




# VASCO technical specifications

									
<b>VASCO</b>		<b>209</b>	<b>214</b>	<b>406</b>	<b>409</b>	<b>414</b>	<b>418</b>	<b>425</b>	<b>430</b>
Input	Voltage	1 x 230 VAC +/- 15%			3 x 380 – 460 VAC +/- 15%				
				<b>306</b>	<b>309</b>	<b>314</b>	<b>318</b>	<b>325</b>	<b>330</b>
Input	Voltage				3 x 230 VAC +/- 15%				
	Frequency	48-62 Hz							
	Raccomended Circuit breaker Type C	20 A	25 A	10 A	16 A	20	25	32	40
	Raccomended Residual Current Device	Pulse Sensitive RCD			AC/DC sensitive RCD				

<b>Output</b>	<b>Max Voltage</b>	1 x V in	3 x Vin	1 x Vin	3 x Vin	3 x Vin					
	<b>Frequency</b>	0 -300 Hz									
	<b>Current</b>	9 A	7 A	9 A	11 A	6 A	9 A	14 A	18 A	25 A	30 A
	<b>Typical motor power [P2]</b>	1.1 kW 3x230VAC	1.5 kW 3x230VAC	1.1 kW 3x230VAC	3 kW 3x230VAC	2.2 kW 3x400VAC	4 kW 3x400VAC	5.5 kW 3x400VAC	7.5 kW 3x400VAC	11 kW 3x400VAC	15 kW 3x400VAC
						1.1 kW 3x230VAC	1.5 kW 3x230VAC	3 kW 3x230VAC	4 kW 3x230VAC	5.5 kW 3x230VAC	7.5 kW 3x230VAC
	<b>Overload Capacity</b>	101 % for 10 min , 110% for 1 min									
<b>Dimensions</b>		180x180x225 mm						260x260x180 mm			
<b>Ambient Conditions</b>	<b>Operating Temperature</b>	0 - 40°C (104 °F)									
	<b>Max Altitude</b>	1000 m									
	<b>Humidity</b>	95% max, non condensing									
<b>Enclosure</b>	<b>Material</b>	Die-casted Allumium, Stainless Steel AISI 304, PA, PE, PVC									

	<b>Protection Degree</b>	IP55, NEMA 4 (Indoor only)
EMC (EN55011)	<b>with internal filter</b>	Class A (industrial environment)
	<b>with external filter</b>	Class B (domestic environment)
Certifications	CE	
Cooling	Forced air	
Protections	<b>Overvoltage, Undervoltage, Overload inverter, Motor Overcurrent, No load, Dry running, Overtemperature, Sensor alarm</b>	
Mounting	<b>Motor onboard</b>	Fixed on motor fan cover by 4 inox straps. VASCO is cooled by motor fan.
	<b>Wall mounted</b>	Fixed to the wall by special supports. Fans powered and controlled by VASCO.
Display	<b>2 x 16 characters backlit display</b>	
Keypad	<b>start, stop, up, down, enter</b>	
Software	<b>Languages</b>	Italian, English, Spanish, Deutsch, French, Polish
	<b>Parameters menù</b>	Installer and Advanced

	<b>Passwords</b> <b>Programming protections</b>	Yes, 2 user changeable passwords
Multiple pumps operation	<b>DOL pumps cascade relay</b>	One inverter controlling a pump + 1 or 2 alternating starting DOL pumps
	<b>Variable speed pumps cascade serial</b>	Up to 8 inverters, each one controlling a pump, connected by RS485
	<b>Alternance</b>	Yes. Starting priority based on effective pump running hours.
	<b>Slave inverter replacement</b>	Yes. when a slave invert goes off-line another inverter can take its place.
	<b>Master Replacement</b>	Yes. when master inverter goes off.line, first slave inverter can take its place.
	<b>Autorestart</b>	Yes, settable as ON or OFF
Max motor frequency	<b>Yes.</b>	
Min motor frequency	<b>Yes.</b>	
Ramps	<b>acceleration</b>	Settable ramp from 0 to minimum motor frequency.

		Settable ramp minimum motor frequency to maximum motor frequency.
	<b>deeleration</b>	Settable ramp from maximum motor frequency to minimum motor frequency. Settable ramp from minimum motor frequency to 0 Hz.
Autoadjusting max motor frequency.	<b>Yes. Based on max inverter current.</b>	
PI Control	<b>Yes. Direct / Inverse.</b>	
Setpoint control	<b>Digital by software or analog by 4-20 mA or 0-10 V trimmer</b>	
No flow stopping detection	<b>By software, based on minimum frequency</b>	
Dry running protection	<b>Software</b>	Yes, based on P.F.
	<b>Float switch</b>	Yes.
Analog inputs	<b>2 inputs 4-20 mA + 2 inputs 4-20 mA / 0-10V (settable by jumper)</b>	
Digital inputs	<b>4 inputs N.0 or N.C (settable by software)</b>	

Relays	<b>Alarm</b>	Yes. N.O. or N.C. 12 VDC, 250 VAC, 5 A
	<b>Motor Run</b>	Yes. N.O. or N.C. 12 VDC, 250 VAC, 5 A
	<b>D.O.L. 1 pump</b>	Yes. N.O. or N.C. 12 VDC, 250 VAC, 5 A
	<b>D.O.L. 2 pump</b>	Yes. N.O. or N.C. 12 VDC, 250 VAC, 5 A
Connectable sensors	<b>2 sensors 4-20 mA</b>	
Sensors voltage supply	<b>15 VDC</b>	
Auxiliary power supply	<b>15 VDC, max 100 mA</b>	
PWM	<b>Settable as 2.5, 4, 6, 8, 10 kHz</b>	
Sensors switching	<b>Yes, by digital input</b>	
Control Modes	<b>Constant Value</b>	
	<b>Constant value</b>	Switchable by digital input

	<b>with 2 values</b>	
	<b>Fix speed</b>	
	<b>Fix speed with 2 values</b>	Switchable by digital input
	<b>External Frequency</b>	By 4-20 mA or 0-10 V trimmer
Sensors difference	<b>Yes, digitally made</b>	
V/f control	<b>V/f curve settable from linear to quadratic</b>	
Stand-by hours timer	<b>Yes</b>	
Running hours timer	<b>Yes</b>	
Alarms hystory	<b>Yes, last 5 alarms</b>	