

# Combiner Boxes

## Features

- Custom designed to match specifications of a PV plant; positive, negative, or ungrounded (floating ground) system.
- UL certified and listed to UL 1741 standard.
- Weather-resistant NEMA 3R, 4 (painted steel) or 4X (fiberglass or stainless steel) rated enclosures.
- Generous enclosure sizes to reduce installation time.
- Anti-corrosion copper bus bars ensures efficient combining.
- Rated for continuous use at total maximum current.
- Quality control tested and identified with a unique serial number.
- 5-year warranty
- 90 degree custom lug configurations.
- Lockable door.
- Lock-out/disconnect functionality for DC disconnects.
- Manufactured in a ISO 9001 facility.

## Options

- Individual string level current output monitoring.
- Voltage monitoring .The monitored current or voltage are able to be read over RS 485 wiring to a central control station.
- Pig-tails with connectors readily attached used in conjunction with **WTEC PV Bundled Plug and Play Wire Harness** facilitates field connections and substantially decreases installation time. NEMA rating of the enclosure is maintained.
- Installation hardware to attach the combiner box to either I-beam or a round pipe found in a solar PV rack system.



## Commercial & Utility Scale

WTEC combiner boxes are carefully designed for high voltage, and high current applications. They are made with utmost attention to safety, ease of installation, and carry listings to UL and CSA standards. Each string has a finger-safe fuse inside each combiner box.

While some manufacturers may offer surge suppressors as an option, WTEC includes this vital feature in all commercial and utility scale combiner boxes; offering protection against lightning and voltage surges.

WTEC Combiner Box Specifications (With Current Monitoring)								Input		Output	Comments
WTEC CB P/N Typical	Enclosure Size	Max Voltage DC	Max Total Current DC	Disconnect Amps	Max No. of Inputs	Max Fuse Size Amps	Max Current/Line (Amps)	PV wire Gage Max	Grounded/ Ungrounded	Wire Size	With Current Monitoring
10-250-08-N-M	24 x 24 x 8	1000V	250	250	8	30	25	12-8 awg	Grounded, only +, fused	500 kcmil-1/0 AWG for both copper and aluminum	With Current Monitoring
10-250-16-N-M	24 x 24 x 8	1000V	250	250	16	25	20	12-8 awg	Grounded, only +, fused	500 kcmil-1/0 AWG for both copper and aluminum	With Current Monitoring
10-250-30-N-M	30 x 24 x 12	1000V	250	250	30	20	15	12-8 awg	Grounded, only +, fused	500 kcmil-1/0 AWG for both copper and aluminum	With Current Monitoring
10-400-36-N-M	36 x 30 x 12	1000V	400	400	36	25	20	12-8 awg	Grounded, only +, fused	1000 kcmil-500 kcmil or (2)300 kcmil-6 AWG for both copper and aluminum	With Current Monitoring
10-250-20-F-M	30 x 30 x 12	1000V	250	250	20	25	20	12-8 awg	Ungrounded, both +, - fused	500 kcmil-1/0 AWG for both copper and aluminum	With Current Monitoring
10-400-30-F-M	36 x 36 x 12	1000V	400	400	30	25	20	12-8 awg	Ungrounded both +, - fused	1000 kcmil-500 kcmil or (2)300 kcmil-6 AWG for both copper and aluminum	With Current Monitoring

WTEC Combiner Box Specifications (Without Current Monitoring)								Input		Output	Comments
WTEC CB P/N Typical	Enclosure Size	Max Voltage DC	Max Total Current DC	Disconnect Amps	Max No. of Inputs	Max Fuse Size Amps	Max Current/Line (Amps)	PV wire Gage Max	Grounded/ Ungrounded	Wire Size	With Current Monitoring
10-250-24-N-B	24 x 20 x 8	1000V	250	250	24	25	20	12-8 awg	Grounded, only +, fused	500 kcmil-1/0 AWG for both copper and aluminum	Without Current Monitoring
10-250-30-N-B	24 x 24 x 8	1000V	250	250	30	25	20	12-8 awg	Grounded, only +, fused	500 kcmil-1/0 AWG for both copper and aluminum	Without Current Monitoring
10-400-36-N-B	30 x 24 x 10	1000V	400	400	36	20	15	12-8 awg	Grounded, only +, fused	1000 kcmil-500 kcmil or (2)300 kcmil-6 AWG for both copper and aluminum	Without Current Monitoring
10-250-20-F-B	24 x 24 x 8	1000V	250	250	20	25	20	12-8 awg	Ungrounded, both +, - fused	500 kcmil-1/0 AWG for both copper and aluminum	Without Current Monitoring
10-400-30-F-B	30 x 30 x 10	1000V	400	400	30	25	15	12-8 awg	Ungrounded both +, - fused	1000 kcmil-500 kcmil or (2)300 kcmil-6 AWG for both copper and aluminum	Without Current Monitoring

### WTEC Part Number System For Combiner Boxes

Manufacturer	WTEC
Combiner Box	CB
1000V / 600V	10/ 06
Max Current & Disconnect Size	250/ 400
Number of Inputs	5-36
Negative leg fused/ Positive Leg Fused/ Floating Ground	N/ P/ F
Current Monitored Design or Basic Without Current Monitoring	M or B

- Enclosure sizes can be slightly larger for optional current monitoring feature.
- Maximum current is based upon:  
(number of strings x 1.25 x short circuit current from each string)
- Disconnect size is chosen to be the same or higher than the maximum current.
- Bus bar and fuse are sized to be (number of strings x 1.56 x short circuit current for each string).
- In the table above, the maximum number of inputs and maximum fuse size may not always work together. It is important to not exceed the maximum current rating.
- WTEC strongly recommends and includes the DC disconnect to safely disconnect each combiner box. WTEC will exclude this feature, only if the customer has a separate disconnect and indicates that it is not required in the specific PV plant design.

