



SCROLL

COMPRESSOR

Advanced Scroll
Frame-Compliant Technology



**SIAM COMPRESSOR
INDUSTRY CO., LTD.**



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MITSUBISHI ELECTRIC, SHIZUOKA WORKS (MELSHI)



MITSUBISHI ELECTRIC (GUANGZHOU) COMPRESSOR CO., LTD.



SIAM COMPRESSOR INDUSTRY CO., LTD. (SCI)

SCI Profile

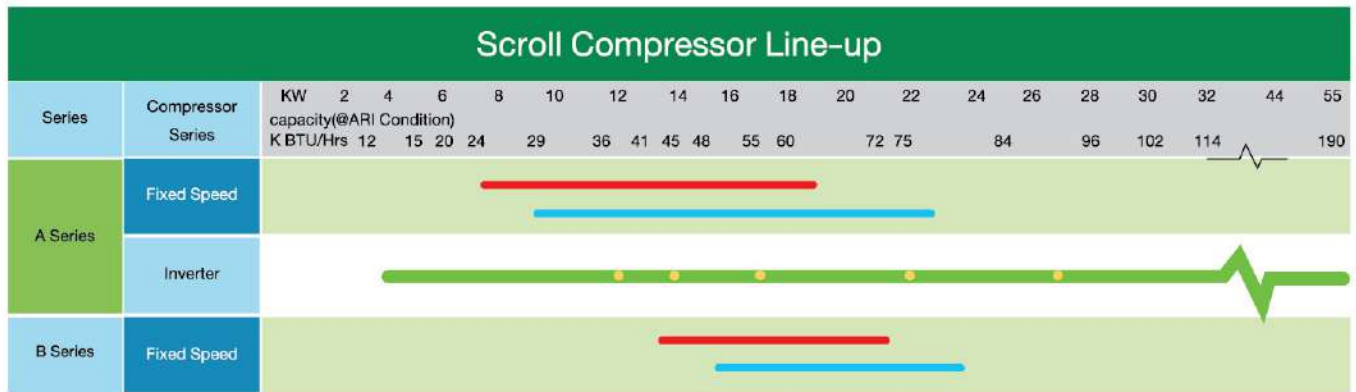
Company Profile

Siam Compressor Industry Co., Ltd. (SCI) is Thailand's first manufacturer of rotary compressor for room air conditioner. SCI was founded on May 25, 1990 as a subsidiary of Mitsubishi Electric Corporation of Japan, a world leader in compressor technology with over 70 years of experience. So successful was SCI in the first year of production that we were able to open a second plant only five years later, on December 16, 1995. Further milestones since then have been the inauguration of our research and development centre in 1998, the launching of a new ozone-friendly compressor that does not use HCFC coolant in 1999 and the opening of a third plant on October 16, 2002 and recently, the opening of the forth plant in June 2012.

Since 2003, SCI has been producing Advanced Scroll Compressor utilizing Frame-Complaint Mechanism technology, thus saving energy and minimizing energy loss due to friction. SCI remains at the forefront of the global compressor industry in terms of technical progress, efficiency of production, the competence of our trained staff and our ongoing expansion.

In 2013, SCI received the Good Factory Awards for Factory Management in Japan, SCI has been performing many outstanding activities such as the development, the supply chain management, production process, and working system in factories to help strengthen management system. SCI was the first compressor manufacturer in Thailand to recieved this honorable award.

Scroll Compressor Line-Up

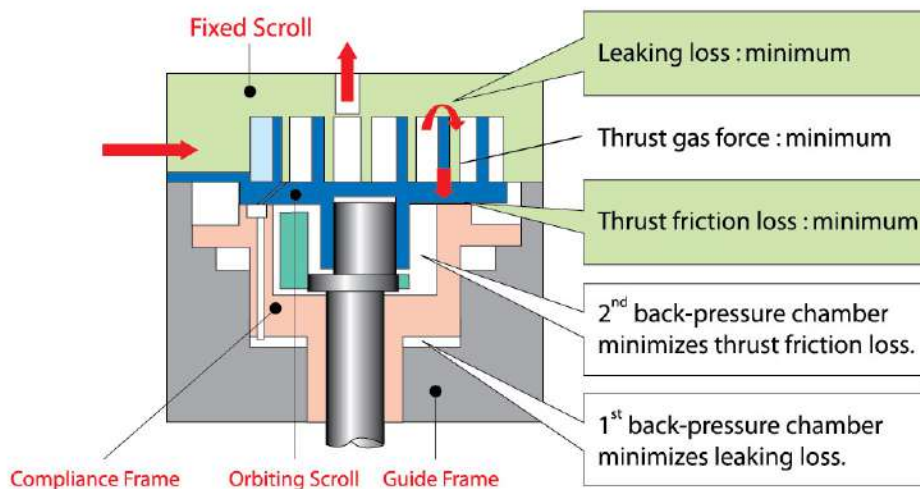


- 50 HZ ● Capacity Range of Inverter Model
- 60 HZ ● Capacity at 60 rps

Mitsubishi Scroll Compressor, Advanced scroll with frame compliant technology, began production in 2002 for packaged air conditioner system. We have been proven more than 20 years in scroll market and become leading scroll compressor manufacturer especially with innovative inverter technology which is bear out by world leading brand in both air-conditioning and heating industry more than decades. Furthermore, our advanced scroll technology especially with inverter system can provide the highest energy efficiency plus optimized energy-saving, emphasize on environmental concern issue, which contribute for large market expansion to all parts of the world continuously.

It is the state-of-art compressor innovation which is carefully designed to be superior than other scroll engineering. Under the modern of Mitsubishi Electric, aiming for the energy saving and the reliability of the compressor, the sophisticated Frame Compliance Mechanism is developed. It enhances the compressor efficiency and justifies the thrust force to the suitable level thus reducing the excessive energy and weariness. This creation brings about the most advanced scroll technology which ensures the highest efficient compressor existing in today market place.

FCM outline diagram



Frame Compliance Mechanism (FCM)

FCM can minimize gas leakage in scroll compression chamber, keep refrigerating capacity and reduce power losses by self-adjustment system of orbiting scroll position to pressure load and accuracy of fixed scroll profile. It is a big feature that FCM has not only a moveable orbiting scroll but also a moveable Frame unlike other manufacturer's one which is known so far. Incidentally, FCM have already applied as patent 31 matters including 221 items in Japan and foreign countries.

Scroll Compressor

Model Code Diagram

For Example **A N V 33 F C A M T**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series name

② Refrigerant

Symbol	Temperature band	Refrigerants
H	High-temperature	R-22
E	High-temperature	R-407C
N	High-temperature	R-410A
P	High-temperature	R-290
V	High-temperature	R-32
D	High-temperature	R-404A

③ Special specifications

Symbol	Specifications
B	DC Inverter
V	AC Inverter
H	Compressor for Heating Application
E	Inverter for Heating Application
S	Fixed speed Vapor Injection

* Contact us regarding other special specifications.

④ Stroke volume of compressor (Indicated in cm³)
 For example, "33" indicates 33 cm³. A two-digit volume is given for the A, B series.

⑤ Power supply

Symbol	Phase	Rated voltage (v)	Rated Frequency (Hz)
N	1	208-230V	60Hz
V	1	220-240V	50Hz
T	3	200/200-230V	50/60Hz
Y	3	380-415/460V	50/60Hz
X	3	380V	60Hz
F	3	Inverter	Variable

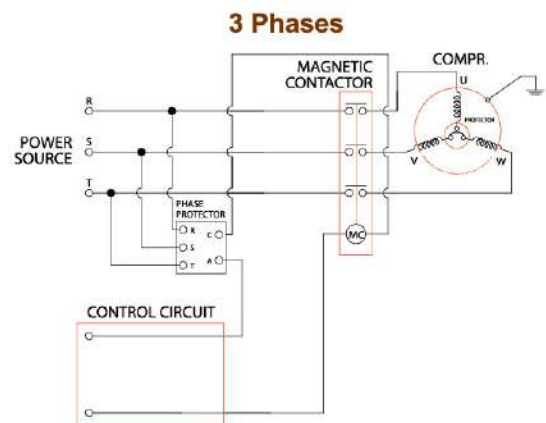
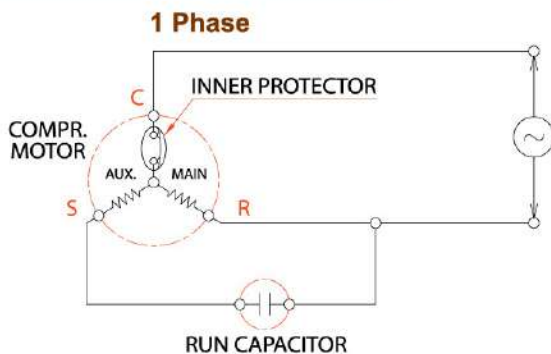
⑥ Special specifications

Symbols are used here to indicate any special specifications the customer may have ordered.

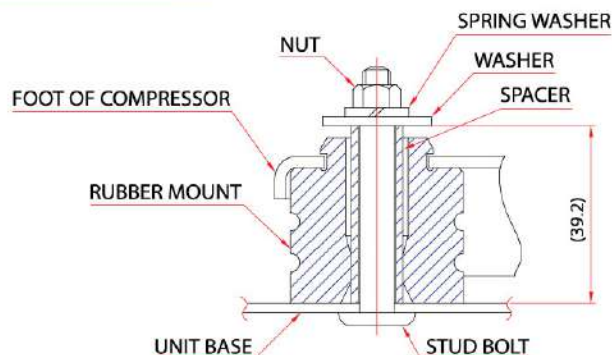
⑦ Refrigerant oil code

M : miscible oil (PVE oil)

Wiring Diagram



Mounting Assembly





TERMINAL COVER



SPACER



RUBBER MOUNT

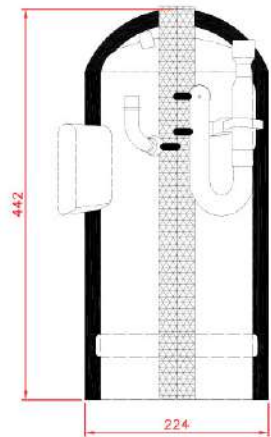
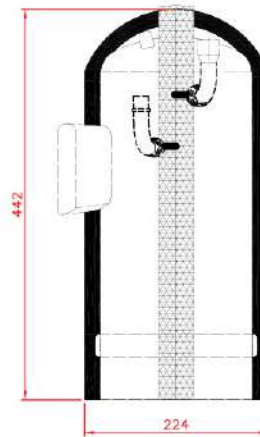
Optional Accessories Thermoacoustic shell



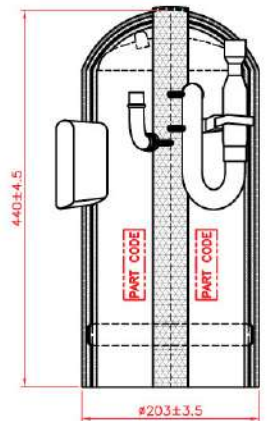
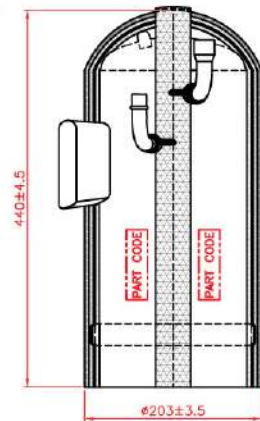
Selection table for Thermoacoustic shell

Series	Code no.	Group no.	Detail
A	SC00G218	G1	For A - short pipe
		G2	For A - long pipe
B	SC00G216	G1	For B - short pipe
		G2	For B - long pipe

Thermoacoustic Drawing for A series



Thermoacoustic Drawing for B series

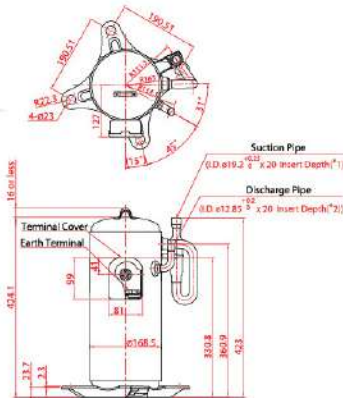


Specifications for Fixed Speed Scroll Compressor for Long Piping System AN, BN

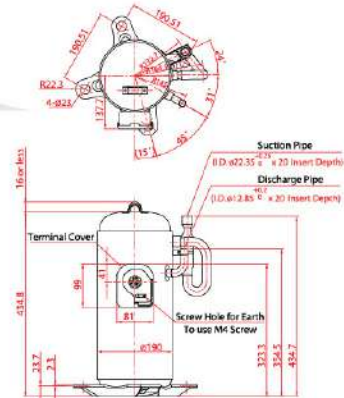
Models	Capacity		Input		Nominal Output		COP. (W/W)	EER. (Btu/hr*W)	Run Cap. (µF/VAC)	Weight (kgs.)	
	W	Kcal/hr	Btu/hr	Watt	Amps	HP					KW.
R-410A Scroll Compressor											
AN Scroll											
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase											
AN30VBFMT	7,670	6,595	26,170	2,570	11.90	3.08	2.30	2.98	10.18	50 / 420	37.3
AN33VBFMT	8,500	7,309	29,000	2,790	13.00	3.35	2.50	3.05	10.40	50 / 420	37.3
AN36VBFMT	9,450	8,126	32,250	3,100	14.60	3.55	2.65	3.05	10.40	55 / 420	37.6
AN40VBFMT	10,300	8,856	35,145	3,360	15.70	3.75	2.80	3.07	10.47	60 / 420	37.6
AN42VBFMT	10,700	9,200	36,510	3,540	16.90	4.02	3.00	3.02	10.31	60 / 450	37.6
b) Electrical 50 Hz : 380 - 415 Volt : 3 Phases											
AN30YBFMT	7,650	6,578	26,100	2,500	4.40	3.08	2.30	3.06	10.44	-	37.6
AN33YBFMT	8,430	7,248	28,770	2,710	4.70	3.35	2.50	3.11	10.61	-	37.6
AN36YBFMT	9,500	8,169	32,420	3,080	5.20	3.75	2.80	3.08	10.52	-	37.9
AN42YBFMT	10,800	9,286	36,850	3,490	5.90	4.02	3.00	3.09	10.56	-	37.9
AN47YBFMT	12,130	10,430	41,390	3,830	6.60	4.49	3.35	3.17	10.81	-	37.8
AN52YBFMT	13,600	11,694	46,400	4,280	7.40	4.96	3.70	3.18	10.84	-	38.4
AN66YQKMT	17,450	15,004	59,539	5,450	9.30	5.77	4.30	3.20	10.92	-	38.5
c) Electrical 60 Hz : 460 Volt : 3 Phases											
AN30YBFMT	9,270	7,970	31,629	3,040	4.50	3.08	2.30	3.05	10.40	-	37.6
AN33YBFMT	10,300	8,856	35,144	3,280	4.80	3.35	2.50	3.14	10.71	-	37.6
AN36YBFMT	11,600	9,974	39,579	3,700	5.30	3.75	2.80	3.14	10.70	-	37.9
AN42YBFMT	12,930	11,117	44,117	4,140	6.00	4.02	3.00	3.12	10.66	-	37.9
AN47YBFMT	14,680	12,622	50,088	4,580	6.70	4.49	3.35	3.21	10.94	-	37.8
AN52YBFMT	16,520	14,204	56,366	5,130	7.50	4.96	3.70	3.22	10.99	-	37.8
AN66YQKMT	21,000	18,056	71,652	6,520	9.40	5.77	4.30	3.20	10.92	-	39.5
BN Scroll											
a) Electrical 60 Hz : 380 : 3 Phases											
BN65XFFMT	20,870	17,945	71,200	6,500	10.90	7.78	5.80	3.21	10.96	-	48.0

- Note :**
1. Testing condition : ARI, for V code at 1Phase 220Volt 50Hz, for Y code at 3Phase 400Volt 50Hz. for X code at 3 phases 380 volt 60Hz.
 2. All figures indicated are nominal value, please contact sales representative for detail specification.
 3. Oil type is FV50S
 4. For variety of oil quantity, please contact sales representative; Min~Max oil quantity of SCl compressor is between 900-2,300 CC.

AN30-42VBFMT AN30-52YBFMT AN66YQKMT



BN65XFFMT



What do "Short piping" and "Long piping" stand for?

Owing to wide operating temperature of MITSUBISHI Advanced scroll resulting from FCM mechanism, scroll operating range can serve various applications, depending on each design purpose. To optimize performance of our scroll compressor to all product variety, we categorize our product in to 2 types; Short piping and Long piping.

What is the benefits from proper selection of Advanced scroll type?

- Acquire Higher performance; from a suitable oil amount.
- Improve system reliability; from more appropriate oil circulation.
- Easy installation; from using our short piping model in individual package unit.

Long piping : Suitable with split unit application (Piping length > 5 m.)

For common split air-conditioner circuit and snap unit application which the refrigerant piping between condensing and evaporation unit is longer than 5 m.

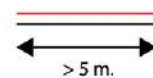
Unit description and example



Multi inverter air - conditioner



Indoor Unit



Split Package



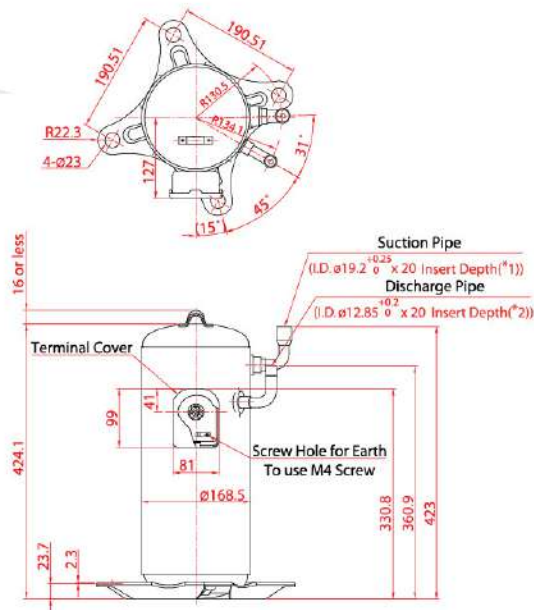
Outdoor Unit

Specifications of Fixed Speed Scroll Compressor for Short Piping System AN

Models	Capacity		Input		Nominal Output		COP. (W/W)	EER. (Btu/hr*W)	Run Cap. (µF/VAC)	Weight (kgs.)	
	W	Kcal/hr	Btu/hr	Watt	Amps	HP					KW.
R-410A Scroll Compressor											
AN Scroll											
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase											
AN30VEJMT	7,670	6,595	26,170	2,570	11.90	3.08	2.30	2.98	10.18	50 / 420	36.3
AN33VEJMT	8,500	7,309	29,000	2,790	13.00	3.35	2.50	3.05	10.40	50 / 420	36.3
AN36VEJMT	9,450	8,126	32,250	3,100	14.60	3.55	2.65	3.05	10.40	55 / 420	36.3
AN42VEJMT	10,700	9,200	36,510	3,540	16.90	4.02	3.00	3.02	10.31	60 / 450	36.7
b) Electrical 60 Hz : 208 - 230 Volt : 1 Phase											
AN33NELMT	10,300	8,856	35,150	3,340	16.20	3.35	2.50	3.08	10.52	60 / 450	36.3
c) Electrical 50 Hz : 380 - 415 Volt : 3 Phases											
AN30YEJMT	7,650	6,578	26,100	2,500	4.40	3.08	2.30	3.06	10.44	-	36.3
AN33YEJMT	8,430	7,248	28,770	2,710	4.70	3.35	2.50	3.11	10.61	-	36.3
AN36YEJMT	9,500	8,169	32,420	3,080	5.20	3.75	2.80	3.08	10.52	-	36.3
AN42YEJMT	10,800	9,286	36,850	3,490	5.90	4.02	3.00	3.09	10.56	-	36.7
AN47YEJMT	12,130	10,430	41,390	3,830	6.60	4.49	3.35	3.17	10.81	-	37.3
AN52YEJMT	13,600	11,694	46,400	4,280	7.40	4.96	3.70	3.18	10.84	-	37.3
AN66YEJMT	17,450	15,004	59,539	5,460	9.30	5.80	4.30	3.20	10.90	-	37.5
d) Electrical 60 Hz : 460 Volt : 3 Phases											
AN30YEJMT	9,270	7,970	31,629	3,040	4.50	3.08	2.30	3.05	10.40	-	36.3
AN33YEJMT	10,300	8,856	35,144	3,280	4.80	3.35	2.50	3.14	10.71	-	36.3
AN36YEJMT	11,600	9,974	39,579	3,700	5.30	3.75	2.80	3.14	10.70	-	36.3
AN42YEJMT	12,930	11,117	44,117	4,140	6.00	4.02	3.00	3.12	10.66	-	36.7
AN47YEJMT	14,680	12,622	50,088	4,580	6.70	4.49	3.35	3.21	10.94	-	37.3
AN52YEJMT	16,520	14,204	56,366	5,130	7.50	4.96	3.70	3.22	10.99	-	37.3
AN66YEJMT	21,000	18,056	71,652	6,520	9.40	5.77	4.30	3.22	10.99	-	37.5

- Note :**
1. Testing condition : ARI, for V code at 1Phase 220Volt 50Hz , for N code 1Phase 220Volt 60Hz , for Y code at 3Phases 400Volt 50Hz.
 2. All figures indicated are nominal value, please contact sales representative for detail specification.
 3. Oil type is FV505
 4. For variety of oil quantity, please contact sales representative; Min~Max oil quantity of SCL compressor is between 900-2,300 CC.

**AN30-42VEJMT
AN33NELMT
AN30-66YEJMT**



Short piping : Suitable with individual package unit (Piping length < 5 m.)

Short piping type of Advanced Scroll is suitable for application which the refrigerant piping between condensing and evaporating side is shorter than 5 m.

Unit description and example



Air-Cooled Rooftop Packaged



Brine/Water Heat pump



Air/Water Heat pump



← →
< 5 m.

Operation Standards and Limits of R-410A Compressor AN, BN

Models	AN	BN
Compressor		
Type	Scroll Type (Fixed Speed)	
Displacement (cc/rev.)	30 ~ 66	65
Refrigerant type	R-410A	
Pressure		
Maximum Condensing	4.15 MPaG/65°C (602 psiG/149°F)	
Evaporating	0.23 ~ 1.59 MPaG (33.4 ~ 230.6 psiG)	
Compression Ratio	1.8 ~ 8.0	
Abnormal Rise in pressure	5.9 MPaG (855.7 psiG) or less	
Temperature		
Condensing	Under 65°C (Under 149°F)	
Evaporating	-25°C ~ 26°C (-13°F ~ 78.8°F)	
Discharged Gas (max)	For A Series : 120°C (248°F) in case -20°C ~ 26°C 110°C (230°F) in case -25°C ~ -20°C For B Series : 120°C (248°F) (See note 1)	
Suction Gas (max)	must be over 0°C (No liquid back) (See note 1)	
Discharged gas 's superheat	10°C or more	
Outdoor Ambient Temp.	Under 43°C (109.4°F)	
Electrical		
Supply voltage during operation	Rated voltage ±10%	
Starting voltage	Minimum 80% of rated voltage at balance pressure (at 43°C) In case of 208-230 V Rated Voltage (N-code compressor), the starting voltage shall be 85% or more. This shall be measured at instance of start	
Reverse phase (rotation)	Not possible	
Frequency range	Rated Frequency ± 2%	
ON/OFF		
ON/OFF Cycle	Less than 250,000 cycles The ON/OFF cycle shall be a maximum of 10 time/hour. OFF time shall be the time until the high side pressure reach to balance pressure (more than 3 min)	
Pipe Stress	3.5 kg/mm ² or less at start and stop condition (1.8 kg/mm ² during operation)	
Refrigerant Circuit		
Maximum Refrigerant Charge	A Series : 6.0 kg max. and B Series : 7.0 kg max. (See detail in Compressor Technical Manual)	
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg)	
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)	
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)	
Piping vibration	Maximum 0.8 mm.	
Inclination of compressor	Within 5°	

- Note :**
1. The temperature must be lower than this critical value even the unit has been using for many years.
 2. It is recommended that evaluation of oil return to the compressor has to be done.

Condition Application :

Application Range

- Evaporating Temperature Range -20°C to 12°C (4°F to 53.6°F)
- Condensing Temperature Range 65°C (149°F) max.
- Refrigerant R-410A
- Discharge Gas Temperature 120°C (248°F) max.

ARI Rating Condition

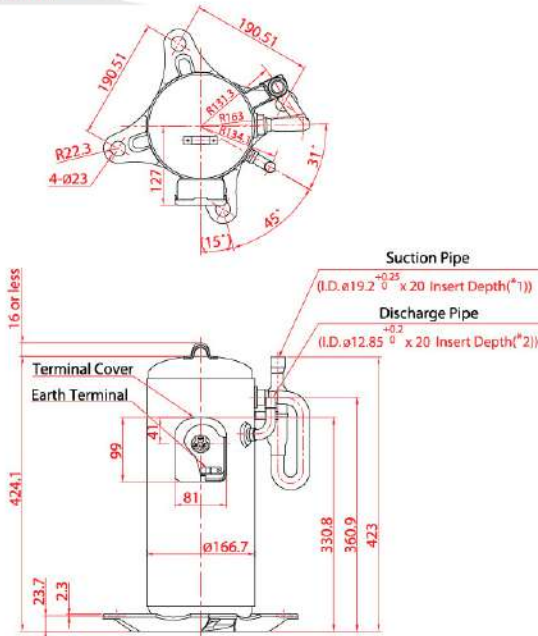
- Evaporating Temperature 7.2°C (45°F)
- Return Gas Temperature 18.3°C (65°F)
- Condensing Temperature 54.4°C (130°F)
- Liquid Temperature 46.0°C (115°F)
- Ambient Temperature 35.0°C (95°F)

Specifications of Fixed Speed Scroll Compressor for Long Piping System AE, BE

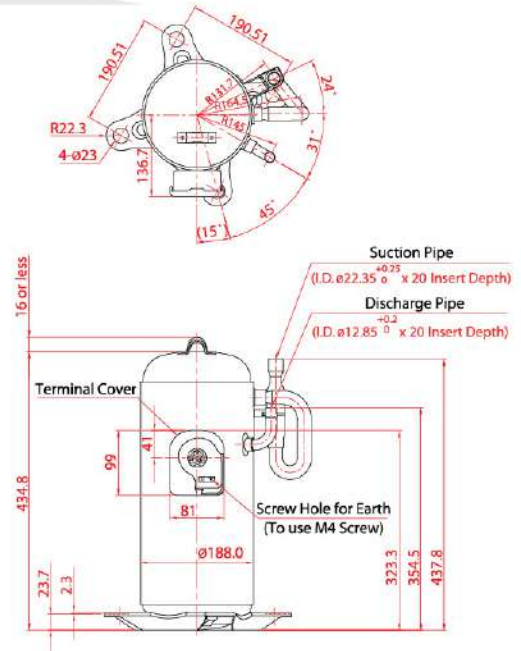
Models	Capacity		Input		Nominal Output		COP. (W/W)	EER. (Btu/hr*W)	Run Cap. (µF/VAC)	Weight (kgs.)	
	W	Kcal/hr	Btu/hr	Watt	Amps	HP					KW.
R-407C Scroll Compressor											
AE Scroll											
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase											
AE33VBNMT	5,600	4,815	19,110	1,790	8.30	2.01	1.50	3.13	10.67	40 / 420	33.6
AE42VBNMT	7,170	6,165	24,470	2,230	10.20	2.55	1.90	3.22	10.97	45 / 420	34.2
AE52VBNMT	9,160	7,876	31,250	2,760	12.90	3.15	2.35	3.32	11.32	50 / 420	36.0
AE60VBNMT	10,500	9,028	35,830	3,230	15.30	3.62	2.70	3.25	11.10	60 / 450	36.3
b) Electrical 50 Hz : 380 - 415 Volt : 3 Phases											
AE33YBNMT	5,700	4,901	19,500	1,790	3.20	2.01	1.50	3.18	10.87	-	33.6
AE42YBNMT	7,300	6,277	24,910	2,250	3.24	2.55	1.90	3.24	11.07	-	34.2
AE47YBNMT	8,300	7,137	28,320	2,520	4.30	2.82	2.10	3.29	11.24	-	36.0
AE52YBNMT	9,100	7,825	31,050	2,730	4.70	3.15	2.35	3.33	11.37	-	36.0
AE60YBNMT	10,700	9,200	36,510	3,140	5.50	3.62	2.70	3.41	11.63	-	36.3
BE Scroll											
a) Electrical 50 Hz : 380 - 415 Volt : 3 Phases											
BE67YFEMT	12,100	10,404	40,950	3,650	6.10	4.43	3.30	3.32	11.31	-	43.8
BE72YFEMT	13,160	11,316	44,904	3,900	6.70	4.69	3.50	3.37	11.52	-	44.2
BE76YFEMT	13,920	11,969	47,500	4,090	7.00	4.96	3.70	3.40	11.62	-	44.2
BE82YFEMT	15,000	12,898	51,200	4,360	7.50	5.23	3.90	3.44	11.74	-	46.2
BE90YFEMT	16,520	14,205	56,370	4,800	8.20	5.50	4.10	3.44	11.74	-	46.2
BE96YFEMT	17,800	15,305	60,750	5,140	8.80	6.17	4.60	3.46	11.82	-	46.2

- Note :**
1. Testing condition : ARI, for V code at 1Phase 220Volt 50Hz, for Y code at 3Phases 400Volt 50Hz.
 2. All figures indicated are nominal value, please contact sales representative for detail specification.
 3. Oil type is FV50S.
 4. For variety of oil quantity, please contact sales representative; Min-Max oil quantity of SCI compressor is between 900-2,300 CC.

**AE33-60VBMT
AE33-60YBMT**



BE67-96YFEMT

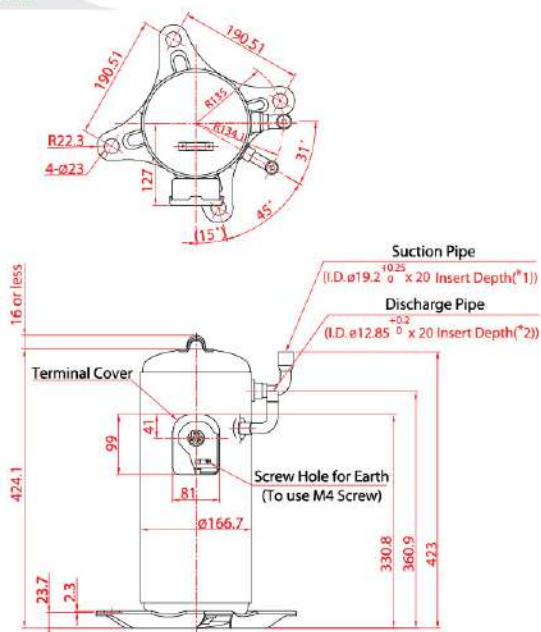


Specifications of Fixed Speed Scroll Compressor for Short Piping System AE, BE

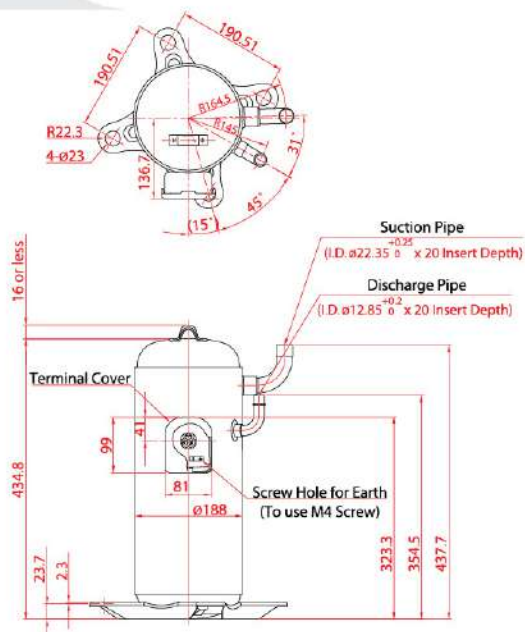
Models	Capacity			Input		Nominal Output		COP. (W/W)	EER. (Btu/hr*W)	Run Cap. (µF/VAC)	Weight (kgs.)
	W	Kcal/hr	Btu/hr	Watt	Amps	HP	KW.				
R-407C Scroll Compressor											
AE Scroll											
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase											
AE33VEHMT	5,600	4,815	19,110	1,790	8.30	2.01	1.50	3.13	10.67	40 / 420	33.1
AE42VEHMT	7,170	6,165	24,470	2,230	10.20	2.55	1.90	3.22	10.97	45 / 420	33.7
AE52VEHMT	9,160	7,876	31,250	2,760	12.90	3.15	2.35	3.32	11.32	50 / 420	35.5
AE60VEHMT	10,500	9,028	35,830	3,230	15.30	3.62	2.70	3.25	11.10	60 / 450	35.8
b) Electrical 50 Hz : 380 - 415 Volt : 3 Phases											
AE33YEHMT	5,700	4,901	19,500	1,790	3.20	2.01	1.50	3.18	10.87	-	33.1
AE42YEHMT	7,300	6,277	24,910	2,250	4.00	2.55	1.90	3.24	11.07	-	33.7
AE47YEHMT	8,300	7,137	28,320	2,520	4.30	2.82	2.10	3.29	11.24	-	35.5
AE52YEHMT	9,100	7,825	31,050	2,730	4.70	3.15	2.35	3.33	11.37	-	35.5
AE60YEHMT	10,700	9,200	36,510	3,140	5.50	3.62	2.70	3.41	11.63	-	35.8
BE Scroll											
a) Electrical 50 Hz : 380 - 415 Volt : 3 Phases											
BE67YEKMT	12,100	10,404	40,950	3,650	6.10	4.49	3.35	3.32	11.31	-	43.0
BE72YEKMT	13,160	11,316	44,904	3,900	6.70	4.69	3.50	3.37	11.51	-	43.4
BE76YEKMT	13,920	11,969	47,497	4,090	7.00	4.96	3.70	3.40	11.61	-	43.4
BE82YEKMT	15,000	12,898	51,200	4,360	7.50	5.10	3.80	3.44	11.74	-	45.3
BE90YEKMT	16,520	14,205	56,369	4,800	8.20	5.50	4.10	3.44	11.74	-	45.3
BE96YEKMT	17,800	15,305	60,750	5,140	8.80	5.90	4.40	3.46	11.82	-	45.1

- Note :**
1. Testing condition : ARI, for V code at 1Phase 220Volt 50Hz, for Y code at 3Phases 400Volt 50Hz.
 2. All figures indicated are nominal value, please contact sales representative for detail specification.
 3. Oil type is FV50S.
 4. For variety of oil quantity, please contact sales representative; Min~Max oil quantity of SCI compressor is between 900-2,300 CC.

AE33-60VEHMT AE33-60YEHMT



BE67-96YEKMT



Operation Standards and Limits of R-407C Compressor AE, BE

Models	AE	BE
Compressor		
Type	Scroll Type (Fixed Speed)	
Displacement (cc/rev.)	33 ~ 60	67 ~ 96
Refrigerant type	R-407C	
Pressure		
Maximum Condensing	3.02 MPaG/68°C (438 psiG/154.4°F)	
Evaporating	0.1 ~ 0.8 MPaG (14.5 ~ 116.0 psiG)	
Compression Ratio	1.8 ~ 8.0	
Abnormal Rise in pressure	4.7 MPaG (681 psiG) or less	
Temperature		
Condensing	Under 68°C (Under 154.4°F)	
Evaporating	-25°C ~ 18°C (-13°F ~ 64.4°F)	
Discharged Gas (max)	For A Series : 120°C (248°F) in case -20°C ~ 18°C 110°C (230°F) in case -25°C ~ -20°C For B Series : 120°C (248°F) (See note 1) must be over 0°C (No liquid back) (See note 1)	
Suction Gas (max)	10°C or more	
Discharged gas 's superheat	Under 43°C (109.4°F)	
Outdoor Ambient Temp.		
Electrical		
Supply voltage during operation	Rated voltage ±10%	
Starting voltage	Minimum 80% of rated voltage at balance pressure (at 43°C) In case of 208-230 V Rated Voltage (N-code compressor), the starting voltage shall be 85% or more. This shall be measured at instance of start	
Reverse phase (rotation)	Not possible	
Frequency range	Rated Frequency ± 2%	
ON/OFF		
ON/OFF Frequency	Less than 250,000 cycles	
ON/OFF Cycle	The ON/OFF cycle shall be a maximum of 10 time/hour. OFF time shall be the time until the high side pressure reach to balance pressure (more than 3 min)	
Pipe Stress	3.5 kg/mm ² or less at start and stop condition (1.8 kg/mm ² during operation)	
Refrigerant Circuit		
Maximum Refrigerant Charge	A Series : 6.0 kg max. and B Series : 7.0 kg max. (See detail in Compressor Technical Manual)	
Evacuation level	Degree of vacuum equivalent to about 133 Pa (abs) (1.0 mmHg)	
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)	
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)	
Piping vibration	Maximum 0.8 mm.	
Inclination of compressor	Within 5°	

- Note :**
- The temperature must be lower than this critical value even the unit has been using for many years.
 - It is recommended that evaluation of oil return to the compressor has to be done.

Condition Application :

Application Range

- Evaporating Temperature Range -20°C to 12°C (4°F to 53.6°F)
- Condensing Temperature Range 68°C (154°F) max.
- Refrigerant R-407C
- Discharge Gas Temperature 120°C (248°F) max.

ARI Rating Condition

- Evaporating Temperature 7.2°C (45°F)
- Return Gas Temperature 18.3°C (65°F)
- Condensing Temperature 54.4°C (130°F)
- Liquid Temperature 46.1°C (115°F)
- Ambient Temperature 35.0°C (95°F)

Inverter Technology

Inverter-driven system promotes maximum compressor efficiency. The system detects subtle temperature changes and automatically adjust its capacity output. These lead to stabilizing temperature, minimizing power consumption, and optimizing humidity control.



Inverter system can control over room temperature to deliver appropriate capacity which is a smart technology that can suitably match cooling and heating performance with operating requirements at specific location so the system can ensure that a room will stay with steady temperature and comfort.

Conventional compressor operates at a fixed speed with on and off repetitively, on the other hand, inverter compressor has controller which can control power output to fit with variable operating environment as well as optimize system therefore amazingly performance in any variant load is ensured throughout the system by means of unit customization and design.

With a proper design concept, the system can reach as higher SEER as 64% comparing with other VRF technology.

Inverter Benefits

- 1) Precision Temperature Control : unnoticeable swing in temperature because of its adaptation of capacity to match with any variable conditions automatically.
- 2) High Efficiency : deliver only the energy needed to satisfy the cooling or heating condition, thereby saving both energy and cash.
- 3) Humidity Control : enjoy greater comfortable climate with desired level of humidity at a glance.
- 4) Compact size and light weight : Owing to motor speed changing technology of inverter compressor, the inverter compressor is more compact size and light weight more than 30% comparing with other Variable Refrigerant Flow (VRF) technology.

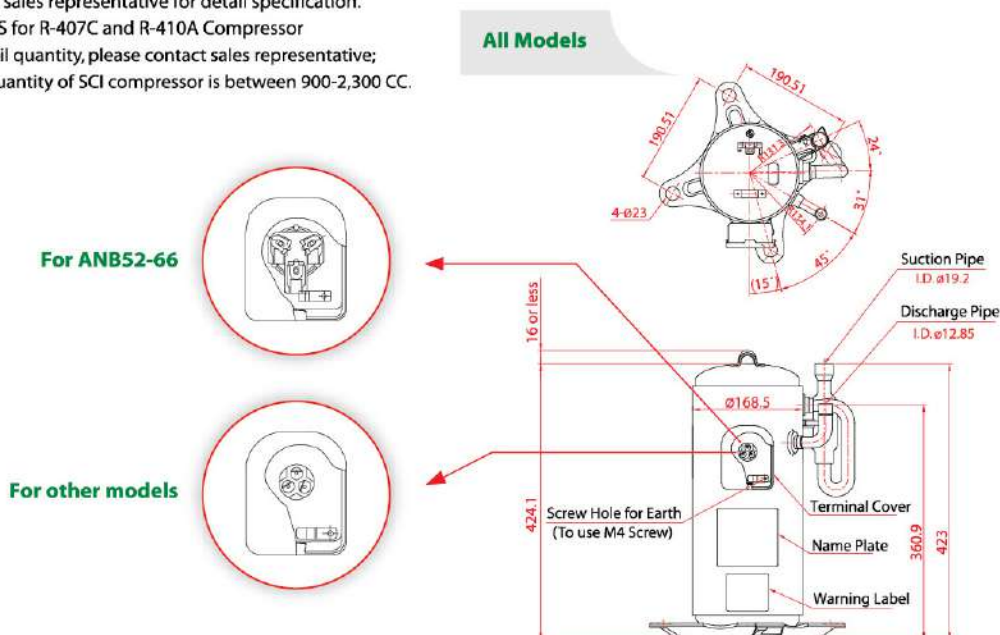
Touch with Advanced Inverter Technology

Optimum inverter system is accompanied with delicate design and easy for development. Our inverter designing service team has customized full solution offering, inverter consulting and intense unit testing service. Our long reputation services and experienced supports are the reasons why anyone can touch MITSUBISHI INVERTER TECHNOLOGY.

Specifications for Inverter Scroll Compressor for Long Piping System

Models	Capacity Range (min~max)			Performance at 60 rps						Weight (kgs.)
				Capacity		Input		COP. W/W	EER. (Btu/hr*w)	
	Watt	Kcal/hr	BTU/hr	W	BTU/hr	Watt	Amps			
R-407C Scroll Compressor										
AEV&AEB Scroll										
a) AC Inverter 200 Volt										
AEV60FBDMT (20-120 RPS)	3,980~24,000	3,420~20,640	13,580~81,890	13,000	44,358	3,800	20.00	3.42	11.67	39.3
b) AC Inverter 380 Volt										
AEV60FBEMT (20-120 RPS)	3,980~24,000	3,420~20,640	13,580~81,890	13,000	44,358	3,800	10.00	3.42	11.67	39.3
c) DC Inverter 380 Volt										
AEB60FBEMT (20-120 RPS)	4,230~24,650	3,640~21,200	14,430~84,110	13,380	45,650	3,820	14.20	3.50	11.95	39.3
R-410A Scroll Compressor										
ANB Scroll										
a) DC Inverter 200 Volt										
ANB33FBSMT (20-120 RPS)	3,220~21,700	2,770~18,660	10,990~74,020	10,800	36,900	3,240	15.80	3.33	11.37	33.4
ANB42FBSMT (20-120 RPS)	4,260~27,100	3,660~23,310	14,540~92,470	13,700	46,750	4,080	19.60	3.36	11.46	33.4
b) DC Inverter 380 Volt										
ANB33FBTMT (20-120 RPS)	3,290~21,500	2,830~18,490	11,230~73,360	10,800	36,900	3,300	12.40	3.27	11.17	33.4
ANB42FBTMT (20-120 RPS)	4,150~27,300	3,570~23,480	14,160~93,150	13,900	47,440	4,160	15.20	3.34	11.40	33.4
ANB52FKFMT (20-120 RPS)	5,450~33,100	4,690~28,470	18,600~112,940	17,200	58,960	5,250	18.50	3.28	11.18	34.0
ANB66FKFMT (20-100 RPS)	6,613~33,782	5,685~29,045	22,563~115,266	21,900	74,723	6,500	15.5	3.37	11.50	38.0
ANB66FBZMT (20-120 RPS)	6,900~40,120	5,933~34,497	23,540~136,800	22,000	75,064	6,500	23.70	3.38	11.55	38.0

- Note :**
1. Testing condition : ARI
 2. All figures indicated are nominal value, please contact sales representative for detail specification.
 3. Oil type : FV50S for R-407C and R-410A Compressor
 4. For variety of oil quantity, please contact sales representative; Min~Max oil quantity of SCI compressor is between 900-2,300 CC.



What do "Short piping" and "Long piping" stand for?

Owing to wide operating temperature of MITSUBISHI Advanced scroll resulting from FCM mechanism, scroll operating range can serve various applications, depending on each design purpose. To optimize performance of our scroll compressor to all product variety, we categorize our product in to 2 types; Short piping and Long piping.

What is the benefits from proper selection of Advanced scroll type?

- Acquire Higher performance; from a suitable
- Improve system reliability; from more appropriate oil circulation.
- Easy installation; from using our short piping model in individual package unit.

Long piping : Suitable with split unit application (Piping length > 5 m.)

For common split air-conditioner circuit and snap unit application which the refrigerant piping between condensing and evaporator unit is longer than 5 m.

Short piping : Suitable with individual package unit (Piping length < 5 m.)

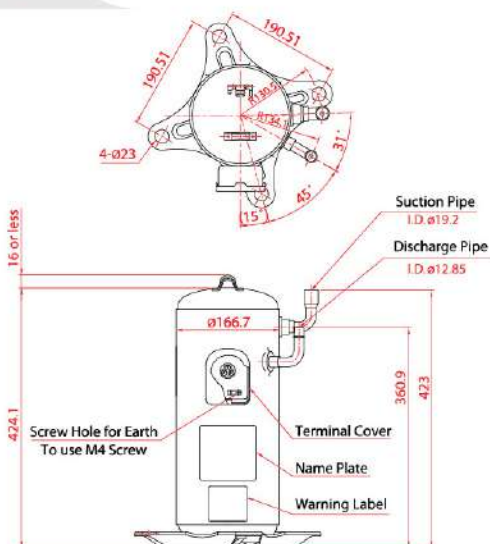
Short piping type of Advanced Scroll is suitable for application which the refrigerant piping between condensing and evaporating side is shorter than 5 m.

Specifications for Inverter Scroll Compressor for Short Piping System

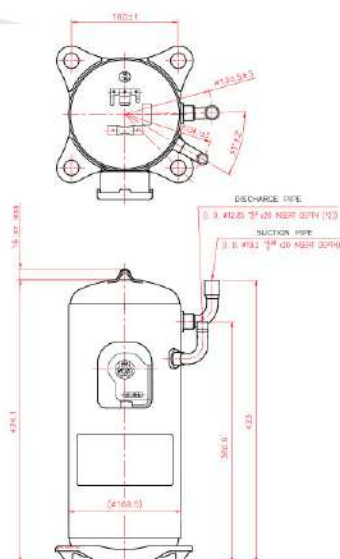
Models	Capacity Range (min~max)			Performance at 60 rps				Weight (kgs.)		
	Watt	Kcal/hr	BTU/hr	Capacity		Input			COP. W/W	EER. (Btu/hr ² w)
R-407C Scroll Compressor										
AEV&AEB Scroll										
a) AC Inverter 93 - 380 Volt AEV60FEQMT (20-120 RPS)	3,980~24,000	3,420~20,640	13,580~81,890	13,000	44,360	3,800	10.00	3.42	11.67	35.3
b) DC Inverter 78 - 400 Volt AEB60FEQMT (20-120 RPS)	4,230~24,650	3,640~21,200	14,430~84,110	13,380	45,650	3,820	14.20	3.50	11.95	30.3
R-410A Scroll Compressor										
ANB Scroll										
a) DC Inverter 62 - 400 Volt ANB33FEUMT (20-120 RPS)	3,220~21,700	2,770~18,660	10,990~74,020	10,800	36,900	3,240	15.80	3.33	11.37	33.0
ANB42FEUMT (20-120 RPS)	4,260~27,100	3,660~23,310	14,540~92,470	13,700	46,750	4,080	19.60	3.36	11.46	33.0
b) DC Inverter 78 - 400 Volt ANB33FEVMT (20-120 RPS)	3,290~21,500	2,830~18,490	11,230~73,360	10,800	36,900	3,300	12.40	3.27	11.17	33.0
ANB42FEVMT (20-120 RPS)	4,150~27,300	3,570~23,480	14,160~93,150	13,900	47,440	4,160	15.20	3.34	11.40	33.0
ANB52FFTMT (20-120 RPS)	5,450~33,100	4,690~28,470	18,600~112,940	17,200	58,960	5,250	18.50	3.28	11.18	33.8
ANB66FLHMT (20-100 RPS)	6,613~33,782	5,685~29,045	22,563~115,266	22,000	75,064	6,500	15.50	3.38	11.55	37.6
ANB66FLJMT (20-120 RPS)	6,585~34,801	5,661~29,921	22,468~118,743	21,500	73,358	6,500	19.60	3.31	11.29	37.6
R-32 Scroll Compressor										
AVB Scroll										
a) DC Inverter 200 Volt AVB33FAAMT (10-120 RPS)	3,350~21,908	2,880~18,837	11,430~74,753	11,200	38,214	3,360	6.00	3.33	11.37	32.8

- Note :**
1. Testing condition : ARI
 2. All figures indicated are nominal value, please contact sales representative for detail specification.
 3. Oil type is FV50S
 4. For variety of oil quantity, please contact sales representative; Min~Max oil quantity of SCL compressor is between 900-2,300 CC.

AEV/AEB60FEQMT



AVB

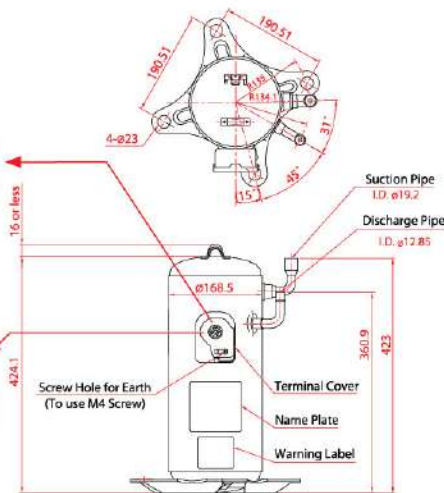


For ANB52-66



ANB33-66FEUMT/FEVMT/FFTMT/FLJMT/FLHMT

For other models



Operation Standards and Limits of Inverter Compressor

Models	R-407C		R-410A		R-32
	AEV & AEB		ANB		AVB
Compressor					
Type	Scroll Type (AC Inverter)	Scroll Type (DC Inverter)	Scroll Type (AC Inverter)	Scroll Type (DC Inverter)	Scroll Type (DC Inverter)
Displacement (cc/rev.)	60.0		33-47		33
Refrigerant type	R-407C		R-410A		R-32
Pressure					
Maximum Condensing	3.02 MPaG/68°C (438 psiG/154.4°F)		4.16 MPaG/65°C (603 psiG/149°F)		4.28 MPaG/65°C (620.7 psiG/149°F)
Evaporating	0.15 ~ 0.65 MPaG (21.7 ~ 94.3 psiG)		0.23 ~ 1.59 MPaG (33.4 ~ 230.6 psiG)		0.21 ~ 1.63 MPaG (30.5 ~ 236.4 psiG)
Compression Ratio			1.8 ~ 8.0		
Abnormal Rise in pressure	4.7 MPaG (681psiG) or less		5.9 MPaG (855.7 psiG) or less		
Temperature					
Condensing	Under 68°C (Under 154.4°F)		Under 65°C (Under 149°F)		
Evaporating			- 25°C ~ 26.3°C (-13°F ~ 79.34°F)		
Discharged Gas (max)	120°C (248°F) (See note 1)		120°C (248°F) in case -20°C ~ 26.3°C 110°C (230°F) in case -25°C ~ -20°C (See note 1)		
Suction Gas (max)	must be over 0°C (No liquid back) (See note 1)				
Discharged gas's superheat	10°C or more				
Outdoor Ambient Temp.	Under 43°C (109.4°F)				
Electrical					
Supply voltage during operation	Rated voltage ±10%				
Starting voltage	Minimum 80% of rated voltage at balance pressure (at 43°C). (Depend on Driver Performance) This shall be measured at instance of start				
Reverse phase (rotation)	Not possible				
Frequency range	See in Specification of Compressor				
ON/OFF					
ON/OFF Frequency	Less than 250,000 cycles				
ON/OFF Cycle	The ON/OFF cycle shall be a maximum of 10 time/hour. OFF time shall be the time until the high side pressure reach to balance pressure (more than 3 min)				
Pipe Stress	3.5 kg/mm ² or less at start and stop condition (1.8 kg/mm ² during operation)				
Refrigerant Circuit					
Maximum Refrigerant Charge	A Series : 6.0 kg max. and B Series : 7.0 kg max. (See detail in Compressor Technical Manual)				
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg)				
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)				
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)				
Piping vibration	Maximum 0.8 mm.				
Inclination of compressor	Within 5°				

Note : 1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.

Condition Application :

Application Range

- Evaporating Temperature Range -20°C to 12°C (4°F to 53.6°F)
- Condensing Temperature Range 65°C (149°F) max.
- Discharge Gas Temperature 120°C (248°F) max.

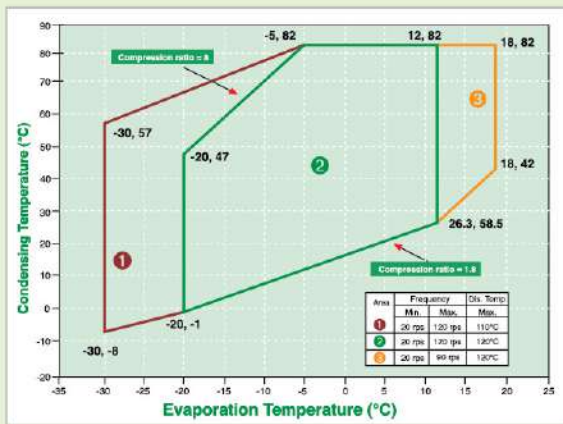
ARI Rating Condition

- Evaporating Temperature 7.2°C (45°F)
- Return Gas Temperature 18.3°C (65°F)
- Condensing Temperature 54.4°C (130°F)
- Liquid Temperature 46.1°C (115°F)
- Ambient Temperature 35.0°C (95°F)

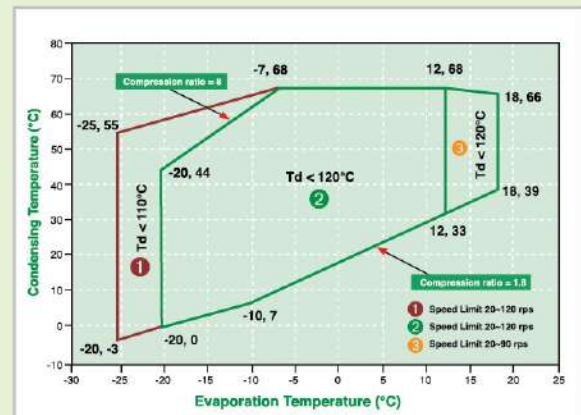
Scroll Compressor for Heating Applications

According to global warming concern and energy price increasing, household power consumption is taken into consideration seriously. For household heating, appliance for heating will change from using fossil energy such as oil, gas to be renewal and clean energy like Solar Energy and electricity.

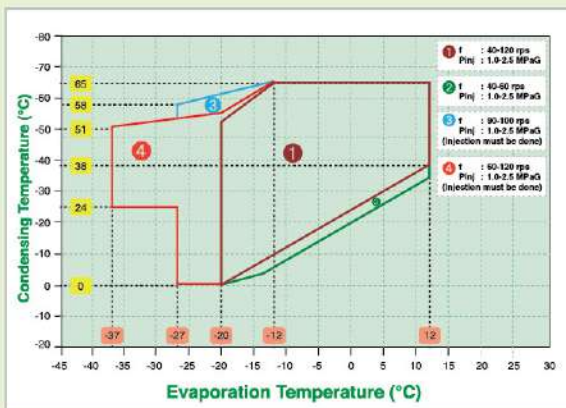
To response to the new market requirement, MITSUBISHI ELECTRIC has introduced Heating specialized SCROLL COMPRESSOR, particularly designed for heating application with our world renown FCM mechanism. The compressor has adopted highly innovated technology, not only FCM mechanism, which can minimize leakage loss and thrust load loss created by scroll mechanism, but also high temperature shell structure with superior motor design. Our Heating specialized Scroll delivers superative performance and efficiency.



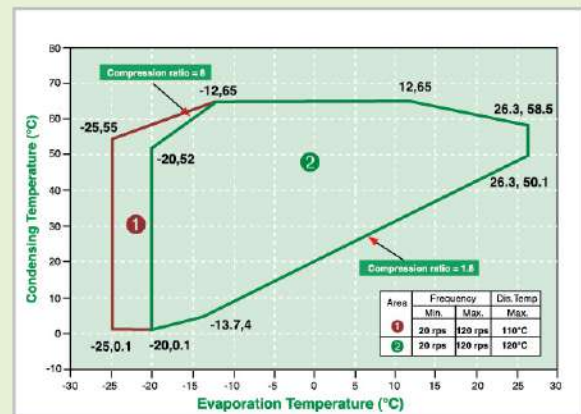
APB Operating Envelop



AEE Operating Envelop



ANB Injection Operating Envelop



ANE Operating Envelop

Other heating benefit attains from FCM technology is a wider operating range. The compressor can be operated at the minimum ET temperature of -25°C, with normal smoother rotation and low noise and vibration. Our Heating specialized scroll design bases on optimizing at high compression area, strengthening part and inverter supporting concept. It has been proven by life test in a heating condition, assured that our Heating specialized scroll compressor is superior reliability and durability for heating industry.

Together with the supreme product, we also provide a premium Technical service, customized to our valued customer with quickly response and full technical support in heating, including air-heating and water-heating unit testing service as your professional consultant, utilizing MITSUBISHI worldwide network.

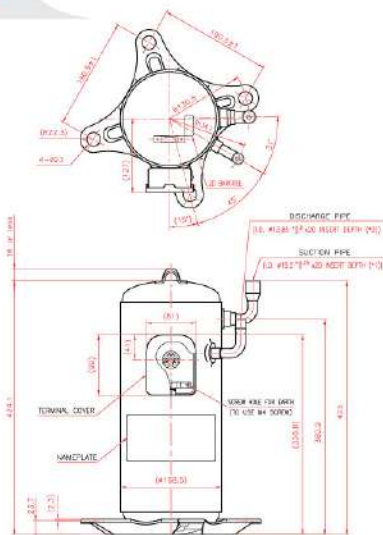
Specifications of Fixed Speed Scroll Compressor for Heating Application ANH, BNH

Models	Capacity		Input		Nominal Output		COP. (W/W)	EER. (Btu/hr*W)	Run Cap. (µF/VAC)	Weight (kgs.)	
	W	Kcal/hr	Btu/hr	Watt	Amps	HP					KW.
R-410A Scroll Compressor											
Long Piping System											
ANH Scroll											
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase											
ANH30VQHMT	7,260	6,190	24,566	2,600	4.50	3.08	2.30	2.77	9.45	50 / 420	37.3
ANH33VQHMT	7,320	6,294	24,976	2,440	11.40	3.40	2.50	3.00	10.24	50 / 420	37.3
ANH37VQHMT	8,280	7,119	28,251	2,760	13.10	3.60	2.65	3.00	10.24	55 / 420	37.3
ANH42VQHMT	9,430	8,108	32,175	3,120	14.80	4.00	3.00	3.02	10.31	60 / 420	37.7
b) Electrical 50 Hz : 380 - 415 Volt : 3 Phases											
ANH30YQHMT	7,260	6,190	24,566	2,600	4.50	3.08	2.30	2.79	9.45	-	37.3
ANH33YQHMT	6,890	5,924	23,509	2,430	4.30	3.40	2.50	2.84	9.67	-	37.3
ANH37YQHMT	8,270	7,111	28,217	2,750	4.70	3.80	2.80	3.01	10.26	-	37.3
ANH42YQHMT	9,020	7,755	30,776	3,030	5.40	4.00	3.00	2.98	10.16	-	37.7
ANH47YQHMT	10,150	8,727	34,632	3,460	6.10	4.50	3.35	2.93	10.01	-	37.3
ANH52YQHMT	11,390	9,793	38,863	3,850	6.80	5.00	3.70	2.96	10.09	-	38.4
BNH Scroll											
a) Electrical 50 Hz : 380 - 415 Volt : 3 Phases											
BNH57YFJMT	13,050	11,220	44,527	4,130	7.52	5.40	4.00	3.16	10.78	-	47.8
BNH62YFJMT	14,200	12,209	48,450	4,490	8.10	5.90	4.40	3.16	10.79	-	47.8
BNH65YFJMT	14,980	12,880	51,112	4,690	8.80	6.20	4.60	3.19	10.90	-	47.8
Short Piping System											
ANH Scroll											
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase											
ANH30VPGMT	6,640	5,709	22,656	2,270	10.70	3.10	2.30	2.93	9.98	50 / 420	36.3
ANH33VPGMT	7,320	6,294	24,976	2,440	11.40	3.40	2.50	3.0	10.24	50 / 420	36.3
ANH37VPGMT	8,280	7,119	28,251	2,760	13.10	3.60	2.65	3.0	10.24	55 / 420	36.3
ANH42VPGMT	9,430	8,108	32,175	3,120	14.80	4.00	3.00	3.02	10.31	60 / 420	36.7
b) Electrical 50 Hz : 380 - 415 / 460 Volt : 3 Phases											
ANH30YPKMT	6,200	5,331	21,154	2,250	3.9	3.0	2.20	2.76	9.40	-	38.4
ANH33YPKMT	6,800	5,847	23,202	2,450	4.2	3.2	2.40	2.78	9.47	-	38.5
ANH36YPKMT	7,520	6,466	25,658	2,720	4.5	3.6	2.70	2.76	9.43	-	38.6
ANH42YPKMT	9,000	7,738	30,708	3,100	5.1	4.2	3.10	2.90	9.91	-	38.4
ANH47YPKMT	10,200	8,770	34,802	3,430	5.8	4.6	3.40	2.97	10.15	-	38.6
ANH52YPKMT	11,350	9,759	38,726	3,850	6.4	5.1	3.80	2.95	10.06	-	38.6
ANH66YPKMT	14,400	12,381	49,133	4,880	8.3	6.4	4.80	2.95	10.07	-	38.9

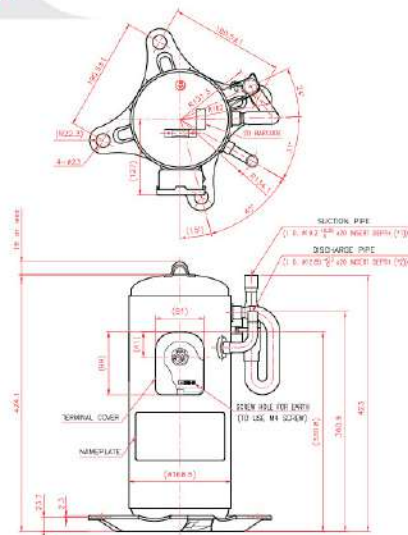
- Note :**
1. Testing condition : Heating condition (50/-7)
 2. All figures indicated are nominal value, please contact sales representative for detail specification.
 3. Oil type is FV505
 4. For variety of oil quantity, please contact sales representative; Min~Max oil quantity of SCI compressor is between 900-2,300 CC.

For BNH Drawing, Please see in page 22 >>

ANH30-66VPGMT/YPKMT



ANH30-42YQHMT/YQHMT



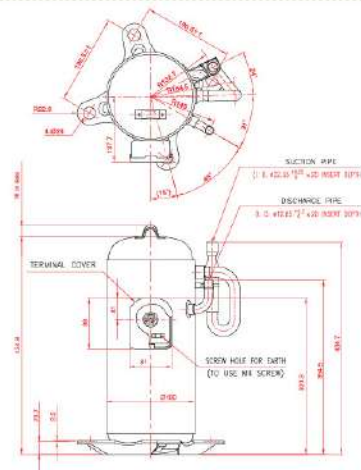
Operation Standards and Limits of Fixed Speed Scroll Compressor for Heating Applications APH, AEH, BEH, ANH, BNH

Models	APH	AEH	BEH	ANH	BNH
Compressor					
Type	Scroll Type (Fixed Speed)				
Displacement (cc/rev.)	42 ~ 73	33 ~ 60	67 ~ 107	33 ~ 52	57 ~ 65
Refrigerant type	R-290 (See note 3)	R-407C		R-410A	
Pressure					
Maximum Condensing	3.15 MPaG/82°C (457 psiG/180°F)	3.02 MPaG/68°C (442 psiG/154.4°F)	4.15 MPaG/65°C (602 psiG/149°F)		
Evaporating	0.07 ~ 0.69 MPaG (10.2 ~ 100.1 psiG)	0.1 ~ 0.8 MPaG (14.5 ~ 116 psiG)	0.23 ~ 1.59 MPaG (33.4 ~ 230.6 psiG)		
Compression Ratio	Follow pressure operating envelop	1.8 ~ 8.0	1.8 ~ 8.0		
Abnormal Rise in pressure	-	4.7 MPaG (681 psiG) or less	5.9 MPaG (855.7 psiG) or less		
Temperature					
Condensing	Under 82°C (Under 179.6°F)	Under 68°C (Under 154.4°F)	Under 65°C (Under 149°F)		
Evaporating	-30°C ~ 18°C (-22°F ~ 64.4°F)	-25°C ~ 18°C (-13°F ~ 64.4°F)	-25°C ~ 26°C (-13°F ~ 78.8°F)		
Discharged Gas (max)	120°C (248°F) (See note 1)	120°C (248°F) in case -20°C ~ 18°C 110°C (230°F) in case -25°C ~ -20°C (See note 1)	120°C (248°F) in case -20°C ~ 26°C 110°C (230°F) in case -25°C ~ -20°C (See note 1)		
Suction Gas (max)	must be over 0°C (No liquid back) (See note 1)				
Discharged gas 's superheat	10°C or more				
Outdoor Ambient Temp.	Under 43°C (109.4°F)				
Electrical					
Supply voltage during operation	Rated voltage ±10%				
Starting voltage	Minimum 80% of rated voltage at balance pressure (at 43°C). In case of 208-230 V Rated Voltage (N-code compressor), the starting voltage shall be 85% or more. This shall be measured at instance of start.				
Reverse phase (rotation)	Not possible				
Frequency range	Rated Frequency ± 2%				
ON/OFF					
ON/OFF Frequency	Less than 250,000 cycles				
ON/OFF Cycle	The ON/OFF cycle shall be a maximum of 10 time/hour. OFF time shall be the time until the high side pressure reach to balance pressure (more than 3 min.)				
Pipe Stress	34.3N/mm ² or less at start and stop condition (17.7N/mm ² during operating)	3.5 kg/mm ² or less at start and stop condition (1.8 kg/mm ² during operation)			
Refrigerant Circuit					
Maximum Refrigerant Charge	2.5 kg max. (See detail in Compressor)	A Series : 6.0 kg max. and B Series : 7.0 kg max. (See detail in Compressor Technical Manual)			
Evacuation level	Degree of vacuum equivalent to about 133 Pa (abs) (1.0 mmHg)				
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)				
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)				
Piping vibration	Maximum 0.8 mm.				
Inclination of compressor	Within 5°				

- Note :**
- The temperature must be lower than this critical value even the unit has been using for many years.
 - It is recommended that evaluation of oil return to the compressor has to be done.
 - R-290 model must be concerned to requirement for safety and customer note for safety.

<< Drawing from page 19

BNH57-65YFJMT



Specifications of Inverter Vapor Injection Scroll Compressor ANB

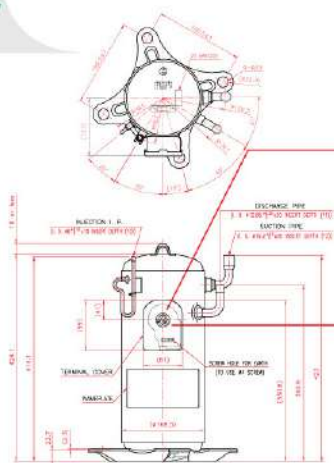
SCI Inverter vapor injection compressor can significantly increase heating capacity and able to operate at low ambient temperature while maintaining a required capacity.

The result is even more impressive when adopting into heat pumps. Synergizing with the premium inverter technology, the inverter vapor injection compressor reduces energy consuming while boosts up efficiency in a unit drastically, especially at low ambient temperature. Therefore, this compressor is a perfectly fit to heat pumps, both air to air and air to water application.

Models	Capacity Range (min~max)			Performance at 60 rps				Weight (kgs.)		
				Capacity		Input			COP.	EER.
	Watt	Kcal/hr	BTU/hr	W	BTU/hr	Watt	Amps		W/W	(Btu/hr*W)
R-410A Scroll Compressor										
Long Piping System										
a) DC Inverter 62 - 200 Volt										
ANB33FUDMT (20-120 RPS)	7,000~21,900	6,019~18,830	23,906~74,792	10,500	35,826	3,350	16.30	3.13	10.69	32.9
ANB42FUDMT (20-100 RPS)	7,900~22,200	6,792~19,088	26,979~75,133	13,500	46,062	4,070	19.40	3.32	11.32	33.6
Long Piping for Plural Compressor										
b) DC Inverter 400 Volt										
ANB33FUEMT (20-120 RPS)	7,100~22,140	6,105~19,002	24,247~75,475	10,500	35,826	3,320	12.50	3.16	10.79	32.9
ANB42FUEMT (20-120 RPS)	9,084~27,878	7,810~23,988	30,736~95,283	13,500	46,062	4,150	15.40	3.25	11.10	33.6
ANB66FUFMT (20-100 RPS)	17,000~36,000	14,617~30,953	58,058~122,946	20,900	71,311	6,550	15.70	3.19	10.89	37.6
Short Piping System										
a) DC Inverter 57 - 200 Volt										
ANB33FUAMT (20-120 RPS)	7,000~21,900	6,019~18,830	23,906~74,792	10,500	35,826	3,350	16.30	3.13	10.69	32.9
ANB42FUAMT (20-100 RPS)	7,900~22,200	6,792~19,088	26,979~75,133	13,500	46,062	4,070	19.40	3.32	11.32	33.6
b) DC Inverter 400 Volt (20-120 rps)										
ANB33FUBMT (20-120 RPS)	7,100~22,100	6,105~19,002	24,247~75,475	10,500	35,826	3,320	12.50	3.16	10.79	32.9
ANB42FUBMT (20-120 RPS)	9,000~27,900	7,738~23,988	30,736~95,283	13,500	46,062	4,150	15.40	3.25	11.10	33.6
ANB66FUCMT (20-100 RPS)	17,000~36,000	14,617~30,953	58,058~122,946	20,900	71,311	6,550	15.70	3.19	10.89	37.6

- Note :**
1. Testing condition : Heating (injection) condition
 2. All figures indicated are nominal value, please contact sales representative for detail specification.
 3. Oil type is FV50S
 4. For variety of oil quantity, please contact sales representative; Min~Max oil quantity of SCI compressor is between 900-2,300 CC.

ANB33-66 FUAMT/ FUBMT/FUCMT



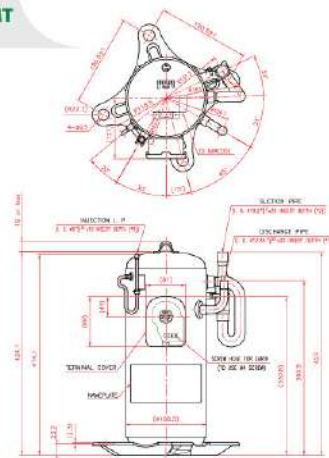
For ANB66FUCMT



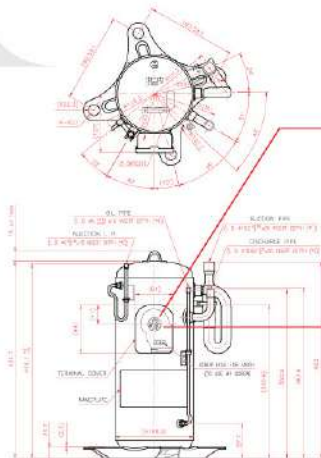
For other models



ANB33-42FUDMT



ANB33-66FUEMT/ FUFMT



For ANB66FUFMT



For other models

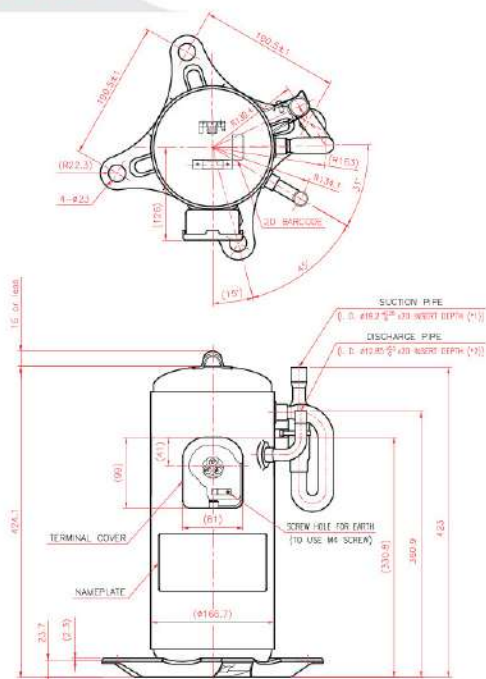


Specifications of Inverter Scroll Compressor for Heating Application APB

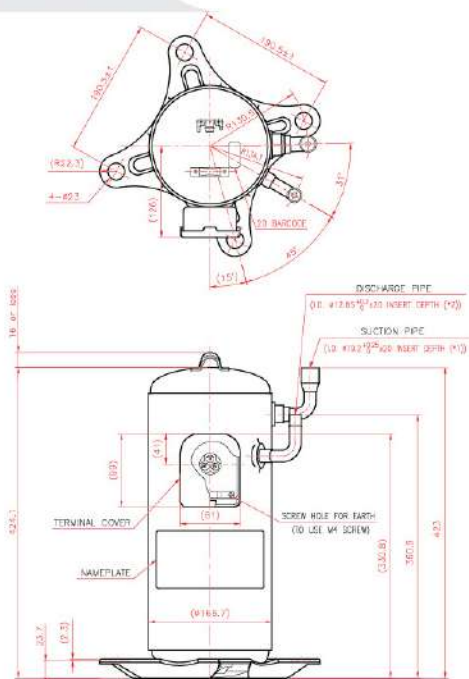
Models	Capacity Range (min~max)			Performance at 60 rps				Weight (kgs.)		
				Capacity		Input			COP. W/W	EER. (Btu/hr*W)
	Watt	Kcal/hr	BTU/hr	W	BTU/hr	Watt	Amps			
R-290 Scroll Compressor Short Piping System										
a) DC Inverter 400 Volt										
APB33FAAMT (20-120 RPS)	2,128~15,294	1,829~13,150	7,261~52,185	5,100	17,401	1,720	4.00	2.97	10.12	31.0
APB42FAAMT (20-120 RPS)	2,859~19,505	2,458~16,771	9,755~66,553	6,200	21,154	2,200	4.70	2.83	9.62	30.7
APB52FAAMT (20-120 RPS)	3,590~24,758	3,086~21,288	12,249~84,477	7,800	26,614	2,620	5.60	2.98	10.16	31.0

- Note :**
1. Testing condition : Heating condition (50/-7)
 2. All figures indicated are nominal value, please contact sales representative for detail specification.
 3. Oil type is FV50S
 4. For variety of oil quantity, please contact sales representative; Min~Max oil quantity of SCl compressor is between 900-2,300 CC.

AEE33-60FQBM7

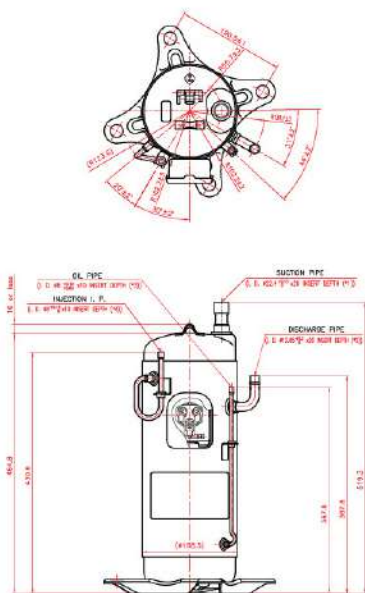


AEE33-60FPAMT/APB33-52

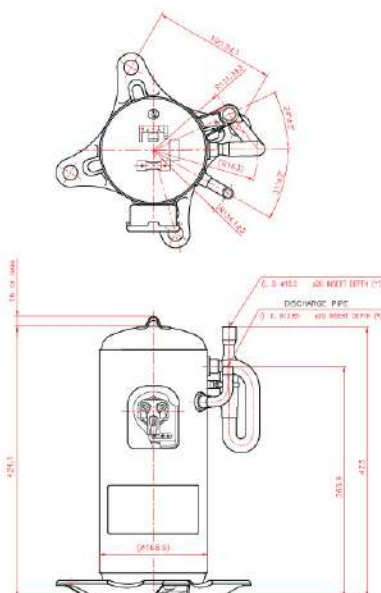


<< Drawing from page 26

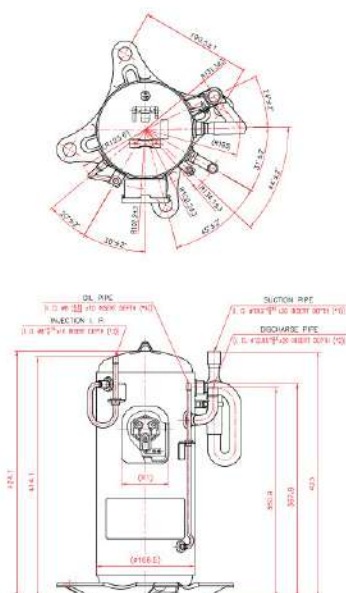
ANS66Y--MTS



ANB33-52 FKJMTS/ FKPM7S



ANB66FUFMTS



Operation Standards and Limits of Inverter Scroll Compressor for Heating Applications ANB (Injection), ANE, AEE, APB

Models	AEE	ANE	ANB (Injection)	APB
Compressor				
Type	Scroll Type (DC Inverter)			
Displacement (cc/rev.)	33 ~ 60	33 ~ 66	33 ~ 66	33-52
Refrigerant type	R-407C	R-410A		R-290 (See note 3)
Pressure				
Maximum Condensing	3.02 MPaG/68°C (438 psiG/154.4°F)	4.15 MPaG/65°C (602 psiG/149°F)	4.16 MPaG/65°C (603 psiG/149°F)	3.15 MPaG/82°C (457 psiG/179.6°F)
Evaporating	0.1~0.8 MPaG (14.5~116 psiG)	0.23~1.59 MPaG (33.4~230.6 psiG)	0.1~1.59 MPaG (14.5~230.6 psiG)	0.07~0.69 MPaG (33.4~230.6 psiG)
Compression Ratio	1.8 ~ 8.0	1.8 ~ 8.0	-	Follow Pressure operating envelop
Abnormal Rise in pressure	4.7 MPaG (681 psiG) or less	5.9 MPaG (855.7 psiG) or less		-
Temperature				
Condensing	Under 68°C (Under 154.4°F)	Under 65°C (Under 149°F)		Under 82°C (Under 179.6°F)
Evaporating	-25°C~18°C (-13°F~64.4°F)	-25°C~26°C (-13°F~78.8°F)	-37°C~26.3°C (-34.6°F~79.34°F)	-30°C~18°C (-22°F~64.4°F)
Discharged Gas (max)	120°C (248°F) in case -20°C ~ 12°C and speed limit 20 ~ 120 rps, 120°C (248°F) in case 12°C ~ 18°C and speed limit 20 ~ 90 rps 110°C (230°F) in case -25°C ~ -20°C and speed limit 20 ~ 120 rps (See note 1)	120°C (248°F) in case -20°C ~ 12°C and speed limit 20 ~ 120 rps 120°C (248°F) in case 12°C ~ 26°C (See note 1) and speed limit 20 ~ 90 rps, 110°C (230°F) in case -25°C ~ -20°C and speed limit 20 ~ 120 rps (See note 1)	120°C (248°F) in case of operating zone 1, 2, 3, 4	120°C(248F) in case -20°~12°C and speed limit 20~120 rps, 120°C(248F) in case 12°C~18°C and speed limit 20~90 rps 110°C(230F) in case -30°~-20°C and speed limit 20~120 rps, (See note 1)
Suction Gas (max)	must be over 0°C (No liquid back) (See note 1)			
Discharged gas 's superheat	10°C or more			
Outdoor Ambient Temp.	Under 43°C (109.4°F)			-
Electrical				
Supply voltage during operation	Rated voltage ±10%			
Starting voltage	Minimum 80% of rated voltage at balance pressure (at 43°C). (Depend on Driver Performance). This shall be measured at at instance of start.			
Reverse phase (rotation)	Not possible			
Frequency range	See in Specification of Compressor			
ON/OFF				
ON/OFF Frequency	Less than 250,000 cycles			
ON/OFF Cycle	The ON/OFF cycle shall be a maximum of 10 time/hour. OFF time shall be the time until the high side pressure reach to balance pressure (more than 3 min)			
Pipe Stress	3.5 kg/mm ² or less at start and stop condition (1.8 kg/mm ² during operation)		34.3 N/mm ² or less at start and stop condition (17.7 N/mm ² during operation)	
Refrigerant Circuit				
Maximum Refrigerant Charge	A Series : 6.0 kg max. and B Series : 7.0 kg max. (See detail in Compressor Technical Manual)			2.5 kg max. (See detail in Compressor Technical Manual)
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg)			
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)			
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)			
Piping vibration	Maximum 0.8 mm.			
Inclination of compressor	Within 5°			

- Note :**
1. The temperature must be lower than this critical value even the unit has been using for many years.
 2. It is recommended that evaluation of oil return to the compressor has to be done.
 3. R-290 model must be concerned to requirement for safety and customer note for safety.

<< For ANS66Y--MTS, ANB33-52 FKJMTS/ FKPMTS, ANB66FUFMTS Drawing, please see in page 25

<< For ANB66-78FVAMTS/ ADB66-78 Drawing, They are the same drawing as "ANB78-87" in page 17

<< For ANB66YQDMTS Drawing, It is the same drawing as "All Models Except ANB78-87" in page 17

Specifications & Operation Standards and Limits of Scroll Compressor for Refrigeration Application

Application	Models	Capacity Range (min ~max)			Performance at MT or LT (depend on model)						Weight (kgs.)
		Watt	Kcal/hr	BTU/hr	Capacity		Input		COP. (w/w)	EER. (Btu/hr*w)	
					W	BTU/hr	Watt	Amps			

R-404A Inverter Scroll Compressor for Refrigeration Application

a) DC Inverter 400 Volt

Inverter Medium Temp.	ADB66F1-MTS (15-120RPS)*	1,853-16,532	1,593-14,214	6,323-56,408	8,500	29,002	4,100	13.30	2.07	7.07	38.9
	ADB78F1-MTS (15-120RPS)*	2,371-19,467	2,039-16,739	8,090-66,424	9,800	33,438	4,700	15.20	2.09	7.11	38.9

R-410A Inverter Scroll Compressor for Refrigeration Applications

a) DC Inverter 400 Volt

Inverter Medium Temp.	ANB33FKJMTS (20-120RPS)*	1,731-11,508	1,488-9,895	5,908-39,266	5,700	19,448	2,720	10.90	2.10	7.15	33.5
	ANB42FKJMTS (20-120RPS)*	2,282-15,075	1,962-12,962	7,787-51,438	7,150	24,396	3,400	13.20	2.10	7.18	33.5
	ANB52FKPMTS (20-120RPS)*	2,925-18,377	2,515-15,801	9,981-62,705	8,850	30,196	4,200	15.80	2.11	7.19	33.5
	ANB66FVAMTS (15-120RPS)*	2,580-22,304	2,218-19,178	8,803-76,104	11,800	40,262	5,290	17.80	2.23	7.61	38.9
	ANB78FVAMTS (15-120RPS)*	3,031-27,137	2,806-23,334	10,342-92,595	13,900	47,427	6,250	20.60	2.22	7.59	38.9
Inverter Low Temp.	ANB66FUFMTS (20-120RPS)*	Under Developing									

Application	Models	Capacity			Input		Normal Output		COP. (w/w)	EER (Btu/hr*w)	Weight. (kgs.)
		W	Kcal/hr	BTU/hr	Watt	Amps	HP	KW.			

R-410A Scroll Compressor for Refrigeration Applications (Fixed Speed)

a) Electrical 50 Hz : 380 - 415 / 460 Volt : 3 Phases

Fixed Speed Medium Temp.	AN66YQDMTS*	10,200	8,772	34,802	4,520	8.00	5.77	4.30	2.26	7.70	38.6
Fixed Speed Low Temp.	ANS66Y--MTS*	Under Developing									

Note : 1. Testing condition : MT for Medium Temp. And LT for Low Temp.

2. All figures indicated are normal value, please contact sales representative for detail specification

3. For variety of oil quantity, please contact sales representative; Min~max oil quantity of SCI compressor is between 900-2,300 cc.

Models	R-410A		R-404A	R-410A
	ANB for Medium Temp. Refrigeration	ANB for Low Temp. Refrigeration	ADB	AN for Medium Temp. and Low Temp. Refrigeration

Compressor

Type	Scroll Type (DC Inverter)			Scroll Type (Fixed Speed)
Displacement (cc/rev.)	33 ~ 78	66	66 ~ 78	66.0
Refrigerant type	R-410A	R-410A	R-404A	R-410A

Pressure

Maximum Condensing	4.15 MPaG/65°C (603 psiG/149°F)	4.15 MPaG/65°C (602 psiG/149°F)	3.31 MPaG/65°C (480.1 psiG/149°F)	4.15 MPaG/65°C (602 psiG/149°F)
Evaporating	0.2~1.59 MPaG (29~230.6 psiG)	0.1~1.59 MPaG (14.5~230.6 psiG)	0.15~93 MPaG (21.8~134.9 psiG)	0.23~1.59 MPaG (33.4~230.6 psiG)
Compression Ratio	1.8 ~ 8.0	-	-	1.8 ~ 8.0
Abnormal Rise in pressure	5.9 MPaG (855.7 psiG) or less			

Temperature

Condensing	Under 68°C (Under 154.4°F)	Under 65°C (Under 149°F)	Under 68°C (Under 154.4°F)	Under 65°C (Under 149°F)
Evaporating	-27°C~26.3°C (-16.6°F~79.34°F)	-37°C~26.3°C (-34.6°F~79.34°F)	-25°C~18°C (13°F~64.4°F)	-25°C~26.3°C (-13°F~79.34°F)
Discharged Gas (max)	120°C (248°F) in case -20°C ~ 26.3°C and speed limit 20 ~ 120 rps 110°C (230°F) in case -27°C ~ -20°C and speed limit 20 ~ 120 rps, (See note 1)	120°C (248°F) in case of operating zone 1,2,3,4 (See note 1)	120°C (248°F) in case of -20°C~18°C and speed limit 15~120 rps 120°C (248°F) in case of -25°C~-20°C and speed limit 15~100 rps	120°C(248°F) in case -20°C~26.3°C 110°C(230°F) in case -25°C~-20°C
Suction Gas (max)	must be over 0°C (No liquid back) (See note 1)			
Discharged gas 's superheat	10°C or more			
Outdoor Ambient Temp.	Under 43°C (109.4°F)			

Electrical

Supply voltage during operation	Rated voltage ±10%		
Starting voltage	Minimum 80% of rated voltage at balance pressure (at 43°C). (Depend on Driver Performance). This shall be measured at at instance of start.		Minimum 80% of rate voltage at balance pressure (at 43°C). In case of 208-230 V Rated Voltage (N-code compressor), the starting voltage shall be 85% or more. This shall be measured at instance of start.
Reverse phase (rotation)	Not possible		
Frequency range	See in Specification of Compressor		

ON/OFF

ON/OFF Frequency	Less than 250,000 cycles		
ON/OFF Cycle	The ON/OFF cycle shall be a maximum of 10 time/hour. OFF time shall be the time until the high side pressure reach to balance pressure (more than 3 min)		
Pipe Stress	3.5 kg/mm ² or less at start and stop condition (1.8 kg/mm ² during operation)		

Refrigerant Circuit

Maximum Refrigerant Charge	A Series : 6.0 kg max. (See detail in Compressor Technical Manual)		
Evacuation level	Degree of vacuum equivalent to about 133 Pa (abs) (1.0 mmHg)		
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)		
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)		
Piping vibration	Maximum 0.8 mm.		
Inclination of compressor	Within 5°		

Note : 1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.



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