



Outdoor unit for the production of chilled water with semi-hermetic screw compressor optimized for R513A, axial-flow fans, micro-channel full-aluminum condensing coils, single-pass shell and tubes evaporator designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. (brazed plate evaporator for sizes 0751 and 0851) and electronic expansion valve. Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Eurovent certification. Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation and the accurate sizing of all internal components. The compressors feature an enhanced lubrication system, an innovative internal geometry and a different control of capacity steps. Innovations that grant a remarkable performance improvement especially at partial loads.

## Control



### W3000TE

W3000TE control is available with the new KIPLink user interface. Based on WiFi technology, it allows one to operate on the unit directly from the smartphone or tablet. Using KIPLink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor the status of the various components and display / reset the alarms. As alternatives, the Touch interface, with a 7" WVGA colour display and USB port, or the Large keyboard, with a wide LCD display and led icons, are available. Temperature control characterized by the continuous capacity modulation, based on PID algorithms with dynamic neutral zone related to the leaving water temperature. Complete alarm management system is available, with the "black-box" and the alarm history display functions. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks. Compatibility with remote keyboard (up to 8 units). The programmable timer manages a weekly schedule organized into time bands (up to 10 daily time bands associated with different operating set points) to optimise unit performance by minimising power consumption during periods of inactivity. As an option (VPF package), the capacity modulation is integrated with the modulation of the water flow, by means of inverter and dedicated resources for the hydraulic circuit.

## Refrigerant



## Versions

K	Standard efficiency	SL-K	Super low noise, standard efficiency
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## Configurations

-	Basic function	R	Total condensing heat recovery function
D	Partial condensing heat recovery function		

## Features

### LOW GWP REFRIGERANT

New generation refrigerant R513A, with reduced greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of R513A = 572, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer. Not flammable (ASHRAE 34, ISO 817: class A1).

### HIGH EFFICIENCY

Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

### COMPACTNESS

Compactness in terms of overall size and weight, helping installation and working on site

### EXTREMELY SILENT OPERATION

As the result of a systematic design oriented to minimize the noise level, the silenced version units give the best combination of quietness and efficiency on the market.

### FLEXIBILITY

Flexibility in the applications thanks to the many configurations and versions available.

### WIDE OPERATING RANGE

The accurate condensation control (variable fan speed regulation as per standard on every model) and devoted kits allow unit's operation from -10°C (-20°C with accessories) to 46°C (50°C with accessories) of outdoor air temperature and from -8°C to 18°C (20°C with accessories) of evaporator leaving water temperature.

### ALUMINIUM MICRO-CHANNEL HEAT EXCHANGERS

The full aluminium micro-channel condenser coils deliver high efficiency whilst ensuring a reduced refrigerant volume and a lower unit weight. The e-coating protection (optional) grants the highest level of resistance to corrosion in any condition, even in the most aggressive environments.

### INTEGRATED HYDRONIC GROUP

The built-in hydronic group (optional) includes the main water circuit components. It is available with 1 or 2 pumps, fixed or variable speed, high or low head to satisfy all the different industrial and comfort application requirements.

## Accessories

- Noise reducer (only on not silenced versions)
- EC fans with electronic DC brushless motor
- Microchannel coils with e-coating protection
- Traditional coils with copper tubes and aluminium fins, also available with pre-painted fins or Fin Guard Silver protective treatment.
- Compressor enclosure (standard on silenced versions)
- Leak detector
- Kit HT to increase the unit operating range
- Compressor power factor correction
- Soft start
- Hydronic group
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Remote control keyboard (distance to 200m and to 500m)

FX-G05 /K			0751	0851	0951	0961	1101
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	145,5	160,1	202,8	221,9	238,0
Total power input	(1)	kW	52,12	61,09	66,27	76,37	88,76
EER	(1)	kW/kW	2,793	2,620	3,059	2,904	2,680
ESEER	(1)	kW/kW	3,930	3,920	3,970	4,010	4,000
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	145,1	159,7	202,1	221,1	237,1
EER	(1)(2)	kW/kW	2,760	2,600	3,020	2,860	2,640
ESEER	(1)(2)	kW/kW	3,830	3,840	3,850	3,880	3,870
Cooling energy class			C	D	B	C	D
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Ambient refrigeration</b>							
Prated,c	(7)	kW	145	160	202	221	237
SEER	(7)(8)		3,80	3,80	3,87	3,93	3,83
Performance ηs	(7)(9)	%	149	149	152	154	150
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	6,957	7,654	9,696	10,61	11,38
Pressure drop	(1)	kPa	20,6	20,1	30,2	36,2	41,6
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	23,0	25,0	32,0	36,0	38,0
<b>NOISE LEVEL</b>							
Sound Pressure	(3)	dB(A)	62	62	62	62	64
Sound power level in cooling	(4)(5)	dB(A)	94	94	94	94	96
<b>SIZE AND WEIGHT</b>							
A	(6)	mm	1500	1500	2750	2750	2750
B	(6)	mm	2260	2260	2260	2260	2260
H	(6)	mm	2500	2500	2500	2500	2500
Operating weight	(6)	kg	1480	1510	2100	2130	2460

FX-G05 /K			1301	1401	1421	1431	1801
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	274,7	299,1	329,0	347,7	395,7
Total power input	(1)	kW	91,61	106,9	123,7	116,2	140,9
EER	(1)	kW/kW	2,999	2,798	2,660	2,992	2,808
ESEER	(1)	kW/kW	4,020	3,970	3,990	3,940	3,960
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	273,7	297,8	327,7	346,8	394,4
EER	(1)(2)	kW/kW	2,960	2,750	2,620	2,960	2,770
ESEER	(1)(2)	kW/kW	3,890	3,820	3,850	3,860	3,850
Cooling energy class			B	C	D	B	C
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Ambient refrigeration</b>							
Prated,c	(7)	kW	274	298	328	347	394
SEER	(7)(8)		3,90	3,80	3,83	3,95	3,86
Performance ηs	(7)(9)	%	153	149	150	155	152
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	13,14	14,30	15,73	16,63	18,92
Pressure drop	(1)	kPa	42,5	50,4	44,9	29,5	38,2
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	44,0	48,0	53,0	56,0	63,0
<b>NOISE LEVEL</b>							
Sound Pressure	(3)	dB(A)	64	65	66	66	66
Sound power level in cooling	(4)(5)	dB(A)	96	97	98	98	98
<b>SIZE AND WEIGHT</b>							
A	(6)	mm	2750	2750	2750	4000	4000
B	(6)	mm	2260	2260	2260	2260	2260
H	(6)	mm	2500	2500	2500	2500	2500
Operating weight	(6)	kg	2510	2540	2580	3110	3540

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Unit in standard configuration/execution, without optional accessories.
- Parameter calculated according to [REGULATION (EU) N. 2016/2281]
- Seasonal energy efficiency ratio
- Seasonal space cooling energy efficiency

The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.  
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<b>FX-G05 /SL-K</b>			<b>0751</b>	<b>0851</b>	<b>0951</b>	<b>0961</b>	<b>1101</b>
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	140,1	169,5	195,5	214,7	245,9
Total power input	(1)	kW	52,54	56,12	66,96	78,02	83,46
EER	(1)	kW/kW	2,669	3,021	2,918	2,753	2,945
ESEER	(1)	kW/kW	3,940	4,130	3,940	4,050	4,060
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	139,7	169,0	194,9	214,0	244,9
EER	(1)(2)	kW/kW	2,640	2,990	2,880	2,720	2,900
ESEER	(1)(2)	kW/kW	3,840	4,020	3,840	3,930	3,920
Cooling energy class			D	B	C	C	B
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Ambient refrigeration</b>							
Prated,c	(7)	kW	140	169	195	214	245
SEER	(7)(8)		3,80	4,01	3,84	3,91	3,92
Performance ηs	(7)(9)	%	149	157	151	153	154
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	6,698	8,107	9,351	10,27	11,76
Pressure drop	(1)	kPa	19,1	22,6	28,1	33,9	44,4
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	24,0	29,0	33,0	37,0	43,0
<b>NOISE LEVEL</b>							
Sound Pressure	(3)	dB(A)	52	52	53	53	55
Sound power level in cooling	(4)(5)	dB(A)	84	84	85	85	87
<b>SIZE AND WEIGHT</b>							
A	(6)	mm	1500	2750	2750	2750	2750
B	(6)	mm	2260	2260	2260	2260	2260
H	(6)	mm	2500	2500	2500	2500	2500
Operating weight	(6)	kg	1640	2050	2270	2290	2770

<b>FX-G05 /SL-K</b>			<b>1301</b>	<b>1401</b>	<b>1421</b>	<b>1431</b>	<b>1801</b>
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	265,0	287,8	331,8	346,5	395,0
Total power input	(1)	kW	92,83	109,0	117,3	112,3	135,5
EER	(1)	kW/kW	2,856	2,640	2,829	3,085	2,915
ESEER	(1)	kW/kW	4,050	3,940	4,180	4,290	4,010
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	264,1	286,6	330,5	345,6	393,7
EER	(1)(2)	kW/kW	2,820	2,600	2,790	3,050	2,880
ESEER	(1)(2)	kW/kW	3,930	3,800	4,030	4,180	3,900
Cooling energy class			C	D	C	B	C
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Ambient refrigeration</b>							
Prated,c	(7)	kW	264	287	330	346	394
SEER	(7)(8)		3,87	3,80	4,02	4,21	3,94
Performance ηs	(7)(9)	%	152	149	158	165	155
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	12,67	13,76	15,86	16,57	18,89
Pressure drop	(1)	kPa	39,5	46,6	45,7	29,3	38,1
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	46,0	49,0	58,0	60,0	68,0
<b>NOISE LEVEL</b>							
Sound Pressure	(3)	dB(A)	55	56	57	57	57
Sound power level in cooling	(4)(5)	dB(A)	87	88	89	89	89
<b>SIZE AND WEIGHT</b>							
A	(6)	mm	2750	2750	4000	4000	4000
B	(6)	mm	2260	2260	2260	2260	2260
H	(6)	mm	2500	2500	2500	2500	2500
Operating weight	(6)	kg	2770	2790	3250	3410	3880

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Unit in standard configuration/execution, without optional accessories.
- Parameter calculated according to [REGULATION (EU) N. 2016/2281]
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**Dimensional drawing**

