

## MotorNet – Brushless Motors with Integrated Drive and Control

Parker Hannifin has developed a new brushless motor series known as “*MotorNet*” with an integrated drive and control. There are several advantages with this approach which all lead to cost benefits - fewer interconnections, ease in overcoming EMC compatibility problems and compactness. The range covers nominal torques from 1.4Nm to 5Nm, and nominal speeds from 3000 rpm to 6000 rpm. The same drive unit is combined with three different motor sizes, therefore the nominal and maximum currents are the same over the complete range.

The supply voltage is 230VAC three-phase for the motor supply and 24VDC for the logic supply. Communication with MotorNet is exclusively via CANBus, and this is used both for configuration and control. Two protocols are available on the CANBus, standard CANopen and the SBC proprietary profile “*SBC-CAN*”, which is optimised for position, speed and torque control. The CANBus baud rate can be up to 1Mbps. MotorNet can also be configured and controlled via Profibus-DP, DeviceNet or RS232 using a gateway known as “*Bridge*”. MotorNet has a range of standard motion control functions: current, torque and speed control, positioning with trapezoidal profiles, digital lock with variable ratio and phase correction, electronic cam, real-time mode (pre-defined and optimised profiles for the positioner via CanBus), homing functions and position capture. In addition, MotorNet has a “*pico-PLC*” on-board PLC as standard, programmable via standard PLC languages (Instruction List and Ladder). PicoPLC allows the external world (input and output signals, bus parameters etc.) to communicate with the internal MotorNet world. In addition to the CANBus and power connections, MotorNet has two digital inputs as standard which are generally used for fast events and position capture functions. An incremental encoder is used for feedback from the motor, allowing precise position control. MotorNet protection is to IP54 due to the integrated electronics. A braking resistor is incorporated in MotorNet as standard.

