cosmotec

your cooling solutions

R513A



FlexIn

CDI

Industrial wall-mounted air conditioner with Inverter technology

A high-efficiency solution for critical applications

Modern industrial electrical panels and servers require more **accurate temperature control and low energy consumption** even with variable thermal loads. In the past, these two needs were incompatible or only partially met, but now they are both available in the **FlexIn** air conditioner with Inverter technology.

cosmotec offers a highly efficient solution among its range of air conditioners. In fact, for every operating condition and thermal load, the new **FlexIn** air conditioners optimize cooling capacity regulation.



The high-efficiency solution

Through the use of Inverter technology and high-performance components, the new **FlexIn** air conditioners feature very **high Energy Efficiency Ratio (EER) values**, both at standard working conditions (L35L35) and in critical operating conditions with high external temperatures. This achieves significant energy and cost savings.i.

INVERTER TECHNOLOGY

The integrated Inverter technology allows for the regulation of cooling capacity based on the thermal load inside the electrical panel. The electronic control, consisting of an Inverter board and a control board, modulates the compressor and fan speeds (evaporator and condenser) and the opening of the electronic thermostatic valve.
Additional benefits provided include:

- Reduced temperature variations inside the electrical panel
- Reduction in the number of on-off cycles and extended component lifespan
- Soft start and consequent elimination of starting surge currents
- High EER/COP values
- Noise reduction
- Wide voltage range

EC FANS

With the use of EC fans, the airflow follows the cooling capacity to **maximize the energy efficiency** of the entire system under all operating conditions. EC fans also provide the following advantages:

- No starting surge current
- High MTBF values
- Low noise

ELECTRONIC EXPANSION VALVE

The electronic expansion valve **enhances the performance and efficiency** of the refrigerant circuit by optimizing the temperature and pressure of the gas and heat exchange within the evaporator, even in the presence of significant load variations. This results in s**ignificant energy and cost benefits**.

MICROCHANNEL CONDENSERS

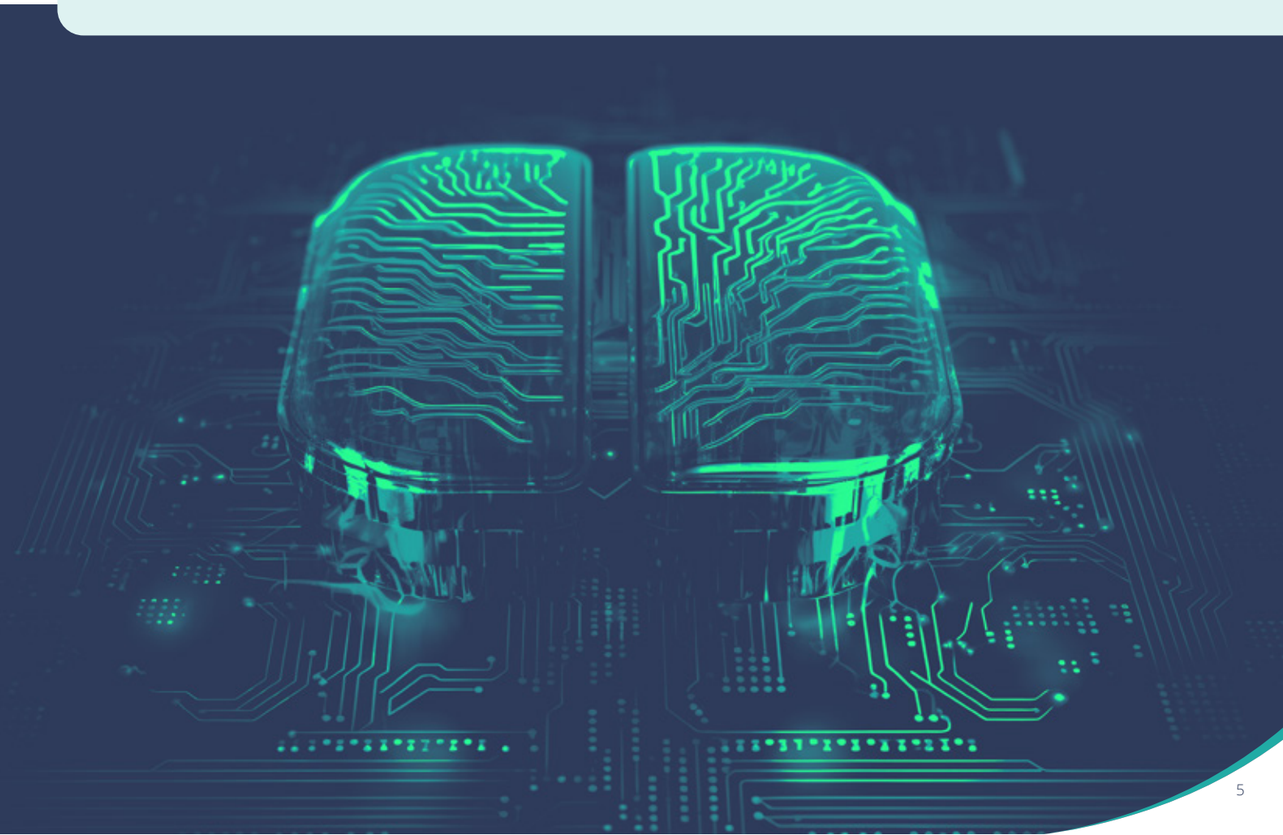
Thanks to their reduced thickness compared to copper-aluminum coils, microchannel condensers allow for lower pressure drops (on both the air and gas sides) and improved airflow through the condenser fan, resulting in **increased efficiency and performance**. Additionally, microchannel condensers allow for a reduction in refrigerant usage.



Control for energy and digital transition

The “brain” of the **FlexIn** air conditioner is an electronic control that ensures optimal and correct operation under any working condition, thus achieving the best performance.
The electronic control also allows for:

- Remote monitoring through direct **Ethernet port connection**
- Speeding up startup and component verification operations through the conditioner’s testing procedure
- Complete management and display of various alarms
- The ability to communicate between two or three units installed in the same cabinet. It allows automatic rotation to balance operating hours, mutual support in case of an alarm on one unit preventing operation, or if the cabinet temperature exceeds the set temperature threshold
- Precise temperature control of 0.2°C under stable load conditions with the option to read the value at suction or discharge or remotely (optional)
- Parameterization switch from °C to °F
- Monitoring the conditioner’s status via alarm contact exchange (NO and NC) and remote control/open port



Flexibility

Cooling Power
Continuous adjustment of cooling capacity according to the actual thermal load of the system and the operating temperature conditions of the air conditioner, along with precise control of the internal temperature within the electrical panel.

Installation
For all product sizes, the air conditioner can be installed **externally**, or **fully flushed**, meeting all layout and space requirements for various applications.



Power supply
With just 2 codes per model, the entire range of voltages and frequencies required by the market is covered:
- For single-phase units: 110...240 V,50...60Hz
- For three-phase units: 380...480 V, 50...60Hz

Temperature
The FlexIn air conditioners operate from -20°C to +60°C, making them suitable for both high temperatures above 55°C and low temperatures below 20°C. Additionally, the setpoint can be adjusted up to +20°C, allowing for the cooling of devices that require low operating temperatures.

Reliability

The air conditioners are equipped with a condensate drain pan. It allows for the elimination or reduction (depending on the working conditions) of condensate exiting the conditioner, without any current consumption. Cathodic electrophoretic coating on the condenser is standard to ensure increased protection against corrosion due to potential corrosive agents present in aggressive environments.



Additionally, they feature a hydrophilic evaporator that allows for reduced fin spacing, which would otherwise be discouraged in the presence of water droplets. This enables higher air velocities without the risk of carrying droplets.

The degree of protection between the air conditioner and the electrical cabinet is IP54.

Continuous 24/7 remote monitoring of the main air conditioner parameters is also available. condizionatore.

EASY INSTALLATION

To facilitate installation, thus resulting in time and cost reductions for assembly and servicing activities, the new CDI air conditioners offer several solutions:

- Two inserts to facilitate unit positioning
- Gasket already installed on the conditioner mounting brackets
- Quick electrical connections via connectors
- Ethernet connection standard on the back of the unit
- Easy access to the electrical panel
- No additional space required for electrical connection inside the cabinet

LOW NOISE

Thanks to the high-performance components, **FlexIn** air conditioners exhibit **very low noise levels**, not only in the presence of low external temperatures but also under nominal operating conditions.



CONNECTIVITY

cosmotec has **integrated an Ethernet port** into the **FlexIn** Inverter air conditioner's electronic control, allowing direct connection to the conditioner via common industrial Ethernet protocols (HTTP, SNMP, TCP-IP), without additional costs for interface devices. This enables seamless integration of the **FlexIn** air conditioner into an Industry 4.0 and Smart Factory environment, achieving increased automation, real-time production monitoring, efficiency, and flexibility.

This setup enables the air conditioners to be monitored and controlled from a remote location 24/7, with many parameters being readable and recorded.

Available functions include:
- Language selection (Italian, English, German, French, Spanish)
- Display of conditioner temperatures and pressures
- Display and setting of setpoint parameters, low and high-temperature alarm settings
- Selection of the internal electrical panel temperature reading mode (suction, discharge, or remote probe)
- Ability to display temperature in °C or °F
- Display of all alarms and the ability to download the alarm list

Applications


Idrogeno


Macchine Utensili


Automotive/ E-Mobility


Food & Beverage


Plastica


Chimico/ Farmaceutic.

Technical Features

- Wall-mounted air conditioners with Inverter technology
- High energy savings and efficiency
- External or fully flushed installation options
- Cooling capacities: 2000W / 2600W / 4200W
- Wide power supply range: 110...240,1,50...60 and 380...480,3,50...60
- Wide range of external temperatures: -20...+60 °C
- General alarm and remote control contacts
- Ethernet Connection
- Condensate drain pan
- Internal circuit protection degree: IP54
- Gasket pre-installed on the air conditioner
- Microchannel condenser with protective treatment
- Low noise levels

Technical data

		CDI20	CDI26	CDI40
Cooling capacity [W]	L35L35 @230V,50Hz	2000	2600	4200
Power supply		110...240,1,50...60		
		380...480,3,50...60		
Dimensions [mm]	Altezza	1666	1666	1666
	Larghezza	454	496	496
	Profondità	294	294	393

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