FRIGA-BOHN

VANGUARD

Condensing unit

HFC

MT **3.4** - **8.5** kW
LT **1.7** - **2.4** kW

DESP 2014/68/UE

Quick installation: complete electrical supply pre-wired in the factory

Easy maintenance: All the sheet metal elements are easy to remove and allow total accessibility to all the unit's components.

Condensing unit **adaptable** to the needs of the application with 18 existing models (13 for high temperature applications, 5 for low temperature applications)

The VANGUARD condensing unit can be coupled to a unit cooler, according to your needs, to form a split system known as the SPLIT VANGUARD

UNIT COOLER

The Vanguard can be coupled with ceiling unit coolers (MR or MH), the dual-discharge unit cooler (NTA), or the cubic unit cooler (3C-A).
The maximum distance between the Vanguard and the unit cooler is 20 m.
In the case of the SPLIT VANGUARD, the unit cooler is factory-assembled with expansion valve and solenoid valve.

For more details on our unit coolers, please refer to the MR, MH, NTA and 3C-A documentations.

Responsible product; its refrigerant charge is reduced by 30% and its coil is 100% recyclable

Sturdy and silent, it is designed to operate in high outdoor temperatures.

1 CASING

White pre-painted sheet steel; intended for outdoor use.
For size TB, front and rear compressor compartment panels made from black pre-painted sheet steel.

2 COMPRESSOR

Two compressor technologies:
- Hermetic piston compressors. Up to 1 1/2 HP in positive and 1 1/4 HP in negative.
- Scroll compressors. From 2 HP in positive and 2 1/2 HP in negative.
For size TB, noise-insulated compressor compartment to reduce the unit's noise level.

3 CONDENSER

Coil technology with all-aluminium microchannels, generously dimensioned to operate in high ambient temperatures (+43 °C).
Limited leakage risk: coil(s) soldered in a single operation and tested with helium.
Coil more environmentally friendly:
it contains less refrigerant charge and is 100% recyclable.
Quieter, each model is controlled by a variable voltage regulator that helps to reduce the noise level, especially during the night.
Motor fans class F, IP55.

4 ELECTRICAL BOX

ABS electrical box, IP66, containing the components for protection and control of the unit:
- Compressor overload and overvoltage protection.
- Fan overvoltage protection.
- Terminals for supplying control and cooling stations.
- Disconnect switch.
- Fault relay for three-phase models.

5 OTHER COMPONENTS

Variable speed drive: all models have a variable speed drive to ensure optimum regulation of the condensing pressure.
Liquid receiver (2l., 3l., 5l.) with shut-off valve at the receiver outlet.
Liquid line with valve, filter dryer and hygroscopic indicator.
LP regulator pressure switch and HP safety pressure switch.

REGULATION

Electronic control
Air or electric defrost management
Lighting management
Display and referral of alarms
Additional programmable contact (door opening, entrapment safety, etc.)
Integrated forced operation for rapid cooling or blast freezing.

The SPLIT VANGUARD split system consists of the VANGUARD condensing unit, a unit cooler and a control system.
Please contact us to choose the right combination of unit/ cooler for the refrigerant and the application.

VG H(A)P(B)012(C)

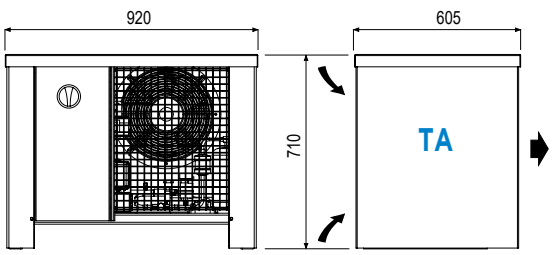
(A) **H** = hermetic compressor **SC** = Scroll compressor
(B) **P** = positive range **N** = negative range
(C) Model

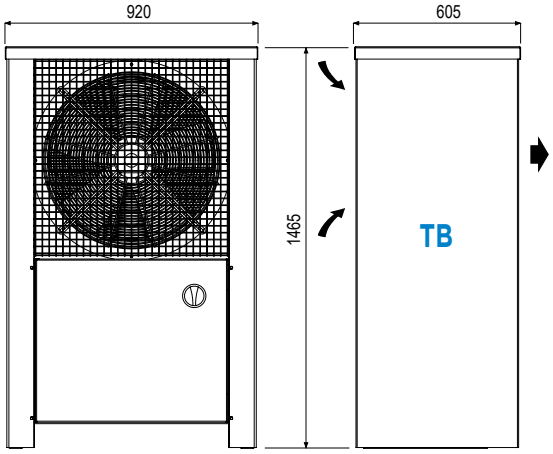
> **The VANGUARD is available with HFCs. For more information, please consult our software.**

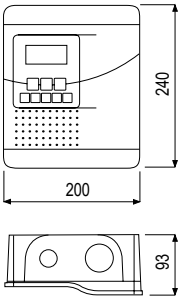
VANGUARD — Positive range

		VG ...	HP 012	HP 014	HP 017	HP 020	HP 024	HP 030	HP 038	ScP 043	ScP 050	ScP 065	ScP 075	ScP 086	ScP 103
Power (1)	R449A	kW	*Contact us*							3,40	3,90	5,20	6,00	7,00	8,50
Power consumption (1)	R449A	kW	*Contact us*							1,63	1,95	2,40	2,80	3,20	4,10
Compressor power		Cv	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
Voltage		50Hz	230V/1	230V/1	230V/1	230V/1	230V/1	230V/1	230V/1	400V/3	400V/3	400V/3	400V/3	400V/3	400V/3
Current drawn		A max.	5,0	5,6	6,6	6,0	6,8	8,7	12,9	4,6	5,6	9,8	10,7	12,5	14,5
Acoustics (2)	Lp at 10 m	dB(A)	38	38	39	39	39	39	36	36	36	41	41	41	41
Ventilation - 230V/1/50Hz		mm	1x300	1x300	1x300	1x300	1x300	1x300	1x400	1x400	1x400	1x560	1x560	1x560	1x560
Liquid capacity		l.	2	2	2	2	2	2	2	3	3	3	5	5	5
Connections	Suction	Ø	3/8"	1/2"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	7/8"	7/8"	7/8"	7/8"	1"1/8
	Liquid	Ø	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	1/2"	1/2"	1/2"	1/2"
Casing	Size		TA	TA	TA	TA	TA	TB	TB	TB	TB	TB	TB	TB	TB
Net weight		kg	100	100	100	100	100	150	150	150	160	170	170	180	180

(1) Evaporating temperature **-10 °C** / Ambient temperature **+32 °C** - Superheat: 10K - Subcool: 3K.
(2) Sound pressure in dB(A) measured at 10 m, in a free field over a reflecting plane, in accordance with standard EN 13487 (parallelepiped reference surface).







HFC

VG H(A)P(B)012(C)

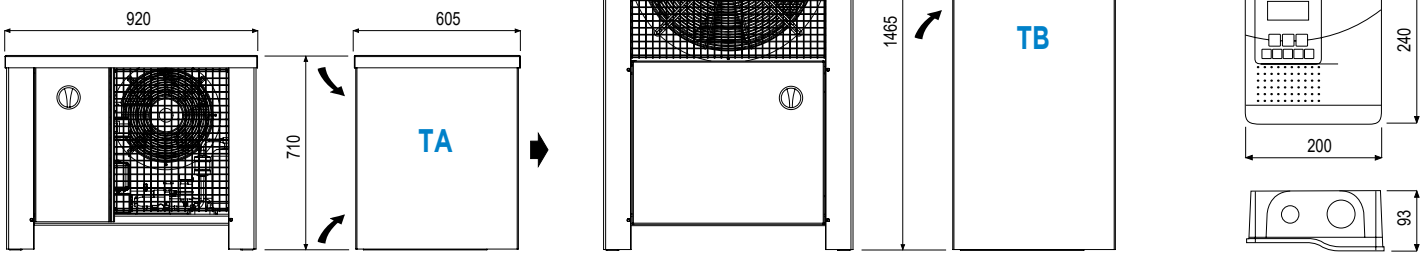
(A) **H** = hermetic compressor **SC** = Scroll compressor
(B) **P** = positive range **N** = negative range
(C) Model

The VANGUARD is available with HFCs. For more information, please consult our software.

VANGUARD — Negative range

		VG ...	HN 008	HN 013	ScN 022	ScN 027	ScN 031
Power (1)	R449A	kW	*Contact us*		1,70	2,10 (3)	2,40 (3)
Power consumption (1)	R449A	kW	*Contact us*		1,90	2,30	2,60
Compressor power		Cv	3/4	1 1/4	2 1/2	3	4
Voltage		50Hz	230V/1	230V/1	400V/3	400V/3	400V/3
Current drawn		A max.	5,0	7,9	6,1	6,9	7,1
Acoustics (2)	Lp at 10 m	dB(A)	38	39	39	39	40
Ventilation - 230V/1/50Hz		mm	1x300	1x300	1x400	1x400	1x400
Liquid capacity		l.	2	2	2	5	5
Connections	Suction	Ø	1/2"	1/2"	7/8"	7/8"	7/8"
	Liquid	Ø	3/8"	3/8"	3/8"	3/8"	3/8"
Casing	Size		TA	TA	TB	TB	TB
Net weight		kg	100	100	150	160	170

(1) Evaporating temperature **-35 °C** / Ambient temperature **+32 °C** - Superheat: 10K - Subcool: 3K.
(2) Sound pressure in dB(A) measured at 10 m, in a free field over a reflecting plane, in accordance with standard EN 13487 (parallelepiped reference surface).
(3) Product only available in split system.



VG H(A)P(B)012(C) MR 100L(D)

(A) **H** = hermetic compressor **SC** = Scroll compressor
(B) **P** = positive range **N** = negative range
(C) Model
(D) Split system **SPLIT VANGUARD** > unit coolers:
MR (ceiling) **MH** (ceiling) **NTA** (dual-discharge) **3CA** (cubic)

The SPLIT VANGUARD is available with HFCs. Please contact us to choose the right combination of unit/cooler for the refrigerant and the application.

SPLIT VANGUARD — ti = +8 °C - DT1 = 10K

VG ...		HP 012 MR 100L	HP 014 MR 110R	HP 017 MR 135R	HP 020 MR 160R	HP 024 MR 180R	HP 030 MR 210R	HP 038 NTA M1R 1-AC GV	ScP 043 NTA M3R 2-AC PV	ScP 050 NTA M3R 2-AC GV	ScP 065 NTA M4R 2-AC GV	ScP 075 NTA M5R 3-AC GV	ScP 086 NTA M6R 3-AC PV	ScP 103 NTA M6R 3-AC GV
Power (1)	kW	**1,33**	**1,57**	**1,88**	**2,21**	**2,57**	**3,34**	**4,24**	**4,71**	**5,57**	**7,30**	**8,30**	**9,62**	**11,44**
Power consumption (1)	kW	**0,75**	**0,87**	**1,07**	**1,21**	**1,32**	**1,59**	**2,19**	**1,94**	**2,42**	**2,95**	**3,38**	**3,86**	**5,00**
Room volume (indicative)	m^3	12	14	17	20	24	32	42	48	58	81	96	116	146

SPLIT VANGUARD — ti = +6 °C - DT1 = 6K

VG ...		HP 012 MR 160R	HP 014 MR 180R	HP 017 MR 210R	HP 020 MR 270R	HP 024 MH 320R	HP 030 MH 380R	HP 038 3CA 3245R	ScP 043 3CA 3343R	ScP 050 3CA 3344R	ScP 065 3CA 3354R	ScP 075 3CA 3444R	ScP 086 3CA 4263R	ScP 103 3CA 4264R
Power (1)	kW	**1,43**	**1,69**	**2,03**	**2,37**	**2,75**	**3,59**	**4,53**	**5,04**	**5,94**	**7,83**	**8,90**	**10,29**	**12,21**
Power consumption (1)	kW	**0,81**	**0,92**	**1,13**	**1,28**	**1,48**	**1,75**	**2,53**	**2,16**	**2,69**	**3,21**	**3,66**	**4,40**	**5,49**
Room volume (indicative)	m^3	17	20	24	28	33	44	56	63	75	102	117	138	169

SPLIT VANGUARD — ti = +2 °C - DT1 = 8K

VG ...		HP 012 MR 110R	HP 014 MR 135R	HP 017 MR 160R	HP 020 MR 180R	HP 024 MR 210R	HP 030 MR 270R	HP 038 MH 380R	ScP 043 3CA 3243R	ScP 050 3CA 3245R	ScP 065 3CA 3343R	ScP 075 3CA 3344R	ScP 086 3CA 3354R	ScP 103 3CA 3444R
Power (1)	kW	**1,13**	**1,35**	**1,62**	**1,91**	**2,22**	**2,88**	**3,69**	**4,08**	**4,86**	**6,33**	**7,19**	**8,34**	**9,98**
Power consumption (1)	kW	**0,72**	**0,83**	**1,05**	**1,15**	**1,25**	**1,54**	**2,19**	**2,03**	**2,54**	**3,17**	**3,61**	**4,04**	**5,05**
Room volume (indicative)	m^3	10	12	14	17	19	25	33	36	43	57	65	77	93

SPLIT VANGUARD — ti = 0 °C - DT1 = 8K

VG ...		HP 012 MR 110R	HP 014 MR 135R	HP 017 MR 160R	HP 020 MR 180R	HP 024 MR 210R	HP 030 MR 270R	HP 038 3CA 3165R	ScP 043 3CA 3243R	ScP 050 3CA 3245R	ScP 065 3CA 3343R	ScP 075 3CA 3344R	ScP 086 3CA 3354R	ScP 103 3CA 3444R
Power (1)	kW	**1,05**	**1,24**	**1,50**	**1,77**	**2,05**	**2,67**	**3,43**	**3,78**	**4,53**	**5,87**	**6,68**	**7,75**	**9,31**
Power consumption (1)	kW	**0,71**	**0,85**	**1,03**	**1,12**	**1,25**	**1,57**	**2,24**	**2,15**	**2,63**	**3,16**	**3,59**	**4,02**	**5,28**
Room volume (indicative)	m^3	8	9	12	14	16	21	28	31	38	50	58	69	86

(1) Ambient temperature **+32 °C** - Superheat: 10K - Subcool: 3K.

All the information on the unit coolers can be found in the **MR**, **MH**, **NTA** and **3C-A** documentation

HFC

VG H(A)N(B)008(C) MRE 120C(D)

(A) **H** = hermetic compressor **SC** = Scroll compressor
(B) **P** = positive range **N** = negative range
(C) Model
(D) Split system **SPLIT VANGUARD** > unit coolers:
MR (ceiling) **MH** (ceiling) **NTA** (dual-discharge) **3CA** (cubic)

The SPLIT VANGUARD is available with HFCs. Please contact us to choose the right combination of unit/cooler for the refrigerant and the application.

SPLIT VANGUARD — ti = -20 °C - DT1 = 7K

VG ...		HN 008 MRE 120C	HN 013 MRE 190C	ScN 022 3CA 3243C	ScN 027 3CA 3244C	ScN 031 3CA 3343C
Power (1)	kW	0,82	1,44	2,52	3,08	3,48
Power consumption (1)	kW	0,84	1,39	2,35	2,80	3,20
Room volume (indicative)	m^3	9	18	36	46	54

SPLIT VANGUARD — ti = -25 °C - DT1 = 6K

VG ...		HN 008 MRE 120C	HN 013 MRE 190C	ScN 022 3CA 3243C	ScN 027 3CA 3244C	ScN 031 3CA 3343C
Power (1)	kW	0,67	1,18	2,12	2,61	2,93
Power consumption (1)	kW	0,77	1,27	2,30	2,73	3,09
Room volume (indicative)	m^3	8	14	29	37	43

(1) Ambient temperature **+32 °C** - Superheat: 10K - Subcool: 3K.

All the information on the unit coolers can be found in the **MR**, **MH**, **NTA** and **3C-A** documentation

NOTES