

## Single Pack BD35K 12/24V DC PM

Single pack code number: **195B4825**

| Position | Title                                      | Code     | Amount |
|----------|--|----------|--------|
| 1        | Compressor BD35K                           | 101Z0211 | 1      |
| 2        | Electronic unit High Speed                 | 101N0391 | 1      |
| 3        | Bolt joint for one compressor   M6   ø16mm | 118-1917 | 1      |

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## BD35K Direct Current Compressor R600a, 12/24V DC, 10-45V DC Solar, & 100-240V AC 50/60Hz



### General

|   |                            |
|---|----------------------------|
| Code number (without electronic units)          | 101Z0211                   |
| Electronic unit 12/24V DC - Standard            | 101N0242, 30 pcs: 101N0243 |
| Electronic unit 12/24V DC - AEO                 | 101N0340, 30 pcs: 101N0341 |
| Electronic unit 10-45V DC - Solar               | 101N0420, 30 pcs: 101N0421 |
| Electronic unit 12/24V DC & 100-240V AC 50/60Hz | 101N0510, 28 pcs: 101N0511 |
| Electronic unit 12/24V DC - Automotive          | 101N0680, 30 pcs: 101N0681 |
| Compressors on pallet                           | 150                        |

### Approvals

|          |
|----------|
| -        |
| UL / VDE |
| VDE      |
| CB / VDE |
| CB / UL  |



### Application

|   |                        |
|---|------------------------|
| Application                                       | LBP/MBP/HBP            |
| Evaporating temperature °C                        | -30 to 0 (10)          |
| Voltage range DC VDC                              | 9.6 - 17 / 21.3 - 31.5 |
| Voltage range AC V/Hz                             | 100 - 240 / 50/60      |
| Voltage range for solar applications VDC          | 10 - 45                |
| Max. condensing temperature continuous (short) °C | 60 (70)                |
| Max. winding temperature continuous (short) °C    | 125 (135)              |

### Cooling requirements

| Application | LBP | MBP | HBP |
|-------------|-----|-----|-----|
| 32°C        | S   | S   | S   |
| 38°C        | S   | S   | S   |
| 43°C        | S   | S   | S   |

Remarks on application: Fan cooling F1 depending on application and speed.

### Motor

|                                     |                |
|-------------------------------------|----------------|
| Motor type                          | variable speed |
| Resistance, all 3 windings (25°C) Ω | 1.8            |

### Design

|   |                       |
|---|-----------------------|
| Displacement cm <sup>3</sup>                  | 3.00                  |
| Oil quantity (type) cm <sup>3</sup>           | 150 (polyolester)     |
| Maximum refrigerant charge g                  | 120                   |
| Free gas volume in compressor cm <sup>3</sup> | 870                   |
| Weight - Compressor/Electronic unit kg        | 4.3 / 0.19 (Standard) |

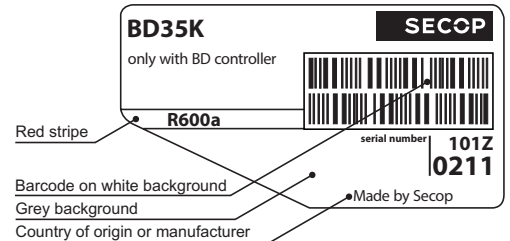
### Standard battery protection settings (refer to electronic unit Instructions for optional settings)

|             |      |      |
|-------------|------|------|
| Voltage     | 12V  | 24V  |
| Cut out VDC | 10.4 | 22.8 |
| Cut in VDC  | 11.7 | 24.2 |

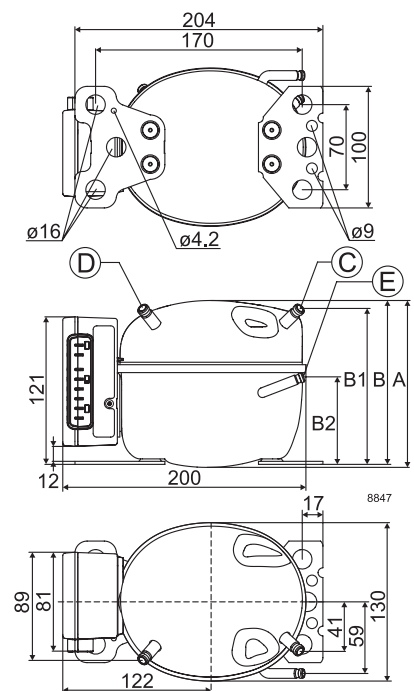
### Dimensions

|  |                    |                           |
|--|--------------------|---------------------------|
| Height mm                                    | A                  | 137                       |
|  | B                  | 135                       |
|  | B1                 | 128                       |
|  | B2                 | 73                        |
| Suction connector location/I.D. mm   angle   | C                  | 6.2   40°                 |
|  | material   comment | Cu-plated steel   Al cap  |
| Process connector location/I.D. mm   angle   | D                  | 6.2   45°                 |
|  | material   comment | Cu-plated steel   Al cap  |
| Discharge connector location/I.D. mm   angle | E                  | 5.0   21°                 |
|  | material   comment | Cu-plated steel   Al cap  |
| Connector tolerance I.D. mm                  |                    | ±0.09, on 5.0 +0.12/+0.20 |

Remarks:



- S = Static cooling normally sufficient
- O = Oil cooling
- F<sub>1</sub> = Fan cooling 1.5 m/s  
(compressor compartment temperature equal to ambient temperature)
- F<sub>2</sub> = Fan cooling 3.0 m/s necessary
- SG = Suction gas cooling normally sufficient
- = not applicable in this area



| Capacity (EN 12900 Household/CECOMAF) |      |      |       |      |      |      |      |      |      |     |     | 12V DC, static cooling |  | watt |  |
|---------------------------------------|------|------|-------|------|------|------|------|------|------|-----|-----|------------------------|--|------|--|
| rpm \ °C                              | -30  | -25  | -23.3 | -20  | -15  | -10  | -5   | 0    | 5    | 7.2 | 10  | 15                     |  |      |  |
| 2,000                                 | 13.1 | 20.9 | 23.8  | 29.8 | 39.7 | 51.1 | 64.1 | 79.1 | 96.2 | 104 | 116 |                        |  |      |  |
| 2,500                                 | 16.8 | 25.2 | 28.4  | 35.2 | 47.0 | 60.9 | 77.2 | 96.0 | 118  | 128 |     |                        |  |      |  |
| 3,000                                 | 21.1 | 30.6 | 34.3  | 42.2 | 56.2 | 72.7 | 92.2 | 115  |      |     |     |                        |  |      |  |
| 3,500                                 | 25.0 | 36.0 | 40.2  | 49.1 | 65.0 | 83.8 | 106  |      |      |     |     |                        |  |      |  |

| Compressor speed |                   |             |
|------------------|-------------------|-------------|
| Electronit unit  | Resistor (R1) [Ω] | Motor speed |
| Code number      | calculated values | [rpm]       |
| 101N0242         | 0                 | 2,000       |
| 101N0510         | 277               | 2,500       |
| 101N0680         | 692               | 3,000       |
|                  | 1523              | 3,500       |
| 101N0340         | 0                 | AEO         |
| 101N0420         | 173               | 2,000       |
| with AEO         | 450               | 2,500       |
|                  | 865               | 3,000       |
|                  | 1696              | 3,500       |

In AEO (Adaptive Energy Optimizing) speed mode the BD compressor will always adapt its speed to the actual cooling demand.

| Capacity (ASHRAE LBP) |      |      |       |      |      |      |      |     |     |     |     | 12V DC, static cooling |  | watt |  |
|-----------------------|------|------|-------|------|------|------|------|-----|-----|-----|-----|------------------------|--|------|--|
| rpm \ °C              | -30  | -25  | -23.3 | -20  | -15  | -10  | -5   | 0   | 5   | 7.2 | 10  | 15                     |  |      |  |
| 2,000                 | 16.0 | 25.6 | 29.1  | 36.3 | 48.5 | 62.4 | 78.4 | 97  | 118 | 128 | 142 |                        |  |      |  |
| 2,500                 | 20.7 | 30.9 | 34.8  | 43.1 | 57.5 | 74.5 | 94.3 | 117 | 144 | 157 |     |                        |  |      |  |
| 3,000                 | 25.8 | 37.4 | 42.0  | 51.6 | 68.6 | 88.9 | 113  | 140 |     |     |     |                        |  |      |  |
| 3,500                 | 30.6 | 43.9 | 49.0  | 60.0 | 79.2 | 102  | 129  |     |     |     |     |                        |  |      |  |

| Power consumption |      |      |       |      |      |      |      |      |      |      |      | 12V DC, static cooling |  | watt |  |
|-------------------|------|------|-------|------|------|------|------|------|------|------|------|------------------------|--|------|--|
| rpm \ °C          | -30  | -25  | -23.3 | -20  | -15  | -10  | -5   | 0    | 5    | 7.2  | 10   | 15                     |  |      |  |
| 2,000             | 17.5 | 21.5 | 22.8  | 25.4 | 29.1 | 32.8 | 36.5 | 40.2 | 44.1 | 45.8 | 48.0 |                        |  |      |  |
| 2,500             | 22.9 | 27.2 | 28.6  | 31.3 | 35.4 | 39.5 | 43.6 | 48.0 | 52.5 | 54.5 |      |                        |  |      |  |
| 3,000             | 28.9 | 34.6 | 36.4  | 40.0 | 45.4 | 50.9 | 56.5 | 62.5 |      |      |      |                        |  |      |  |
| 3,500             | 33.7 | 41.1 | 43.5  | 47.8 | 54.1 | 60.4 | 67.1 |      |      |      |      |                        |  |      |  |

| Current consumption (for 24V applications the following must be halved) |      |      |       |      |      |      |      |      |      |      |      | 12V DC, static cooling |  | watt |  |
|---|------|------|-------|------|------|------|------|------|------|------|------|------------------------|--|------|--|
| rpm \ °C  | -30  | -25  | -23.3 | -20  | -15  | -10  | -5   | 0    | 5    | 7.2  | 10   | 15                     |  |      |  |
| 2,000   | 1.48 | 1.80 | 1.91  | 2.12 | 2.43 | 2.74 | 3.04 | 3.35 | 3.65 | 3.79 | 3.97 |                        |  |      |  |
| 2,500   | 1.90 | 2.28 | 2.40  | 2.63 | 2.98 | 3.32 | 3.67 | 4.02 | 4.40 | 4.57 |      |                        |  |      |  |
| 3,000   | 2.36 | 2.87 | 3.03  | 3.34 | 3.79 | 4.23 | 4.69 | 5.16 |      |      |      |                        |  |      |  |
| 3,500   | 2.81 | 3.42 | 3.61  | 3.98 | 4.52 | 5.04 | 5.58 |      |      |      |      |                        |  |      |  |

| COP (EN 12900 Household/CECOMAF) |      |      |       |      |      |      |      |      |      |      |      | 12V DC, static cooling |  | W/W |  |
|----------------------------------|------|------|-------|------|------|------|------|------|------|------|------|------------------------|--|-----|--|
| rpm \ °C                         | -30  | -25  | -23.3 | -20  | -15  | -10  | -5   | 0    | 5    | 7.2  | 10   | 15                     |  |     |  |
| 2,000                            | 0.75 | 0.97 | 1.04  | 1.17 | 1.36 | 1.56 | 1.76 | 1.97 | 2.18 | 2.28 | 2.41 |                        |  |     |  |
| 2,500                            | 0.73 | 0.93 | 1.00  | 1.12 | 1.33 | 1.54 | 1.76 | 1.99 | 2.23 | 2.34 |      |                        |  |     |  |
| 3,000                            | 0.73 | 0.89 | 0.94  | 1.05 | 1.24 | 1.43 | 1.63 | 1.84 |      |      |      |                        |  |     |  |
| 3,500                            | 0.74 | 0.87 | 0.92  | 1.03 | 1.20 | 1.39 | 1.58 |      |      |      |      |                        |  |     |  |

| COP (ASHRAE LBP) |      |      |       |      |      |      |      |      |      |      |      | 12V DC, static cooling |  | W/W |  |
|------------------|------|------|-------|------|------|------|------|------|------|------|------|------------------------|--|-----|--|
| rpm \ °C         | -30  | -25  | -23.3 | -20  | -15  | -10  | -5   | 0    | 5    | 7.2  | 10   | 15                     |  |     |  |
| 2,000            | 0.91 | 1.19 | 1.27  | 1.43 | 1.67 | 1.91 | 2.15 | 2.41 | 2.69 | 2.81 | 2.97 |                        |  |     |  |
| 2,500            | 0.90 | 1.14 | 1.22  | 1.38 | 1.63 | 1.89 | 2.16 | 2.45 | 2.74 | 2.87 |      |                        |  |     |  |
| 3,000            | 0.89 | 1.08 | 1.15  | 1.29 | 1.51 | 1.75 | 2.00 | 2.26 |      |      |      |                        |  |     |  |
| 3,500            | 0.90 | 1.07 | 1.13  | 1.26 | 1.47 | 1.70 | 1.94 |      |      |      |      |                        |  |     |  |

| Test conditions with electronic units |                      | EN 12900/CECOMAF | ASHRAE LBP |
|---------------------------------------|----------------------|------------------|------------|
| Condensing temperature                | 101N0242<br>101N0680 | 55°C             | 54.4°C     |
| Ambient temperature                   |                      | 32°C             | 32°C       |
| Suction gas temperature               |                      | 32°C             | 32°C       |
| Liquid temperature                    |                      | no subcooling    | 32°C       |

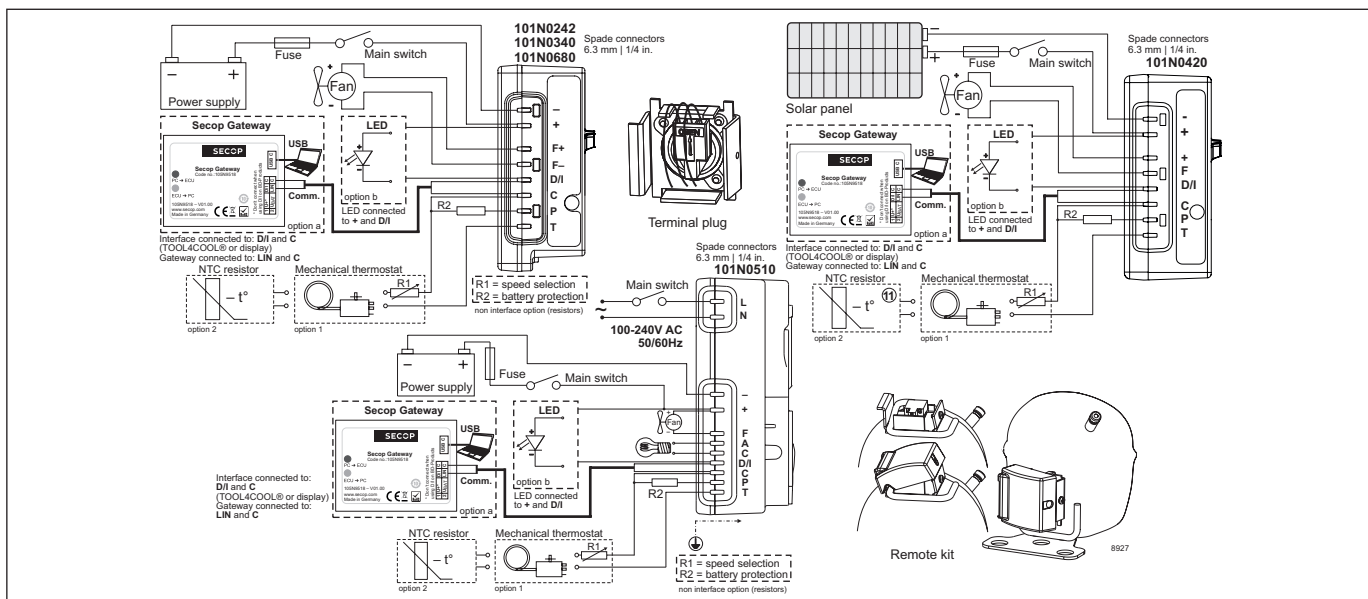
| Accessories for BD35K      |   | Code number                |
|----------------------------|---|----------------------------|
| Bolt joint for one comp.   | Ø:16 mm   | 118-1917                   |
| Bolt joint in quantities   | Ø:16 mm   | 118-1918                   |
| Snap-on in quantities      | Ø:16 mm   | 118-1919                   |
| Remote kit (without cable) |   | 105N9210                   |
| Secop Gateway              |   | 105N9518                   |
| DC usage:                  | Automobile fuse, DIN 7258 12V: 15A   24V: 7.5 A | Not deliverable from Secop |
| Main switch                | min. 20A  |                            |
| AC usage:                  | Fuse, 100-240V                                  | Not deliverable from Secop |
| Main switch                | min. 6A   |                            |

| Wire dimensions DC |       |     |                            |       |                            |       |
|--------------------|-------|-----|----------------------------|-------|----------------------------|-------|
| Cross section      | Size  |     | Max. length* 12V operation |       | Max. length* 24V operation |       |
|                    | [mm²] | AWG | [m]                        | [ft.] | [m]                        | [ft.] |
| 2.5                | 12    | 12  | 2.5                        | 8     | 5                          | 16    |
| 4                  | 12    | 12  | 4                          | 13    | 8                          | 26    |
| 6                  | 10    | 10  | 6                          | 20    | 12                         | 39    |
| 10                 | 8     | 8   | 10                         | 33    | 20                         | 66    |

\*Length between battery and electronic unit

Wire dimensions AC  
Cross section min. 0.75 mm² or AWG 18

| Operational errors        |  |
|---------------------------|--|
| Error code or LED flashes | Error type   |
|                           | Can be read out in the software <b>TOOL4COOL®</b>  |
| 6                         | <b>Thermostat failure</b><br>(If the NTC thermistor is short-circuit or has no connection).  |
| 5                         | <b>Thermal cut-out of electronic unit</b><br>(If the refrigeration system has been too heavily loaded, or if the ambient temperature is high, the electronic unit will run too hot). |
| 4                         | <b>Minimum motor speed error</b><br>(If the refrigeration system is too heavily loaded, the motor cannot maintain minimum speed at approximately 1,850 rpm).                         |
| 3                         | <b>Motor start error</b><br>(The rotor is blocked or the differential pressure in the refrigeration system is too high (>5 bar)).  |
| 2                         | <b>Too many start attempts or fan over current</b><br>(Too many compressor or fan starts in short time or fan current higher than 0.5A <sub>avg</sub> ).                             |
| 1                         | <b>Battery protection cut-out</b><br>(The voltage is outside of the cut-out setting).  |



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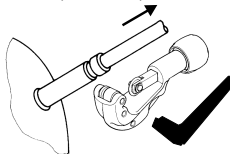
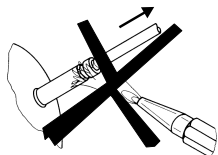
Keep electrical equipment clear from oil, chemicals, and water



# BD Compressors

# SECCP

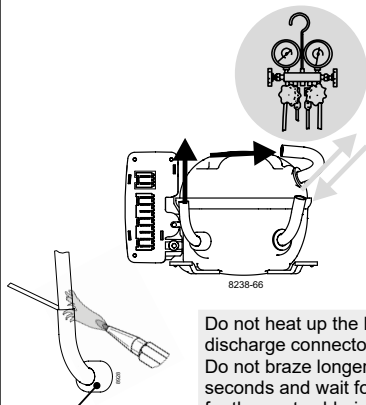
**Service/Repair – R290, R600a, R170, R1270, R1234yf (applies to all flammable refrigerants)**



8545



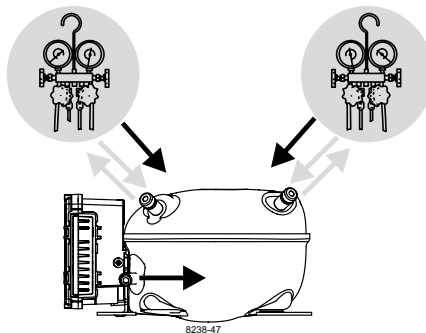
## BD Nano



Do not heat up the bottom of the discharge connector directly.  
Do not braise longer than 10 seconds and wait for 5 minutes for the next soldering attempt (Product Bulletin DES.N.101.M).

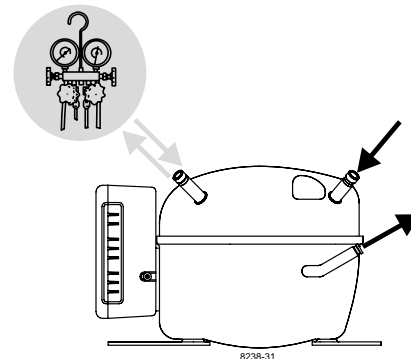
**! max. 150°C/302°F !**  
at socket  
brazing solder: silver with flux

## BD Micro



8238-47

## BD-P



8238-31

**Dismantling, recycling, disposal:** At the end of a compressor's lifecycle, proceed by separating and storing components according to their environmental impact. Parts that may cause pollution must be clearly identified and handled separately, ensuring appropriate disposal. Refrigerant gas must not be released into the environment and should be recovered by qualified operators. Compressor oil must also be collected separately. The compressor should be disposed of at specialized disposal centers in accordance with the applicable regulations. **Subject to modifications/alterations. [www.seccp.com](http://www.seccp.com)**

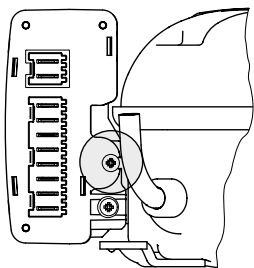


Instructions for Electronic Units  
are available for download on  
[www.secop.com](http://www.secop.com)

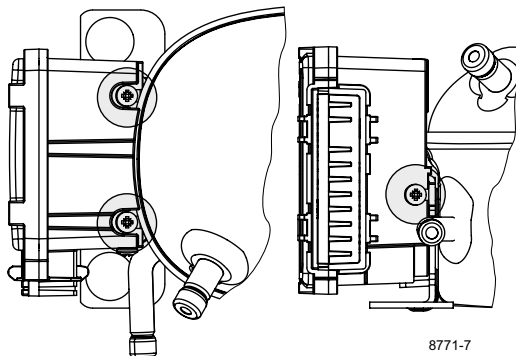


# BD Compressors

# SECCP

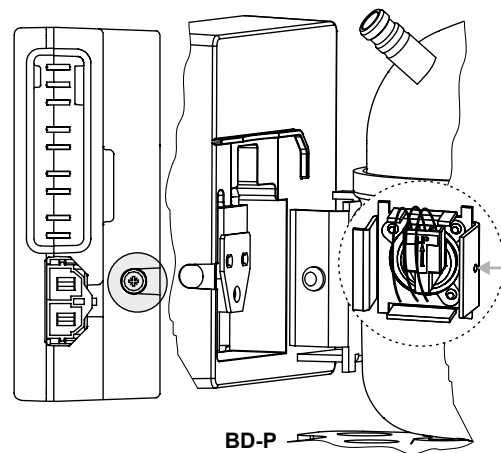


**BD Nano**



**BD Micro**

8771-7



**BD-P**

## BD Nano

Attach the electronic unit by pressing it linearly onto the compressor's Fusite® connector and bracket. The electronic unit must be mounted straight onto the compressor terminals. Ensure correct alignment before pressing it into place. Apply pressure until both screw heads snap into place. For high-vibration environments, the unit can optionally be secured with a third screw (marked in grey).

## BD Micro

Attach the electronic unit by pressing it linearly onto the compressor's Fusite® connector and bracket. The electronic unit must be mounted straight onto the compressor terminals. Ensure correct alignment before pressing it into place. Secure it with at least two screws, either from the side or from above (marked in grey).

## BD-P

The cable plug of the electronic unit is connected to the compressor's Fusite® connector. The electronic unit is then mounted onto the compressor bracket. First, the left side is attached; next, the right side is pressed sideways over the screw on the bracket (marked in grey). The unit snaps into place on the bracket and is now securely fixed to the compressor. An earth connection (via the compressor baseplate) can be used if required.

**Dismantling, recycling, disposal:** At the end of a compressor's lifecycle, proceed by separating and storing components according to their environmental impact. Parts that may cause pollution must be clearly identified and handled separately, ensuring appropriate disposal. Refrigerant gas must not be released into the environment and should be recovered by qualified operators. Compressor oil must also be collected separately. The compressor should be disposed of at specialized disposal centers in accordance with the applicable regulations. **Subject to modifications/alterations.** [www.secop.com](http://www.secop.com)