

THE PERFECT SOLUTION FOR REFRIGERATION IN ELECTRIC VEHICLES

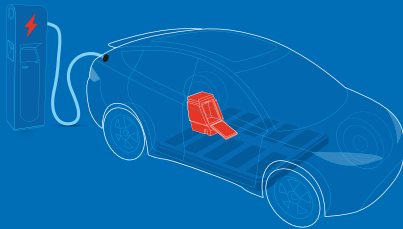
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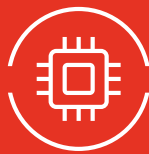
BD Nano EV



Mobile Applications



Variable-Speed Efficiency



Premium Controller



Low Noise Low Vibration



Optimized for E-Cars



Small Footprint

→ Compact, Efficient, and Silent Design

The BD Nano EV (BDN-EV) compressor has a height of 93 mm and weighs only 1.38 kilograms, making it ideal for e-car refrigerators by maximizing space for food and drinks. Its efficiency ensures low energy consumption, extended battery life, and an optimized total cost of ownership. Additionally, the compressor enhances acoustic comfort by reducing knocking noise and vibration, making it suitable for noise-sensitive applications.

The BDN-EV is quieter and more powerful than similar predecessors, e.g. the BD Micro, which has been the benchmark in the car cooling solutions market.

→ Proven Robustness

BDN-EV compressors comply with the ISO16750 standard on improved transport stability.

→ A Dedicated Controller for Automotive Applications

Easy controller customization via Tool4Cool® software

→ Produced in IATF16949-certified Plant

BDN-EV compressors are manufactured at the Secop's plant in Tianjin, China. This facility has been IATF16949-certified and complies with the strict standards of the automotive industry.

Secop's **BDN-EV** compressor delivers premium cooling performance, high efficiency, and low noise and vibration levels in a compact design for new generation e-cars.

The BDN-EV compressor is controlled by a next-generation electronic control unit (ECU), offering users an easy-to-implement yet integral component of the refrigeration system. The ECU features Secop's unique compressor control algorithm, designed for efficient and silent operation of the compressor's electronic motor. The BD Nano EV control unit is lighter, smaller, and tailor-made for new electric vehicles, with a focus on controlling the compressor.

The new BDN-EV ECU represents Secop's next step toward an integrated solution for mobile refrigeration in vehicles. It includes industry-standard LIN connectivity, enabling the delivery and reception of operational data in real time. The BDN-EV significantly reduces the ECU's size and weight compared to Secop's previous BD Nano Automotive control units.

The BD Nano EV offers a 12 V single-range input, specifically optimized for automotive power networks. It provides plug-and-play compatibility with Secop's BD Nano Automotive Modbus interface. You'll also find Secop's proven and reliable battery protection functionality built in. The unit includes a thermostat that's fully configurable and offers rapid temperature response. Its stepless, state-of-the-art motor control ensures both load-matching and silent operation.

General	BDN-EV
Refrigerant	R134a, R1234yf
Compressor (1.37 kg)	109Z0700
Electronic unit (0.055 kg)	101N2830

Application	
Application	LBP/MBP
Evaporating temperature	°C -30 to -5
Voltage range	VDC 9.6–17
Speed range	rpm 2300–3000

Performance Data ASHRAE LBP		R134a			R1234yf		
Speed	rpm	2300	2800	3000	2300	2800	3000
Cooling capacity	W	27.5	33.3	36.2	30.3	36.7	39.9
Power consumption	W	21.9	24.2	25.7	23.8	26.2	27.8
COP	W/W	1.25	1.37	1.41	1.27	1.40	1.44

Test conditions

@ -23.3°C evaporating temperature

Condensing temp.: 54.4°C | Suction gas temp.: 32.2°C | Ambient temp.: 32.2°C | Liquid temp.: 32.2°C

Performance Data EN 12900 CECOMAF LBP		R134a			R1234yf		
Speed	rpm	2300	2800	3000	2300	2800	3000
Cooling capacity	W	19.8	23.9	25.9	21.1	25.4	27.7
Power consumption	W	20.7	22.7	24.1	22.7	24.8	26.3
COP	W/W	0.96	1.05	1.07	0.93	1.02	1.05

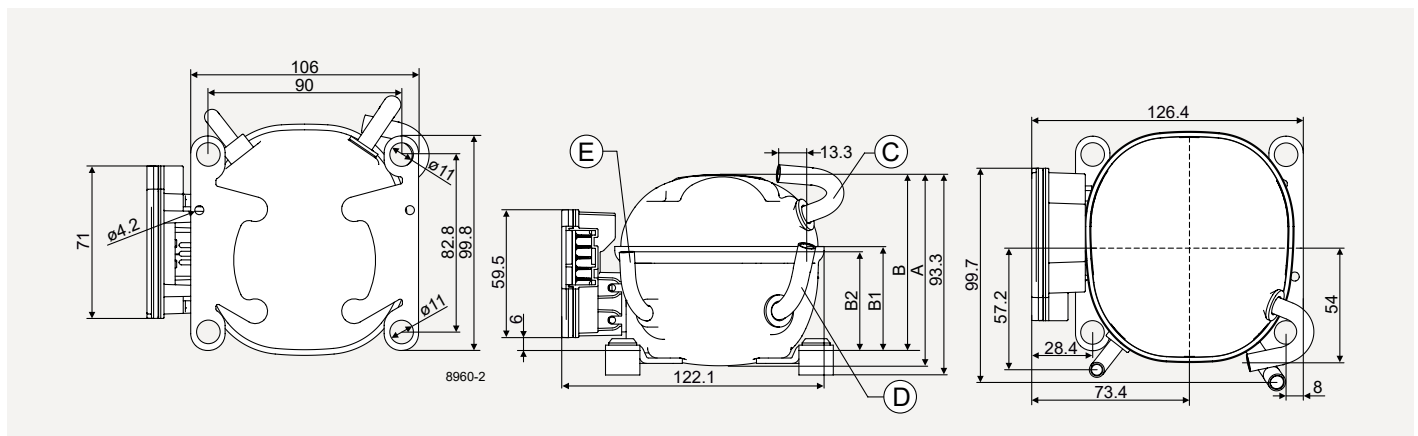
Test conditions

@ -25°C evaporating temperature

Condensing temp.: 55°C | Suction gas temp.: 32°C | Ambient temp.: 32°C | Liquid temp.: 55°C

Dimensions			
Height	mm	A	89.0
		B / B1 / B2	82.4 / 48.7 / 45.8
Suction connector	location/l.D. mm angle material seal	C	6.2 5° Copper Rubber plug
Process connector	location/l.D. mm angle material seal	D	6.2 77.9° Copper Rubber plug
Discharge connector	location/l.D. mm angle material seal	E	5.0 86.9° Cu-plated steel Rubber plug
Connector tolerance	I.D. mm		±0.09, on 5.0 +0.12/+0.20

Electronic Unit Features	
32-bit STM32 microcontroller	Modern and robust instruction set microcontroller · proven reliability in several Secop products
LIN communication hardware	Standard transceivers · robust against ground voltage shift and EMI · Modbus protocol
State of the art hardware design	Modern components with proven track record · high efficiency due to optimized design
Modern honeycomb housing design	Active vibration noise cancellation · reduced size and weight · 5-pin RAST connector
Tailor made	Reduced complexity and cost for a master-slave car refrigerator system



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