

ABB string inverters UNO-2.0/2.5-I-OUTD 2 to 2.5 kW



The UNO-2.0-I and UNO-2.5-I are packed with ABB's proven high performing technology. The smallest of ABB's outdoor range, these products are the right size for the average rooftop installation.

The high speed and precise Maximum Power Point Tracking (MPPT) algorithm enables more real-time power tracking and improved energy harvesting.

Efficiency of up to 96.3%

Despite the isolated operation, the UNO-2.0-I and UNO-2.5-I feature an efficiency of 96.3%. The wide input voltage range makes the inverter suitable to low power installations with reduced string size.

In addition to its new look, this inverter has new features including a special built-in heat sink compartment and front panel display system.

This rugged outdoor inverter has been designed as a completely sealed unit to withstand the harshest environmental conditions.

Highlights

- Single-phase output
- High frequency isolated topology
- Each inverter is set on specific grid codes which can be selected in the field
- Wide input voltage range
- Flat efficiency curves ensure high efficiency at all output levels ensuring consistent and stable performance across the entire input voltage and output power range

Additional highlights

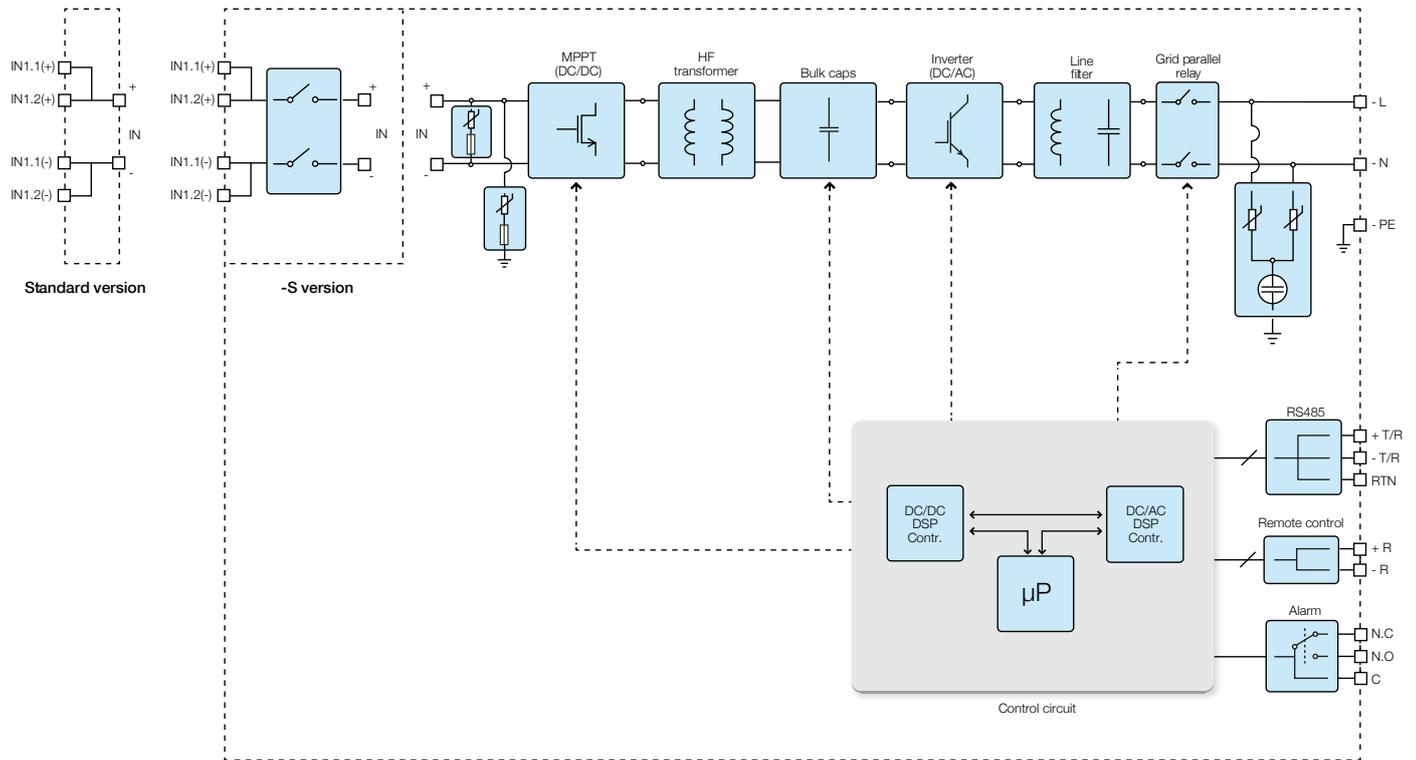
- Natural convection cooling for maximum reliability
- Outdoor enclosure for unrestricted use under any environmental conditions
- RS-485 communication interface (for connection to laptop or datalogger)



Technical data and types

| Type code | UNO-2.0-I-OUTD | UNO-2.5-I-OUTD |
|--|---|---|
| Input side | | |
| Absolute maximum DC input voltage ($V_{max,abs}$) | 520 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 x $V_{start}...520$ V (min 90 V) | |
| Rated DC input voltage (V_{dcr}) | 360 V | |
| Rated DC input power (P_{dcr}) | 2100 W | 2600 W |
| Number of independent MPPT | 1 | |
| Maximum DC input power for each MPPT ($P_{MPPTmax}$) | 2300 W Linear derating from max to null [470 V ≤ V_{MPPT} ≤ 520 V] | 2900 W Linear derating from max to null [470 V ≤ V_{MPPT} ≤ 520 V] |
| MPPT input DC voltage range ($V_{MPPTmin}...V_{MPPTmax}$) at P_{acr} | 200...470 V | 200...470 V |
| Maximum DC input current ($I_{dcr,max}$) / for each MPPT ($I_{MPPTmax}$) | 12.5 A / 12.5 A | 12.8 A / 12.8 A |
| Maximum input short circuit current for each MPPT | 15.0 A | |
| Number of DC inputs pairs for each MPPT | 2 | |
| DC connection type | PV quick fit connector ³⁾ | |
| 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) | 16 A / 600 V | |
| Output side | | |
| AC grid connection type | Single-phase | |
| Rated AC power ($P_{acr} @ \cos\phi=1$) | 2000 W | 2500 W |
| Maximum AC output power ($P_{acmax} @ \cos\phi=1$) | 2200 W ⁵⁾ | 2750 W ⁶⁾ |
| Rated AC grid voltage (V_{acr}) | 230 V | |
| AC voltage range | 180...264 V ¹⁾ | |
| Maximum AC output current ($I_{ac,max}$) | 10.5 A | 12.5 A |
| Contributory fault current | 16.0 A | |
| Rated output frequency (f_r) | 50 Hz / 60 Hz | |
| Output frequency range ($f_{min}...f_{max}$) | 47...53 Hz / 57...63 Hz ²⁾ | |
| Nominal power factor and adjustable range | > 0.990 ⁸⁾ | |
| Total current harmonic distortion | < 2% | |
| AC connection type | Screw terminal block, cable gland M25 | |
| Output protection | | |
| Anti-islanding protection | According to local standard | |
| Maximum external AC overcurrent protection | 16.0 A | |
| Output overvoltage protection - varistor | 2 (L - N / L - PE) | |

Block diagram of UNO-2.0/2.5-I-OUTD



Technical data and types

| Type code | UNO-2.0-I-OUTD | UNO-2.5-I-OUTD |
|---|---|---|
| Operating performance | | |
| Maximum efficiency (η_{max}) | | 96.3% |
| Weighted efficiency (EURO/CEC) | 95.1% / - | 95.4% / - |
| Feed in power threshold | | 24.0 W |
| Night consumption | | < 0.6 W ⁴⁾ |
| Communication | | |
| Wired local monitoring | PVI-USB-RS232_485 (opt.) | |
| Remote monitoring | VSN300 Wifi Logger Card (opt.), VSN700 Data Logger (opt.) | |
| Wireless local monitoring | VSN300 Wifi Logger Card (opt.) | |
| User interface | Graphic display | |
| 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) |
| Relative humidity | 0...100% condensing | |
| Sound pressure level, typical | 50 dBA @ 1 m | |
| Maximum operating altitude without derating | 2000 m / 6560 ft | |
| Physical | | |
| Environmental protection rating | IP65 | |
| Cooling | Natural | |
| Dimension (H x W x D) | 518 mm x 367 mm x 161 mm / 20.4" x 14.4" x 6.3" | |
| Weight | < 17 kg / 37.4 lbs | |
| Mounting system | Wall bracket | |
| Safety | | |
| Isolation level | HF transformer | |
| Marking | CE (50 Hz only), RCM | |
| Safety and EMC standard | EN 50178, IEC/EN 62109-1, IEC/EN 62109-2, AS/NZS 3100, AS/NZS 60950.1, EN 61000-6-2, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3 | |
| Grid standard (check your sales channel for availability) | DIN V VDE V 0126-1-1, VDE-AR-N 4105 ⁷⁾ , G83/2, EN 50438 (not for all national appendices), RD 1699, RD 413, AS 4777, C10/11, IEC 61727, IEC 62116 | |
| Available products variants | | |
| Standard | UNO-2.0-I-OUTD | UNO-2.5-I-OUTD |
| With DC switch | UNO-2.0-I-OUTD-S | UNO-2.5-I-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

³⁾ Please refer to the document "String inverters – Product manual appendix" available at www.abb.com/solarinverters for information on the quick-fit connector brand and model used in the inverter

⁴⁾ Stand-by consumption < 8.0 W

⁵⁾ Limited to 2000 W for Germany

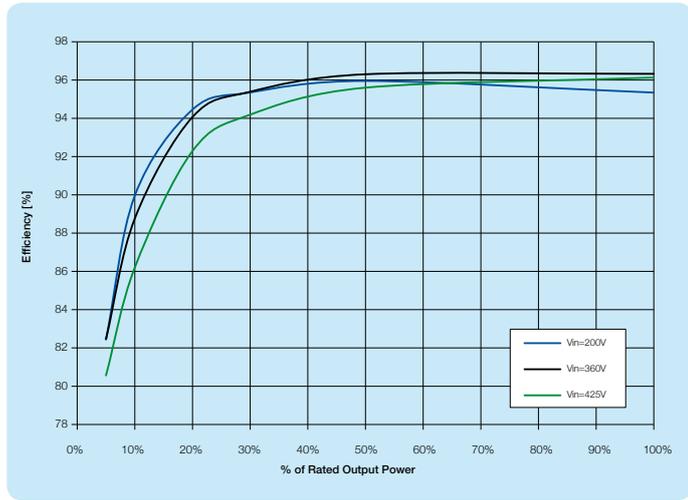
⁶⁾ Limited to 2500 W for Germany

⁷⁾ Limited to plant power ≤ 3.68 kVA

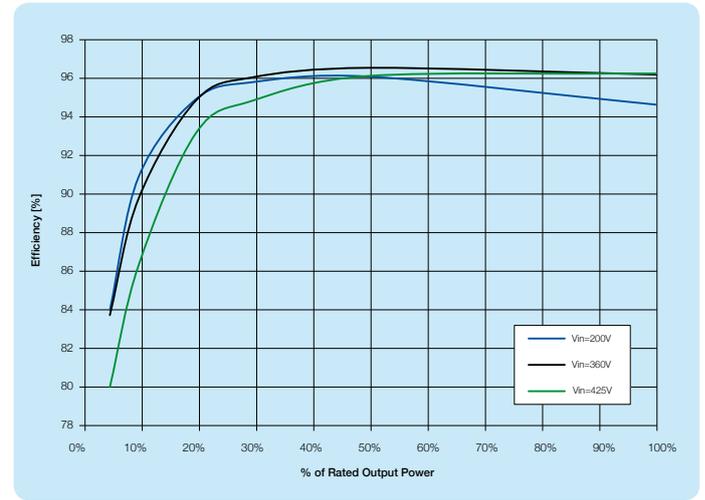
⁸⁾ The unit has not reactive power capability

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

Efficiency curves of UNO-2.0-I-OUTD



Efficiency curves of UNO-2.5-I-OUTD



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:

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