



## ER7041-3002 | Stepper motor module 50 V DC, 5 A, with incremental encoder, for high-speed applications

The ER7041-3002 EtherCAT Box is intended for the direct connection of different stepper motors. The PWM output stages for two motor coils cover a wide voltage and current range. The ER7041-3002 can be adjusted to the motor and the application by changing just a few parameters. 256-fold micro-stepping ensures particularly quiet and precise motor operation. Connection of an incremental encoder enables a simple servo axis to be realised. Two digital inputs and a digital 0.5 A output enable connection of end switches and a motor brake.

The hardware- and software-based configuration make the stepper motor module particularly suitable for applications that are subject to unsteady motor operation due to natural resonance of the motor and the moved mass.

The EtherCAT Box modules with zinc die-cast housing are ready for use in harsh industrial and process environments. With the fully sealed design and metal surfaces the ER series is ideal for applications requiring enhanced load capacity and protection against weld spatter, for example.

Technical data	ER7041-3002
Number of outputs	1 stepper motor, 1 digital 24 V DC output
Number of inputs	2 digital inputs, encoder system (24 V DC encoder)
Connection method	M12, screw type
Load type	uni- or bipolar stepper motors
Nominal voltage	8...50 V DC
Distributed clocks	yes
Protocol	EtherCAT
Output current	2 x 3.5 A, 2 x 5 A peak current (overload- and short-circuit-proof)
Maximum step frequency	1000, 2000, 4000 or 8000 full steps/s (configurable)
Step pattern	256-fold micro stepping
Current controller frequency	dynamic
Diagnostics LED	error phase A and B, loss of step/stagnation, power, enable
Resolution	approx. 5000 positions (per revolution, depending on motor and encoder type)
Bit width in the process image	input/output: 2 x 16 bit data + 1 x 16 bit control/status
Electrical isolation	500 V
Current consumption from Us	120 mA
Special features	for high-speed applications, travel distance control, encoder input, load indication, motor supply via plug
Operating/storage temperature	-25...+60 °C/-40...+85 °C
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Protect. class/installation pos.	IP 65/66/67 (conforms to EN 60529)/variable
Approvals	CE, UL in preparation

Accessories	
ZK1090-3xxx-xxxx	Cables for EtherCAT signal in- and -output
ZK2020-3xxx-xxxx	Cables for M8 power supply
AS2022-wGy0	stepper motor, 50 V DC, 1.37 Nm standstill torque, 5.6 A standstill current
AS2023-wGy0	stepper motor, 50 V DC, 2.3 Nm standstill torque, 5.0 A standstill current
AS2042-wGy0	stepper motor, 50 V DC, 6.4 Nm standstill torque, 6.0 A standstill current
Cables, gears and couplings	accessories for AS2000 stepper motors

Related products	
ER7041-0002	EtherCAT Box, zinc die-cast housing, Stepper Motor module 50 V DC, 5 A, 2 phases, with incremental encoder, 2 digital inputs 24 V DC, 1 digital output 24 V DC
ER7041-1002	EtherCAT Box, zinc die-cast housing, Stepper Motor module 50 V DC, 1.5 A, 2 phases, with incremental encoder, 2 digital inputs 24 V DC, 1 digital output 24 V DC
ER7041-2002	EtherCAT Box, zinc die-cast housing, Stepper Motor module 50 V DC, 5 A, 2 phases, with incremental encoder, 2 digital inputs 24 V DC, 1 digital output 24 V DC, motor connection via plug
EP7041-0002	stepper motor EtherCAT Box (industrial housing), I <sub>MAX</sub> = 5 A, 50 V, IP 67
EP7041-1002	EtherCAT Box, industrial housing, Stepper motor module, 50 V DC, 1.5 A, with incremental encoder, 2 digital inputs, 1 digital output
EP7041-2002	EtherCAT Box, industrial housing, Stepper Motor module 50 V DC, 5 A, 2 phases, with incremental encoder, 2 digital inputs 24 V DC, 1 digital output 24 V DC, motor connection via plug
EP7041-3002	EtherCAT Box, industrial housing, Stepper Motor module 50 V DC, 5 A, 2 phases, with incremental encoder, 2 digital inputs 24 V DC, 1 digital output 24 V DC, for high speed applications
EL7041	stepper motor EtherCAT Terminal, I <sub>MAX</sub> = 5 A, 50 V, IP 20
EL7031	stepper motor EtherCAT Terminal, I <sub>MAX</sub> = 1.5 A, 24 V, IP 20