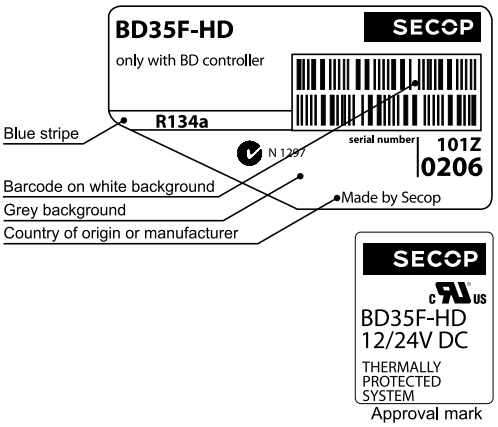
BD35F-HD
Heavy Duty
Direct Current Compressor
R134a, 12-24V DC



General

Code number (without electronic units)	101Z0206
Electronic unit - Standard	101N0210, 30 pcs: 101N0211
Approval for compressor - electronic unit combination	UL
Additional approvals	e4, C-Tick
Compressors on pallet	150

Application

Application		LBP/MBP/HBP
Evaporating temperature	°C	-30 to 0 (10)
Voltage range	VDC	9.6 - 17 / 21.3 - 31.5
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:

HD (Heavy Duty) version of the BD35F which can handle extreme vibrations.

Fan cooling F_1 depending on application and speed.

For more info please contact: mobile@secop.com.

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

Motor

Motor type		variable speed
Resistance, all 3 windings (25°C)	Ω	2.2

Design

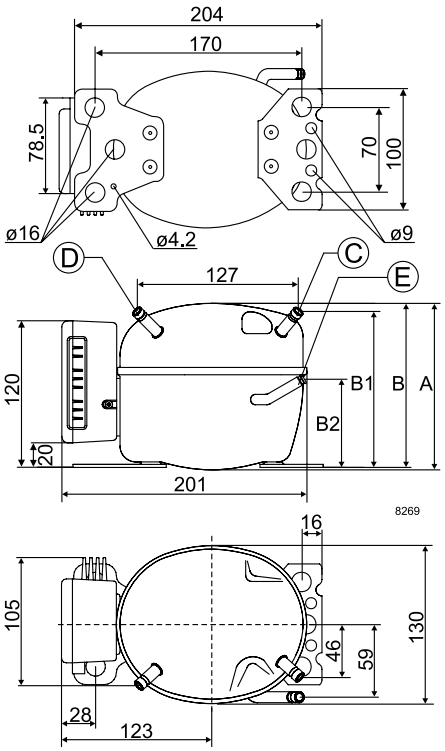
Displacement	cm^3	2.00
Oil quantity (type)	cm^3	150 (polyolester)
Maximum refrigerant charge	g	300
Free gas volume in compressor	cm^3	870
Weight - Compressor/Electronic unit	kg	4.3/0.27

Standard battery protection settings (refer to 101N0xxx *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	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	15.8	23.9	26.9	33.1	43.8	56.6	71.7	89.9	111	122	136	
2,500	20.2	29.9	33.5	41.2	54.6	70.7	89.7	112	139	152		
3,000	22.5	32.4	36.5	45.4	61.8	81.7	105	133				
3,500	26.2	35.9	40.4	50.5	69.8	93.6	122					

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	19.5	29.4	33.1	40.7	54.0	69.8	88.6	111	137	151	169	
2,500	24.9	36.8	41.3	50.7	67.3	87.1	111	139	172	189		
3,000	27.7	39.9	44.9	55.9	76.1	101	130	164				
3,500	32.2	44.2	49.7	62.2	86.0	115	150					

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	17.6	23.4	25.3	28.7	33.6	38.3	43.0	48.0	53.4	56.0	59.5	
2,500	23.3	30.9	33.3	37.8	44.1	50.2	56.2	62.3	68.7	71.7		
3,000	29.9	36.0	38.3	43.0	50.7	58.7	66.8	74.8				
3,500	36.0	42.8	45.4	50.8	59.5	68.9	78.5					

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

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	1.5	2.0	2.1	2.4	2.8	3.2	3.6	4.0	4.5	4.67	5.0	
2,500	1.9	2.6	2.8	3.2	3.7	4.2	4.7	5.2	5.8	5.98		
3,000	2.5	3.0	3.2	3.6	4.2	4.9	5.6	6.2				
3,500	3.0	3.6	3.8	4.3	5.0	5.7	6.5					

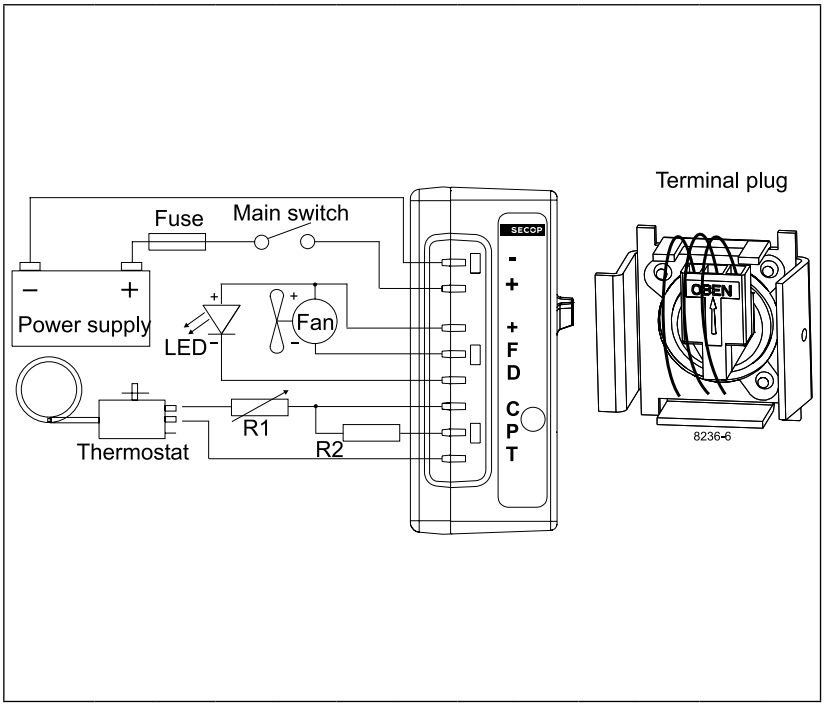
COP (EN 12900 Household/CECOMAF) 12V DC, static cooling **W/W**

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	0.90	1.02	1.06	1.15	1.31	1.48	1.67	1.87	2.08	2.17	2.29	
2,500	0.87	0.97	1.01	1.09	1.24	1.41	1.60	1.80	2.02	2.12		
3,000	0.75	0.90	0.95	1.06	1.22	1.39	1.58	1.78				
3,500	0.73	0.84	0.89	1.00	1.17	1.36	1.55					

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	1.10	1.25	1.31	1.42	1.61	1.82	2.06	2.31	2.57	2.70	2.84	
2,500	1.07	1.19	1.24	1.34	1.53	1.74	1.97	2.23	2.50	2.63		
3,000	0.93	1.11	1.17	1.30	1.50	1.72	1.95	2.20				
3,500	0.89	1.03	1.09	1.23	1.44	1.68	1.91					

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 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 1,850 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

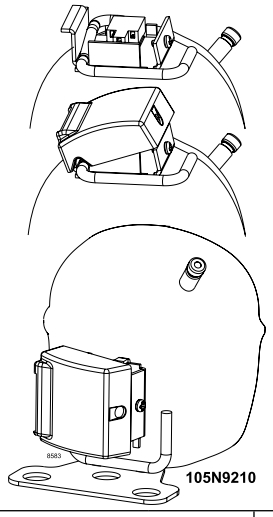
Electronit unit Code number	Resistor (R1) [Ω] calculated values	Motor speed [rpm]	Control circuit current [mA]
101N0210	0	2,000	5
	277	2,500	4
	692	3,000	3
	1523	3,500	2

Wire Dimensions DC

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

*Length between battery and electronic unit

Accessories for BD35F-HD	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	