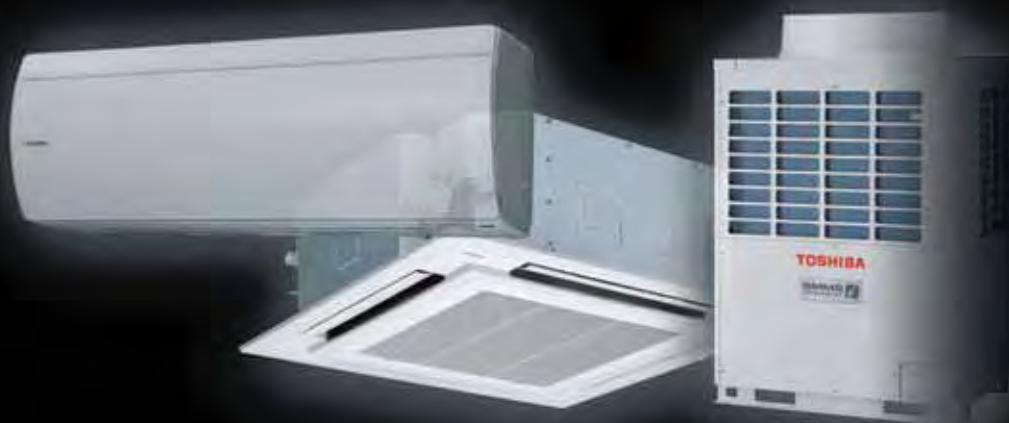
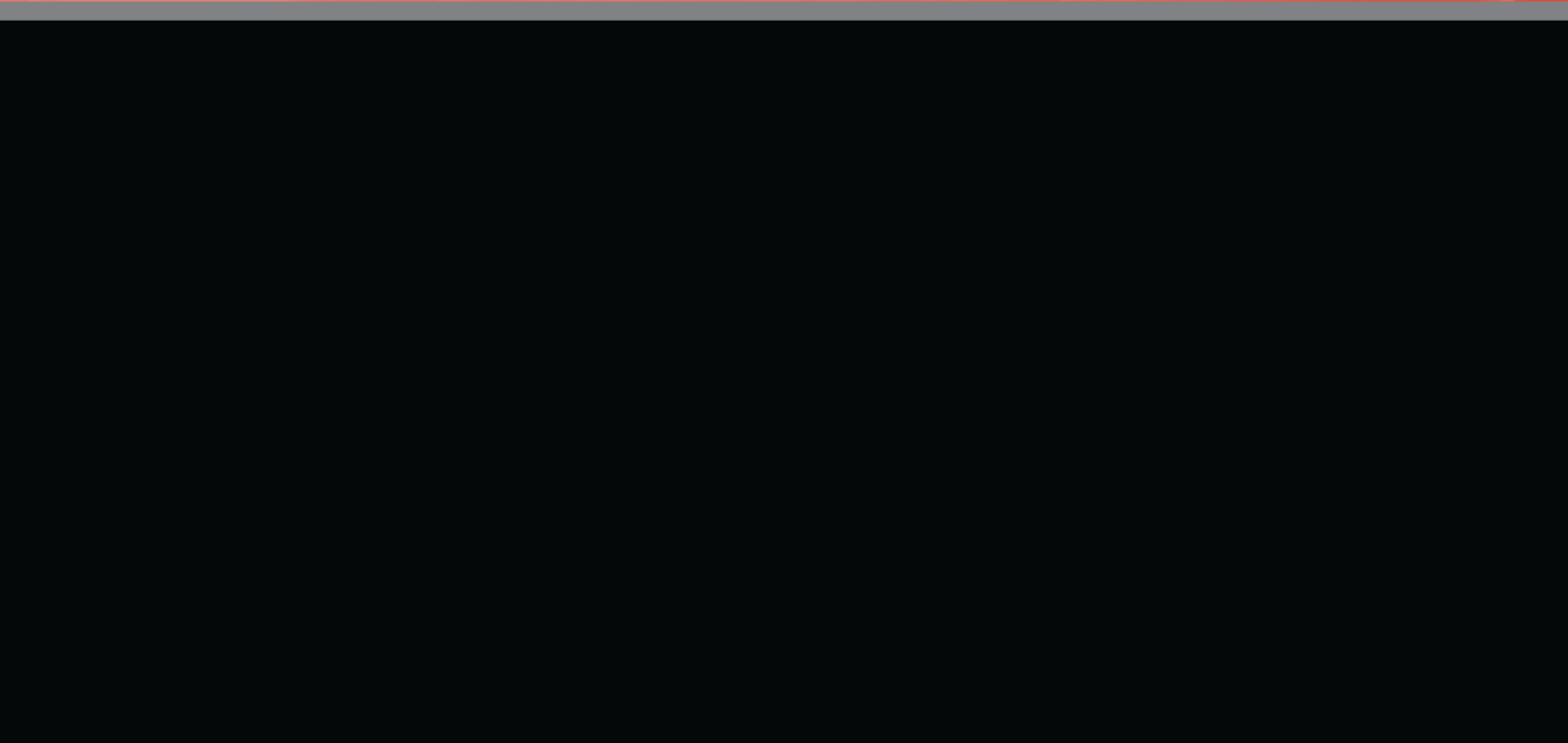




General catalogue 2011

TOSHIBA AIRCONDITIONING
Advancing the **eco**-evolution





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Toshiba Group

Toshiba's origins go back to 1875 and two great inventors.

Hisashige Tanaka, the Thomas Edison of Asia, was renowned for his inventiveness. The sign that welcomed visitors to Tanaka Engineering Works "Improving life with things people need" expressed his deep commitment to improve people's quality of life.

Ichisuke Fujioka was Japan's father of electronics. He manufactured the country's first incandescent lamps and pioneered the development of Japan's electronics industry.

Today, more than 130 years after, Toshiba Group provides a wide range of products and services that feature the best in innovative technologies and the finest quality.

By continually developing innovative technologies, we strive to create products and services that enhance human life, and which lead to a thriving healthy society. In 2009, Toshiba Group enjoyed consolidated annual sales of over US\$68 billion and employed approximately 200,000 people in more than 500 group companies worldwide.



A wide innovative range

Digital products: high value-added mobile phones; advanced audio and visual products; Personal Computers and business communication systems.

Electronic devices and components: advanced semiconductors and display technologies.

Social infrastructure systems: critical components that support power generating, broadcast, transportation, financial and distribution equipment and systems.

Consumer appliances: from refrigerators, and residential and commercial air conditioning systems, to automotive electronics and network services.

Corporate social responsibility

Toshiba signed the United Nations Global Compact in 2004 and from then has implemented and promoted these basic principles concerning human rights, labor, the environment and anti-corruption within the organization and towards its suppliers.

been awarded with several prizes for its success and commitment.

Corporate social responsibility is reviewed every year by third parties and Toshiba has



Leading the way to the future

Toshiba group focuses on the development of innovative products, developed to meet the emerging needs of the society and timely respond to the constant changes in the business environment.

Innovation is the key in all the Toshiba process: technology, research, development, production, procurement, marketing and sales.

These new business processes will create customer value by anticipating and providing product and solutions to fulfill their needs.



Environmental based management

Toshiba Group manages its business operations as a corporate citizen of planet.

Earth with the future of the world in mind. With compliance with laws and regulations the Toshiba Group has formulated the Environmental Vision 2050.

A vision of a world in which "People lead richer lifestyles in harmony with the Earth" by 2050.

Under this vision, it is the mission of Toshiba to reduce environmental impacts and create new value by promoting the development of Environmentally conscious products, which involves environmentally conscious product design, the assessment of environmental impact and disclosure of the environmental performance.



Our brand statement

Toshiba delivers technology and products remarkable for their innovation and artistry contributing to a safer, more comfortable, more productive life.

We bring together the spirit of innovation with our passion and conviction to shape the future and help protect the global environment – our shared heritage.

We foster close relationships, rooted in trust and respect, with our customers, business partners and communities around the world.

TOSHIBA
Leading Innovation >>>

TOSHIBA AIRCONDITIONING

Advancing the **eco**-evolution

Toshiba air conditioning

Toshiba produced its first air conditioning units in the **1950's**, and immediately worked on introducing improvements.

Its role as an innovator continued with the introduction of the rotary compressor and electronic controls.

By the **1980's** with a broad product offering, Toshiba was the first to introduce the inverter driven unit (1981) and the twin rotary compressor (in 1988).

In **1999**, Toshiba again led the industry with the launch of its product range operating with non-ozone depleting refrigerants (R-410A and R407C).

Toshiba's spirit of innovation continues with its relentless drive for product and system improvements.

Every year from 1994 onward Toshiba has received a prestigious award for its great achievement in the industry.

Innovations for worldwide air conditioning market

2000: revolutionary DC hybrid inverter.

2003: Digital Inverter.

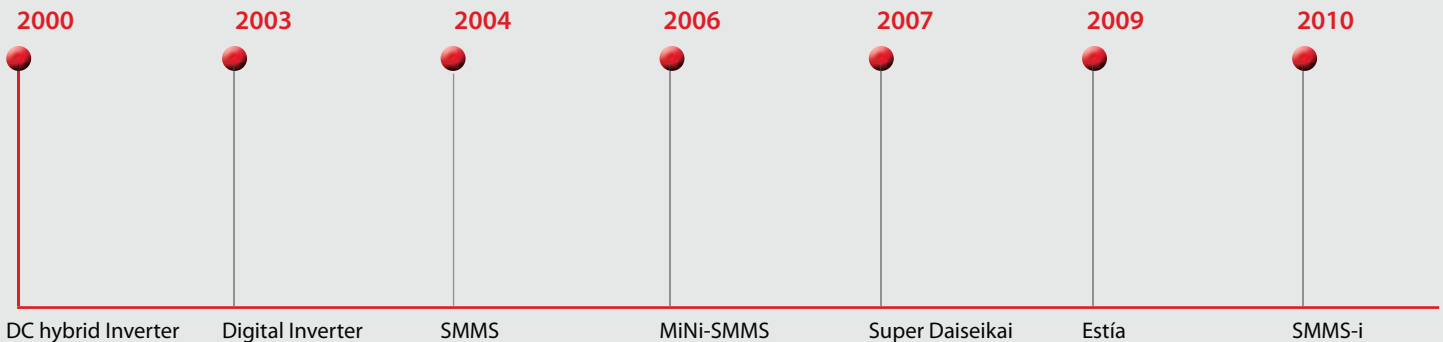
2004: SMMS (the VRF system with the industry's highest COP).

2006: MiNi-SMMS.

2007: Super Daiseikai with Ag Plasma air purifier.

2009: Estía, Air-to-Water Heat Pump Super Daiseikai with improved COP.

2010: SMMS-i, the next generation energy efficient VRF system



Advancing the eco evolution

Toshiba Carrier corporation is aiming to be the Advanced Eco Evolution “Made of and for Eco” and will contribute to a world in which people lead richer lifestyles in harmony with the Earth through imagination, innovation, and integrity.

Deep in the psyche of each one of us is the ideal that we need to play a part in helping preserve our Earth. As relative new comers in the evolution of the Earth, it’s undeniable that humankind has had a greater impact on our planet’s eco-system than any other life form.

The industrial revolution sparked numerous innovations that raised levels of human comfort and prosperity globally. One such invention was the world’s first modern electrical air conditioning system over a hundred years ago by Willis Carrier.

Another was the automobile, giving people greater mobility. But these advancements came at a price: carbon dioxide levels and average regional temperatures have increased at alarming rates around the world, and air quality in our cities continue to deteriorate.

At Toshiba air conditioning, we believe we can make a difference. As a global vision for our evolving world, we are committed to advancing research and development of super energy-efficient, cleaner technologies and to innovate products that not only use significantly less energy but help maintain air quality through state-of-the-art air purification systems for the home and business. Intelligent ideas that use less of our Earth’s resources, without sacrificing your personal comfort.

We call this vision “Advancing the eco-evolution”.



Quality commitment philosophy

Toshiba has been studying, designing and creating innovative air conditioning systems for 60 years and as a result has always offered the highest performance on the market.

Quality has always been Toshiba's strength and will remain the trademark that will differentiate Toshiba air conditioners from the competition.

This is the philosophy behind every Toshiba product, developed and manufactured following strictly all the industry regulations, the quality of processes certifications and higher internal Toshiba quality standards, which includes controls on all finished products and supplied parts.

Toshiba products are certified with third parties institutes for quality, safety and performance (TUV, Eurovent, WEEE, RoHS, REACH).

Core technologies

Toshiba commitment to innovation led to the design of highly efficient and reliable components like:

- IPDU inverter
- DC Twin rotary compressor
- IAQ filtration system



Toshiba solutions

Toshiba offers a solution for all applications: residential, light commercial and larger commercial buildings.

Residential indoor units are designed to blend perfectly with all interiors and incorporate advanced filtration systems to deliver optimum indoor air quality.

For small commercial premises, products are designed to deliver top performance combined with energy efficiency.

For larger applications, VRF systems combine flexibility, energy efficiency and respect for the environment, with a wide choice of stylish indoor units.



Absolute comfort

Toshiba commitment to people drives a focused attention for the details in every stage of the development process, from design to user field tests. Therefore the products and systems installed feature higher standard of indoor air quality, sound levels, energy savings and environmental awareness.



A step in the right direction of reducing pollution and CO₂ emissions

The increase of CO₂ and other green house gases is a key concern.

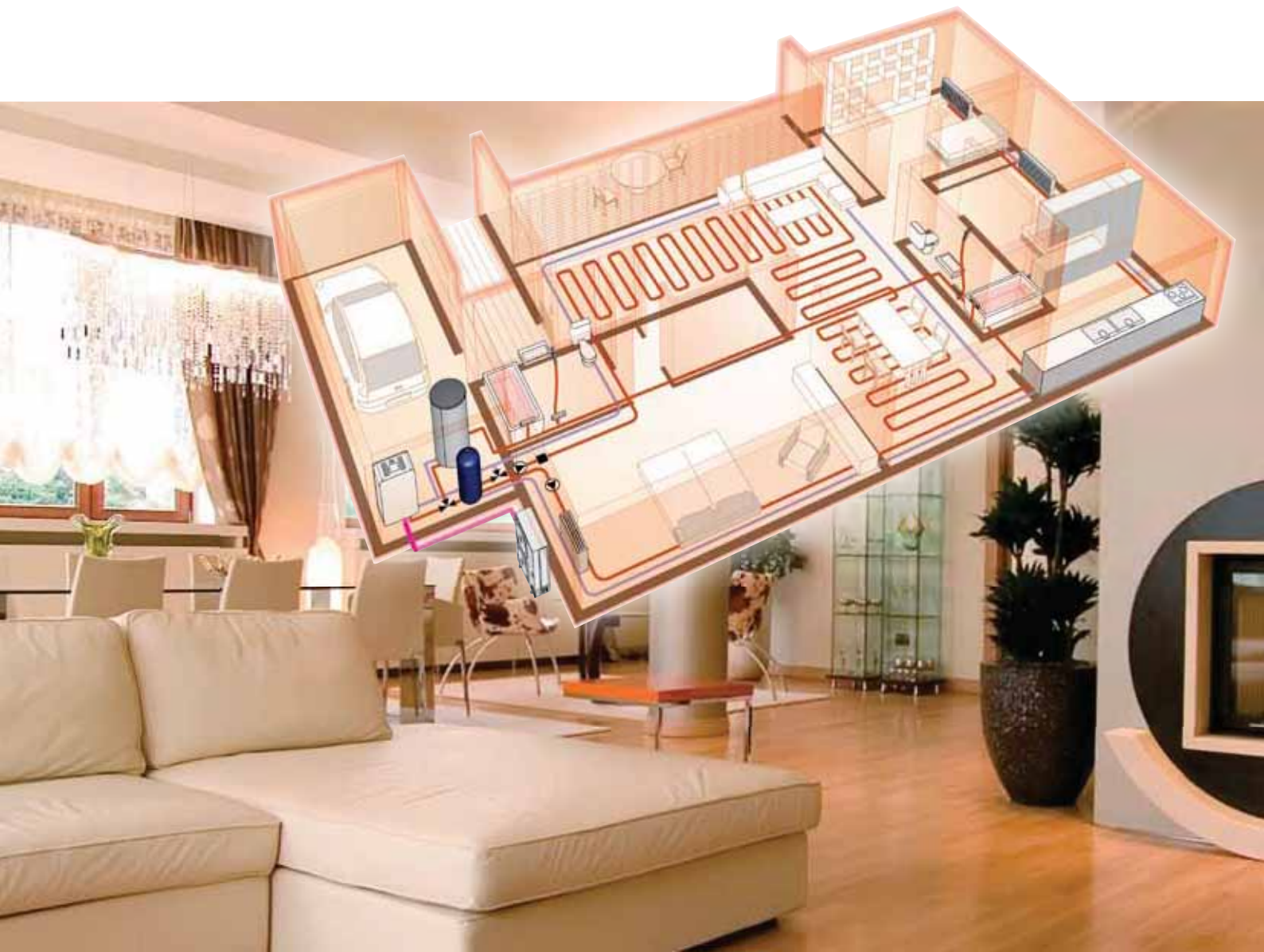
Following the European commitment of reducing 20% of the emissions by 2020, energy waste from residential space heating and domestic hot water have been identified as the possible reduction targets.

Air-to-water heat pumps are considered as renewable energy technology compared to heating systems dependent on fossil fuel or non efficient electrical heating.

They are now considered as ideal solutions for space heating and domestic hot water.

Residential heat production by means of gas, oil or electricity contribute to raise the CO₂ emissions level in the atmosphere. In addition these traditional heating systems are less efficient and therefore the energy running costs increase.

Toshiba Estía air to water heat pumps are the ideal solution to increase energy efficiency (COP), using air as a main source of energy. This is an all in one system designed to deliver the right temperature for space heating, for domestic sanitary hot water and with the additional advantage of offering air conditioning in the warmer seasons.



Estía

Air to water

The heating and cooling systems of the future.



Estía



World-leading energy efficiency - COP of 4,77*

With its best in class COP performance, Estía air to water heat pump system delivers more heating power with less energy consumption. Estía uses high quality components and material which contribute to the overall savings in energy consumption.

With the Toshiba advanced inverter, Estía air to water heat pump system only delivers the heating capacity required; thus consuming only the necessary electricity. The hot water temperature is also optimized thanks to Toshiba advanced control depending on the outside air temperature. The milder outside, the air-to-water systems automatically produces lower water temperature to anticipate decreased needs of space heating. The same control logic allows to anticipate as well increasing heating needs when weather conditions become extreme; this overall temperature management gives the best conditions of comfort.

All this saving has a positive impact on the personal electricity bill and the whole community by reducing the CO₂ emissions in the atmosphere.



*HWS-1103H-E model

New
phases
outdoor
units **3**

Easy to install

Quick and easy to install. The hydro module unit can be placed safely in the most suitable place within the house. There's no need for chimney or underground captors which require additional works on site. The compact outdoor unit can be placed anywhere outside the house or on a balcony, thanks to extensive piping options.

Environment conscious

The use of Toshiba Estía heat pump contribute to the reduction of global CO₂ emissions in the atmosphere and limit the use of fossil fuels or other non-renewable energy primary sources.

Whenever required for maintenance purpose, all the R410A refrigerant (non ozone depleting) can be completely sucked back to the outdoor unit through the powerful embedded Toshiba "pump down" operation.





World-leading energy efficiency

Environment conscious

Multiple solutions

Easy to install



One system, multiple solutions

Estia heat pump systems can be used in combination with different types of emitters: existing heating low temperature radiators, floor heating or fan coil units.

Incentives

Every country in Europe has already issued or is in the process of promoting incentives programs for the installation of heat pump systems.

Grants or tax rebates are calculated using the nominal COP as a reference, with progressively annual efficiency entering into consideration. The installation of an Estia air to water heat pump system with top nominal COP and outstandingly high partial load COP thanks to its inverter DC Twin rotary compressor, guarantees to match most of the local governments requirements.



One system, full combination flexibility

In existing dwellings already equipped with traditional gas or fuel boilers, Toshiba Estia air to water heat pump system can be combined with the existing heating system to cover exclusively and in an optimized way all the heating needs, all year round. Then, the boiler is only used as a back-up source during some extreme weather days of the winter.

The intelligent Toshiba control balances the energy source in the most efficient way.



UP TO 4,66 COP

R-410A

DUAL STAGE COMPRESSOR

3 SIZES RANGE



Hydro unit

Stainless steel tank

Weekly timer

Three phases units

Estia Heat Pump System

Features

Toshiba Estia air to water heat pumps are the ideal solution to increase energy efficiency (COP), using air as a main source of energy.

This is an all in one system designed to deliver the right temperature for space heating, for domestic sanitary hot water and with the additional advantage of offering air conditioning in the warmer seasons.

Key features

World leading energy efficiency – COP of 4,77.

Estia heat pump systems can be used in combination with different types of emitters: existing heating low temperature radiators, floor heating or fan coil units.

Toshiba air to water heat pump systems can manage two independent zones. This solution enables the delivery of water to diverse emitters at different temperature levels up to 55 °C.

Contribute to reduce the CO₂ emissions in the atmosphere.

The remote controller is designed to be simple, intuitive and easy to use.

Toshiba Inverter uses the new vector controlled Intelligent Power Drive Unit, which enables a wider range of frequencies and voltages.

Domestic hot water from +40°C to +75°C



Optional additional controller directly linked to the hydronic module. It can be placed directly in the living area for immediate and easy access.

Residential heating

Technical specifications air to water heat pump

Outdoor unit	HWS-	803H-E	1103H-E	1103H8-E 1103H8R-E	1403H-E	1403H8-E 1403H8R-E	1603H8-E 1603H8R-E
Hydro unit combination	HWS-	803XWH**-E	1403XWH**-E	1403XWH**-E	1403XWH**-E	1403XWH**-E	1403XWH**-E
Nominal heating power	kW HP	8,0	11,2	11,2	14,0	14,0	16,0
Power input	kW HP	1,82	2,35	2,39	3,11	3,21	3,72
COP	W/W HP	4,40	4,77	4,69	4,50	4,36	4,30
Nominal cooling power	kW CO	6,0	10,0	10,0	11,0	11,0	13,0
Power input	kW CO	2,13	3,52	3,52	4,08	4,08	4,80
EER	W/W CO	2,82	2,84	2,84	2,70	2,70	2,71
Dimensions (HxWxD)	mm	890x900x320	1340x900x320	1340x900x320	1340x900x320	1340x900x320	1340x900x320
Weight	kg	63	93	93	93	93	93
Airflow	m ³ /h - l/s	3420 - 950	6060 - 1683	6060 - 1683	6180 - 1717	6180 - 1717	6180 - 1717
Sound pressure Level	dB(A)	49	49	50	51	51	52
Sound power level	dB(A)	64	66	66	68	68	69
Compressor type		DC Twin rotary	DC Twin rotary	DC Twin rotary	DC Twin rotary	DC Twin rotary	DC Twin rotary
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A
Flare connections (gas-liquid)		5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"
Minimum pipe length	m	5	5	5	5	5	5
Maximum pipe length	m	30	30	30	30	30	30
Maximum height difference	m	30	30	30	30	30	30
Chargeless pipe length	m	30	30	30	30	30	30
Operating range in space heating	°C	-20÷25	-20÷25	-20÷25	-20÷25	-20÷25	-20÷25
Operating range Domestic hot water	°C	-20÷43	-20÷43	-20÷43	-20÷43	-20÷43	-20÷43
Operating range in cooling	°C	10÷43	10÷43	10÷43	10÷43	10÷43	10÷43
Bottom tape heater power*	W	-	-	75	-	75	75
Power supply	V-ph-Hz	220/230-1-50	220/230-1-50	380/400-3N-50	220~230-1-50	380/400-3N-50	380/400-3N-50

* 3H8R Models only - Back-up heater operates depending on conditions

Technical specifications air to water heat pump

Hydro Unit	HWS-	803XWHM3-E	803XWHT6-E	803XWHT9-E	1403XWHM3-E	1403XWHT6-E	1403XWHT9-E
To be used with size		80	80	80	110-140-160	110-140-160	110-140-160
Leaving water temperature	°C HP	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C
	°C CO	10 ~ 25°C	10 ~ 25°C	10 ~ 25°C	10 ~ 25°C	10 ~ 25°C	10 ~ 25°C
Dimensions (HxWxD)	mm	925 x 525 x 355	925 x 525 x 355	925 x 525 x 355	925 x 525 x 355	925 x 525 x 355	925 x 525 x 355
Weight	Kg	54	54	54	54	54	54
Sound pressure level	dB(A)	29	29	29	29	29	29
Electric back up heater capacity	kW	3	6	9	3	6	9
Electric back up heater supply	V-ph-Hz	220/230-1-50	380/400-3N-50	380/400-3N-50	220~230-1-50	380/400-3N-50	380/400-3N-50
Maximum current	A	13	13 x 2	13 x 3	13	13 x 2	13 x 3

Technical specifications air to water heat pump

Domestic hot water tank	HWS-	1501CSHM3-E	2101CSHM3-E	3001CSHM3-E
Water volume	l	150	210	300
Max water temperature	°C	75	75	75
Electric heater	kW	2,75	2,75	2,75
Power supply	V-ph-Hz	220/230-1-50	220/230-1-50	220/230-1-50
Height	mm	1.090	1.474	2.040
Diameter	mm	550	550	550
Weight	mm	31	41	60
Material		Stainless steel	Stainless steel	Stainless steel

Accessories

Model	Description	
TCB-PCIN3E	Output signal PCB	Boiler operation output signal, Alarm output signal, Defrost output signal, Compressor operation output signal
TCB-PCMO3E	Input signal PCB	Room thermostat input, Emergency stop input
HWS-AMS11E	Wired RC	Wired Remote controller for Room air temperature control

* The capacities in this catalogue are calculated based on following conditions:

Heating:

Leaving hot water temperature: 35°C (ΔT 5°C).

Outdoor air temperature: 7 °C DB / 6 °C WB.

Cooling:

Leaving cold water temperature: 7°C (ΔT 5°C).

Outdoor air temperature: 35 °C DB.

The sound pressure level is given at 1 m distance from outdoor units, and 1.5 m distance from hydro units.

CO = cooling mode
HP = heating mode

The residential range. The applications

Air conditioning plays a fundamental role in your well-being at home as well as at work. In fact, it is not only important to grant the desired temperature; it is also the right tool to get the best indoor air quality.

Selecting the most suitable system is key to maximizing performance and optimizing comfort.

Air treatment, low sound levels, guaranteed energy savings and easy installation of the indoor units make the Toshiba residential range the top choice for any home.

Well-being and beyond

The new R-410A residential products have been designed to offer the best possible comfort to users.

The air filtration systems provide cleaned indoor air at all times.

In fact, the new high-walls grant high energy savings and unmatched indoor air quality.

Thanks to a new design, the indoor units also look elegant and blend beautifully with any room interior.

They have all the features a user can require: silent, discreet and unobtrusive, they deliver high energy efficiency and complete air purification.



Residential

The residential range
Ultimate inverter technology, ultimate comfort.



Residential

When technology meets comfort

Toshiba was the first company to incorporate inverter technology into air conditioning systems in 1981 and since then it has always maintained a technological advantage over its competitors.

The development of the new and exclusive DC hybrid inverter system has reaffirmed this ability to innovate and maintain technological leadership in a fast-growing market. But for Toshiba, innovation also means a strong commitment to international institutions that carefully evaluate the impact of new technologies on our environment. Toshiba combines technological development with care for future generations: the result is a range of extremely energy-efficient air conditioners, reducing greenhouse gas emissions at source.

Toshiba continuous research developed PWM technology, which is used together with the traditional PAM control. The application of these two distinct technologies allows total control of performance and energy use.

The ultimate expression of inverter technology

Toshiba DC hybrid inverter technology controls the capacity supplied by the air conditioner. By modifying the supply current frequency or intensity, it ensures smooth linear variation of the rotation speed and capacity of the compressor – the heart of the air conditioner.

This allows the cooling and heating capacities to be matched to the actual operating conditions required.

When the room temperature is different from the set point, the air conditioner operates at maximum capacity, ensuring that a comfortable temperature will be reached quickly. Once the desired temperature is reached, the inverter precisely adjusts the capacity to maintain a temperature close to the set point.





Superior COP

Advanced filtration systems

Optimised compatibility with the environment

Unequalled capacity reserves



Filtration, purification, innovation

True quality in the residential environment goes beyond control of the air filtration. With Toshiba residential air conditioners, air quality is guaranteed by many stages of filtration and additional functions such as pre-treatment, removal of fine particles, viruses, bacteria and allergens or total purification. Electrostatic purification also guarantees a basic cost advantage as there are no ongoing replacement part costs.



Care for the environment

Toshiba has anticipated legislation on the control of refrigerant emissions to the atmosphere, and pioneers solutions that our technological leadership enables us to offer.



UP TO 5,68 COP

R-410A

DUAL STAGE COMPRESSOR

SINGLE-SPLIT

FIVE SIZES RANGE



New air purifier

Plasma ion charger

Self cleaning

Stylish new design

Wide air flow area

Super Daiseikai PKVP/PAVP Inverter high-wall

Features

The new SuperDaiseikai has been designed and created with the objective to provide excellence, respecting the latest eco-evolution trends and maintaining the ultimate comfort.

World's best class energy efficiency.

Pure air.

Premium design.

Key features

Improved class A efficiency with COP value above 5 (5,36 for size 10).

New technology and advanced electronic reduced the Annual Energy Consumption of 30%*.

Dual stage compressor improve the load efficiency in a wide range of conditions.

Fast filtration: impurities are ionized by the ion charger and absorbed by the new heat exchanger.

Self cleaning to prevent the growth of mold inside the unit.

Nordic version with heat on the base plate of outdoor unit and winter operation mode.



** in cooling; compared to SKV*

Performance data

Outdoor unit			RAS-07PAVP-E	RAS-10PAVP-E	RAS-13PAVP-E	RAS-16PAVP-E	RAS-18PAVP-E
Indoor unit			RAS-07PKVP-E	RAS-10PKVP-E	RAS-13PKVP-E	RAS-16PKVP-E	RAS-18PKVP-E
Cooling capacity	kW		2,0	2,5	3,5	4,5	5,0
Cooling range (min. – max.)	kW		0,3 - 3,0	0,3 - 3,5	0,3 - 4,5	0,3 - 5,0	0,3 - 5,5
Power input (min. – rated – max.)	kW	CO	0,07 - 0,35 - 0,68	0,07 - 0,47 - 0,88	0,07 - 0,77 - 1,25	0,07 - 1,22 - 1,49	0,07 - 1,49 - 1,75
EER	W/W		5,63	5,26	4,55	3,69	3,36
Energy efficiency class		CO	A	A	A	A	A
Annual energy consumption	kWh		177	237	385	610	745
Heating capacity	kW		2,5	3,0	4,0	5,5	6,0
Heating range (min. – max.)	kW		0,3 - 5,0	0,3 - 5,8	0,3 - 6,1	0,3 - 6,5	0,3 - 6,7
Power input (min. – rated – max.)	kW	HP	0,07 - 0,44 - 1,30	0,07 - 0,56 - 1,60	0,07 - 0,84 - 1,60	0,07 - 1,34 - 1,70	0,07 - 1,54 - 1,75
COP	W/W		5,68	5,36	4,76	4,1	3,9
Energy efficiency class		HP	A	A	A	A	A

Physical data Indoor unit

Indoor unit			RAS-07PKVP-E	RAS-10PKVP-E	RAS-13PKVP-E	RAS-16PKVP-E	RAS-18PKVP-E
Air flow (h)	m ³ /h – l/s	CO	612/288 - 170/80	624/306 - 173/85	696/318 - 193/88	744/372 - 207/103	804/408 - 223/113
Sound pressure level (h/l)	dB(A)	CO	42/26	43/27	45/27	47/30	49/31
Sound power level (h/l)	dB(A)	CO	57/41	58/42	60/42	62/45	64/46
Air flow (h/l)	m ³ /h – l/s	HP	648/348 - 180/97	666/348 - 185/97	696/348 - 193/97	744/384 - 207/107	804/420 - 223/117
Sound pressure level (h/l)	dB(A)	HP	42/26	43/27	45/27	47/30	49/31
Sound power level (h/l)	dB(A)	HP	57/41	58/42	60/42	62/45	64/46
Dimensions (h x w x d)	mm		295 x 790 x 242	295 x 790 x 242	295 x 790 x 242	295 x 790 x 242	295 x 790 x 242
Weight	kg		12	12	12	12	12

Physical data Outdoor unit

Outdoor unit			RAS-07PAVP-E	RAS-10PAVP-E	RAS-13PAVP-E	RAS-16PAVP-E	RAS-18PAVP-E
Air Flow	m ³ /h – l/s	CO	1662 - 462	1800 - 500	2232 - 620	2232 - 620	2370 - 658
Sound pressure level	dB(A)	CO	46	48	50	50	52
Sound power level	dB(A)	CO	61	63	65	65	67
Operating range	°C	CO	-10÷46	-10÷46	-10÷46	-10÷46	-10÷46
Air Flow	m ³ /h – l/s	HP	1530 - 425	1662 - 462	2088 - 580	2088 - 580	2232 - 620
Sound pressure level	dB(A)	HP	46	48	50	50	52
Sound power level	dB(A)	HP	61	63	65	65	67
Operating range	°C	HP	-15÷24	-15÷24	-15÷24	-15÷24	-15÷24
Dimensions (h x w x d)	mm		550 x 780 x 290	550 x 780 x 290	550 x 780 x 290	550 x 780 x 290	550 x 780 x 290
Weight	kg		39	39	40	40	40
Compressor type			Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary
Flare connections (gas-liquid)			3/8" - 1/4"	3/8" - 2/8"	3/8" - 2/8"	4/8" - 2/8"	1/2" - 1/4"
Minimum pipe length	m		2	2	2	2	2
Maximum pipe length	m		20	20	20	20	20
Maximum height difference	m		10	10	10	10	10
Chargeless pipe length	m		15	15	15	15	15
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

R-410A

DC HYBRID INVERTER

SINGLE SPLIT

NORDIC VERSION



Super Daiseikai SKVP2 Inverter high-wall

Features

Latest release in the Innovative Daiseikai family, with higher standard in efficiency and comfort.

New ergonomic and practical remote control with easy access to main buttons and a sliding panel to hide the control used less frequently

Key features

Energy consumption with 5,1 EER in cooling (size 10).

Plasma air purifier: doesn't need cleaning since its deodorising effect gets constantly regenerated.

New, modern aesthetic.

Self-cleaning with low density Ozone will eliminate all bacteria normally remaining after operation.

DC Hybrid Inverter technology with Twin Rotary compressor.

Nordic version with heat on the base plate of outdoor unit and winter operation mode.

Plasma air Purifier

Dust collection

Bacteria elimination

Deodorising

Modern design



Performance data

Outdoor unit			RAS-10SAVP2-E	RAS-13SAVP2-E	RAS-16SAVP2-E
Indoor unit*			RAS-10SKVP2-E	RAS-13SKVP2-E	RAS-16SKVP2-E
Cooling capacity	kW		2,51	3,52	4,53
Cooling range (min. – max.)	kW		0,5 - 3,5	0,6 - 4,5	0,8 - 5,0
Power input (min. – rated – max.)	kW	CO	0,10 - 0,49 - 0,87	0,11 - 0,84 - 1,37	0,15 - 1,34 - 1,82
EER	W/W		5,12	4,19	3,38
Energy efficiency class		CO	A	A	A
Annual energy consumption	kWh		245	420	670
Heating capacity	kW		3,21	4,22	5,53
Heating range (min. – max.)	kW		0,5 - 6,5	0,5 - 7,7	0,7 - 8,0
Power input (min. – rated – max.)	kW	HP	0,09 - 0,63 - 1,82	0,10 - 0,95 - 2,33	0,15 - 1,47 - 2,51
COP	W/W		5,1	4,44	3,76
Energy efficiency class		HP	A	A	A

Physical data Indoor unit

Indoor unit			RAS-10SKVP2-E	RAS-13SKVP2-E	RAS-16SKVP2-E
Air flow (h)	m ³ /h – l/s	CO	630 - 175	642 - 178	738 - 205
Sound pressure level (h/l)	dB(A)	CO	42/27	43/27	45/29
Sound power level (h/l)	dB(A)	CO	55	56	58
Air flow (h)	m ³ /h – l/s	HP	684 - 190	744 - 207	738 - 205
Sound pressure level (h/l)	dB(A)	HP	43/27	44/27	45/29
Sound power level (h/l)	dB(A)	HP	56	57	58
Dimensions (h x w x d)	mm		275x790x205	275x790x205	275x790x205
Weight	kg		9	9	9

Physical data Outdoor unit

Outdoor unit			RAS-10SAVP2-E	RAS-13SAVP2-E	RAS-16SAVP2-E
Air Flow	m ³ /h – l/s	CO	1440 - 400	1680 - 467	1920 - 533
Sound pressure level	dB(A)	CO	46	48	49
Sound power level	dB(A)	CO	59	61	62
Operating range	°C	CO	-10÷46	-10÷46	-10÷46
Air Flow	m ³ /h – l/s	HP	1200 - 333	1440 - 400	1680 - 467
Sound pressure level (h)	dB(A)	HP	47	50	50
Sound power level (h)	dB(A)	HP	60	63	63
Operating range	°C	HP	-15÷24	-15÷24	-15÷24
Dimensions (h x w x d)	mm		630 x 800 x 300	630 x 800 x 300	630 x 800 x 300
Weight	kg		41	41	41
Compressor type			DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections (gas-liquid)			3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"
Minimum pipe length	m		2	2	2
Maximum pipe length	m		25	25	25
Maximum height difference	m		10	10	10
Chargeless pipe length	m		15	15	15
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

COP 4,27

R-410A

SINGLE/MULTI-SPLIT

DEODORIZING EFFECT



Suzumi+ SKV2 Inverter high-wall

Features

This elegant unit combines an improved energy efficiency with indoor air quality.

Suzumi+ is very silent and feature a unique "Quiet" button on the remote control, to further increase the acoustic comfort.

Key features

One touch my comfort button. Memorize the desired operation parameters.

Toshiba new IAQ filter filtration system includes extremely powerful anti virus, anti bacteria and the deodorizing effects.

Self cleaning function to remove moist from the internal components of the unit.

Toshiba DC hybrid inverter technology controls and adjust the capacity supplied by the air conditioner.

A/A efficiency class in cooling and heating (sizes below 6 kW).

Modern and compact design.

A/A class in cooling and heating

Modern design

PAM + PWM

Comfort sleep function



Performance data

Outdoor unit			RAS-10SAV2-E	RAS-13SAV2-E	RAS-16SAV2-E	RAS-18SAV2-E	RAS-22SAV2-E
Indoor unit			RAS-10SKV2-E	RAS-13SKV2-E	RAS-16SKV2-E	RAS-18SKV2-E	RAS-22SKV2-E
Cooling capacity	kW		2,5	3,5	4,5	5	6
Cooling range (min. – max.)	kW		1,1 - 3,0	0,8 - 4,1	0,8 - 5,0	1,1 - 6,0	1,2 - 6,7
Power input (min. – rated – max.)	kW	CO	0,25 - 0,598 - 0,82	0,15 - 1,00 - 1,25	0,15 - 1,395 - 1,72	0,18 - 1,42 - 2,00	0,20 - 1,995 - 2,65
EER	W/W		4.18	3.50	3,23	3,52	3,01
Energy efficiency class		CO	A	A	A	A	B
Annual energy consumption	KWh		299	500	698	710	998
Heating capacity	kW		3,2	4,2	5,5	5,8	7
Heating range (min. – max.)	kW		0,9 - 4,8	0,9 - 5,6	0,9 - 6,9	0,8 - 6,3	1,0 - 7,5
Power input (min. – rated – max.)	kW	HP	0,17 - 0,75 - 1,40	0,15 - 1,08 - 1,58	0,15 - 1,52 - 1,98	0,14 - 1,56 - 1,70	0,18 - 2,05 - 2,21
COP	W/W		4.27	3.89	3,62	3,72	3,41
Energy efficiency class		HP	A	A	A	A	B

Physical data Indoor unit

Indoor unit			RAS-10SKV2-E	RAS-13SKV2-E	RAS-16SKV2-E	RAS-18SKV2-E	RAS-22SKV2-E
Air flow	m ³ /h – l/s	CO	516 - 143	570 - 158	684 - 190	954 - 265	1080 - 300
Sound pressure level (h/l)	dB(A)	CO	38/26	39/26	45/30	44/32	47/35
Sound power level (h)	dB(A)	CO	51	52	58	59	62
Air flow	m ³ /h – l/s	HP	570 - 158	624 - 173	738 - 205	990-275	1098/305
Sound pressure level (h/l)	dB(A)	HP	39/28	40/28	45/31	44/32	47/35
Sound power level (h)	dB(A)	HP	52	53	58	59	62
Dimensions (h x w x d)	mm		275 x 790 x 205	275 x 790 x 205	275 x 790 x 205	320 x 1050 x 228	320 x 1050 x 228
Weight	kg		9	9	9	13	13

Physical data Outdoor unit

Outdoor unit			RAS-10SAV2-E	RAS-13SAV2-E	RAS-16SAV2-E	RAS-18SAV2-E	RAS-22SAV2-E
Air Flow	m ³ /h – l/s	CO	1800 - 500	2250 - 625	2160 - 600	1914 - 532	2316-643
Sound pressure level	dB(A)	CO	46	48	49	49	53
Sound power level	dB(A)	CO	59	61	62	64	68
Operating range	°C	CO	-10÷46	-10÷46	-10÷46	-10÷46	-10÷46
Air flow		HP	1800-500	2250-625	1920-533	1914-532	2232-620
Sound pressure level	dB(A)	HP	47	50	50	50	52
Sound power level	dB(A)	HP	60	63	63	65	67
Operating range	°C	HP	-15÷24	-15÷24	-15÷24	-15÷24	-15÷24
Dimensions (h x w x d)	mm		550 x 780 x 290	550 x 780 x 290	550 x 780 x 290	550 x 780 x 290	550 x 780 x 290
Weight	kg		33	33	39	41	41
Compressor type			DC Rotary	DC Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections (gas-liquid)			3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"	1/2" - 1/4"	1/2" - 1/4"
Minimum pipe length	m		2	2	2	2	2
Maximum pipe length	m		20	20	20	20	20
Maximum height difference	m		10	10	10	10	10
Chargeless pipe length	m		15	15	15	15	15
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

R-410A

DC HYBRID INVERTER

AIR PURIFICATION



AvAnt 7SKV Inverter high-wall

Features

AvAnt-garde Inverter model specifically conceived for residential users.

If your need is ideal temperature all year round, delivered with high energy saving and extremely low noise, Toshiba AvAnt Inverter is the solution.

Key features

A energy class in cooling and heating (capacities 10 and 13): high energy saving.

The lowest indoor unit noise of the category: only 20 dB(A) at low fan speed.*

3 in 1 filtration system: to reduce bacteria, prevent allergies and eliminate odours.

New modern design with reduced dimension to fit into every room.

Easy to use remote control.

A class in cooling and heating

3 in 1 filtration system

Extremely low sound level

Modern and compact design



** model 137SKV, from 2,5 m distance*

Performance data

Outdoor unit			RAS-107SAV-E3	RAS-137SAV-E3	RAS-167SAV-E3
Indoor unit			RAS-107SKV-E3	RAS-137SKV-E3	RAS-167SKV-E3
Cooling capacity	kW		2,5	3,5	4,4
Cooling range (min. – max.)	kW		1,1-3,0	1,1-4,0	1,1-5,0
Power input (min. – rated – max.)	kW	CO	0,26-0,76-0,97	0,25-1,08-1,33	0,26-1,56-1,90
EER	W/W		3,29	3,24	2,82
Energy efficiency class		CO	A	A	C
Annual energy consumption	KWh		380	540	780
Heating capacity	kW		3,2	4,2	5,2
Heating range (min. – max.)	kW		0,9-4,1	0,9-5,0	1,0-6,2
Power input (min. – rated – max.)	kW	HP	0,20-0,87-1,20	0,17-1,14-1,48	0,19-1,52-1,81
COP	W/W		3,68	3,68	3,42
Energy efficiency class		HP	A	A	B

Physical data Indoor unit

Indoor unit			RAS-107SKV-E3	RAS-137SKV-E3	RAS-167SKV-E3
Air Flow (max)	m ³ /h – l/s	CO	522-145	570-158	690-192
Sound pressure level (l/m/h)	dB(A)	CO	29/33/38	26/33/39	30/40/45
Sound power level (l/m/h)	dB(A)	CO	51	52	58
Air Flow (max)	m ³ /h – l/s	HP	576-160	624-173	744-207
Sound pressure level (l/m/h)	dB(A)	HP	30/35/40	28/34/40	31/40/45
Sound power level (l/m/h)	dB(A)	HP	53	53	58
Dimensions (h x w x d)	mm		250 x 740 x 195	275 x 790 x 205	275 x 790 x 205
Weight	kg		8	9	9

Physical data Outdoor unit

Outdoor unit			RAS-107SAV-E3	RAS-137SAV-E3	RAS-167SAV-E3
Air Flow	m ³ /h – l/s	CO	1620 – 450	2250 – 625	2250 – 625
Sound pressure level	dB(A)	CO	48	48	49
Sound power level	dB(A)	CO	61	61	62
Operating range	°C	CO	15 ÷ 43	-10 ÷ 46	-10 ÷ 46
Air flow		HP	1620-450	2250-625	2250-625
Sound pressure level	dB(A)	HP	50	50	50
Sound power level	dB(A)	HP	63	63	63
Operating range	°C	HP	-10 ÷ 24	-15 ÷ 24	-15 ÷ 24
Dimensions (h x w x d)	mm		530 x 660 x 240	550 x 780 x 290	550 x 780 x 290
Weight	kg		27	33	40
Compressor type			DC Rotary	DC Rotary	DC Twin Rotary
Flare connections (gas-liquid)			3/8" – 1/4"	3/8" – 1/4"	1/2" – 1/4"
Minimum pipe length	m		2	2	2
Maximum pipe length	m		10	20	20
Maximum height difference	m		8	10	10
Chargeless pipe length	m		10	15	15
Power supply	V-ph-Hz		220/240-1-50	220/24-1-50	220/240-1-50
Filter				Active Carbon Catechin x 2	

CO = cooling mode
HP = heating mode

A/A CLASS

R-410A

SINGLE AND MULTI SPLIT

DEODORIZING EFFECT



Smart user interface

Floor heating mode

Bi-flow

Compact design

UFV Inverter console

Features

Innovative and compact unit to be installed on the floor and in low wall applications, fit perfectly under the window sills or in a low ceiling attic.

Unique floor heating function, to deliver a powerful flow at floor level for a uniform and comfortable room heating.

Key features

Energy efficient Toshiba DC Hybrid inverter.

Compact and modern design in all three dimensions (60 × 70 × 22 cm).

Bi-flow. Two outlets for complete personalized flow: flow intensity and air direction control.

Toshiba new IAQ filter filtration system, includes extremely powerful anti virus, anti bacteria and the deodorizing effects.

Child lock function on the unit display panel.

Brightness level control of the display unit to reduce the led light glow.

Automatic restart function in case of unexpected electricity supply line power cuts.



Performance data

Outdoor unit		RAS-10SAV2-E	RAS-13SAV2-E	RAS-18SAV2-E	
Indoor unit		RAS-B10UFV-E	RAS-B13UFV-E	RAS-B18UFV-E	
Cooling capacity	kW	2,5	3,5	5,0	
Cooling range (min. - max.)	kW	1,1 - 3,1	1,1 - 4,1	1,0 - 5,7	
Power input (min. -rated - max.)	kW	CO	0,59	0,23 - 0,97 - 1,35	0,20 - 1,66 - 1,95
EER	W/W	4,20	3,61	3,01	
Energy efficiency class	CO	A	A	B	
Annual energy consumption	KWh	298	485	830	
Heating capacity	kW	3,2	4,2	5,8	
Heating range (min. - max.)	kW	1,0 - 4,8	1,0 - 5,4	1,1 - 6,3	
Power input (min. -rated - max.)	kW	HP	0,18 - 0,75 - 1,40	1,12	1,80
COP	W/W	4,27	3,73	3,21	
Energy efficiency class	HP	A	A	C	

Physical data Indoor unit

Indoor unit		RAS-B10UFV-E	RAS-B13UFV-E	RAS-B18UFV-E	
Air Flow	m ³ /h – l/s	CO	468 - 130	510 - 142	600 - 167
Sound pressure level (h/l)	dB(A)	CO	39/26	40/27	46/34
Sound power level (h/l)	dB(A)	CO	54	55	61
Air Flow	m ³ /h – l/s	HP	510 - 142	552 - 153	642 - 178
Sound pressure level (h/l)	dB(A)	HP	39/26	40/27	46/34
Sound power level (h/l)	dB(A)	HP	54	55	61
Dimensions (h x w x d)	mm		600x700x220	600x700x220	600x700x220
Weight	kg		16	16	16

Physical data Outdoor unit

Outdoor unit		RAS-10SAV2-E	RAS-13SAV2-E	RAS-18SAV2-E	
Air Flow	m ³ /h – l/s	CO	1800 - 500	2250 - 625	2178 - 605
Sound pressure level	dB(A)	CO	46	48	49
Sound power level	dB(A)	CO	59	61	64
Operating range	°C	CO	-10÷46	-10÷46	-10÷46
Air Flow		HP	1800 - 500	2250 - 625	1914 - 532
Sound pressure level	dB(A)	HP	47	50	50
Sound power level	dB(A)	HP	60	63	65
Operating range	°C	HP	-15÷24	-15÷24	-15÷24
Dimensions (h x w x d)	mm		550 x 780 x 290	550 x 780 x 290	550 x 780 x 290
Weight	kg		33	33	41
Compressor type			DC Rotary	DC Rotary	DC Twin Rotary
Flare connections (gas-liquid)			3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"
Minimum pipe length	m		2	2	2
Maximum pipe length	m		20	20	20
Maximum height difference	m		10	10	10
Chargeless pipe length	m		15	15	15
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

Technology in multisplit systems

When it is necessary to provide total comfort solution for a multi-room application, Toshiba multisplit systems offer the perfect answer for any kind of requirement.

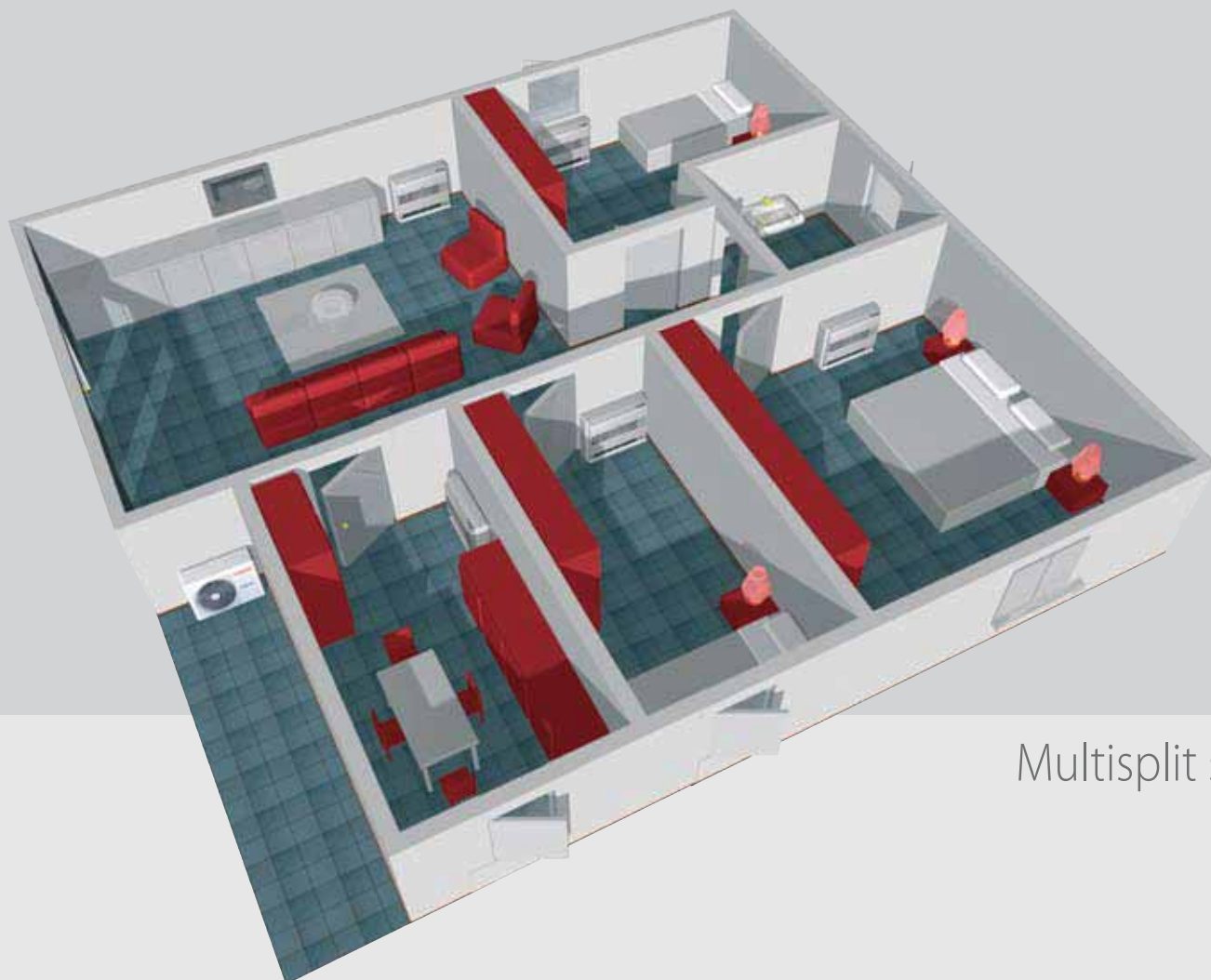
One outdoor unit is capable of operating 2, 3, 4 or 5 indoor units. They are compact and elegant as they are designed to blend in with any room interior. In fact, Toshiba offers a wide range of possibilities to create all the comfort you desire.

The full range of indoor units can satisfy every kind of need: it includes unobtrusive ducted units, console units and modern high walls, that provide hi-tech and sophisticated design and complete air filtration at the same time. Moreover, the efficient inverter systems are composed of high quality components: control electronics, motor, compressor...

Toshiba solutions are studied and verified in every tiny element and are recognised universally by air conditioning professionals for their total reliability. In fact, for Toshiba quality has always been a priority and today and into the future, the quality of Toshiba products will continue to differentiate us from other manufacturers.

5:1





Multisplit system

ENERGY SAVINGS

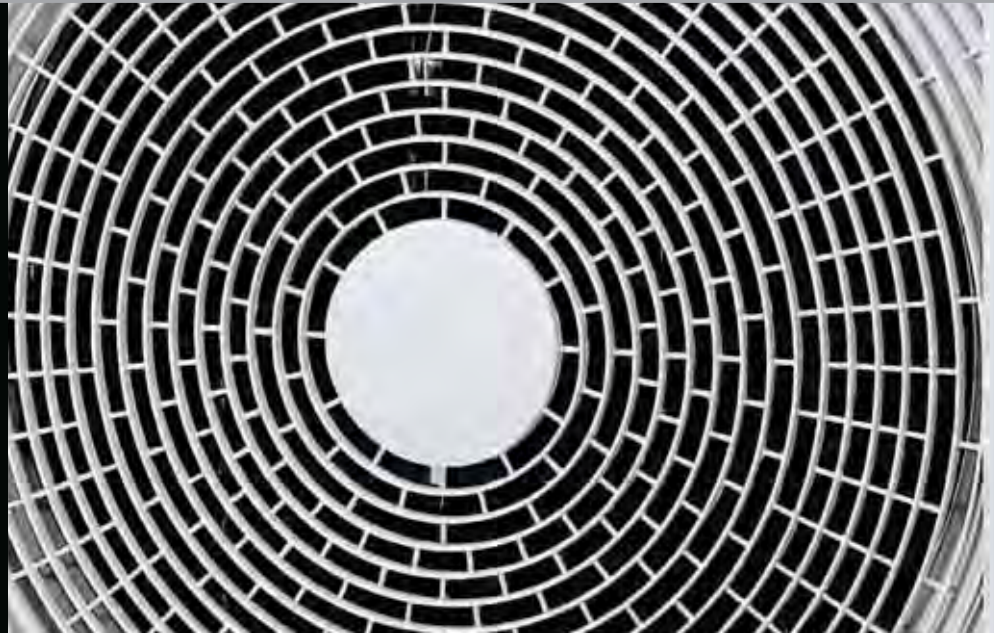
WIDE RANGE OF OUTDOOR UNITS TO TAILOR ANY APPLICATION

HIGH COMFORT

R-410A

DC HYBRID INVERTER

INVERTER MULTI-SPLIT



Wide range of both heat pump and cooling only outdoor units

Up to 70 m pipe run

GAV/SAV Multi-split Outdoor unit

Features

Toshiba multi-splits are equipped with Toshiba DC hybrid inverter, an enhanced feature that ensures improved performance and reliability.

Thanks to the efficient DC compressors, these units provide fast and precise temperature management, with energy savings of 40 – 50% compared to fixed-speed systems.

Key features

Wide range of indoor units available: Daiseikai, high-wall, ducted, cassette 600 x 600 and console.

A perfect combination of DC twin rotary compressor, DC hybrid inverter and R-410A refrigerant.

Superior reliability, due to the reduction of the compressor ON/ OFF cycles.

Low noise levels.

Flexibility: this system allows up to 25 m piping length for one room ensuring the overall length is not exceeded.

Performance data

Outdoor unit			2-room Multisplit	3-room Multisplit		4-room Multisplit
			RAS-M14GAV-E	RAS-3M18SAV-E	RAS-3M26GAV-E1	RAS-4M23SAV-E
Cooling capacity	kW		4,0	5,2	7,5	6,8
Cooling capacity (min. - max.)	kW		1,1 - 4,5	1,4 - 6,5	1,4 - 8,9	1,4 - 7,5
Power input	kW	CO	1,08	1,34	2,25	1,95
EER	W/W		3,70	3,88	3,33	3,49
Energy efficiency class		CO	A	A	A	A
Heating capacity	kW		4,4	6,8	9,0	7,2
Heating capacity (min. - max.)	kW		0,5 - 5,2	0,8 - 7,7	0,8 - 10,8	1,4 - 8,4
Power input	kW	HP	1,01	1,6	2,55	1,63
COP	W/W		4,35	4,25	3,53	4,42
Energy efficiency class		HP	A	A	B	A

Physical data Outdoor unit

Outdoor unit			2-room Multisplit	3-room Multisplit		4-room Multisplit
			RAS-M14GAV-E	RAS-3M18SAV-E	RAS-3M26GAV-E1	RAS-4M23SAV-E
Air Flow	m ³ /h – l/s		1812 - 503	2100 - 583	2802 - 833	2802 - 778
Sound pressure level	dB(A)	CO	46	47	48	47
Sound power level	dB(A)	CO	59	62	61	62
Operating range	°C	CO	5÷43	5÷43	10÷43	5÷43
Sound pressure level	dB(A)	HP	48	49	48	48
Sound power level	dB(A)	HP	61	64	61	63
Operating range	°C	HP	-15÷24	-15÷24	-15÷21	-15÷24
Dimensions (HxWxD)	mm		550 x 780 x 290	695 x 780 x 270	795 x 900 x 320	795 x 900 x 320
Weight	kg		36	47	64	55
Compressor type			DC Twin Rotary	Twin Rotary	DC Twin Rotary	Twin Rotary
Flare connections - gas			3/8" x 2	3/8" x 3	3/8" x 2 + 1/2	3/8" x 4
Flare connections - liquid			1/4" x 2	1/4" x 3	1/4" x 3	1/4" x 4
Maximum pipe length (per unit/total)	m		20/30	20/50	25/50	25/60
Maximum height difference	m		10	10	15	15
Chargeless pipe length	m		20	50	50	40
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

R-410A

DC HYBRID INVERTER

INVERTER MULTI-SPLIT



World's best EER and COP

Compact dimensions

Up to 80 m pipe run

UAV Multi-split Outdoor units

Features

Toshiba new Super efficient DC Twin rotary compressor enables top performance at low energy consumption. With this efficient unit, operating costs decrease dramatically, compare to other multisplit systems.

Key features

Toshiba multi-splits are equipped with Toshiba DC hybrid inverter, an enhanced feature that ensures improved performance and reliability.

Wide range of indoor units available: Super Daiseikai, high-wall, ducted, cassette 600 × 600 and the new Console from Toshiba.

Environmental conscious, with R-410A refrigerant and reduced overall CO₂ emissions.

Superior reliability, due to the reduction of the compressor ON/ OFF cycles.

Low noise levels.

Installation flexibility: this system allows up to 25 m piping length for one room installation, 80 meters as a total length and up to 15 meters in installation height.

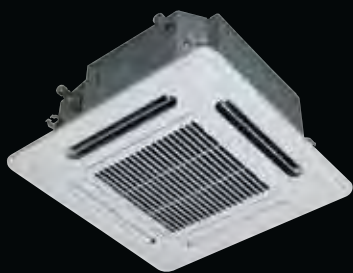
Performance data

Outdoor unit			RAS-M18UAV-E	RAS-4M27UAV-E	RAS-5M34UAV-E1
Cooling capacity	kW		5,2	8,0	10,0
Cooling capacity (min. - max.)	kW		1,4 - 6,2	4,2 - 9,3	3,7 - 11,0
Power input	kW	CO	1,44	2,29	2,92
EER	W/W		3,61	3,50	3,42
Energy efficiency class		CO	A	A	A
Heating capacity	KWh		5,6	9,0	12,0
Heating capacity (min. - max.)	kW		0,9 - 8,3	3,0 - 11,7	3,4 - 14,0
Power input	kW		1,19	1,93	2,83
COP	kW	HP	4,71	4,67	4,24
Energy efficiency class	W/W		A	A	A
Energy efficiency class		HP	A	A	C

Physical data Outdoor unit

Outdoor unit			RAS-M18UAV-E	RAS-4M27UAV-E	RAS-5M34UAV-E1
Air Flow	m ³ /h – l/s	CO	1800-500	2507-696	3245-901
Sound pressure level	dB(A)	CO	49	63	66
Sound power level	dB(A)	CO	64	48	51
Operating range	°C	CO	5÷43	10÷43	10÷43
Air Flow		HP	1950-542	2507-696	3562-989
Sound pressure level	dB(A)	HP	51	64	69
Sound power level	dB(A)	HP	66	49	54
Operating range	°C	HP	-15÷24	-15÷22	-10÷22
Dimensions (HxWxD)	mm		550 x 780 x 290	890 x 900 x 320	890 x 900 x 320
Weight	kg		41	69	75
Compressor type			DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections - gas			3/8" + 1/2"	3/8" x 2 + 1/2" x 2	3/8" x 3 + 1/2" x 2
Flare connections - liquid	m		1/4" x 2	1/4" x 4	1/4" x 5
Maximum pipe length (per unit/total)	m		20 / 30	25 / 70	25 / 80
Maximum height difference	m		10	15	15
Chargeless pipe length	m		20	40	40
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode



R-410A HEAT PUMPS

DC HYBRID INVERTER

Inverter 4-way cassette

Features

This 4-way cassette has been designed to suit all the standard 600 × 600 mm grid ceiling, for easy installation and maintenance.

Its compact and stylish panel design makes it discreet and unobtrusive. Both the installation and the maintenance are really easy, thanks to the simple access to electrical box by simply removing the suction grill.

Key features

Stylish design and compact dimensions to suit all standard 600 × 600 mm grid ceilings.

Complete range from 10 to 16 k. All cassettes will fit standard 600 × 600 mm tiles.

Easy maintenance: easy access to electrical box by simply removing the suction grill.

Easy installation by panel adjust pocket.

All units equipped with IR remotes as standard.

Compact and stylish indoor unit

Standard 600 × 600 mm grid

Easy installation

Physical data Indoor unit

Indoor unit		CO	RAS-M10SMUCV-E	RAS-M13SMUCV-E	RAS-M16SMUCV-E
			RAS-M10SMUV-E	RAS-M13SMUV-E	RAS-M16SMUV-E
Air flow (h/l)	m ³ /h – l/s	CO	588 - 163	618 - 172	660 - 183
Sound pressure level (h/l)	dB(A)	CO	37/30	38/30	40/31
Sound power level	dB(A)	CO	52	53	55
Air flow (h/l)	m ³ /h	HP	558 - 432	618 - 432	660 - 450
Sound pressure level (h/l)	dB(A)	HP	37/30	38/30	40/31
Sound power level	dB(A)	HP	52	53	55
Dimensions (h x w x d)	mm		268 x 575 x 575	268 x 575 x 575	268 x 575 x 575
Weight	kg		15	15	15
Flare connections (gas – liquid)			3/8" – 1/4"	3/8" – 1/4"	1/2" – 1/4"

CO = cooling mode
HP = heating mode



R-410A

DC HYBRID INVERTER

IR REMOTE CONTROL

GDV Inverter ducted

Features

These ducted multi-split inverter units offer reliable and controllable comfort year-round.

The compact and quiet units are suitable for a wide range of residential and light commercial applications, with one outdoor unit serving up to four indoor units.

Key features

Easy-to-use infrared remote control or wired remote control as an option.

Low noise level: the unit operates very quietly.

Very slim design and only 230 mm high, for easier and more flexible installation.

Flexible air inlet: rear or below the unit.

Drain pump kit available as an option.

Up to 63,7 Pa static pressure.

Only 230 mm high

Flexible air return

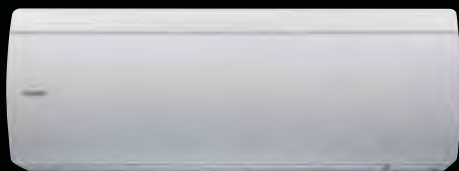
High static pressure

Physical data Indoor unit

Indoor unit	CO		RAS-M10GDCV-E	RAS-M13GDCV-E	RAS-M16GDCV-E
	HP		RAS-M10GDV-E	RAS-M13GDV-E	RAS-M16GDV-E
Air flow (h/l)	m ³ /h – l/s	CO	720/400 – 200/111	780/428 – 217/119	780/428 – 217/119
Sound pressure level (h/l)	dB(A)	CO	31/23	32/24	33/25
Sound power level (h/l)	dB(A)	CO	44/36	45/37	46/38
Air flow (h/l)	m ³ /h – l/s	HP	720/450 – 200/111	780/428 – 217/119	780/428 – 217/119
Sound pressure level (h/l)	dB(A)	HP	32/24	33/25	34/26
Sound power level (h/l)	dB(A)	HP	45/37	46/33	47/34
Dimensions (h x w x d)	mm		230 x 750 x 440	230 x 750 x 440	230 x 750 x 440
Weight	kg		19	19	19
Flare connections (gas – liquid)			3/8" – 1/4"	3/8" – 1/4"	1/2" – 1/4"
External static pressure* (stand/upper limit)	Pa		35,3/54,9	41,2/63,7	41,2/63,7

* static pressure at nominal condition

CO = cooling mode
HP = heating mode



R-410A HEAT PUMPS

DUAL STAGE COMPRESSOR

FIVE SIZES RANGE

Super Daiseikai PKVP/PAVP Inverter high-wall

Features

The new SuperDaiseikai has been designed and created with the objective to provide excellence, respecting the latest eco-evolution trends and maintaining the ultimate comfort.

World's best class energy efficiency.

Pure air.

Premium design.

Key features

Fast filtration: impurities are ionized by the ion charger and absorbed by the new heat exchanger.

Self cleaning to prevent the growth of mold inside the unit.

New air purifier

Stylish new design

Wide air flow area

Physical data Indoor unit

Indoor unit			M10PKVP-E	M13PKVP-E	M16PKVP-E	M18PKVP-E
Air Flow (h/l)	m ³ /h - l/s	CO	624/306 - 173/85	696/318 - 193/88	744/372 - 207/103	804/408 - 223/113
Sound pressure level (h/l)		dB(A) CO	43/27	45/27	47/30	49/31
Sound power level (h/l)		dB(A) CO	58/42	60/42	62/45	64/46
Air Flow (h/l)	m ³ /h - l/s	HP	666/348 - 185/97	696/348 - 193/97	744/384 - 207/107	804/420 - 223/117
Sound pressure level (h/l)		dB(A) HP	43/27	45/27	47/30	49/31
Sound power level (h/l)		dB(A) HP	58/42	60/42	62/45	64/46
Dimensions (h x w x d)	mm		295 x 790 x 242	295 x 790 x 242	295 x 790 x 242	295 x 790 x 242
Weight	kg		12	12	12	12
Flare connections (gas-liquid)			3/8" - 2/8"	3/8" - 2/8"	4/8" - 2/8"	1/2" - 1/4"

CO = cooling mode
HP = heating mode



Suzumi SKV Inverter high-wall

Features

This elegant unit combines an improved energy efficiency with indoor air quality.

Suzumi+ is very silent and feature a unique "Quiet" button on the remote control, to further increase the acoustic comfort.

Key features

One touch my comfort button. Memorize the desired operation parameters.

Toshiba new IAQ filter filtration system includes extremely powerful anti virus, anti bacteria and the deodorizing effects.

Self cleaning function to remove moist from the internal components of the unit.

Modern and compact design.co = cooling mode

HP = heating mode

COP 4,27

R-410A

DEODORIZING EFFECT

Modern design

Comfort sleep function

Physical data Indoor unit

Indoor unit			M10SKV-E	M13SKV-E	M16SKV-E	M22SKV-E	M24SKV-E
Air Flow	m ³ /h - l/s	CO	522 - 145	563 - 156	684 - 190	1080 - 300	1134 - 315
Sound pressure level (h/l)	dB(A)	CO	38/29	39/26	45/30	47/35	49/37
Sound power level (h/l)	dB(A)	CO	51/42	52/39	58/43	60/48	62/50
Air Flow	m ³ /h - l/s	HP	576 - 160	630 - 175	743 - 206	1098 - 305	1152 - 320
Sound pressure level (h/l)	dB(A)	HP	40/30	40/28	45/31	47/35	49/37
Sound power level (h/l)	dB(A)	HP	53/43	53/41	58/44	60/48	62/50
Dimensions (h x w x d)	mm		250 x 740 x 195	275 x 790 x 205	275 x 790 x 205	320 x 1050 x 228	320 x 1050 x 228
Weight	kg		8	9	9	13	13
Flare connections (gas-liquid)			3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"	1/2" - 1/4"	1/2" - 1/4"

CO = cooling mode
HP = heating mode



A/A CLASS

R-410A

DEODORIZING EFFECT

Smart user interface

Floor heating mode

Compact design

UFV Inverter console

Features

Innovative and compact unit to be installed on the floor and in low wall applications, fit perfectly under the window sills or in a low ceiling attic.

Unique floor heating function, to deliver a powerful flow at floor level for a uniform and comfortable room heating.

Key features

Compact and modern design in all three dimensions (60 × 70 × 22 cm).

Bi-flow. Two outlets for complete personalized flow: flow intensity and air direction control.

Toshiba new IAQ filter filtration system, includes extremely powerful anti virus, anti bacteria and the deodorizing effects.

Child lock function on the unit display panel.

Brightness level control of the display unit to reduce the led light glow.

Automatic restart function in case of unexpected electricity supply line power cuts.

Physical data Indoor unit

Indoor unit		CO	RAS-B10UFV-E	RAS-B13UFV-E	RAS-B18UFV-E
		HP	RAS-B10UFV-E	RAS-B13UFV-E	RAS-B18UFV-E
Air Flow	m ³ /h – l/s	CO	468 - 130	510 - 142	600 - 167
Sound pressure level (h/l)	dB(A)	CO	39/26	40/27	46/34
Sound power level (h/l)	dB(A)	CO	54	55	61
Air Flow	m ³ /h – l/s	HP	510 - 142	552 - 153	642 - 178
Sound pressure level (h/l)	dB(A)	HP	39/26	40/27	46/34
Sound power level (h/l)	dB(A)	HP	54	55	61
Dimensions (h x w x d)	mm		600 x 700 x 220	600 x 700 x 220	600 x 700 x 220
Weight	kg		16	16	16
Flare connections (gas-liquid)			3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"

CO = cooling mode
HP = heating mode



Heat Pump	Indoor unit		Hi-Wall PKVP	Hi-wall SKV	Console UFV	Ducted GDV	Cassette SMUV
RAS-M14GAV-E	HP	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	-
	HP	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	-
RAS-M18UAV-E	HP	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	HP	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	HP	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
RAS-3M18SAV-E	HP	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	HP	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	HP	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
RAS-3M26GAV-E1	HP	7	-	RAS-M07SKV-E	-	-	-
	HP	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	HP	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	HP	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
	HP	18	RAS-M18PKVP-E (ND)	-	RAS-B18UFV-E	-	-
RAS-4M23SAV-E	HP	10	-	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	HP	13	-	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	HP	16	-	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
RAS-4M27UAV-E	HP	7	-	RAS-M07SKV-E	-	-	-
	HP	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	HP	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	HP	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
	HP	18	RAS-M18PKVP-E (ND)	-	RAS-B18UFV-E	-	-
RAS-5M34UAV-E1	HP	7	-	RAS-M07SKV-E	-	-	-
	HP	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	HP	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	HP	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
	HP	18	RAS-M18PKVP-E (ND)	-	RAS-B18UFV-E	-	-
	HP	22	-	RAS-M22SKV-E	-	-	-
	HP	24	-	RAS-M24SKV-E	-	-	-

The light commercial range. The applications

Digital and Super Digital Inverter air conditioners perfectly satisfy the requirement of the commercial sector for the best return on your investment.

Toshiba offers the best options on operating costs, flexibility and maintenance.

Moreover, thanks to its flexibility, Toshiba can always find the ideal product for any requirement: high performance, technology, compactness, optimum comfort.

Simplicity and beyond

The Digital Inverter range for business applications provides compact, light weight units with exceptional performance.

Thanks to the TCC-Link communication system, the systems suit any installation with little business disruption.

In addition, most of the Super Digital Inverter* boasts energy efficiency class A and enables an even larger range of applications.

The wide range of indoor units is able to satisfy any kind of requirement and the enhanced DC twin rotary compressor delivers stable performance with less friction, making this system really silent.

**except for 3HP high-wall*



Light Commercial

The light commercial range
The most advanced systems for the professionals.



Light Commercial

Solutions for professionals, from professionals

Toshiba Digital and Super Digital Inverter systems deliver exceptional operating savings in extremely compact units.

With state-of-the-art technologies, flexible controls and improved installation they bring comfort and convenience to any business installation.

A complete range of indoor units satisfies all commercial applications: ceiling, cassette, ducted, suspended, high-wall and flexi units.

The enlargement of the range with maximum cooling capacities up to 27 kW allows to address even more commercial applications with larger volumes.

When the inverter becomes digital

The technology of the Digital Inverter control module ensures optimised reproduction of the supply sine wave at the desired frequency, in order to reduce inefficient harmonics that inverters normally emit.

With this innovative control method, the Toshiba Digital Inverter brings state-of-the-art inverter technology to the commercial sector, offering considerable advantages in terms of capacity, energy savings and optimised comfort.

The compressor operation is practically imperceptible.

Who says that you must choose between improved performance and minimised consumption?

The Toshiba Digital and Super Digital Inverters systems are powerful and extremely efficient.

They provide air conditioning with great energy savings.

The new series 4 of Super Digital Inverter provides the best efficiency performance in the industry: up to 4,52 EER in cooling mode and up to 4,79 COP in heating mode.

In most applications, these systems can reduce energy consumption by up to 50% compared with traditional fixed speed units.

The variable capacity management of the compressor allows the Digital and Super Digital Inverter to maintain room temperature control and to ensure minimum energy wastage.

The new series Super Digital Inverter 4 and Digital Inverter 3 can fit R22 or R407C old pipes in case of replacement of high-consuming fixed speed systems.



Absolute ease-of-installation

Superior compactness and capacity

Maximised operating economy

Total unit control



All the flexibility you have ever dreamt of

If you want high performance, compact units and optimum comfort, Toshiba has the ideal product for your requirements.

With the continuous improvement of the inverter control system, Toshiba offers vector control for its DC hybrid inverter, which enhances system efficiency and reduces noise levels in the power lines.

The new developments in electronics have been complemented by compressor innovation.

High-tech elements include improved coils, high precision components and higher refrigerant compression thanks to redesigned compression channels.

The new technology applied to Super Digital Inverter series 4 is able to satisfy applications that require cooling at low operating conditions down to -15°C .

Powerful heating capacities are possible at -20°C outdoor temperature.

The enhanced Eco-driving DC twin-rotary compressor delivers stable performance with extremely low rotor friction, making it ideal for noise-sensitive applications as well as for efficient operations in partial load conditions.



R-410A HEAT PUMPS

ECO-DRIVING COMPRESSORS

A-CLASS SYSTEM



Super Digital Inverter 4 Outdoor unit

Features

The new Super Digital Inverter, series 4, sets a new limit for the industry energy performance.

The seasonal and the rated efficiencies are the highest in the industry for capacities from 10 to 12,5 kW.

The air management system has been improved: high efficiency fan motors, larger fans and new fan grille design also contribute to the exceptional energy performance.

Piping and operating limits improved.

The new system can work at extremely low temperatures, in cooling and heating.

Admitted pipe length is up to 75 m.

SDI4 are designed for R410A refrigerant, but can also fit R22 or R407C piping refrigerants in case of refurbishment.

Key features

The best EER/COP values in the industry.

Most systems are A-class rated in cooling and heating operation. The new systems provide excellent seasonal energy performance, thus saving up to 70% annual energy cost compared to fixed speed systems.

The structure and magnetic action of the new Eco-driving twin-rotary compressors provide excellent energy performance at full load as well as in partial load conditions (operation down to 10 rps).

Longer pipe runs, up to 75 m length and 30 m elevation for increased installation flexibility (4HP ÷ 6HP).

Wide operating range: down to -15 °C in cooling mode and down to -20 °C in heating mode (2HP ÷ 6HP).

The Toshiba "anti-ice" circuit prevents the condenser to be caught in ice in winter.

The extended capacity range with 3 phases units from 10 to 14 kW, broaden the spectrum of light commercial installation possibilities.

The best EER and COP

Wide operating range; down to -15 °C in cooling and -20 °C in heating



Single phase

Physical data outdoor unit

Outdoor unit			RAV-SP404AT-E	RAV-SP454AT-E	RAV-SP564AT-E	RAV-SP804AT-E	RAV-SP1104AT-E	RAV-SP1404AT-E
			1,5 HP	1,7 HP	2 HP	3 HP	4 HP	5 HP
Air Flow	m ³ /h – l/s		2400 - 667	2400 - 667	2400 - 667	3000 - 833	6060 - 1683	6180 - 1716
Sound pressure level	dB(A)	CO	45	45	47	48	49	51
Sound power level	dB(A)	CO	62	62	63	64	66	68
Operating range	°C	CO	-15 / 43	-15 / 43	-15 / 43	-15 / 43	-15 / 43	-15 / 43
Sound pressure level	dB(A)	HP	47	47	48	49	50	52
Sound power level	dB(A)	HP	64	64	64	65	67	69
Operating range	°C	HP	-15 / 15	-15 / 15	-20 / 15	-20 / 15	-20 / 15	-20 / 15
Dimensions (HxWxD)	mm		550 x 780 x 290	550 x 780 x 290	550 x 780 x 290	890 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320
Weight	kg		40	40	44	63	93	93
Compressor type			DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections								
Gas	in		1/2	1/2	1/2	5/8	5/8	5/8
Liquid	in		1/4	1/4	1/4	3/8	3/8	3/8
Minimum pipe length	m		5	5	5	5	3	3
Maximum pipe length	m		30	30	50	50	75	75
Maximum height difference	m		30	30	30	30	30	30
Chargeless pipe length	m		20	20	20	30	30	30
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

Three phase

Physical data outdoor unit

Outdoor unit			RAV-SP1104AT8-E	RAV-SP1404AT8-E	RAV-SP1604AT8-E
			4 HP	5 HP	6 HP
Air Flow	m ³ /h – l/s		6060 - 1683	6180 - 1717	6180 - 1717
Sound pressure level	dB(A)	CO	49	51	51
Sound power level	dB(A)	CO	66	68	68
Operating range	°C	CO	-15 / +46	-15 / +46	-15 / +46
Sound pressure level	dB(A)	HP	50	52	53
Sound power level	dB(A)	HP	67	69	70
Operating range	°C	HP	-20 / +15	-20 / +15	-20 / +15
Dimensions (HxWxD)	mm		1340 x 900 x 320	1340 x 900 x 320	1340 x 900 x 320
Weight	kg		95	95	95
Compressor type			DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections					
Gas	in		5/8	5/8	5/8
Liquid	in		3/8	3/8	3/8
Minimum pipe length	m		3	3	3
Maximum pipe length	m		75	75	75
Maximum height difference	m		30	30	30
Chargeless pipe length	m		30	30	30
Power supply	V-ph-Hz		380/415-3N-50	380/415-3N-50	380/415-3N-50

CO = cooling mode
HP = heating mode

R-410A HEAT PUMPS

VECTOR IPDU INVERTER

HIGH PERFORMANCE



Digital Inverter 3 Outdoor unit

Performing EER

Light and compact: easy to install

Compatible with a wide range of indoor units

Features

Toshiba Digital Inverter 3 is an advanced solution that can meet the growing market need for ease of installation and increased consumer comfort. This new system, which uses the environmentally friendly refrigerant R410A, can use piping designed for old R22 or R407C refrigerants. This new solution enables old high-energy consumption air conditioning systems to be replaced by the most advanced inverter units, with significant benefits in terms of performance, acoustic comfort and energy-efficiency.

Key features

Extremely light and compact condensing units: easy to install in small spaces.

Excellent EER with significant savings in annual power consumption.

Compatible with a wide choice of indoor units: ceiling, 4-way cassette, compact 4-way cassette, ducted, high-wall and flexi units.

The Vector Intelligent Drive Unit (IPDU) technology ensures high performance.

Simplified maintenance using the new TCC-Link wired remote control panel.



Single phase

Physical data outdoor unit

Outdoor unit			RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E	RAV-SM1403AT-E	RAV-SM1603AT-E
			2 HP	3 HP	4 HP	5 HP	6 HP
Air Flow	m ³ /h – l/s		2400 - 667	2700 - 750	4500 - 1250	4500 - 1250	6180 - 1717
Sound pressure level	dB(A)	CO	46	48	53	54	51
Sound power level	dB(A)	CO	63	65	70	71	68
Operating range	°C	CO	-15 / +43	-15 / +43	-15 / +43	-15 / +43	-15 / +43
Sound pressure level	dB(A)	HP	48	50	54	54	53
Sound power level	dB(A)	HP	65	67	71	71	70
Operating range	°C	HP	-15 / +15	-15 / +15	-15 / +15	-15 / +15	-15 / +15
Dimensions (HxWxD)	mm		550 x 780 x 290	550 x 780 x 290	795 x 900 x 320	795 x 900 x 320	1340 x 900 x 320
Weight	kg		38	44	77	77	99
Compressor type			DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections							
Gas	in		1/2	5/8	5/8	5/8	5/8
Liquid	in		1/4	3/8	3/8	3/8	3/8
Minimum pipe length	m		5	5	5	5	5
Maximum pipe length	m		30	30	50	50	50
Maximum height difference	m		30	30	30	30	30
Chargeless pipe length	m		20	20	30	30	30
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

R-410A HEAT PUMPS

INVERTER DRIVEN

HIGH CAPACITY



Big Digital Inverter Outdoor Unit

Compact outdoor unit

Extended operation range

High EER and COP

Features

The new Big DI inverter proposes an alternative cost competitive solution for medium size applications like shop and small office buildings.

The big DI system is the ideal solution in case of a large volume with single temperature control as it allows simultaneous operation of 2, 3 or up to 4 identical indoor units.

Toshiba concentrates a set of new high technologies in one unit, to deliver a top COP and EER* together with big capacity, still offering a very compact and flexible installation; through extensive piping run and a wide range of indoor units connection (please refer to page 32). Thanks to an extended operation range, the big DI allows comfortable environment throughout the whole year.

Key features

Cost competitive solution for high capacity applications of up to 27 kW** cooling, concentrated in only 0.29 m² footprint.

High-tech concentration (new twin rotary DC compressor, DC fan motor combined to a new propeller fan, vector controlled inverter and a 3-row heat exchanger) allowing to achieve Top energy class up to a EER of 3.21 and a COP of 3.85*

Wide operation range down to -20 °C in heating mode, down to -15 °C and up to 46 °C in cooling mode.

Long piping run up to 70 m total length and 30 m elevation.

Reuse of existing R22 and R407C piping capability.



*20 kW in 4 way-cassette twin combination

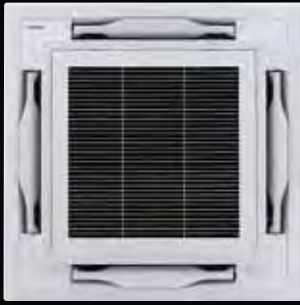
**Maximum cooling capacity for RAV-SM2804AT8-E

Three phase

Physical data outdoor unit

Outdoor unit			RAV-SM2244AT8-E 8 HP	RAV-SM2804AT8-E 10 HP
Air Flow	m ³ /h - l/s		8000 - 2222	9000 - 2500
Sound pressure level	dB(A)	CO	56	57
Sound power level	dB(A)	CO	72	74
Operating range	°C	CO	-15 / +46	-15 / +46
Sound pressure level	dB(A)	HP	57	58
Sound power level	dB(A)	HP	74	75
Operating range	°C	HP	-20 / +15	-20 / +15
Dimensions (HxWxD)	mm		1540 x 900 x 320	1540 x 900 x 320
Weight	kg		134	134
Compressor type			DC Twin Rotary	DC Twin Rotary
Flare connections				
Gas	in		1 1/8	1 1/8
Liquid	in		1/2	1/2
Minimum pipe length	m		7,5	7,5
Maximum pipe length	m		70	70
Maximum height difference	m		30	30
Chargeless pipe length	m		30	30
Power supply	V-ph-Hz		380/415-3N-50	380/415-3N-50

CO = cooling mode
HP = heating mode

**R-410A HEAT PUMPS****DIGITAL/SUPER DIGITAL
INVERTER****NEW DESIGN CEILING PANEL**

Uniform air distribution

Light and easy to install

Three different setting modes

SM_UT New 4-way cassette

Features

This new 4-way cassette is unobtrusive and flexible and can easily blend in with any room interior.

Thanks to the new ceiling panel, it grants uniform air distribution, providing total comfort. This system is ideal for small commercial applications.

Key features

Two louver shape options: straight flow louver and wide flow louver; optimum air distribution.

Light-weight unit, for easy and quick installation.

Built-in drain pump.

Simple maintenance, thanks to the Self-cleaning function and the Ag-ion tip for anti-mould in drain cap.

Individual setting of louver position:
3 different Swing modes: standard, diagonally opposite, turn-around.

Optional wired remote control RBC-AX31U(W)-E.

Performance data with Super Digital Inverter Serie 4

Outdoor unit		RAV-SP564AT-E	RAV-SP804AT-E	RAV-SP1104AT-E	RAV-SP1104AT8-E	RAV-SP1404AT-E	RAV-SP1404AT8-E	RAV-SP1604AT8-E
Indoor unit (Cassette)		RAV-SM564UT-E	RAV-SM804UT-E	RAV-SM1104UT-E	RAV-SM1104UT-E	RAV-SM1404UT-E	RAV-SM1404UT-E	RAV-SM1604UT-E
Cooling capacity	kW	5,3	7,1	10,0	10,0	12,5	12,5	14,0
Cooling range (min. - max.)	kW	1,2 - 5,6	1,9 - 8,0	2,6 - 12,0	2,6 - 12,0	2,6 - 14,0	2,6 - 14,0	2,6 - 16,0
Power input (min. - rated - max.)	kW CO	0,20 - 1,47 - 1,95	0,30 - 1,86 - 2,52	0,64 - 2,21 - 3,88	0,66 - 2,37 - 3,60	0,64 - 3,16 - 4,21	0,66 - 3,46 - 4,40	0,66 - 4,49 - 5,70
EER		3,61	3,82	4,52	4,22	3,96	3,61	3,12
Energy efficiency class	CO	A	A	A	A	-	-	-
Annual energy consumption	kWh	735	930	1105	1185	1580	1730	2245
Heating capacity	kW	5,6	8,0	11,2	11,2	14,0	14,0	16,0
Heating range (min. - max.)	kW	0,9 - 8,1	1,3 - 11,3	2,4 - 13,0	2,4 - 15,6	2,4 - 16,5	2,4 - 18,0	2,4 - 19,0
Power input (min. - rated - max.)	kW HP	0,15 - 1,21 - 2,40	0,25 - 1,91 - 3,52	0,52 - 2,34 - 3,75	0,53 - 2,42 - 4,30	0,52 - 3,21 - 4,50	0,53 - 3,42 - 5,50	0,53 - 4,30 - 6,51
COP		4,63	4,19	4,79	4,63	4,36	4,09	3,72
Energy efficiency class	HP	A	A	A	A	-	-	-

Performance data with Digital Inverter Serie 3

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E	RAV-SM1403AT-E	RAV-SM1603AT-E
Indoor unit (4-way Cassette)		RAV-SM564UT-E	RAV-SM804UT-E	RAV-SM1104UT-E	RAV-SM1404UT-E	RAV-SM1604UT-E
Cooling capacity	kW	5,3	6,7	10,0	12,0	14,0
Cooling range (min. - max.)	kW	1,5 - 5,6	1,5 - 8,0	3,0 - 11,2	3,0 - 13,2	3,0 - 16,0
Power input (min. - rated - max.)	kW CO	0,35 - 1,65 - 1,86	0,45 - 2,09 - 2,60	0,60 - 3,11 - 4,10	0,65 - 3,74 - 4,50	0,65 - 4,49 - 5,70
EER		3,21	3,21	3,22	3,21	3,12
Energy efficiency class	CO	A	A	A	A	-
Annual energy consumption	kWh	825	1045	1555	1870	2245
Heating capacity	kW	5,6	8,0	11,2	14,0	16,0
Heating range (min. - max.)	kW	1,5 - 6,3	1,5 - 9,0	3,0 - 13,0	3,0 - 16,0	3,0 - 18,0
Power input (min. - rated - max.)	kW HP	0,35 - 1,44 - 2,08	0,45 - 2,21 - 3,03	0,60 - 2,93 - 4,30	0,65 - 3,80 - 4,50	0,65 - 4,43 - 6,51
COP		3,89	3,62	3,82	3,68	3,61
Energy efficiency class	HP	A	A	A	A	-

Physical data indoor unit

Indoor unit		RAV-SM564UT-E	RAV-SM804UT-E	RAV-SM1104UT-E	RAV-SM1404UT-E	RAV-SM1604UT-E
Air Flow (H/L)	m ³ /h - l/s	1050/780 - 291/217	1230/810 - 341/225	2010/1170 - 558/325	2100/1230 - 583/341	2130/1260 - 592/350
Sound pressure level (H-M-L)	dB(A)	32-29-28	35-31-28	43-38-33	44-38-34	45-40-36
Sound power level (H-M-L)	dB(A)	47-44-43	50-46-43	58-53-48	59-53-49	60-55-51
Dimensions (HxWxD)	mm	256 x 840 x 840	256 x 840 x 840	319 x 840 x 840	319 x 840 x 840	319 x 840 x 840
Weight	kg	20	20	24	24	24
Panel dimensions (HxWxD)	mm	30x950x950	30x950x950	30x950x950	30x950x950	30x950x950
Panel weight	kg	4,2	4,2	4,2	4,2	4,2

CO = cooling mode

H = heating mode

H-M-L = High - Medium - Low speed



R-410A HEAT PUMPS

DIGITAL/SUPER DIGITAL INVERTER

COMPACT DIMENSIONS

Suitable for standard grid

Easy installation and maintenance

Slim and unobtrusive design

SM_MUT **Compact 4-way cassette**

Features

This 4-way cassette has been designed to suit all standard 600 x 600 mm grid ceilings, for easy installation and maintenance.

Its compact design blends with any room interior, where appearance is as important as functionality.

Draught prevention and clean ceiling functions make this unit ideal for the most demanding applications.

When combined with the Super Digital Inverter outdoor unit, the highest energy label (A) is achieved.

Key features

Slim-line dimensions: this cassette is suitable for the most demanding installations where ceiling height is reduced.

Same dimensions for all capacities: the installation is always smart and elegant.

Easy maintenance: ease of access to the corner pockets facilitates installation and adjustment for perfect ceiling fitting.

Easy installation with a built-in drain pump.

TCC Link control panel makes control of the system flexible and simplifies maintenance.

Performance data with Super Digital Inverter Serie 4

Outdoor unit		RAV-SP404AT-E	RAV-SP454AT-E	RAV-SP564AT-E
Indoor unit (600X600 Cassette)		RAV-SM404MUT-E	RAV-SM454MUT-E	RAV-SM564MUT-E
Cooling capacity	kW	3,6	4,0	5,0
Cooling range (min. - max.)	kW	1,5 - 4,0	1,5 - 4,5	1,2 - 5,6
Power input (min. - rated - max.)	kW CO	0,36 - 1,00 - 1,49	0,36 - 1,19 - 1,49	0,21 - 1,56 - 2,29
EER	W/W	3,60	3,36	3,21
Energy efficiency class	CO	A	A	A
Annual energy consumption	kWh	500	595	780
Heating capacity	kW	4,0	4,5	5,6
Heating range (min. - max.)	kW	1,5 - 5,0	1,5 - 5,6	0,9 - 7,4
Power input (min. - rated - max.)	kW HP	0,36 - 0,97 - 2,20	0,36 - 1,16 - 2,30	0,17 - 1,54 - 2,37
COP	W/W	4,12	3,88	3,64
Energy efficiency class	HP	A	A	A

Performance data with Digital Inverter Serie 3

Outdoor unit		RAV-SM563AT-E
Indoor unit (600X600 Cassette)		RAV-SM564MUT-E
Cooling capacity	kW	5,0
Cooling range (min. - max.)	kW	1,5 - 5,6
Power input	kW CO	0,40 - 1,61 - 1,86
EER	W/W	3,11
Energy efficiency class	CO	B
Annual energy consumption	kWh	805
Heating capacity	kW	5,6
Heating range (min. - max.)	kW	1,5 - 6,3
Power input	kW HP	0,40 - 1,61 - 2,40
COP	W/W	3,48
Energy efficiency class	HP	B

Physical data indoor unit

Indoor unit		RAV-SM404MUT-E	RAV-SM454MUT-E	RAV-SM564MUT-E
Air Flow (H/L)	m ³ /h - l/s	660/468 - 183/130	660/468 - 183/130	798/546 - 222/152
Sound pressure level (H-M-L)	dB(A)	40-36-31	40-36-31	43-39-34
Sound power level (H-M-L)	dB(A)	55-51-46	55-51-46	58-54-49
Dimensions (HxWxD)	mm	268 x 575 x 575	268 x 575 x 575	268 x 575 x 575
Weight	kg	17	17	17
Panel dimensions (HxWxD)	mm	27 x 700 x 700	27 x 700 x 700	27 x 700 x 700
Panel weight	kg	3	3	3

CO = cooling mode
HP = heating mode

H-M-L = High - Medium - Low speed



R-410A HEAT PUMPS

**DIGITAL/SUPER DIGITAL
INVERTER**

DISCREET DUCTED UNITS

— Infra-red control option

— Discharge spigots as standard

— High static pressure up to 98 Pa

SM_BT Ducted

Features

Whatever the shape of the room could be, ducted units ensure uniform temperatures in it.

The unit can be discreetly positioned in the walls or ceiling.

It's ideal for hotels, banks and similar applications, where very low noise levels are needed.

Key features

Wide range of applications: the use of ducts ensures flexible installations.

Improved room aesthetic: it's unobtrusive and discreet.

High static pressure: 98 Pa can be achieved and all the areas of the room can have the same temperature simultaneously.

High-lift drain pump kit: raises drain up to 290 mm for flexible condensate piping layout.

Performance data with Super Digital Inverter Serie 4

Outdoor unit		RAV-SP564AT-E	RAV-SP804AT-E	RAV-SP1104AT-E	RAV-SP1104AT8-E	RAV-SP1404AT-E	RAV-SP1404AT8-E
Indoor unit (Standard Duct)		RAV-SM564BT-E	RAV-SM804BT-E	RAV-SM1104BT-E	RAV-SM1104BT-E	RAV-SM1404BT-E	RAV-SM1404BT-E
Cooling capacity	kW	5,0	7,1	10,0	10,0	12,5	12,5
Cooling range (min. - max.)	kW	1,2 - 5,6	1,9 - 8,0	2,6 - 12,0	2,6 - 12,0	2,6 - 14,0	2,6 - 14,0
Power input (min. - rated - max.)	kW CO	0,21 - 1,56 - 2,05	0,30 - 2,21 - 2,88	0,64 - 2,94 - 3,80	0,66 - 2,94 - 4,01	0,64 - 3,83 - 4,47	0,66 - 3,86 - 4,89
EER		3,21	3,21	3,40	3,40	3,26	3,24
Energy efficiency class	CO	A	A	A	A	-	-
Annual energy consumption	kWh	780	1105	1470	1470	1915	1930
Heating capacity	kW	5,6	8,0	11,2	11,2	14,0	14,0
Heating range (min. - max.)	kW	0,9 - 7,4	1,3 - 10,6	2,4 - 13,0	2,40 - 14,0	2,4 - 16,5	2,40 - 18,0
Power input (min. - rated - max.)	kW HP	0,17 - 1,55 - 2,51	0,27 - 2,21 - 3,50	0,52 - 2,77 - 4,00	0,53 - 2,77 - 4,42	0,52 - 3,41 - 4,50	0,53 - 3,55 - 5,71
COP		3,61	3,62	4,04	4,04	4,11	3,94
Energy efficiency class	HP	A	A	A	A	-	-

Performance data with Digital Inverter Serie 3

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E	RAV-SM1403AT-E
Indoor unit (Standard Duct)		RAV-SM564BT-E	RAV-SM804BT-E	RAV-SM1104BT-E	RAV-SM1404BT-E
Cooling capacity	kW	5,0	7,1	10,0	12,5
Cooling range (min. - max.)	kW	1,5 - 5,6	1,5 - 7,4	3,0 - 12,5	3,0 - 13,2
Power input (min. - rated - max.)	kW CO	0,45 - 1,78 - 1,95	0,50 - 2,53 - 2,76	0,60 - 3,56 - 4,50	0,65 - 4,42 - 4,85
EER		2,81	2,81	2,81	2,83
Energy efficiency class	CO	C	C	C	-
Annual energy consumption	kWh	890	1265	1780	2210
Heating capacity	kW	5,6	8,0	11,2	14,0
Heating range (min. - max.)	kW	1,5 - 6,3	1,5 - 9,0	3,0 - 12,5	3,0 - 16,0
Power input (min. - rated - max.)	kW HP	0,45 - 1,71 - 2,47	0,50 - 2,41 - 3,18	0,60 - 3,14 - 4,00	0,65 - 4,03 - 4,55
COP		3,27	3,32	3,57	3,47
Energy efficiency class	HP	C	C	B	-

Physical data indoor unit

Indoor unit		RAV-SM564BT-E	RAV-SM804BT-E	RAV-SM1104BT-E	RAV-SM1404BT-E
Air Flow (H/L)	m ³ /h – l/s	780/588 - 217/163	1140/798 - 317/222	1620/1134 - 450/315	1980/1386 - 550/385
Sound pressure level (H-M-L)	dB(A)	40-37-33	40-37-34	42-39-36	44-41-38
Sound power level (H-M-L)	dB(A)	55-52-48	55-52-49	57-54-51	59-56-53
Dimensions (HxWxD)	mm	320 x 700 x 800	320 x 1000 x 800	320 x 1350 x 800	320 x 1350 x 800
Weight	kg	30	39	54	54
External static pressure (stand/upper limit)	Pa	40/100	40/100	40/100	40/90

CO = cooling mode

HP = heating mode

H-M-L = High - Medium - Low speed



R-410A HEAT PUMPS

**DIGITAL/SUPER DIGITAL
INVERTER**

1,5 – 2 HP RANGE

Slim profile

Self cleaning

SM_SDT Slim Duct

Features

Very compact design unit with low height dimension for flexible ceiling installations. Combines with the new small sizes of the high performances Super Digital Inverter outdoor units, for commercial applications which require limited power (1,5 HP).

Key features

High energy efficiency performances in cooling and heating.

Two choice of selection for the air inlet section: bottom or back side.

Natural drain discharge port and drain pump (up to 850 mm).

Easy to install and service.

Cleanable prefilter included.

Fresh air inlet possibility via a pre-punched knock hole.

Performance data with Super Digital Inverter Serie 4

Outdoor unit		RAV-SP404AT-E	RAV-SP454AT-E	RAV-SP564AT-E
Indoor unit (Slim duct)		RAV-SM404SDT-E	RAV-SM454SDT-E	RAV-SM564SDT-E
Cooling capacity	kW	3,6	4,0	5,0
Cooling range (min. - max.)	kW	1,5 - 4,0	1,5 - 4,5	1,2 - 5,6
Power input (min. - rated - max.)	kW CO	0,37 - 1,03 - 1,25	0,37 - 1,2 - 1,49	0,21 - 1,56 - 2,29
EER	W/W	3,50	3,33	3,21
Energy efficiency class	CO	A	A	A
Annual energy consumption	kWh	515	600	780
Heating capacity	kW	4,0	4,5	5,6
Heating range (min. - max.)	kW	1,5 - 5,0	1,5 - 5,6	0,9 - 7,4
Power input (min. - rated - max.)	kW HP	0,37 - 1,00 - 2,20	0,37 - 1,15 - 2,30	0,17 - 1,44 - 2,37
COP	W/W	4,00	3,91	3,89
Energy efficiency class	HP	A	A	A

Performance data with Digital Inverter Serie 3

Outdoor unit		RAV-SM563AT-E
Indoor unit (Slim duct)		RAV-SM564SDT-E
Cooling capacity	kW	5,0
Cooling range (min. - max.)	kW	1,5 - 5,6
Power input (min. - rated - max.)	kW CO	0,21 - 1,66 - 2,78
EER	W/W	3,01
Energy efficiency class	CO	B
Annual energy consumption	kWh	830
Heating capacity	kW	5,6
Heating range (min. - max.)	kW	1,5 - 6,3
Power input (min. - rated - max.)	kW HP	0,38 - 1,59 - 2,40
COP	W/W	3,52
Energy efficiency class	HP	B

Physical data indoor unit

Indoor unit		RAV-SM404SDT-E	RAV-SM454SDT-E	RAV-SM564SDT-E
Air Flow (H/L)	m ³ /h - l/s	690/522 - 192/145	690/522 - 192/145	780/582 - 217/162
Sound pressure level (H-M-L)*	dB(A)	39-36-33	39-36-33	45-40-36
Sound power level (H-M-L)*	dB(A)	54-51-48	54-51-48	60-55-51
Dimensions (HxWxD)	mm	210 x 845 x 645	210 x 845 x 645	210 x 845 x 645
Weight	kg	22	22	22
External static pressure (stand/upper limit)	Pa	5/24	5/24	4/24

CO = cooling mode

HP = heating mode

*bottom air inlet



R-410A HEAT PUMPS

**DIGITAL/SUPER DIGITAL
INVERTER**

DRAIN PUMP KIT

Easy service and installation

High efficiency filters

Up to 196 Pa

Wide range of options

SM_DT **Hi-static pressure ducted unit**

Features

This is Toshiba's most powerful ducted unit delivering air flows up to 5040 m³/h. Unobtrusive, flexible and compact, it can be installed easily and discretely in any interior.

This model is the ideal solution for both new and refurbishing buildings.

Key features

Easy installation.

Inspection hole enables easy access and maintenance.

Wide range of options available: filter chamber, long-life filter, drain pump kit, etc.

Static pressure can be set to 3 levels (68,6, 137 and 196 Pa).

Performance data with Big DI serie 4

Outdoor unit		RAV-SM2244AT8-E	RAV-SM2804AT8-E
Indoor unit (High Static duct)		RAV-SM2242DT-E	RAV-SM2802DT-E
Cooling capacity	kW	20,0	23,0
Cooling range (min. - max.)	kW	9,8 - 22,4	9,8 - 27,0
Power input (min. - rated - max.)	kW CO	3,26 - 7,20 - 9,09	3,36 - 8,75 - 12,76
EER	W/W	2,78	2,63
Energy efficiency class	CO	-	-
Annual energy consumption	kWh	3600	4375
Heating capacity	kW	22,4	27,0
Heating range (min. - max.)	kW	9,8 - 25,0	9,8 - 31,5
Power input (min. - rated - max.)	kW HP	2,57 - 6,49 - 7,45	2,57 - 8,15 - 11,01
COP	W/W	3,45	3,31
Energy efficiency class	HP	-	-

Physical data indoor unit

Indoor unit		RAV-SM2242DT-E	RAV-SM2802DT-E
Air Flow (H/L)	m ³ /h – l/s	3600 - 1000	4200 - 1167
Sound pressure level	dB(A)	54	55
Sound power level	dB(A)	74	75
Dimensions (HxWxD)	mm	470 x 1380 x 1250	470 x 1380 x 1250
Weight	kg	160	160
External static pressure (H/M/L)	Pa	196/137/68,6	196/137/68,6

CO = cooling mode

HP = heating mode

H-M-L = High - Medium - Low speed



R-410A HEAT PUMPS

**DIGITAL/SUPER DIGITAL
INVERTER**

CEILING-SUSPENDED UNITS

Low noise levels

Slim-line design

Automatic louvre control plus
auto-swing

SM_CT Ceiling

Features

These ceiling suspended units are the ideal solution for offices, classrooms and restaurants.

The automatic louvre control and low noise levels are the key characteristics of this state-of-the-art unit.

In addition, the drain pan inside the unit ensures the maximum hygiene and is easily recyclable thanks to its stain resistant polypropylene resin body.

Key features

It operates at only 30 dB(A) (in 2HP) – twice as quietly as conventional units, thanks to its new design.

Optimum louvre control: the air flow angle is automatically set to the most suitable setting, and an automatic swing mode ensures air flow reaches all areas of the room.

Installation efficiency: for ceiling mounting, the unit can be suspended simply by adjusting 2 screws on the intake grille (compared to a dozen screws for conventional models).

Performance data with Super Digital Inverter Serie 4

Outdoor unit		RAV-SP564AT-E	RAV-SP804AT-E	RAV-SP1104AT-E	RAV-SP1104AT8-E	RAV-SP1404AT-E	RAV-SP1404AT8-E
Indoor unit (Ceiling)		RAV-SM564CT-E	RAV-SM804CT-E	RAV-SM1104CT-E	RAV-SM1104CT-E	RAV-SM1404CT-E	RAV-SM1404CT-E
Cooling capacity	kW	5,0	7,1	10,0	10,0	12,5	12,5
Cooling range (min. - max.)	kW	1,2 - 5,6	1,9 - 8,0	2,6 - 12,0	2,6 - 12,0	2,6 - 14,0	2,6 - 14,0
Power input (min. - rated - max.)	kW CO	0,21 - 1,56 - 2,26	0,30 - 2,21 - 2,88	0,64 - 2,67 - 3,70	0,66 - 2,79 - 3,81	0,64 - 3,73 - 4,47	0,66 - 3,83 - 4,85
EER	W/W	3,21	3,21	3,75	3,58	3,35	3,26
Energy efficiency class	CO	A	A	A	A	-	-
Annual energy consumption	kWh	780	1105	1335	1395	1865	1915
Heating capacity	kW	5,6	8,0	11,2	11,2	14,0	14,0
Heating range (min. - max.)	kW	0,9 - 7,4	1,3 - 10,6	2,4 - 13,0	2,40 - 14,0	2,4 - 16,5	2,40 - 18,0
Power input (min. - rated - max.)	kW HP	0,17 - 1,47 - 2,34	0,27 - 2,16 - 3,50	0,52 - 2,62 - 4,00	0,53 - 2,67 - 4,26	0,52 - 3,65 - 4,60	0,53 - 3,70 - 5,95
COP	W/W	3,81	3,70	4,27	4,19	3,84	3,78
Energy efficiency class	HP	A	A	A	A	-	-

Performance data with Digital Inverter Serie 3

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E	RAV-SM1403AT-E
Indoor unit (Ceiling)		RAV-SM564CT-E	RAV-SM804CT-E	RAV-SM1104CT-E	RAV-SM1404CT-E
Cooling capacity	kW	5,0	7,0	10,0	12,3
Cooling range (min. - max.)	kW	1,5 - 5,6	1,5 - 7,4	3,0 - 11,2	3,0 - 13,2
Power input (min. - rated - max.)	kW CO	0,45 - 1,82 - 1,95	0,50 - 2,53 - 2,76	0,60 - 3,51 - 4,10	0,65 - 4,52 - 4,85
EER	W/W	2,75	2,77	2,85	2,72
Energy efficiency class	CO	D	D	C	-
Annual energy consumption	kWh	910	1265	1755	2260
Heating capacity	kW	5,6	8,0	11,2	14
Heating range (min. - max.)	kW	1,5 - 6,3	1,5 - 9,0	3,0 - 12,5	3,0 - 16,0
Power input (min. - rated - max.)	kW HP	0,45 - 1,64 - 2,40	0,50 - 2,47 - 3,20	0,60 - 3,20 - 4,10	0,65 - 4,14 - 4,60
COP	W/W	3,41	3,24	3,50	3,38
Energy efficiency class	HP	B	C	B	-

Physical data indoor unit

Indoor unit		RAV-SM564CT-E	RAV-SM804CT-E	RAV-SM1104CT-E	RAV-SM1404CT-E
Air Flow (H/L)	m ³ /h - l/s	780/600 - 217/167	1110/876 - 308/243	1650/1270 - 458/352	1800/1386 - 500/385
Sound pressure level (H-M-L)	dB(A)	38-33-30	38-36-33	41-38-35	43-40-37
Sound power level (H-M-L)	dB(A)	51-48-45	53-51-48	56-53-50	58-55-52
Dimensions (HxWxD)	mm	210 x 910 x 680	210 x 1180 x 680	210 x 1595 x 680	210 x 1595 x 680
Weight	kg	21	25	33	33

CO = cooling mode

HP = heating mode

H-M-L = High - Medium - Low speed



R-410A HEAT PUMPS

**DIGITAL/SUPER DIGITAL
INVERTER**

STYLISH DESIGN

Slim design

4 levels of filtration

SM_4KRT High-wall

Features

With its attractive and slim-line design, this high-wall is suitable for offices, restaurants and other applications where elegance is required.

The filtration system further improves the indoor air quality benefits of this high-wall unit.

Key features

With its slim design, this compact and stylish unit blends with any room setting.

Enhanced filtration system: Zeolite Plus + Sasa filter to deodorise, Bio-Enzyme filter + Gingko filter to purify and new antioxidant Vitamin C filter.

Auto louvre mode allows optimum air distribution throughout.

Wireless controller included.

TCC Link remote control (optional).

Performance data with Super Digital Inverter Serie 4

Outdoor unit		RAV-SP564AT-E	RAV-SP804AT-E
Indoor unit (High-wall)		RAV-SM564KRT-E	RAV-SM-804KRT-E
Cooling capacity	kW	5	6,9
Cooling range (min. - max.)	kW	1,2 - 5,6	1,9 - 8,0
Power input (min. - rated - max.)	kW	0,21 - 1,56 - 2,05	0,3 - 2,40 - 2,88
EER		3,21	2,88
Energy efficiency class		A	C
Annual energy consumption	kWh	780	1200
Heating capacity	kW	5,6	8
Heating range (min. - max.)	kW	0,9 - 7,3	1,3 - 10,6
Power input (min. - rated - max.)	kW	0,17 - 1,55 - 2,57	0,27 - 2,40 - 3,87
COP		3,61	3,33
Energy efficiency class		A	C

Performance data with Digital Inverter Serie 3

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E
Indoor unit (High-wall)		RAV-SM564KRT-E	RAV-SM804KRT-E
Cooling capacity	kW	5,1	6,7
Cooling range (min. - max.)	kW	1,5 - 5,6	1,5 - 8,0
Power input (min. - rated - max.)	kW	0,40 - 1,74 - 1,86	0,50 - 2,72 - 2,85
EER		2,93	2,46
Energy efficiency class		C	E
Annual energy consumption	kWh	870	1360
Heating capacity	kW	5,6	8
Heating range (min. - max.)	kW	1,5 - 6,3	1,5 - 9,0
Power input (min. - rated - max.)	kW	0,40 - 1,70 - 2,40	0,50 - 2,67 - 3,46
COP		3,29	3
Energy efficiency class		C	D

Physical data indoor unit

Indoor unit		RAV-SM564KRT-E	RAV-SM804KRT-E
Air Flow (h/l)	m ³ /h - l/s	840/642 - 233/178	1110/732 - 308/203
Sound pressure level (H-M-L)	dB(A)	39-36-33	45-41-36
Sound power level (H-M-L)	dB(A)	54-51-48	60-56-51
Dimensions (HxWxD)	mm	298 x 998 x 221	298 x 998 x 221
Weight	kg	12	12

CO = cooling mode

HP = heating mode

H-M-L = High - Medium - Low speed



R-410A HEAT PUMPS

DIGITAL INVERTER

**CEILING-SUSPENDED/
CONSOLE UNIT**

Triple action filtration system

Two installation layouts

SM_XT Flexi

Features

The stylish Flexi unit can add a touch of elegance to a commercial space. Installation flexibility and indoor air quality are two of the many advantages of the system.

Key features

Ultimate flexibility: low wall and ceiling-suspended installations are both possible, with no modification or additional accessories.

Triple-action filtration system: the first step removes large particles, then a passive electrostatic filter removes solid particles down to 0,01 micron in size and finally the Zeolite Plus filter absorbs even smaller airborne pollutants.

Natural air distribution: in ceiling-suspended applications, air can be directed either horizontally, parallel to the ceiling or away from the room occupants for non intrusive air distribution.

High-lift drain pump kit: raises drain piping up to 290 mm for flexible condensate piping layout (option suitable for ceiling suspended unit only).

Performance data with Digital Inverter Serie 3

Outdoor unit			RAV-SM563AT-E	RAV-SM803AT-E
Indoor unit (Flexi)			RAV-SM562XT-E	RAV-SM802XT-E
Cooling capacity	kW		5,0	6,7
Cooling range (min. - max.)	kW		1,5 - 5,6	1,5 - 7,0
Power input (min. - rated - max.)	kW	CO	0,55 - 1,87 - 2,01	0,55 - 2,72 - 2,85
EER			2,67	2,46
Energy efficiency class		CO	D	E
Annual energy consumption	kWh		935	1360
Heating capacity	kW		5,6	8,0
Heating range (min. - max.)	kW		1,5 - 6,3	1,5 - 9,0
Power input (min. - rated - max.)	kW	HP	0,55 - 1,70 - 2,40	0,55 - 2,67 - 3,46
COP			3,29	3,00
Energy efficiency class		HP	C	D

Physical data indoor unit

Indoor unit			RAV-SM562XT-E	RAV-SM802XT-E
Air Flow (h/l)	m ³ /h – l/s		840/600 - 233/178	1110/640 - 308/177
Sound pressure level (h-l)	dB(A)		43-36	46-37
Sound power level (h-l)	dB(A)		58-51	61-52
Dimensions (HxWxD)	mm		208 x 1093 x 633	208 x 1093 x 633
Weight	kg		23	23

CO = cooling mode

HP = heating mode

Branching kits Twin split- Triple split - Double twin split

Features

With these kits is possible to connect more than one indoor unit of the same size and capacity to a single outdoor unit in order to improve the air distribution in a large zone.

One unit is designated the master unit which manage the room temperature reference for the other indoor units.

The indoor units should be installed in the same room, operate simultaneously and share a single controller.

Key features

Precise capacity control in all conditions.

Ideal for large shops, open-plan offices and other similar application.

User friendly controls.

Twinning requires a connection kit that includes an electromagnetic noise filter and pipe joint.

Triple combination requires a piping connection kit to optimize refrigerant flow.

The branching kits operates with all light commercial indoor units.

Check the matching table below for the allowed size/units combinations.

R-410A

DIGITAL/SUPER DIGITAL/BIG DIGITAL INVERTER

UP TO 4 INDOOR UNITS COMBINATION

	SDI	DI	BIG DI
TWIN	✓	✓	✓
TRIPLE	✓	✓	✓
DOUBLE TWIN			✓



All branching kits must be used with the same type of indoor unit.



Twin split SDI – cooling

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	EER W/W	Energy class	AEC kWh
				nominal kW	min. - max kW				
4-way cassette	SP1104AT-E	SM564UT-E	4	10,0	2,6 - 12,0	2,21	4,52	A	1105
	SP1104AT8-E	SM564UT-E	4	10,0	2,6 - 12,0	2,37	4,22	A	1185
	SP1404AT-E	SM804UT-E	5	12,5	2,6 - 14,0	3,16	3,96	-	1580
	SP1404AT8-E	SM804UT-E	5	12,5	2,6 - 14,0	3,46	3,61	-	1730
	SP1604AT8-E	SM804UT-E	6	14,0	2,6 - 16,0	4,49	3,12	-	2245
Compact 4-way cassette	SP804AT-E	SM404MUT-E	3	7,1	1,9 - 8,0	2,21	3,21	A	1105
	SP1104AT-E	SM564MUT-E	4	10,0	2,6 - 12,0	2,67	3,75	A	1335
	SP1104AT8-E	SM564MUT-E	4	10,0	2,6 - 12,0	2,79	3,58	-	1395
Ducted	SP1104AT-E	SM564BT-E	4	10,0	2,6 - 12,0	2,94	3,40	A	1470
	SP1104AT8-E	SM564BT-E	4	10,0	2,6 - 12,0	2,94	3,40	A	1470
	SP1404AT-E	SM804BT-E	5	12,5	2,6 - 14,0	3,83	3,26	-	1915
	SP1404AT8-E	SM804BT-E	5	12,5	2,6 - 14,0	3,86	3,24	-	1930
	SP1604AT8-E	SM804BT-E	6	14,0	2,6 - 16,0	5,12	2,73	-	2560
Slim duct	SP804AT-E	SM404SDT-E	3	7,1	1,9 - 8,0	2,21	3,21	A	1105
	SP1104AT-E	SM564SDT-E	4	10,0	2,6 - 12,0	2,77	3,61	A	1385
	SP1104AT8-E	SM564SDT-E	4	10,0	2,6 - 12,0	2,79	3,58	A	1395
Ceiling	SP1104AT-E	SM564CT-E	4	10,0	2,6 - 12,0	2,67	3,75	A	1335
	SP1104AT8-E	SM564CT-E	4	10,0	2,6 - 12,0	2,79	3,58	A	1395
	SP1404AT-E	SM804CT-E	5	12,5	2,6 - 14,0	3,73	3,35	-	1865
	SP1404AT8-E	SM804CT-E	5	12,5	2,6 - 14,0	3,83	3,26	-	1915
	SP1604AT8-E	SM804CT-E	6	14,0	2,6 - 16,0	4,99	2,81	-	2495
High-wall	SP1104AT-E	SM564KRT-E	4	10,0	2,6 - 12,0	2,77	3,61	A	1385
	SP1104AT8-E	SM564KRT-E	4	10,0	2,6 - 12,0	2,92	3,42	A	1460
	SP1404AT-E	SM804KRT-E	5	12,5	2,6 - 14,0	3,88	3,17	-	1940
	SP1404AT8-E	SM804KRT-E	5	12,3	2,6 - 13,5	4,00	3,08	-	2000
	SP1604AT8-E	SM804KRT-E	6	14,0	2,6 - 16,0	5,10	2,75	-	2550

Twin split SDI – heating

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	COP W/W	Energy class
				nominal kW	min. - max kW			
4-way cassette	SP1104AT-E	SM564UT-E	4	11,2	2,4 - 13,0	2,34	4,79	A
	SP1104AT8-E	SM564UT-E	4	11,2	2,4 - 15,6	2,42	4,63	A
	SP1404AT-E	SM804UT-E	5	14,0	2,4 - 16,5	3,21	4,36	-
	SP1404AT8-E	SM804UT-E	5	14,0	2,4 - 18,0	3,42	4,09	-
	SP1604AT8-E	SM804UT-E	6	16,0	2,4 - 19,0	4,30	3,72	-
Compact 4-way cassette	SP804AT-E	SM404MUT-E	3	8,0	1,3 - 10,6	2,16	3,70	A
	SP1104AT-E	SM564MUT-E	4	11,2	2,4 - 13,0	2,67	4,19	A
	SP1104AT8-E	SM564MUT-E	4	11,2	2,4 - 14,0	2,67	4,19	A
Ducted	SP1104AT-E	SM564BT-E	4	11,2	2,4 - 13,0	2,77	4,04	A
	SP1104AT8-E	SM564BT-E	4	11,2	2,4 - 14,0	2,77	4,04	A
	SP1404AT-E	SM804BT-E	5	14,0	2,4 - 16,5	3,41	4,11	-
	SP1404AT8-E	SM804BT-E	5	14,0	2,4 - 18,0	3,55	3,94	-
	SP1604AT8-E	SM804BT-E	6	16,0	2,4 - 19,0	4,60	3,48	-
Slim duct	SP804AT-E	SM404SDT-E	3	8,0	1,3 - 10,6	2,16	3,70	A
	SP1104AT-E	SM564SDT-E	4	11,2	2,4 - 13,0	2,67	4,19	A
	SP1104AT8-E	SM564SDT-E	4	11,2	2,4 - 14,0	2,67	4,19	A
Ceiling	SP1104AT-E	SM564CT-E	4	11,2	2,4 - 13,0	2,62	4,27	A
	SP1104AT8-E	SM564CT-E	4	11,2	2,4 - 14,0	2,67	4,19	A
	SP1404AT-E	SM804CT-E	5	14,0	2,4 - 16,5	3,65	3,84	-
	SP1404AT8-E	SM804CT-E	5	14,0	2,4 - 18,0	3,70	3,78	-
	SP1604AT8-E	SM804CT-E	6	16,0	2,4 - 19,0	4,60	3,48	-
High-wall	SP1104AT-E	SM564KRT-E	4	11,2	2,4 - 13,0	2,8	4,00	A
	SP1104AT8-E	SM564KRT-E	4	11,2	2,4 - 14,0	2,85	3,93	A
	SP1404AT-E	SM804KRT-E	5	14,0	2,4 - 16,5	3,83	3,66	-
	SP1404AT8-E	SM804KRT-E	5	14,0	2,4 - 18,0	3,88	3,61	-
	SP1604AT8-E	SM804KRT-E	6	16,0	2,4 - 19,0	4,88	3,28	-

Twin split DI – cooling

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	EER W/W	Energy class	AEC kWh
				nominal kW	min. - max kW				
4-way cassette	SM1103AT-E	SM564UT-E	4	10,0	3,0 - 11,2	3,11	3,22	A	1555
	SM1403AT-E	SM804UT-E	5	12,5	3,0 - 13,2	4,09	3,06	-	2045
	SM1603AT-E	SM804UT-E	6	14,0	3,0 - 16,0	4,49	3,12	-	2245
Compact 4-way cassette	SM1103AT-E	SM564MUT-E	4	10,0	3,0 - 11,2	3,52	2,84	C	1760
Ducted	SM1103AT-E	SM564BT-E	4	10,0	3,0 - 11,2	3,56	2,81	C	1780
	SM1403AT-E	SM804BT-E	5	12,5	3,0 - 13,2	4,42	2,83	-	2210
	SM1603AT-E	SM804BT-E	6	14,0	3,0 - 16,0	5,12	2,73	-	2560
Slim duct	SM1103AT-E	SM564SDT-E	4	10,0	3,0 - 11,2	3,55	2,82	C	1775
Ceiling	SM1103AT-E	SM564CT-E	4	10,0	3,0 - 11,2	3,51	2,85	C	1755
	SM1403AT-E	SM804CT-E	5	12,3	3,0 - 13,2	4,52	2,72	-	2260
	SM1603AT-E	SM804CT-E	6	14,0	3,0 - 16,0	4,99	2,81	-	2495
High-wall	SM1103AT-E	SM564KRT-E	4	10,0	3,0 - 11,2	3,48	2,87	C	1740
	SM1403AT-E	SM804KRT-E	5	12,0	3,0 - 13,0	4,52	2,65	-	2260
	SM1603AT-E	SM804KRT-E	6	14,0	3,0 - 16,0	5,10	2,75	-	2550

Twin split DI – heating

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	COP W/W	Energy class
				nominal kW	min. - max kW			
4-way cassette	SM1103AT-E	SM564UT-E	4	11,2	3,0 - 13,0	2,93	3,82	A
	SM1403AT-E	SM804UT-E	5	14,0	3,0 - 16,0	3,80	3,68	-
	SM1603AT-E	SM804UT-E	6	16,0	3,0 - 18,0	4,43	3,61	-
Compact 4-way cassette	SM1103AT-E	SM564MUT-E	4	11,2	3,0 - 13,0	3,14	3,57	B
Ducted	SM1103AT-E	SM564BT-E	4	11,2	3,0 - 12,5	3,14	3,57	B
	SM1403AT-E	SM804BT-E	5	14,0	3,0 - 16,0	4,03	3,47	-
	SM1603AT-E	SM804BT-E	6	16,0	3,0 - 18,0	4,69	3,41	-
Slim duct	SM1103AT-E	SM564SDT-E	4	11,2	3,0 - 12,5	3,14	3,57	B
Ceiling	SM1103AT-E	SM564CT-E	4	11,2	3,0 - 12,5	3,20	3,50	B
	SM1403AT-E	SM804CT-E	5	14,0	3,0 - 16,0	4,14	3,38	-
	SM1603AT-E	SM804CT-E	6	16,0	3,0 - 18,0	4,69	3,41	-
High-wall	SM1103AT-E	SM564KRT-E	4	11,2	3,0 - 12,5	3,14	3,57	B
	SM1403AT-E	SM804KRT-E	5	14,0	3,0 - 16,0	4,24	3,30	-
	SM1603AT-E	SM804KRT-E	6	16,0	3,0 - 18,0	4,98	3,21	-

Light Commercial

Twin split BIG DI – cooling

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	EER W/W
				nominal kW	min. - max kW		
4-way cassette	SM2244AT8-E	SM1104UT-E	8	20,0	9,8 - 22,4	6,24	3,21
	SM2804AT8-E	SM1404UT-E	10	23,0	9,8 - 27,0	8,19	2,81
Ducted	SM2244AT8-E	SM1104BT-E	8	20,0	9,8 - 22,4	7,12	2,81
	SM2804AT8-E	SM1404BT-E	10	23,0	9,8 - 27,0	9,55	2,41
Ceiling	SM2244AT8-E	SM1104CT-E	8	20,0	9,8 - 22,4	7,12	2,81
	SM2804AT8-E	SM1404CT-E	10	23,0	9,8 - 27,0	9,55	2,41

Twin split BIG DI – heating

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	COP W/W
				nominal kW	min. - max kW		
4-way cassette	SM2244AT8-E	SM1104UT-E	8	22,4	9,8 - 25,0	5,82	3,85
	SM2804AT8-E	SM1404UT-E	10	27,0	9,8 - 31,5	7,48	3,61
Ducted	SM2244AT8-E	SM1104BT-E	8	22,4	9,8 - 25,0	6,40	3,50
	SM2804AT8-E	SM1404BT-E	10	27,0	9,8 - 31,5	7,92	3,41
Ceiling	SM2244AT8-E	SM1104CT-E	8	22,4	9,8 - 25,0	6,40	3,50
	SM2804AT8-E	SM1404CT-E	10	27,0	9,8 - 31,5	7,92	3,41

Triple split SDI – cooling

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	EER W/W	Energy class	AEC kWh
				nominal kW	min. - max kW				
4-way cassette	SP1604AT8-E	SM564UT-E	6	14,0	2,6 - 16,0	4,49	3,12	-	2245
Compact 4-way cassette	SP1604AT8-E	SM564MUT-E	6	14,0	2,6 - 16,0	4,99	2,81	-	2495
Ducted	SP1604AT8-E	SM564BT-E	6	14,0	2,6 - 16,0	5,12	2,73	-	2560
Slim duct	SP1604AT8-E	SM564SDT-E	6	14,0	2,6 - 16,0	4,99	2,81	-	2495
Ceiling	SP1604AT8-E	SM564CT-E	6	14,0	2,6 - 16,0	4,99	2,81	-	2495
High-wall	SP1604AT8-E	SM564KRT-E	6	14,0	2,6 - 16,0	5,10	2,75	-	2550

Triple split SDI – heating

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	COP W/W
				nominal kW	min. - max kW		
4-way cassette	SP1604AT8-E	SM564UT-E	6	16,0	2,4 - 19,0	4,30	3,72
Compact 4-way cassette	SP1604AT8-E	SM564MUT-E	6	16,0	2,4 - 19,0	4,60	3,48
Ducted	SP1604AT8-E	SM564BT-E	6	16,0	2,4 - 19,0	4,60	3,48
Slim duct	SP1604AT8-E	SM564SDT-E	6	16,0	2,4 - 19,0	4,60	3,48
Ceiling	SP1604AT8-E	SM564CT-E	6	16,0	2,4 - 19,0	4,60	3,48
High-wall	SP1604AT8-E	SM564KRT-E	6	16,0	2,4 - 19,0	4,88	3,28

Triple split DI – cooling

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	EER W/W	Energy class	AEC kWh
				nominal kW	min. - max kW				
4-way cassette	SM1603AT-E	SM564UT-E	6	14,0	3,0 - 16,0	4,49	3,12	-	2245
Compact 4-way cassette	SM1603AT-E	SM564MUT-E	6	14,0	3,0 - 16,0	4,99	2,81	-	2495
Ducted	SM1603AT-E	SM564BT-E	6	14,0	3,0 - 16,0	5,12	2,73	-	2560
Slim duct	SM1603AT-E	SM564SDT-E	6	14,0	3,0 - 16,0	4,99	2,81	-	2495
Ceiling	SM1603AT-E	SM564CT-E	6	14,0	3,0 - 16,0	4,99	2,81	-	2495
High-wall	SM1603AT-E	SM564KRT-E	6	14,0	3,0 - 16,0	5,10	2,75	-	2550

Triple split DI – heating

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	COP W/W
				nominal kW	min. - max kW		
4-way cassette	SM1603AT-E	SM564UT-E	6	16,0	3,0 - 18,0	4,43	3,61
Compact 4-way cassette	SM1603AT-E	SM564MUT-E	6	16,0	3,0 - 18,0	4,69	3,41
Ducted	SM1603AT-E	SM564BT-E	6	16,0	3,0 - 18,0	4,69	3,41
Slim duct	SM1603AT-E	SM564SDT-E	6	16,0	3,0 - 18,0	4,69	3,41
Ceiling	SM1603AT-E	SM564CT-E	6	16,0	3,0 - 18,0	4,69	3,41
High-wall	SM1603AT-E	SM564KRT-E	6	16,0	3,0 - 18,0	4,98	3,21

Triple split BIG DI – cooling

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	EER W/W
				nominal kW	min. - max kW		
4-way cassette	SM2244AT8-E	SM804UT-E	8	20,0	9,8 - 22,4	6,24	3,21
	SM2804AT8-E	SM804UT-E	10	23,0	9,8 - 27,0	8,19	2,81
Ducted	SM2244AT8-E	SM804BT-E	8	20,0	9,8 - 22,4	7,12	2,81
	SM2804AT8-E	SM804BT-E	10	23,0	9,8 - 27,0	9,55	2,41
Ceiling	SM2244AT8-E	SM804CT-E	8	20,0	9,8 - 22,4	7,12	2,81
	SM2804AT8-E	SM804CT-E	10	23,0	9,8 - 27,0	9,55	2,41
High-wall	SM2244AT8-E	SM804KRT-E	8	20,0	9,8 - 22,4	7,12	2,81
	SM2804AT8-E	SM804KRT-E	10	23,0	9,8 - 27,0	9,55	2,41

Triple split BIG DI – heating

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	COP W/W
				nominal kW	min. - max kW		
4-way cassette	SM2244AT8-E	SM804UT-E	8	22,4	9,8 - 25,0	5,82	3,85
	SM2804AT8-E	SM804UT-E	10	27,0	9,8 - 31,5	7,48	3,61
Ducted	SM2244AT8-E	SM804BT-E	8	22,4	9,8 - 25,0	6,40	3,50
	SM2804AT8-E	SM804BT-E	10	27,0	9,8 - 31,5	7,92	3,41
Ceiling	SM2244AT8-E	SM804CT-E	8	22,4	9,8 - 25,0	6,40	3,50
	SM2804AT8-E	SM804CT-E	10	27,0	9,8 - 31,5	7,92	3,41
High-wall	SM2244AT8-E	SM804KRT-E	8	22,4	9,8 - 25,0	6,40	3,50
	SM2804AT8-E	SM804KRT-E	10	27,0	9,8 - 31,5	7,92	3,41

Double twin split BIG DI – cooling

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	EER W/W
				nominal kW	min. - max kW		
4-way cassette	SM2244AT8-E	SM564UT-E	8	20,0	9,8 - 22,4	6,24	3,21
	SM2804AT8-E	SM804UT-E	10	23,0	9,8 - 27,0	8,19	2,81
Compact 4-way cassette	SM2244AT8-E	SM564MUT-E	8	20,0	9,8 - 22,4	7,12	2,81
Ducted	SM2244AT8-E	SM564BT-E	10	20,0	9,8 - 22,4	7,12	2,81
	SM2804AT8-E	SM804BT-E	8	23,0	9,8 - 27,0	9,55	2,41
Slim duct	SM2244AT8-E	SM564SDT-E	10	20,0	9,8 - 22,4	7,12	2,81
Ceiling	SM2244AT8-E	SM564CT-E	8	20,0	9,8 - 22,4	7,12	2,81
	SM2804AT8-E	SM804CT-E	10	23,0	9,8 - 27,0	9,55	2,41
High-wall	SM2244AT8-E	SM564KRT-E	8	20,0	9,8 - 22,4	7,12	2,81
	SM2804AT8-E	SM804KRT-E	10	23,0	9,8 - 27,0	9,55	2,41

Double twin split BIG DI – heating

Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	Capacity		Power input kW	COP W/W
				nominal kW	min. - max kW		
4-way cassette	SM2244AT8-E	SM564UT-E	8	22,4	9,8 - 25,0	5,82	3,85
	SM2804AT8-E	SM804UT-E	10	27,0	9,8 - 31,5	7,76	3,48
Compact 4-way cassette	SM2244AT8-E	SM564MUT-E	8	22,4	9,8 - 25,0	6,40	3,50
Ducted	SM2244AT8-E	SM564BT-E	10	22,4	9,8 - 25,0	6,40	3,50
	SM2804AT8-E	SM804BT-E	8	27,0	9,8 - 31,5	7,92	3,41
Slim duct	SM2244AT8-E	SM564SDT-E	10	22,4	9,8 - 25,0	6,40	3,50
Ceiling	SM2244AT8-E	SM564CT-E	8	22,4	9,8 - 25,0	6,40	3,50
	SM2804AT8-E	SM804CT-E	10	27,0	9,8 - 31,5	7,92	3,41
High-wall	SM2244AT8-E	SM564KRT-E	8	22,4	9,8 - 25,0	6,40	3,50
	SM2804AT8-E	SM804KRT-E	10	27,0	9,8 - 31,5	7,92	3,41

The business range. The applications

VRF technology offers the best solution for large commercial and industrial buildings: including hotels, hospitals, leisure and shopping centres.

The dual inverter compressor guarantees high efficiency levels, operating flexibility and reduced maintenance requirements.

Moreover, the wide range of indoor units makes VRF system the most flexible choice to satisfy any kind of requirement and to be ideal for many installations. The MiNi-SMMS systems, for instance, are the ideal solution both commercial and for private spaces.

Compactness and beyond

In 2006, Toshiba completed the VRF range with the new compact MiNi-SMMS system. This new range has been designed to guarantee the most flexible solutions for both commercial and large spaces applications.

VRF offers important features: performance, low noise levels, sophisticated and precise control systems, energy savings and respect for the environment.

In fact, Toshiba's commitment to the research and the development of new technologies grants always the maximum care of the environment: all the VRF systems are endowed with non-ozone-depleting refrigerant (R-410A) and the sophisticated dual inverter control.



Business

The business range
The most advanced solutions for larger buildings.



Business

VRF. The freedom of choice

Variable refrigerant flow offer the advantages of direct expansion linked to inverter control and the most sophisticated electronics.

This technology has many advantages, from the system design to the installation and operation phase.

The wide range of indoor units makes VRF the most flexible choice to satisfy any requirement.

The 3 VRF ranges can meet any kind of need: SMMS (Super Modular Multi System) provides cooling or heating, SHRM (Super Heat Recovery Multi) provides simultaneous heating and cooling and MiNi-SMMS, the new compact system is ideal for small spaces.

Typical applications and advantages

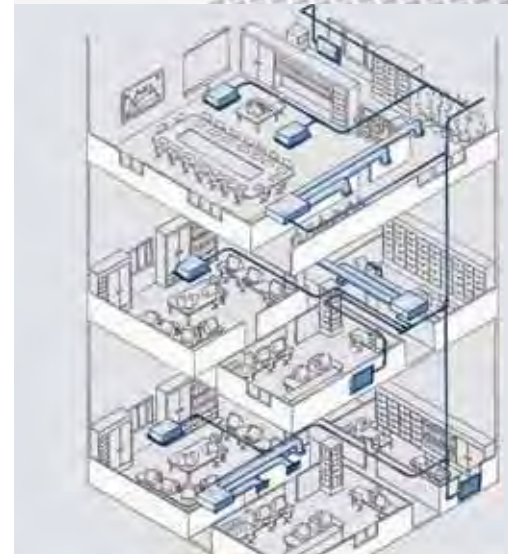
VRF systems offer safety, reliability, comfort, flexibility, ease of installation, durability and energy savings.

More and more commercial centres, office towers, hospitals and hotels, all typically requiring the benefit of energy savings, have selected this type of system.

Now, these systems also play an important role in prestigious residential installations, where more than one room needs to be air-conditioned.

In addition, direct-expansion indoor units offer many benefits: easy and low-cost installation and precise performance.

The range also includes a complete series of heat exchanger ventilation units to supply fresh air for the rooms in a building.





Unlimited flexibility

Optimised product choice

The ultimate inverter system

Minimised consumption



Energy savings according to Toshiba

The advanced electronic technology in these systems permits capacity control that results in outstanding energy savings, especially at partial load.

This objective is achieved thanks to the use of sophisticated inverter control and modulating control valves in each indoor unit.

In addition, the power input of the outdoor unit is dramatically reduced with the heat load reduction in the areas served.

No particular routine maintenance is required, except periodic cleaning of the indoor unit filters: this also means that maintenance costs are minimised.

Precision is our top priority

Sophisticated inverter control permits matching of the actual refrigerant flow to the capacity required by each indoor unit in an application.

This results in optimised efficiency of the refrigerant cycle and increased precision in maintaining the required temperature, improving comfort for the occupants.

The required capacity and the related technical parameters for each indoor unit are electronically transmitted to the outdoor unit in order to optimise the zone load calculation and to control the actual refrigerant flow to each indoor unit, using the special Pulsed Modulating Valves (PMV).



Industry-leading energy savings

Energy-efficient performance for greater environmental friendliness

Adopting the highly efficient new DC twin-rotary compressors and advanced vector-controlled inverters realizes a COP of 6,41 (under 50% partial load). Greater operating performance is now possible when operating under a constant load.

New intelligent VRF control

Total system control and consistent room-to-room temperature

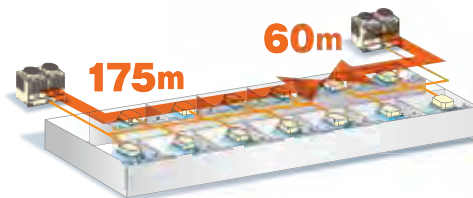
Toshiba's newly developed intelligent VRF control ensures that the right amount of refrigerant to satisfy the demands of each room, regardless of the type of indoor unit used and the length of the pipes.

Industry-leading pipe length for greater flexibility

Layout flexibility with few design limitations

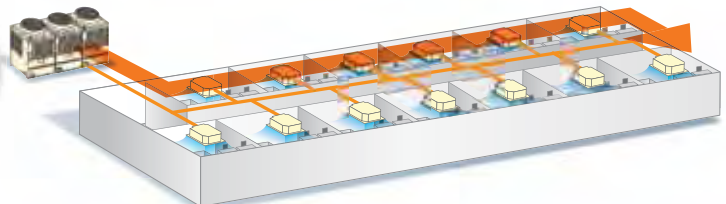
System layouts can use a maximum equivalent distance of up to 235 meters. This makes it much easier to design for floors with many small rooms, or for tenants who often rearrange their floor layouts.

As of December 2009 (according to in-house studies).



Current SMMS coverage requires two systems

New SMMSi coverage achieved by a single system



Farthest equivalent length **235 m**



The next-generation 'i-quality' trio

Dedication to innovation and advanced intelligence fosters the imaginative creativity with which we deliver total value in air conditioning systems.

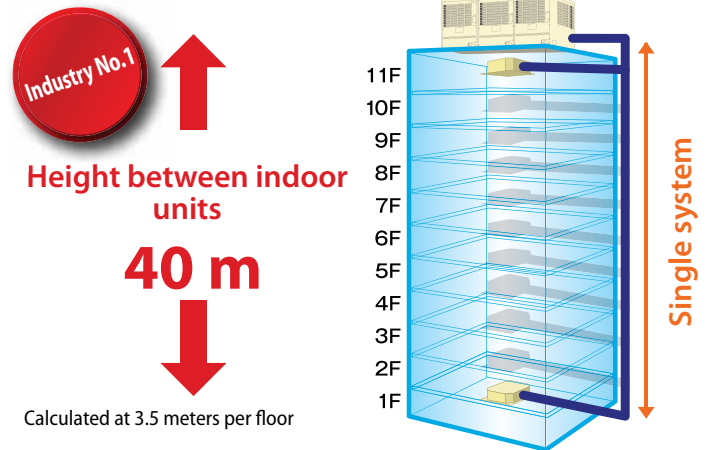


**Innovation,
Intelligence,
Imagination**

Greater support for height differences between indoor units

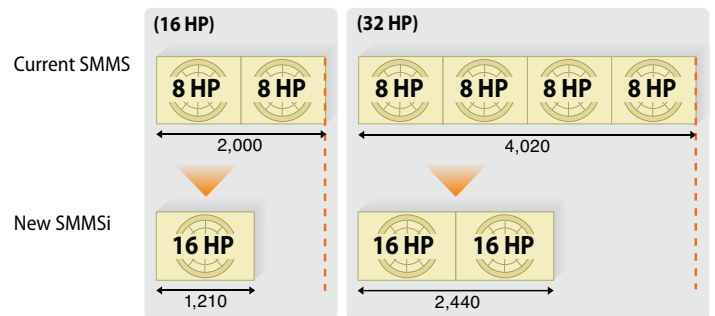
Toshiba SMMSi leads the industry with support for height differences of up to 40 meters between indoor units on a single system. That is enough height to cover an 11-story building.

As of December 2009 (according to in-house studies)



Industry-leading installation flexibility

At 1830mm (H) x 1210mm (W) x 780mm (D), the outdoor units improve performance to achieve greater space efficiency that defies their compact module size to deliver greater freedom in layout design. This minimizes weight-related restrictions and allows for quicker installation.



A 16HP system installation now occupies only 2/3 the footprint and weight of two units previously required.

Reduce 40%

R-410A

SUPER MODULAR MULTI SYSTEM



Dual Inverter VRF Heat Pump

SMMS-i VRF Outdoor unit

Features

The next generation "i-quality" trio.

innovation

The new SMMS-i offers innovations in every savings with highly efficient DC twin rotary compressors and advanced vector-controlled inverters

intelligence

The intelligent VRF ensures precise control over cooling or heating for each individual room, delivering consistent temperature to even the furthest room from the unit.

imagination

With flexible layout variations beyond imagination, this extremely versatile system can accommodate up to an impressive 235 metres in length and maximum height of 40 metres between indoor units.

Key features

New DC twin-rotary compressors and advanced vector-controlled inverters realizes a COP of 6.41 (50% partial load)..

The introduction of the 16HP single size unit enables an overall footprint reduction up to 40%, in units combination.

Piping design flexibility: up to 235m of equivalent length and 40 m in height difference.

TCC Link: state-of-the-art communication bus system with automatically configured addressing.

Piping layout made easier with the introduction of the innovative Y shape pipe joints

Two type of combinations: Standard efficiency and high efficiency, both with the possibility to connect up to 48 indoor units.

Accurate refrigerant flow control optimized for each fan coil unit.

Performance data

Outdoor unit	CO HP	MMY- MMY-	MAP0501T8-E	MAP0601T8-E	MAP0804T8-E	MAP1004T8-E	MAP1204T8-E	MAP1404T8-E	MAP1604T8-E
			MAP0501HT8-E	MAP0601HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1204HT8-E	MAP1404HT8-E	MAP1604HT8-E
			5 HP	6 HP	8 HP	10 HP	12 HP	14 HP	16 HP
Cooling capacity ¹	kW		14,0	16,0	22,4	28,0	33,5	40	45
Power input	kW	CO	3,65	4,64	5,40	7,41	9,55	11,50	13,70
EER	W/W		3,84	3,45	4,15	3,78	3,51	3,48	3,28
Running current	A	CO	5,85	7,28	8,50	11,40	14,70	17,70	20,80
Heating capacity ²	kW		16,0	18,0	25,0	31,5	37,5	45,0	50,0
Power input	kW	HP	3,84	4,56	5,53	7,50	10,20	11,20	14,20
COP	W/W		4,17	3,95	4,52	4,20	3,68	4,02	3,52
Running current	A	HP	6,09	7,08	8,80	11,80	16,00	17,60	22,00
Maximum overcurrent protection ³	A		20	20	32	32	40	40	50

Physical data Outdoor unit

Outdoor unit	CO HP	MMY- MMY-	MAP0501T8-E	MAP0601T8-E	MAP0804T8-E	MAP1004T8-E	MAP1204T8-E	MAP1404T8-E	MAP1604T8-E
			MAP0501HT8-E	MAP0601HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1204HT8-E	MAP1404HT8-E	MAP1604HT8-E
			Air Flow	m ³ /h		9000	9000	9900	10500
Air Flow	l/s		2500	2500	2750	2917	3222	3333	3611
Sound Power Level	dB(A)	HP	75	76	78	79	83	83	84
Sound pressure level	dB(A)	HP	55	56	56	58	62	62	64
Sound Power Level	dB(A)	CO	75	76	77	78	82	82	83
Sound pressure level	dB(A)	CO	55	56	55	57	59	60	62
External Static pressure available	Pa		35	35	60	60	50	40	40
Operating range - db	°C	CO	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43
Operating range - wb ⁴	°C	HP	-20÷15	-20÷15	-20÷15	-20÷15	-20÷15	-20÷15	-20÷15
Dimensions (h x w x d)	mm		1800 x 990 x 750	1800 x 990 x 750	1830 x 990 x 780	1830 x 990 x 780	1830 x 990 x 780	1830 x 1210 x 780	1830 x 1210 x 780
Weight	kg	HP	228	228	242	242	242	330	330
		CO	227	227	241	241	241	330	330
Compressor type			Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary
Refrigerant charge R410A	kg		8,5	8,5	11,5	11,5	11,5	11,5	11,5
Suction line type - diameter			Flare - 5/8"	Brazed - 3/4"	Brazed - 7/8"	Brazed - 7/8"	Brazed - 1-1/8"	Brazed - 1-1/8"	Brazed - 1-1/8"
Liquid line type - diameter			Flare - 3/8"	Flare - 3/8"	Flare - 1/2"	Flare - 1/2"	Flare - 1/2"	Flare - 5/8"	Flare - 5/8"
Farthest piping equivalent length	m		175	175	235	235	235	235	235
Farthest piping actual length ⁵	m		150	150	190	190	190	190	190
Maximum pipe length	m		300	300	500	500	500	500	500
Maximum lift (outdoor unit above/below) ⁶	m		50/40	50/40	70/40	70/40	70/40	70/40	70/40
Power supply	V-ph-Hz		400(380-415V)-3-50						

1) based on an indoor air temperature of 27°C db/19°C wb and an outdoor air temperature of 35°db

2) based on an indoor air temperature of 20°C db and an outdoor air temperature of 7°db/6°C wb

3) if outdoor units are combined, refer to the installation manual

4) The unit operates down to an outdoor temperature of -20°C, however considerable performance decrease will be expected below -15°C. Consider installation location/surroundings and system design when expected to operate between -15°C and -20°C.

5) Less than 34HP or less combination: 300m

6) if the height difference between indoor units exceeds 3 m and if the indoor unit is above, max, lift is reduced to 30 m

CO = cooling mode















HP = heating mode

Protection devices

- Discharge and suction temperature sensors
- Internal overload relay
- Compressor over current relay
- Over current sensor
- High pressure switch
- Low pressure sensors

Capacity data tables

Standard models				
	Model Name (MMY-)	Cooling capacity	Heating capacity	Appearance
5 HP	MAP0501HT7	14,0 kW	16,0 kW	
6 HP	MAP0601HT7	16,0 kW	18,0 kW	
8 HP	MAP0804HT8-E	22,4 kW	25,0 kW	
10 HP	MAP1004HT8-E	28,0 kW	31,5 kW	
12 HP	MAP1204HT8-E	33,5 kW	37,5 kW	
14 HP	MAP1404HT8-E	40,0 kW	45,0 kW	
16 HP	MAP1604HT8-E	45,0 kW	50,0 kW	
18 HP	AP1814HT8-E	50,4 kW	56,5 kW	
20 HP	AP2014HT8-E	56,0 kW	63,0 kW	
22 HP	AP2214HT8-E	61,5 kW	69,0 kW	
24 HP	AP2414HT8-E	68,0 kW	76,5 kW	
26 HP	AP2614HT8-E	73,0 kW	81,5 kW	
28 HP	AP2814HT8-E	78,5 kW	88,0 kW	
30 HP	AP3014HT8-E	85,0 kW	95,0 kW	
32 HP	AP3214HT8-E	90,0 kW	100,0 kW	
34 HP	AP3414HT8-E	96,0 kW	108,0 kW	
36 HP	AP3614HT8-E	101,0 kW	113,0 kW	
38 HP	AP3814HT8-E	106,5 kW	119,5 kW	
40 HP	AP4014HT8-E	112,0 kW	127 kW	
42 HP	AP4214HT8-E	118,0 kW	132,0 kW	
44 HP	AP4414HT8-E	123,5 kW	138,0 kW	
46 HP	AP4614HT8-E	130,0 kW	145,0 kW	
48 HP	AP4814HT8-E	135,0 kW	150,0 kW	

High efficiency models				
	Model Name (MMY-)	Cooling capacity	Heating capacity	Appearance
16 HP	AP1624HT8-E	45,0 kW	50,0 kW	
24 HP	AP2404HT8-E	68,0 kW	76,5 kW	
26 HP	AP2624HT8-E	73,0 kW	81,5 kW	
28 HP	AP2824HT8-E	78,5 kW	88,0 kW	
30 HP	AP3024HT8-E	85,0 kW	95,0 kW	
32 HP	AP3224HT8-E	90,0 kW	100,0 kW	
34 HP	AP3424HT8-E	96,0 kW	108,0 kW	
36 HP	AP3624HT8-E	101,0 kW	113,0 kW	
38 HP	AP3824HT8-E	106,5 kW	119,5 kW	
40 HP	AP4024HT8-E	112,0 kW	127 kW	
42 HP	AP4224HT8-E	118,0 kW	132,0 kW	
44 HP	AP4424HT8-E	123,5 kW	138,0 kW	
46 HP	AP4624HT8-E	130,0 kW	145,0 kW	
48 HP	AP4824HT8-E	135,0 kW	150,0 kW	

Figures in tables above are of 50 Hz units. See the data book for figures of 60Hz units. Preliminary values noted for cooling and heating capacity.

There are also units with only cooling capacity.

Power: 3-phase 50 Hz 400V (380 ~ 415V)

Rated conditions Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

The standard piping means that main pipe length is 5 m, branching pipe length 2,5 m of branch piping connected with a 0 meter height.




























































































The source voltage must not fluctuate more than ±10%.

The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

Indoor units number

Standard models	High efficiency models	Max Number of indoor units
5 HP		8
6 HP		10
8 HP		13
10 HP		16
12 HP		20
14 HP		23
16 HP	16 HP=8+8	27
18 HP=10+8		30
20 HP=10+10		33
22 HP=12+10		37
24 HP=12+12	24 HP=8+8+8	40
26 HP=16+10	26 HP=10+8+8	43
28 HP=16+12	28 HP=10+10+8	47
30 HP=16+14	30 HP=10+10+10	48
32 HP=16+16	32 HP=8+8+8+8	48
34 HP=12+12+10	34 HP=10+8+8+8	48
36 HP=12+12+12	36 HP=10+10+8+8	48
38 HP=16+12+10	38 HP=10+10+10+8	48
40 HP=16+12+12	40 HP=10+10+10+10	48
42 HP=16+14+12	42 HP=12+10+10+10	48
44 HP=16+16+12	44 HP=12+12+10+10	48
46 HP=16+16+14	46 HP=12+12+12+10	48
48 HP=16+16+16	48 HP=12+12+12+12	48

Combination data table

	Standard models				High efficiency models			
	Module combination	Dimensions	EER	COP	Module combination	Dimensions	EER	COP
16 HP		1830 x 1210 x 780	3,28	3,52	 	1830 x 1980 x 780	4,13	4,52
18 HP	 	1830 x 1980 x 780	3,93	4,34				
20 HP	 	1830 x 1980 x 780	3,78	4,20				
22 HP	 	1830 x 1980 x 780	3,63	3,90				
24 HP	 	1830 x 1980 x 780	3,46	3,62	  	1830 x 2970 x 780	4,10	4,45
26 HP	 	1830 x 2200 x 780	3,46	3,76	  	1830 x 2970 x 780	3,99	4,39
28 HP	 	1830 x 2200 x 780	3,38	3,57	  	1830 x 2970 x 780	3,87	4,29
30 HP	 	1830 x 2420 x 780	3,37	3,65	  	1830 x 2970 x 780	3,74	4,18
32 HP	 	1830 x 2420 x 780	3,28	3,52	   	1830 x 3960 x 780	4,13	4,52
34 HP	  	1830 x 2970 x 780	3,55	3,78	   	1830 x 3960 x 780	4,00	4,37
36 HP	  	1830 x 2970 x 780	3,49	3,66	   	1830 x 3960 x 780	3,93	4,34
38 HP	  	1830 x 3190 x 780	3,47	3,72	   	1830 x 3960 x 780	3,85	4,26
40 HP	  	1830 x 3190 x 780	3,41	3,57	   	1830 x 3960 x 780	3,78	4,17
42 HP	  	1830 x 3410 x 780	3,39	3,65	   	1830 x 3960 x 780	3,68	4,04
44 HP	  	1830 x 3410 x 780	3,34	3,55	   	1830 x 3960 x 780	3,61	3,90
46 HP	  	1830 x 3630 x 780	3,34	3,61	   	1830 x 3960 x 780	3,52	3,76
48 HP	  	1830 x 3630 x 780	3,28	3,52	   	1830 x 3960 x 780	3,48	3,68

R-410A

MiNi - SMMS

MCY-MAP***1HT



Superior EER and COP

Quiet operation

MiNi-SMMS VRF Outdoor unit

Features

The MiNi-SMMS system has been developed to achieve the best performance in a wide variety of commercial applications including shops, offices and large apartments, where unobtrusive appearance and quiet operation are important advantages.

The extraordinary flexibility of this Toshiba system is guaranteed by the breadth of the range of SMMS indoor units – up to 13 models with a combination of 81 units. MiNi-SMMS can be easily installed.

Key features

Best COP (4,61 for 4HP): represents state-of-art energy saving efficiency.

Wide range: up to 9 indoor units may be connected with a single outdoor unit.

DC Twin Rotary compressor delivers high efficiency and complete reliability.

Full SMMS indoor and control units available.

The compact design of the outdoor unit (70% smaller overall than standard VRF unit) means it can be easily installed virtually anywhere; including on a balcony.

PMV Kit

- The PMV kit is an option for super-silent operation, available for hotel rooms and residential applications where noise levels are critical
- Ease of installation
- Integral condensate pump
- Low cost

Performance data

Outdoor unit	HP	MCY-MAP0401HT	MCY-MAP0501HT	MCY-MAP0601HT
		4 HP	5 HP	6 HP
Cooling capacity	kW	12,1	14,0	15,5
Power input	kW CO	2,82	3,47	4,63
EER	W/W	4,29	4,03	3,35
Running current	A CO	13,2	16,1	21,4
Heating capacity	kW	12,5	16,0	18,0
Power input	kW HP	2,71	4,00	4,85
COP	W/W	4,61	4,00	3,71
Running current	A HP	12,5	18,3	22,2
Peak demand current	A	25,0	28,0	31,0

Physical data Outdoor unit

Outdoor unit	HP	MCY-MAP0401HT	MCY-MAP0501HT	MCY-MAP0601HT
Air Flow	m ³ /h - l/s	5820 - 1612	6120 - 1695	6420 - 1778
Sound pressure level	dB(A) CO/HP	49/50	50/52	51/53
Dimensions (HxWxD)	mm	1340x900x320	1340x900x320	1340x900x320
Weight	kg	117	117	117
Compressor type		Twin Rotary	Twin Rotary	Twin Rotary
Refrigerant charge R410A	kg	7,2	7,2	7,2
Suction line type - diameter		Flare - 5/8"	Flare - 5/8"	Brazing - 3/4"
Liquid line type - diameter		Flare - 3/8"	Flare - 3/8"	Flare - 3/8"
Discharge line connection type - diameter				
Maximum equivalent length separation*	m	125	125	125
Maximum actual piping separation*	m	100	100	100
Maximum total pipe length*	m	180	180	180
Maximum lift (indoor unit above/below)	m	20/30	20/30	20/30
Operating range - db	°C CO	-5÷43	-5÷43	-5÷43
Operating range - wb	°C HP	-15,0÷15,5	-15,0÷15,5	-15,0÷15,5
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50


* when PMV Kit is used: Maximum equivalent length separation (80 m); Maximum actual piping separation (65 m); Maximum total pipe length (150 m)

CO = cooling mode
HP = heating mode

Indoor units combinations

Model Name		Cooling capacity	Heating capacity	Number of indoor units	Total capacity of connectable indoor units	
				Max	Min	Max
MCY-MAP0401HT	4 HP	12,1 kW	12,5 kW	6	3,2 HP	5,2 HP
MCY-MAP0501HT	5 HP	14,0 kW	16,0 kW	8	4,0 HP	6,5 HP
MCY-MAP0601HT	6 HP	15,5 kW	18,0 kW	9	4,8 HP	7,8 HP

Technical specifications PMV kit

	Model Name	Indoor unit capacity code
	RBM-PMV0361E	0,8 - 1 - 1,25 HP
	RBM-PMV0362E	For new High wall MMK-AP***3H - 0,8 - 1 - 1,25 HP
	RBM-PMV0901E	1,7 - 2 - 2,5 HP
	RBM-PMV0902E	For new High Wall MMK-AP***3H - 1,7 - 2 - 2,5 HP

R-410A

SUPER HEAT RECOVERY MULTI SYSTEM

MMY-MAP***2FT8-E



Dual Inverter heat recovery VRF

SHRM VRF Outdoor unit

Features

The three-pipe VRF Super Heat Recovery Multi System (SHRM) delivers simultaneously cooling and heating and has exceptional energy efficiency.

Key features

Unbeatable energy consumption efficiency: average COP of 3,97 (22,4 kW).

Compact flow selector unit: it automatically adjusts the temperature either by unit or by area.

Piping branch flexibility: the three-pipe connection allows installation height variation of 35 m (equivalent to a 9-story building).

Active Oil Management system: it increases the operation reliability.

Wide control applications: Artificial Intelligence network system available and Building Management System (BMS) compatible.

Protection devices

- Discharge and suction temperature sensors
- Internal overload relay
- Compressor over current relay
- Over current sensor
- High pressure switch
- Low pressure sensors

Performance data

Outdoor unit			MMY-MAP0802FT8-E	MMY-MAP1002FT8-E	MMY-MAP1202FT8-E
			8 HP	10 HP	12 HP
Cooling capacity ¹	kW		22,4	28,0	33,5
Power input	kW	CO	6,07	8,54	12,90
EER	W/W		3,69	3,18	2,60
Running current	A	CO	9,25	13,15	19,85
Heating capacity ²	kW		25,0	31,5	35,5
Power input	kW	HP	6,29	8,73	9,65
COP	W/W		3,97	3,61	3,68
Running current	A	HP	9,55	13,40	14,85
Peak demand current ³	A		30	30	30

Physical data Outdoor unit

Outdoor unit			MMY-MAP0802FT8-E	MMY-MAP1002FT8-E	MMY-MAP1202FT8-E
Air Flow	m ³ /h - l/s		9900 - 2742	10500 - 2909	10500 - 2909
Sound pressure level	dB(A)		57	58	59
Dimensions (HxWxD)	mm		1800x990x750	1800x990x750	1800x990x750
Weight	kg		263	263	263
Compressor type			Twin Rotary	Twin Rotary	Twin Rotary
Refrigerant charge R410A	kg		11,5	11,5	11,5
Suction line type - diameter			Brazed - 7/8"	Brazed - 7/8"	Brazed -1-1/8"
Liquid line type - diameter			Flare - 1/2"	Flare - 1/2"	Flare - 1/2"
Discharge line connection type - diameter			Brazed - 3/4"	Brazed - 3/4"	Brazed - 3/4"
Maximum equivalent length separation	m		150	150	150
Maximum actual piping separation	m		125	125	125
Maximum total pipe length	m		300	300	300
Maximum lift (Indoor unit above/below) ⁵	m		30/50	30/50	30/50
Operating range - db	°C	CO	-10÷43	-10÷43	-10÷43
Operating range - wb ⁴	°C	HP	-20÷16	-20÷16	-20÷16
Running current	A	HP	9,55	13,40	14,85
Power supply	V-ph-Hz		400(380-415V)-3-50		

¹ based on an indoor air temperature of 27 °C db/19 °C wb and an outdoor air temperature of 35 °C db

² based on an indoor air temperature of 20 °C db and an outdoor air temperature of 7 °C db/6 °C wb

³ if outdoor units are combined, refer to the installation manual

⁴ the unit can be operated even if outdoor temperature gets down to -20 °C, however note that the warranty covers only up to -15 °C because operation beyond that temperature is out of specification.




⁵

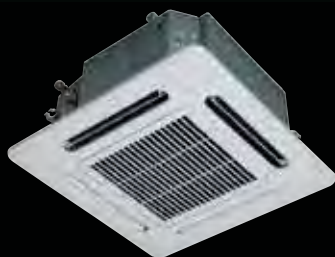
When outdoor air temperature falls to under -15 °C, it may cause shortening the product lifetime

CO = cooling mode

HP = heating mode

Indoor units combinations

	Model Name		Cooling capacity	Heating capacity	Outdoor units in combination	Number of indoor units		Total cap. of connectable indoor units	
						Max	Min	Max	Min
	MMY-MAP0802FT8-E	8 HP	22,4 kW	25,0 kW	1	13	5,6 HP	10,8 HP	
	MMY-MAP1002FT8-E	10 HP	28,0 kW	31,5 kW	1	16	7,0 HP	13,5 HP	
	MMY-MAP1202FT8-E	12 HP	33,5 kW	35,5 kW	1	16	8,4 HP	14,4 HP	
	MMY-AP1602FT8-E	16 HP	45,0 kW	50,0 kW	2 (22,4kW+22,4kW)	27	11,2 HP	21,6 HP	
	MMY-AP1802FT8-E	18 HP	50,4 kW	56,5 kW	2 (22,4kW+28kW)	30	12,6 HP	24,3 HP	
	MMY-AP2002FT8-E	20 HP	56,0 kW	63,0 kW	2 (28kW+28kW)	33	14,0 HP	27,0 HP	
	MMY-AP2402FT8-E	24 HP	68,0 kW	76,5 kW	3 (22,4kW+22,4kW+22,4kW)	40	16,8 HP	32,4 HP	
	MMY-AP2602FT8-E	26 HP	73,0 kW	81,5 kW	3 (22,4kW+22,4kW+28kW)	43	18,2 HP	35,1 HP	
	MMY-AP2802FT8-E	28 HP	78,5 kW	88,0 kW	3 (22,4kW+28kW+28kW)	47	19,6 HP	37,8 HP	
	MMY-AP3002FT8-E	30 HP	84,0 kW	95,0 kW	3 (28kW+28kW+28kW)	48	21,0 HP	40,5 HP	



MMU-AP***4MH-E

Compact 4-way cassette

Features

The compact 4-way cassette suits all the standard 600 × 600 mm grid ceiling, to allow simple and easy installation and maintenance.

Its sophisticated design fits with any room interior, where design is as important as the functionality.

Draft prevention and clean ceiling functions make this unit ideal for the most demanding application.

Key features

Slimline dimensions make this cassette suitable for any kind of installation.

All the capacity sizes have the same physical dimensions so the installation looks much smarter and consistent.

Easy maintenance: access to the corner pockets is easy and enables convenient installation and adjustment for perfect ceiling fitting.

Wireless remote controllers with TCB-AX21E2 stand alone receiver can be connected.

Performance data

Indoor unit	MMU-	AP0074MH-E	AP0094MH-E	AP0124MH-E	AP0154MH-E	AP0184MH-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6
Heating capacity	kW	2,5	3,2	4,0	5,0	6,3
Power consumption	kW	0,034	0,036	0,038	0,041	0,052
Running current	A	0,28	0,30	0,31	0,34	0,42
Starting current	A	0,49	0,52	0,54	0,59	0,73

Physical data Indoor unit

Indoor unit	MMU-	AP0074MH-E	AP0094MH-E	AP0124MH-E	AP0154MH-E	AP0184MH-E
Air Flow (h/l)	m ³ /h	552/378	570/378	594/402	660/468	762/522
Air Flow (h/l)	l/s	153/105	158/105	165/112	183/130	211/145
Sound pressure level (h/m/l)	dB(A)	36/32/28	37/33/28	37/33/29	40/35/30	44/39/34
Sound power level (h/m/l)	dB(A)	51/47/43	52/48/43	52/48/44	55/50/45	59/54/49
Dimensions (HxWxD)	mm	268x575x575	268x575x575	268x575x575	268x575x575	268x575x575
Weight	kg	17	17	17	17	17
Panel dimensions (HxWxD)	mm	27x700x700	27x700x700	27x700x700	27x700x700	27x700x700
Panel weight	kg	3	3	3	3	3
Connecting pipe, gas		3/8"	3/8"	3/8"	5/8"	5/8"
Connecting pipe, liquid		1/4"	1/4"	1/4"	1/4"	1/4"
Drain port diameter	mm	25	25	25	25	25
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50



Slim duct

Features

Whether installed in a ceiling void or in a false ceiling, Toshiba new slim-duct offers the ultimate technology, with exceptional energy savings, high performance and easy installation.

This ultra flexible, invisible and silent unit creates a pleasant and comfortable environment for a wide range of applications, such as hotels, offices, shops, etc.

Key features

Very slim design: only 21 cm height, for easier and more flexible installation.

Very low noise level: it can operate down to 24 dB(A).

Flexible installation: ideal for sites with restriction on the space above ceiling level, the unit features a high-lift drain pipe (850 mm).

Perfect comfort throughout the room: can be used with any kind of air diffuser.

Unobtrusive: concealed installation within a ceiling void.

MMD-AP*4SPH-E**

Performance data

Indoor unit	MMU-	AP0074SPH-E	AP0094SPH-E	AP0124SPH-E	AP0154SPH-E	AP0184SPH-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6
Heating capacity	kW	2,5	3,2	4,0	5,0	6,3
Power consumption	kW	0,039	0,039	0,043	0,045	0,054
Running current	A	0,29	0,29	0,31	0,32	0,39
Starting current	A	0,51	0,51	0,54	0,56	0,68

Physical data Indoor unit

Indoor unit	MMU-	AP0074SPH-E	AP0094SPH-E	AP0124SPH-E	AP0154SPH-E	AP0184SPH-E
Air Flow (h/l)	m ³ /h	540/400	540/400	600/450	690/520	780/580
Air Flow (h/l)	l/s	150/111	150/111	166/125	191/144	216/161
Sound pressure level, rear suction (h/l)	dB(A)	28/24	28/24	29/25	32/28	33/29
Sound pressure level, bottom suction (h/m/l)	dB(A)	36/33/30	36/33/30	38/35/32	39/36/33	40/38/36
Sound power level, bottom suction (h/m/l)	dB(A)	51/48/45	51/48/45	53/50/47	54/51/48	55/53/51
Dimensions (HxWxD)	mm	210x845x645	210x845x645	210x845x645	210x845x645	210x845x645
Weight	kg	22	22	22	23	23
External static pressure	Pa	6	6	5	5	4
Max external static pressure	Pa	46	46	45	45	44
Connecting pipe, gas		3/8"	3/8"	3/8"	1/2"	1/2"
Connecting pipe, liquid		1/4"	1/4"	1/4"	1/4"	1/4"
Drain port diameter	mm	25	25	25	25	25
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50



MMK-AP*4MH-E**

Compact high-wall

Features

This compact high-wall is perfect for limited spaces, such as offices, small shops or hotel rooms.

The unit is compact (only 275 × 790 × 208 mm) and light-weight (11 kg).

This high-wall also achieves outstanding sound level performances.

Key features

New compact and modern design: and fits easily in a narrow corridor (width of a door). New rounded shape and grille, for a more attractive design.

Light unit: 11 kg – reduced by 40% less than average equivalent units compared to the previous model.

Clean unit: the panel is easily detachable for fast grille and filters cleaning.

Low noise level: it operates down to 29 dB(A).

Auto-swing mechanism.

Performance data

Indoor unit	MMU-	AP0154H-E	AP0184H-E	AP0484H-E
Cooling capacity	kW	4,5	5,6	14,0
Heating capacity	kW	5,0	6,3	16,0
Power consumption	kW	0,033	0,038	0,110
Running current	A	0,29	0,32	0,84
Starting current	A	0,43	0,48	1,25

Physical data Indoor unit

Indoor unit	MMU-	AP0154H-E	AP0184H-E	AP0484H-E
Air Flow (h/l)	m ³ /h	720/540	780/540	1800/1320
Air Flow (h/l)	l/s	199/150	216/150	499/366
Sound pressure level (h/m/l)	dB(A)	35/32/30	36/33/30	43/40/37
Sound power level (h/m/l)	kg	50/47/45	51/48/45	58/55/52
Dimensions (HxWxD)	mm	210x910x680	210x910x680	210x1595x680
Weight	kg	22	22	34
Connecting pipe, gas		1/2"	1/2"	5/8"
Connecting pipe, liquid		1/4"	1/4"	3/8"
Drain port diameter	mm	20	20	20
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50



A/A CLASS

R-410A

DEODORIZING EFFECT

MML-AP*4NH-E**

Bi-flow console

Features

Innovative and compact unit to be installed on the floor and in low wall applications, fit perfectly under the window sills or in a low ceiling attic.

Unique floor heating function, to deliver a powerful flow at floor level for a uniform and comfortable room heating.

Key features

Compact and modern design in all three dimensions (60 × 70 × 22 cm).

Bi-flow. Two outlets for complete personalized flow: flow intensity and air direction control.

Toshiba new IAQ filter filtration system, includes extremely powerful anti virus, anti bacteria and the deodorizing effects.

Child lock function on the unit display panel.

Brightness level control of the display unit to reduce the led light glow.

Automatic restart function in case of unexpected electricity supply line power cuts.

Smart user interface

Floor heating mode

Compact design

Performance data

Indoor unit	MMU-	AP0074NH-E	AP0094NH-E	AP0124NH-E	AP0154NH-E	AP0184NH-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6
Heating capacity	kW	2,5	3,2	4,0	5,0	6,3
Power consumption	kW	0.021	0.021	0.025	0.034	0.052
Running current	A	0.20	0.20	0.23	0.29	0.42
Starting current	A	0.26	0.26	0.30	0.38	0.55

Physical data Indoor unit

Indoor unit	MMU-	AP0074NH-E	AP0094NH-E	AP0124NH-E	AP0154NH-E	AP0184NH-E
Air Flow (h/l)	m ³ /h	510/282	510/282	552/324	624/384	726/426
Air Flow (h/l)	l/s	142/78.3	142/78.3	153/90	173/106.7	202/56.1
Sound pressure level (h/m/l)	dB(A)	38/32/26	38/32/26	40/34/29	43/37/31	47/40/34
Sound power level (h/m/l)	dB(A)	53/47/41	53/47/41	55/49/44	58/52/46	62/55/49
Dimensions (HxWxD)	mm	600x700x220	600x700x220	600x700x220	600x700x220	600x700x220
Weight	kg	17	17	17	17	17
Connecting pipe, gas		3/8"	3/8"	3/8"	1/2"	1/2"
Connecting pipe, liquid		1/4"	1/4"	1/4"	1/4"	1/4"
Drain port diameter	mm	16	16	16	16	16
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

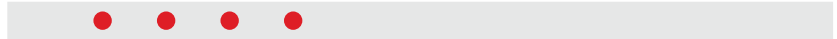
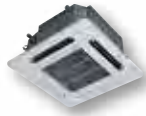
Indoor units range

Model Type

HP	0,8	1,0	1,3	1,7	2,0	2,5	3,0	3,2	4,0	5,0	6,0	8,0	10,0
kW	2,2	2,8	3,6	4,5	5,6	7,1	8,0	9,0	11,2	14,0	16,0	22,4	28

Cassette

Compact 4-way
MMU-AP***MH



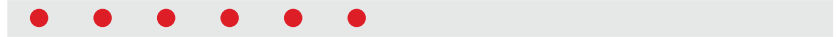
4-way
MMU-AP***H



2-way
MMU-AP***WH

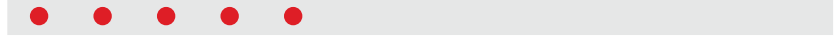


1-way
MMU-AP***YH/SH

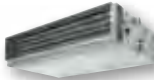


Duct

Slim
MMD-AP***SPH



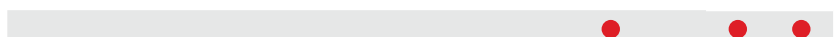
Concealed
MMD-AP***BH



Concealed High Static
MMD-AP***H



Fresh air intake
MMD-AP***HFE

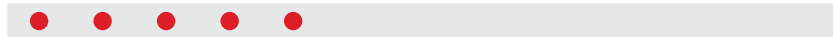


Ceiling
MMC-AP***H

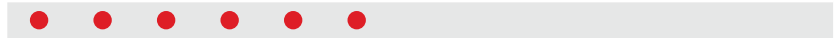


Floor Standing

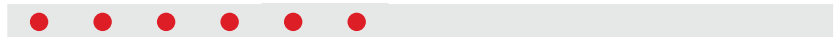
Bi-flow console
MML-AP***NH



Cabinet
MML-AP***H



Concealed
MML-AP***BH

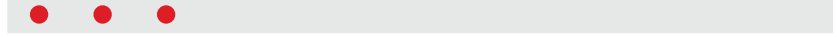


Tall
MMF-AP***H

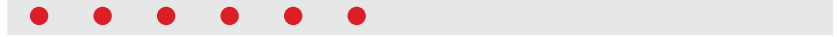


High Wall

Serie 2
MMK-AP***2H



Serie 3
MMK-AP***3H












HP	0,8	1,0	1,3	1,7	2,0	2,5	3,0	3,2	4,0	5,0	6,0	8,0	10,0
kW	2,2	2,8	3,6	4,5	5,6	7,1	8,0	9,0	11,2	14,0	16,0	22,4	28

Please contact local distributor for detailed combinations

Indoor units range

Model Type	Model Name	Capacity Code	Cooling cap. (kW)	Heating cap. (kW)
4-way cassette 	MMU-AP0092H	1,00	2,80	3,20
	MMU-AP0122H	1,25	3,60	4,00
	MMU-AP0152H	1,70	4,50	5,00
	MMU-AP0182H	2,00	5,60	6,30
	MMU-AP0242H	2,50	7,10	8,00
	MMU-AP0272H	3,00	8,00	9,00
	MMU-AP0302H	3,20	9,00	10,00
	MMU-AP0362H	4,00	11,20	12,50
	MMU-AP0482H	5,00	14,00	16,00
	MMU-AP0562H	6,00	16,00	18,00
Compact 4-way cassette 	MMU-AP0074MH-E	0,80	2,20	2,50
	MMU-AP0094MH-E	1,00	2,80	3,20
	MMU-AP0124MH-E	1,25	3,60	4,00
	MMU-AP0154MH-E	1,70	4,50	5,00
	MMU-AP0184MH-E	2,00	5,60	6,30
2-way cassette 	MMU-AP0072WH	0,80	2,20	2,50
	MMU-AP0092WH	1,00	2,80	3,20
	MMU-AP0122WH	1,25	3,60	4,00
	MMU-AP0152WH	1,70	4,50	5,00
	MMU-AP0182WH	2,00	5,60	6,30
	MMU-AP0242WH	2,50	7,10	8,00
	MMU-AP0272WH	3,00	8,00	9,00
	MMU-AP0302WH	3,20	9,00	10,00
	MMU-AP0362WH	4,00	11,20	12,50
	MMU-AP0482WH	5,00	14,00	16,00
MMU-AP0562WH	6,00	16,00	18,00	
1-way cassette 	MMU-AP0074YH-E	0,80	2,20	2,50
	MMU-AP0094YH-E	1,00	2,80	3,20
	MMU-AP0124YH-E	1,25	3,60	4,00
	MMU-AP0154SH-E	1,70	4,50	5,00
	MMU-AP0184SH-E	2,00	5,60	6,30
MMU-AP0244SH-E	2,50	7,10	8,00	
Concealed duct, stand type 	MMD-AP0074BH-E	0,80	2,20	2,50
	MMD-AP0094BH-E	1,00	2,80	3,20
	MMD-AP0124BH-E	1,25	3,60	4,00
	MMD-AP0154BH-E	1,70	4,50	5,00
	MMD-AP0184BH-E	2,00	5,60	6,30
	MMD-AP0244BH-E	2,50	7,10	8,00
	MMD-AP0274BH-E	3,00	8,00	9,00
	MMD-AP03015H-E	3,20	9,00	10,00
	MMD-AP0364BH-E	4,00	11,20	12,50
	MMD-AP0484BH-E	5,00	14,00	16,00
MMD-AP0564BH-E	6,00	16,00	18,00	
Concealed duct, high static pressure 	MMD-AP0184H-E	2,00	5,60	6,30
	MMD-AP0244H-E	2,50	7,10	8,00
	MMD-AP0274H-E	3,00	8,00	9,00
	MMD-AP0364H-E	4,00	11,20	12,50
	MMD-AP0484H-E	5,00	14,00	16,00
	MMD-AP0724H-E	8,00	22,40	25,00
MMD-AP0964H-E	10,00	28,00	31,50	

Model Type	Model Name	Capacity Code	Cooling cap. (kW)	Heating cap. (kW)
Slim Duct 	MMD-AP0074SPH-E	0,80	2,20	2,50
	MMD-AP0094SPH-E	1,00	2,80	3,20
	MMD-AP0124SPH-E	1,25	3,60	4,00
	MMD-AP0154SPH-E	1,70	4,50	5,00
	MMD-AP0184SPH-E	2,00	5,60	6,30
Under-ceiling 	MMC-AP0154H-E	1,70	4,50	5,00
	MMC-AP0184H-E	2,00	5,60	6,30
	MMC-AP0244H-E	2,50	7,10	8,00
	MMC-AP0274H-E	3,00	8,00	9,00
	MMC-AP0364H-E	4,00	11,20	12,50
MMC-AP0484H-E	5,00	14,00	16,00	
High-wall compact 	MMK-AP0074MH-E	0,80	2,20	2,50
	MMK-AP0094MH-E	1,00	2,80	3,20
	MMK-AP0124MH-E	1,25	3,60	4,00
High-wall 	MMK-AP0073H	0,80	2,20	2,50
	MMK-AP0093H	1,00	2,80	3,20
	MMK-AP0123H	1,25	3,60	4,00
	MMK-AP0153H	1,70	4,50	5,00
	MMK-AP0183H	2,00	5,60	6,30
	MMK-AP0243H	2,50	7,10	8,00
Bi-flow console 	MML-AP0074NH-E	0,80	2,20	2,50
	MML-AP0094NH-E	1,00	2,80	3,20
	MML-AP0124NH-E	1,25	3,60	4,00
	MML-AP0154NH-E	1,70	4,50	5,00
	MML-AP0184NH-E	2,00	5,60	6,30
Floor standing cabinet type 	MML-AP0071H	0,80	2,20	2,50
	MML-AP0091H	1,00	2,80	3,20
	MML-AP0121H	1,25	3,60	4,00
	MML-AP0151H	1,70	4,50	5,00
	MML-AP0181H	2,00	5,60	6,30
	MML-AP0241H	2,50	7,10	8,00
Floor standing Concealed type 	MML-AP0074BH-E	0,80	2,20	2,50
	MML-AP0094BH-E	1,00	2,80	3,20
	MML-AP0124BH-E	1,25	3,60	4,00
	MML-AP0154BH-E	1,70	4,50	5,00
	MML-AP0184BH-E	2,00	5,60	6,30
	MML-AP0244BH-E	2,50	7,10	8,00
Tall floor-standing 	MMF-AP0154H-E	1,70	4,50	5,00
	MMF-AP0184H-E	2,00	5,60	6,30
	MMF-AP0244H-E	2,50	7,10	8,00
	MMF-AP0274H-E	3,00	8,00	9,00
	MMF-AP0364H-E	4,00	11,20	12,50
	MMF-AP0484H-E	5,00	14,00	16,00
MMF-AP0564H-E	6,00	16,00	18,00	
Fresh Air Intake 	MMD-AP0481HFE	5,00	14,00	8,90
	MMD-AP0721HFE	8,00	22,40	13,90
	MMD-AP0961HFE	10,00	28,00	17,40

**FRESH AIR VENTILATION AND
HEAT RECOVERY UNIT**

**COMPATIBLE WITH LIGHT
COMMERCIAL AND VRF
SYSTEMS**

VN-M*0HE**



High efficiency

Wide range

TCC-LINK

Air-to-Air Heat Exchangers

Features

The air-to-air heat exchangers can be integrated with the air conditioning system.

They use exhaust air to pre-condition the incoming air, thus reducing the cooling or heating load and the overall size of the required air conditioning system.

Key features

7 models available with air flow ranges from 110 to 1000 m³/h.

Air conditioners and heat exchangers are controlled with same main bus system(TCC-LINK).

Automatic changeover to efficient operation mode: Units automatically switches to the heat exchange mode and normal ventilation based on operating conditions.

Free cooling - Provides fresh outdoor cool air to reduce the indoor air temperature, when the outdoor temperature is lower than the indoor air conditioned temperature.

Air balance volume rate can be varied to suit the usage environment and location

Easy to install and service. Unit is designed for either horizontal or upside down installations.

Heat Exchangers

at heat exchange mode and bypass mode

Model			VN-M150HE	VN-M250HE	VN-M350HE	VN-M500HE	VN-M650HE	VN-M800HE	VN-M1000HE
Air volume	(EH/H/L)	m ³ /h	150/150/110	250/250/155	350/350/210	500/500/390	650/650/520	800/800/700	1000/1000/755
Temp. exchange efficiency	(EH/H/L)	%	81,5/81,5/83	78/78/81,5	74,5/74,5/79,5	76,5/76,5/78	75/75/76,5	76,5/76,5/77,5	73,5/73,5/77
Enthalpy exchange efficiency (Heating)	(EH/H/L)	%	74,5/74,5/76	70/70/74	65/65/71,5	72/72/73,5	69,5/69,5/71,5	71/71/71,5	68,5/68,5/71,5
Enthalpy exchange efficiency (Cooling)	(EH/H/L)	%	69,5/69,5/71	65/65/69	60,5/60,5/67	64,5/64,5/66,5	61,5/61,5/64	64/64/65,5	60,5/60,5/64,5
Sound pressure level* **	EH	dB(A)	26-28	29,5-30	34-35	32,5-34	34-36	37-38,5	39,5-40,5
Sound pressure level* **	H	dB(A)	24-25,5	25-27	30-32	29,5-31	33-34	35,5-37	38,5-40
Sound pressure level* **	L	dB(A)	20-22	21-22	27-29	26-29	31-32,5	33,5-35	34-35,5
Power consumption**	EH	dB(A)	68-78	123-138	165-182	214-238	262-290	360-383	532-569
Power consumption**	H	dB(A)	59-67	99-111	135-145	176-192	240-258	339-353	494-538
Power consumption**	L	dB(A)	42-47	52-59	82-88	128-142	178-191	286-300	353-370
External static pressure**	EH	dB(A)	82-102	80-98	114-125	134-150	91-107	142-158	130-150
External static pressure**	H	dB(A)	52-78	34-65	56-83	69-99	58-82	102-132	97-122
External static pressure**	L	dB(A)	47-64	28-40	65-94	62-92	61-96	76-112	84-127
Dimensions (HxWxD)		mm	290x900x900	290x900x900	290x900x900	350x1140x1140	350x1140x1140	400x1189x1189	400x1189x1189
Weight		kg	36	36	38	53	53	70	70
Duct diameter		mm	100	150	150	200	200	250	250
Power supply		V-ph-Hz	220-240 - 1 - 50						
Operating range - around unit			-10°C ÷ +40°C, 80% RH or less						
Operating range - outdoor air			-15°C ÷ +43°C						
Room temperature			+5°C ÷ +40°C, 80% RH or less						

* Sound pressure level is measured 1.5m below the center of the unit.

** Sound power level, power consumption and external static pressure values at 220 - 240 V

EH/H/L = extra-high/high/low

Heat Exchangers + DX coil (+ Humidifier)

Model			VN-M150HE	VN-M250HE	VN-M350HE	VN-M500HE	VN-M650HE	VN-M800HE	
Fresh air conditioning capacity	CO	kW	4,10	6,56	8,25	4,10	6,56	8,25	
Fresh air conditioning capacity	HP	kW	5,53	8,61	10,92	5,53	8,61	10,92	
Air volume	(EH/H/L)	m ³ /h	500/500/440	800/800/640	950/950/820	500/500/440	800/800/640	950/950/820	
Temperature exchange efficiency	(EH/H/L)	%	70,5/70,5/71,5	70/70/72,5	65,5/65,5/67,5	70,5/70,5/71,5	70/70/72,5	65,5/65,5/67,5	
Enthalpy exchange efficiency (Heating)	(EH/H/L)	%	68,5/68,5/69	70/70/73	66/66/68,5	68,5/68,5/69	70/70/73	66/66/68,5	
Enthalpy exchange efficiency (Cooling)	(EH/H/L)	%	56,5/56,5/57,5	56/56/59	52/52/54,5	56,5/56,5/57,5	56/56/59	52/52/54,5	
Sound pressure level* ***	(EH/H/L)	dB(A)	37,5/36,5/34,5	41/40/38	43/42/40	36,5/35,5/33,5	40/39/38	42/41/39	
Power consumption***	(EH/H/L)	W	300/280/235	505/465/335	550/545/485	305/285/240	530/485/350	575/565/520	
External static pressure***	(EH/H/L)	Pa	120/105/115	120/100/105	135/120/105	95/85/95	105/85/90	110/90/115	
Heat exchanger			Finned tube - R410A						
Suction line diameter			3/8"	1/2"	1/2"	3/8"	1/2"	1/2"	
Liquid line diameter			1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	
Drain port diameter		mm	25	25	25	25	25	25	
Humidifier** technology			Permeable film humidifier						
water pressure		Mpa	0,02 to 0,49						
water flow		kg/h	-	-	-	3,0	5,0	6,0	
water supply			-	-	-	1/2"	1/2"	1/2"	
Dimensions (HxWxD)		mm	430x1140x1690	430x1189x1739	430x1189x1739	430x1140x1690	430x1189x1739	430x1189x1739	
Weight		kg	84	100	101	91	111	112	
Duct diameter		mm	200	250	250	200	250	250	
Power supply		V-ph-Hz	220-240 - 1 - 50						
Operating range - outdoor air	HP/CO		-15°C ÷ +21°C / -5°C ÷ +43°C						
Room temperature	HP/CO		+28°C or less / +21°C ÷ 32°C, 80% RH or less						

* Sound pressure level is measured 1.5m below the center of the unit.

**Humidification available during heating operation

***The water quality of the humidifiers supply water should meet public waterworks standards, and have a hardness less than 100mg/l. If the supply water does not meet these standards, use a deionizer.

*** Sound power level, power consumption and external static pressure values at 230 V

EH/H/L = extra-high/high/low
CO = cooling mode
HP = heating mode

FRESH AIR VENTILATION

HEATING AND COOLING

MMD-AP*HFE**



Connectable outdoor unit
 MMY-MAPXXXXT8
 MMY-MAPXXXXHT8
 * Cooling/Heating selecting SMMS type outdoor unit.



Compact

Only for SMMS

Compatible with new DX coil kit

Fresh air intake

Features

This unit offers the possibility to introduce in the building external fresh air and to control air discharge temperature.

It's the ideal solution for school, hospital, offices and all the buildings that require a fresh air ventilation, in limited quantity, without any further exclusive system.

Key features

Pre-heat, pre-cool functions.

Compact dimensions.

TCC-Link control connection.

External static pressure available up to 230 Pa.

Use Conditions

In COOL mode, if temperature of the fresh air is below the setup temp. of +3°C, FAN status is automatically made. When temperature of the fresh air is below 19°C, FAN status is also made regardless of the setup temperature.

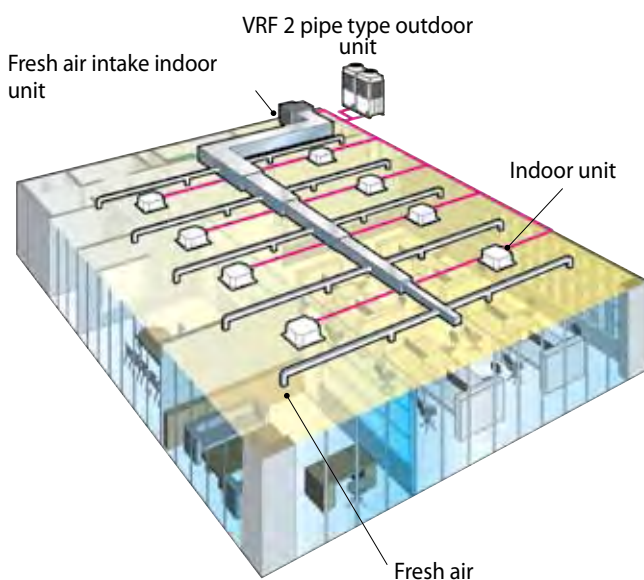
In HEAT mode, if temperature of the fresh air is above the setup temp. -3°C, FAN status is automatically made. When temperature of the fresh air is above 15°C, FAN status is also made regardless of the setup temperature.

Performance data

Indoor unit	MMU-	AP0481HFE	AP0721HFE	AP0961HFE
Cooling capacity	kW	14,0	22,4	28,0
Heating capacity	kW	8,9	13,9	17,4
Power input	kW	0,28	0,45	0,52
Power factor	%	85	78	83
Running current	A	1,43	2,52	2,73
Starting current	A	3,5	7,0	7,0

Physical data Indoor unit

Indoor unit	MMU-	AP0481HFE	AP0721HFE	AP0961HFE
Air Flow (h)	m ³ /h	1080	1680	2100
Sound pressure level (h/m/l)	dB(A)	45/43/41	46/45/44	46/45/44
Sound power level (h/m/l)	dB(A)	60/58/56	61/60/59	61/60/59
Dimensions (HxWxD)	mm	492 x 892 x 1262	492 x 1392 x 1262	492 x 1392 x 1262
Weight	kg	93	144	144
Connecting pipe, gas		5/8"	7/8"	7/8"
Connecting pipe, liquid		3/8"	1/2"	1/2"
Drain port diameter	mm	25	25	25
Operating range - Cooling	°C	5÷43	5÷43	5÷43
Operating range - Heating	°C	-5÷43	-5÷43	-5÷43
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50
Air filter		Option or field supply	Option or field supply	Option or field supply
External static pressure (h/m/l)	Pa	170(Min)/210(Factory setting)/230(Max)	140(Min)/165(Factory setting)/180(Max)	160(Min)/190(Factory setting)/205(Max)



SMMS-I

SMMS

MINI-SMMS

SHRM



Controller

DX coil interface

Features

Fresh air intake is now widely recommended to improve working environments, and avoid "Sick Building Syndrome". Trends in European and local legislations are moving towards recommending a minimum limits on fresh air intake per person per hour.

Currently, fresh air intake is normally achieved using be-spoked stand-alone air handling units. These third party AHU's pre-condition the ambient fresh air to roughly match that of the conditioned space.

The Direct Expansion Coil Interface (DX) enables the connection of a TOSHIBA VRF Outdoor unit to a third party Air Handling Unit (AHU) for fresh air intake.

It is composed of two parts:

- Controller
- Valve Kit (Three sizes)

Key features

Allows connection of a 3rd party AHU unit to be connected to all Toshiba VRF products (Mini-SMMS, SMMS, SMMSi and SHRM) using a locally supplied DX coil.

Control achieved using a standard Toshiba remote controller (RBC-AMT32E).

Compatible with Toshiba control accessories.

External ON/OFF input.

Safety cut out input to detect fan failure.

Air temperature control achieved using TA sensor positioned in return air stream (set with remote controller).

Technical specifications **Performances**

DX Controller unit	MMD	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010
DX valve unit	MMD	DXV080	DXV080	DXV080	DXV140	DXV140	DXV280	DXV280
Cooling capacity	kW	5,6	7,1	8,0	11,2	14,0	22,4	28,0
Heating capacity	kW	6,3	8,0	9,0	12,5	16,0	25,0	31,5
Power code	HP	2	2,5	3,0	4,0	5,0	8,0	10,0

Technical specifications **Physical Data**

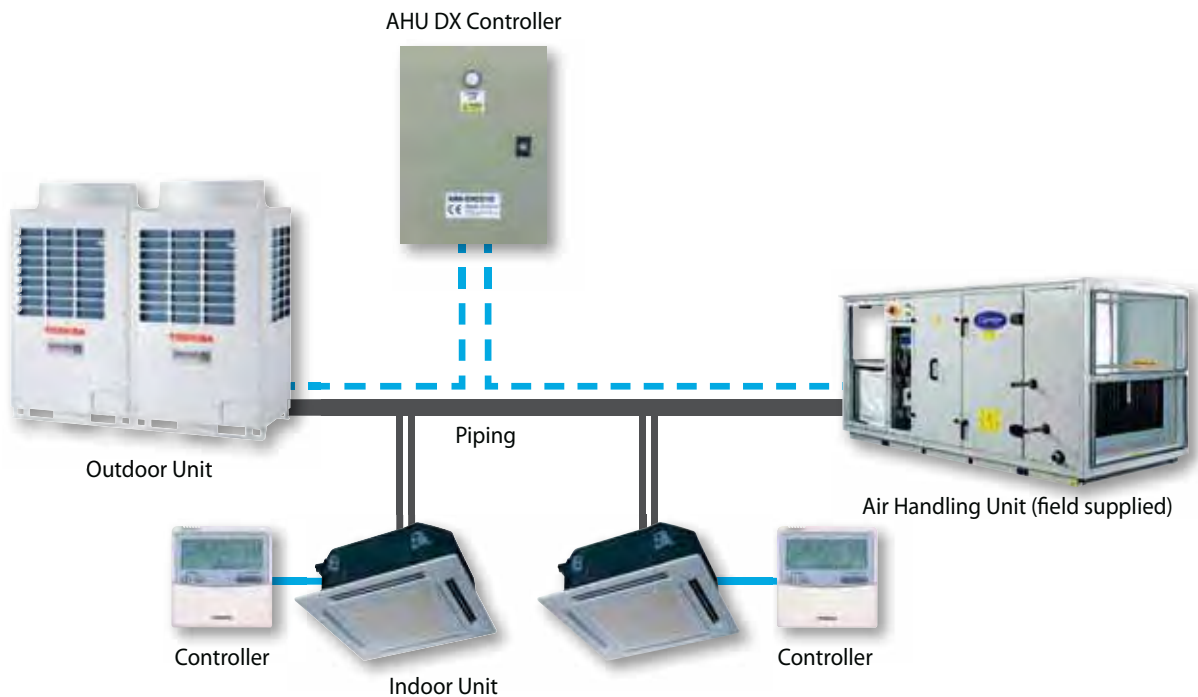
DX Controller unit	MMD	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010
Minimum Air Flow rate	m3/h	720	1060	1060	1280	1680	2880	3360
Maximum Air Flow rate	m3/h	1080	1580	1580	1920	2520	4320	5040
Dimensions (HxWxD)	mm	400 x 300 x 150	400 x 300 x 150	400 x 300 x 150	400 x 300 x 150	400 x 300 x 150	400 x 300 x 150	400 x 300 x 150
Weight	kg	12	12	12	12	12	12	12
Operating range - Cooling coil "Air on" temp	°C	15°CWB÷24°CWB	15°CWB÷24°CWB	15°CWB÷24°CWB	15°CWB÷24°CWB	15°CWB÷24°CWB	15°CWB÷24°CWB	15°CWB÷24°CWB
Operating range - Heating coil "Air on" temp	°C	15°CDB÷28°CDB	15°CDB÷28°CDB	15°CDB÷28°CDB	15°CDB÷28°CDB	15°CDB÷28°CDB	15°CDB÷28°CDB	15°CDB÷28°CDB
Power supply	V-ph-Hz	220/240-1-50						

Note:

Heating & Cooling Capacity are guide-line figures, the design of each customer's AHU and DX Coil will have an impact on the actual system performance.

Heating Capacity Conditions (Indoor 20°C DB & Outdoor 7°C DB / 6°C WB) at Standard Air Flow rate.

Cooling Capacity Conditions (Indoor 27°C DB / 19°C WB & Outdoor 35°C DB) at Standard Air Flow rate.



With Toshiba everything is easier

Toshiba's commitment to the development of technological and innovative products with improved performances is complemented by a responsibility to supply more sophisticated and functional tools for the design, installation and control of these systems.

Selection Software: everything at the click of a button

Sophisticated system design software has been developed for the whole Mini-SMMS, SMMS and SHRM range and is a useful and irreplaceable support tool for engineers, architects, installers and, in general, for anyone who wants to apply innovative Toshiba solutions.

With this software, the user can create a complete VRF system by simply clicking on the icons for the indoor units and the other connection components. It is also possible to define, in advance, relevant parameters such as outside and inside temperatures, fan speed, pipe system length and routing etc.

The software automatically manages all the parameters entered, and the actual system capacity for the conditions required can be quickly calculated and simulated during the design stage. Using this software, the design of VRF systems is guaranteed for the project at the given conditions.

The software constantly monitors possible design errors and warns the user, when it reaches the system limits.

Graphical representation of the required pipe connection system and pipe sizing.

Specific details and data of the system selected: heating capacity, sensible and total cooling capacity, actual cooling capacity, additional refrigerant charge and pricing indications.

Multiple system management as a single project.

Export function to transfer the project report using standard Microsoft® Word® and Adobe® Acrobat® (PDF). The images can also be exported to an AutoCAD® (DXF) file.

Automatic regeneration when adding or amending an existing project selection.

Indoor unit fan speed indication (high/medium/low) on the system report.



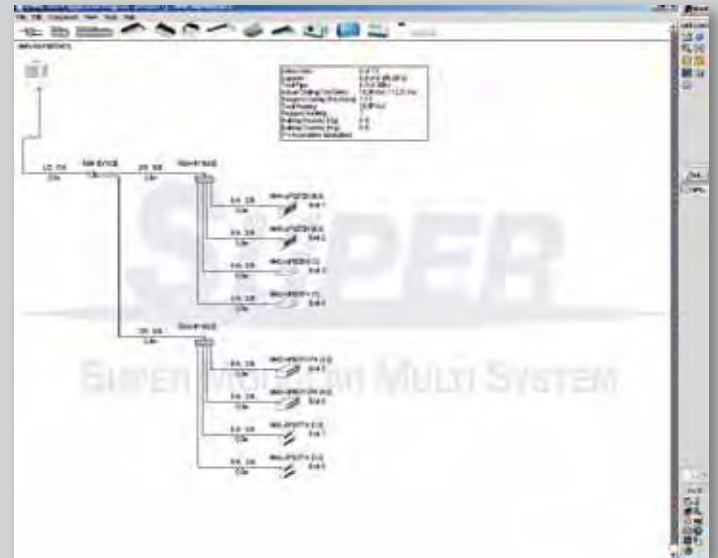
Diagnostic software

The correct operation of sophisticated systems such as VRF is important to the long-term reliability of the system.

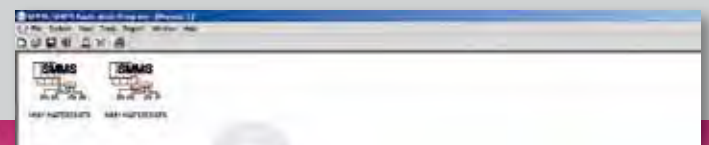
In order to assist with the correct commissioning of MiNi-SMMS, SMMS and SHRM systems, Toshiba has developed a diagnostic software programme – a valuable tool for the commissioning and service engineer.

The engineer can connect to the VRF system using a dedicated interface – enabling the download of all operating parameters and providing the engineer with detailed information for instant analysis or record.

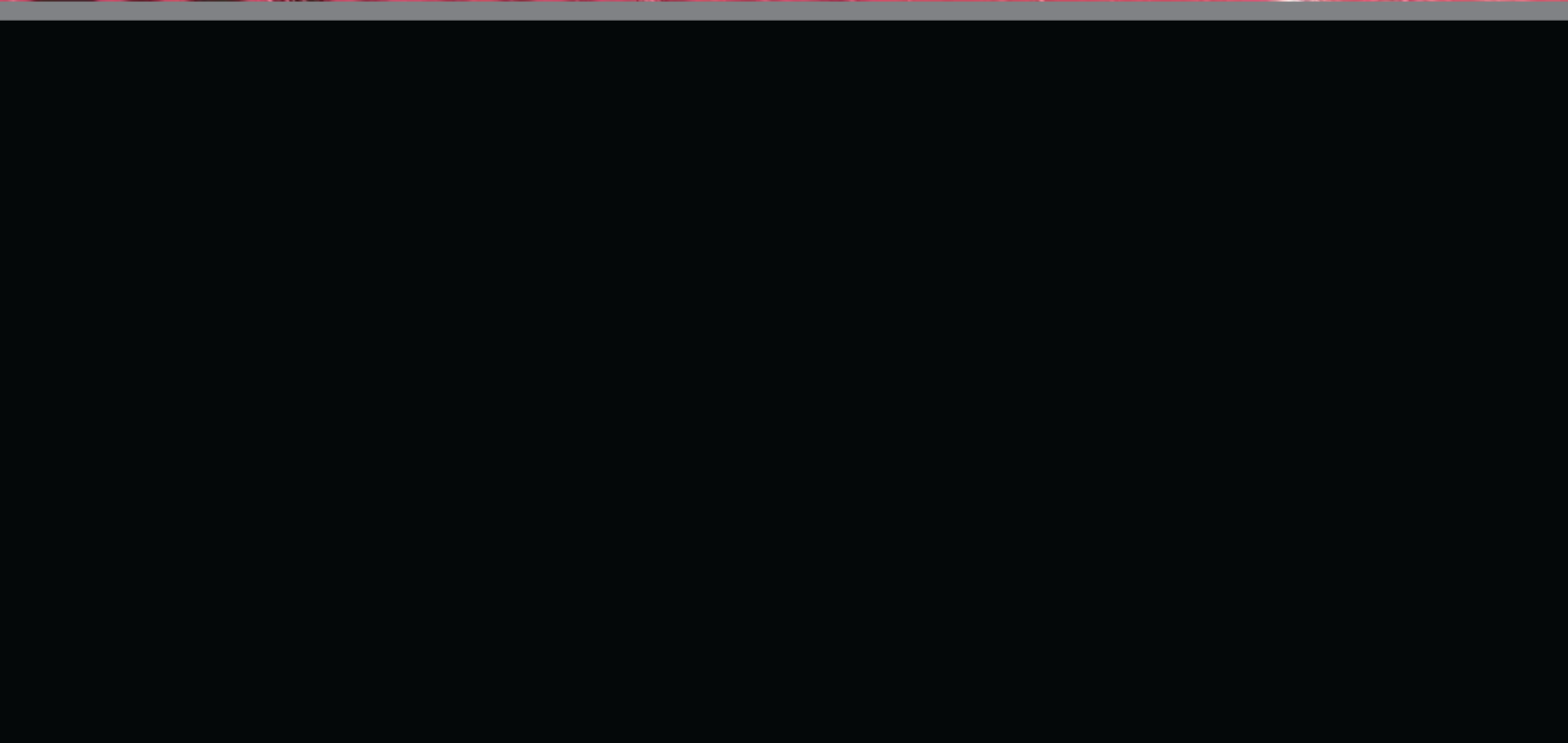
Diagnostic software is distributed exclusively by the Toshiba EMEA RLC Technical Department.



Selection software screenshots



SUPER
 SUPER HEAT RECOVERY MULTI
SUPER
 SUPER MODULAR MULTI SYSTEM



The background of the top half of the page is a vibrant red. It features a complex pattern of glowing white and light red lines that swirl and curve, resembling light trails or data paths. Interspersed among these lines are strings of binary code (0s and 1s) in a light, semi-transparent font. The overall effect is one of dynamic energy and digital connectivity.

Controls

Light commercial and VRF control options.

Technology is nothing without control

An innovative and complete range of integrated controls for application in the Toshiba VRF (SMMSi-, SMMS, SHRM & MiNi SMMS) and RAV (Excludes Di Flexi Type) Product ranges ensures maximum comfort and excellent performance by perfectly matching the different control requirements. The range is composed of three control types: local, central and Building Management controls.

Local control systems

TOSHIBA offer a number of Local Control products that can be used to control a single Indoor Unit, or group of up to 8 Indoor Units, from a position adjacent to that Indoor Unit or group.

It is possible to install these these Local Controllers up to 500m* from the connected Indoor Unit which allows greater flexibility when designing the installation. This also provides the opportunity to install the Local Controller in an area removed from the connected Indoor Unit, for example, common use areas where the Indoor Unit operation should not be changed by local users but may need to be monitored by a site engineer from a Control Room.

There are two different types of Local Remote Controller currently available from Toshiba, these are:

The Wired Remote Controller which is the standard local control device suitable for most applications, and the Wireless Remote Controller which consists of a universal Handset that can be purchased with a choice of 4 different Wireless Receiver Units that are specifically designed to suit different Indoor Unit model types.

** Distances may vary depending on models and installation layout.*

Compact design and minimised installation space

Simplified display using icons

Automatic network addressing

TCC-Link connections with non-polarised wiring



Central control systems

Toshiba offer a number of different central control solutions that can be used to control a large number of Indoor Units from a central location, such as a Reception Area, Engineering room or Office Space.

These Control devices are connected to the Air Conditioner side using Toshiba's dedicated Central Control Network, the TCC-Link, which can be used to directly connect SMMS, MiNi-SMMS, S-HRM, and SMMS-i equipment.

The TCC-Link also offers connection of Light Commercial split systems with the use of a specially designed low cost network adaptor (TCB-PCNT30TLE2)*.

**Excludes DI Flexi type Indoor Unit.*

Toshiba Building Management solutions

Toshiba offer a range of control Interfaces that can be used to Integrate the control of our Air Conditioner products in to local Building Management Systems.

Our Building Management controls currently offer easy integration with the following protocols:

- Lonworks[®].
- Modbus.
- BACnet[®].
- Open Ended system using Digital Analogue Inputs & Outputs.

A Building Management System (BMS) is a computer based control system that is installed in buildings to control and monitor mechanical and electrical equipment, such as ventilation, lighting, power systems, fire systems and security for that building. The core function of most BMS systems is to manage the environment within the building and can be used to control heating and cooling equipment and manage the systems that distribute treated air throughout the building.

What is Lonworks

Lonworks is a control system platform built on the LonTalk Communications Protocol created by the Echelon Corporation, and is used for the networking of equipment over media such as Twisted Pair, Power lines, fibre optics and Radio Frequency. The Lonworks platform has been adopted as the basis for product and service offers in many different industries including the Building industry where it is widely used for control of Lighting and HVAC systems.

What is Modbus?

Modbus is a serial Communications protocol that was first published in 1979 for use with programmable logic controllers, and has now become the most commonly available means of connecting industrial electronic devices to a computer control system.

There are many different versions of Modbus currently used in building management systems including Modbus RTU, Modbus ASCII and Modbus TCP.

BACnet is a communications protocol for building automation and control networks. It is an ASHRAE, ANSI and ISO standard protocol.

BACnet was designed to allow communication of building automation and control systems for applications such as heating, ventilation air-conditioning control, lighting control, access control, and fire detection systems and their associated equipment. The BACnet protocol provides mechanisms for computerized building automation devices to exchange information, regardless of the particular building service they perform.

Please note that Lonworks[®] and BACnet[®] are registered trademarks, however these symbols have been omitted in the remaining text.



Individual Remote Controllers



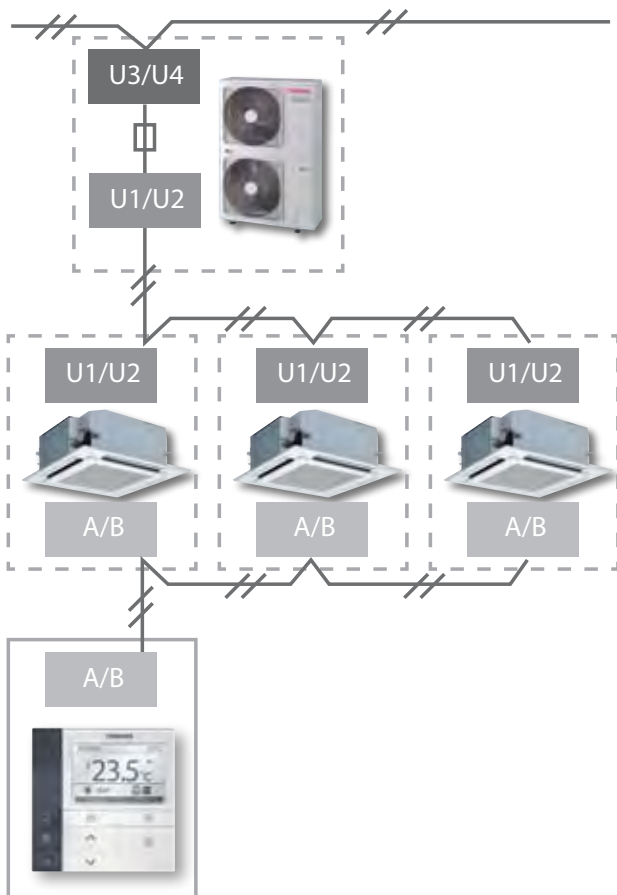
RBC-AMS51E

Lite-Vision plus Remote Controller

The RBC-AMS51E is the new local remote controller with a built in 7-Day Timer-featuring a new multi-language LCD display with backlight, Energy Saving Options and a Return back function.

Key Features

- Possibility to set and display the room name to easily set-up and monitor the working parameters.
- New Modern and desirable controller design with menu driven display.
- Save mode by schedule timer to optimize energy consumption.
- Room temperature display always available.
- Two "Hot Keys" (F1, F2) for easy operation of air conditioner functions.
- Easy to read layout including display of Indoor Unit Model Name and serial number.
- New temperature display that can show the Indoor Unit settings in increments of 0.5°C.
- Built-in backup power. Settings are kept in memories up to 48 hours in case of power failure.
- Remote TA sensor available in controller.
- Can be connected to a single Indoor Unit or a group of up to 8 Indoor Units.



Wireless control



TCB-AX21E2

IR Remote Control

The wireless controller is available with a series of receiver unit designs. These receivers are specially designed to fit into different Indoor Unit models to provide a high standard of finish. The wireless controller features an easy to use and compact button layout, standard control buttons that are always available with increased functions hidden under a sliding screen, and a temperature sensor which can be used in place of the Indoor Unit Return Air (TA) Sensor.

Receiver Models:



RBC-AX31U(W)-
RBC-AX31U(WS)-E

Mountable on the corner pocket of the cassette unit
To be used with: new 4-Way cassette units.
W model is for white cassette panels
WS model is for white/grey cassette panels



RBC-AX22CE2

Receiver mountable in the frame of the front panel.
To be used with: Ceiling units, 1-way cassette units.



RBC-AX23UW(W)-E

Receiver mountable in the frame of the front panel.
To be used with: new 2-way cassette units.



TCB-AX21E2

Wall or ceiling mountable receiver.
To be used with: all the indoor units, more specifically targeted to ducted units.

Wired control

Wired Control



RBC-AMT32E

The standard remote controller can control an individual indoor unit or a group of 8 indoor units. The remote control allows the operating parameters to be set for the indoor unit. It also allows faults to be displayed and unit configurations to be set up. The weekly timer can be fitted to this remote control.

Simplified Control



RBC-AS21E2

This is a simplified version of the standard wired remote controller and can be connected to a single Indoor Unit, or group of up to 8 Indoor Units. The reduced function display and simplified button layout make this controller the ideal solution for hotel and office applications.

Remote controller with weekly timer (7-day timer function)



RBC-AMS41E

This controller is based on the standard wired controller but has the additional control provided by a built-in 7-day timer function making it an ideal solution for any light commercial or VRF application that requires schedule timer operations or Night set-back control. The 7-Day timer function can set multiple Indoor Unit parameters and can control: Operation ON/OFF, Operation Mode, Set Temperature, Energy Saving Function*, Frost Protection Function*, button restrictions. Restriction on button operation.

** Specific Unit Combinations only.*

Schedule timer



TCB-EXS21TLE

The Schedule Timer is an advanced control device that can be used to control Indoor Unit parameters based on a timed schedule, and has two possible modes of operation to choose from, these are:

Weekly Timer Mode

The timer is connected to an Indoor Unit via a local or central remote controller.

Schedule Timer Mode

The timer is connected directly to the TCC Link Central Control network and can set timer functions for up to 64 Indoor Units in up to 8 programmable control groups.

Central controls

Smart Manager



BMS-SM1280HTLE

The Smart Manager has the same hardware Control Function as the BMS-CM1280TLE Controller, but also has the ability of control from a Local Area Network and, with the use of an additional Interface, is capable of Energy Monitoring and Report Creation Functions.

This controller is ideal where advanced control, Energy Monitoring, advanced scheduling or access to individual Air Conditioners is required from networked computer systems.

Features

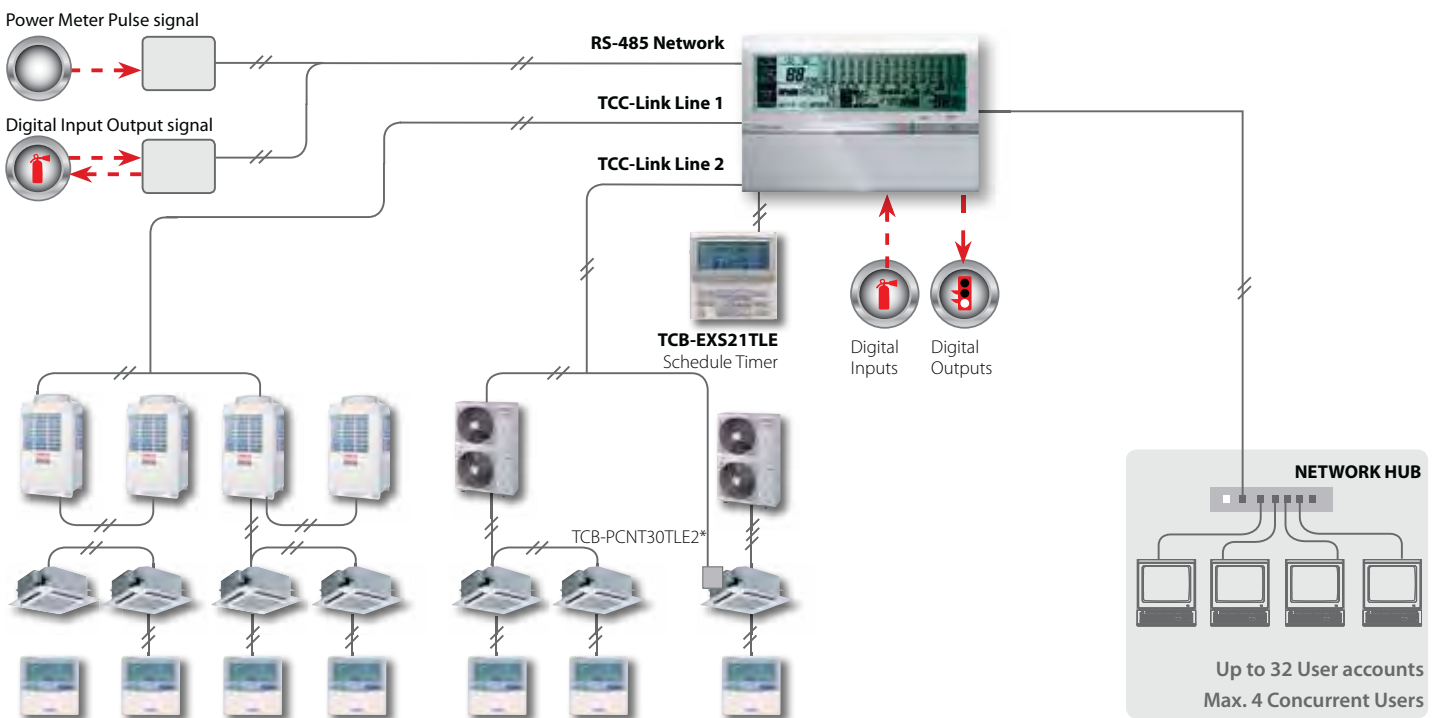
- Same Hardware control features as the BMS-CM1280TLE Controller
- Can be connected to a single PC or LAN to allow advanced control functions from a Multi-Language Web Browser Display Screen*
- Energy Monitoring and report creation functions available
- Advanced operation & master schedules can be set on a calendar
- Additional Digital I/O Device Available
- Thin profile controller and separate power supply unit enables easy installation.

Web Browser Control Software

Layout can be selected in terms of Area Name, Floor Name or Tenant Name.

Features

- List View available - Displays all Indoor Units in one screen
- Set View available - Shows Basic Indoor Unit settings on main screen
- Advanced Operation and Master schedule functions available
- Up to 4 Concurrent users can be connected
- Up to 32 User accounts can be programmed with different levels of access (at least 1 must be administrator level)



* TCC-Link Adaptor for Digital/Super Digital Indoor Units.

Central Controller



TCB-SC642TLE2

The TCB-SC642TLE2 64-Way central controller is TOSHIBA's standard central control solution and can be connected to up to 64 Indoor Units via the TCC-Link Central Control network. Indoor Units can be controlled in terms of: Individual Indoor Unit/Group, all Units in a Zone, and all Units connected. Additional features include 4-levels of remote controller permit/prohibit functions and the option of connecting an additional Schedule Timer.

On-Off controller



TCB-CC163TLE2

The TCB-CC163TLE2 is a 16-Way ON/OFF controller for use with VRF, DI and SDI equipment (excludes DI Flexi Type). It is a simplified Central Control device that can be connected to up to 16 Indoor Units via the TCC-Link network to provide simple "1 touch" ON/OFF control and for all connected Indoor Units.

Compliant Manager



BMS-CM1280TLE
BMS-CM1280FTLE*

This Controller is an advanced Central Control device that can be connected to up to 128 Indoor Units (2 x 64 IDU TCC-Link Connections). The High-Spec model has the same hardware control function as the standard version, but also has the ability of control from a Local Area Network and , with the addition of an additional Interface, is capable of Energy Monitoring and report creation functions. This controller is ideal where advanced control, Energy Monitoring, advanced scheduling or access to individual air Conditioners is required from networked computer systems.

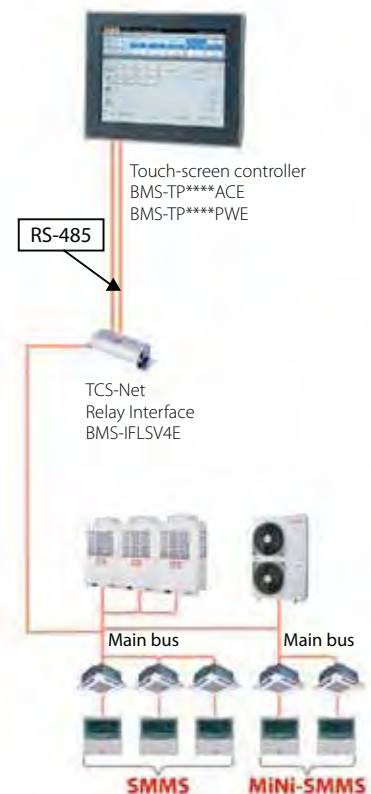
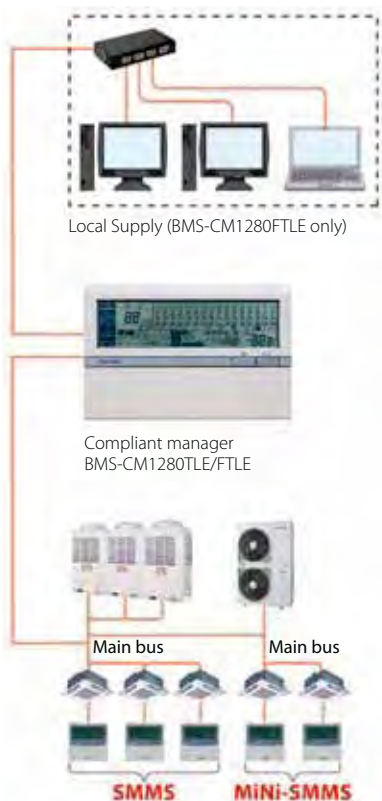
Touch Screen



BMS-TP0641ACE
BMS-TP05121ACE
BMS-TP0641PWE
BMS-TP5121PWE

The Touch Screen Controller can be connected to 64 or 512 Indoor Units depending on model and offers Energy Monitoring* and schedule program functions. This controller is ideally suited to any small or large installation where Energy monitoring functions are required, or where a professional and highly presentable finish is required. It can control each of the individual indoor units and is capable of providing information from the indoor unit settings and malfunction check codes. The Touch Screen is connected to the air conditioner control network directly by relay interfaces.

** Available with BMSTP***PWE Models only and requires an additional relay Interface.*



Web based controls



BMS-WB2561PWE
(Gateway Server)

This is an advanced Central Control device designed for use with large installations or where high-level control and/or energy monitoring functions are required.

One major benefit of the Web Based Controller over other Central Control systems is the ability to automatically retransmit system alarms to up to 8 programmed email addresses. It is also possible to specify which units will send alarms to each of the different email addresses.



BMS-WE01GTE
(WEB Server)

The BMS-WB01GTE is a Master device that can be used to enable the connection of up to 2,048 Indoor Units to the web based controller system. This is carried out using the Master device as a hub for up to 8 Web Based Controllers.

Relay Interfaces



BMS-IFLV4E
For TCS-NET

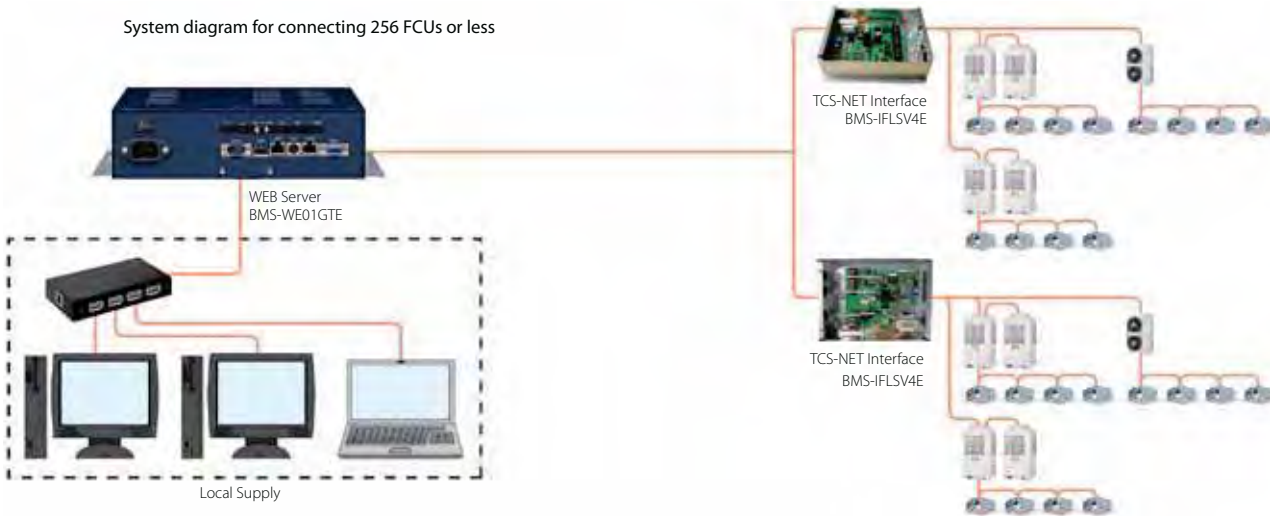


BMS-IFWH5E
For Energy Monitoring

BMS-IFDD03E
For Digital I/O

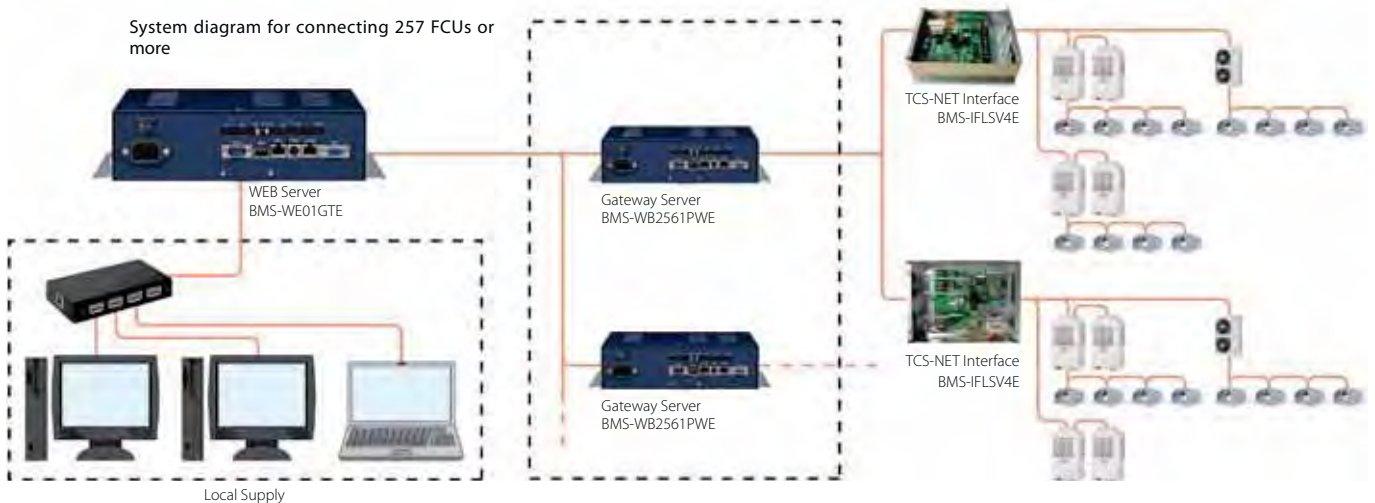
BMS-WB2561PWE (Web Server/Gateway)

System diagram for connecting 256 FCUs or less



BMS-WB01GTE (Master Server)

System diagram for connecting 257 FCUs or more



Building Management systems

A Building Management System (BMS) is a computer based control system that is installed in buildings to control and monitor mechanical and electrical equipment, such as Ventilation, lighting, power systems, fire systems and security for that building.

The core function of most BMS systems is to manage the environment within the building and can be used to control heating and cooling equipment and manage the systems that distribute the treated air throughout the building.

BACnet® gateway

BACnet®



BMS-LSV6E

The Toshiba BACnet® control system consists the BMS-LSV6E Intelligent server and the BMS-STBN08E BACnet server software, and can be connected to the TCC-Link Central Control Network via a TCS-Net Relay Interface to enable control of up to 128 Indoor Units from a BACnet® building management system.

Analogue Interface

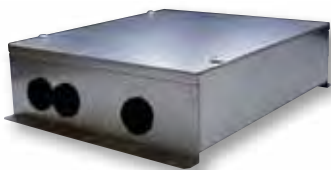


TCB-IFCB640TLE

That Analogue Relay Interface is a device that can be connected directly to the TCC-Link Central Control network to provide Analogue & Digital Inputs & Outputs for control over Toshiba Air Conditioner products from non-Toshiba Control systems. This Interface is ideal for Integrating the Toshiba Air Conditioner product into basic or PLC BMS control systems, such as may be found in older controls systems.



LonWorks® LN Interface



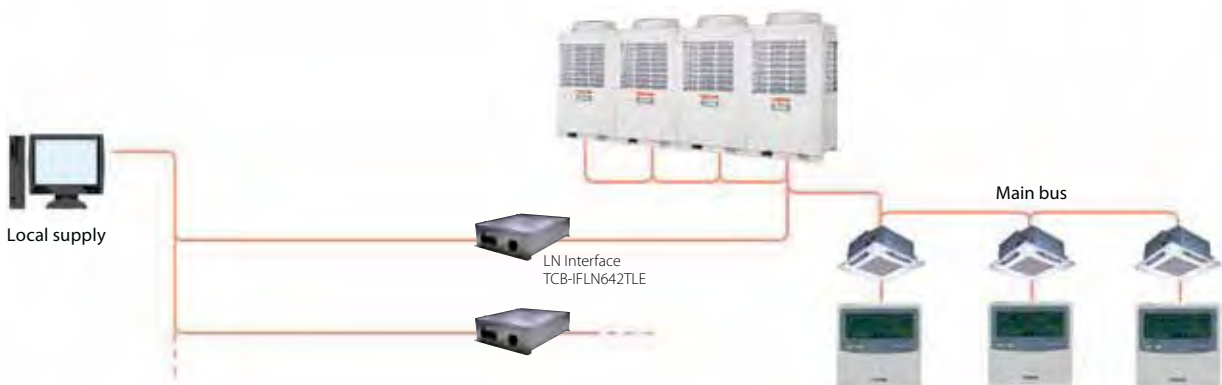
TCB-IFLN642TLE

The Toshiba Lonworks interface 100% LonMark Compliant and is designed to connect the Toshiba Air Conditioning system to a Lonworks Building Management Control System.

This Interface connects directly to the Toshiba TCC-Link Central Control Network on the Air Conditioner side and can be wired on the Indoor or outdoor side depending on preference.

The Interface is then connected to the Lonworks Building Management Control system where it provides 28 Network variables for the sending of Control Commands and receiving unit information.

Multiple Toshiba Lonworks Interfaces can be connected to a single TCC-Link Network and addressed using simple switches provided on the device. This is to enable ease of installation, especially in buildings with separate areas where 1 Interface may be used for each area/floor.



Building Management Systems

Modbus® Interface



TCB-IFMB640TLE

The Toshiba Modbus® interface is designed to connect the Toshiba Air Conditioning system to a Modbus Building Management System.

The Toshiba Interface connects directly to the Toshiba TCC-Link Central Control Network on the Air Conditioner and can be wired on the Indoor or outdoor side depending on preference.

The Interface then uses the Modbus RTU protocol based on the RS-485 type serial communications protocol to connect to a suitable Modbus Master device.

Finally, this Modbus Master device is connected to the BMS control system and allows control of all connected Toshiba Air Conditioner equipment from that BMS control system.

Multiple Toshiba Modbus Interfaces can be connected to a single TCC-Link Network and addressed using simple switches provided on the device.

This is to enable ease of installation, especially in buildings with separate areas where 1 Interface may be used for each area/floor.



Control PC Boards

For the SMMSi are available also a number of Control accessory PC Boards for use with Indoor and Outdoor units

Model number	Reference	Description	Used with
TCB-PCMO4E	External Master On/Off control	External Master On/Off control board	VRF outdoor units
TCB-PCIN4E	Error Output Control Board	Error output control board	VRF outdoor units
TCB-PCDM4E	Power Peak Cut Control Board	Power Peak Cut Control Board	VRF outdoor units
TCB-IFCG1TLE	General purpose interface	enables control of A/C by the DI/DO and AI/AO	Daiseikai, DI, SDI, VRF. Combination with TCB-IFCB640TLE
TCB-IFCB640TLE	Analog interface	Control & monitoring up to 64 IU on TCC-link	Combination with TCB-IFCG1TLE
TCB-IFGSM1E	GSM control interface	Allows ON/OFF control, operation status monitoring & alarm monitoring of A/C	VRF, DI, SDI (CN61) & Daiseikai (CN08 or 09)
TCB-PCOS1E2	Application control kit	Enables night operation control, demand control, operation monitoring	All DI units
TCB-IFCB-4E2	Remote location On/Off Control Box	Enables remote location On/Off control	All indoor units

Interactive Intelligence

RBC-WP1-PE



The Interactive Intelligence software tool is a Building Management control software designed for use on the Lonworks Network protocol and can not only be used to control Toshiba Air Conditioner systems, but also any building systems (i.e. Lighting, security, etc...)

Features

- Can connect up to 1024 Indoor Units
- 3 levels of control schematic automatically created during commissioning
- Advanced scheduling and alarm retransmission via Email
- Remote access available with RBC-IK1-PE Add-On
- Schematics can be fully customised to suit the site (building schematics from AutoCAD can be used)
- Energy Monitoring and report creation functions available
- Can also be used to integrate other site equipment using RBC-DI1-PE Digital I/O Device

Relay Interfaces

TCB-IFGSM1E



The TCB-IFGSM1E Interface is a device that allows control of the Toshiba Air Conditioner Equipment from a remote location using standard GSM (Global system for Mobile communications) Mobile phone SMS text messages.

Features

- Device connects to CN61 on DI/SDI & VRF Indoor Units (excludes DI Flexi Type)
- Daiseikai Residential & DI Flexi units can be connected via HA connector on Indoor Unit
- Control Functions vary depending on HA/CN61 Connection used

TCB-IFCG1TLE



General Purpose Relay I/F

The General Purpose Relay Interface is a device that can be connected directly to the TCC-Link Central Control Network and addressed on the TCC-Link Network in order to provide control of non-Toshiba equipment from a Toshiba control system, and control of the Toshiba Air Conditioner from digital & Analogue Inputs.

Features

- TCB-IFCG1TLE is given a Central Control address (similar to an Indoor Unit) and can then be controlled from a central control device.
- Only On/Off Input/Output available from Central Controllers.
- Full Control Available From Modbus Interface Only
- Can be used to allow On/Off control and monitoring of Residential Indoor Units from TCC-Link Central Control devices (selected models only).

Controls

Model number	Reference	Description	Used with
RBC-AMT32E	Wired Remote Controller	Main wired remote controller	VRF, SDI, DI (except DI flexi and VRF Air-to-air heat exchangers with DX coil) indoor units
RBC-AS21E2	Simplified Wired Remote Controller	As above but designed for hotel and domestic applications	VRF, SDI, DI (except DI flexi and VRF Air-to-air heat exchangers with DX coil) indoor units
NRC-01HE	Wired Remote Controller	Wired remote controller for Air-to-air heat exchanger, including with DX coil and humidifiers models	New Air-to-air heat exchangers and Air-to-air heat exchangers with DX coil
HWS-AMS11E	Room temperature remote controller	Wired Estia Room temperature remote controller including schedule timer	Estia
TCB-EXS21TLE	Schedule timer	Operating in weekly timer mode or schedule timer mode	VRF, SDI, DI (except DI flexi and VRF Air-to-air heat exchangers with DX coil) indoor units
RBC-AMS41E	Remote controller with schedule timer	Enables to control indoor unit operation with schedule timer (7-days) allowing to program 8 functions/day + clock display	VRF, SDI, DI (except DI flexi and VRF Air-to-air heat exchangers with DX coil) indoor units
RBC-AMSS1E-EN RBC-AMSS1E-ES	Lite-Vision plus Remote Controller	Local Controller with Multi-Language LCD display, a built-in 7-Day timer, Energy Saving options and return back function. EN = English, Italian, Polish, Greek, Russian, Turkish. ES = English, Spanish, Portuguese, French, Dutch, German	VRF, SDI, DI (except DI flexi and VRF Air-to-air heat exchangers with DX coil) indoor units
RBC-AX22CE2	Infra-red Remote Kit	Wireless remote controller	All ceiling units and one-way cassettes (SH series)
TCB-AX21E2	Infra-red Remote Kit	Wireless remote controller	All other units (including compact 4-way cassette, except for DI Flexi type)
RBC-AX23UW(W)-E	Wireless remote unit kit	Wireless remote unit kit for 2-way cassette	2-way-cassette MMU-AP***2WH
RBC-AX31U(W)-E	Wireless remote unit kit	Wireless remote unit kit for 4-way cassette	RAV-SM***4UT-E with RBC-U31PG(W)-E & RBC-U31PGS(W)-E panels
RBC-AX31U(WS)-E	Wireless remote unit kit	Wireless remote unit kit for 4-way cassette	RAV-SM***4UT-E with RBC-U31PGS(WS)-E panels
WH-H2UE	Infra-red Remote Controller	Wireless remote unit kit for Flexi units	DI Flexi
TCB-TC21LE2	Remote temperature sensor	Remote temperature sensor for cassette & duct	DI, SDI, VRF
TCB-SC642TLE2	Central Remote Controller	Enables the control of up to 64 individual units	VRF, 1:1 model connection interface required for DI/SDI (Excluding high-wall type)
TCB-CC163TLE2	On / Off Controller	Enables On/Off control (Max. 16 units)	VRF, 1:1 model connection interface required for DI/SDI (Excluding high-wall type)
TCB-IFCB-4E2	Remote location On/Off Control Box	Enables remote location On/Off control	All indoor units (Excluding DI Flexi type)
BMS-WB2561PWE	Web Based Controller	Gateway server. Network Intranet connection, yearly schedule, error message history, up to 256 IDUs	
BMS-WB01GTE	Wired Remote Controller	Web server. Network Intranet connection, yearly schedule, error message history, up to 512 IDUs	Web control operates with BMS-WB2561PWE (up to 2) & BMS-IFLSV3E
BMS-CM1280TLE	Compliant Manager	Enables full control of up to 128 indoor units	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-SM1281HTLE	Smart Manager	Enables full control of up to 128 indoor units with Energy Monitoring and Advanced Control Options.	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-TP0641ACE	Touch Screen Controller	Enables full control of up to 64 indoor units, ML	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-TP5121ACE	Touch Screen Controller	Enables full control of up to 512 indoor units, ML	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-TP0641PWE	Touch Screen Controller	Enables full control of up to 64 indoor units with electric billing, ML	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-TP5121PWE	Touch Screen Controller	Enables full control of up to 512 indoor units with electric billing, ML	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-IFLSV4E	TCS-Net Relay Interface	Relay for integration to TCS-Net	Bacnet gateway, Touch-screens & Web based controller
BMS-IFWH5E	Energy monitoring relay interface	Energy monitoring relay interface	Touch screen controller, Compliant manager, Web based controller, Smart Manager
BMS-IFDD03E	Digital I/O relay interface	Digital I/O relay interface	Touch screen controller, Compliant manager, Web based controller, Smart Manager
BMS-LSV6E	Intelligent Server	Bacnet Gateway	Requires software BMS-STBN08E & Interface BMS-IFLSV3E
BMS-STBN08E	BACnet	Server Software	Enables integration with BACnet
BMS-STCC06E	Intelligent Server Software	Software package for the intelligent server	
TCB-IFLN642TLE	Lonworks® Gateway	Allows control of 64 indoor units from a Lonworks based BMS	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
TCB-IFCG1TLE	General purpose interface	enables control of A/C by the DI/DO and AI/AO	DI, SDI. Combination with TCB-IFCB640TLE
TCB-IFCB640TLE	Analog interface	Control & monitoring up to 64 IU on TCC-link	Combination with TCB-IFCG1TLE
TCB-IFGSM1E	GSM control interface	Allows ON/OFF control, operation status monitoring & alarm monitoring of A/C	DI, SDI (using CN61)
TCB-PCNT30TLE2	1:1 model connection interface	Integration with DI, SDI	Allows DI/SDI indoor units to be connected to TCC link network (except for DI Flexi type)
TCB-PX30MUE	Terminal box	Terminal box to connect to	TCB-PCNT30TLE2
TCB-PCOS1E2	Application control kit	Enables night operation control, demand control, operation monitoring	DI / SDI Compact 4way cassette with All DI 3 outdoor unit, SDI(RAV-SP404/454/564AT-E)
TCB-KBOS1E	Optional connector kit	Connector kit	SDI 4 outdoor units (Except for SDI (RAV-SP404/454/564AT-E))
TCB-PCMO3E	Output Signal PC Board	Boiler operation, alarm, defrost and compressor operation output signal	Estia
TCB-PCIN3E	Input Signal PC Board	Room thermostat, Emergency stop input signal	Estia
TCB-PCDM4E	Application Control PC Board	Power Peak Cut Control	SMMS, SMMS-i, SHRM and Mini-SMMS Outdoor Units
TCB-PCMO4E	Application Control PC Board	External Master ON/OFF Control Board	SMMS, SMMS-i, SHRM and Mini-SMMS Outdoor Units
TCB-PCIN4E	Connectors	Error/Individual compressor Operation Output Control Board	SMMS, SMMS-i, SHRM and Mini-SMMS Outdoor Units
TCB-KBCN32VEE	Application Control PC Board	For CN32	VRF,DI, SDI, except Flexi DI
TCB-KBCN60OPE		For CN60	VRF,DI, SDI, except Flexi DI
TCB-KBCN61HAE		For CN61	VRF,DI, SDI, except Flexi DI
TCB-KBCN70OAE		For CN70	VRF,DI, SDI, except Flexi DI
TCB-KBCN73DEE		For CN73	VRF,DI, SDI, except Flexi DI
TCB-KBCN80EXE		For CN80	VRF,DI, SDI, except Flexi DI



Accessories

Residential, Light Commercial and Business.

Residential Accessories

Code	Description		Compatible with Residential units
	Indoor unit type	Parts name	
RB-A607DE	High wall	Zeolite filter	Super Daisekai
RB-A608DE		Zeolite 3G filter	Super Daisekai
RB-A614DE		Active Carbon Catechin	7SKV-E, 7SKV-E2
RB-A620DE		Toshiba New IAQ filter	SKVR-E, SKV-E, SKV-E2, M-SKV-E
			M-SKCV-E, 13SKVR-E2, SKV(R)-ND
	Flexi type	SKP-ES, SKHP-ES, 18/24SK(H)P-EG, GK(H)P-ES2	
RBC-SH-A1LE2	Duct type	Wired remote controller kit	M-GDV-E
RB-F81E2		Drain pump	

Light Commercial Refrigerant connection kits

Code	Description	Capacities
RBC-TWP30E	Twin branch kit for DI & SDI	1.5 HP + 1.5 HP 2 HP + 2 HP
RBC-TWP50E	Twin branch kit for DI & SDI	3 HP + 3 HP
RBC-TWP101E	Twin branch kit for Big DI	4 HP + 4 HP 5 HP + 5 HP
RBC-TRP100E	Triple branch kit for DI & big DI	2 HP + 2 HP + 2 HP 3 HP + 3 HP + 3 HP
RBC-DTWP101E	Double-twin branch kit for big DI	2 HP + 2 HP + 2 HP + 2 HP 3 HP + 3 HP + 3 HP + 3 HP

Light Commercial Accessories

Code	Description		Compatible with DI, SDI		
	Indoor unit type	Parts name			
RB-A615DE	High wall	Super Oxi deo filter (Sasa-Zeolite)	RAV-SM**2KRT-E, 4KRT-E		
	Flexi type		RAV-SM**2XT-E		
RB-A616DE	High wall	Super sterilizer filter	RAV-SM**2KRT-E, 4KRT-E		
	Flexi type		RAV-SM**2XT-E		
RBC-UM11PG(W)E	Compact 4-way cassette type	Decoration panel	RAV-SM**2MUT-E, 4MUT-E		
RBC-U31PG(W)-E	4-way Air Discharge cassette type	Standard panel	RAV-SM**4UT-E		
RBC-U31PGS(W)-E		MTO straight, white color panel			
RBC-U31PGS(WS)-E		Standard panel			
TCB-GFC1602UE2		Fresh air and filter chamber			
TCB-GB1602UE2		Fresh air inlet box			
TCB-FF101URE2		Auxiliary fresh air flange			
TCB-SP1602UE		Spacer for height adjustment			
TCB-BC1602UE		Air discharge direction kit			
TCB-UFM21BE		Concealed duct type		High efficiency filter 65 (For underside suction)	RAV-SM562BT-E, 4BT-E
TCB-UFM31BE					RAV-SM802BT-E, 4BT-E
TCB-UFM41BE	RAV-SM1102/1402BT-E, 4BT-E				
TCB-UFH61BE	High efficiency filter 90 (For underside suction)		RAV-SM562BT-E, 4BT-E		
TCB-UFH71BE			RAV-SM802BT-E, 4BT-E		
TCB-UFH81BE			RAV-SM1102/1402BT-E, 4BT-E		
RBC-UD501PE(W)	Ceiling panel (Half panel for underside suction)		RAV-SM562BT-E, 4BT-E		
RBC-UD801PE(W)			RAV-SM802BT-E, 4BT-E		
RBC-UD1401PE(W)			RAV-SM1102/1402BT-E, 4BT-E		
TCB-CA501BE	Suction canvas (For underside suction)		RAV-SM562BT-E, 4BT-E		
TCB-CA801BE		RAV-SM802BT-E, 4BT-E			
TCB-CA1401BE		RAV-SM1102/1402BT-E, 4BT-E			
TCB-DP22CE2	Ceiling-suspended type	Drain pump kit	RAV-SM***2CT-E, 4CT-E		
TCB-KP12CE2		Elbow Piping Kit	RAV-SM562CT-E, 4CT-E		
TCB-KP22CE2			RAV-SM802/1102/1402CT-E, 4CT-E		
TCB-DP32DE	High static duct type	Drain pump kit	RAV-SM**2DT-E		
TCB-PF3DE		Long life pre-filter	RAV-SM***2DT-E		
TCB-UFM3DE		High efficiency filter 65	RAV-SM***2DT-E		
TCB-UFM7DE		High efficiency filter 90	RAV-SM***2DT-E		
TCB-FCY100DE		Filter chamber	RAV-SM***2DT-E		

Indoor accessories

Indoor unit	Parts Name	Model Name	Comply with VRF CDU	Notes	Remarks	
4-way Air Discharge cassette type	Standard panel	RBC-U31PG(W)-E	MMU-AP***2H	Required accessory	Use with TCB-GFC1602UE	
	MTO straight, white color panel	RBC-U31PGS(W)-E				
	MTO straight, grey panel	RBC-U31PGS(WS)-E				
	Fresh air and filter chamber	TCB-GFC1602UE2	MMU-AP***2H	For fresh air inlet box For fresh air intake by using the knockout hole of fresh air and filter chamber. (dia=100mm)		
	Fresh air inlet box	TCB-GB1602UE2				
	Auxiliary fresh air flange	TCB-FF101URE2	MMU-AP***2H, 1MH, 4MH-E, 2SH, 4SH-E, 1SPH, 4SPH-E	For easy fresh air intake by using the knockout hole of indoor unit. (dia=100mm)		
	Spacer for height adjustment	TCB-SP1602UE	MMU-AP***2H	height 50 mm		
Air discharge direction kit	TCB-BC1602UE	Air direction change by cutting off air discharge port (3 pcs.)				
Compact 4-way cassette type	Decoration panel	RBC-UM11PG(W)E	MMU-AP***1MH, 4MH-E	Required accessory		
Compact 2-way cassette type	Decoration panel	RBC-UW283PG(W)-E	MMU-AP0072/0092/0122/0152WH	Required accessory		
		RBC-UW803PG(W)-E	MMU-AP0182/0242/0272/0302WH			
		RBC-UW1403PG(W)-E	MMU-AP0362/0484/0562WH			
	Auxiliary fresh air flange	TCB-FF151US-E	MMU-AP***2WH	For easy fresh air intake by using the knockout hole of indoor unit		
	Filter chamber	TCB-FC283UW-E	MMU-AP0072/0092/0122/0152WH	For use with filter chamber		
		TCB-FC803UW-E	MMU-AP0182/0242/0272/0302WH			
		TCB-FC1403UW-E	MMU-AP0362/0484/0562WH			
Super Long life filter	TCB-LF283UW-E	MMU-AP0072/0092/0122/0152WH	Use with TCB-FC283UW-E			
	TCB-LF803UW-E	MMU-AP0182/0242/0272/0302WH				
	TCB-LF1403UW-E	MMU-AP0362/0484/0562WH				
1-way cassette type	Decoration panel	RBC-U21PGE	MMU-AP0071/0091/0121YH, 4YH-E	Required accessory		
	Front air discharge unit	TCB-BUS21WHE	MMU-AP0152/0182/0242SH, 4SH-E			
	Auxiliary fresh air flange	TCB-FF101URE2				
Slim duct type	Auxiliary fresh air flange	TCB-FF101URE2	MMU-AP***2H, 1MH, 4MH-E, 2SH, 4SH-E, 1SPH, 4SPH-E	For easy fresh air intake by using the knockout hole of indoor unit. (dia=100mm)		
Concealed duct type	High efficiency filter 65 (for rear suction)	TCB-UFM11BFCE	MMD-AP0071/0091/0121BH, 4BH-E	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-FC281BE Use with TCB-FC801BE Use with TCB-FC501BE Use with TCB-FC1401BE	
			MMD-AP0241/0271/0301BH, 4BH-E (2 pcs.)			
		TCB-UFM21BFCE	MMD-AP0151/0181BH, 4BH-E			
	High efficiency filter 90 (for rear suction)	TCB-UFH51BFCE	MMD-AP0071/0091/0121BH, 4BH-E	MMD-AP0241/0271/0301BH, 4BH-E (2 pcs.)	Dust collecting effect: 90% (NBS Colorimetric method)	Use with TCB-FC281BE Use with TCB-FC801BE Use with TCB-FC501BE Use with TCB-FC1401BE
			MMD-AP0151/0181BH, 4BH-E			
		TCB-UFH61BFCE	MMD-AP0361/0481/0561BH, 4BH-E (2 pcs.)			
	Filter chamber (rear suction) (for)	TCB-FC281BE	MMD-AP0071/0091/0121BH, 4BH-E	MMD-AP0151/0181BH, 4BH-E	For high efficiency filter	
		TCB-FC501BE	MMD-AP0151/0181BH, 4BH-E			
		TCB-FC801BE	MMD-AP0241/0271/0301BH, 4BH-E			
	High efficiency filter 65 (For underside suction)	TCB-FC1401BE	MMD-AP0361/0481/0561BH, 4BH-E	MMD-AP0071/0091/0121BH, 4BH-E	Dust collecting effect: 65% (NBS Colorimetric method)	
		TCB-UFM11BE	MMD-AP0071/0091/0121BH, 4BH-E			
		TCB-UFM21BE	MMD-AP0151/0181BH, 4BH-E			
	High efficiency filter 90 (For underside suction)	TCB-UFM31BE	MMD-AP0241/0271/0301BH, 4BH-E	MMD-AP0361/0481/0561BH, 4BH-E	Dust collecting effect: 90% (NBS Colorimetric method)	
		TCB-UFM41BE	MMD-AP0361/0481/0561BH, 4BH-E			
		TCB-UFH51BE	MMD-AP0071/0091/0121BH, 4BH-E			
Ceiling panel (Half panel for underside suction)	TCB-UFH61BE	MMD-AP0151/0181BH, 4BH-E	MMD-AP0241/0271/0301BH, 4BH-E			
	TCB-UFH71BE	MMD-AP0241/0271/0301BH, 4BH-E				
	TCB-UFH81BE	MMD-AP0361/0481/0561BH, 4BH-E				
Suction canvas (For underside suction)	RBC-UD281PE(W)	MMD-AP0071/0091/0121BH, 4BH-E	MMD-AP0151/0181BH, 4BH-E	Adjustment height of the suction canvas between 40 & 100mm		
	RBC-UD501PE(W)	MMD-AP0151/0181BH, 4BH-E				
	RBC-UD801PE(W)	MMD-AP0241/0271/0301BH, 4BH-E				
Filter kit for underside (Kit of underside prefilter & shielding plate of rear suction)	RBC-UD1401PE(W)	MMD-AP0361/0481/0561BH, 4BH-E	MMD-AP0071/0091/0121BH, 4BH-E	Kit of underside prefilter & shielding plate of rear suction		
	TCB-CA281BE	MMD-AP0071/0091/0121BH, 4BH-E				
	TCB-CA501BE	MMD-AP0151/0181BH, 4BH-E				
Concealed Duct high static pressure type and fresh air intake unit type	High-efficiency filter 65	TCB-UFM1D-1E	MMD-AP0181H, 4H-E	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-FCY21DE Use with TCB-FCY51DE Use with TCB-FCY31DE	
			MMD-AP0481H, 4H-E (2 pcs.)			
		TCB-UFM2D-1E	MMD-AP0241/0271/0361H, 4H-E (2 pcs.)			
	High-efficiency filter 90	TCB-UFM3DE	MMD-AP0721/0961H, 4H-E & MMD-AP0721/0961HFE	MMD-AP0181H, 4H-E	Dust collecting effect: 90% (NBS Colorimetric method)	Use with TCB-FCY100DE or TCB-PF3DE (HFE)
			MMD-AP0481H, 4H-E (2 pcs.)			
		TCB-UFH5D-1E	MMD-AP0241/0271/0361H, 4H-E (2 pcs.)			
	Long life prefilter	TCB-UFH6D-1E	MMD-AP0721/0961H, 4H-E & MMD-AP0721/0961HFE	MMD-AP0181H, 4H-E	Dust collecting effect: 50% (NBS Colorimetric method)	Use with TCB-FCY100DE or TCB-PF3DE (HFE)
			MMD-AP0481H, 4H-E (2 pcs.)			
		TCB-UFH7DE	MMD-AP0721/0961H, 4H-E & MMD-AP0721/0961HFE			
	Filter chamber	TCB-PF1D-1E	MMD-AP0181H, 4H-E	MMD-AP0481H, 4H-E (2 pcs.)	For high efficiency filter or long life prefilter	
			MMD-AP0481H, 4H-E (2 pcs.)			
		TCB-PF2D-1E	MMD-AP0241/0271/0361H, 4H-E (2 pcs.)			
	Drain pump kit	TCB-PF3DE	MMD-AP0721/0961H, 4H-E & MMD-AP0721/0961HFE	MMD-AP0181H, 4H-E	Lift up to 330 mm	
			MMD-AP0481H, 4H-E (2 pcs.)			
		TCB-FCY21DE	MMD-AP0181H, 4H-E			
Fresh air intake type	TCB-FCY31DE	MMD-AP0481H, 4H-E (2 pcs.)	MMD-AP0181H, 4H-E	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-PF4D-1E	
	TCB-FCY51DE	MMD-AP0181H, 4H-E				
	TCB-FCY100DE	MMD-AP0721/0961H, 4H-E & MMD-AP0721/0961HFE				
	TCB-DP31DE	MMD-AP0181H to AP0481H, 4H-E				
	TCB-DP32DE	MMD-AP0721/0961H, 4H-E				
Air-to-air heat exchanger with DX coil	High-efficiency filter 65	TCB-UFM4D-1E	MMD-AP0481HFE	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-FCY51DFE	
	High-efficiency filter 90	TCB-UFH8D-1E	MMD-AP0481HFE	Dust collecting effect: 90% (NBS Colorimetric method)		
	Long life pre-filter	TCB-PF4D-1E	MMD-AP0481HFE	Dust collecting effect: 50% (NBS Colorimetric method)		
	Filter chamber	TCB-DP32DFE	MMD-AP0481HFE	For high efficiency filter or long life prefilter		
Ceiling-suspended type	Drain pump kit	TCB-DP32DFE	MMD-AP0481/0721/0961HFE	Lift up to 330 mm		
	Drain pump kit	TCB-DP31HEXE	MMD-VN502/802/1002HEXE & MMD-VNK502/802/1002HEXE	Lift up to 330 mm		
Ceiling-suspended type	Drain pump kit	TCB-DP22CE2	MMC-AP0151/0181H, 4H-E	Lift up to 600 mm	Use TCB-KP12CE2	
		TCB-KP12CE2	MMC-AP0241-0481H, 4H-E		Use TCB-KP22CE2	
	Elbow Piping Kit	TCB-KP22CE2	MMC-AP0151/0181H, 4H-E	Needed when drain pump kit is used		

Combination Pattern

1) Accessory for 4-way air discharge cassette type: combination pattern

	1	2	3	4	5	6
1 Ceiling panel		OK	OK	OK	OK	OK
2 Fresh air inlet box + Fresh air and filter chamber	OK			OK	—	OK
3 Fresh air and filter chamber	OK			OK	OK	OK
4 Auxiliary fresh air flange	OK	OK	OK		OK	OK
5 Spacer for height adjustment	OK	—	OK	OK		OK
6 Air discharge direction kit	OK	OK	OK	OK	OK	

2) Accessory for concealed duct type: combination pattern

	1	2	3	4	5	6	7	9
	For rear suction			For underside suction				
1 High-efficiency filter 65 (for rear suction)		—	OK	—	—	—	—	—
2 High-efficiency filter 90 (for rear suction)	—		OK	—	—	—	—	—
3 Filter chamber (for rear suction)	OK	OK		—	—	—	—	—
4 High-efficiency filter 65 (for underside suction)	—	—	—	—	—	OK	OK	OK
6 High-efficiency filter 90 (for underside suction)	—	—	—	—	—	OK	OK	OK
7 Ceiling panel (half panel for underside suction)	—	—	—	OK	OK		OK	OK
8 Suction canvas (for underside suction)	—	—	—	OK	OK	OK		OK
9 Filter kit for underside*	—	—	—	OK	OK	OK	OK	

* In case of underside, Filter kit is required accessory

3) Accessory for concealed duct high static pressure type/ fresh air intake indoor unit type: combination pattern

	1	2	3	4	5
1 High-efficiency filter 65		—	OK	OK	OK
2 High-efficiency filter 90	—		OK	OK	OK
7 Long life prefilter	OK	OK		OK	OK
8 Filter chamber	OK	OK	OK		OK
9 Drain pump kit	OK	OK	OK	OK	

Refrigerant Accessories

Model Name		Description	Total capacity codes
RBM-BY55E		branching joint for SMMS, SMMS-i and Mini-SMMS	< 6,4 HP
RBM-BY105E		Branching joint for SMMS-i	< 6,4 - 14,2 HP
RBM-BY205E			< 14,2 - 25,2 HP
RBM-BY305E			25,2 HP
RBM-BY55FE		Branching joint for SHRM	< 6,4HP
RBM-BY105FE			< 6,4 - 14,2 HP
RBM-BY205FE			< 14,2 - 25,2 HP
RBM-BY305FE			25,2 HP
RBM-HY1043E	four-way	Headers branching SMMS, SMMS-i	< 14,2 HP
RBM-HY1083E	eight-way		< 14,2 HP
RBM-HY2043E	four-way		< 14,2 - 25,2 HP
RBM-HY2083E	eight-way		< 14,2 - 25,2 HP
RBM-HY1043FE	four-way	Headers branching SHRM	< 14,2 HP
RBM-HY1083FE	eight-way		< 14,2 HP
RBM-HY2043FE	four-way		>14,2 - 25,2 HP
RBM-HY2083FE	eight-way		>14,2 - 25,2 HP
RBM-Y1122FE		Flow switch selector (three pipe SHRM)	< 11,2 Kw indoor units
RBM-Y1802FE			> 11,2 - 18 Kw indoor units
RBM-Y2802FE			> 18 - 28 Kw indoor units
RBM-BT14E	For connection of outdoor units	T-joint for SMMS-i	< 26 HP system capacity
RBM-BT24E			>26 HP system capacity
RBM-BT13FE		T-joint for SHRM	

Installation and the use of refrigerants not specified by TOSHIBA Carrier Corporation.

TOSHIBA refrigeration and air-conditioning products are designed and manufactured on the assumption that each product is used with the specific refrigerant specified for that product.

Recently it has been noticed that, in some cases, the type of refrigerant used in a product is different from the one specified for that product. The use of incorrect refrigerant may cause mechanical defects, malfunctions or failures which, in some cases, could result in a serious safety issue. For this reason, TOSHIBA Carrier Corporation requires that ONLY the specified refrigerant for a product should be used.

The type of refrigerant specified for a product is stated in the accompanying owners manual for that product, or on the label attached to the product itself.

Toshiba Carrier Corporation shall NOT assume any liability for failures, malfunctions or safety issues on any product if an incorrect refrigerant is used in that product.

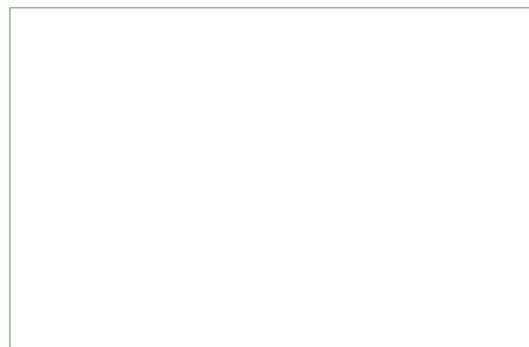
The capacities in this catalogue are based on Eurovent conditions:

Cooling: Entering indoor air temperature: 27 °C db / 19 °C wb. Outdoor air temperature: 35 °C db / 24 °C wb.

Heating: Entering indoor air temperature: 20 °C db. Outdoor air temperature: 7 °C db / 6 °C wb.

The sound pressure level is given at 1 m distance from outdoor units, and 1,5 m distance from indoor units.

Energy class and annual consumption are determined according to 2002/31/EC Commission Directive.



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Address