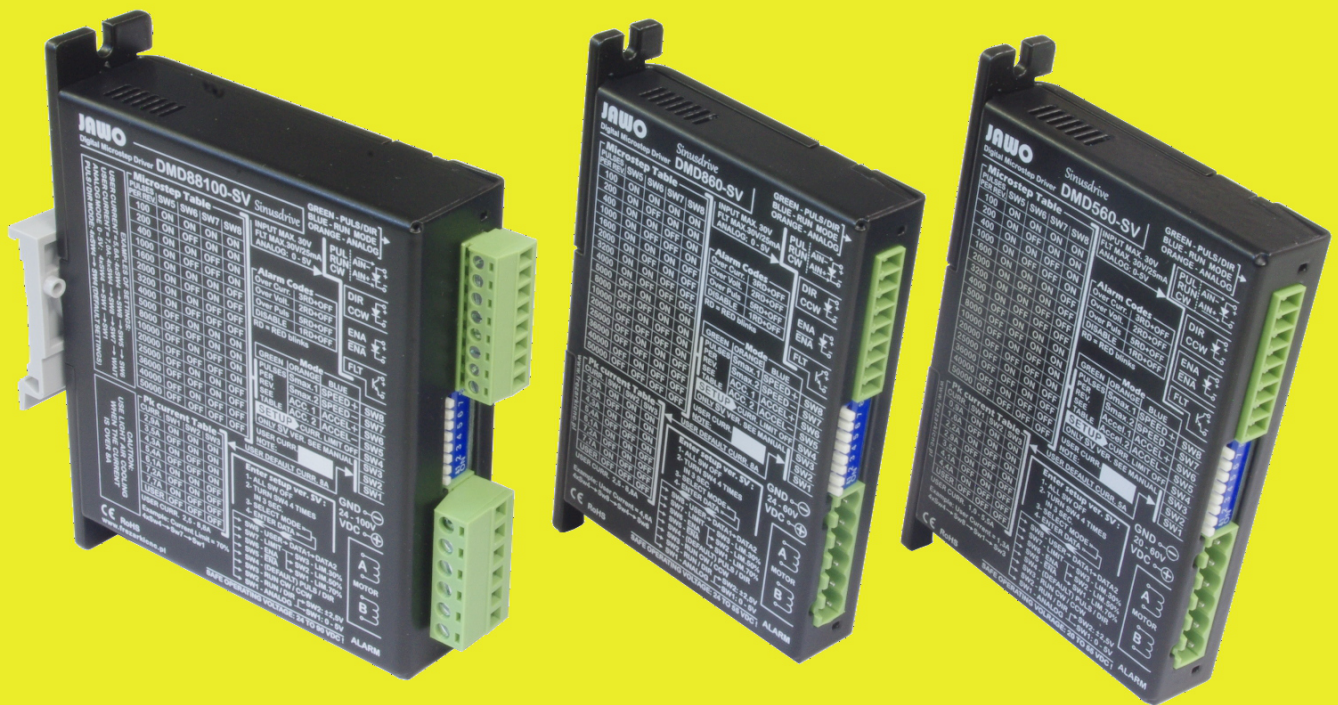


**Sinusdrive** - when the need for the simplest drive solutions

# Drivers for stepper motors with current envelope interpolation

- for 2 and 4 phase stepper motors
- high torque and useful turnover
- exceptional smoothness of work
- no resonances
- standard work modes
- high reliability
- built-in generator
- analog input



**JAWO** P.P.H.U.

[www.frezarkicnc.pl](http://www.frezarkicnc.pl)

JAWO controllers are currently manufactured in three voltage and current ranges. They have identical utility functions. The differences between individual models are current efficiency and voltage strength. Drivers have many solutions that have a decisive impact on the smoothness of the drive, as well as increasing its functionality. Here are some of them:

**Inter-ocular interpolation** - an algorithm responsible for exceptional smoothness of work. Its operation consists in interpolating the envelope of the control current to the shape of a sine wave between successive rotor steps. High current changes that contribute to the resonance of the motor are eliminated.

**Soft start** - a mechanism that causes a smooth rise of current in the motor windings after switching on the power supply. It significantly limits the "kick" of the motor during switching on. This is of great importance in the case of large engines where a jerk at the start can cause strong mechanical impacts.

**Smooth current settings** - in addition to the current available directly from the table, the user can set the "user" value with 0.1A accuracy. The set value is stored in the non-volatile memory.

**The idle current** can be set by the user in 4 values: 100%, 70%, 50% and 30%

**Input Enable / Disable** - it is possible to change the polarity of the control.

**All control inputs** are equipped with current sources adapting to the input voltages up to 30V. This frees up the need to add resistors limiting the current of optocouplers. In addition, all inputs are protected against the effects of reverse polarity. The FAULT output is protected against short-circuits by a current source. The output current output is 25mA. This allows direct control of the corresponding relay in the 12V-24V voltage range.

**Power stage protections** supervise the safe operating range of the controller. There are phase faults, phase-to-phase faults, ground faults, current surges and overloads.

**PULS / DIR** are standard controller inputs designed for synchronous operation. The very fast numerical unit allows simultaneous PUL and DIR signals. In this case, the DIR signal will have priority. In many applications this is a big advantage. It is also possible to control a quadrature signal, eg when directly connecting an incremental encoder. This gives you the opportunity to work as a manipulator or torque booster.

**The internal generator** is a module that allows the controller to operate autonomously. The engine can be put into motion by a logical state. The direction is also controlled. There are several ways to control (instruction). The spin speed and acceleration / deceleration ramp are set.

**The analog input** is a development of the internal generator capability. It is possible to adjust the motor speed with a voltage in the range of 0-5V, eg directly by a potentiometer. There is also the possibility of recurrent work. The maximum spin speed is divided into 4 ranges.

Below in the table the most important parameters of the controllers:

	DMD560-SV	DMD860-SV	DMD88100-SV
Supply voltage max.	60 V	60 V	100 V
Current max.	5,5 A	8,8 A	8,8 A
Voltage max.	55 V	55 V	85 V
Available divisions pulses/rev.	100, 200, 400, 1000, 1600, 2000, 3200, 4000, 5000, 8000, 10000, 20000, 25000, 36000, 40000, 50000		
Max. frequency PULS	400 KHz		
Max. voltage of logic	32 V		
Controller protection	Short-phase phase, short-circuit phase-GND, overload, thermal		
Idle current	100%, 75%, 50%, 30%		
Internal generator	Yes		
Analog input	0-5V oraz od -2,5 do 2,5V		
Recommended engine	≤ 5Nm	≤ 8Nm	≥ 4 Nm

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