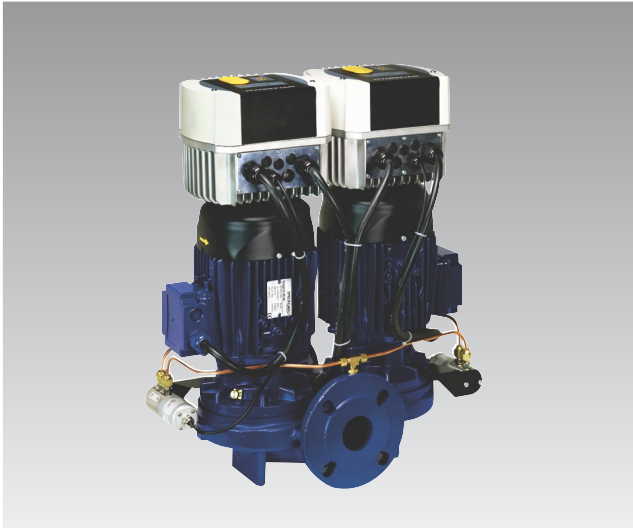


OmegaDrive In-Line Glanded Pumps with integrated capacity adjustment



- Extensive range of integral inverters from 0,55 kW – 22 kW
- Branch sizes from 25 mm to 200 mm
- Flow rates up to 550 m³/h
- Heads up to 50 m (500 kPa)
- Automatic speed adjustment giving energy savings
- Soft start with built in motor protection
- Reduced noise levels
- Easy to install and programme
- Suitable for retro-fit
- Available with or without differential pressure transducer
- LCD of operational status on 1,5 kW units and above
- Both single and twin pumps available
- For individual OmegaDrive data sheets, see www.smedegaard.com

OmegaDrive with integral inverter

Models

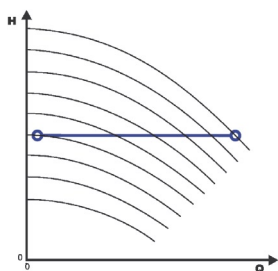


All single and twin pumps, from 0,55 up to 22 kW, can be supplied as OmegaDrive with integral inverters to give automatic adjustment, via a signal from an optional differential pressure transducer. All pump curves and specifications are the same as for the Omega pumps – see individual data sheets at www.smedegaard.com. The OmegaDrive concept gives electrical and thermal savings together with reduced noise level in the installation.

What is the function of the OmegaDrive

The basic function of the OmegaDrive is to control the pump to meet the varying system demands in one of three ways.

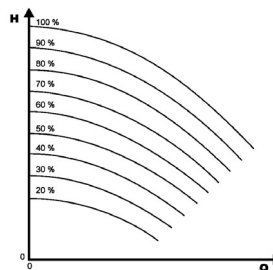
Control for constant pressure



In this method, the desired discharge pressure is set (in bar) by the operator. The OmegaDrive varies pump speed as demand increases or decreases to keep the pressure constant.

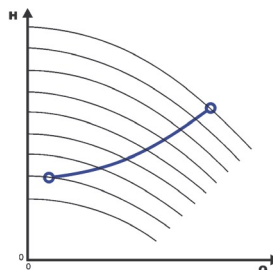
In order to set the OmegaDrive for this application, the pumps should be selected so that the maximum pressure and flow required by the system is on or below the full speed, usually 1450/2950 rpm, performance curve of the pump.

Control for variable speed via analog input.



In analog input mode the pump speed can be varied via an external source using a 4-20 mA signal. In this case the built in controller is taken out of circuit.

Control for pressure loss compensation



The operator can increase the discharge pressure of the pump as the flow increases to compensate for the added friction losses in the system. This allows the pump to follow the “system curve”. The operator enters the percentage increase in discharge pressure required at the maximum speed and flow. In addition, the operator selects where this increased pressure will start.

The pump should be selected so that the maximum flow is on or below the 1450/2950 rpm curve.

The OmegaDrive will then automatically compensate the friction losses depending on the increasing flow and speed.

The OmegaDrive performs these functions by:

- Measuring the system pressure via a transducer connected to inlet/outlet of the pump flanges (constant pressure and pressure loss compensation). It may also be advantageous to measure the differential pressure remotely in the system and the OmegaDrive pump can be ordered with or without differential transmitter.
- Sending out a signal to the pump motor for start, increase speed, decrease speed or stop.
- In the case of multiple pump installations the OmegaDrive will vary the order of the lead pump and turn on the lag pumps automatically of lead/lag sets.

OmegaDrive with integral inverter

Additional functions

In addition to the basic functions, the OmegaDrive can perform the following tasks, normally only associated with the most advanced computerised control systems.

- Shut off the pump(s) at zero demand.
- Shut off the pumps at zero suction.
- Automatically turn on the next pump in a multiple series.
- Protect the pump and motor from over voltage, under voltage, overload and overheat.
- Vary the time of pump speed acceleration and deceleration.
- Automatic compensation of higher friction losses at high flow rates.
- Send out a signal for remote monitoring of pressure and frequency.
- Conduct an automatic test run of the pump at set times.
- Display all functions in an LCD window in 7 different languages.
(English, German, Spanish, Portugese, French, Italian, Dutch)
- Can communicate with another OmegaDrive, computer, or other controller via an RS 485 interface.

OmegaDrive Pump Control

Operator controls

The OmegaDrive has several operator controls which may be selected for both single and multiple pump applications depending on working conditions and individual preferences. Please refer to the operating manual for specific programme options.

- The OmegaDrive has language options available that can be preset for 7 different languages.
- Except for the basic settings the OmegaDrive is password protected which that the programme can only be changed by authorised personel. The factory installed password is 0066.
- The OmegaDrive can be set to operate at any frequency up to 70 Hz. In order not to overload the motor the unit should not be set a frequencies higher than the nominal rating of the motor being used.
- Units available can be programmed to show bar, psi, m³/h, gpm, mWc, feet or percentage.
- The display contrast can be altered to operator preference.
- Test run of the OmegaDrive can be done manually or programmed to operate automatically at set times.
- All the programme settings can be locked.

Operator indicators and display (not Drives 1.1 - 2.2)

The following displays are found on the OmegaDrive, the unit can also be monitored remotely through the RS 485 interface.

- Indicator lamps show power on, run and fault, which indicate the basic status of the unit.
- The display shows a pressure reading, which shows the current pressure being read by the transducer.
- The jog mode shows the current pressure and frequency in hertz, the operator can modify the speed by using the up/down button as a test. The OmegaDrive reverts back to its programmed settings once this display is changed.
- The number of hours of both the pump and OmegaDrive are logged. These settings can be reset.

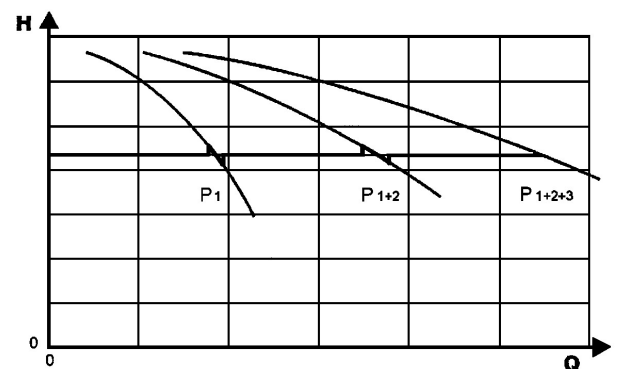
OmegaDrive Multiple Pump Operation and Control

Up to four OmegaDrive controlled pumps can operate together to form a system, without any other controls being necessary.

In a multi-pump system all pumps are connected via the RS-485 interface. The Microprocessors monitor the activity in each OmegaDrive to adjust overall system performance.

Note all OmegaDrive controllers must be of the same size and type.

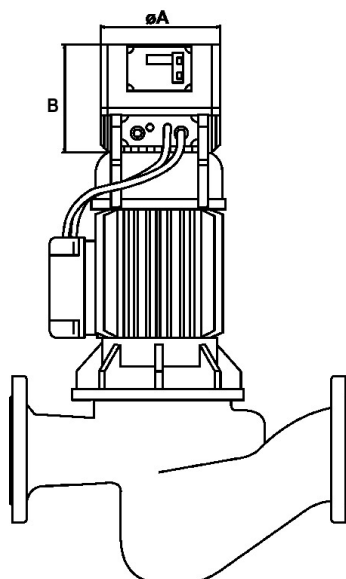
Constant Pressure Systems



Constant pressure is maintained by the OmegaDrive in a multi-pump system, in the same manner as a single pump system. The OmegaDrive can use up to four pumps to maintain constant pressure. The first pump will operate until it can no longer maintain the set pressure, when the second pump will start, the third and fourth pump also starting under similar circumstances

OmegaDrive with integral inverter

Dimensions



Models and product features

Drive type	A diameter	B height	Power [kW]	F.L.C. [Amp]	Weight [kg]	Constant pressure	Pressure loss compensation	Variable speed (4-20 mA)	External max. speed	External stop	External night set back	Manual frequency	Ramp regulator	Status relay output	Alternating	Cascade operation	Error status	Pressure readout	Frequency readout	Power on hours	Multi language selects.
Electrical supply - Single-phase 1x230V 50 /60Hz +/- 10%																					
Drive 1.1	155	120	0,5-1,1	4,8	2,0																
Drive 1.15	195	155	1,1-1,5	7	5,5																
Drive 1.2	195	155	1,5-2,2	10	5,5																
Drive 2.1	195	185	1,1-1,5	7	5,8																
Drive 2.2	195	185	1,5-2,2	10	5,8																
Electrical supply - 3 Phase 3x400V 50/60 Hz +/- 10%																					
Drive 3.2	195	185	1,5-2,2	5,7	5,8																
Drive 3.3	195	185	2,2-3	7,3	5,8																
Drive 3.4	195	185	3-4	9	5,8																
Drive 3.5	280	185	4-5,5	13,5	10																
Drive 3.7	280	185	5,5-7,5	17	10																
Drive 3.11	280	185	7,5-11	23	10																
Drive 3.15	350	390	11-15	30	27																
Drive 3.18	350	390	15-18,5	37	27																
Drive 3.22	350	390	18-22	43	27																

Note: The inverters from OmegaDrive pumps are suitable for retrofit to existing fix speed pumps. Existing motors up to 2.2kW must be wound suitable for a 230-3-50 supply and the electrical supply that is required to be wired into the inverter will be 230-1-50. For motors over 2.2kW the motor and electrical supply must be 400-3-50.
Protection Class: Drive 1.1 to 3.11 IP55, Drive 3.15 to 3.22 IP54.

It is SMEDEGAARD's policy to continually improve and develop the product range. We reserve the right to change specifications without prior notice. Whilst every care has been taken to ensure that data is correct, no responsibility can be accepted for inaccuracies or misprints.

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