



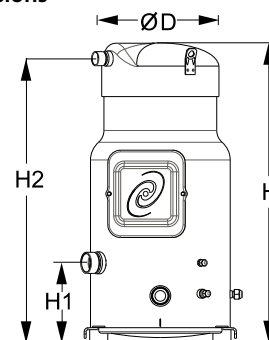
Datasheets

Danfoss scroll compressors **SM / SY / SZ / SH / WSH**



General Characteristics

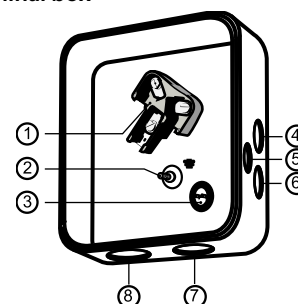
Model number (on compressor nameplate)	SZ185S4RC	SZ185S4CC
Code number for Singlepack*	SZ185-4RI	SZ185-4CAI
Code number for Industrial pack**	SZ185-4RM	SZ185-4CAM
Drawing number	8551119b	8551056c
Suction and discharge connections	Rotolock	Brazed
Suction connection	2-1/4 " Rotolock	1-5/8 " ODF
Discharge connection	1-3/4 " Rotolock	1-1/8 " ODF
Suction connection with supplied sleeve	1-3/8 " ODF	
Discharge connection with supplied sleeve	7/8 " ODF	
Oil sight glass	Threaded	Threaded
Oil equalisation 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	249,9 cm ³ /rev	
Displacement @ Nominal speed	43.5 m ³ /h @ 2900 rpm - 52.5 m ³ /h @ 3500 rpm	
Net weight	100 kg	
Oil charge	6,2 litre, POE - 160SZ	
Maximum system test pressure Low Side / High side	25 bar(g) / 32 bar(g)	
Maximum differential test pressure	24 bar	
Maximum number of starts per hour	12	
Refrigerant charge limit	13,5 kg	
Approved refrigerants	R407C, R134a, R404A, R507A	

Dimensions


D=317 mm
 H=678 mm
 H1=180 mm
 H2=643 mm
 H3= mm

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 25°C	0.77 Ω
Maximum Must Trip current (MMT)	35 A
Locked Rotor Amps (LRA)	175 A
Motor protection	Internal thermostat, ext. overload protector needed

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

Recommended Installation torques

Suction Rotolock nut or valve	130 Nm
Discharge Rotolock nut or valve	110 Nm
Oil sight glass	50 Nm
Power connections / Earth connection	3 Nm / 2 Nm
Terminal box cover screws	2,3 Nm
Mounting bolts	21 Nm

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

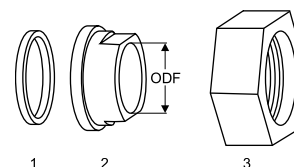
**Industrial pack: 6 Unboxed compressors on pallet (order per multiples of 6)

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.

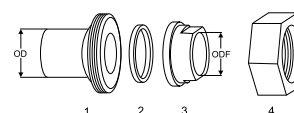
Solder sleeve, P07 (1-3/4" Rotolock, 7/8" ODF)	8153013
Solder sleeve, P02 (1-3/4" Rotolock, 1-1/8" ODF)	8153004
Angle adapter, C07 (1-3/4" Rotolock, 7/8" ODF)	8168008
Angle adapter, C02 (1-3/4" Rotolock, 1-1/8" ODF)	8168005
Rotolock valve, V07 (1-3/4" Rotolock, 7/8" ODF)	8168032
Rotolock valve, V02 (1-3/4"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

Gaskets, sleeves and nuts


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

Rotolock accessories, sets
Code no.

Solder sleeve adapter set, (2-1/4" Rotolock, 1-5/8" ODF), (1-3/4" Rotolock, 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

Solder sleeve adapter set


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

Oil / lubricants
Code no.

POE lubricant, 160SZ, 1 litre can	7754023
POE lubricant, 160SZ, 2.5 litre can	120Z0571

Crankcase heaters
Code no.

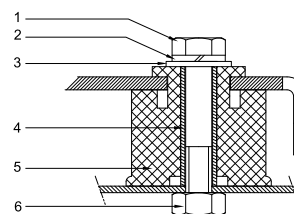
Surface sump heater + bottom insulation, 56 W, 24 V, CE mark, UL	120Z0360
Surface sump heater + bottom insulation, 56 W, 230 V, CE mark, UL	120Z0376
Surface sump heater + bottom insulation, 56 W, 400 V, CE mark, UL	120Z0377
Surface sump heater + bottom insulation, 56 W, 460 V, CE mark, UL	120Z0378
Belt type crankcase heater, 75 W, 230 V, CE mark, UL	7773108
Belt type crankcase heater, 75 W, 400 V, CE mark, UL	7773118
Belt type crankcase heater, 75 W, 460 V, CE mark, UL	120Z0464

Miscellaneous accessories
Code no.

Electronic soft start kit, MCI 25 C	7705007
Acoustic hood for scroll compressor S175-S185	7755007
Acoustic bottom insulation for scroll compressor	120Z0353
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, 2 rotolock nuts, 2 solder sleeves, 2 gaskets	8156147
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Terminal box 186 x 198 mm, incl cover	8156139
T block connector 60 x 75 mm	8173021

Mounting kit


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

Datasheet, performance data

Danfoss scroll compressor. SZ185-4

Performance data at 50 Hz, EN 12900 rating conditions

R407C

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-20	-15	-10	-5	0	5	10	15

Cooling capacity in W

30	16 496	21 007	26 387	32 726	40 115	48 644	58 403	69 483	-
35	15 417	19 792	24 990	31 102	38 217	46 425	55 816	66 481	-
40	14 305	18 513	23 500	29 353	36 163	44 020	53 012	63 231	-
45	-	17 169	21 913	27 478	33 953	41 427	49 989	59 730	-
50	-	-	20 228	25 474	31 583	38 643	46 744	55 975	-
55	-	-	-	23 340	29 052	35 667	43 275	51 963	-
60	-	-	-	-	26 357	32 495	39 576	47 689	-
65	-	-	-	-	23 494	29 122	35 642	43 143	-

Power input in W

30	7 675	7 756	7 828	7 887	7 928	7 947	7 941	7 904	-
35	8 560	8 643	8 717	8 779	8 823	8 847	8 845	8 814	-
40	9 561	9 646	9 724	9 789	9 837	9 866	9 869	9 844	-
45	-	10 783	10 864	10 933	10 986	11 019	11 028	11 010	-
50	-	-	12 153	12 226	12 284	12 323	12 338	12 326	-
55	-	-	-	13 685	13 748	13 793	13 815	13 810	-
60	-	-	-	-	15 393	15 444	15 473	15 476	-
65	-	-	-	-	17 235	17 293	17 329	17 340	-

Current consumption in A

30	16.77	16.89	17.00	17.09	17.14	17.16	17.14	17.07	-
35	17.72	17.85	17.97	18.06	18.12	18.15	18.14	18.08	-
40	18.87	19.00	19.12	19.22	19.30	19.33	19.33	19.28	-
45	-	20.38	20.50	20.61	20.69	20.74	20.75	20.71	-
50	-	-	22.13	22.24	22.33	22.39	22.42	22.40	-
55	-	-	-	24.15	24.26	24.33	24.37	24.36	-
60	-	-	-	-	26.49	26.57	26.62	26.63	-
65	-	-	-	-	29.05	29.15	29.22	29.25	-

Mass flow in kg/h

30	344	430	530	646	778	929	1 100	1 292	-
35	337	425	526	643	776	928	1 099	1 292	-
40	330	418	520	638	772	924	1 096	1 288	-
45	-	411	513	631	765	918	1 089	1 282	-
50	-	-	504	622	756	908	1 079	1 271	-
55	-	-	-	610	744	895	1 065	1 256	-
60	-	-	-	-	728	878	1 047	1 237	-
65	-	-	-	-	708	857	1 024	1 212	-

Coefficient of performance (C.O.P.)

30	2.15	2.71	3.37	4.15	5.06	6.12	7.35	8.79	-
35	1.80	2.29	2.87	3.54	4.33	5.25	6.31	7.54	-
40	1.50	1.92	2.42	3.00	3.68	4.46	5.37	6.42	-
45	-	1.59	2.02	2.51	3.09	3.76	4.53	5.43	-
50	-	-	1.66	2.08	2.57	3.14	3.79	4.54	-
55	-	-	-	1.71	2.11	2.59	3.13	3.76	-
60	-	-	-	-	1.71	2.10	2.56	3.08	-
65	-	-	-	-	1.36	1.68	2.06	2.49	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	38 643	W
Power input	12 323	W
Current consumption	22.39	A
Mass flow	908	kg/h
C.O.P.	3.14	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	81	dB(A)
With acoustic hood	73	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

All performance data +/- 5%

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Performance data at 50 Hz, ARI rating conditions
R407C

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-20	-15	-10	-5	0	5	10	15

Cooling capacity in W

30	17 693	22 504	28 237	34 983	42 837	51 893	62 245	73 985	-
35	16 616	21 303	26 866	33 396	40 989	49 739	59 738	71 081	-
40	15 504	20 036	25 397	31 682	38 983	47 395	57 011	67 925	-
45	-	18 700	23 829	29 837	36 815	44 858	54 061	64 516	-
50	-	-	22 159	27 858	34 483	42 127	50 885	60 849	-
55	-	-	-	25 744	31 984	39 198	47 480	56 924	-
60	-	-	-	-	29 315	36 069	43 845	52 736	-
65	-	-	-	-	26 475	32 737	39 975	48 284	-

Power input in W

30	7 675	7 756	7 828	7 887	7 928	7 947	7 941	7 904	-
35	8 560	8 643	8 717	8 779	8 823	8 847	8 845	8 814	-
40	9 561	9 646	9 724	9 789	9 837	9 866	9 869	9 844	-
45	-	10 783	10 864	10 933	10 986	11 019	11 028	11 010	-
50	-	-	12 153	12 226	12 284	12 323	12 338	12 326	-
55	-	-	-	13 685	13 748	13 793	13 815	13 810	-
60	-	-	-	-	15 393	15 444	15 473	15 476	-
65	-	-	-	-	17 235	17 293	17 329	17 340	-

Current consumption in A

30	16.77	16.89	17.00	17.09	17.14	17.16	17.14	17.07	-
35	17.72	17.85	17.97	18.06	18.12	18.15	18.14	18.08	-
40	18.87	19.00	19.12	19.22	19.30	19.33	19.33	19.28	-
45	-	20.38	20.50	20.61	20.69	20.74	20.75	20.71	-
50	-	-	22.13	22.24	22.33	22.39	22.42	22.40	-
55	-	-	-	24.15	24.26	24.33	24.37	24.36	-
60	-	-	-	-	26.49	26.57	26.62	26.63	-
65	-	-	-	-	29.05	29.15	29.22	29.25	-

Mass flow in kg/h

30	342	428	527	642	774	924	1 093	1 284	-
35	335	422	523	639	772	922	1 093	1 284	-
40	328	416	518	634	768	919	1 089	1 281	-
45	-	408	511	628	761	912	1 083	1 274	-
50	-	-	501	619	752	903	1 073	1 263	-
55	-	-	-	607	739	890	1 059	1 248	-
60	-	-	-	-	724	873	1 041	1 229	-
65	-	-	-	-	704	852	1 018	1 205	-

Coefficient of performance (C.O.P.)

30	2.31	2.90	3.61	4.44	5.40	6.53	7.84	9.36	-
35	1.94	2.46	3.08	3.80	4.65	5.62	6.75	8.06	-
40	1.62	2.08	2.61	3.24	3.96	4.80	5.78	6.90	-
45	-	1.73	2.19	2.73	3.35	4.07	4.90	5.86	-
50	-	-	1.82	2.28	2.81	3.42	4.12	4.94	-
55	-	-	-	1.88	2.33	2.84	3.44	4.12	-
60	-	-	-	-	1.90	2.34	2.83	3.41	-
65	-	-	-	-	1.54	1.89	2.31	2.78	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	43 092	W
Power input	13 619	W
Current consumption	24.10	A
Mass flow	964	kg/h
C.O.P.	3.16	

Pressure switch settings

Maximum HP switch setting	29.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	1	bar(g)

Sound power data

Sound power level	81	dB(A)
With acoustic hood	73	dB(A)

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

All performance data +/- 5%

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Performance data at 50 Hz, EN 12900 rating conditions
R134a

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-15	-10	-5	0	5	10	15	

Cooling capacity in W

35	12 952	16 610	20 911	25 918	31 698	38 315	45 836	-	-
40	12 108	15 640	19 786	24 611	30 179	36 557	43 810	-	-
45	11 243	14 632	18 606	23 232	28 572	34 693	41 660	-	-
50	10 361	13 589	17 376	21 784	26 879	32 725	39 388	-	-
55	-	12 517	16 097	20 271	25 102	30 657	36 998	-	-
60	-	-	14 774	18 696	23 246	28 490	34 492	-	-
65	-	-	-	17 061	21 312	26 227	31 870	-	-
70	-	-	-	15 369	19 303	23 869	29 132	-	-

Power input in W

35	6 066	6 139	6 198	6 240	6 260	6 253	6 215	-	-
40	6 679	6 755	6 819	6 866	6 892	6 893	6 863	-	-
45	7 371	7 452	7 521	7 574	7 607	7 615	7 593	-	-
50	8 150	8 235	8 310	8 369	8 409	8 426	8 413	-	-
55	-	9 112	9 193	9 259	9 307	9 332	9 329	-	-
60	-	-	10 176	10 250	10 307	10 341	10 348	-	-
65	-	-	-	11 349	11 414	11 458	11 476	-	-
70	-	-	-	12 562	12 637	12 691	12 720	-	-

Current consumption in A

35	15.02	15.10	15.17	15.21	15.22	15.19	15.11	-	-
40	15.60	15.70	15.77	15.82	15.84	15.82	15.75	-	-
45	16.31	16.41	16.50	16.56	16.59	16.58	16.53	-	-
50	17.15	17.26	17.36	17.43	17.47	17.48	17.44	-	-
55	-	18.26	18.37	18.45	18.50	18.53	18.51	-	-
60	-	-	19.54	19.64	19.71	19.74	19.74	-	-
65	-	-	-	21.00	21.09	21.14	21.16	-	-
70	-	-	-	22.56	22.66	22.73	22.77	-	-

Mass flow in kg/h

35	314	394	485	589	707	839	986	-	-
40	309	390	482	587	705	838	986	-	-
45	302	384	477	583	702	835	983	-	-
50	296	378	472	578	697	830	979	-	-
55	-	371	465	571	691	824	973	-	-
60	-	-	457	564	683	816	964	-	-
65	-	-	-	554	673	806	954	-	-
70	-	-	-	544	662	794	941	-	-

Coefficient of performance (C.O.P.)

35	2.14	2.71	3.37	4.15	5.06	6.13	7.37	-	-
40	1.81	2.32	2.90	3.58	4.38	5.30	6.38	-	-
45	1.53	1.96	2.47	3.07	3.76	4.56	5.49	-	-
50	1.27	1.65	2.09	2.60	3.20	3.88	4.68	-	-
55	-	1.37	1.75	2.19	2.70	3.29	3.97	-	-
60	-	-	1.45	1.82	2.26	2.76	3.33	-	-
65	-	-	-	1.50	1.87	2.29	2.78	-	-
70	-	-	-	1.22	1.53	1.88	2.29	-	-

Nominal performance at to = 5 °C, tc = 50 °C

Cooling capacity	26 879	W
Power input	8 409	W
Current consumption	17.47	A
Mass flow	697	kg/h
C.O.P.	3.20	

Pressure switch settings

Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

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

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 10 K , Subcooling = 0 K

All performance data +/- 5%

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Performance data at 50 Hz, ARI rating conditions
R134a

Cond. temp. in °C (tc)	Evaporating temperature in °C (to)							
	-15	-10	-5	0	5	10	15	

Cooling capacity in W

35	14 028	17 960	22 573	27 935	34 114	41 177	49 192	-	-
40	13 185	16 999	21 467	26 656	32 633	39 468	47 226	-	-
45	12 320	15 999	20 304	25 302	31 061	37 649	45 133	-	-
50	11 435	14 962	19 086	23 876	29 400	35 724	42 917	-	-
55	-	13 892	17 819	22 384	27 654	33 697	40 581	-	-
60	-	-	16 506	20 827	25 827	31 571	38 129	-	-
65	-	-	-	19 211	23 922	29 351	35 566	-	-
70	-	-	-	17 539	21 944	27 040	32 893	-	-

Power input in W

35	6 066	6 139	6 198	6 240	6 260	6 253	6 215	-	-
40	6 679	6 755	6 819	6 866	6 892	6 893	6 863	-	-
45	7 371	7 452	7 521	7 574	7 607	7 615	7 593	-	-
50	8 150	8 235	8 310	8 369	8 409	8 426	8 413	-	-
55	-	9 112	9 193	9 259	9 307	9 332	9 329	-	-
60	-	-	10 176	10 250	10 307	10 341	10 348	-	-
65	-	-	-	11 349	11 414	11 458	11 476	-	-
70	-	-	-	12 562	12 637	12 691	12 720	-	-

Current consumption in A

35	15.02	15.10	15.17	15.21	15.22	15.19	15.11	-	-
40	15.60	15.70	15.77	15.82	15.84	15.82	15.75	-	-
45	16.31	16.41	16.50	16.56	16.59	16.58	16.53	-	-
50	17.15	17.26	17.36	17.43	17.47	17.48	17.44	-	-
55	-	18.26	18.37	18.45	18.50	18.53	18.51	-	-
60	-	-	19.54	19.64	19.71	19.74	19.74	-	-
65	-	-	-	21.00	21.09	21.14	21.16	-	-
70	-	-	-	22.56	22.66	22.73	22.77	-	-

Mass flow in kg/h

35	312	392	483	586	703	834	981	-	-
40	307	388	479	584	701	833	980	-	-
45	301	382	475	580	698	830	978	-	-
50	294	376	470	575	693	826	974	-	-
55	-	369	463	568	687	820	967	-	-
60	-	-	455	561	679	812	959	-	-
65	-	-	-	552	670	802	948	-	-
70	-	-	-	541	658	790	936	-	-

Coefficient of performance (C.O.P.)

35	2.31	2.93	3.64	4.48	5.45	6.59	7.91	-	-
40	1.97	2.52	3.15	3.88	4.73	5.73	6.88	-	-
45	1.67	2.15	2.70	3.34	4.08	4.94	5.94	-	-
50	1.40	1.82	2.30	2.85	3.50	4.24	5.10	-	-
55	-	1.52	1.94	2.42	2.97	3.61	4.35	-	-
60	-	-	1.62	2.03	2.51	3.05	3.68	-	-
65	-	-	-	1.69	2.10	2.56	3.10	-	-
70	-	-	-	1.40	1.74	2.13	2.59	-	-

Nominal performance at to = 7.2 °C, tc = 54.4 °C

Cooling capacity	30 442	W
Power input	9 208	W
Current consumption	18.39	A
Mass flow	744	kg/h
C.O.P.	3.31	

to: Evaporating temperature at dew point

tc: Condensing temperature at dew point

Rating conditions : Superheat = 11.1 K , Subcooling = 8.3 K

Pressure switch settings

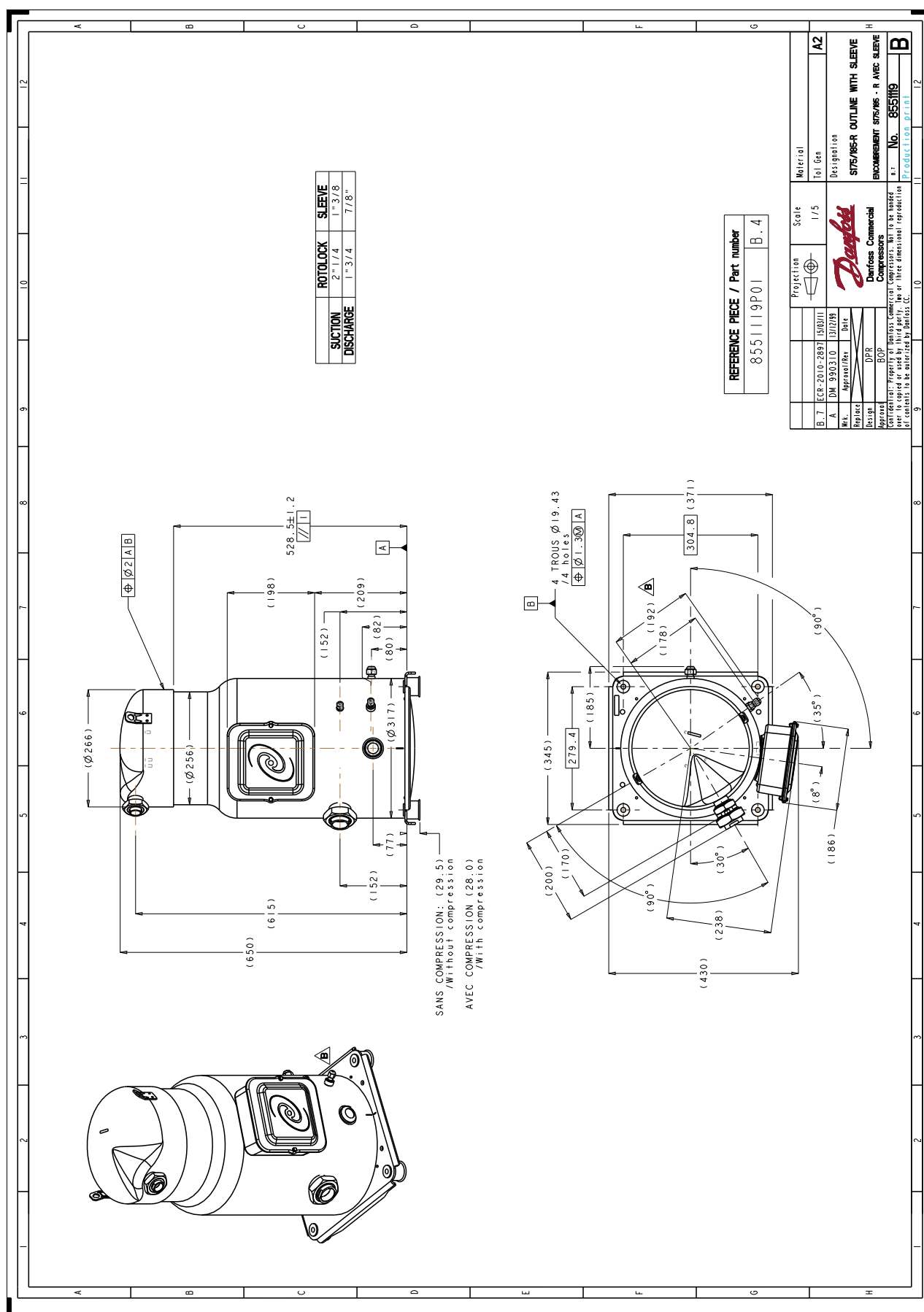
Maximum HP switch setting	20.5	bar(g)
Minimum LP switch setting	0.5	bar(g)
LP pump down setting	0.5	bar(g)

Sound power data

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

All performance data +/- 5%

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