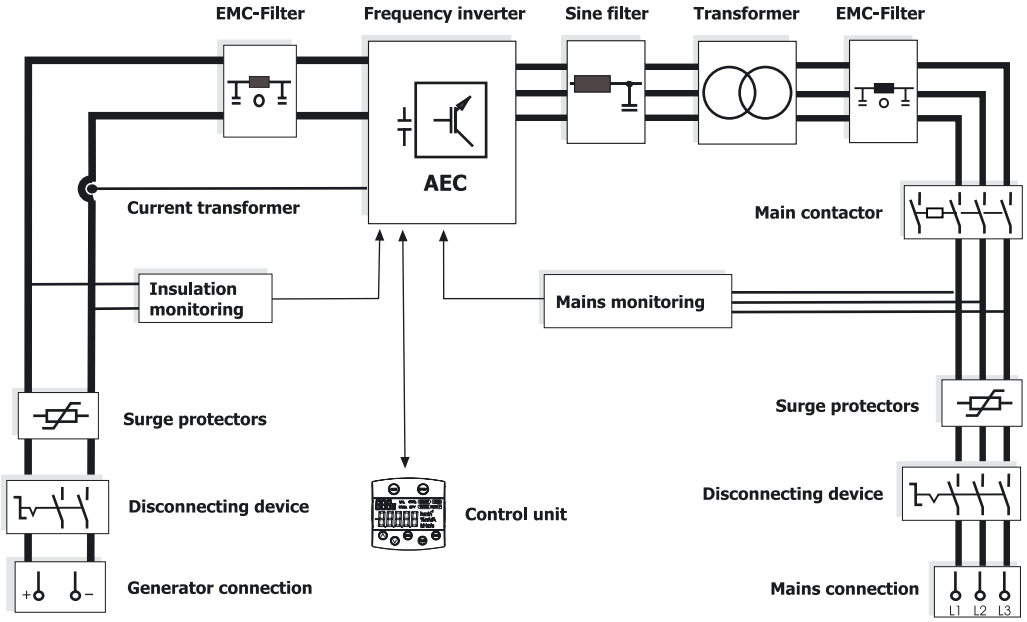
RPS 450 Compact

Photovoltaic inverter with transformer 30kWp - 170kWp generator connected power

Description

For power ranges up to 170kWp, Bonfiglioli offers the RPS450 solar inverter with an internal transformer for feeding into the low-voltage network.
Due to the use of high-quality materials and special production processes, component losses are minimised and a higher degree of efficiency can be reached. Galvanic isolation, which is compulsory in many countries, between the power supply and the generator in order to prevent the feeding of constant components is guaranteed by the internal isolating transformers.
The compact units of the RPS450 range can be interconnected as often as desired on the power supply side, which makes it possible to implement large systems and permits a flexible adjustment on the solar generator.
Solar inverters can be operated in the master-slave network without additional components, the communication interfaces and software functions for it are present in each inverter. The operation of the inverter module in the master-slave network permits a high power output even in the part-load operational range, whereby the operating mode "alternating master module" provides an additional increase in the system life-span. The compact design and limited construction height allows the device to be transported through any standard door. The devices are characterised by an especially simple and fast commissioning process, whereby the power connections merely have to be wired and the solar inverter has to be started in order to start up the device.

Construction



Key features overview

- High efficiency up to 96.7%
- No-load voltage up to 900 V (up to 1000V optionally)
- MPPT-range 425 V - 875 V
- Low distortion factor
- Cos Phi adjustable
- Free assignment of functions to digital and analog inputs and outputs
- Adjustable operating behavior
- Integrated isolating transformer
- Insulation monitoring
- Monitoring of mains with adjustable operating range
- Surge protectors on mains and generator side
- Interference suppression filter on mains and generator side
- Externally switchable AC main switch and DC switch at the 120kWp- und 170kWp-unit
- Communication interfaces
  - RS485 and CAN (standard)
  - Profibus DP, Ethernet (option)
- Control unit KP500
- Ease of operation
- Quick commissioning
- Easy to maintain due to readily accessible components
- Operation with grounded generators

Technical data

Type					
RPS450		**-030**	**-060**	**-120**	**-170**
Input					
Recommended maximum connected generator power	kWp	30	60	120	170
MPPT range	V	425 ... 875			
Max. input voltage	V	900			
Max. input current	A	70	140	250	350
Output AC-side					
Mains voltage	V	400			
Mains frequency	Hz	50			
Rated power	kW	27	54	108	150
Rated current (400 V mains)	A	39	78	156	217
Power factor	-	adjustable, >0.99 at rated power			
Harmonic distortion	%	< 3			
Transformer					
Isolation level	-	according to EN 60726:2003			
Further norms	-	according to EN 61558-2-4			
Efficiency					
Maximum efficiency	%	95.2	95.7	96.7	96.7
European efficiency	%	94.4	94.9	95.9	95.9
Consumption during night hours	W	20.0			
Mechanics					
Control cabinet dimensions (WxHxD)	mm	600x1300x500	800x1700x600	1200x1700x800	1200x1700x800
Weight approx.	kg	285	650	950	1100
Degree of protection [1]	-	IP 20			
Environment					
Ambient temperature	°C	-10 ... 40			
Rel. Air humidity	%	15 ... 85, not condensing			
Rate of coolant air required	m^3/h	750	1500	3000	4500
Protection and monitoring					
Insulation monitoring	-	50kΩ fixed tripping value			
Grid monitoring	-	Adjustable voltage and frequency range			
Overvoltage protection	-	EN Typ 2, IEC Class II on mains and generator side			
Interfaces					
Communication interface [2]	-	CAN, RS485			
Potential-free signaling contacts [2]	-	Overvoltage protection malfunction, inverter malfunction			

1) Higher degree of protection on request
2) Pther on request

Standards and directives

Mains connection terms
- VDE 0126-1-1
- ENEL DK 5940
- Real Decreto 661/2007
- Real Decreto 1663/2000

Electromagnetic compatibility
- DIN EN 61000-6-2; VDE 0839-6-2 (2006)
- DIN EN 61000-6-4; VDE 0839-6-4 (2007)
- DIN EN 61000-3-11; VDE 0838-11 (2001-04)
- DIN EN 61000-3-12; VDE 0838-12 (2005-09)

Safety, function, ambient conditions
- DIN EN 50178; VDE 0160
- DIN EN 60529; VDE 0470-1
- DIN EN 60721-3-3
- EN 60950-1
- CE
- Internal isolating transformer according to EN61558-2-4

Certifications for further country-specific standards projected.