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50HZ

Nominal cooling capacity 40.8-112.0 kW

Nominal heating capacity 40.5-112.1 kW

The 50HZ packaged rooftop units are versatile and efficient air conditioners, designed for outdoor installation. The units are self-contained and can be installed in commercial and industrial applications.

Features

- The new refrigerant R-407C is a blend of R-32, R-125 and R-134a, ensures similar performances to those achieved with R-22 and offers an economical solution to environmental protection problems. The components of these units are specifically designed for the new refrigerant, and the units have been submitted to the necessary laboratory tests to ensure perfect operation.
- The unit cabinet is made of prepainted sheet metal, specially suitable for outdoor use and includes hinged panels.
- Reduced size and weight make these units ideal for today's lightweight building structures.
- Models 016 and 028 have scroll compressors; the other sizes have reciprocating hermetic compressors. All are designed for use with R-407C and include a thermal cut-out to protect the motor against overloads and overtemperatures.
- The compressors have built-in silencers for extra-quiet operation and are mounted on vibration isolators. Crankcase heaters are standard (020-024).
- Double-inlet indoor fans have forward-curved blades. They are statically and dynamically balanced for quiet, vibration-

free operation. They are factory-set to supply nominal air volume and static pressure. The fans are powered by generously sized three-phase motors via adjustable belt and pulley transmission.

- Fan motors are corrosion-resistant, protected to IP54 and designed for quiet operation and long maintenance-free life. The motor is protected by a built-in thermal cut-out against overheating.
- The heat exchangers are made of high-quality staggered copper tubing, mechanically bonded in pretreated corrugated aluminium fins, with a high level of corrosion protection.
- The refrigerant circuit uses deoxidized and dehydrated copper tubes with obus type access valves. It includes a full refrigerant charge (R-22), expansion valves, filter driers and all components required for correct unit operation.
- The units are fully wired in accordance with EN standards and include thermo magnetic circuit breakers and a main disconnect switch.

Master Link

The Master Link electronic control system controls unit operation and enhances performance.

The control system comprises the following components

- Base module
- Extension module
- Temperature probe
- Safety transformer

- A basic service tool and an advanced tool are available as accessories.
- Start-up, service and maintenance operations can be carried out on the unit itself via Master Link, but they can also be done using either of the two following tools:

Basic tool

The basic service tool is a very useful device for start-up, service and maintenance operations. It offers a real-time display of the status of the room thermostat signals, the unit, and each of the main refrigerant circuit and protection elements of the unit. The basic tool has an option to access several submenus with maintenance and service operations: module and list selection, editing lists (parameters, totalizers, timers, temperatures, fault identification), data transmission (parameters, totalizers), alarm.12

Advanced tool

This tool provides an effective way of supervising air conditioning installations which include units equipped with the Master Link control. Its functions include: automatic recognition of units present in the supervision network (SCAN function), display of the unit real time status, editing of unit data lists (parameters, totalizers and fault identification), advanced unit test functions, thermostat sequence evaluation, unit status and history reports.

Options and accessories

	Option	Accessory
Economizer	X	X
Enthalpy control	X	X
Shielded electric heaters	X	X
Electric strip heaters	X	X
Front discharge		X
Adjustable longitudinal roof curb, vert. discharge		X
Fixed position vertical discharge		X
Adjustable transverse roof curb, vert. discharge		X
Exhaust fan		X
Power exhaust		X
Superior drive (indoor fan)	X	
Hot water coils	X	X
Hot water coil with 3-way valve	X	X
Head pressure control	X	X
Basic Tool for Master Link control system		X
Advanced Tool for Master Link control system		X
High-efficiency filters	X	X
Rotalock valves	X	
Smoke detector with damper	X	X
Manual outdoor air damper	X	X
Smoke detector without damper (for units with Economizer)	X	X
Thermostat		X
Unit without neutral	X	
PRO-DIALOG control	X	

Physical data

50HZ		016	020	024	028	034	040
Nominal cooling capacity*	kW	40.75	54.00	65.95	80.30	96.70	112.00
Nominal heating capacity**	kW	40.50	58.15	69.05	84.65	102.00	112.10
Operating weight	kg	680	690	760	987	1400	1450
Refrigerant charge R-407C	kg	14.5	8.2 x 2	10.0 x 2	13.0 x 2	15.0 x 2	18.5 x 2
Compressor		Scroll	Hermetic	Hermetic	Scroll	Hermetic	Hermetic
Quantity		1	2	2	2	2	2
Oil charge (each)	l	6.6	4.0	4.0	6.6	7.6	7.6
Indoor coil		Copper tubes, pretreated aluminium fins					
Face area	m ²	1.71	1.71	1.71	1.71	2.56	2.56
Rows ... fin spacing	mm	3 ... 1.81	3 ... 1.81	4 ... 1.70	4 ... 1.70	3 ... 1.70	4 ... 1.70
Outdoor coil		Copper tubes, pretreated aluminium fins					
Face area	m ²	2.05	1.93	1.93	2.78	5.20	5.20
Rows ... fin spacing	mm	4 ... 1.81	4 ... 1.70	5 ... 1.70	5 ... 1.70	3 ... 1.81	4 ... 1.81
Indoor fan		One, centrifugal					
Air flow	l/s	2528	3278	3472	3944	5550	5550
Fan speed	r/s	15.41	18.08	19.41	16.50	13.88	14.21
Nominal power input	kW	2.95	4.05	5.50	5.50	6.40	6.74
Outdoor fan		Two, axial					
Diameter	mm	650	760	760	760	910	910
Fan speed	r/s	14.66	16.66	16.66	16.66	14.40	14.40
Nominal power input (each)	kW	0.75	1.50	1.50	1.50	1.36	1.36
Filter		Two, washable, 900 x 1000 x 13 mm					

* Based on an outdoor air dry bulb temperature of 35°C and an indoor air wet bulb temperature of 19°C.

** Based on an outdoor air wet bulb temperature of 6°C and an indoor air dry bulb temperature of 21°C.

Electrical data

50HZ		016	020	024	028	034	040
Nominal supply	V/3/50	230	400	230	400	230	400
Voltage range	V						
Min.		207	360	207	360	207	360
Max.		253	440	253	440	253	440
Nom. power input							
Cooling*	kW	15.84	15.84	25.95	25.95	33.51	33.51
Heating**	kW	15.44	15.44	23.86	23.86	29.73	29.73
Effective power input							
Cooling*	kW	14.49	14.49	24.09	24.09	31.54	31.54
Heating**	kW	14.09	14.09	22.00	22.00	27.73	27.73
Nom. current drawn							
Cooling*	A	54.80	31.90	73.35	42.70	96.65	56.25
Heating**	A	53.21	31.00	68.30	39.75	86.70	50.45
Effective current drawn							
Cooling*	A	50.10	29.20	68.10	39.65	90.95	52.95
Heating**	A	48.40	28.30	62.65	36.65	80.75	47.00
Maximum power input							
Cooling***	kW	18.32	18.32	28.95	28.95	37.00	37.00
Heating****	kW	18.28	18.28	28.49	28.49	38.10	38.10
Maximum current drawn							
Cooling***	A	63.35	36.90	81.80	47.65	106.70	62.10
Heating****	A	63.05	36.70	81.50	47.45	111.05	64.65
Starting current	A	340	191	287	173	346	210

* Based on an outdoor air dry bulb temperature of 35°C and an indoor air wet bulb temperature of 19°C

** Based on an outdoor air wet bulb temperature of 6°C and an indoor air dry bulb temperature of 21°C

*** Based on an outdoor air dry bulb temperature of 46°C

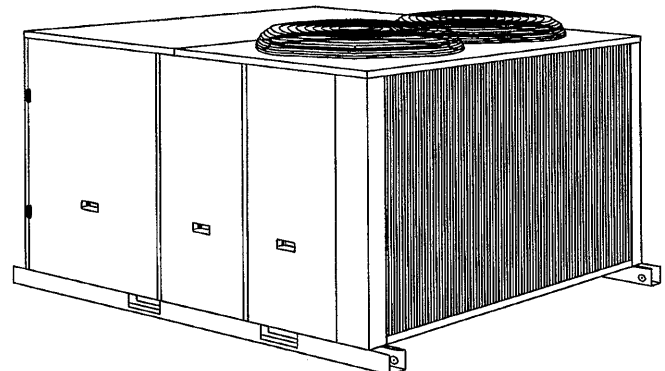
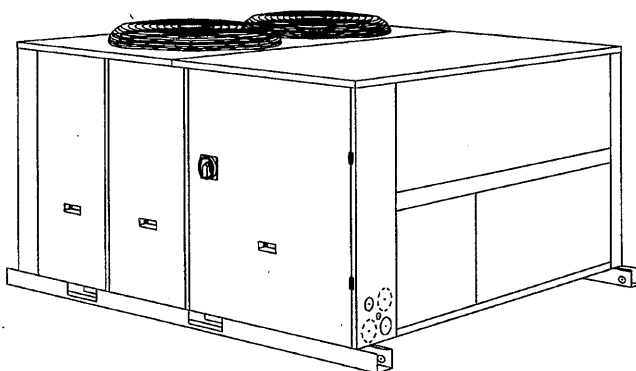
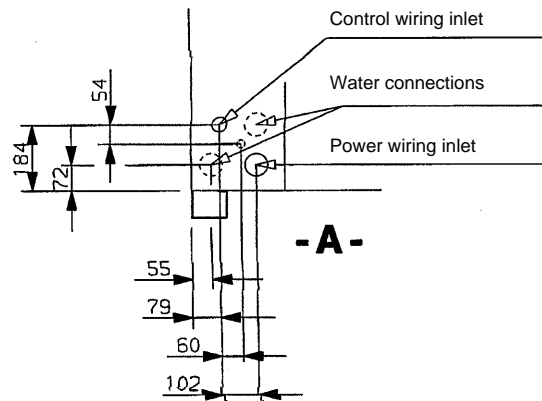
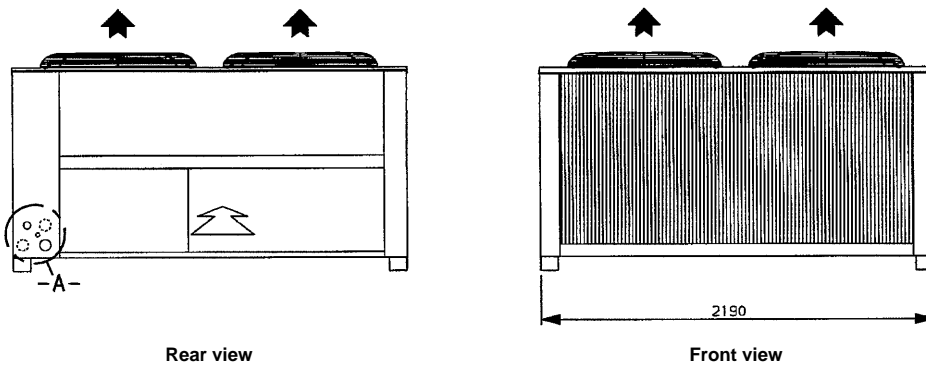
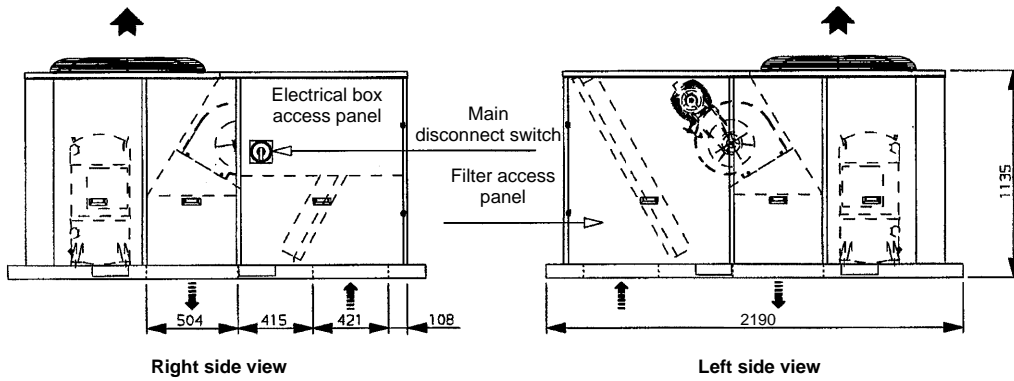
**** Based on an outdoor air wet bulb temperature of 16°C and an indoor air dry bulb temperature of 27°C. For sizes 034 and 040 the outdoor air wet bulb temperature is 14°C.

Note: The optional electric heater consumption is not included. Control circuit voltage 220-1-50

Effective power input according to EUROVENT.

Dimensions, mm

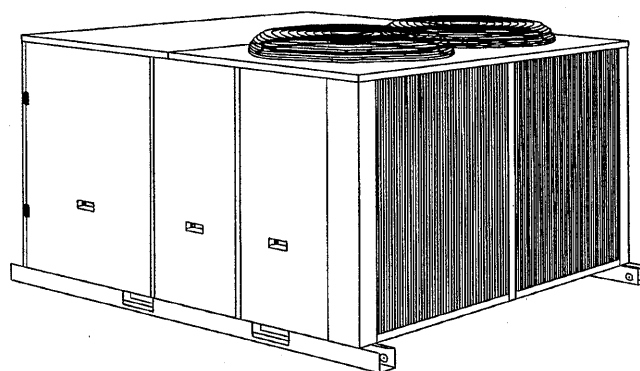
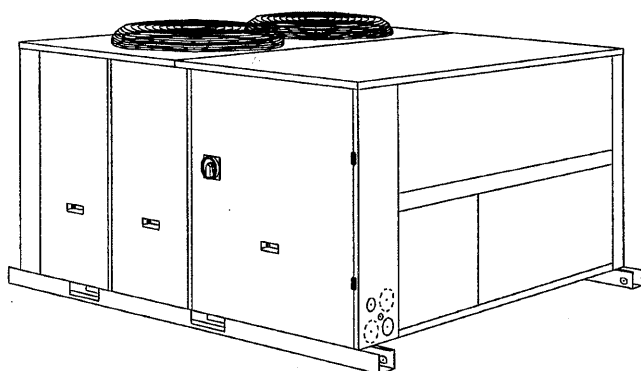
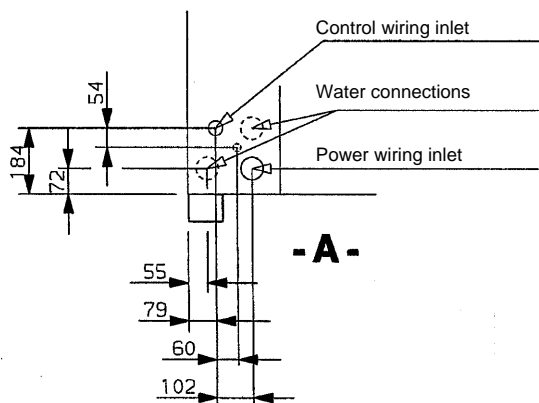
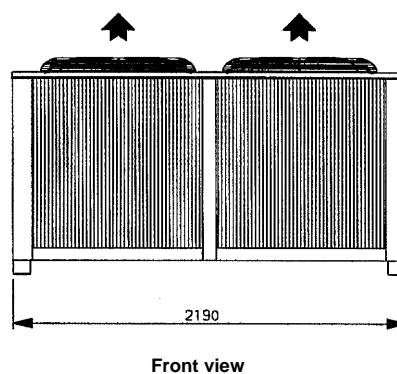
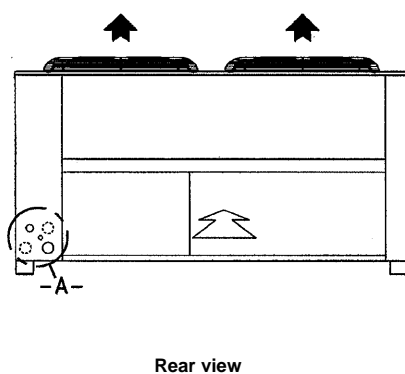
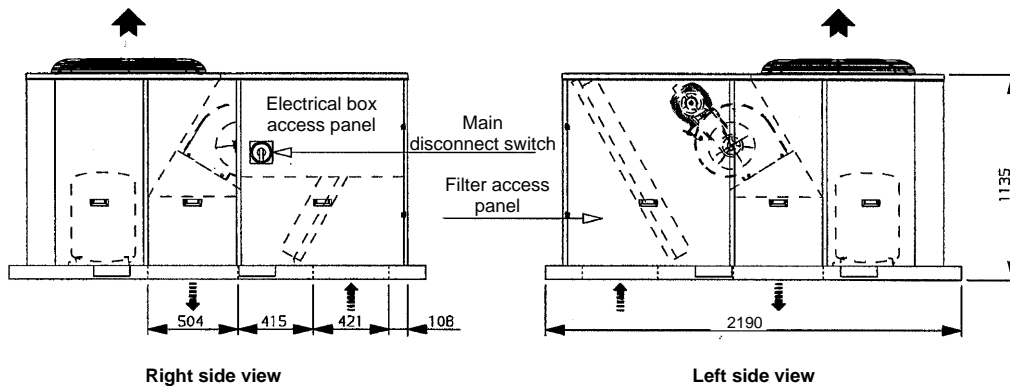
50HZ 016



When designing an installation, always use up-to-date drawings, available from your local Carrier office.

Dimensions, mm

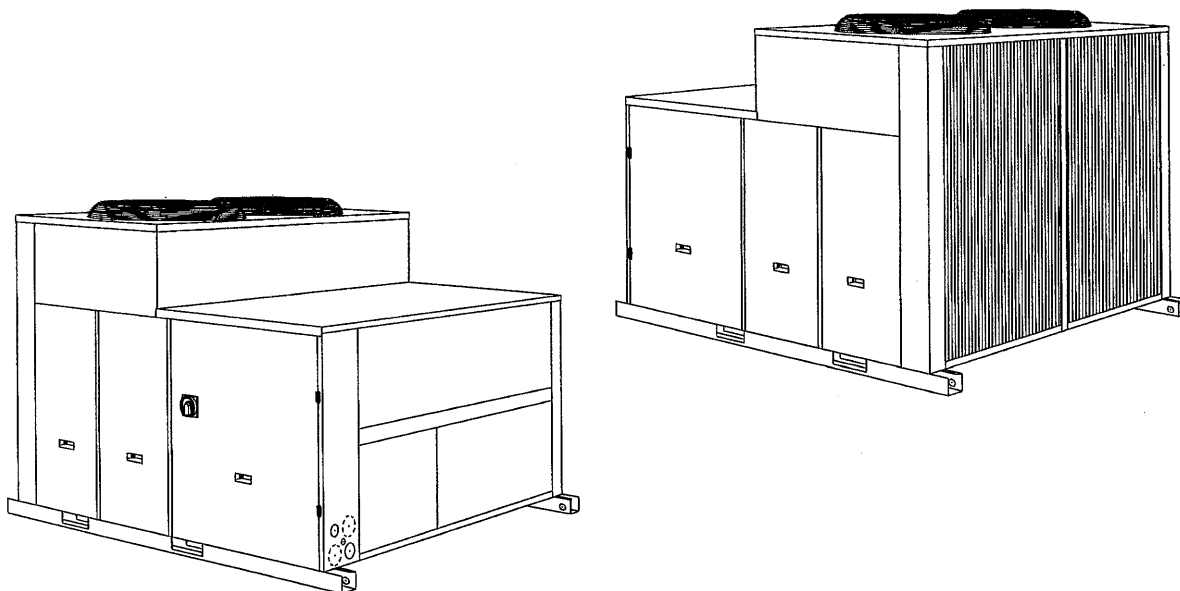
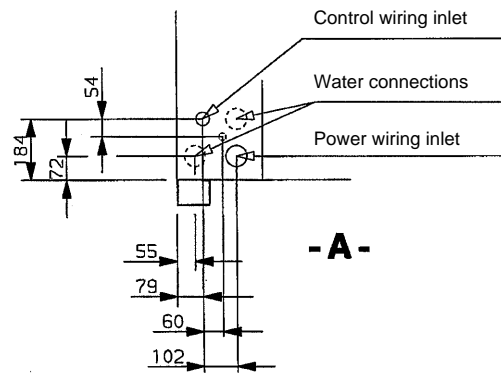
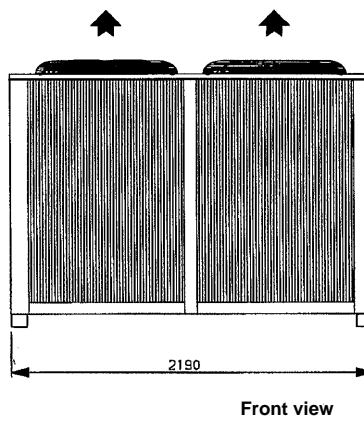
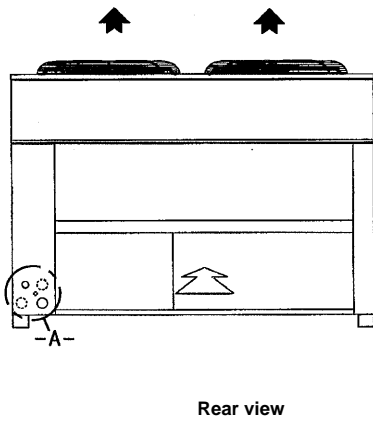
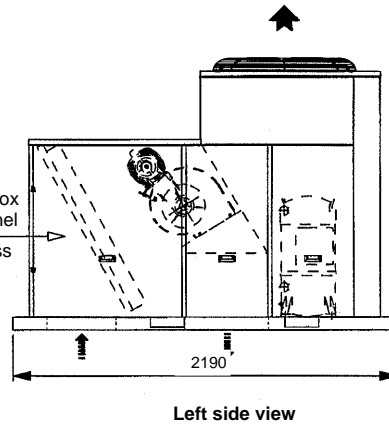
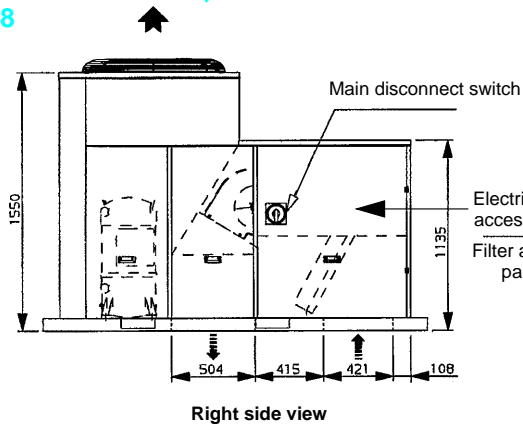
50HZ 020,024



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Dimensions, mm

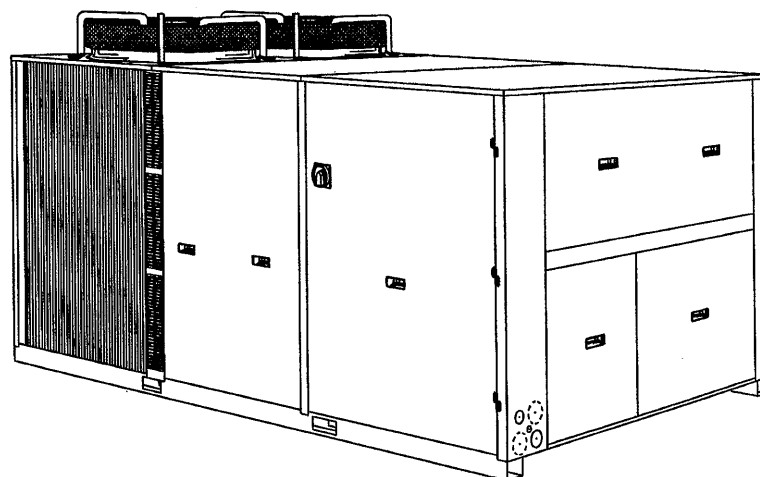
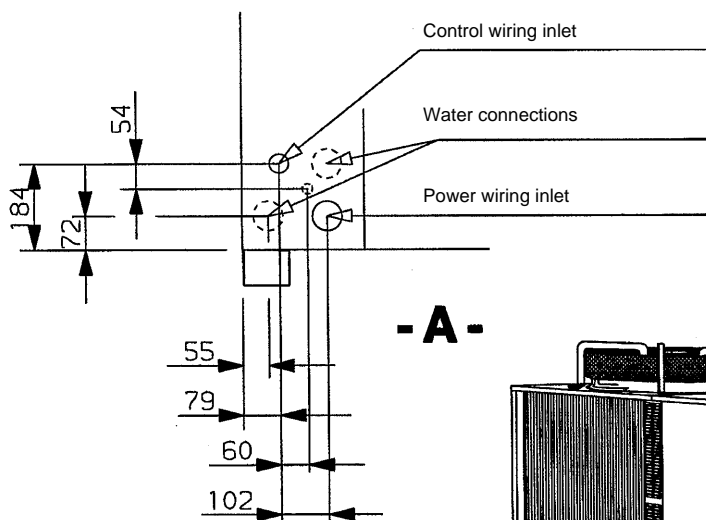
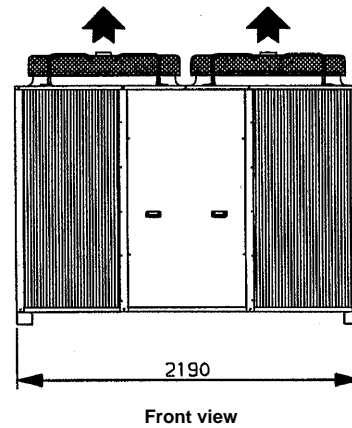
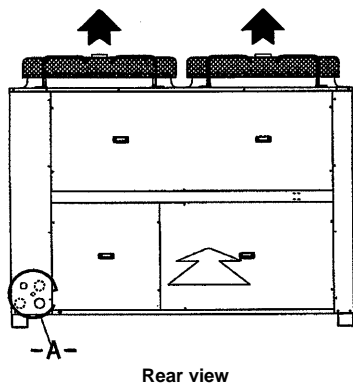
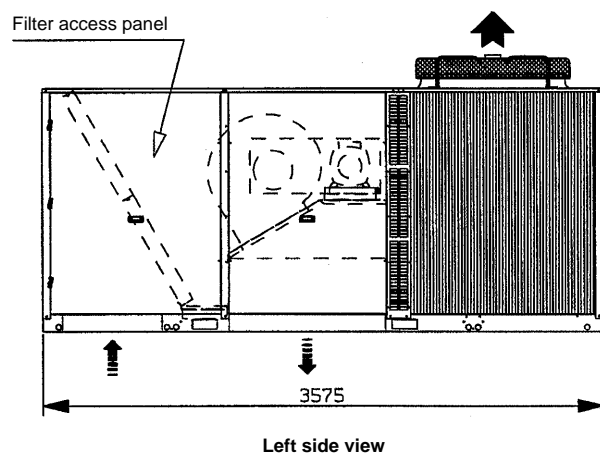
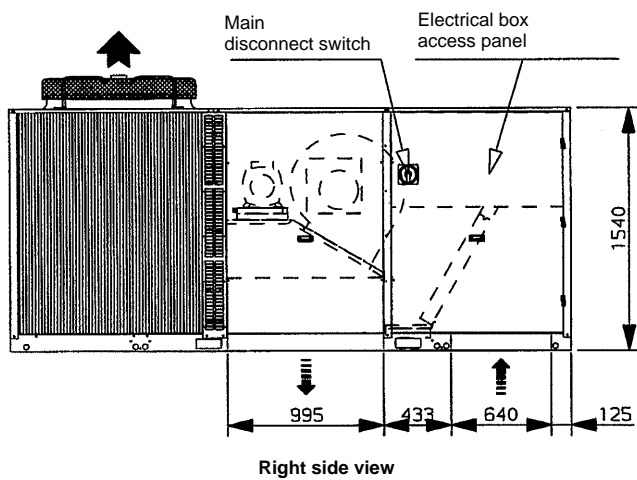
50HZ 028



When designing an installation, always use up-to-date drawings, available from your local Carrier office.

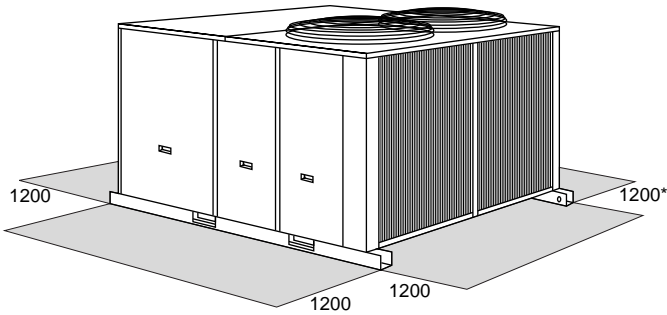
Dimensions, mm

50HZ 034,040



When designing an installation, always use up-to-date drawings, available from your local Carrier office.

Clearances, mm



■ Clearances required

* If the unit includes the optional electric heater or the optional hot water coil this clearance should be 2000 mm.

Cooling capacities

50HZ 016 - Air flow 2528 l/s

	Ewb °C	Edb °C	Outdoor air temperature, °C db				
			25	30	35	40	46
15	CAP		41.25	37.95	34.50	31.25	27.75
		kW	10.65	11.15	11.75	12.65	14.35
	19	SHC	23.80	22.80	21.70	21.00	20.45
	21	SHC	27.95	26.95	26.95	25.20	24.50
	23	SHC	32.45	31.40	30.35	29.65	29.00
25	SHC	37.70	33.30	34.45	31.20	27.70	
17	CAP		43.70	40.40	37.35	34.60	30.80
		kW	10.75	11.40	12.00	13.10	14.60
	21	SHC	24.40	23.40	22.30	21.60	21.05
	23	SHC	28.55	27.55	26.55	25.80	25.10
	25	SHC	33.05	32.00	30.95	30.25	29.60
27	SHC	38.30	36.90	36.05	34.55	30.75	
19	CAP		46.70	43.55	40.75	37.65	34.05
		kW	11.05	11.60	12.37	13.25	14.75
	23	SHC	25.00	24.00	22.90	22.20	21.65
	25	SHC	29.15	28.15	27.15	26.40	25.70
	27	SHC	33.65	32.60	31.55	30.85	30.20
29	SHC	38.90	37.50	36.65	36.05	34.60	
21	CAP		49.85	46.45	43.30	40.65	37.20
		kW	11.15	11.70	12.45	13.20	14.85
	25	SHC	25.60	24.60	23.50	22.80	22.25
	27	SHC	29.75	28.75	27.75	27.00	26.30
	29	SHC	34.25	33.20	32.15	31.45	30.80
31	SHC	39.50	38.10	37.25	36.65	35.20	

50HZ 020 - Air flow 3278 l/s

	Ewb °C	Edb °C	Outdoor air temperature, °C db				
			25	30	35	40	46
15	CAP		53.95	49.65	45.25	40.95	35.45
		kW	16.85	17.20	18.20	19.25	20.85
	19	SHC	30.30	27.40	24.55	22.00	20.90
	21	SHC	37.00	34.10	31.25	29.40	27.50
	23	SHC	43.65	40.80	37.95	36.05	34.20
25	SHC	50.10	47.25	44.35	40.90	35.40	
17	CAP		58.75	54.35	49.85	45.45	40.05
		kW	17.70	18.30	18.70	20.15	21.20
	21	SHC	31.50	28.60	25.75	23.90	22.10
	23	SHC	38.20	35.30	32.45	30.60	28.70
	25	SHC	44.85	42.00	39.15	37.25	35.40
27	SHC	51.30	48.45	45.55	43.75	40.00	
19	CAP		63.20	58.75	54.00	49.90	44.60
		kW	18.00	18.65	19.35	20.45	22.00
	23	SHC	32.70	29.80	26.95	25.10	23.30
	25	SHC	39.40	36.50	33.65	31.80	29.90
	27	SHC	46.08	43.20	40.35	38.45	36.60
29	SHC	52.50	49.65	46.75	44.95	43.10	
21	CAP		67.90	63.60	59.25	54.25	49.45
		kW	18.40	19.15	19.90	20.65	22.35
	25	SHC	33.90	31.00	28.15	26.30	24.50
	27	SHC	40.60	37.70	34.85	33.00	31.10
	29	SHC	47.25	44.40	41.55	39.65	37.80
31	SHC	53.70	50.85	47.95	46.15	44.30	

50HZ 024 - Air flow 3472 l/s

	Ewb °C	Edb °C	Outdoor air temperature, °C db				
			25	30	35	40	46
15	CAP		66.50	61.30	56.20	51.05	45.10
		kW	22.70	23.25	24.10	24.75	26.25
	19	SHC	37.05	34.65	32.30	30.40	27.50
	21	SHC	43.65	41.30	38.85	36.50	34.10
	23	SHC	51.15	48.75	46.30	43.85	42.10
25	SHC	57.40	55.05	52.60	50.20	45.00	
17	CAP		71.65	66.50	61.30	56.00	49.85
		kW	23.80	24.35	25.15	25.80	27.30
	21	SHC	37.75	35.35	33.00	31.10	28.20
	23	SHC	44.35	42.00	39.55	37.20	34.80
	25	SHC	51.85	49.45	47.00	44.55	42.80
27	SHC	58.10	55.75	53.30	50.90	48.55	
19	CAP		76.95	71.15	65.95	61.00	54.75
		kW	24.55	25.05	25.90	26.95	28.50
	23	SHC	38.45	36.05	33.70	31.80	28.90
	25	SHC	45.05	42.70	40.25	37.90	35.50
	27	SHC	52.55	50.15	47.70	45.25	43.50
29	SHC	58.80	56.45	54.00	51.60	49.25	
21	CAP		80.95	75.90	70.75	65.50	59.45
		kW	24.90	25.60	26.60	27.60	29.40
	25	SHC	39.15	36.75	34.40	32.50	29.60
	27	SHC	45.75	43.40	40.95	38.60	36.20
	29	SHC	53.25	50.85	48.40	45.95	44.20
31	SHC	59.50	57.15	54.70	52.30	49.95	

50HZ 028 - Air flow 3944 l/s

	Ewb °C	Edb °C	Outdoor air temperature, °C db				
			25	30	35	40	46
15	CAP		79.30	74.40	69.45	64.50	58.45
		kW	20.63	21.70	23.35	25.70	28.95
	19	SHC	45.70	43.25	40.80	38.30	35.90
	21	SHC	53.40	50.90	48.45	45.60	43.50
	23	SHC	60.80	58.30	55.90	53.40	50.90
25	SHC	68.50	66.05	63.50	61.05	58.40	
17	CAP		84.95	79.70	74.90	69.95	63.90
		kW	21.15	22.40	24.10	26.25	29.85
	21	SHC	46.10	43.65	41.20	38.70	36.30
	23	SHC	53.80	51.30	48.85	46.00	43.90
	25	SHC	61.20	58.70	56.30	53.80	51.30
27	SHC	68.90	66.45	63.90	61.45	59.00	
19	CAP		89.85	85.15	80.30	75.45	69.60
		kW	21.75	23.15	24.90	27.25	30.35
	23	SHC	46.50	44.05	41.60	39.10	36.70
	25	SHC	54.20	51.70	49.25	46.40	44.30
	27	SHC	61.60	59.10	56.70	54.20	51.70
29	SHC	69.30	66.85	64.30	61.85	59.40	
21	CAP		94.75	89.85	85.05	80.15	74.20
		kW	22.32	23.78	25.40	27.65	30.97
	25	SHC	46.90	44.45	42.00	39.50	37.10
	27	SHC	54.60	52.10	49.65	46.80	44.70
	29	SHC	62.00	59.50	57.10	54.60	52.10
31	SHC	69.70	67.25	64.70	62.25	59.80	

Legend

CAP - Total cooling capacity, kW

Ewb - Indoor unit entering air wet bulb temperature, °C

Edb - Indoor unit entering air dry bulb temperature, °C

kW - Compressor power input

SHC - Sensible heating capacity, kW

50HZ 034 - Air flow 5550 l/s

	Ewb °C	Edb °C	Outdoor air temperature, °C db				
			25	30	35	40	46
15		CAP	99.90	92.85	85.95	78.80	70.30
		kW	30.25	31.80	33.25	34.85	36.65
	19	SHC	59.85	55.45	51.50	46.80	41.55
	21	SHC	69.75	65.35	60.95	56.65	51.40
	23	SHC	79.55	75.25	70.95	66.55	61.35
	25	SHC	89.50	85.10	80.70	76.40	70.20
17		CAP	105.10	98.20	91.15	84.15	75.75
		kW	31.30	32.94	34.55	36.15	38.00
	21	SHC	60.35	55.95	51.60	47.30	42.05
	23	SHC	70.25	65.85	61.45	57.15	51.90
	25	SHC	80.05	75.75	71.45	67.05	61.85
	27	SHC	90.00	85.60	81.20	76.90	71.70
19		CAP	110.45	103.75	96.70	89.50	81.05
		kW	32.45	34.05	35.75	37.40	39.25
	23	SHC	60.85	56.45	52.10	47.80	42.55
	25	SHC	70.95	66.35	61.95	57.65	52.40
	27	SHC	80.55	76.25	71.95	67.55	62.35
	29	SHC	90.50	86.10	81.70	77.40	72.20
21		CAP	115.70	109.30	102.30	95.10	86.40
		kW	33.35	35.05	36.75	38.65	40.65
	25	SHC	61.13	56.95	52.60	48.30	43.05
	27	SHC	71.25	66.85	62.45	58.15	52.90
	29	SHC	81.05	76.75	72.45	68.05	62.85
	31	SHC	91.00	86.60	82.20	77.90	72.70

50HZ 040 - Air flow 5550 l/s

	Ewb °C	Edb °C	Outdoor air temperature, °C db				
			25	30	35	40	46
15		CAP	113.70	106.45	99.50	91.85	84.00
		kW	34.90	36.85	38.60	40.45	42.65
	19	SHC	64.95	60.70	56.50	53.10	49.75
	21	SHC	74.95	70.75	66.45	63.10	59.70
	23	SHC	85.00	80.70	76.50	73.10	69.75
	25	SHC	95.25	90.65	86.35	83.05	79.70
17		CAP	119.70	112.55	105.55	98.30	90.40
		kW	36.35	38.30	40.30	42.15	44.50
	21	SHC	65.95	61.75	57.45	54.10	50.80
	23	SHC	75.95	71.75	67.45	64.10	60.80
	25	SHC	86.00	81.70	77.50	74.10	70.75
	27	SHC	96.25	91.65	87.35	84.05	80.70
19		CAP	125.70	118.95	112.00	105.10	96.85
		kW	37.85	39.90	41.90	43.75	46.10
	23	SHC	66.95	62.70	58.50	55.10	51.75
	25	SHC	76.95	72.75	68.45	65.10	61.80
	27	SHC	87.00	82.70	78.50	75.10	71.75
	29	SHC	97.25	92.65	88.35	85.05	81.70
21		CAP	131.75	125.30	118.40	111.00	103.20
		kW	39.65	41.60	43.45	45.35	47.50
	25	SHC	67.95	63.70	59.50	56.10	52.75
	27	SHC	77.95	73.75	69.45	66.10	62.80
	29	SHC	88.00	83.70	79.50	76.10	72.75
	31	SHC	98.25	93.65	89.35	86.05	82.70

Legend
CAP - Total cooling capacity, kW

Ewb - Indoor unit entering air wet bulb temperature, °C

Edb - Indoor unit entering air dry bulb temperature, °C

kW - Compressor power input

SHC - Sensible heating capacity, kW

Instantaneous heating capacities

50HZ	Air flow l/s	IAT °C	Outdoor air temperature °C, wb																				
			-15			-10			-5			0			6			12			14		
			CAP	kW	COP	CAP	kW	COP	CAP	kW	COP	CAP	kW	COP	CAP	kW	COP	CAP	kW	COP	CAP	kW	COP
016	2528	18	24.20	10.20	2.37	26.15	10.78	2.04	28.75	11.45	2.51	34.15	12.40	2.75	42.10	13.27	3.17	50.00	13.92	3.59	52.65	14.10	3.73
		21	22.90	11.11	2.06	24.80	11.82	2.09	27.35	12.40	2.20	32.45	13.23	2.45	40.50	14.09	2.87	48.65	14.81	3.28	51.25	14.96	3.42
		24	21.80	12.16	1.79	23.60	12.97	1.82	26.00	13.70	1.89	31.05	14.52	2.13	39.10	15.26	2.56	47.00	15.75	2.98	49.70	15.88	3.13
020	3278	18	37.10	16.46	2.25	39.20	16.84	2.32	42.80	17.69	2.42	48.50	18.74	2.58	59.25	21.26	2.78	69.90	23.65	2.95	73.70	24.31	3.03
		21	36.00	16.88	2.13	38.30	17.25	2.22	41.90	18.13	2.31	47.60	19.48	2.44	58.15	22.00	2.64	68.85	24.25	2.84	72.55	24.95	2.90
		24	34.90	17.12	2.03	37.30	17.65	2.11	40.90	18.34	2.23	46.60	19.70	2.36	56.95	22.28	2.55	67.95	24.77	2.74	71.55	25.45	2.92
024	3472	18	48.30	21.17	2.28	50.15	21.61	2.32	53.45	22.38	2.38	59.75	23.75	2.51	71.75	26.60	2.69	85.50	29.27	2.92	90.50	30.05	3.01
		21	47.15	22.71	2.07	49.00	23.30	2.10	52.00	23.90	2.17	58.30	25.45	2.29	69.05	27.73	2.49	83.55	30.94	2.70	88.15	31.72	2.78
		24	45.95	25.00	1.83	47.80	25.45	1.87	50.00	25.50	1.96	56.85	27.72	2.05	67.85	29.92	2.26	81.55	32.68	2.49	86.05	33.50	2.56
028	3944	18	67.50	28.75	2.34	68.90	28.92	2.38	71.00	29.11	2.44	78.25	29.32	2.56	85.90	30.10	2.85	101.60	32.72	3.10	106.75	33.40	3.19
		21	66.50	30.05	2.21	67.90	30.22	2.24	70.10	30.43	2.30	74.05	31.14	2.37	84.65	32.16	2.63	100.45	34.07	2.94	105.55	34.79	3.03
		24	65.50	31.50	2.08	67.00	31.90	2.10	69.40	32.19	2.15	73.25	32.76	2.23	83.60	33.14	2.52	99.80	35.56	2.80	103.20	36.31	2.84
034	5550	18	80.85	33.10	2.44	82.50	33.32	2.47	85.05	33.52	2.53	90.15	33.73	2.67	103.00	34.56	2.98	121.85	37.37	3.26	127.90	38.09	3.35
		21	79.60	34.51	2.30	81.30	34.70	2.34	84.00	34.92	2.40	88.70	35.65	2.48	102.00	36.69	2.78	120.25	38.77	3.10	126.40	39.51	3.20
		24	78.40	36.08	2.17	80.30	36.50	2.20	83.15	36.80	2.26	87.70	37.00	2.37	100.10	37.73	2.64	118.80	40.41	2.93	124.95	41.23	3.03
040	5550	18	88.90	36.15	2.46	90.75	36.40	2.49	93.60	36.60	2.55	99.10	37.20	2.66	113.15	37.75	2.99	133.85	40.84	3.27	140.60	41.61	3.37
		21	87.60	37.70	2.32	89.45	37.90	2.36	92.45	38.20	2.42	97.55	39.30	2.48	112.10	40.23	2.78	132.25	42.37	3.12	139.05	43.22	3.21
		24	86.20	39.40	2.18	88.30	39.90	2.21	91.45	40.20	2.27	96.50	40.45	2.38	110.10	41.35	2.66	130.70	44.20	2.95	137.45	45.20	3.04

CAP - Instantaneous heating capacity, kW
 IAT - Indoor air dry bulb temperature, °C
 kW - Effective unit power input
 COP - Coefficient of performance

Integrated heating capacities

To obtain the integrated heating capacity values multiply the values from the instantaneous heating capacity table with the following correction factors.

		Outdoor air temperature °C, wb						
		-15	-10	-5	0	6	12	14
CAP	x	0.91	0.91	0.91	0.897	1.00	1.00	1.00
COP	x	0.955	0.955	0.955	0.955	1.00	1.00	1.00

Correction factors

Cooling operation

50HZ	Multiplier	% Nominal air flow		
		90	100	110
016-040	CAP	0.98	1.00	1.02
	SHC	0.96	1.00	1.03
	kW	0.99	1.00	1.01

Legend:

CAP - Total cooling capacity kW
 SHC - Sensible heating capacity kW
 kW - Compressor power input

Heat pump operation

50HZ	Multiplier	% Nominal air flow		
		90	100	110
016-040	CAP	0.98	1.00	1.02
	COP	0.97	1.00	1.06

Legend:

CAP - Total heating capacity kW
 COP - Coefficient of performance W/W

Operating limits

Zone	Air temperature °C	
	Dry bulb	Wet bulb
Cooling		
Indoor		
Maximum	35	21
Minimum	19	14
Outdoor		
Maximum	46	-
Minimum	19*	-
Heating		
Indoor		
Maximum	27	-
Outdoor		
Maximum	22	16**
Minimum	-15	-

* With optional head pressure control the unit can operate at temperatures below 19°C.

** For sizes 034 and 040 this temperature is 14°C.

Fan performance (standard)

50HZ 016

Motor pulley position		Air flow l/s					
		2022	2222	2361	2638	2916	3033
Closed 17.83 r/s	Pa	308	291	279	245	226	190
	kW	2.26	2.50	2.68	3.04	3.20	3.50
1 turn open 17.33 r/s	Pa	286	270	256	224	208	170
	kW	2.10	2.30	2.48	2.80	2.96	3.28
2 turns open 16.23 r/s	Pa	264	246	231	193	180	144
	kW	1.98	2.18	2.32	2.65	2.80	3.10
3 turns open 15.91 r/s	Pa	238	220	206	173	154	116
	kW	1.86	2.05	2.20	2.50	2.62	2.90
4 turns open 15.41 r/s	Pa	214	194	180	146	126	90
	kW	1.76	1.92	2.06	2.34	2.45	2.70
4.5 turns open 15.16 r/s	Pa	198	180	165	132	112	76
	kW	1.70	1.86	2.00	2.25	2.36	2.60
Factory setting 15.41 r/s	Pa	214	194	180	146	126	90
	kW	1.76	1.92	2.06	2.34	2.45	2.70

50HZ 024

Motor pulley position		Air flow l/s					
		2777	3055	3333	3611	3888	4166
Closed 21.16 r/s	Pa	345	320	289	250	208	139
	kW	4.60	4.90	5.20	5.65	6.15	6.70
1 turn open 20.66 r/s	Pa	318	292	261	226	180	100
	kW	4.35	4.60	4.90	5.25	5.75	6.35
2 turns open 20.16 r/s	Pa	290	265	234	196	146	65
	kW	4.15	4.35	4.60	4.95	5.45	5.90
3 turns open 19.66 r/s	Pa	262	236	205	165	110	30
	kW	4.05	4.15	4.40	4.70	5.15	5.70
4 turns open 19.16 r/s	Pa	236	210	175	132	78	---
	kW	3.75	3.90	4.18	4.48	4.90	---
4.5 turns open 18.91 r/s	Pa	222	198	164	120	62	---
	kW	3.65	3.80	4.05	4.38	4.80	---
Factory setting 19.41 r/s	Pa	248	224	190	156	90	10
	kW	3.85	4.00	4.25	4.58	5.00	5.58

50HZ 034

Motor pulley position		Air flow l/s					
		5000	5277	5550	5695	5833	6111
Closed 14.71 r/s	Pa	300	270	240	224	204	164
	kW	5.97	6.50	7.03	7.28	7.52	7.90
1 turn open 14.30 r/s	Pa	270	240	210	192	174	130
	kW	5.77	6.23	6.70	6.89	7.08	7.42
2 turns open 13.88 r/s	Pa	240	212	180	164	146	100
	kW	5.58	6.00	6.40	6.65	6.99	7.13
3 turns open 13.46 r/s	Pa	210	180	150	132	116	72
	kW	5.29	5.65	6.02	6.31	6.50	6.87
4 turns open 13.05 r/s	Pa	180	152	122	105	88	46
	kW	5.05	5.38	5.77	6.00	6.21	6.45
Factory setting 13.88 r/s	Pa	240	212	210	164	146	100
	kW	5.58	6.00	6.40	6.65	6.99	7.13

Legend:

Pa - External static pressure

kW - Fan power input

50HZ 020

Motor pulley position		Air flow l/s					
		2611	2777	3055	3333	3611	3944
Closed 18.91 r/s	Pa	314	296	264	224	180	115
	kW	3.20	2.35	3.65	3.95	4.40	5.00
1 turn open 18.08 r/s	Pa	275	256	224	185	140	78
	kW	2.95	3.10	3.45	3.75	4.20	4.80
2 turns open 17.25 r/s	Pa	235	216	184	164	102	40
	kW	2.70	2.90	3.25	3.60	4.00	4.60
3 turns open 16.41 r/s	Pa	200	180	148	106	62	2
	kW	2.55	2.70	3.00	3.40	3.75	4.40
4 turns open 15.88 r/s	Pa	162	145	112	72	26	---
	kW	2.25	2.40	2.75	3.10	3.45	---
4.5 turns open 15.16 r/s	Pa	146	128	95	55	10	---
	kW	2.15	2.30	2.65	2.95	3.35	---
Factory setting 18.08 r/s	Pa	275	256	224	185	140	78
	kW	2.95	3.10	3.45	3.75	4.20	4.80

50HZ 028

Motor pulley position		Air flow l/s					
		3138	3333	3611	3888	4166	4750
Closed 18.08 r/s	Pa	334	320	296	266	231	128
	kW	4.55	4.75	5.05	5.40	5.85	7.30
1 turn open 17.41 r/s	Pa	303	289	265	235	200	97
	kW	4.25	4.45	4.75	5.10	5.55	7.00
2 turns open 16.75 r/s	Pa	272	258	234	204	169	66
	kW	4.00	4.15	4.45	4.80	5.20	6.40
3 turns open 16.08 r/s	Pa	240	225	201	171	136	---
	kW	3.75	3.90	4.20	4.50	4.70	---
4 turns open 15.41 r/s	Pa	209	195	171	141	106	---
	kW	3.55	3.70	4.00	4.30	4.55	---
4.5 turns open 15.08 r/s	Pa	194	180	156	126	91	---
	kW	3.45	3.60	3.90	4.20	4.45	---
Factory setting 16.41 r/s	Pa	256	242	218	188	153	50
	kW	3.85	4.05	4.35	4.65	4.95	6.00

50HZ 040

Motor pulley position		Air flow l/s					
		5000	5277	5550	5695	5833	6111
Closed 14.63 r/s	Pa	259	236	204	185	164	112
	kW	6.05	6.55	6.95	7.25	7.45	7.90
1 turn open 14.21 r/s	Pa	234	210	180	162	142	90
	kW	5.80	6.30	6.74	7.00	7.25	7.70
2 turns open 13.80 r/s	Pa	210	182	150	132	112	60
	kW	5.45	5.95	6.45	6.70	6.90	7.25
3 turns open 13.38 r/s	Pa	182	156	124	106	84	30
	kW	5.15	5.60	6.10	6.30	6.55	6.90
4 turns open 12.96 r/s	Pa	164	136	104	86	64	10
	kW	4.95	5.45	5.90	6.10	6.35	6.70
Factory setting 14.21 r/s	Pa	234	210	180	162	142	90
	kW	5.80	6.30	6.74	7.00	7.25	7.70

Fan performance (optional drive)

50HZ 016

Motor pulley position		Air flow l/s					
		2022	2222	2361	2638	2777	3033
Closed 21.08 r/s	Pa	430	406	390	368	362	344
	kW	3.40	3.65	3.85	4.20	4.38	4.68
1 turn open 20.25 r/s	Pa	395	368	352	334	328	306
	kW	3.15	3.40	3.58	3.92	4.10	4.45
2 turns open 19.58 r/s	Pa	360	335	322	306	298	272
	kW	2.86	3.10	3.28	3.62	3.80	4.12
3 turns open 19.41 r/s	Pa	330	305	290	275	268	242
	kW	2.62	2.85	3.02	3.32	3.48	3.80
4 turns open 18.75 r/s	Pa	300	276	260	248	240	214
	kW	2.50	2.68	2.84	3.14	3.28	3.58
4.5 turns open 18.41 r/s	Pa	286	260	245	233	226	200
	kW	2.40	2.60	2.74	3.04	3.18	3.50

50HZ 020

Motor pulley position		Air flow l/s					
		2611	2777	3055	3333	3611	3944
Closed 25.00 r/s	Pa	585	570	530	470	390	250
	kW	5.24	5.50	6.00	6.48	6.96	7.58
1 turn open 24.16 r/s	Pa	542	530	495	432	348	198
	kW	4.95	5.20	5.50	6.06	6.50	7.10
2 turns open 23.33 r/s	Pa	514	501	464	388	272	70
	kW	4.50	4.72	5.05	5.44	5.80	6.30
3 turns open 22.50 r/s	Pa	486	474	432	342	215	30
	kW	3.98	4.15	4.15	4.82	4.15	5.55
4 turns open 21.66 r/s	Pa	466	450	405	312	180	-
	kW	3.58	3.74	4.00	4.26	4.52	-
4.5 turns open 21.25 r/s	Pa	452	436	390	296	162	-
	kW	3.38	3.52	3.74	4.00	4.24	-

50HZ 024

Motor pulley position		Air flow l/s				
		2777	3055	3333	3611	3888
Closed 24.16 r/s	Pa	466	442	420	388	350
	kW	5.75	6.05	6.35	6.65	7.00
1 turn open 23.58 r/s	Pa	436	412	390	356	318
	kW	5.65	5.90	6.20	6.50	6.90
2 turns open 22.91 r/s	Pa	406	385	358	325	285
	kW	5.50	5.75	6.05	6.40	6.75
3 turns open 22.33 r/s	Pa	375	355	330	300	255
	kW	5.20	5.45	5.75	6.05	6.45
4 turns open 21.66 r/s	Pa	346	326	302	270	225
	kW	4.80	5.05	5.35	5.65	6.10
4.5 turns open 21.41 r/s	Pa	334	312	288	255	206
	kW	4.65	4.90	5.15	5.45	5.90

50HZ 028

Motor pulley position		Air flow l/s				
		3138	3333	3611	3888	4166
Closed 20.41 r/s	Pa	525	510	486	460	426
	kW	5.45	5.85	6.20	6.65	6.90
1 turn open 19.75 r/s	Pa	478	464	446	415	382
	kW	5.05	5.45	5.80	6.15	6.50
2 turns open 19.08 r/s	Pa	440	426	404	372	340
	kW	4.75	5.20	5.50	5.80	6.10
3 turns open 18.41 r/s	Pa	398	382	360	330	296
	kW	4.35	4.90	5.20	5.45	5.75
4 turns open 17.75 r/s	Pa	364	348	322	290	256
	kW	4.20	4.70	4.95	5.15	5.35
4.5 turns open 17.41 r/s	Pa	342	326	300	268	232
	kW	4.10	4.60	4.80	5.00	5.20

50HZ 034

Motor pulley position		Air flow l/s					
		5138	5277	5550	5833	6111	6388
Closed 15.83 r/s	Pa	398	390	365	334	298	260
	kW	8.00	8.25	8.90	9.40	9.85	10.25
1 turn open 15.41 r/s	Pa	345	364	340	305	272	235
	kW	7.10	7.40	8.00	8.50	9.05	9.50
2 turns open 15.00 r/s	Pa	345	335	305	272	238	200
	kW	6.70	6.95	7.55	8.10	8.45	9.00
3 turns open 14.58 r/s	Pa	310	300	272	240	205	175
	kW	6.40	6.70	7.20	7.75	8.25	8.60
4 turns open 14.16 r/s	Pa	275	262	235	205	170	130
	kW	6.15	6.40	7.00	7.55	7.95	8.10

50HZ 040

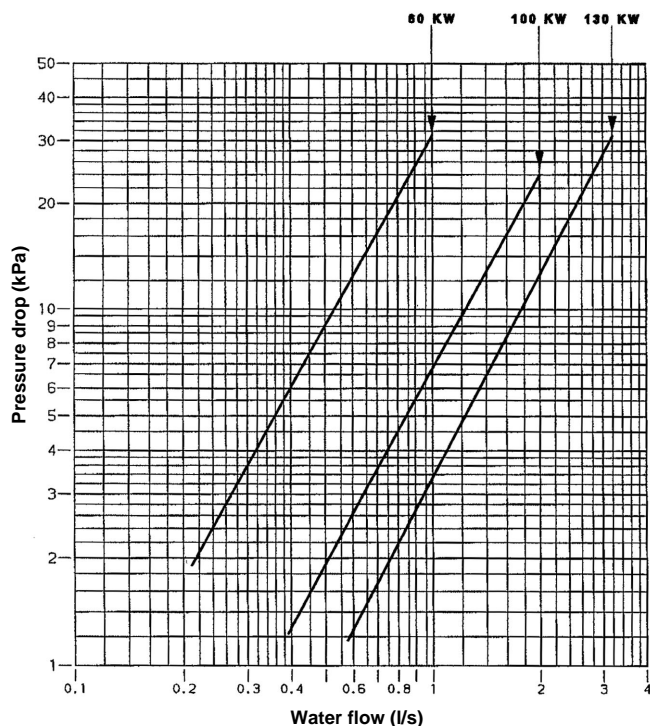
Motor pulley position		Air flow l/s					
		5138	5277	5550	5833	6111	6388
Closed 15.75 r/s	Pa	343	340	310	275	239	195
	kW	8.00	8.25	8.85	9.35	9.80	10.20
1 turn open 15.33 r/s	Pa	322	318	291	257	221	175
	kW	7.05	7.41	7.95	8.45	9.00	9.48
2 turns open 14.91 r/s	Pa	302	287	254	218	182	135
	kW	6.65	6.90	7.50	8.05	8.40	8.95
3 turns open 14.51 r/s	Pa	268	260	224	192	148	108
	kW	6.35	6.65	7.15	7.70	8.20	8.55
4 turns open 14.50 r/s	Pa	250	234	200	168	126	88
	kW	6.10	6.35	6.95	7.50	7.95	8.05

Legend:

Pa - External static pressure

kW - Fan power input

Water pressure drop



Control sequence

When the unit is switched on, the electronic control is energized. The control checks and if no protection has tripped the control actuates according to the thermostat-selected commands.

Specification guide

Roof-top unit model 50HZ __ with the following specification:

Total cooling capacity __ kW, sensible heating capacity __ kW at an indoor air dry bulb temperature of __ °C, an indoor air wet bulb temperature of __ °C and an outdoor air dry bulb temperature of __ °C.

Total heating capacity __ kW at an indoor air dry bulb temperature of __ °C, and an outdoor air wet bulb temperature of __ °C.

Indoor air flow __ l/s.
Available static pressure __ Pa.
Power supply __ V/3 Ph/50 Hz.

Static pressure loss, options

Options	Air flow (l/s)				
	2000	2500	3000	3600	4000
Electrical heater	16	24	32	43	51
Economizer	8	13	20	28	35
Hot water coil					
60 kW	40	60	80	100	115
100 kW	70	90	120	160	185

Options	Air flow (l/s)		
	5050	5550	6100
Electrical heater	70	78	85
Economizer	50	65	80
Hot water coil			
130 kW	95	110	127

Electric heaters

kW

18 (one stage)
27 (one stage)

Nominal power consumption:

Cooling __ kW, __ A.
Heating __ kW, __ A.
Starting current __ A.

Unit dimensions:

Length __ mm, Width __ mm, Height __ mm.
Weight __ kg.

The unit incorporates three-phase reciprocating hermetic or scroll compressors with thermal protection.

The refrigerant circuit is made of deoxidized and dehydrated copper piping. The copper tubes are expanded into pretreated aluminium fins with a high level of anti-corrosion protection. Supply air fans have double-inlet forward-curved blades, and are statically and dynamically balanced for quiet vibration-free operation. They are powered by a generously sized three-phase motor via an adjustable belt and pulley transmission.



Order No. 15743-20, August 1997. Supersedes order No. New.
Manufacturer reserves the right to change any product specifications without notice.

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