

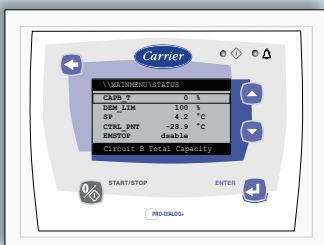
# AIR-COOLED CONDENSING UNITS



## Air treatment 38RBS

### Options

- Condenser anti-corrosion post-treatment for improved corrosion resistance in urban, industrial and rural environments
- Condenser with pre-treated fins for improved corrosion resistance in marine environments
- Very low noise level
- Soft starter for reduced compressor start-up current
- Winter operation for air temperatures between  $-10^{\circ}\text{C}$  and  $-20^{\circ}\text{C}$
- Suction and liquid line valves to isolate the unit from the rest of the refrigerant circuit
- JBus, BacNet or LonTalk gateways
- Remote Pro-Dialog+ user interface
- Replaceable filter drier for easy filter replacement without emptying the refrigerant circuit
- Temperature sensor kit



Pro-Dialog+ operator interface

### Features

- Eleven sizes with nominal cooling capacities from 40 to 162 kW.
- Units integrate the latest technological innovations: ozone-friendly refrigerant R410A, scroll compressors, low-noise fans made of a composite material and auto-adaptive microprocessor control
- Exceptionally quiet latest-generation Flying Bird 4 fans, made of a composite material. Fan motor controlled by a variable-frequency controller, to allow reduction of the fan speed, if the extra low noise option 15LS is selected. Rigid fan installation for reduced start-up noise (Carrier patent).
- Low-noise, reliable scroll compressors with low vibration level. The compressor assembly is installed on an independent chassis and supported by anti-vibration mountings. Dynamic suction and discharge piping support, minimising vibration transmission (Carrier patent).
- Refrigerant circuit includes all components for easy connection to a direct expansion air handling unit: filter drier, moisture sight glass, high and low pressure switch, as well as solenoid valves for pumpdown. Two independent refrigerant circuits from size 38RBS 140 onwards.
- Increased energy efficiency at part load. The refrigerant circuit includes several compressors connected in parallel. At part load, around 99% of the operating time, only the compressors that are absolutely necessary operate. At these conditions the compressors operating are more energy efficient, as they use the total condenser and evaporator capacity.
- Designed for year-round operation.
- Electrical connections are simplified.
- Exceptional endurance tests.

## Physical data

38RBS		039	045	050	060	070	080	090	100	120	140	160	
Nominal cooling capacity, standard unit*	kW	40.4	45.9	52.4	58.5	66.7	77.9	90.4	100.9	119.4	139.6	161.7	
Power input	kW	13.8	16.3	19.0	21.2	24.4	28.8	31.8	36.0	43.6	50.2	58.7	
EER	kW/kW	2.92	2.81	2.75	2.76	2.74	2.7	2.84	2.81	2.74	2.78	2.75	
Weight ex-factory, standard unit**	kg	399	408	425	445	435	456	698	701	719	796	842	
<b>Sound levels</b>													
<b>Standard unit</b>													
Sound power level 10 <sup>-12</sup> W***	dB(A)	80	81	81	81	87	87	84	84	84	90	90	
Sound pressure level at 10 m****	dB(A)	49	49	49	49	55	55	52	52	52	58	58	
<b>Unit with option 15LS (very low sound level)</b>													
Sound power level 10 <sup>-12</sup> W***	dB(A)	79	80	80	80	80	80	83	83	83	83	83	
Sound pressure level at 10 m****	dB(A)	48	48	48	48	48	48	51	51	51	51	51	
<b>Compressors</b>													
Hermetic scroll compressor, 48.3 r/s													
Quantity, circuit A		2	2	2	2	2	2	3	3	3	2	2	
Quantity, circuit B		-	-	-	-	-	-	-	-	-	2	2	
No. of capacity steps		2	2	2	2	2	2	3	3	3	4	4	
<b>Refrigerant</b>													
R-410A													
<b>Control type</b>													
Pro-Dialog+													
<b>Condenser</b>													
Grooved copper tubes, aluminium fins													
Fans													
Axial Flying Bird 4 fans with rotating shroud													
Quantity		1	1	1	1	1	1	2	2	2	2	2	
Total air flow (high speed)	l/s	3800	3800	3800	3800	5300	5300	7600	7600	7600	10600	10600	
<b>Dimensions</b>													
Length x depth x height	mm	2110 x 1075 x 1330						2110 x 2273 x 1330					

\* Nominal evaporating temperature condition: 5°C, outdoor air temperature 35°C, superheat 5 K, 15 m equivalent length.

\*\* Weight shown is a guideline only.

## Electrical data

38RBS		039	045	050	060	070	080	090	100	120	140	160
<b>Power circuit</b>												
Nominal power supply	V-ph-Hz	400-3-50 ± 10%										
<b>Control circuit supply</b>												
24 V, via internal transformer												
<b>Maximum start-up current*</b>												
Standard unit	A	114.2	132.4	141.3	143.7	170.4	209.4	169.4	196.4	240.4	226.2	275.2
Unit with electronic starter option	A	74.7	86.5	93.8	96.2	114.4	139.8	-	-	-	-	-
<b>Maximum unit power input**</b>												
	kW	19.5	22.3	24.5	27.9	31.2	35.8	42.3	45.6	52.5	62.4	71.6
<b>Nominal unit current draw***</b>												
	A	26.2	30.4	34.6	37.6	44.2	53.8	57.8	64.4	78.8	88.4	107.6
<b>Maximum unit current draw****</b>												
	A	35.6	40.0	43.8	48.6	55.8	65.8	74.3	81.8	96.8	11.6	131.6

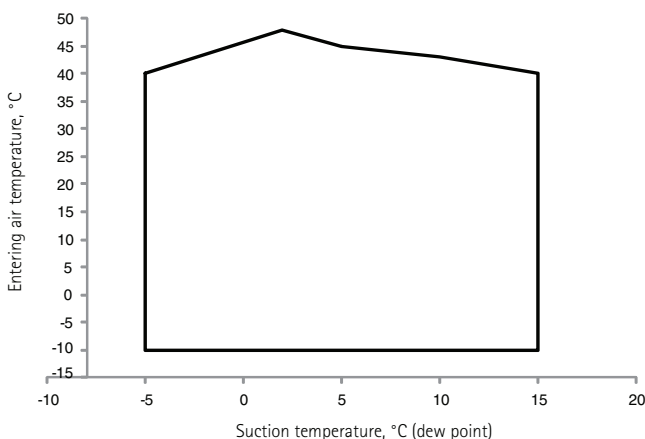
\* Maximum instantaneous starting current at 400 V nominal voltage with direct compressor starting (maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor).

\*\* Power input, compressors and fans, at the unit operating limits (saturated suction temperature 15°C, saturated condensing temperature 65°C) and nominal voltage of 400 V (data given on the unit nameplate).

\*\*\* Nominal conditions: suction temperature 5°C, outside air temperature 35°C.

\*\*\*\* Maximum unit operating current at maximum unit power input and 400 V (values given on the unit nameplate).

## Operating range



## Operating limits, standard unit

38RBS		Minimum	Maximum
<b>Evaporator</b>			
Suction temperature (dew point)	°C	-5	15
<b>Condenser</b>			
Entering air temperature*	°C	-10	48

\* For transport and storage of the 38RBS units the minimum and maximum allowable temperatures are -20°C and +48°C. It is recommended that these temperatures are used for transport by container. Option 28 allows stable unit operation at air temperatures below -10°C and down to -20°C.