

With additional PWM and CAN versions

# SPUMP FAMILY



## Speed pumping intelligent and flexible

New versions with PWM and CAN feature variable speed control, save energy, reduce noise emission and always provide outstanding performance required for electrically powered vehicles. The SPump S120 and S200 are the lightest weight and most compact circulation pumps of their kind within the product family. The 500 W variant convinces with a high flow rate at high counter pressure. With an extended ambient temperature range of up to 95 °C at the highest level of reliability, the SPump is the best solution for water pumps in comfort application and component cooling worldwide.

[www.spheros.com](http://www.spheros.com)

**SPHEROS**

# SPUMP FAMILY

SPUMP S120

SPUMP S200

SPUMP 260

SPUMP 500

**NEW**  
SPUMP S200



## ► SPump Family: Always the best solution for any application

Spheros has become a leading manufacturer of high-end water pumps for bus and truck, agricultural and construction machinery, off-highway and commercial vehicles. With the smart SPump family, comprising four different performance variants with 120 W, 200 W, 260 W and 500 W, we offer our clients the best solution for almost every application to cool the passenger compartment or components (e.g. the battery).

In addition to vehicles with diesel drive the series has been developed for vehicles with a hybrid, plug-in or electric drive that are

reliant on efficient energy management at highest demands. Even shorter dimensions and an extended outside temperature range between -40 °C and +95 °C allow for a variety of installation options.

PWM and CAN (interface) versions offer decisive advantages for the customer: variable speed control, enabling optimal coordination with the main vehicle system and reducing energy consumption while increasing the vehicle's range. In addition, an intelligent diagnostic function within the CAN variant sends early warning signals by

automatic error detection and transmits key operating data. A 120 W version for 12 and 24 V with a flow rate of 4,000 l/h at 0.35 bar is particularly suitable for smaller water circuits. The 200 W version with a flow rate of 5,000 l/h at 0.65 bar is suitable for mid-sized and larger water circuits. The canned motor model of both pumps (120 & 200 W) has a small number of individual parts, making them the lightest weight and most compact circulation pumps of its kind within the product family. With these benefits they are designed for future applications.

## Various methods of control: On/Off – PWM – CAN

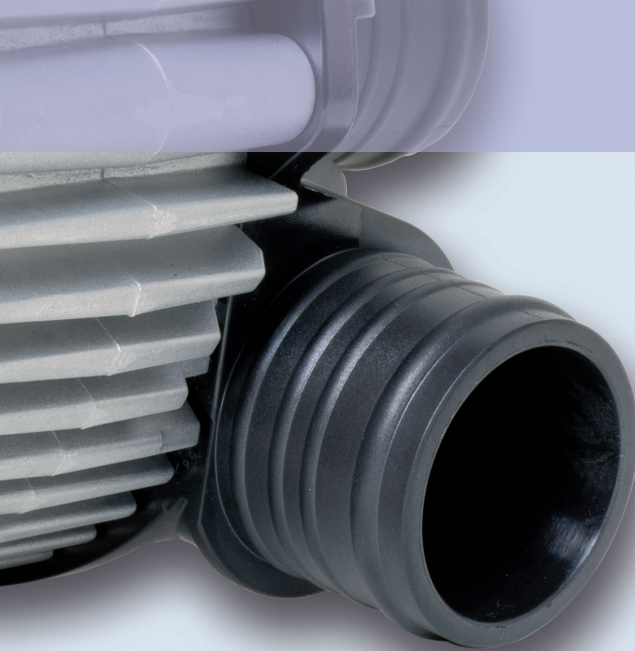


### Variable speed control PWM and CAN

- Optimally tuned to the customer's system
- Optimised power consumption and energy-safe
- Extended range

### Spheros Flexible CAN

- Complies with SAE 1939 standard – other CAN communication parameters on request
- Modular concept
  - Up to nine pumps in one system, independently controllable
  - Fast and easy installation due to reduced wiring effort
- Intelligent diagnosis



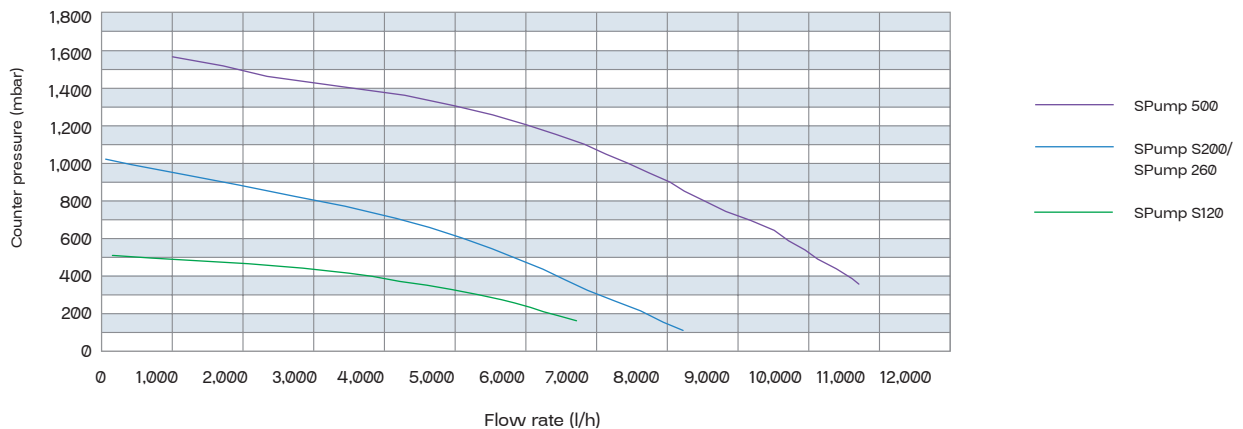
## ► Full Protection Package (CAN variants)

- Dry-run protection
- Stall protection
- Overcurrent protection
- Overtemperature protection
- Overload protection
- Low-voltage protection
- Overvoltage protection
- Reverse polarity protection via coded plug
- Supply voltage current limit

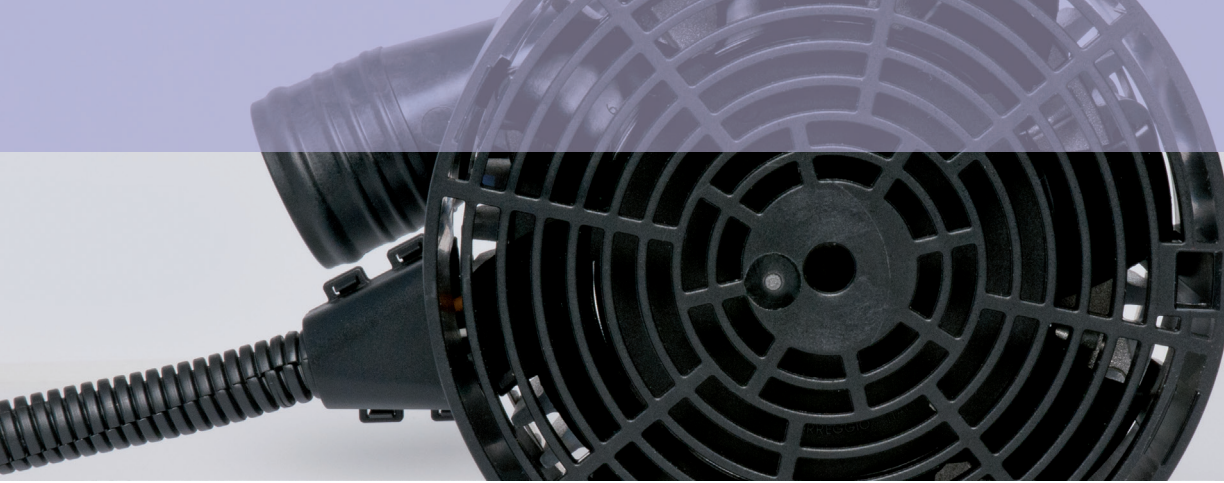
## ► Intelligent feedback for highest safety and comfort

| Communication Type  | SPump S120 / SPump S200 |            |     | SPump 260 / SPump 500 |     |     |
|---|-------------------------|------------|-----|-----------------------|-----|-----|
|   | On / Off                | PWM        | CAN | On / Off              | PWM | CAN |
| Speed control   |                         | ✓          | ✓   |                       | ✓   | ✓   |
| Soft start  | ✓                       | ✓          | ✓   | ✓                     | ✓   | ✓   |
| Simple diagnosis  |                         | on request |     |                       |     |     |
| Full diagnosis  |                         |            | ✓   |                       |     | ✓   |
| Energy consumption feedback   |                         |            | ✓   |                       |     | ✓   |
| Addressability<br>(up to 9 SPump with same part number on one CAN System) |                         |            | ✓   |                       |     | ✓   |

## ► Flow rate







## HIGHLIGHTS



### Low Life-Cycle Costs

- Leak-free, wear-resistant and maintenance-free due to the magnetic drive
- Brushless EC-motor allows a long service lifetime of up to 40,000 h
- With the IP6k9k classification, the pump is dust and water proof - ideal for demanding environmental conditions and other applications



### Comfort

- Intelligent function - error diagnosis and function monitoring of CAN versions



### Environmentally friendly

- Noise-optimized and ideally suited for use in electric or hybrid buses
- Optimized power consumption, high efficiency and energy savings through variable speed control in the PWM & CAN SPump versions
- Increased operational safety and comfort while reducing operating costs



### Reliability & durability

- The extended temperature range up to 95 °C allows operation under hot ambient conditions in the bus
- Full Protection Package in CAN versions
- High EMC level

## TECHNICAL DATA

|   | SPump S120  | SPump S200  | SPump 260   | SPump 500   |
|---|---|---|---|---|
| Power Consumption (W)                         | 120   | 200   | 260   | 500   |
| Flow Rate (l/h)                               | 3,500 at 0.4 bar<br>1,000 at 0.5 bar                          | 6,000 at 0.5 bar<br>1,000 at 1.0 bar                          | 6,000 at 0.5 bar<br>1,000 at 1.0 bar                          | 10,000 at 0.5 bar<br>1,500 at 1.5 bar                         |
| Rated Voltage (V)                             | 12/24   | 24  | 24  | 24  |
| Operating Voltage Range (V)                   | 8...16 V (12 V)<br>16...32 V (24 V)                           | 16...32   | 16.5...32   | 16.5...32   |
| Temperature Range in Operation (°C)           | -40 to +95  | -40 to +85  | -40 to +95  | -40 to +85  |
| Protection Class                              | IP6K9K <sup>1)</sup><br>IP67 <sup>1)</sup><br>(whole pump)    | IP6K9K <sup>1)</sup><br>IP67 <sup>1)</sup><br>(whole pump)    | IP6K9K<br>(whole pump depending on the plug)                  | IP6K9K<br>(whole pump)  |
| Dimensions D / L<br>(diameter / length in mm) | 127/170   | 127/170   | 172 / 212   | 172 / 212   |
| Weight (kg)                                   | 2.2   | 2.2   | 2.3 / 2.6 (CAN)   | 2.6   |
| Lifetime (h)                                  | 40,000 <sup>2)</sup>  | 35,000 <sup>3)</sup>  | 40,000 <sup>2)</sup>  | 40,000 <sup>2)</sup>  |
| Noise Level (dB), approx.                     | 53 (in a distance of 1 m)                                     | 57 (in a distance of 1 m)                                     | 60 / 65 (CAN)   | ~ 65  |
| Motor concept                                 | canned motor  | canned motor  | magnetic coupling   | magnetic coupling   |
| Control                                       | ON / OFF<br>PWM (universal)<br>CAN                            | ON / OFF<br><br>CAN   | ON / OFF<br>PWM (active low)<br>CAN                           | <br><br>CAN   |
| CAN-interface                                 | Acc. to SAE J1939   | Acc. to SAE J1939   | Acc. to SAE J1939   | Acc. to SAE J1939   |
| Plug  | integrated<br>MOLEX MX150                                     | integrated<br>MOLEX MX150                                     | watertight<br>Plug on demand (ON/OFF)                         | watertight  |
| Brine   | at least 30 %<br>commercial radiator antifreeze <sup>4)</sup> | at least 30 %<br>commercial radiator antifreeze <sup>4)</sup> | at least 30 %<br>commercial radiator antifreeze <sup>4)</sup> | at least 30 %<br>commercial radiator antifreeze <sup>4)</sup> |

<sup>1)</sup> with connected mating plug

<sup>2)</sup> 40,000 h @ Tmax < 55 °C | 30,000 h @ Tmax < 65 °C | 10,000 h @ Tmax < 85 °C

<sup>3)</sup> 35,000 h @ Tmax < 55 °C | 25,000 h @ Tmax < 65 °C | 10,000 h @ Tmax < 85 °C. Higher values possible under other conditions.

<sup>4)</sup> 52 % at -40 °C