VASCO technical specifications

		209	214	406	409	414	418	425	430
Input	**Voltage**	1 x 230 VAC +/- 15%		3 x 380 – 460 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					
Output	**Max Voltage**	1 x V in	3 x Vin	1 x Vin	3 x Vin	3 x Vin			

	Frequency	0 -300 Hz									
	Current	9 A	7 A	9 A	11 A	6 A	9 A	14 A	18 A	25 A	30 A
	Typical motor power [P2]	1.1 kW	1.5 kW	1.1 kW	3 kW	2.2 kW	4 kW	5.5 kW	7.5 kW	11 kW	15 kW
	Overload Capacity	101 % for 10 min , 110% for 1 min									
Dimensions		180x180x225 mm						260x260x180 mm			
Ambient Conditions	Operating Temperature	0 - 40°C (104 °F)									
	Max Altitude	1000 m									
	Humidity	95% max, non condening									
Enclosure	Material	Die-casted Allumium, Stainless Steel AISI 304, PA, PE, PVC									
	Protection Degree	IP55, NEMA 4 (Indoor only)									
EMC (EN55011)	with internal filter	Class A (industrial environment)									

	with external filter	Class B (domestic environment)
Certifications	CE	
Cooling	Forced air	
Protections	Overvoltage, Undervoltage, Overload inverter, Motor Overcurrent, No load, Dry running, Overtemperature, Sensor alarm	
Mounting	Motor onboard	Fixed on motor fan cover by 4 inox straps. VASCO is cooled by motor fan.
	Wall mounted	Fixed to the wall by special supports. Fans powered and controlled by VASCO.
Display	2 x 16 characters backlit display	
Keypad	start, stop, up, down, enter	
Software	Languages	Italian, English, Spanish, Deutsch, French, Polish
	Parameters menù	Installer and Advanced
	Passwords Programming protections	Yes, 2 user changeable passwords
Multiple pumps	DOL pumps cascade relay	One inverter controlling a pump + 1 or 2 alternating starting DOL pumps

operation		
	Variable speed pumps cascade serial	Up to 8 inverters, each one controlling a pump, connected by RS485
	Alternance	Yes. Starting priority based on effective pump running hours.
	Slave inverter replacement	Yes. when a slave invert goes off-line another inverter can take its place.
	Master Replacement	Yes. when master inverter goes off.line, first slave inverter can take its place.
	Autorestart	Yes, settable as ON or OFF
Max motor frequency	**Yes.**	
Min motor frequency	**Yes.**	
Ramps	**acceleration**	Settable ramp from 0 to minimum motor frequency. Settable ramp minimum motor frequency to maximum motor frequency.
	deleration	Settable ramp from maximum motor frequency to minimum motor frequency. Settable ramp from minimum motor frequency to 0 Hz.
Autoadjusting	**Yes. Based on max inverter current.**	

max motor frequency.		
PI Control	**Yes. Direct / Inverse.**	
Setpoint control	**Digital by software or analog by 4-20 mA or 0-10 V trimmer**	
No flow stopping detection	**By software, based on minimum frequency**	
Dry running protection	**Software**	Yes, based on P.F.
	Float switch	Yes.
Analog inputs	**2 inputs 4-20 mA + 2 inputs 4-20 mA / 0-10V (settable by jumper)**	
Digital inputs	**4 inputs N.0 or N.C (settable by software)**	
Relays	**Alarm**	Yes. N.O. or N.C. 12 VDC, 250 VAC, 5 A
	Motor Run	Yes. N.O. or N.C. 12 VDC, 250 VAC, 5 A
	D.O.L. 1 pump	Yes. N.O. or N.C. 12 VDC, 250 VAC, 5 A

	D.O.L. 2 pump	Yes. N.O. or N.C. 12 VDC, 250 VAC, 5 A
Connectable sensors	**2 sensors 4-20 mA**	
Sensors voltage supply	**15 VDC**	
Auxiliary power supply	**15 VDC, max 100 mA**	
PWM	**Settable as 2.5, 4, 6, 8, 10 kHz**	
Sensors switching	**Yes, by digital input**	
Control Modes	**Constant Value**	
	Constant value with 2 values	Switchable by digital input
	Fix speed	
	Fix speed with 2 values	Switchable by digital input

	External Frequency	By 4-20 mA or 0-10 V trimmer
Sensors difference	**Yes. digitally made**	
V/f control	**V/f curve settable from linear to quadratic**	
Stand-by hours timer	**Yes**	
Running hours timer	**Yes**	
Alarms hystory	**Yes, last 5 alarms**	