

motech[®]

refrigeration parts and equipment



GFF93AA

Data Sheet

BASIC DATA

1.1 OPERATION

Application: LBP
Refrigerant: R134a
Expansion device: Capillary tube
Cooling: Static
Evaporating Temperature Range: -35 to -10°C (-34 to +14 °F)
Max Ambient Temperature: 43°C (110°F)
Max Operating Discharge Temperature(1): 120°C (248°F)
Max Peak Discharge Temperature (1, 2): 135°C (275°F)
Max Operating Condensing Temperature: 60°C (140°F)
Max Peak Condensing Temperature(2): 70°C (158°F)
Max Winding Temperature: 130°C (266°F)
Max Impurities: 30 mg
Max Water Content: 100 mg

1.2 COMPRESSOR

Displacement: 9.3 cc
Cylinder Bore: 24.4 mm
Stroke: 19.8 mm
Net Weight(3): -
Shell size: High
Oil charge: 230 cc
Oil Type: ICI RL 10H
Oil viscosity(4): 10 cSt
Suction system: Semi-direct

1.3 MOTOR

Power supply: 220-240 V
Voltage limits: 187 - 264 V
Frequency: 50 Hz
Phase: 1
Motor Type: RSIR / RSCR
Electrical Insulation Class: B
Locked Rotor Current at 220 V- Max value with RC: 14.2A
Locked Rotor Current at 220 V- After 4 s with RC: 7.8A

Locked Rotor Current at 220 V- Max value without RC: 14.0A
Locked Rotor Current at 220 V- After 4 s without RC: 8.0A

Main Winding Resistance at 20°C (68°F): 9.13 Ω
Start Winding Resistance at 20°C (68°F): 14.5 Ω

- (1) Measured at 5 cm from the shell with insulated termocouples
(2) For transient conditions during "Pull Down"
(3) With oil and without external electricals
(4) Measured at 40°C (104°F)

1.4 ELECTRICALS

Motor-protector

Manufacturer:	WANBAO	SENSATA
Type:	BT110-120A61D2	4TM 308 NFBYY-53
Open Temperature:	115-125 °C	115-125 °C
Close Temperature:	70-52 °C	70-52 °C
U.T.C. at 70°C:	2.36 A	2.34 A (AT 70°C)
Time Check Current 7-15 s:	11 A (7.5-14 sec)	11 A (5-15 sec)
Max Current: -		
Code: -		

PTC starting device

Assembly type:	WANBAO	TIANYIN
PTC Pill:	QP2-15	QP2-15E
Resistance at 25°C, 100V:	11-19Ω	11-19Ω
V max:	350 V	350 V
I max:	8A	8A
Curie Temp:	120°C	120°C
Dimensions:	20mm (diameter), 3.3mm (thickness)	16mm (diameter), 2.5mm (thickness)

Run capacitor (optional)

Type: plastic case
Capacity: 4μF
Vmax: 450 V
Working hours: 10.000 h at 450 V

Connecting-board

Type: Without
Fast-on size

CALORIMETER DATA

2.1 CALORIMETER TEST	Evaporating temperature					
	-30°C	-23.3°C	-10°C	-30°C	-23.3°C	-10°C
	Without RC			With RC		
Cooling capacity (W)	174	270	519	170	270	524
Input power (W)	142	185	265	137	174	252
COP (W)/W	1.22	1.46	1.96	1.25	1.55	2.08
Current (A)	1.09	1.25	1.52	0.81	0.95	2.08

Test conditions according to ASHRAE:

Condensing temperature: +55°C(+130°F)
Subcooling temperature: +32°C(+90°F)
Superheating temperature: +32°C(+90°F)
Suction temperature: +32°C(+90°F)

Room temperature: +32°C(+90°F)

Cooling: Static cooling
Supply Voltage: 220 V
Supply Frequency: 50 Hz
Run capacitor: 4μF

OTHER PERFORMANCES

3.1 STARTING TEST	Motor Temp. / Equalized Press.		
	90°C / 5 Bar A	43°C / 6.5 Bar A	25°C / 5 Bar A
Min. Starting Voltage (V)	165		

According to ACC-CQ-PRO-99016.D

3.2 CALORIMETER TEST	-25/+55°C	-20/+50°C	-23.3/+40°C
	ISO3745	GB9098	USA STD
A-weighted SPL (dBA)	-	42	-
Vibration Level (dB)	-	-	-
Vibration Index TVI (mm/s)	-	0.65	-
Gas pulse level TPI (mBar)	-	-	-

3.3 LIFE TEST	Wear	High Temp.	On Off
	500 h	2000 h	200 K Cycles
Test Results	Passed	Passed	Passed

Wear Test according to CECOMAF GT4003

High Temperature Test according to CECOMAF GT4002

On Off Test according to CECOMAF GT4004

3.4 TRANSPORT TEST	2 h - 0.75 m/s ²		
	x - 3.25 Hz	y - 7.5 Hz	z - 11.5 Hz
Test Results		Not required	

According to GB / T4857.10-92

3.5 OIL TRANSPORT TEST	Oil flow
	(g/h)
Test Results	Not required

According to ACC-CQ-ES-99002.D

3.6 IMPACT TEST	
Test Results	Not required

According to ECC-CQ-W-01042

OTHER INFORMATION

COMPARISON CHART

MOTECH	POWER	EMBRACO	TECUMSEH
GFF93AA	1/3+ HP	FFI 12 HBK	TPH1410Y
GFF86AA	1/3 HP	EGAS 100 HLR	TPH1410Y
		EGAS 90 HLR	-
GFF75AA	1/4+ HP	EGAS 80 HLR	TSB1390Y
GFF66AA	1/4 HP	EGAS 80 HLR	TSB1380Y
GFF57AA	1/5 HP	-	TSB1374Y
		EGAS 70 HLR	TSB1355Y
		EMI 70 HER	THG1358Y
		EMIS 70 HLR	TSB1360Y
GFF44AA	1/6 HP	EMI 60 HER	THG1346Y
			THG1352Y
GVM35AA	1/8 HP	EMI 80 HLR	THG1335Y
GVM30AA	1/10 HP	EM 30 HNR	THG1330Y

OTHER INFORMATION

R134a	A $\pm$ 2.5	B $\pm$ 2.5	C $\pm$ 2.5	D $\pm$ 2.5
GFF57AA	98.5	100.5	113.5	174
GFF66AA				
GFF75AA				
GFF86AA				
GFF93AA	108.5	110.5	123.5	184
BFF12AA	108.5	110.5	123.5	184
BFM93AA	98.5	100.5	113.5	174

