

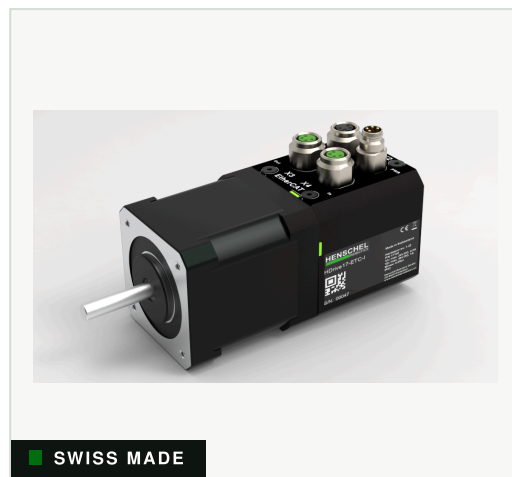
NEMA17 · ETHERCAT · CiA 402

HDrive17-ETC

Integrated brushless servo drive with EtherCAT for PLC-based automation.

Motor, power stage, 14-bit absolute encoder and motion controller in one 42 × 42 × 88 mm housing. Field-oriented control and a CiA 402 EtherCAT slave make it a drop-in axis for TwinCAT, Codesys, SOEM and other EtherCAT masters. Separate supply rails for logic (Vs) and power stage (Vp, up to 48 V).

- **FOC** - efficient, low torque ripple
- **EtherCAT** - cycle time down to 50 µs
- **Two 24 V inputs** - limits, homing
- **CiA 402** - position, velocity, torque
- **FoE firmware update** - over the bus
- **M8 connectors** - EtherCAT In / Out



0.6 Nm

STALL TORQUE

2200 RPM

MAX. SPEED AT 48 V

±0.1 °

POSITION ACCURACY

50 µs

MIN. ETHERCAT CYCLE

ELECTRICAL

Logic supply Vs	12-24 V DC
Power stage supply Vp	12-48 V DC
Reverse polarity protection	Vs and Vp
Current Vs	0.1 A
Max. current Vp	1.0 A
Max. power	36 W
Holding power, no load	< 5 W

DIGITAL INPUTS

Inputs	2
Switching level	< 8 V low · > 12 V high
Max. input voltage	48 V

PERFORMANCE

Stall torque	0.6 Nm
Max. speed at 48 V	up to ~2200 RPM
Position accuracy	±0.1°
Repeatability	±0.05°
Encoder	14-bit absolute
Current bandwidth	100-2000 Hz
Pos. / speed bandwidth	10-30 Hz
Current loop rate	26 kHz
Pos. / speed loop rate	3 kHz

COMMUNICATION & CONTROL

Protocol	EtherCAT, 100 Mbps
Drive profile	CiA 402
Cycle time typ. / min.	1 ms / 50 µs
Control modes	Position, velocity, torque
Firmware update	FoE (Bootstrap)
Device description	ESI HDrive-ETC v1.6

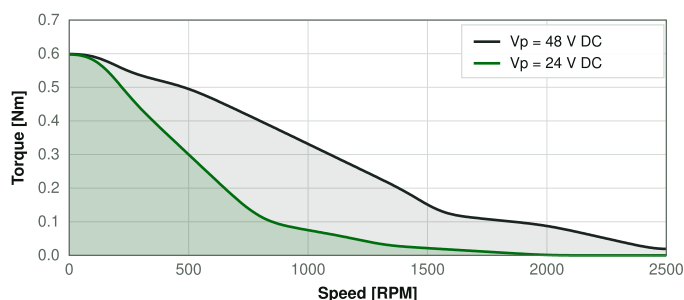
MECHANICAL & ENVIRONMENT

Flange	NEMA17 (42 mm)
Housing (w/o shaft)	42 × 42 × 88 mm
Shaft	Ø 5 mm × 22 mm
Pilot	Ø 22 mm × 2 mm
Mounting	4 × M3
Rotor inertia	0.082 kg·cm²
Weight	470 g
Protection	IP40
Operating temperature	5-80 °C
Ambient temperature	5-50 °C
Humidity	5-95 % RH, non-cond.

CONNECTORS

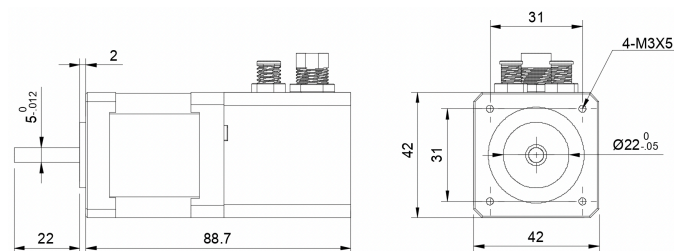
Power (Vs, Vp)	M8 4-pin A-coded male
Digital inputs	M8 4-pin A-coded female
EtherCAT In	M8 4-pin A-coded female
EtherCAT Out	M8 4-pin A-coded female

TORQUE / SPEED



Typical operating envelope at Vp = 24 V and 48 V DC. Continuous operation depends on duty cycle and heat dissipation of the mounting.

DIMENSIONS MM



Shaft loads. Max. axial load 5 N, max. radial load 10 N at 20 mm shaft length. Use a flexible coupling so the bearing is not over-constrained; keep dynamic loads on the shaft as low as possible. 3D model (STEP) available at henschel-robotics.ch/products.