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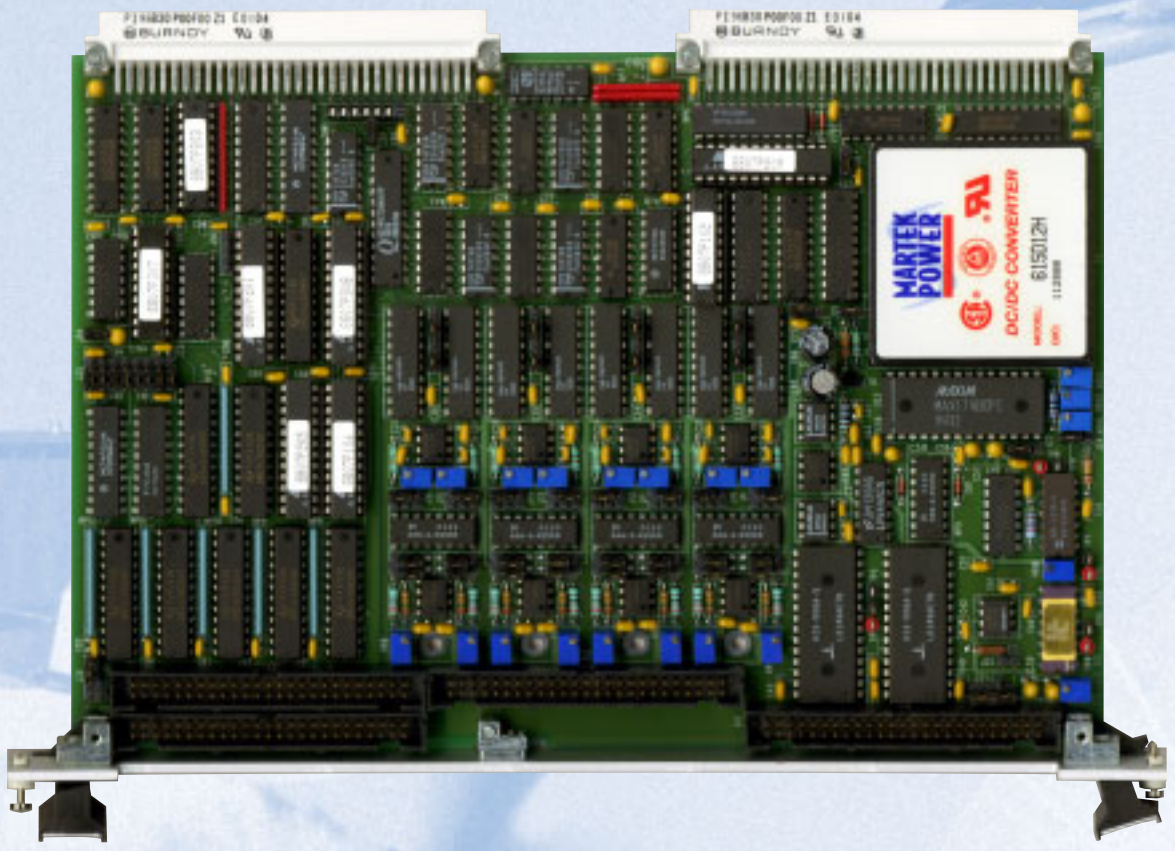
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Find the *Kontron / Thales / Matrix MD-DAADIO8NFP* at our website: *Click HERE*



DAADIO

Combining high-performance D/A, A/D, and PIO functions on one 6U VMEbus board, the DAADIO is an ideal solution for data acquisition and control applications. Its unique combination of I/O functions and its flexible configuration, high throughput, and low cost make the DAADIO a cost-effective alternative to multiboard solutions.

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General Overview

DAC Section

- 8 Channels of D/A
- 2, 4, 6, or 8 Voltage Output Channels Configurable for Current Loop Operation with Optional Voltage-to-Current Adapter
- 12-Bit Resolution, 25 µs Settling Time
- Each Channel Jumper-Selectable as 0-5V, 0-10V, ±5V, ±10V with External Reference Capability to ±24V (±15V Recommended)
- Zero Voltage (or Minimum Current) Output on Reset
- Outputs can be Scaled to External AC or DC Reference Signals (Multiplying DAC Capability)
- Remote Sensing of Output Voltages (User Selectable, per Channel)
- Output Short Circuit Protection (Indefinite Duration - Voltage and Current)

ADC Section

- 32 Channels of A/D
- 12-Bit Resolution at 8 µs Typical (12 µs Version Available)
- In 8-Bit Mode, Conversion Time is 6 µs Typical (8 µs Version Available)
- 32 Single-Ended or 16 Differential Inputs
- Input Range Selection: 0-10V, ±5V, and ±10V
- Software Programmable Gains of 1, 2, 4, 8, and 16 or 10, 20, 40, 80, and 160
- VMEbus Interrupter to Signal End of Conversion

PIO Section

- 48 Lines of PIO
- Two 24-Line Opto 22 Compatible Connectors
- Eight I/O Lines with Change-of-State or Pattern-Matching Interrupt Capability
- Six Byte-Wide I/O Ports; Each Software Configurable for:
  - Data Direction
  - Input Enabling
  - Output Tri-Stating
- I/O Lines Configure as Inputs on Reset
- Input Hysteresis Provided at all Inputs
- Version Available with Right-Angle Headers (MD-DAADIOR)

The MD-DAADIO reduces system costs by combining high-performance D/A, A/D, and PIO functions on one double-height VMEbus board. The design allows for selective population of the D/A, A/D, and PIO sections to create the most cost-effective combination for a particular application.

The MD-DAADIO provides versatile operational configuration via board control and status registers. Programmable board parameters include interrupt level, vector and source registers, PIO port settings, PIO interrupt mask, along with both D/A and A/D control and data registers.

The MD-DAADIO is an ideal single-board solution for data acquisition and control applications. Its unique combination of I/O functions, along with its flexible configuration, high throughput, and low cost make it an attractive alternative to multi-board solutions.

Technical Data

DAC Section

The DAC module features jumper selection of output mode and voltage range as well as multiplying D/A and current loop capabilities. Each of the eight voltage output channels has a 12-bit digital-to-analog converter.

The fully independent output drive circuitry supports a wide range of output characteristics. With jumper-selected unipolar/bipolar modes and 5V/10V ranges, each channel independently configures to operate at 0 to 5V, 0 to 10V, ±5V, and ±10V ranges. External reference signals allow scaling of unipolar and bipolar D/A outputs to nonstandard ranges. This external reference capability also generates unipolar and bipolar outputs scaled to modulated reference signals for true multiplying D/A capability.

Independently jumpered, each channel interprets digital inputs as straight binary (unipolar), offset binary (bipolar), or two's complement (bipolar) data. On reset and power up, all output voltages can be driven to zero independent of mode or range. All current loop outputs are driven to the low limit of the selected current loop range. This feature may be disabled for applications where zero volts (or minimum current) does not represent the desired reset value.

A voltage-to-current adapter (VCA) converts any number of channel pairs from voltage operation to current loop operation. The plug-in VCA supports 4-20 mA, 0-20 mA, or 5-25 mA operation.

ADC Section

The ADC section features software gain control and jumper selection of both input mode and voltage range. The A/D converter features 12-bit resolution and 12 µs or 8 µs conversion time.

The analog input module can be configured for 32 single-ended (input channels are referenced to the common analog ground point), 32 pseudo-differential (all channels are referenced to a common point, not necessarily the analog ground), or 16 differential inputs (each channel has its own independent reference input).

Input voltage ranges are jumper selectable and operate at 0-10V, ±5V, and ±10V. Maximum input voltages as high as ±35V can be tolerated without damaging the board. Preset gain factors of 1, 2, 4, 8, 16, 10, 20, 40, 80, and 160 are programmed by writing to a register. Gain factors can be dynamically changed between the sampling of different channels to optimize the dynamic range of each input.

PIO Section

The PIO module provides 48 lines of TTL I/O. The six ports of the module are individually configured by software to be either input or output ports. Port A of the PIO module has 8 lines which serve as interrupt sources. Each of these lines can be individually masked and configured for interrupting on pattern recognition or change of state.

MD-DAADIOR

The MD-DAADIOR has all the features and functions of the MD-DAADIO, and it has right-angle headers instead of straight headers.

Product Warranty and Services

All of Thales Computers' hardware products are covered by a twelve month return-to-factory warranty.

Several service programs are available, including update services, hotline access, product repair and exchange services, technical assistance, on-site or remote technical assistance.

Finally, in addition to its standard support services, Thales Computers offers customized consultation to system integrators.

Miscellaneous

- Board size: VME double Eurocard (6U: 233.3 mm x 160 mm)
- Single VME slot
- All Thales Computers boards are EC compliant.

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DAADIO Technical Features

VMEbus	
Interface	SA16, SD16/8, SADO
Mapping Granularity	1024-byte
Bus Interrupter	RORA, Programmable Vector & Level

A/D SAMPLING RATES	
8 µs (AD774)	
12-bit	100 KHz to 125 KHz
8-bit	128 KHz to 160 KHz
12 µs (AD674)	
12-bit	62.5 KHz to 100 KHz
8-bit	90.9 KHz to 142 KHz

MISCELLANEOUS	
Power Req.,Typical	+5V @ 2.1A, +12V @ 0.5A

ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature	0 to +70°C
Storage Temperature	-40° to +85°C
Relative Humidity	0 to 95%, noncondensing

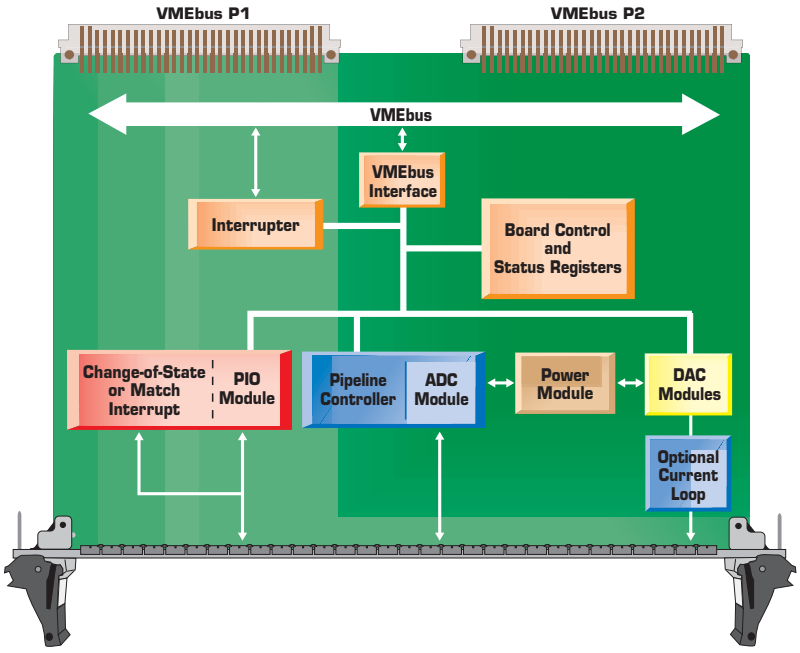
DAADIO Order Code

MD-DAADIO -

		Industrial	Code
Environment Class:	Industrial	X	D
Headers:	Straight Headers	X	no character
	Right Angle Headers	X	R
D/A Options:	No D/A Installed	X	N
	2 Voltage Channels	X	2
	4 Voltage Channels	X	4
	6 Voltage Channels	X	6
	8 Voltage Channels	X	8
Voltage/Current Loop Adapters*:			
	No Current Loop Installed	X	N
	2 Current Loop Channels	X	2
	4 Current Loop Channels	X	4
	6 Current Loop Channels	X	6
	8 Current Loop Channels	X	8
A/D Options:	No A/D Installed	X	N
A/D Installed:	12 µs Conversion	X	A
	8 µs Conversion	X	F
PIO Options:	No PIO Installed	X	N
	48-Line PIO Installed	X	P

*Any number of channel pairs may be converted from voltage operation to current loop operation via a VCA (voltage-to-current adapter).

Example: The part number for a six voltage channel MD-DAADIO with four channels converted to current loop operation via VCAs, an 8 µs A/D, and no PIO would be MD-DAADIO-64FN.



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THALES

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