

Single Pack BD1.4F-AUTO.3 12V DC PM

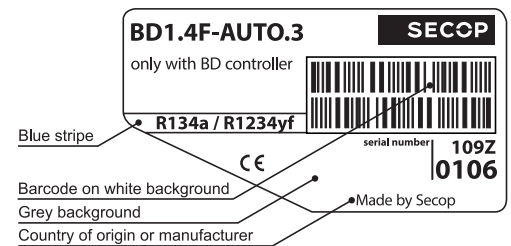
Single pack code number: **195B3449**

Position	Title	Code	Amount
1	Compressor BD1.4F	109Z0106	1
2	Electronic unit 12V DC	101N1001	1
3	Bolt joint for one compressor M6 ø16mm	118-1917	1

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BD1.4F-AUTO.3 Direct Current Compressor R134a, R1234yf 12V DC



General

Code number (without electronic unit)	109Z0106
Electronic unit - Automotive	101N1000, 30 pcs: 101N1001
Electronic unit - Automotive	101N1010, 30 pcs: 101N1011
Approvals	-
Compressors on pallet	180

Application

Application	LBP/MBP
Evaporating temperature °C	-25 to 5
Voltage range VDC	8.5 - 17
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	-
38°C	S	S	-
43°C	S	S	-

Remarks on application:
 - New generation with optimized noise level
 - New generation also released for R1234yf

Motor

Motor type	permanent magnet, brushless DC	
Speed rpm	3,000	
Resistance, all 3 windings (25°C) mΩ	370	

Design

Displacement cm ³	1.41	
Oil quantity (type) cm ³	75 (polyolester)	
Maximum refrigerant charge g	70	
Free gas volume in compressor cm ³	500	
Weight - Compressor/Electronic unit kg	2.1/0.17	

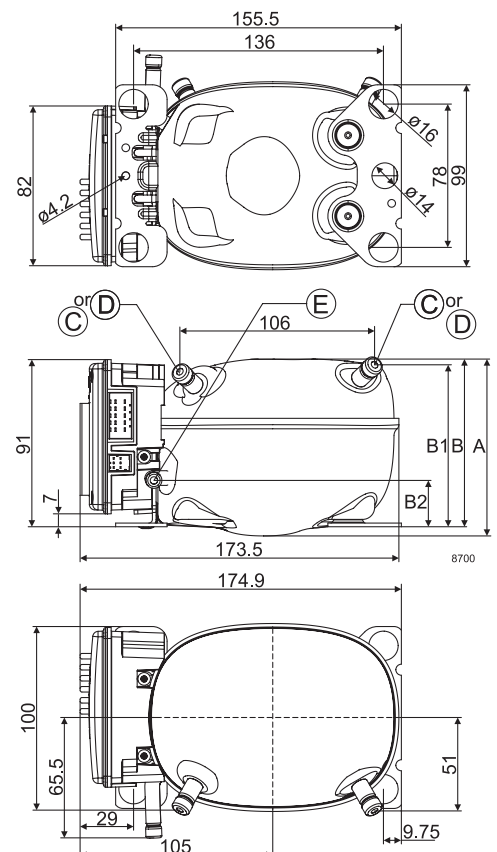
Standard battery protection settings (refer to 101N1000 Instructions for optional settings)

Voltage	Min. value	Default	Max. value
Cut out (0.1 steps) VDC	8.5	8.5	17
Cut in diff. (0.1 steps) VDC	0.5	0.5	8

Dimensions

Height mm	A	96.25
	B	91.25
	B1	88.00
	B2	25.20
Suction connector location/I.D. mm angle	C	6.2 25°
	material comment	Cu-plated steel Al cap
Process connector location/I.D. mm angle	D	6.2 25°
	material comment	Cu-plated steel Al cap
Discharge connector location/I.D. mm angle	E	5.0 0°
	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
- F₁ = Fan cooling 1.5 m/s (compressor compartment temperature equal to ambient temperature)
- F₂ = Fan cooling 3.0 m/s necessary
- SG = Suction gas cooling normally sufficient
- = not applicable in this area



Performance Data with Refrigerant R134a & R1234yf

EN 12900 Household (CECOMAF), R134a

Evap. temp. in °C	-25	-23.3	-20	-15	-10	-6.7	-5	0	5
Capacity in W	16.1	19.2	25.7	37.4	51.2	61.5	67.1	85.2	105.4
Power cons. in W	24.1	25.7	29.0	34.1	39.3	42.9	44.7	50.3	56.0
Current cons. in A	1.84	1.96	2.20	2.59	2.99	3.26	3.40	3.84	4.29
COP in W/W	0.67	0.74	0.89	1.10	1.30	1.43	1.50	1.69	1.88

EN 12900 Household (CECOMAF), R1234yf

Evap. temp. in °C	-25	-23.3	-20	-15	-10	-6.7	-5	0	5
Capacity in W	17.4	20.5	27.2	38.8	52.0	61.5	66.7	82.7	99.9
Power cons. in W	26.5	28.2	31.4	36.3	41.1	44.3	45.9	50.6	55.2
Current cons. in A	2.02	2.15	2.39	2.76	3.13	3.37	3.50	3.86	4.22
COP in W/W	0.66	0.73	0.87	1.07	1.26	1.39	1.45	1.63	1.81

ASHRAE LBP, R134a

Evap. temp. in °C	-25	-23.3	-20	-15	-10	-6.7	-5	0	5
Capacity in W	20.2	23.9	32.0	46.5	63.7	76.4	83.5	106.0	131.3
Power cons. in W	24.0	25.7	29.0	34.0	39.2	42.8	44.6	50.1	55.8
Current cons. in A	1.84	1.96	2.20	2.59	2.98	3.25	3.40	3.82	4.27
COP in W/W	0.84	0.93	1.11	1.37	1.62	1.79	1.87	2.12	2.35

ASHRAE LBP, R1234yf

Evap. temp. in °C	-25	-23.3	-20	-15	-10	-6.7	-5	0	5
Capacity in W	22.7	26.8	35.4	50.4	67.5	80.0	86.7	107.7	130.4
Power cons. in W	26.4	28.1	31.3	36.2	41.0	44.1	45.7	50.4	54.9
Current cons. in A	2.37	2.53	2.85	3.34	3.83	4.16	4.33	4.81	5.29
COP in W/W	0.93	1.02	1.20	1.45	1.69	1.84	1.92	2.13	2.32

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
	Can be read out in the software TOOL4COOL®
7	Communication failure
6	Thermostat failure (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 (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 (If the refrigeration system is too heavily loaded, the motor cannot maintain minimum speed at approximately 1,850 rpm).
3	Motor start error (The rotor is blocked or the differential pressure in the refrigeration system is too high (>5 bar)).
2	Fan over-current cut-out (The fan loads the electronic unit with more than 0.65A _{peak}).
1	Battery protection cut-out (The voltage is outside the cut-out setting).

Accessories for BD1.4F-AUTO.3

Mounting	Code number
Bolt joint for one compressor Ø: 16 mm	118-1917
Bolt joint in quantities Ø: 16 mm	118-1918
Snap-on in quantities Ø: 16 mm	118-1919
One Wire/LIN gateway	105N9501
Not deliverable from Secop	
Automobile fuse DIN 7258	15A

NTC Temperature Sensors Software-Setup

Power: -12V
DI
Dim
Com

S1
C
S2
F+
F-

8704-2

Mechanical Temperature Sensor Hardware-Setup

Power: -12V
DI
Dim
Com

S1
C
S2
F+
F-

Resistors

Marking	Value [Ω]	Function
R1	see Instructions	battery protection
R2	750	resistor LED 1
R3	750	resistor LED 2
R4	1500	coding resistor S1
R5	330	coding resistor S2

Connectors (Tyco Electronics)

Code no	Male	Female	Crimp
Power	178305-5	178289-5	1-175218-20
MMI	1376136-1	1-1318119-3	1-318108-1

Wire Dimensions DC

Cross section [mm²]	Size		Max. length* 12V operation	
	AWG [Gauge]	[m]	[ft.]	
2.5	12	2.5	8	
4	12	4	13	
6	10	6	20	
10	8	10	33	

*Length between battery and electronic unit

MMI

D1
D2
D3
Sw1
Sw2
C

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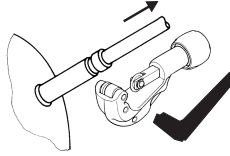
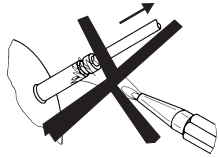
Instructions for Electronic Units
are available for download on
www.secop.com



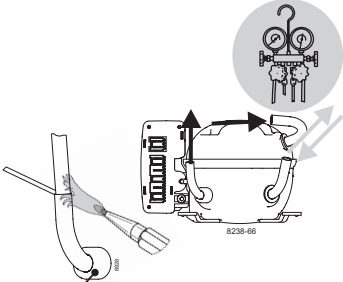
BD Compressors



Service/Repair



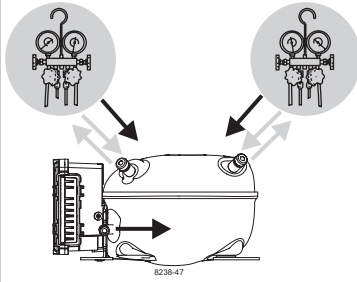
BD Nano



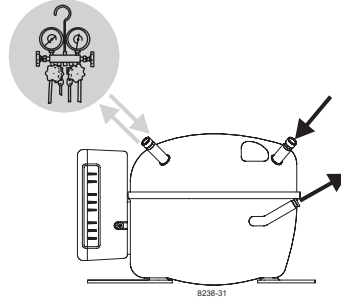
**! max. 150°C/302°F !
at socket**
brazing solder: silver with flux

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.M1).

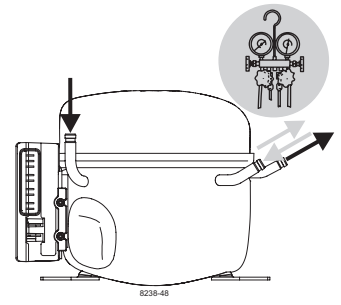
BD Micro



BD P-Housing



BD T-Housing



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