

ABB string inverters

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

3.3 to 5 kW



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

One size fits all

The new design wraps ABB's quality and engineering into a lightweight 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 self-commissioning routine removes the need for a manual configuration process, resulting in lower installation time and costs.

Smart connectivity and integration

Embedded WLAN communication with all service software enclosed within the inverter and wirelessly accessible using any standard device (smartphone, tablet or PC).

The future-proof and flexible design enables integration with current and future devices for smart building automation.

Improved user experience thanks to a built-in User Interface (UI), which enables access to advanced features such as advanced inverter configuration settings, dynamic feed-in control and load manager.

SunSpec Compliant

The compliance with SunSpec Protocol (TCP/RTU) ensures an easy and immediate integration with third party devices within Smart buildings and Smart grids.

Highlights

- Wireless communication with integrated web server
- "Zero commissioning" capability
- Future-proof with embedded connectivity for Smart building and Smart grid integration
- Dynamic feed-in control (for instance "zero injection")
- Remote Over The Air (OTA) firmware upgrade for inverter and components
- Native Modbus SunSpec protocol (TCP/RTU)
- Improved user experience through the embedded UI
- Dual input section with independent MPPT

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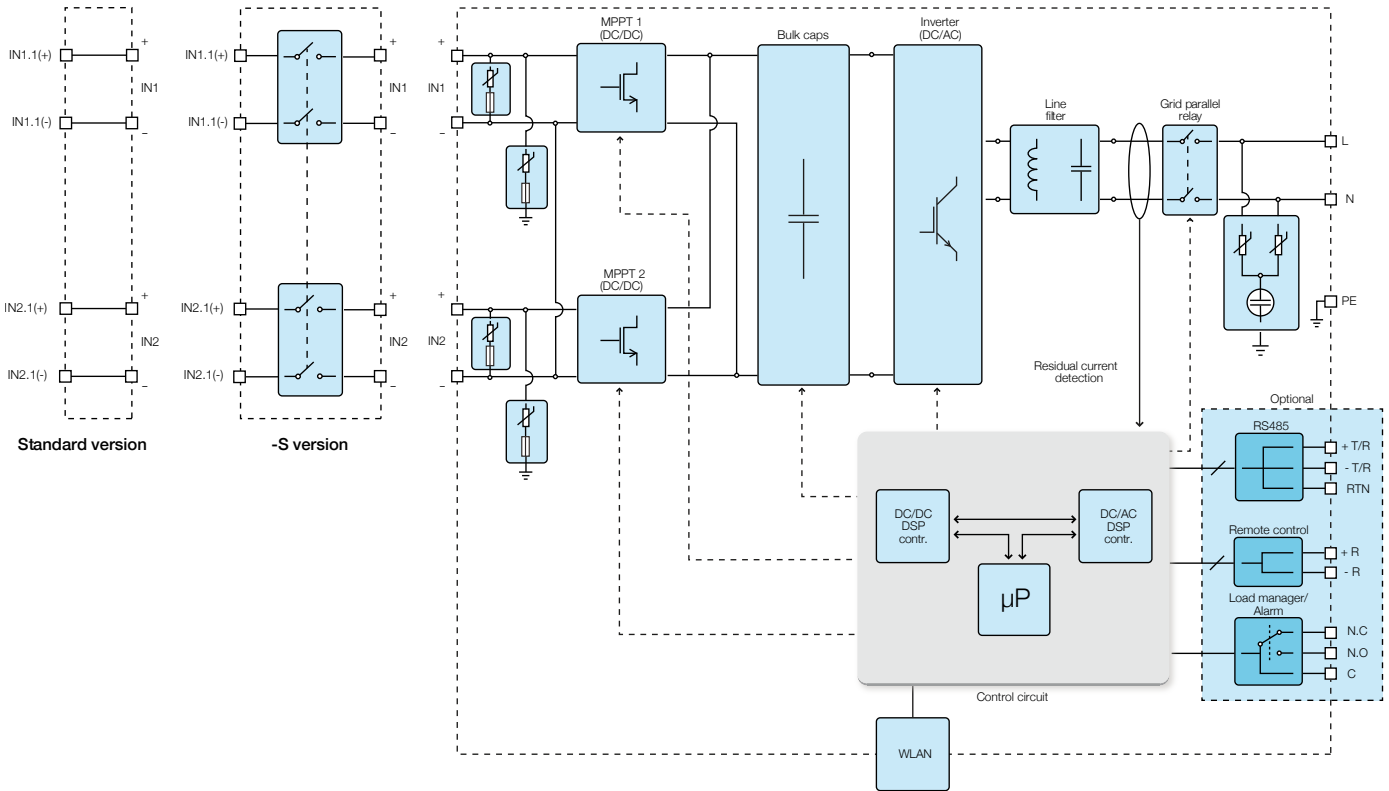
3.3 to 5 kW



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 ($V_{dmin}...V_{dmax}$)	$0.7 \times V_{start}...580$ 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_{dcr}	160...530 V	120...530 V	140...530 V	145...530 V
DC power limitation with parallel configuration of MPPT	Linear derating from Max to Null [$530V \leq V_{MPPT} \leq 580V$]			
DC power limitation for each MPPT with independent configuration of MPPT at P_{dcr} , max unbalance example	2000 W [$200V \leq V_{MPPT} \leq 530V$] the other channel: $P_{dcr} \leq 2000$ W [$112V \leq V_{MPPT} \leq 530V$]	3000 W [$190V \leq V_{MPPT} \leq 530V$] the other channel: $P_{dcr} \leq 3000$ W [$90V \leq V_{MPPT} \leq 530V$]	3000 W [$190V \leq V_{MPPT} \leq 530V$] the other channel: $P_{dcr} \leq 3000$ W [$90V \leq V_{MPPT} \leq 530V$]	3500 W [$200V \leq V_{MPPT} \leq 530V$] the other channel: $P_{dcr} \leq 3500$ W [$90V \leq V_{MPPT} \leq 530V$]
Maximum DC input current (I_{dmax}) / for each MPPT ($I_{MPPTmax}$)	20.0 A / 10.0 A	32.0 A / 16.0 A	32.0 A / 16.0 A	38 A / 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 inputs pairs for each MPPT	1			
DC connection type	Quick Fit PV Connector ⁷⁾			
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 ($P_{acr} @ \cos\phi=1$)	3300 W	4000 W	4600 W	5000 W ⁹⁾
Maximum AC output power ($P_{acmax} @ \cos\phi=1$)	3300 W ⁴⁾	4000 W ⁵⁾	4600 W ⁶⁾	5000 W
Maximum apparent power (S_{max})	3300 VA	4000 VA	4600 VA	5000 VA
Rated AC grid voltage (V_{acr})	230 V			
AC voltage range	180...264 V ¹⁾			
Maximum AC output current ($I_{ac,max}$)	14.5 A	17.2 A ²⁾	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)	50 Hz / 60 Hz			
Output frequency range ($f_{min}...f_{max}$)	47...53 Hz / 57...63 Hz ³⁾			
Nominal power factor and adjustable range	> 0.995, adj. \pm 0.8			
Total current harmonic distortion	< 3.5			
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)			
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			

Block diagram of UNO-DM-3.3/4.0/4.6/5.0-TL-PLUS



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
Communication				
Embedded communication interface	Wireless [®]			
Optional communication interface	RS485, Ethernet, ZigBee ¹⁰⁾			
Embedded communication protocol	ModBus TCP (SunSpec)			
Optional communication protocol	ModBus RTU (SunSpec), Aurora Protocol			
Commissioning tool	Display, Aurora Manger Lite, ABB Manager Lite			
Firmware update capabilities	Locally and remotely			
Mobile App	Plant Viewer for Mobile			
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 45°C/113°F	-25...+60°C / -13...140°F with derating above 45°C/113°F @ 4200 W ⁹⁾	-25...+60°C / -13...140°F with derating above 45°C/113°F
Relative humidity	0...100 % condensing			
Acoustic noise emission level	< 50 db (A) @1m			
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 lb			
Mounting system	Wall bracket			
Safety				
Isolation level	Transformerless			
Marking	CE (50 Hz only), RCM			
Safety and EMC standard	EN 50178, IEC/EN 62109-1, IEC/EN 62109-2, AS/NZS 3100, EN 61000-6-1, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3			
Grid standard (check your sales channel for availability)	CEI 0-21, DIN V VDE V 0126-1-1, VDE-AR-N 4105, G83/2, G59/3, EN 50438 (not for all national appendices), RD 1699, ITC-BT-40, AS 4777, IEC 61727, IEC 62116		CEI 0-21, DIN V VDE V 0126-1-1, VDE-AR-N 4105, G59/3, EN 50438 (not for all national appendices), RD 1699, ITC-BT-40, AS 4777, IEC 61727, IEC 62116	CEI 0-21, DIN V VDE V 0126-1-1, G59/3, EN 50438 (not for all national appendices), RD 1699, ITC-BT-40, AS 4777, C10/11, IEC 61727, IEC 62116
Available products variants				
Standard	UNO-DM-3.3-TL-PLUS	UNO-DM-4.0-TL-PLUS	UNO-DM-4.6-TL-PLUS	UNO-DM-5.0-TL-PLUS
With DC switch	UNO-DM-3.3-TL-PLUS-S	UNO-DM-4.0-TL-PLUS-S	UNO-DM-4.6-TL-PLUS-S	UNO-DM-5.0-TL-PLUS-S

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

²⁾ For UK G83/2 setting, maximum output current limited to 16A up to a maximum output power of 3.68 kW

³⁾ The frequency range may vary depending on specific country grid standard

⁴⁾ Limited to 3000 W for Germany

⁵⁾ Limited to 3600 W for Germany

⁶⁾ Limited to 4200 W for Germany

⁷⁾ Refer to the document "String inverter – Product Manual appendix" available at www.abb.com/solarinverters to know the brand and the model of the quick fit connector

⁸⁾ As per IEEE 802.11 b/g/n standard

⁹⁾ Derating start at 40°C for 4600 W

¹⁰⁾ Available for custom version only

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

Support and service

ABB supports its customers with dedicated, global service organization in more than 60 countries and strong regional and national technical partner networks providing complete range of life cycle services.

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

www.abb.com/solarinverters

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