Bonfiglioli
Photovoltaic

RPS TL-UL System

Solutions for the North American Solar Market

2015/2016

Bonfiglioli
power, control and green solutions

Power, control and green solutions

RPS TL-UL System

With the new generation of the RPS TL-UL series, Bonfiglioli expands its product range of solar PV inverters for the North American market, reaching a power rating of up to 1,575 kWac for a single inverter system. The modular design ensures maximum energy harvest, optimal adaptation to PV plant configurations and excellent system reliability.

RPS TL-UL inverters carry the ETL mark for full compliance to UL1741, IEEE1547 and IEEE1547.1 standards.

Flexibility and Scalability

The RPS TL-UL boasts one of the widest ranges of inverter ratings in the market (from 376 kWac to 1575 kWac), ensuring an optimal matching with every PV array configuration. The scalable modular architecture offers options for Multi-MPPT and Master-Slave configuration, which help to manage workload and maximize productivity.

Advanced Grid Features

Bonfiglioli RPS TL-UL inverters are designed according to the most stringent grid codes in order to offer the following features:

- Complete set of advanced grid features set including LVRT, HVRT, FRT, ramp rates, reactive power control, power factor control
- Large power factor capability (0.9 lead/lag at rated power)
- Compliant with all major utilities' requirements.

Quality and Availability

The RPS TL-UL is a uniquely-designed high-power solar PV inverter system that provides maximum energy harvest. Thanks to the rigorous modular architecture, the RPS TL-UL ensures maximum system reliability: a single fault in an inverter module will never affect more than only one subfield, while the balance of the system continues to operate with minimum loss of energy production.

Reliable Partnership

Thanks to over 25 years of engineering excellence in power conversion technology, Bonfiglioli has the required footprint, experience and infrastructure to develop and deliver complete, cost-effective inverter solutions.

In addition, the overall business composition of Bonfiglioli ensures financial stability to support installations long-term, and to provide and support customers with uptime guarantees and a wide range of extended warranty options.

RPS TL-UL from 376 kWac to 1575 kWac


RPS
Bonfiglioli
Vectron
Renewable Power System
STOP
START
RESET

RPS TL-UL System

The scalable, modular architecture of the RPS TL-UL offers greater system flexibility and more options for managing working load, making Bonfiglioli an ideal partner for large commercial and utility-scale installations.
Available in Master-Slave or Multi-MPPT configurations, the RPS TL-UL system includes floating or grounded arrays up to 1000 Vdc.

Master-Slave Configuration

The Master-Slave configuration intelligently manages the working load of each module in order to maximize conversion efficiency and provide an extended working life. The automatic disconnection of individual modules during fault conditions ensures a minimal effect on the energy production by allowing the rest of the system to operate normally. The Master-Slave system is ideally suited to provide the most benefit in efficiency under partial load conditions and will allow the system to start earlier in the morning and stop later in the evening.

Multi-MPPT Configuration

The Multi-MPPT configuration provides independent control for multiple sub-arrays, making this configuration ideally suited for solar applications with different irradiance profiles, mismatched solar panels or multiple surface slopes. In this configuration, the system is able to minimize the solar array mismatch losses by actively searching for the best operating point which maximizes power production. This system also enables applications with different electrical characteristics to be used together, which maximizes efficiency and increases productivity.

Comprehensive Grid Management

- Anti-islanding with grid voltage and frequency protection according to UL1741 & IEEE1547
- Extensive set of advanced grid features, including LVRT, HVRT, FRT, ramp rates, reactive power control and power factor control (for more details on grid management, see page 13).

Technical Overview

- Wide range of inverter power ratings from 376 kWac to 1,575 kWac
- Modular inverter system with up to 7 independent MPPT inputs
- ETL certified to UL1741, IEEE 1547 and IEEE 1547.1 standards
- Full suite of power management functions
- DC breaker provided for each module to provide disconnection from the solar array
- Includes main AC breaker to provide overall protection for inverter lineup
- Suitable for floating or grounded (positive or negative) array configurations.

Bonfiglioli has established the assets, competence, and technical prowess to successfully deliver and install commercial and utility-scale power systems anywhere in the world.

SELECTED WORLDWIDE REFERENCES

70 MW Rovigo, Italy
50 MW Puertollano, Spain
60 MW Karadzhalovo, Bulgaria
200 MW Golmud, China
90 MW Gujarat, India
100 MW, Atacama, Chile
170 MW California, USA

Multi-MPPT - 360V

RPS TL-UL		0400	0600	0800	1000	1200	1400
Number of inverter modules / cabinets	-	2	3	4	5	6	7
Input ratings							
Maximum input current	A	700	1050	1400	1750	2100	2450
Maximum DC input voltage	V	1000					
MPPT range	V	550 ... 850					
Number of MPPT trackers	-	2	3	4	5	6	7
Number of DC inputs	-	4	6	8	10	12	14
Output ratings							
AC voltage	V	360 (IT mains, floating neutral or ungrounded delta)					
AC voltage range	V	317 - 396 (-12 % to + 10 %)					
Frequency range	Hz	59.5 - 60.5					
Rated power @ 0.9pf	kW	376	564	752	940	1128	1316
Maximum active power	kW	400	600	800	1000	1200	1400
Maximum apparent power	kVA	424	636	848	1060	1272	1484
Rated output current	A	640	960	1280	1600	1920	2240
Maximum output current	A	680	1020	1360	1700	2040	2380
Power factor range	-	controllable 0.8i ... 0.8c (nominal > 0.99 at rated power)					
Current harmonic distortion	%	< 3 at rated power					
Auxiliary power							
External power (single phase)	-	240 V / 10 A					
Standby power consumption	W	40	60	80	100	120	140
Efficiency							
Maximum efficiency	%	98.6 (prelim)					
European weighted efficiency	%	98.4 (prelim)					
CEC weighted efficiency	%	98.0 (prelim)					
Mechanical details							
Dimensions (WxHxD)	mm	1800x2100x 800	2400x2100x 800	3000x2100x 800	3800x2100x 800	4400x2100x 800	5000x2100x 800
	in	71x83x31.5	95x83x31.5	118x83x31.5	150x83x31.5	173x83x31.5	197x83x31.5
Weight (approx.)	kg	1300	1850	2450	3000	3550	4100
	lbs	2860	4070	5390	6600	7810	9020
Protection class	-	Nema1 / IP20 (Indoor only)					
Temperature							
Ambient operating temperature range	-	-4°F ... 131°F ('-20°C ... +55°C)*					
Rel. humidity	%	up to 95 (not condensing)					
Max. altitude	m	13123 ft / (derating above 3280 ft) / 4000 m (derating above 1000 m)					
Req. air flow rate	m^3/h	3000	4500	6000	7500	9000	10500
	cfm	1766	2649	3532	4415	5298	6181
Protection and monitoring							
Array grounding configuration	-	Floating					
Array ground fault protection	-	Impedance Monitoring					
Grid protection	-	Anti-Islanding / Adjustable voltage and frequency settings according to IEEE1547					
Surge protection	-	UL1449, Class II on DC Input and AC Output					
Interfaces							
Communication interface	-	RS-485 (ModBus® / RTU or proprietary), Options: ModBus® / TCP over Ethernet					
Standards & certifications							
Standards	-	UL1741 / CSA107.1 / IEEE1547, UL1998, NEC2014					
Testing	-	IEEE1547.1 / IEEE C62.41.2 / IEEE C62.45 / IEEE C37.90.1 / IEEE C37.90.2					
Environmental conditions	-	EN 60721-3-3 (3K3, 3B1, 3C1, 3S2, 3M1) (unless deviating specifications provided)					
Supported Power Management Functions	-	LVRT, Power Factor Control, Grid Fault Support, Power / Frequency Control and Ramp Rate					

* -10°C…+45°C at rated power for Vdc < 700 V, lower minimum temperatures on request

Subject to change without notice.
Refer to user manual for detailed specification.

Multi-MPPT - 386V

RPS TL-UL		0425	0640	0855	1065	1280	1495
Number of inverter modules / cabinets	-	2	3	4	5	6	7
Input ratings							
Maximum input current	A	700	1050	1400	1750	2100	2450
Maximum DC input voltage	V	1000					
MPPT range	V	575 ... 850					
Number of MPPT trackers	-	2	3	4	5	6	7
Number of DC inputs	-	4	6	8	10	12	14
Output ratings							
AC voltage	V	386 (IT mains, floating neutral or ungrounded delta)					
AC voltage range	V	340 - 425 (-12 % to + 10 %)					
Frequency range	Hz	59.5 - 60.5					
Rated power @ 0.9pf	kW	400	600	800	1000	1200	1400
Maximum active power	kW	427	641	855	1069	1283	1497
Maximum apparent power	kVA	454	681	909	1136	1363	1591
Rated output current	A	640	960	1280	1600	1920	2240
Maximum output current	A	680	1020	1360	1700	2040	2380
Power factor range	-	controllable 0.8i ... 0.8c (nominal > 0.99 at rated power)					
Current harmonic distortion	%	< 3 at rated power					
Auxiliary power							
External power (single phase)	-	240 V / 10 A					
Standby power consumption	W	40	60	80	100	120	140
Efficiency							
Maximum efficiency	%	98.6 (prelim)					
European weighted efficiency	%	98.4 (prelim)					
CEC weighted efficiency	%	98.0 (prelim)					
Mechanical details							
Dimensions (WxHxD)	mm	1800x2100x 800	2400x2100x 800	3000x2100x 800	3800x2100x 800	4400x2100x 800	5000x2100x 800
	in	71x83x31.5	95x83x31.5	118x83x31.5	150x83x31.5	173x83x31.5	197x83x31.5
Weight (approx.)	kg	1300	1850	2450	3000	3550	4100
	lbs	2860	4070	5390	6600	7810	9020
Protection class	-	Nema1 / IP20 (Indoor only)					
Temperature							
Ambient operating temperature range	-	-4°F ... 131°F ('-20°C ... +55°C)*					
Rel. humidity	%	up to 95 (not condensing)					
Max. altitude	m	13123 ft / (derating above 3280 ft) / 4000 m (derating above 1000 m)					
Req. air flow rate	m^3/h	3000	4500	6000	7500	9000	10500
	cfm	1766	2649	3532	4415	5298	6181
Protection and monitoring							
Array grounding configuration	-	Floating					
Array ground fault protection	-	Impedance Monitoring					
Grid protection	-	Anti-Islanding / Adjustable voltage and frequency settings according to IEEE1547					
Surge protection	-	UL1449, Class II on DC Input and AC Output					
Interfaces							
Communication interface	-	RS-485 (ModBus® / RTU or proprietary), Options: ModBus® / TCP over Ethernet					
Standards & certifications							
Standards	-	UL1741 / CSA107.1 / IEEE1547, UL1998, NEC2014					
Testing	-	IEEE1547.1 / IEEE C62.41.2 / IEEE C62.45 / IEEE C37.90.1 / IEEE C37.90.2					
Environmental conditions	-	EN 60721-3-3 (3K3, 3B1, 3C1, 3S2, 3M1) (unless deviating specifications provided)					
Supported Power Management Functions	-	LVRT, Power Factor Control, Grid Fault Support, Power / Frequency Control and Ramp Rate					

* -10°C…+45°C at rated power for Vdc < 700 V, lower minimum temperatures on request

Subject to change without notice.
Refer to user manual for detailed specification.

Multi-MPPT - 406V

RPS TL-UL		0450	0675	0900	1125	1350	1575
Number of inverter modules / cabinets	-	2	3	4	5	6	7
Input ratings							
Maximum input current	A	700	1050	1400	1750	2100	2450
Maximum DC input voltage	V	1000					
MPPT range	V	610 ... 850					
Number of MPPT trackers	-	2	3	4	5	6	7
Number of DC inputs	-	4	6	8	10	12	14
Output ratings							
AC voltage	V	406 (IT mains, floating neutral or ungrounded delta)					
AC voltage range	V	358 - 446 (-12 % to + 10 %)					
Frequency range	Hz	59.5 - 60.5					
Rated power @ 0.9pf	kW	423	634	846	1057	1269	1480
Maximum active power	kW	450	675	900	1125	1350	1575
Maximum apparent power	kVA	478	717	956	1195	1434	1673
Rated output current	A	640	960	1280	1600	1920	2240
Maximum output current	A	680	1020	1360	1700	2040	2380
Power factor range	-	controllable 0.8i ... 0.8c (nominal > 0.99 at rated power)					
Current harmonic distortion	%	< 3 at rated power					
Auxiliary power							
External power (single phase)	-	240 V / 10 A					
Standby power consumption	W	40	60	80	100	120	140
Efficiency							
Maximum efficiency	%	98.6 (prelim)					
European weighted efficiency	%	98.4 (prelim)					
CEC weighted efficiency	%	98.0 (prelim)					
Mechanical details							
Dimensions (WxHxD)	mm	1800x2100x 800	2400x2100x 800	3000x2100x 800	3800x2100x 800	4400x2100x 800	5000x2100x 800
	in	71x83x31.5	95x83x31.5	118x83x31.5	150x83x31.5	173x83x31.5	197x83x31.5
Weight (approx.)	kg	1300	1850	2450	3000	3550	4100
	lbs	2860	4070	5390	6600	7810	9020
Protection class	-	Nema1 / IP20 (Indoor only)					
Temperature							
Ambient operating temperature range	-	-4°F ... 131°F ('-20°C ... +55°C)*					
Rel. humidity	%	up to 95 (not condensing)					
Max. altitude	m	13123 ft / (derating above 3280 ft) / 4000 m (derating above 1000 m)					
Req. air flow rate	m^3/h	3000	4500	6000	7500	9000	10500
	cfm	1766	2649	3532	4415	5298	6181
Protection and monitoring							
Array grounding configuration	-	Floating					
Array ground fault protection	-	Impedance Monitoring					
Grid protection	-	Anti-Islanding / Adjustable voltage and frequency settings according to IEEE1547					
Surge protection	-	UL1449, Class II on DC Input and AC Output					
Interfaces							
Communication interface	-	RS-485 (ModBus® / RTU or proprietary), Options: ModBus® / TCP over Ethernet					
Standards & certifications							
Standards	-	UL1741 / CSA107.1 / IEEE1547, UL1998, NEC2014					
Testing	-	IEEE1547.1 / IEEE C62.41.2 / IEEE C62.45 / IEEE C37.90.1 / IEEE C37.90.2					
Environmental conditions	-	EN 60721-3-3 (3K3, 3B1, 3C1, 3S2, 3M1) (unless deviating specifications provided)					
Supported Power Management Functions	-	LVRT, Power Factor Control, Grid Fault Support, Power / Frequency Control and Ramp Rate					

* -10°C…+45°C at rated power for Vdc < 700 V, lower minimum temperatures on request

Subject to change without notice.
Refer to user manual for detailed specification.

Master-Slave - 360V

RPS TL-UL		0400	0600	0800	1000	1200	1400
Number of inverter modules / cabinets	-	2	3	4	5	6	7
Input ratings							
Maximum input current	A	700	1050	1400	1750	2100	2450
Maximum DC input voltage	V	1000					
MPPT range	V	550 ... 850					
Number of MPPT trackers	-	1					
Number of DC inputs	-	variable (realized in external DC combiner)					
Output ratings							
AC voltage	V	360 (IT mains, floating neutral or ungrounded delta)					
AC voltage range	V	317 - 396 (-12 % to + 10 %)					
Frequency range	Hz	59.5 - 60.5					
Rated power @ 0.9pf	kW	376	564	752	940	1128	1316
Maximum active power	kW	400	600	800	1000	1200	1400
Maximum apparent power	kVA	424	636	848	1060	1272	1484
Rated output current	A	640	960	1280	1600	1920	2240
Maximum output current	A	680	1020	1360	1700	2040	2380
Power factor range	-	controllable 0.8i ... 0.8c (nominal > 0.99 at rated power)					
Current harmonic distortion	%	< 3 at rated power					
Auxiliary power							
External power (single phase)	-	240 V / 10 A					
Standby power consumption	W	40	60	80	100	120	140
Efficiency							
Maximum efficiency	%	98.6 (prelim)					
European weighted efficiency	%	98.4 (prelim)					
CEC weighted efficiency	%	98.0 (prelim)					
Mechanical details							
Dimensions (WxHxD)**	mm	1800x2100x 800	2400x2100x 800	3000x2100x 800	3800x2100x 800	4400x2100x 800	5000x2100x 800
	in	71x83x31.5	95x83x31.5	118x83x31.5	150x83x31.5	173x83x31.5	197x83x31.5
Weight (approx.)**	kg	1300	1850	2450	3000	3550	4100
	lbs	2860	4070	5390	6600	7810	9020
Protection class	-	Nema1 / IP20 (Indoor only)					
Temperature							
Ambient operating temperature range	-	-4°F ... 131°F ('-20°C ... +55°C)*					
Rel. humidity	%	up to 95 (not condensing)					
Max. altitude	m	13123 ft / (derating above 3280 ft) / 4000 m (derating above 1000 m)					
Req. air flow rate	m^3/h	3000	4500	6000	7500	9000	10500
	cfm	1766	2649	3532	4415	5298	6181
Protection and monitoring							
Array grounding configuration	-	Negative Grounded / Positive Grounded / Floating					
Array ground fault protection	-	GFDI (inside external DC recombiner)					
Grid protection	-	Anti-Islanding / Adjustable voltage and frequency settings according to IEEE1547					
Surge protection	-	UL1449, Class II on DC Input and AC Output					
Interfaces							
Communication interface	-	RS-485 (ModBus® / RTU or proprietary), Options: ModBus® / TCP over Ethernet					
Standards & certifications							
Standards	-	UL1741 / CSA107.1 / IEEE1547, UL1998, NEC2014					
Testing	-	IEEE1547.1 / IEEE C62.41.2 / IEEE C62.45 / IEEE C37.90.1 / IEEE C37.90.2					
Environmental conditions	-	EN 60721-3-3 (3K3, 3B1, 3C1, 3S2, 3M1) (unless deviating specifications provided)					
Supported Power Management Functions	-	LVRT, Power Factor Control, Grid Fault Support, Power / Frequency Control and Ramp Rate					

* -10°C…+45°C at rated power for Vdc < 700 V, lower minimum temperatures on request
** excluding external dc combiner

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Master-Slave - 386V

RPS TL-UL		0425	0640	0855	1065	1280	1495
Number of inverter modules / cabinets	-	2	3	4	5	6	7
Input ratings							
Maximum input current	A	700	1050	1400	1750	2100	2450
Maximum DC input voltage	V	1000					
MPPT range	V	575 ... 850					
Number of MPPT trackers	-	1					
Number of DC inputs	-	variable (realized in external DC combiner)					
Output ratings							
AC voltage	V	386 (IT mains, floating neutral or ungrounded delta)					
AC voltage range	V	340 - 425 (-12 % to + 10 %)					
Frequency range	Hz	59.5 - 60.5					
Rated power @ 0.9pf	kW	400	600	800	1000	1200	1400
Maximum active power	kW	427	641	855	1069	1283	1497
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Weight (approx.)**	kg	1300	1850	2450	3000	3550	4100
	lbs	2860	4070	5390	6600	7810	9020
Protection class	-	Nema1 / IP20 (Indoor only)					
Temperature							
Ambient operating temperature range	-	-4°F ... 131°F ('-20°C ... +55°C)*					
Rel. humidity	%	up to 95 (not condensing)					
Max. altitude	m	13123 ft / (derating above 3280 ft) / 4000 m (derating above 1000 m)					
Req. air flow rate	m^3/h	3000	4500	6000	7500	9000	10500
	cfm	1766	2649	3532	4415	5298	6181
Protection and monitoring							
Array grounding configuration	-	Negative Grounded / Positive Grounded / Floating					
Array ground fault protection	-	GFDI (inside external DC recombiner)					
Grid protection	-	Anti-Islanding / Adjustable voltage and frequency settings according to IEEE1547					
Surge protection	-	UL1449, Class II on DC Input and AC Output					
Interfaces							
Communication interface	-	RS-485 (ModBus® / RTU or proprietary), Options: ModBus® / TCP over Ethernet					
Standards & certifications							
Standards	-	UL1741 / CSA107.1 / IEEE1547, UL1998, NEC2014					
Testing	-	IEEE1547.1 / IEEE C62.41.2 / IEEE C62.45 / IEEE C37.90.1 / IEEE C37.90.2					
Environmental conditions	-	EN 60721-3-3 (3K3, 3B1, 3C1, 3S2, 3M1) (unless deviating specifications provided)					
Supported Power Management Functions	-	LVRT, Power Factor Control, Grid Fault Support, Power / Frequency Control and Ramp Rate					

* -10°C…+45°C at rated power for Vdc < 700 V, lower minimum temperatures on request
** excluding external dc combiner

Subject to change without notice.
Refer to user manual for detailed specification.

Master-Slave - 406V

RPS TL-UL		0450	0675	0900	1125	1350	1575
Number of inverter modules / cabinets	-	2	3	4	5	6	7
Input ratings							
Maximum input current	A	700	1050	1400	1750	2100	2450
Maximum DC input voltage	V	1000					
MPPT range	V	610 ... 850					
Number of MPPT trackers	-	1					
Number of DC inputs	-	variable (realized in external DC combiner)					
Output ratings							
AC voltage	V	406 (IT mains, floating neutral or ungrounded delta)					
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Maximum active power	kW	450	675	900	1125	1350	1575
Maximum apparent power	kVA	478	717	956	1195	1434	1673
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Auxiliary power							
External power (single phase)	-	240 V / 10 A					
Standby power consumption	W	40	60	80	100	120	140
Efficiency							
Maximum efficiency	%	98.6 (prelim)					
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CEC weighted efficiency	%	98.0 (prelim)					
Mechanical details							
Dimensions (WxHxD)**	mm	1800x2100x 800	2400x2100x 800	3000x2100x 800	3800x2100x 800	4400x2100x 800	5000x2100x 800
	in	71x83x31.5	95x83x31.5	118x83x31.5	150x83x31.5	173x83x31.5	197x83x31.5
Weight (approx.)**	kg	1300	1850	2450	3000	3550	4100
	lbs	2860	4070	5390	6600	7810	9020
Protection class	-	Nema1 / IP20 (Indoor only)					
Temperature							
Ambient operating temperature range	-	-4°F ... 131°F ('-20°C ... +55°C)*					
Rel. humidity	%	up to 95 (not condensing)					
Max. altitude	m	13123 ft / (derating above 3280 ft) / 4000 m (derating above 1000 m)					
Req. air flow rate	m^3/h	3000	4500	6000	7500	9000	10500
	cfm	1766	2649	3532	4415	5298	6181
Protection and monitoring							
Array grounding configuration	-	Negative Grounded / Positive Grounded / Floating					
Array ground fault protection	-	GFDI (inside external DC recombiner)					
Grid protection	-	Anti-Islanding / Adjustable voltage and frequency settings according to IEEE1547					
Surge protection	-	UL1449, Class II on DC Input and AC Output					
Interfaces							
Communication interface	-	RS-485 (ModBus® / RTU or proprietary), Options: ModBus® / TCP over Ethernet					
Standards & certifications							
Standards	-	UL1741 / CSA107.1 / IEEE1547, UL1998, NEC2014					
Testing	-	IEEE1547.1 / IEEE C62.41.2 / IEEE C62.45 / IEEE C37.90.1 / IEEE C37.90.2					
Environmental conditions	-	EN 60721-3-3 (3K3, 3B1, 3C1, 3S2, 3M1) (unless deviating specifications provided)					
Supported Power Management Functions	-	LVRT, Power Factor Control, Grid Fault Support, Power / Frequency Control and Ramp Rate					

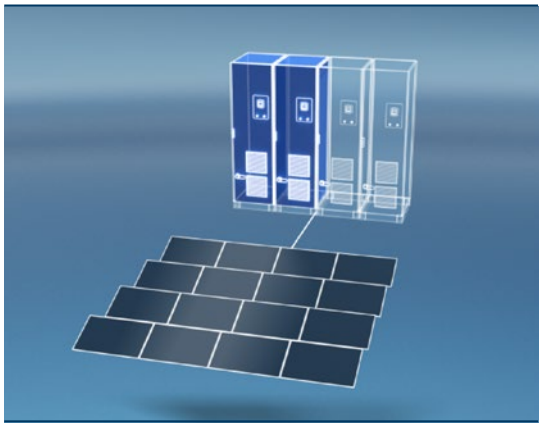
* -10°C…+45°C at rated power for Vdc < 700 V, lower minimum temperatures on request
** excluding external dc combiner

Subject to change without notice.
Refer to user manual for detailed specification.

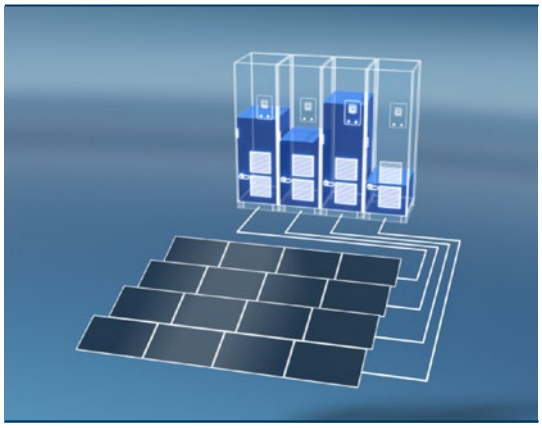
RPS TL-UL System

The modular architecture of Bonfiglioli products enables selection of the best configuration based on the characteristics of the photovoltaic plant and the site where the inverter is located.

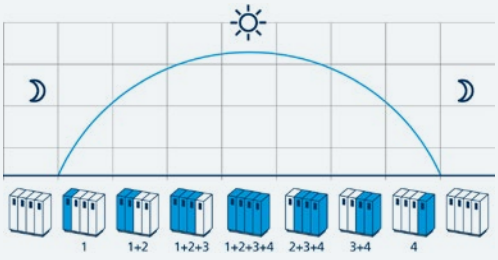
Master-Slave



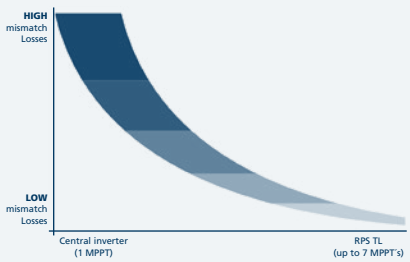
Multi-MPPT



Longer expected lifetime



Increase energy yield

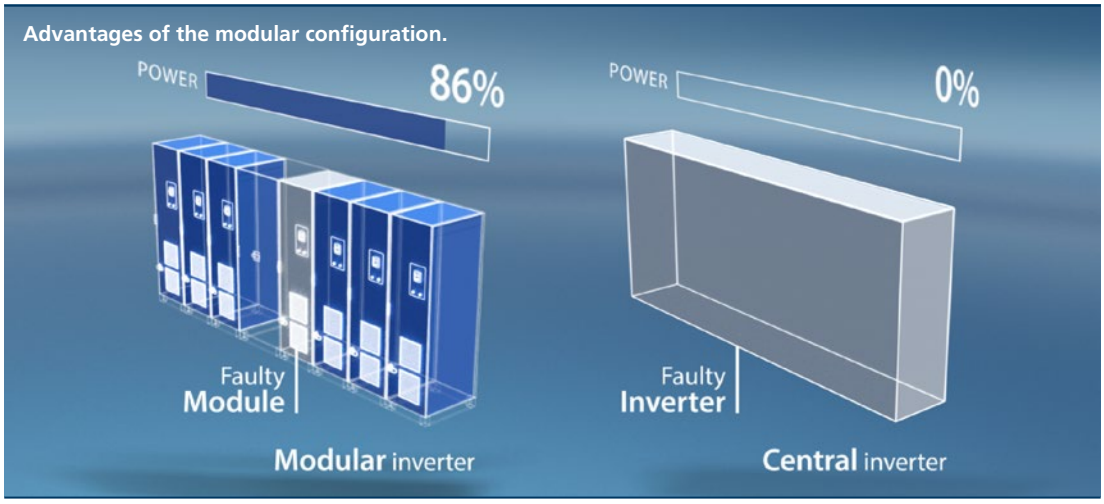


Benefits

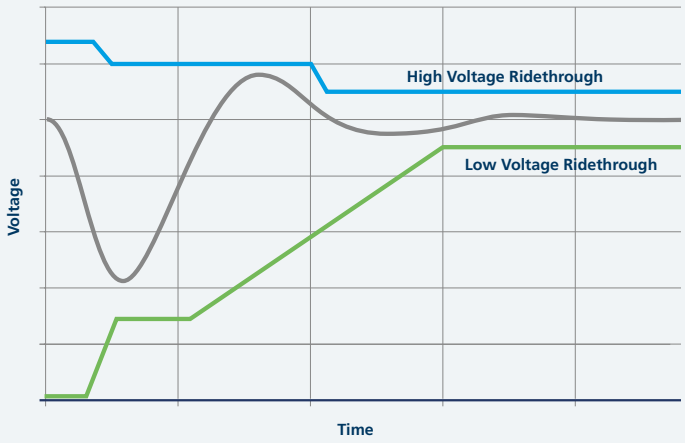
- The earliest morning start
- The later evening stop
- High energy conversion efficiency
- Longer expected lifetime
- The lowest failure effect

Benefits

- The highest energy in presence of:
  - Non-homogeneous light exposure
  - Different PV modules characteristics
  - Other plant conditions (dirt, cable length, etc.)
- Low failure effect



Grid Management - Other profiles possible



The RPS TL-UL inverter includes a comprehensive set of grid management and protection functions with the flexibility to meet all relevant grid codes and practices in North America.
In the standard configuration, the RPS TL-UL system includes anti-islanding with grid voltage and frequency protection according to UL1741 & IEEE 1547 to ensure that the inverter quickly and safely disconnects from the local utility.

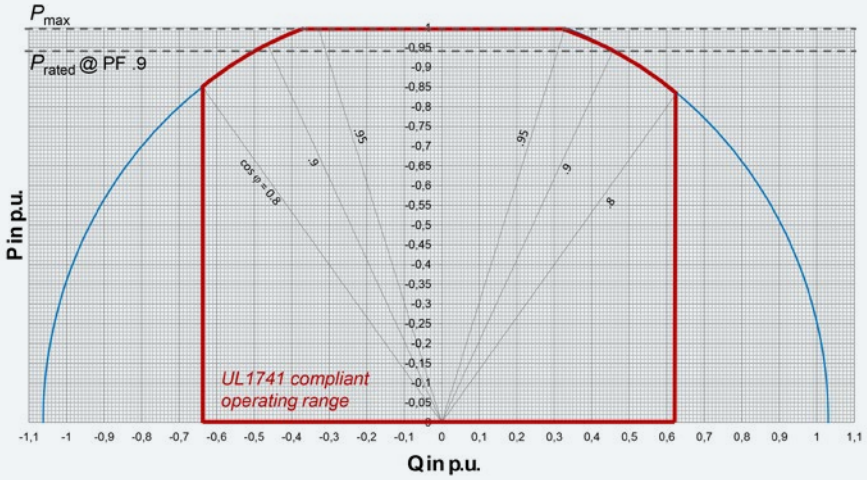
The RPS TL-UL is also designed with a comprehensive suite of power management and grid support functions for advanced utility power plants.
This capability was first developed in response to the German BDEW standards and is now offered by Bonfiglioli to meet electrical grid standards in North America.

The functions of the advanced configuration include:

- Active power curtailment via SCADA interface.
- Reactive power control locally or via SCADA interface.
- Fault ride-through including high voltage, low voltage and zero voltage capability.
- Dynamic grid support and voltage control capability.
- Controlled power ramps to minimize disturbances on grid.
- Compatible with FERC 661A, NERC PRC 024, WECC ONF Plan and CAISO IRRP.
- Other grid profiles possible.

Full rated power capability at .9 PF lead/lag

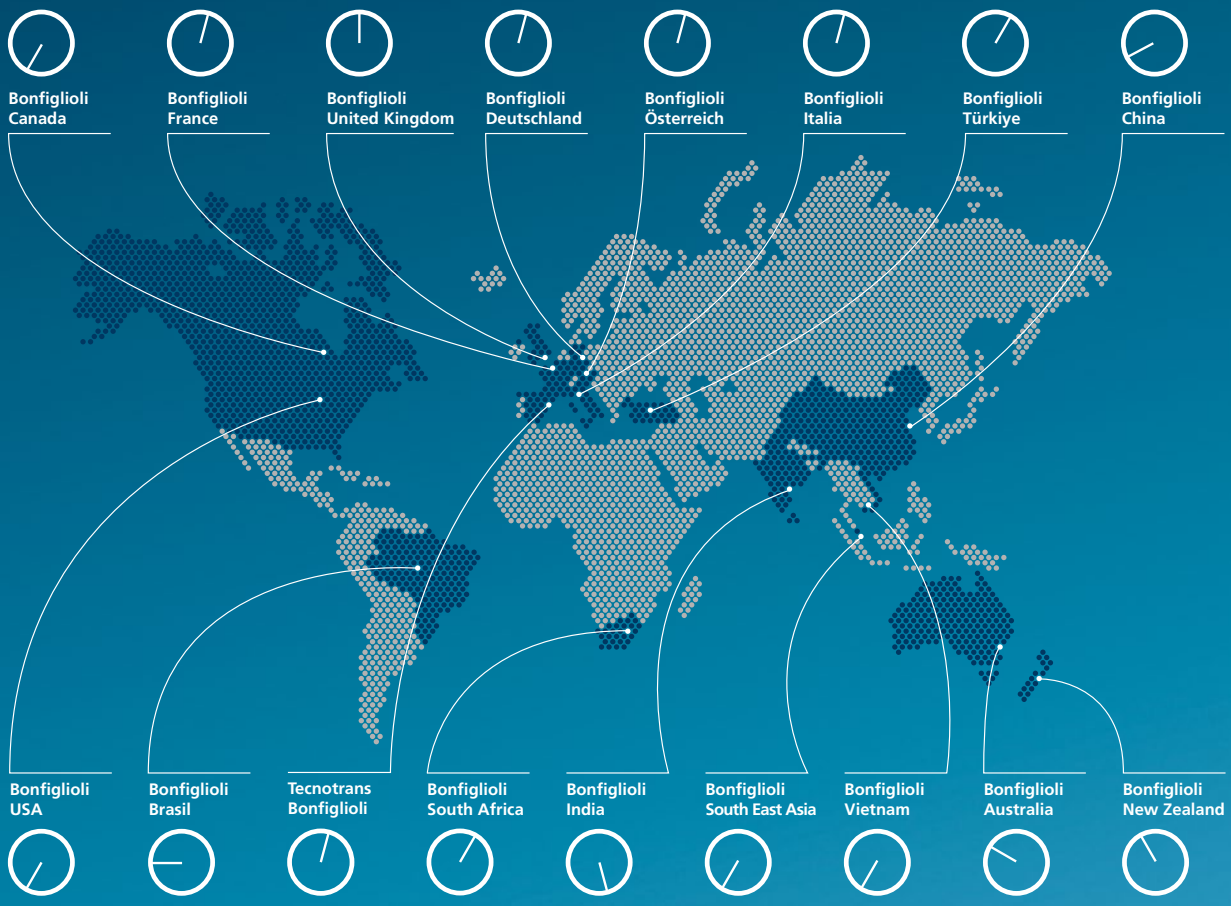
Active / reactive power operating range of RPS TL-UL at 112°F (45°C), Vdc < 700 V



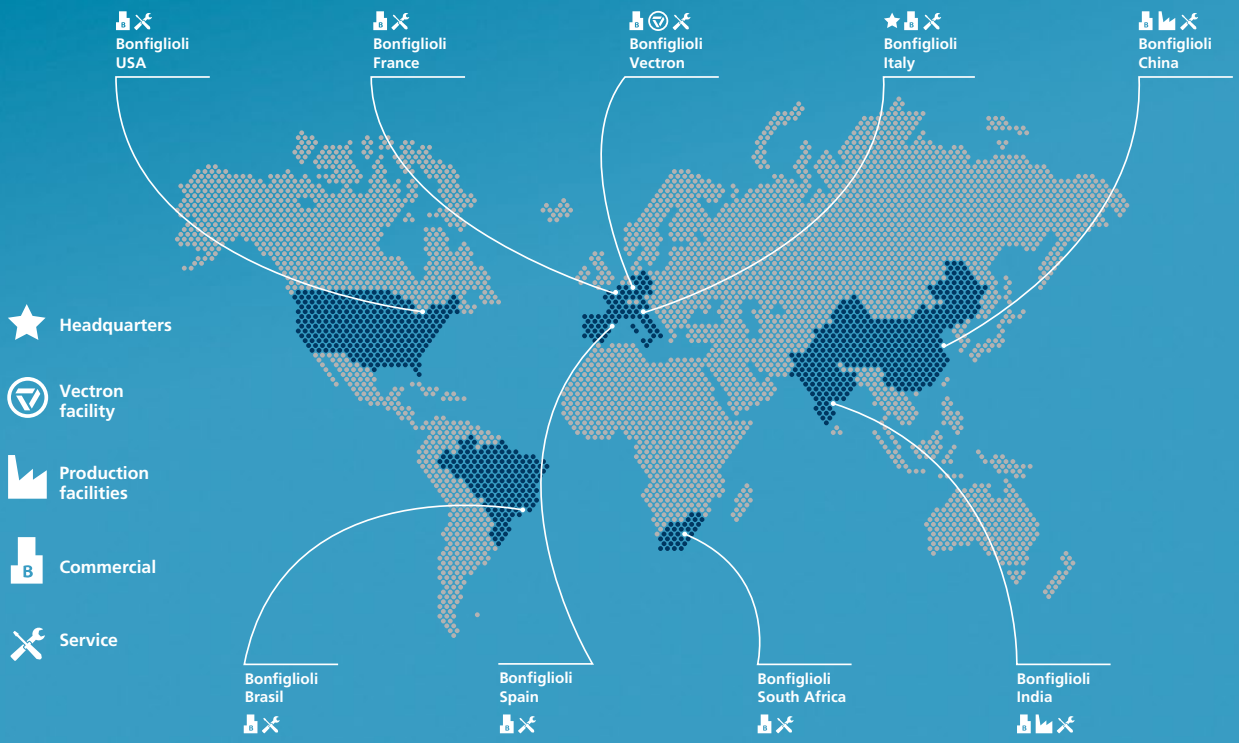
Does not apply to variants for DC optimizers.

Branches and facilities

Our branches



Bonfiglioli Photovoltaic

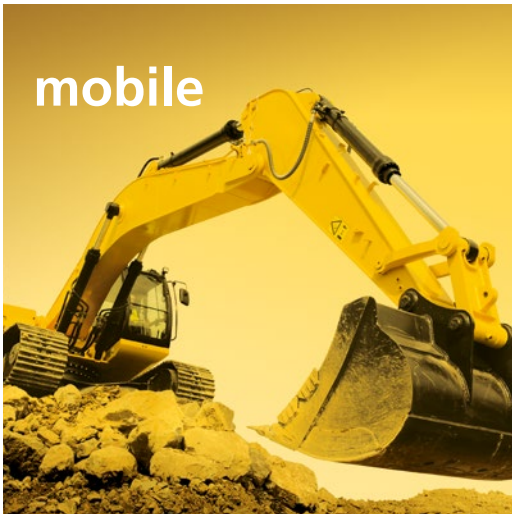


Bonfiglioli Solutions

As one of the world's leading providers of clean energy solutions, with utility-scale PV installations currently in place around the world, Bonfiglioli has the innovative know-how and technical capacity to bring commercial and utility-scale PV power plants to life.
For the PV sector, Bonfiglioli designs and manufactures highly efficient and innovative electronic control systems for photovoltaic fields and has the expertise to manage every aspect of photovoltaic energy generation from MPPT tracking to utility interconnection.

Bonfiglioli also designs and manufactures a complete range of gearmotors, drive systems and planetary gearboxes for industrial processes, automation, mobile machinery and wind energy applications.

Over 50 years of engineering excellence makes Bonfiglioli a preferred supplier and partner for market leaders around the world.
For more information, visit **Bonfiglioliusa.com**



Bonfiglioli
power, control and green solutions

Bonfiglioli has been designing and developing innovative and reliable power transmission and control solutions for industrial, mobile machinery and renewable energy applications since 1956.

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