



Cleanverter 40-100 TL

Inverters in the CLEANVERTER TL series have been designed specifically for grid connection of variable-speed renewable source power plants using a permanent magnet synchronous generator or excited synchronous or asynchronous. CLEANVERTER TL is a comprehensive system built in an cabinet for outdoor installation without transformer, with a double (back to back) inverter configuration with DSP (Digital Signal Processor) digital control meaning the electrical generator is managed as effectively as possible.

In the wind field ELPOWER contributes its knowledge of the process by developing, together with the customer, integrated solutions to turbine management issues in various functioning situations in relation to the characteristics of the turbine itself (pitch control, yaw control, hydraulic or electric braking) through the study of dedicated logics. Furthermore the notable overload inverter capacity means that gusts of wind can be exploited.



CLEANVERTER TL consists essentially of:

- Automatic circuit breaker
- EMI filter
- Mains contactor
- L-C-L filter
- Three-phase IGBT AFE inverter
- C Filter
- Generator-side three-phase IGBT inverter
- Generator-side contactor

The contactors are controlled by a safety circuit. The cooling fans are controlled by a temperature sensor so as to minimise consumption for their own maintenance and their functioning is continuously monitored to prevent damage through their malfunctioning.

The CLEANVERTER TL design has placed special emphasis on reliability:

- Total elimination (power and control) of the electrolytic capacitors; particularly the capacitive filter between the two inverters has been made with film capacitors with a life span, under operating conditions, of 500,000 hours
- Tropicalization of the electronic cards and use of industrial standard extended temperature components on them
- Fans with a life span of 50,000 hours

The system is complete of a breaking chopper connected to the d.c. bus of the double inverter, to manage a prospective breaking resistor.

FEATURES	CLEANVERTER 40 TL	CLEANVERTER 50 TL	CLEANVERTER 60 TL	CLEANVERTER 80 TL	CLEANVERTER 100 TL
Rated power AC (W)	40,000	50,000	60,000	80,000	100,000
Current overload capacity on generator side	150% for 1min/10 min				
Max voltage generator side (Vac)	500				
Frequency generator side (Hz)	Variable up to 300				
Grid connection	Three-phase without neutral				
Voltage grid side (Vrms)	400 V ± 15%				
Frequency grid side (Hz)	50 / 60				
Power factor grid side	in compliance with CEI 0-21 standard and VDE AR N 4105 standard				
Power factor generator side	automatic				
THDI harmonic distortion grid side	3%				
THDI harmonic distortion gen. side	< 5%				
Max efficiency (%)	95,5%				
Standby consumption (W)	< 50				
Operating environment temp. (°C)	from -20 to +50				
Relative humidity	0 - 95%				
Altitude	≤ 2000 m a.s.l.				
Dimensions (HxWxD) (mm)	1700 x 800 x 800				
Protection degree	IP 54				
Weight (Kg)	430	450	470	500	550
Communication ports	RS 232, RS 485 prot. MODBUS				
User interface	Display with keyboard				
Certifications	CEI 0-21, VDE AR N 4105				
In compliance with	CE; EN 61000-6-1; EN 61000-6-3; EN 61000-2-2, EN 61000-3-12; EN 61000-3-11; EN 62109-1; EN62109-2; G59-3				

