

DIEHL

AKO

Manufacturer's guarantee free of charge:

10 years

for all TL models

Transformerless

PLATINUM
INVERTER TL



- | | |
|---------|----------|
| 7200 TL | 22001 TL |
| 6300 TL | 22000 TL |
| 5300 TL | 19000 TL |
| 4800 TL | 16000 TL |
| 4300 TL | 13000 TL |
| 3801 TL | |
| 3800 TL | |

High-performance transformerless string inverters

PLATINUM INVERTER TL



Uncompromising: PLATINUM TL – top class η 98 %

We go out of our way for high efficiency: The TL has a maximum efficiency of 98 %.

This maximum efficiency is made possible by combining state-of-the-art SiC components and DIVE®, a technology patented by Diehl AKO in order to increase the efficiency, especially in the inverter's lower performance range.

With the new TL model (2011/TLD) the efficiency could be raised up to +0.4%. Even the smallest model 3801 TL has now a maximum conversion efficiency of 97.7%.

The performance curve remains constantly high over a broad range.

A high efficiency alone, however, is not sufficient. PLATINUM inverters bring your yield home safely with RAC-MPP®, the Diehl AKO principle for extraordinary yields – top-class MPP tracking. Even under extremely fluctuating and dynamic irradiation conditions. MPP optimization can be engaged if the system is located in a partially shaded area.



We're sure – 10 years manufacturer's warranty included!

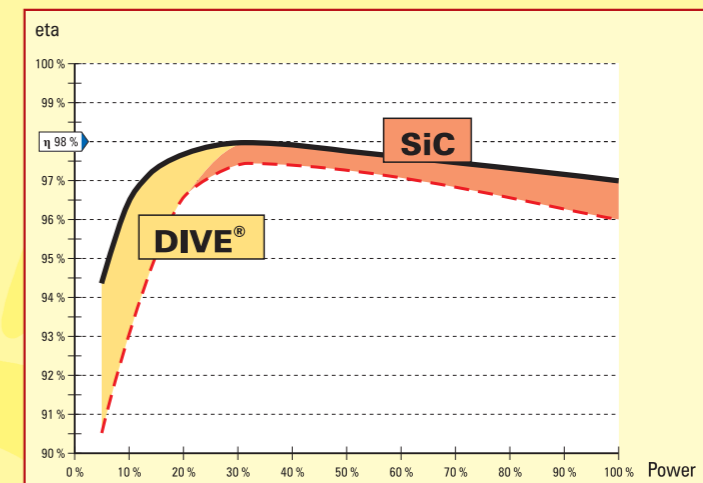
Work longer – produce more:

- As of February 2011, our standard warranty will be 10 instead of five years for the TL product families.
- This inverter likes to work long hours. Needless to say "Get up earlier, work later". At only one thousandth of its power, the device starts to consistently transform even very low irradiation powers.
- Model 7200 starts feeding at an irradiation power of only 8 W. While other inverters are sleeping, the PLATINUM inverter is already working for you.
- Monitoring function even at night: Even after sunset, you can communicate with the PLATINUM inverter. Thus, you can monitor plant data and behaviour around the clock.

New benchmarks in configuration flexibility: The DC input voltage range which is extraordinary broad for its class enables a very flexible plant configuration across all module types.

SiC, semiconductor in silicon carbide technology • DIVE® Dynamic Input Value Enhancement • RAC-MPP® Rapid Adaption Control MPP-Tracking

22 kW
SiC
DIVE®
RAC-MPP®



PLATINUM INVERTER TL: High efficiency thanks to patented Diehl AKO technology

PLATINUM INVERTER TL

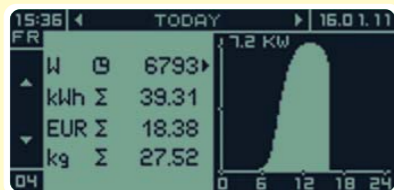
Consistent innovation down to the last detail

Datalogger for life

Throughout its operating life of more than 30 years, the built-in datalogger saves events, measured values, yield and performance data with the high precision of an electricity meter.

The display – all data at a glance

The large back-lit full graphic display graphically represents all important parameters of the datalogger in clearly arranged graphs and diagrams. Week and year review functions allow a quick on-site performance control at any time.



Protection against environmental influences

The power element of the inverter as well as the display and the AC and DC connections are designed according to protection type IP66. The connections for the PLATINUM network are protected by the protector and secured against pulling-out. Thus, the inverter is perfectly suitable for outdoor use.

The gateway to the world – the PLATINUM network

With separately available PLATINUM communication devices, you can integrate the inverters in your plant monitoring. The EIA 485 interface connects the PLATINUM inverters and gives them access to the world of PLATINUM plant monitoring.

Reliable protection for your PLATINUM inverter: the innovative protector

The protector – innovative solutions down to the last detail: The innovative protector not only protects the device against shocks in rough conditions, it also improves the thermic system and protects the device interfaces.



Sixfold consistency:

The large PLATINUM TL inverters over 13 kW

- 1. Consistent yields,** 3 independent MPP trackers allow an optimal adaptation of the PV plant to all design conditions.
- 2. Consistent 3-phase feed,** an integrated Power Balancing System prevents phase imbalances.
- 3. Consistent performance,** four new models between 13 and 22 kW, with a maximum efficiency up to 98 %.
- 4. Consistently compact,** all established advantages of the TL class.
- 5. Consistently easy installation:**
 - considerably less space required,
 - quicker installation,
 - easier wiring
 - even quicker start-up.
- 6. Consistent outdoor installation,** the Power Block, a neat solution for difficult installation conditions.

Consistent 3 x 3

3-phase feed with 3 MPP trackers, the new TL models between 13 and 22 kW



Mounting and startup

- Spring clamp connectors allow an **extra-quick installation** of the AC side. On the DC side, you can choose between two different connector systems.
- Within the **PLATINUM network**, all settings are transferred from one inverter to the other thanks to the **automatical master programming**.



PLATINUM INVERTER TL



■ Grid Code conformity

All TLD inverters comply with the current market requirement standards „Energy Management (§6 EEG)“, the German grid code „Medium voltage directive“ and the grid code „Low voltage directive AR-N-4105“ when become effective following grid code VDE 0126-1-1. See therefore instructions in info box „Possible configurations“ under topic ** ENS3.



■ A universal device for all countries

Adapting the country settings on site is quick and easy and can be done by the installer without any additional tool.

Currently **more than 45 countries** are supported. You will find the current list for the type designation on our website in the download center under the category certificates/overview.

(For tips on how to find your perfect model configuration, see the lower left corner of this spread.)

Technical data



Model	3801 TL	3800 TL	4300 TL	4800 TL	5300 TL	6300 TL	7200 TL	13000 TL	16000 TL	19000 TL	22001 TL	22000 TL	
Input characteristics													
Max. PV power	4,000 Wp	4,300 Wp	4,900 Wp	5,400 Wp	6,000 Wp	7,100 Wp	8,000 Wp	14,700 Wp	18,000 Wp	21,300 Wp	23,000 Wp	24,000 Wp	
Max. DC power	3,480 W	3,800 W	4,300 W	4,800 W	5,300 W	6,300 W	7,200 W	12,900 W	15,900 W	18,900 W	20,800 W	21,600 W	
PV voltage range MPPT	349 V-710 V	350 V-710 V	351 V-710 V	348 V-710 V	349 V-710 V	350 V-710 V	351 V-710 V	351 V-710 V	349 V-710 V	350 V-710 V	351 V-710 V	351 V-710 V	
Max. DC voltage	880 V												
Max. input current	10.5 A	11.5 A	13.0 A	14.5 A	16.0 A	18.5 A	21.0 A	3 x 13.0 A	3 x 16.0 A	3 x 18.5 A	3x 20.2 A	3 x 21.0 A	
Number of string inputs	2	2	2	2	2	3	3	6	6	9	9	9	
Number of MPP trackers				1							3		
DC section switch device	Optional DC disconnecter, integrated in the device												
Reverse polarity protection	yes												
Earth leakage protection	Isolation control												
Output characteristics													
Nominal AC power (Cos Phi = 1)	3,330 W	3,680 W	4,120 W	4,600 W	5,000 W	6,000 W	6,900 W	12,360 W	15,000 W	18,000 W	20,000 W	20,700 W	
Nominal AC current	14.5 A	16.0 A	17.9 A	20.0 A	21.7 A	26.1 A	30.0 A	17.9 A	21.7 A	26.1 A	29.0 A	30.0 A	
Max. AC power (Cos Phi = 1)	3,330 W	3,680 W	4,120 W	4,600 W	5,000 W	6,000 W	6,900 W	12,360 W	15,000 W	18,000 W	20,000 W	20,700 W	
Max. AC current	14.5 A	16.0 A	17.9 A	20.0 A	21.7 A	26.1 A	30.0 A	17.9 A	21.7 A	26.1 A	29.0 A	30.0 A	
Feed operation starts at	7 W	7 W	7 W	7 W	7 W	8 W	8 W	21 W	21 W	24 W	24 W	24 W	
Mains output voltage range	230 V (+/- 20 %)						3 AC 230 V/400 V + N (+/- 20 %)						
Internal consumption at night	lower than 2 W						lower than 6 W						
AC frequency							50 Hz (+/- 5 %)						
Short-circuit proof	yes												
Cos Phi (Medium voltage directive)	0.9 i to 0.9 c												
Earth leakage protection	RCD												
Interfaces													
DC input	Multicontact MC4												
AC output	Spring clamp connectors												
PLATINUM network	EIA 485, 2 x RJ 45 Western Modular add. plug connector with screw terminals												
Service interface	EIA 232, SubD 9-pole socket												
Potential-free contact	1 Change-over contact, max. 24 V _{ac} /2 A, plug connector with screw terminals												
Appliance data													
Maximum efficiency	97.7%	97.7%	97.7 %	97.7 %	97.7 %	98.0 %	98.0 %	97.7 %	97.7 %	98.0 %	98.0%	98.0 %	
European efficiency	97.4%	97.4%	97.4 %	97.4 %	97.4 %	97.5 %	97.5 %	97.4 %	97.4 %	97.5 %	97.5%	97.5 %	
Weight	27 kg	27 kg	27 kg	28 kg	28 kg	29 kg	29 kg	81 kg	84 kg	87 kg	87 kg	87 kg	
Dimensions	H 720 x W 320 x D 250 mm						H 743 x W 972 x D 262 mm						
Working temperature range	-20 °C up to +60 °C												
Maximum temperature at nominal power	+45 °C												
Storage temperature	-25 °C up to +80 °C												
Protection type (except digital interface)	IP 66 according to DIN EN 60529						IP 65 according to DIN EN 60529						
Optical display	Full graphic LCD 170 x 76 pixels												
Integrated datalogger	Storage capacity sufficient for 30 yrs operating time												
Circuit concept	Transformerless, DIVE®, RAC-MPP® technology												
Type designation	3801 TLD	3800 TLD	4300 TLD	4800 TLD	5300 TLD	6300 TLD	7200 TLD	13000 TLD	16000 TLD	19000 TLD	22001 TLD	22000 TLD	

Possible configurations

Exemplary: 19000 TLD-ENS3-DCT-PBF

Type designation	Grid Control	DC disconnecter with/without	PowerBlock
3801 TLD			
3800 TLD			
4300 TLD			
4800 TLD	ENS1 *	DCT	---
5300 TLD	ENS3 **	---	---
6300 TLD			
7200 TLD			
13000 TLD			
16000 TLD			
19000 TLD	ENS3 **	DCT	---
22001 TLD		---	PBF
22000 TLD			PBS

* ENS1: The automatic network monitoring functions exclusively on the phase the inverter is feeding on. The models 13000 TL through 22000 TL are only available with ENS3.

** ENS3: In this model, the network monitoring functions simultaneously on all three phases. As in the ENS1 model, the inverter feeds only on one phase. Only models with option ENS3 fulfill the German grid code „Medium voltage directive“.



Diehl AKO

is an internationally leading electronics company which specializes in the development and production of industrial control and regulating systems.

As the market leader, every year we manufacture more than 2 million frequency inverters for power drive systems alone.

Innovation & quality

Diehl AKO sets standards for the development of **innovative concepts** for electronic systems and appliances by established know-how, the selection of component parts and the latest technologies of excellent production and test engineering. From the electronics to the complete appliance, the manufacturing process of our products is certified according to

the **Quality and environment standards**

ISO 9001-2000 and ISO 14000.

All **PLATINUM string inverters** are built in excellent industrial quality. Therefore we give a standard 5-year guarantee for our string inverters. For all **S- and TL-models** we give optional even a **10-year guarantee**. For string inverters there is an optional warranty extension to 20 years.



Environmental protection

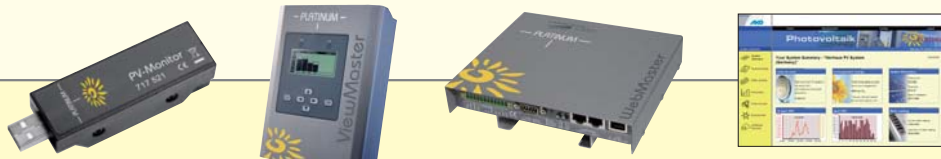
*Environmental protection has top priority for **Diehl AKO**. In order to live up to this standard, **Diehl AKO** continually improves manufacturing processes and optimizes the use of resource-friendly materials.*

*The products are manufactured in compliance with the new RoHS standard and the environment standard DIN EN 14001. **PLATINUM string inverters** were the first appliances on the market to be produced using **lead-free** technology.*



PLATINUM plant monitoring –

much more than just access to your data.



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