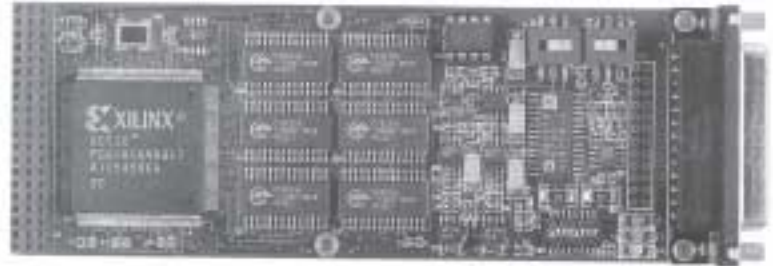


This product is manufactured by C&H Technologies, Inc.  
and exclusively distributed by Racal Instruments, Inc.

## Digital Input Module Model MA203

The MA203 is a digital input module that will sample and selectively store up to 16 bits of digital data along with 31-bit time stamp at a rate up to 5 MHz. The 31-bit time tag allows unique time tagging data. The module has the ability to store all data at the specified sample rate or selectively store input values based upon changes in state of one or more of the inputs. This technique provides extensive real-time data compression for certain digital input signals.

As a replacement for the obsolete Tektronix VX4286 and VX4287 event detectors, double the input channels are available in a single-slot VXI module.



### SPECIFICATIONS

#### Number of Channels

16

#### Sample Rate

up to 5 MHz

#### Input Debounce

0 to 128 ms  
Software Selected

#### Input Polarity

Software Selected

#### Input Types

Plug in AM104, Signal  
Conditioning (see below)

#### Input Masking

Any bit pattern programmable

#### Interrupts

Data Stored  
FIFO Half-Full  
FIFO Full  
Time-Stamp Rollover  
Preset Change of State  
Preset Level Transition  
Preset Bit Pattern

#### Local Memory

32 k x 48 (31-bit time tag)

#### Sampling Strobe

Internal: To 5 MHz  
Front Panel: To 5 MHz  
Backplane Trigger: To 5 MHz  
(Source & prescaler software  
programmable)

#### I/O Connector

44-pin D-Sub or 24-pin peripheral

#### Temperature

Operating: 0° C to 50° C  
Storage: -40° C to 70° C

#### Power

+5 V @ 400 mA  
+12 V @ 0 mA  
-12 V @ 20 mA

#### Signal Conditioning (Specify one per MA203)

(See Reverse Side)

AM104-1: +5 V Optocoupled\*  
AM104-2: +28 V Optocoupled\*  
AM104-3: Contact Closure\*  
AM104-4: +28 V, pgm  
threshold\*\*

\*100 kHz max \*\*5 MHz max

#### M-Module Compliance

Complies with ANSI/VITA Std. 12-1996 for single MA-Modules

Data Transfers: 16-bit

Interrupts: INTA & INTC

Triggers: TRIGA & TRIGB

Compatible with VXI, VME, PCI,  
cPCI and other M-Module carriers

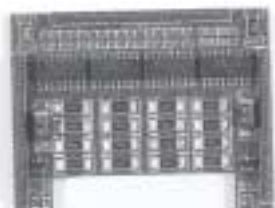
#### Applications

Acquisition of transient signals  
Realtime data compression  
Logic analysis  
Event counting

#### Ordering Information

One AM104 signal conditioning  
module must be ordered with  
each MA-203.

(See Reverse Side)



## AM104 Signal Conditioning Accessory

The AM104 series of Signal Conditioning modules are designed for use with the MA203 digital input module. Specific Options are shown below. An MA203 **MUST** be ordered with one version of the AM104, signal conditioning module.

### +5 V Optocoupled Input Accessory Module (AM104-1) [P/N: 11028120-0001]

Normal Input Voltage Range	0 V to +5 V
OFF Input Voltage	+1.8 V (maximum)
ON Input Voltage	+2.6 V (minimum)
Input Protection	-75 V to +28 V
Input Resistance	100 K $\Omega$ (minimum)
Input Current	3.5 mA per channel at +5 V input (maximum)
Input Propagation Delay	5 $\mu$ s
Channel-Channel Isolation	10 M $\Omega$ minimum
Input Voltage Isolation	1000 V minimum
Maximum sample rate	100 kS/s

### +28 V Optocoupled Input Accessory Module (AM104-2) [P/N: 11028120-0002]

Normal Input Voltage Range	0 V to +28 V
Maximum OFF Input Voltage	+11.0 V
Minimum ON Input Voltage	+17.0 V
Input Protection	-75 V to +50 V
Input Resistance	7.0 K $\Omega$ (minimum)
Input Current	3.0 mA per channel at +28 V input (maximum)
Input Propagation Delay	5 $\mu$ s
Channel-Channel Isolation	10 M $\Omega$ minimum
Input Voltage Isolation	1000 V minimum
Maximum sample rate	100 kS/s

### Contact Closure Sensing Accessory Module (AM104-3) [P/N: 11028120-0003]

Output Sensing Current	3.25 mA (typical)
Output Voltage	+5 V (isolated supply from base module)
Maximum OPEN Sense Current	2.1 mA (1000 $\Omega$ minimum resistance)
Minimum CLOSED Sense Current	4.4 mA (100 $\Omega$ maximum resistance)
Input Propagation Delay	5 $\mu$ s
Maximum sample rate	100 kS/s

### Programmable Threshold Accessory Module (AM104-4) [P/N: 11028120-0004]

Threshold Programming Resolution	100 mV (8-bits)
Threshold Programming Range	0 - 25.6 V
Threshold Accuracy	$\pm$ 0.5% of full scale
Threshold Programming	3-bit Serial
Maximum Input Voltage	28 V
Input Hysteresis	25m V
Maximum Sample Rate	5 mS/s

### Ordering Information

Model Number	Part Number
MA203 + AM104-1	11028100-0001 + 11028120-0001
MA203 + AM104-2	11028100-0001 + 11028120-0002
MA203 + AM104-3	11028100-0001 + 11028120-0003
MA203 + AM104-4	11028100-0001 + 11028120-0004



Racal Instruments Inc., 4 Goodyear St., Irvine, CA 92618-2002. Tel: (800) RACAL-ATE, (800) 722-2528, (949) 859-8999; FAX: (949) 859-7139

Racal Instruments Ltd., 480 Bath Road, Slough, Berkshire, SL1 6BE, United Kingdom. Tel: +44 (0) 1628 604455; FAX: +44 (0) 1628 662017

Racal Systems Electronique S.A., 18 Avenue Dutartre, 78150 LeChesnay, France. Tel: +33 (1) 3923 2222; FAX: +33 (1) 3923 2225

Racal Systems Elettronica Srl, Strada 2-Palazzo C4, 20090 Milanofiori Assago, Milan, Italy. Tel: +39 (0)2 5750 1796; FAX +39 (0)2 5750 1828

Racal Instruments GmbH, Technologiepark Bergisch Gladbach, Friedrich-Ebert-Strasse, D-51429 Bergisch Gladbach, Germany. Tel: +49 2204 8442 00;

FAX: +49 2204 8442 19

