

FUJITSU



WATERSTAGETM

**New Energy Efficiency Standard
for Air-to-Water**



FUJITSU GENERAL LIMITED

What's Ecodesign regulation?



From 26 September 2015, Ecodesign requirements will apply to space heaters and water heaters in homes.

The Ecodesign Regulation (EU) No. 813/2013

New Ecodesign directive defines a regulatory framework for improving the environmental performance of energy-related products (ErP). From 26 September 2015, the Ecodesign Directive will apply to space heaters (including heat pumps and fossil fuel boilers), combination heaters (for both space and water heating), water heaters and water storage tanks.

All these products have to meet the requirements for energy efficiency* and sound power level. The minimum energy efficiency level will be raised from 26 September 2017 and maximum sound power level will be lowered on 26 September 2018.

*Energy efficiency is represented by seasonal space heating efficiency (η_s). This value is based upon the seasonal coefficient of performance (SCOP).

The Energy Labelling Regulation (EU) No. 811/2013

The energy label aims to help consumers make direct comparisons of energy use, as well as product specific features.

From 26 September 2015, the requirements are:

- A printed energy label and product fiche must be provided for all products.
- Information on energy classes must be provided in adverts and technical promotional materials.
- Electronic versions of the energy label and product fiche must be made available for dealers / wholesalers / installers.
- The energy label and product fiche must be displayed when products are sold on the internet.

The scope of product label requirements

The scope of product label requirements are defined as follows.

- **Heat generators of up to 70kW**
for space heating only, and combi heaters for space heating and domestic hot water heating (gas, oil and electric boilers, heat pumps and CHP units.)
- **Water heaters and tanks of up to 70kW or 500 liters**
Traditional water heaters, solar water heaters, heat pump water heaters and storage tanks.
- **Combi appliances for central heating and water heating**

What's the difference ?

The manufacture have to provide a product label and a product fiche for each space heater and combination heater. In addition, space heaters and combination heaters have to be provided with a package label and a package fiche for the integrated system into a package. If the package is offered for sale (to the end-user), the manufacture have to provide the required information to trade and wholesalers. And more, the contents of some items in the specifications will be changed and added as follows.

	Previous		New
Label	—	➔	Product label Package label
Fiche	—		Product fiche Package fiche

Specifications	Previous		New
Rated condition of leaving water temperature	35°C	➔	35°C & 55°C
Capacity	Rated capacity		Rated heat output (Prated*)
Energy efficiency	COP		SCOP & η_s^{**} & η_{wh}^{***}
Energy class	—		A++ to G****
Noise level	Sound pressure level		Sound power level

*Prated means the declared heat output of a heater when providing space heating and water heating.

** η_s is seasonal space heating energy efficiency. η_s means the ratio between the space heating demand for a designated heating season, supplied by a space heater, a combination heater, a package of space heater, temperature control and solar device, and the annual energy consumption required to meet this demand, expressed in %.

*** η_{wh} is water heating energy efficiency. η_{wh} means the ratio between the useful in the drinking or sanitary water provided by a combination heater or a package of combination heater, temperature control and solar device, and the energy required for its generation, expressed in %.

****Standard from 26 September 2015.

Product labels



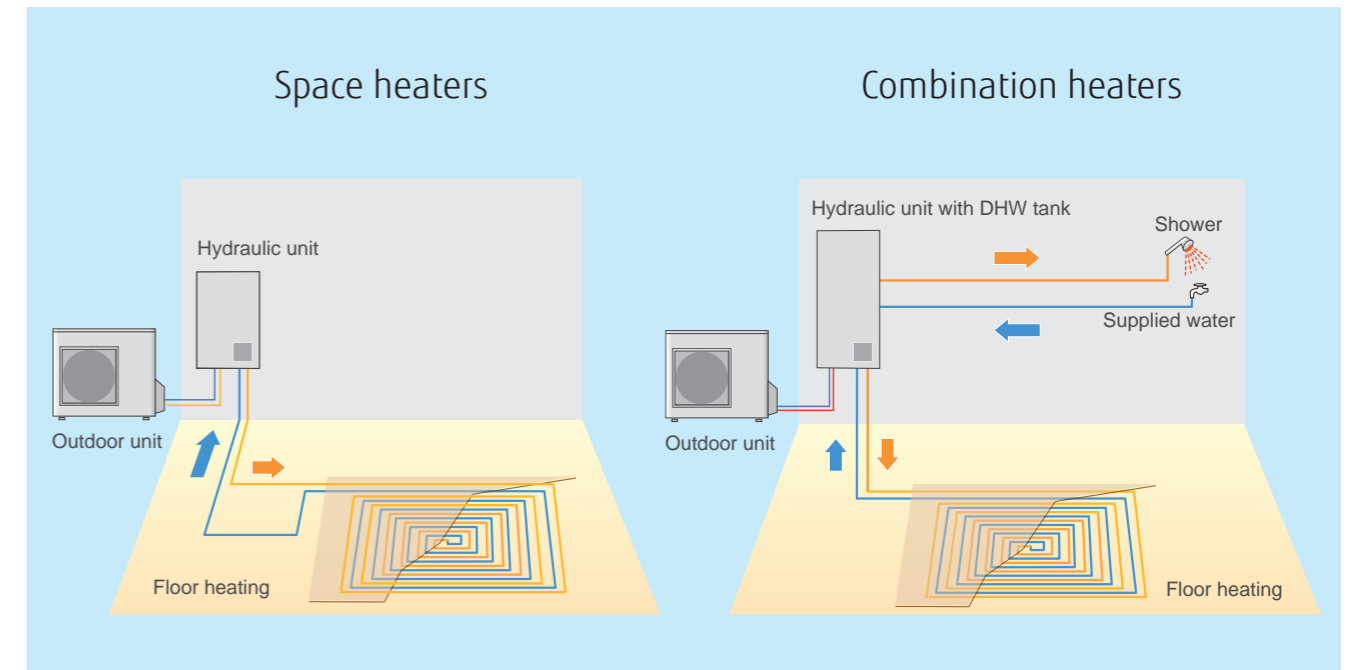
Individual products

FUJITSU GENERAL offers two heat pumps of space heaters (Split/Monobloc type) and combination heaters (Split/DHW integrated type).

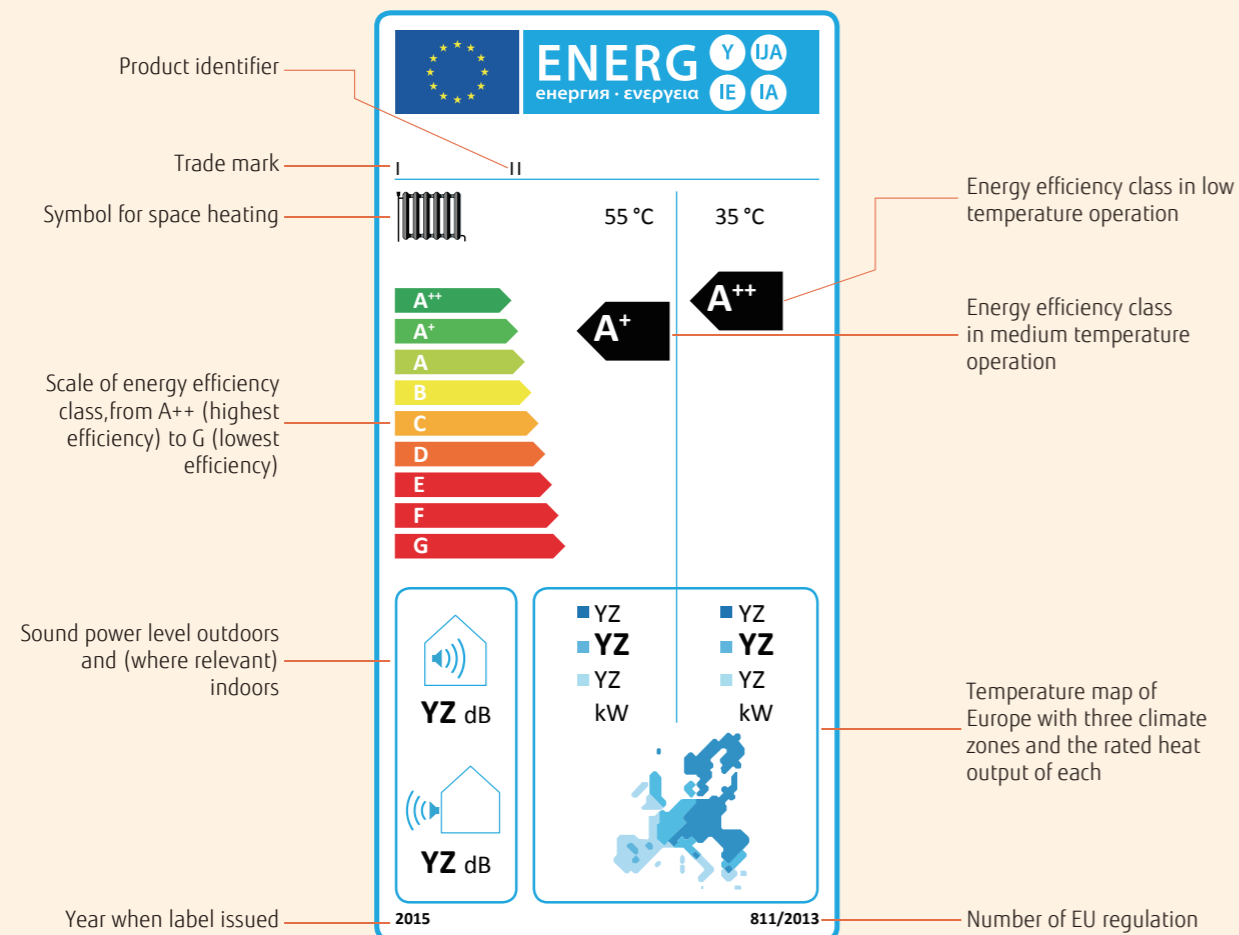
Product labels for each product are defined as follows;

On these labels, manufacturer's name, brand, model name and the scales of the energy efficiency classes are displayed. For heat generators, the scale of the energy efficiency classes show from A++ to G (A+++ to D from 2019). In addition, the labels contain the technical information such as sound power level and rated heating output.

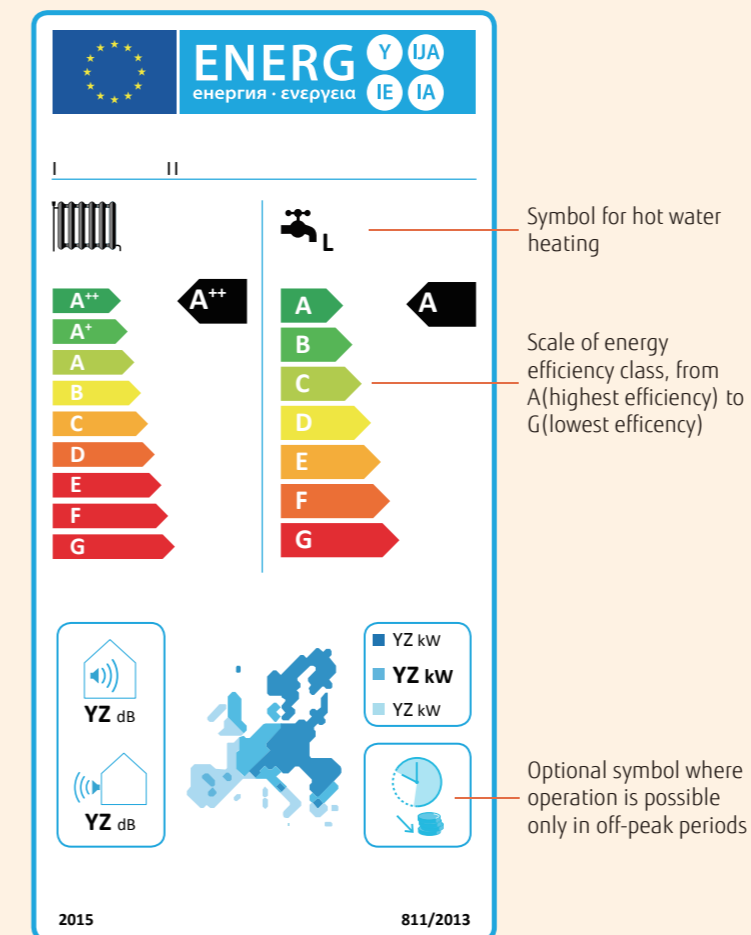
There are two types of labels for space heaters and combination heaters.



For space heaters



For combination heaters



For space heaters, energy efficiency class of low-temperature application and the exception of low-temperature application shall be determined based on the following table.

For combination heaters, energy efficiency class of space heating shall be determined as the exception low temperature application. Energy efficiency class of hot water heating, please refer to the Energy Labelling Directive.

Seasonal space heating Energy efficiency class

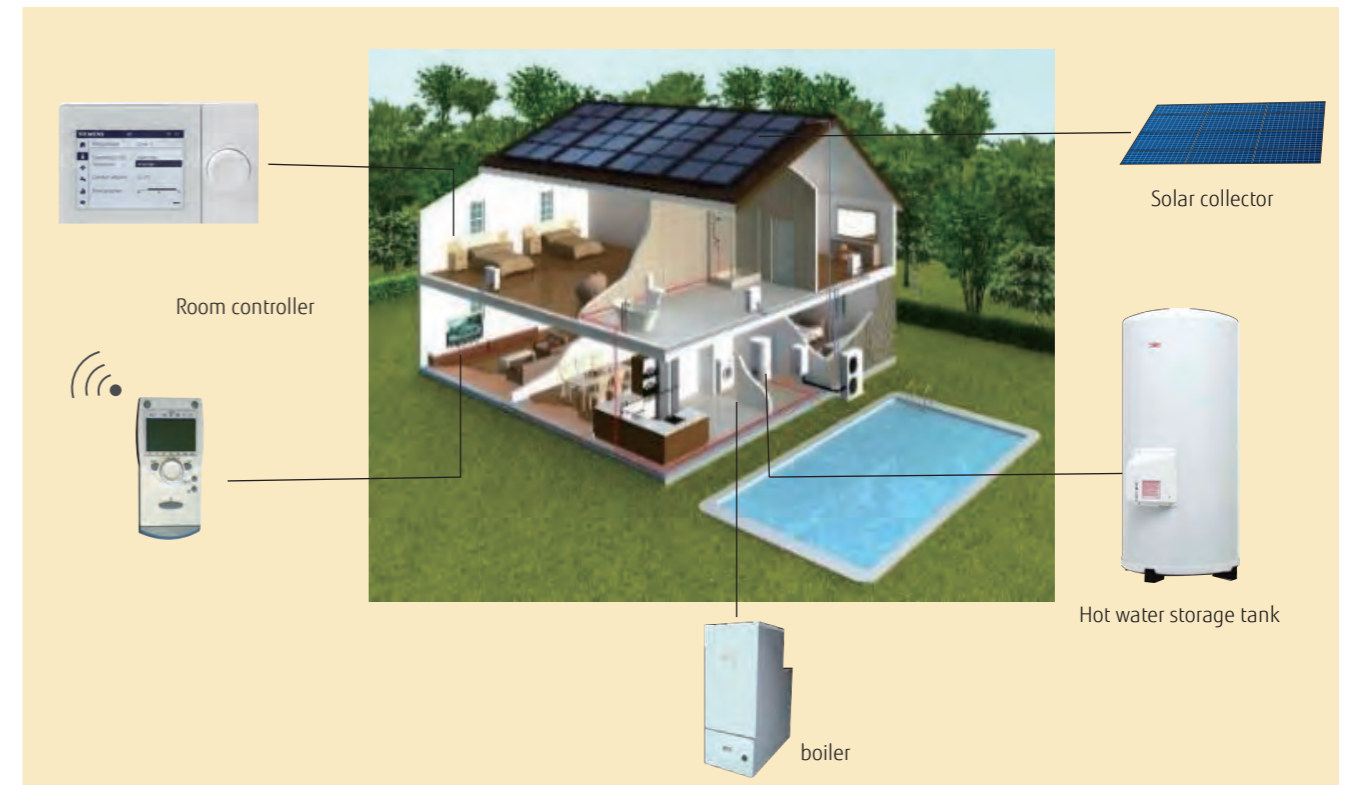
	Except low temp 55°C	low temp 35°C
A+++	$\eta_s \geq 150$	$\eta_s \geq 175$
A++	$125 \leq \eta_s < 150$	$150 \leq \eta_s < 175$
A+	$98 \leq \eta_s < 125$	$123 \leq \eta_s < 150$
A	$90 \leq \eta_s < 98$	$115 \leq \eta_s < 123$
B	$82 \leq \eta_s < 90$	$107 \leq \eta_s < 115$
C	$75 \leq \eta_s < 82$	$100 \leq \eta_s < 107$
D	$36 \leq \eta_s < 75$	$61 \leq \eta_s < 100$
E	$34 \leq \eta_s < 36$	$59 \leq \eta_s < 61$
F	$30 \leq \eta_s < 34$	$55 \leq \eta_s < 59$
G	$\eta_s < 30$	$\eta_s < 55$

Package labels

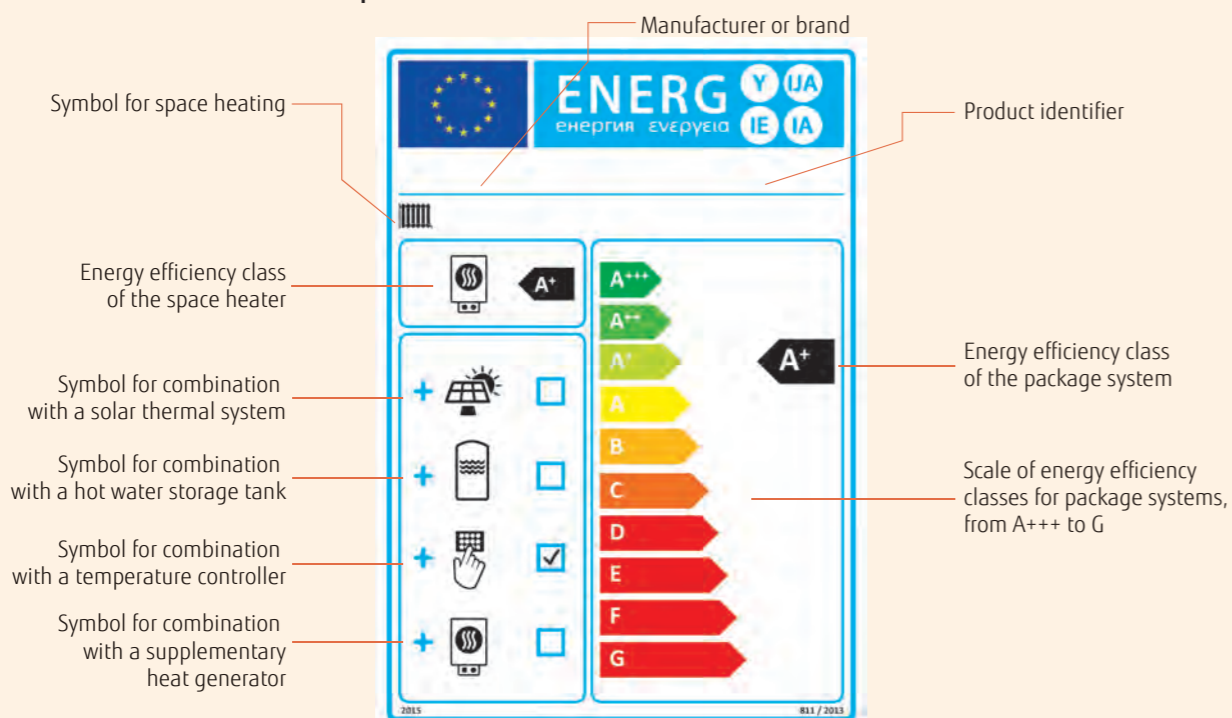


Package heating system

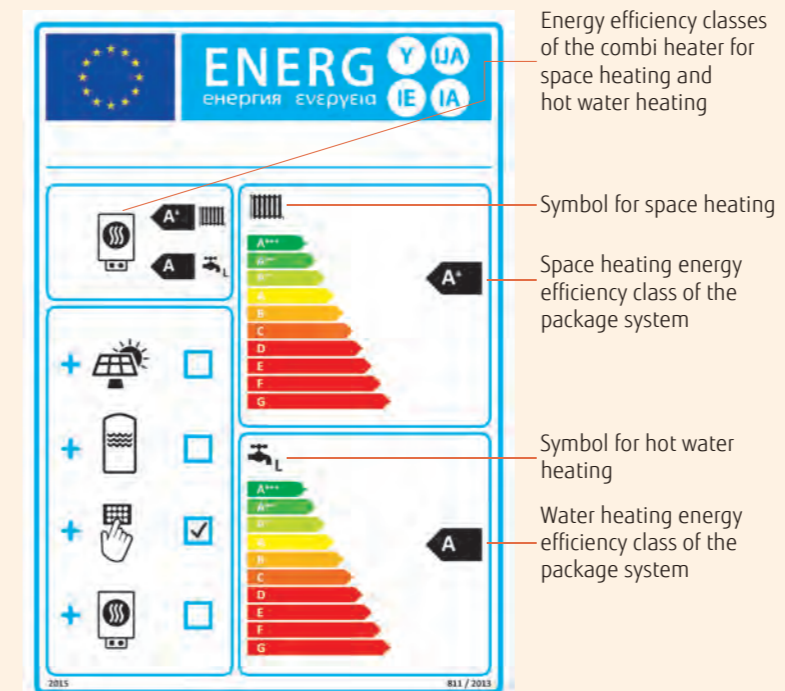
Heating systems which are composed of heat generators and several components such as solar thermal systems, tanks, controllers and/or supplementary heat generators shall provide a package label. The label display components by pictographs and show the energy efficiency class of space heater and whole package. The distributor of package is responsible for displaying the package label. If the package is composed of each component individually, the responsibility will be on the wholesalers or installers. There are two type of labels for space heater package and combination heater package.



Packages of space heater, Temperature control and solar device



Packages of combination heater, Temperature control and solar device



Each label gives information regarding energy efficiency class of heat generator, the types of components combined and the overall energy efficiency class of system.

Energy efficiency class of heat generator depend on seasonal energy efficiency

+

Energy efficiency class of each components depend on seasonal energy efficiency

↓

Overall energy efficiency class of system

Fujitsu General solutions



High energy saving and High power technology

Accurate temperature control by DC inverter technology

V-PAM inverter technology

Temperature vs Time graph showing 'INVERTER' and 'Constant' phases.

TWIN ROTARY COMPRESSOR with Linear Control Injection port

Diagram showing the heating cycle with components: Heating cycle, Co-axial Heat Exchanger, Hydraulic unit, Linear Control Injection, Evaporator, and Outdoor unit. Includes text: 'It realizes the high condensing temperature without overheating discharge gas temperature by Linear Control Injection process during compression. Therefore, the condensing temperature rises up higher than normal circuit. A higher hot water temperature is realized by controlling the injection amount according to the usage state. Optimized circuit = higher water temperature'.

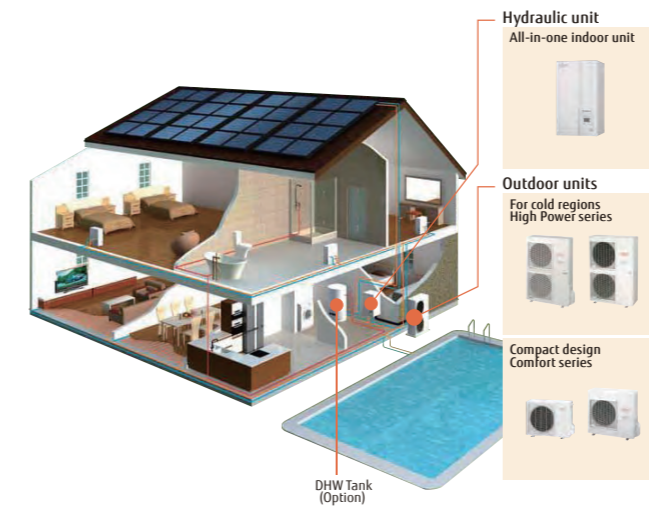
High durability

Co-axial Heat Exchanger

- Corrosion protected
- No flow switch
- Anti-freeze-protection is unnecessary

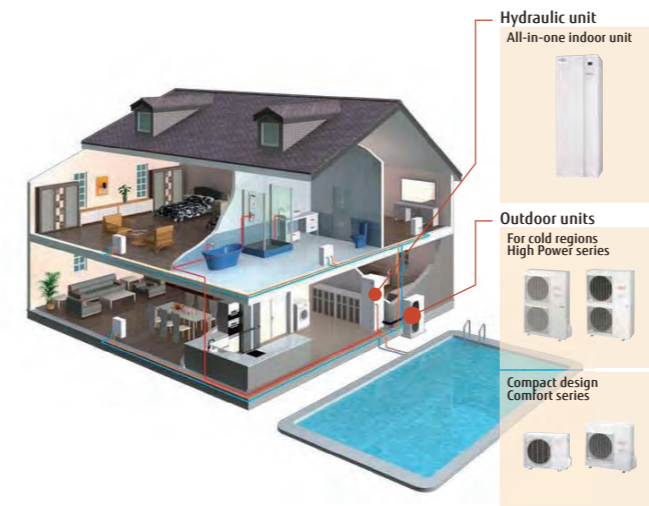
Class A High Efficiency Class A Pump

Energy saving pump with constant volume or pressure adjustment function.



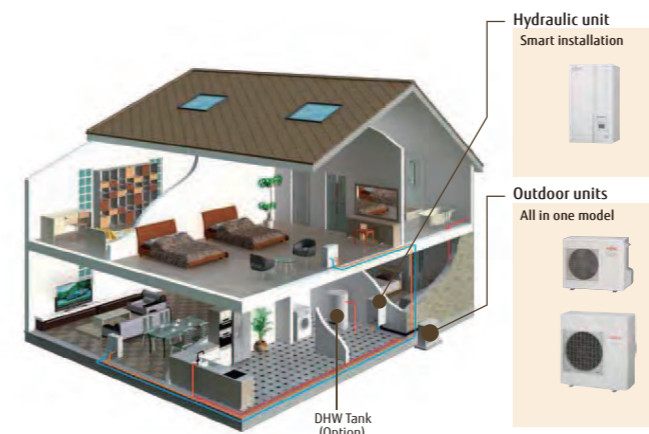
WATERSTAGE Split type

- Outdoor unit and hydraulic unit can be installed freely, so installation is easy.
- Since hydraulic unit is installed inside a house, freezing of circulated water can be prevented.
- A larger heating capacity can be performed flexibly by using more units in cascade connection.
- 5kW to 16kW class, 9 models.



WATERSTAGE Split DHW integrated type

- Space is saved drastically due to built-in DHW tank.
- Existing boiler can be replaced easily.
- A larger heating capacity can be performed flexibly by using more units in cascade connection.
- 5kW to 16kW class, 9 models.



WATERSTAGE Monobloc type

- Outdoor unit and hydraulic unit can be installed anywhere due to compact size.
- Installation work can be performed easily only by connecting hydraulic pipes.
- 5kW to 10kW class, 3 models.

Products line-up

Type		Capacity class (kw)						
		5 kw	6 kw	8 kw	10 kw	11 kw	14 kw	16 kw
SPLIT TYPE	High power series				(Single phase) WSYG140DG6 WOYG112LCTA	WSYG140DG6 WOYG140LCTA		
				(Three phase) WSYK160DG9 WOYK112LCTA	WSYK160DG9 WOYK140LCTA	WSYK160DG9 WOYK160LCTA		
	Comfort series	WSYA050DG6 WOYA060LFCA	WSYA100DG6 WOYA060LFCA	WSYA100DG6 WOYA080LFCA	WSYA100DG6 WOYA100LFTA			
SPLIT DHW INTEGRATED TYPE	High power series				(Single phase) WGYG140DG6 WOYG112LCTA	WGYG140DG6 WOYG140LCTA		
				(Three phase) WGYK160DG9 WOYK112LCTA	WGYK160DG9 WOYK140LCTA	WGYK160DG9 WOYK160LCTA		
	Comfort series	WGYA050DG6 WOYA060LFCA	WGYA100DG6 WOYA060LFCA	WGYA100DG6 WOYA080LFCA	WGYA100DG6 WOYA100LFTA			
MONOBLOC TYPE		WSYP100DF6 WPYA050LG		WSYP100DF6 WPYA080LG	WSYP100DF6 WPYA100LG			
		Control box UTW-SCBYA WPYA050LG		Control box UTW-SCBYA WPYA080LG	Control box UTW-SCBYA WPYA100LG			

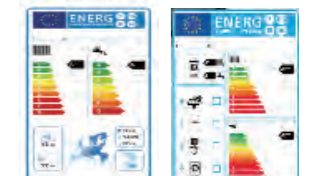


Waterstage's strong support

Fujitsu General WATERSTAGE provide a variety of product and technical information to distributor, installer and wholesaler. From September 2015, we will add necessary information free available onto our homepage. You will find this information here : www.fujitsu-general.com/global/products/index.html.

Energy labels & Fiches

- Product labels
- Preconfigured package labels
- Product fiches
- Preconfigured package fiches



Product information

- Product news
- Brochures
- Information sheets
- Feature promotion movie
- Operating manual / Installation manual



Technical information

- Design & Technical Manual
- Certificate data
- 2D/3D CAD data



Model selection software

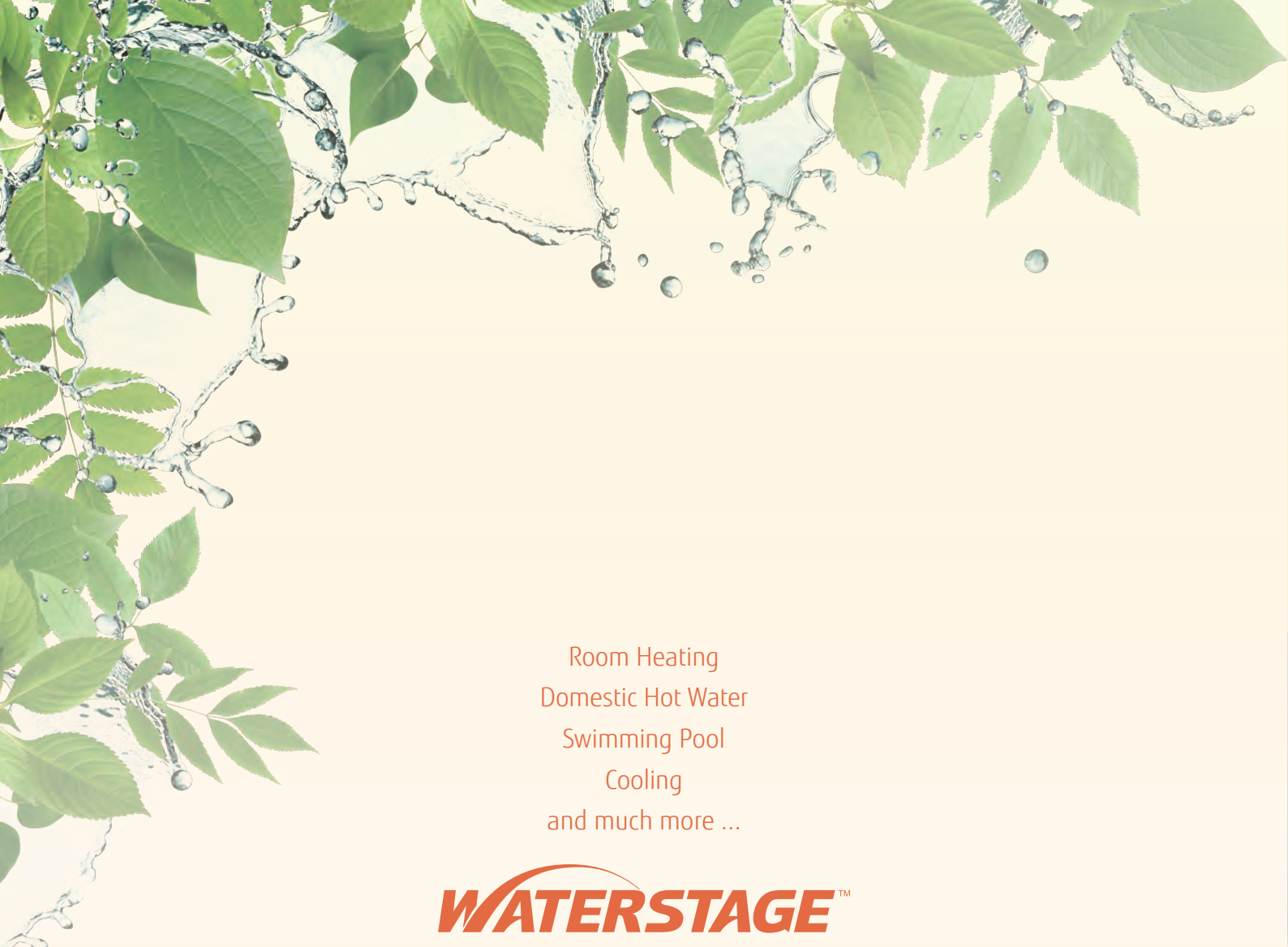
- The software automatically selects the equipments just by adding some factors, like the region where the equipment is installed, required capacity to heat up the space, and a heating method.



Training

- Designing WATERSTAGE System
- Control system on-site training





Room Heating
 Domestic Hot Water
 Swimming Pool
 Cooling
 and much more ...

WATERSTAGE™

- Specifications and design are subject to change without notice for future improvement.
- For further details, please check with our authorized dealer.
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