



AIR CONDITIONING
SYSTEMS



NEWGEN_{Si}

Air to water high efficiency heat pumps with R410A, monoblock and reversible design, compressor and axial fans with DC Inverter motors and variable speed water pump.



*Conditioning your ambient,
maximising your comfort.*



Cooling, conditioning, purifying.



NEWGEN_{Si}

The reversible and monoblock heat pumps of the NewGen S.i. range are suitable for outdoor installation and are high efficiency units with single refrigerant circuit for R410A which does not damage the ozone layer. The units are designed for residential and light commercial applications to be connected to fan coils, high efficiency radiators and radiant heating floor systems.



HIGH ENERGY EFFICIENCY CLASS A



ROTARY COMPRESSOR



PLATE EXCHANGER



LOW NOISE



ECOLOGICAL REFRIGERANT



SCROLL COMPRESSOR



ELECTRONIC EXPANSION VALVE



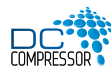
PLUG & PLAY



PHASE CUT PUMP



DC INVERTER AXIAL FANS



DC COMPRESSOR



HOT WATER FOR HEATING AND SANITARY USE

NEWGEN SMALL INVERTER, EFFICIENCY AND RELIABILITY FOR AIR CONDITIONING

The **NEWGEN Si** range of products is extremely versatile and designed for heat pump operation for the supplying of hot water for ambient heating and for sanitary use up to +55 °C also at the limit external temperature of -15 °C.

The inverter compressor technology with brushless motor and microprocessor, which allows adjustment without oscillations of the cooling and heating capacity output, combined with the electronic expansion valve, DC invert fans and variable speed pump, optimizes power consumption by reducing the costs of management and ensuring the best operating efficiency of the unit.

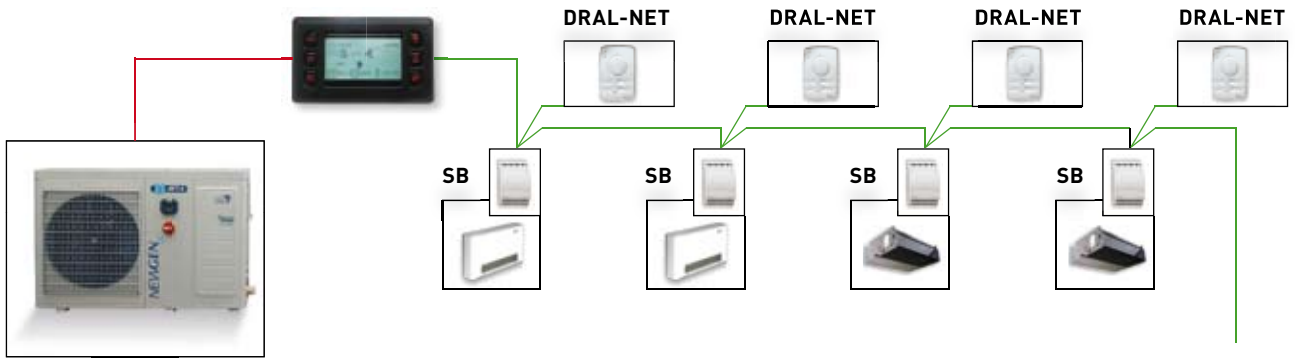
The hot or chilled water is produced instantaneously, avoiding the use of the storage tank in radiant and fan coil systems.

The compact design, the low noise operation and the high level of the units performances are the perfect solution also for problematic building applications.

In the **NEWGEN Si** range of products are available no. 4 models: NGSi 05, NGSi 07, NGSi 10 and NGSi 15 that, with high EER/ESEER and COP values allow to obtain the tax benefits provided for the EU Member States. The unit installation is very simple and requires only electrical and hydraulic connections.



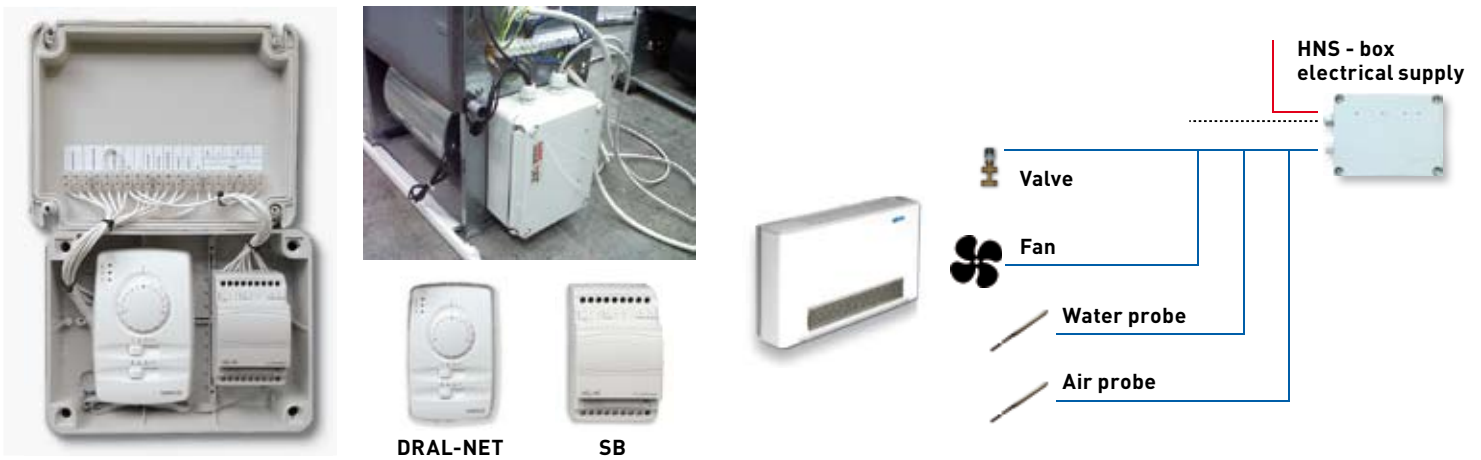
CRH Remote control combined with Dral Net and SB devices



The remote control CRH combined with the control panel Dral NET and SB adapter can manage up to 70 EURUS hydronic terminal units connected in series. The control panel DRAL NET can be wall installed and allows the modification of the CRH set-

point ambient temperature of ± 5 °C. The CRH remote control, through the components DRAL NET and SB, is able to manage: speed of the fan motor, 3 ways diverter valve (VD accessory), water and air NTC 10K probes.

CRH Remote control combined with HNS-BOX device



The accessory HNS-Box is equipped with the devices DRAL NET, SB and the air and water probes already pre-wired and ready to be connected to the EURUS hydronic terminal units.

The HNS-Box can be installed inside the fan coil casing or close to the recessed or cassette EURUS units.

CRH panel for remote control of the unit (optional).

Anti-freeze kit AK, equipped with a heating cable and electrical resistance (optional).

Innovative logic control and DC Inverter technology.





BENEFITS

- Energy efficiency Class A with high ESEER values;
- High thermal comfort;
- High energy savings and consequently reduction of management costs;
- Very low noise operation;
- Supplying of hot water for heating and sanitary use also at the external limit temperature of -15 °C;
- The unit allows to avoid the use of a buffer tank also with partial thermic loads;
- Compact design that meets high quality and safety standards;
- The inverter technology allows the **NEWGEN Si** units to operate always at optimum power, modulating the compression of the refrigerant gas, the cooling capacity and the power consumption;
- Refrigerant gas R410A which does not damage the ozone layer;
- Microprocessor with high computing capacity for a perfect logic control of the electronic expansion valve, the compressor DC Inverter, the fans DC Inverter and the circulation pump;
- **NEWGEN Si** units can produce hot water managing also a 3-way valve (optional VD);
- The **NEWGEN Si** allows the connection of max 5 units in parallel configuration with the rotation of units in operation and remote control management (optional CRH);
- Connecting multiple units in series, the user can decide which and how many units should be used for the production of domestic hot water;
- Climatic compensation function.

ACCESSORIES

CRH - Remote control panel to control up to 5 units NGSi, and up to 70 hydronic terminal units in 9 different climatic areas;

AG - Anti-vibration rubber mounts to be fixed on the unit base frame;

AK - Antifreeze heater version - Antifreeze heater kit (this accessory has to be requested when ordering because it has to be installed during the unit production). The kit includes heaters applied on the user plate exchanger sides which are energized (also when the unit is switch off but powered) when the water temperature falls below 4 °C. The plate heat exchanger heaters are switched off when the temperature measured by the outlet water probe exceeds 6 °C. The kit also includes a heating cable installed on the base of the NEWGEN Si unit and it is equipped with a built-in thermostat which activates the power supply of the heating cable (also when the unit is switch off but powered) when the outside air temperature falls below 5 °C;

DSP Kit (Dual Set Point Kit) - This kit, which allows a second working setpoint side system, is used to improve the thermohygrometric comfort and avoid the formation of condensation on the floor prevent the formation of condensation on the floor in the case of floor radiant cooling assisted by fan coil for dehumidification. The kit consists of a humidistat, a socket for DIN rail and a relay. It also required the use of a 3-way diverter valve (not included in this kit, optional VD);

VD - 3-way diverter valve;

SAS - Sanitary water probe kit;

DRAL NET - Control Panel for hydronic terminals units EURUS series;

SB - BUS adapter for hydronic terminals units EURUS series;

HNS-BOX - Prewired box for hydronic terminals units EURUS series, within SB device, Dral NET device and air/water probes.

STANDARD FEATURES

- The DC Inverter compressors are rotary hermetic single phase type for models NGSi 05 and 07, twin rotary single phase type for model NGSi 10 and scroll three-phase type for unit NGSi 15. All compressors are equipped with crankcase electric heater, thermal overload protection and anti-vibration rubber mounts;
- Axial fans with plastic aerofoil blades, with modulating Brushless motor are equipped with a protection mesh and are managed by the microprocessor. The rotor forms a single unit with the fan wheel and incorporates an overload protection device;
- The user heat exchanger is made of stainless steel braze-welded plates. It is insulated and equipped with a water thermal sensor that in case of need, switches on the water circulator also when the unit is in stand-by, in order to avoid freezing condition;
- Air side exchanger made by copper pipes and aluminium fins with turbolenced design, low pressure drop and hydrophilic treatment which increases the corrosion protection and also delay the frosting of the exchanger in heat pump mode reducing the number of defrost cycles and consequently obtaining a considerable energy saving;
- The refrigerant circuit is contained in a separated compartment and it is equipped with:
 - electronic expansion valve;
 - 4-ways reverse cycle valve;
 - high pressure switch control;
 - liquid separator (only for models NGSi 05, 07 and 10);
 - liquid receiver;
 - high and low pressure transducer;
 - filters;
 - oil separator, liquid separator and non return valve (only for mod. NGSi 10 and 15).
- The units **NEWGEN Si** are covered by hot-galvanised metal sheet, painted with polyurethane powder enamels at 180 °C. The colour is Pantone Warm Grey 2C;
- The hydraulic circuit is equipped with:
 - water pump with continuous phase cut-off electronic speed control;
 - expansion vessel;
 - safety valve;
 - pressure gauge;
 - water flow switch;
 - water pressure gauge;
 - loading/unloading valve.
- The electrical board contains all the power, regulation and safety devices;
- Thermic/acoustic insulation on the compressor and on the piping of the hydraulic circuit;
- Plastic mesh protection for air side exchanger;
- The model NGSi 15 (power supply 400/3+N-PE/50Hz) is equipped with a device to provide protection against phase loss and phase reversal. All compressors are provided with a function to start at low frequency (soft starter) integrated in the logic management of the compressor driver, to decrease the inrush current at the start-up of the compressor;
- External ambient temperature sensor;
- Integrated collection tray in the unit base frame equipped with drain connection;
- On-off control of the integration system electrical heater and integration sanitary heater.



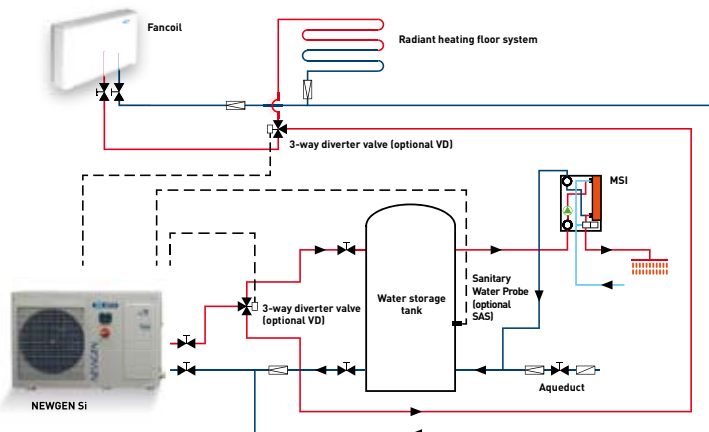
Technical data:

			05	07	10	15
Cooling	Nominal cooling power (1) [min/max]	kW	4,13 (1,80 / 5,00)	6,49 (3,00 / 8,20)	8,20 (3,70 / 10,80)	10,51 (4,80 / 13,10)
	Nominal power input (1) [min/max]	kW	1,33	2,08	2,65	3,39
	E.E.R. (1)	W/W	3,11	3,12	3,10	3,10
	E.S.E.E.R.	W/W	3,43	3,49	3,41	3,48
	Nominal cooling power (2) [min/max]	kW	5,72 (2,30 / 6,20)	8,93 (3,70 / 9,90)	12,36 (4,60 / 13,20)	14,00 (6,00 / 16,00)
	Nominal power input (2) [min/max]	kW	1,44	2,27	2,98	3,64
	E.E.R. (2)	W/W	3,98	3,93	4,15	3,85
Heating	Nominal heating power (3) [min/max]	kW	5,48 (2,10 / 5,80)	8,43 (3,50 / 9,30)	11,81 (4,40 / 12,60)	13,38 (5,60 / 14,80)
	Nominal power input (3) [min/max]	kW	1,65	2,55	3,45	4,13
	C.O.P. (3)	W/W	3,32	3,30	3,42	3,24
	Nominal heating power (4) [min/max]	kW	5,77 (2,40 / 6,50)	9,06 (4,00 / 10,30)	12,40 (4,70 / 13,40)	14,16 (6,30 / 16,40)
	Nominal power input (4) [min/max]	kW	1,39	2,21	2,95	3,45
	C.O.P. (4)	W/W	4,15	4,11	4,21	4,11
	Electrical data	Power supply	V/Ph/Hz	230 ±10% / 1 / 50		
Max. absorbed power		kW	2,81	4,61	5,78	7,93
FLA (Full Load Ampere)		A	12,3	20,2	25,4	11,5
Compressor	Type	-	Rotary DC Inverter	Rotary DC Inverter	Twin Rotary DC inverter	Scroll DC inverter
	Number	-	1	1	1	1
Fan	Type	-	Motore DC Brushless			
	Number	-	1	1	2	2
	Rated power input	kW	0,156	0,188	0,180 (x2)	0,180 (x2)
	Speed	r/min	900	900	1000	1000
	Max. air flow	m³/s	1,08	1,63	2,11	2,59
Refrigerant	Type	-	R410A			
	Refrigerant quantity	kg	1,55	2,10	3,65	3,90
Hydraulic Circuit	Water flow (1)	L/s	0,29	0,45	0,59	0,72
	Head pressure (1)	kPa	43	29	51	48
	Max power input of the water pump	kW	0,124	0,124	0,165	0,165
	Expansion vessel	L	2	2	2	2
	Hydraulic connections	in	1" M	1" M	1" M	1" M
	Min. volume of water	L	18	25	35	45
Sound levels	Sound power max (5)	dB(A)	63	65	67	68
	Sound pressure max (6)	dB(A)	50	52	54	55
Dimensions and Weight	Dimensions (WxHxD)	mm	1134 x 719 x 376	1229 x 861 x 371	1258 x 1402 x 448	1258 x 1402 x 448
	Operation weight	kg	73	92	147	152
	Transportation weight	kg	77	96	153	158

All data refers to standard units at the following conditions:

- (1) Cooling: outdoor air temperature 35 °C; inlet/outlet water temperature 12/7 °C.
- (2) Cooling: outdoor air temperature 35 °C; inlet/outlet water temperature 23/18 °C.
- (3) Heating: outdoor air temperature 7 °C d.b. 6 °C w.b.; inlet/outlet water temperature 40/45 °C.
- (4) Heating: outdoor air temperature 7 °C d.b. 6 °C w.b.; inlet/ outlet water temperature 30/35 °C.
- (5) Sound power: determined on the basis of measurements taken in accordance to ISO 3744.
- (6) Sound pressure level at 1 m obtained in free field over a reflecting plane. Tolerance ± 2 dB. The sound levels are referred to max operation of the unit. Data refers to the following operating conditions: external air temperature 35 °C, inlet/outlet water temperature 7/12 °C.

Note: Data declared according to UNI EN 14511:2011. The performance data shown in the table refer to units without options and / or accessories and could be subject to change.
Attention: for antifreeze unit version, for lowest ambient temperature -5 °C, you must add a suitable quantity of antifreeze additives.



Functional limits:

Chiller mode	
Outdoor air temperature	Min. -10 °C – Max. +46 °C
Outlet water temperature	Min. +5 °C – Max. +25 °C
Heat pump mode	
Outdoor air temperature	Min. -15 °C – Max. +30 °C
Outlet water temperature	Min. +25 °C – Max. +55 °C
Heatpump mode - Summer functioning (Hot Water for Sanitary Use)	
Outdoor air temperature	Min. -15 °C – Max. +40 °C (max water temp. 48 °C)
	Min. -15 °C – Max. +35 °C (max water temp. 55 °C)
Outlet water temperature	Min. +20 °C – Max. +55 °C



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MTA products comply with European safety directives, as recognised by the CE symbol.



MTA participates in the E.C.C. programme for LCP-HP. Certified products are listed on:
www.eurovent-certification.com
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW



GOST Certification



Cooling, conditioning, purifying.