

Basic Specification

Model	YM132E7G-100 (Including Extended Models)
Type	Low Side Shell Design Scroll Compressor
Application	Medium Temp. Refrigeration
Power	8 HP
Capacity (BTU/Hr)	53326
Refrigerant	R448A/R449A
Displacement(cc/rev)	123
Cooling Capacity(W) ^(a)	15629
Input Power(W) ^(a)	7113
RLA(A) ^(a)	24.1
Cooling COP(W/W) ^(a)	2.2
Power Supply	208-230V/3~/60Hz
Min. Operating Voltage(V)	187
Max. Operating Voltage(V)	253
LRA(A)	241
Max. Operating Current(A) ^(b)	35.5
Rated Speed(r/min) ^(a)	3500
Compressor Weight (With Oil)(kg)	53
Oil Type	POE
Oil Kinematic Viscosity (cSt, 40°C)	32
Oil Density (kg/L, 20°C)	0.977
Primary Charge(L)	2.7
Recharge(L)	2.55
Oil Circulation Rate ^(a)	≤1%
Rated Sound (Sound Power)(dBA) ^(c)	78
Max. Operating Sound in Running Envelope (Sound Power)(dBA)	83
Vibration Displacement Peak-Peak (mm) ^(d)	≤0.12
Moisture (mg)	≤1100
Impurity (mg)	≤140
LVS(V) ^(e)	177
MOV (V) ^(f)	187
Start Capacitor (µF/V)	/
Start Relay	/
Run Capacitor (µF/V)	/
IP Class of Terminal Box	IP54
Compressor Color	Black

Motor Parameters

Motor Type	Three-phase asynchronous motor
Motor Pole	2
Motor Insulation Class(°C)	130(B Class)
Line to Line Resistance UV(CS)(Ω, 25°C)	0.258(± 10%)
Line to Line Resistance UW(CR)(Ω, 25°C)	0.258(± 10%)
Line to Line Resistance VW(SR)(Ω, 25°C)	0.258(± 10%)
Dielectric Strength	2000VAC / 1s / 60Hz, Leakage Current≤5mA
Insulation Resistance(MΩ)	≥20
Ground Resistance(Ω)	≤0.1

Safety Operating Limit

Tightness Test Pressure (MPa)	3.8-4.0
Max. Operating Pressure	
High Side(MPa) Low Side(MPa)	H3.2/L2.0
Compressor FreeSpace(Without Oil)	
High Side(L) Low Side(L)	H0.9/L6.5
Max. Refrigerant Charge(kg)	See Notes
Discharge Temperature Limit(°C)	≤125 (120mm to compressor discharge connection and well insulated)
Start-Stop Interval	See Notes

Performance Condition:

Condition	Condition Description
a	Rated Condition
b	Max. Load Condition, 90% Rated Voltage
c	Rated Condition, A Weighted Sound Power
d	Rated Condition, Max Operating Normal Displacement of Compressor Housing
e	Discharge Pressure and Suction Pressure: Saturated Refrigerant Pressure at 40°C
f	Max. Load Condition

2. Rated Condition, 48 Hours Break-in-Running before implementing Performance and Sound Testing

Item	Rated Condition	Max. Load Condition
E.T.(°C)/C.T.(°C)/S.H.(K)/S.C.(K)/A.T.(°C)	-6.7/48.9/11.1/0/35	10/65/11.9/0/46.1
Cooling Capacity Deviation	≥92.5%	-
Power Deviation	≤107.5%	-
COP Deviation	≥92.5%	-

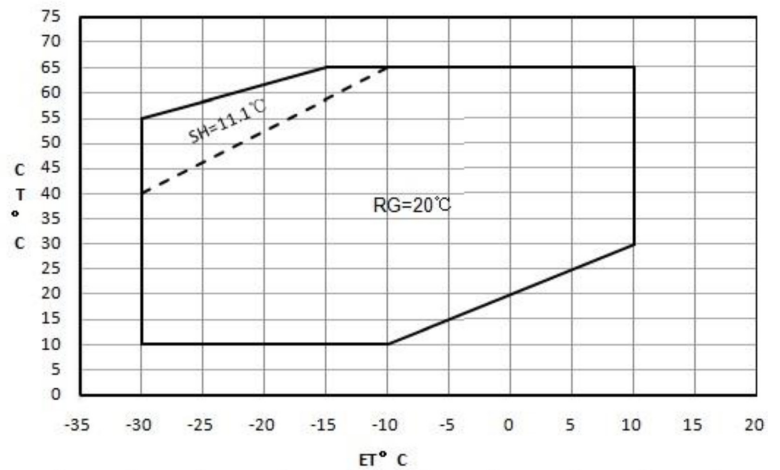
3. Internal Protector

Protection Method	Config	Parameter		
Internal Overload Protector	With	Vendor	Vendor 1	Vendor 2
		Model	UP28NA03B-XX	
		Open Temp.(°C)	135±5	
		Close Temp. (°C)	70±10	
		Short Time Trip	120A 3-10s	A S
Internal Pressure Relieve Valve	With	2.76-3.10MPa		

4. Accessory

Item	Name	P.N.	PCS
1	Grommet	070-0003-00	4
2	Sleeve	010-0014-00	4

5. Compressor Operating Envelope



Compressor Performance Sheet

- » Performance Based on Superheat is within the Operating Envelope, Subcooling after Condenser is 0K;
- » Performance Calculated by Coefficients of Polynomial is Only Suitable for the Condition within Operating Envelope
- » Capacity, Power can be Calculated by Coefficients of Polynomial

		Performance Table									
Item	E.T. (°C)	-30	-25	-20	-15	-10	-5	0	5	10	
Cooling Cap. (W)	65					10636	12859	15498	18559	22051	
	60				9599	11657	14146	17073	20445	24271	
	55			8524	10359	12640	15375	18571	22235	26375	
	50		7532	9086	11103	13588	16549	19994	23931	28366	
	45	6745	7962	9655	11833	14502	17671	21347	25536	30248	
	40	7107	8420	10233	12553	15388	18745	22631	27055	32023	
	35	7519	8910	10823	13266	16247	19773	23851	28489	33695	
	30	7986	9435	11429	13975	17083	20758	25009	29842	35266	
	25	8510	9997	12053	14684	17899	21704	26108	31118		
	20	9094	10600	12698	15395	18698	22614	27152			
10	10455	11942	14067	16836	20257	8837	9308	9731	10137	10561	
Power (W)	65					7713	8188	8594	8961	9323	9713
	60				6662	7164	7573	7923	8246	8575	8941
	55			5654	6203	6639	6993	7298	7587	7892	8246
	50	4656	5276	5759	6139	6449	6720	6985	7277	7629	
	45	4350	4903	5331	5666	5941	6188	6440	6730	7090	
	40	4039	4536	4919	5219	5470	5704	5954	6252	6631	
	35	3725	4176	4524	4800	5038	5270	5528	5845	6253	
	30	3408	3824	4148	4411	4646	4885	5162	5508		
	25	3089	3481	3791	4051	4293	4551	4857			
	20	2449	2824	3138	3424	3714					

Notes

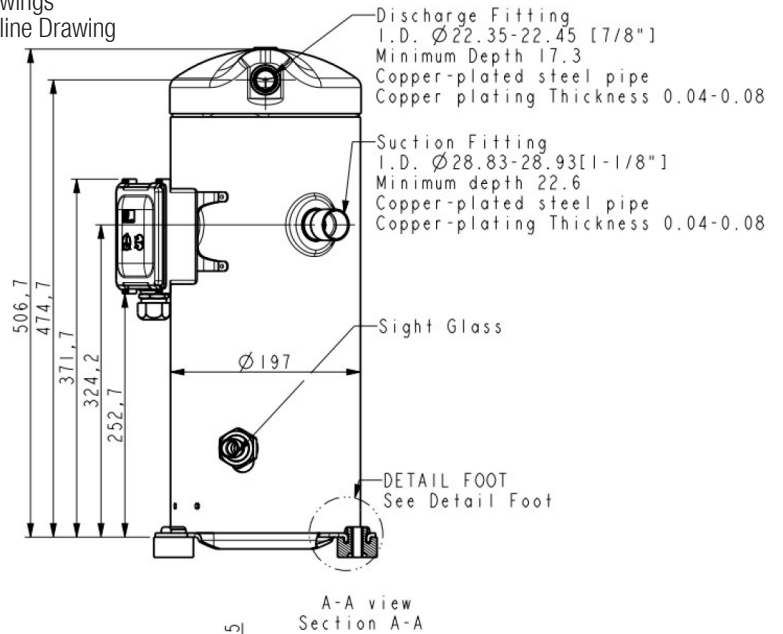
- » It is not allowed to perform vacuum in the system by using the refrigeration compressor. The compressor can start only after the refrigerant charged. In some cases, such as on the field site, if it is limited by the situation that can't charge the required volume of refrigerant, 50% of the required refrigerant is charged necessary before the compressor starts. Double check the system and make sure everything is under safe status, then power on the compressor and charge the remained refrigerant when the compressor is running.
- » It is not allowed to charge the refrigerant from the suction or discharge line closes to the compressor. The charge port should be arranged on the connection pipe of suction line accumulator or receiver, which is on the side far away to the compressor, to avoid the liquid refrigerant flood back.
- » Refrigerant charge limitation: the ratio between the weight of oil and refrigerant should be >=0.4.
- » It is not allowed to vacuum by compressor, not allowed to run the compressor without refrigerant, and not allowed to run the compressor on the reversed direction for long duration.
- » The compressor can only work with approved refrigerant.
- » The compressor is not allowed to work outside its envelope, the system should guarantee the suction line superheat and avoid the liquid refrigerant flood back.
- » When the suction and discharge plugs are removed, the assembly and brazing should be done in 15 minutes.
- » The frequently start/stop should be avoided. The suggested minimum continuous running time is 10 minutes to guarantee the safe oil level (>=50% initial charge volume), the suggested minimum interval duration between start and stop is 3 minutes.
- » The deviation of supplied voltage should be less than +/-10% of rated voltage.
- » A 90W crankcase heater is recommended to avoid the refrigerant migration during the off circle and flood start. The crankcase heater should be power on 12 hours earlier than the first start or restart after long duration off.
- » The system should be equipped with necessary protection devices, such as pressure, temperature, oil return, overcurrent and phase fault, etc.
- » The compressor is not allowed to lay down or place upside down during transportation, stock and installation. The maximum inclination is 15° when the compressor is running.

Ten Coefficients of Polynomial			
Expression	$z = p_0 + p_1*x + p_2*y + p_3*x^2 + p_4*x*y + p_5*y^2 + p_6*x^3 + p_7*x^2*y + p_8*x*y^2 + p_9*y^3$		
Description	z: Cooling Capacity(W) or Power (W) Specially: Heating Capacity(W)=Cooling Capacity(W)+Power (W) x: E.T. °C y: C.T. °C p0~p9: Coefficients of Polynomial		
Cooling Cap. Factor	Value	Power Factor	Value
p0	30835.017809	p0	4270.824561
p1	1047.864372	p1	116.704972
p2	-166.53331	p2	3.3881
p3	14.405249	p3	2.461827
p4	-2.342549	p4	-3.272723
p5	-0.797793	p5	1.321017
p6	0.010005	p6	0.043385
p7	-0.091559	p7	-0.042782
p8	-0.077124	p8	0.042093
p9	-0.004158	p9	-0.001244

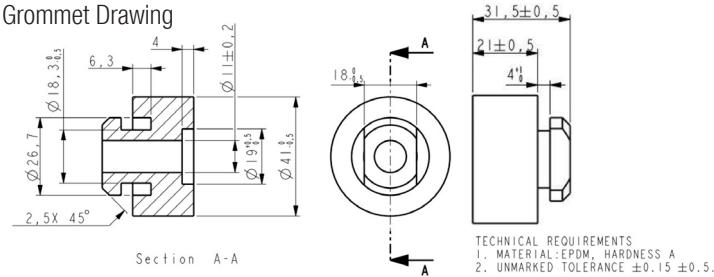
Notes: Coefficients of polynomial are based on the fitting results of some sample data, which can be used as a reference of compressor selection, but cannot completely eliminate customer's test.

Drawings

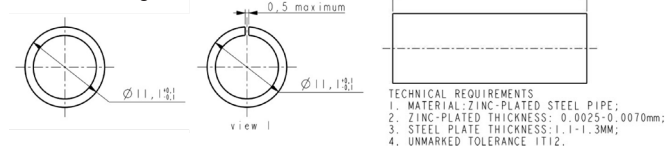
Outline Drawing



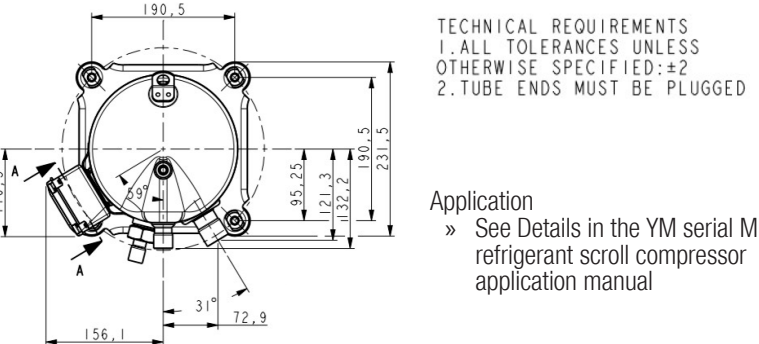
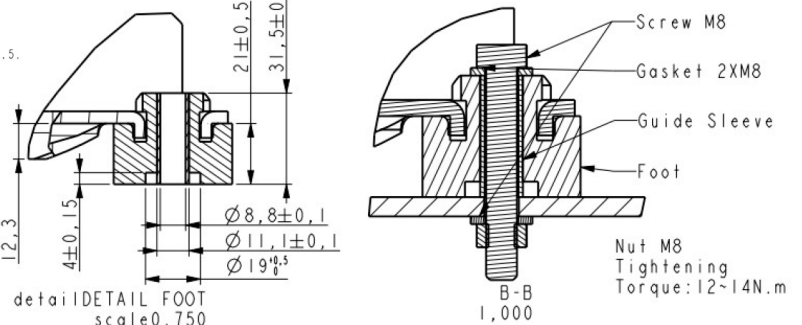
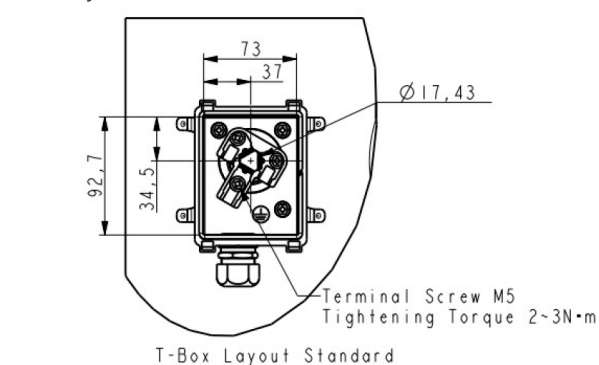
Grommet Drawing



Sleeve Drawing



T-Box Layout Standard



» Single Phase Compressor Wiring Diagram Only for single phase