ENGEL ELEKTROANTRIEBE

DSV 13x

Digital Servo Controller
for Three-phase Synchronous Motors for permanent magnet DC-Motors

4-quadrant operation,
fully digital closed loop control,
point-to-point positioning capability,
upto 770W output power

Description:

The Digital Servo Controllers DSV13x are perfectly suited for operation with ENGEL Three-phase Synchronous Motors as well as for brush-type

permanent magnet DC-Motors.

Designed for low voltage operation, these fully digital devices feature a high-performance digital signal processor (DSP) providing high drive dynamics and accuracy due to short cycle times of the current, speed and position control loops.

The electrically isolated CAN interface supports the CANopen® Device Profile for drives, CiA® DSP 402.

Alternatively, the DSV13x can be operated through a number of digital / analogue inputs and outputs. In this case, setpoints for speed or current (i.e. torque) may be applied by means of an analog control voltage or simply by applying one of two programmable fixed values. Additionally, the integrated positioning capability offers point-to-point positioning for up to 16 different target positions stored in the device, which can be selected via BCD-coded digital inputs.

When operated with DC motors, a tachometer sensor or an incremental encoder or BEMF measurement with IxR compensation are the choices for speed feedback. With Three-phase Synchronous Motors, a resolver is used for commutation and speed feedback.

In positioning mode, the resolver signals or incremental signals are also used for position sensing. Homing mode can be chosen from various available options.

The DSV13x servo controller comes with the clear and easy-to-use configuration software DSerV, which allows users to set up and monitor the device's parameters. The DSerV tool runs on PCs under MS Windows operating systems, using the PC's serial interface (RS232) for communication with the servo controller.

Three different models are available for operation with 24VDC, 48VDC or 42VAC power supplies. No additional auxiliary supply is required.

Due to its integrated filter components and a housing design taking EMC criteria into account, the device complies with the EMC regulations according to DIN EN 61800-3, with no need for additional external components (max. motor cable length: 10m).

The DSV13x is equipped with a dedicated output automatically activating/deactivating a holding brake. A ballast circuit with internal/external ballast resistor dissipates recuperation energy generated by the motor.

The digital servo controllers of the DSV series are designed for wall mounting and can be spaced compactly for multi-axis applications.

Both power supply and motor cables are connected using Phoenix- Combicon plugs with screw connection (7.62mm). Signal lines are connected using D-SUB plugs.

type	suited for ENGEL Motors	Rated Input Voltage	Output Values		
			Rated Current	Peak Current (max. 5 sec)	Rated Power
DSV 130	BSR 26 ... BSR 37, HLR 26 ... HLR 37, BSM 12 ... BSM 28, HLM 12 ... HLM 28, GNM 26 ... GNM 80	24 VDC	40 A_{pk}	80 A_{pk}	580 W
DSV 132		48 VDC	25 A_{pk}	50 A_{pk}	770 W
DSV 133		42 VAC	8,0 A_{pk}	20 A_{pk}	320 W

Features:

- For operation with DC and BL Motors
- CANopen®
- Short circuit proof power stage
- Status and error indicator
- Internal ballast circuit
- Parking brake output
- Compact dimensions approx. 182 x 36 x 171 mm^3 (H x W x D without mounting straps)
- Protection class IP20

Options:

- DeviceNet
- Customized functions

Typical applications:

Positioning tasks or speed control for
material handling, metering units, electric pumps, stirring units etc.

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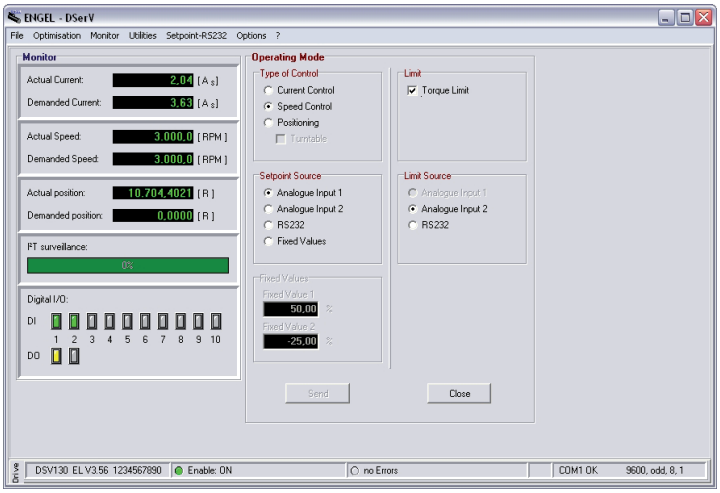
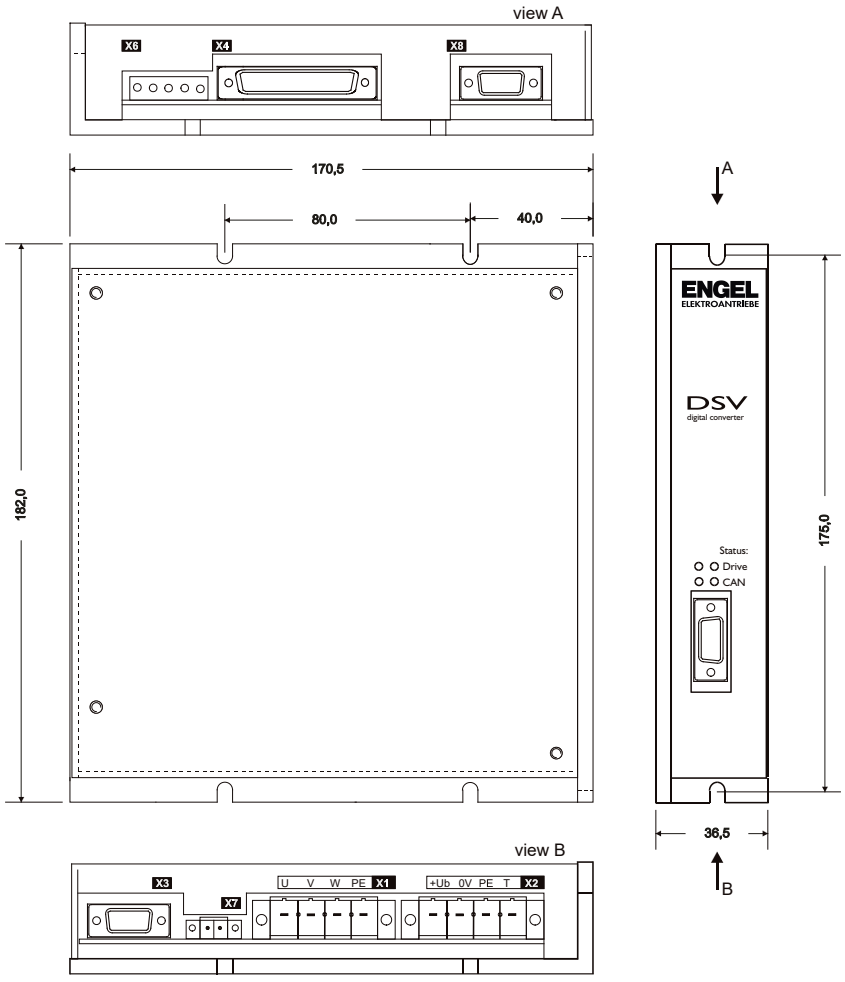
In- and outputs:

● 10 Digital inputs 24V/7,5kOhm	-	Control Enable, Limit Switches, Target Position Select etc.
● 2 Digital outputs 24V/0,05A	-	Speed/Current threshold, Target Reached signal etc. (Digital inputs and outputs are optically isolated)
● 1 Potential-free contact 100V/0,5A	-	READY signal
● 1 Output for parking brake 24V/1,5A	-	for automatically activation of parking brake
● 1 Analogue input ±10V 10Bit	-	Differential input for analogue setpoint setting (speed/current)
● 1 Analogue input +10V 10Bit	-	Analogue setpoint setting (speed/current)
● 2 Analogue outputs 0 ... 10V 10Bit	-	Monitor function: Current, Speed, Rotor angle (configurable)
● Incremental encoder input A, B, Z	-	Speed / Position signals: RS422, 5VTTL or 10 ... 30V (configurable)
● Incremental encoder supply	-	5V/200mA or 16V/100mA (configurable)
● Status LEDs	-	Indication of Enable / Device / Bus status and Error codes
● Resolver interface / Tachometer input	-	Resolver: f_R = 10kHz, K = 0,5 / Tachometer: Max. ± 35V
● Auxiliary voltage regulator 24V, 50mA	-	For stimulation of digital inputs
● Serial interface RS232	-	Communication with DSerV software (PC / Laptop)
● CAN Interface	-	Fieldbus integration: CANopen® and DeviceNet (optional)

DSerV parametrizing software:
The DSerV software is a simple and easy-to-use tool, enabling users to set up the DSV servo controllers quickly.
The menu-driven user interface allows to adjust scaling values, current limits, modes of operation and more.
Drive settings can be stored in a parameter file on the computer's hard disk.
Operational status information such as speed values, current values, enable status etc. are available at a glance.
Selectable language options include English, French and German.
The DSerV software is executable under MS-Windows. The PC's RS232 serial interface (COMx) is used for communication with the servo controller.



Dimensional Drawing:



Accessoirs (optional):

- Connecting cable motor, assembled
  Length: 2m / 5m *)
- Connecting cable resolver, assembled
  Length: 2m / 5m *)
- Connector set with all mating
  connectors for DSV.

*) other length on demand