

VENTI

THE INVERTER FOR ELECTRICAL CABINET




NASTEC[®]
> we move it faster >

VENTI is the Nastec inverter that revolutionizes panel applications, offering unprecedented performance and flexibility. Its essential design conceals endless possibilities of use.

When the application involves the presence of an electrical cabinet containing other control and protection devices, it can be convenient or, in some cases, necessary to install the inverter inside the cabinet rather than on the motor itself.

VENTI seamlessly integrates into the electrical system of the panel, providing protection against water and dust.

The user interface, installed on the panel's front, can consist of the VENTI display (optional) or any third-party HMI unit communicating with the inverter via a fieldbus

ALL FEATURES ONLY WHEN NEEDED

VENTI is offered with the revolutionary Nastec FORMULA system, which allows customization of the device's performance and features based on actual application needs.

This translates into multiple advantages:

- A single code to purchase and keep in stock: lower inventory costs, reduced transportation and management costs, a single technological partner.
- Product cost always proportional to the application: why should an inverter used for a simple household application cost the same as an inverter for process control in an industry?
- Scalability over time: everything is in movement, and so are applications. That's why it's essential to have an inverter capable of evolving accordingly.

The expansion of features and performance can be carried out at any time by the user through the Nastec NOW App, choosing from multiple options.

The purchase of options, organized in credits, is done through traditional sales channels by reaching out to your trusted dealer. Once one or more credits are purchased, they can be exchanged from one user to another. All of this is monitorable and configurable through your account on the Nastec FORMULA portal.



REMOTE KEYBOARD

- Easy and quick panel application of the keyboard, available as an accessory, through high-resistance adhesive.
- OLED graphic display with extended operating temperature range and wide viewing angle.
- Digital rotation of text based on the installation position.
- LED indication for standby, run, and alarm conditions.
- Audible alert in case of alarm.



QUICK ACCESS TO ALL CONNECTIONS

The power and signal terminals are easily accessible from multiple sides on the front of the device, allowing for the organization of wiring inside the panel in the most convenient manner.



UNMATCHED USER EXPERIENCE

Thanks to the Nastec NOW app it is possible to communicate with all Nastec SMART Bluetooth® devices in order to:

- Monitor multiple operating parameters simultaneously on the wide, high-definition colour screen of your smartphone or tablet.
- Develop programs, save them in the archive, copy them to other devices and share them among multiple users.
- Get energy consumption statistics and check the alarm log.
- Remotely control a Nastec device via Wi-Fi or GSM by tethering to a nearby smartphone.
- Create reports with the possibility of adding notes and images, and email or store them in the digital archive.

MULTIPLE CONTROL METHODS:

- Constant pressure control.
- Constant or proportional differential pressure control.
- Constant temperature control.
- Constant differential temperature control.
- Constant flow control.
- Constant level control.
- Control with an external frequency signal or preset at 1 or 2 values.

ADVANCED MOTOR CONTROLS:

- Field Oriented Control (FOC) with motor autotuning.
- Control of next-generation asynchronous motors, both three-phase and single-phase.
- Sensorless control of permanent magnet synchronous motors.

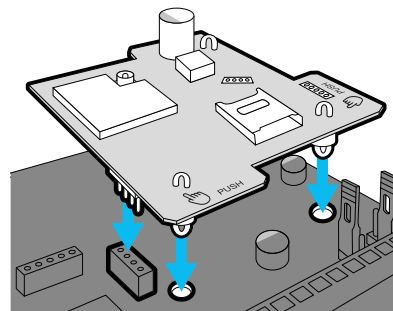
COMBO OPERATION IN A GROUP

- Up to 8 units
- Alternating operation to equalize pump wear.
- Master or slave replacement in case of unit failure to ensure group operation continuity.
- Cascade or synchronous operation.

Alternatively, it is possible to control a variable-speed pump and command up to two fixed-speed DOL pumps with sequential and alternating start.

REMOTE CONTROL VIA WIFI OR GSM

In addition to Bluetooth connectivity for control through a smartphone and app, it is possible to install a Wifi or GSM card onboard the device and manage the system remotely through the **remo.nastec.eu** portal. Therefore, there is no need to install any external communication device or subscribe to expensive telemetry services.



PREDICTIVE ANALYSIS AND REMOTE CONTROL

Through predictive analysis performed by the device during operation, it is possible to intervene before a problem occurs, minimizing intervention and repair costs.

If the device is connected to the Internet, warning or alarm notifications can be sent via email to the concerned users. For this purpose, a quick configuration from the **remo.nastec.eu** portal is sufficient.



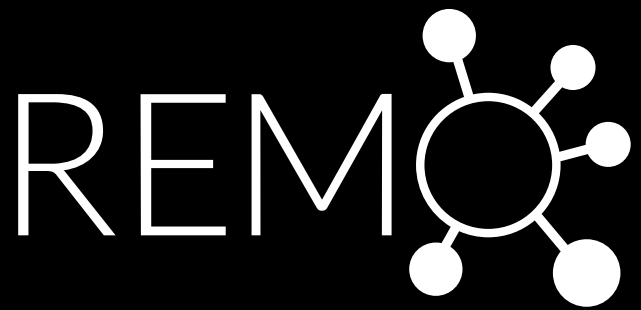
MODBUS RTU AND BACNET CONNECTIVITY AS STANDARD

The device can be connected via the RS485 serial port to external control systems using the MODBUS RTU and BACnet protocols.



ADDITIONAL FEATURES UPON REQUEST

If the application requirements are not met by the standard functionalities, Nastec can offer the implementation of additional features according to customer specifications.



remo.nastec.eu

REMO, the revolutionary Nastec system for remote controlling devices.

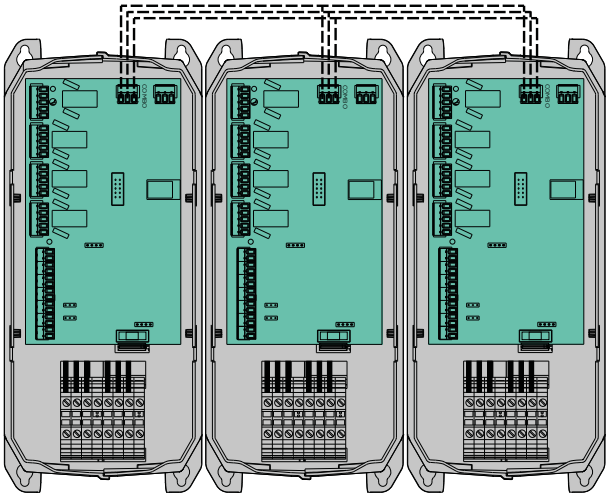
To implement the REMO control system you will need to:

- Install an Android or iOS smartphone nearby Nastec device you wish to control. The smartphone, connected to the network via Wifi or GSM, communicates via Bluetooth with the associated Nastec device.
- Download and install Nastec NOW App on the smartphone, register for free and activate REMO mode on the App.
- From a PC or mobile, access to **remo.nastec.eu** to monitor or program the Nastec device from anywhere in the world.



PARALLEL INSTALLATION

The VENTI inverters can be installed side by side to minimize the space occupied within the panel, as is the case with pressurization groups in COMBO mode.



AUTOMATIC ADAPTATION

In addition to protecting the motor from over-voltages and overloads, the inverter is capable of automatically adapting its performance to power and environmental conditions.

This means that if the ambient temperature or the current absorbed by the motor were to reach the allowed limits, the inverter will automatically limit the motor frequency, ensuring the continuity of operation.

DYNAMIC PARAMETER CONFIGURATION

Changing certain parameters often requires the adjustment of others to ensure the proper functioning of the system. However, it is not always easy to know or remember the existing relationships between all parameters. For this purpose, the device is capable of automatically adjusting secondary parameters based on primary parameters, preventing users from overlooking important details.

DIFFERENTIATED MANAGEMENT OF ALARMS AND WARNINGS

In addition to alarms, which result in motor shutdown, the device notifies the user of possible malfunctions and, where possible and if desired, implements automatic corrections to motor control to prevent system downtime. Both alarms and warnings are stored in the device's history for easy reference over time.

AUXILIARY CONTROL MODE

In some cases, it is necessary to switch from the main control mode (e.g., constant pressure) to the auxiliary mode (e.g., fixed frequency). In such cases, it is sufficient to program the desired auxiliary control mode and act on the dedicated digital input.

CONFIGURABLE ANALOG AND DIGITAL INPUTS

Analog and digital inputs are extensively configurable based on user needs, allowing for versatility to meet the requirements of a wide range of applications.

ALWAYS UPDATED FIRMWARE

To obtain the latest available firmware version, updated with new features and improvements, simply connect to the device via smartphone and follow the guided update process provided by the app.

This ensures that each installation is carried out with the utmost capabilities, or new functions can be added to existing systems.



TECHNICAL SPECIFICATIONS

Model	Vin	Vin	Max V out	Max I out	P2 motor power [kW] *		Size
	VAC	VDC	VAC	A	3x230 VAC	3x400 VAC	
VENTI 412	3 x 190 - 520	190 - 850	3 x Vin	4 (basic) 6 (attivabile) 9 (attivabile) 12 (attivabile)	0,75 1,1 2,2 3	1,1 2,2 4 5,5	1

* Typical motor power. It is recommended to refer to the rated motor current when selecting the suitable model.

MAIN BASIC FUNCTIONALITIES AND THOSE ACTIVATABLE THROUGH NASTEC FORMULA

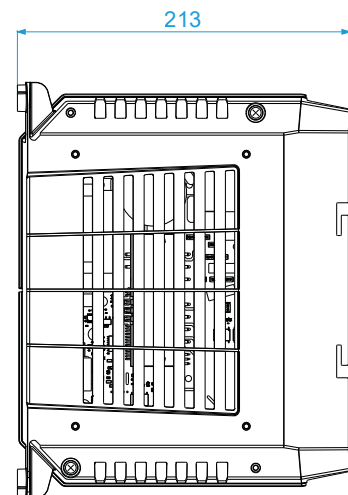
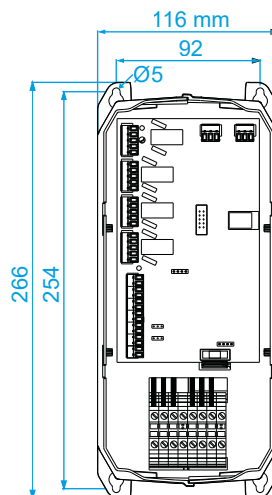
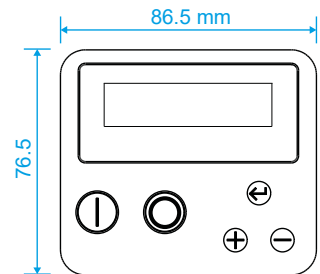
VENTI 412	Basic	Activatable via App
Maximum motor current	4 A	<ul style="list-style-type: none"> • 6 A • 9 A • 12 A
Control mode	<ul style="list-style-type: none"> • Fixed frequency • Fixed frequency at 2 values • External frequency 	<ul style="list-style-type: none"> • Constant value • Constant value at 2 values • MPPT
Motor control	FOC for three-phase asynchronous motors	FOC for permanent magnet synchronous motors
Connectivity	Bluetooth SMART	<ul style="list-style-type: none"> • Modbus RTU RS485 • BACnet RS485
Group operation	No	COMBO

The keyboard with OLED display is available as an accessory with a 2-meter cable.

Nastec is able to offer a wide range of accessories, including pressure sensor, differential pressure sensor, flow sensor, temperature sensor, as well as shielded cables, input and output filters.

GENERAL SPECIFICATIONS

- Rated frequency: 50 - 60 Hz (+/- 2%)
- Energy Efficiency Class (EN61800-9-2): IE2
- Relative humidity in the working environment: 5 - 95% non-condensing
- Operating ambient temperature: from -10 °C (14 °F) to 60 °C (140 °F)
- Maximum operating ambient temperature at full load: 50°C (122 °F)
- Maximum altitude at full load: 1000 m
- Degree of protection: IP20 (NEMA 1)
- Required degree of protection for the panel: IP54 (NEMA 12) or higher.
- Settable digital outputs N.O. or N.C.:
 1. Motor run signal
 2. Alarm signal
 3. DOL 1 pump
 4. DOL 2 pump
- Analog inputs, (10 o 15 VDC):
 1. 4-20 mA
 2. 4-20 mA
 3. 4-20 mA o 0 - 10 VDC
 4. 4-20 mA o 0 - 10 VDC
- 4 digital inputs, configurable N.O. or N.C. for motor run/stop
- RS485 MODBUS RTU, BACnet Bluetooth® SMART



nastec.eu



We were born in 2007 with over 30 years of previous experience in water pumps.

We develop products dedicated to specific applications. We don't claim to do everything, but we strive to do the best at what we do.

We pay attention to details.

We love manufacturing and encourage every form of repair. That's why we offer spare parts.

We update our products while maintaining compatibility with the past.

We support our customers always and by every possible means.

We are global in sales but local in assistance.

Our mission? To make pumping systems intelligent, efficient, and connected.

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