INVOTECH
CENTRO DE DISTRIBUCIÓN MÉXICO
INNOVATION HVAC/R SOLUTION

SCROLL COMPRESSOR
TECHNICAL DATASHEET: YS28U3G-100

ISO 9001:2015

Basic Specification	
Model	YS28U3G-100
Type	Low Side Scroll Compressor
Application	Medium Temp. Refrigeration
Power	4 HP
Capacity (BTU/Hr)	26784
Refrigerant	R454C
Displacement (in^3/Rev)	4.14
Compressor Weight With Oil (lbs)	83.8
Oil Type	POE
Oil Kinematic Viscosity (cSt,104°F)	32
Oil Primary Charge (oz)	54.1
Oil Recharge (oz)	49.0
Rated Speed (r/min)	3500
IP Class Of Terminal Box	IP54
Compressor Colour	Black

Performance Specifications	
Cooling Capacity (BTU/hr)	26784±7.5%
Input Power (W)	3506±7.5%
EER (BTU/Wh)	7.64±7.5%
Rated Operating Current (A)	16.3
Oil Circulation Rate(%)	≤1%
Rated Sound Power (dBA)	73
Max. Sound Power (dBA)	78
Max. Vibration Displacement (mil)	≤3.9

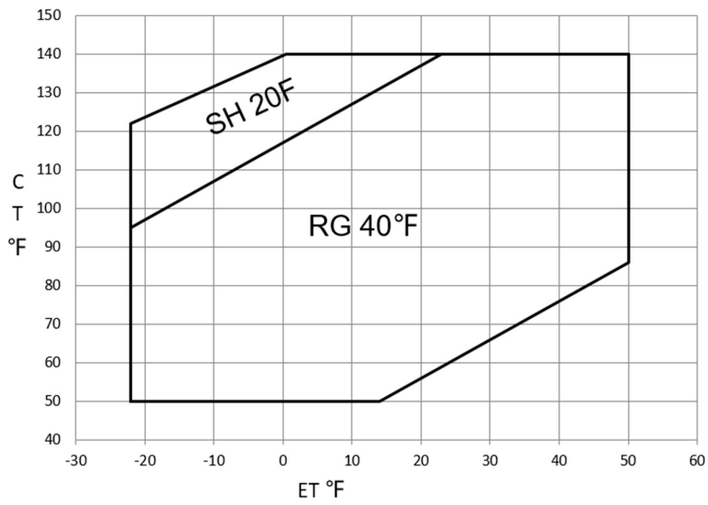
Test Condition	Rated Cooling	Oil Cirulation	Sound & Vibration
Evaporating Temp. (°F)	20	20	20
Condensing Temp. (°F)	120	120	120
Return Gas Temp. (°F)	40	40	40
Liquid Temp. (°F)	120	120	120
Ambient Temp. (°F)	95	95	95

Electric Parameters		
Motor Type		Three Phase Induction Motor
Motor Poles		2
Power Supply		208-230V/1~/60Hz
Locked Rotor Current (A)		140
Max. Operating Current (A)		26.1
Motor Insulation Class		B
Line to Line Resistance (Ω,77°F)	UW(RC)	0.414± 10%
	UV(SC)	0.849± 10%
	VW(RS)	1.255± 10%
Lowest Starting Voltage (V)		177
Start Capacitor(μF/V)		250/330

Start Relay	HLR3800-3F3C
Run Capacitor(μF/V)	100/450
Dielectric Strength	2000VAC / 1s / 60Hz ≤5mA
Insulation Resistance (MΩ)	≥20
Ground Resistance(Ω)	≤0.1

Safety Operating Limitation	
Tightness Test Pressure (psig)	551-580
High Side Max Running Pressure(psig)	328.8
Low Side Max Running Pressure(psig)	76.3
Discharge Temp. Limit (°F)	≤257 4.72in to Compressor Discharge Connection And Well Insulated

Operating Envelope



Performance Table									
Item	E.T.(°C) / C.T.(°C)	-20	-10	0	10	20	30	40	50
Cooling Cap. (BTU/hr)	140			12110	16909	22103	27975	34800	42855
	130		10666	15143	19878	25132	31189	38323	46810
	120	8689	12966	17333	22080	27472	33790	41308	50304
	110	10442	14561	18894	23732	29338	35994	43975	53557
	100	11614	15652	20028	25033	30930	38000	46519	56764
	90	12415	16450	20946	26195	32460	40022	49158	60142
	80	13050	17158	21850	27420	34129	42259	52087	63887
	70	13728	17986	22952	28920	36151	44927	55525	68219
	60	14653	19137	24453	30896	38724	48222	59665	73329
	50	16034	20823	26566	33561	42065	52363	64730	79441
Power (W)	140			3897	4078	4242	4392	4530	4660
	130		3374	3548	3705	3849	3982	4106	4225
	120	2928	3095	3245	3382	3509	3627	3741	3851
	110	2707	2850	2981	3101	3213	3321	3426	3531
	100	2511	2634	2747	2854	2955	3054	3154	3257
	90	2332	2438	2537	2632	2725	2819	2917	3021
	80	2162	2255	2343	2430	2518	2610	2708	2816
	70	1994	2075	2155	2237	2323	2416	2518	2633
	60	1820	1893	1968	2048	2135	2232	2341	2465
	50	1632	1700	1773	1854	1945	2048	2167	2304

» Performance Data Sheet Is Based On Limited Compressor Tests and Data Treatment, It Is Only a Reference for Compressor Selection.

» Return gas temperature within Envelope is 40°F, and Liquid Subcooling is 0F;

Compressor Protection
Motor Protector

Internal Protector For Motor Protection	
Open Temp.(°F)	302±9
Close Temp.(°F)	176±16
Short Time Trip	155A 3-10s

Accessory

Item	Drawing/Standard No.	Quantity
Grommet	070-0003-00	4
Sleeve	010-0014-00	4
StartBox	110-0076-10	1

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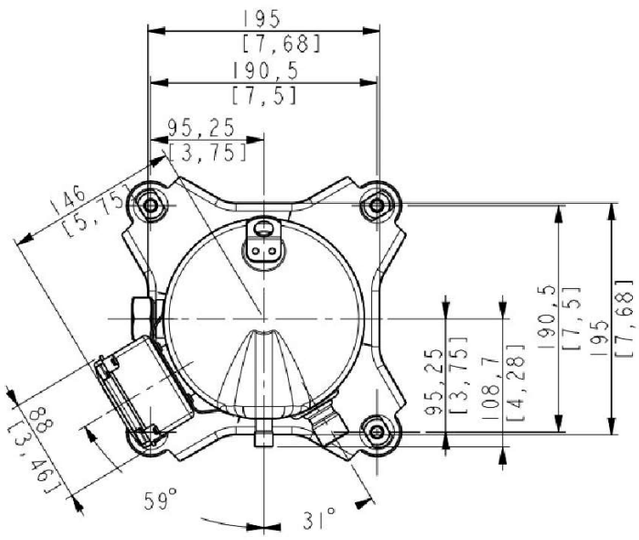
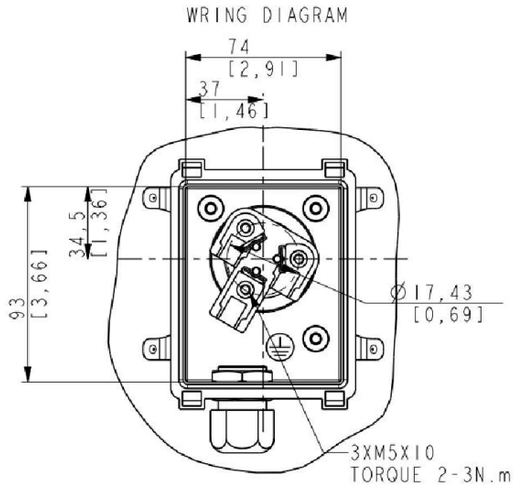
Attentions

- » It is not allowed to perform vacuum in the system by using the refrigeration compressor. The compressor can start only after the refrigerant is charged;
- » It is not allowed to charge the refrigerant from the suction o discharge line closes to the compressor. The charge port should be arranged on the connection pipe of suction line accumulator or receiver, which is far away from the compressor, to avoid the liquid refrigerant flooding back;
- » The refrigerant charge amount complies with local regulations;
- » It is not allowed to run compressor in vacuum, not allowed to run compressor without refrigerant, and not allowed to run compressor in the reversed direction for long duration;
- » The compressor can only work with approved refrigerants;
- » The compressor is not allowed to work outside its envelope. System design should guarantee the suction line superheat and avoid the liquid refrigerant flooding back;
- » When the suction and discharge plugs are removed, the assembly and brazing should be done in 15 minutes;
- » The frequently start/stop compressor 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 between start and stop is 3 minutes.
- » A 70W crankcase heater is recommended to avoid the refrigerant migration during the off circle and flooded start. The crankcase heater should be powered on 12 hours earlier before the first start or restart after long duration off;
- » The system should be equipped with necessary protection devices for 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.

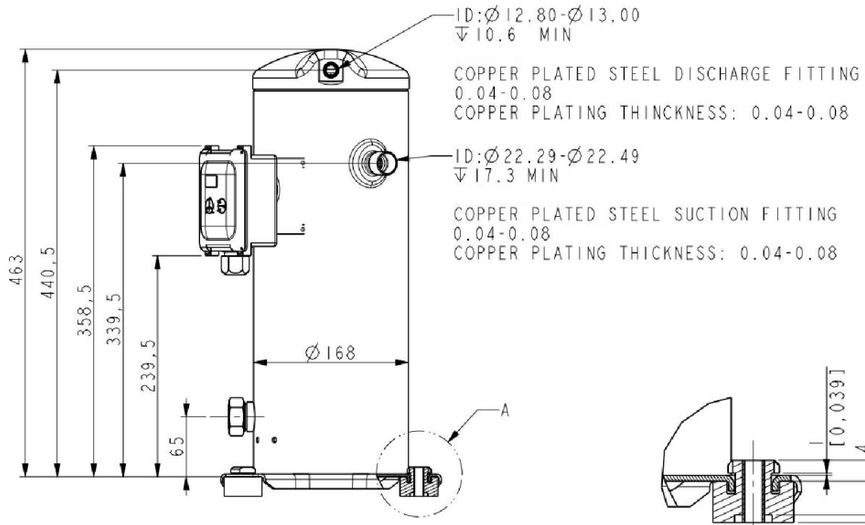


Wring Diagram

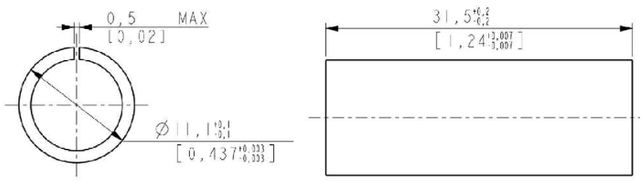


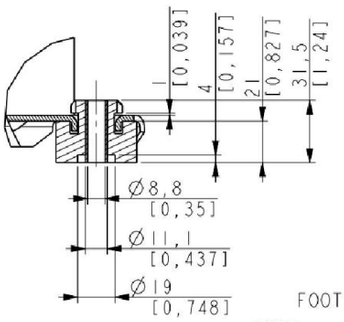
Compressor Drawings

Compressor Outline Drawing

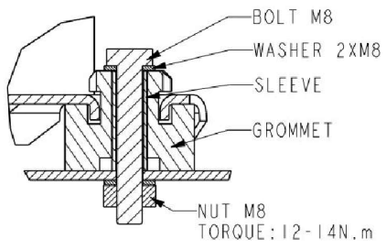


Mounting Sleeve Drawing





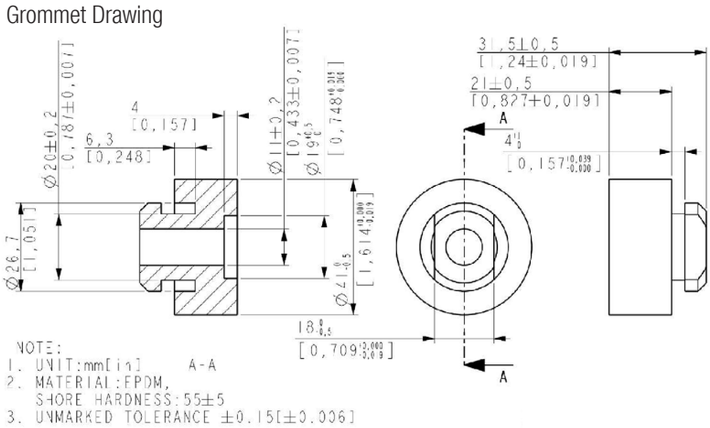
MOUNTING FEET



FOOT INSTALLATION RECOMMENDATION

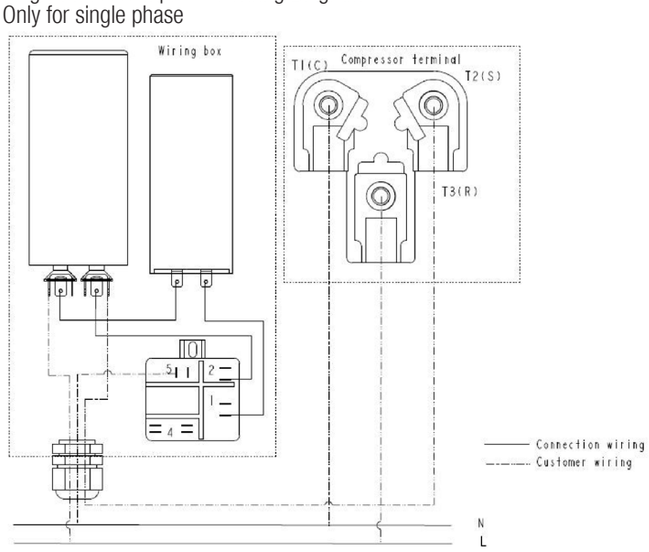
NOTE
1.UNIT:mm[in]
1.ALL TOLERANCES UNLESS OTHERWISE SPECIFIED:±3[0.12],±3°[0.12°]

Grommet Drawing



Single Phase Compressor Wiring Diagram

Only for single phase



Application Guideline

- » See Details in the Application Guidelines for Invotech YS****U***_R454C.