



BD150F

Variable Speed Drive Compressor

R134a, 160-254V 50-60Hz

12/24V DC with Inverter

General

Code number (without electronic units)	102G4784
Electronic unit	105N4220
Approvals	EN 60335-2-34 with Annex AA
Compressors on pallet	125

Application

Application	LBP
Evaporating temperature °C	-35 to -10
Voltage range VAC	160 - 254
Hz	50 - 60
VDC	12/24 (see page 2)
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	—	—
38°C	S	—	—
43°C	S	—	—

Remarks on application: HST starting characteristics

Features

Protections	• current, voltage, speed, temperature
Usage	• mobile refrigeration, designed for use in vans, small trucks, etc. • active refrigeration for food transportation • expanded 230V AC range

Motor

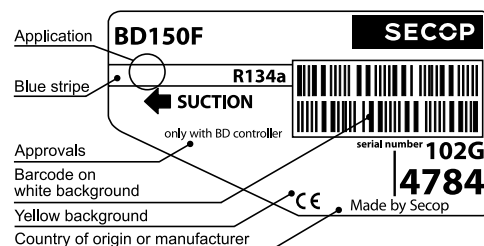
Motor type	permanent magnet
Speed range rpm	2000 - 4000
LRA (rated after 4 sec. UL984) HST	electronic cut-off
Cut-in current HST	6.0
Resistance, all 3 windings (25°C)	14.0

Design

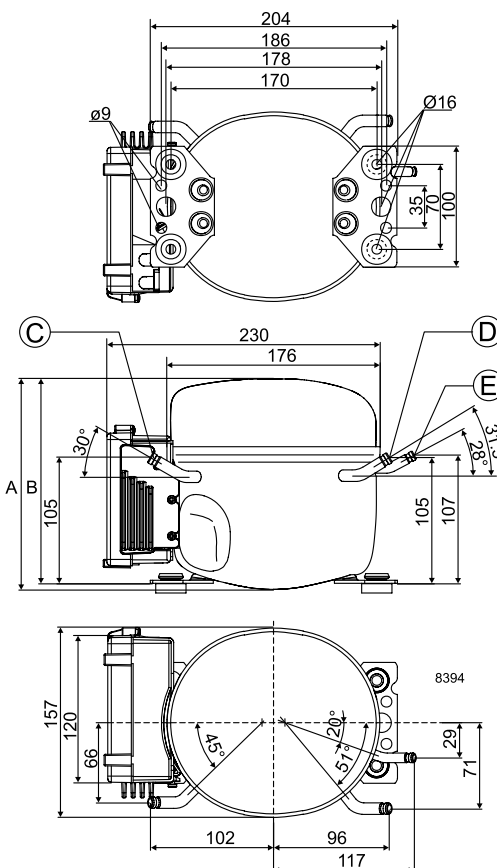
Displacement	cm³	6.49
Oil quantity (type)	cm³	180 (polyolester)
Maximum refrigerant charge	g	400
Free gas volume in compressor	cm³	1790
Weight - Compressor/Electronic unit	kg	7.9/0.6

Dimensions

Height	mm	A	173
		B	169
Suction connector	location/I.D. mm angle	C	6.2 30°
	material comment		Cu-plated steel Al cap
Process connector	location/I.D. mm angle	D	6.2 31.5°
	material comment		Cu-plated steel Al cap
Discharge connector	location/I.D. mm angle	E	5.0 28°
	material comment		Cu-plated steel Al cap
Connector tolerance	I.D. mm		±0.09, on 5.0 +0.12/+0.20
Remarks			



- S = Static cooling normally sufficient
O = Oil cooling
F₁ = Fan cooling 1.5 m/s (compressor compartment temperature equal to ambient temperature)
F₂ = Fan cooling 3.0 m/s necessary
SG = Suction gas cooling normally sufficient
— = not applicable in this area



Capacity (EN 12900 Household/CECOMAF)		220V 50 Hz, static cooling						watt
rpm \ °C	-35	-30	-25	-23.3	-20	-15	-10	
2,000	47.5	66.2	90.0	99.3	120	156	199	
2,500	56.3	80.7	111	122	147	192	245	
3,000	64.2	92.8	128	141	171	222	284	
4,000	78.3	111	153	170	205	269	345	

Capacity (ASHRAE LBP)		220V 50 Hz, static cooling						watt
rpm \ °C	-35	-30	-25	-23.3	-20	-15	-10	
2,000	58.6	81.7	111	123	148	192	246	
2,500	69.3	99.5	137	151	182	237	302	
3,000	79.1	114	158	175	211	274	350	
4,000	96.6	137	189	210	253	332	427	

Power consumption		220V 50 Hz, static cooling						watt
rpm \ °C	-35	-30	-25	-23.3	-20	-15	-10	
2,000	51.8	64.6	78.3	83.3	93.1	109	125	
2,500	63.0	79.8	97.6	104	116	136	156	
3,000	74.2	94.2	115	123	137	161	185	
4,000	96.2	120	146	155	174	203	235	

Current consumption		220V 50 Hz, static cooling						A
rpm \ °C	-35	-30	-25	-23.3	-20	-15	-10	
2,000	0.49	0.63	0.74	0.78	0.85	0.96	1.10	
2,500	0.59	0.70	0.84	0.90	1.00	1.12	1.32	
3,000	0.69	0.80	0.95	1.02	1.14	1.35	1.55	
4,000	0.84	1.05	1.24	1.31	1.45	1.67	1.90	

COP (EN 12900 Household/CECOMAF)		220V 50 Hz, static cooling						W/W
rpm \ °C	-35	-30	-25	-23.3	-20	-15	-10	
2,000	0.92	1.03	1.15	1.19	1.28	1.43	1.59	
2,500	0.89	1.01	1.13	1.18	1.27	1.41	1.57	
3,000	0.87	0.99	1.11	1.15	1.24	1.38	1.53	
4,000	0.81	0.93	1.05	1.09	1.18	1.32	1.47	

COP (ASHRAE LBP)		220V 50 Hz, static cooling						W/W
rpm \ °C	-35	-30	-25	-23.3	-20	-15	-10	
2,000	1.13	1.27	1.42	1.47	1.59	1.77	1.97	
2,500	1.10	1.25	1.40	1.45	1.56	1.74	1.94	
3,000	1.07	1.22	1.37	1.42	1.53	1.71	1.90	
4,000	1.00	1.14	1.29	1.35	1.46	1.63	1.81	

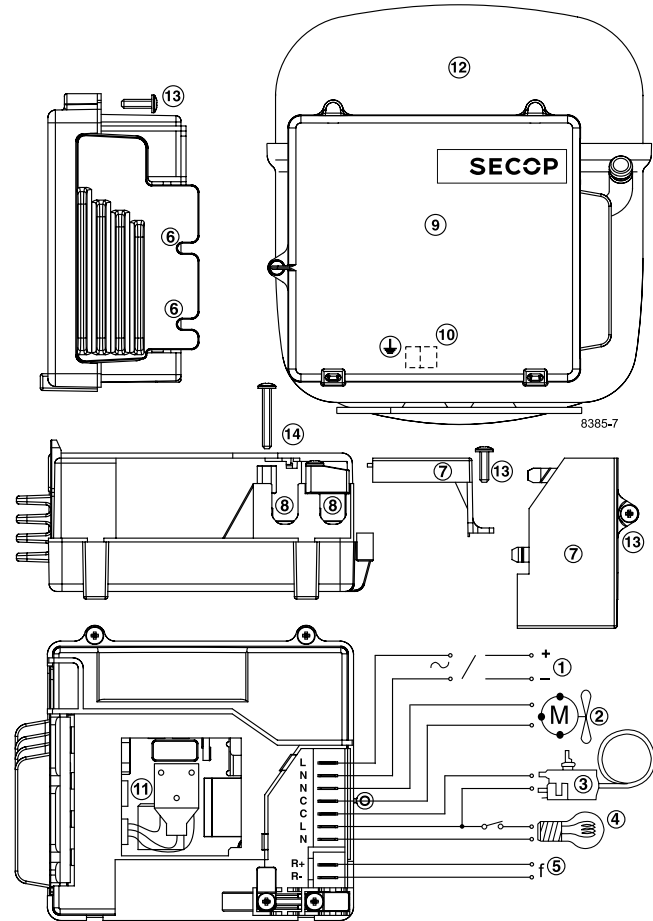
Examples of application

Mobile Application

Stationary Application

Combined Application

Use with 12/24V DC battery in a mobile application is possible by means of an inverter, 12/24V to 230V AC type, min. 300V peak voltage, min. 300W continuous power output.



Legend

Number Description

- 1: Power supply
- 2: Fan connection
- 3: Thermostat connection
- 4: Light connection
- 5: Signal input
- 6: Mounting recesses
- 7: Cover
- 8: Cord relief
- 9: Electronic unit
- 10: Earth connection
- 11: Connector
- 12: Compressor
- 13: Screw 3.5 x 12 mm (3 pcs.)
- 14: Screw 3.5 x 25 mm (2 pcs.)

For further descriptions on connecting the electronic unit and the compressor, refer to *Instructions DES.I.100.R "Electronic Unit Type 105N4220, 160-254V, 50-60Hz for BD150F Compressors"*.

Test conditions	EN 12900/CECOMAF	ASHRAE
Condensing temperature	55°C	55°C
Ambient temperature	32°C	32°C
Suction gas temperature	32°C	32°C
Liquid temperature	55°C	32°C

Accessories for	BD150F	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

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