HEAT RECOVERY KXZR2 SYSTEM

The new KXZR2 features a tiered design and a completely new shape. Thanks to the 3-pipe system, a single outdoor unit can simultaneously heat or cool several indoor units.

SIMULTANEOUS HEATING AND COOLING

- Heat recovery.
- An extensive range of applications.
- Flexibility of the design.
- Better low temperature cooling capacity.
- Easy maintenance.

KXZRE2

NEW DESIGN AND ENHANCED COMPONENTS

- Rounded shape.
- Next-generation compressor that reduces friction between components.
- New Inverter control.
- High-efficiency heat exchanger.
- Optimised pipeline shape.

KXZRXE2 Hi-COP

SYSTEM CHARACTERISTICS

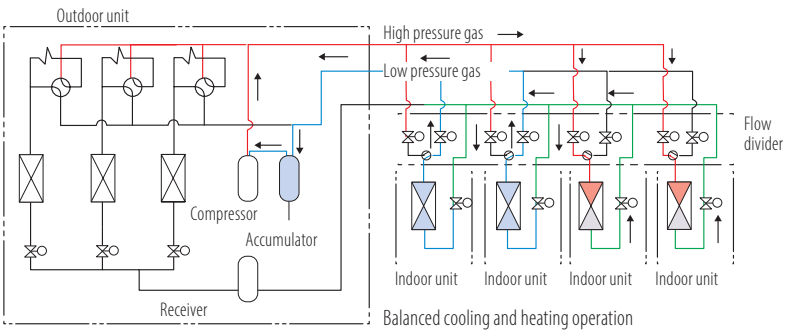
These heat recovery systems work with 3 interconnecting pipes and therefore are commonly referred to as 3-pipe systems. These systems offer both heating and cooling in a single indoor unit, based on the room conditions/ requirements. The systems incorporate a highly sophisticated air conditioning control for multiple indoor areas, regardless of the cooling or heating needs, for applications where the building orientation (N, S, E, W) may result in a heat increase/loss on different sides of the same building.

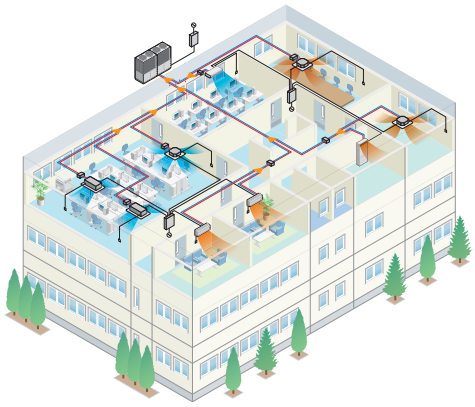
The range starts from a cooling capacity of 8 HP (22.4 kW), up to 24HP (67.0 kW).

The outdoor units can also be installed in "pairs" or in "triple combination", reaching 60HP/168.0 kW on a single system.

HEAT RECOVERY SYSTEMS

The interconnection piping system has a unique arrangement with two of the interconnecting pipes passing through a PFD distribution controller and the third tube connected directly to each indoor unit from the main pipe path.
This reduces installation times and the number of braze-welded connections on the site. The PFD distribution controllers are available for single connection or as a 4-way combined PFD connection, with each connected unit characterised by independent cooling or heating.





During defrost or during automatic compressor protection, activated every hour during heating, the heating operation stops and restarts temporarily after a specific time interval.

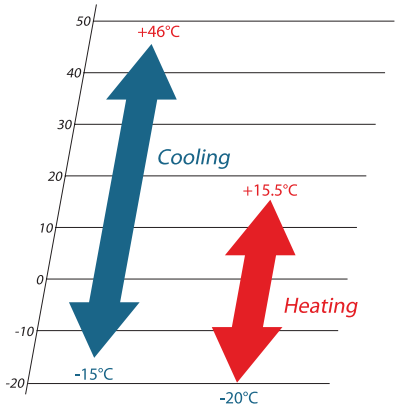
The series is equipped with the same automatic compressor protection even in cooling mode.

During this protection period, only the air flow is active and the cooling operation restarts at the end of a specific time interval.

This model is not suitable for the use of annual cooling operations, for example for the server room, especially in areas where the outdoor air temperature falls below 5° C.

WIDE RANGE OF OPERATION

The KXZR series has an an extensible system design, considering a heating range at low temperature conditions down to -20° C, and a cooling range up to 46° C (previous model: 43° C).



CONNECTABLE INDOOR UNITS

It is possible to connect up to 80 indoor units to the outdoor unit of greater power size. 14 different types of indoor units are available, visible or recessed, in different sizes, for a total of 81 overall possibilities.

DESIGN FLEXIBILITY

Total power of the indoor units

HP	KXZR
8~16	**200%**
17~34	**160%**
36~60	130%

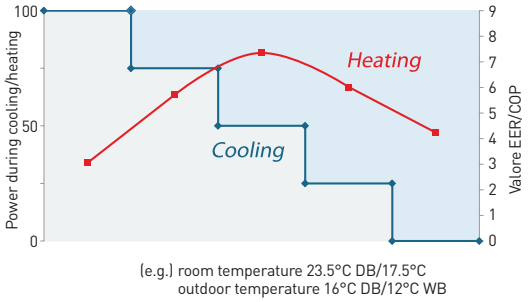
- Where total power is higher than 130%, an additional refrigerant charge is required on site.
- With 8-34HP systems, if one or more of the FDK, FDFL, FDFU and/or FDFW series are connected to the system, the total power of the indoor units cannot exceed 130%.

SYSTEM CHARACTERISTICS

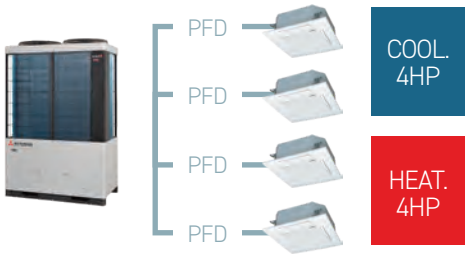
ENERGY EFFICIENCY IN HEAT RECOVERY MODE

High efficiency when cooling and heating occur simultaneously. System control maximises efficiency up to a maximum COP of 9.0* in both cooling and heating mode.

* Data obtained at 8HP in an outdoor temperature condition of 16°C DB/12°C WB, in a refrigerated room of 27°C DB/19°C WB, and in a heated room of 20°C DB/14.5°C WB.



(e.g.) room temperature 23.5°C DB/17.5°C
outdoor temperature 16°C DB/12°C WB



MAX COP > 9.0

Conditions:
FDC 224 KXZRE2
50% indoor units in cooling mode (27°C DB/19°C)
50% indoor units in heating mode (20°C DB/14.5°C)
Outdoor temperature 16°C DB/12°C WB

IMPROVED COOLING CAPACITY AT LOW OUTDOOR TEMPERATURE

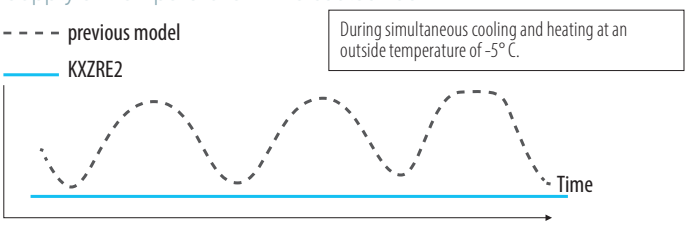
The small partitions of the exchanger and the internal pressure control allow the outdoor unit to operate in cooling mode even in low outdoor temperature conditions, for greater capacity with very low temperatures (-5° C) compared to the previous model.

In the previous model, in the presence of a strong heating demands and simultaneous low cooling demands in low outdoor temperature conditions, the pressure control is adjusted to maintain a greater heating power compared to a sufficient cooling power.

The new heat exchanger and pressure control adopted in the KXZR series has improved operating efficiency in heating and cooling*.

* The cooling system has priority for the required heating mode compared to a very low cooling demand, where most of the indoor units are used in heating mode.

Supply air temperature in the cooled room



REFRIGERANT CONNECTIONS

VRF-T systems are manufactured to the highest standards of quality and reliability and it is therefore essential for the installation procedures and materials to have the same qualitative features, to ensure trouble-free long-term operation. It is advisable to use high quality copper refrigerant piping, in coils or in straight, semi-rigid lengths. The copper piping should be chosen considering the higher operating pressure of R410A refrigerant gas and the increased pressure circulating in the system produced by reverse cycle operation. All materials used must comply with European standards (EN 12735). The branch pipe kits supplied must be used to connect the indoor units and the manifold kits must be used to connect the outdoor units (if necessary). It is forbidden to use standard accessories (elbow pipes, T-joints etc.). The branch pipes must be installed according to manufacturer guidelines and must allow a continuous flow of refrigerant in accordance with European standard E378: 2017.

All connecting welds must be made under slight nitrogen pressure to prevent the oxidation of the inner surface of the copper pipes. During installation, no accidental entry of condensate, dust or any other contaminant must be permitted. Once installation is complete, a leak test must be carried out to check for refrigerant leaks with pressurised nitrogen. The ends of the pipe must be bent and welded and an appropriate service valve affixed.

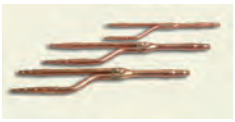
Additional refrigerant charge

Only R410A refrigerant gas must be used, and this must be added by weight using an electronic meter. The amount of additional refrigerant must be carefully calculated according to the manufacturer's guidelines, defined by the length and diameter of each section of the system piping.

If the longest distance (measured between the outdoor unit and the furthest indoor unit) is 90 m or more (actual length), change the size of the main pipe according to the following table.Even if the longest distance exceeds 90 m (actual length), it is not necessary to change the size of the exhaust gas pipes.

HP		8	10	12	14	16	17	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
Liquid side	Futhest I.U. =<90 m	ø 9.52		ø 12.7								ø 15.88						ø 19.05											
Intake gas		ø 19.05	ø 22.22		ø 28.58							ø 34.92																	
Delivery gas		ø 15.88	ø 19.05		ø 22.22							ø 28.58																	
Liquid side	Furthest I.U. =>90 m	ø 12.7					ø 15.88					ø 19.05						ø 22.22											
Intake gas		ø 22.22			ø 28.58							ø 34.92																	
Delivery gas		ø 15.88	ø 19.05		ø 22.22							ø 28.58																	

BRANCH PIPES

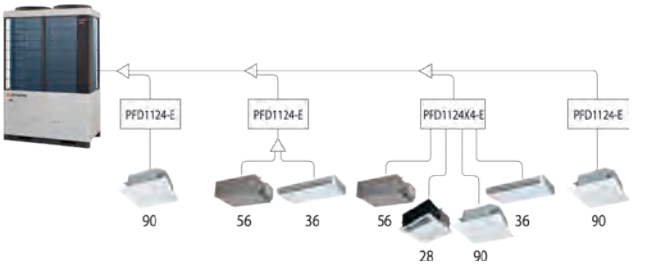


DIS-22-1RB/DIS-180-1RB

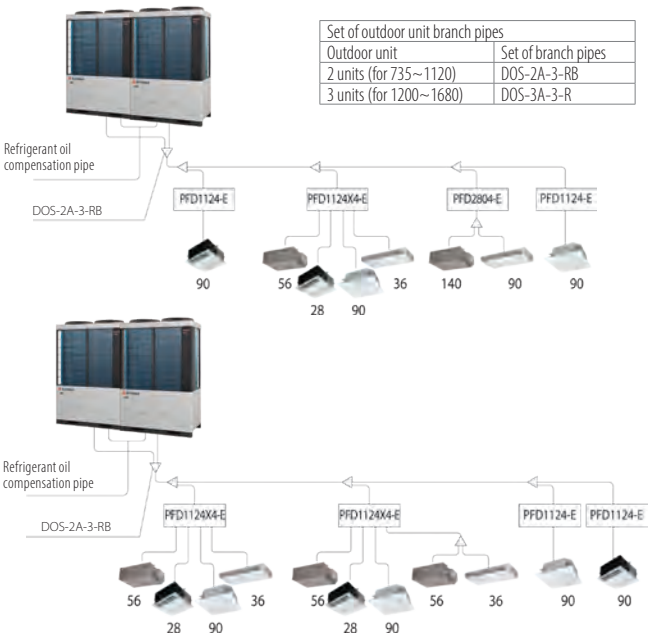
MANIFOLDS

DOS-2A-3-RB

SINGLE OUTDOOR UNIT



COMBINED OUTDOOR UNITS



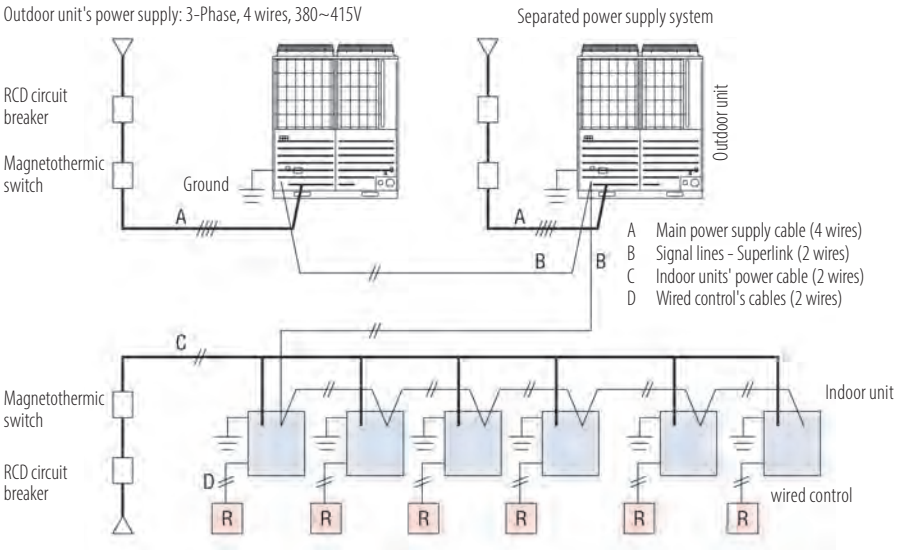
Set of outdoor unit branch pipes	
Outdoor unit	Set of branch pipes
2 units (for 735~1120)	DOS-2A-3-RB
3 units (for 1200~1680)	DOS-3A-3-R

First branch pipe of the indoor unit	
Indoor units' total capacity	Set of branch pipes
~179	DIS-22-1-RB
180~370	DIS-180-1-RB
371~539	DIS-371-2-RB
540~	DIS-540-2-RB

Downstream of the PFD	
Indoor units' total capacity	Set of branch pipes
~179	DIS-22-1B
180~370	DIS-180-1B
371~539	DIS-371-1B
540~	DIS-540-3B

WIRING

VRF MHI systems require highly simplified electrical connections to the indoor units, thanks to a control circuit that uses 2 non-polarised conductors. The outdoor unit can be accessed from all sides for electrical connections (front, rear, bottom, right and left). A separate single-phase or three-phase power supply must be brought in for outdoor and indoor units, depending on the product specification.



Indoor unit's power supply: 1-Phase 220~240V

IMPORTANT: if the RCD circuit breaker is dedicated solely to protecting against leakage to earth, it will be necessary to install a magnetothermic switch.

CONNECTIONS

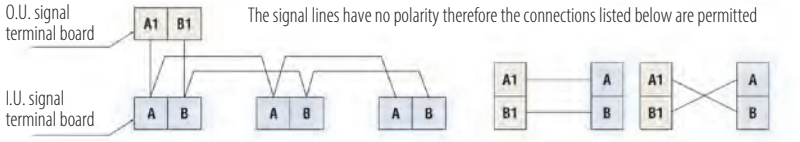
SIGNAL LINE

The signal line that connects the outdoor unit to the indoor units is 5 VDC and uses 2 non-polarised conductors marked A1 and B1.
For the signal line with 2 conductors, use shielded cables measuring 0.75 mm2. Earth the shield on all the indoor and outdoor units.

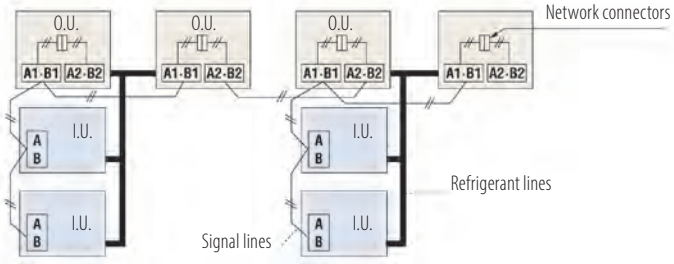
If using combined outdoor units, connect:

- the signal line between indoor and outdoor units, and the signal line between outdoor units that belong to the same refrigerant line, to A1 and B1;
- the signal line between outdoor units belonging to a different refrigerant line to A2 and B2.

Single outdoor unit

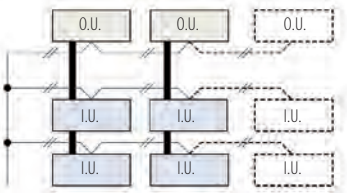


Combined outdoor units



The maximum number of indoor units that can be connected to a signal line is 128, and it is possible to create groups of outdoor and/or indoor units connected to the same outdoor unit or to separate outdoor units, as long as they are connected to the same signal line. The signal line can also be connected by adopting the method described below (multiple connectors).

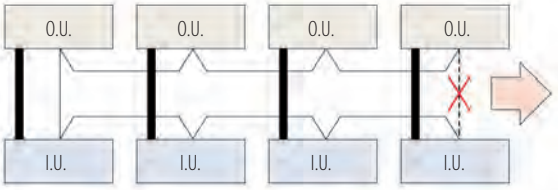
CAUTION: star connections on the signal lines are not permitted.



WIRED CONTROL

The specifications for the connection between the wired remote control and the indoor units (XY connection) are 0.5 mm2 x 2 wires. The maximum permitted length is 600 m. If the length exceeds 100 m, refer to the table.

Length (m)	Type of cables
100~200	0.5 mm2 x 2 wires
~300	0.75 mm2 x 2 wires
~400	1.50 mm2 x 2 wires
~600	2.0 mm2 x 2 wires



A loop cannot be formed with the signal, therefore the section of the connection indicated with ..... is not permitted

Low noise flow divider

PFD 1124-E, PFD 1804-E, PFD 2804-E, PFD 1124X4-E

Designed and manufactured at Mitsubishi Heavy Industries specialist research laboratories, the PFD flow divider enables all indoor units to be integrated into an air conditioning network, to switch from cooling mode to heating mode, or vice versa, while the whole system remains operational, thus preventing unnecessary power on and power off cycles. By using the optional extension cable for the PFD box, equipped with a connector, it is possible to further separate the PFD box from the indoor unit. This enables a reduction in sound level caused by the PDF box and the flow of refrigerant.

4-outlet PFD

Relay kit

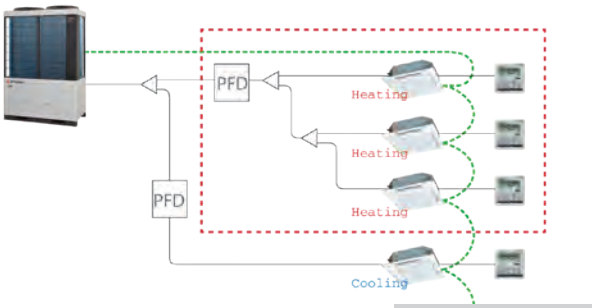
CONNECTIONS

PFD 1124-E, PFD 1804-E, PFD 2804-E, PFD 1124X4-E

Selection and control from centralised panel

The remote control settings (such as power on/off of single indoor units, temperature setting, as well as controlling the heating/cooling procedures) are possible via an individual control connected to each indoor unit.
At the same time, together with the individual controls, the SC-SL1N/2NA/4-AE3/BE3 centralised control panels can also be used.

For more details, refer to the Installation Manual.

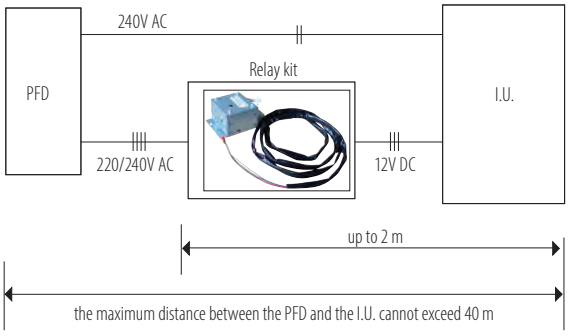


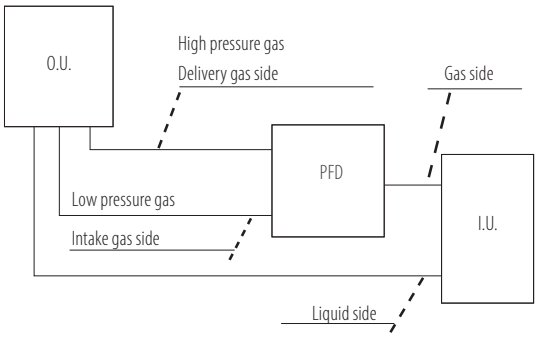
SC-SL1N/2NA/4-AE3/BE3

Ease of installation

The PFD flow divider requires only the connection of gas-side piping, including low-pressure piping from the O.U., while the liquid-side piping is connected directly to the I.U. This reduces the number of connections and, consequently, installation times and costs.
Groups of indoor units up to a total capacity of 28 kW can be connected to a single PFD by means of branch pipes, all of which operate in the same mode, cooling or heating.
Also available is a 4-connection distributor, PFD1124X4-E, which allows up to 4 groups of indoor units to be connected, operating individually in cooling or heating mode.

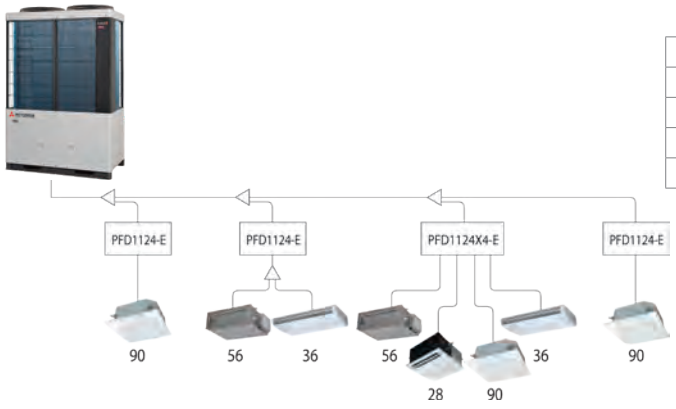
The PFD flow divider is connected to the indoor unit via a relay kit (supplied) to be installed within a maximum distance of 2 metres from the indoor unit. The maximum distance between the PFD and the I.U. is 40 metres. The power of the PFD comes directly from the indoor unit.





PFD4-15WR-W

15 m Extension Cable for PFD-Box KXZR (optional)



Flow divider	Total I.U. power downstream	Connectable indoor units*
PFD 1124-E	up to 11.20 kW	1-5
PFD 1804-E	up to 18.00 kW	1-8
PFD 2804-E	up to 28.00 kW	1-10
PFD 1124X4-E	up to 37.10 kW total (divided over the 4 connections)	up to 16

* Refer to the technical manuals for specifications.

KXZR2

CONNECT UP TO 44 INDOOR UNITS/200% CAPACITY

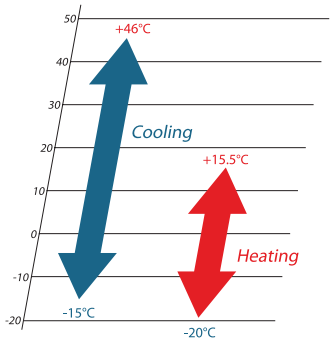
FDC 224 KXZRE2 22.4 kW
FDC 280 KXZRE2 28.0 kW
FDC 335 KXZRE2 33.5 kW

FEATURES

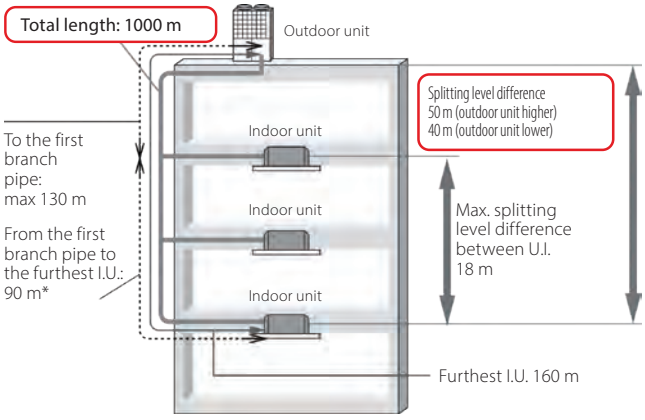
- Maximum energy efficiency: COP 4.25 and EER 3.89 [8 HP]
- Only DC Inverter compressors
- High splitting distance: up to 1000 m in total and with a max. distance between the O.U. and the furthest I.U. of 160 m
- Up to 50 Pa fan static pressure

8~12HP (22.4~33.5 kW)

OPERATING RANGE



INSTALLATION DIAGRAM



* With difference of length between the farthest indoor unit and the nearest one from the first branch pipe < 40 m.

Outdoor unit model			FDC 224 KXZRE2	FDC 280 KXZRE2	FDC 335 KXZRE2
Power class		HP	8	10	12
Nominal data					
Rated capacity	Cooling	kW	22.40	28.00	33.50
Rated power input		kW	5.76	7.39	9.65
Rated energy efficiency coefficient		EER[1]	3.89	3.79	3.47
Rated capacity	Heating	kW	22.40	28.00	33.50
Rated power input		kW	5.27	6.86	8.44
Rated energy performance coefficient		COP[1]	4.25	4.08	3.97
Seasonal data					
Seasonal energy efficiency index	Cooling	SEER[2]	6.21	6.36	7.15
Seasonal performance coefficient	Heating	SCOP[2]	4.06	4.02	4.43
Seasonal energy efficiency (ηs)		%	159.40	157.80	174.20
Electrical data					
Power supply		Ph-V-Hz	3Ph-380~415V-50Hz		
Rated current	Cooling	A	10.10	12.20	15.80
	Heating	A	9.10	11.30	13.80
Maximum current		A	16.00	20.00	21.20
Refrigerant circuit data					
Refrigerant[2]		Type (GWP)	R410A (2088)		
Q.ty of refrigerant pre-charge[3] (tons of CO2 equivalent)		kg	11.5 (24.012)	11.5 (24.012)	11.5 (24.012)
Piping diameter	Liquid	inch (mm)	3/8" (9.52)	3/8" (9.52)	1/2" (12.7)
	Gas LP		3/4" (19.05)	7/8" (22.22)	1" (25.4)
	Gas HP		5/8" (15.88)	3/4" (19.05)	3/4" (19.05)
Product specifications					
Dimensions	HxLxD	mm	1697x1350x720	1697x1350x720	1697x1350x720
Net weight		kg	305	305	305
Sound power level	Max	dB(A)	77	76	82
Sound pressure level	Max	dB(A)	58	57	64
Volume of air treated	Standard	m³/h	13500	13500	17640
Fan static pressure	Max	Pa	50	50	50
Operating range (outdoor temperature)	Cooling	°C	-15~46	-15~46	-15~46
	Heating	°C	-20~15.5	-20~15.5	-20~15.5
Connectable indoor units[5]	Min ~ Max	nb.	1 ~ 29	1 ~ 37	1 ~ 44
	Capacity	%	50 ~ 200	50 ~ 200	50 ~ 200

1. Value measured according to the harmonised standard EN14511. 2. EU Regulations No. 206/2012 - No. 2281/2016 - Value measured according to the harmonised standard EN14825. 3. Refrigerant leakage contributes to climate change. When released into the atmosphere, refrigerants with a lower global warming potential (GWP) contribute less to global warming than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. If 1 kg of this refrigerant fluid were released into the atmosphere, therefore, the impact on global warming would be 2088 times higher than 1 kg of CO2 , over a period of 100 years. Under no circumstances should the user try to intervene on the refrigerant circuit or disassemble the product. Always contact qualified personnel if necessary. 4. For the calculation of the additional refrigerant charge, refer to the labels placed inside and outside the unit. 5. When connecting indoor units of type FDK, FDFL, FDFU or FDFW the upper limit is always 130%.

HEAT RECOVERY KXZR2

KXZR2

CONNECT UP TO 71 INDOOR UNITS/160% CAPACITY (200% FOR FDC 400~450)

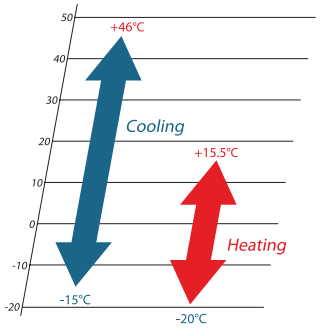
FDC 400 KXZRE2 40.0 kW
FDC 450 KXZRE2 45.0 kW
FDC 475 KXZRE2 47.5 kW
FDC 500 KXZRE2 50.0 kW
FDC 560 KXZRE2 56,0 kW
FDC 615 KXZRE2 61,5 kW
FDC 670 KXZRE2 67,0 kW

FEATURES

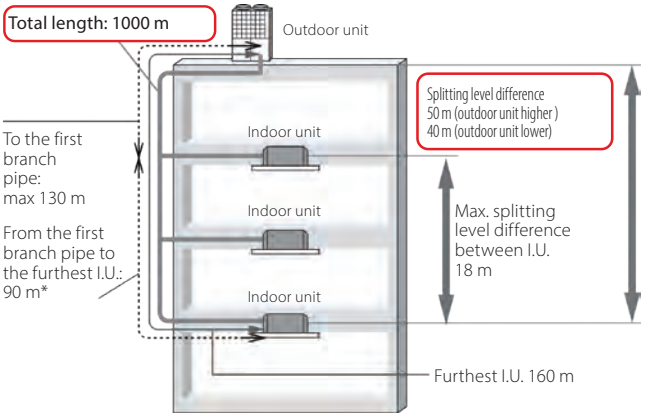
- Maximum energy efficiency: COP 4.10 and EER 3.46 [14 HP]
- Only DC Inverter compressors
- High splitting distance: up to 1000 m in total and with a max. distance between the O.U. and the furthest I.U. of 160 m
- Up to 50 Pa fan static pressure

14~24HP (40.0~67.0 kW)

OPERATING RANGE



INSTALLATION DIAGRAM



* With difference of length between the farthest indoor unit and the nearest one from the first branch pipe < 40 m.

Outdoor unit model			FDC 400 KXZRE2	FDC 450 KXZRE2	FDC 475 KXZRE2	FDC 500 KXZRE2	FDC 560 KXZRE2	FDC 615 KXZRE2	FDC 670 KXZRE2
Power class		**HP**	**14**	**16**	**17**	**18**	**20**	**22**	**24**
Nominal data									
Rated capacity	Cooling	kW	40.00	45.00	47.50	50.00	56.00	61.50	67.00
Rated power input	Cooling	kW	11.56	14.47	14.84	15.20	19.31	21.35	25.57
Rated energy efficiency coefficient	Cooling	EER[1]	3.46	3.11	3.20	3.29	2.90	2.88	2.62
Rated capacity	Heating	kW	40.00	45.00	47.50	50.00	56.00	61.50	63.00
Rated power input	Heating	kW	9.76	11.39	11.67	12.69	14.93	16.14	17.45
Rated energy performance coefficient	Heating	COP[1]	4.10	3.95	4.07	3.94	3.75	3.81	3.61
Seasonal data									
Seasonal energy efficiency index	Cooling	SEER[2]	6.78	6.29	6.6	7.01	6.26	6.05	5.88
Seasonal performance coefficient	Heating	SCOP[2]	4.39	4.33	4.27	4.39	4.29	4.34	4.50
Seasonal energy efficiency (ηs)	Heating	%	172.60	170.20	167.80	172.60	168.60	170.60	177.00
Electrical data									
Power supply		Ph-V-Hz	3Ph-380~415V-50Hz						
Rated current	Cooling	A	18.50	23.10	24.00	24.60	31.20	34.50	41.30
Rated current	Heating	A	15.90	18.60	18.90	20.50	24.10	26.10	28.20
Maximum current		A	30.00	32.00	40.40	41.00	41.60	42.00	42.40
Refrigerant circuit data									
Refrigerant[2]		Type (GWP)	R410A (2088)						
Q.ty of refrigerant pre-charge[3] (tons of CO2 equivalent)		kg	11.5 (24.012)	11.5 (24.012)	11.5 (24.012)	11.5 (24.012)	11.5 (24.012)	11.5 (24.012)	11.5 (24.012)
Piping diameter	Liquid	inch (mm)	1/2" (12.7)	1/2" (12.7)	1/2" (12.7)	1/2" (12.7)	1/2" (12.7)	1/2" (12.7)	1/2" (12.7)
Piping diameter	Gas LP	inch (mm)	1" (25.4)	1-1/8" (28.58)	1-1/8" (28.58)	1-1/8" (28.58)	1-1/8" (28.58)	1-1/8" (28.58)	1-1/8" (28.58)
Piping diameter	Gas HP	inch (mm)	7/8" (22.22)	7/8" (22.22)	7/8" (22.22)	7/8" (22.22)	7/8" (22.22)	1" (25.4)	1" (25.4)
Product specifications									
Dimensions	HxLxD	mm	2052x1350x720	2052x1350x720	2052x1350x720	2052x1350x720	2052x1350x720	2052x1350x720	2052x1350x720
Net weight		kg	372	372	420	420	420	420	420
Sound power level	Max	dB(A)	82	82	82	82	82	83	83
Sound pressure level	Max	dB(A)	62	62	62	62	64	65	65
Volume of air treated	Standard	m³/h	18240	18240	18000	18000	18000	18000	18000
Fan static pressure	Max	Pa	50	50	50	50	50	50	50
Operating range (outdoor temperature)	Cooling	°C	-15~46	-15~46	-15~46	-15~46	-15~46	-15~46	-15~46
Operating range (outdoor temperature)	Heating	°C	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5	-20~15.5
Connectable indoor units[5]	**Min ~ Max**	**nb.**	**1 ~ 53**	**1 ~ 60**	**1 ~ 50**	**1 ~ 53**	**1 ~ 59**	**2 ~ 65**	**2 ~ 71**
	Capacity	**%**	**50 ~ 200**	**50 ~ 200**	**50 ~ 160**	**50 ~ 160**	**50 ~ 160**	**50 ~ 160**	**50 ~ 160**

1. Value measured according to the harmonised standard EN14511. 2. EU Regulations No. 206/2012 - No. 2281/2016 - Value measured according to the harmonised standard EN14825. 3. Refrigerant leakage contributes to climate change. When released into the atmosphere, refrigerants with a lower global warming potential (GWP) contribute less to global warming than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. If 1 kg of this refrigerant fluid were released into the atmosphere, therefore, the impact on global warming would be 2088 times higher than 1 kg of CO2 , over a period of 100 years. Under no circumstances should the user try to intervene on the refrigerant circuit or disassemble the product. Always contact qualified personnel if necessary. 4. For the calculation of the additional refrigerant charge, refer to the labels placed inside and outside the unit. 5. When connecting indoor units of type FDK, FDFL, FDFU or FDFW the upper limit is always 130%.

KXZR2 - MODULAR OUTDOOR UNITS

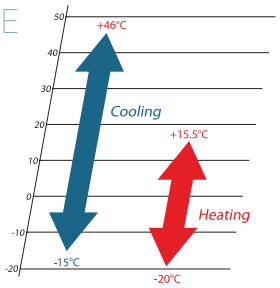
CONNECT UP TO 78 INDOOR UNITS (FDC 735) AND UP TO 80 INDOOR UNITS (FDC 800~1120) 160% CAPACITY (FDC 735~950) AND UP TO 130% CAPACITY (FDC 1000~1120)

FDC 735 KXZRE2 (FDC 335+FDC 400) 73.5 kW
FDC 800 KXZRE2 (FDC 400+FDC 400) 80.0 kW
FDC 850 KXZRE2 (FDC 400+FDC 450) 85.0 kW
FDC 900 KXZRE2 (FDC 450+FDC 450) 90.0 kW
FDC 950 KXZRE2 (FDC 475+FDC 750) 95.0 kW
FDC 1000 KXZRE2 (FDC 500+FDC 500) 100.0 kW
FDC 1060 KXZRE2 (FDC 500+FDC 560) 106.0 kW
FDC 1120 KXZRE2 (FDC 560+FDC 560) 112.0 kW

FEATURES

- Maximum energy efficiency: COP 4.10 (28HP); EER 3.47 (26HP)
- Only DC Inverter compressors
- High splitting distance: up to 1000 m in total and with a max. distance between the O.U. and the farthest I.U. e la U.I. of 160 m
- Up to 85 Pa fan static pressure

OPERATING RANGE



26HP (73.5 kW)

28~40HP (80.0~112.0 kW)

COMBINATIONS

Outdoor unit model			FDC 735 KXZRE2	FDC 800 KXZRE2	FDC 850 KXZRE2	FDC 900 KXZRE2	FDC 950 KXZRE2	FDC 1000 KXZRE2	FDC 1060 KXZRE2	FDC 1120 KXZRE2
Combinations			FDC 335 KXZRE2	FDC 400 KXZRE2	FDC 400 KXZRE2	FDC 450 KXZRE2	FDC 475 KXZRE2	FDC 500 KXZRE2	FDC 500 KXZRE2	FDC 560 KXZRE2
			FDC 400 KXZRE2	FDC 400 KXZRE2	FDC 450 KXZRE2	FDC 450 KXZRE2	FDC 475 KXZRE2	FDC 500 KXZRE2	FDC 560 KXZRE2	FDC 560 KXZRE2
			-	-	-	-	-	-	-	-
Power class		HP	26	28	30	32	34	36	38	40
Rated capacity	Cooling	kW	73.50	80.00	85.00	90.00	95.00	100.00	106.00	112.00
Rated power input	Cooling	kW	21.21	23.12	26.03	28.94	29.68	30.40	34.51	38.62
Rated energy efficiency coefficient	Cooling	EER[1]	3.47	3.46	3.27	3.11	3.20	3.29	3.07	2.90
Rated capacity	Heating	kW	73.50	80.00	85.00	90.00	95.00	100.00	106.00	112.00
Rated power input	Heating	kW	18.20	19.52	21.15	22.78	23.34	25.38	27.62	29.86
Rated energy performance coefficient	Heating	COP[1]	4.04	4.10	4.02	3.95	4.07	3.94	3.84	3.75
Seasonal data										
Seasonal energy efficiency index	Cooling	SEER[6]	7.11	6.90	6.74	6.61	6.60	6.30	6.28	6.26
Seasonal performance coefficient	Heating	SCOP[6]	4.39	4.39	4.36	4.33	4.27	4.39	4.34	4.29
Seasonal energy efficiency (ηs)	Heating	%	172.70	172.50	171.30	170.20	167.80	172.70	170.50	168.60
Electrical data										
Power supply		Ph-V-Hz	3Ph-380~415V-50Hz							
Rated current	Cooling	A	34.30	37.00	41.60	46.30	48.00	49.10	55.80	62.40
Rated current	Heating	A	29.70	31.90	34.60	37.20	37.70	41.00	44.60	48.30
Maximum current		A	51.20	60.00	62.00	64.00	80.80	82.00	82.60	83.20
Refrigerant circuit data										
Refrigerant[2]		Type (GWP)	R410A (2088)							
Q.ty of refrigerant pre-charge[3] (tons of CO2 equivalent)		kg	23 (48.024)	23 (48.024)	23 (48.024)	23 (48.024)	23 (48.024)	23 (48.024)	23 (48.024)	23 (48.024)
Piping diameter[4]	Liquido	inch (mm)	5/8" (15.88)	5/8" (15.88)	5/8" (15.88)	5/8" (15.88)	5/8" (15.88)	5/8" (15.88)	3/4" (19.05)	3/4" (19.05)
Piping diameter[4]	Gas LP	inch (mm)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/2" (38.1)	1-1/2" (38.1)	1-1/2" (38.1)
Piping diameter[4]	Gas HP	inch (mm)	1" (25.4)	1-1/8" (28.58)	1-1/8" (28.58)	1-1/8" (28.58)	1-1/8" (28.58)	1-1/8" (28.58)	1-1/4" (31.75)	1-1/4" (31.75)
Piping diameter[4]	Oil balancing	inch (mm)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)
Product specifications										
Dimensions	HxLxD	mm	2052x2700x720							
Net weight		kg	677	744	744	744	840	840	840	840
Connectable indoor units[5]	Min ~ Max	nb.	2 ~ 78	2 ~ 80	2 ~ 80	2 ~ 80	2 ~ 80	2 ~ 80	2 ~ 80	2 ~ 80
Connectable indoor units[5]	Capacity	%	50 ~ 160	50 ~ 160	50 ~ 160	50 ~ 160	50 ~ 160	50 ~ 130	50 ~ 130	50 ~ 130

1. Value measured according to the harmonised standard EN 14511. 2. Refrigerant leakage contributes to climate change. When released into the atmosphere, refrigerants with a lower global warming potential (GWP) contribute less to global warming than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. If 1 kg of this refrigerant fluid were released into the atmosphere, therefore, the impact on global warming would be 2088 times higher than 1 kg of CO2, over a period of 100 years. Under no circumstances should the user try to intervene on the refrigerant circuit or disassemble the product. Always contact qualified personnel if necessary. 3. For the calculation of the additional refrigerant charge, refer to the labels positioned inside and outside the unit. 4. The diameters indicated refer to the section up to the first junction, with an equivalent length of less than 90 m. 5. When connecting indoor units of type FDK, FDFL, FDFU or FDFW the upper limit is always 130%. 6. EU Regulations No. 206/2012 - No. 2281/2016 - Value measured according to the harmonised standard EN14825

KXZR2 - MODULAR OUTDOOR UNITS

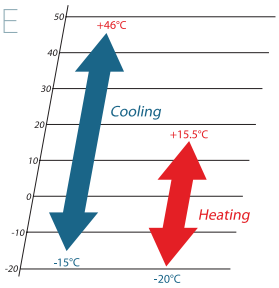
CONNECT UP TO 80 INDOOR UNITS/130% CAPACITY

FDC 1200 KXZRE2 (FDC 400+FDC 400+FDC 400) 120.0 kW
FDC 1250 KXZRE2 (FDC 400+FDC 400+FDC 450) 125.0 kW
FDC 1300 KXZRE2 (FDC 400+FDC 450+FDC 450) 130.0 kW
FDC 1350 KXZRE2 (FDC 450+FDC 450+FDC 450) 135.0 kW
FDC 1425 KXZRE2 (FDC 475+FDC 475+FDC 475) 142.5 kW
FDC 1450 KXZRE2 (FDC 475+FDC 475+FDC 500) 145.0 kW
FDC 1500 KXZRE2 (FDC 500+FDC 500+FDC 500) 150.0 kW
FDC 1560 KXZRE2 (FDC 500+FDC 500+FDC 560) 156.0 kW
FDC 1620 KXZRE2 (FDC 500+FDC 560+FDC 560) 162.0 kW
FDC 1680 KXZRE2 (FDC 560+FDC 560+FDC 560) 168.0 kW

FEATURES

- Maximum energy efficiency: COP 4.10 and EER 3.46 (42HP)
- Only DC Inverter compressors
- High splitting distance: up to 1000 m in total and with a max. distance between the O.U. and the farthest I.U. e la U.I. of 160 m
- Up to 85 Pa fan static pressure

OPERATING RANGE



42~60HP
(120.0~168.0 kW)

COMBINATIONS

Outdoor unit model			FDC 1200 KXZRE2	FDC 1250 KXZRE2	FDC 1300 KXZRE2	FDC 1350 KXZRE2	FDC 1425 KXZRE2	FDC 1450 KXZRE2	FDC 1500 KXZRE2	FDC 1560 KXZRE2	FDC 1620 KXZRE2	FDC 1680 KXZRE2
Combinations			FDC 400 KXZRE2	FDC 400 KXZRE2	FDC 400 KXZRE2	FDC 450 KXZRE2	FDC 475 KXZRE2	FDC 475 KXZRE2	FDC 500 KXZRE2	FDC 500 KXZRE2	FDC 500 KXZRE2	FDC 560 KXZRE2
			FDC 400 KXZRE2	FDC 400 KXZRE2	FDC 450 KXZRE2	FDC 450 KXZRE2	FDC 475 KXZRE2	FDC 475 KXZRE2	FDC 500 KXZRE2	FDC 500 KXZRE2	FDC 560 KXZRE2	FDC 560 KXZRE2
			FDC 400 KXZRE2	FDC450 KXZRE2	FDC 450 KXZRE2	FDC 450 KXZRE2	FDC 475 KXZRE2	FDC 500 KXZRE2	FDC 500 KXZRE2	FDC 560 KXZRE2	FDC 560 KXZRE2	FDC 560 KXZRE2
Power class		HP	42	44	46	48	50	52	54	56	58	60
Rated capacity	Cooling	kW	120.00	125.00	130.00	135.00	142.50	145.00	150.00	156.00	162.00	168.00
Rated power input		kW	34.68	37.59	40.50	43.41	44.52	44.88	45.60	49.71	53.82	57.93
Rated energy efficiency coefficient		EER[1]	3.46	3.33	3.21	3.11	3.20	3.23	3.29	3.14	3.01	2.90
Rated capacity	Heating	kW	120.00	125.00	130.00	135.00	142.50	145.00	150.00	156.00	162.00	168.00
Rated power input		kW	29.28	30.91	32.54	34.17	35.01	36.03	38.07	40.31	42.55	44.79
Rated energy performance coefficient		COP[1]	4.10	4.04	4.00	3.95	4.07	4.02	3.94	3.87	3.81	3.75
Seasonal data												
Seasonal energy efficiency index	Cooling	SEER[6]	6.90	6.79	6.69	6.61	6.60	6.49	6.30	6.28	6.27	6.26
Seasonal performance coefficient	Heating	SCOP[6]	4.39	4.37	4.35	4.33	4.27	4.31	4.39	4.36	4.32	4.29
Seasonal energy efficiency (ηs)		%	172.50	171.70	170.90	170.20	167.80	169.40	172.70	171.20	169.80	168.60
Electrical data												
Power supply		Ph-V-Hz	3Ph-380~415V-50Hz									
Rated current	Cooling	A	55.50	60.10	64.80	69.40	72.00	72.50	73.70	80.30	87.00	93.60
	Heating	A	47.80	50.50	53.20	55.80	56.60	58.20	61.50	65.20	68.80	72.40
Maximum current		A	90.00	92.00	94.00	96.00	121.20	121.80	123.00	123.60	124.20	124.80
Refrigerant circuit data												
Refrigerant[2]		Type (GWP)	R410A (2088)									
Q.ty of refrigerant pre-charge[3] (tons of CO2 equivalent)		kg	34.5 (72.036)	34.5 (72.036)	34.5 (72.036)	34.5 (72.036)	34.5 (72.036)	34.5 (72.036)	34.5 (72.036)	34.5 (72.036)	34.5 (72.036)	34.5 (72.036)
Piping diameter[4]	Liquido	inch (mm)	3/4" (19.05)	3/4" (19.05)	3/4" (19.05)	3/4" (19.05)	3/4" (19.05)	3/4" (19.05)	3/4" (19.05)	3/4" (19.05)	3/4" (19.05)	3/4" (19.05)
	Gas LP		1-1/2" (38.1)	1-1/2" (38.1)	1-1/2" (38.1)	1-1/2" (38.1)	1-1/2" (38.1)	1-1/2" (38.1)	1-1/2" (38.1)	1-1/2" (38.1)	1-1/2" (38.1)	1-1/2" (38.1)
	Gas HP		1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)	1-1/4" (31.75)
	Oil balancing		3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)	3/8" (9.52)
Product specifications												
Dimensions	HxLxD	mm	2052x4050x720									
Net weight		kg	1116	1116	1116	1116	1260	1260	1260	1260	1260	1260
Connectable indoor units[5]	Min ~ Max	nb.	3 ~ 80	3 ~ 80	3 ~ 80	3 ~ 80	3 ~ 80	3 ~ 80	3 ~ 80	3 ~ 80	3 ~ 80	3 ~ 80
	Capacity	%	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130

1. Value measured according to the harmonised standard EN 14511. 2. Refrigerant leakage contributes to climate change. When released into the atmosphere, refrigerants with a lower global warming potential (GWP) contribute less to global warming than those with a higher GWP. This appliance contains a refrigerant with a GWP of 2088. If 1 kg of this refrigerant fluid were released into the atmosphere, therefore, the impact on global warming would be 2088 times higher than 1 kg of CO2, over a period of 100 years. Under no circumstances should the user try to intervene on the refrigerant circuit or disassemble the product. Always contact qualified personnel if necessary. 3. For the calculation of the additional refrigerant charge, refer to the labels positioned inside and outside the unit. 4. The diameters indicated refer to the section up to the first junction, with an equivalent length of less than 90 m. 5. When connecting indoor units of type FDK, FDFL, FDFU or FDFW the upper limit is always 130%. 6. EU Regulations No. 206/2012 - No. 2281/2016 - Value measured according to the harmonised standard EN14825