MOVE THE WORLD FORW>RD MITSUBISHI



# HYDROLUTION







HEATING



#### **HOT SANITARY**



COOLING

# WHY A MHI HEAT PUMP?

Mitsubishi Heavy Industries air to water heat pump is a complete modern system for heating, cooling and producing hot sanitary water for houses. Offering effective energy saving and reducing carbon dioxide emission.





#### WHY A MHI HEAT PUMP?

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### 1

### Our recognised contribution to global environment.

Our contributions to a low-carbon society encompass the entire product life cycle from efficient production, effective use of energy, effectual utilization of inexhaustible clean energy and recycling. This is a part of our accomplishments through unique technological features.

#### Our assured integration of high technology is the mainstay of a low carbon society.

We have assured integration of high technology in a variety of areas including new clear power generation, transportation systems, desalination plants, and wind turbine generators. Our product portfolio covering entire social infrastructure is supported by our proven high technology. We integrate proprietary technologies which have already demonstrated their own significant capabilities in their fields to enhance the effect in our total solutions. Our air to water heat pump is an innovative system developed by using integration of high technology. Mitsubishi Heavy Industries utilises its high technology in a variety of areas and provides comprehensive solutions for realization of a low-carbon society.

Air to Water heat pump is one of our products supported by our unrivalled technology to realise utmost energy savings, safety and assurance.

3

## Heat pump technology for a low-carbon society

Air to water heat pumps are a revolutionary energy recycling system which reduces environmental load by reusing heat energy produced in daily life. This first-rate energy saving system has been developed by our exceptional technology.

Saving running costs with use of heat pump technology

Typically less than 1kW of output heat energy can be produced by conventional oil or gas boilers. Heat pump technology is capable of producing up to 5.32kW of heat energy from 1kW of energy input making the system 5.32 times more efficient than traditional means.

# **BENEFITS OF HYDROLUTION**

Our heat pump is a complete modern system for heating and cooling room air and producing sanitary hot water. It absorbs 'free' heat from outdoor air and amplifies it to generate ideal temperatures and hot water swiftly and efficiently.

#### **ENERGY SAVING**

Optimum annual operation costs are achived thanks to the inverter driven compressor. The speed of the compressor is controlled according to the demand resulting in the highest COP levels of 4.09~5.42\* in heating operation and is in accordance with Lot 1 energy class. \*Condition 2 on page 16

#### **HIGH EFFICIENCY**

The compressor is designed to be efficient even at low ambient temperatures (down to -20°C) in order to be able to withstand the toughest winter climates.

#### **INTEGRATED DESIGN**

MHI developed compact solutions: all-in-one (HMA-W series) and hydrobox (HMS-W/-S) series. With the all in one, hot water, heating and cooling has been integrated and with the hydrobox, heating and cooling has been integrated and for hot water production a separate tank will be required. From factory the hydrobox includes a three way diverting valve for hot water production. For both solutions, electric and piping work is simple due to their integrated design.

#### 65°C HOT WATER

Maximum flow line temperature is 65°C with the use of an auxiliary electric heater used for hot water back-up and to cope with irregular and excessive hot water demand. The heat pump can keep producing the temperature of 58°C (60°C with FDCW71VNX-W) hot water without an auxiliary electric heater and can still produce this even at ambient temperatures between -20-43°C.

#### SILENT MODE

Silent mode function can reduce the sound level from the outdoor unit during heating mode by reducing the compressor and fan speed. The ON/OFF timer operation can be set with the remote controller.

#### **INTERNET CONNECTION**

Customers can get a brief overview and the status of the MHI heat pump and the heating system remotely. It allows customers to control heating and hot water production.



### **MYUPLINK APP**



# STAY IN CONTROL WITH MYUPLINK

#### THE ULTIMATE APP FOR REMOTE MONITORING

The Hydrolution air to water unit is connectable to its independent remote monitoring system via myUplink platform which is a dedicated app for the end user.

#### myUplink Key Benefits

- Real time monitoring and control of heating, hot water, pool, solar and heat pump operation
- Real time alarm information
- Cloud based software update





# **NEXT GENERATION REFRIGERANT R32**



#### **R32 REFRIGERANT**

This next generation refrigerant boasts nearly 70% lower Global Warming Potential rate than R410A. Due to its superior qualities, R32 offers amazing energy efficiency benefits. It has a potential refrigerating effect that is 1.5 times that of R410A, meaning that it needs less energy to achieve the desired temperatures and requires less refrigerant volumes to operate.

### **BENEFITS OF R32**

**ENERGY IMPACT ON EFFICIENCY ENVIRONMENT** Low Global Warming potential and Superior Energy Efficiency **Zero Ozone Depletion** THE DECISION Easy to recycle BY MHI TO TRANSITION TO A It complies with F-Gas Γ. NEW REFRIGERANT IS DRIVEN Single component, easy to handle refrigerant 5 BY MANY FACTORS: Already used in air conditioning systems and heat 6 pumps worldwide

It requires up to 13% less charge compared to R410A



# **REDUCED REFRIGERANT CHARGE** 100% Λ

R410A

R32

PERFORMANCE





Mitsubishi Heavy Industries air to water heat pumps are a complete modern system for heating, cooling and producing hot sanitary water for living, offering effective energy saving.



#### Indoor Unit (HMS)

- Hydrobox indoor module for heating, cooling and hot water production (accessory required)
- Integrated expansion vessel
- Integrated electrical heater for backup operation
- Integrated 3-way deverting valve for hot water operation
- Integrated controller (advanced version)
- · Compatible with all outdoor units.



#### Indoor Unit (HMA)

- Flexible all in one indoor module for heating, cooling and hot water
- Upgrading existing heating systems or new builds with requirements for high hot water performance
- Equipped with a capacity of 180 litres of heated domestic water heater
- Integrated expansion vessel (10L)
- Has a built in condenser, as well two diverting valves (one of heating and cooling, the other for heating and hot water)
- Integrated electrical heater for backup
- Extra additional heat connection (eg: gas boiler, oil boiler).
- Integrated controller (advanced version)
- Compatible with R410A and R32 outdoor units (up to 11 kW).



#### **Outdoor Unit**

- FDCW60/71VNX-W
  - MHI high quality outdoor unit using low GWP refrigerant R32
  - Available in 6 and 8 kW, compatible with all indoor units
  - Silent mode range expanded assuring sound pressure level of 35 db(A) at 5 meters
  - Improved piping height:
  - FDCW60VNX-W: from 7 to 20 meter
  - FDCW71VNX-W: From 7 to 15 meter when the outdoor unit is below the indoor unit and 7 to 30 meter when the outdoor unit is above the indoor unit
  - Very energy efficient with a wide operation range
  - Latest inverter & DC twin rotary compressor technology
  - Compact design for easy installation
  - Built in drain pan heater to improve defrost
  - Blue coated fin for heat exchanger to prevent corrosion.

Mitsubishi Heavy Industries air to water heat pumps are a complete modern system for heating, cooling and producing hot sanitary water for living, offering effective energy saving.



#### Advanced Controllers RC-HY20-W, RC-HY40-W

Easy Operation: Advanced user friendly controller, which have large multicolor displays, It shows information about the status of the units.

RC-HY20-W: Base version without extension module.

RC-HY40-W: Advanced version with extension module. Room sensor and current sensor with cascade heat pump control function



#### Tank Unit

- Storage tank with coil designed to store hot sanitary water.
- Temperature indicator allows user to read and control water temperature in the tank
- Large heating surface of the coil provides high hot utility water efficiency
- Manages water pressure up to 10 bar



#### **Split Box**

- Built in condenser
- Easy installation by use of wall bracket
- Good for flexible applications
- Compatible with R410A and R32 units

Our domestic air-to-water heat pump range offers a complete modern system for heating, cooling and producing hot sanitary water for houses.

Thanks to the integration of a hot water heater, immersion heater, circulating pump and climate system within the indoor unit, the Hydrolution range is one of the safest, most economical and environmentally friendly options available today.



#### All-in-one combination

Indoor Model			HMA100-W	
Outdoor Model			FDCW100VNX-A	
Power source			400V 3N AC (230V single-phase) 50Hz	
	condition 1	kW	3.5 - 11.0	
Heating Nominal capacity	condition 2	kW	3.5 - 10.0	
60D	condition 1		3.44	
	condition 2		4.28	
Cooling Naminal constitu	condition 1	kW	3.0 - 9.0	
	condition 2	kW	HMA 100-W       FDCW100VNX-A       400V 3N AC (230V single-phase) 50Hz       3.5 - 11.0       3.5 - 10.0       3.44       4.28       3.0 - 9.0       3.3 - 12.0       2.81       3.62       A++/A++       A       126/165       98       A++/A++       130/169       -20° - 43°C       15° - 43°C       25°C - 58°C (65°C, with immersion heater)       7       7       30       7       1715(+ 40 max) x 600 x 610       180       4.8       10       22       Compression fittings       9 (6 for single-phase) (3 Step)	
FED	condition 1		2.81	
EER	condition 2		3.62	
Seasonal Space Heating *1 Energy Efficiency Class (W55/W35)			A++/A++	
Water Heating Energy Efficiency Class *1			A	
Seasonal Space Heating Energy Efficiency (W55/W35) *1		%	126/165	
Water Heating Energy Efficiency *1		%	98	
Seasonal Space Heating Energy *1 *2 Efficiency Class of package (W55/W35)			A++/A++	
Seasonal Space Heating Energy *1 *2 Efficiency of package(W55/W35)			130/169	
Operation range (Ambient temperature)		heating	-20° - 43°C	
operation range (Ambient temperature)		cooling	ng -20° - 43°C ng 15° - 43°C	
Operation range (Water temperature)		heating	25°C - 58°C (65°C, with immersion heater)	
	peration range (Water temperature)		7-25°C	
Max refrigerant pipe length		m	30	
Max height difference between IU and OU		m	7	
Height x Width x Depth		mm	1715(+ 40 max) x 600 x 610	
Weight (without water in the system)		kg	165	
Tank Surface			Enamel Coated	
Tank Volume total		liter	180	
Volume of coil		liter	4.8	
Volume expansion vessel		liter	10	
Dimensions, climate system pipe		mm	22	
Water pipe connections			Compression fittings	
Immersion Heater		ĸw	9 (6 for single-phase) (3 Step)	
Max current		A	23 (40 for 230V Single-phase)	

\*1 European Average climate conditions \*2 In case of a room temperature sensor connected





#### Flexible combination

Split box			HSB100-W	HSB140		
Outdoor Model			FDCW100VNX-A	FDCW140VNX-A		
Power source			1 phase 230V 50Hz	1 phase 230V 50Hz		
Heating Nominal	condition 1	kW	3.5 - 11.0	5.8-16.0		
сарасну	condition 2	kW	3.5 - 10.0	4.2-16.0		
OP condition 1			3.44	3.31		
	condition 2		4.28	4.2		
Cooling Nominal	condition 1	kW	3.0 - 9.0	3.1-11.8		
сарасну	condition 2	kW	3.3 - 12.0	5.2-16.5		
EER	condition 1		2.81	2.65		
	condition 2		3.62	3.78		
Seasonal Space Heating Energy Efficiency Class (	W55/W35)		A++/A++	A++/A++		
Seasonal Space Heating % Energy Efficiency (W55/W35)		%	126/165	133/166		
Seasonal Space Heating Energy *2 Efficiency Class of package (W55/W35)			A++/A++	A++/A++		
Seasonal Space Heating Efficiency of package (W	Energy *2 /55/W35)	%	130/169	137/170		
Operation range (Ambier	it temperature)	heating	-20°C -43°C			
		cooling	15°C - 43°C			
Operation range (Water t	emperature)	heating	25°C - 58°C (65°C, with immersion heater)			
		cooling	7-25°C			
Refrigerant type			R41	0A		
Max refrigerant pipe leng	gth	m	3	0		
Max height difference be	tween IU and OU	m	7			
Height x Width x Depth mm 400 x 460 x 250			50 x 250			
Weight		kg	18	23		
Dimensions, climate system pipe		mm	22	28		
Max Current	Indoor	A	6	6		
	Outdoor	Α	23	25		



#### Hydrobox combination

Split box	HMS100-W HMS140-S		HMS140-S				
Outdoor Model			FDCW100VNX-A	FDCW140VNX-A			
Power source			400V 3N AC	400V 3N AC			
			(230V single-phase) 50Hz	(230V single-phase) 50Hz			
Heating Nominal	condition 1	kW	3.5 - 11.0	5.8 - 16.0			
condition 2		kW	3.5 - 10.0	4.2 - 16.0			
СОР	condition 1		3.44	3.31			
	condition 2		4.28	4.2			
Cooling Nominal	condition 1	kW	3.0 - 9.0	3.1 - 11.8			
capacity	condition 2	kW	3.3 - 12.0	5.2 - 16.5			
EER	condition 1		2.81	2.65			
	condition 2		3.62	3.78			
Seasonal Space Heating *1 Energy Efficiency Class (W5	5/W35)		A++/A++	A++/A++			
Seasonal Space Heating Energy Efficiency (W55/W35) *1		%	126/165	133/166			
Seasonal Space Heating Energy *2 Efficiency Class of package (W55/W35)			A++/A++	A++/A++			
Seasonal Space Heating Energy *2 Efficiency of package (W55/ W35)		%	130/169	137/170			
Operation range (Ambient te	mperature)	heating	-20°C	-43°C			
		cooling	15°C - 43°C				
Operation range (Water tem	perature)	heating	25°C - 58°C (65°C, wi	25°C - 58°C (65°C, with immersion heater)			
		cooling	7-2	5°C			
Max refrigerant pipe length		m	3	0			
O.U	en I.U and	m	7				
Height x Width x Depth		mm	850 x 51	5 x 350			
Weight (without water in the	system)	kg	56	58			
Volume expansion vessel		L	1	2			
Dimensions, climate system	pipe	mm	22	28			
Water pipe connections			Compress	ion fitting			
Immersion heater		kW	9 kW (three phase)	9 kW (three phase)			
Max Current			o kw (single phase)	4.5 KW (single phase)			
			36 (single phase)	45 (single phase)			

### MITSUBISHI HEAVY INDUSTRIES

### **ALL IN ONE COMBINATION**



#### All-in-one combination

Indoor model				НМА60-W НМА100-W		
Outdoor Model				FDCW60VNX-W	FDCW71VNX-W	
Power source				400V 3N AC	400V 3N AC	
				(230V single-phase) 50Hz	(230V single-phase) 50Hz	
Heating Nominal	condition 1		kW	2.70 - 8.00	3.00 - 10.00	
capacity	condition 2	High capacity	kW	0.90 - 7.60	2.20 - 9.50	
			kW	2.64	-	
СОР	condition 1			3.06	3.40	
	condition 2	High capacity		5.16	4.30	
		Low capacity		5.42	-	
Cooling Nominal	condition 1		kW	0.60 - 6.30	2.00 - 7.10	
capacity	condition 2		kW	1.20 - 7.80	2.70 - 10.7	
EER	condition 1			2.73	2.70	
	condition 2			3.57	3.62	
Seasonal Space Heati Energy Efficiency Cla	ing *1 ss (W55/W35)			A++/A+++	A++/A+++	
Water Heating Energy	y Efficiency Class *1			A	A	
Seasonal Space Heat Energy Efficiency (WS	ing 55/W35) *1		%	137/190	131/180	
Water Heating Energy	y Efficiency *1		%	100	107	
Seasonal Space Heating Energy *2 Efficiency Class of package				A++/A+++	A++/A+++	
Seasonal Space Heating Energy *2 Efficiency of package (W55/ W35)			%	141/194	135/184	
Operation range (Am	bient temperature)		heating	-20°C	-43°C	
			cooling	15°C - 43°C		
Operation range			heating	25°C - 58°C (65°C, with immersion heater)	25°C - 60°C (65°C, with immersion heater)	
(Water temperature)			cooling	7-2	5°C	
Refrigerant type				R	32	
Max refrigerant pipe	length		m	30	50	
Max height difference between IU and OU	9		m	20	30 (O.U above I.U) 15 (O.U below I.U)	
Height x Width x Dept	th		mm	1715(+20 - 40 m	nax) x 600 x 610	
Weight (without wate	r in the system)		kg	155	165	
Tank surface				Enamel	coated	
Tank volume total			L	18	30	
Volume expansion ve	ssel		L	1	0	
Dimensions, climate	system pipe		mm	2	2	
Water pipe connection	ns			Compressi	ion fittings	
Immersion heater			kW	9 (three 6 (sinal	phase) e phase)	
Max current			A	20 (three phase) 29 (single phase)	20 (three phase) 36 (single phase)	



#### **Flexible combination**

Split box				HSB60-W HSB100-W	
Outdoor Model				FDCW60VNX-W	FDCW71VNX-W
Power source				1 phase 230V 50Hz	1 phase 230V 50Hz
Heating Nominal	condition 1		kW	2.70 - 8.00	3.00 - 10.00
capacity condition 2		High capacity	kW	0.90 - 7.60	2.20 - 9.50
			kW	2.64	-
COP	condition 1			3.06	3.40
	condition 2	High capacity		5.16	4.30
		Low capacity		5.42	-
Cooling Nominal	condition 1		kW	0.60 - 6.30	2.00 - 7.10
capacity	condition 2		kW	1.20 - 7.80	2.70 - 10.7
EER	condition 1			2.73	2.70
	condition 2			3.57	3.62
Seasonal Space Heating Energy Efficiency Class (W55/W35 )*1				A++/A+++	A++/A+++
Seasonal Space Heating Energy Efficiency (W55/W35 )*1			%	137/190	131/180
Seasonal Space Heating Energy*2 Efficiency Class of package (W55/W35)				A++/A+++	A++/A+++
Seasonal Space Heating Energy*2 Efficiency of package (W55/W35)			%	141/194	135/184
Operation range			heating	-20°C	-43°C
(Ambient temperatu	re)		cooling	15°C -	- 43°C
Operation range			heating	25°C - 58°C (65°C, with immersion heater)	25°C - 60°C (65°C, with immersion heater)
(water temperature)			cooling	7-2	5°C
Refrigerant type				R	32
Max refrigerant pipe	length		m	30	50
Max height difference between IU and OU	e		m	20	30 (0.U above I.U) 15 (0.U below I.U)
Height x Width x Dep	th		mm	400 x 46	50 x 250
Weight			kg	16	18
Dimensions, climate system pipe			mm	22	28
Max Current	Indoor		A	6	6
	Outdoor		Α	15	18

\*1 European Average climate conditions \*2 In case of a room temperature sensor connected





### MITSUBISHI HEAVY INDUSTRIES

### **SPECIFICATIONS**



#### Hydrobox combination

Split box				HMS60-W HMS100-W		
Outdoor Model				FDCW60VNX-W	FDCW71VNX-W	
Power source				400V 3N AC	400V 3N AC	
				(230V single-phase) 50Hz	(230V single-phase) 50Hz	
Heating Nominal	condition 1		kW	2.70 - 8.00	3.0 - 10.00	
condition 2		High ca- pacity	kW	0.90 - 7.60	2.20 - 9.50	
		Low capacity	kW	2.64	-	
COP	condition 1			3.06	3.40	
	condition 2	High ca- pacity	kW	5.16	4.30	
	condition 2	Low capacity	kW	5.42	-	
Cooling Nominal	condition 1		kW	0.60 - 6.30	2.00 - 7.10	
capacity	condition 2		kW	1.20 - 7.80	2.70 - 10.7	
EER	condition 1			2.73	2.70	
	condition 2			3.57	3.62	
Seasonal Space Heating Energy Efficiency Class	y *1 (W55/W35)			A++/A+++	A++/A+++	
Seasonal Space Heating Energy Efficiency (W55/W35) *1			%	137/190	131/180	
Seasonal Space Heating Energy *2 Efficiency Class of package (W55/W35)				A++/A+++	A++/A+++	
Seasonal Space Heating Energy *2 Efficiency of package (W55/W35)			%	141/194	135/184	
Operation range			heating	-20°C	-43°C	
(Ambient temperature)			cooling	15°C -	- 43°C	
Operation range			heating	25°C - 58°C (65°C, with immersion heater)	25°C - 60°C (65°C, with immersion heater)	
(water temperature)			cooling	7-2	5°C	
Refrigerant type				R	32	
Max refrigerant pipe ler	ngth		m	30	50	
Max height difference between IU and OU			m	20	30 (O.U above I.U) 15 (O.U below I.U)	
Height x Width x Depth			mm	850 x 5'	5 x 350	
Weight (without water i	n the system)		kg	50	56	
Volume expansion vess	el		L	1	2	
Dimensions, climate sys	stem pipe		mm	22		
Water pipe connections				Compress	ion fitting	
Immersion heater			ĸw	9 kW (thr 6 kW (sing	ee phase) Jle phase)	
Max Current			A	20 (three phase) 29 (single phase)	20 (three phase) 36 (single phase)	



#### Outdoor unit

			N4IDA		
Model		FDCW100VNX-A	FDCW140VNX-A		
Power source		1 phase 2	30V 50Hz		
Height x Width x Depth	mm	845 x 970 x 370	1300 x 970 x 370		
Weight	kg	81	105		
Sound Power level (A7/W35)	dB(A)	64.5	71		
Sound Pressure level*1 (A7/W35)	dB(A)	50	54		
Airflow	m3/min	nin 73 100			
Refrigerant type		R4	10A		
Refrigerant volume(pipe length with- out additional charge)	kg (m)	3.08 (18)	4.0 (15)		
Dimensions, refrigerant pipe	mm(inch)	Gas pipe: OD 15.88 (5/8"), Liquid pipe: OD 9.52 (3/8")			
Ref pipe connections		Flare Co	nnection		
Max current	A	23	25		

#### Outdoor unit

			R32		
Model		FDCW60VNX-W	FDCW71VNX-W		
Power source		1 phase 2	30V 50Hz		
Height x Width x Depth	mm	640 x 800 x 290	750 x 880 x 340		
Weight	kg	46	62		
Sound Power level (A7/W35)	dB(A)	52	64		
Sound Pressure level*1 (A7/W35)	dB(A)	44 49			
Airflow	m3/min	41.5 41.5			
Refrigerant type		R32			
Refrigerant volume (pipe length without additional charge)	kg (m)	1.3 (15)	1.84 (15)		
Dimensions, refrigerant pipe	mm(inch)	Gas pipe: OD 12.7(1/2"), Liquid pipe: OD 6.35 (1/4")	Gas pipe: OD 15.88 (5/8"), Liquid pipe: OD 6.35 (1/4")		
Ref pipe connections		Flare Connection			
Max current	A	15	18		
		*1 Sound pressu	re level is 1m away in front of the unit at		

the weight of 1 meter

#### Test conditions

		Water Temperature	Ambient Temperature			
ating	condition 1	45°C out / 40°C in	7°C DB / 4°C WB			
aung	ng condition 1 45°C out / 40°C in condition 2 35°C out / 30°C in	35°C out / 30°C in	/ / UB / 6°C WB			
- I'	condition 1	7°C out / 12°C in	25%0 DD			
bung	condition 2	18°C out / 23°C in	- 35°C DB			



HEATING



HOT SANITARY



COOLING



#### Tank unit

Model		PT300	PT300-V2	PT500		
Power source		-	-	-		
Volume	liter	279	285	476		
Volume of coil	liter	9.4	16	13		
Immersion heater	kW	Not included	Not included	Not included		
Height x Width x Depth	mm	1634 x 673 x 743	1705 x 673 x 785	1835 x 832 x 897		
Weight	kg	115	133	156		
Dimensions, climate system pipe	inch	1" Male				
Dimensions, hot water pipe	inch		1" Male			
Inner Surface			Enamel			
Design Pressure Tank	Bar		10			
Design Pressure Coil	Bar		16			
Energy Class		С	С	С		

#### Remote controller

Model		RC-HY20-W	RC-HY40-W	
Power source		1 phase 2	30V 50Hz	
Height x Width x Depth	mm	400 x 3	54 x 123	
Weight	kg	4.3	4.4	
Area of operation		- 25 -	70 °C	
Ambient temperature		5 – 3	95 °C	
Optional connections				
Max. number of air/water heat pumps		1	8	
Max. number of sensors		8	8	
Max. number of charge pumps with internal accessory cards		1	4	
Max number of charge pumps with external accessory cards		-	8	
Max. number of outputs for additional heat step		3	3	
Internet connection function		Included (	myUplink)	
Language		English, Swedish, German, French, Spanish, Finnish, Lithuanian, Czech, Polish. Dutch. Norwegian. Danish. Estonian, Latvian.		
		Russian	, Italian,	
		Hungarian, Slovenian, Tur	kish, Croatian, Romanian, Portuguese	
		icetalluic, r	ortuguese	







# SYSTEM COMBINATIONS

Mitsubishi Heavy Industries extensive product range offers the right heat pump to suit every demand. Our product is a suitable comprehensive solution for existing buildings and houses as well as new builds.

#### **ALL-IN-ONE COMBINATION**

#### (Outdoor Unit + HMA system)

ALL-IN-ONE COMBINATION provides the comprehensive solution for all your heating, cooling and domestic hot water needs.

Each ALL-IN-ONE COMBINATION includes the set of an outdoor unit and HMA system, providing an all-inclusive indoor unit integrating hot water heater, immersion heater, circulating pump and climate system within one unit.

- Heating, Cooling and Hot water
- Easy installation and operation A single neatly packaged all-in-one indoor unit and a well designed outdoor make the installation as smooth and straight forward as possible.
- Ideal for residential use from apartments to small houses
- Available from 6 and 8 kW (R32) to 11 kW (R410A)





### SYSTEM COMBINATIONS

#### HYDROBOX COMBINATION

#### (HMS system)

Hydrobox combination offers space heating and cooling with the option to add sanitary hot water to the system.

Each Hydrobox combination includes a set of an outdoor unit and an indoor unit (HMS) where the indoor includes all the necessary accessories to make a complete installation (remote controller, circulation pump, 3 way diverting valve for hot water, immersion heater for back-up operation).

The indoor unit is a compact unit with a gas boiler design (H850x W515x D350) making it applicable in any space due to its reduce size.

#### • Heating and cooling only option

Mitsubishi Heavy industries air to water heat pumps captures fresh air to heat or cool the property and ensure maximum comfort throughout the year. Heating and cooling only option is available and no additional accessories are required for such installation.

#### Hot water option

Hot water system option can be available by additionally connecting a hot water tank. The indoor unit already includes a 3 way diverting valve for hot water mode and an immersion heater.

 Available from 6 and 8 kW (R32) to 16kW (R410A)



### SYSTEM COMBINATIONS



#### **FLEXIBLE COMBINATION**

#### (HSB system)

FLEXIBLE COMBINATION offers space heating and cooling with the option to add sanitary hot water to the system.

FLEXIBLE COMBINATION consists of an outdoor unit and HSB system (Split box) and by combining the separate accessories, FLEXIBLE COMBINATION makes installation even more complete for your climate needs.

#### • Heating and cooling only option

Mitsubishi Heavy industries air to water heat pumps captures fresh air to heat or cool the property and ensure maximum comfort throughout the year. Heating and cooling only option is available by additionally connecting any FLEXIBLE COMBINATION with a charging pump and an immersion heater.

#### Hot water option

Hot water system option can be available by additionally connecting any FLEXIBLE COMBINATION with a charging pump, an immersion heater, a tank and shuttle valve.

- Flexible installation of units You can combine the variety of accessories to suit your demand.
- Available from 6 and 8 kW (R32) to 16kW (R410A)





### SYSTEM COMBINATIONS



		Controller	Outdoor Unit	Indoor Unit	Tank	Immersion heater (tank)	Immersion Heater	Charging Pump	Shuttle Valve
	Combination		FDCW60VNX-W	HMA60-W					
All-in-one	Combination 2		FDCW71VNX-W	UN44400 W	-	-	-	-	-
	Combination 3		FDCW100VNX-A	HMA I UU-W			Immersion Heater Charging Pump   - -   ELK9M1 (Optional) CPD11-25M/65 CPD11-25M/75   - -   - -		
	Combination 4		FDCW60VNX-W	HSB60-W	PT300				
Flexible (heating/	Combination 5		FDCW71VNX-W	UCD100 W	PT300-V2	ME1030M			VST05M
cooling and hot water production)	Combination 6		FDCW100VNX-A	HSB100-W	PT500	+ HR10M (Optional)			VST11M
	Combination 7	RC-HY20-W RC-HY40-W	FDCW140VNX-A	HSB140	PT300-V2 PT500		ELK9M1 (Optional)	CPD11-25M/65	¥3120M
Flexible (heating and cooling only)	Combination 8		FDCW60VNX-W	HSB60-W				CPD11-25M/75	
	Combination 9	-	FDCW71VNX-W FDCW100VNX-A	HSB100-W	-	-			_
	Combination 10								
	Combination 1		FDCW140VNX-A	HSB140					
	Combination 12		FDCW60VNX-W	HMS60-W					
Hydrobox (heating	Combination 13		FDCW71VNX-W	HMS100-W	_	_			
and cooling only)	Combination 14		FDCW100VNX-A	HMS100-W			-	-	-
	Combination 15		FDCW140VNX-A	HMS140-S					
	Combination 16	-	FDCW60VNX-W	HMS60-W	PT300				
Hydrobox (heating,	Combination 17		FDCW71VNX-W	HMS100-W	PT300-V2				
cooling and hot water)	Combination 18		FDCW100VNX-A	HMS100-W	F1500	-	-	-	-
	Combination 19		FDCW140VNX-A	HMS140-S	PT300-V2 PT500				

# **SYSTEM COMBINATIONS**

#### The following combination of the products is recommended.



#### All-in-one 6

- Building heating load up to 8kW .
- Heating, hot water, cooling
- . Cooling down to 7°C



#### Flexible 8

- Split-box system for heating,
- . Building heating load up to 8kW
- .



#### Heating & Cooling 8

- Split-box system for heating & cooling
- Building heating load up to 8kW
- Cooling down to 7°C •



#### All-In-One 8

- Building heating load up to 8kW
- Heating, hot water, cooling .
- Cooling down to 7°C



#### All-In-One 12

- Building heating load up to 11kW .
- Heating, hot water, cooling •
- . Cooling down to 7°C



#### Flexible 6

- Split-box system for heating, . hot water as required & cooling
- Building heating load up to 8kW

Split-box system for heating

Building heating load up to 8kW

& coolina

Cooling down to 7 °C

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Cooling down to 7°C •



- Split-box system for heating,
- hot water as required & cooling
- .





- Building heating load up to 16kW .
- Cooling down to 7°C



#### Heating & Cooling 16

- Split-box system for heating & cooling
- Building heating load up to 16 kW •
- Cooling down to 7°C •



- hot water as required & cooling

### Cooling down to 7°C

- Flexible 12 Split-box system for heating, hot water as required & cooling
- Building heating load up to 11kW .
- Cooling down to 7°C



#### Heating & Cooling 12

- Split-box system for heating & cooling
- Building heating load up to 11kW Cooling down to 7°C •



#### The following combination of the products is recommended.

17



#### Hydrobox heating/cooling 6

- Hydrobox system for heating and cooling
- Building heating load up to 8kW
- Cooling down to 7°C •



#### Hydrobox heating/cooling and hot water 6

- Hydrobox system for heating, cooling and hot water
- Building heating load up to 8kW .





#### Hydrobox heating/cooling 8

- Hydrobox system for heating and cooling
- . Building heating load up to 8kW . Cooling down to 7°C

Hydrobox heating/cooling and

Hydrobox system for heating,

Building heating load up to 8kW

cooling and hot water

Cooling down to 7°C

hot water 8

.



#### Hydrobox heating/cooling 12

- Hydrobox system for heating •
- and cooling • Building heating load up to 11kW
- Cooling down to 7°C •



#### Hydrobox heating/cooling 16

- Hydrobox system for heating and cooling
- Building heating load up to 16kW Cooling down to 7°C •



#### Hydrobox heating/cooling and hot water 12

- ٠ Hydrobox system for heating, cooling and hot water
- Building heating load up to 11kW .
- Cooling down to 7°C •



#### Hydrobox heating/cooling and hot water 16

- Hydrobox system for heating, cooling and hot water
- Building heating load up to 16kW .
- Cooling down to 7°C

1 myUplink 35 dB(A)\* Heating Cooling Energy saving 58°C at -20°C

\*FDCW60VNX-W

# ACCESSORIES



#### ECS40M/ECS41M

Extra mixing valve set, including a room sensor, for adjusting temperature in several climate systems. (e.g. A radiator system and an underfloor heating)

#### Contents

- 4 x Cable ties
- 1 x Circulation pump
- 1 x Shunt motor
- 1 x 3-way valve
- $1\ x$  Kit for accessory card
- 2 x Heating pipe paste

- 2 x Aluminium tape
- 1 x Insulation tape
  - 2 x Replacement gasket
  - 2 x Temperature sensor
  - 1 x Room sensor

ECS40M for maximum 80m<sup>2</sup> floor heating ECS41M for 80-250 m<sup>2</sup> floor heating

RC-HY40-W HMA

HMS



RTS40M Room sensor RC-HY40 and HMA include one sensor







AXC30M Accessory card





#### RMU40M

Room sensor/controller with multicolour display



#### VST05M / VST11M / VST20M

Reversing valve for using hot water accessories and prioritising hot water demand. VST05M (Ø 22mm, Max.electric charge output: 11kW) VST11M (Ø 28mm, Max.electric charge output: 17kW)

VST20M (DN32, (11/4"), Max.electric charge output: 40kW)

RC-HY20-W RC-HY40-W

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### ACCESSORIES



**POOL40M** Enables pool heating with the heat pump. Max. output - 17 kW





#### EME20M

Enables communication and control between the inverter for solar cells and heat pump/indoor module/control module.





**SOLAR42M** Enables solar heating with the heat pump.

RC-HY40-W	НМА
HMS	



#### **VCC05M / VCC11M**

Reversing valve for changing operation of cooling and heating. VCC05M (Ø 22mm) VCC11M (Ø 28mm) RC-HY20-W RC-HY40-W HMS



#### MODBUS40M

Control and monitor the heat pump system by external Modbus-equipped equipment.

RC-HY40-W HMA HMS

# ACCESSORIES



#### EMK300M / EMK500M

Energy measurement kit for measuring the flow and temperature differences in the charge circuit. Information can be shown on RC-HY40's display. EMK300M (Measurement range 5.0-85 l/min)

EMK500M (Measurement range 9.0-150 l/min)



HMS



Anode M300 /Anode M500 Magnesium anode chain Anode M300 for PT300 & PT300-V2 (Ø26 x 8 pieces (G1"))

Anode M500 for PT500 (Ø33 x 5 pieces (G1¼"))

PT300 PT300-V2 PT500



#### Anode T300/Anode T500

Anode titanium complete Anode T300 for PT300 & PT300-V2 (Length: 200mm, G¾", 230V)

Anode T500 for PT500 (Length: 400mm, G¾"230V)

PT300 PT300-V2 PT500



#### HR10M

Relay for ME1030M Used to control external 1 to 3 phase loads such as oil burners, immersion heaters and pumps.





#### ME1030M

Immersion heater designed to heat up domestic hot water installations. (3kW, G11/2', 230V)





CPD11-25M/65 / CPD11-25M/75 DC Motor controlled water pump. HSB60/100-W --> CPD11-25M/65 HSB140 --> CPD11-25M/75



#### ELK9M1

Immersion heater that can be used to supplement the heating capacity of heat pumps.

Power source: 1~230V 50Hz or 3~400V 50Hz

Output: 4.5 or 9 kW



#### **Before use**

In order to get the greatest benefit from our Air to Water Heat Pump, read thoroughly the User's Manual .

#### Places

Do not install in places where combustible gas could leak or where there are sparks. Keep away from places where combustible gas could be generated, flow or accumulate, or locations containing carbon fibres, otherwise there is a danger of fire.

#### Installation

Installation must be carried out in accordance with current norms and directives.

Current regulations require the inspection of installation before commissioning and the inspection must be carried out by a suitable qualified personnel and should be documented. Improper installation will lead to water leakage, electric shocks, fires and other serious problems.

Make sure that the indoor unit and the outdoor unit are stable in installation and fixed on stable base.

> Mitsubishi Heavy Industries Air Conditioning Europe Ltd 5 The Square, Stockley Park, Uxbridge, UB11 1ET http://www.mhiae.com

#### ISO9001

Our Air-Conditioning & Refrigeration Division is an ISO9001 approved factory for residential air conditioners and commercial-use air conditioners (including heat pumps).

Mitsu Air-Co



ISO14001 Our Air-Conditioning & Refrigeration Division has been assessed and found to comply with the requirements of ISO14001.



ISO 14001 Certificate:04 104 980813 MITSUBISHI HEAVY INDUSTRIES-MAHAJAK ARI CONDITIONERS CO., LTD. Certificate:04 104 980913

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