

NOCCHI VSD VARIABLE SPEED DRIVE

VSD 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



VERSIONS

- **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.

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.
- 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

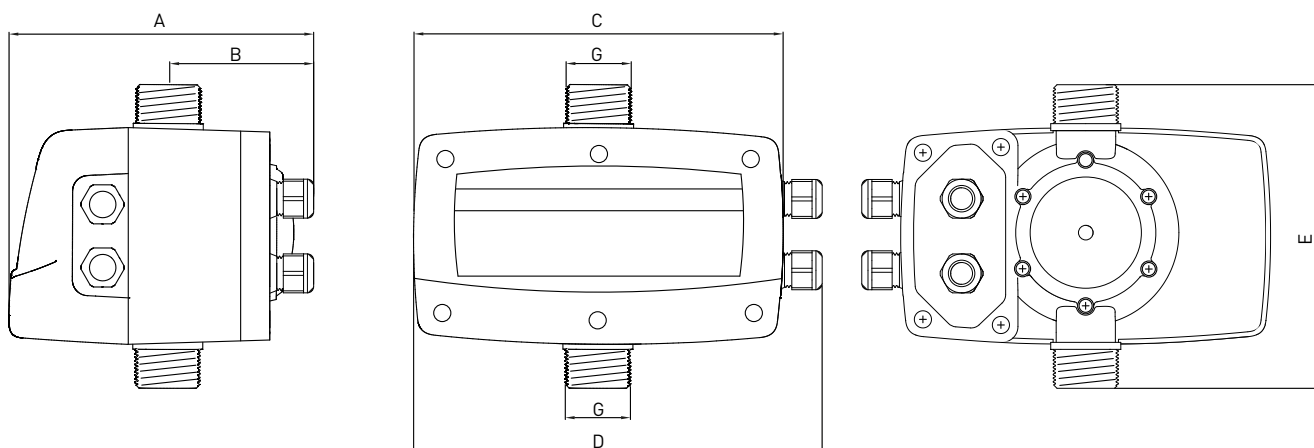
- Only VSD M/T or T/T models can be assembled together with another identical device, in MASTER-SLAVE operating mode. The device configured as MASTER is the responsible of the control. The operating system works in alternate or parallel mode.
- Free contact to track the alarm signals displayed on the 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.

NOCCHI VSD

FREQUENCY CHANGER

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 |



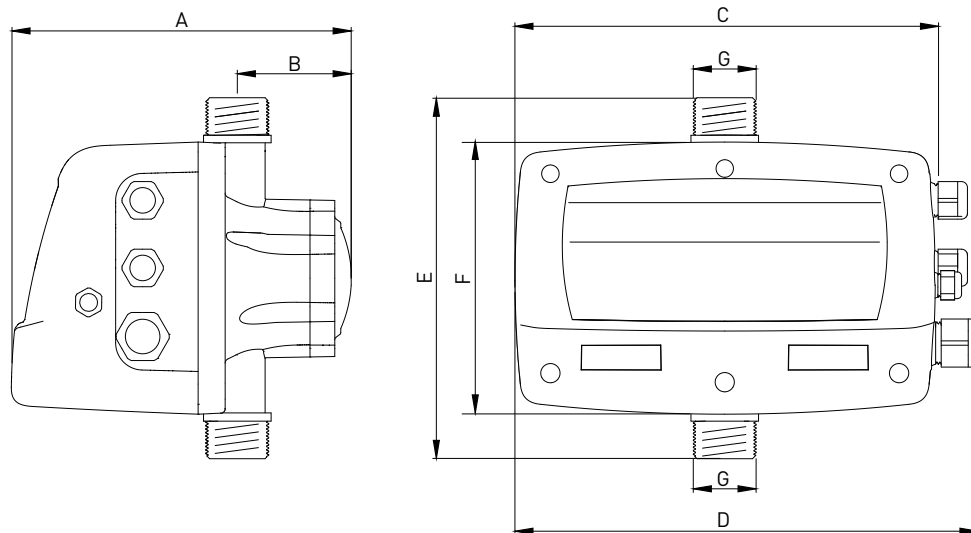
OVERALL DIMENSIONS AND WEIGHTS

| MODEL | Dimensions (mm) | | | | | | Weight (Kg) |
|-----------------|-----------------|----|-----|-----|-----|--------|-------------|
| | A | B | C | D | E | G | |
| 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 |

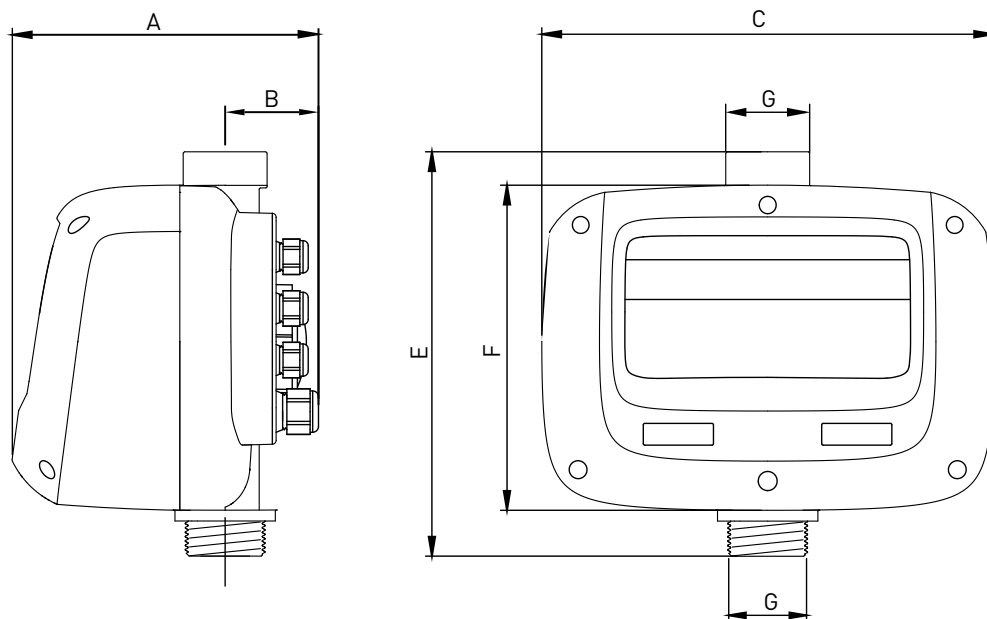
NOCCHI VSD

FREQUENCY CHANGER

OVERALL DIMENSIONS AND WEIGHTS



| 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 |

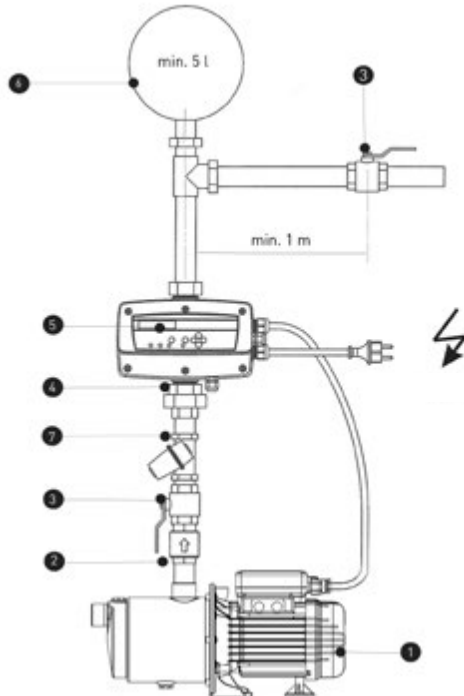


| MODEL | Dimensions (mm) | | | | | | Weight (Kg) |
|------------|-----------------|----|-----|-----|-----|----|-------------|
| | A | B | C | E | F | G | |
| VSD 14 T/T | 238 | 72 | 350 | 313 | 252 | 2" | 6,1 |

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FREQUENCY CHANGER

INSTALLATION



NOTES:

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

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

POSSIBLE CONFIGURATION OF VSD WITH ELECTRIC PUMPS

| MODELLI | 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 | • | • | | • | | | |
| MULTI EVO | • | • | • | • | • | • | |
| 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.