Single
Packs

Single Pack FRK8.5G 220-240V 50Hz / 208-230V 60Hz CSIR

Single pack code number: **195B4769**

Position	Title	Code	Amount
1	Compressor FRK8.5G	106G5753	1
2	Starting relay (QLZ-5.5A, overload protector T0377/L6)	117U7071	1
3	Starting capacitor (80µF 220V, 6.3mm)	117U5001	1
4	KL accessories	103N1060	1
5	Bolt joint for one compressor | M6 | ø16mm	118-1917	1

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Model
FRK8.5G

Sales code:
106G5753

Compressor Data

Refrigerant(s)	**R134a / R513A**
Refr. charge - tech. limit	**700g / 24.69oz**
Weight	**9.50 kg / 20.94lbs**
Displacement	**6.60 cm3 / 0.40cu.in**
Compressors on pallet	**100**

General – Configurations With FRK8.5G

–	Conf. 1	Conf. 2	Conf. 3	Conf. 4
Motor configuration	CSIR	CSIR	CSIR	CSIR
Power supply (nominal)	220-240 V/50 Hz	208-230 V/60 Hz	220-240 V/50 Hz	208-230 V/60 Hz
Number of phases	1	1	1	1
Voltage range	187-254 V	198-253 V	187-254 V	198-253 V
Approvals	VDE, CB, UL, CCC	VDE, CB, UL, CCC	VDE, CB, UL, CCC	VDE, CB, UL, CCC
Starting torque	HST	HST	HST	HST
Refrigerant	R134a	R134a	R513A	R513A
Application	LBP+MBP+HBP	LBP+MBP	LBP+MBP+HBP	LBP+MBP
Hot gas defrost	OK	OK	OK	OK
Long interval pull down	OK	OK	OK	OK

Application Notes

- Provision for PE Grounding is located at the PE Stamp on the compressor
- Suctiongas connector and Process connector can be switched (minor loss of cooling capacity)
- Very good robustness against liquid intake.
- Ice-cube maker optimization - indirect suction intake.
- Special design for high refrigerant charge

Model
FRK8.5G

Sales code:
106G5753

Compressor Design

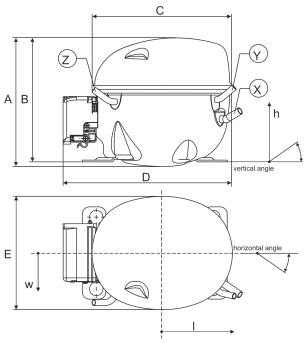
Oil type	**POE**	Winding resistance main	**8.4 Ohm**
Oil viscosity	**19,2cSt**	Winding resistance aux	**11.9 Ohm**
Oil quantity	**240 cm3 / 8.12fl.oz**	Max. winding temp.	**125 °C**
Free gas volume comp.	**1,510 cm3 / 51.06fl.oz**	Max. discharge temp.	**130°C / 266°F**
Motor protection	**external**		

Compressor Dimensions

Housing

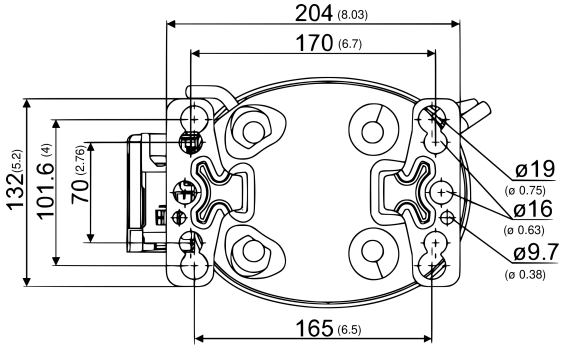
A Height	**182mm / 7.17in**
B Height	**175mm / 6.89in**
C Length shell	**198mm / 7.80in**
D Length w. cover	**238mm / 9.37in**
E Width	**160mm / 6.30in**

Find 3D Model here



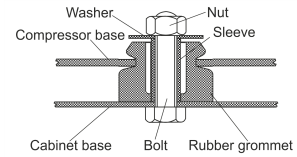
Connectors	Suction X	Discharge Y	Process Z
Diameter [mm]	øi 8.11–8.29 / 0.32–0.33in	øi 6.11–6.29 / 0.24–0.25in	øi 6.11–6.29 / 0.24–0.25in
Material	CU	CU	CU
Horizontal angle ±2°	35°	13°	0°
Vertical angle ±2°	30°	40°	145°
Position l/h/w [mm]	119/73/59 / 4.69/2.87/2.32in	117/107/66 / 4.61/4.21/2.60in	-88/101/71 / -3.46/3.98/2.80in
Straight tube l. [mm]	13.5 / 0.53in	13.5 / 0.53in	13.5 / 0.53in

Mounting Accessories

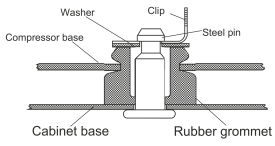


Dimensions in mm [in]

Bolt joint



Snap-on



	one comp.	multi pack
Bolt joint | M6 | ø16mm	118-1917	118-1918
Bolt joint | ø1/4" | ø16mm	118-1946	–
Bolt joint | ø1/4" | ø19mm	118-1949	–
Snap-on | ø7,3 | ø16mm	118-1947	118-1919

Model
FRK8.5G Configuration 1

Sales code:
106G5753

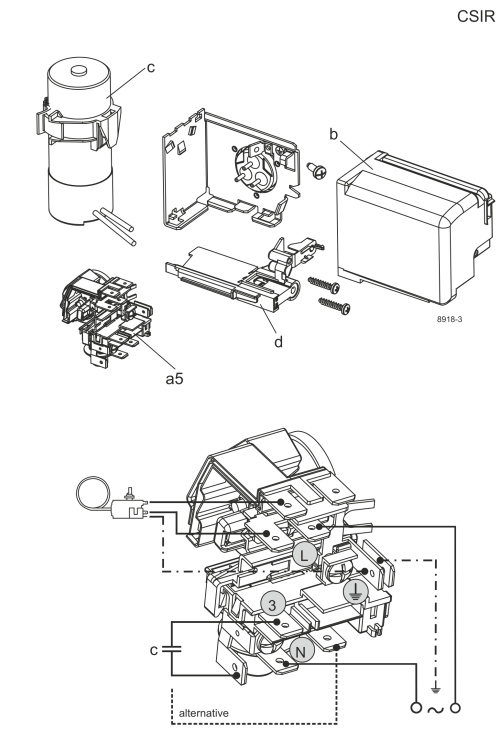
Configuration

Motor configuration	**CSIR**
Power supply (nominal)	**220-240 V/50 Hz 1~**
Refrigerant	**R134a**
Application	**LBP+MBP+HBP**
Voltage range	**187-254 V**
Starting torque	**HST**
Approvals	**VDE, CB, UL, CCC**
Starting device type	**relay**
Run capacitor	**-/-**
Start capacitor	**80 µF**
LRA (locked rotor amps / 4s/ U(N))	**13.4 A**
RLA (rated load amps / 1s/ U(N))	**1.8 A**
Cut in current (U(N))	**12.3 A**

Ambient/ machine room temperatures minimum /maximum
Ambient temperature range: 10 - 43°C / 50 - 109°F
Machine room temp. compressor: 10 - 48°C / 50 - 118°F

System Cooling
fan 3m/s

Electrical Accessories / Wiring Diagram



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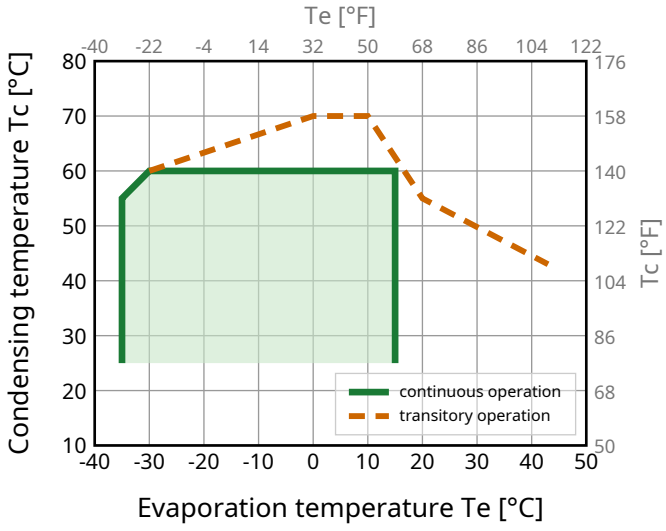
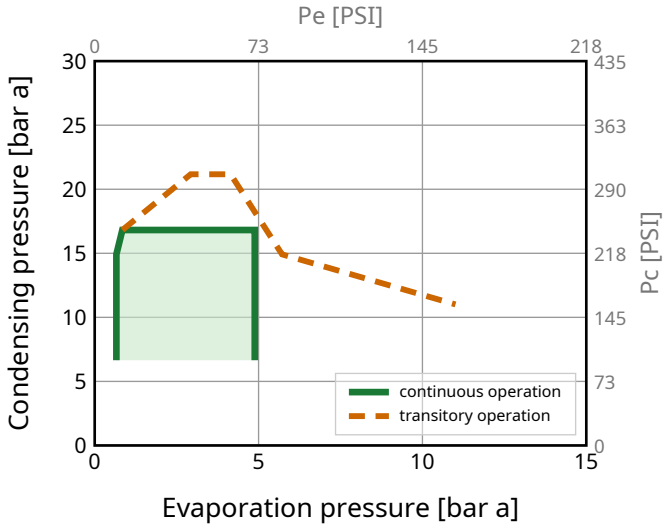
Components
a5 current relay (T0377/L6-S1) 117U7071
c start capacitor (80µF, 6.3mm) 117U5001
b, d cover + clamp + screws (5VA-compl.) 103N0600

Alternative components
b, d 100x cover + clamp + screws (5VA) 103N2060
b, d cover + clamp + screws (5VA) in bag 103N1060

Operation Pressure Range





Model Sales code:

FRK8.5G Configuration 1 **106G5753**

Standard Conditions

R134a, 220 V/50 Hz, CSIR, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**185**	632	159	**1.23**	4.19	151	1.30	3.59	**ASHRAE LBP**
-6.7 20	54.4 129.9	35 95	46.1 115	**392**	1338	337	**1.78**	6.07	220	1.54	8.54	**ASHRAE MBP**
7.2 45	54.4 129.9	35 95	46.1 115	**700**	2390	602	**2.47**	8.44	283	1.79	15.51	**ASHRAE HBP**
-35 -31	40 104	20 68	40 104	**98**	333	84	**0.89**	3.03	110	1.21	2.13	**EN12900 LBP**
-10 14	45 113	20 68	45 113	**341**	1162	293	**1.81**	6.17	188	1.42	7.94	**EN12900 MBP**
5 41	50 122	20 68	50 122	**600**	2048	516	**2.31**	7.87	260	1.69	15.05	**EN12900 HBP**

Performance Tables

R134a, 220 V/50 Hz, CSIR, fan 3m/s

pc= 45/113 | RGT= 32/89.6 | Tliq= 45/113 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-35	-31	**92**	313	79	**0.82**	2.79	112	1.21	1.98
-30	-22	**120**	411	104	**0.97**	3.32	124	1.23	2.60
-20	-4	**212**	722	182	**1.38**	4.71	154	1.31	4.59
-10	14	**353**	1204	303	**1.87**	6.39	188	1.42	7.71
0	32	**550**	1878	473	**2.43**	8.30	226	1.56	12.14
10	50	**810**	2765	697	**3.07**	10.47	264	1.71	18.14
15	59	**966**	3296	831	**3.42**	11.68	282	1.78	21.82

pc= 55/131 | RGT= 32/89.6 | Tliq= 55/131 | °C/°F

-35	-31	**74**	254	64	**0.67**	2.28	111	1.21	1.76
-30	-22	**100**	343	86	**0.79**	2.70	127	1.24	2.39
-20	-4	**181**	617	155	**1.10**	3.76	164	1.34	4.32
-10	14	**304**	1036	261	**1.47**	5.01	207	1.49	7.32
0	32	**475**	1620	408	**1.88**	6.42	252	1.66	11.58
10	50	**701**	2392	603	**2.36**	8.04	298	1.85	17.37
15	59	**837**	2856	720	**2.62**	8.94	319	1.95	20.95

Model
FRK8.5G Configuration 2

Sales code:
106G5753

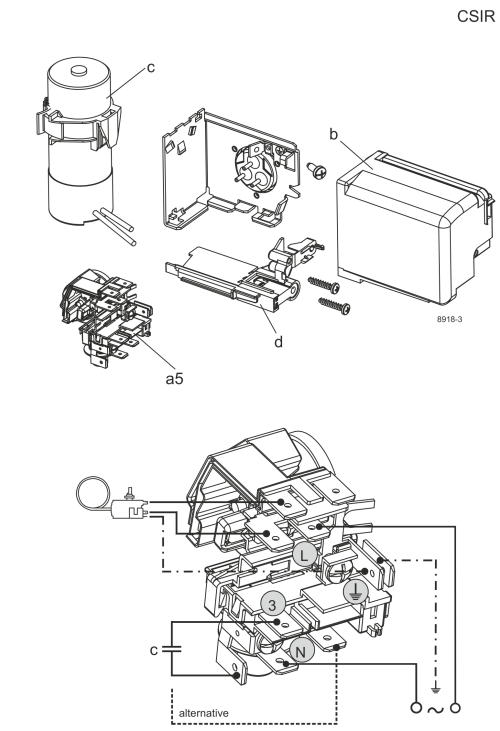
Configuration

Motor configuration	**CSIR**
Power supply (nominal)	**208-230 V/60 Hz 1~**
Refrigerant	**R134a**
Application	**LBP+MBP**
Voltage range	**198-253 V**
Starting torque	**HST**
Approvals	**VDE, CB, UL, CCC**
Starting device type	**relay**
Run capacitor	**-/-**
Start capacitor	**80 µF**
LRA (locked rotor amps / 4s/ U(N))	**13.4 A**
RLA (rated load amps / 1s/ U(N))	**1.8 A**
Cut in current (U(N))	**12.3 A**

Ambient/ machine room temperatures minimum /maximum
Ambient temperature range: 10 - 43°C / 50 - 109°F
Machine room temp. compressor: 10 - 48°C / 50 - 118°F

System Cooling
fan 3m/s

Electrical Accessories / Wiring Diagram



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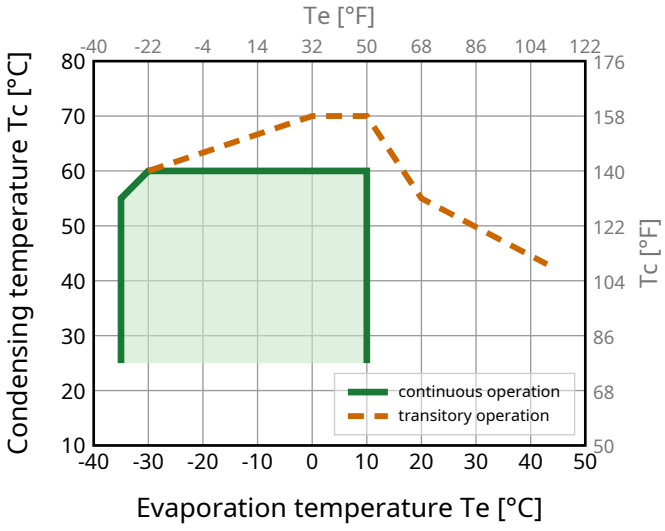
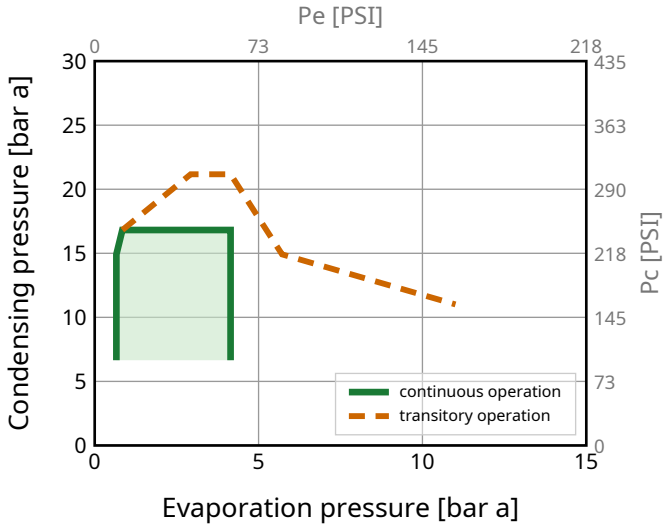
Components
a5 current relay (T0377/L6-S1) 117U7071
c start capacitor (80µF, 6.3mm) 117U5001
b, d cover + clamp + screws (5VA-compl.) 103N0600

Alternative components
b, d 100x cover + clamp + screws (5VA) 103N2060
b, d cover + clamp + screws (5VA) in bag 103N1060

Operation Pressure Range





Model Sales code:

FRK8.5G Configuration 2 **106G5753**

Standard Conditions

R134a, 230 V/60 Hz, CSIR, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**224**	766	193	**1.32**	4.50	170	1.25	4.35	**ASHRAE LBP**
-6.7 20	54.4 129.9	35 95	46.1 115	**464**	1582	399	**1.83**	6.25	253	1.51	10.10	**ASHRAE MBP**
7.2 45	54.4 129.9	35 95	46.1 115	**820**	2800	706	**2.52**	8.58	326	1.78	18.16	**ASHRAE HBP**
-35 -31	40 104	20 68	40 104	**116**	396	100	**1.07**	3.64	109	1.11	2.54	**EN12900 LBP**
-10 14	45 113	20 68	45 113	**400**	1365	344	**1.81**	6.19	221	1.40	9.33	**EN12900 MBP**
5 41	50 122	20 68	50 122	**702**	2394	603	**2.31**	7.88	304	1.70	17.60	**EN12900 HBP**

Performance Tables

R134a, 230 V/60 Hz, CSIR, fan 3m/s

pc= 45/113 | RGT= 32/89.6 | Tliq= 45/113 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-35	-31	**109**	373	94	**1.01**	3.46	108	1.11	2.35
-30	-22	**146**	496	125	**1.10**	3.75	132	1.16	3.14
-20	-4	**253**	862	217	**1.42**	4.85	178	1.27	5.48
-10	14	**414**	1414	356	**1.88**	6.40	221	1.40	9.05
0	32	**642**	2191	552	**2.42**	8.25	266	1.56	14.17
10	50	**946**	3228	814	**2.99**	10.21	316	1.74	21.18
15	59	**1130**	3855	972	**3.28**	11.19	345	1.84	25.53

pc= 55/131 | RGT= 32/89.6 | Tliq= 55/131 | °C/°F

-35	-31	**84**	288	73	**0.80**	2.74	105	1.10	2.00
-30	-22	**120**	410	103	**0.90**	3.05	134	1.16	2.86
-20	-4	**218**	746	188	**1.17**	3.97	188	1.30	5.22
-10	14	**361**	1231	310	**1.52**	5.18	238	1.46	8.70
0	32	**558**	1905	480	**1.94**	6.61	288	1.64	13.61
10	50	**821**	2802	706	**2.39**	8.15	344	1.85	20.35
15	59	**981**	3346	843	**2.62**	8.94	374	1.97	24.55

Model
FRK8.5G Configuration 3

Sales code:
106G5753

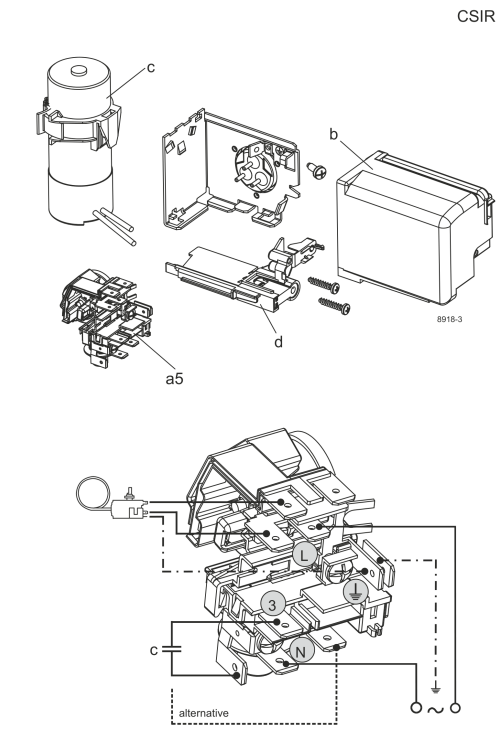
Configuration

Motor configuration	**CSIR**
Power supply (nominal)	**220-240 V/50 Hz 1~**
Refrigerant	**R513A**
Application	**LBP+MBP+HBP**
Voltage range	**187-254 V**
Starting torque	**HST**
Approvals	**VDE, CB, UL, CCC**
Starting device type	**relay**
Run capacitor	**-/-**
Start capacitor	**80 µF**
LRA (locked rotor amps / 4s/ U(N))	**13.4 A**
RLA (rated load amps / 1s/ U(N))	**1.8 A**
Cut in current (U(N))	**12.3 A**

Ambient/ machine room temperatures minimum /maximum
Ambient temperature range: 10 - 43°C / 50 - 109°F
Machine room temp. compressor: 10 - 48°C / 50 - 118°F

System Cooling
fan 3m/s

Electrical Accessories / Wiring Diagram



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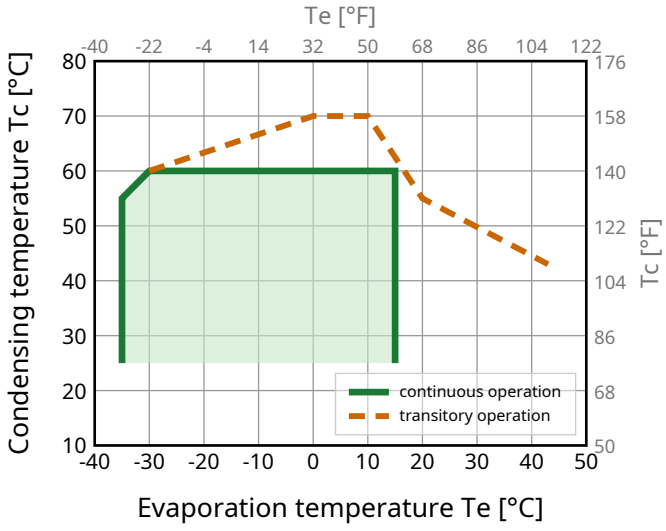
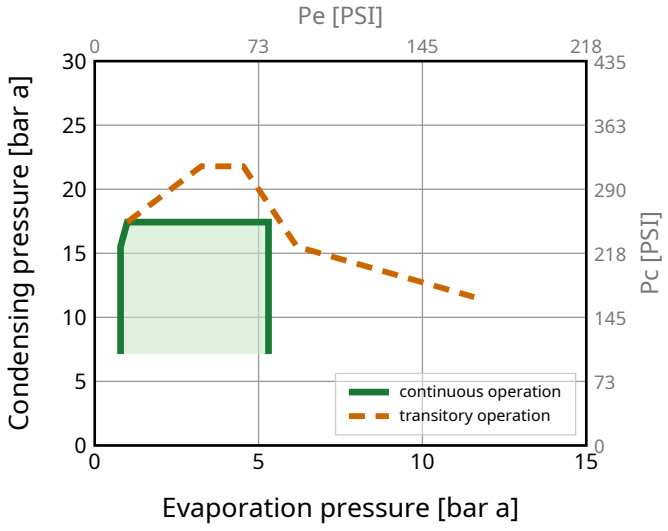
Components
a5 current relay (T0377/L6-S1) 117U7071
c start capacitor (80µF, 6.3mm) 117U5001
b, d cover + clamp + screws (5VA-compl.) 103N0600

Alternative components
b, d 100x cover + clamp + screws (5VA) 103N2060
b, d cover + clamp + screws (5VA) in bag 103N1060

Operation Pressure Range





Model
FRK8.5G Configuration 3

Sales code:
106G5753

Standard Conditions

R513A, 220 V/50 Hz, CSIR, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**204**	695	175	**1.24**	4.24	164	1.34	4.46	**ASHRAE LBP**
-6.7 20	54.4 129.9	35 95	46.1 115	**411**	1402	353	**1.76**	6.00	234	1.58	10.24	**ASHRAE MBP**
7.2 45	54.4 129.9	35 95	46.1 115	**720**	2457	619	**2.43**	8.30	296	1.84	18.29	**ASHRAE HBP**
-35 -31	40 104	20 68	40 104	**108**	369	93	**0.91**	3.10	119	1.23	2.72	**EN12900 LBP**
-10 14	45 113	20 68	45 113	**354**	1208	304	**1.77**	6.03	200	1.46	9.58	**EN12900 MBP**
5 41	50 122	20 68	50 122	**604**	2062	520	**2.22**	7.57	272	1.74	17.81	**EN12900 HBP**

Performance Tables

R513A, 220 V/50 Hz, CSIR, fan 3m/s

pc= 45/113 | RGT= 32/89.6 | Tliq= 45/113 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-35	-31	**103**	351	88	**0.84**	2.87	122	1.23	2.53
-30	-22	**133**	453	114	**0.99**	3.36	135	1.26	3.28
-20	-4	**227**	775	195	**1.38**	4.69	165	1.34	5.64
-10	14	**371**	1267	319	**1.86**	6.33	200	1.46	9.30
0	32	**571**	1947	491	**2.40**	8.19	238	1.60	14.45
10	50	**830**	2831	714	**3.02**	10.29	275	1.75	21.37
15	59	**984**	3356	846	**3.35**	11.45	293	1.83	25.60

pc= 55/131 | RGT= 32/89.6 | Tliq= 55/131 | °C/°F

-35	-31	**83**	285	72	**0.68**	2.31	123	1.23	2.30
-30	-22	**110**	376	95	**0.79**	2.70	139	1.27	3.04
-20	-4	**192**	653	165	**1.08**	3.68	177	1.38	5.32
-10	14	**314**	1073	270	**1.43**	4.87	220	1.53	8.82
0	32	**484**	1652	416	**1.82**	6.23	265	1.71	13.77
10	50	**706**	2407	607	**2.27**	7.76	310	1.91	20.44
15	59	**837**	2857	720	**2.52**	8.60	332	2.00	24.55

Model
FRK8.5G Configuration 4

Sales code:
106G5753

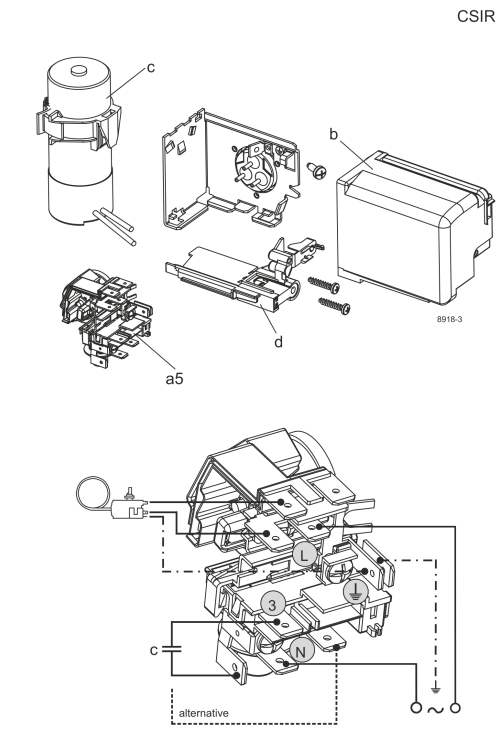
Configuration

Motor configuration	**CSIR**
Power supply (nominal)	**208-230 V/60 Hz 1~**
Refrigerant	**R513A**
Application	**LBP+MBP**
Voltage range	**198-253 V**
Starting torque	**HST**
Approvals	**VDE, CB, UL, CCC**
Starting device type	**relay**
Run capacitor	**-/-**
Start capacitor	**80 µF**
LRA (locked rotor amps / 4s/ U(N))	**13.4 A**
RLA (rated load amps / 1s/ U(N))	**1.8 A**
Cut in current (U(N))	**12.3 A**

Ambient/ machine room temperatures minimum /maximum
Ambient temperature range: 10 - 43°C / 50 - 109°F
Machine room temp. compressor: 10 - 48°C / 50 - 118°F

System Cooling
fan 3m/s

Electrical Accessories / Wiring Diagram

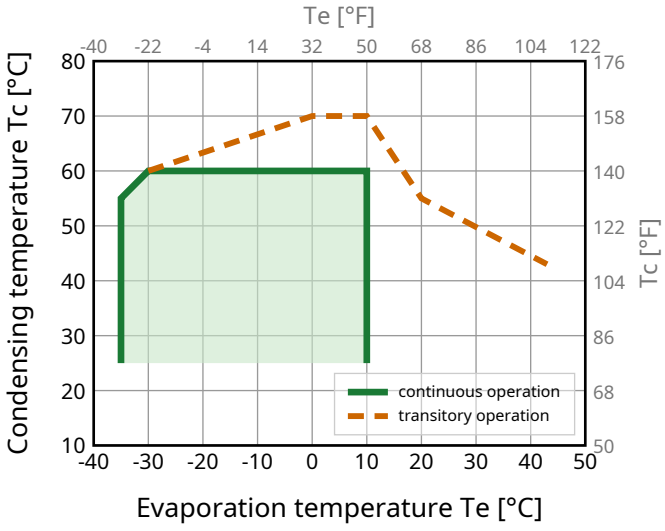


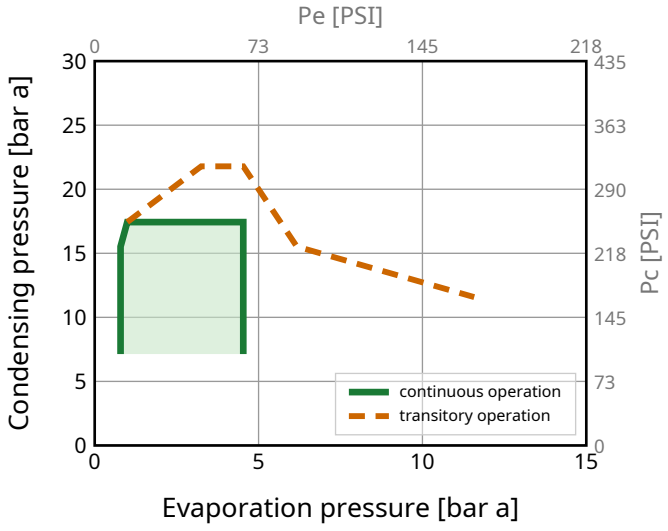
View full size

Components
a5 current relay (T0377/L6-S1) 117U7071
c start capacitor (80µF, 6.3mm) 117U5001
b, d cover + clamp + screws (5VA-compl.) 103N0600

Alternative components
b, d 100x cover + clamp + screws (5VA) 103N2060
b, d cover + clamp + screws (5VA) in bag 103N1060

Operation Pressure Range





Model Sales code:

FRK8.5G Configuration 4 **106G5753**

Standard Conditions

R513A, 230 V/60 Hz, CSIR, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**247**	842	212	**1.34**	4.56	185	1.30	5.41	**ASHRAE LBP**
-6.7 20	54.4 129.9	35 95	46.1 115	**486**	1658	418	**1.81**	6.18	268	1.56	12.12	**ASHRAE MBP**
7.2 45	54.4 129.9	35 95	46.1 115	**844**	2878	725	**2.47**	8.44	341	1.84	21.43	**ASHRAE HBP**
-35 -31	40 104	20 68	40 104	**129**	440	111	**1.09**	3.73	118	1.13	3.25	**EN12900 LBP**
-10 14	45 113	20 68	45 113	**416**	1419	358	**1.77**	6.05	235	1.45	11.26	**EN12900 MBP**
5 41	50 122	20 68	50 122	**706**	2410	608	**2.22**	7.58	318	1.75	20.83	**EN12900 HBP**

Performance Tables

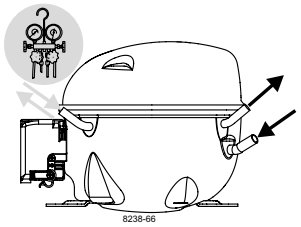
R513A, 230 V/60 Hz, CSIR, fan 3m/s

pc= 45/113 | RGT= 32/89.6 | Tliq= 45/113 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-35	-31	**123**	419	106	**1.04**	3.56	118	1.12	3.02
-30	-22	**161**	548	138	**1.11**	3.80	144	1.19	3.96
-20	-4	**271**	925	233	**1.42**	4.84	191	1.31	6.73
-10	14	**436**	1489	375	**1.86**	6.35	235	1.45	10.93
0	32	**666**	2272	573	**2.39**	8.14	279	1.61	16.86
10	50	**969**	3305	833	**2.94**	10.03	330	1.79	24.95
15	59	**1151**	3926	990	**3.21**	10.95	359	1.90	29.95

pc= 55/131 | RGT= 32/89.6 | Tliq= 55/131 | °C/°F

-35	-31	**95**	325	82	**0.82**	2.79	116	1.12	2.62
-30	-22	**132**	450	113	**0.89**	3.05	148	1.20	3.64
-20	-4	**231**	790	199	**1.14**	3.89	203	1.35	6.43
-10	14	**374**	1276	322	**1.48**	5.04	253	1.51	10.49
0	32	**569**	1942	490	**1.88**	6.40	304	1.69	16.19
10	50	**827**	2820	711	**2.31**	7.86	358	1.91	23.95
15	59	**982**	3349	844	**2.52**	8.60	389	2.03	28.78



FRK Compressors

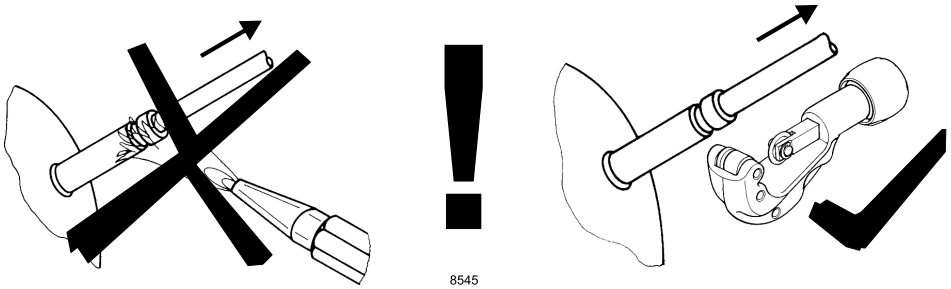
SECOP

Keep electrical equipment clear from oil, chemicals, and water

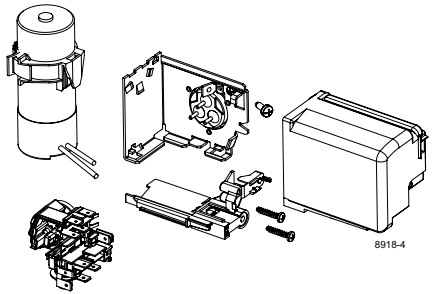
When operated with a flammable refrigerant, only spark-proof starting equipment is allowed.

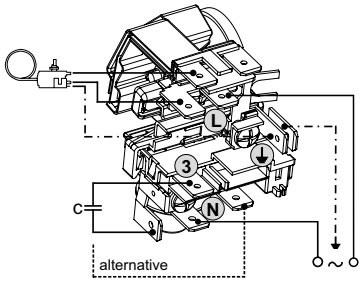
Service/Repair – R1234yf

(applies to all flammable refrigerants)



CSIR





Dismantling, recycling, disposal: At the end of a compressor's lifecycle, proceed by separating and storing components according to their environmental impact. Parts that may cause pollution must be clearly identified and handled separately, ensuring appropriate disposal. Refrigerant gas must not be released into the environment and should be recovered by qualified operators. Compressor oil must also be collected separately. The compressor should be disposed of at specialized disposal centers in accordance with the applicable regulations. **Subject to modifications/alterations. www.secop.com**