

## Subtype BES MONOBLOK 9KW

|                     |   |
|---------------------|---|
| Certificate Holder  | Fotowoltaika By Energy Solutions sp. z o. o.          |
| Address             | Rynek Główny 28                                       |
| ZIP                 | 31-010  |
| City                | Krakow  |
| Country             | PL  |
| Certification Body  | DIN CERTCO Gesellschaft für Konformitätsbewertung mbH |
| Subtype title       | BES MONOBLOK 9KW                                      |
| Registration number | 011-1W0868  |
| Heat Pump Type      | Outdoor Air/Water                                     |
| Refrigerant         | R32   |
| Mass of Refrigerant | 1.8 kg  |
| Certification Date  | 14.08.2024  |
| Testing basis       | HP KEYMARK certification scheme rules V14             |

## Model BES MONOBLOK 9KW

|                                     |                       |
|-------------------------------------|-----------------------|
| Model name                          | BES MONOBLOK 9KW      |
| Application                         | Heating (medium temp) |
| Units                               | Outdoor               |
| Climate zone (for heating)          | n/a                   |
| Reversibility                       | Yes                   |
| Cooling mode application (optional) | n/a                   |
| Any additional heat sources         | n/a                   |

## General data

|                  |             |
|------------------|-------------|
| Power supply     | 3x230V 50Hz |
| Off-peak product | n/a         |

## Outdoor Air/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

|                               |        |
|-------------------------------|--------|
| Complete power supply failure | passed |
| Defrost test                  | passed |
| Starting and operating test   | passed |

### EN 14511-2 | Heating

|             | Low temperature | Medium temperature |
|-------------|-----------------|--------------------|
| Heat output | 10.40 kW        | 12.00 kW           |
| El input    | 2.44 kW         | 4.10 kW            |
| COP         | 4.27            | 2.92               |

### EN 12102-1 | Average Climate

|                           | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level outdoor | 67 dB(A)        | 67 dB(A)           |

### EN 14825 | Average Climate

|                | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| $\eta_s$       | 177 %           | 134 %              |
| Prated         | 10.08 kW        | 9.17 kW            |
| SCOP           | 4.49            | 3.41               |
| Tbiv           | -7 °C           | -7 °C              |
| TOL            | -10 °C          | -10 °C             |
| Pdh Tj = -7°C  | 8.91 kW         | 8.11 kW            |
| COP Tj = -7°C  | 3.23            | 2.49               |
| Cdh Tj = -7 °C | 0.900           | 0.900              |
| Pdh Tj = +2°C  | 5.53 kW         | 4.69 kW            |
| COP Tj = +2°C  | 4.40            | 3.37               |
| Cdh Tj = +2 °C | 0.900           | 0.900              |
| Pdh Tj = +7°C  | 4.73 kW         | 4.15 kW            |

|   |             |             |
|---|-------------|-------------|
| COP Tj = +7°C                                       | 5.77        | 4.14        |
| Cdh Tj = +7 °C                                      | 0.900       | 0.900       |
| Pdh Tj = 12°C                                       | 4.99 kW     | 4.88 kW     |
| COP Tj = 12°C                                       | 8.29        | 6.37        |
| Cdh Tj = +12 °C                                     | 0.900       | 0.900       |
| Pdh Tj = Tbiv                                       | 8.91 kW     | 8.11 kW     |
| COP Tj = Tbiv                                       | 3.23        | 2.49        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.76 kW     | 7.79 kW     |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.02        | 2.25        |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 0.900       | 0.900       |
| WTOL  | 60 °C       | 60 °C       |
| Poff  | 12 W        | 12 W        |
| PTO   | 12 W        | 12 W        |
| PSB   | 12 W        | 12 W        |
| PCK   | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 2.31 kW     | 1.38 kW     |
| Annual energy consumption Qhe                       | 4635 kWh    | 5549 kWh    |