

HYDROVAR FREQUENCY CONVERTERS

SVH PUMPS
FCEH PUMPS



APPLICATIONS

- Pressure regulation in the water systems of civil, residential and industrial buildings.
- Handling of liquids in conditioning systems where it is necessary to boost pressure in pipes with excessive flow resistance.
- Water treatment and process engineering for constant delivery when pressure variations occur.

SPECIFICATIONS

- **Single phase** models:

Hydrovar HV 2/.. Series

Power: 1.5 - 2.2 kW.

Mains voltage U: 1x230 V \pm 15%, 40-60 Hz

Motor voltage U1: 3x230 V 50-60 Hz

- **Three-phase** models:

Hydrovar HV 3/.. series

Power: 2.2 - 45 kW.

Mains voltage U: 3x400 V \pm 15%, 40-60 Hz.

Motor voltage U1: 3x400 V 50-60 Hz.

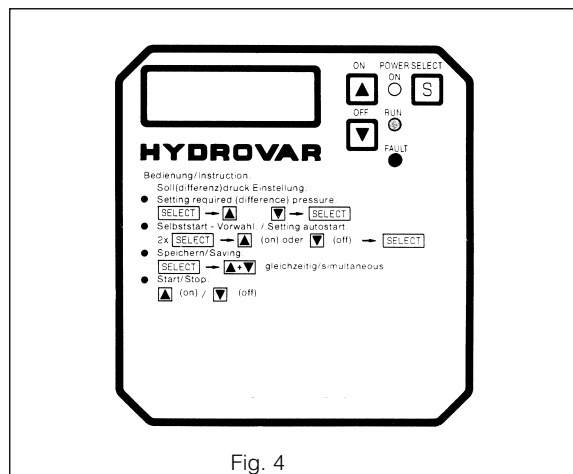
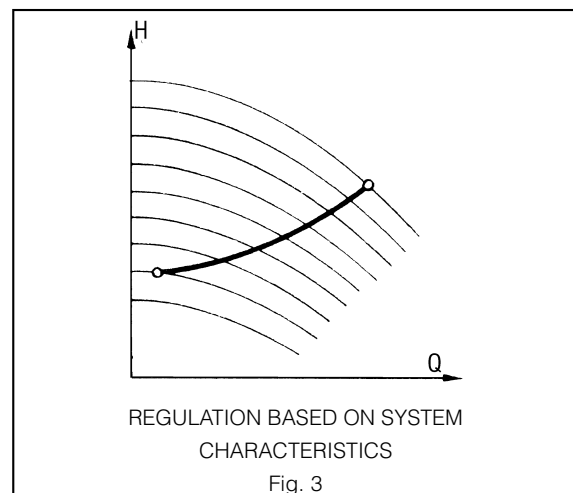
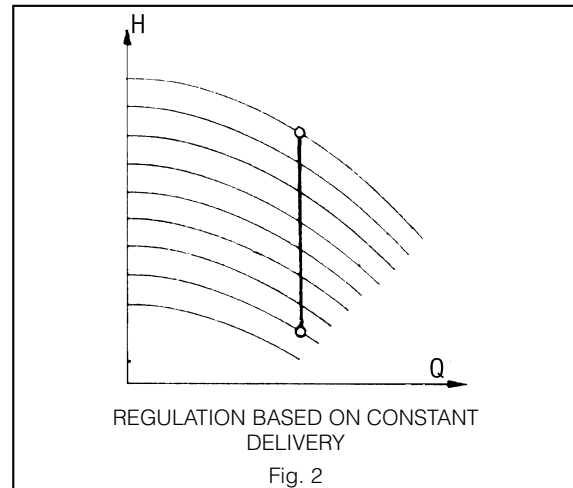
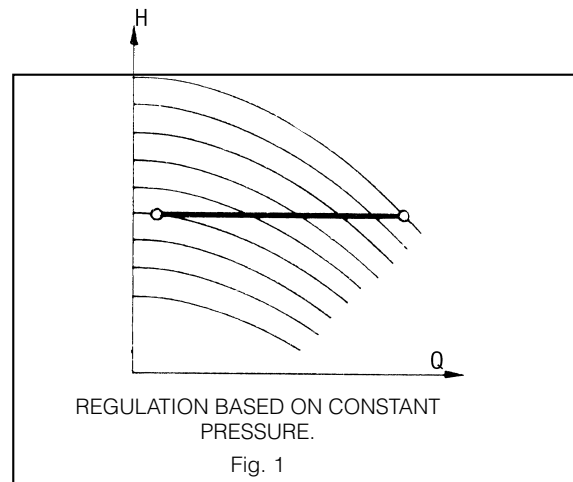
- Ambient **temperature 5°C to 40°C.**
- 50% humidity at 40°C.
- **IP 54 protection.**
- Built-in anti-condensate device.
- **Designed to connect up to 4 Hydrovars.**
- Individually interface with a computer through an **RS485 system.**
- Display with directions in **7 selectable languages.**



THE TECHNOLOGY

CONTROL AND REGULATION

- The HYDROVAR integrated frequency converter features automatic regulation of the speed of an asynchronous three-phase electric motor, by interpreting either a pressure or a differential pressure or a delivery signal (Fig. 1 and 2). A patented control system disconnects the pump in case of a decrease in user demand.
- The pump delivery is detected indirectly through the speed, enabling the pressure, or the differential pressure, to be regulated according to the rate of consumption, based on the pre-set system characteristic parameters (Fig. 3).
- Besides the autonomous regulation possibilities described above, the pump with the HYDROVAR device can also be connected to an external system on which the regulation parameters must be set.
- The HYDROVAR device is equipped with connection terminals for remote start and stop, for operating and failure signals, and for the transmission of an analogue signal (speed or actual value of the regulation signal) to a central control station. It is also equipped with an RS 485 interface connection for communication with a central process control system.
- To prevent access and tampering by unauthorized personnel, the set parameters can be partially or fully protected by password. The activation or deactivation of the pump and the setting of the required parameters are obtained directly through the command keys, with messages appearing on the frequency converter's LCD display. Three differently coloured diode indicator lights signal "ON", "RUN" and "FAULT" (Fig. 4). Seven different languages can be selected for the information appearing on the display.
- In case of coupled systems, the microprocessor contained in each regulation unit automatically controls the pumps' sequential operation based on system requirements. It also controls their cyclic connection in series and automatic switch in case of malfunction, without requiring any supplementary control devices.
- The frequency converter supplies a sinusoidal evaluation output voltage, modulated by impulse length. It operates with controlled synthesis of the sinusoidal current and dynamic current limitation. The high 8 kHz impulse frequency prevents the development of undesired motor noise. With the harmonic filter any reactions in the low voltage areas are avoided (in compliance with EN 55011/91, cl.B). The cooling of the frequency converter is ensured by the pump motor fan or, in the wall-mounted version, the fan located in its base.





WALL-MOUNTED HYDROVAR

DESCRIPTION

Hydrovar frequency converter, as described above, with a wall-mounting plate, cooled by a suitable pre-assembled fan.

CHARACTERISTICS

- **Available power: 1.1 to 45 kW**
- Models/mains voltage and motor: see Hydrovar specifications.
- **Maximum permissible length of shielded cable** for motor-Hydrovar connection: **20 m** up to **100 m** with additional device.

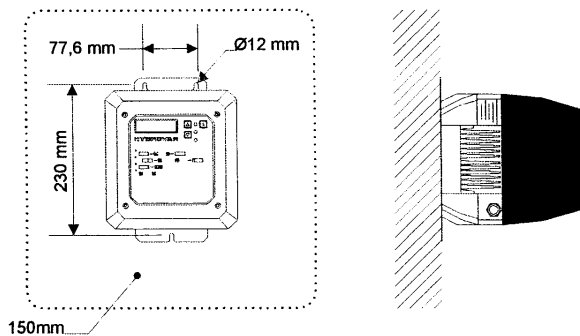
AVAILABLE MODELS

TYPE	RATED POWER kW	MAXIMUM CURRENT A	SUPPLY VOLTAGE V	MOTOR VOLTAGE V
HV 2.1 W	1,5	7	1 x 230	3 x 230
HV 2.2 W	2,2	9	1 x 230	3 x 230
HV 3.2 W	2,2	5	3 x 400	3 x 400
HV 3.3 W	3	7	3 x 400	3 x 400
HV 3.4 W	4	9	3 x 400	3 x 400
HV 3.5 W	5,5	12	3 x 400	3 x 400
HV 3.7 W	7,5	15	3 x 400	3 x 400
HV 3.11 W	11	22	3 x 400	3 x 400

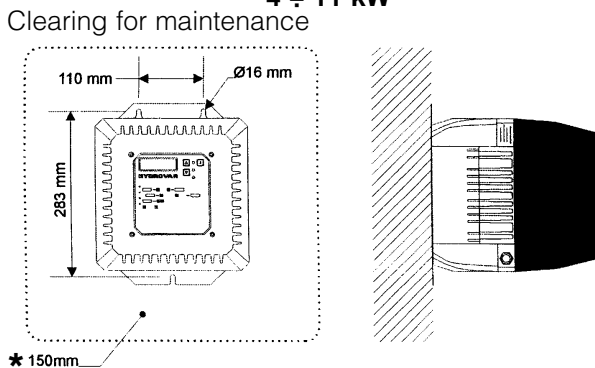
TYPE	RATED POWER kW	MAXIMUM VOLTAGE (A)
HV 3.30 W	30	58
HV 3.37 W	37	71
HV 3.45 W	45	85

DIMENSIONS

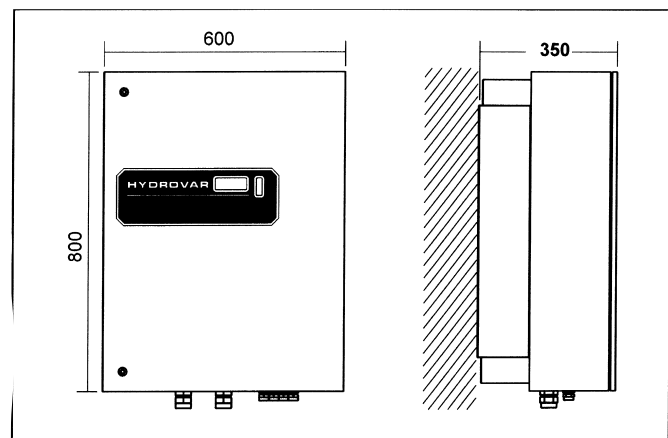
1,5 ÷ 3 kW



4 ÷ 11 kW



30 ÷ 45 kW



SVH MULTISTAGE PUMPS

DESCRIPTION

- SSV series multi-stage vertical centrifugal pumps (see specific section in this catalogue) with in-line suction and delivery ports. Stainless steel impeller, diffuser and pump body.
- Static frequency converter mounted directly on the motor, with forced cooling provided by the motor fan.
- Pressure transmitter for regulation based on system characteristics, in the standard version.

TECHNICAL DATA

Single-phase models:

- Power: 1.5 - 2.2 kW.
Mains voltage U: 1x230 V \pm 15%, 40-60 Hz.
Motor voltage U1: 3x230 V 50-60 Hz.

Three-phase models

- Power: 2.2 - 22 kW.
Mains voltage U: 3x400 V \pm 15%, 40-60 Hz.
Motor voltage U1: 3x400 V 50-60 Hz.
- **Max. delivery: 72 m³/h.**
- **Max. head: 247 m.**
- **See specific catalogues or contact the Lowara sales network for more information on the performance and dimensions of the various models.**



FCEH IN-LINE PUMPS

DESCRIPTION

- SFC series in-line centrifugal pumps (see specific section in this catalogue) with in-line suction and delivery ports.
- Static frequency converter mounted directly on the motor, with forced cooling provided by the motor fan.
- Pressure transmitter for regulation based on system characteristics, in the standard version.

TECHNICAL DATA

Single-phase models:

- Power: 1.5 - 2.2 kW.
Mains voltage U: 1x230 V \pm 15%, 40-60 Hz.
Motor voltage U1: 3x230 V 50-60 Hz.

Three-phase models:

- Power: 2.2 - 22 kW.
Mains voltage U: 3x400 V \pm 15%, 40-60 Hz.
Motor voltage U1: 3x400 V 50-60 Hz.
- **Max. delivery: 190 m³/h.**
- **Max. head: 90 m.**
- **See specific catalogues or contact the Lowara sales network for more information on the performance and dimensions of the various models.**

