

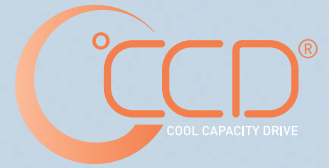
WE HAVE MORE THAN 40 YEARS OF EXPERIENCE DEVELOPING DIRECT CURRENT COMPRESSORS AND HELPING CUSTOMERS BENEFIT FROM THE OPPORTUNITIES OF MOBILE REFRIGERATION TECHNOLOGY.

WITH IN-DEPTH KNOWLEDGE OF USE ACROSS VARIOUS APPLICATIONS, WE HAVE EARNED A POSITION AS MARKET LEADER, WORKING WITH OEM CUSTOMERS.

**SECOP**

COMPLEXITY DOWN  
FLEXIBILITY UP

**BD1.4F-VSD.3**  
**BD1.4F-VSD-HD**  
BD MICRO VARIABLE SPEED DRIVE



# One4all

**LESS IS MORE**  
REDUCED WEIGHT AND SIZE COMPARED TO PREVIOUS SOLUTIONS.



# BD1.4F-VSD.3/-HD – NEW MILESTONES IN MOBILE COOLING

The new **BD1.4F-VSD.3** (new generation with optimized noise level and released for refrigerant R1234yf) from Secop is 60% smaller than previous models and weighs in at only 2.3 kilos.

Perfect for 10-30 liter in car / van / boat cabinets or portable boxes that need to fit into tight spaces without compromising storage space.

Specially designed for maximum efficiency and reliability, this powerhouse of a compressor makes it easier than ever to provide leading class mobile refrigerators. Enabling the variable speed function increases the system's COP/EER.

Low energy consumption is good for car / boat/ van batteries – as well as the environment. The optimized, low-noise motor ensures outstanding performance when you want to provide that extra degree of luxury on the move.

The electronic thermostat (NTC sensor support) provides an accurate temperature while the failure detection allows a fast fault diagnosis. The computer interface makes it easier for customization.

The Heavy Duty version **BD1.4F-VSD-HD** (Heavy Duty) can handle extreme vibrations.

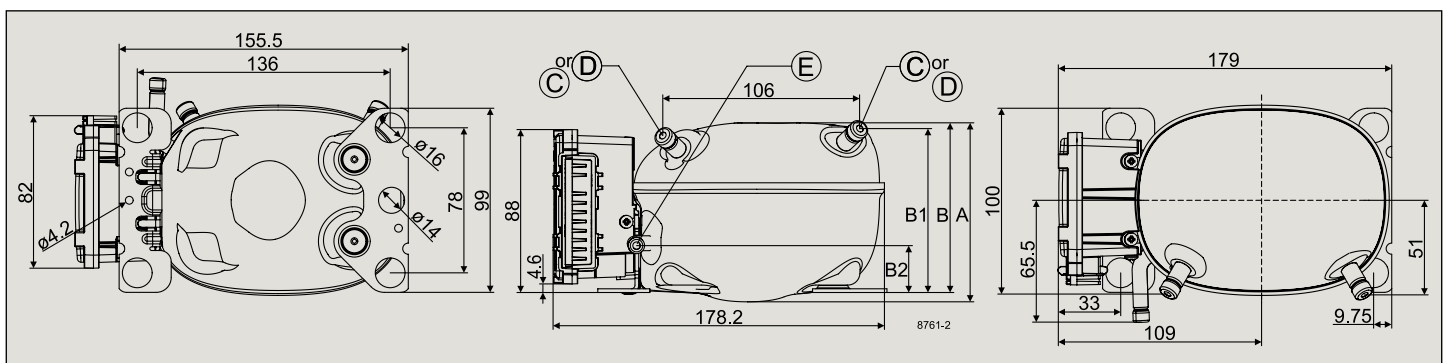
Cool beverages on demand make your journey so much more of an excellent experience.

General (code numbers)	BD1.4F-VSD.3
Compressor (2.1 kg)	109Z0209
Electronic unit (0.11 kg)	101N2100

Application	
Application	LBP/MBP/HBP
Evaporating temp. °C	-30 to 15
Voltage (range) V DC	12 (9.6 - 17) / 24 (19 - 34)

Capacity (ASHRAE LBP)		BD1.4F-VSD.3																								watt	
Evap. temp. in °C	R134a												R1234yf														
	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15			
	2,000 rpm		12	14	19	28	39	52	68	85	93	105	126		13	15	21	30	42	55	69	85	92	102	120		
	3,000 rpm	11	20	24	32	47	64	83	106	131	143	159	190	13	23	27	35	50	68	87	108	130	141	155	180		
	4,000 rpm	15	29	34	45	65	88	114	144	177	193	214	254	17	32	38	50	70	93	118	145	174	188	206	239		
Power consumption		BD1.4F-VSD.3																								watt	
Evap. temp. in °C	R134a												R1234yf														
	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15			
	2,000 rpm		16	17	19	22	25	29	34	39	41	44	50		17	18	20	23	27	30	34	38	40	42	46		
	3,000 rpm	19	24	26	29	34	39	45	50	56	59	62	68	22	27	28	31	36	41	46	51	55	57	60	64		
	4,000 rpm	27	34	36	41	48	55	61	68	75	77	81	87	30	37	40	44	51	57	63	68	74	76	78	83		
Current consumption (for 24 V applications the following must be halved)		BD1.4F-VSD.3																								A	
Evap. temp. in °C	R134a												R1234yf														
	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15			
	2,000 rpm		1.25	1.33	1.48	1.74	2.02	2.33	2.66	3.02	3.18	3.40	3.81		1.39	1.47	1.62	1.88	2.14	2.41	2.69	2.97	3.09	3.25	3.53		
	3,000 rpm	1.49	1.84	1.96	2.20	2.59	2.99	3.40	3.84	4.29	4.49	4.75	5.24	1.66	2.02	2.15	2.39	2.76	3.13	3.50	3.86	4.22	4.38	4.58	4.93		
	4,000 rpm	2.09	2.58	2.75	3.08	3.59	4.11	4.64	5.17	5.71	5.95	6.26	6.82	2.34	2.83	3.00	3.32	3.81	4.28	4.75	5.20	5.64	5.83	6.06	6.47		
COP (ASHRAE LBP)		BD1.4F-VSD.3																								W/W	
Evap. temp. in °C	R134a												R1234yf														
	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15			
	2,000 rpm		0.74	0.83	1.01	1.29	1.55	1.79	2.01	2.21	2.29	2.39	2.56		0.75	0.85	1.03	1.3	1.56	1.81	2.03	2.24	2.33	2.44	2.62		
	3,000 rpm	0.57	0.84	0.93	1.11	1.37	1.62	1.87	2.12	2.35	2.46	2.59	2.82	0.59	0.86	0.95	1.13	1.39	1.65	1.9	2.14	2.38	2.48	2.61	2.84		
	4,000 rpm	0.58	0.85	0.94	1.11	1.36	1.61	1.87	2.12	2.38	2.5	2.65	2.92	0.58	0.86	0.95	1.13	1.38	1.63	1.88	2.13	2.38	2.49	2.63	2.90		

Dimensions		BD1.4F-VSD.3	
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°
Process connector	location/I.D. mm   angle	D	6.2   25°
Discharge connector	location/I.D. mm   angle	E	5.0   0°



**BD 1.4F-VSD.3 features ...**

- low weight, less than 2.3 kg
- reduced size, 60% less than standard products
- compressor covers LBP/MBP/HBP application range

**BD 1.4F-VSD.3 functions ...**

- fan speed control: 40 -100%, start/stop delays
- compressor speed control
- ECO function
- flexible thermostats selection: mechanical or electronic

**BD 1.4F-VSD.3 functions ...**

- transport-stable
- flexible programming options
- communication interface
- protection against wrong polarity
- fan failure detection
- start & stop delay for compressor and fans
- battery protection
- PCB temperature protection

**... are your benefits**

- portable applications are easier to carry (45% less weight)
- increase your net volume
- one compressor for all applications

**... that reduce energy consumption for you**

- increased comfort, less noise, energy savings
- less energy consumption, reduced noise
- energy savings, reduced noise
- easy installation, customizing, less costs

**... that reduce service costs on your application**

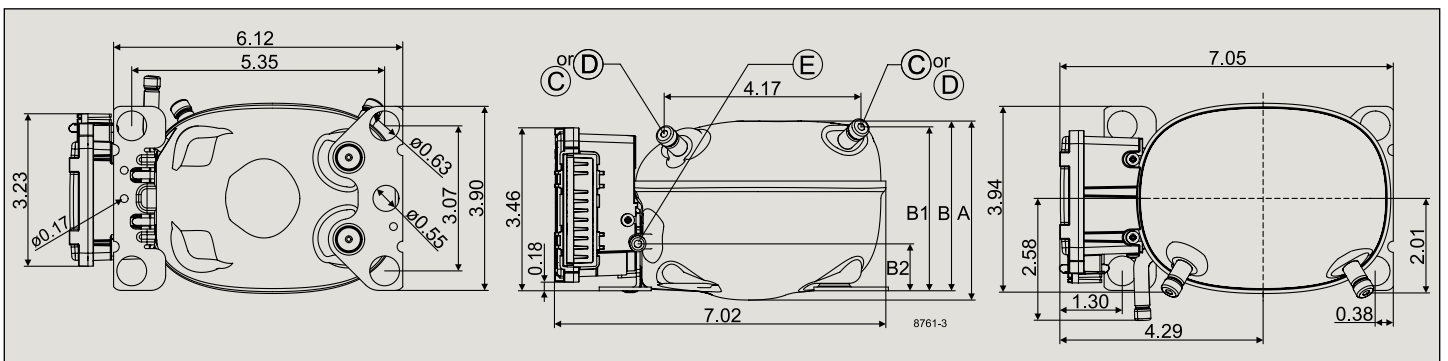
- long lifetime, less spare parts
- with software TOOL4COOL® or with resistors
- easy development phase, optimizing, open protocol
- no additional device needed, easy to install, no damage
- safety feature, easy trouble shooting
- safety setting that gives higher reliability
- avoid drainage of battery, increase lifetime
- protection of PCB from overheating, no damage

General (code numbers)	BD1.4F-VSD-HD	BD1.4F-VSD-HD (inch connectors)
Compressor (2.1 kg   4.63 lbs)	109Z0250	109Z0251
Electronic unit (0.11 kg   0.24 lbs)	101N2100	101N2100

Application		LBP/MBP/HBP
Evaporating temperature	C°   °F	-30 to 15   -20 to 59
Voltage (voltage range)	V DC	12 (9.6 - 17) / 24 (19 - 34)

Performance data [12 V DC, static cooling]	Capacity (ASHRAE LBP)												Capacity (ASHRAE LBP)												
	watt												BTU/h												
	Evap. in °F	-22	-13	-10	-4	5	14	23	32	41	45	50	59	-20	-13	-10	0	10	14	20	30	41	45	50	59
	temp. in °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15	-28.9	-25	-23.3	-17.8	-12.2	-10	-6.7	-1.1	5	7.2	10	15
	2,000 rpm	12	14	19	28	39	52	68	85	93	105	126	39	47	77	116	133	162	219	290	319	357	431		
	3,000 rpm	11	20	24	32	47	64	83	106	131	143	159	190	44	69	82	130	190	217	261	344	448	488	543	648
	4,000 rpm	15	29	34	45	65	88	114	144	177	193	214	254	61	98	115	182	264	300	358	468	604	657	728	865
	Power consumption												Power consumption												
	watt												watt												
	Evap. in °F	-22	-13	-10	-4	5	14	23	32	41	45	50	59	-20	-13	-10	0	10	14	20	30	41	45	50	59
temp. in °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15	-28.9	-25	-23.3	-17.8	-12.2	-10	-6.7	-1.1	5	7.2	10	15	
2,000 rpm	16	17	19	22	25	29	34	39	41	44	50	16	17	20	24	25	28	33	39	41	44	49			
3,000 rpm	19	24	26	29	34	39	45	50	56	59	62	68	20	24	26	31	37	39	43	49	56	58	62	68	
4,000 rpm	27	34	36	41	48	55	61	68	75	77	81	87	28	34	36	44	52	55	59	66	74	77	81	87	
Current consumption (for 24 V applications the following must be halved)												Current consumption (for 24 V applications the following must be halved)													
A												A													
Evap. in °F	-22	-13	-10	-4	5	14	23	32	41	45	50	59	-20	-13	-10	0	10	14	20	30	41	45	50	59	
temp. in °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15	-28.9	-25	-23.3	-17.8	-12.2	-10	-6.7	-1.1	5	7.2	10	15	
2,000 rpm	1.25	1.33	1.48	1.74	2.02	2.33	2.66	3.02	3.18	3.40	3.81	1.25	1.33	1.59	1.89	2.02	2.22	2.57	3.00	3.16	3.37	3.77			
3,000 rpm	1.49	1.84	1.96	2.20	2.59	2.99	3.40	3.84	4.29	4.49	4.75	5.24	1.56	1.84	1.96	2.37	2.81	2.98	3.25	3.73	4.27	4.47	4.73	5.20	
4,000 rpm	2.09	2.58	2.75	3.08	3.59	4.11	4.64	5.17	5.71	5.95	6.26	6.82	2.19	2.58	2.75	3.30	3.88	4.10	4.45	5.04	5.69	5.93	6.23	6.78	
COP (ASHRAE LBP)												EER (ASHRAE LBP)													
W/W												BTU/Wh													
Evap. in °F	-22	-13	-10	-4	5	14	23	32	41	45	50	59	-20	-13	-10	0	10	14	20	30	41	45	50	59	
temp. in °C	-30	-25	-23.3	-20	-15	-10	-5	0	5	7.2	10	15	-28.9	-25	-23.3	-17.8	-12.2	-10	-6.7	-1.1	5	7.2	10	15	
2,000 rpm	0.74	0.83	1.01	1.29	1.55	1.79	2.01	2.21	2.29	2.39	2.56	2.51	2.83	3.87	4.89	5.27	5.83	6.69	7.54	7.82	8.16	8.73			
3,000 rpm	0.57	0.84	0.93	1.11	1.37	1.62	1.87	2.12	2.35	2.46	2.59	2.82	2.15	2.87	3.18	4.17	5.15	5.53	6.09	7.03	8.03	8.38	8.83	9.61	
4,000 rpm	0.58	0.85	0.94	1.11	1.36	1.61	1.87	2.12	2.38	2.5	2.65	2.92	2.18	2.89	3.19	4.15	5.12	5.50	6.07	7.04	8.12	8.52	9.03	9.95	

Dimensions		BD1.4F-VSD-HD	BD1.4F-VSD-HD (inch connectors)
Height	mm, inch	A	96.25
		B	91.25
		B1	88.00
		B2	25.20
Suction connector	location/I.D.   angle mm, inch	C	6.2   25°
			0.252-0.259   25°
Process connector	location/I.D.   angle mm, inch	D	6.2   25°
Discharge connector	location/I.D.   angle mm, inch	E	5.0   0°
			0.202-0.205   0°



# 60%

**LESS IS MORE**  
REDUCED WEIGHT AND  
SIZE COMPARED TO  
PREVIOUS SOLUTIONS.

## SIZE DOWN BUSINESS UP



## WEIGHT DOWN MOBILITY UP



# Save 2<sup>KG</sup>

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COMPARED TO PREVIOUS  
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