

S Series - Light Commercial and Commercial Scroll Compressors

Danfoss Performer® Universal Scroll Compressors are designed to serve as quick, easy replacements for most commercial air conditioning scroll compressors. These compressors come with a bolt pattern, suction and discharge lines, and performance characteristics that match up directly with some competitors' products.



Nomenclature / Model No.

SM 115 S 4 Q C
DSH 090 A 4 AL C

Refrigerant & oil

SM: R-22, mineral oil
SY: R-22, R-407C, R-134a, POE oil
SZ: R-407C, R-134a, R-404A / R-507A, POE oil
DSH: R-410A, POE oil

Nominal Capacity

In thousand Btu/h at 60 Hz, ARI Conditions

UL index

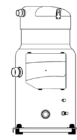
Motor voltage code

3: 200-230 V / 3 ph / 60 Hz
4: 380-400 V / 3 ph / 50 Hz & 460 V / 3 ph / 60 Hz
6: 230 V / 3 ph / 50 Hz
7: 500 V / 3 ph / 50 Hz & 575 V / 3 ph / 60 Hz
9: 380 V / 3 ph / 60 Hz

Evolution index

Version (for SM, SY, SZ)	Motor protection module	Connection	Module voltage	Applies to
V	Internal overload protector	brazed		084, 090, 100, 110, 120, 148, 161
A		brazed		112, 124, 147
C	Internal thermostat	brazed		115, 125, 160, 175, 185
Q		brazed		
R		rotolock		
P	Electronic protection module	brazed	24V AC	240, 300, 380
X		brazed	230V	
S		rotolock	24V AC	
Y		rotolock	230V	
CA		brazed	24V AC	
CB		brazed	115/230V	
PA		rotolock	24V AC	
PB	rotolock	115/230V		
AC	contact OEM			

Version (for SH)	Motor protection module	Connection	Module voltage	Applies to
AL	Internal overload protector	brazed		090, 105, 120, 140, 161, 175, 184
AA	Electronic protection module	brazed	24V AC	240, 295, 300, 380, 485
AB		brazed	115/230V	
AB		brazed	230V	
AC	contact OEM			



Technical data and ordering

S Series - Scroll Compressors

Nominal tonnage	Voltage/Phase/Frequency	Competitor Part Nos. ¹		Net weight (lbs.)	Connection size/type (suction x discharge)	Solder sleeve adapter set for Rotolock connectors	R-22		R-407C	
							Danfoss Model No.	Danfoss Code No. ²	Danfoss Model No.	Danfoss Code No. ²
7 ½	200-230/3/60		ZR94KC-TF5	143	1 ¾ x ¾ Brazed	7765005	SM090S3VC	SM090-3VI	SZ090S3VC	SZ090-3VI
	460/3/60 400/3/50		ZR94KC-TFD				SM090S4VC	SM090-4VI	SZ090S4VC	SZ090-4VI
9 ½	200-230/3/60	CSHA-093R-0*00 or 0A	ZR108KC-TF5 ZR11M3-TWC	172	1 ¾ x ¾ Brazed	120Z0405	SM115S3QC	SM115-3QAI	SZ115S3QC	SZ115-3QAI
	460/3/60 400/3/50		ZR108KC-TFD ZR11M3-TWD				SM115S4QC	SM115-4QAI	SZ115S4QC	SZ115-4QAI
10	200-230/3/60	CSHA-100R-0*00 or 0A	ZR125KC-TF5 ZR12M3-TWC	198	1 ¾ x 1 ½ Brazed	7765028	SM125S3QC	SM125-3QAI	SZ125S3QC	SZ125-3QAI
	460/3/60 400/3/50		ZR125KC-TFD ZR12M3-TWD				SM125S4QC	SM125-4QAI	SZ125S4QC	SZ125-4QAI
12 ½	200-230/3/60	CSHA-125R-0*00 or 0A	ZR16M3-TWC	220	1 ¾ x 1 ½ Brazed	7765028	SM160T3CC	SM160-3CBI	SZ160T3CC	SZ160-3CBI
	460/3/60 400/3/50		ZR16M3-TWD				SM160T4CC	SM160-4CBI	SZ160T4CC	SZ160-4CBI
14	200-230/3/60	CSHA-140R-0*00 or 0A		220	1 ¾ x 1 ½ Brazed	7765028	SM175S3QC	SM175-3QAI	SZ175S3QC	SZ175-3QAI
	460/3/60 400/3/50		CSHA-140K-0*00 or 0A				SM175S4QC	SM175-4QAI	SZ175S4QC	SZ175-4QAI
15	200-230/3/60	CSHA-150R-0*00 or 0A	ZR190KC-TW5 ZR19M3-TWC	220	1 ¾ x 1 ½ Brazed	7765028	SM185S3QC	SM185-3QAI	SZ185S3QC	SZ185-3QAI
	460/3/60 400/3/50		CSHA-150K-0*00 or 0A				ZR190KC-TWD ZR19M3-TWD	SM185S4QC	SM185-4QAI	SZ185S4QC

¹ Competitor Model Nos. beginning "ZR" may have different footprint, suction, discharge or height compared to Danfoss Model No.

² Code Nos. ending "QAI" include threaded sight glass, ¾ in. flare SAE oil equalization connection, brazed suction and discharge connections and mounting bracket. Code Nos. ending "VI" and "CBI" have threaded sight glass, ¾ in. flare SAE oil equalization connection and brazed suction and discharge connections. Use compressor beginning with SM when system will use R-22; use compressor beginning with SZ when retrofitting system to R-407C.

Spare Parts and Accessories

Description	Type(s) applied to	Danfoss Code No.
Solder sleeve adapter set (1 ¾ in. rotolock, 1 ½ in. ODF), (1 ¼ in. rotolock, ¾ in. ODF)	SH090	120Z0125
Solder sleeve adapter set (1 ¾ in. rotolock, 1 ¾ in. ODF), (1 ¼ in. rotolock, ¾ in. ODF) *diameter restrictor	SM115, 125, 160, DSH105, 120, 140, 161, 184	7765006
Solder sleeve adapter set (1 ¾ in. rotolock, 1 ¾ in. ODF), (1 ¼ in. rotolock, ¾ in. ODF)	SM115, 125, SZ115, 125, DSH105, 120, 140, 161, 184	120Z0405
Solder sleeve adapter set (2 ¾ in. rotolock, 1 ¾ in. ODF), (1 ¾ in. rotolock, ¾ in. ODF)	SM160, 175, 185, SZ160, 175, 185, DSH240, 295, 380, 381	7765028
Motor protection module, 24V AC	SM115, 125, 160, 185	120Z0584
Electrical module 115/230V	DSH 240, 295, 380	120Z0585
Belt type crankcase heater; 65W, 460V	SM115, 125, 160, DSH090, 105, 120, 140, 161, 175, 184	120Z0466
Belt type crankcase heater; 65W, 110V		7773109
Belt type crankcase heater; 65W, 230V		7773107
Belt type crankcase heater; 65W, 400V		7773117
Belt type crankcase heater; 65W, 400V		120Z0039
Belt type crankcase heater; 75W, 110V		7773110
Belt type crankcase heater; 75W, 230V		7773108
Belt type crankcase heater; 75W, 400V		7773118
Belt type crankcase heater; 75W, 460V		120Z0464
Belt type crankcase heater; 130W, 110V		7773121
Belt type crankcase heater; 130W, 230V	DSH380	7773122
Belt type crankcase heater; 130W, 400V		7773123
Service kit for terminal box; includes cover, clamp, terminal block connector	DSH090, 105, 120, 140, 161	8156135
Terminal box, including cover	SM115, 125, 160, 175, 185	8156139
Terminal box cover	DSH140-3, 161-3, 184, 175	120Z0413
Terminal box, including cover	DSH240, 295, 380	120Z0458
Oil sight glass with gaskets	SM090, 115, 125, 160, 175, 185	8156019
Mounting kit for 1 compressor: 4 grommets, 4 sleeves, 4 bolts, 4 washers	SM115-185	8156138
Mounting kit for 1 compressor: 4 grommets, 4 sleeves, 4 bolts, 4 washers	DSH090, 105, 120, 140, 161, 175, 184	120Z0066
Mounting kit for 1 compressor: 4 rigid grommets, 4 sleeves, 4 bolts, 4 washers	DSH240, 295, 380	7777045
Mineral oil, 160P; 2 liter can	all SM, SZ	7754001
Mineral oil, 160P; 5 liter can	all SM, SZ	7754002
Blue spray paint	all	8154001
Oil equalization adaptor. To connect ¾ in. tube on 22mm oil sight glass connection; includes (1) 22mm to ¾ in., (2) gaskets.	all SM, SZ, DSH	120Z0164
Oil equalization adaptor. To connect ½ in. tube on 22mm oil sight glass connection; includes (1) 22mm to ½ in., (2) gaskets.	all SM, SZ, DSH	120Z0165
Oil equalization adaptor kit for trio mounting; oil fittings, gasket and adaptors (copper pipes not included)	SM 160, 185	7773112

DSH Series - Light Commercial and Commercial Scroll Compressors with Intermediate Discharge Valves

Refrigerant	Nominal tonnage	Voltage/phase/frequency	Competitor model no. ¹		Motor protection	Net weight (lbs.)	Solder ODF connection (in.)	Solder sleeve adaptor set to Rotolock connections	OLD Danfoss Model No.	OLD Danfoss Code No. ²	NEW Danfoss Model No. ³	NEW Danfoss Code No. ²	
R-410A	7½	200–230/3/60	CSHD-089J CSHD-092J	ZP90KCE-TF5 ZP91KCE-TF5	Internal Overload Protector	128	1 ¼ × ¾	120Z0125	SH090A3AL*	120H0001	DSH090A3ALA	120H1180	
		460/3/60	CSHD-089K CSHD-092K	ZP90KCE-TFD					SH090A4AL*	120H0003	DSH090A4ALB	120H1182	
	8¾	200–230/3/60	CSHD-105J	ZP103KCE-TF5		142	142	1 ¼ × ¾	120Z0405	SH105A3AL*	120H0209	DSH105A3ALA	120H1188
		460/3/60	CSHD-105K	ZP103KCE-TFD						SH105A4AL*	120H0211	DSH105A4ALB	120H1190
	10	200–230/3/60	CSHD-125J	ZP120KCE-TF5		142	142	1 ¼ × ¾	120Z0405	SH120A3AL*	120H0011	DSH120A3ALA	120H1196
		460/3/60	CSHD-125K	ZP120KCE-TFD						SH120A4AL*	120H0013	DSH120A4ALB	120H1198
	11½	200–230/3/60	CSHD-142J	ZP137KCE-TF5		148	148	1 ¼ × ¾	120Z0405	SH140A3AL*	120H0199	DSH140A3ALA	120H1204
		460/3/60	CSHD-142K	ZP137KCE-TFD						SH140A4AL*	120H0201	DSH140A4ALB	120H1206
	13½	200–230/3/60	CSHD-161J	ZP154KCE-TF5		152	152	1 ¼ × ¾	120Z0405	SH161A3AL*	120H0021	DSH161A3ALA	120H1212
		460/3/60	CSHD-161K	ZP154KCE-TFD						SH161A4AL*	120H0023	DSH161A4ALB	120H1214
	15	200–230/3/60	CSHD-183J	ZP182KCE-TF5		159	159	1 ¼ × ¾	120Z0405	SH184A3AL*	120H0359	DSH184A3ALA	120H1220
		460/3/60	CSHD-183K	ZP182KCE-TFD						SH184A4AL*	120H0361	DSH184A4ALB	120H1222
	20	200–230/3/60	CSHN-176J	ZP236KCE-TW5 ³		24V AC 115/230V	238	1 ¼ × ¾	7765028	SH240A3AA*	120H0289	DSH240A3AAB	120H1159
		460/3/60	CSHN-176K	ZP236KCE-TWD ²		24V AC 115/230V				SH240A3AB*	120H0297	DSH240A3ABB	120H1161
	25	200–230/3/60	CSHN-250J	ZP295KCE-TW5 ³		24V AC 115/230V	245	1 ¼ × 1 ¼	7765028	SH240A4AA*	120H0291	DSH240A4AAB	120H1119
		460/3/60	CSHN-250K	ZP295KCE-TWD ²		24V AC 115/230V				SH240A4AB*	120H0299	DSH240A4ABB	120H1121
	30	200–230/3/60	CSHN-315J	ZP385KCE-TW5 ³		24V AC 115/230V	355	1 ¼ × 1 ¼	7765028	SH295A3AA*	120H0851	DSH295A3AAB	120H1163
		460/3/60	CSHN-315K	ZP385KCE-TWD ²		24V AC 115/230V				SH295A3AB*	120H0853	DSH295A3ABB	120H1165
	40	200–230/3/60				24V AC 115/230V	386	1 ¼ × 1 ¼	7765028	SH295A4AA*	120H0825	DSH295A4AAB	120H1123
		460/3/60				24V AC 115/230V				SH295A4AB*	120H0827	DSH295A4ABB	120H1125
40	200–230/3/60			24V AC 115/230V	386	1 ¼ × 1 ¼	7765028	SH380A3AA*	120H0151	DSH381A3AAA	120H1167		
	460/3/60			24V AC 115/230V				SH380A3AB*	120H0152	DSH381A3ABA	120H1169		
40	200–230/3/60			24V AC 115/230V	386	1 ¼ × 1 ¼	7765028	SH380A4AA*	120H0253	DSH381A4AAA	120H1127		
	460/3/60			24V AC 115/230V				SH380A4AB*	120H0255	DSH381A4ABA	120H1129		
40	200–230/3/60			24V AC 115/230V	386	1 ¼ × 1 ¼	7765028			DSH485A3AAA	120H1105		
	460/3/60			24V AC 115/230V						DSH485A4AAB	120H1131		
										DSH485A4ABB	120H1133		

¹ Competitor Model Nos. beginning "ZP" may have different footprint, suction, discharge or height compared to Danfoss Model No.

² Control voltage of external motor protection module must be checked before crossing to Danfoss Model No with 24V ac or 115/230V motor protection module.

³ Intermediate Discharge Valves (IDVs) are mechanical valves that improve the partload efficiency of air conditioning systems. The new Danfoss scroll range with IDVs is backward compatible with existing Danfoss scrolls to reduce complexity and save time during installation.

Full range of models (refrigerant, tons, and voltage codes) available. Check Coolselector