# PicoDAD-SN Low-voltage Dual Axis SynqNet® Drive

## Description

The PicoDAD-SN is a low-voltage Dual-Axis SynqNet® Drive. Incorporating two independent servo drives, this revolutionary product saves space on your machine, and lowers the system cost by utilizing shared components. The PicoDAD operates on 48VDC for the Bus power, and separate 24VDC for Logic power. Separation of Bus and Logic power allows bus power control to be incorporated into the machine safety chain, while not losing application information or real-time monitoring data during E-stop events. Each axis is capable of individually sourcing 10A RMS continuous and 20A RMS peak to the motor.

Like most SynqNet® drives, the PicoDAD-SN is designed as a torque drive, while servo control is executed by the centralized motion controller. Compensation of the drive for use with a specific motor is achieved by programming a set of parameters that reflect the physical characteristics of the electro-mechanical system. Real-time data monitoring allows for on-line diagnostics and preventative maintenance. Extensive I/O support is provided, including dedicated Home, Over-travel limits, brake control, and general-purpose opto-isolated and high-speed I/Os. Machine-oriented I/O is separate from Controller-oriented I/O, for ease of cabling. In addition to status information being accessible via SynqNet®, 7-segment LEDs provide a clear drive status display, individually for each axis.

## SynqNet®

SynqNet® (http://www.synqnet.org) is an all-digital motion control interface for connections between controllers and drives, I/O devices, and other custom nodes. SynqNet® motion network is based on the industry standard IEEE802.3 physical layer for robust electrical isolation and cable/connector availability with an open data layer implemented by Motion Engineering Inc. The 100BASE-T media system is based on specifications published in the ANSI TP-PMD physical media standard. The 100BASE-T system operates over two pairs of wires, one pair for receive-data signals and the other pair for transmit-data signals.

## Electrical Specification

Bus Voltage     48VDC
Logic Power     24VDC
Motor Power     10A RMS continuous / 20A RMS peak per axis

## Dimensions

**Height**: (including mounting bracket): 205mm (8.07")
**Width**: 71.5mm (2.82")
**Depth** (not including mating connector shells): 120.7mm (4.75")

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## Features

### Feedback
◉ Incremental encoder, resolver and sine encoder
◉ Choice of feedback device is made via software parameters, allowing for a single drive part number. Each axis may be configured for a different feedback type.
◉ Commutation initialization without halls is achieved with minimal motion
◉ Auxiliary encoder feedback supported on one axis

### Servo Control
◉ Fully digital current loop, running at 16kHz
◉ Advanced sinewave commutation provides smooth, precise low-speed control as well as high-speed performance
◉ Patented torque angle control enhances motor performance

### Machine I/O (individual for each axis)
◉ Home
◉ Over-travel limits
◉ Brake control dry-contact relay

### Controller I/O
◉ 8 general purpose opto-isolated inputs
◉ 4 general purpose opto-isolated outputs
◉ Enable (individual for each axis)
◉ High-speed I/O
　○ Four RS-422 inputs
　○ Six RS-422 outputs
◉ 4 general-purpose analog inputs
　○ +/- 10Vdc
　○ 12-bit resolution
◉ Dry-contact fault relay

### Real-time data monitoring
◉ Bus voltage
◉ Drive temperature
◉ Analog inputs
◉ Phase currents and overall torque

### Robust Power Stage
◉ Protection against short-circuit and over-voltage
◉ Flexible current foldback protection

## Ordering Information

A single part number exists. Feedback options are selected via drive programming.

### PDD 04 10 165