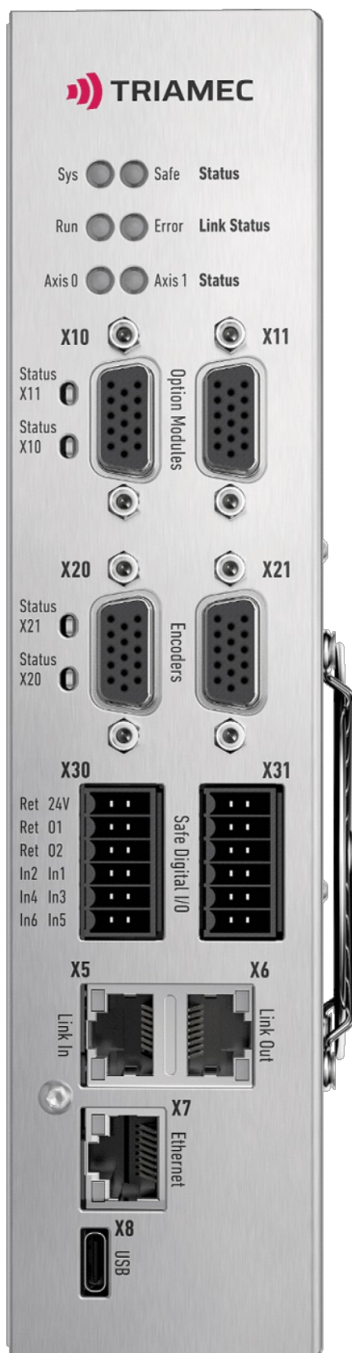


HIGHEST DYNAMICS AND PRECISION AT 100 kHz

Dual Axis Servo Drive TSD80 / TSD130 Revision 6



The TSD series consists of two complete servo drives in one case.

Current and position control loops operate both at 100kHz and the new Revision 6 drives have improved current and position capturing compared to the Revision 5 models. The control loop is extensible by C# user code, allowing to solve even the most challenging tasks.

Option modules allow for dual-loop control, sin/cos encoder with up to 10 MHz, analog I/O, FFT, Laser-PWM etc.

Properties

- 100 kHz control loop (current / position)
- Freely programmable in C# for control loop extensions and general control purposes
- Improved current resolution for low noise (standstill) and high stability
- Up to 10 MHz | 16 bit sin/cos encoder
- Up to 50 kHz set point rate
- Up to 15 A_{rms} nominal current (max. 30 A_{peak})
- Full integrated Functional Safety capability
- Tria-Link or EtherCAT fieldbus

Applications

- Semiconductor and laser (e.g. positioning tables with < 50 pm standstill, gantry systems)
- Ultra-precision machining (e.g. optics)
- High-precision machine tools (e.g. direct drive)
- High-speed spindles, also positionable

SPECIFICATIONS

		TSD80-06	TSD80-10	TSD80-15	TSD130-10
Motor configuration		2 Motors, 2 and 3 phase synchronous or asynchronous AC, DC			
Supply, rated / min – abs. max		80 V _{DC} , 24 – 90V _{DC} +2%		130V _{DC} , 24 – 137.5V _{DC} +2%	
Current nominal / peak (abs. max. current surge)		4.2 A _{rms} / 6 A _{peak}	10 A _{rms} / 20 A _{peak}	15 A _{rms} / 30 A _{peak}	10 A _{rms} / 20 A _{peak}
Thermal time constant		20 s			
Output power, continuous		460 W	1100 W	1650 W	1680 W
Functional Safety (FS) Safety		Integrated Functional Safety STO, SLS, SSR, SSM, SS1, SS2, SOS, SBC, SLI, SLP, SDI 4 safe outputs, 12 safe inputs, 6 state outputs, Safe Torque Off; up to SIL3/PLe			
Protection		Drive and motor temperature (KTY83/84, PT100, PT1000, PTC-1K, NTC); i2t, over voltage, over current			
Position measurement (per axis)	General	5.2 V supply with a maximum of 1 A for both encoders together.			
	Analog	sin/cos 1 V _{pp} : 65536 times interpolation, auto calibration, FIR filtering, max. frequency 700 kHz, optional: 10 MHz			
	Incremental	RS422: max. pulse frequency 10 MHz, TTL: max pulse frequency 2.5 MHz			
	Digital	Standards: EnDat 2.1 & 2.2; BiSS B, BiSS C, SSI, Tamagawa, Nikon (encoder with additional sin/cos signals recommended)			
	Sensorless	Sensorless commutation / control, suitable for fast spindles			
Digital inputs		2 x 6 Inputs isolated, 24 V, 2 x 300µs, 4 x 1200 µs 2 x 4 fast TTL level inputs on the D-Sub encoder connector			
Digital outputs		2 x 2 Outputs isolated, 24 V, 1 A; max. current for all: 2.9 A			
Option Modules		2 x, Extensions for encoder, analog I/O, FFT, laser PWM, etc.			
Logic Supply		24 V _{DC} ± 10%, 2 A max			
Fieldbus		EtherCAT 100 Mbps / Tria-Link 200 Mbps allowing direct transmission of values from one servo drive to others on the same bus.			
Service Interfaces		USB (type C) / Ethernet			
Programming inside the servo-drive		10 kHz hard real time task, freely programmable in C# incl. coupling of axes; additional asynchronous task			
Programming PC side		TAM API for .NET Framework; Beckhoff TwinCAT; Python			
Dimensions		W x H x D: 53 x 230 x 170 mm ³			