

Commercial & Power Plants BNT series

# BNT

## 3-25 kW

# ATON

~~~~~ SERIES

## Smart | Safety | Efficient

The Afore BNT Series Three-phase string inverters are designed for residential and small commercial PV system applications, rating from 3kW to 25kW. All models have unibody housings with aluminum structure which is anodized, increasing durability and effectively prevents corrosion. Equipped with external inductors, the unibody housings can ensure efficient heat dissipation, which significantly improves the reliability and extends the life of the inverters.

Communication implements are via the Wi-Fi module (can be changed to Ethernet / GPRS). Check the system status anytime and anywhere via online portal or APP.

- Quick-Arc Fault circuit interruption (Optional)
- WiFi standard
- Compact design
- Multiple intelligent protections
- Compatible with bifacial modules
- String level monitoring



- MPPPT**  
Wide MPPPT Range
- Max. 1.5**  
PV OVERSIZE  
1.5 Times PV Oversize
- Max. 1100V**  
DC 1100V  
Max. DC 1100V
- UNIBODY**  
One-piece Aluminum Housing
- PROTECTION**  
Build-in SPD Type II (Type II Optional)
- SMART**  
Smart IV Curve Scanning
- UPDATE**  
Remote Firmware Update



| PV Input Data                         | BNT003KTL | BNT004KTL | BNT005KTL  | BNT006KTL | BNT008KTL | BNT010KTL |
|---------------------------------------|-----------|-----------|------------|-----------|-----------|-----------|
| Max. DC Power (W)                     | 5100      | 6000      | 7500       | 9000      | 12000     | 15000     |
| Max. DC Voltage (V)                   |           |           | 1100       |           |           |           |
| MPPV Voltage Range (V)                |           |           | 150 - 1000 |           |           |           |
| MPPV Full Power Voltage Range (V)     |           | 200 - 850 |            | 250 - 850 | 300 - 850 | 500 - 850 |
| Rated Input Voltage (V)               |           |           | 620        |           |           |           |
| Start-up Voltage (V)                  |           |           | 150        |           |           |           |
| Max. Input Current (A)                |           |           | 15 x 2     |           |           |           |
| Max. Short Current (A)                |           |           | 25 x 2     |           |           |           |
| No. of MPP Tracker / No. of PV String |           |           | 2/2        |           |           |           |
| Input Connector Type                  |           |           | MC4        |           |           |           |

| AC Output Data                | BNT003KTL | BNT004KTL | BNT005KTL                                              | BNT006KTL | BNT008KTL | BNT010KTL |
|-------------------------------|-----------|-----------|--------------------------------------------------------|-----------|-----------|-----------|
| Max. Output Power (W)         | 3300      | 4000      | 5500                                                   | 6600      | 8800      | 11000     |
| Nominal Output Power (W)      | 3000      | 4000      | 5000                                                   | 6000      | 8000      | 10000     |
| Max. Output Current (A)       | 5.3       | 7         | 8.5                                                    | 10.5      | 13.5      | 17        |
| Nominal Output Voltage (V)    |           |           | 3P+N+PE / 3P+PE 230/400                                |           |           |           |
| Grid Voltage Range            |           |           | 260-519 (according to local standard)                  |           |           |           |
| Nominal Output Frequency (Hz) |           |           | 50/60                                                  |           |           |           |
| Grid Frequency Range          |           |           | 45-55/55-65 (according to local standard)              |           |           |           |
| Output Power Factor           |           |           | 1 default (adjustable from 0.8 leading to 0.8 lagging) |           |           |           |
| Output Current THD            |           |           | <3%                                                    |           |           |           |

| Efficiency      | BNT003KTL | BNT004KTL | BNT005KTL | BNT006KTL | BNT008KTL | BNT010KTL |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Max. Efficiency | 97.61%    | 97.65%    | 98.30%    | 98.00%    | 98.05%    | 98.70%    |
| Euro Efficiency |           |           | 98.00%    |           | 98.05%    | 98.23%    |

| Protection                           | BNT003KTL | BNT004KTL | BNT005KTL            | BNT006KTL | BNT008KTL | BNT010KTL |
|--------------------------------------|-----------|-----------|----------------------|-----------|-----------|-----------|
| PV Reverse Polarity Protection       | YES       | YES       | YES                  | YES       | YES       | YES       |
| PV Insulation Resistance Detection   | YES       | YES       | YES                  | YES       | YES       | YES       |
| AC Short Circuit Protection          | YES       | YES       | YES                  | YES       | YES       | YES       |
| AC Over Current Protection           | YES       | YES       | YES                  | YES       | YES       | YES       |
| AC Over Voltage Protection           | YES       | YES       | YES                  | YES       | YES       | YES       |
| Anti-Islanding Protection            | YES       | YES       | YES                  | YES       | YES       | YES       |
| Residual Current Detection           | YES       | YES       | YES                  | YES       | YES       | YES       |
| Over Temperature Protection          | YES       | YES       | YES                  | YES       | YES       | YES       |
| Integrated DC switch                 | YES       | YES       | Integrated (Type II) | YES       | YES       | YES       |
| Surge Protection                     | YES       | YES       | Integrated (Type II) | YES       | YES       | YES       |
| Smart IV Curve Scanning              | YES       | YES       | Optional             | Optional  | Optional  | Optional  |
| Quick Arc Fault Circuit Interruption | Optional  | Optional  | Optional             | Optional  | Optional  | Optional  |

| General Data                   | BNT003KTL | BNT004KTL | BNT005KTL                           | BNT006KTL | BNT008KTL | BNT010KTL |
|--------------------------------|-----------|-----------|-------------------------------------|-----------|-----------|-----------|
| Dimensions (H x W x D, mm)     |           |           | 510 x 370 x 167                     |           |           |           |
| Weight (kg)                    |           |           | 17                                  |           |           |           |
| Protection Degree              |           |           | IP 65                               |           |           |           |
| Enclosure Material             |           |           | Aluminum                            |           |           |           |
| Ambient Temperature Range (°C) |           |           | -25 - +60                           |           |           |           |
| Humidity Range                 |           |           | 0-100%                              |           |           |           |
| Topology                       |           |           | Transformerless                     |           |           |           |
| Communication Interface        |           |           | RS485 / WiFi / Wire Ethernet / GPRS |           |           |           |
| Cooling Concept                |           |           | Convection                          |           |           |           |
| Noise Emission (db)            |           |           | <30                                 |           |           |           |
| Night Power Consumption (W)    |           |           | <1                                  |           |           |           |
| Max. Operation Altitude (m)    |           |           | ≤4000                               |           |           |           |

| Certifications and Standards | BNT003KTL                                                                                                           | BNT004KTL | BNT005KTL | BNT006KTL | BNT008KTL | BNT010KTL |
|------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| EMC Standard                 | EN/IEC 61000-6-2, EN/IEC 61000-6-3, EN61000-3-2, EN61000-3-3, EN61000-3-11, EN61000-3-12                            |           |           |           |           |           |
| Safety Standard              | IEC 60068, UL1741, EN62109                                                                                          |           |           |           |           |           |
| Grid-connection              | IEEE1547, CSA C22, EN50549, VDE4105, VDE0126, RD1699, ABNT NBR16149 & 16150, AS4777.2, NB/T32004, G98/G99, IEC61727 |           |           |           |           |           |

| PV Input Data                         | BNT012KTL | BNT013KTL | BNT015KTL  | BNT017KTL | BNT020KTL | BNT025KTL |
|---------------------------------------|-----------|-----------|------------|-----------|-----------|-----------|
| Max. DC Power (W)                     | 18000     | 19500     | 22500      | 25500     | 30000     | 37500     |
| Max. DC Voltage (V)                   |           |           | 1100       |           |           |           |
| MPPV Voltage Range (V)                |           |           | 150 - 1000 |           |           |           |
| MPPV Full Power Voltage Range (V)     |           |           | 500 - 850  |           |           |           |
| Rated Input Voltage (V)               |           |           | 620        |           |           |           |
| Start-up Voltage (V)                  |           |           | 150        |           |           |           |
| Max. Input Current (A)                |           | 15 + 26   |            |           |           | 2.6 x 2   |
| Max. Short Current (A)                |           | 25 + 48   |            |           |           | 4.8 x 2   |
| No. of MPP Tracker / No. of PV String |           | 2/3       |            |           |           | 2/4       |
| Input Connector Type                  |           |           | MC4        |           |           |           |

| AC Output Data                | BNT012KTL | BNT013KTL | BNT015KTL                                              | BNT017KTL | BNT020KTL | BNT025KTL |
|-------------------------------|-----------|-----------|--------------------------------------------------------|-----------|-----------|-----------|
| Max. Output Power (W)         | 13200     | 14300     | 16500                                                  | 18700     | 22000     | 27500     |
| Nominal Output Power (W)      | 12000     | 13000     | 15000                                                  | 17000     | 20000     | 25000     |
| Max. Output Current (A)       | 21.5      | 22        | 27                                                     | 30        | 32        | 40        |
| Nominal Output Voltage (V)    |           |           | 3P+N+PE / 3P+PE 230/400                                |           |           |           |
| Grid Voltage Range            |           |           | 260-519 (according to local standard)                  |           |           |           |
| Nominal Output Frequency (Hz) |           |           | 50/60                                                  |           |           |           |
| Grid Frequency Range          |           |           | 45-55/55-65 (according to local standard)              |           |           |           |
| Output Power Factor           |           |           | 1 default (adjustable from 0.8 leading to 0.8 lagging) |           |           |           |
| Output Current THD            |           |           | <3%                                                    |           |           |           |

| Efficiency      | BNT012KTL | BNT013KTL | BNT015KTL | BNT017KTL | BNT020KTL | BNT025KTL |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Max. Efficiency | 98.70%    | 98.23%    | 98.75%    | 98.75%    | 98.35%    | 98.75%    |
| Euro Efficiency |           | 98.23%    |           | 98.35%    |           | 98.35%    |

| Protection                           | BNT012KTL | BNT013KTL | BNT015KTL            | BNT017KTL | BNT020KTL | BNT025KTL |
|--------------------------------------|-----------|-----------|----------------------|-----------|-----------|-----------|
| PV Reverse Polarity Protection       | YES       | YES       | YES                  | YES       | YES       | YES       |
| PV Insulation Resistance Detection   | YES       | YES       | YES                  | YES       | YES       | YES       |
| AC Short Circuit Protection          | YES       | YES       | YES                  | YES       | YES       | YES       |
| AC Over Current Protection           | YES       | YES       | YES                  | YES       | YES       | YES       |
| AC Over Voltage Protection           | YES       | YES       | YES                  | YES       | YES       | YES       |
| Anti-Islanding Protection            | YES       | YES       | YES                  | YES       | YES       | YES       |
| Residual Current Detection           | YES       | YES       | YES                  | YES       | YES       | YES       |
| Over Temperature Protection          | YES       | YES       | YES                  | YES       | YES       | YES       |
| Integrated DC switch                 | YES       | YES       | Integrated (Type II) | YES       | YES       | YES       |
| Surge Protection                     | YES       | YES       | Integrated (Type II) | YES       | YES       | YES       |
| Smart IV Curve Scanning              | YES       | YES       | Optional             | Optional  | Optional  | Optional  |
| Quick Arc Fault Circuit Interruption | Optional  | Optional  | Optional             | Optional  | Optional  | Optional  |

| General Data                   | BNT012KTL | BNT013KTL | BNT015KTL                           | BNT017KTL | BNT020KTL | BNT025KTL |
|--------------------------------|-----------|-----------|-------------------------------------|-----------|-----------|-----------|
| Dimensions (H x W x D, mm)     |           |           | 510 x 370 x 167                     |           |           |           |
| Weight (kg)                    |           | 19        |                                     |           |           | 21        |
| Protection Degree              |           |           | IP65                                |           |           |           |
| Enclosure Material             |           |           | Aluminum                            |           |           |           |
| Ambient Temperature Range (°C) |           |           | -25 - +60                           |           |           |           |
| Humidity Range                 |           |           | 0-100%                              |           |           |           |
| Topology                       |           |           | Transformerless                     |           |           |           |
| Communication Interface        |           |           | RS485 / WiFi / Wire Ethernet / GPRS |           |           |           |
| Cooling Concept                |           |           | Intelligent fan cooling             |           |           |           |
| Noise Emission (db)            |           |           | <40                                 |           |           |           |
| Night Power Consumption (W)    |           |           | <1                                  |           |           | <51       |
| Max. Operation Altitude (m)    |           |           | ≤4000                               |           |           |           |

| Certifications and Standards | BNT012KTL                                                                                                           | BNT013KTL | BNT015KTL | BNT017KTL | BNT020KTL | BNT025KTL |
|------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| EMC Standard                 | EN/IEC 61000-6-2, EN/IEC 61000-6-3, EN61000-3-2, EN61000-3-3, EN61000-3-11, EN61000-3-12                            |           |           |           |           |           |
| Safety Standard              | IEC 60068, UL1741, EN62109                                                                                          |           |           |           |           |           |
| Grid-connection              | IEEE1547, CSA C22, EN50549, VDE4105, VDE0126, RD1699, ABNT NBR16149 & 16150, AS4777.2, NB/T32004, G98/G99, IEC61727 |           |           |           |           |           |