

# VSA

Serisi Ürün Kataloğu  
Series Products Catalogue  
Каталог Серии Продуктов

**ERACO**  
Air Conditioning & Industrial Application



# VSA SERIE



# Sustainable Future with **High Efficiency**



Yüksek **Verimlilik**

High **Efficiency**

Высокая **Эффективность**



Daha İyi Bir Gelecek İçin **Teknoloji**

**Technology** for Better Future

**Технология** для Лучшего



**Güvenilir** Ve Sağlam

**Reliable** And TrustWorthy

**Надежный** и Заслуживающий



**Akıllı** Çözümler

**Smart** Solution

**Умные** Решения



Dünya'ya **Bağlan**

**Connectivity** in Worldwide

**Связь** по Всему Миру



**Çevre** Bilinci

Reduce **Environment** Impact

**Сознание** Окружающей Среды



# High Efficiency



Eraco cihazlarında kullanılan komponentler sınıfının en verimli ve bilinen markalarından oluşmaktadır. Hassas tasarım hesaplamalarına göre montajlanan bu ürünler, üretimin farklı aşamalarındaki yüksek zorluk derecelerine sahip test protokollerini geçtikten sonra onay almaktadır. Bu sayede ünite verimliliği ve kalitesi garanti edilmiş olur.



The components used in Eraco units are comprised of the most efficient and the most well-known brands in their grades. These products which are assembled complying with the precise design calculations receive the approval and confirmation, after they pass the test protocols as these protocols have the high levels of difficulties during the different stages of the production. Thus, the unit efficiency and unit quality are to be under warranty as guaranteed.



В производстве Eraco используют самые эффективные модули от широко известных брендов в своих категориях. Оборудование, собранное в соответствии с точными расчетами конструкции, получает одобрение и подтверждение после прохождения контрольных испытаний, имеющих высокие требования к качеству на разных этапах производства. Таким образом, эффективность и качество оборудования гарантированы.



# Technology for Better Future



Üretimini yaptığımız Eraco marka ürünler; yüksek kalitenin yanı sıra gelişmiş teknolojik donanımları da içerisinde barındırmaktadır. Yükseltilebilir yazılım, inverter ve hız kontrol sistemleri, iklim ve çalışma koşullarına göre uygulanabilecek seçenekler ile ürünlerimiz zamanın gerekliliklerini fazlaıyla karşılamaktadır.

Bununla birlikte fabrikamız en gelişmiş ekipmanlar ile donatılmıştır. Üretimin tüm safhaları, ilgili operatörler tarafından el terminaleri vasıtası ile takip edilmekte, kurulan SAP sisteminde anlık izleme olanağı sağlanmaktadır. Kurulan Ar&Ge ve test departmanları, hem ürün hem de tesis gereksinimlerini en üst seviyede tutacak şekilde organize edilmiştir.



The products with Eraco brands which we currently produce have the higher quality as well as having the advanced developed technology hardwares. Our Products go beyond the bounds to be able to meet today's requirements in the best way together with its implemented options according to the climate and operating conditions and the software that can be upgraded, inverter and speed control systems.

Furthermore, our factory is mainly equipped with the advanced level of equipments. All the stages of the production are followed by the relevant operators by means of the hand terminals, and the instant tracking becomes possible by means of the established SAP system. The established R&D and test departments are organized in order to ensure keeping both the product requirements and also the factory requirements at the highest level.



Оборудование марки Eraco имеет высокое качество, а также соответствует передовым технологиям. Наши продукты отвечают передовым требованиям благодаря модифицируемому программному обеспечению, инверторам и системам управления скоростью – дополнительным опциям, применяемым в зависимости от климата и условий труда.

Наряду с вышеперечисленным, наш завод оснащен самым современным оборудованием. Все этапы производства контролируются соответствующими операторами через ручные терминалы, обеспечивая мгновенный мониторинг в установленной системе SAP. Созданные научно-исследовательские и испытательные отделы организованы так, чтобы поддерживать уровень качества как продукта, так и проекта на самом высоком уровне.





# Reliable and TrustWorthy



Endüstriyel ve iklimlendirme sistemlerinde dikkat edilmesi gereken güvenlik ve emniyet tertibatı, sistemin sağlığı ve sürekli işler halde kalması adına oldukça önemlidir. Ünite-ler üzerinde yer alan switch, selenoid vana, prop, termik, müşür, solenoid, röle... gibi ekipmanların doğru kullanımı ile sistem sürekliliği garanti edilir.

Müşteri deneyimlerini sürekli takip ederek, ihtiyaç duyulan güvenlik donanımını sürekli bir ileri aşamaya taşıyan Eraco, alanında en iyi ürünlerini üretme misyonuna sahiptir.



The security and safety fixings and equipment which must be paid attention in the Industrial and air conditioning systems are quite important in order to ensure to make a fit, healthy and continuous system. The system continuity is guaranteed by means of the correct usages of the equipments such as the switch, probe, solenoid valve, solenoid, relay, sensor and thermic etc which are available on the relevant units.

Keeping track of the customer experiences all the time and continuously upgrading and moving the required security hardware to one next level, Eraco has got the mission of producing the best products in its business area.



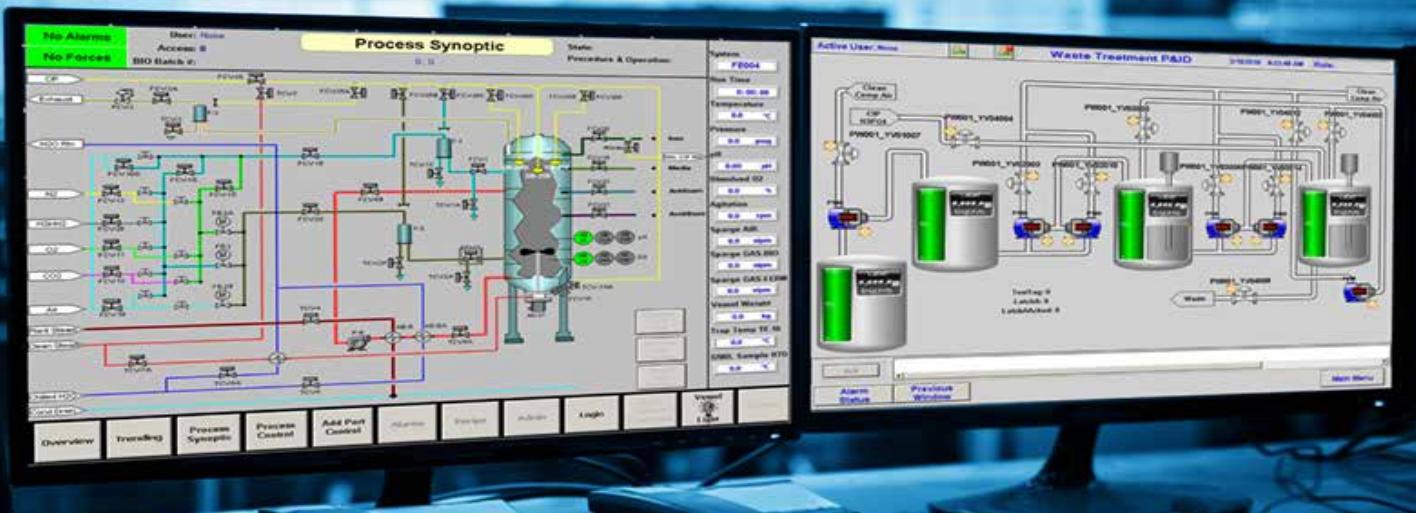
Оборудование для обеспечения безопасности и охраны, которое следует учитывать в промышленных системах и системах кондиционирования, очень важно для поддержания работоспособности системы и ее непрерывной работы. Непрерывность системы гарантируется при правильном использовании оборудования, такого как выключатель, электромагнитный клапан, датчик, тепловой выключатель, соленоид, реле... на устройствах.

Постоянно следя опыту работы с клиентами, Era-co ставит перед собой задачу производить лучшую продукцию в своей области, выводя необходимое оборудование для обеспечения безопасности на постоянный уровень.





# Smart Solution



Ünitelerimiz, uygun maliyetlerine karşın kullanıcının ihtiyaçlarına maksimum seviyede yanıt verecek şekilde üretilmiştir. Ürünlerimizde kullanılan microprocessor ve PLC oldukça kullanıcı ve kolay kontrolü sağlayan bir arayüze sahiptir.

Opsiyonlar ile zenginleştirilebilen akıllı tasarım sayesinde; bulut tabanlı parametrik veri depolama, geçmiş alarm ve çalışma değerleri listelemeleri, hibrit sistem kurgulamaları gibi geniş bir alanda çalışma, işlem yapabilme fırsatı mevcuttur.



Our units in spite of their own suitable costs are produced in order to respond to the user requirements at the maximum level. Microprocessor and PLC used in our products have the quite useful and easy-controlled interface.

By means of the enriched smart design with the relevant options; the opportunity is provided and available to be able to carry out the processes and also to work within a comprehensive area such as cloud-based parametric data storage, history or previous alarm and operating value listings and hybrid system editings.



Наши устройства производятся для удовлетворения потребностей пользователей на максимальном уровне, несмотря на их доступную стоимость. Микропроцессор и ПЛК, используемые в наших продуктах, имеют интерфейс, который обеспечивает очень полезное и простое управление.

Благодаря продуманному дизайну, который можно дополнить опциями, появляется возможность работать в широком диапазоне, например, в облачном хранилище параметрических данных, в истории аварийных сигналов и рабочих значений, конфигурациях гибридных систем.

# **Connectivity**

## in Worldwide



Gelişen teknoloji ile birlikte proseslerde kullanılan makinelerin, belirli sistemler aracılığı ile haberleşmesi veya tek bir noktadan yönetilebilir olması oldukça önem kazanmıştır. Onlarca makinenin çalıştığı bir işletmede bu durum ihtiyaçtan öte bir zorunluluktur.

Opsiyonlar ile geliştirilebilir tasarımları sayesinde Eraco ürünleri uzaktan erişimli bağlantıların yanı sıra; Modbus RS-485 / ModbusTCP / IP / ModbusRTU / BACnet MSTP / BACnet IP / LonWorks FTT10 / CANbus ..vb gibi bağlantı protokollerine uygun çalışmalar yapabilmektedir.



By means of the developed technology, it has gained great importance to enable the machines which are used in the relevant processes to communicate each other through the assistances of the determined systems and to be managed from one single point. This is not only a basic requirement, but also goes beyond the meaning of a requirement; in fact it is a necessity in where many machines operate at a facility.

By means of their designs which can be developed with the options, Eraco products both operate through the remote access connections and also can operate in comply with the connection protocols such as Modbus RS-485 / ModbusTCP / IP / ModbusRTU / BACnet MSTP / BACnet IP / LonWorks FTT10 / CANbus etc.



С развитием технологии стало очень важно, чтобы машины, используемые в процессах, могли обмениваться данными с определенными системами или управлять из одной точки. В бизнесе, где работают десятки машин, это больше, чем необходимость.

Благодаря своим конструкциям оборудования Eraco, которые могут усовершенствоваться опциями, могут работать в сочетании с соединениями удаленного доступа, а также с протоколами соединений, такими как Modbus RS-485 / ModbusTCP / IP / ModbusRTU / BACnet MSTP / BACnet IP / LonWorks FTT10 / CANbus и так далее.





# Reduce Environment Impact



Eraco Soğutma, iklim değişikliği ile mücadele ve minimum karbon ayak izi prensibine sahiptir. Bu konuda üzerine düşeni yapabilmek için Kyoto Protokolünün tüm esaslarını dikkate almakta ve buna uyacak şekilde üretim yapmaktadır. Yapılan çalışmalar ile 2017 yılından itibaren %35 daha az soğutucu akişkana sahip cihazlar üretilmekte, bu cihazlarda düşük GWP değerli ürünler kullanılmaktadır. Ayrıca sahip olduğu proseslerin tamamında minimum su tüketimi hedeflenmektedir.



Eraco Chillers has the principle of minimum carbon footprint and to mainly struggle with the climate changes. In order to carry out its main responsibilities regarding this subject, Eraco Chillers consider all the fundamentals of the Kyoto Protocol and manufactures to be in comply with these fundamentals. By means of the performed business operations, since 2017 the units have been manufactured which contain the 35% less amount of refrigerants, and on these units the products are used with the lower GWP values. Furthermore, the minimum water consumption is aimed for all of the business processes in which it possesses.



ЭРАКО Чиллерс следует принципам минимального углеродного следа в борьбе с изменением климата. Чтобы выполнить свои основные обязанности по этому вопросу, мы учитываем все принципы Киотского протокола и каждая наша продукция соответствует этим требованиям. Благодаря предпринятым мерам с 2017 года выпускаем агрегаты, где использование хладагентов меньше на 35%, что в свою очередь соответствует более низким значениями ПГП. Более того, мы также стремимся минимизировать расходы воды и их источников

# Air Cooled **Chiller**



## View of Content

R410A

**VSA**

Scroll Kompressor  
Scroll Compressor  
одним инвертором




**from 107,5 kW to 1357 kW**


### Ürün açıklaması:

VSA serisi chiller üniteleri enerji tasarrufu ve uygun ilk yatırım maliyetini bir arada sunan benzersiz ürünlerdir. Yapısı içerisinde yer alan inverterli kompresör değişken yükleri karşılarken, yüksek kapasitelerde yerińi sabit devirli kompresörlerle bırakarak yeniden ara kapasitelere yönelik. Inverterli ve normal kompresörlerin hibrit bileşimi olan bu seride ki chiller cihazları, özellikle endüstride standart chiller cihazlarına nazaran %40'ye varan enerji tasarrufu sağlamaktadır. Yüksek kaliteli komponentlerin iyi mühendislikle birleştirildiği VSA serisi chiller üniteleri, oldukça geniş bir kapasite aralığında kullanıma sunulmaktadır.

### Unit Description :

VSA series Chiller units are unique products that offer energy savings and suitable initial investment costs. When meeting the inverter compressor variable loads in the structure, while in high capacities, it is turned on to residual capacities by leaving the replacement to constant cyclic compressors. This is the hybrid composition of the inverter and normal compressors, Chiller devices provide %40 energy compared to the standard chiller devices in the industry. The VSA Series Chiller Units, where high quality components are joined with good engineering, are available in a wide range of capacity.

### Описание товара :

Блоки охладителя серии VSA уникальные продукты, которые декомпозируют энергосберегающие и удобные первоначальные инвестиционные затраты. В то время как декомпрессор с инвертором в своей структуре выдерживает переменные нагрузки, при больших емкостях он снова переходит на промежуточные мощности, оставляя место для компрессоров с постоянной скоростью. Гибридная комбинация инверторных и обычных компрессоров, эта серия холодильных устройств экономит до 40% энергии по сравнению со стандартными холодильными устройствами, особенно в промышленности. Хорошо спроектированные высококачественные компоненты, агрегаты для чиллеров серии VSA Объемы доступны в довольно широком диапазоне мощностей.

#### Notlar:

- Soğutma kapasitesi +7°C su çıkış ve +35°C ortam sıcaklığına göre tayin edilmiştir.
- Ses seviye basıncı açık alanda chizdan 10 metre uzakta 4 taraftan alınan ortalama değerler ile ölçümüştür.
- Proses basınç kayıfları ve tesisatin durumuna bağlı olarak pompa tipi değişimelidir.
- Pompa debi değerleri imalatçı firma katalog değerlerine göre belirlenmiştir

#### Notes:

- Cooling capacity is referred to +7°C water outlet and +35°C ambient temperature.
- In an open field at 10 m from the unit tour side unit avarage value.
- Pump specifications are subject to change depending on number of machines, piping length and height.
- Water pump flow rate is obtained from manufacturer's technical data sheet.

#### Ноты:

- Расчет хладопроизводительности при условиях выход воды +7°C и окружающая среда +35°C
- За расчет звукового давления взято среднее с 4 сторон на расстоянии 10 метров в открытой местности
- Возможно изменение насоса в зависимости от требований  
Мощности насоса взяты из каталога производителя.

Model / Модель		VSA-T 1102	VSA-T 1702	VSA-T 2104	VSA-T 2704	VSA-T 3204	VSA-T 4104	VSA-T 5604
Cooling Охлаждение	Cooling Capacity Max. Холододорождительность Макс.	KW	107,5	148,0	203,4	271,6	314,0	403,4
	Cooling Capacity Min Холододорождительность мин.	KW	15,9	21,4	15,9	21,4	21,4	21,4
	Absorbed Power Max. Аборбированная мощность Макс.	KW	17,4	24,1	31,5	42,2	48,8	58,8
	Absorbed Power Min. Аборбированная мощность мин.	KW	2,3	3,0	2,3	3,0	3,0	3,0
	Minimum Working Capacity Минимальная рабочая мощность	%	0,15	0,14	0,08	0,08	0,07	0,05
	COP Cooling at Max Capacity Охлаждение COP при максимальной мощности	-	6,16	6,14	6,45	6,44	6,44	6,62
	COP Cooling at Min Capacity Охлаждение COP при минимальной мощности	-	6,81	7,05	6,81	7,05	7,05	7,05
	COP Охлаждение при минимальной мощности	-						
Compressor Компрессор	Refrigerant Circuit(s) Кол-во контуров	n°	1	1	2	2	2	2
	Compressor Quantity Кол-во компрессоров	n°	2	2	4	4	4	4
	Type Тип	-			Hermetic Scroll Type / Тип Герметичный Спиральный			
	Capacity Steps Степени загрузки	n°			Electronic Expansion Valve/ Электронный расширительный клапан			
	Capacity Steps Степени загрузки	n°			Inverter Control/Инверторный контроль			
Evaporator Испаритель	Type Тип	-			Shell & Tube Type / Тип Кожухотрубный			
	Pressure Drop Потери давления	kPa	35	33	33	46	43	48
	Water Flow Поток воды	m³/h	18,5	25,5	35,0	46,7	54,0	69,4
Electrical Specifications Электрические характеристики	Power Supply Питание	V-phz-Hz			380-415 V / 3Phz / 50 Hz			
	Nominal Current Ном. сила тока	A	31,3	43,1	60,8	81,0	90,3	109,3
	Max. Current Макс. ампераж	A	68	80	124	152	178	224
	Protection Class Класс защиты	-	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54
Fan Вентилятор	Fans Кол-во вентиляторов	n°	3	4	4	4	6	6
	Air Flow Воздушный поток	m³/h	32.400	43.200	96.440	96.440	96.440	144.660
Noise Characteristics Шум Характеристики	Sound Pressure Звуковое давление	dB(A)	59,0	61,0	59,0	62,0	62,0	64,0
	Sound Power Звуковая мощность	dB(A)	90,0	92,0	90,0	93,0	93,0	95,0
Hydraulic Гидравлика	Water Tank Бак воды	inch	2 1/2"	3"	3"	3"	DN 150	DN 200
Dimension Размеры	Lenght Длина	mm	2.810	4.435	4.435	4.435	4.435	3.819
	Width Ширина	mm	1.222	1.215	1.215	1.215	1.215	2.210
	Height Высота	mm	2.328	2.330	2.465	2.465	2.465	2.535
Weight Вес	Transport Weight Вес загружочный	kg	946	1355	1654	1680	1761	2203
								2811

Model / Модель		VSA-T 6706	VSA-T 8206	VSA-T 9606	VSA-T 10708	VSA-T 12208	VSA-T 13708	
Cooling Охлаждение	Cooling Capacity Max. Холододорождительность Макс.	KW	658,8	806,4	954,0	1061,8	1209,4	1357,0
	Cooling Capacity Min Холододорождительность мин.	KW	21,4	21,4	21,4	21,4	21,4	21,4
	Absorbed Power Max. Аборбированная мощность Макс.	KW	99,7	121,1	142,5	155,8	180,3	201,6
	Absorbed Power Min. Аборбированная мощность мин.	KW	3,0	3,0	3,0	3,0	3,0	3,0
	Minimum Working Capacity Минимальная рабочая мощность	%	0,03	0,03	0,02	0,02	0,02	0,02
	COP Cooling at Max Capacity Охлаждение COP при максимальной мощности	-	6,61	6,66	6,70	6,82	6,71	6,73
	COP Cooling at Min Capacity Охлаждение COP при минимальной мощности	-	7,05	7,05	7,05	7,05	7,05	7,05
	COP Охлаждение при минимальной мощности	-						
Compressor Компрессор	Refrigerant Circuit(s) Кол-во контуров	n°	3	3	3	4	4	4
	Compressor Quantity Кол-во компрессоров	n°	6	6	6	8	8	8
	Type Тип	-			Hermetic Scroll Type / Тип Герметичный Спиральный			
	Capacity Steps Степени загрузки	n°			Electronic Expansion Valve/ Электронный расширительный клапан			
	Capacity Steps Степени загрузки	n°			Inverter Control/Инверторный контроль			
Evaporator Испаритель	Type Тип	-			Shell & Tube Type / Тип Кожухотрубный			
	Pressure Drop Потери давления	kPa	41	42	32	45	45	44
	Water Flow Поток воды	m³/h	113,3	138,7	164,1	182,6	208,0	233,4
Electrical Specifications Электрические характеристики	Power Supply Питание	V-phz-Hz			380-415 V / 3Phz / 50 Hz			
	Nominal Current Ном. сила тока	A	175,6	216,1	256,6	282,3	322,8	363,3
	Max. Current Макс. ампераж	A	368	456	544	600	688	776
	Protection Class Класс защиты	-	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54
Fan Вентилятор	Fans Кол-во вентиляторов	n°	10	12	14	16	18	20
	Air Flow Воздушный поток	m³/h	241.100	289.320	337.540	385.760	433.980	482.200
Noise Characteristics Шум Характеристики	Sound Pressure Звуковое давление	dB(A)	63,0	63,0	66,0	66,0	67,0	67,0
	Sound Power Звуковая мощность	dB(A)	94,0	94,0	97,0	97,0	98,0	98,0
Hydraulic Гидравлика	Water Tank Бак воды	inch	DN 200	DN 200	DN 200	DN 200	DN 200	DN 200
Dimension Размеры	Lenght Длина	mm	6.140	7.255	8.370	9.480	10.685	11.797
	Width Ширина	mm	2.210	2.210	2.210	2.210	2.210	2.210
	Height Высота	mm	2.535	2.535	2.535	2.535	2.535	2.535
Weight Вес	Transport Weight Вес загружочный	kg	3533	4001	4466	5238	5792	6313

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## Legenda



Soğutma  
Cooling  
Охлаждение



Inverter  
Inverter  
Инвертер



Shell And Tube  
Shell And Tube  
Кожухотрубный



Isıtma  
Heating  
Нагревание



Led Ekran  
Led Screen  
ЖК Экран



Su  
Water  
Вода



Adyabatik Spreyleme Sistemi  
Adiabatic Mistspraying System  
Система адиабатического распыления



Micro Channel  
Micro Channel  
Микроканальный



R134A Soğutucu Ağızkanı  
R134A Refrigerant  
R134A Хладагент



Aksiyal Fan  
Axial Fan  
Вентилятор осевой



Plakalı Tip Isı Değiştiricisi  
Plate Type Heat Exchanger  
Пластинчатый теплообменник



R404A Soğutucu Ağızkanı  
R404A Refrigerant  
R404A Хладагент



Dokunmatik Ekran  
Touch Screen  
Сенсорный экран



Plug-Fan  
Plug-Fan  
Подключаемый вентилятор



R407C Soğutucu Ağızkanı  
R407C Refrigerant  
R407C Хладагент



Likit Shell and Tube  
Flooded Shell and Tube  
Погружной Кожухотрубный



Santrifüj Fan  
Centrifugal Fan  
Центрробежный вентилятор



R410A Soğutucu Ağızkanı  
R410A Refrigerant  
R410A Хладагент



GSM/GPRS/TCP-IP Bağlantı  
GSM/GPRS/TCP-IP Connection  
GSM/GPRS/TCP-IP Соединение



Rezitans  
Resistance  
Сопротивление



R454B Soğutucu Ağızkanı  
R454B Refrigerant  
R454B Хладагент



Hermetik Scroll Kompresör  
Hermetic Scroll Compressor  
Герметичный спиральный компрессор



Rotary  
Rotary  
Роторный



R513B Soğutucu Ağızkanı  
R513B Refrigerant  
R513B Хладагент



Yüksek sıcaklık  
High-Temperature  
Высоко-температурный



Semi-Hermetik İkiz Vidalı Kompresör  
Semi-Hermetic Twin Screw Compressor  
Полугерметичный двухвинтовой компрессор



Serbest Soğutma  
Free-Cooling  
Естественное охлаждение



Semi Hermetik Piston Kompresör  
Semi Hermetic Reciprocating Compressor  
Полугерметичный поршневой компрессор

## Optional List

Optional Code	Optional Name	Optional Description
YT	Spring type antivibration dampers	It is a spring vibration damper application for wheelless models to prevent vibration during device operation.
KT	Rubber type antivibration dampers	It is a rubber type vibration damper application for wheelless models to prevent vibration during device operation.
RAL	Paint selection with special RAL code	It is a customized painting process if the RAL code is specified for the device framework.
PEF	PE filter for Condenser	It is a PE filter application to protect air cooled condensers from dust and mechanical impacts.
KC	Compressor jackets on compressors	It is a low noise version application for compressors that includes the compressor jacket application
LNF	Low Noise for Fans	Low noise option for fans. With this LNF option, the cooling capacity will be negatively affected by 18%.
SS	Soft Starter	Soft starter option to regulate the compressor starting regime
SST	Water storage tank in stainless steel AISI304 ( internal )	Stainless water tank application inside the framework for devices without a water tank (Applied up to the largest 2V chassis model)
FB	Flanged water connections	It is a flanged connection application in water installation
GT	Expansion vessel kit	It is the application of an expansion tank inside the framework device to regulate the water pressure in closed systems.
STE	Shell & Tube evaporator	For devices with plate evaporator as standard, S&T is an option to change to evaporator.
ECO	Ekonomerizer	It is an economizer application option in screw compressor series.
PTE	Brazed Plate type evaporatör	It is an option to change to plate evaporator for devices with S&T evaporator as standard.
KR	Antifreeze wire heater for evaporator	It is a capillary cable type resistance application to prevent the water in the evaporator from freezing.
DR	Antifreeze immersion heater for tank	It is an immersion type resistance application to prevent the water in the evaporator from freezing.
EBV	Shut-off valve on suction and discharge line	Rotalock valve is installed on the compressor suction and discharge line for service convenience and safety.
LTK	Low ambient temp kit up to -40 C	It is an option that includes the following applications for models to be used at temperatures as low as -40C; electrical cabinet insulation, external display in PLC + 7" processor devices, 30m RS 485 cable, electrical cabinet heater, capillary cable type heater wound on the heat exchanger suitable for -40 C, insulation, liquid receiver, thermostat and fan speed control
HR25	Heat recovery %25	It is a 25% heat recovery application to benefit from the heat of the hot fluid in the discharge line.
HR100	Heat recovery %100	It is a 100% heat recovery application to benefit from the heat of the hot fluid in the discharge line.
EEV	Electronic Exp valve	Electronic expansion valve application for devices without electronic expansion valve
HE	Extra heat exchanger	It is an extra evaporator application in double-circuit devices.
DRC	Double Refrigeration circuit	It is the option of converting 2 tandem single circuit devices to 2 circuits.
RC4	Remote control with Small screen	Remote control option for devices with small screen processor (ST542 or MCX 06)
RC7	Remote control with 7" Screen	Remote control option for devices with large screen processor (PLC + 7")
PLC	Microprocessor to PLC conversiton	Option to switch from microprocessor to PLC
TCP	Connection Modbus TCP	Modbus TCP connection option
RS485	Conneciton Modbus RS485	Modbus RS485 connection option
BACnet	Connection BACNet and LonWorks	BACnet and LonWorks connectivity option
P-BUS	Connection Profibus	Profibus connection option
FS	Fan Speed control	Fan Speed Control application to increase energy efficiency

## Optional List

Optional Code	Optional Name	Optional Description
PI	Inverter control for Water pump	Pump inverter option for water pump to increase energy efficiency
IP65	Closed Electrical Cabinet IP65	IP65 closed electrical panel option with full resistance to low pressure water jet and dust
SHR	Acoustic and visual alarm	There is an audible and visual light alarm option for malfunctions in the device.
PS	Electrical Panel Cooling	It is an electrical panel cooling option to prevent damage to switchgear at high temperatures.
VFT	V shape chiller protection	It is a protection wire application to protect the condensers from mechanical impacts in V type chassis devices.
ATS	Automatic Transfer Switch	It is optional to automatically switch from the main line to the generator in case of power failure.
TK	Wooden packaging	Its a wooden packaging option for shipment
YF	Y Filter	It is an option to add a Y filter to the water inlet of the device so that dirt and debris in the water line do not damage the water line inside the device.
CU-AL	Copper - Al Condenser	It is a transition option from standard condenser to Copper Aluminum Condenser
CS	Condenser Spray	Water spray option on the condenser surface to obtain efficient pre-cooling from the condenser.
FI	Fan Inverter	Inverter application to fans to increase energy efficiency
UP	Upgraded Pump	It is a transition option from the standard pump to the high pressure pump in the device.
EC	EC Fan Option	It is a transition option from axial fan to EC fan in air-cooled models.
60Hz	60 Hz Electritronic Supply	It is option to make the device components suitable for connections with a frequency of 60 Hz.
FW	Framework Wheel	It is option to add wheels to the framework devices without wheels.
MBP	Mechanical Valve By-pass	It is option to apply mechanical bypass between device input and output connections.
WE	Warranty Extension	It is option to extend warranty
E3BP	Evaporator 3-way By-Pass	It is option to add 3-way valve bypass to the evaporator inlet and outlet.
C3BP	Condenser 3-way By-Pass	It is an option to add 3-way valve bypass to the condenser inlet and outlet in water-cooled models.
WWP	Option to Use Without Water Pump	Pump removal option is available from models with pumps as standard.
WWT	Option to Use Without Water Tank	It is an option to remove the water tank from models with a water tank as standard.
WPT	Option to Use Without Water Pump and Water Tank	It is an option to remove the water tank and water pump from the models with water tank and water pump as standard.
NN	No Notr Connection	It is an electrical connection option without neutral
DIK	De-Ionize Kit	Option to add deionized kit in laser series
DIKWOC	De-Ionize Kit with One Hydraulic Circuit	Single hydraulic circuit and deionized kit production option is available in laser series.
ITK	In Tank Resistance	In laser series, it is optional to add a resistance inside the tank.
DHC	Double Hydraulic Circuit	Double hydraulic circuit production option is available in laser series.
FIK	Freecooling Integration Kit	It is an option to use chiller and drycooler devices as a freecooling system. It includes the following applications; 3-way valve on the pedestal, valve motor, 3-layer insulation on the valve and valve motor, external panel with PLC+7" processor, PT 100 temperature sensor, insulation inside the electrical cabinet, cable type resistance winding on the valve, electrical cabinet heater and 7" screen in the panel
WFF	Water Flow Filter	It is option to add a filter to clean the water going to the drycooler batteries



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