

***Photovoltaic inverter without transformer
280kWp - 1190kWp generator connected power***



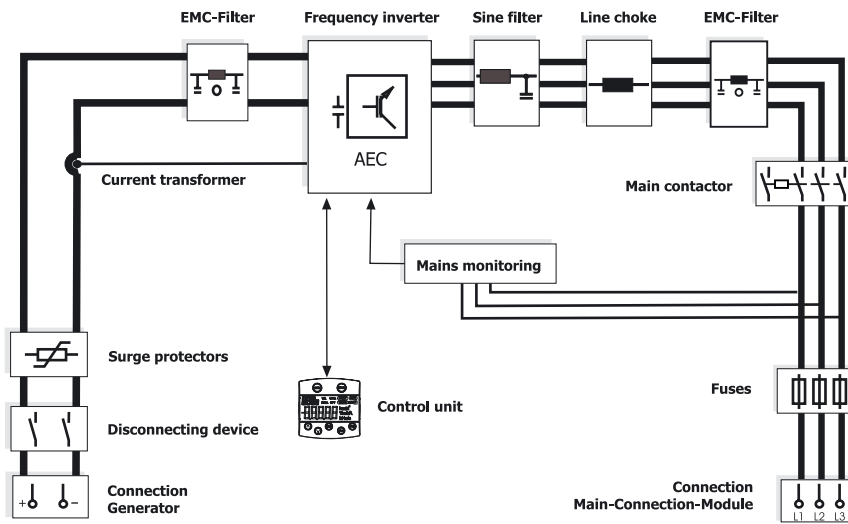
Description

In the power range from 280kWp to 1190kWp, Bonfiglioli offers solar inverters of the RPS450-TL range without internal transformers. This is the most cost and yield optimal solution for photovoltaic systems of moderate to large output. The modular construction allows a perfect adjustment of the inverter to the respective solar generator and increases the availability of the system. The right size of inverter can be selected from the pre-defined and cost-optimised combinations. Alternatively, overall systems of up to 1.19 MWp can be flexibly constructed from individual inverter modules, with nominal outputs of 140kWp and 170kWp. The RPS450TL solar inverters are designed for IT networks and can be attached directly to the low-voltage connections of the medium-voltage transformers. Network connection modules serve as an interface between the inverter modules and the transformer, and are available for different power outputs. Additional low-voltage distribution boards are therefore not necessary.

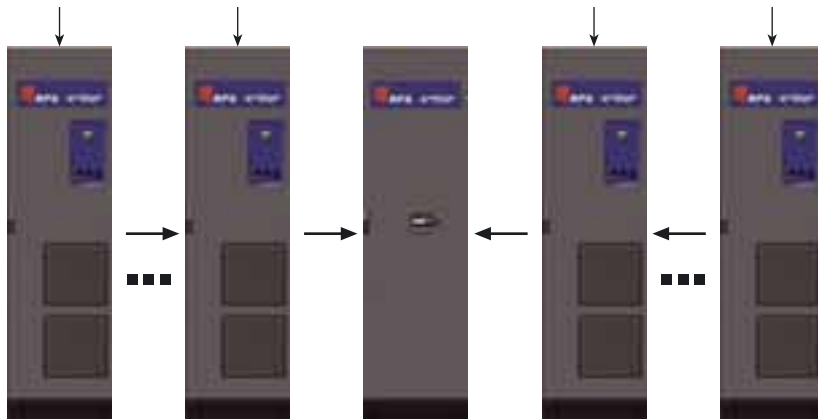
Each inverter module possesses its own MPP tracker, which reduces yield losses caused by the mismatching of the solar generator.

Construction

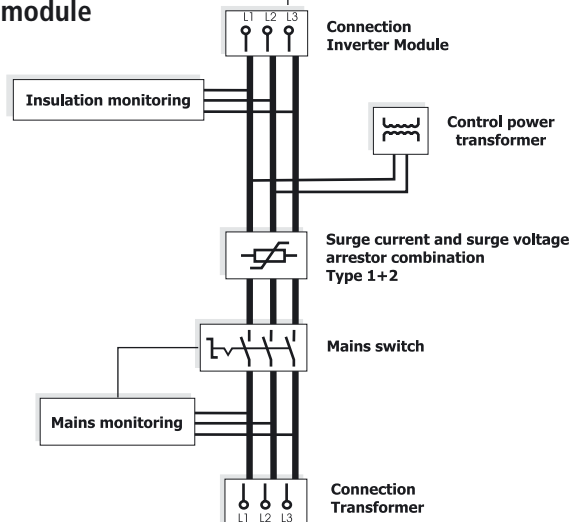
Block diagram inverter module



Modular concept



Block diagram mains-connection-module



Example of an Inverter station

Technical data

Type								
RPS450 ⁽¹⁾		-280 TL	-340 TL	-560 TL	-680 TL	-850 TL	-1020 TL	-1190 TL
Input								
Recommended maximum connected generator power	kWp	280	340	560	680	850	1020	1190
MPPT range (270V mains)	V	425 ... 875						
Max. input voltage	V	900						
Max. input current	A	600	700	1200	1400	1750	2100	2450
Output								
Mains voltage	V	270 - 330 / IT system						
Mains frequency	Hz	50						
Rated power	kW	250	300	500	600	750	900	1050
Rated current (270V mains)	A	540	640	1080	1280	1600	1920	2240
Power factor	-	adjustable, >0.99 at rated power						
Harmonic distortion	%	< 3						
Efficiency								
Maximum efficiency	%	98.3						
European efficiency	%	98.0						
Consumption during night hours	W	40	80	100	120	140		
Mechanics								
Dimensions (WxHxD)	mm	1800x2100x800	1800x2100x800	3000x2100x800	3200x2100x800	3800x2100x800	4400x2100x800	5000x2100x800
Weight approx.	kg	1150	1300	2100	2450	3000	3550	4100
Degree of protection ⁽²⁾	-	IP 20						
Environment								
Ambient temperature	°C	-10 ... 40						
Rel. Air humidity	%	15 ... 85, not condensing						
Rate of coolant air required	m ³ /h	3000	6000	7500	9000	10500		
Protective and monitoring equipment								
Insulation monitoring	-	30k Ω fixed tripping value						
Grid monitoring	-	Adjustable voltage and frequency range						
Overvoltage protection	-	EN Type 1 + 2, IEC Class I + II on mains side and EN Type 2, IEC Class II on generator side						
Interfaces								
Communication interface ⁽³⁾	-	CAN, RS485						
Potential-free signaling contacts ⁽³⁾	-	Overvoltage protection malfunction, inverter malfunction						

¹⁾ Other power classes available on request

²⁾ Higher degree of protection on request

³⁾ Other on request

Key features overview

- Flexible configuration of the inverter system by interconnection of 140kWp and 170kWp inverter modules and a corresponding mains-connection-module
- Multiple-string operation
- High efficiency, up to 98.3%
- No-load voltage up to 900 V (up to 1000V optionally)
- MPPT-range 425V - 875V
- Low distortion factor
- Cos Phi adjustable
- Free assignment of functions to digital and analog inputs and outputs
- Insulation monitoring
- Monitoring of mains with adjustable operating range
- Lightning current protector and surge protector on mains side (EN type I+II)
- Surge protector on generator side (EN type II)
- Interference suppression filter on mains and generator side
- Low weight
- Communication interfaces
 - RS485 and CAN (standard)
 - Profibus DP, Ethernet (option)
- Control unit KP500
- Ease of operation
- Quick commissioning
- Easy to maintain and readily accessible components
- Operation with grounded generators possible
- Complies with all relevant standards and directives as listed for the compact system