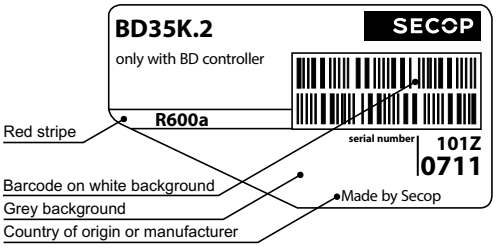
BD35K.2
Direct Current Compressor
R600a
12/24V DC

General

Code number (without electronic units)	101Z0711
Electronic unit 12/24V DC	101N0226, 30 pcs: 101N0227
Compressors on pallet	150

Approvals

UL



Application

Application		LBP/MBP
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	–
38°C	S	S	–
43°C	S	S	–
Remarks on application:			

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	0.12

Design

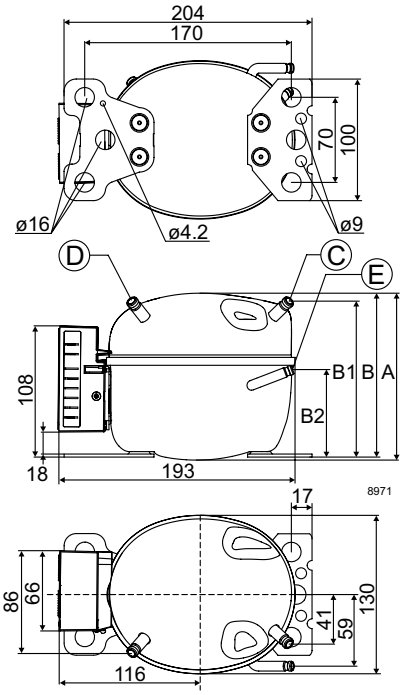
Displacement	cm^3	3.00
Oil quantity (type)	cm^3	150 (polyolester)
Maximum refrigerant charge	g	120
Free gas volume in compressor	cm^3	870
Weight - Compressor/Electronic unit	kg	4.05 / 0.14

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:			



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	105	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					

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	48.4	62.3	78.3	96.6	118	128	142	
2,500	20.7	30.9	34.8	43.1	57.4	74.4	94.2	117	144	157		
3,000	25.8	37.4	41.9	51.5	68.6	88.8	113	140				
3,500	30.6	43.9	49.1	60.0	79.3	102	130					

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	18.4	22.5	23.9	26.6	30.5	34.4	38.2	42.1	46.1	47.9	50.3	
2,500	24.0	28.4	29.9	32.8	37.1	41.4	45.9	50.4	55.2	57.4		
3,000	30.2	36.2	38.2	41.9	47.6	53.3	59.2	65.4				
3,500	35.3	43.1	45.5	50.1	56.7	63.3	70.3					

Current consumption (for 12V applications the following must be doubled) **A**

rpm \ °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15
2,000	1.53	1.88	1.99	2.21	2.54	2.86	3.19	3.51	3.85	4.00	4.19	
2,500	2.00	2.37	2.49	2.73	3.09	3.45	3.82	4.20	4.60	4.78		
3,000	2.52	3.02	3.18	3.50	3.97	4.44	4.93	5.45				
3,500	2.94	3.59	3.79	4.17	4.72	5.28	5.86					

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	0.71	0.93	1.00	1.12	1.30	1.49	1.68	1.88	2.08	2.18	2.30	
2,500	0.70	0.89	0.95	1.07	1.27	1.47	1.68	1.90	2.13	2.23		
3,000	0.70	0.85	0.90	1.01	1.18	1.37	1.56	1.76				
3,500	0.71	0.83	0.88	0.98	1.15	1.32	1.51					

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	0.87	1.13	1.21	1.37	1.59	1.82	2.06	2.30	2.56	2.68	2.83	
2,500	0.86	1.09	1.16	1.31	1.55	1.80	2.06	2.33	2.61	2.74		
3,000	0.85	1.03	1.10	1.23	1.44	1.67	1.91	2.16				
3,500	0.86	1.02	1.08	1.20	1.40	1.62	1.85					

Test conditions with electronic unit		EN 12900/CECOMAF	ASHRAE LBP
Condensing temperature	101N0226	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.2		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
Automobile fuse, DIN 7258	12V: 15A | 24V: 15A	Not deliverable from Secop
Main switch	min. 20A	

Compressor speed

Electronit unit Code number	Resistor (R1) [Ω] calculated values	Motor speed [rpm]
101N0226	0	2,000
	277	2,500
	692	3,000
	1523	3,500

Wire dimensions

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

Operational errors

LED flashes	Error type
5	**Thermal cut-out of electronic unit** (If the refrigeration system has been too heavily loaded, or if the ambient temperature is higher or lower than 10°C, the electronic will cut out).
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	**Too many start attempts or fan over current** (Too many compressor or fan starts in short time or fan current higher than $0.5A_{avg}$).
1	**Battery protection cut-out** (The voltage is outside the cut-out setting).