



# Performer<sup>®</sup> Tandem Scroll Compressors

## R-22 and R-410A

## OVERVIEW

### Why choose tandems?

A tandem configuration reduces operating costs through greater capacity control and lower power consumption. Staging the operating sequence of the compressors allows system capacity to match system load. The unloading of conventional fixed speed compressors imposes a serious efficiency penalty at part load or low load conditions. But in a tandem installation, an individual compressor can be switched off while the other compressor continues to run, delivering full capacity and full load efficiency.

### Why choose Danfoss tandems?

Tandem compressor systems present certain design challenges — oil equalization, proper oil return, and pipe configuration. Field erected systems can not effectively manage these issues. To ensure highly efficient and long running tandem systems, choose Danfoss. Designed and tested to effectively manage noise, pipe vibrations and oil management, Danfoss tandem scrolls manufactured in North America ensure optimal performance along with these additional benefits:

- 100% proof-pressure testing and mass spectrometer leak testing of entire assembly
- Oil equalization system designed for correct performance and reliability throughout the entire operating envelope
- Overall cost savings to the OEM compared to in-house assembly



*Oil equalization systems — ensure proper oil balancing between compressors*



*Rail mounting — tested to protect against vibrations and noise*

- Other standard features:



*Suction line insulation*



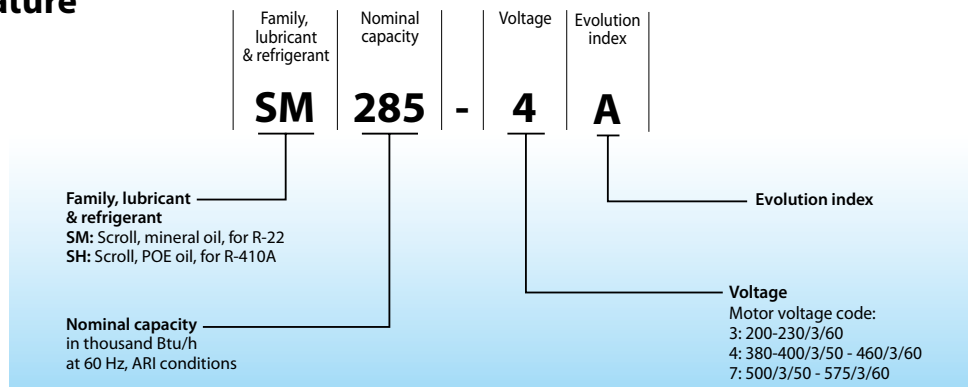
*Crankcase heaters*



*Schrader ports (for HP and LP cut-out switches)*

## ORDERING

### Model Nomenclature



### Ordering Information

Refrigerant	Model	Configuration		Compressor Motor Protection	Motor Code 3 (200-230/3/60)	Motor Code 4 (380-400/3/50 - 460/3/60)	Motor Code 7 (500/3/50 - 575/3/60)
		Suction (Left or Right)	Discharge (Left or Right)				
R-22	SM220	R	L or R	Internal	121G0042	121G0043	121G0044
	SM242	R	L or R	Internal	121G0000	121G0001	121G0002
	SM320	R	L or R	24V Module <sup>2</sup>	121G0006	121G0007	121G0008
	SM350	R	L or R	24V Module <sup>2</sup>	121G0018	121G0019	121G0020
	SM370	R	L or R	24V Module <sup>2</sup>	121G0012	121G0013	121G0014
R-410A	SH182	L or R	L or R	Internal	121G0120	121G0121	121G0122
	SH195	R <sup>1</sup>	L or R	Internal	121G0123	121G0124	121G0125
	SH210	R <sup>1</sup>	L or R	Internal	121G0126	121G0127	121G0128
	SH212	L or R	L or R	Internal	121G0129	121G0130	121G0131
	SH242	L or R	L or R	Internal	121G0132	121G0133	121G0134
	SH260	R <sup>1</sup>	L or R	Internal	121G0135	121G0136	121G0137
	SH281	R <sup>1</sup>	L or R	Internal	121G0138	121G0139	121G0140
	SH282	L or R	L or R	Internal	121G0141	121G0142	121G0143
	SH322	L or R	L or R	Internal	121G0144	121G0145	121G0146
	SH360	L or R	L or R	24V Module <sup>2</sup>	121G0174	121G0175	121G0176
	SH420	L or R	L or R	24V Module <sup>2</sup>	121G0177	121G0178	121G0179
	SH480	L or R	L or R	24V Module <sup>2</sup>	121G0180	121G0181	121G0182
	SH482	L or R	L or R	24V Module <sup>2</sup>	121G0183	121G0184	121G0185
	SH540	L or R	L or R	24V Module <sup>2</sup>	121G0186	121G0187	121G0188
	SH600	L or R	L or R	24V Module <sup>2</sup>	121G0189	121G0190	121G0191
	SH620	L or R	L or R	24V Module <sup>2</sup>	121G0192	121G0193	121G0194
	SH680	L or R	L or R	24V Module <sup>2</sup>	121G0195	121G0196	121G0197
SH760	L or R	L or R	24V Module <sup>2</sup>	121G0198	121G0199	121G0200	

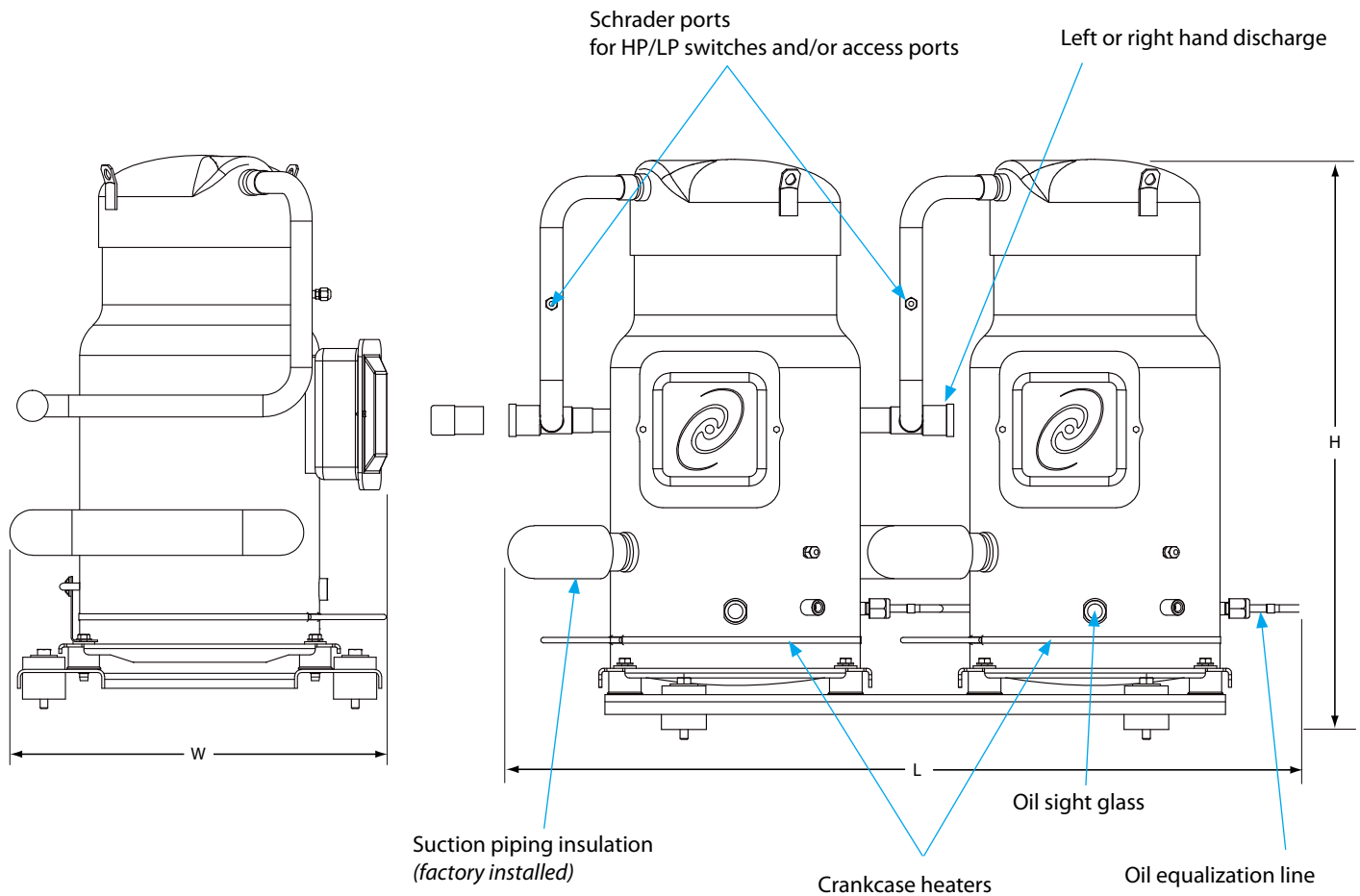
1) Left handed suction available upon request

2) Additional module voltages available upon request

#### Notes:

- Crankcase heater voltages match compressor voltage code
- 380-3-60 (Motor Code 9) available upon request

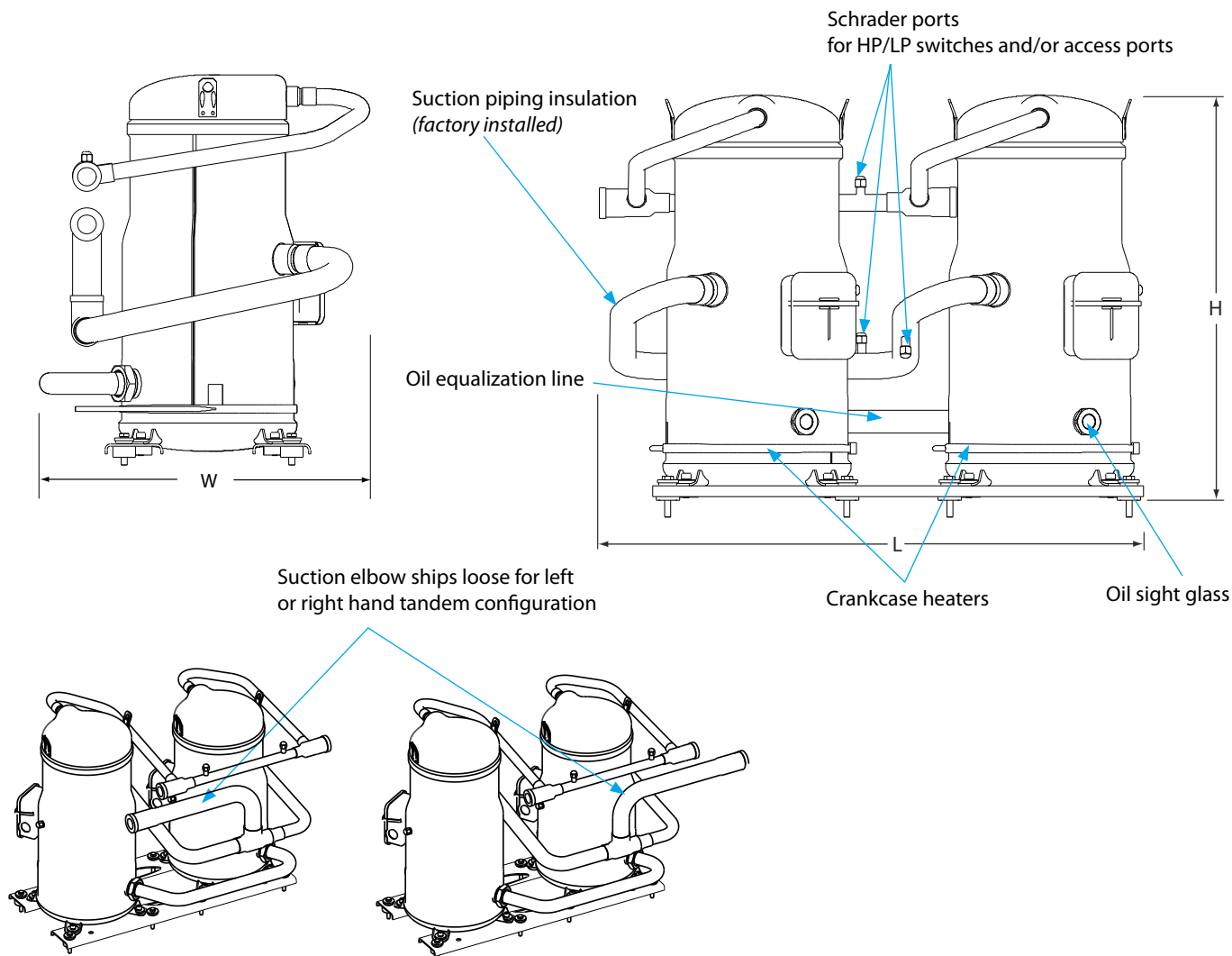
## R-22 TECHNICAL DATA



Model	Nominal Capacity (Tons)	Compressors (A + B)	Outline Drawing #*	Charge Limits (lbs)	Available Capacity Steps (%)	Connection Sizes		Overall Dimensions			Net Weight (lbs)
						Suction (in.)	Discharge (in.)	Length L (in.)	Width W (in.)	Height H (in.)	
SM220	18.3	SM110+SM110	8556086	26.4	50/100	1-5/8	1-1/8	31.5	17.45	22.9	375
SM242	20.0	SM120+SM120	8556086	26.4	50/100	1-5/8	1-1/8	31.5	17.45	22.9	375
SM320	26.7	SM160+SM160	8556084	36.3	50/100	2-1/8	1-3/8	36.4	18.9	25.9	462
SM350	29.2	SM175+SM175	8556085	38.5	50/100	2-1/8	1-3/8	39.6	20.0	27.7	495
SM370	30.8	SM185+SM185	8556085	38.5	50/100	2-1/8	1-3/8	39.6	20.0	27.7	495

\*To obtain outline drawings, please contact our Application Support Team at 410-931-8250. Please reference drawing number.

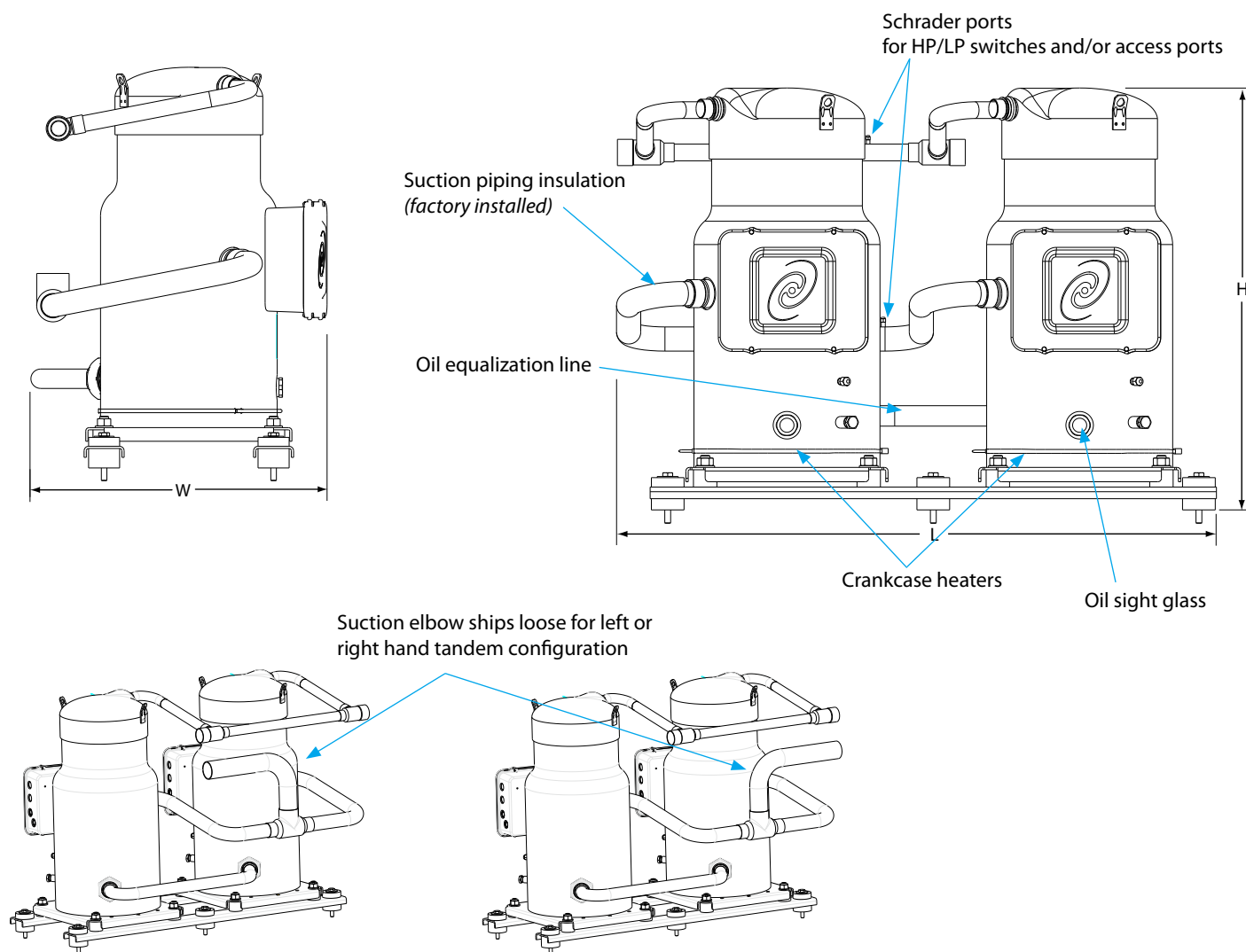
# R-410A LIGHT COMMERCIAL TECHNICAL DATA



Model	Nominal Capacity (Tons)	Compressors (A + B)	Outline Drawing #*	Charge Limits (lbs)	Available Capacity Steps (%)	Connection Sizes		Overall Dimensions			Net Weight (lbs)
						Suction (in.)	Discharge (in.)	Length L (in.)	Width W (in.)	Height H (in.)	
SH182	15.0	SH090+SH090	8556075	17.6	50/100	1-5/8	1-3/8	28.5	18.4	19.4	283
SH195	16.3	SH105+SH090	8556074	18.7	46/54/100	1-5/8	1-3/8	28.5	18.4	21.4	297
SH210	17.5	SH120+SH090	8556074	18.7	43/57/100	1-5/8	1-3/8	28.5	18.4	21.4	297
SH212	17.5	SH105+SH105	8556075	23.1	50/100	1-5/8	1-3/8	28.5	18.4	21.4	310
SH242	20.0	SH120+SH120	8556075	23.1	50/100	1-5/8	1-3/8	28.5	18.4	21.4	310
SH260	21.7	SH140+SH120	8556074	23.1	46/54/100	1-5/8	1-3/8	28.5	18.4	21.4	316
SH281	23.4	SH161+SH120	8556074	23.1	43/57/100	1-5/8	1-3/8	28.5	18.4	21.4	321
SH282	23.3	SH140+SH140	8556075	23.1	50/100	1-5/8	1-3/8	28.5	18.4	21.4	323
SH322	26.8	SH161+SH161	8556075	23.1	50/100	1-5/8	1-3/8	28.5	18.4	21.4	332

\*To obtain outline drawings, please contact our Application Support Team at 410-931-8250. Please reference drawing number.

# R-410A COMMERCIAL TECHNICAL DATA



Model	Nominal Capacity (Tons)	Compressors (A + B)	Outline Drawing #*	Charge Limits (lbs)	Available Capacity Steps (%)	Connection Sizes		Overall Dimensions			Net Weight (lbs)
						Suction (in.)	Discharge (in.)	Length L (in.)	Width W (in.)	Height H (in.)	
SH360	30.0	SH180+SH180	8556076	38.6	50/100	2-1/8	1-3/8	40.4	20.7	28.3	507
SH420	35.0	SH240+SH180	8556076	38.6	43/57/100	2-1/8	1-3/8	40.4	20.7	28.3	512
SH480	40.0	SH300+SH180	8556076	38.6	38/62/100	2-1/8	1-3/8	40.4	21.1	30.0	611
SH482	40.0	SH240+SH240	8556076	38.6	50/100	2-1/8	1-3/8	40.4	20.7	28.3	516
SH540	45.0	SH300+SH240	8556076	38.6	44/56/100	2-1/8	1-3/8	40.4	21.1	30.0	615
SH600	50.0	SH300+SH300	8556076	38.6	50/100	2-1/8	1-3/8	40.4	21.1	30.0	714
SH620	51.7	SH380+SH240	8556076	38.6	43/57/100	2-1/8	1-3/8	40.4	21.1	31.3	639
SH680	56.7	SH380+SH300	8556076	38.6	44/56/100	2-1/8	1-3/8	40.4	21.1	31.3	738
SH760	63.3	SH380+SH380	8556076	38.6	50/100	2-1/8	1-3/8	40.4	21.1	31.3	762

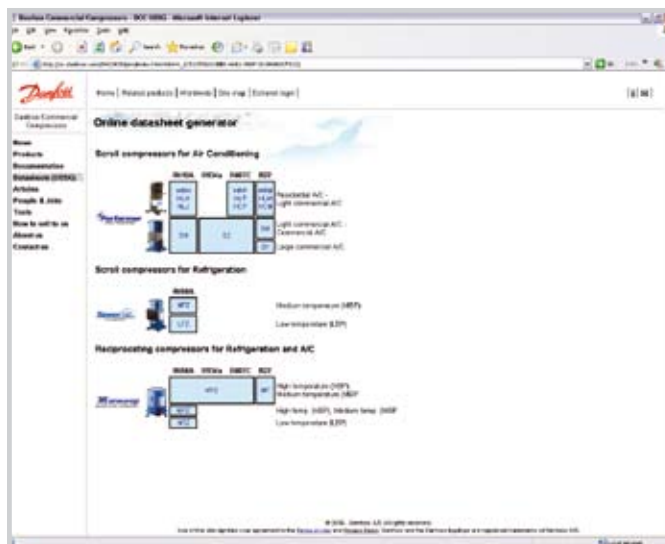
\*To obtain outline drawings, please contact our Application Support Team at 410-931-8250. Please reference drawing number.

## FURTHER REFERENCE

### Literature Resources

For more information and literature regarding Danfoss scroll compressors, visit the following websites:

- [www.danfoss.com/Products/Categories](http://www.danfoss.com/Products/Categories)
- <http://cc.danfoss.com>
- <http://cc.danfoss.com/SW/ODSG/en/index.htm> - this is our online datasheet generator.



Please refer to our Selection & Application Guidelines for more detailed information:

#### R-22

- Performer Scroll Compressors - SM - SY - SZ - 50 / 60 Hz (literature no. FRCC.PC.003.A2.02)
- Performer Scroll Compressors in Parallel Installation – SM / SY Range (literature no. FRCC.PC.005.A1.02)

#### R-410A

- Performer Scroll Compressors - SH090 to SH380 50-60Hz (literature no. FRCC.PC.007.B2.02)
- Performer Scroll Compressors in Parallel Installation – SH Range (literature no. FRCC.EC.008.A2.02)

For technical assistance, please contact our Application Support Team at 410-931-8250.



## The Danfoss product range for the refrigeration and air conditioning industry

Danfoss is a global manufacturer with a leading position in industrial, commercial, and supermarket refrigeration together with air conditioning and climate solutions.

We focus on our core business of making quality products, components, and systems that enhance performance and reduce total life cycle costs – the key to major savings.



*Controls for Refrigeration & Air-Conditioning*



*Controls for Industrial Refrigeration*



*Electronic Controls & Sensors*



*Industrial Automation*



*Household Compressors*



*Scroll Compressors*



*Sub-Assemblies*



*Thermostats*



*Brazen plate heat exchanger*

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