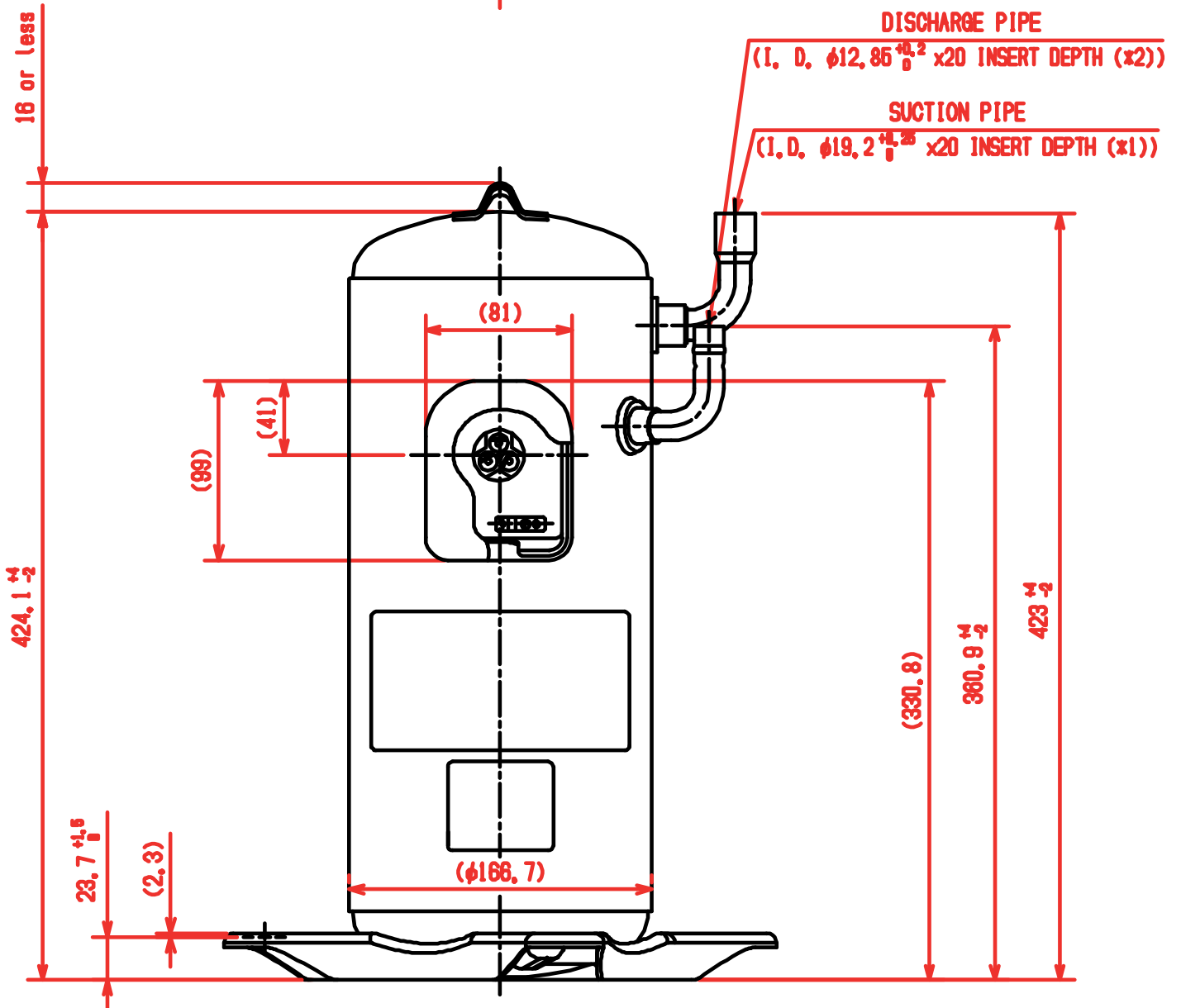
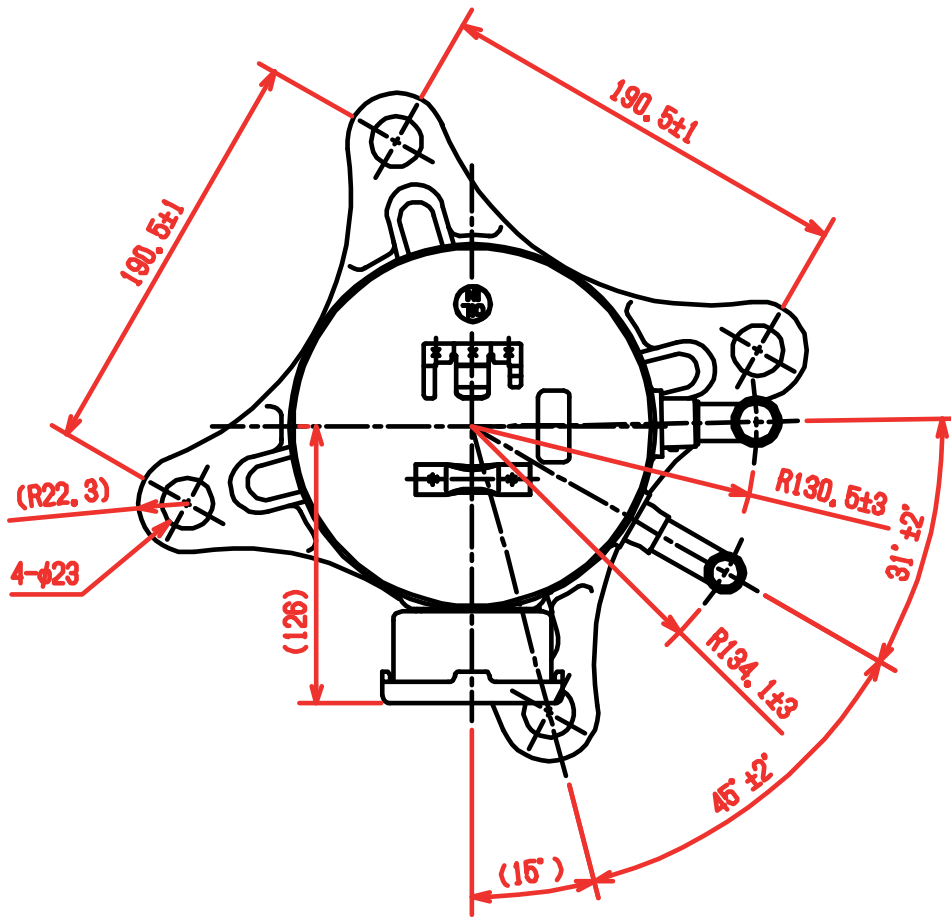


# R-32 & R-290 Inverter Scroll for HVAC Application Specifications

## APB Inverter Scroll Compressor for R-290

Models	Capacity Range						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
	(min ~ max)						Capacity		Input		COP.	EER.			
	Watt	Kcal/hr	BTU/hr		W	BTU/hr	Watt	Amps	(w/w)	(Btu/hr*w)					
<b>a) DC Inverter 200 Volt</b>															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
APB33FABMT(15-120 RPS)	1,500	10,500	1,290	9,028	5,118	35,826	5,100	17,401	1,650	5.90	3.09	10.55	30.4	900	14
APB42FABMT(15-120 RPS)	2,000	14,100	1,720	12,123	6,824	48,109	6,200	21,154	2,200	8.70	2.82	9.62	30.3	900	14
APB52FABMT(15-120 RPS)	2,500	17,500	2,150	15,047	8,530	59,710	8,300	28,320	2,620	9.20	3.17	10.81	30.5	900	14
<b>b) DC Inverter 400 Volt</b>															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
APB33FAAMT(15-120 RPS)	1,500	10,500	1,290	9,028	5,118	35,826	5,100	17,401	1,720	4.00	2.97	10.12	31.0	900	14
APB42FAAMT(15-120 RPS)	2,000	14,100	1,720	12,123	6,824	48,109	6,200	21,154	2,200	4.70	2.82	9.62	30.7	900	14
APB52FAAMT(15-120 RPS)	2,500	17,500	2,150	15,047	8,530	59,710	7,800	26,614	2,620	5.60	2.98	10.16	31.0	900	14

Heat pump Condition





# SIAM COMPRESSOR INDUSTRY

Classification : Specification for Compressor	Written By		Wanmongkol Marathong	
	Approved By		Korakot Intraratat	
Subject : APB33FAAMT	Issued Date		2020-04-29	Revised D
	Document No.		SPC18O2010.02	
1.Compressor data				
Type		Scroll		
Displacement	cm <sup>3</sup> /rev.	33.0		
	in <sup>3</sup> /rev.	2.0		
2.Motor data				
Motor type		BLDCM		
Motor protection		External		
Nominal output	W	2500		
Number of pole		6		
Nominal revolution	rpm	3600 (at 60rps)		
Insulation class		E		
Motor resistance (20 °C)	Ohm	1.21		
3.Refrigerant				
Type		R-290		
4.Oil				
Type		PZ46M		
Charge amount	L (in <sup>3</sup> )	1.40 (85.4)		
5.Mass (include.oil)	kg (lbs)	31.1 (68.6)		
6.Compressor power source				
Rated voltage	V	103-415		
Rated frequency	Hz	180 (60rps)		
Running frequency	Hz	45-360 (15-120rps)		
Phase	Ø	3		
7.Performance				
Refrigerating capacity (±5%)	W	6200	5100	
	BTU/hr	21154	17401	
Motor input (±5%)	W	1820	1720	
COP	W/W	3.41	2.97	
EER	BTU/hr.W	11.62	10.12	
Current	A	3.9	4.0	
Note: Conditions	°C (°F)	ARI	Heat Pump	
Evaporating temp.	°C (°F)	7.2 (45.0)	-7.0 (19.4)	
Condensing temp.	°C (°F)	54.4 (129.9)	50.0 (122.0)	
Return gas temp.	°C (°F)	18.3 (64.9)	-2.0 (28.4)	
Ambient temp.	°C (°F)	35.0 (95.0)	0.0 (32.0)	
Liquid temp.	°C (°F)	46.1 (115.0)	46.0 (114.8)	
Power source	rps/Hz	60/180	60/180	
Cooling performance curve		SCI-CPDA145		
Cooling performance injection curve		-		
Heating performance curve		SCI-HPDA078		
Heating performance injection curve		-		
-Performance data are base on SCI's calculation at oil 900 cc. Please follow to the general specification for APB (TDRD20M039)				



# SIAM COMPRESSOR INDUSTRY

Classification : Specification for Compressor	Issued Date	2020-04-29
Subject : APB33FAAMT	Document No.	SPC18O2010.02
Compressor data	SC01F970	
Wiring diagram	CS01D584	
Terminal parts accessories		
Terminal parts assy	CS01F449	
Terminal cover	SC25C057H01	1 pce.
Mounting accessories		
Mounting parts	SC01D525	
Rubber mount	SC31D009H01	4 pce.
Spacer (Optional)	SC10D377H01	4 pcs.

REFERENCE

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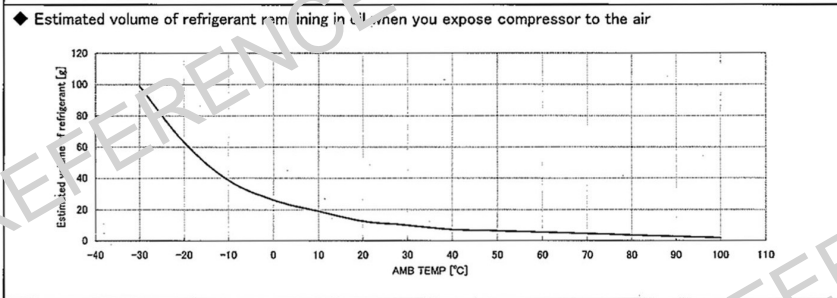
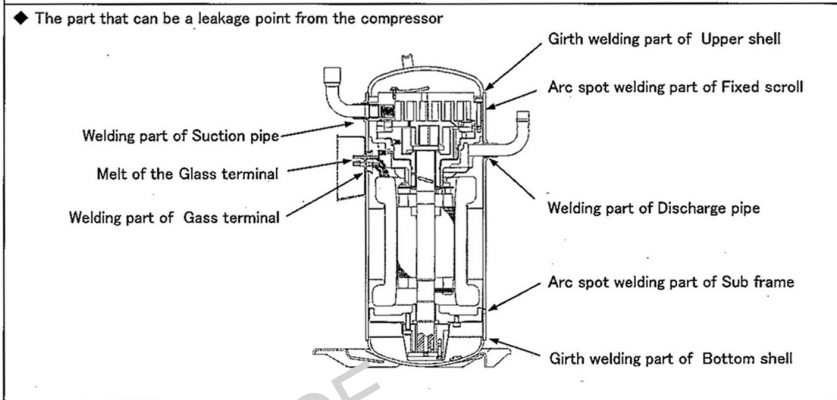
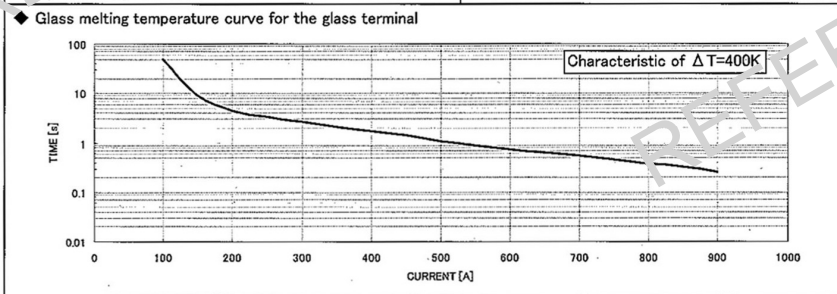
REFERENCE



Classification : Specification for Compressor	Issued Date	2020-04-29
Subject : APB33FAAMT	Document No.	SPC18O2010.02

**THE DATA ON COMPRESSOR SAFETY**

◆ Specifications of compressor protector (for fixed speed) Ultimate trip current characteristic Amb temp Current Operating temp Open Close	130°C 22.4~30.6A -170±5°C 90±10°C
◆ Abnormally over current and input of compressor (at 198V) Current Input	19.4A 3690W
◆ Destructive pressure of compressor shell (hydrostatic pressure)	13.7MPa



VM-CZC21



# SIAM COMPRESSOR INDUSTRY

Classification : Specification for Compressor	Issued Date	2020-04-29
Subject : APB33FAAMT	Document No.	SPC18O2010.02
Pressure		
Condensing		3.15 MPaG [457 psiG] or less
Evaporating		0.07 ~ 0.69 MPaG [10.2~100.1 psiG]
Compression ratio		Follow pressure operating envelop
Abnormal rise in pressure		-
High pressure switch recommendation		-
Temperature		
Condensing temperature		Under 82 °C
Evaporating temperature		-30 ~ 18 °C
Discharge gas (max)		-30 ~ 18 °C
Suction gas superheat		Must be more than 0 °C - No liquid-back
Discharge gas superheat		10 °C or more
Outdoor ambient temp.		-
Electrical		
Reverse phase (rotation)		Not possible
ON / OFF		
ON/OFF frequency		Less than 250,000 cycles
ON/OFF cycle		-The ON/OFF cycle shall be a maximum of 10 times/hour. -OFF time shall be the time until the high side and low side pressure reach to balance pressure (more than 3 minutes)
Piping stress		34.3 N/mm <sup>2</sup> or less at start and stop condition (17.7 N/mm <sup>2</sup> during operation)
Refrigerant circuit		
Maximum refrigerant charge		Amount of refrigerant [g] < or = Amount of oil [g] x 4 (the relative density of oil : 1[g/cm <sup>3</sup> ]). Regarding operation which exceeds the above limit, consult with us.
Piping vibration		Maximum 0.8 mm.
Inclination of compressor		Within 5°
Piping		Suction & Discharge pipes are sealed with rubber plugs.
Discharge gas temp. measurement		Discharge gas temperature sensor at 340mm distance from the shell is acceptable by the test result.
Discharge gas temp. measurement		Discharge gas temperature sensor at 340mm distance from the shell is acceptable by the test result.
Accumulator installation		In case of 1.1kg refrigerant amount usage, it is not necessary to install accumulator in the circuit by the soaking start test result of sightglass compressor.