

VSD

WATER SOLUTIONS



FREQUENCY CHANGER
STARITE.IT

VSD

VARIABLE SPEED DRIVE

VSD (Variable Speed Drive)

is a static frequency converter that controls the speed of an electric pump to maintain constant pressure even when water demand changes. This regulation is possible through a pressure sensor and a flow sensor connected to the inverter. Main benefits of VSD installation are:

- Energy saving
- Constant output pressure with increase of comfort for the end user
- Silent operation

SAFETY AND PROTECTION SYSTEMS

- Control and safety system against dry-running
- Control and safety system against over-current
- Control and safety system against short-circuit between output phases
- Control and safety system against overvoltage or undervoltage

OPERATING FEATURES

- Inverter for a single pump
- Frequency Hz: 50/60
- Protection index: IP55
- Max water temperature °C: 40
- Max environment temperature °C: 50
- ART System (Automatic Reset Test): if the device has been stopped due to the action of the safety system against dry operation, ART system tries to restore the water supply, through regularly scheduled reboots
- Automatic restore system after an interruption of power supply. The system keeps the same configuration as before the stop of the device

VERSIONI

- **VSD Easy** is a device that controls single-phase or three-phase pumps. Easy to install and to setup, you just need to select the pressure set point. The power supply of the device is single-phase 230V
- **VSD** is a device for the control of three-phase pumps, it's able to communicate with another identical device through the installation of a cable. The power supply of the device can be single-phase 230V or three-phase 400V, depending on the model



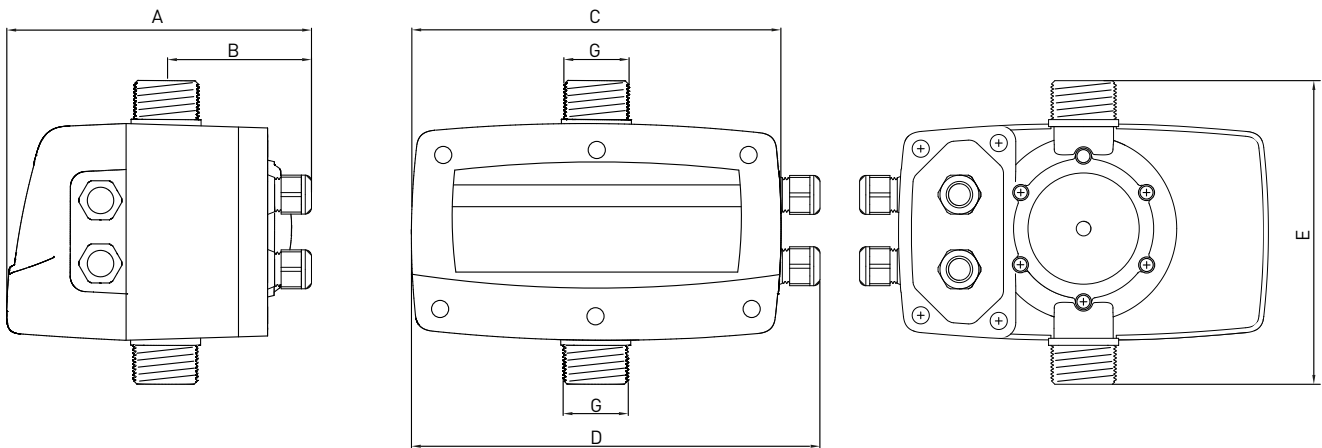
- Inner pressure transducer
- Inner current sensor
- Inner flow sensor
- Control panel with LCD display
- Regular check of working cycle: information about working hours, counters of starts, counters of connections to the power grid
- Register of alarms: all types and numbers of the alarms that have been produced, are stored in the device

FEATURES ONLY RELATED TO VSD M/T AND T/T MODELS

- Only VSD M/T or T/T models can be assembled together with another identical device, in MASTER-SLAVE operating mode. The device configured as MASTER is the responsible of the control. The operating system works in alternate or parallel mode
- Free contact to track the alarm signals displayed on the screen, coming from failures or problems in the system
- Additional contact for the detection of the minimum water level in the suction tank, its use is optional and independent from the dry-running protection system

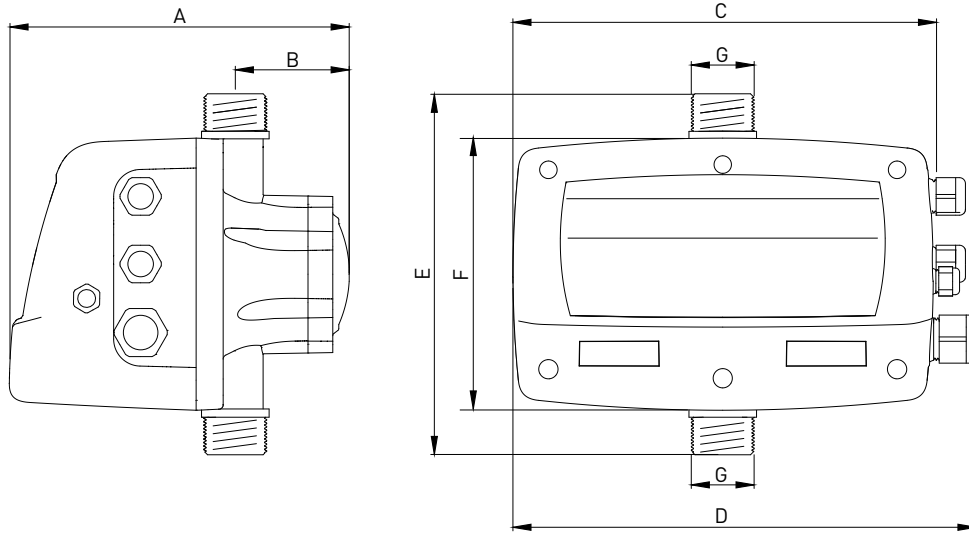
TECHNICAL FEATURES

MODEL	Power supply voltage (V)	Pump current (V)	Max current per phase (A)	Booster set configuration	Range of set pressure (bar)	Max operating pressure (bar)	Max flow (m ³ /h)
VSD EASY 9 M/M	1-230	1-230	9	NO	1-8	16	10
VSD EASY 6 M/T	1-230	3-230	6	NO	1-8	16	10
VSD EASY 10 M/T	1-230	3-230	10	NO	1-8	16	10
VSD 6 M/T	1-230	3-230	6	YES	0,5-12	16	10
VSD 10 M/T	1-230	3-230	10	YES	0,5-12	16	10
VSD 9 T/T	3-400	3-400	9	YES	0,5-12	16	15
VSD 14 T/T	3-400	3-400	14	YES	0,5-12	16	25

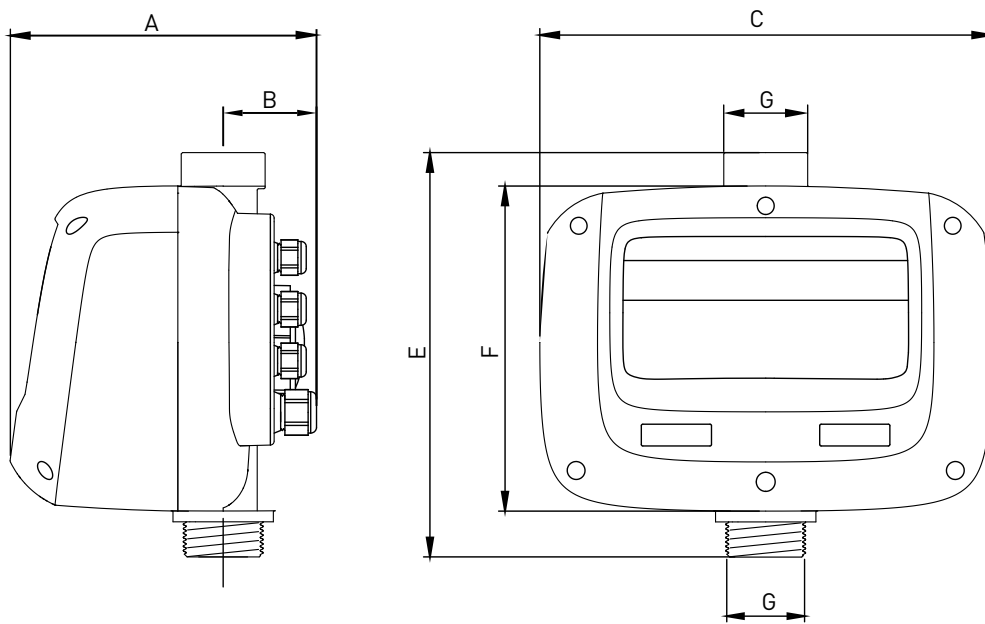


OVERALL DIMENSIONS AND WEIGHTS

MODEL	Dimensions mm.						Weight (Kg)
	A	B	C	D	E	F	
VSD EASY 9 M/M	196	93	237	262	196	1" 1/4	2,5
VSD EASY 6 M/T	196	93	237	262	196	1" 1/4	2,5
VSD EASY 10 M/T	196	93	237	262	196	1" 1/4	2,5
VSD 6 M/T	196	93	237	262	196	1" 1/4	2,7
VSD 10 M/T	196	93	237	262	196	1" 1/4	2,7

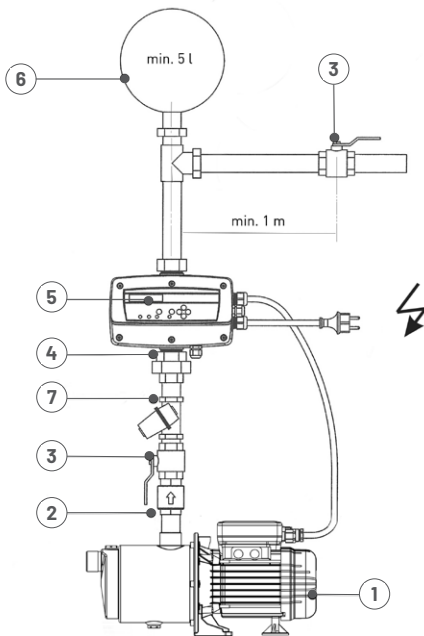


MODEL	Dimensions mm.							Weight (Kg)
	A	B	C	D	E	F	G	
VSD 9 T/T	226	76	280	~310	240	181	1" 1/4	4,3



MODEL	Dimensions mm.						Weight (Kg)
	A	B	C	D	E	F	
VSD 14 T/T	238	72	350	313	252	2"	6,1

INSTALLATION



1. Pump
2. Check valve
3. Ball valve
4. Joint with rapid connection
5. VSD
6. Expansion tank
7. Filter

NOTES

Accessories 3, 4 and 7 are recommended but not mandatory.
In case of expansion tank 6, its use is recommended when you want to avoid water hammer.

POSSIBLE CONFIGURATION OF VSD WITH ELECTRIC PUMPS

MODEL	VSD EASY 9 M/M	VSD EASY 6 M/T	VSD EASY 10 M/T	VSD 6 M/T	VSD 10 M/T	VSD 9 T/T	VSD 14 T/T
PRATIKA	•						
DOMINATOR 4	•						
DOMINATOR 5	•	•		•		•	
SCM4 PLUS	•	•		•		•	•
MULTINOX VE+	•	•	•	•	•	•	
DHR	•	•	•	•	•	•	•
MULTINOX-XC	•	•		•		•	
MCX	•	•	•	•	•	•	
MAX	•	•		•			
MULTINOX - A	•	•	•	•	•	•	
JET / JETINOX	•	•		•			
MULTIEVO	•	•	•	•	•	•	
PVM / PVMI / PVMX	•	•	•	•	•	•	•

Select the right pump according to power and current. If the power cord is extended for the motor output, connect the mains filter in order to comply with the regulations on electromagnetic emission.
For correct operation the mains filter must be installed close to the VSD.

The technical specifications shown in this catalogue are given as an indication and may differ from the actual specifications. Should it be deemed necessary, Pentair reserves the right to amend the characteristics described without any prior notice.



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