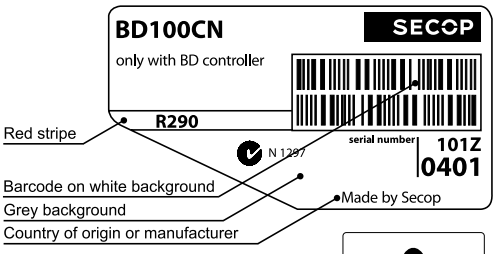
BD100CN
Direct Current Compressor
R290
12-24V DC



Yellow warning label

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)	101Z0401
Electronic unit - High Speed	101N0290, 28 pcs: 101N0291
Approved compressor - electronic unit combinations	refer to *Instructions* for 101N0290
Additional approvals	e4, C-Tick
Compressors on pallet	150

Application

Application		LBP
Evaporating temperature	°C	-40 to -10
Voltage/max. voltage	VDC	9.6 - 17 / 21.3 - 31.5
Max. condensing temperature continuous (short)	°C	55 (65)
Max. winding temperature continuous (short)	°C	125 (135)

Cooling requirements

Application	LBP	MBP	HBP
32°C	S	–	–
38°C	S	–	–
43°C	S	–	–
Remarks on application: **for stationary use only**			

Motor

Motor type		Variable speed
Resistance, all 3 windings (25°C)	Ω	1.8

Design

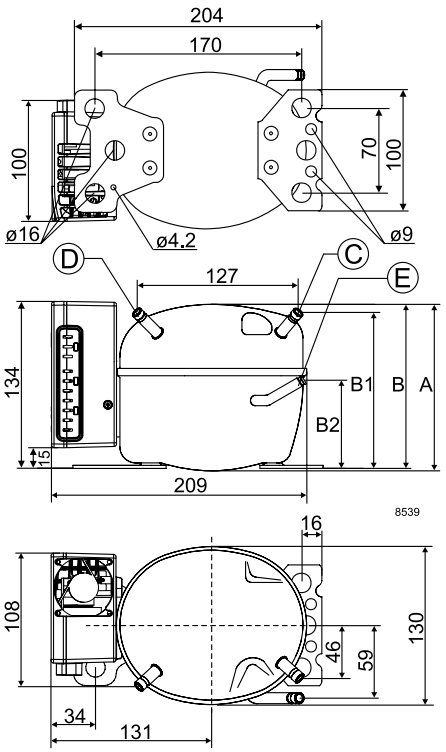
Displacement	cm^3	2.00
Oil quantity (type)	cm^3	150 (polyolester)
Maximum refrigerant charge	g	120
Free gas volume in compressor	cm^3	870
Weight - Compressor/Electronic unit	kg	4.3/0.32

Standard battery protection settings (refer to 101N0290 *Instructions* for optional settings)

		12V	24V
Voltage			
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			



Capacity (EN 12900 Household/CECOMAF) 12V DC, static cooling **watt**

rpm \ °C	-40	-35	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2
2,500	30.6	40.2	51.9	66.0	71.4	82.9	103	126				
3,100	36.0	49.0	64.6	83.0	90.0	105	130	160				
3,800	40.5	56.6	75.6	98.0	106	124	154	189				
4,400	44.6	62.4	83.4	108	117	137	170	209				

Capacity (ASHRAE LBP) 12V DC, static cooling **watt**

rpm \ °C	-40	-35	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2
2,500	34.1	44.8	57.9	73.6	79.7	92.5	115	141				
3,100	40.1	54.6	72.0	92.6	100	117	145	178				
3,800	45.1	63.1	84.3	109	119	138	172	211				
4,400	49.7	69.6	93.0	121	131	153	190	233				

Power consumption 12V DC, static cooling **watt**

rpm \ °C	-40	-35	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2
2,500	35.7	39.8	44.8	50.5	52.5	56.4	62.3	67.8				
3,100	41.9	48.9	56.3	64.0	66.7	71.8	79.4	86.5				
3,800	48.7	58.6	68.6	78.5	81.8	88.1	97.5	106				
4,400	57.4	69.1	80.8	92.5	96.4	104	115	125				

Current consumption (for 24V applications the following must be halfed) **A**

rpm \ °C	-40	-35	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2
2,500	2.97	3.32	3.74	4.21	4.38	4.70	5.19	5.65				
3,100	3.49	4.07	4.69	5.34	5.56	5.98	6.61	7.20				
3,800	4.06	4.88	5.71	6.54	6.82	7.35	8.12	8.86				
4,400	4.78	5.76	6.74	7.71	8.04	8.66	9.58	10.44				

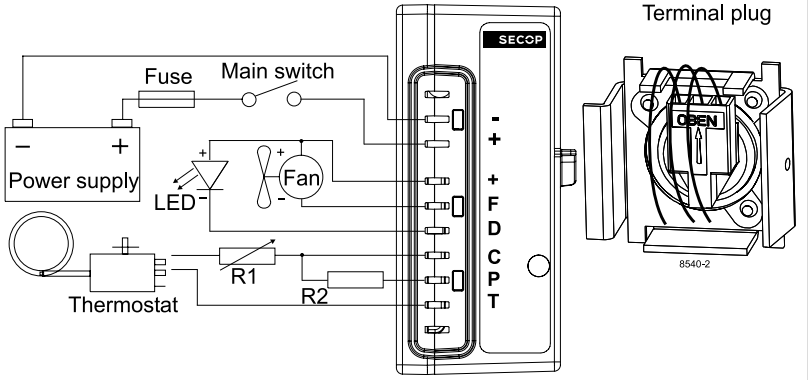
COP (EN 12900 Household/CECOMAF) 12V DC, static cooling **W/W**

rpm \ °C	-40	-35	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2
2,500	0.86	1.01	1.16	1.31	1.36	1.47	1.65	1.86				
3,100	0.86	1.00	1.15	1.30	1.35	1.46	1.64	1.85				
3,800	0.83	0.97	1.10	1.25	1.30	1.41	1.58	1.78				
4,400	0.78	0.90	1.03	1.17	1.22	1.32	1.48	1.66				

COP (ASHRAE LBP) 12V DC, static cooling **W/W**

rpm \ °C	-40	-35	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2
2,500	0.96	1.13	1.29	1.46	1.52	1.64	1.84	2.08				
3,100	0.96	1.12	1.28	1.45	1.51	1.63	1.83	2.06				
3,800	0.93	1.08	1.23	1.39	1.45	1.57	1.77	1.99				
4,400	0.87	1.01	1.15	1.30	1.36	1.47	1.65	1.86				

Test conditions	EN 12900/CECOMAF*	ASHRAE LBP*
Condensing temperature	45°C	45°C
Ambient temperature	32°C	32°C
Suction gas temperature	32°C	32°C
Liquid temperature	no subcooling	32°C



Operational errors errors shown by LED (optional)

Error code	Error type
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 2,450 rpm).
3	**Motor start error** (The rotor is blocked or the differential pres-sure in the refrigeration system is too high (>5 bar)).
2	**Fan over-current cut-out** (The fan loads the electronic unit with more than $1A_{peak}$).
1	**Battery protection cut-out** (The voltage is outside the cut-out setting).

Compressor speed

Electronit unit Code number	Resistor (R1) [Ω] calculated values	Motor speed [rpm]	Control circuit current [mA]
101N0290 with AEO	0	AEO	6
	203	2,500	5
	451	3,100	4
	867	3,800	3
	1700	4,400	2

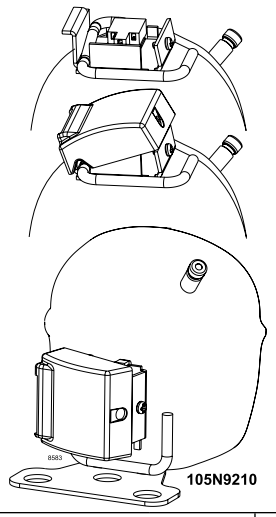
In AEO (Adaptive Energy Optimizing) speed mode the BD compressor will always adapt its speed to the actual cooling demand.

Wire Dimensions DC

Size		Max. length* 12V operation		Max. length* 24V operation	
Cross section	AWG				
[mm²]	[Gauge]	[m]	[ft.]	[m]	[ft.]
6	10	2.5	8	5	16

*Length between battery and electronic unit

Accessories for BD100CN		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
Remote kit (without cable)		105N9210



Standard automoblie fuse DIN 7258	12V: 30A 24V: 15A	Not deliverable from Secop
Main switch	min. 30A	