Single
Packs

SECOP

# Single Pack BD250GH.2 48V DC PM

Single pack code number: **195B4556**

| Position | Title | Code | Amount |
|---|---|---|---|
| 1 | Compressor BD250GH.2 | 101Z0405 | 1 |
| 2 | Electronic unit - Telecom | 101N0732 | 1 |
| 3 | Bolt joint for one compressor \| M6 \| ø16mm | 118-1917 | 1 |

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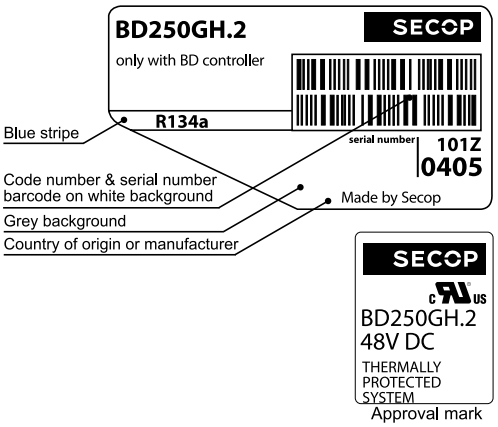
# BD250GH.2
# Direct Current Compressor
# R134a
# 48V DC

TOOL4COOL®




S = Static cooling normally sufficient
O = Oil cooling
$F_1$ = Fan cooling 1.5 m/s (compressor compartment temperature equal to ambient temperature)
$F_2$ = Fan cooling 3.0 m/s necessary
SG = Suction gas cooling normally sufficent
– = not applicable in this area

**General**

| | |
|---|---|
| Code number (without electronic units) | 101Z0405 |
| Electronic unit - Telecom | 101N0732, 36 pcs: 101N0733 |
| Approvals | UL |
| Compressors on pallet | 150 |

**Application**

| | | |
|---|---|---|
| Application | | LBP/MBP/HBP |
| Evaporating temperature | °C | -25 to 15 |
| Voltage range | VDC | 32 - 60 |
| 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 | $F_1$ |
| Remarks on application: | | | |

**Motor**

| | | |
|---|---|---|
| Motor type | | variable speed |
| Resistance, all 3 windings (25°C) | Ω | 1.03 |

**Design**

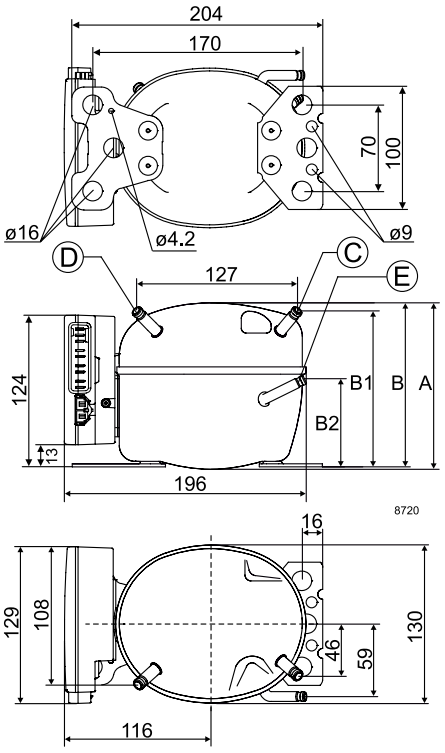
| | | |
|---|---|---|
| Displacement | $cm^3$ | 2.50 |
| Oil quantity (type) | $cm^3$ | 150 (polyolester) |
| Maximum refrigerant charge | g | 300 |
| Free gas volume in compressor | $cm^3$ | 870 |
| Weight - Compressor/Electronic unit | kg | 4.4/0.24 |

**Battery protection settings**

| Voltage | | | Min. value | Default | Max. value |
|---|---|---|---|---|---|
| Cut out | (0.1 steps) | VDC | 32 | 36 | 60 |
| Cut in diff. | (0.1 steps) | VDC | 0.5 | 4.0 | 10.0 |

**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: | Clearance between electronic unit and baseplate does not allow the snap-on option for mounting. | | |



**Capacity (EN 12900 Household/CECOMAF)** 53V DC, fan cooling $F_1$ **watt**

| rpm \ °C | -25 | -23.3 | -20 | -15 | -10 | -6.7 | -5 | 0 | 5 | 7.2 | 10 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,500 | 31.4 | 36.6 | 47.2 | 65.5 | 87.0 | 103 | 112 | 143 | 178 | 195 | 219 | 267 |
| 3,100 | 42.9 | 49.1 | 62.1 | 84.8 | 112 | 132 | 144 | 181 | 224 | 246 | 275 | 333 |
| 3,800 | 55.0 | 62.4 | 78.3 | 106 | 139 | 165 | 179 | 224 | 277 | 303 | 337 | 408 |
| 4,400 | 64.3 | 72.8 | 91.1 | 124 | 162 | 191 | 208 | 261 | 322 | 352 | 392 | 472 |

**Capacity (ASHRAE LBP)** 53V DC, fan cooling $F_1$ **watt**

| rpm \ °C | -25 | -23.3 | -20 | -15 | -10 | -6.7 | -5 | 0 | 5 | 7.2 | 10 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,500 | 40.1 | 46.3 | 59.3 | 81.8 | 108 | 129 | 140 | 177 | 222 | 243 | 273 | 334 |
| 3,100 | 54.0 | 61.6 | 77.6 | 106 | 139 | 164 | 178 | 225 | 279 | 306 | 342 | 416 |
| 3,800 | 68.7 | 77.9 | 97.4 | 132 | 173 | 204 | 222 | 279 | 345 | 377 | 421 | 509 |
| 4,400 | 80.0 | 90.5 | 113 | 153 | 201 | 237 | 257 | 323 | 400 | 437 | 488 | 589 |

**Power consumption** 53V DC, fan cooling $F_1$ **watt**

| rpm \ °C | -25 | -23.3 | -20 | -15 | -10 | -6.7 | -5 | 0 | 5 | 7.2 | 10 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,500 | 40.8 | 44.1 | 50.1 | 58.5 | 66.0 | 70.4 | 72.5 | 78.5 | 83.9 | 86.1 | 88.7 | 93.1 |
| 3,100 | 46.5 | 50.1 | 57.0 | 66.9 | 76.5 | 82.6 | 85.7 | 94.7 | 103 | 107 | 112 | 121 |
| 3,800 | 58.2 | 62.2 | 70.0 | 81.7 | 93.7 | 102 | 106 | 119 | 132 | 137 | 145 | 159 |
| 4,400 | 72.4 | 76.7 | 85.3 | 98.8 | 113 | 122 | 128 | 143 | 160 | 167 | 177 | 196 |

**Current consumption** 53V DC, fan cooling $F_1$ **A**

| rpm \ °C | -25 | -23.3 | -20 | -15 | -10 | -6.7 | -5 | 0 | 5 | 7.2 | 10 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,500 | 0.78 | 0.86 | 1.01 | 1.23 | 1.43 | 1.55 | 1.60 | 1.75 | 1.87 | 1.91 | 1.95 | 1.98 |
| 3,100 | 0.65 | 0.74 | 0.90 | 1.14 | 1.38 | 1.52 | 1.59 | 1.79 | 1.97 | 2.04 | 2.12 | 2.23 |
| 3,800 | 0.87 | 0.96 | 1.13 | 1.40 | 1.67 | 1.85 | 1.94 | 2.20 | 2.45 | 2.55 | 2.68 | 2.89 |
| 4,400 | 1.36 | 1.45 | 1.64 | 1.93 | 2.24 | 2.44 | 2.55 | 2.86 | 3.17 | 3.30 | 3.47 | 3.76 |

**COP (EN 12900 Household/CECOMAF)** 53V DC, fan cooling $F_1$ **W/W**

| rpm \ °C | -25 | -23.3 | -20 | -15 | -10 | -6.7 | -5 | 0 | 5 | 7.2 | 10 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,500 | 0.77 | 0.83 | 0.94 | 1.12 | 1.32 | 1.47 | 1.55 | 1.82 | 2.12 | 2.27 | 2.47 | 2.87 |
| 3,100 | 0.92 | 0.98 | 1.09 | 1.27 | 1.46 | 1.60 | 1.67 | 1.91 | 2.17 | 2.29 | 2.45 | 2.74 |
| 3,800 | 0.94 | 1.00 | 1.12 | 1.30 | 1.49 | 1.62 | 1.68 | 1.89 | 2.11 | 2.21 | 2.33 | 2.57 |
| 4,400 | 0.89 | 0.95 | 1.07 | 1.25 | 1.44 | 1.56 | 1.63 | 1.82 | 2.01 | 2.10 | 2.21 | 2.41 |

**COP (ASHRAE LBP)** 53V DC, fan cooling $F_1$ **W/W**

| rpm \ °C | -25 | -23.3 | -20 | -15 | -10 | -6.7 | -5 | 0 | 5 | 7.2 | 10 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,500 | 0.98 | 1.05 | 1.19 | 1.41 | 1.66 | 1.84 | 1.95 | 2.28 | 2.67 | 2.86 | 3.12 | 3.63 |
| 3,100 | 1.16 | 1.23 | 1.37 | 1.59 | 1.83 | 2.00 | 2.09 | 2.39 | 2.72 | 2.87 | 3.07 | 3.45 |
| 3,800 | 1.18 | 1.25 | 1.40 | 1.62 | 1.85 | 2.01 | 2.10 | 2.36 | 2.64 | 2.76 | 2.92 | 3.22 |
| 4,400 | 1.10 | 1.18 | 1.33 | 1.55 | 1.79 | 1.94 | 2.02 | 2.27 | 2.51 | 2.62 | 2.76 | 3.02 |

| **Test conditions** | **EN 12900/CECOMAF** | **ASHRAE LBP** |
|---|---|---|
| Condensing temperature | 55°C | 54.4°C |
| Ambient temperature | 32°C | 32°C |
| Suction gas temperature | 32°C | 32°C |
| Liquid temperature | no subcooling | 32°C |

**Operational errors**

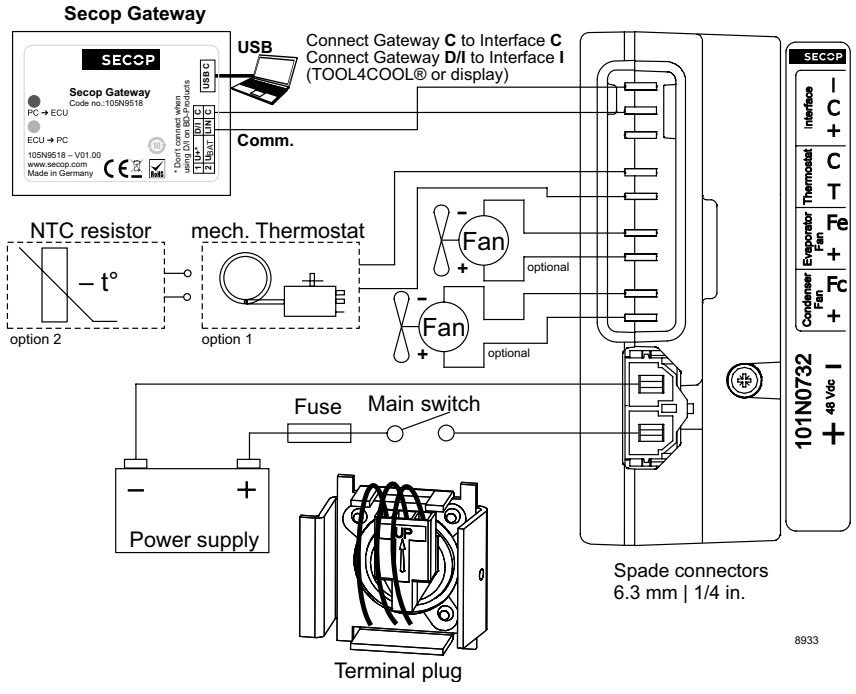
| Error code | Error type<br>Can be read out in the software **TOOL4COOL®** |
|---|---|
| 6 | **Thermostat failure**<br>(If the NTC thermistor is short-circuit or has no connection, the electronic unit will enter manual mode). |
| 5 | **Thermal cut-out of electronic unit**<br>(If the refrigeration system has been too heavily loaded, or if the ambient temperature is high, the electronic unit will run too hot). |
| 4 | **Minimum motor speed error**<br>(If the refrigeration system is too heavily loaded, the motor cannot maintain minimum speed at approximately 1,850 rpm). |
| 3 | **Motor start error**<br>(The rotor is blocked or the differential pressure in the refrigeration system is too high). |
| 2 | **Fan over-current cut-out**<br>(The fan loads the electronic unit with more than $1.8A_{peak}$). |
| 1 | **Battery protection cut-out**<br>(The voltage is outside the cut-out setting). |

**Accessories for BD250GH.2**

| **Mounting** | | **Code number** |
|---|---|---|
| Bolt joint for one compressor | Ø: 16 mm | 118-1917 |
| Bolt joint in quantities | Ø: 16 mm | 118-1918 |

| **Electrical (cables, sensors, etc.)** | **Code number** | |
|---|---|---|
| | **Single pack** | **I - Pack** |
| DC line cord, 900 mm | 105N9542 | 105N9543, 36 pcs. |
| DC line cord, 2000 mm | 105N9540 | 105N9541, 36 pcs. |
| DC line cord, 5000 mm | 105N9538 | 105N9539, 36 pcs. |
| Temperature sensor 470 mm | 105N9612 | 105N9613, 200 pcs. |
| Temperature sensor 1000 mm | 105N9614 | 105N9615, 100 pcs. |
| Temperature sensor 1500 mm | 105N9616 | 105N9617, 100 pcs. |
| Secop Gateway | 105N9518 | – |

| Not deliverable from Secop | |
|---|---|
| Slow-blow fuse | 16A |
| Main switch | rated to min. 25A |

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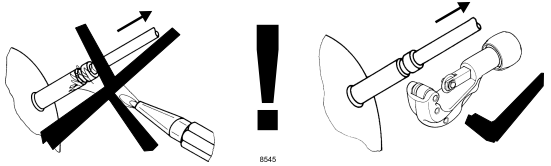
Keep electrical equipment clear from oil, chemicals, and water

# BD Compressors

SECOP

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



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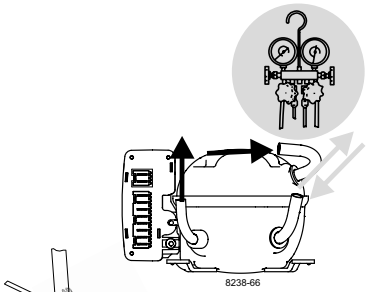
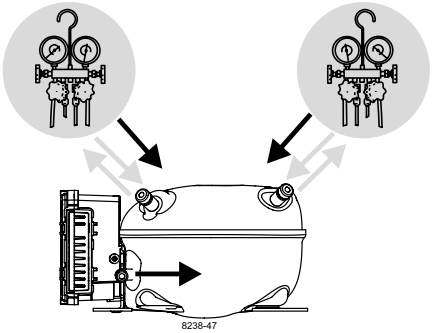
## BD Nano

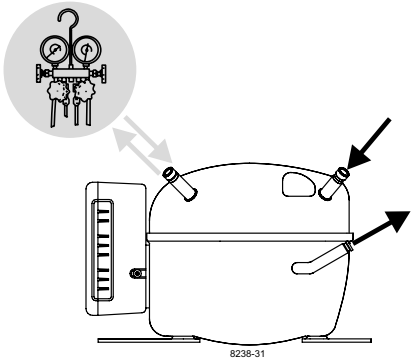



Do not heat up the bottom of the discharge connector directly.
Do not braze longer than 10 seconds and wait for 5 minutes for the next soldering attempt (Product Bulletin DES.N.101.M).

## BD Micro



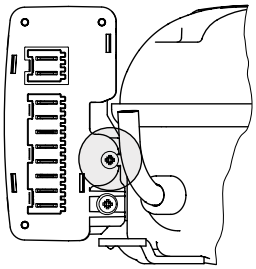

## BD-P



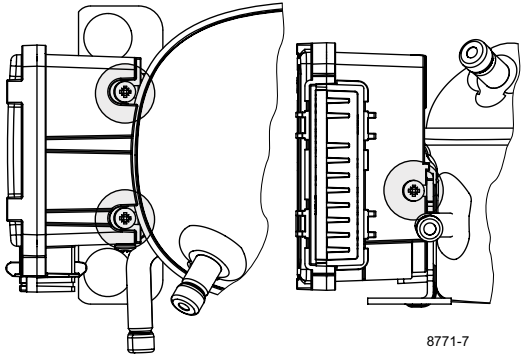

**Dismantling, recycling, disposal:** At the end of a compressor's lifecycle, proceed by separating and storing components according to their environmental impact. Parts that may cause pollution must be clearly identified and handled separately, ensuring appropriate disposal. Refrigerant gas must not 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**

Instructions for Electronic Units are available for download on **www.secop.com**

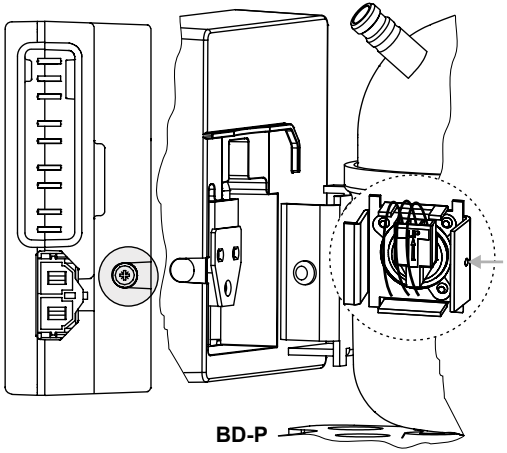
# BD Compressors



**BD Nano**




**BD Micro**



**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**