Single
Packs

Single Pack BD35K 12/24V DC PM

Single pack code number: **195B4310**

Position	Title	Code	Amount
1	Compressor BD35K	101Z0211	1
2	Electronic unit 12/24V DC - Automotive	101N0650	1
3	Bolt joint for one compressor | M6 | ø16mm	118-1917	1

Secop GmbH • Lise-Meitner-Straße 29 • 24941 Flensburg, Germany • Tel: +49 461 4941 0 • **www.secop.com**

BD35K
Direct Current Compressor
R600a,12/24V DC, 10-45V DC Solar, & 100-240V AC 50/60Hz

TOOL4COOL®

General

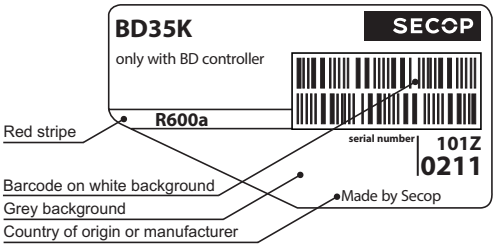
Code number (without electronic units)	101Z0211
Electronic unit 12/24V DC - Standard	101N0242, 30 pcs: 101N0243
Electronic unit 12/24V DC - AEO	101N0340, 30 pcs: 101N0341
Electronic unit 10-45V DC - Solar	101N0420, 30 pcs: 101N0421
Electronic unit 12/24V DC & 100-240V AC 50/60Hz	101N0510, 28 pcs: 101N0511
Electronic unit 12/24V DC - Automotive	101N0680, 30 pcs: 101N0681
Compressors on pallet	150

Approvals

–
UL / VDE
VDE
CB / VDE
CB / UL

Approval mark

Yellow warning label



Application

Application		LBP/MBP/HBP
Evaporating temperature	°C	-30 to 0 (10)
Voltage range DC	VDC	9.6 - 17 / 21.3 - 31.5
Voltage range AC	V/Hz	100 - 240 / 50/60
Voltage range for solar applications	VDC	10 - 45
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: Fan cooling F1 depending on application and speed.			

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	1.8

Design

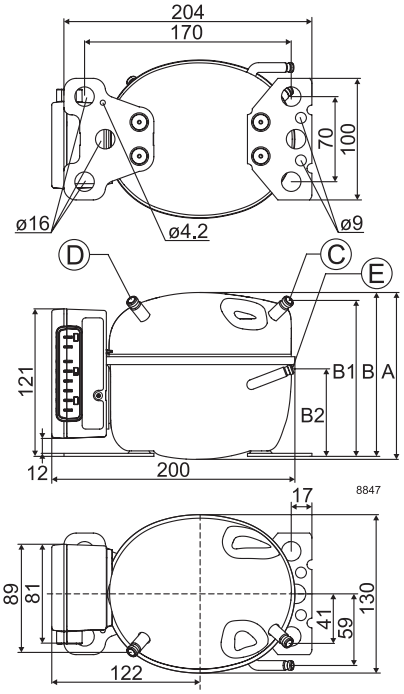
Displacement	cm^3	3.00
Oil quantity (type)	cm^3	150 (polyolester)
Maximum refrigerant charge	g	120
Free gas volume in compressor	cm^3	870
Weight - Compressor/Electronic unit	kg	4.3 / 0.19 (Standard)

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	104	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	48.5	62.4	78.4	97	118	128	142	
2,500	20.7	30.9	34.8	43.1	57.5	74.5	94.3	117	144	157		
3,000	25.8	37.4	42.0	51.6	68.6	88.9	113	140				
3,500	30.6	43.9	49.0	60.0	79.2	102	129					

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	17.5	21.5	22.8	25.4	29.1	32.8	36.5	40.2	44.1	45.8	48.0	
2,500	22.9	27.2	28.6	31.3	35.4	39.5	43.6	48.0	52.5	54.5		
3,000	28.9	34.6	36.4	40.0	45.4	50.9	56.5	62.5				
3,500	33.7	41.1	43.5	47.8	54.1	60.4	67.1					

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	1.48	1.80	1.91	2.12	2.43	2.74	3.04	3.35	3.65	3.79	3.97	
2,500	1.90	2.28	2.40	2.63	2.98	3.32	3.67	4.02	4.40	4.57		
3,000	2.36	2.87	3.03	3.34	3.79	4.23	4.69	5.16				
3,500	2.81	3.42	3.61	3.98	4.52	5.04	5.58					

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	0.75	0.97	1.04	1.17	1.36	1.56	1.76	1.97	2.18	2.28	2.41	
2,500	0.73	0.93	1.00	1.12	1.33	1.54	1.76	1.99	2.23	2.34		
3,000	0.73	0.89	0.94	1.05	1.24	1.43	1.63	1.84				
3,500	0.74	0.87	0.92	1.03	1.20	1.39	1.58					

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	0.91	1.19	1.27	1.43	1.67	1.91	2.15	2.41	2.69	2.81	2.97	
2,500	0.90	1.14	1.22	1.38	1.63	1.89	2.16	2.45	2.74	2.87		
3,000	0.89	1.08	1.15	1.29	1.51	1.75	2.00	2.26				
3,500	0.90	1.07	1.13	1.26	1.47	1.70	1.94					

Test conditions with electronic units		EN 12900/CECOMAF	ASHRAE LBP
Condensing temperature	101N0242 101N0680	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			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
Remote kit (without cable)			105N9210
Secop Gateway			105N9518
DC usage:	Automobile fuse, DIN 7258	12V: 15A | 24V: 7.5 A	Not deliverable from Secop
	Main switch	min. 20A	
AC usage:	Fuse, 100-240V		
	Main switch	min. 6A	

Compressor speed

Electronit unit Code number	Resistor (R1) [Ω] calculated values	Motor speed [rpm]
101N0242 101N0510 101N0680	0	2,000
	277	2,500
	692	3,000
	1523	3,500
101N0340 101N0420 with AEO	0	AEO
	173	2,000
	450	2,500
	865	3,000
	1696	3,500

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.]
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

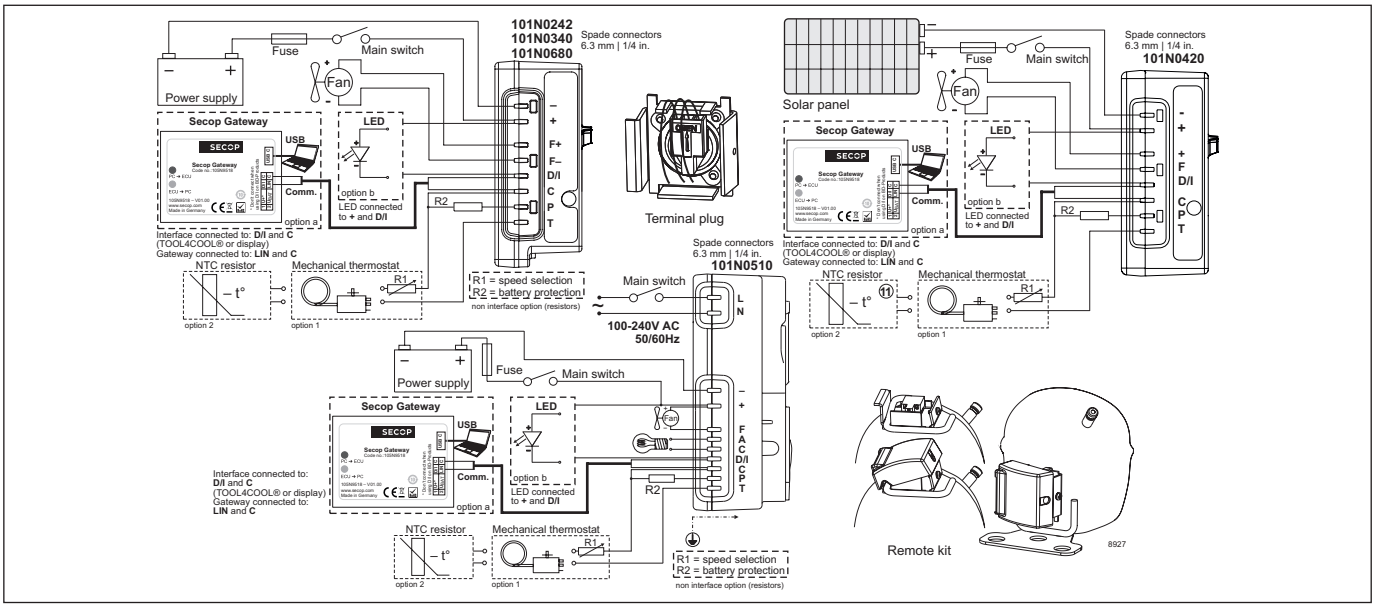
*Length between battery and electronic unit

Wire dimensions AC

Cross section min. 0.75 mm² or AWG 18

Operational errors

Error code or LED flashes	Error type Can be read out in the software **TOOL4COOL®**
6	**Thermostat failure** (If the NTC thermistor is short-circuit or has no connection).
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	**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).



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

BD Compressors

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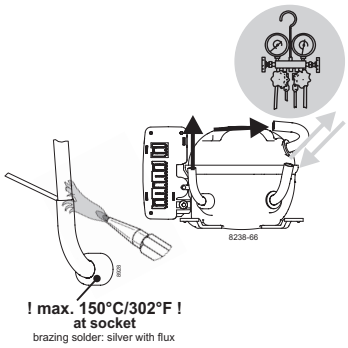
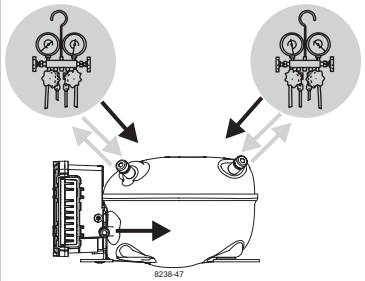
Service/Repair

BD Nano

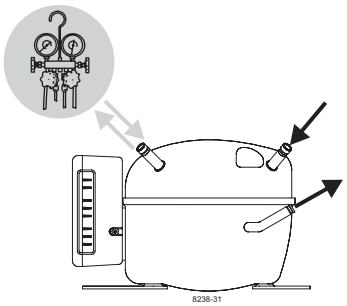


Do not heat up the bottom of the discharge connector directly.
Do not braze longer than 10 seconds and wait for 5 minutes for the next soldering attempt (Product Bulletin DES.N.101.M1).

BD Micro



BD P-Housing



BD T-Housing