



# Ecocirc<sup>®</sup> D5vario DC pumps

DIRECT OR BATTERY POWERED  
FROM 8 - 24 VOLT, WITH SPEED CONTROL

# Ecocirc<sup>®</sup> D5vario design



The new pump generation with minimal energy consumption, shaftless spherical motor and permanent magnet technology.

## The spherical motor design.

The principle of the spherical motor is fundamentally different from conventional canned motor pumps. The single moving part in a spherical motor is a hemispherical rotor/impeller unit, which sits on an ultra-hard, wear-resistant ceramic sphere.

There are no conventional shaft bearings or seals. This rules out, in effect, the possibility of play in the bearings and the increase in noise associated with it. These pumps are particularly robust and give exceptionally long service. The new Ecocirc vario uses sine wave commutation, which works completely silently even at high output levels. The self-realigning bearing is lubricated and cooled by the media. Maintenance is not necessary under normal conditions and even after lengthy shutdown periods a reliable start-up is virtually guaranteed. The parts exposed to the fluid are completely corrosion resistant and ensure safe application even with aggressive media. All D5 vario have a wide adjustable range of control for individual applications and needs which can be set at the integrated speed controller in the end cap.

## Application.

The Ecocirc vario pumps can be used wherever a highly efficient circulation pump is needed without a direct connection to AC power. They are characterised by their small size, high efficiency and very low power consumption. The shaftless spherical motor technology enables a long, maintenance free and quiet service life. Areas of application are circulating systems in industrial or medical applications, computer and laser cooling, hot water heating in a mobile home, weekend home or boat with battery-powered pump, ponds and aquariums, domestic hot water systems and car heaters.

## Integrated overtemperature protection.

The pump comes with an integrated overtemperature safety device, which shuts the pump electronics off when reaching overtemperature. Normally the temperature of the pumped media during operation at the highest speed setting is 95° C at this point. A complete shutdown after reaching overtemperature condition can result in adverse effects on the circulating system. Since the temperature of the electronic components is influenced by the temperature of the pumped media as well as by the speed setting, the pump will lower its speed automatically after reaching a critical temperature level in order to avoid a total shutdown. However, if the temperature continues to rise (caused e.g. by too hot pumped media), the pump will eventually shut down completely. After cooling down, the pump will restart automatically.

## Speed controller.

The pump can be adjusted over a wide range of control by the integrated speed controller. It can be used either for the adjustment of the desired hydraulic performance or for the limitation of the electric power consumption. Regardless of the setting, the pump is always starting with maximum torque. This ensures a safe start even at the lowest speed. In 24 Volt operation, at the highest setting the maximum speed is maintained over the whole performance curve. At smaller voltages the pump either cannot keep the adjusted speed over the whole performance curve and slows down at higher flow rates, or the pump cannot reach the adjusted speed at all. For example, if the pump is powered with 8 Volts, only the pump curves up to the speed setting 3 can be obtained. If the voltage is varied during operation (for example when connected to a solar panel), the pump will keep the adjusted speed as long as the voltage makes this possible. In this case the current draw is altered accordingly. This is advantageous in applications where a certain pump performance is required despite a varying voltage supply.

Pump housing,  
made of  
Brass or Noryl



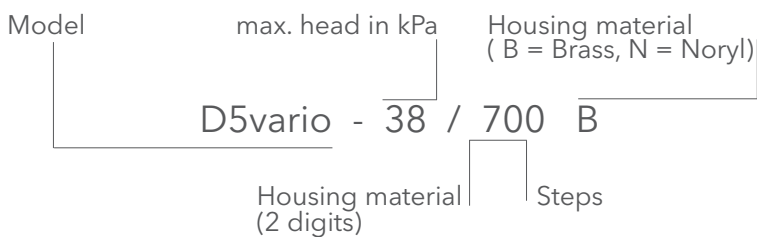
## Technical Data.

Motor design	Electronically commutated spherical motor with permanent magnet rotor/impeller
Voltage	8 - 24 Volt
Power consumption*	see pump curves
Current draw	at 12 Volt: 0,25 - 1,9 A at 24 Volt: 0,25 - 1,5 A
Acceptable media	domestic hot water, heating water, water/glycol mixtures, other media on request*
Insulation class	IP 42 / Class F
Max. system pressure	1 MPa (10 bar) for pumps with brass housing 0,15 MPa (1,5 bar) for pumps with plastic housing
Max. system temperature	-10 to + 95°C for pumps with brass housing (non-freezing) +/- 0 to + 60°C for pumps with plastic housing (non-freezing)
Weight	0,7 kg for pumps with brass housing 0,35 kg for pumps with plastic housing



\*please check pump performance with more than 20% glycol

## Model designation.





D5vario-38/700 B



D5vario-35/100 B



D5vario-38/830 N



D5vario-38/810 N



D5vario-38/790 N

## Product range.

Model	Part number	Pump	max. system temperature	Housing design and length	Connection	Product category
D5vario-38/700 B D5vario-38/100 B	LH 60 00 500 LH 60 00 501	Brass	95° C	Inline / 65 mm Inline / 110 mm / RV+KH*	1/2" female 1 1/4" male**	7 T
D5vario-38/830 N	LH 60 00 502	Noryl	60° C	Angled housing	1/2" male	
D5vario-38/810 N	LH 60 00 503				1/2" hosebarb	
D5vario-38/790 N	LH 60 00 504				3/4" hosebarb	

\* integrated check valve and ball valve \*\* for connection to 3/4" union components. Housing has additionally a 1/2" female connection

## Accessories, components and spare parts.

Model	Part number	Description	Product category
RV 1/2"	LH 95 00 001	Brass check valve 1/2" male thread x 1/2" female thread	7 K
KH 1/2"	LH 95 00 020	Chrome plated brass ball valve 1/2" male thread x 1/2" female thread	
AV 1/2" x 1/2"	LH 95 00 024	2 pieces brass union fitting 1/2" male thread x 1/2" female thread	
AV 5/4" x 3/4"	LH 95 00 025	2 pieces brass union fitting 1 1/4" female thread x 3/4" female thread	
MW C	LH 95 00 041	Mounting plate for D5solar pumps	

## Pump curves.

Please note that the pump curves depend on the pump housing, the speed control setting and the supply voltage.

We will be glad to give you more detailed information on request. All pump curves shown here are at 12 Volt and at different speed controller settings.



Speed control settings / RPM:

P1: 1.800 RPM

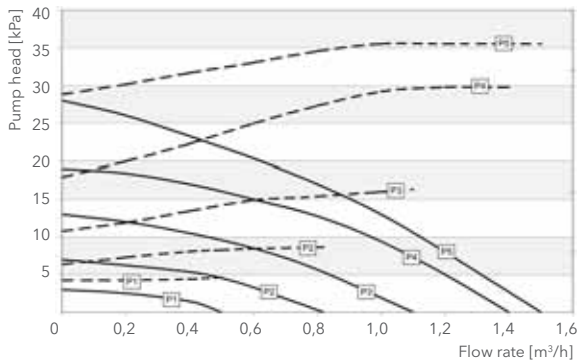
P2: 2.550 RPM

P3: 3.300 RPM

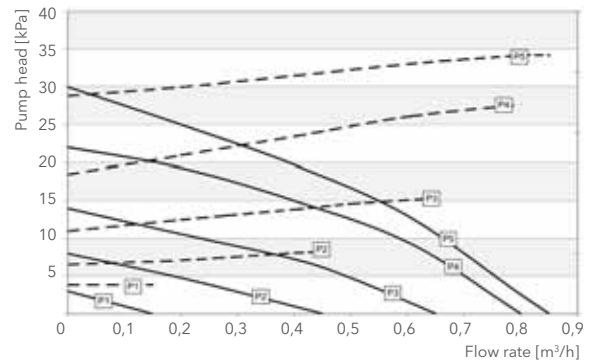
P4: 4.050 RPM

P5: 4.800 RPM

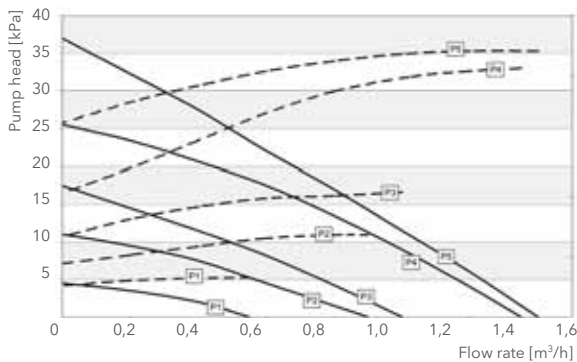
D5vario-38/700 B



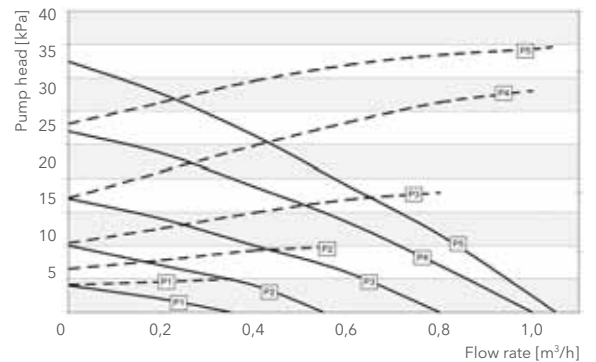
D5vario-35/100 B



D5vario-38/790 N and  
D5vario-38/830 N

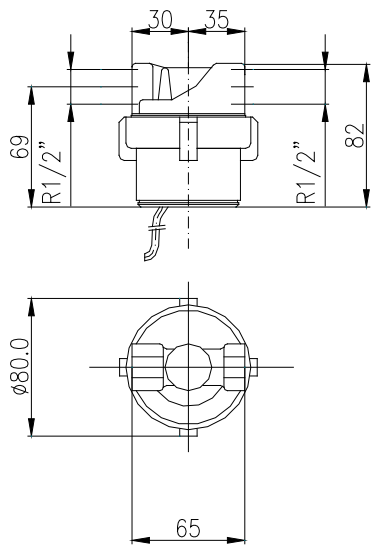


D5vario-38/810 N

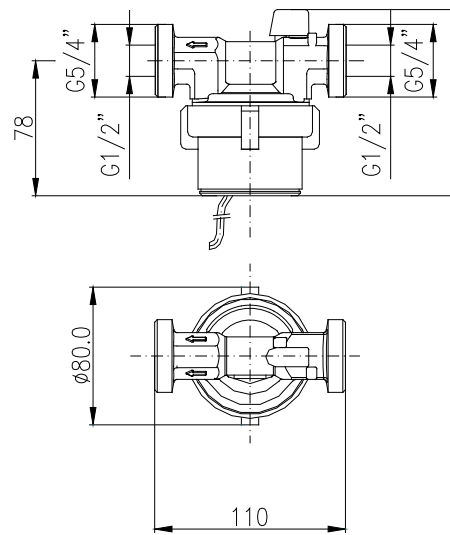


Dimensional drawings in mm.

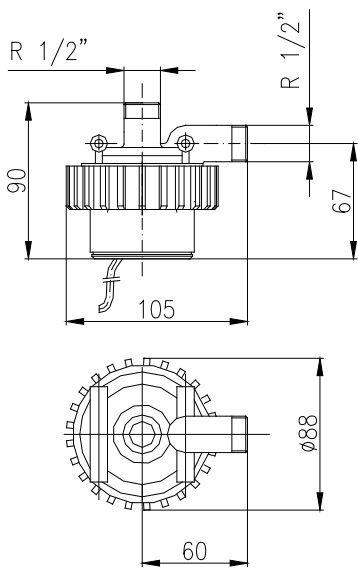
D5vario-38/700 B



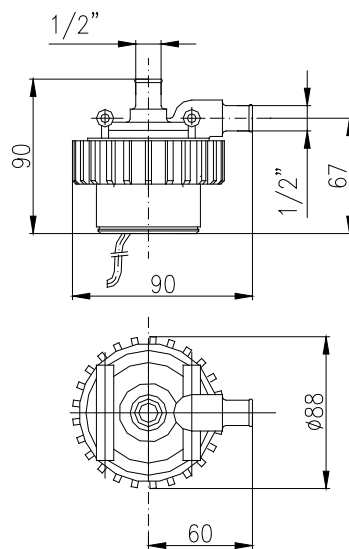
D5vario-35/100 B



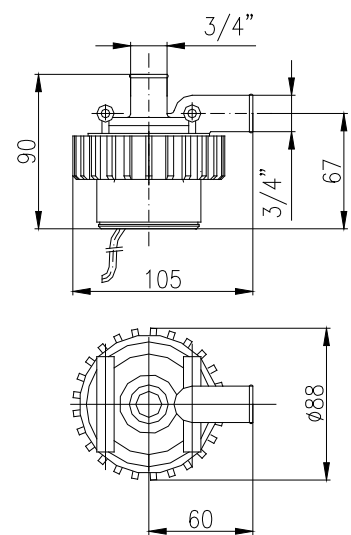
D5vario-38/830 N



D5vario-38/810 N



D5vario-38/790 N



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Xylem ['zɪləm]

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're 12,000 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

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LOWARA S.r.l. Unipersonale  
Via Vittorio Lombardi, 14  
36075 Montecchio Maggiore  
Vicenza - Italy  
Tel. (+39) 0444 707111  
Fax (+39) 0444 492166  
e-mail: [lowara.mkt@xylem.com](mailto:lowara.mkt@xylem.com)  
[www.lowara.com](http://www.lowara.com)  
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