



Duran

AIR/WATER HEAT PUMPS





THE COMPANY

Thermics is a small-medium enterprise (SME) with dedicated engineering and production teams. The company's expertise includes both heat engineering and software. The key to our success is teamwork and the appreciation and passion for renewable energy. This makes us a flexible company that adopts the most advanced standards and technologies.



HVAC HIGH TECHNOLOGY



HEAT PUMPS

The heat pumps produced by Thermics companies are among the most advanced and high quality machines in the industry. Particular attention is paid to the software, which is fully designed and created within the company, developed in order to adapt to specific environments with a view to ensuring maximum performance.

THERMAL SOLAR

The technologies used in the solar heating and cooling systems provided by Thermics have been progressively consolidated over the years, and guarantee maximum efficiency and adaptability of installations.

The company owns a number of patents, and all of these meet Solar Key Mark certifications.

INNOVATION IN VENTILATION

- Mechanical ventilation units boasting high-quality engineering

with thermodynamic heat recovery and inverter compressors.

- Maximum energy efficiency in domestic and commercial ventilation environments thanks to the total modulation of fans and refrigerator circuits that enable the full energy needs of customers to be met.

- Comprehensive air management and treatment, from renewal to air conditioning to dehumidification, for high living comfort.

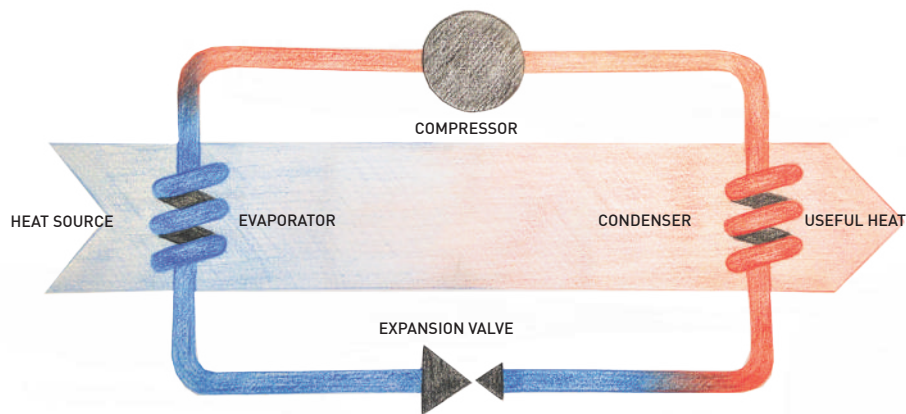


Air/water heat pumps

DURAN

DURAN heat pump units are particularly suitable for applications using radiant panel heating systems or low temperature applications such as suitably dimensioned fan-coil, thermal ventilation and AHUs for delivery temperatures of up to 50°C. All versions are fitted with noiseless EC axial fans and Twin Rotary inverter compressors that allow full power management of each individual component. In fact, the compressor, fan and circulators are continuously regulated by a programmed control unit with an internally developed control logic.

It has been designed to be intuitive immediately usable; it allows the unit to be inserted into a large number of system configurations. The DURAN units come with a weather resistant powder coated galvanised steel structure. They are characterised by high efficiency with integrated management of the circulator that allows high temperature hot water production with a three-way diverter valve on the boiler and the option of using a backup electric heating resistance, or alternatively, the integrated management of a circulator and heat exchanger dedicated to the production of domestic hot water.





All in one

The DURAN units are reverse cycle heat pumps for winter heating, summer cooling and the production of domestic hot water. The range includes 6 units with a heating capacity from 8 to 30 kW. The range covers most residential heating and cooling requirements, from small apartments to villas.



Operation

Heat pumps absorb heat from an outdoor environment to transfer it to an indoor environment, in order to heat it. Reverse cycle heat pumps allow the indoor rooms to be cooled during the summer. Electronically controlled delivery temperature via the heating or cooling curve.



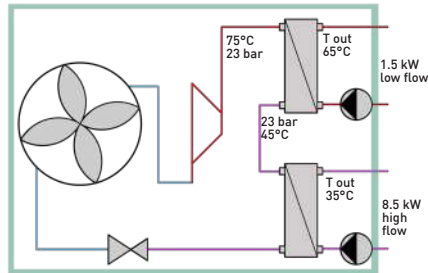
Air/water heat pumps

Winter/summer operating logic

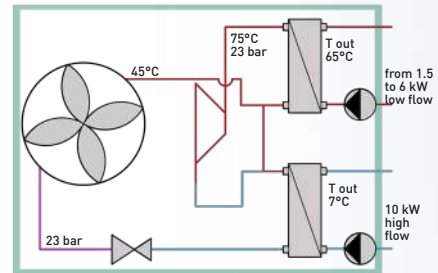
By using Twin Rotary Inverter technology, DURAN is able to regulate the power of the unit according to actual needs.

This modulation function is also used for the fan and circulators in order to achieve maximum efficiency.

Winter



Summer



SIMULTANEOUS DOMESTIC HOT WATER AND HEATING OR COOLING WITHOUT ELECTRIC HEATING ELEMENTS

The **4-pipe** units can control high and low temperature circuits at the same time.

In summer mode, the high temperature heat exchanger operates as a cooler, improving overall performance and producing hot water by recovering energy that would otherwise not be utilised.

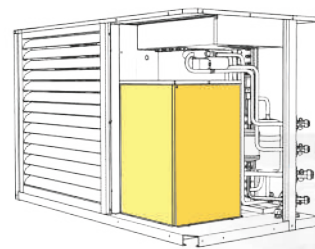
- LARGE AMOUNTS OF FREE DOMESTIC HOT WATER IN THE SUMMER DURING COOLING
- HIGH LEVEL OF COMFORT
- HIGH TEMPERATURE DOMESTIC HOT WATER IN THE WINTER
- WITH SAVINGS ON BILLS

“SOUND-BLOCK” COMPRESSOR

5 dB(A) LESS DUE TO THE SPECIAL COMPRESSOR INSULATION DESIGNED BY THERMICS

Low noise is guaranteed by an intelligent control system, which regulates the speed of the compressor and fan, by anti-vibration mountings for the compressor and by multi-layer noise insulation on the casing.

- SILENT MODE
- LOW CONSUMPTION



BUILT-IN REMOTE INTELLIGENCE

SIMPLE AND INNOVATIVE REMOTE MONITORING AVAILABLE FOR ALL UNITS

Monitoring unit for residential installations developed by Carel, which allows you to switch on the heat pumps, control their respective temperatures, monitor their operation and to provide the heating comfort requirements of the home directly from any device, both inside and outside the home.

The information is transmitted locally to all devices using Wireless technology.

- THE SYSTEM ALLOWS HEAT PUMP FAULTS TO BE REPORTED
- POSSIBILITY OF PREVENTIVE MAINTENANCE
- MAXIMUM HEAT PUMP EFFICIENCY FOR MAXIMUM ENERGY AND COST SAVINGS



MULTIPLE DEFROST SYSTEM

ALLOWS THE PUMP TO ACTIVATE TWO DIFFERENT DEFROSTING SYSTEMS: HOT GAS OR REVERSING VALVE

Thermics has developed a unique multi-phase defrost system that enables various energy levels according to the load and outdoor conditions. The most efficient defrosting is achieved when the heat pump is used in energy efficient homes and in moderate weather conditions.

- FEWER AND LESS INTENSE DEFROSTING CYCLES ALLOW LOWER ENERGY CONSUMPTION



Hybrid housing

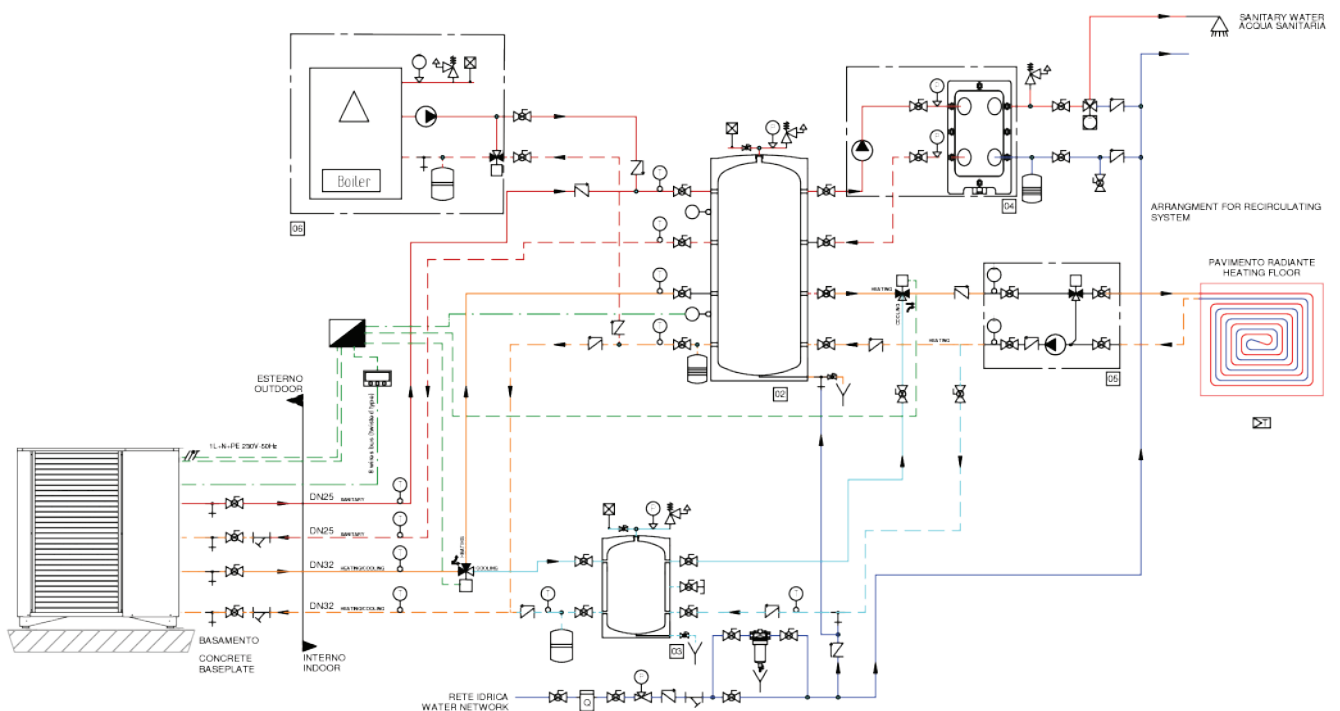
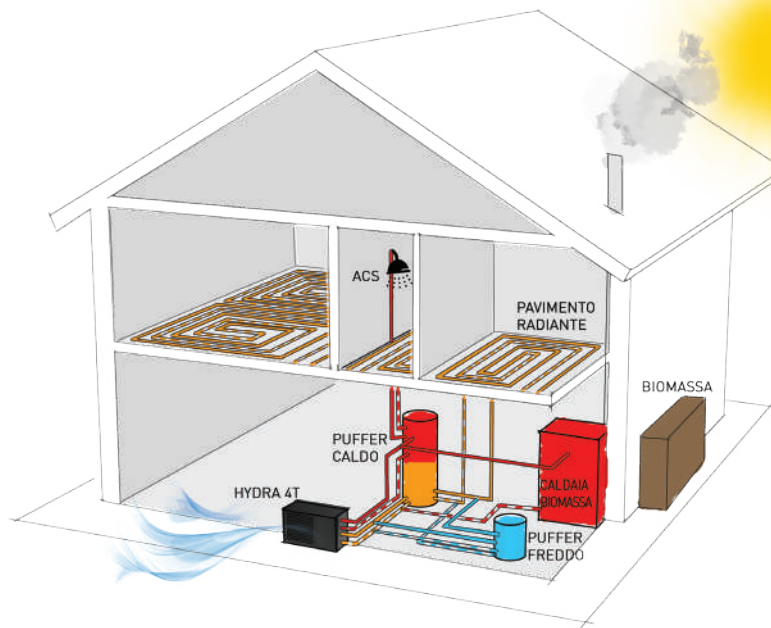
Large houses in which various types of renewable energy are used.

DURAN Monobloc is the best solution to be combined with solar thermal or biomass boilers.

COMPONENTS:

+ DURAN 4T MB

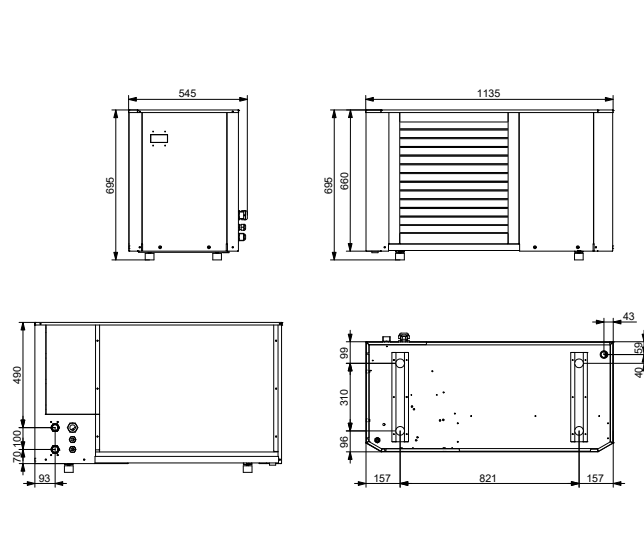
+ Biomass or solar thermal boiler



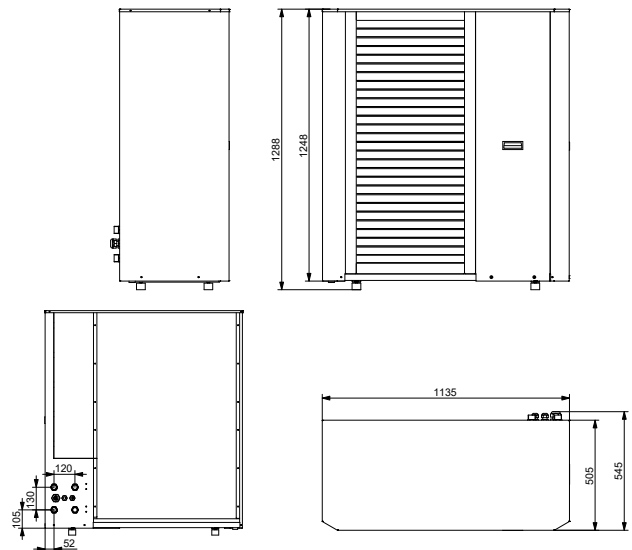


Technical drawings - DURAN monobloc:

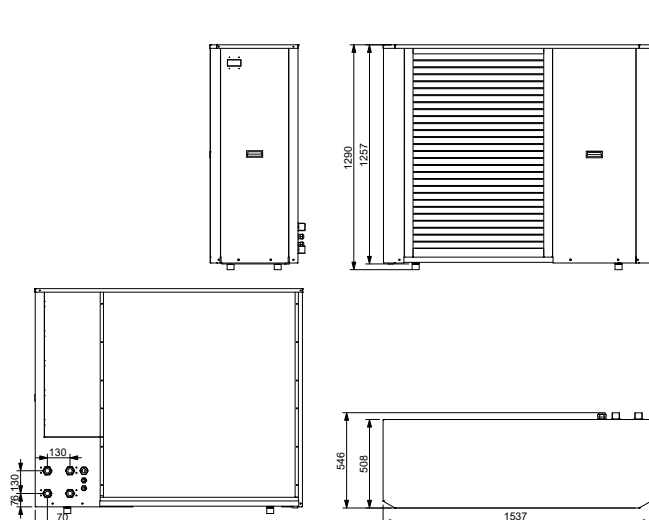
DURAN 8 MB



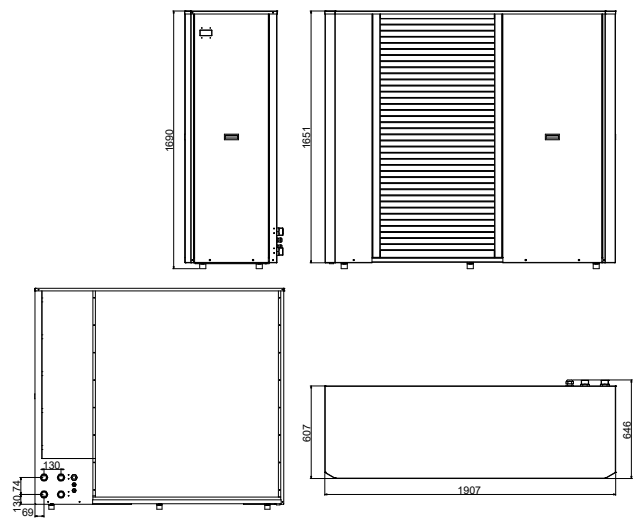
DURAN 12 MB



DURAN 15/20 MB

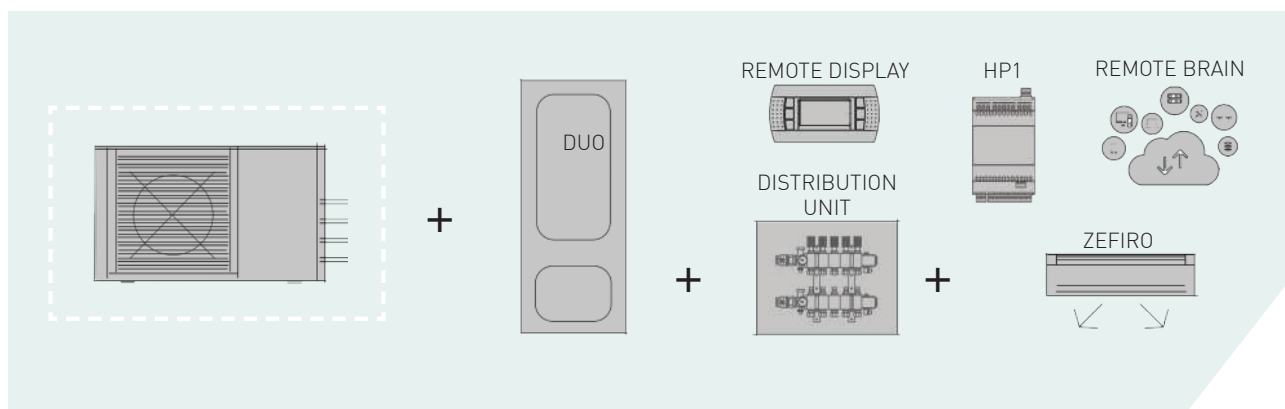


DURAN 25/30 MB



DURAN monobloc

Duran monobloc 4-pipe



Code	Description
8THY00170	DURAN 12 MB 4T - INV - 230V - C/F - RAL 7016
8THY00170.01	DURAN 12 MB 4T - INV - 400V - C/F - RAL 7016
8THY00210.01	DURAN 15 MB 4T - INV - 230V - C/F - RAL 7016
8THY00210	DURAN 15 MB 4T - INV - 400V - C/F - RAL 7016
8THY00270	DURAN 20 MB 4T - INV - 400V - C/F - RAL 7016
8THY00290	DURAN 25 MB 4T - INV - 400V - C/F - RAL 7016
8THY00320	DURAN 30 MB 4T - INV - 400V - C/F - RAL 7016

110%

SUPER BONUS
("trainante",
i.e. primary
improvements)

Tax deduction

All versions of Duran are **energy class A** and therefore benefit from tax deductions in accordance with applicable legislation.

65%

ECO BONUS

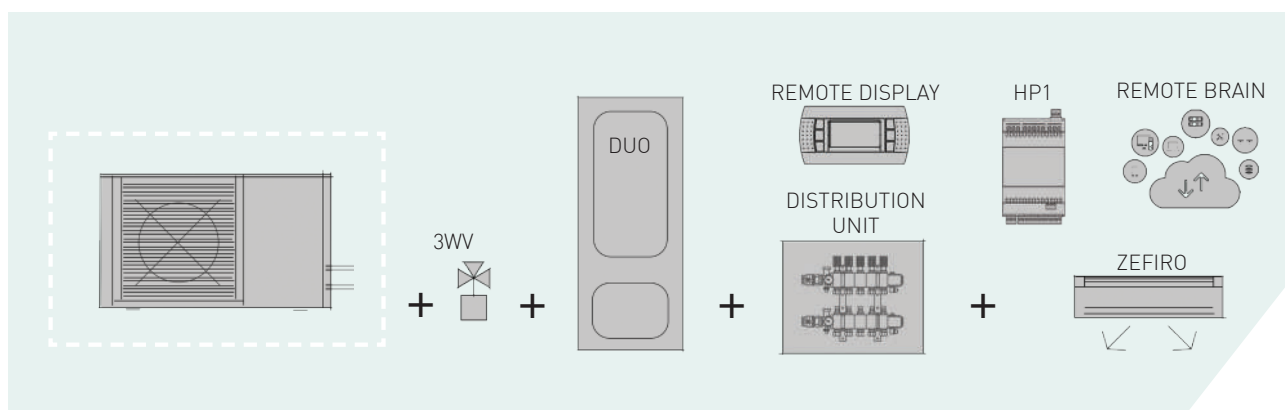
50%

BONUS CASA (HOME BONUS)



CONTO TERMICO

Duran monobloc 2-pipe



Code	Description
8THY00110	DURAN 8 MB 2T - INV - 230V - C/F - RAL 7016
8THY00160	DURAN 12 MB 2T - INV - 230V - C/F - RAL 7016
8THY00160.01	DURAN 12 MB 2T - INV - 400V - C/F - RAL 7016
8THY00200.01	DURAN 15 MB 2T - INV - 230V - C/F - RAL 7016
8THY00200	DURAN 15 MB 2T - INV - 400V - C/F - RAL 7016
8THY00260	DURAN 20 MB 2T - INV - 400V - C/F - RAL 7016
8THY00280	DURAN 25 MB 2T - INV - 400V - C/F - RAL 7016
8THY00310	DURAN 30 MB 2T - INV - 400V - C/F - RAL 7016

110%

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65%

ECO BONUS

50%

BONUS CASA (HOME BONUS)



CONTO TERMICO



Available accessories

	Product Code	Description
HYDRAULIC ACCESSORIES	8TCM00110	Y-strainer, brass DN20 for DURAN 8
	8TCM00120	Y-strainer, brass DN25 for DURAN 12 (1 or 2 pieces depending on whether it is a 2 or 4-pipe heat pump)
	8TCM00125	Y-strainer, brass DN32 for DURAN 15 and 20 (1 or 2 pieces depending on whether it is a 2 or 4-pipe heat pump)
	8TCM00130	Y-strainer, brass DN40 for DURAN 25 and 30 (1 or 2 pieces depending on whether it is a 2 or 4-pipe heat pump)
	8TSI02010	Diverter valve + DHW probe kit for DURAN 8
	8TSI02015	Diverter valve + DHW probe kit for DURAN 12 and 15
	8TES90040	3-way valve for DURAN 20, 25 and 30
	6TSS00017	Boiler Probe - NTC 10K - L=1500mm

	Product Code	Description
HARDWARE ACCESSORIES	8TCR03055	HP1 - GOLD system expansion module
	8TCR03040	HP2 - Expansion module for cascade control
	8TCR02050.01	Carel remote display
	8TSI01200.01	REMOTE-BRAIN monitoring to combine with tService

	Product Code	Description
SERVICE ACCESSORIES	6TAC00036	Heat pump commissioning and testing - DURAN - MB 8, 12 and 15
	6TAC00045.01	Heat pump commissioning and testing - DURAN - MB 20, 25 and 30
	88TCR90110	tService - monitoring for 1 year (to be added when purchasing REMOTE BRAIN)
	8TCR90120	tService - monitoring for 2 years (to be added when purchasing REMOTE BRAIN)
	8TCR90130	tService - monitoring for 5 years (to be added when purchasing REMOTE BRAIN)
	8TEG00812	Warranty extension for a total of 5 years for DURAN MB 8 and 12 (2T and 4T)
	8TEG01520	Warranty extension for a total of 5 years for DURAN MB 15 and 20 (2T and 4T)
	8TEG02530	Warranty extension for a total of 5 years for DURAN MB 25 and 30 (2T and 4T)

DURAN monobloc

Remote display



Wired remote control, with display that allows you to view and modify the main operating parameters of the unit, which simplifies and improves heat pump management.

HP1 - Gold system expansion module



Expansion module that connects as a BUS accessory to the existing control unit and allows important and innovative additional functions to be added that are useful for more complex systems:

- **DPAC:** a 0-10V input that regulates the power used by the heat pump according to the instantaneous availability of the solar energy system. This is an extremely innovative logic developed by Thermics. When the heat pump is set to "ECO" mode, it operates according to the availability of energy and its wide modulation range means that it will avoid drawing electricity from other sources.
- **MIX1:** available for the management of a general system mixed unit with 0-10V signal
- **INFO SEASON:** an outlet that alerts the rest of the season change system!
- **HEAT TRANSF:** a setting that specifies the logics used for heat transfer through a plate exchanger or a secondary transfer boiler
- **HYBRID:** relay activated heating integration using a second source both on the DHW side and on the heating side

Remote Brain



- Remote Brain is a simple and inexpensive system for monitoring residential installations that allows you to switch on THERMICS heat pumps, control their respective temperatures, monitor their operation and to provide the heating comfort requirements of the home directly from any device, both inside and outside the home. This innovative system means that all the main terminal units for HVAC and the production of domestic hot water are constantly monitored, to enable the heat pump to be used in the most efficient way and to obtain maximum savings in terms of energy and cost.
- The information is transmitted locally using Wireless technology to Tablets, Smartphones and PCs directly from the ADSL router, which uploads it to a data collection CLOUD. This means that the data is always up to date and can be used at any time and on any device, wherever you are. The system also allows you to report heat pump malfunctions, meaning that trained technicians can take the appropriate action quickly. They will immediately know the reason for the malfunction and be able to restore correct operation of the heat pump rapidly.
- Remote Brain has an annual charge for maintaining the service and its functions (see t-Service).



tSERVICE



tService is the service dedicated to service centres to be used together with the Remote Brain monitoring system. tService makes carrying out maintenance faster and more effective with a ready-to-use remote control solution specifically designed for service centres. Functions available with tService:

- Reading and writing variables in real time
- Data logging with frequencies up to 5 seconds
- Alarm management with e-mail notification
- Reports and graphs, using up to 300 variables
- Programmable SW update checks

Warranty extension



Today, product quality and energy savings are the discriminating factors when choosing a heat pump. To make your investment last over time and deliver maximum reliability, it is recommended that you have the heat pump serviced regularly, just as you service a car. This will allow your installation to be correctly maintained and to save on bills.

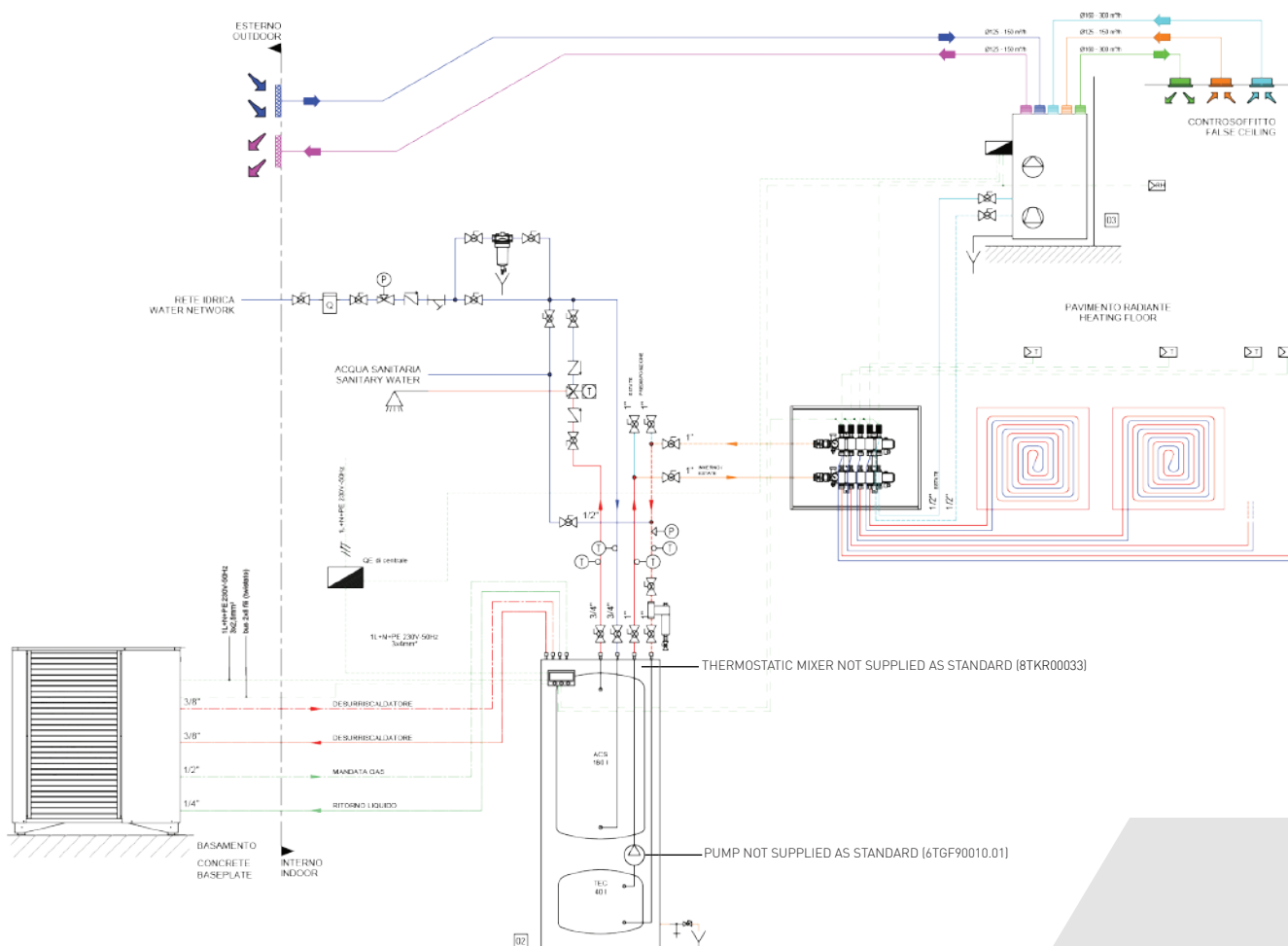
To take advantage of the warranty extension, for up to a maximum of 5 years (2 by default + 3 service years) you have to subscribe and pay an initial fee, within 1 month from the initial start-up, for a scheduled maintenance contract provided by the THERMICS ENERGIE SRL authorized technical assistance service.

*see the specific document for the terms of the warranty extension

New large apartments and / or villas oriented towards gas-free air conditioning solutions. DURAN split is the most compact and complete system with all the advantages of a unique 4-pipe system.

+ DURAN DHW 4T

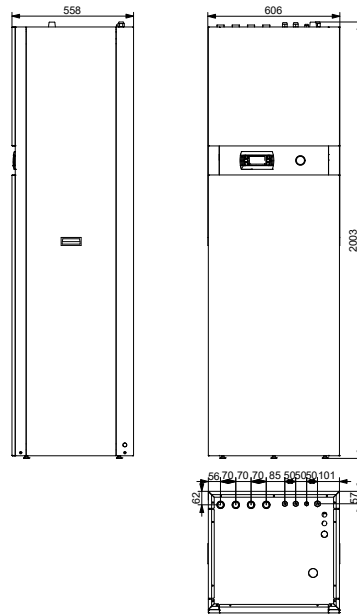
- + Radiant air conditioning and heating systems





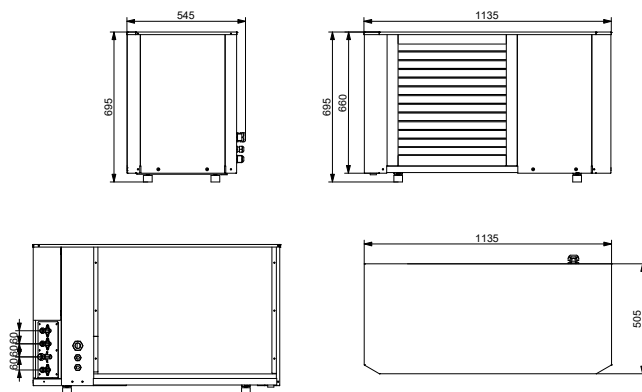
Technical drawings - DURAN - DHW (indoor unit):

DURAN 8/12 DHW SPLIT I.U.

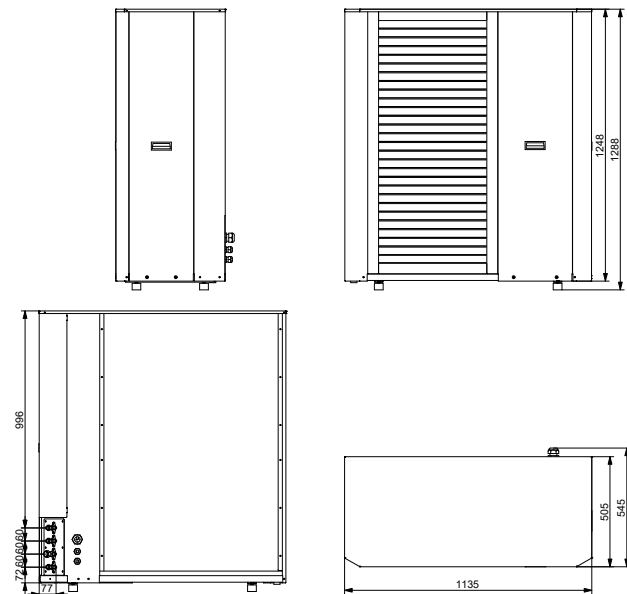


Technical drawings - DURAN - DHW - 4-pipe (outdoor unit):

DURAN 8 DHW O.U.

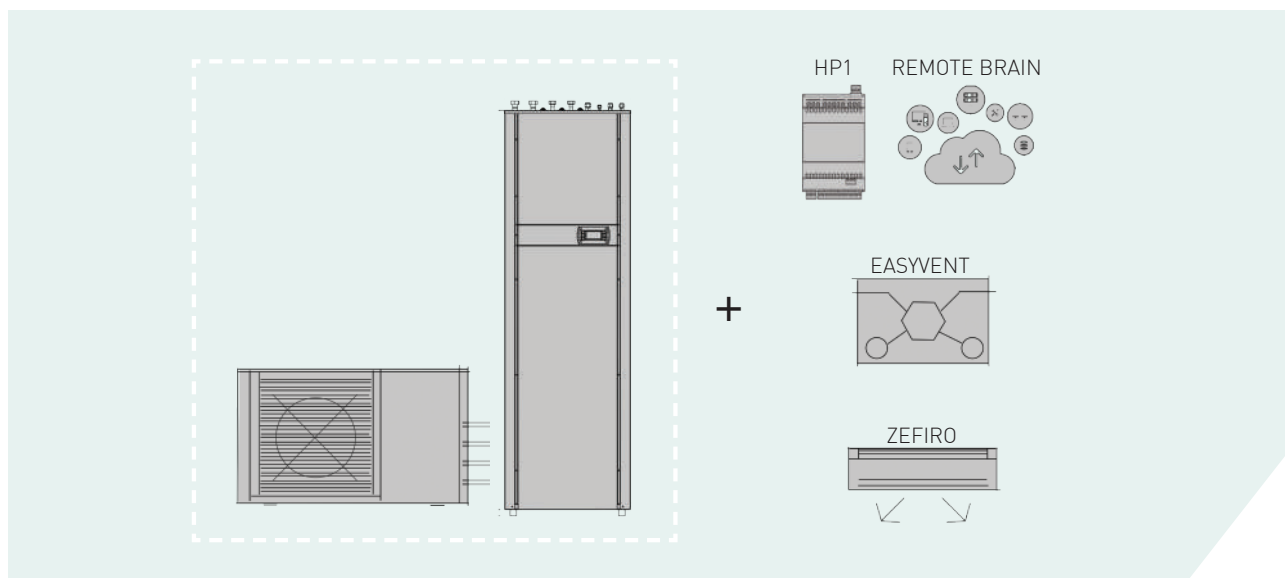


DURAN 12 DHW O.U.



DURAN DHW

Duran - DHW 4-PIPE



Code	Description
8THY00100	DURAN 8 DHW - 230V - outdoor unit RAL7016 - indoor unit RAL9010
8THY00150	DURAN 12 DHW - 230V - outdoor unit RAL7016 - indoor unit RAL9010
8THY00150.01	DURAN 12 DHW - 400V - outdoor unit RAL7016 - indoor unit RAL9010

110%

SUPER BONUS
("trainante",
i.e. primary
improvements)

Tax deduction

All versions of Duran are **energy class A** and therefore benefit from tax deductions in accordance with applicable legislation.

65%

ECO BONUS

50%

**BONUS CASA
(HOME BONUS)**



CONTO TERMICO





Available accessories

	Product Code	Description
HYDRAULIC ACCESSORIES	8TKR00033	Anti-scald thermostatic mixing valve
	6TGF90010.01	Secondary circulator Duran DHW

	Product Code	Description
HARDWARE ACCESSORIES	8TCR03055	HP1 - GOLD system expansion module
	8TSI01200.01	REMOTE-BRAIN monitoring to combine with t-Service

	Product Code	Description
SERVICE ACCESSORIES	6TAC00040	Heat pump commissioning - DURAN DHW
	8TCR90110	tService - monitoring for 1 year (to be added when purchasing REMOTE BRAIN)
	8TCR90120	tService - monitoring for 2 years (to be added when purchasing REMOTE BRAIN)
	8TCR90130	tService - monitoring for 5 years (to be added when purchasing REMOTE BRAIN)
	8TEGDHW00	Warranty extension for a total of 5 years for DURAN DHW 8 and 12 (2T and 4T)

LT = low temperature (system side); HT = high temperature (DHW side) (1) Energy efficiency class for medium temperature (55°C) heating applications under "average" climatic conditions (2) Energy efficiency class for low temperature (35°C) heating applications under "average" climatic conditions

(3) Operating conditions according to EN 14511: User circuit: radiant system Outdoor circuit: outside air 7°C with 85% U.R.	A7/W35	30/35	In-Out	(5) Operating conditions according to EN 14511 User circuit: radiant system Outdoor circuit: outside air 35°C 50% U.R.	A35/W18	23/18	In-Out
	°C	7°C 85%	In-Out		°C	35°C 50%	In-Out
(4) Operating conditions according to EN 14511 User circuit: fan coil system Outdoor circuit: outside air 7°C with 85% U.R.	A7/W45	40/45	In-Out	(6) Operating conditions according to EN 14511 User circuit: fan coil system Outdoor circuit: outside air 35°C 50% U.R.	A35/W7	12/7	In-Out
	°C	7°C 85%	In-Out		°C	35°C 50%	In-Out

(7) Acoustic tests performed in accordance with EN 12102

Technical specifications

DURAN			unit of measure	8	12	15	20	25	30		
Energy efficiency class				(1) A+++	(1) A++	(1) A+++	(1) A+++	(1) A+++	(1) A+++		
				(2) A+	(2) A+	(2) A+	(2) A++	(2) A++	(2) A++		
WINTER OPERATION	A7/W35		100%	kW	8.41	12.32	14.87	19.03	24.64	31.88	
		Heat output (3)	66%	kW	5.23	7.72	9.77	11.92	16.12	20.86	
			33%	kW	2.45	3.74	4.67	5.77	7.57	9.80	
		Compressor power input	100%	kW	1.63	2.51	2.93	3.74	4.86	6.34	
		Total power input	100%	kW	1.77	2.77	3.27	4.18	5.22	6.86	
		COP			4.75	4.44	4.80	4.55	4.72	4.65	
	A7/W45	System side									
		Water flow rate (system)	m³/h		1.50	2.12	2.56	3.27	4.24	5.48	
		Useful head	mca		4.50	3.00	4.60	4.30	3.50	7.50	
		Pump power input	kW		0.06	0.06	0.13	0.13	0.13	0.31	
			100%	kW	8.19	11.91	14.27	18.39	23.89	30.92	
		Heat output (4)	66%	kW	5.07	7.42	9.41	11.52	15.57	20.16	
	A7/W50		33%	kW	2.37	3.59	4.54	5.58	7.26	9.39	
		Compressor power input	100%	kW	2.04	3.07	3.60	4.55	6.00	7.82	
		Total power input	100%	kW	2.18	3.33	3.94	4.99	6.36	8.34	
		COP			3.75	3.57	3.62	3.69	3.75	3.71	
		System side									
		Water flow rate (system)	m³/h		1.41	2.05	2.45	3.16	4.11	5.32	
	SUMMER OPERATION	A35/W18	Useful head	mca		5.50	4.00	5.60	5.30	4.50	8.50
			Condition A7/W50								
			Heat output	kW		8.07	11.67	13.88	18.05	23.49	30.41
		A35/W7	Water flow rate (system)	m3/h		1.39	2.01	2.39	3.10	4.04	5.23
			Useful head	mca		3.50	2.70	3.10	3.00	3.80	3.50
				100%	kW	10.76	15.64	18.61	24.15	31.30	40.63
			Cooling capacity (5)	66%	kW	6.82	9.87	12.16	15.24	20.62	26.91
				33%	kW	3.26	4.83	5.70	7.58	9.82	12.82
			Compressor power input	100%	kW	1.83	2.58	3.31	4.14	5.33	6.95
Total power input			100%	kW	1.97	2.84	3.65	4.58	5.69	7.47	
EER					5.47	5.50	5.10	5.28	5.47	5.44	
System side											
Water flow rate (system)	m3/h			1.85	2.69	3.20	4.15	5.38	6.99		
Useful head	mca			4.00	2.80	4.00	3.80	2.00	5.30		
A35/W7		100%	kW	7.54	10.90	12.83	16.89	21.77	28.41		
	Cooling capacity (6)	66%	kW	4.75	6.85	8.45	10.65	14.42	18.82		
		33%	kW	2.24	3.32	4.07	5.28	6.77	8.83		
	Compressor power input	100%	kW	1.85	2.81	3.29	4.20	5.47	7.14		
	Total power input	100%	kW	1.99	3.07	3.63	4.64	5.83	7.66		
	EER			3.79	3.56	3.53	3.64	4.13	3.71		
	System side										
	Water flow rate (system)	m3/h		1.30	1.89	2.21	2.91	4.14	4.89		
	Useful head (system)	mca		4.30	3.20	4.70	6.00	3.50	8.50		
	Compressor type		Twin Rotary								
	Number of compressors		no.	1	1	1	1	1	1		
Refrigerant		R410a									
Refrigerant charge		Kg	1.9	3.0	5.0	5.2	7.0	8.0			
Fans		no.	1	1	1	1	2	2			
Air flow rate		m3/h	4000	5500	7800	8700	10000	13000			
Useful head		Pa	8.00	16.00	25.50	10.00	9.81	4.90			
Power input		kW	0.08	0.20	0.20	0.30	0.22	0.22			
Electrical power supply		V/Ph/Hz	230-1-50	230-1-50 (400-3-50 opt)	400-3-50 (230-1-50 opt)	400-3-50	400-3-50	400-3-50			
Gas connections diameter DHW - O.U.		inches	(ht) 3/8", 3/8" (lt) ½", ¼"	(ht) 3/8", 3/8" (lt) 5/8", 3/8"	-	-	-	-			
Gas connection diameter DHW - I.U.		inches	(ht) 3/8", 3/8" (lt) ½", ¼"	(ht) 3/8", 3/8" (lt) 5/8", 3/8"	-	-	-	-			
Hydraulic connections diameter DHW - I.U.		inches	4 x 1"	4 x 1"	-	-	-	-			
Water connections diameter MB - 2T.		inches	2 x 1"	2 x 1 1/4"	2 x 1 1/4"	2 x 1 1/4"	2 x 1 1/2"	2 x1 1/2"			
Water connections diameter MB - 4T.		inches	-	4 x 1 1/4"	4 x 1 1/4"	4 x 1 1/4"	4 x 1 1/2"	4 x 1 1/2"			
Sound power ⁽⁷⁾		dB(A)	48	55	54	55	56	57			
Sound power		dB(A)	67	71	69	71	69	71			
Sound pressure at 10 m		dB(A)	36	40	39	40	41	42			
Dimensions MB		L x H x P	1135x695x545	1135x1288x545	1537x1290x546	1537x1290x546	1907x1690x646	1907x1690x646			
Dimensions DHW O.U.		L x H x P	1135x695x545	1135x1288x545	-	-	-	-			
Dimensions DHW I.U.		L x H x P	606x2003x558	606x2003x558	-	-	-	-			
Weight MB		Kg	85	210	240	240	320	340			
Weight DHW O.U.		Kg	65	170	-	-	-	-			
Weight DHW I.U.		Kg	95	96	-	-	-	-			

