



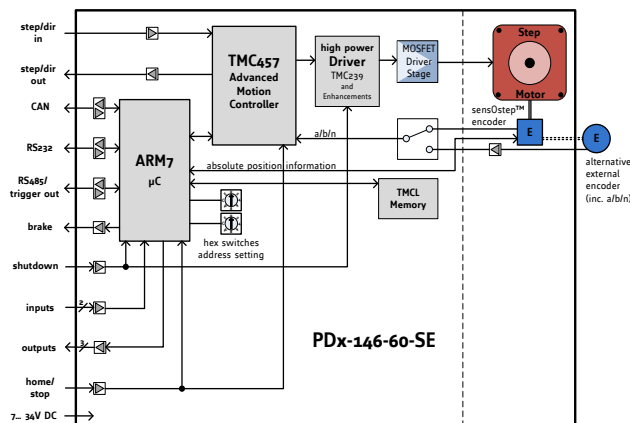
PD-146-60

**60mm / NEMA24
Stepper Motor with
Controller / Driver,
Encoder and
Serial Interface
optional CANopen**

INFO The PD-146-60-SE PANdrive™ is a full mechatronic solution including 60mm flange high torque motor, a motion controller/driver and an integrated high resolution sensOstep™ encoder for step loss detection or position control. The PANdrive™ can be controlled via serial interface or operated in stand-alone mode. It is equipped with a high performance motion controller for high dynamic, high resolution and linear or S-shaped acceleration ramps. The PD-146-60-SE comes with the PC based software development environment TMCL-IDE for the Trinamic Motion Control Language (TMCL™). Predefined high level TMCL™ commands guarantee a rapid development of motion control applications. Communication traffic is kept very low since all time critical operations, e.g. ramp calculation are performed onboard. CANopen firmware is available optionally.

MAIN CHARACTERISTICS

- ELECTRICAL DATA**
 - 24V DC (nom.) supply voltage
- MOTOR DATA**
 - flange size 60mm/NEMA24
 - holding torque 1.10 / 1.65 / 2.10 / 3.10 Nm
 - please also refer to the motor datasheet
- INTERFACE**
 - CAN, RS485 and RS232
 - general purpose I/Os
 - inputs for ref. & stop switches, hardware-shutdown, 1 brake output
 - step&direction/enable input and output
 - external encoder interface (ABN)
- FEATURES**
 - sensOstep™ encoder (max. 4096 incr./rot.)
 - chopSync™ for high velocity operation
 - stallGuard™ for motor stall detection
 - up to 1024 times microstepping
 - memory for 2048 TMCL commands
 - motion profile calculation in real-time (e.g. trapezoid or S-shaped acceleration ramps)
 - on the fly alteration of motion parameters
 - dynamic current control
 - integrated protection
- SOFTWARE**
 - stand-alone operation using TMCL or remote controlled operation
 - PC-based application development software TMCL-IDE included
 - optional CANopen firmware (CiA 302, 402)
- OTHER**
 - 9- & 26-pin D-Sub connector (male)
 - RoHS compliant



ORDER CODE	DESCRIPTION
PD1-146-60-SE (-option)	PANdrive 1.10 Nm, 71 mm length with motor QSH6018-45-28-110
PD2-146-60-SE (-option)	PANdrive 1.65 Nm, 82 mm length with motor QSH6018-56-28-165
PD3-146-60-SE (-option)	PANdrive 2.10 Nm, 91 mm length with motor QSH6018-65-28-210
PD4-146-60-SE (-option)	PANdrive 3.10 Nm, 112 mm length with motor QSH6018-86-28-310
INTERFACE OPTIONS	
TMCL	with TMCL firmware
CANopen	with CANopen firmware