



## KL2541 | Stepper motor terminal 50 V DC, 5 A, with incremental encoder

The KL2541 Bus Terminal is intended for stepper motors with medium performance range. The PWM output stages cover a wide range of voltages and currents. Together with two inputs for limit switches, they are located in the Bus Terminal. The stepper motor terminal KL2541 can be adjusted to the motor and the application by changing just a few parameters. 64-fold micro stepping ensures particularly quiet and precise motor operation. Together with a stepper motor, the KL2541 represents an inexpensive small servo axis.

Technical data	KL2541   KS2541	KL2541-0006
Technology	Compact drive technology	
Number of channels	1	
Number of outputs	1 x stepper motor, encoder input	
Number of inputs	2 x end position, 1 x encoder	
Connection technology	direct motor connection	
Supply voltage electronics	24 V DC (via power contacts)	
Supply voltage power	8...50 V DC (external)	
Output current	max. 5 A per channel	
Encoder supply	24 V DC	5 V DC
Max. step frequency	125,000 steps/s	
Step pattern	full step, half step, up to 64-fold micro stepping	
Current controller frequency	approx. 25 kHz	
Resolution	approx. 5000 positions in typ. applications (per revolution)	
Diagnostics LED	error phase A and B, loss of step/stagnation, power, enable	
Encoder input signal	5...24 V DC, 5 mA, single-ended	
Input frequency	max. 400,000 increments/s (with 4-fold evaluation)	
Current consumption power contacts	typ. 35 mA	
Current consumption K-bus	typ. 100 mA	
Bit width in the process image	input/output: 2 x 16 bit data + 1 x 8 bit control/status	
Special features	travel distance control, encoder input	
Electrical isolation	500 V (K-bus/signal voltage)	
Weight	approx. 100 g	
Operating/storage temperature	0...+55 °C/-25...+85 °C	
Relative humidity	95 %, no condensation	
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 20/see documentation	
Pluggable wiring	for all KSxxxx Bus Terminals	
Approvals	CE, UL	

Accessories	
<b>AS10xx</b>	Stepper motors 0.4 upto 5 Nm (standstill torque)
<b>ZK47x4-04xx, ZK4000-xxxx</b>	Supply cables for Compact Drive Technology

Related products	
<b>KL2531</b>	stepper motor Bus Terminal, $I_{MAX} = 1.5 \text{ A}$ , 24 V, IP 20
<b>EL7031</b>	stepper motor EtherCAT Terminal, $I_{MAX} = 1.5 \text{ A}$ , 24 V, IP 20
<b>EL7041</b>	stepper motor EtherCAT Terminal, $I_{MAX} = 5 \text{ A}$ , 50 V, IP 20
<b>EP7041-0002</b>	stepper motor EtherCAT Box (industrial housing), $I_{MAX} = 5 \text{ A}$ , 50 V, IP 67