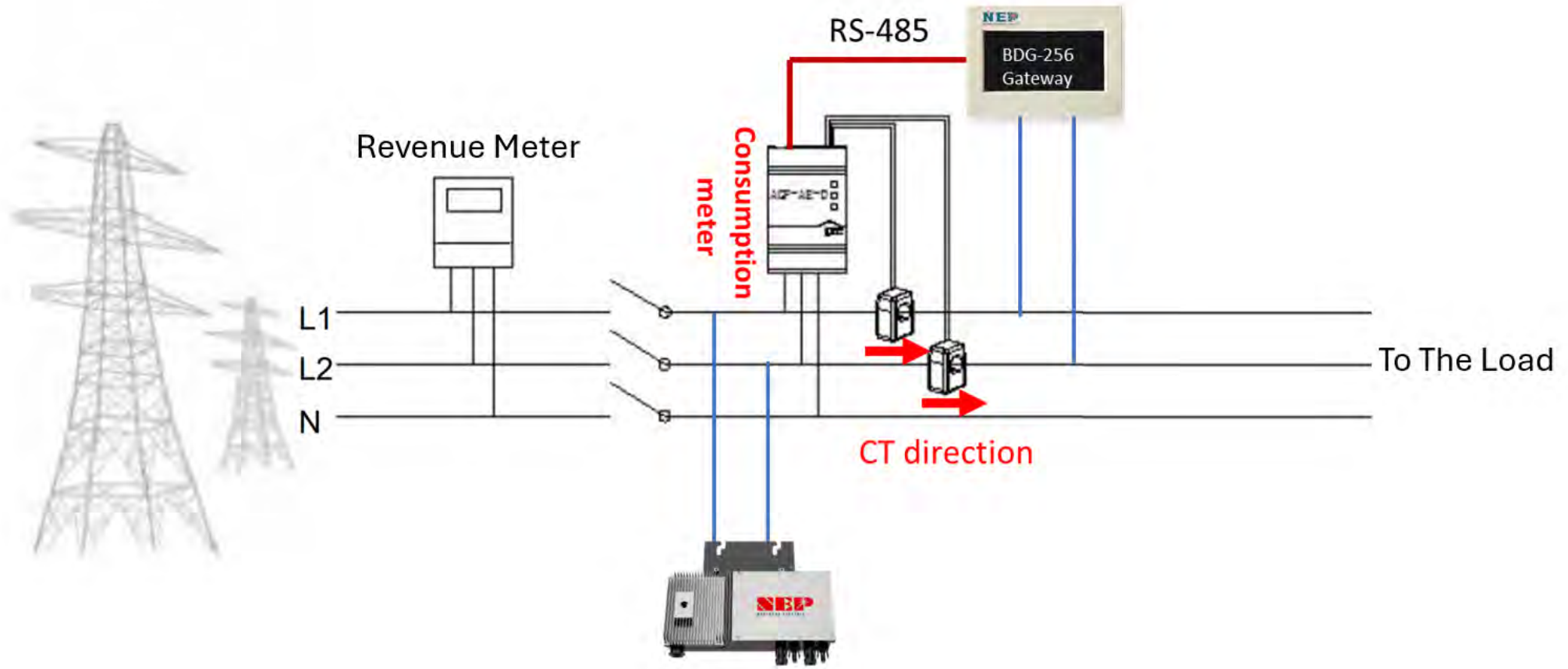
Installing BDM-600X:

- Don't exceed 6 micros per branch circuit on a 20A OCPD.
- 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.
- Secure daisy chained trunk between microinverters, to the racking before laying modules.
- Remember to use MC4 sealing caps to seal the unused DC input terminals on the microinverter.
- If ever installing an array that has more than one branch/portion of branch circuit, include appropriate end caps to seal the unused AC cable connector(s).
- When laying out 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.





Consumption Metering:





Technical Specification:

BDM-600X MICROINVERTER

Input (DC)	
Recommended Max PV Power:	450 W x 2
Max DC Open Circuit Voltage:	60 Vdc
Max DC Input Current:	14 A x 2
MPPT Tracking Accuracy:	> 99.5%
MPPT Tracking Range:	22 – 55 Vdc
ISC PV (Absolute Maximum):	18 A x 2
Maximum Backfeed Current to Array:	0 A

Output (AC)	
Peak AC Output Power:	600 W
Max Continuous Output Power:	580 W
Nominal Power Grid Voltage:	240 Vac 3φ: 208 Vac
Allowable Power Grid Voltage:	211-264 Vac 3φ: 183-228 Vac
Rated Output Current:	2.42 A 3φ: 2.79 A
Maximum Units Per Branch (20A):	6 units 3φ: 5 units
<i>(All NEC adjustment factors considered)</i>	
Allowable Power Grid Frequency:	59.3 - 60.5 Hz
THD:	< 3% (at rated power)
Power Factor (cos phi, fixed):	-0.99 > 0.9 (adjustable)
Current (inrush) (Peak and Duration):	24 A, 15 US
Nominal Frequency:	60 Hz
Max Output Fault Current:	2.4 Arms for 3 cycles
Max Output Overcurrent Protection:	10 A

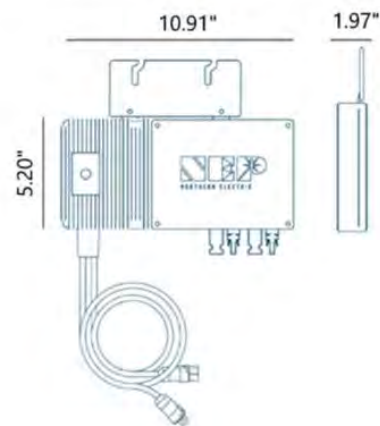
BDM-600X MICROINVERTER

BDM-300X2 CEC Listing as Utility Interactive Inverter
(NC0142-US-BQ-A, NC0142-L-US-BQ-A)

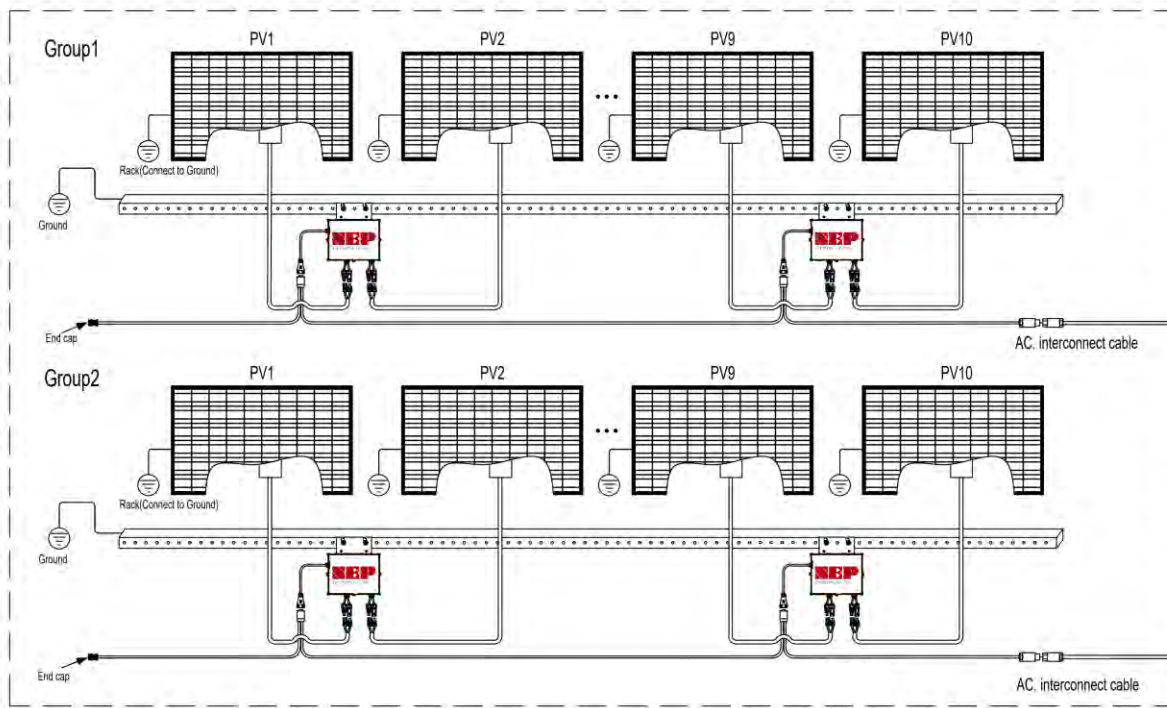


STANDARD DIMENSIONS

Inches



Weight: 6.4 lbs. (2.9 kg)

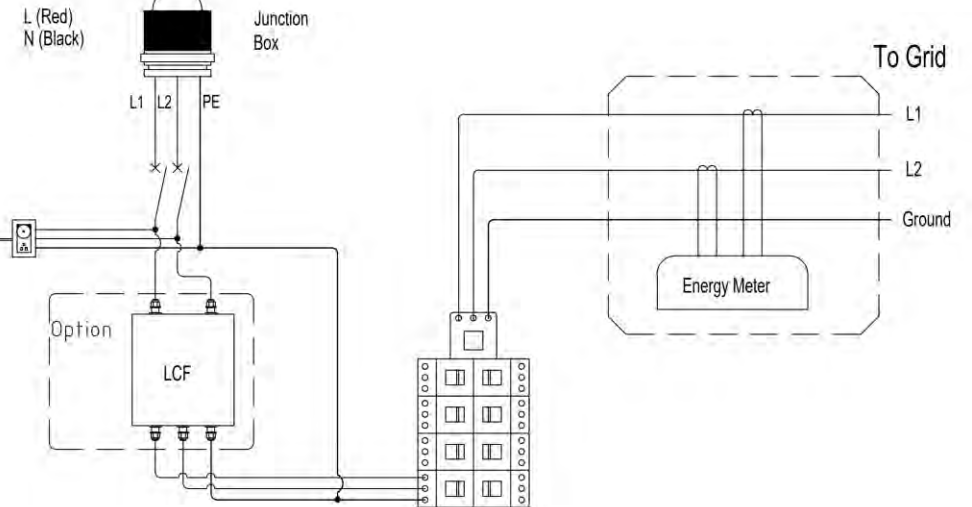
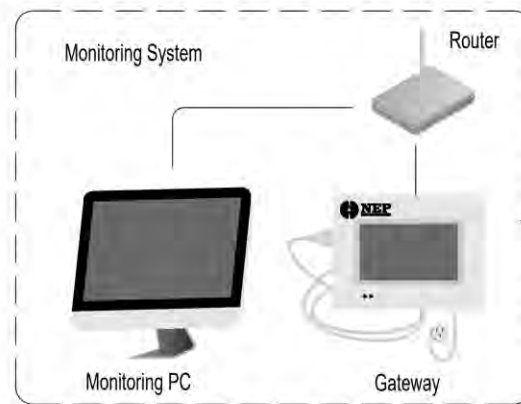


Branch Back-feed Calculation: Microinverter (MI) max output power
Multiplied by # of MI, **Divided** by service voltage.

*Example; BDM-600X: 580w ac output * 5 MI(s) = 2900w*
2900w / 240V Phase to Phase = **12.1A** back-feed * by 1.25 continuous
 = 15.13A minimum OCPD.

Apply code required correction factors:

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

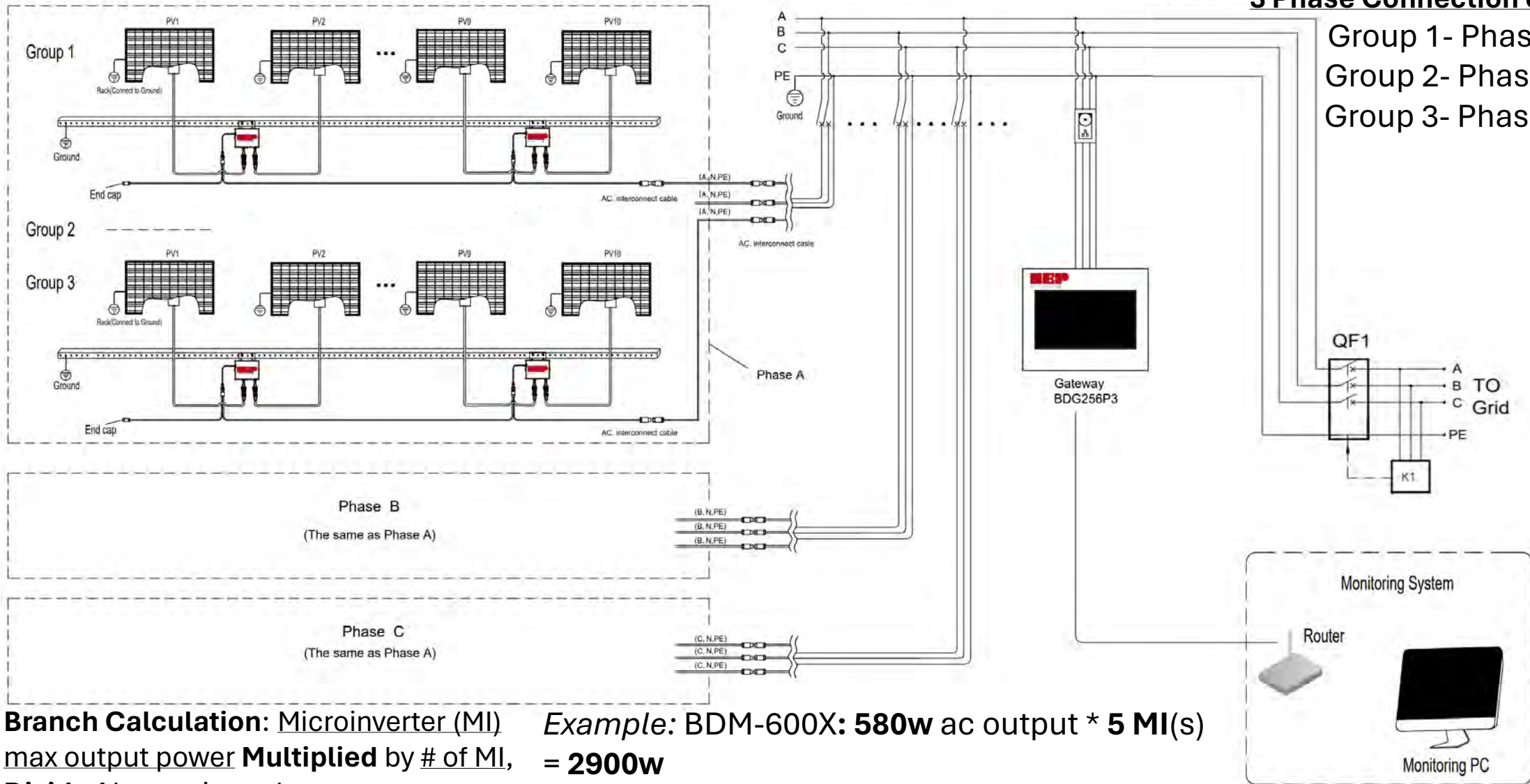


10kW PV System BOM



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-600X: **580w** ac output * **5 MI(s)**
= 2900w
2900w / 208V Phase to Phase = **13.9A** back-feed



Reference Links:

- [BDM-600X Technical Specifications](#)
- [BDM-600X Installation Manual](#)
- [Example Diagram](#)
- [Accessory Information](#)
- [Consumption Metering Installation Guide](#)
- [Gateway Connectivity Guide](#)
- [Commissioning Step-by-Step](#)
- [Everything else NEP](#)