

MAKING MODERN LIVING POSSIBLE



Datasheets

Performer[®] scroll compressors **SM / SY / SZ / SH**



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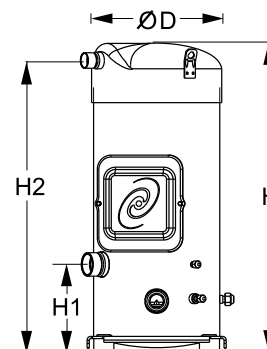
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Performer[®]
Air Conditioning Scroll Compressors

General Characteristics

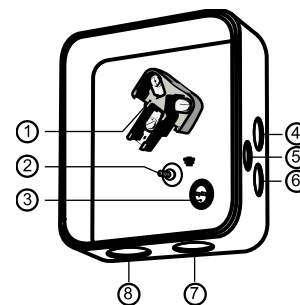
Model number (on compressor nameplate)	SZ160T4RC	SZ160T4CC
Code number for Singlepack*	SZ160-4RAI	SZ160-4CBI
Code number for Industrial pack**	SZ160-4RAM	SZ160-4CBM
Drawing number	8551120b	8551055c
Suction and discharge connections	Rotolock	Brazed
Suction connection	2-1/4 " Rotolock	1-5/8 " ODF
Discharge connection	1-3/4 " Rotolock	1-1/8 " ODF
Suction connection with supplied sleeve	1-3/4 " ODF	
Discharge connection with supplied sleeve	7/8 " ODF	
Oil sight glass	Threaded	Threaded
Oil equalization connection	3/8" flare SAE	3/8" flare SAE
Oil drain connection	1/4" flare	1/4" flare
LP gauge port	Schrader	Schrader
IPR valve	None	None
Swept volume	13.22 in3/rev	
Displacement @ Nominal speed	1331 cfh @ 2900 rpm - 1606 cfh @ 3500 rpm	
Net weight	198 lbs	
Oil charge	135 oz, POE - 160SZ	
Maximum system test pressure Low Side / High side	363 psi / 464 psi	
Maximum differential test pressure	348 psi	
Maximum number of starts per hour	12	
Refrigerant charge limit	28 lbs	
Approved refrigerants	R407C, R134a, R404A, R507A	

Dimensions



D=10.5 inch, H=24.8 inch,
H1=7.1 inch, H2=23.5 inch

Terminal box



IP54 (with cable gland)

- 1: Power connection, 3 x 4.8 mm (3/16")
- 2: Earth M5
- 3: Thermostat connector
- 4: Knock-out Ø 22 mm (7/8") for 1/2" conduit
- 5: Knock-out Ø 16.5 mm (0.65")
- 6: Knock-out Ø 20.5 mm (0.81")
- 7: Double knock-out Ø 32.1 mm (1.26") & Ø 25.4 mm (1")
- 8: Double knock-out Ø 44 mm (1-3/4") for 1-1/4" conduit & Ø 34 mm (1-3/8") for 1" conduit

Electrical Characteristics

Nominal voltage	380-400V/3/50Hz - 460V/3/60Hz
Voltage range	340-440 V @ 50Hz - 414-506 V @ 60Hz
Winding resistance (between phases) +/- 7% at 77°F	0.94 Ω
Maximum Must Trip current (MMT)	29 A
Locked Rotor Amps (LRA)	150 A
Motor protection	Internal thermostat, ext. overload protector needed

Recommended Installation torques

Suction Rotolock nut or valve	96 ft.lbs
Discharge Rotolock nut or valve	81 ft.lbs
Oil sight glass	37 ft.lbs
Power connections / Earth connection	2 ft.lbs / 1 ft.lbs
Terminal box cover screws	2 ft.lbs
Mounting bolts	15 ft.lbs

Parts shipped with compressor

Mounting kit with grommets, bolts, nuts, sleeves and washers
Initial oil charge
Installation instructions

Approvals : CE certified, UL certified (file SA6873), -

*Singlepack: Compressor in cardboard box

**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

Rotolock accessories, suction side
Code no.

Solder sleeve, P08 (2-1/4" Rotolock, 1-3/8" ODF)	8153005
Solder sleeve, P03 (2-1/4" Rotolock, 1-5/8" ODF)	8153006
Rotolock valve, V08 (2-1/4" Rotolock, 1-3/8" ODF)	8168025
Rotolock valve, V03 (2-1/4" Rotolock, 1-5/8" ODF)	8168026
Gasket, 2-1/4"	8156133

Rotolock accessories, discharge side
Code no.

Solder sleeve, P07 (1-3/4" Rotolock, 7/8" ODF)	8153013
Solder sleeve, P02 (1-3/4" Rotolock, 1-1/8" ODF)	8153004
Angle adapter, C07 (1-3/4" Rotolock, 7/8" ODF)	8168008
Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF)	8168005
Rotolock valve, V07 (1-3/4" Rotolock, 7/8" ODF)	8168032
Rotolock valve, V02 (1-3/4" Rotolock, 1-1/8" ODF)	8168028
Gasket, 1-3/4"	8156132

Rotolock accessories, sets
Code no.

Solder sleeve adapter set, 1-5/8" ODF & 1-1/8" ODF	7765028
Valve set, V08 (2-1/4"~1-3/8"), V07 (1-3/4"~7/8")	7703010
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

Oil / lubricants
Code no.

POE lubricant, 160SZ, 1 liter can	7754023
POE lubricant, 160SZ, 2 liter can	7754024

Crankcase heaters
Code no.

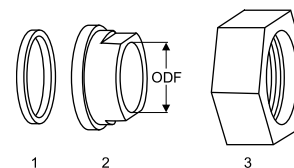
Surface sump heater + bottom insulation, 48 W, 24 V, CE mark, UL	120Z0363
Surface sump heater + bottom insulation, 48 W, 230 V, CE mark, UL	120Z0384
Surface sump heater + bottom insulation, 48 W, 400 V, CE mark, UL	120Z0385
Surface sump heater + bottom insulation, 48 W, 460 V, CE mark	120Z0386
Belt type crankcase heater, 65 W, 460 V, CE mark, UL	120Z0466
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	7773107
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	7773117
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	120Z0039

Miscellaneous accessories
Code no.

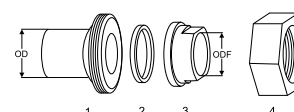
Electronic soft start kit, MCI 25 C	7705007
Acoustic hood for scroll compressor S160	7755008
Discharge thermostat kit	7750009

Spare parts
Code no.

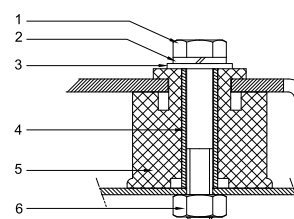
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156147
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Terminal box 7.3" x 7.8" incl cover	8156139
T block connector 2.4" x 3"	8173021

Gaskets, sleeves and nuts


- 1: Gasket
- 2: Solder sleeve
- 3: Rotolock nut

Solder sleeve adapter set


- 1: Rotolock adapter (Suc & Dis)
- 2: Gasket (Suc & Dis)
- 3: Solder sleeve (Suc & Dis)
- 4: Rotolock nut (Suc & Dis)

Mounting kit


- 1: Bolt (4x)
- 2: Lock washer (4x)
- 3: Flat washer (4x)
- 4: Sleeve (4x)
- 5: Grommet (4x)
- 6: Nut (4x)

Performance data at 60 Hz, ARI rating conditions

R407C

Cond. temp. in °F (tc)	Evaporating temperature in °F (to)								
	0	10	20	30	35	40	45	50	55

Cooling capacity in Btu/h

90	69 357	89 718	114 270	143 481	159 980	177 820	197 058	217 753	239 965
100	65 029	84 696	108 337	136 421	152 275	169 416	187 901	207 790	229 140
110	-	79 356	101 940	128 750	143 886	160 255	177 914	196 923	217 339
120	-	73 700	95 080	120 470	134 816	150 339	167 099	185 154	204 563
130	-	-	87 759	111 583	125 064	139 669	155 456	172 485	190 813
140	-	-	-	102 088	114 632	128 245	142 987	158 916	176 090
150	-	-	-	-	-	116 069	129 692	144 448	160 395

Power input in W

90	8 486	8 674	8 821	8 912	8 931	8 931	8 909	8 864	8 793
100	9 522	9 719	9 877	9 981	10 009	10 018	10 005	9 970	9 911
110	-	10 881	11 053	11 174	11 210	11 228	11 227	11 203	11 155
120	-	12 174	12 361	12 500	12 546	12 575	12 585	12 573	12 537
130	-	-	13 813	13 971	14 029	14 069	14 091	14 092	14 071
140	-	-	-	15 601	15 670	15 723	15 758	15 773	15 766
150	-	-	-	-	-	17 548	17 597	17 627	17 635

Current consumption in A

90	13.66	13.86	14.04	14.16	14.21	14.23	14.24	14.23	14.20
100	14.78	14.99	15.18	15.32	15.37	15.41	15.43	15.44	15.42
110	-	16.34	16.54	16.70	16.77	16.82	16.85	16.87	16.86
120	-	17.93	18.15	18.34	18.41	18.48	18.52	18.56	18.57
130	-	-	20.04	20.25	20.34	20.42	20.48	20.53	20.56
140	-	-	-	22.48	22.59	22.68	22.76	22.83	22.88
150	-	-	-	-	-	25.29	25.39	25.47	25.54

Mass flow in lbs/h

90	876	1 111	1 387	1 710	1 891	2 084	2 292	2 514	2 750
100	863	1 101	1 381	1 706	1 888	2 083	2 291	2 514	2 752
110	-	1 088	1 370	1 697	1 879	2 074	2 283	2 506	2 745
120	-	1 072	1 354	1 682	1 864	2 059	2 268	2 491	2 729
130	-	-	1 334	1 661	1 842	2 037	2 245	2 467	2 704
140	-	-	-	1 634	1 815	2 008	2 215	2 436	2 671
150	-	-	-	-	-	1 972	2 177	2 396	2 629

Energy Efficiency Ratio (E.E.R.)

90	8.17	10.34	12.95	16.10	17.91	19.91	22.12	24.57	27.29
100	6.83	8.71	10.97	13.67	15.21	16.91	18.78	20.84	23.12
110	-	7.29	9.22	11.52	12.84	14.27	15.85	17.58	19.48
120	-	6.05	7.69	9.64	10.75	11.96	13.28	14.73	16.32
130	-	-	6.35	7.99	8.91	9.93	11.03	12.24	13.56
140	-	-	-	6.54	7.32	8.16	9.07	10.08	11.17
150	-	-	-	-	-	6.61	7.37	8.19	9.10

Nominal performance at to = 45 °F, tc = 130 °F

Cooling capacity	155 456	Btu/h	Current consumption	20.48	A
Power input	14 091	W	Mass flow	2 245	lbs/h
E.E.R.	11.03				

Pressure switch settings

Maximum HP switch setting	428	psi(g)
Minimum LP switch setting	7	psi(g)
LP pump down setting	15	psi(g)

T 0 : Evaporating temperature at dew point

T C : Condensing temperature at dew point

Rating conditions : Superheat = 20 °F , Subcooling = 15 °F

All performance data +/- 5%

Sound power data

Sound power level	83	dB(A)
With acoustic hood	75	dB(A)

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Performance data at 60 Hz, ARI rating conditions
R134a

Cond. temp. in °F (tc)	Evaporating temperature in °F (to)							
	5	15	25	30	35	40	45	50

Cooling capacity in Btu/h

90	53 881	69 478	88 293	99 024	110 698	123 362	137 063	151 846	167 759
100	50 668	65 780	83 975	94 345	105 624	117 860	131 098	145 385	160 767
110	47 316	61 858	79 348	89 314	100 157	111 921	124 654	138 402	153 212
120	43 849	57 736	74 436	83 956	94 318	105 569	117 755	130 922	145 116
130	-	53 436	69 260	78 292	88 132	98 826	110 422	122 965	136 501
140	-	-	63 843	72 344	81 619	91 715	102 677	114 554	127 390
150	-	-	-	66 134	74 802	84 257	94 544	105 712	117 805

Power input in W

90	5 911	6 008	6 093	6 130	6 161	6 187	6 207	6 220	6 226
100	6 567	6 671	6 764	6 805	6 842	6 874	6 900	6 920	6 932
110	7 315	7 426	7 529	7 575	7 618	7 656	7 689	7 716	7 736
120	8 163	8 283	8 396	8 448	8 497	8 542	8 582	8 616	8 645
130	-	9 248	9 373	9 432	9 488	9 540	9 588	9 631	9 668
140	-	-	10 469	10 535	10 599	10 659	10 715	10 766	10 813
150	-	-	-	11 766	11 837	11 906	11 971	12 032	12 088

Current consumption in A

90	11.20	11.33	11.43	11.48	11.51	11.54	11.56	11.57	11.57
100	11.76	11.89	12.01	12.06	12.10	12.14	12.17	12.19	12.19
110	12.45	12.60	12.73	12.78	12.84	12.88	12.92	12.95	12.97
120	13.31	13.46	13.61	13.68	13.74	13.79	13.84	13.88	13.92
130	-	14.51	14.68	14.75	14.82	14.89	14.95	15.00	15.05
140	-	-	15.95	16.03	16.12	16.19	16.27	16.33	16.39
150	-	-	-	17.54	17.63	17.72	17.81	17.89	17.96

Mass flow in lbs/h

90	758	955	1 187	1 318	1 458	1 609	1 770	1 943	2 128
100	747	947	1 182	1 314	1 456	1 608	1 771	1 945	2 131
110	734	937	1 174	1 307	1 450	1 603	1 767	1 942	2 129
120	720	924	1 163	1 297	1 440	1 593	1 758	1 933	2 121
130	-	909	1 149	1 282	1 426	1 580	1 744	1 920	2 107
140	-	-	1 131	1 264	1 408	1 561	1 726	1 901	2 089
150	-	-	-	1 243	1 385	1 539	1 702	1 877	2 064

Energy Efficiency Ratio (E.E.R.)

90	9.12	11.56	14.49	16.15	17.97	19.94	22.08	24.41	26.94
100	7.72	9.86	12.41	13.86	15.44	17.15	19.00	21.01	23.19
110	6.47	8.33	10.54	11.79	13.15	14.62	16.21	17.94	19.81
120	5.37	6.97	8.87	9.94	11.10	12.36	13.72	15.19	16.79
130	-	5.78	7.39	8.30	9.29	10.36	11.52	12.77	14.12
140	-	-	6.10	6.87	7.70	8.60	9.58	10.64	11.78
150	-	-	-	5.62	6.32	7.08	7.90	8.79	9.75

Nominal performance at to = 45 °F, tc = 130 °F

Cooling capacity	110 422	Btu/h	Current consumption	14.95	A
Power input	9 588	W	Mass flow	1 744	lbs/h
E.E.R.	11.52				

Pressure switch settings

Maximum HP switch setting	297	psi(g)
Minimum LP switch setting	7	psi(g)
LP pump down setting	7	psi(g)

T 0 : Evaporating temperature at dew point

T C : Condensing temperature at dew point

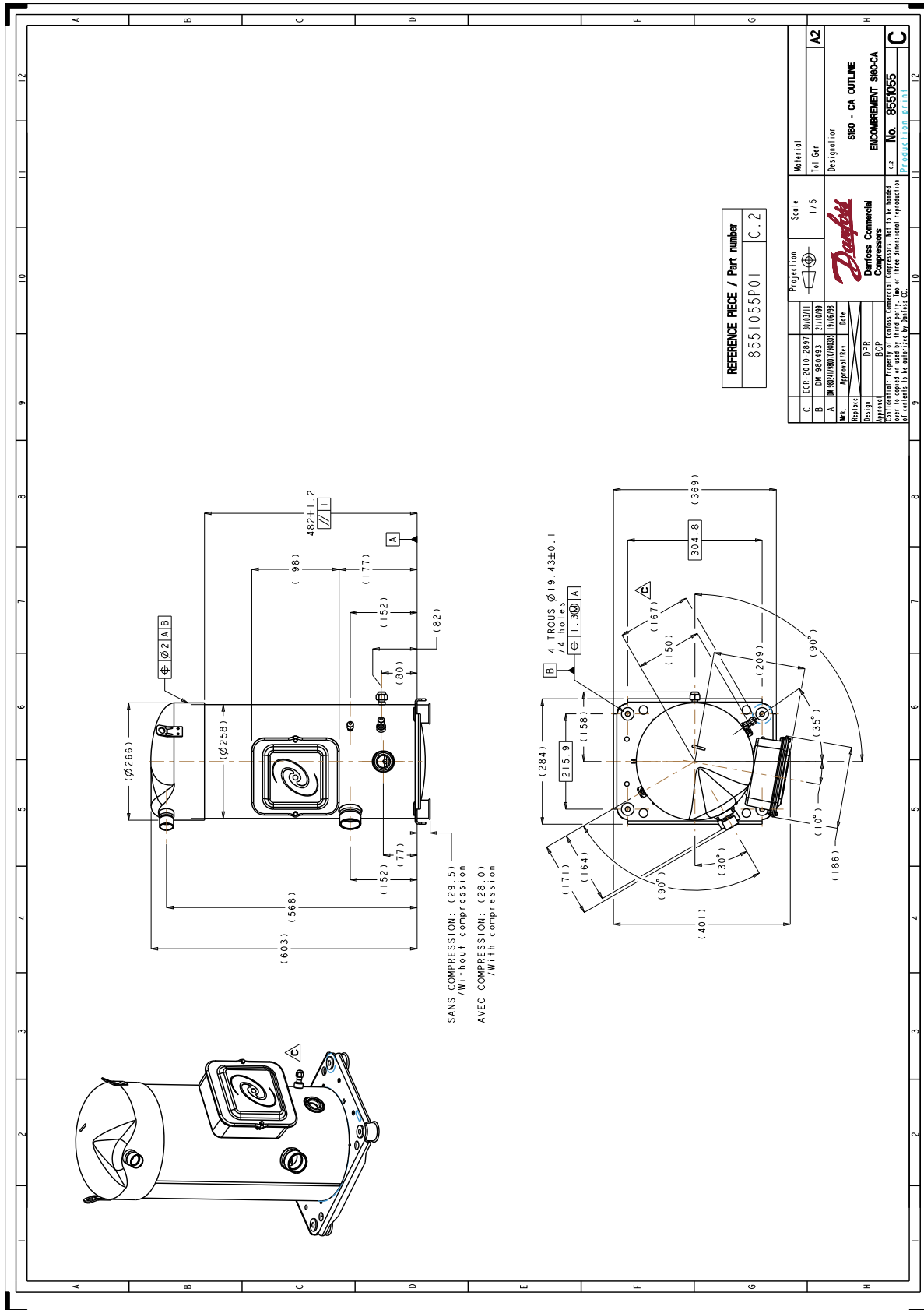
Rating conditions : Superheat = 20 °F , Subcooling = 15 °F

All performance data +/- 5%

Sound power data

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

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