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Increased flexibility and control with new generation HYDROVAR®



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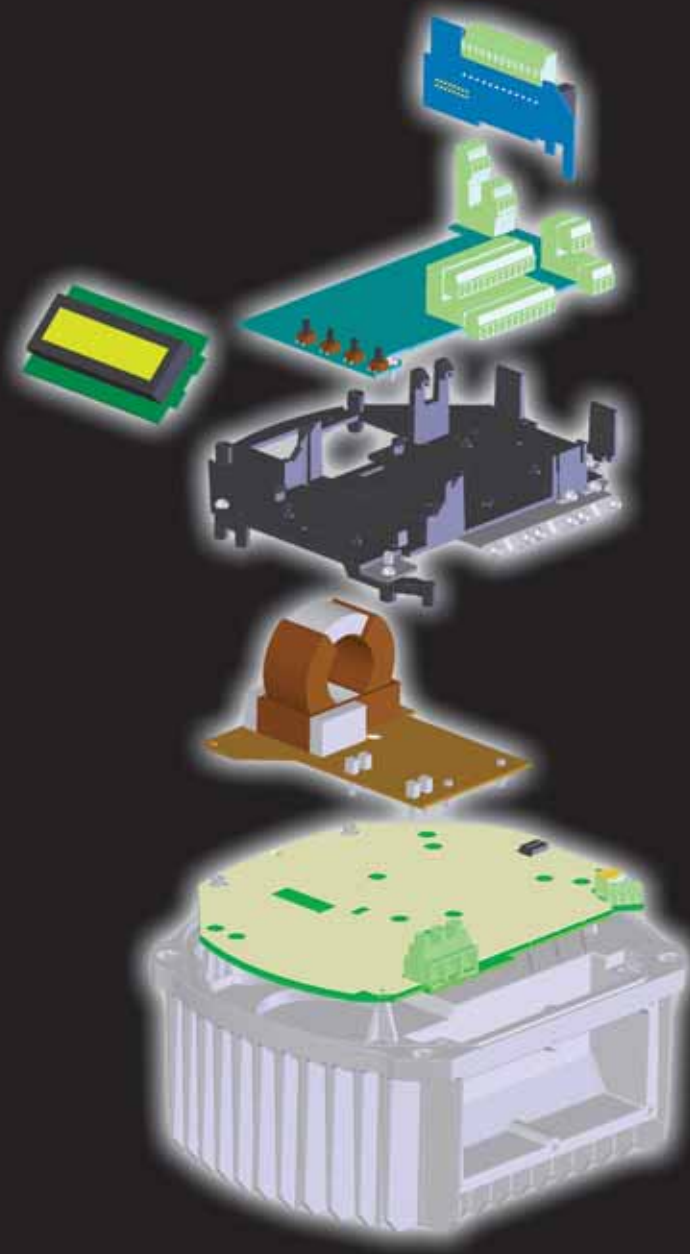
A new generation of Hydrovar variable speed pump drive is taking pumping to a new level of flexibility and efficiency.

- Motor mounted
- More flexibility
- Cost savings
- New Hardware design
- Improved Software structure
- Energy savings up to 70%
- Simple mounting "clip & work"
- Multipump capability up to 8 pumps
- Enclosure IP 55

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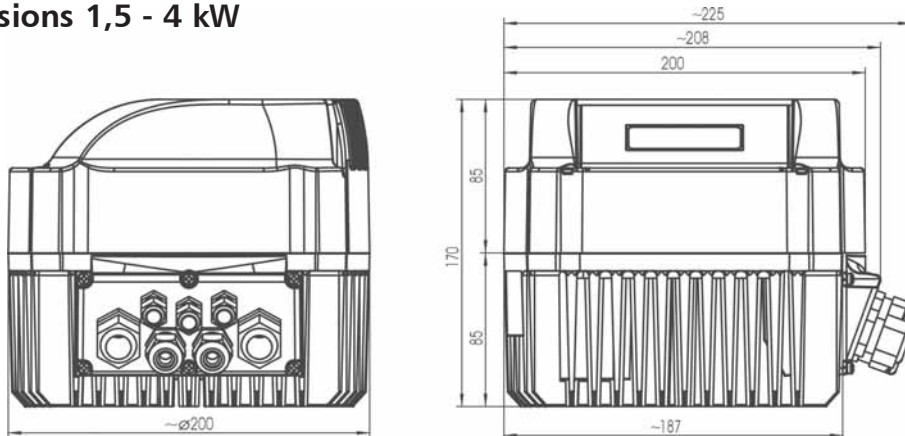
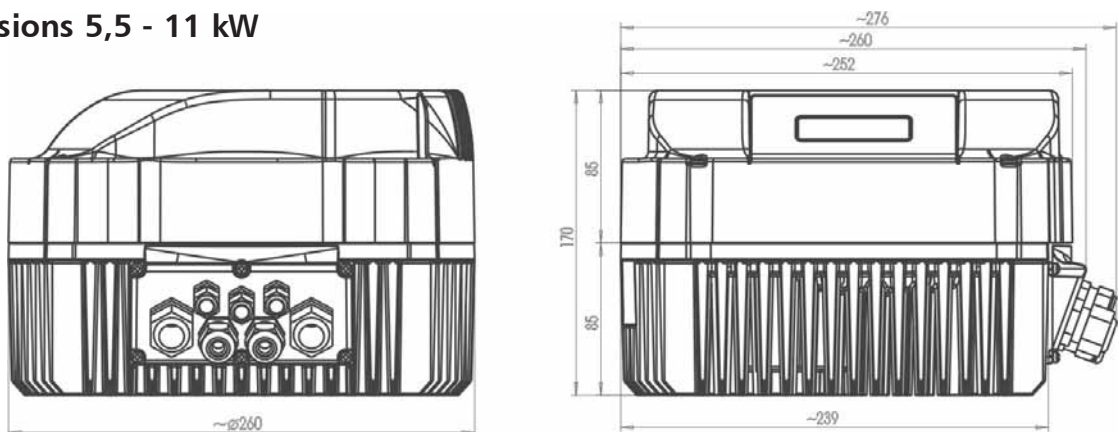
Hydrovar's unique modular design needs no additional master control and enables virtually any configuration of pumps: up to 8 master drives or a mix of master and slave drives.

This is the long-awaited solution for high-level installations requiring failsafe systems with a superior range of features, while its modularity also provides a cost-effective solution for low-level, reduced feature demands.



Technical Data

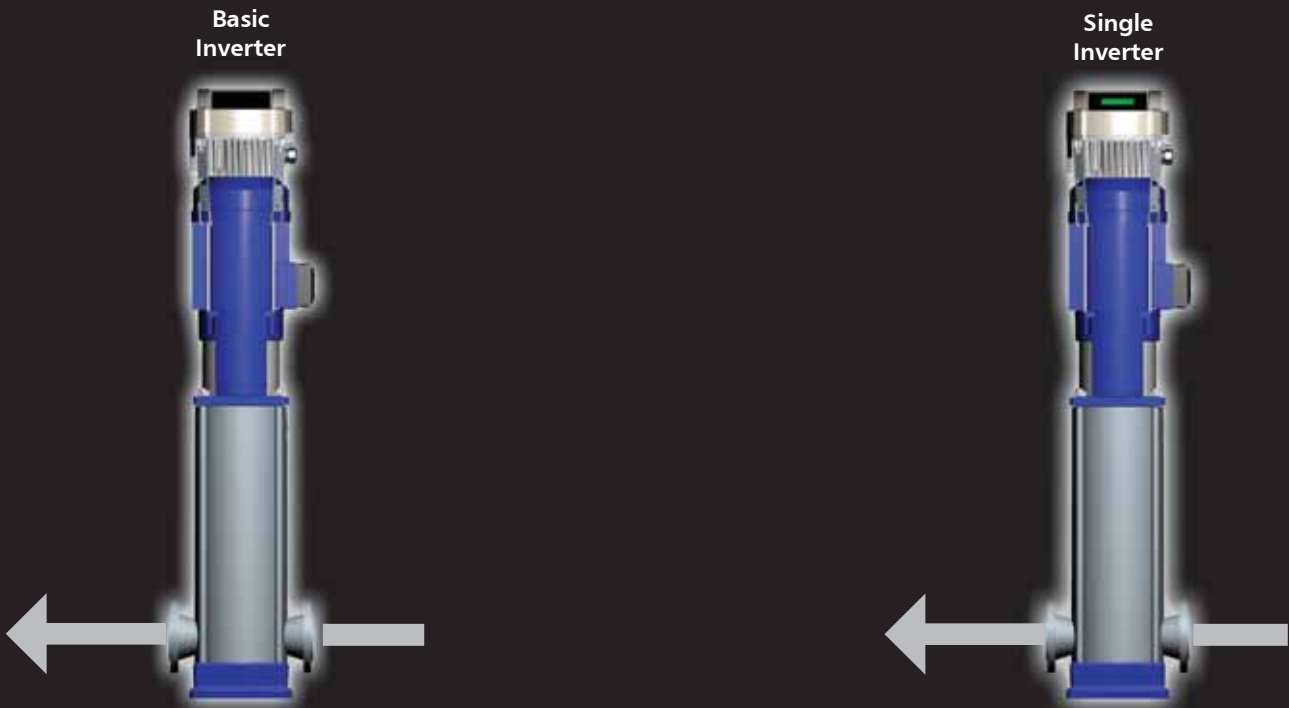
HYDROVAR		Power Supply		Output to Motor	
Type	Rated output	Voltage limits 48-62 Hz	Recommended line protection	Max. Voltage Output	Rated Current output
HV	[kW]	[V]	[A]	[V]	[A]
2.015	1,5	1~220-240 -10%+15%	20	3~U _{in}	7
2.022	2,2		25		10
4.022	2,2	3~380-460 ± 15%	13	3~U _{in}	5,7
4.030	3		13		7,3
4.040	4		16		9
4.055	5,5	3~380-460 ± 15%	20	3~U _{in}	13,5
4.075	7,5		25		17
4.110	11		32		23

Dimensions 1,5 - 4 kW

Dimensions 5,5 - 11 kW


Product Overview - Hardware configurations

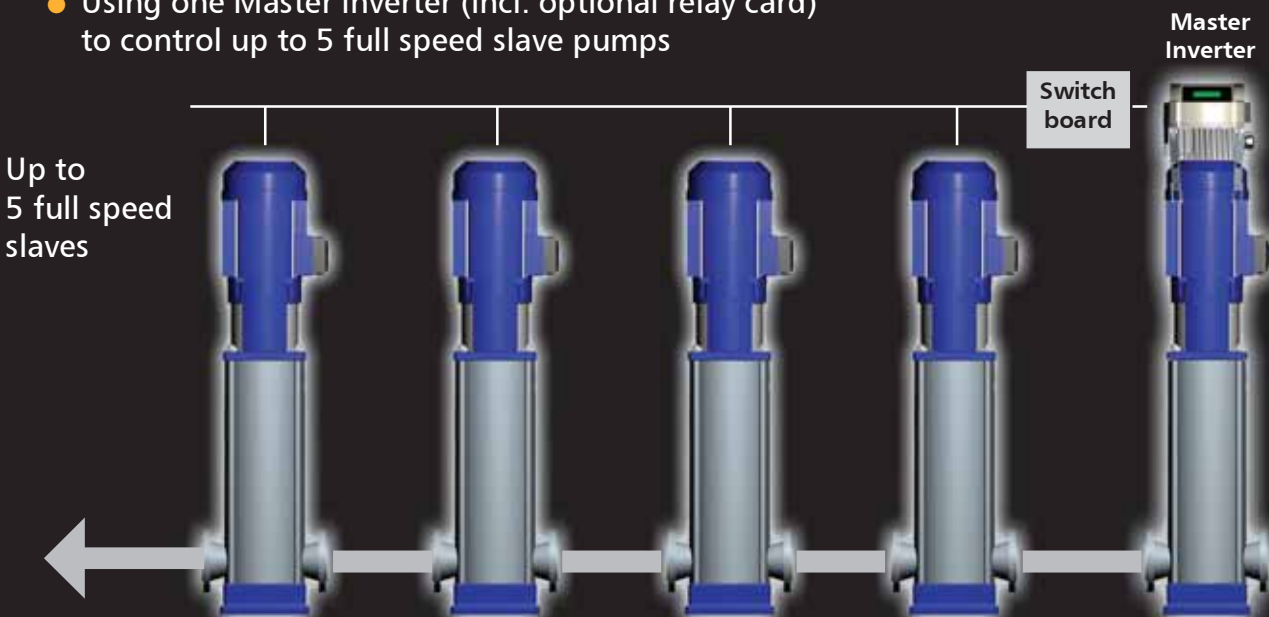
Single Pump Operation

- Using one Basic Inverter for soft start/stop function
- Using one Single Inverter for speed controlled function



Multi Pump Operation (Cascade Controller - Relay)

- Using one Master Inverter (incl. optional relay card) to control up to 5 full speed slave pumps

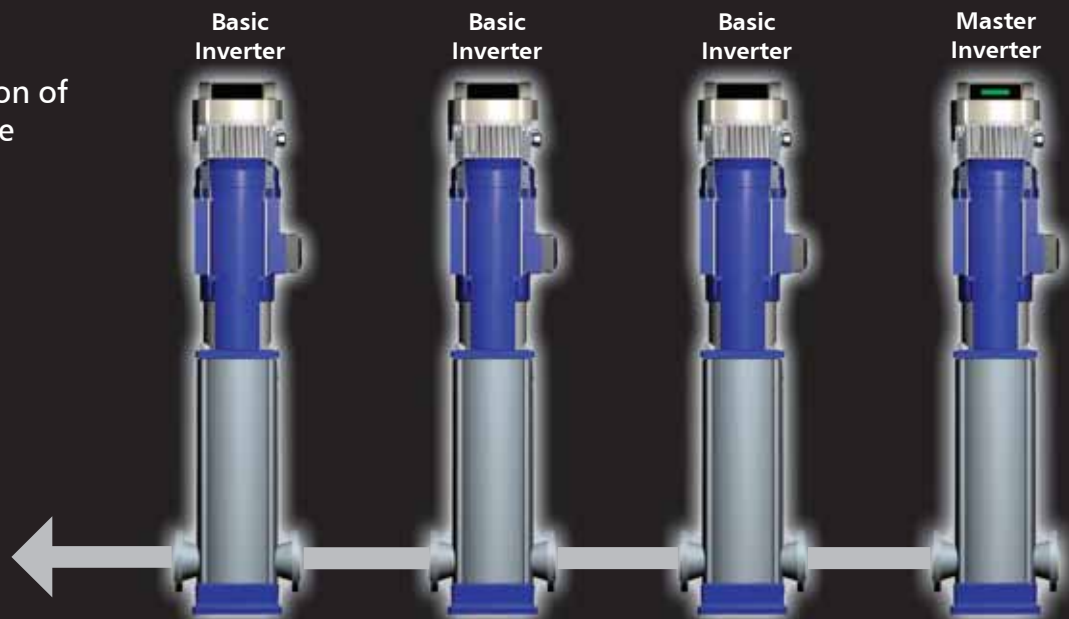


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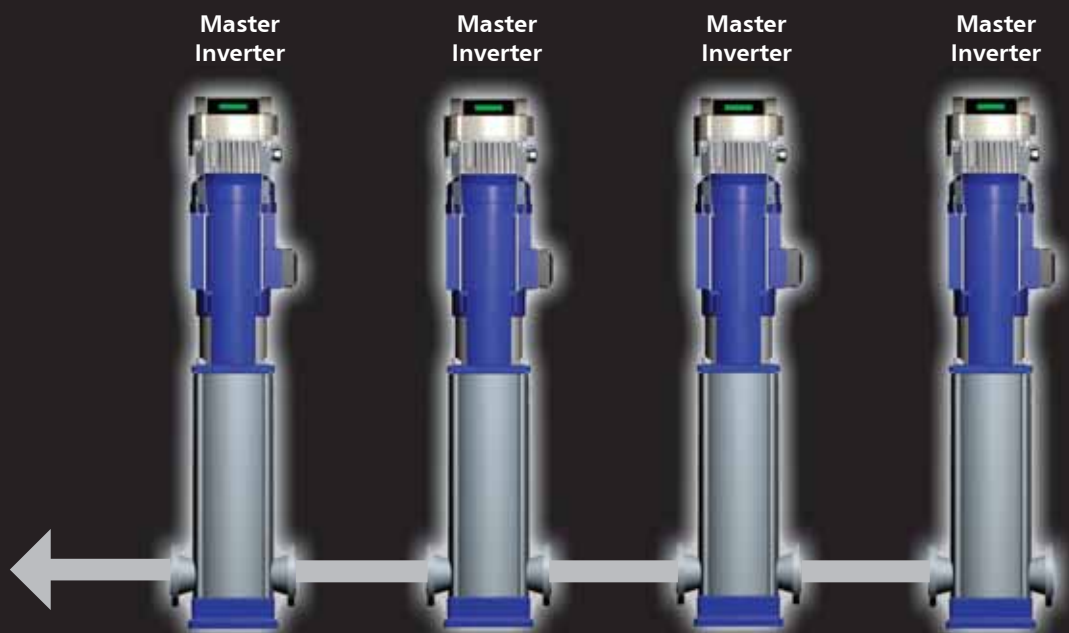
Multi Pump Operation (Cascade Controller - Serial)

- Using several Master Inverters and Basic Inverters in combination (up to 8 pumps can be combined)

Mixed installation of master and slave HYDROVAR



Up to 8 Master Inverters



Advantages

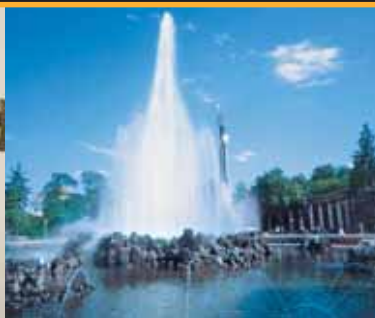
The new Hydrovar concept allows more flexibility and cost savings - just pay for what you really need. Basic / Master / Multicontroller Versions are available.

Error Log with Time and date stamp (real time clock) and included diagnostic menu to view Temperature, Current and Voltage values facilitates diagnostics and failure analysis.

Easy to integrate into BMS systems - Modbus communication included as standard.

Different types of sensors supported because of enhanced input signal range (4-20mA, 0-20mA, 0-10Vdc).

Improved software structure and illuminated display for easy handling and programming - even in difficult installations.



Advantages

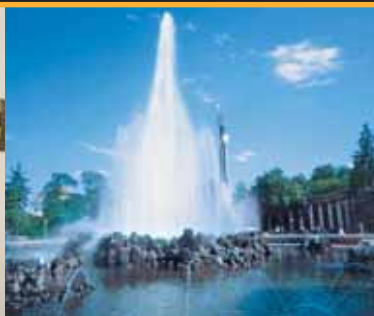
Two sensor inputs for implementing two actual value signals within one system (min/max, difference) or for a second sensor for safety reasons.

Controlling of up to 5 fixed speed pumps with only one HYDROVAR unit (Cascade relay mode).

Up to 8 Hydrovar pumps can be connected to one System (Multi-controller mode).

Extended manual Control mode with different fixed speed values changeable via external contact.

Programmable output signals (analogue out / digital out).





RETROFITTING is possible on all existing standard asynchronous motors, which are suitable for VFD operation.

Automatic adjustment of the pump performance to varying demands.



Constant system pressure in water supply and booster stations. Possibility of control along the system curve for circulation pumps for the HVAC market.



No external panels, contactors and motor protection devices are required.



All hydraulic control functions are included in the HYDROVAR®. Therefore no additional external controllers are required.

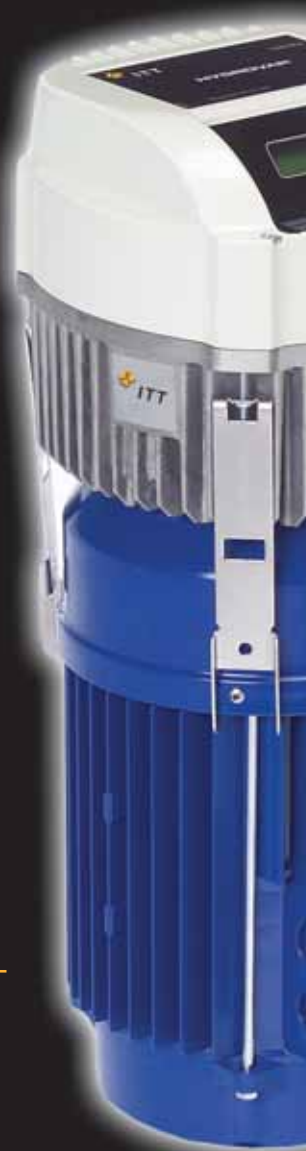


Optimised cooling of the Hydrovar®, depending on the power and the speed of the pump, is guaranteed by the motor fan.



Longer maintenance intervals because of less stress to the pump and the motor.

The brilliant mounting method of the Hydrovar® unit allows a very simple, fast and inexpensive retrofitting on existing pumps.



Retrofit Clip & Work

Especially in the operation at partial loads of a centrifugal pump there will be significant potential of energy savings!
„TUV approved“

Example:
Circulation pump with nominal power in partial load operation.

Capacity in %	Power consumption as per curve		Saving in kW	Saving per 1/3 year (2.920 hours)
	Pump at constant speed	Pump at variable speed		
25 %	5,8 kW	1,8 kW	4,0 kW	11.680 kWh
50 %	7,6 kW	3,2 kW	4,4 kW	12.848 kWh
75 %	9,2 kW	5,7 kW	3,5 kW	10.220 kWh
Energy savings within 1 year (8.760 hours)				34.748 kWh

Compared with the installation costs for the HYDROVAR units there will be a payback time of less than one year (depending of the energy costs).





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