Type table

Secure • Powerful • User friendly

Energy production and storage of the latest generation









Special characteristics of the three phase TLS inverters

- up to 3 MPP trackers
- up to 20,000 Wp recommended DC power
- Relay contact for self consumption optimisation
- Plug & Play installation (as from TLS 13.3)

Your qualified installer:

PV inverter

TLS series
10,000 W - 17,000 W

Technical data:
BENNING TLS 10.3-II – TLS 17.3 inverter

DC Input:	TLS 10.3-II	TLS 13.3	TLS 15.3	TLS 17.3
Recommended DC power (+15% acc. ISE)	12000 W	15000 W	17000 W	20000 W
Maximum input voltage	1000 V			
Minimum input voltage/Start input voltage	Input A: 175 V / 200 V	Input A/(B): 250 V / 280 V		
Minimum input voltage*	Input B: 120 V	Input C: 120 V		
MPP voltage range	380-800 V	320-800 V	360-800 V	400-800 V
Rated input voltage	600 V	690 V	690 V	690 V
Maximum current per input (A/B) **	18/10 A	18 A	18 A	18 A
Maximum short circuit current per input	20/12 A	20 A	20 A	20 A
Start feeding-in at	20 W	30 W	30 W	30 W
Number of independent MPP inputs	2	3	3	3
Strings per MPP input	2/1	2	2	2
DC terminal type	SUNCLIX	SUNCLIX	SUNCLIX	SUNCLIX
DC Overvoltage category	III			

AC Output:	TLS 10.3-II	TLS 13.3	TLS 15.3	TLS 17.3
Rated output power (230V / 50 Hz, cos(φ)=1)	10000 W	13000 W	15000 W	17000 W
Maximum apparent AC power	10000 VA	13000 VA	15000 VA	17000 VA
AC connection	3 / N / PE			
AC nominal output voltage range	3 x 400 V / 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 15 A	3 x 22 A	3 x 22 A	3 x 25 A
Maximum short circuit current	3 x 15 A	3 x 22 A	3 x 22 A	3 x 25 A
Maximum permitted fusing	MCB 20 A, characteristic B	Circuit breaker 32 A, characteristic B		
Distortion factor at cos(φ) = 1	< 3 %			
Self-consumption at night	< 2 W	2W		
AC Overvoltage category	III			
Efficiency	**TLS 10.3-II**	**TLS 13.3**	**TLS 15.3**	**TLS 17.3**
Maximum efficiency	97.5 %	98.0 %	98.0 %	98.0 %
European efficiency	97.0 %	97.5 %	97.5 %	97.5 %

Protection and protective devices:	TLS 10.3-II	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 10.3-II**	**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	40 °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 10.3-II**	**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 10.3-II**	**TLS 13.3**	**TLS 15.3**	**TLS 17.3**
Dimensions in mm (W x H x D)	360 x 506 x 190 mm	455 x 612 x 213 mm (without plugs)		
Weight (approx.)	27 kg	45 kg	45kg	45kg
Features	**TLS 10.3-II**	**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 230 V / 2 A			

*) 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
version of: 13.02.2018
TNR: 10115928.01

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