



# INVOTECH

YM/YSM Series Scroll Compressors

**Special Design For  
Medium Temperature Application**

**50Hz**





## **Suzhou Invotech Scroll Technologies Co., Ltd.**

is a high-tech company.

Our company is founded by a group of engineers who formerly worked for the world's largest manufacturer of scroll compressors. We are a team of passionate and highly qualified professionals with more than 15 years of experience in this industry. Our company's products in addition to impressive sales performance in the domestic market, also sales to Asia, Africa, Europe, South America, North America and other more than 30 countries and regions.

Our company provides specialized scroll compressors and related technical consulting services for heat pump water heaters, refrigeration and air conditioning, chillers and other applications. We are willing to provide our customers with jointly developed or Turn-Key solutions to meet their needs.

Our vision: to become a global first class solution provider by providing innovative products for the climate and energy industries.

For more information please visit:

[www.invotech.cn](http://www.invotech.cn)

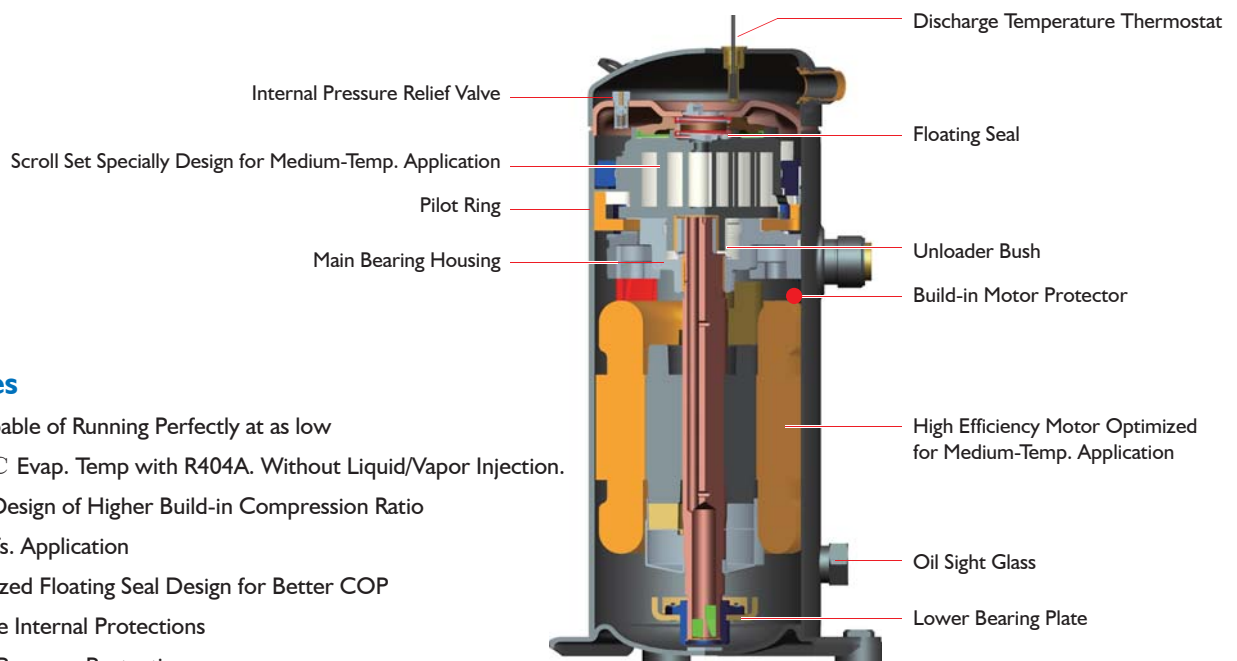


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# YM Series

## Scroll Compressors With Dual-Compliance For Medium Temperature Application

- Specific Design For Refs. Application, Not Only The Scroll Set But Also The Unit, Precise Product-Definition Based On Customer's Need
- Both Build-in Radius and Axial Compliance Design, Improved Floating Seal Design for Better Energy Efficiency
- Excellent Discharge Temperature Management to Stretch Operation Envelope
- Accurate Calculation of Load and Sealing Force for Running Sound Optimization
- High Efficiency Motor Design



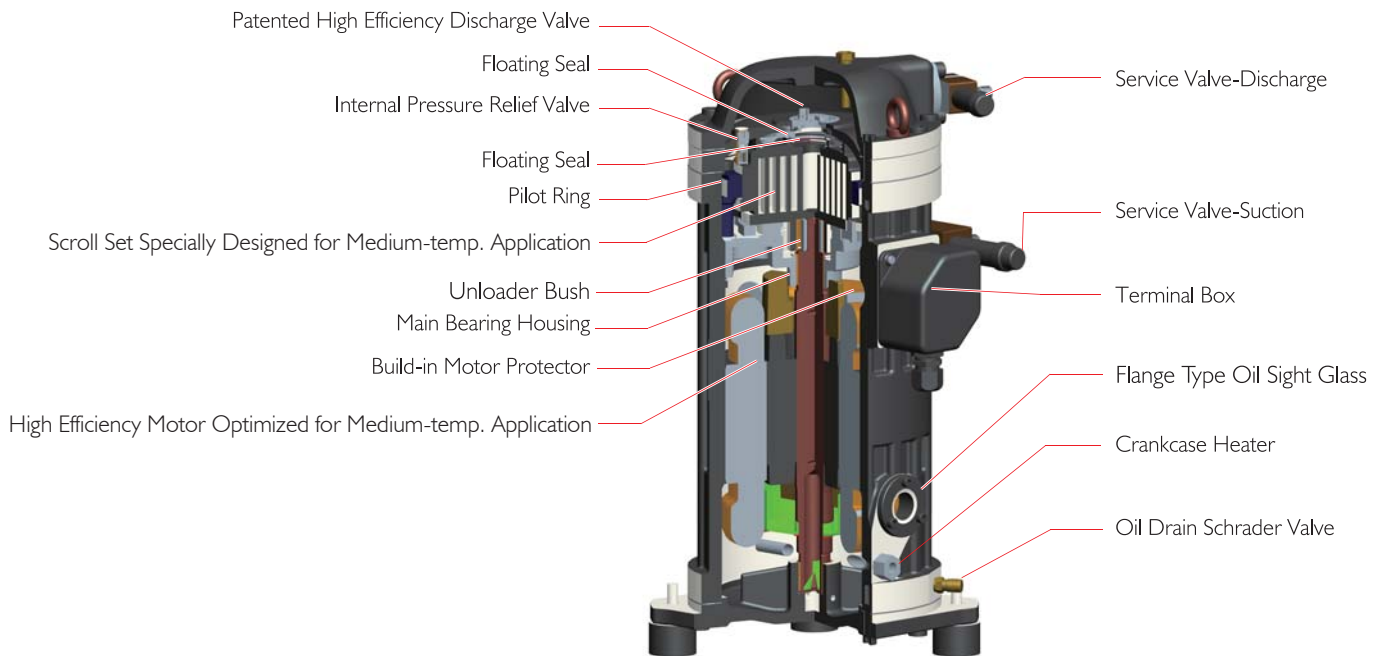
### Features

- Be Capable of Running Perfectly at as low as  $-30^{\circ}\text{C}$  Evap. Temp with R404A. Without Liquid/Vapor Injection.
- Scroll Design of Higher Build-in Compression Ratio For Refs. Application
- Optimized Floating Seal Design for Better COP
- Multiple Internal Protections
  - High Pressure Protection
  - Overload Protection

# YSM Series

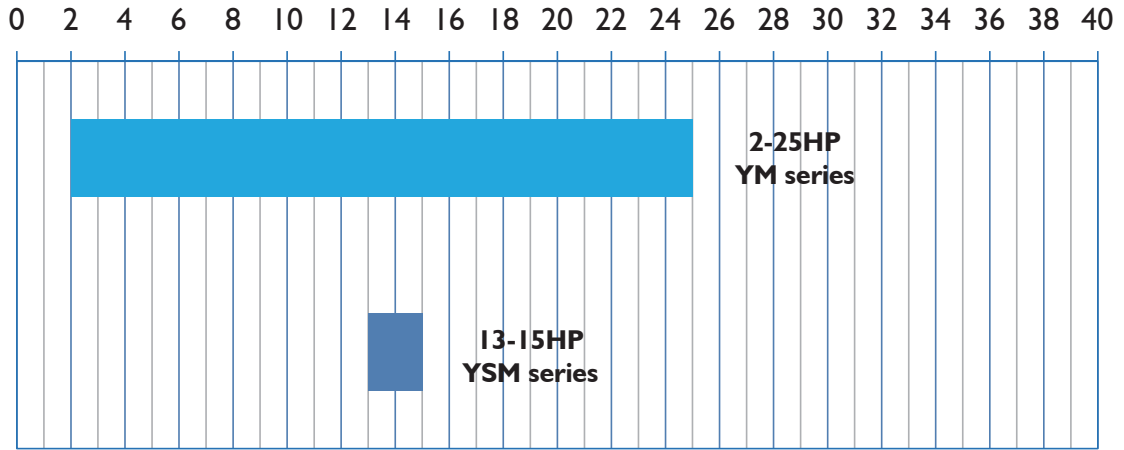
## Semi-Hermetic Scroll Compressors With Dual-Compliance For Medium Temperature Application

- Specific Design For Refs. Application, Not Only The Scroll Set But Also The Unit, Precise Product-Definition Based On Customer's Need
- Both Build-in Radius and Axial Compliance Design, Improved Floating Seal Design for Better Energy Efficiency
- Excellent Discharge Temperature Management to Stretch Operation Envelope
- Accurate Calculation of Load and Sealing Force for Running Sound Optimization
- High Efficiency Motor Design
- Repairable

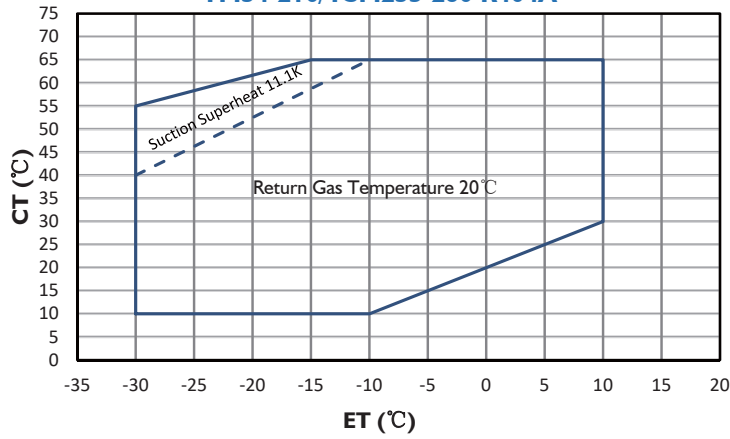


# YM/YSM Series

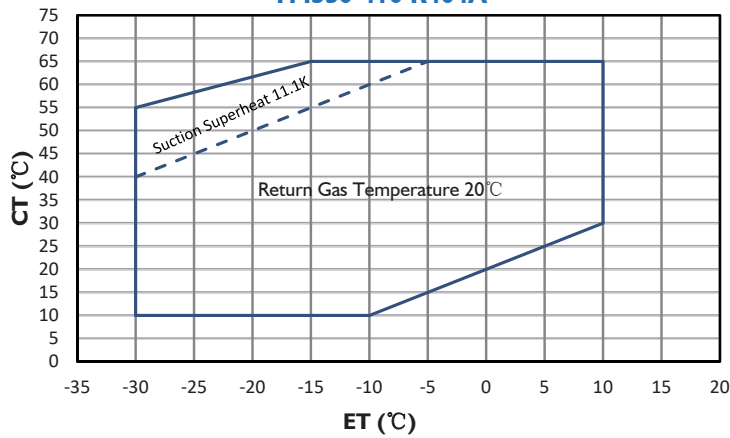
## Models / Operating Envelope



**YM34-210/YSM235-260 R404A**

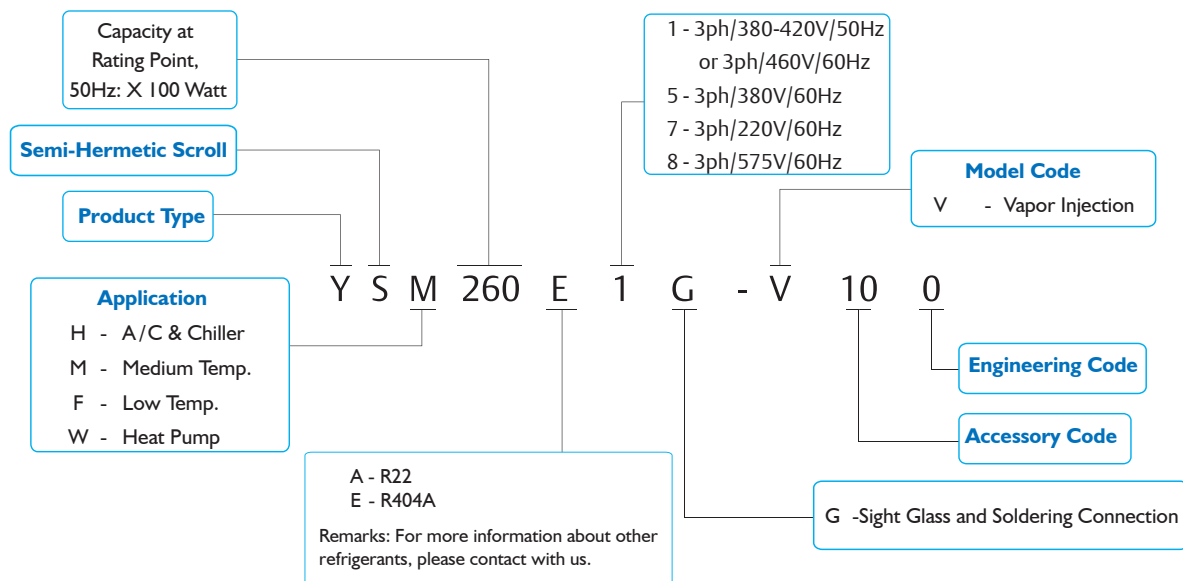
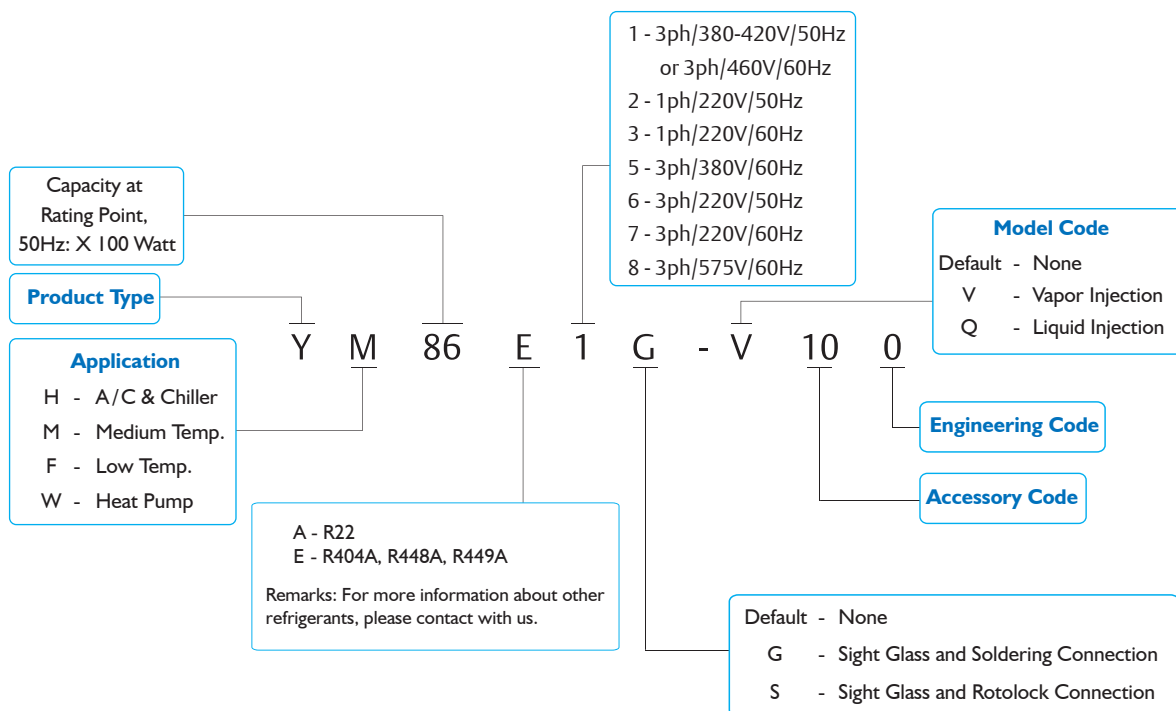


**YM350-410 R404A**



# YM/YSM Series

## Nomenclature



# YM/YSM Series

## Specifications

# 50Hz

# R404A

Model	YM34E2G-102	YM43E2G-102	YM49E2G-102	YM60E2G-100	YM70E2G-100	YM86E2G-100	YM34E1G-100	YM43E1G-100	YM49E1G-100	YM60E1G-100	YM70E1G-100	YM86E1G-100
Electricity	220V/1~/50Hz						380-420V/3~/50Hz or 460V/3~/60Hz					
Power in Horse Power (HP)	2	2.5	3	3.5	4	5	2	2.5	3	3.5	4	5
Displacement (cc/rev)	33.3	42	46.6	58	67.8	83.3	33.3	42	46.6	58	67.8	83.3
Refrigerant	R404A											
Cooling Capacity (W)	3560	4250	4840	6100	6920	8500	3560	4250	4840	6100	6920	8500
Power in Watt (W)	2070	2361	2689	3220	3601	4427	2034	2297	2547	3220	3530	4250
COP (W/W)	1.72	1.76	1.8	1.89	1.92	1.92	1.75	1.85	1.9	1.89	1.96	2
Running current (A)	9.4	11.2	12.7	14.6	16.9	21.2	3.5	4.8	5.1	6.5	7	8
LRA (A)	76	76	76	109	109	140	22	45	45	60	60	60
MOC (A)	16.2	17.2	19	24.5	28.1	33.4	5.2	6.4	6.9	8.5	10.3	12.2
Crankcase Heater (W)	70											
Fitting Dimensions (mm)												
Discharge Tube(ID)	12.87-12.97											
Suction Tube(ID)	22.35-22.45											
Product Dimensions (mm)												
Length (L)	239											
Width (W)	239											
Height (H)	418					463	418					
Feet Dimensions (hole)	190.5x190.5(8.8)											
Oil Type	POE											
Initial Charge Volume (L)	1.4											
Recharge Volume (L)	1.25											
Max Pressure (MPa)												
High Side	3.2											
Low Side	2											
Weight (kg)	31	31	31	33	33	38	29	30	30	31	31	31

ET -6.7°C, CT 48.9°C, RG 4.4°C, No Subcooling



Model	YM102E1G -100	YM115E1G -100	YM132E1G -100	YM158E1G -100	YM182E1G -100	YM200E1G -100	YM210E1G -100	YSM235E1 G-100	YSM260E1 G-100	YM350E1S -100	YM410E1S -100
Electricity	380-420V/3~/50Hz or 460V/3~/60Hz										
Power in Horse Power (HP)	6	7	8	9	10	12	13	13	15	22	25
Displacement (cc/rev)	98.3	108	123	145.4	167.2	189.1	197.1	216.7	244.3	332.6	392
Refrigerant	R404A										
Cooling Capacity (W)	10100	11328	12893	15842	17856	19536	20544	23218	25688	33300	39200
Power in Watt (W)	5050	5600	6447	7921	8928	9671	10170	11900	13150	16650	19400
COP (W/W)	2	2.02	2	2	2	2.02	2.02	1.95	1.95	2	2.02
Running current (A)	9.4	11.2	12.1	13.6	15.5	16.3	16.9	21.5	23	29.4	34.5
LRA (A)	65	85	117	117	121	121	121	148.5	148.5	205	266
MOC (A)	14.3	17.1	18.4	21	23.6	26.5	27.6	28.9	32.8	41	51
Crankcase Heater (W)	70		90				75		140		
Fitting Dimensions (mm)											
Discharge Tube(ID)	12.87-12.97		22.35-22.45				22.50-22.60		1-3/4"-12UN		
Suction Tube(ID)	22.35-22.45		28.83-28.93				35.20-35.30		2-1/4"-12UN		
Product Dimensions (mm)											
Length (L)	239		272				318		350.9		
Width (W)	239		248				308		326.2		
Height (H)	463		506				584		676.7		
Feet Dimensions (hole)	190.5x190.5(8.8)						190.5x190.5(10.2)		232x232(11.0)		
Oil Type	POE										
Initial Charge Volume (L)	1.6		2.7		3		3.4		5.5		
Recharge Volume (L)	1.45		2.55		2.85		3.25		5.3		
Max Pressure (MPa)											
High Side	3.2										
Low Side	2										
Weight (kg)	33	38	53	53	54	54	54	90	90	100	104

ET -6.7°C, CT 48.9°C, RG 4.4°C, No Subcooling

Model		CT (°C)	ET (°C)								
			-30	-25	-20	-15	-10	-5	0	5	10
YM34E2G-102	Capacity (W)	60			1837	2245	2704	3228	3834	4538	5355
		50	1490	1887	2325	2819	3386	4041	4800	5679	6694
		40	1777	2215	2716	3297	3971	4757	5669	6723	7936
		30	2020	2499	3064	3729	4512	5428	6493	7723	9133
	Power (W)	60			2243	2350	2451	2545	2632	2711	2781
		50	1705	1800	1892	1981	2067	2149	2226	2296	2360
		40	1448	1523	1599	1674	1748	1820	1890	1955	2017
		30	1235	1295	1357	1421	1486	1552	1617	1681	1743
YM43E2G-102	Capacity (W)	60			2194	2682	3229	3856	4579	5420	6396
		50	1780	2254	2777	3368	4044	4827	5733	6783	7996
		40	2122	2646	3245	3938	4744	5682	6771	8030	9479
		30	2412	2985	3659	4455	5390	6484	7756	9224	10909
	Power (W)	60			2618	2743	2861	2971	3072	3164	3246
		50	1990	2101	2209	2313	2413	2509	2598	2680	2755
		40	1690	1778	1866	1954	2041	2125	2206	2283	2354
		30	1441	1511	1584	1659	1735	1812	1888	1963	2035
YM49E2G-102	Capacity (W)	60			2500	3056	3680	4394	5218	6176	7289
		50	2028	2569	3165	3837	4609	5500	6533	7730	9111
		40	2419	3015	3697	4487	5406	6475	7716	9151	10801
		30	2749	3401	4170	5076	6142	7389	8838	10511	12431
	Power (W)	60			2917	3056	3188	3310	3423	3526	3616
		50	2218	2341	2461	2577	2689	2795	2895	2986	3070
		40	1883	1981	2080	2178	2274	2368	2458	2543	2623
		30	1606	1684	1765	1848	1933	2019	2103	2187	2268
YM60E2G-102	Capacity (W)	60			3062	3742	4506	5380	6390	7563	8925
		50	2484	3145	3875	4699	5643	6735	8000	9465	11157
		40	2961	3692	4527	5494	6619	7928	9448	11205	13226
		30	3366	4165	5106	6216	7521	9047	10822	12871	15221
	Power (W)	60			3929	4114	4289	4453	4603	4740	4861
		50	2996	3160	3320	3475	3624	3766	3899	4021	4132
		40	2550	2681	2812	2943	3071	3196	3316	3430	3537
		30	2181	2284	2392	2504	2617	2731	2844	2955	3063
YM70E2G-100	Capacity (W)	60			3572	4366	5257	6276	7455	8823	10412
		50	2898	3670	4521	5482	6584	7857	9333	11042	13016
		40	3455	4307	5282	6410	7722	9249	11023	13073	15431
		30	3927	4859	5957	7252	8774	10555	12626	15016	17758
	Power (W)	60			3890	4075	4250	4413	4564	4700	4821
		50	2957	3121	3281	3436	3585	3726	3859	3982	4093
		40	2510	2641	2773	2903	3032	3156	3277	3391	3498
		30	2141	2245	2353	2464	2577	2691	2804	2915	3023
YM86E2G-100	Capacity (W)	60			4388	5364	6459	7711	9159	10840	12792
		50	3560	4509	5554	6735	8089	9653	11466	13566	15991
		40	4245	5292	6489	7875	9487	11364	13542	16061	18958
		30	4824	5970	7319	8909	10780	12968	15512	18449	21817
	Power (W)	60			4800	5029	5245	5447	5633	5801	5950
		50	3649	3851	4049	4240	4424	4599	4763	4914	5051
		40	3098	3260	3422	3583	3741	3896	4044	4185	4316
		30	2642	2770	2904	3041	3181	3321	3461	3598	3731

Remark:

	Suction Superheat 11.1K, No Subcooling
	RG 20°C, No Subcooling

Model		CT (°C)	ET (°C)								
			-30	-25	-20	-15	-10	-5	0	5	10
YM34E1G-100	Capacity (W)	60			1837	2245	2704	3228	3834	4538	5355
		50	1490	1887	2325	2819	3386	4041	4800	5679	6694
		40	1777	2215	2716	3297	3971	4757	5669	6723	7936
		30	2020	2499	3064	3729	4512	5428	6493	7723	9133
	Power (W)	60			2214	2324	2427	2524	2612	2693	2764
		50	1664	1760	1855	1946	2034	2118	2196	2269	2334
		40	1400	1477	1555	1632	1708	1782	1852	1920	1983
		30	1182	1243	1307	1373	1440	1507	1574	1639	1703
YM43E1G-100	Capacity (W)	60			2194	2682	3229	3856	4579	5420	6396
		50	1780	2254	2777	3368	4044	4827	5733	6783	7996
		40	2122	2646	3245	3938	4744	5682	6771	8030	9479
		30	2412	2985	3659	4455	5390	6484	7756	9224	10909
	Power (W)	60			2502	2625	2742	2851	2952	3043	3124
		50	1880	1989	2096	2199	2299	2393	2482	2563	2638
		40	1582	1669	1757	1844	1930	2013	2093	2169	2240
		30	1336	1405	1477	1551	1627	1703	1778	1852	1924
YM49E1G-100	Capacity (W)	60			2500	3056	3680	4394	5218	6176	7289
		50	2028	2569	3165	3837	4609	5500	6533	7730	9111
		40	2419	3015	3697	4487	5406	6475	7716	9151	10801
		30	2749	3401	4170	5076	6142	7389	8838	10511	12431
	Power (W)	60			2776	2913	3043	3164	3275	3376	3466
		50	2085	2207	2325	2440	2550	2655	2753	2844	2926
		40	1755	1852	1949	2046	2141	2233	2322	2407	2486
		30	1482	1559	1639	1721	1805	1889	1973	2055	2135
YM60E1G-100	Capacity (W)	60			3062	3742	4506	5380	6390	7563	8925
		50	2484	3145	3875	4699	5643	6735	8000	9465	11157
		40	2961	3692	4527	5494	6619	7928	9448	11205	13226
		30	3366	4165	5106	6216	7521	9047	10822	12871	15221
	Power (W)	60			3417	3586	3745	3894	4032	4156	4266
		50	2567	2716	2862	3004	3140	3269	3389	3501	3602
		40	2160	2280	2399	2518	2635	2749	2859	2963	3060
		30	1824	1919	2017	2119	2222	2325	2429	2530	2628
YM70E1G-100	Capacity (W)	60			3572	4366	5257	6276	7455	8823	10412
		50	2898	3670	4521	5482	6584	7857	9333	11042	13016
		40	3455	4307	5282	6410	7722	9249	11023	13073	15431
		30	3927	4859	5957	7252	8774	10555	12626	15016	17758
	Power (W)	60			3851	4041	4221	4389	4544	4684	4808
		50	2893	3061	3226	3385	3538	3684	3820	3946	4060
		40	2435	2569	2704	2838	2970	3098	3222	3339	3449
		30	2056	2162	2273	2388	2504	2621	2737	2851	2962
YM86E1G-100	Capacity (W)	60			4388	5364	6459	7711	9159	10840	12792
		50	3560	4509	5554	6735	8089	9653	11466	13566	15991
		40	4245	5292	6489	7875	9487	11364	13542	16061	18958
		30	4824	5970	7319	8909	10780	12968	15512	18449	21817
	Power (W)	60			4628	4857	5073	5275	5461	5629	5779
		50	3477	3679	3877	4069	4253	4427	4591	4742	4879
		40	2926	3088	3250	3411	3570	3724	3872	4013	4145
		30	2471	2599	2732	2870	3009	3150	3289	3427	3560

Remark:

	Suction Superheat 11.1K, No Subcooling
	RG 20°C, No Subcooling

Model		CT (°C)	ET (°C)								
			-30	-25	-20	-15	-10	-5	0	5	10
YM102E1G-100	Capacity (W)	60			5205	6362	7660	9146	10863	12857	15172
		50	4222	5347	6588	7988	9594	11449	13600	16090	18966
		40	5034	6276	7697	9340	11252	13478	16062	19049	22485
		30	5722	7080	8680	10567	12785	15380	18397	21881	25876
	Power (W)	60			5489	5761	6017	6256	6477	6676	6854
		50	4124	4364	4598	4826	5044	5251	5445	5625	5787
		40	3471	3662	3855	4046	4234	4417	4593	4760	4916
		30	2930	3082	3241	3403	3569	3736	3901	4064	4222
YM115E1G-100	Capacity (W)	60			5868	7172	8637	10311	12247	14495	17106
		50	4760	6029	7427	9006	10816	12908	15333	18141	21384
		40	5676	7076	8677	10531	12686	15196	18109	21477	25350
		30	6451	7982	9786	11914	14415	17341	20742	24670	29174
	Power (W)	60			6412	6729	7028	7308	7565	7799	8006
		50	4817	5097	5371	5637	5891	6133	6360	6570	6760
		40	4054	4278	4503	4726	4945	5159	5365	5560	5742
		30	3423	3600	3785	3976	4169	4364	4557	4747	4932
YM132E1G-100	Capacity (W)	60			6735	8233	9913	11836	14058	16638	19635
		50	5464	6920	8525	10337	12415	14817	17600	20823	24545
		40	6515	8122	9960	12087	14562	17442	20786	24652	29098
		30	7405	9163	11233	13675	16546	19904	23808	28317	33487
	Power (W)	60			7043	7391	7719	8026	8309	8566	8793
		50	5291	5599	5900	6191	6471	6737	6986	7216	7425
		40	4453	4699	4945	5191	5432	5666	5892	6107	6307
		30	3760	3954	4157	4367	4579	4793	5005	5214	5417
YM158E1G-100	Capacity (W)	60			8266	10104	12166	14526	17253	20420	24097
		50	6706	8493	10463	12687	15237	18184	21600	25555	30123
		40	7996	9968	12224	14834	17871	21406	25510	30254	35711
		30	9088	11245	13786	16783	20306	24428	29219	34752	41098
	Power (W)	60			8643	9070	9474	9851	10198	10512	10791
		50	6494	6871	7240	7598	7942	8268	8574	8856	9112
		40	5465	5767	6069	6370	6666	6954	7231	7494	7741
		30	4614	4853	5102	5359	5620	5882	6143	6399	6648
YM182E1G-100	Capacity (W)	60			9287	11351	13668	16319	19383	22940	27072
		50	7534	9541	11754	14253	17118	20429	24266	28710	33842
		40	8983	11199	13733	16666	20078	24049	28659	33989	40120
		30	10210	12633	15488	18854	22813	27444	32827	39043	46172
	Power (W)	60			9586	10060	10508	10926	11311	11659	11969
		50	7202	7621	8030	8427	8808	9170	9509	9822	10107
		40	6061	6396	6732	7066	7394	7713	8020	8312	8585
		30	5118	5383	5659	5944	6233	6524	6813	7097	7373

Remark:

	Suction Superheat 11.1K, No Subcooling
	RG 20°C, No Subcooling

Model		CT (°C)	ET (°C)								
			-30	-25	-20	-15	-10	-5	0	5	10
YM200E1G-100	Capacity (W)	60			10205	12474	15020	17933	21300	25209	29750
		50	8279	10485	12917	15663	18811	22449	26666	31550	37189
		40	9872	12306	15091	18314	22063	26427	31494	37351	44088
	Power (W)	30	11219	13883	17020	20719	25069	30158	36073	42904	50738
		60			10535	11055	11547	12006	12429	12813	13152
		50	7915	8375	8825	9261	9679	10077	10449	10794	11106
		40	6660	7028	7398	7764	8125	8476	8814	9134	9434
YM210E1G-100	Capacity (W)	30	5624	5915	6219	6532	6850	7169	7487	7799	8102
		60			10716	13097	15771	18829	22365	26470	31237
		50	8693	11009	13563	16446	19751	23572	28000	33127	39048
		40	10365	12922	15846	19230	23167	27748	33068	39219	46292
	Power (W)	30	11780	14577	17871	21755	26323	31666	37877	45049	53275
		60			10968	11510	12022	12500	12941	13340	13694
		50	8240	8719	9188	9642	10077	10491	10879	11238	11563
YSM235E1G-100	Capacity (W)	40	6934	7317	7702	8084	8459	8825	9176	9510	9822
		30	5855	6158	6475	6800	7131	7464	7795	8120	8435
		60			11991	14657	17649	21071	25027	29621	34956
		50	9727	12320	15177	18404	22103	26378	31333	37071	43697
	Power (W)	40	11599	14460	17732	21519	25924	31052	37005	43887	51803
		30	13183	16312	19998	24345	29456	35435	42386	50412	59617
		60			12928	13567	14171	14734	15253	15724	16141
YSM260E1G-100	Capacity (W)	50	9713	10278	10830	11365	11879	12366	12824	13246	13630
		40	8174	8625	9078	9529	9971	10402	10816	11210	11578
		30	6902	7259	7632	8016	8406	8798	9188	9571	9943
		60			13267	16216	19526	23313	27690	32772	38675
	Power (W)	50	10762	13630	16792	20362	24454	29184	34666	41015	48345
		40	12833	15998	19619	23808	28682	34355	40942	48556	57314
		30	14585	18047	22126	26935	32590	39205	46895	55775	65959
Power (W)	60			14304	15010	15678	16302	16876	17397	17858	
	50	10746	11371	11982	12574	13142	13682	14188	14656	15080	
	40	9043	9543	10044	10542	11032	11508	11967	12402	12810	
	30	7636	8031	8444	8868	9300	9734	10166	10590	11001	

Remark:

	Suction Superheat 11.1K, No Subcoolig
	RG 20°C, No Subcooling

Model	CT (°C)	ET (°C)									
		-30	-25	-20	-15	-10	-5	0	5	10	
YM350E1S-100	Capacity (W)	60			19926	23948	28782	34652	41780	50391	60706
		50	15289	19274	23789	29059	35306	42754	51625	62143	74531
		40	17820	22443	27762	34001	41381	50127	60462	72608	86789
		30	20468	25451	31294	38221	46455	56220	67738	81233	96928
	Power (W)	60			16602	17842	18997	20074	21076	22010	22800
		50	12186	13386	14500	15534	16494	17384	18210	18978	19692
		40	10870	11847	12750	13582	14349	15057	15710	16315	16877
		30	9661	10420	11113	11746	12325	12854	13339	13784	14197
YM410E1S-100	Capacity (W)	60			23170	27846	33467	40293	48582	58594	70589
		50	17778	22411	27662	33790	41054	49714	60029	72260	86664
		40	20721	26097	32282	39536	48118	58287	70304	84428	100917
		30	23801	29594	36388	44443	54018	65372	78765	94457	112707
	Power (W)	60			19304	20746	22090	23341	24507	25593	26605
		50	14170	15565	16860	18063	19179	20214	21175	22067	22898
		40	12640	13776	14825	15792	16685	17508	18268	18971	19624
		30	11234	12116	12922	13659	14331	14946	15510	16028	16508

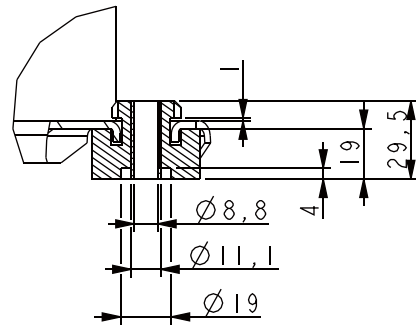
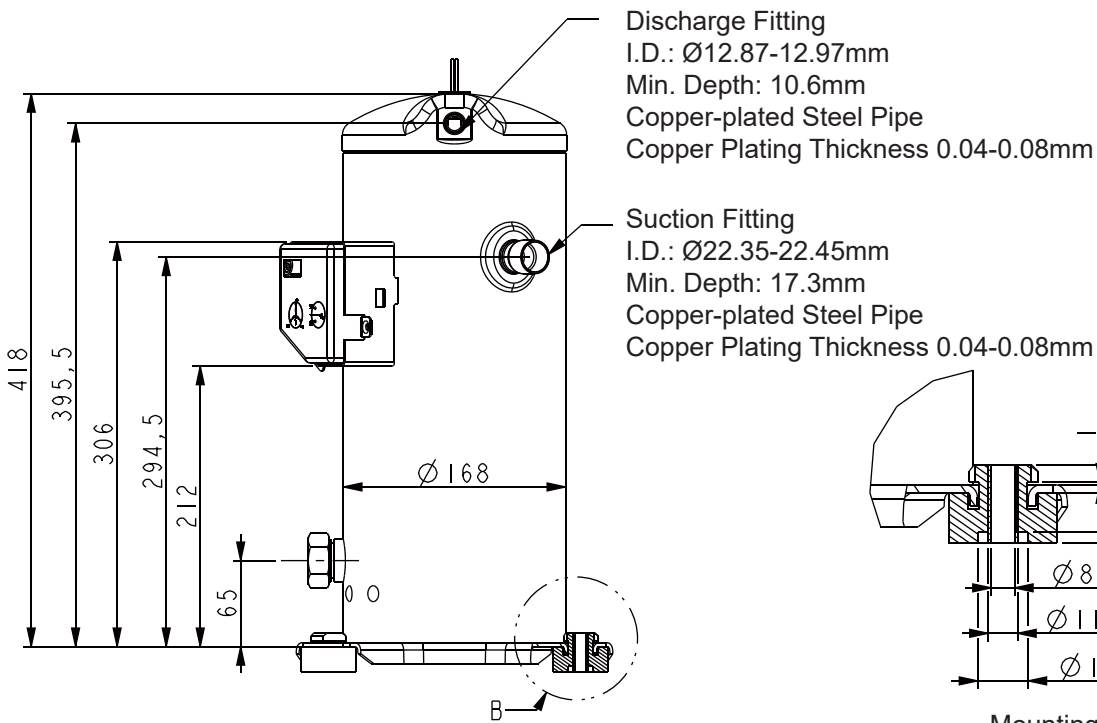
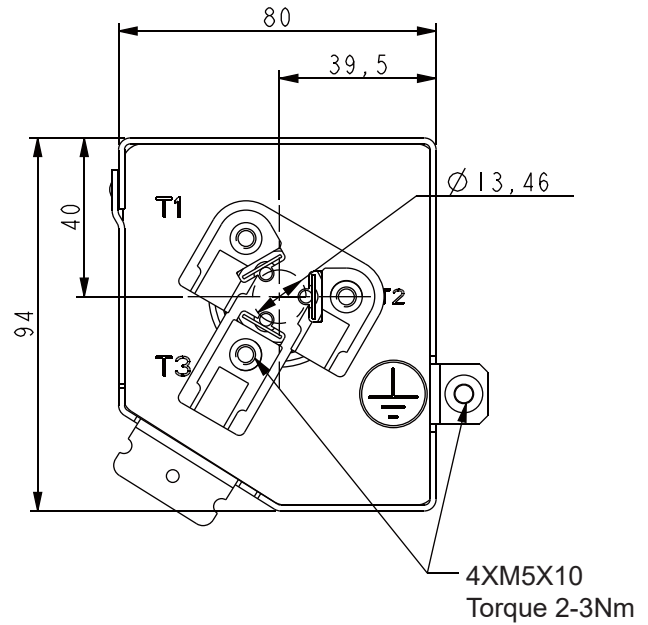
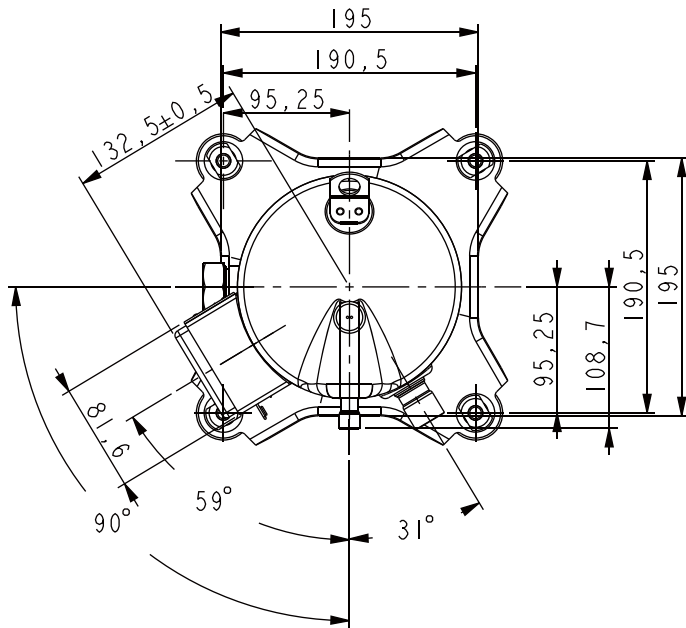
Remark:

	Suction Superheat 11.1K, No Subcooling
	RG 20°C, No Subcooling

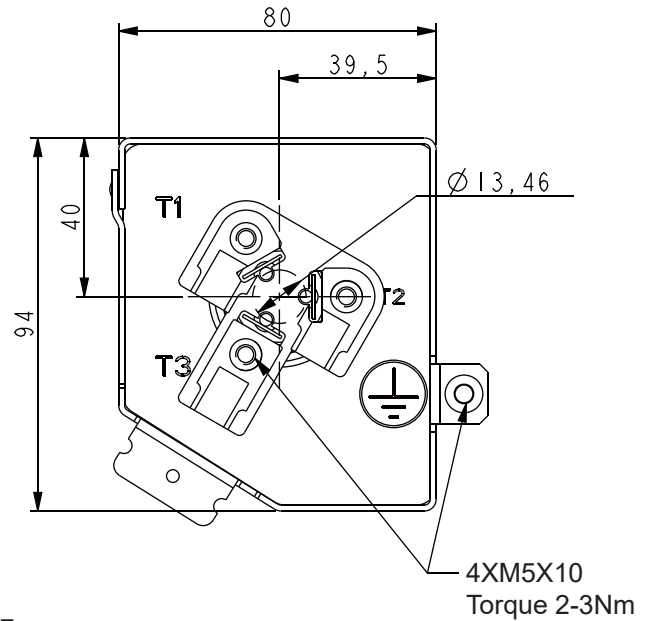
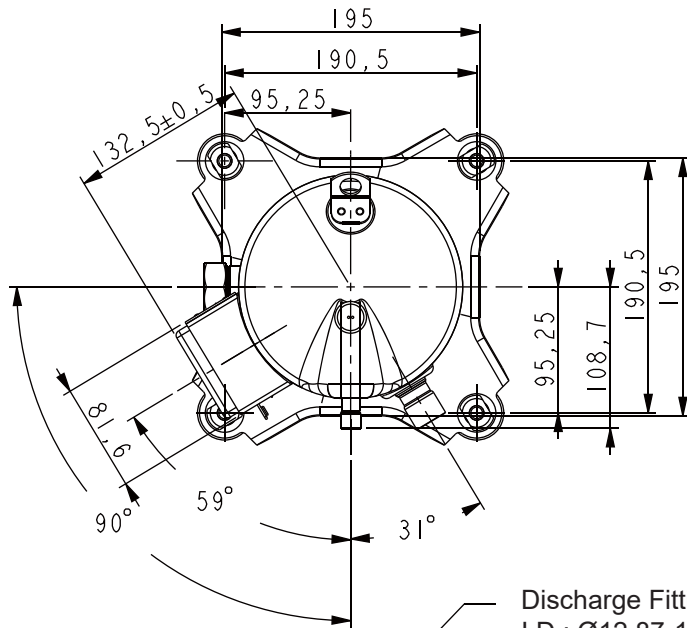
# YM/YSM Series

## Product Dimensions

2-4 HP 1 Phase  
2-5 HP 3 Phase

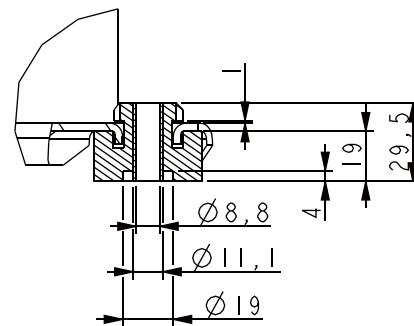
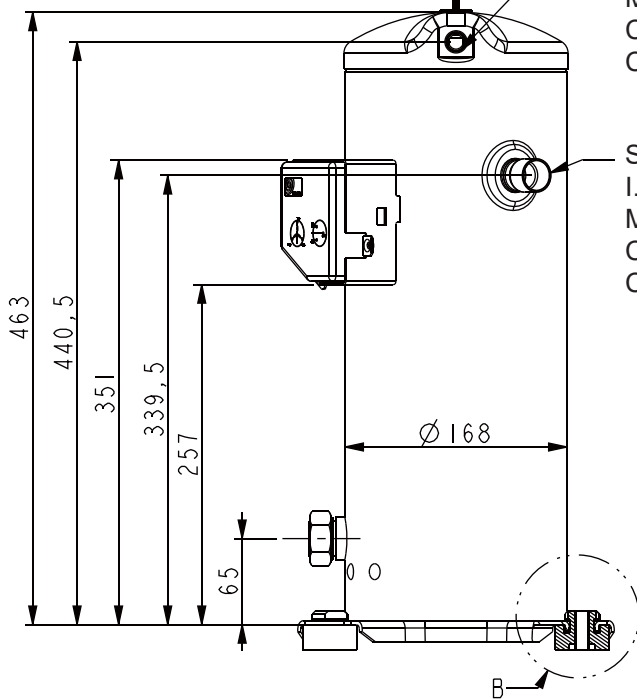


Mounting Feet



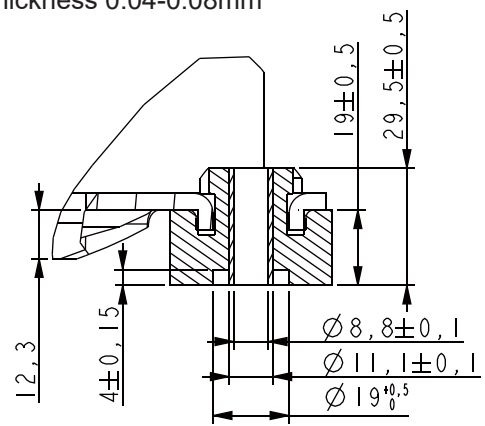
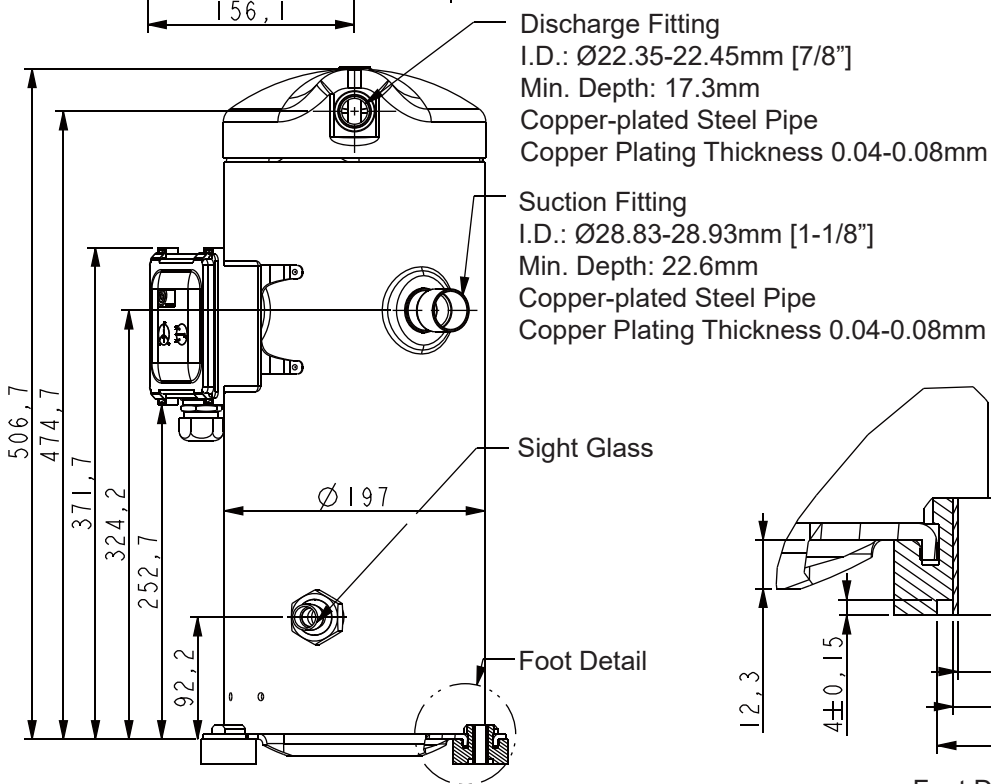
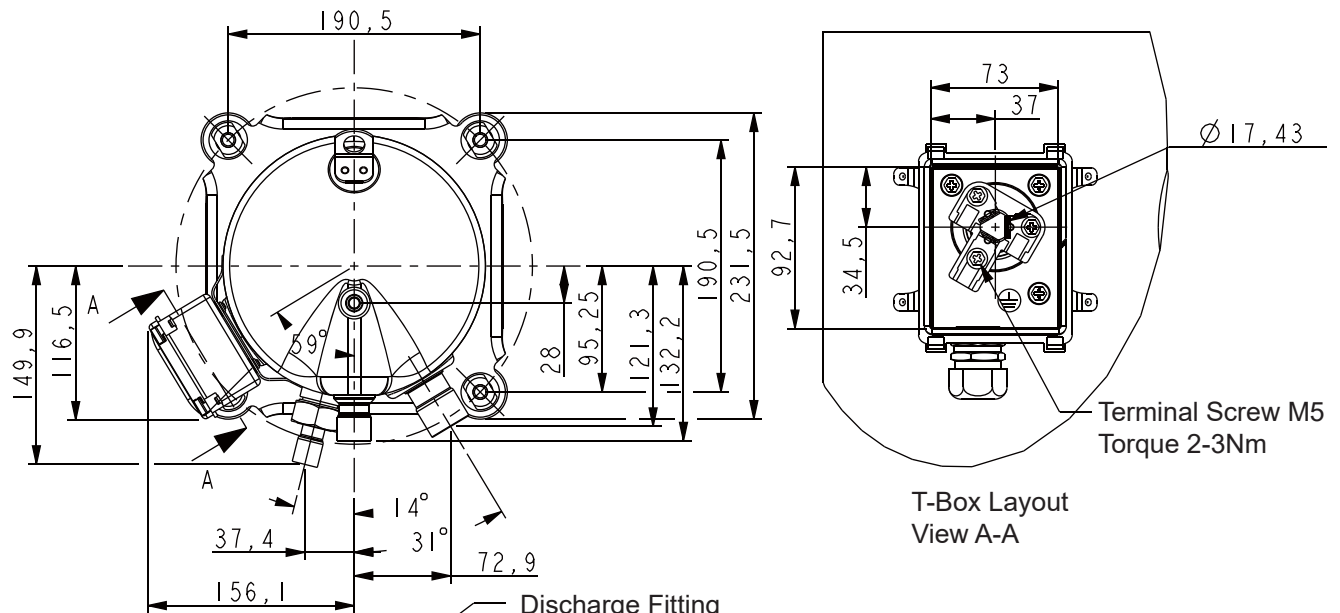
Discharge Fitting  
I.D.: Ø12.87-12.97mm  
Min. Depth: 10.6mm  
Copper-plated Steel Pipe  
Copper Plating Thickness 0.04-0.08mm

Suction Fitting  
I.D.: Ø22.35-22.45mm  
Min. Depth: 17.3mm  
Copper-plated Steel Pipe  
Copper Plating Thickness 0.04-0.08mm



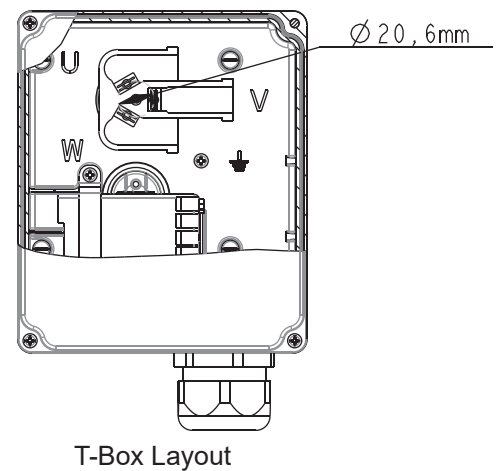
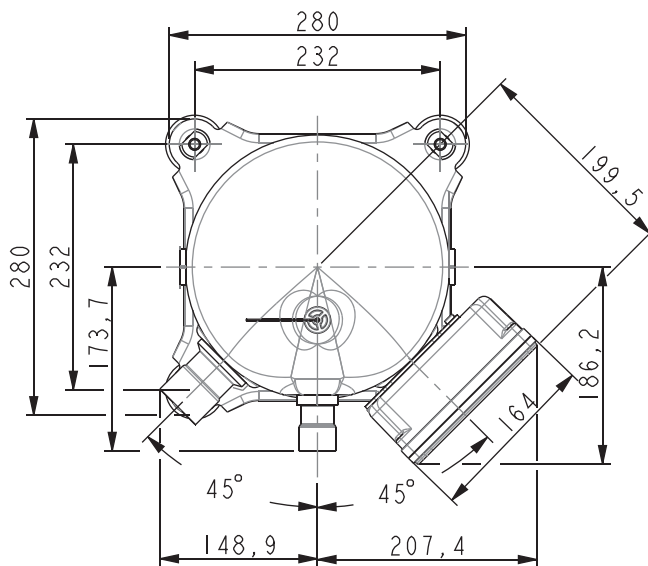
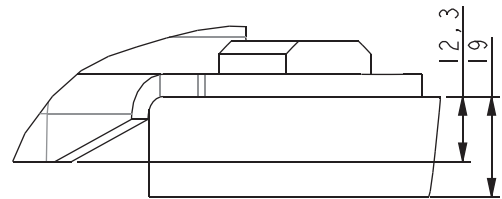
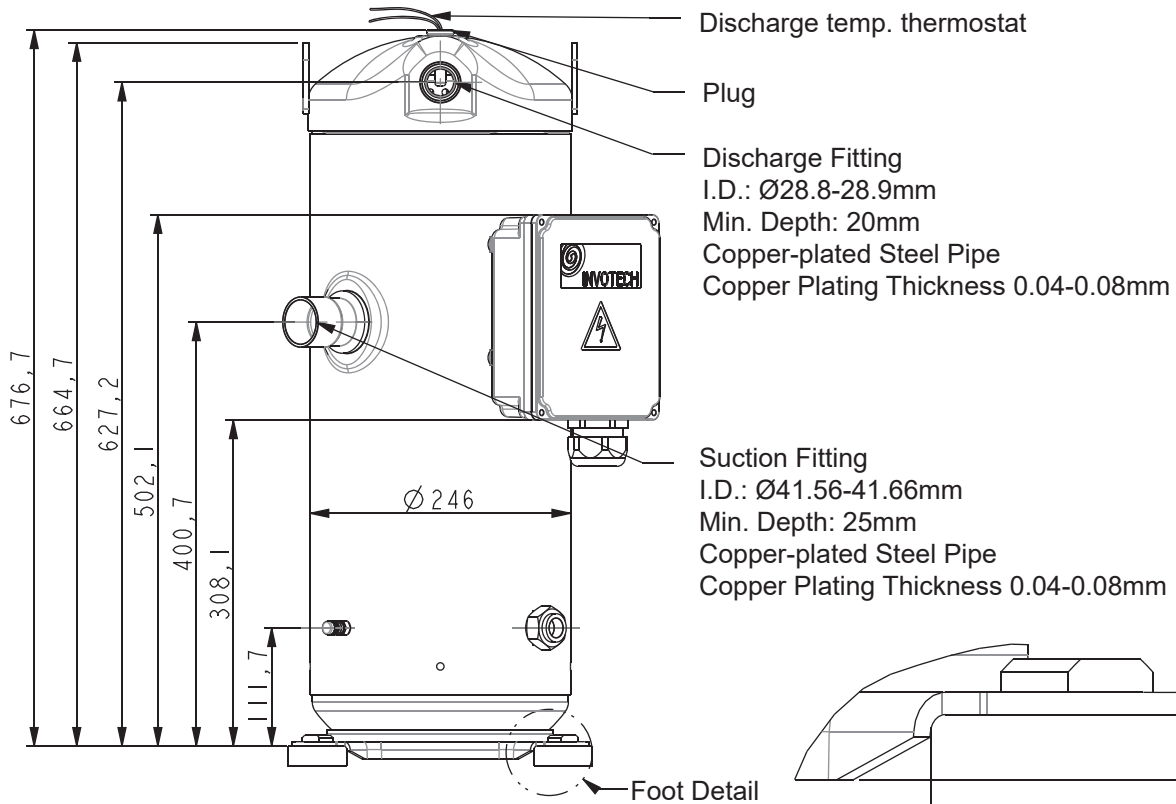
Mounting Feet





Foot Detail







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[www.invotech.cn](http://www.invotech.cn)