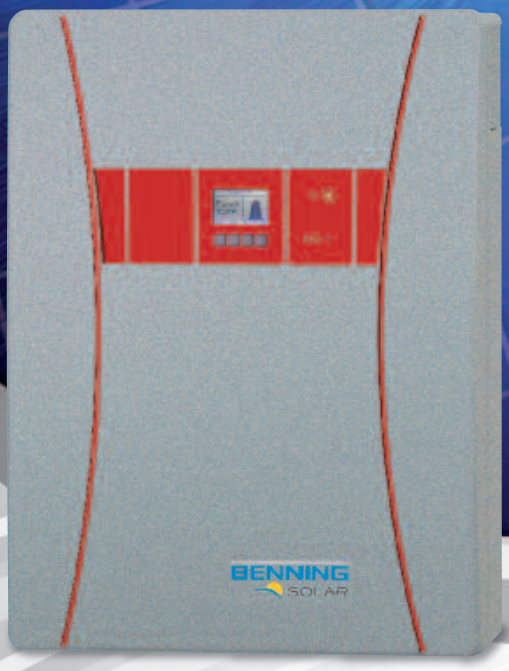
Type table

BENNING SOLAR

Secure • Powerful • User friendly

Energy production and storage of the latest generation



LOGIN

120 V
–
1000 V

3 MPP

Special characteristics of the three phase TLS inverters

- up to 3 MPP trackers
- up to 20,000 Wp recommended DC power
- Plug & Play installation
- Relay contact for self consumption optimisation

Your qualified installer:

PV inverter

TLS series
8,000 W - 17,000 W

Technical data:
BENNING TLS 8.3 – TLS 17.3 inverter

DC Input:	TLS 8.3	TLS 10.3	TLS 13.3	TLS 15.3	TLS 17.3
Recommended DC power (+15% acc. ISE)	10000 W	12000 W	15000 W	17000 W	20000 W
Maximum input voltage	1000 V				
Minimum input voltage/Start input voltage	Input A/(B): 250 V / 280V				
Minimum input voltage*	Input B: 120 V		Input C: 120 V		
MPP voltage range	300-800V	350-800V	320-800V	360-800V	400-800V
Rated input voltage	690 V	690 V	690 V	690 V	690 V
Maximum current per input (A/B) **	18 A	18 A	18 A	18 A	18 A
Maximum short circuit current per input	20 A	20 A	20 A	20 A	20 A
Start feeding-in at	30 W	30 W	30 W	30 W	30 W
Number of independent MPP inputs	2	2	3	3	3
Strings per MPP input	2	2	2	2	2
DC terminal type	SUNCLIX	SUNCLIX	SUNCLIX	SUNCLIX	SUNCLIX
DC Overvoltage category	III				

AC Output:	TLS 8.3	TLS 10.3	TLS 13.3	TLS 15.3	TLS 17.3
Rated output power (230V / 50 Hz, cos(φ)=1)	8000 W	10000 W	13000 W	15000 W	17000 W
Maximum apparent AC power	8000 VA	10000 VA	13000 VA	15000 VA	17000 VA
AC connection	3 / N / PE				
AC nominal output voltage range	3 x 400V / 3 x 230 V +/- 20%				
Power factor range, adjustable cos(φ)	0,9 ind. … 1 … 0,9 cap.				
Operating range at nominal frequency 50 Hz	50 Hz / 47,5 Hz - 51,5 Hz				
Maximum output current	3 x 16 A	3 x 20 A	3 x 22 A	3 x 22 A	3 x 25 A
Maximum short circuit current	3 x 16 A	3 x 20 A	3 x 22 A	3 x 22 A	3 x 25 A
Maximum permitted fusing	Circuit breaker 32 A, characteristic B				
Distortion factor at cos(φ) = 1	< 3%				
Self-consumption at night	2W				
AC Overvoltage category	III				
Efficiency	**TLS 8.3**	**TLS 10.3**	**TLS 13.3**	**TLS 15.3**	**TLS 17.3**
Maximum efficiency	98,0%	98,0%	98,0%	98,0%	98,0%
European efficiency	97,5%	97,5%	97,5%	97,5%	97,5%

Protection and protective devices:	TLS 8.3	TLS 10.3	TLS 13.3	TLS 15.3	TLS 17.3
Topology	transformerless				
Protection class	I				
Earth fault detection	integrated				
Residual current monitoring	integrated, sensitive to universal current				
Overload behaviour	operating point adjustment				
Overtemperature behaviour	operating point adjustment				
Input isolator	integrated				
Overvoltage protection-input	integrated, type 3 as per EN61643-11				
Overvoltage protection-output	integrated, type 3 as per EN61643-11				
Automatic disconnection device	as per VDE 0126-1-1				
Environmental conditions	**TLS 8.3**	**TLS 10.3**	**TLS 13.3**	**TLS 15.3**	**TLS 17.3**
Ingress protection	IP 65 / connection area IP 54				
Cooling concept	variable speed, temperature-controlled fan				
Operating temperature range	-20°C – 60°C				
Maximum ambient temperature at rated power	50 °C	50 °C	50 °C	45 °C	40 °C
Climatic category	4K4H according to IEC 721-3-4 ***				
Maximum operating altitude	2000 m above sea level				
Noise emission	≤ 50 dB(A)				
Standards and approvals	**TLS 8.3**	**TLS 10.3**	**TLS 13.3**	**TLS 15.3**	**TLS 17.3**
EMC emission	EN 61000-6-3: 2007				
EMC immunity	EN 61000-6-2: 2005				
Equipment safety	EN 62109-1, -2				
Grid compliance	VDE-AR-N 4105, EN50438, AS4777, AS3100				

General Data:					
Dimensions and weights	**TLS 8.3**	**TLS 10.3**	**TLS 13.3**	**TLS 15.3**	**TLS 17.3**
Dimensions in mm (W x H x D)	455 x 612 x 213 mm (without plugs)				
Weight (approx.)	43 kg	43 kg	45 kg	45kg	45kg
Features	**TLS 8.3**	**TLS 10.3**	**TLS 13.3**	**TLS 15.3**	**TLS 17.3**
Display	liquid crystal display, 128 x 64 pixel				
Communication interfaces	RS 485, USB, Ethernet, solar radiation, S0 as per DIN EN 62053-31 class B				
Data storage	24 hours: 5-min values				
	30 days: hourly values				
	20 years: daily values				
Relay contact	potential-free contact 230V / 2A				

*) This value is valid if one input has exceeded the start input voltage.
**) It is permitted to exceed this limit as long as the maximum short circuit current is not exceeded.
***) The device is designed for an outdoor use. Direct sunlight and precipitation (rain, snow hail) hast to be avoided on site.

technical changes reserved
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