

TRIO-5.8-TL-OUTD TRIO-7.5-TL-OUTD TRIO-8.5-TL-OUTD

GENERAL SPECIFICATIONS OUTDOOR MODELS

This new generation three-phase inverter for domestic installations, is available in three power ratings: 5.8, 7.5 and 8.5 kW. The compact, transformerless TRIOs are the latest products in the Aurora family for their performance, ease of use and installation, monitoring and control. The topology of the TRIO 20.0/27.6 inverters has been redesigned to ensure that the TRIO 5.8/7.5/8.5 models also enjoy high conversion efficiency across a wide range of input voltages, and the double MPPT gives maximum installation flexibility for an optimal energy production (TRIO 7.5/8.5 models). The new-generation inverters can integrate power control, monitoring functionalities, and environmental sensor inputs, all without requiring external components. A compact expansion card gives access to the Ethernet datalogger, which allows parameters to be monitored both locally (with the integrated webserver) or remotely (via the Aurora Vision portal), via with a LAN connection.

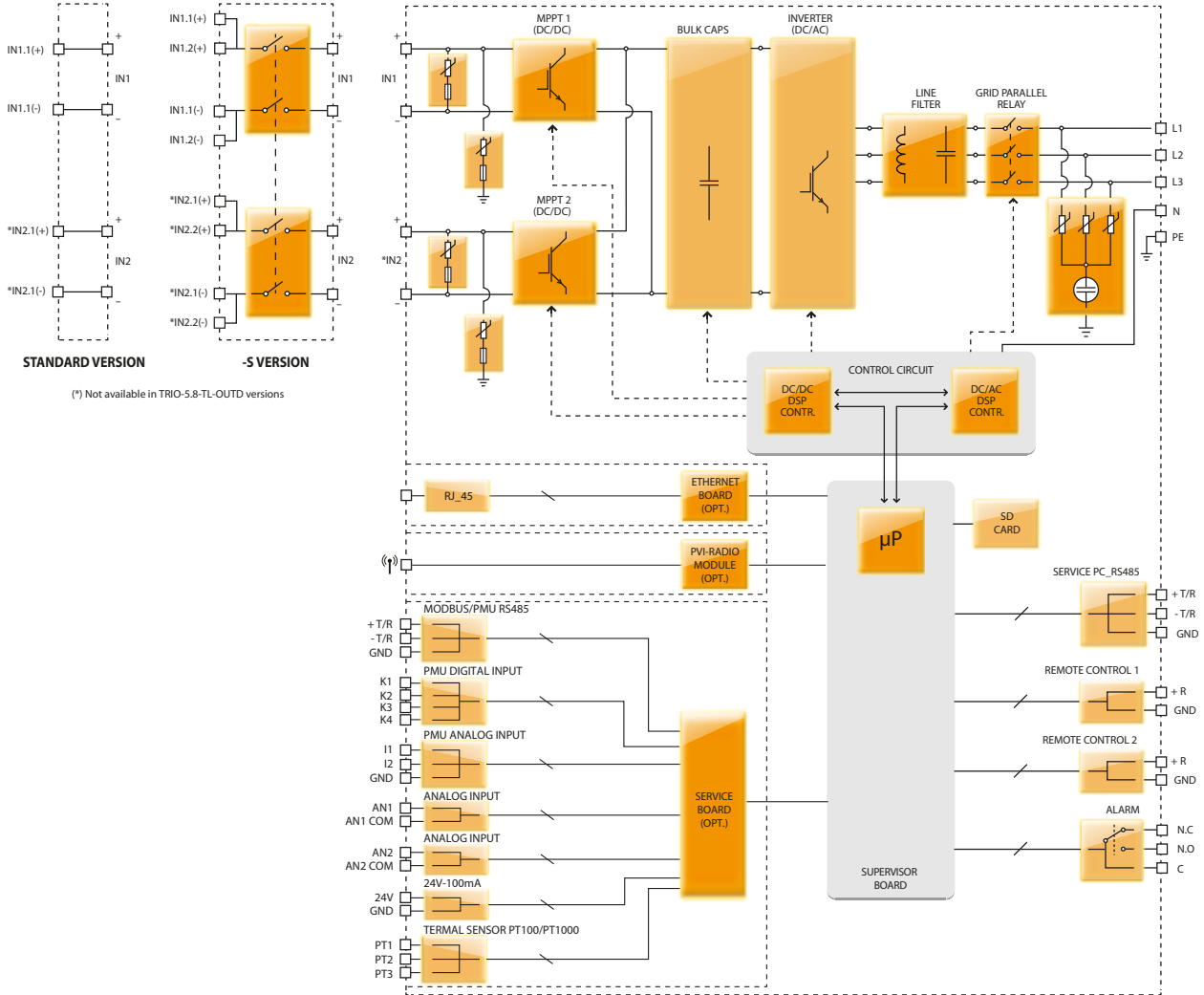
The outer cover with its natural cooling mechanism qualifies at IP65 environmental protection level for external use. It provides for maximum reliability and ease of installation, with a sliding front panel giving access to the connection and configuration area without requiring the complete removal of the cover.



Features

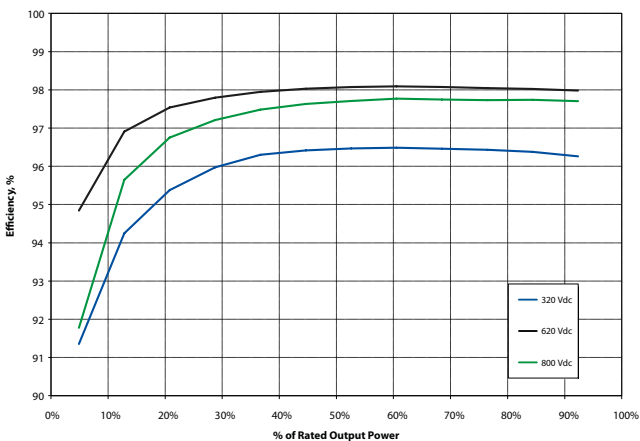
- High speed and precise MPPT algorithm for real time power tracking and improved energy harvesting
- Two independent MPPT channels for TRIO-7.5/8.5 allows optimal energy harvesting from two sub- arrays oriented in different directions (one MPPT channel for TRIO-5.8)
- Flat efficiency curves ensure high efficiency at all output levels ensuring consistent and stable performance across the entire input voltage and output power range
- Wide input voltage range
- Datalogger and smart grid functionalities integrated on expansion cards:
 - PMU expansion card option, with external sensors inputs for monitoring environmental conditions and additional RS-485 for Modbus protocol
 - Ethernet expansion card option with integrated Web Server and remote monitoring capability via Web Portal (Modbus/TCP supported)
- Remote inverter upgrade
- Reactive power management
- Availability of auxiliary DC output voltage (24V, 100mA)
- Natural convection cooling for maximum reliability
- DC switch version option (-S)
- Outdoor enclosure for unrestricted use under any environmental conditions (IP65)
- Sliding cover for the easiest installation and maintenance

BLOCK DIAGRAM OF TRIO-5.8/7.5/8.5-TL-OUTD

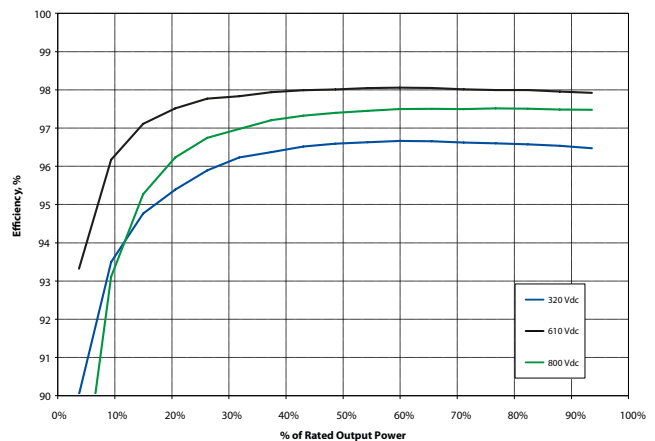


Block Diagram and Efficiency Curves

TRIO-5.8-TL-OUTD*



TRIO-8.5-TL-OUTD*



* Preliminary

PARAMETER	TRIO-5.8-TL-OUTD	TRIO-7.5-TL-OUTD	TRIO-8.5-TL-OUTD
Input Side			
Absolute Maximum DC Input Voltage ($V_{max,abs}$)	1000 V		
Start-up DC Input Voltage (V_{start})	350 V (adj. 200...500 V)		
Operating DC Input Voltage Range ($V_{dcmin} \dots V_{dcmax}$)	0.7 x V_{start} ...950 V		
Rated DC Input Power (P_{dcr})	5950 W	7650 W	8700 W
Number of Independent MPPT	1	2	2
Maximum DC Input Power for each MPPT ($P_{MPPTmax}$)	6050 W Linear Derating From MAX to Null [800V ≤ V_{MPPT} ≤ 950V]	4800 W	4800 W
MPPT Input DC Voltage Range ($V_{MPPTmin} \dots V_{MPPTmax}$) at P_{acr}	320...800 V	-	-
DC Input Voltage Range with Parallel Configuration of MPPT at P_{acr}	-	320...800 V	320...800 V
DC Power Limitation with Parallel Configuration of MPPT	-	Linear Derating From MAX to Null [800V ≤ V_{MPPT} ≤ 950V]	Linear Derating From MAX to Null [800V ≤ V_{MPPT} ≤ 950V]
DC Power Limitation for each MPPT with Independent Configuration of MPPT at P_{acr} , max unbalance example	-	4800 W [320V ≤ V_{MPPT} ≤ 800V] the other channel: P_{dcr} -4800W [215V ≤ V_{MPPT} ≤ 800V]	4800 W [320V ≤ V_{MPPT} ≤ 800V] the other channel: P_{dcr} -4800W [290V ≤ V_{MPPT} ≤ 800V]
Maximum DC Input Current (I_{dmax}) / for each MPPT ($I_{MPPTmax}$)	18.9 A	30.0 A / 15.0 A	30.0 A / 15.0 A
Maximum Input Short Circuit Current for each MPPT	24.0 A	20.0 A	20.0 A
Number of DC Inputs Pairs for each MPPT	2 (-S Version)		
DC Connection Type	Tool Free PV Connector WM / MC4 (Screw Terminal Block on Standard Version)		
Input Protection			
Reverse Polarity protection	Yes, from limited current source		
Input Over Voltage Protection for each MPPT - Varistor	2		
Photovoltaic Array Isolation Control	According to local standard		
DC Switch Rating for each MPPT (Version with DC Switch)	16 A / 1000 V, 25 A / 800 V		
Output Side			
AC Grid Connection Type	Three phase 3W or 4W+PE		
Rated AC Power ($P_{acr} @ \cos\phi=1$)	5800 W	7500 W	8500 W
Maximum Apparent Power (S_{max})	5800 VA	7500 VA	8500 VA
Rated AC Grid Voltage (V_{acr})	400 V		
AC Voltage Range	320...480 V ⁽¹⁾		
Maximum AC Output Current ($I_{ac,max}$)	10.0 A	12.5 A	14.5 A
Contributory fault current	12.0 A	14.5 A	16.5 A
Rated Output Frequency (f.)	50 Hz / 60 Hz		
Output Frequency Range ($f_{min} \dots f_{max}$)	47...53 Hz / 57...63 Hz ⁽²⁾		
Nominal Power Factor and adjustable range	> 0.995, adj. ± 0.9 with $P_{acr}=5.22$ kW, ± 0.8 with max 5.8 kVA	> 0.995, adj. ± 0.9 with $P_{acr}=6.75$ kW, ± 0.8 with max 7.5 kVA	> 0.995, adj. ± 0.9 with $P_{acr}=7.65$ kW, ± 0.8 with max 8.5 kVA
Total Current Harmonic Distortion	< 2%		
AC Connection Type	Screw terminal block		
Output Protection			
Anti-Islanding Protection	According to local standard		
Maximum AC Overcurrent Protection	10.5 A	13.0 A	15.5 A
Output Overvoltage Protection - Varistor	4 plus gas arrester		
Operating Performance			
Maximum Efficiency (η_{max})	98.0%		
Weighted Efficiency (EURO/CEC)	97.4% / -	97.5% / -	97.5% / -
Feed In Power Threshold	32 W	36 W	36 W
Stand-by Consumption	< 15W		
Communication			
Wired Local Monitoring	Ethernet card with webserver (opt.), PVI-USB-RS232_485 (opt.), PVI-DESKTOP (opt.)		
Remote Monitoring	Ethernet card (opt.), PVI-AEC-EVO (opt.), AURORA LOGGER (opt.)		
Wireless Local Monitoring	PVI-DESKTOP (opt.) with PVI-RADIOMODULE (opt.)		
User Interface	Graphic display		
Environmental			
Ambient Temperature Range	-25...+60°C / -13...140°F with derating above 50°C/122°F		
Relative Humidity	0...100% condensing		
Noise Emission	< 45 dB(A) @ 1 m		
Maximum Operating Altitude without Derating	2000 m / 6560 ft		
Physical			
Environmental Protection Rating	IP 65		
Cooling	Natural		
Dimension (H x W x D)	641mm x 429mm x 220mm/ 25.2" x 16.9" x 8.7" (855mm x 429mm x 237mm/ 33.7" x 16.9" x 9.3" with open front cover)		
Weight	25.0 kg / 55.1 lb	28.0 kg / 61.7 lb	28.0 kg / 61.7 lb
Mounting System	Wall bracket		
Safety			
Isolation Level	Transformerless		
Marking	CE		
Safety and EMC Standard	EN62109-1, EN62109-2, AS/NZS3100, AS/NZS 60950, EN61000-6-2, EN61000-6-3, EN61000-3-2, EN61000-3-3		
Grid Standard	CEI 0-21, CEI 0-16, VDE 0126-1-1, VDE-AR-N 4105, G83/1, C10/11, EN 50438 (not for all national appendices), RD1699, RD 1565, ABNT NBR 16149		
Available Products Variants			
Standard	TRIO-5.8-TL-OUTD	TRIO-7.5-TL-OUTD	TRIO-8.5-TL-OUTD
With DC Switch	TRIO-5.8-TL-OUTD-S	TRIO-7.5-TL-OUTD-S	TRIO-8.5-TL-OUTD-S

1. The AC voltage range may vary depending on specific country grid standard

2. The Frequency range may vary depending on specific country grid standard

Remark. Features not specifically listed in the present data sheet are not included in the product



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Ver. 2013-04.0-EN - All products are subject to technical improvements without notice.