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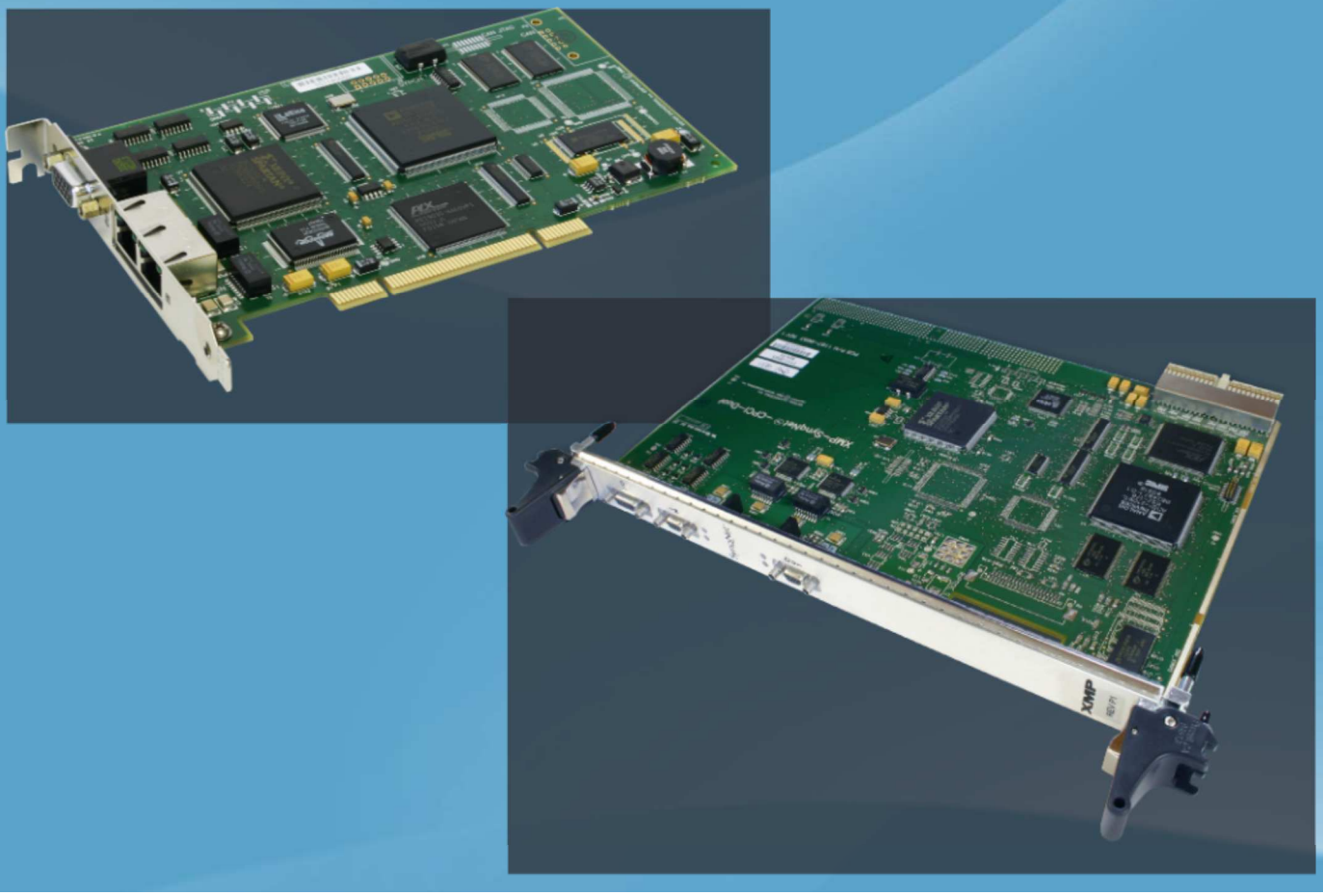
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Find the *Danaher / Kollmorgen / Motion Engineering XMP-SynqNet-PCI-RJ* at our website: *Click HERE*



XMP-SynqNet Series Motion Controllers

Hardware Specification

DANAHER MOTION

*Helping you build a better machine, **faster.***

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XMP-SynqNet Series
Hardware Specification

DANAHER MOTION | SynqNet



Key Benefits

- **Fastest Move Times**
  Shared memory map architecture results in minimized controller latency for the fastest possible motion response and maximized machine throughput. On-the-fly motion and gain set modifications improve machine throughput by minimizing cycle and settling times.
- **Increased Reliability**
  Optional Micro-D connectors for high-vibration environments enhances machine quality, reliability, and up-time.
- **Optimized Machine Design**
  Real-time operating system support reduces overall system cost by enabling deterministic usage of host processor for optimized machine design.
- **Cost Effective SynqNet Controller**
  Tight coordination between motion and I/O via the SynqNet network reduces machine development costs by providing real-time system visibility and motion optimization.

High-Performance SynqNet Motion Controller

The XMP-SynqNet Series controllers provide machine builders with a high-performance motion control solution for next generation machines. The 32-bit XMP-SynqNet Series controllers offer servo update rates up to 20kHz for 4 axes, allowing optimum control of machines requiring high levels of coordination and synchronization between axes. With its software-defined capabilities, each controller can be readily customized to fit the requirements of the most demanding OEM applications. Available in PCI, CPCI-3U, and CPCI-6U form factors with support for Windows® XP/2000, RTX, Linux, VxWorks® and other real-time operating systems.

Develop motion applications for the XMP family of controllers with either the MPI programming library for C/C++ or the MPX programming library for Visual Basic .NET.

The XMP-SynqNet Series controllers also support an optional CAN Network interface, offering virtually unlimited user-defined I/O accessible under one controller and one API.

XMP-Series controllers are the highest volume SynqNet controller for proven motion performance.

SynqNet Platform Overview

Launched in 2001, SynqNet is a digital machine control network specifically designed to meet the flexibility, performance, and safety requirements of today's demanding machine control applications. Built on the 100BT physical layer, SynqNet provides a synchronous real-time connection between motion controllers, servo drives, stepper drives, I/O modules, and custom devices.

FAST
- Network bandwidth for servo updates up to 48 kHz
- Supports up to 32 nodes with 32 axes*
- Over 16,000 bits of digital I/O and 1,000 points of analog I/O
- Real-time diagnostics over SynqNet

SAFE
- "Self-Healing" fault tolerant operation using ring topology
- "HotReplace" allowing replacement of node without network shutdown

PROVEN
- Over 350,000 motion axes installed worldwide
- Multi-vendor interoperable network

SynqNet
www.synqnet.org



Motion Controllers



Drives and Motors



I/O

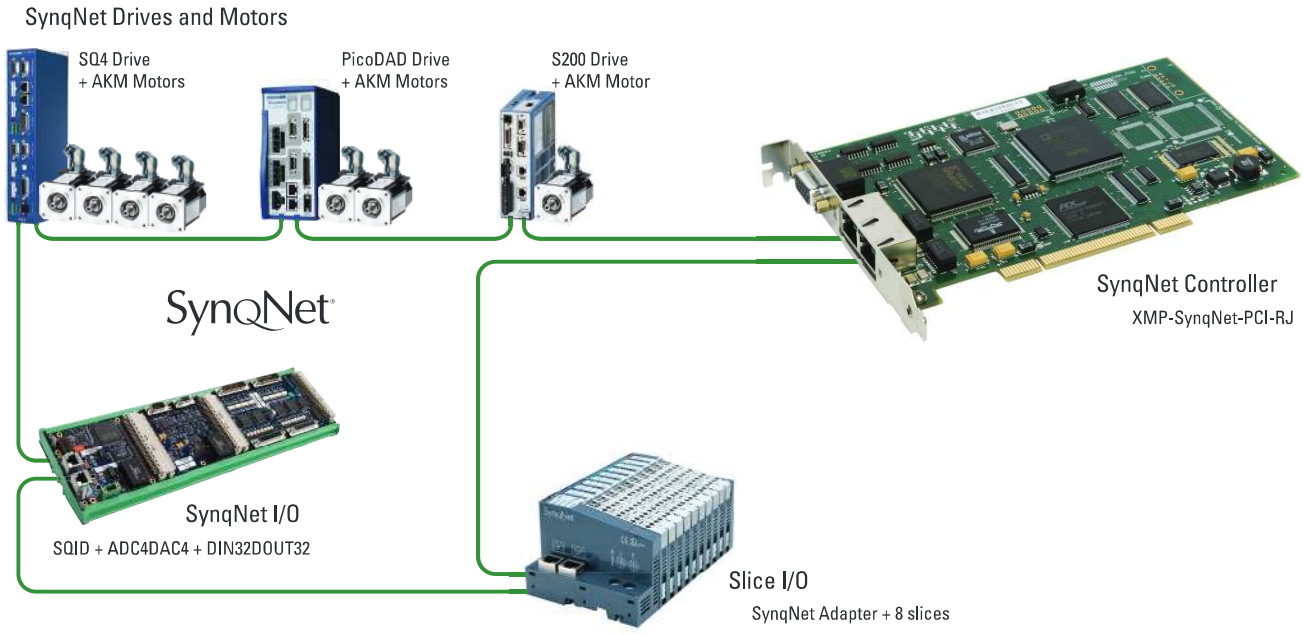


Custom Nodes

* 64 axes/64 nodes available in 2008

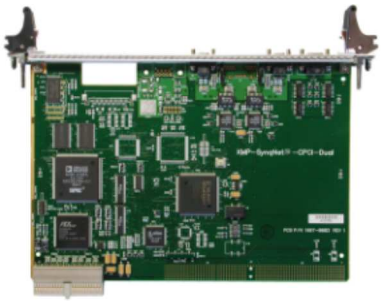
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SynqNet Connectivity Diagram



Configuration Options

XMP-SynqNet Controller
Use a single controller to handle applications with up to 32 axes.


CPCI-6U


PCI

XMP-SynqNet Controller with CANopen
Control up to 32 axes of servo or stepper across the SynqNet network and with virtually unlimited user I/O via CANOpen.


CPCI-6U controller
with CANOpen


PCI controller
with CANOpen option

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XMP-SynqNet-PCI



Part Number	Description
T114-0001*	XMP-SynqNet-PCI-RJ-CAN
T114-0002	XMP-SynqNet-PCI-RJ
T114-0003**	XMP-SynqNet-PCI-RJ-CAN, Non Opto-Isolated
A088-0001	CAN-XCVR, D9, Opto-Isolated
A088-0002	CAN-XCVR-D9, Non Opto-Isolated

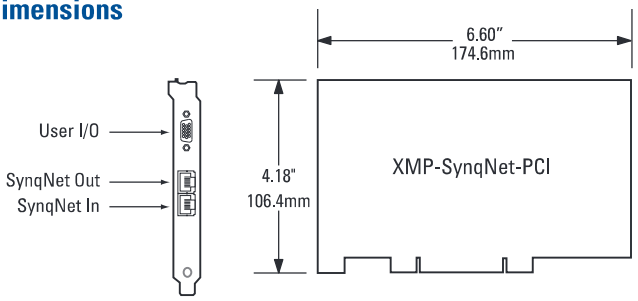
* includes the A088-0001

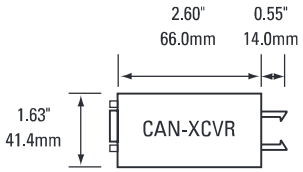
** includes the A088-0002

Specifications

Function	Parameter	Specification
Processor	DSP	Analog Devices SHARC 64-bit floating point 40 MHz / 150 MFLOPS
Servo Loop	Update Rate 4 Axes Update Rate 8 Axes Update Rate	User programmable Max: 20 kHz Max: 10 kHz
Board Interface	Connectors Form Factor Host Bus PCI Bus Speed Memory Interface Power	SynqNet Interface: RJ45 User I/O: Standard DE (15-pin) Half-Size PCI Slot 32-bit Universal PCI 33 MHz 32-bit direct memory map 5V @ 2.0A
User I/O	Lines	6 bi-directional I/O, 1 ESTOP Input
CAN Network User I/O (optional)	Protocol	CANopen - DS401
Kinematic Ranges	Position, Velocity, Acceleration, Jerk	32-bit floating point
Environment	Operating Temperature Storage Temperature Humidity	0 - 50° C 0 - 50° C 20 - 90% RH, non-condensing

Dimensions

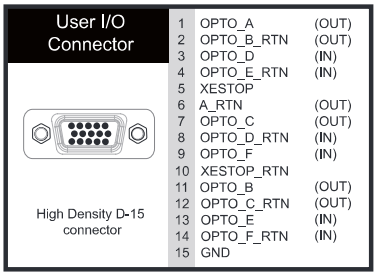




Pinouts and Connector Information

User I/O Connector
Female High Density D-15

User I/O Mating Connector
Male High Density D-15

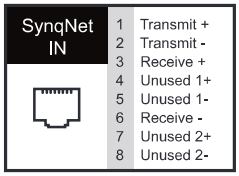


1	OPTO_A	(OUT)
2	OPTO_B_RTN	(OUT)
3	OPTO_D	(IN)
4	OPTO_E_RTN	(IN)
5	XESTOP	
6	A_RTN	(OUT)
7	OPTO_C	(OUT)
8	OPTO_D_RTN	(IN)
9	OPTO_F	(IN)
10	XESTOP_RTN	
11	OPTO_B	(OUT)
12	OPTO_C_RTN	(OUT)
13	OPTO_E	(IN)
14	OPTO_F_RTN	(IN)
15	GND	

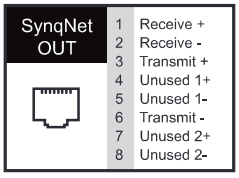
RJ45 SynqNet Connector
AMP Connectors
Mfg P/N 1116353-1

RJ45 Mating Connector
AMP Connectors
Mfg P/N 5-557315
Shielded RJ45 recommended

For more information:
www.amp.com



1	Transmit +
2	Transmit -
3	Receive +
4	Unused 1+
5	Unused 1-
6	Receive -
7	Unused 2+
8	Unused 2-

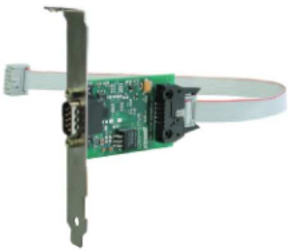


1	Receive +
2	Receive -
3	Transmit +
4	Unused 1+
5	Unused 1-
6	Transmit -
7	Unused 2+
8	Unused 2-

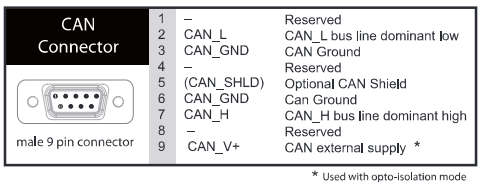
CANoopen Option

Breakout CAN Transceiver
A088-0001 opto-isolated
(for use with T114-0001)

A088-0002 non opto-isolated
(for use with T114-0003)



CANopen Connector
(Optional)

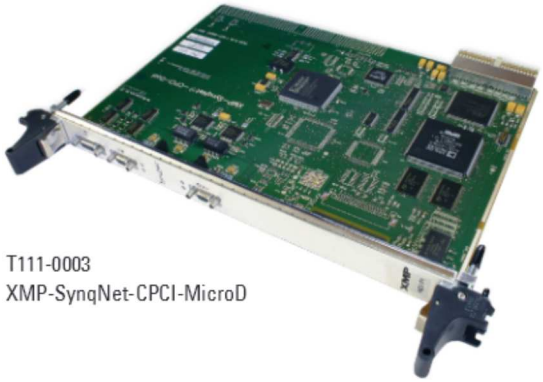


1	–	Reserved
2	CAN_L	CAN_L bus line dominant low
3	CAN_GND	CAN Ground
4	–	Reserved
5	(CAN_SHLD)	Optional CAN Shield
6	CAN_GND	Can Ground
7	CAN_H	CAN_H bus line dominant high
8	–	Reserved
9	CAN_V+	CAN external supply *

* Used with opto-isolation mode

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XMP-SynqNet-CPCI



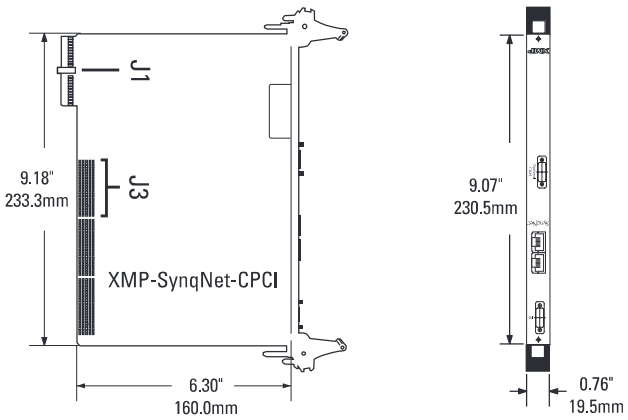
Part Number	Description
T111-0003	XMP-SynqNet-CPCI-MicroD
T111-0004	XMP-SynqNet-CPCI-RJ-CAN

Specifications

Function	Parameter	Specification
Processor	CPU	Analog Devices SHARC 32-bit floating point 40 MHz / 150 MFLOPS
Servo Loop	Update Rate 4 Axes Update Rate 8 Axes Update Rate	User programmable Max: 20 kHz Max: 10 kHz
Board Interface	Connectors	T111-0003 SynqNet Interface: Micro-D (9-pin) User I/O: Micro-D (15-pin) T111-0004 SynqNet Interface: RJ45 User I/O: Micro-D (15-pin)
	Form Factor Host Bus Memory Interface Power	Compact PCI 6U (T111-0003, T111-0004) 32-bit Universal CPCI 32-bit direct memory map 3.3V @ 2.5A; 5V @ 0.9A +12V @ 0.03A; -12V @ 0.01A
User I/O	Lines	6 bi-directional I/O, 1 ESTOP Input
CAN Network User I/O (optional)	Protocol	CANopen - DS401 (T111-0004)
Kinematic Ranges	Position, Velocity, Acceleration, Jerk	32-bit floating point
Environment	Operating Temperature Storage Temperature Humidity	0 - 50° C 0 - 50° C 20 - 90% RH, non-condensing

* must be configured at time of order.

Dimensions



Pinouts and Connector Information

CANopen Connector
(Optional)



1	–	Reserved
2	CAN_L	CAN_L bus line dominant low
3	CAN_GND	CAN Ground
4	–	Reserved
5	(CAN_SHLD)	Optional CAN Shield
6	CAN_GND	Can Ground
7	CAN_H	CAN_H bus line dominant high
8	–	Reserved
9	CAN_V+	CAN external supply *

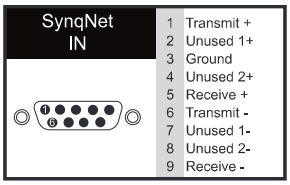
* Used with opto-isolation mode

For additional rear panel I/O options, please contact Danaher Motion.

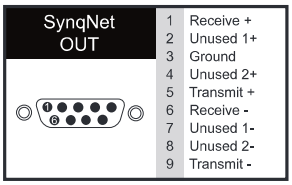
Micro-D SynqNet Connector
Molex Inc.
Mfg P/N 83611-9006

Micro-D SynqNet Mating Connector
Molex Inc.
Mfg P/N 83421-9014

For more information:
www.molex.com



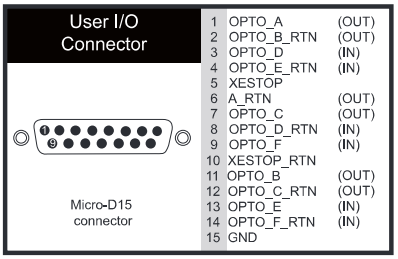
1	Transmit +
2	Unused 1+
3	Ground
4	Unused 2+
5	Receive +
6	Transmit -
7	Unused 1-
8	Unused 2-
9	Receive -



1	Receive +
2	Unused 1+
3	Ground
4	Unused 2+
5	Transmit +
6	Receive -
7	Unused 1-
8	Unused 2-
9	Transmit -

User I/O Connector
Female Micro-D (15 pin)

User I/O Mating Connector
Male Micro-D (15 pin)



1	OPTO_A	(OUT)
2	OPTO_B_RTN	(OUT)
3	OPTO_D	(IN)
4	OPTO_E_RTN	(IN)
5	XESTOP	
6	A_RTN	(OUT)
7	OPTO_C	(OUT)
8	OPTO_D_RTN	(IN)
9	OPTO_F	(IN)
10	XESTOP_RTN	
11	OPTO_B	(OUT)
12	OPTO_C_RTN	(OUT)
13	OPTO_E	(IN)
14	OPTO_F_RTN	(IN)
15	GND	

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