



# Y-Pack Low energy consumption technology.



# Y-Pack is the new range of water chillers and heat pumps in R410A with Adaptive Function Plus: an innovative technology developed to reduce energy consumption.

## Water chillers and heat pumps for low consumption

The new **Y-Pack** series includes units of different capacity, ranging from 70 to 325 kW, in R410A: ideal for commercial and industrial applications, requiring a conditioning system that provides the perfect balance between low consumption and maximum comfort. All units are ideal also for process cooling applications which require good control of the water temperature.



## Silent operation

**Y-Pack** has been designed both for a reduction in energy consumption and for a silent operation. Also in the range are silenced and supersilenced versions with fan speed control which adapts to the cooling load and outdoor temperature, guaranteeing low noise levels even at partial loads. This benefit is more pronounced during the night when the sensitivity to noise is greater.



## Up to 4 capacity steps

In the smaller models, the choice of using different size scroll compressors on the same circuit, provides three capacity steps giving greater regulation and higher part load efficiency with ESEER values up to 4,37. Capacities higher than 325 kW are designed with 2 circuits and 4 capacity steps guaranteeing optional performances at partial load.



## Reliability, even in systems with a low water content

The capability of **Y-Pack** units of estimating the inertia and dynamics of the system allowing the possibility of removing the buffer tank, means that the **Y-Pack** is a quality product designed to last even in plants with water content of up to 2 litres/kW.



## Units that make installation easier

As a means of reducing the times to set up operations and installation problems, **Y-Pack** units can be equipped "plug&play" with fitted water components. It is therefore sufficient to connect the inlet and outlet pipes to the machine.



# Adaptive Function Plus: The revolution of low consumption.



## Predictive technology

**Adaptive Function Plus** is an innovative predictive control software, exclusively patented by Rhoss, born from the partnership with the Physics and Information Technology departments of the University of Padova. The new logic allows the chiller to receive from the plant the information concerning the load and inertia, abling the software to elaborate and optimize the operating parameters in order to reduce energy consumption.

## Top class performances

**Adaptive Function Plus** makes it possible to obtain energy performances equal or better than units of Class A (\*) without the need of overdimensioning the unit.

\*Class A defined according to Eurovent

## Greater stability in the temperature delivered to the system

**Adaptive Function Plus**, if compared with traditional controls, makes it possible to obtain, even at partial loads, a good stability in the water temperature delivered to the users, thus guaranteeing excellent regulation performances even in process applications.

## “Energy that is required, only when it's truly required”

In air conditioning systems the cooling units work at full load only for a reduced number of hours and at partial load for most of the season. The need is to design and manage them so that their energy consumption is as low as possible throughout the entire period of use.

**Adaptive Function Plus** regulates the set-point value thus increasing the efficiency of the compressors on the basis of the actual working conditions. It is thus possible to achieve significant seasonal energy savings compared to water chillers and heat pumps of an equivalent capacity with traditional control logic. Energy savings are up to 36% in the winter months and 18% in the summer months!

## Respect for the environment.

Y-Pack with **Adaptive Function Plus** improves the energy performances of the building-plant system thanks to its energy saving capability. The value of the building is thus enhanced with a reduction of the emission of polluting agents into the atmosphere.



In cooperation with University of Padova

Tecnologia a Basso Consumo  
Low Energy-Consumption Technology

# TECHNICAL DATA

TCAEBY		270	280	290	2100	2115	2130	2145	2160
① Nominal cooling capacity	kW	67,5	75,3	83,0	96,0	110,5	120,5	138,5	155,0
① E.E.R.		2,65	2,69	2,56	2,69	2,72	2,64	2,66	2,61
<b>TCAEY-TCAESY-TCAEQY</b>		<b>270</b>	<b>280</b>	<b>290</b>	<b>2100</b>	<b>2115</b>	<b>2130</b>	<b>2145</b>	<b>2160</b>
① Nominal cooling capacity	kW	70,3	79,5	88,0	101,2	114,5	126,0	143,0	161,0
① Nominal cooling capacity	kW	70,3	79,5	88,0	101,2	108,0	119,0	136,0	151,0
① Nominal cooling capacity	kW	67,0	75,0	82,5	95,0	101,0	108,0	125,0	138,0
① E.E.R.		2,98	2,99	2,90	2,90	2,93	2,91	2,90	2,90
① E.E.R.		2,98	2,99	2,90	2,90	2,67	2,67	2,63	2,60
① E.E.R.		2,70	2,85	2,62	2,73	2,34	2,30	2,32	2,20
● E.S.E.E.R.		4,32	4,37	4,35	4,32	4,37	4,31	4,29	4,26
<b>THAETY-THAESY</b>		<b>270</b>	<b>280</b>	<b>290</b>	<b>2100</b>	<b>2115</b>	<b>2130</b>	<b>2145</b>	<b>2160</b>
② Nominal heating capacity	kW	79,0	86,0	96,0	111,0	122,0	139,0	157,0	175,0
② Nominal heating capacity	kW	79,0	86,0	96,0	111,0	120,0	135,0	154,0	170,0
② C.O.P.		3,36	3,44	3,29	3,34	3,21	3,31	3,22	3,21
② C.O.P.		3,36	3,44	3,29	3,34	3,22	3,31	3,25	3,21
① Nominal cooling capacity	kW	69,4	77,7	85,2	99,3	111,0	123,8	141,3	159,8
① Nominal cooling capacity	kW	69,4	77,7	85,2	99,3	107,2	118,5	135,6	150,2
<b>TCAEY-THAEY</b>		<b>270</b>	<b>280</b>	<b>290</b>	<b>2100</b>	<b>2115</b>	<b>2130</b>	<b>2145</b>	<b>2160</b>
③ Sound pressure level TCAEBY	dB(A)	60	60	60	62	68	68	68	69
③ Sound pressure level TCAEY-THAEY	dB(A)	55	56	56	57	60	60	62	62
③ Sound pressure level TCAESY-THAESY	dB(A)	53	54	54	55	57	57	58	58
③ Sound pressure level TCAEQY	dB(A)	51	52	52	53	54	54	55	55
Scroll/step compressor	No.	2/3	2/2	2/3	2/3	2/3	2/2	2/3	2/2
Circuits	No.	1	1	1	1	1	1	1	1
<b>DIMENSIONS</b>		<b>270</b>	<b>280</b>	<b>290</b>	<b>2100</b>	<b>2115</b>	<b>2130</b>	<b>2145</b>	<b>2160</b>
Width version B	mm	2.650	2.650	2.650	3.150	3.150	3.150	3.150	3.450
Width version T - S - Q	mm	3.150	3.150	3.150	3.150	3.250	3.250	3.250	3.250
Height version B	mm	1.700	1.700	1.700	1.700	1.730	1.730	1.730	1.730
Height version T - S - Q	mm	1.520	1.520	1.520	1.520	2.000	2.000	2.000	2.000
Depth version B	mm	1.210	1.210	1.210	1.210	1.210	1.210	1.210	1.210
Depth version T - S - Q	mm	1.210	1.210	1.210	1.210	1.520	1.520	1.520	1.520

  

TCAEBY		4160	4180	4200	4230	4260	4290	4320
① Nominal cooling capacity	kW	152,0	170,0	191,0	219,0	244,0	282,0	315,0
① E.E.R.		2,57	2,51	2,51	2,53	2,51	2,52	2,55
<b>TCAEY-TCAESY-TCAEQY</b>		<b>4160</b>	<b>4180</b>	<b>4200</b>	<b>4230</b>	<b>4260</b>	<b>4290</b>	<b>4320</b>
① Nominal cooling capacity	kW	160,0	182,0	201,0	225,0	257,0	293,0	325,0
① Nominal cooling capacity	kW	152,7	177,0	192,0	215,0	246,0	281,0	309,0
① Nominal cooling capacity	kW	138,0	164,0	181,0	211,0	228,0	259,0	-
① E.E.R.		2,87	2,80	2,75	2,75	2,79	2,77	2,70
① E.E.R.		2,74	2,70	2,60	2,60	2,75	2,61	2,55
① E.E.R.		2,24	2,45	2,25	2,45	2,35	2,25	-
● E.S.E.E.R.		4,25	4,20	4,13	4,13	4,19	4,16	4,11
<b>THAETY-THAESY</b>		<b>4160</b>	<b>4180</b>	<b>4200</b>	<b>4230</b>	<b>4260</b>	<b>4290</b>	<b>4320</b>
② Nominal heating capacity	kW	166,0	188,0	220,0	241,0	272,0	309,0	342,0
② Nominal heating capacity	kW	160,0	183,0	211,0	233,0	264,0	303,0	333,0
② C.O.P.		3,03	2,85	2,98	2,96	2,93	2,92	2,91
② C.O.P.		3,00	2,89	3,00	2,98	2,97	3,01	2,96
① Nominal cooling capacity	kW	158,0	179,0	197,0	222,0	253,0	289,0	320,0
① Nominal cooling capacity	kW	151,0	174,0	189,0	212,0	242,0	277,0	304,0
<b>TCAEY-THAEY</b>		<b>4160</b>	<b>4180</b>	<b>4200</b>	<b>4230</b>	<b>4260</b>	<b>4290</b>	<b>4320</b>
③ Sound pressure level TCAEBY	dB(A)	66	70	70	72	72	74	74
③ Sound pressure level TCAEY - THAEY	dB(A)	63	67	67	68	69	69	69
③ Sound pressure level TCAESY - THAESY	dB(A)	59	61	61	62	64	64	64
③ Sound pressure level TCAEQY	dB(A)	56	58	58	59	60	60	-
Scroll/step compressor	No.	4/4	4/4	4/4	4/4	4/4	4/4	4/4
Circuits	No.	2	2	2	2	2	2	2
<b>DIMENSIONS</b>		<b>4160</b>	<b>4180</b>	<b>4200</b>	<b>4230</b>	<b>4260</b>	<b>4290</b>	<b>4320</b>
Width version B	mm	3.130	3.130	3.130	4.090	4.090	5.050	5.050
Width TCAEY-TCAESY/TCAEQY	mm	3.700	3.700	3.700	4.800	4.800	4.800	4.800
Width THAETY - THAESY	mm	3.700	3.700	4.800	4.800	4.800	4.800	4.800
Height version B	mm	2.135	2.135	2.135	2.135	2.135	2.135	2.135
Height version T - S	mm	2.000	2.030	2.030	2.030	2.030	2.030	2.030
Height version Q	mm	2.000	2.000	2.000	2.000	2.000	2.000	-
Depth version B	mm	1.190	1.190	1.190	1.190	1.190	1.190	1.190
Depth version T - S - Q	mm	2.090	2.090	2.090	2.090	2.090	2.090	2.090

**In the following conditions:**

- ① Air: 35°C - Water: 7/12°C - ② Air: 7°C D.B. - 6°C W.U. - Water 40/45°C
- ③ At 5 m from the unit, coil side, in free field (Q = 2)
- ESEER (European Seasonal EER) - European seasonal average efficiency

- TCAESY-THAESY silenced versions
- TCAEQY supersilenced versions



RHOSS S.P.A. declines all responsibilities for possible mistakes in the catalogue and reserves the right to alter the features of their products without notice in the interests of continuous improvement.