FIMER

Solar inverter UNO-DM-3.3/4.0/4.6/5.0 TL-PLUS

The UNO-DM-TL-PLUS single-phase inverter family, with power ratings from 3.3 to 5.0 kW, is the optimal solution for residential installations.

From 3.3 to 5.0 kW

One size fits all
The design wraps FIMER's quality and engineering into a light-weight and compact package thanks to technological choices optimized for installations with different orientation.
All power ratings share the same overall volume, allowing higher performance in a minimum space, and have a dual Maximum Power Point Tracker (2 MPPT).

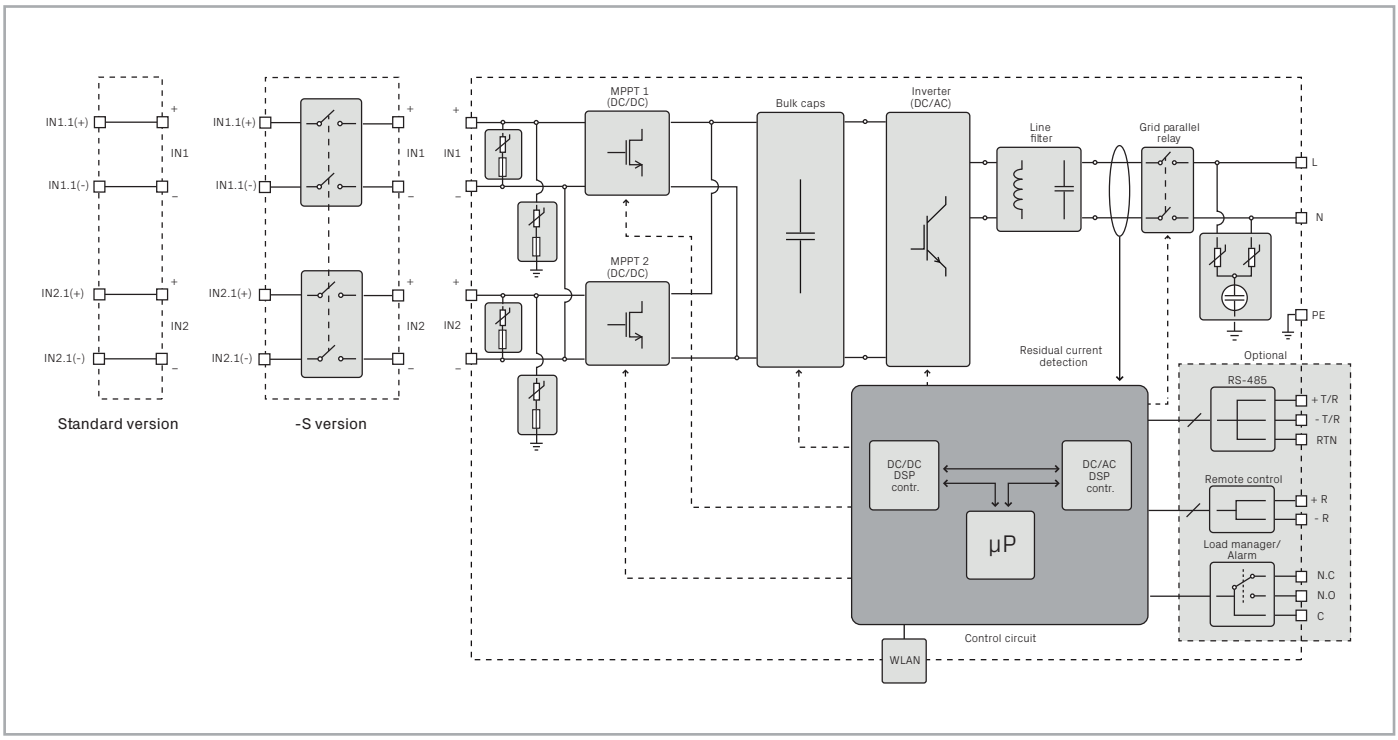
Easy to install, fast to commission
The presence of plug and play connectors, both on the DC and AC side, as well as the wireless communication, enable a simple, fast and safe installation without the need of opening the front cover of the inverter.
The featured easy commissioning routine removes the need for a long configuration process, resulting in lower installation time and costs.
Improved user experience thanks to a build in User Interface (UI), which enables access to features such as advanced inverter configuration settings, dynamic feed-in control and load manager, from any WLAN enabled devices (smartphone, tablet or PC).

Smart capabilities
The embedded logging capabilities and direct transferring of the data to Internet (via Ethernet or WLAN) allow customers to enjoy the whole Aurora Vision remote monitoring experience.
The advanced communication interfaces (WLAN, Ethernet, RS-485) combined with an efficient Modbus (RTU/TCP) communication protocol, Sunspec compliant, allow the inverter to be easily integrated within any smart environment and with third party monitoring and control systems.
A complete set of control functions with the embedded efficient algorithm, enabling dynamic control of the feed-in (i.e. zero injection), make the inverter suitable for worldwide applications in compliance with regulatory norms and needs of the utilities.

Energy Viewer
This new tool allows residential customers to remotely monitor the performance of their own solar plant and provides all information necessary to increase energy self-reliance and self-sufficiency.

Highlights
- Wireless access to the embedded Web User Interface
- Easy commissioning capability
- Future-proof with embedded connectivity for smart building and smart grid integration
- Dynamic feed-in control (for instance "zero injection")
- Remote firmware upgrade for inverter and components
- Modbus TCP/RTU Sunspec compliant

UNO-DM-3.3/4.0/4.6/5.0-TL-PLUS string inverter block diagram



Technical data and types

Type code	UNO-DM-3.3-TL-PLUS	UNO-DM-4.0-TL-PLUS	UNO-DM-4.6-TL-PLUS	UNO-DM-5.0-TL-PLUS
Input side				
Absolute maximum DC input voltage ($V_{max,abs}$)	600 V			
Start-up DC input voltage (V_{start})	200 V (adj. 120...350 V)			
Operating DC input voltage range (V_{dcmin}...V_{dcmax})	0.7 x V_{start}...580 V (min 90 V)			
Rated DC input voltage (V_{dcr})	360 V			
Rated DC input power (P_{dcr})	3500 W	4250 W	4750 W	5150 W
Number of independent MPPT	2			
Maximum DC input power for each MPPT ($P_{MPPTmax}$)	2000 W	3000 W	3000 W	3500 W
DC input voltage range with parallel configuration of MPPT at P_{acr}	170...530 V	130...530 V	150...530 V	145...480 V
DC power limitation with parallel configuration of MPPT	Linear derating from Max to Null [530V≤V_{MPPT}≤580V]			Linear derating from Max to Null [480V≤V_{MPPT}≤580V]
DC power limitation for each MPPT with independent configuration of MPPT at P_{acr}, max unbalance example	2000 W [200 V≤V_{MPPT}≤530 V] the other channel: P_{dcr}-2000 W [112 V≤V_{MPPT}≤530 V]	3000 W [190 V≤V_{MPPT}≤530 V] the other channel: P_{dcr}-3000 W [90 V≤V_{MPPT}≤530 V]	3000 W [190 V≤V_{MPPT}≤530 V] the other channel: P_{dcr}-3000 W [90 V≤V_{MPPT}≤530 V]	3500 W [185 V≤V_{MPPT}≤480 V] the other channel: P_{dcr}-3500 W [145 V≤V_{MPPT}≤480 V]
Maximum DC input current (I_{dcmax}) / for each MPPT ($I_{MPPTmax}$)	20.0/10.0 A	32.0/16.0 A	32.0/16.0 A	38.0/19.0 A
Maximum input short circuit current for each MPPT	12.5 A	20.0 A	20.0 A	22.0 A
Number of DC input pairs for each MPPT	1			
DC connection type [1]	Quick Fit PV Connector			
Input protection				
Reverse polarity protection	Yes, from limited current source			
Input over voltage protection for each MPPT-varistor	Yes			
Photovoltaic array isolation control	According to local standard			
DC switch rating for each MPPT (version with DC switch)	25 A / 600 V			
Output side				
AC grid connection type	Single-phase			
Rated AC power (P_{acr} @cosφ=1)	3300 W	4000 W	4600 W	5000 W
Maximum AC output power (P_{acmax} @cosφ=1)	3300 W	4000 W [2]	4600 W	5000 W
Maximum apparent power (S_{max})	3300 VA	4000 VA [2]	4600 VA	5000 VA
Rated AC grid voltage ($V_{ac,r}$)	230 V			
AC voltage range [3]	180...264 V			
Maximum AC output current ($I_{ac,max}$)	14.5 A	17.2 A	20.0 A	22.0 A
Contributory fault current	16.0 A	19.0 A	22.0 A	24.0 A
Rated output frequency (f_r) [4]	50/60 Hz			
Output frequency range (f_{min}...f_{max}) [4]	47...53/57...63 Hz			
Nominal power factor and adjustable range	> 0.995, adj. ± 0.1 - 1 (over/under excited)			
Total current harmonic distortion	< 3%			
AC connection type	Female connector from panel			
Output protection				
Anti-islanding protection	According to local standard			
Maximum external AC overcurrent protection	20.0 A	25.0 A	25.0 A	32.0 A
Output overvoltage protection - varistor	2 (L - N / L - PE)			

Technical data and types

Type code	UNO-DM-3.3-TL-PLUS	UNO-DM-4.0-TL-PLUS	UNO-DM-4.6-TL-PLUS	UNO-DM-5.0-TL-PLUS
Operating performance				
Maximum efficiency (η_{max})	97.0%	97.0%	97.0%	97.4%
Weighted efficiency (EURO/CEC)	96.5% / -	96.5% / -	96.5% / -	97.0% / -
Feed in power threshold	8 W			
Night consumption	<0.4 W			
Embedded communication				
Embedded communication interface [5]	Wireless			
Embedded communication protocol	ModBus TCP (SunSpec)			
Commissioning tool	Display, Web User Interface			
Monitoring	Plant Portfolio Manager, Plant Viewer, Plant Viewer for Mobile, Display, Energy Viewer			
Optional board UNO-DM-COM kit				
Optional communication interface	RS-485 (use with meter for dynamic feed-in control), Alarm/Load manager relay, Remote ON/OFF			
Optional communication protocol	ModBus RTU (SunSpec), Aurora Protocol			
Optional board UNO-DM-PLUS Ethernet COM kit				
Optional communication interface	Ethernet, RS-485 (use with meter for dynamic feed-in control), Alarm/Load manager relay, Remote ON/OFF			
Optional communication protocol	ModBus TCP (SunSpec), ModBus RTU (SunSpec), Aurora Protocol			
Environmental				
Ambient temperature range	25...+60°C /-13...140°F with derating above 50°C/122°F	-25...+60°C /-13...140°F with derating above 50°C/122°F	-25...+60°C /-13...140°F with derating above 45°C/113°F [6]	-25...+60°C /-13...140°F with derating above 45°C/113°F
Relative humidity	0...100 % condensing			
Maximum operating altitude without derating	2000 m / 6560 ft			
Physical				
Environmental protection rating	IP 65			
Cooling	Natural			
Dimension (H x W x D)	553 x 418 x 175 mm / 21.8" x 16.5" x 6.9"			
Weight	15 kg / 33 lbs			
Mounting system	Wall bracket			
Safety				
Isolation level	Transformerless			
Marking	CE , RCM			
Safety and EMC standard	IEC/EN 62109-1, IEC/EN 62109-2, AS/NZS 4777.2, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-3-11, EN 61000-3-12			
Grid standard (check your sales channel for availability) [7]	CEI 0-21, DIN V VDE V 0126-1-1, VDE-AR-N 4105, G83/2, G59/3, RD 413, ITC-BT-40, AS/NZS 4777.2, C10/11, IEC 61727, IEC 62116			
Available products variants				
Standard	UNO-DM-3.3-TL-PLUS-B	UNO-DM-4.0-TL-PLUS-B	UNO-DM-4.6-TL-PLUS-B	UNO-DM-5.0-TL-PLUS-B
With DC switch	UNO-DM-3.3-TL-PLUS-SB	UNO-DM-4.0-TL-PLUS-SB	UNO-DM-4.6-TL-PLUS-SB	UNO-DM-5.0-TL-PLUS-SB

1) "Refer to the document "String inverter – Product Manual appendix" available at www.fimer.com to know the brand and the model of the quick fit connector"
2) For UK G83/2 setting, maximum output current limited to 16 A up to a maximum output power of 3600 W and a maximum apparent power of 3600 VA
3) The AC voltage range may vary depending on specific country grid standard
4) The Frequency range may vary depending on specific country grid standard; CE is valid for 50Hz only
5) As per IEEE 802.11 b/g/n standard
6) P_{acr} = 4200 W @ 45°C/113°F
7) Further grid standards will be added, please refer to FIMER's Solar page for further details

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

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For more information please contact your local FIMER representative or visit:

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