

PANASONIC SCROLL COMPRESSORS

Code : 809 183 88

Model : C-SCN603H8K

Aproved for R407C, R448A, R449A, R134a, R513A, R404A



Panasonic Appliances Compressor (Dalian) Co.,Ltd.

Section 1. General Specifications

Model C-SCN603H8K

Electrical 380-415 Volts 3 Phase 50Hz

Refrigerant R407C

440-460 Volts 3 Phase 60Hz

Nominal Performance at ARI

	50Hz-380V	60Hz-440V
Power Source		
Capacity (W)	24500	29100
Power (W)	7750	9450
Current (A)	13.2	13.9
COP (W/W)	3.16	3.08
Mass Flow (kg/h)	589	700

Rating Conditions (MID Point)

Condensing Temperature(°C)	54.4
Evaporating Temperature(°C)	7.2
Return Gas temperature(°C)	18.3
Liquid Temperature(°C)	43.8
Ambient Temperature(°C)	35

Motor

	50Hz	60Hz
Voltage Range(V)	342-456	396-506
RLA (A)	15.9	
MCC (A)	22.2	
LRA (A)	80	84
RPM (min ⁻¹)	2900	3450

Compressor

Maximum Discharge Temp(°C)	135
Displacement (cm ³ /rev)	171.2
Weight (with oil kg)	66.5

Oil

Oil Type	FV68S
Initial Charge (ml)	2800
Re-charge (ml)	2600

Electrical Components

Motor Protector Type	Internal
Run Capacitor Rating (MFD/Volts)	n/a

Winding Resistance at 25°C

	1.655
U-V	1.742
U-W	
V-W	1.713

Sound level

	50Hz/380V	60Hz/440V
(db)	70Max	73Max

Nominal performance values +/-5% with 1 hr run-in.

Ratings with air over compressor.

Sound level is an average sound pressure level in four directions. MIC location is the distance of 1m from the compressor Specifications subject to change without notice.

Minimum Starting Voltage

Power Source (3PH)	Hz	50	60
Minimum Starting Voltage	V	304	352

Conditions

Compressor Temp.	°C (°F)	10~60(50~140)
Ambient Temp.	°C (°F)	10~40(50~105)
High Pressure	MPa(G)/psig	2(290)
Low Pressure	MPa(G)/psig	0.5(72)

Inernal Motor Protector (in compressor)

Parts Name	Specification	
Inernal Motor Protector	TripTemp.	155±5°C
	Reset Temp.	70±10°C
	Trip Current	52A / 3~10s

Others

Content	Unit	Specification	
Design Pressure	L.P. S.	MPa(G)/psig	1.6(232)
	H. P. S.	MPa(G)/psig	3.2(464)
Insulation Resistance	MΩ	100 (without refrigerant)	
Dielectric Strength	v	2400 (1 second)	
Residual Moisture	mg	400	

Note:
1. The insulation resistance be measured with a DC500V megohm test

Accessories List

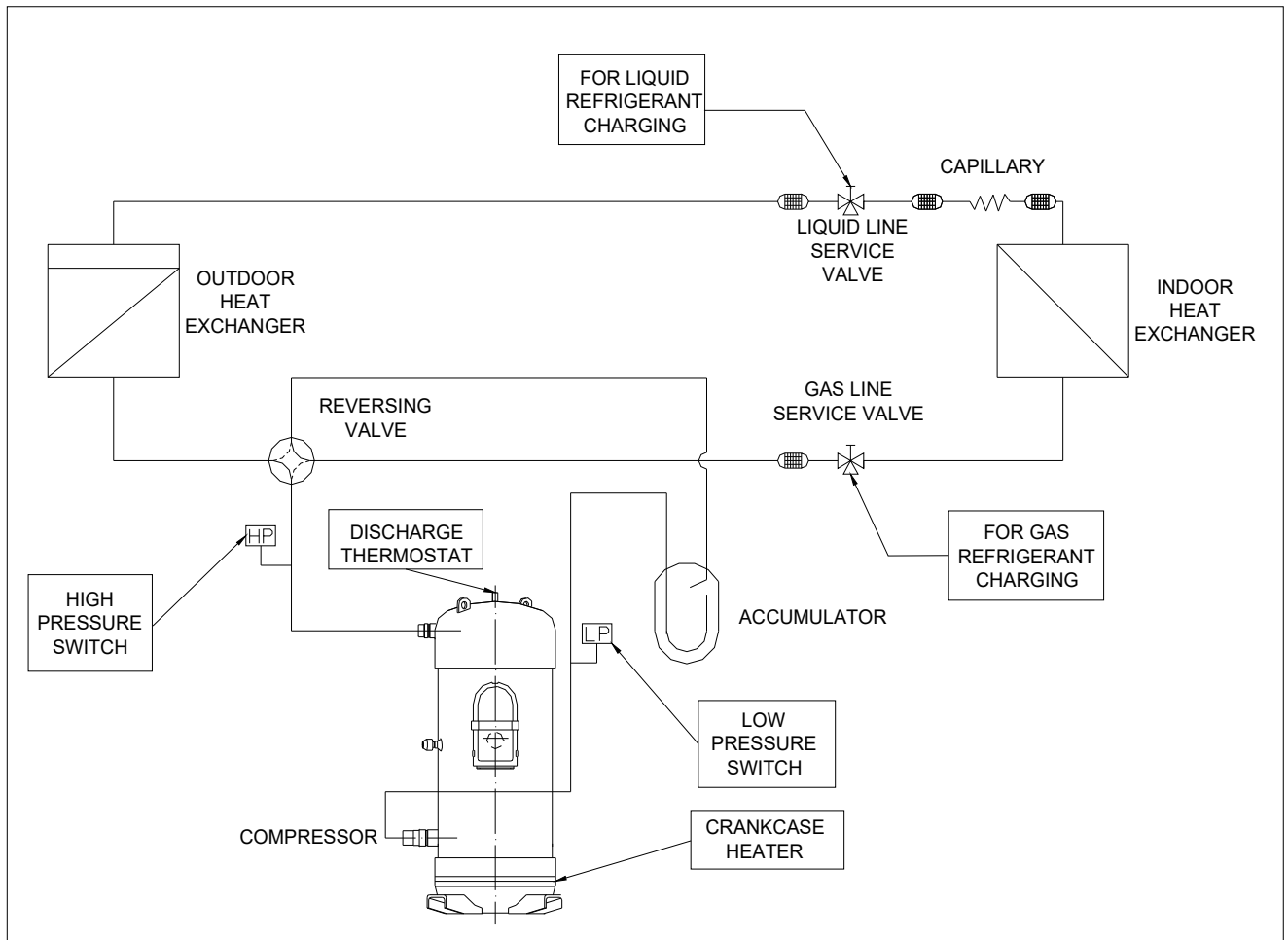
Parts Name	Qty	Parts code	Revision No.	Note
Terminal Box Cover	1	A-0101-DSC	0	Installed on Compressor
Terminal Box Clip	1	A-0201-DSC	0	Installed on Compressor
Insulating Grommet	1	A-0301-DSC	0	Installed on Compressor
Gasket Terminal	1	A-0401-DSC	0	Installed on Compressor
Mounting Grommet	4	M-0101-DSC	0	Included with Compressor
Mounting Sleeve	4	M-0201-DSC	0	Included with Compressor

Section 2. Compressor Protection

2.1 Protection Required but not Included with compressor

Protection Device	Items	Specifications
Reversal Defensible Relay	Features	To protect the compressor from reverse rotation
	Rated Voltage	AC380V
Crankcase Heater	Rated Power	88 Watts
Discharge Thermostat	Mounting Position	Located in the well pipe of top shell
	Trip Temperature	135±5°C(275 ± 10 °F)
	Reset Temperature	86±15°C (187 ± 27 °F)
High Pressure Switch	Setting	Cut-out seting no higher than 3.2MPa(G)
Low Pressure Switch	Setting	Cut-out seting no lower than 0.05MPa(G)

2.2 Position of the Protection and Refrigerant Charging



Section 3. Performance data

PERFORMANCE DATA

Compressor Model(Code)	C-SCN603H8K (809 183 88)
Power Source	3PH 50Hz 380-415V
Suction Gas Superheat(K)	9
Sub Cooling(K)	8.3
Compressor Cooling	Natural Cooling
Refrigerant	R407C

CAPACITY(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	13,210	16,230	18,590	24,490	29,350	32,930	36,960	40,130
40.5	12,180	14,950	17,130	22,550	27,020	30,310	34,010	36,920
45.0	11,380	13,980	16,000	21,070	25,230	28,310	31,750	34,470
50.0	10,560	12,960	14,830	19,520	23,370	26,220	29,400	31,910
54.4		12,120	13,870	18,250	21,850	24,500	27,470	29,820
60.0			12,750	16,760	20,060	22,480	25,210	27,350
65.0				15,540	18,590	20,840	23,360	25,350

POWER(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	5,020	5,090	5,120	5,160	5,160	5,160	5,140	5,120
40.5	5,600	5,680	5,720	5,770	5,770	5,770	5,750	5,740
45.0	6,140	6,230	6,270	6,330	6,340	6,340	6,330	6,320
50.0	6,810	6,910	6,960	7,030	7,050	7,050	7,050	7,040
54.4		7,570	7,630	7,710	7,740	7,750	7,750	7,740
60.0			8,570	8,670	8,710	8,730	8,740	8,740
65.0				9,610	9,660	9,690	9,700	9,710

CURRENT(A)

@380V

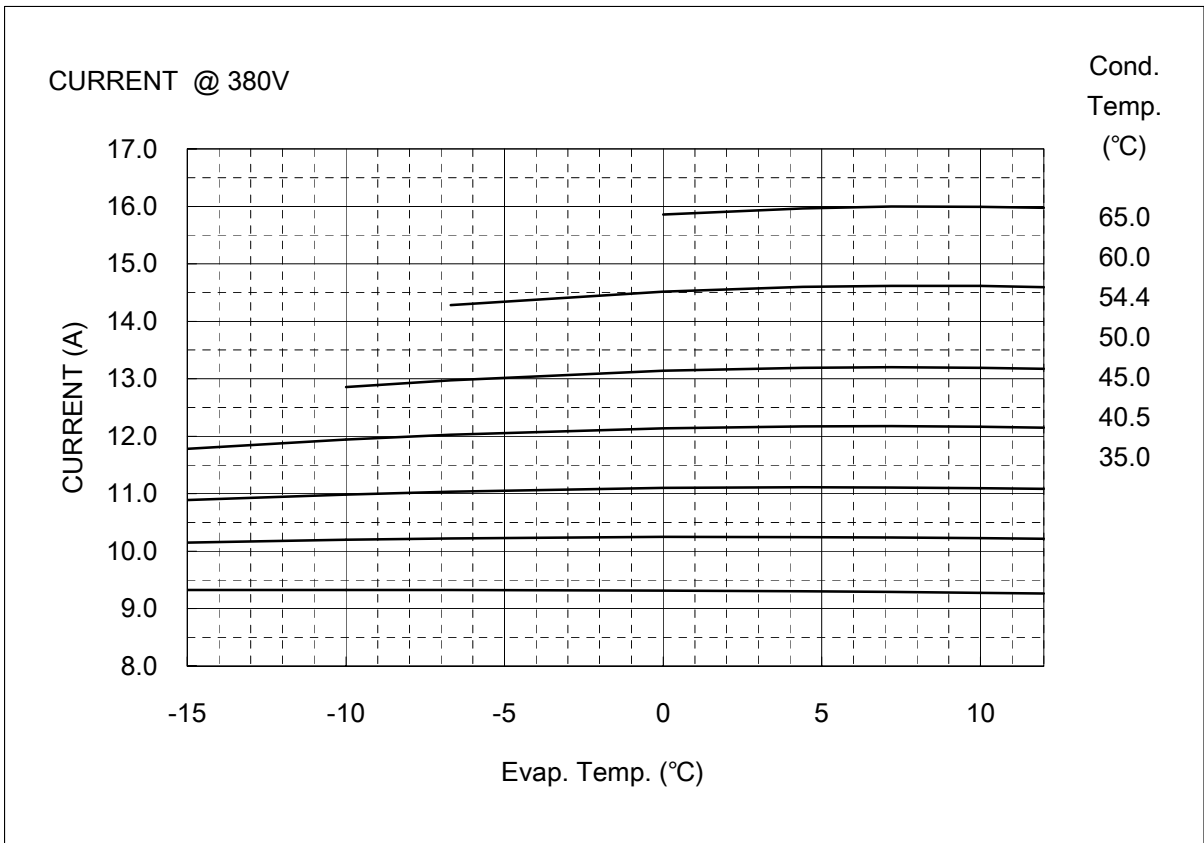
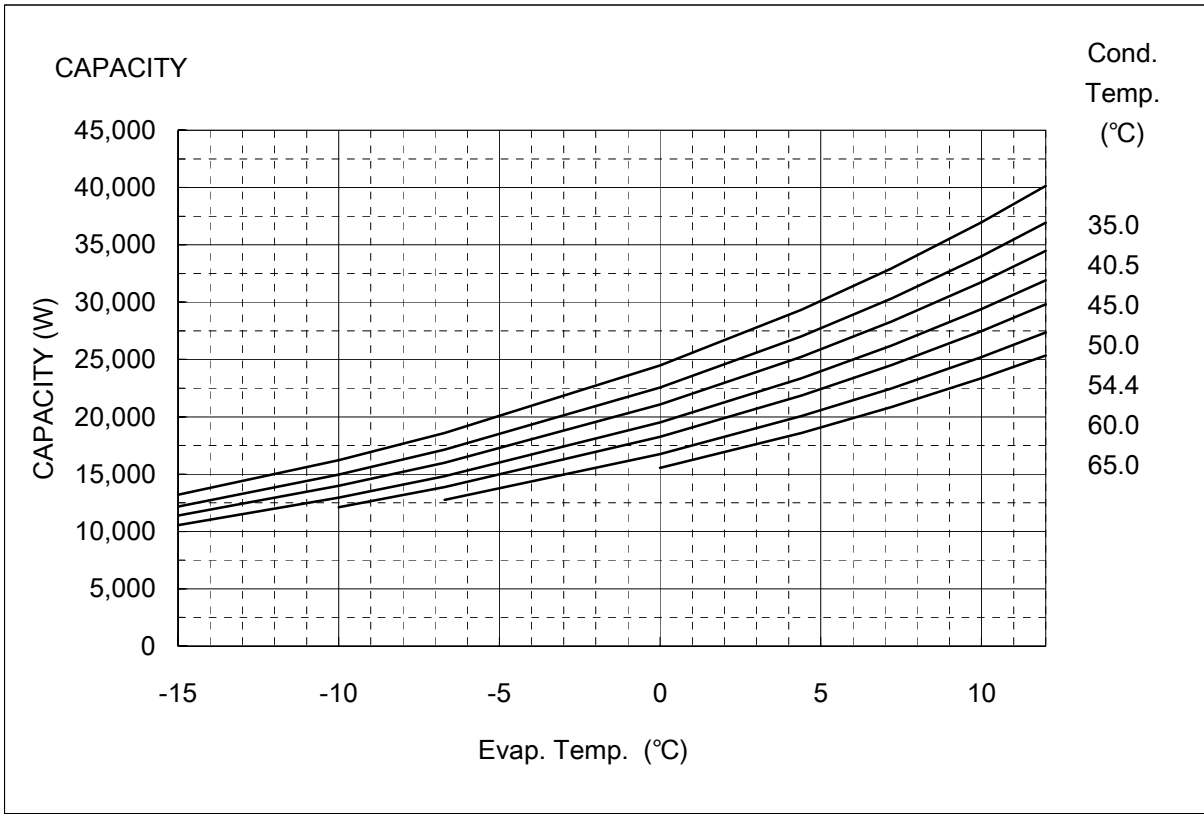
Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
40.5	10.1	10.2	10.2	10.2	10.2	10.2	10.2	10.2
45.0	10.9	11.0	11.0	11.1	11.1	11.1	11.1	11.1
50.0	11.8	11.9	12.0	12.1	12.2	12.2	12.2	12.2
54.4		12.9	13.0	13.1	13.2	13.2	13.2	13.2
60.0			14.3	14.5	14.6	14.6	14.6	14.6
65.0				15.9	16.0	16.0	16.0	16.0

NOTE:

- * The performance values are based on MID point method
- * The performance values subject to change without notice

Compressor Model(Code)
Power Source

C-SCN603H8K (809 183 88)
3PH 50Hz 380-415V



COEFFICIENTS OF PERFORMANCE CURVES

Compressor Model **C-SCN603H8K (809 183 88)**
 Power Source **3PH 50Hz 380-415V**
 Suction Gas Superheat (K) **9**
 Sub Cooling (K) **8.3**
 Compressor Cooling **Natural Cooling**
 Refrigerant **R407C**

$$X=C1+C2*(S)+C3*D+C4*(S^2)+C5*(S*D)+C6*(D^2)+C7*(S^3)+C8*(D*S^2)+C9*(S*D^2) +C10*(D^3)$$

X—CAPACITY(W) OR POWER(W) OR CURRENT(A) OR FLOW(kg/h)

S—EVAPORATING TEMP, °C

D—CONDENSING TEMP, °C

380V-50Hz	CAPACITY (W)	POWER (W)	CURRENT (A)
C1	4.004642E+04	3.569299E+03	6.084165E+00
C2	1.707960E+03	5.038327E+00	-4.586390E-03
C3	-5.239410E+02	-9.795056E+00	2.441731E-02
C4	3.105100E+01	-4.003621E-01	1.879734E-03
C5	-2.365733E+01	-3.377715E-01	-5.175950E-04
C6	2.263373E+00	1.580085E+00	1.935642E-03
C7	2.389230E-01	1.053029E-04	-2.682842E-06
C8	-2.845702E-01	-2.093382E-03	-5.562160E-05
C9	1.090986E-01	7.518378E-03	1.672233E-05
C10	-3.152917E-08	5.700804E-09	6.634405E-12

Note:The polynomial coefficients subject to change without notice.

PERFORMANCE DATA

Compressor Model(Code)	C-SCN603H8K (809 183 88)
Power Source	3PH 60Hz 440-460V
Suction Gas Superheat(K)	9
Sub Cooling(K)	8.3
Compressor Cooling	Natural Cooling
Refrigerant	R407C

CAPACITY(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	16,340	19,980	22,820	29,900	35,690	39,950	44,720	48,480
40.5	14,900	18,240	20,840	27,330	32,650	36,560	40,950	44,400
45.0	13,810	16,910	19,330	25,370	30,330	33,970	38,060	41,280
50.0	12,680	15,540	17,770	23,340	27,920	31,290	35,070	38,040
54.4		14,420	16,500	21,690	25,960	29,100	32,620	35,400
60.0			15,020	19,760	23,660	26,540	29,770	32,310
65.0				18,200	21,810	24,480	27,460	29,820

POWER(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	5,940	6,090	6,170	6,270	6,290	6,290	6,270	6,240
40.5	6,660	6,820	6,900	7,000	7,030	7,030	7,020	7,000
45.0	7,340	7,500	7,580	7,690	7,720	7,730	7,720	7,710
50.0	8,190	8,340	8,420	8,540	8,590	8,600	8,610	8,600
54.4		9,160	9,240	9,370	9,430	9,450	9,470	9,470
60.0			10,400	10,530	10,600	10,640	10,680	10,700
65.0				11,670	11,760	11,810	11,860	11,900

CURRENT(A)

@440V

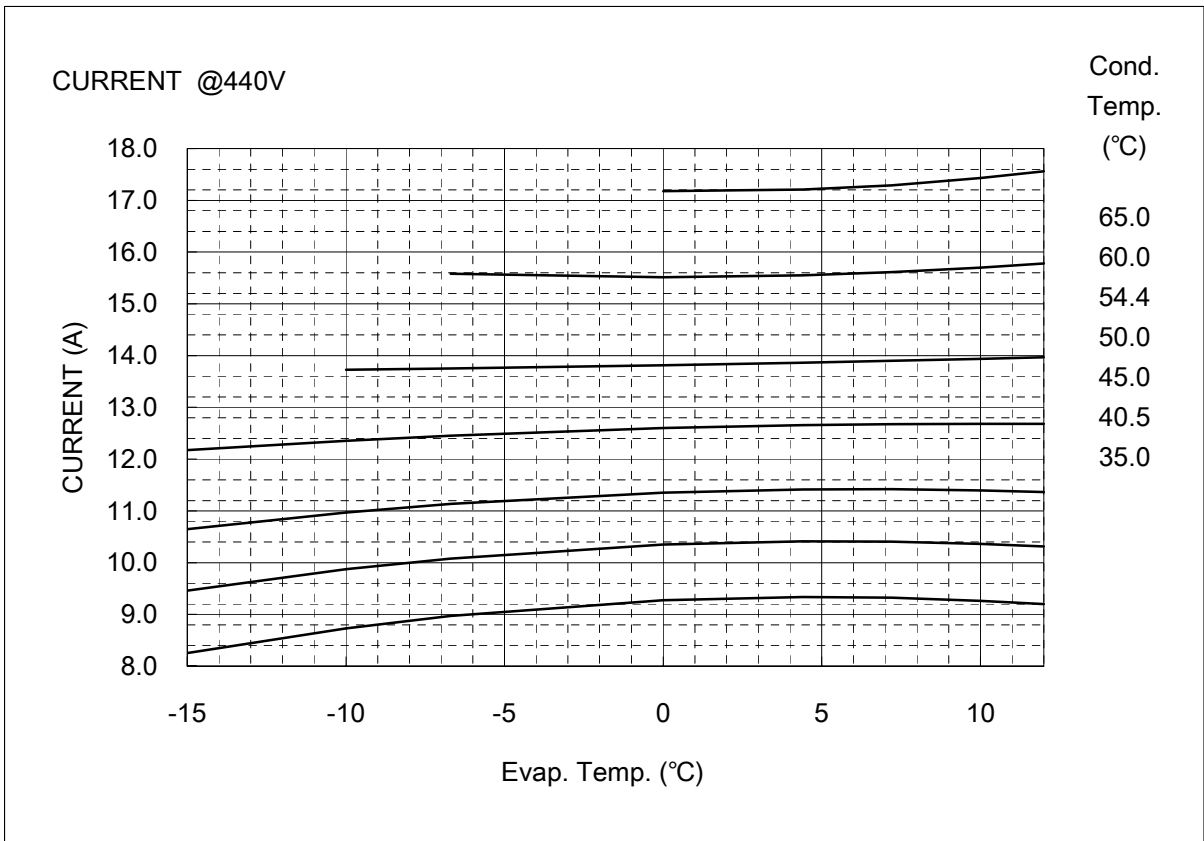
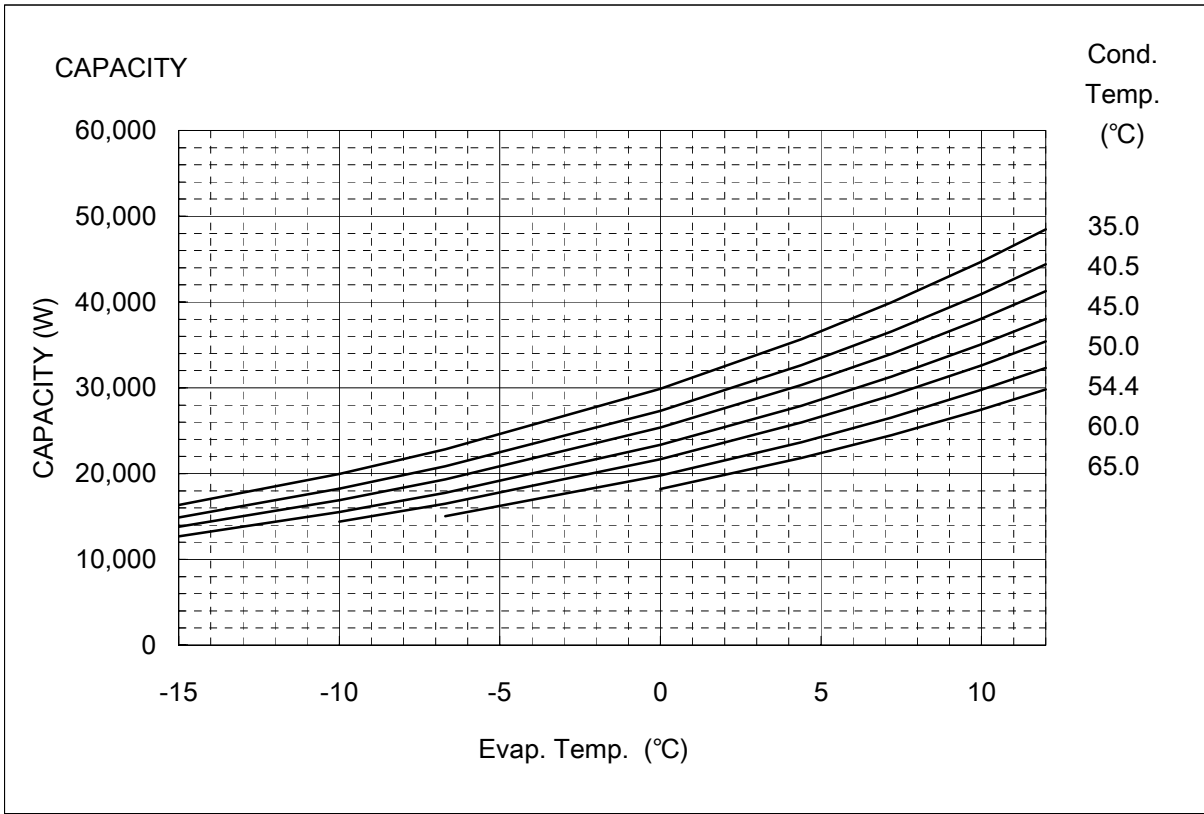
Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7.2	10	12
35.0	8.3	8.7	9.0	9.3	9.3	9.3	9.3	9.2
40.5	9.5	9.9	10.1	10.3	10.4	10.4	10.4	10.3
45.0	10.6	11.0	11.1	11.4	11.4	11.4	11.4	11.4
50.0	12.2	12.4	12.5	12.6	12.7	12.7	12.7	12.7
54.4		13.7	13.8	13.8	13.9	13.9	13.9	14.0
60.0			15.6	15.5	15.6	15.6	15.7	15.8
65.0				17.2	17.2	17.3	17.4	17.6

NOTE:

- * The performance values are based on MID point method
- * The performance values subject to change without notice

Compressor Model(Code)
Power Source

C-SCN603H8K (809 183 88)
3PH 60Hz 440-460V



COEFFICIENTS OF PERFORMANCE CURVES

Compressor Model **C-SCN603H8K (809 183 88)**
 Power Source **3PH 60Hz 440-460V**
 Suction Gas Superheat (K) **9**
 Sub Cooling (K) **8.3**
 Compressor Cooling **Natural Cooling**
 Refrigerant **R407C**

$$X=C1+C2*(S)+C3*D+C4*(S^2)+C5*(S*D)+C6*(D^2)+C7*(S^3)+C8*(D*S^2)+C9*(S*D^2) +C10*(D^3)$$

X—CAPACITY(W) OR POWER(W) OR CURRENT(A) OR FLOW(kg/h)

S—EVAPORATING TEMP, °C

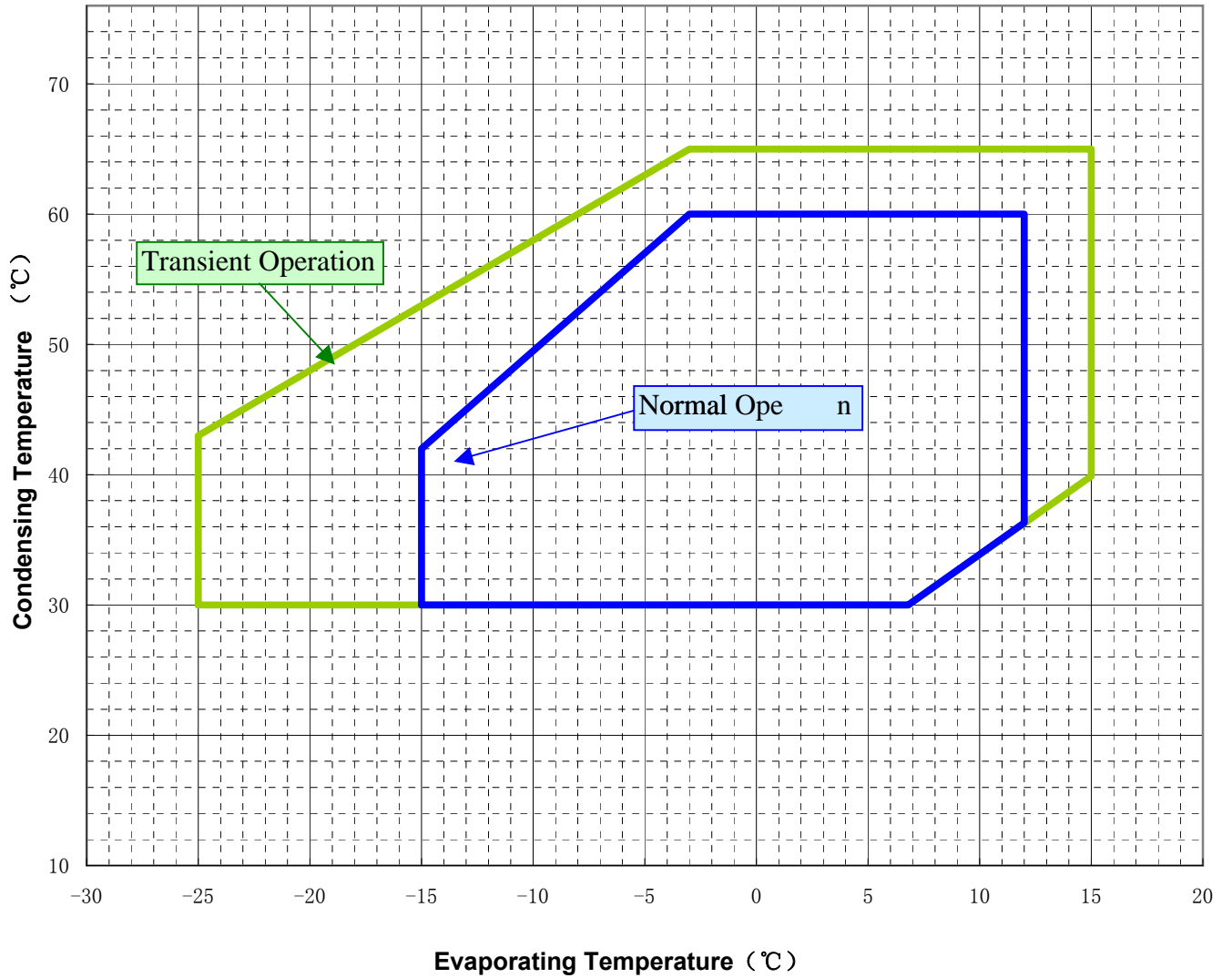
D—CONDENSING TEMP, °C

440V-60Hz	CAPACITY (W)	POWER (W)	CURRENT (A)
C1	5.079741E+04	4.383964E+03	6.908819E+00
C2	2.055610E+03	1.235758E+01	1.760747E-02
C3	-7.097991E+02	-1.385735E+01	-3.705640E-02
C4	3.586250E+01	-1.684597E+00	-9.046854E-03
C5	-2.879854E+01	-4.162538E-01	7.744920E-04
C6	3.208373E+00	1.938782E+00	3.009590E-03
C7	2.766718E-01	1.809265E-03	1.504425E-05
C8	-3.199017E-01	2.093213E-02	1.702135E-04
C9	1.330703E-01	8.630991E-03	-1.647913E-05
C10	-1.647169E-08	-1.231354E-08	-7.266176E-11

Note:The polynomial coefficients subject to change without notice.

Section 4. Operating Envelope

Suction Gas
Superheat :9K
Refrigerant : R407C



Section 5. Application Standard & Limit

The following requirements apply to vertical type hermetic scroll compressors:

Standard: Applicable to ordinary conditions in Japan JIS B8616 or standards relative to JIS B8616, such as standard rating conditions, maximum operating conditions, low temperature conditions, etc.

Limit: Applicable to transitional brief period of time, such as start-up and beginning of defrost mode.

No.	Item	Standard	Limit	Remark
1	Refrigerant	R407C(Refrigerant must meet a criterion)		
2	Average Evap. Temp.	-15~12°C(5~54 ° F) 0.20~0.65MPa(G)(29~94psig)	-25~15°C(-13~59 ° F) 0.07~0.73MPa(G)(10~106psig)	Average temp. of evaporator Inlet and outlet.
3	Average Cond.Temp.	30~60°C(86~140 ° F) 1.17~2.56MPa(G)(170~371psig)	65°C(149 ° F) 2.88MPa(G)(418psig)	Average temp. of condensor Inlet and outlet.
4	Compression Ratio	2 ~ 6	10	
5	Winding Temp.	115°C(240 °F) Max.	125°C(257 °F)	
6	Shell Bottom Temp.	90°C(194 °F) Max.		
		Evaporating Temp.+12°C(21 °F) Min.		Operating
		Ambient Temp.+11°C(20 °F) Min.		Not Operating
7	Discharge Gas Temp.	115°C(240 °F) Max.	C-SB:130°C(266°F) Max.	Temp. within 10cm of the discharge fitting.
			C-SC:135°C(275°F) Max.	Temp. inside of the copper pipe on the top of compressor
8	Suction Gas Temp.	Superheat: 5K(10 °F)Min.	No excessive noise.	It should meet the requirement of item 5, 6, 7 and 14 within 30cm of the suction fitting.
9	Running Voltage	Within ±10% of the rated voltage		Voltage at compressor terminals.
10	Starting Voltage	Three Phase Models: 85% of the rated voltage min.		Voltage at compressor terminals.
		Single Phase Models: 90% of the rated voltage min.		
11	On/Off Cycling	On Period: Until the oil level returns to the center of the lower bearing Off Period: Until balance of high and low pressure is obtained		For at least 7 minutes - on/3 minutes-off is recommended.
12	Refrigerant Charge	Oil/Refrigerant(wt.)>0.35.		Specific gravity of the Oil:0.94.
13	Life Time	200,000 cycle		
14	Minimum Oil Level	C-SB:Center of the lower bearing	C-SB:Bottom of the lower bearing	
		C-SC:No less than 70% of the initial oil charge		
15	Abnormal Pressure Rise/Drop	Pressure Rise: 3.20MPa(G) (464psig) Max.		By high pressure switch
		Pressure Drop: 0.05MPa(G) (7.3psig) Min.		By low pressure switch
16	System Moisture Level	200ppm Max.		
17	System Uncondensable Gas Level	1 Vol.% Max. Residual Oxygen 0.1 Vol.% Max.		24 hrs. after vacuuming: 1.01kPa Max.
18	Tilt	5Deg.Max.		

(G): Gauge Pressure

Notes

- 1 Installation should be completed within 15 minutes after removing the rubber plugs.
- 2 Do not use the compressor to compress air.
- 3 Do not energize the compressor under vacuumed condition.
- 4 Evacuation and Refrigerant charge : Evacuate internal section in the refrigeration system from high and low pressure sides and charge liquid refrigerant from condenser outlet side. Additional charge shall be done with gas condition from low side.
- 5 Do not tilt over the compressor while carrying it.
- 6 Do not remove the paint.
- 7 Crankcase heater is required when the oil sump temperature is too low to meet the requirement of item 6 on page 7.
- 8 Voltage fluctuation between compressor terminals, during operation, shall be within 2% of the rated voltage.
- 9 Do not operate compressor in reverse rotational direction.
- 10 Suction strainers are recommended for all applications.
- 11 Copper Piping Stress

Start/Shutdown	34.32 N/mm ² Max.
Run	12.26 N/mm ² Max.

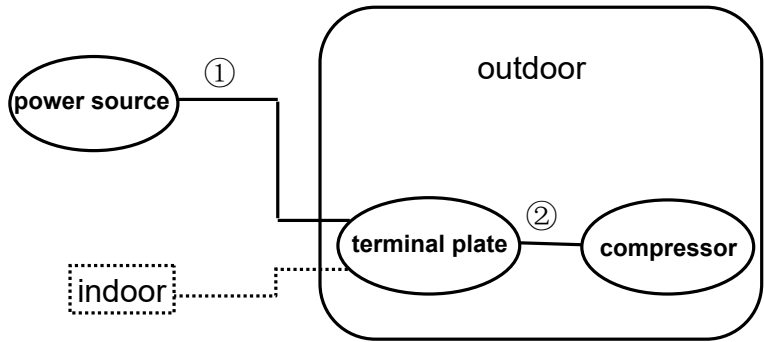
Section 6. Selection of Electrical Wire

Voltage drop may occur due to the large current draw during compressor starting.

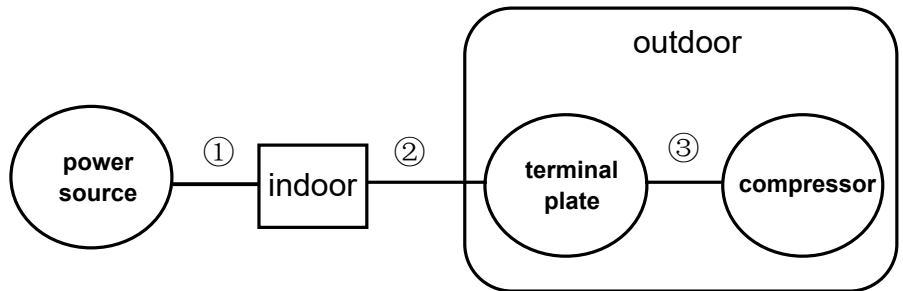
We recommend selecting the wire size from the table below.

6.1 Type of Unit

6.1.1 Window & Commercial Type Unit



6.1.2 Split Type(Separate Type)



6.2 Size Table of Electrical Wire

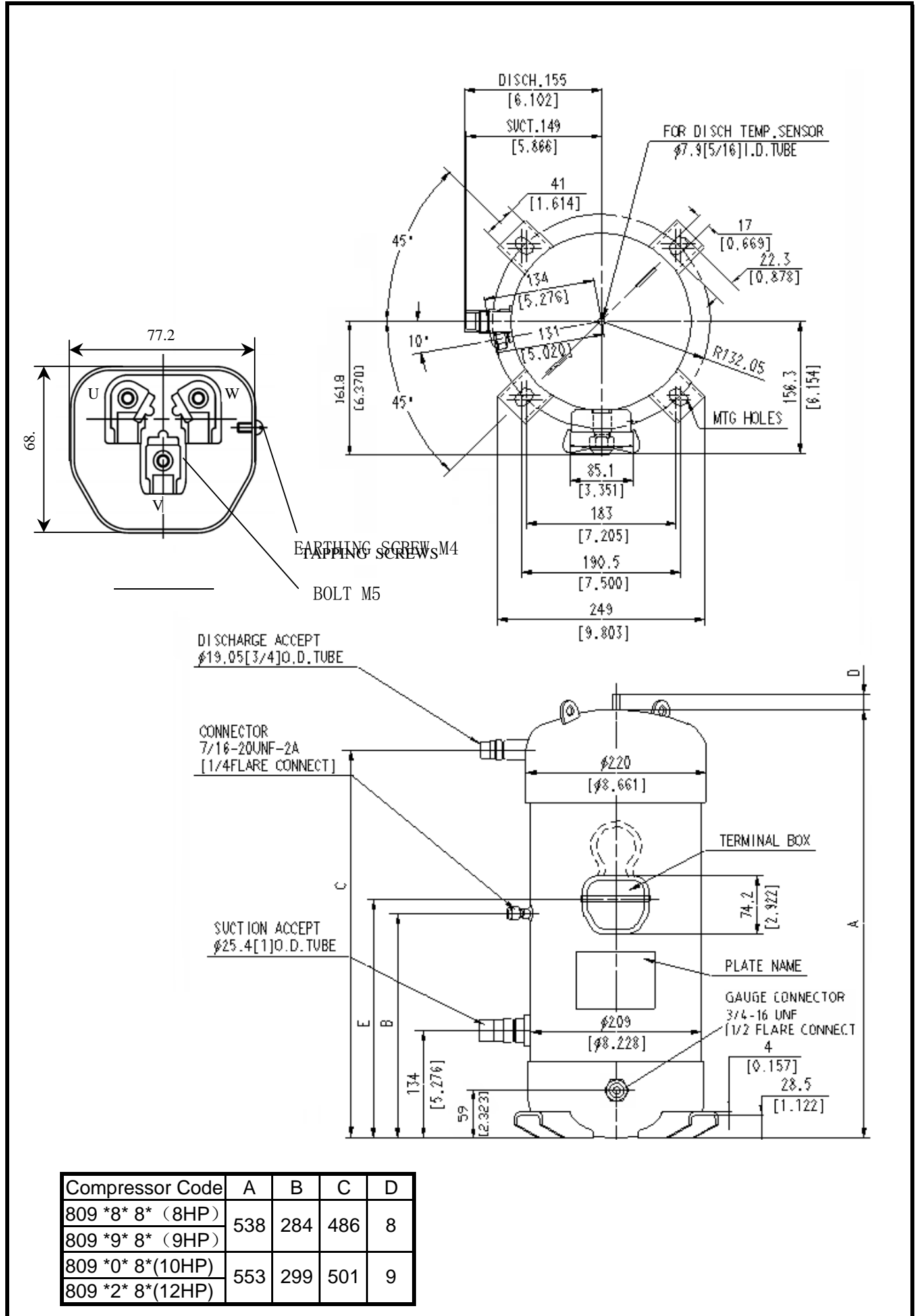
Starting current (A)	Size of electrical wire (mm ²)						
	Remark ① or Remark ①+② (heat-resistance Temperature: 60°C(140°F) min.)						Remark③ (heat-resistance Temperature: 120°C(248°F) min.)
	5m max.	10m max.	15m max.	20m max.	30m max.	50m max.	1m max.
20max.	2.0	2.0	2.0	3.5	5.5	8.0	2.0
30max.	↑	↑	3.5	5.5	↑	14.0	↑
40max.	↑	3.5	5.5	↑	8.0	↑	↑
50max.	↑	↑		8.0	14.0	22.0	↑
60max.	↑	5.5	↑	↑			↑
70max.	3.5	↑	8.0	14.0	↑	↑	3.5
80max.	↑	↑			22.0	30.0	↑
90max.	↑	↑	14.0	↑	↑		↑
100max.	↑	8.0	↑	↑		38.0	↑
110max.	↑	↑					↑
120max.	5.5	↑	↑	22.0	30.0	↑	↑
140max.	↑	14.0	↑	↑		50.0	5.5
160max.	↑	↑	22.0	↑	↑		↑
180max.	↑	↑			38.0	60.0	8.0
200max.	8.0	↑	↑	30.0	↑	↑	↑
220max.	↑	↑			50.0	80.0	↑
240max.	↑	↑					14.0

The internal motor protector does not protect the compressor against all possible conditions.

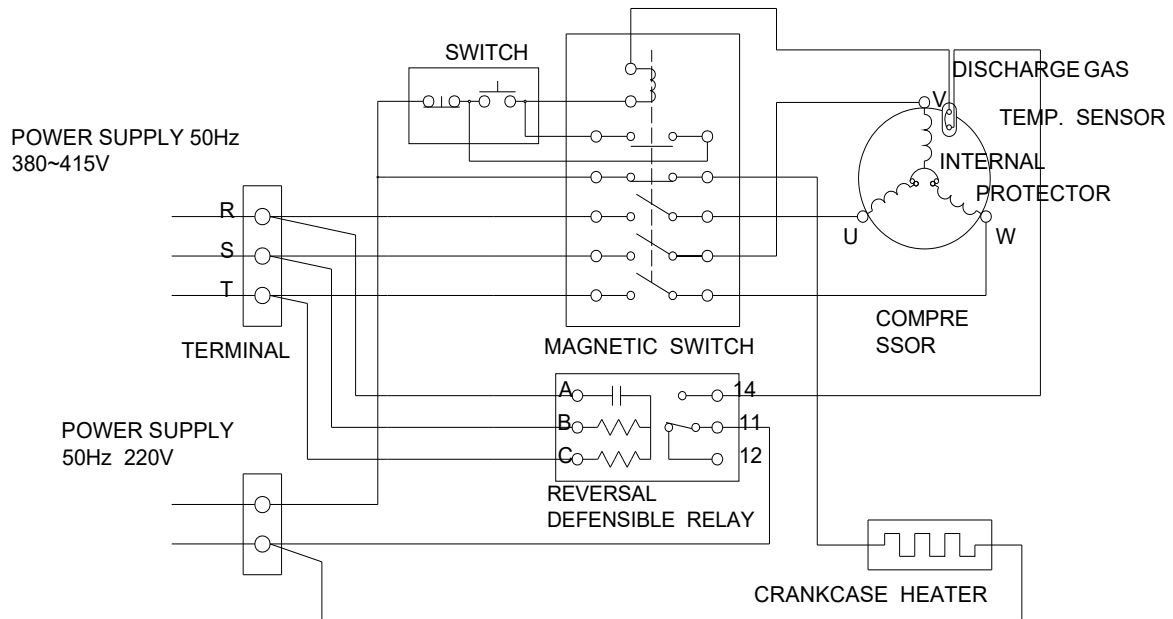
Please be sure that the system utilizes the ground connection when installed in the field.

Section 7. Drawings

7.1. Dimensional Sketch

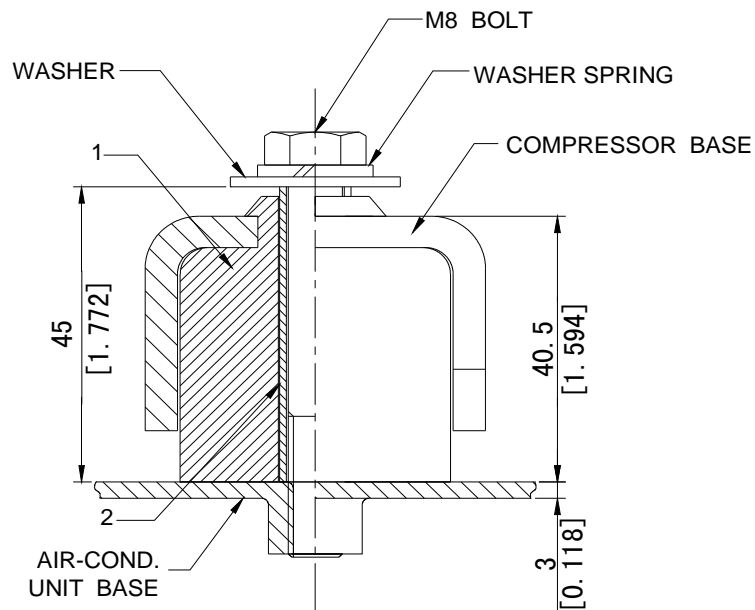


7.2. Wiring & mounting sketch

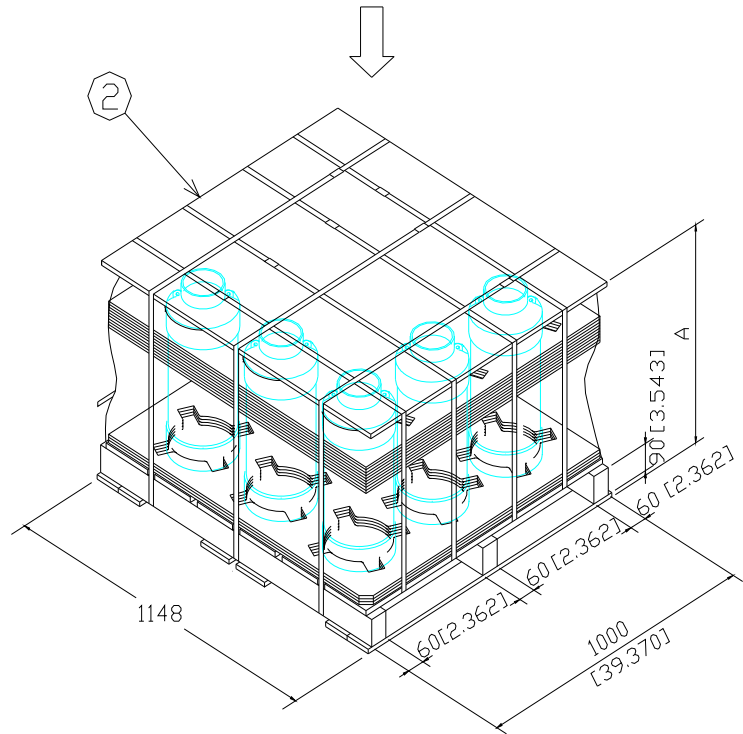
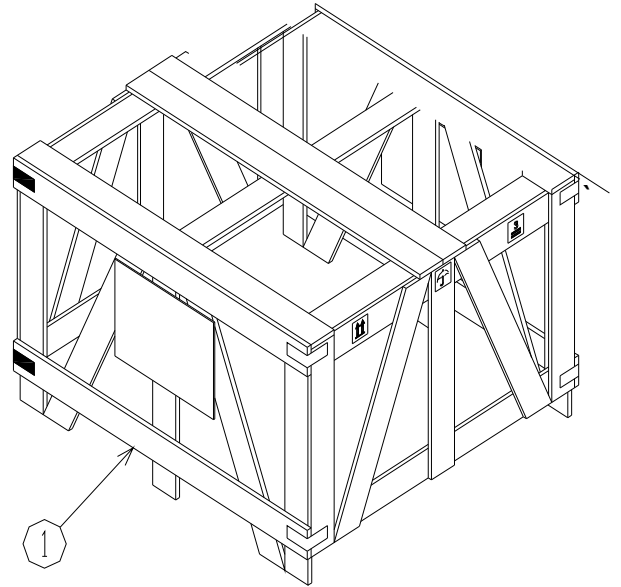
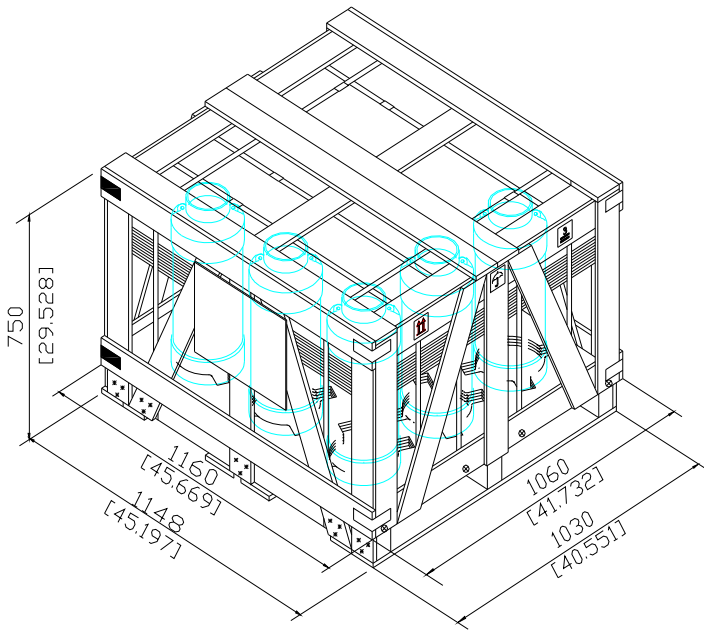


Part Code
E-0910-DSC Name
Wiring Diagram

MOUNTING SKETCH



7.2. Packing dimensios



Compressor Code	A
80928*8*	682
80918*8*	[26.850]
80929*8*	
80920*8*	697
80910*8*	[27.441]
80922*8*	
80912*8*	