INTARCON

Sigilus

ErP ecodesign

- Tropicalised design for high ambient temperature up to 50 °C.
- Multi-service version with VRC cooling capacity modulation system.
- Liquid injection system for compressor refrigeration.

Low noise condensing units for positive and negative refrigeration with hermetic alternative or scroll compressor with noise insulation and low speed axial motor fan.

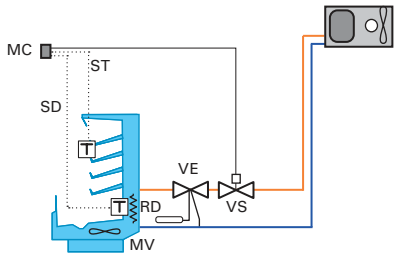
Features

- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- R-134a or R-449A refrigerant, other refrigerants by request.
- Reciprocating hermetic or scroll compressor, acoustically insulated with discharge muffler, mounted on shock absorbers, with crankcase heater and internal klixon.
- Large-surface condensing coil made of copper tubes and aluminium fins, with tropicalised dimensioning for ambient temperatures up to 50 °C.
- Low speed axial motor fan.
- Refrigeration circuit equipped with high and low pressure switches, ceramic filter and sight gauge.
- Digital control of condensation pressure with the optional electrical board, and all-nothing condensation control in condensers without electrical panel.
- Proportional control of condensing pressure through fan speed variation (included from MDF-NY-2086 and MDF-NG-1038 without electronic control).
- Full control and power board with compressor and motor fan protection.
- Evaporator electronic control board (-N version with optional electrical board).
- Built-in oil separator (-V multi-service version).
- Liquid injection system for negative temperature models with R-449A.

Versions

- -N version: Without electrical board. Designed for on/off operation depending on the suction pressure (pump-down).
  With electrical board as an option. Electronic controller to manage the condensing unit and the evaporator built-in solenoid valve as an option.
- -V version (multi-service): The multi-service version features VRC system to adjust the refrigerant flow to the demand of the evaporators, keeping the pressure constant in suction the line. The VRC system is composed of a set of pressure and temperature control valves to progressively modulate cooling capacity from 100 % to 10 % of its nominal capacity, while reducing energy consumption and preventing compressor overheating.
- -S version (scroll):
  Version designed with scroll compressors.

Installation without electrical board (-N version)



MC: CONTROL PAD
MV: MOTOR FAN
RD: DEFROST HEATER
ST: THERMOSTAT PROBE
SD: DEFROST PROBE
VE: EXPANSION VALVE
VS: SOLENOID VALVE

Oil separator (optional)

Sigilus condensing units connected to a single evaporator usually not require an oil separator. This is recommended for long pipe lengths (> 30 m) being necessary for a suitable circuit design to ensure oil return.

Proportional condensation control

Sigilus condensing units incorporate proportional condensation control by speed variation for prolonged running times at low ambient temperature.

Triple noise insulation

Sigilus units incorporate triple noise insulation as standard:

- Insulated compressor compartment separated from air flow.
- Acoustic compressor jacket (three-phase models) and discharge muffler (hermetic models).
- Low-noise and low-speed fans, mounted on shock absorbers.

Ecodesign requirements

Coefficient of Performance (COP) and Seasonal Performance Factor (SEPR) according to ErP Directive 2015/1095/EU.

	Cooling capacity	Ecodesign standard
MT	0.2 < P≤ 1 kW	COP ≥ 1.40
	1 < P≤ 5 kW	COP ≥ 1.60
	5 < P≤ 20 kW	SEPR ≥ 2.55
BT	P≤ 2 kW	COP ≥ 0.95
	2 < P≤ 8 kW	SEPR ≥ 1.60

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | Hermetic and scroll compressor | R-134a / R-449A

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity EN13215 (W) [1] Evap. temp. -10 °C	Cooling capacity (W) [2] Average evaporating temperature 0 °C	-5 °C	-10 °C	-15 °C	Input power (kW)	(COP) SEPR [3]	Max. current (A)	Fan Ø mm	Flow (m³/h)	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) [4]
R-134a	1x Hermetic	MDF-NY-0 010	3/8	230 V-I	570	880	710	560	430	0.33	(1.75)	4	Ø 200	350	1/4"-3/8"	50	28
		MDF-NY-0 015	1/2	230 V-I	795	1 200	975	775	595	0.46	(1.73)	5	Ø 200	350	1/4"-3/8"	52	29
		MDF-NY-1 015	1/2	230 V-I	875	1 395	1 110	865	650	0.49	(1.78)	5	Ø 360	1 700	1/4"-1/2"	66	31
		MDF-NY-1 026	3/4	230 V-I	1 340	2 160	1 710	1 315	980	0.71	(1.89)	9	Ø 360	1 700	1/4"-1/2"	74	31
		MDF-NY-1 033	1	230 V-I	1 730	2 700	2 160	1 685	1 280	0.82	(2.11)	9	Ø 360	1 700	1/4"-5/8"	76	31
		MDF-NY-1 053	1 1/2	230 V-I *	2 425	3 975	3 115	2 360	1 710	1.04	(2.33)	12	Ø 360	1 700	1/4"-3/4"	88	32
		MDF-NY-1 074	2	230 V-I *	3 150	5 080	4 005	3 045	2 210	1.37	(2.29)	16	Ø 360	1 700	1/4"-3/4"	90	36
		MDF-NY-2 086 (V)	4	400 V-III	4 230	6 800	5 360	4 130	3 090	1.84	(2.32)	13	Ø 450	3 600	3/8"-7/8"	98	38
		MDF-NY-2 108 (V)	5	400 V-III	5 175	8 280	6 535	5 035	3 765	2.23	3.23	16	Ø 450	3 600	3/8"-7/8"	100	35
		MDF-NY-2 136 (V)	6 1/2	400 V-III	6 575	10 140	8 200	6 385	4 835	2.99	2.87	19	Ø 450	3 600	3/8"-1 1/8"	103	34
		MDF-NY-3 171 (V)	8	400 V-III	7 830	12 220	9 845	7 615	5 680	3.75	2.71	23	Ø 450	4 000	3/8"-1 1/8"	142	40
		MDF-NY-3 215 (V)	10	400 V-III	10 000	15 585	12 550	9 700	7 270	4.36	3.02	28	2x Ø 450	6 500	3/8"-1 1/8"	149	39
		MDF-NY-3 271 (V)	13	400 V-III	13 700	19 785	16 350	13 180	10 280	6.28	2.74	37	2x Ø 450	6 500	1/2"-1 3/8"	154	38
	2x Hermetic	MDF-NY-6 097 (V)	2x 2	400 V-III	4 580	7 415	5 830	4 475	3 320	2.10	(2.19)	16	Ø 450	3 600	3/8"-7/8"	139	32
		MDF-NY-6 109 (V)	2x 2 1/2	400 V-III	5 325	8 420	6 690	5 185	3 910	2.42	3.98	17	Ø 450	3 600	3/8"-7/8"	141	32
		MDF-NY-6 120 (V)	2x 3	400 V-III	6 425	9 730	7 910	6 240	4 820	2.92	3.92	19	Ø 450	3 600	3/8"-1 1/8"	143	31
		MDF-NY-6 137 (V)	2x 3 1/2	400 V-III	7 135	10 665	8 715	6 930	5 355	3.42	3.69	20	Ø 450	3 600	3/8"-1 1/8"	145	31
		MDF-NY-7 172 (V)	2x 4	400 V-III	7 935	12 320	9 935	7 705	5 780	3.70	3.71	25	Ø 450	4 000	3/8"-1 1/8"	187	41
		MDF-NY-7 216 (V)	2x 5	400 V-III	10 055	15 640	12 605	9 765	7 330	4.52	3.94	31	2x Ø 450	6 500	3/8"-1 1/8"	194	39
		MDF-NY-7 272 (V)	2x 6 1/2	400 V-III	12 705	18 845	15 430	12 285	9 355	6.08	3.60	37	2x Ø 450	6 500	1/2"-1 3/8"	200	38
		MDF-NY-8 320 (V)	2x 8	400 V-III	15 045	22 460	18 360	14 560	10 950	7.54	3.35	45	2x Ø 450	7 000	1/2"-1 3/8"	256	43
	1x Scroll	MDF-SY-1 021 (D)	3	400 V-III	3 320	4 805	3 960	3 235	2 620	1.37	(2.43)	8	Ø 450	3 200	1/4"-3/4"	88	20
		MDF-SY-2 029 (D)	4	400 V-III	4 165	6 025	4 965	4 055	3 285	1.78	(2.34)	11	Ø 450	3 600	3/8"-3/4"	90	20
		MDF-SY-2 038 (D)	5	400 V-III	5 520	7 945	6 565	5 365	4 350	2.28	3.60	13	Ø 450	3 600	3/8"-7/8"	98	21
		MDF-SY-2 045 (D)	6	400 V-III	6 520	9 295	7 730	6 335	5 135	2.69	3.49	14	Ø 450	3 600	3/8"-1 1/8"	101	21
		MDF-SY-3 057 (D)	8	400 V-III	8 190	11 610	9 680	7 945	6 450	3.76	3.00	17	Ø 450	4 000	3/8"-1 1/8"	118	28
	2x Scroll	MDF-SY-6 030	2x 2	400 V-III	4 530	6 550	5 400	4 410	3 570	1.95	(2.33)	10	Ø 450	3 600	3/8"-7/8"	142	28
		MDF-SY-6 042 (D)	2x 3	400 V-III	6 500	9 270	7 710	6 315	5 120	2.85	4.20	15	Ø 450	3 600	3/8"-1 1/8"	149	29
		MDF-SY-7 058 (D)	2x 4	400 V-III	8 115	11 515	9 595	7 870	6 390	3.76	3.91	21	Ø 450	4 000	3/8"-1 1/8"	170	31
R-449A	1x Hermetic	MDF-NG-0 008	1/3	230 V-I	570	965	790	635	490	0.36	(1.71)	4	Ø 200	350	1/4"-3/8"	51	28
		MDF-NG-0 010	3/8	230 V-I	735	1 210	1 000	805	635	0.46	(1.72)	5	Ø 200	350	1/4"-3/8"	51	29
		MDF-NG-0 012	1/2	230 V-I	870	1 395	1 160	945	755	0.54	(1.74)	6	Ø 200	350	1/4"-3/8"	51	29
		MDF-NG-1 014	1/2	230 V-I	1 075	1 870	1 515	1 200	930	0.66	(1.71)	6	Ø 360	1 700	1/4"-1/2"	66	32
		MDF-NG-1 016	5/8	230 V-I	1 220	2 200	1 770	1 385	1 040	0.74	(1.77)	7	Ø 360	1 700	1/4"-1/2"	76	32
		MDF-NG-1 018	3/4	230 V-I	1 525	2 630	2 140	1 710	1 310	0.88	(1.85)	8	Ø 360	1 700	1/4"-1/2"	76	32
		MDF-NG-1 024	1	230 V-I	1 940	3 485	2 815	2 195	1 650	1.01	(2.04)	12	Ø 360	1 700	3/8"-5/8"	78	32
		MDF-NG-1 026	1 1/4	230 V-I *	2 185	3 790	3 085	2 455	1 870	1.13	(2.05)	13	Ø 360	1 700	3/8"-5/8"	78	32
		MDF-NG-1 034	1 1/2	230 V-I *	2 820	4 765	3 895	3 125	2 420	1.6	(1.91)	16	Ø 360	1 700	3/8"-5/8"	78	32
		MDF-NG-1 038 (V)	1 3/4	400 V-III	3 105	5 315	4 320	3 440	2 650	1.53	(2.11)	7	Ø 450	3 200	3/8"-5/8"	81	29
		MDF-NG-2 048 (V)	2	400 V-III	3 985	6 805	5 525	4 410	3 410	1.89	(2.25)	8	Ø 450	3 600	3/8"-3/4"	85	26
		MDF-NG-2 054 (V)	2 1/2	400 V-III	4 595	7 660	6 250	5 020	3 950	2.09	(2.35)	9	Ø 450	3 600	3/8"-3/4"	86	26
		MDF-NG-2 060 (V)	3	400 V-III	5 300	8 655	7 105	5 750	4 575	2.48	3.26	10	Ø 450	3 600	3/8"-3/4"	87	26
		MDF-NG-2 068 (V)	3 1/2	400 V-III	5 975	9 635	7 955	6 460	5 160	2.85	3.14	10	Ø 450	3 600	1/2"-3/4"	88	25
		MDF-NG-3 086 (V)	4	400 V-III	7 055	11 615	9 520	7 660	6 045	3.15	3.27	13	Ø 450	4 000	1/2"-7/8"	115	38
		MDF-NG-3 108 (V)	5	400 V-III	9 040	14 820	12 175	9 815	7 765	4.15	3.28	16	2x Ø 450	6 500	1/2"-7/8"	120	35
		MDF-NG-4 136 (V)	6 1/2	400 V-III	11 655	18 710	15 520	12 590	10 045	5.50	3.08	19	2x Ø 450	7 000	1/2"-1 1/8"	135	34
		MDF-NG-4 160 (V)	8	400 V-III	13 435	21 570	17 940	14 570	11 505	6.74	2.79	23	2x Ø 450	7 000	5/8"-1 1/8"	157	40
	2x Hermetic	MDF-NG-6 076 (V)	2x 1 3/4	400 V-III	5 935	9 960	8 135	6 500	5 075	2.93	3.83	13	Ø 450	3 600	1/2"-3/4"	135	33
		MDF-NG-7 097 (V)	2x 2	400 V-III	7 625	12 560	10 350	8 315	6 530	3.84	3.70	16	Ø 450	4 000	1/2"-7/8"	161	33
		MDF-NG-7 109 (V)	2x 2 1/2	400 V-III	9 015	14 800	12 150	9 795	7 750	4.26	4.03	17	2x Ø 450	6 500	1/2"-7/8"	166	33
		MDF-NG-8 137 (V)	2x 3 1/2	400 V-III	11 830	18 870	15 690	12 770	10 215	5.76	3.87	20	2x Ø 450	7 000	1/2"-1 1/8"	182	28
		MDF-NG-8 172 (V)	2x 4	400 V-III	13 695	21 800	18 160	14 785	11 715	6.43	3.95	25	2x Ø 450	7 000	5/8"-1 1/8"	202	41
	1x Scroll	MDF-SG-2 021 (D)	3	400 V-III	5 220	7 955	6 675	5 560	4 590	2.33	3.49	8	Ø 450	3 600	3/8"-7/8"	90	20
		MDF-SG-2 029 (D)	4	400 V-III	6 740	10 125	8 560	7 150	5 915	3.14	3.17	11	Ø 450	3 600	1/2"-7/8"	90	20
		MDF-SG-3 038 (D)	5	400 V-III	8 640	12 890	10 930	9 150	7 580	4.03	3.05	13	Ø 450	4 000	1/2"-1 1/8"	115	21
		MDF-SG-3 045 (D)	6	400 V-III	10 265	15 430	13 045	10 890	9 015	4.64	3.38	14	2x Ø 450	6 500	1/2"-1 1/8"	121	22
		MDF-SG-4 057 (D)	8	400 V-III	13 430	19 970	16 960	14 220	11 790	5.72	3.51	17	2x Ø 450	7 000	5/8"-1 1/8"	133	28
	2x Scroll	MDF-SG-6 030	2x 2	400 V-III	6 745	10 140	8 570	7 155	5 920	3.46	3.65	10	Ø 450	3 600	1/2"-7/8"	112	28
		MDF-SG-7 042 (D)	2x 3	400 V-III	10 315	15 505	13 110	10 945	9 060	4.83	4.05	16	2x Ø 450	6 500	1/2"-1 1/8"	139	31
		MDF-SG-8 058 (D)	2x 4	400 V-III	13 390	19 920	16 915	14 175	11 750	6.39	3.94	21	2x Ø 450	7 000	5/8"-1 1/8"	150	21

[1] Conditions based on UNE-EN 13215: ambient temp. 32 °C, evap. temp. -10 °C (PT), 20 °C of suction temperature, refrigerant R-449A.
[2] Cooling capacity in nominal conditions: evaporating temperature -10 °C (PT), ambient temperature of 32 °C, overheating 10 K, refrigerant R-449A.
[3] COP/SEPR: Coefficient of Performance according to Ecodesign Directive 2015/1095/EU ErP 2015/1095/UE.
[4] Sound pressure level of the condenser referred to dB(A) sound pressure level, measured in the open field at 10 m distance.
(V) Model that allow VRC system. | (D) Available models with Digital compressor. | * Units available in 400 V-III-50 Hz voltage.

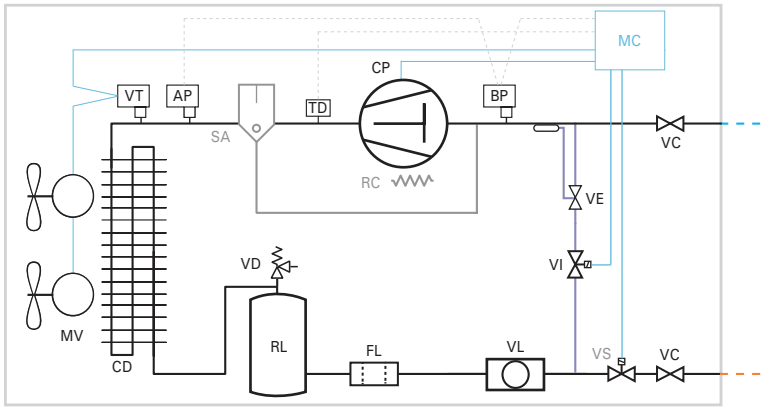
230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | Hermetic and scroll compressor | R-449A

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity EN13215 (W) [1] Evap. temp. -35 °C	Cooling capacity (W) [2] Average evaporating temperature -25 °C	-30 °C	-35 °C	Input power (kW)	(COP) SEPR [3]	Max. current (A)	Fan Ø mm	Flow (m³/h)	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) [4]
R-449A	1x Hermetic	BDF-NG-0 018	5/8	230 V-I	335	795	600	415	0.43	(0.96)	6	Ø 200	350	1/4"-1/2"	58	28
		BDF-NG-1 026	3/4	230 V-I	545	1 285	945	655	0.67	(0.97)	9	Ø 360	1 700	1/4"-1/2"	76	31
		BDF-NG-1 034	1 1/4	230 V-I	720	1 690	1 245	865	0.90	(0.95)	10	Ø 360	1 700	3/8"-5/8"	79	32
		BDF-NG-1 055	1 3/4	230 V-I *	920	2 425	1 745	1 160	1.17	(0.99)	16	Ø 360	1 700	3/8"-5/8"	85	34
		BDF-NG-1 075	2 1/2	230 V-I *	1 360	3 125	2 375	1 645	1.56	(1.06)	24	Ø 360	1 700	3/8"-5/8"	90	36
		BDF-NG-2 096	3 1/2	400 V-III	1 570	4 055	2 930	1 945	1.64	(1.21)	11	Ø 450	3 600	3/8"-3/4"	98	39
		BDF-NG-2 108	4	400 V-III	2 015	4 700	3 475	2 390	1.95	1.65	13	Ø 450	3 600	3/8"-7/8"	98	37
		BDF-NG-2 136	5	400 V-III	2 665	5 855	4 425	3 125	2.59	1.58	15	Ø 450	3 600	3/8"-7/8"	98	32
		BDF-NG-3 215	7 1/2	400 V-III	4 040	9 125	6 865	4 785	3.83	1.65	24	2x Ø 450	6 500	1/2"-1 1/8"	149	39
		BDF-NG-3 271	10	400 V-III	5 840	11 755	9 020	6 600	5.13	1.68	28	2x Ø 450	6 500	1/2"-1 1/8"	149	39
	2x Hermetic	BDF-NG-6 097	2x 2 1/2	400 V-III	1 585	4 045	2 920	1 935	1.64	(1.20)	10	Ø 450	3 600	3/8"-7/8"	111	31
		BDF-NG-6 137	2x 3	400 V-III	2 950	6 105	4 665	3 380	2.82	1.81	18	Ø 450	3 600	3/8"-1 1/8"	115	32
		BDF-NG-7 216	2x 4	400 V-III	4 025	9 120	6 855	4 770	3.90	1.85	26	2x Ø 450	6 500	1/2"-1 1/8"	165	41
		BDF-NG-7 272	2x 5	400 V-III	5 320	11 280	8 565	6 160	5.18	1.79	30	2x Ø 450	6 500	1/2"-1 1/8"	165	37
	1x Scroll	BDF-SG-2 013 [D]	4	400 V-III	3 295	5 400	4 515	3 700	2.78	1.74	10	Ø 450	3 600	3/8"-7/8"	103	23
		BDF-SG-3 018 [D]	6	400 V-III	5 085	8 360	6 985	5 735	3.85	1.95	15	2x Ø 450	6 500	3/8"-1 1/8"	124	27
		BDF-SG-4 025 [D]	8	400 V-III	6 430	10 570	8 830	7 255	4.52	2.08	17	2x Ø 450	7 000	3/8"-1 1/8"	136	30
		BDF-SG-4 034	10	400 V-III	8 660	14 285	11 915	9 810	6.23	2.01	26	2x Ø 450	7 000	1/2"-1 3/8"	162	28
	2x Sc.	BDF-SG-8 026 [D]	2x 4	400 V-III	6 590	10 830	9 045	7 435	5.60	1.82	19	2x Ø 450	7 000	3/8"-1 1/8"	178	26
		BDF-SG-8 036 [D]	2x 6	400 V-III	10 210	16 870	14 055	11 575	7.90	1.97	29	2x Ø 450	7 000	1/2"-1 3/8"	181	30

Options

- Change to 400 V-III-50 Hz power supply.
- Built-in oil separator (already included in -V version).
- Built-in solenoid valve with body and coil (except -V version).
- Anti-corrosion coil coating.
- Coil protection grille.
- Proportional condensation control by fan speed variator (1 series).
- Control and power panel with electronic control unit for management of condenser and evaporator.
  - Larger sized multifunction electronic control.

Scheme



STANDARD
- AP: HIGH PRESSURE SWITCH
- BP: LOW PRESSURE SWITCH
- CD: CONDENSER
- CP: COMPRESSOR
- FL: FILTER
- MV: MOTOR FAN
- RL: LIQUID VESSEL
- RC: CRANKCASE HEATER
- VC: SERVICE VALVE
- VD: SECURITY VALVE (UP TO 1 HP)
- VL: SIGHT GAUGE
- VT: VOLTAGE REGULATOR

OPTIONAL
- SA: OIL SEPARATOR
- VS: SOLENOID VALVE

LIQUID INJECTION SYSTEM (ONLY BDF)
- TD: DISCHARGE THERMOSTAT
- VE: THERMOSTATIC EXPANSION VALVE
- VI: LIQUID SOLENOID VALVE

ADDITIONAL -N VERSION
- MC: ELECTRONIC MICRO-CONTROLLER

[1] Conditions based on UNE-EN 13215: ambient temp. 32 °C, evap. temp. -35 °C (NT), 20 °C of suction temperature, refrigerant R-449A.

[2] Cooling capacity in nominal conditions: evaporating temp -35 °C (NT), ambient temperature of 32 °C, overheating 10 K, refrigerant R-449A.

[3] COP/SEPR: Coefficient of Performance according to Ecodesign Directive 2015/1095/EU ErP 2015/1095/UE.

[4] Sound pressure level of the condenser referred to dB(A) sound pressure level, measured in the open field at 10 m distance.

[V] Model that allow VRC system.

* Units available in 400 V-III-50 Hz voltage.

MDF-N and BDF-N (with optional electronic control)

Sigilus condensing units with optional electronic control incorporate an advanced electronic controller XM670K for the management of the condensing unit and the evaporator, being able to optionally integrate the solenoid valve.

- Multifunction remote digital control.
- Electronic board integrated in the condensing unit for 6 control relays for: compressor, condensing fan, evaporator fan, defrost, light and alarm.
- Possibility of interconnection and synchronization of up to 8 devices by LAN, managed from a single control.

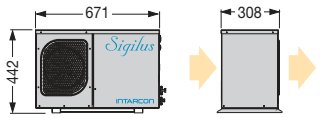
Liquid injection system

Negative temperature condensing units incorporate a safety cooling system for the motor by liquid injection into the compressor suction.

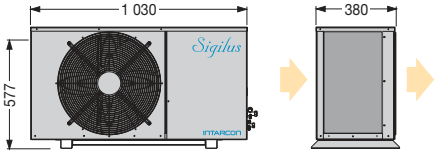
R-499A and R-448A refrigerants have high gas discharge temperature under conditions of high compression ratio and high suction gas superheat.
To protect the motor windings and preserve oil stability, compressor cooling is necessary in certain situations.

Dimensions

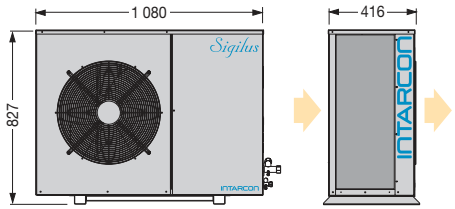
0 series



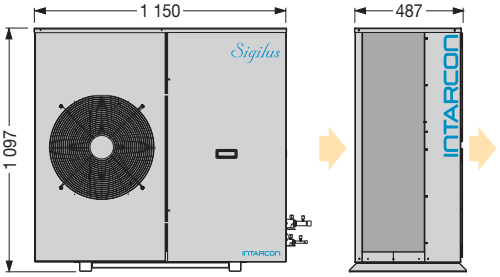
1 series



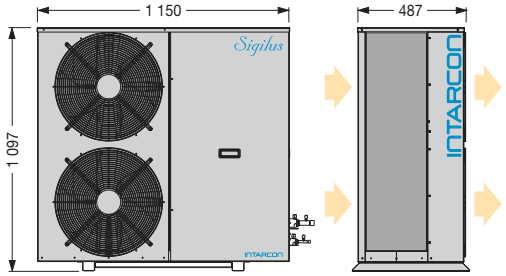
2 series



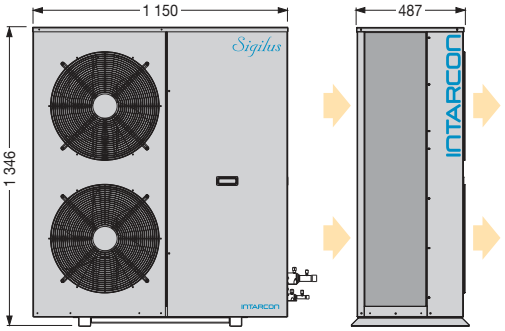
3 series - 1x Ø 450



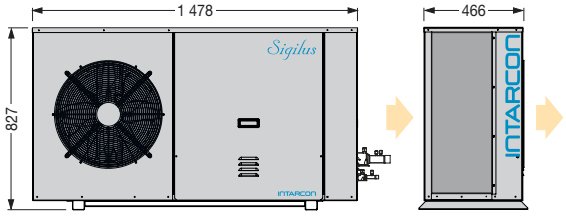
3 series - 2x Ø 450



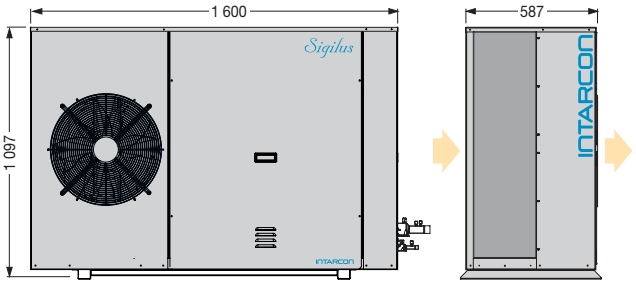
4 series



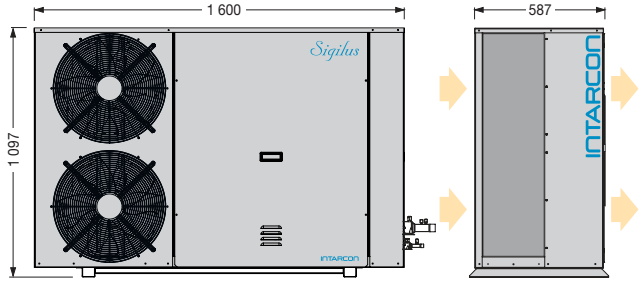
6 series



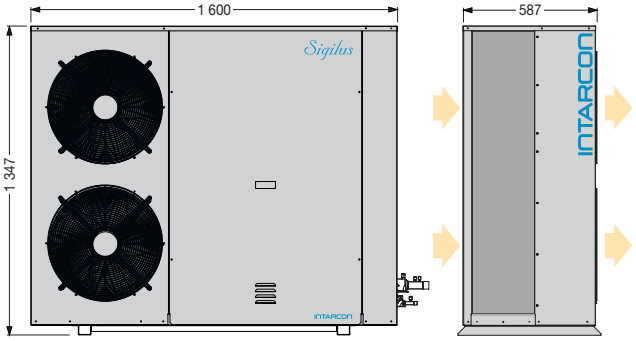
7 series - 1x Ø 450



7 series - 2x Ø 450



8 series



Dimensions in mm.

Variable Refrigerant Capacity

VRC system

- ❄ Cooling capacity control.
- ❄ Constant evaporation pressure.
- ❄ Set services refrigeration production centralization.

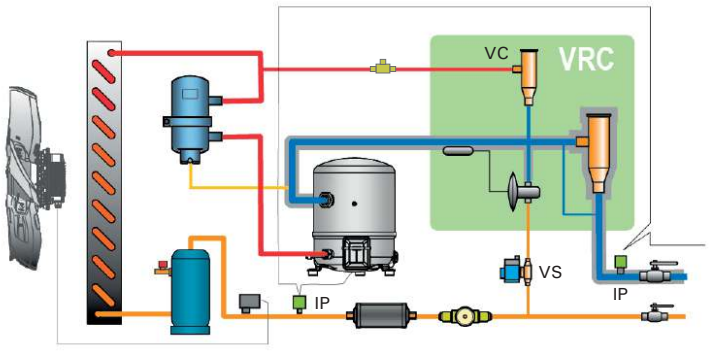
Multi-service version, featuring VRC system (Variable Refrigerant Capacity), of refrigeration capacity control, applicable to hermetic alternative compressors, consisting of:

- Suction pressure valve (VP).
- By-pass pressure valve (VC).
- Thermostatic expansion valve for liquid injection (VE).
- Pressure control switch (IP).
- Built-in oil separator.

Multi-service versions of condensing units:

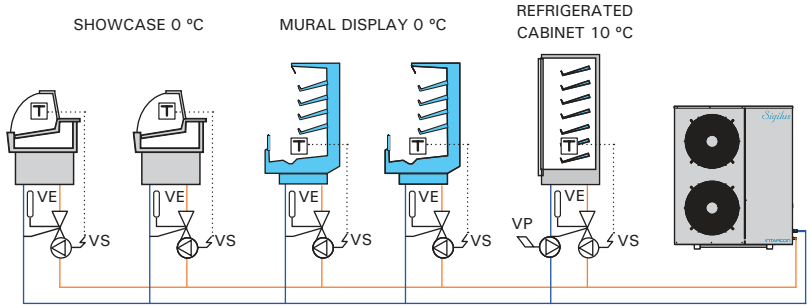
- Horizontal axial or centrifugal multi-service version.
  intarbox-multi: MDH-CV/-V series.
- Horizontal axial low-noise multi-service version.
  Sigilus-multi: MDF-V series.

Scheme



Example of multi-service installation

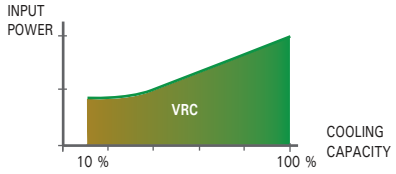
Units specifically designed for the centralisation of cooling production of several evaporators.



VRC system is composed of a set of pressure and temperature valves capable of progressive variation of a compressor's cooling capacity between 100 % and 10 % of this rated power, at the same time the system reduces electrical input power and protects the compressor, maintaining its compression ratio within security margins, eliminating the risk of overheating.

VRC system: Variable Refrigerant Capacity

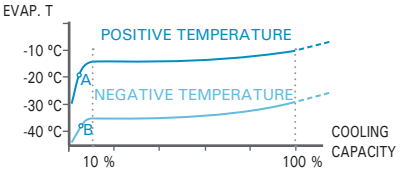
VRC system applied to a reciprocating hermetic compressor adjusts the flow of refrigerant to the evaporator unit's demand by maintaining constant pressure in the suction line.



VRC system is characterized by:

- Consisting exclusively of high reliability mechanical components.
- Keeps the evaporation pressure constant.
- Protects the compressor against the risk of engine overheating.
- Maintains the compression ratio of the compressor within the safety limits.

Condensing units equipped with VRC system allow centralizing the refrigeration production of a set of services, maintaining constant the pressure and temperature of the refrigerant in the evaporators.



VRC system can be easily regulated to set a minimum evaporation pressure. The factory setting provides the following minimum evaporation temperatures:

- Positive temperature units: -13 °C
- Negative temperature units: -35 °C

With demand below 10 % of the nominal power, the characteristic of the evaporation pressure curve falls towards the minimum value admitted by the compressor, disconnecting the low pressure switch (points A and B) and stopping the compressor.

In this way, the multi-service condensing units are designed for low-pressure stop / start control (drop down or pump down).

Alternatively, the compressor running stop can be done through an external open / closed contact.