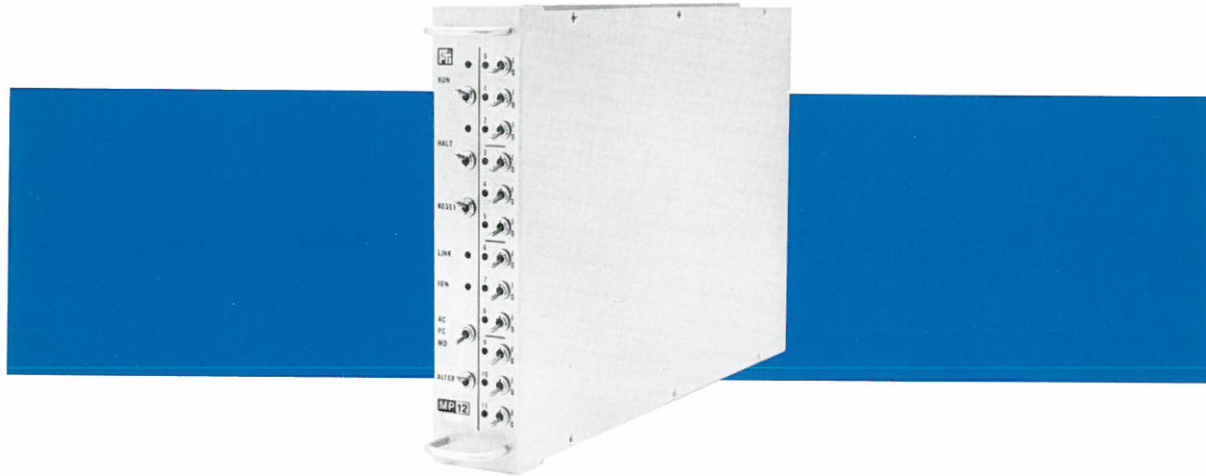




## MP12 MICROPROCESSOR

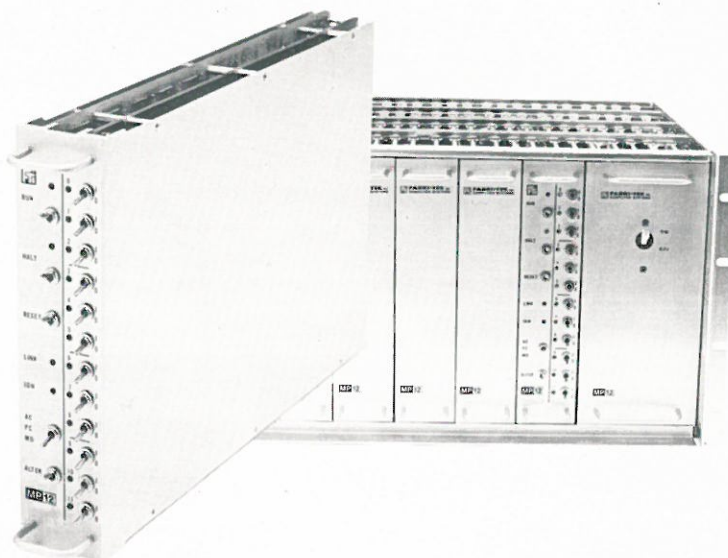


### FEATURES:

- INSTRUCTION SET COMPATIBLE WITH PDP 8\* – USERS CAN REDUCE COSTS WITHOUT REPROGRAMMING
- COMPLETE FUNCTIONAL PROCESSOR – NOT A DO-IT-YOURSELF KIT
- HIGH PERFORMANCE, HIGH RELIABILITY – ALL TTL
- NON-VOLATILE CORE MEMORY
- FASTER THAN MOS MICROPROCESSORS
- SINGLE +5V POWER SUPPLY AT LESS THAN 40 WATTS
- SMALL SIZE RUGGED MODULE 2" x 9.5" x 15"
- VERY LOW COST WITH "OFF THE SHELF" DELIVERY
- BASIC MP12 MICROPROCESSOR INCLUDES
  - OPERATOR'S CONTROL PANEL
  - INTERRUPT SYSTEM
  - DMA CHANNEL
  - PROGRAMMED I/O CHANNEL
  - TELETYPE INTERFACE
  - POWER FAIL - AUTO RESTART
  - 4K MEMORY
- OPTIONAL ROM MEMORY OVERLAY FOR DEDICATED APPLICATIONS
- EASY AND INEXPENSIVE TO INTERFACE – 22 LINE I/O BUS PROVIDES DMA CHANNEL, PIO CHANNEL, AND INTERRUPTS
- INCLUDES POWER FAIL – AUTO RESTART
- COMPREHENSIVE SELF-SUPPORTING SOFTWARE
  - ASSEMBLER
  - DEBUG
  - BINARY LOADER
  - SOURCE EDIT
  - UTILITY MATH SUBROUTINES
  - PROCESSOR DIAGNOSTIC PROGRAM
  - MEMORY DIAGNOSTIC PROGRAM
  - 360/370 CROSS ASSEMBLER

\*TM

# MP12



## FUNCTIONAL

INSTRUCTION FORMAT: Single Word  
 INDEX REGISTERS: 8 (AutoIndex)  
 INDIRECT ADDRESSING: Single Level  
 FIXED POINT OPERANDS: 12 Bit Standard  
 with Software Double and Multiple Precision  
 FEATURES: Power Fail/Auto Restart,  
 Remote Control Inputs, Integral Teletype  
 Interface

## MAIN MEMORY

TYPE: Magnetic Core  
 WORD SIZE: 12 Bits/Word  
 CAPACITY: 4096 Words  
 CYCLE TIME: 1.5 Microseconds

## ENVIRONMENTAL

TEMPERATURE: 0 to 50 C  
 HUMIDITY: 90% Without Condensation

## INPUT/OUTPUT

PROGRAMMED INPUT/OUTPUT: Up to 74,000  
 Words/Second  
 DIRECT MEMORY ACCESS: Latency Time  
 6 Microseconds Max, up to 666,000 Words/Second  
 I/O WORD LENGTH: Up to 12 Bits  
 INTERRUPTS: Single Level with Software Con-  
 trolled priorities

REQUIRES +5V $\pm$  2% VOLTS AT 8 AMP. MAX.

DIMENSIONS: 9.5" x 22.5" x 15.5"  
 WEIGHT: 6.5 Pounds with TTY Interface and  
 Control Panel

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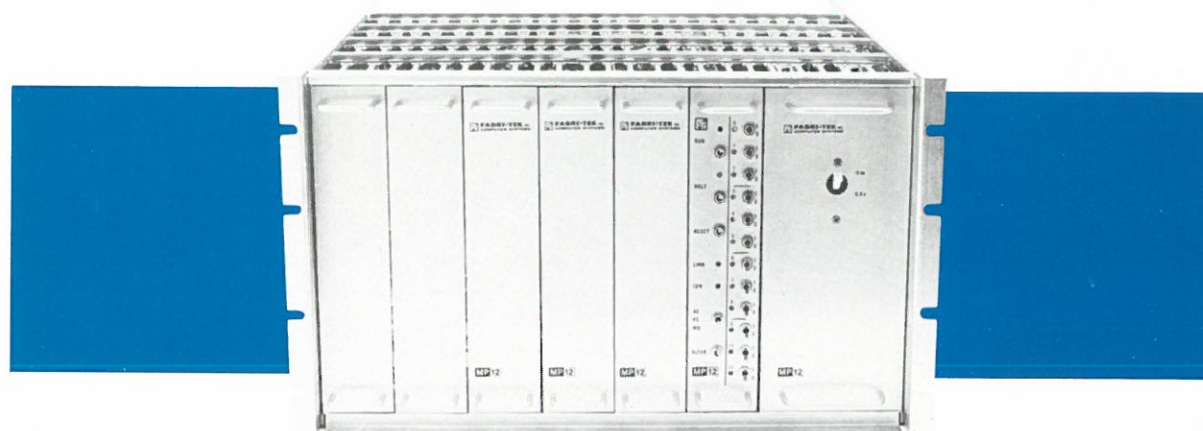
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## MP12 MICROPROCESSOR SYSTEM



### FEATURES:

#### ■ WIRELESS PACKAGING OF PLUGGABLE MODULES

#### ■ MODULES AVAILABLE ARE:

- POWER SUPPLY
- CARD RACK WITH PC BACKPANEL
- WIREWRAP I/O INTERFACE CARD
- I/O INTERFACE CABLES

#### ■ POWER SUPPLY INCLUDES REAL-TIME CLOCK

#### ■ POWER SUPPLY INCLUDES POWER DOWN-POWER UP SIGNALS

#### ■ POWER SUPPLY CAN BE OPERATED FROM 120 VAC LINE OR 8-16 VDC FOR BATTERY OR MOBILE APPLICATIONS

#### ■ INTERFACE CARDS AVAILABLE FOR:

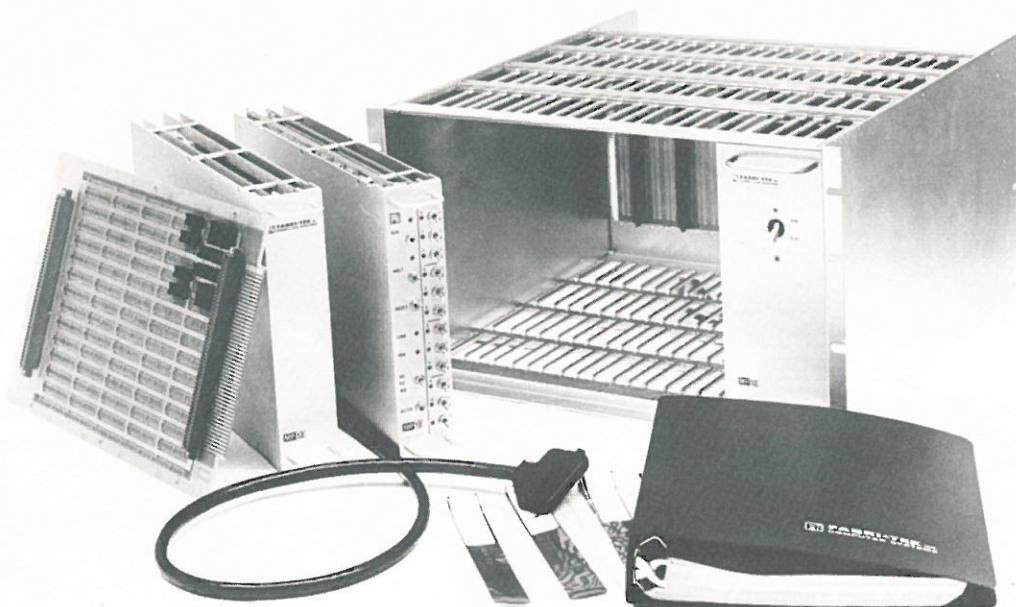
- TELETYPE (OPTIONAL WITH PROCESSOR)
- ASYNCHRONOUS COMMUNICATIONS (103 OR 202 MODEM)
- GENERAL RS232 FOR CRT's ETC.

#### Interface Card cont.,

- FLOPPY DISK
- MAG TAPE CASSETTE
- HIGH SPEED PAPER TAPE READER
- HIGH SPEED PAPER TAPE PUNCH
- GENERAL PURPOSE (8 BIT INPUT, 8 BIT OUTPUT)
- DIGITAL INPUT (TTL OR OPTICAL ISOLATORS)
- DIGITAL OUTPUT (TTL OR RELAY CONTACT CLOSURE)
- ANALOG TO DIGITAL CONVERSION (16 CHANNEL, 12 BIT)
- DIGITAL TO ANALOG CONVERSION (2 CHANNEL, 12 BIT)
- DATA MODULE (4K x 12 CORE MEMORY)
- HIGH SPEED LINE PRINTER
- CHARACTER PRINTER
- 80 COLUMN CARD READER (WITH ASCII CONVERSION)
- MAGNETIC TAPE (9TK 800 BPI, IBM COMPATIBLE)
- MULTIPROCESSOR

#### ■ VERY RUGGED MODULAR PACKAGING

# MP12



## MICROPROCESSOR SYSTEM COMPONENTS

### MP12 SPECIFICATIONS

#### FUNCTIONAL

PROVIDES: Card Rack, Interconnection Back-panel, I/O Interface cards, I/O Interface Cables, and Power Supply for MP12 Microprocessor and I/O Interface Cards

POWER SUPPLY: 9.5" x 4.5" x 15.5"

I/O CABLES: 5, 10, or 15 feet long

Cards can be plugged into the rack on .65" and .75" centers (total of 14 cards and one MP12 and one power supply in one card rack)

RACK TO RACK BUSS CONNECTOR AVAILABLE

#### ELECTRICAL

Requires 120 VAC, 60 HZ, at 2 AMPS Max. or 8-16VDC at 8 AMPS Max., Power Supply Delivers up to 20 AMP. at 5V

#### ENVIRONMENTAL

TEMPERATURE: 0 to 50 C

HUMIDITY: 90% Without Condensation

#### MECHANICAL

I/O INTERFACE CARDS: 9.5" x 2.25" x 15.5"

CARD RACK: 19" x 10.5" x 17.5" (Fits standard 19" RETMA Rack)

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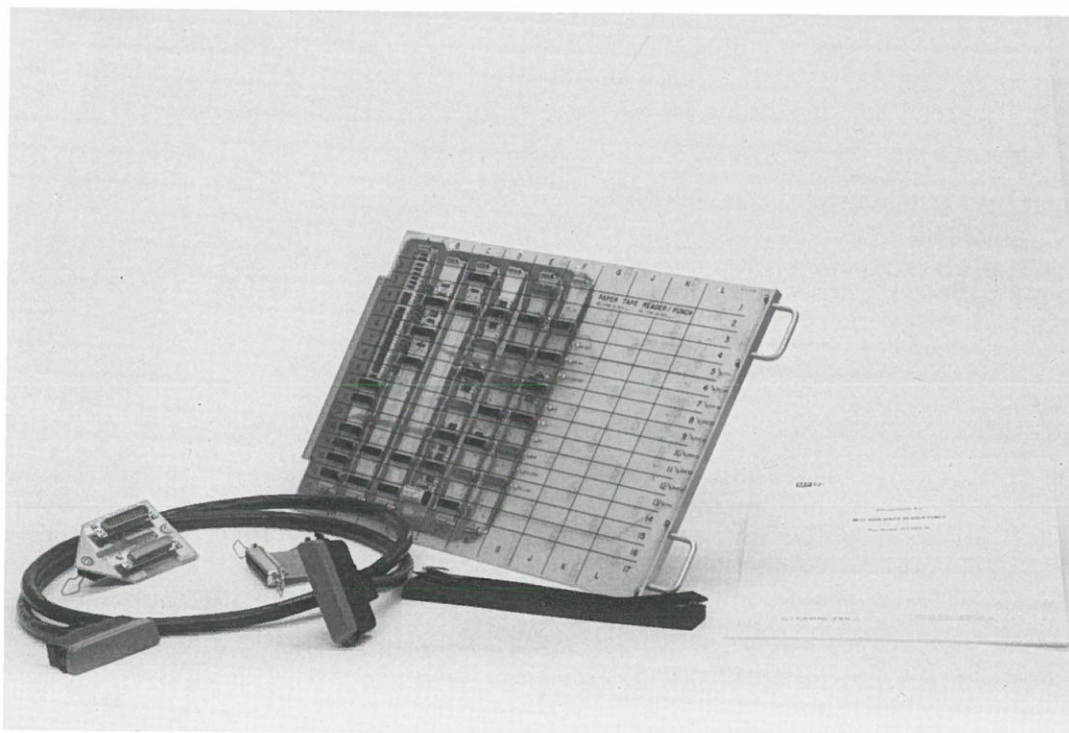
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## **MP12** READER/PUNCH INTERFACE

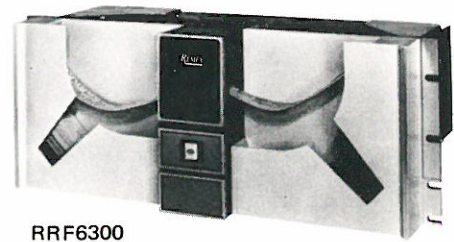


### **FEATURES:**

- DELIVERED IN KIT FORM COMPLETE WITH PRINTED CIRCUIT INTERFACE CARD, CABLE, ADAPTERS, AND DOCUMENTATION PACKAGE
- INTERFACE CARD PLUGS DIRECTLY INTO THE MP12 CHASSIS ASSEMBLY
- AVAILABLE FOR REMEX MODEL RR-6300 PAPER TAPE READER, REMEX MODEL RP-1075 PAPER TAPE PUNCH, REMEX MODEL RA-6375 PAPER TAPE READER/PUNCH, AND REMEX MODEL RCS-1300 DUAL MAGNETIC TAPE CASSETTE SYSTEM
- LOW COST WITH "OFF-THE-SHELF" AVAILABILITY

**PAPER TAPE READER INTERFACE KIT****PART NUMBER 117-0321-00**

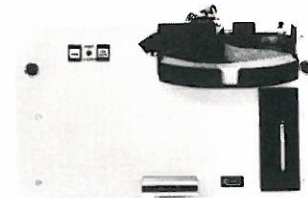
Interface Card and Installation Kit for Remex Model RR-6300 Paper Tape Reader--- The Remex Model RR-6300 Paper Tape Reader reads standard 8 channel punched tape asynchronously at 300 characters per second. Tape handlers for both fanfold (RRF6300) or reel to reel (RRS6300) operation are available. Installation Kit includes I/O Adapter (190-1716-00), 5 foot I/O cable (262-0318-05), Adapter to RR-6300 Paper Tape Reader Connector (190-1780-01), and documentation (schematics, operating instructions, and diagnostic software).



RRF6300

**PAPER TAPE PUNCH INTERFACE KIT****PART NUMBER 117-0339-00**

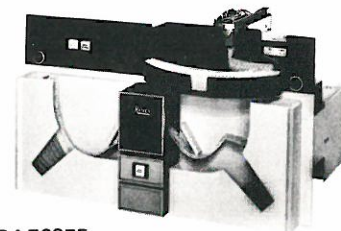
Interface Card and Installation Kit for Remex Model RP-1075 Paper Tape Punch -- The Remex Model RP-1075 Paper Tape Punch perforates standard 8 channel punched tape asynchronously at 75 characters per second. Tape handlers for both fanfold (RPF1075) or reel to reel (RPS1075) operation are available. Installation Kit includes I/O adapter (190-1716-00), 5 foot I/O Cable (262-0318-05), adapter to RP-1075 Paper Tape Punch Connector (190-1780-02), and documentation (schematics, operating instructions, and diagnostic software).



RPF1075

**PAPER TAPER READER/PUNCH INTERFACE KIT****PART NUMBER 117-0322-00**

Interface Card and Installation Kit for Remex Model RA-6375 Paper Tape Reader/Punch --- The Remex Model RA-6375 punches standard 8 channel punched tape asynchronously at 75 characters per second and reads standard 8 channel punched tape asynchronously at 300 characters per second. Tape Handlers for both fanfold (RAF6375) or reel to reel (RAB6375) operation are available. Installation kit includes I/O adapter (190-1716-00), 5 foot I/O cable (262-0318-05), adapter to RA-6375 Paper Tape Reader/Punch Connector (190-1780-00), and documentation (schematics, operating instructions, and diagnostic software).



RAF6375

**DUAL CASSETTE TAPE DRIVE INTERFACE KIT****PART NUMBER 117-0340-00**

Interface Card and Installation Kit for Remex Model RCS 1300 Paper Tape Emulator. The Remex Model RCS 1300 Paper Tape Emulator is a Dual Cassette Magnetic Tape System that is a functional replacement for a combination Paper Tape Punch and Paper Tape Reader. Installation Kit includes I/O adapter (190-1716-00), 5 foot I/O Cable (262-0318-05), Adapter to RCS 1300 Paper Tape Emulator connector, and documentation (schematics, operating instructions, and diagnostic software).



RCS1300

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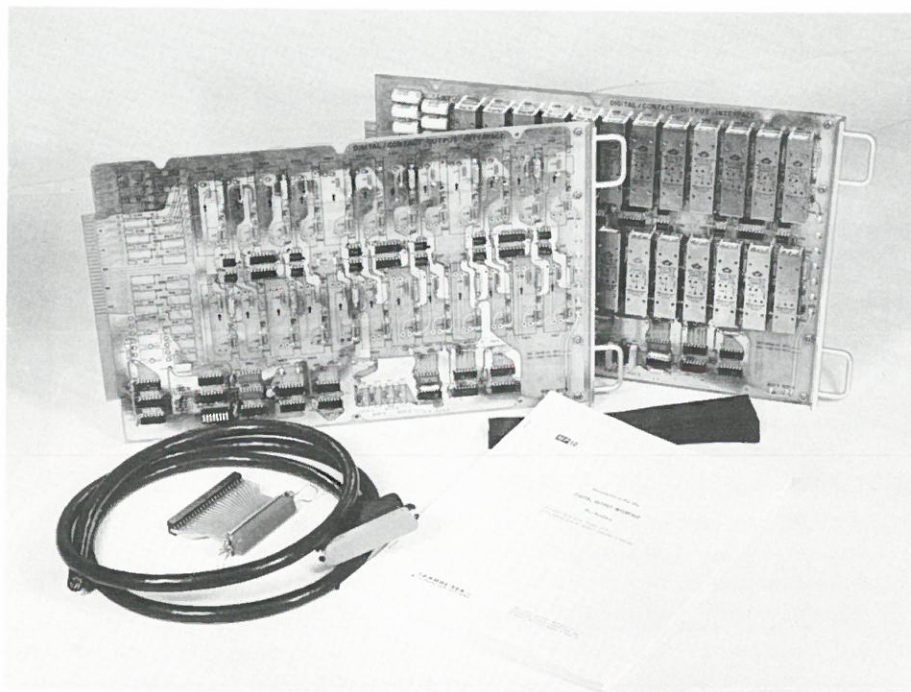
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# MP12 DIGITAL INPUT INTERFACE DIGITAL OUTPUT INTERFACE



## FEATURES:

- DELIVERED IN KIT FORM COMPLETE WITH PRINTED CIRCUIT INTERFACE CARD, CABLE\*, I/O ADAPTER, AND DOCUMENTATION PACKAGE
- INTERFACE CARD PLUGS DIRECTLY INTO THE MP12 CHASSIS ASSEMBLY
- FOUR DIFFERENT INTERFACE CARDS AVAILABLE
  - TTL LEVEL INPUT
  - OPTICALLY ISOLATED INPUT
  - TTL LEVEL OUTPUT
  - CONTACT CLOSURE OUTPUT
- TWENTY FOUR INTERFACE SIGNALS PER INTERFACE CARD
- INPUT INTERFACE OPTIONALLY INTERRUPTS ON STATUS CHANGE

\*117-XXXX-00 Kit does not include cable, 117-XXXX-10 Kit Includes 10 foot long cable (Available separately as 262-0314-10).

#### DIGITAL INPUT INTERFACE KIT Part Number 117-0325-00

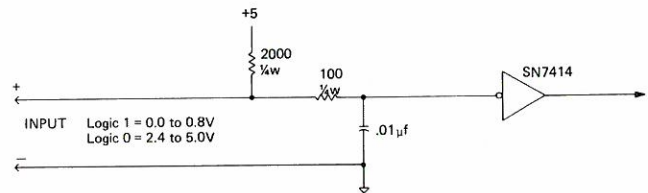
Interface card and installation kit for 24 TTL level input signals. The 24 inputs are divided into two independent 12 bit groups addressed as separate input devices. Inputs can be configured to generate a processor interrupt signal on positive transitions, negative transitions, both positive and negative transitions, or no interrupts at all by jumpers on the interface printed circuit card.

Installation kit includes:

I/O Adapter (190-1716-00)

Documentation (Schematics, Operating Instructions, and Diagnostic Software)

#### Input Circuit Configuration



#### DIGITAL INPUT INTERFACE KIT Part Number 117-0326-00

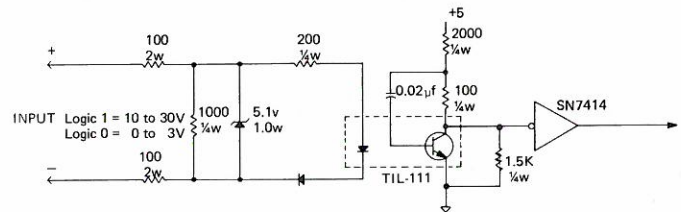
Interface card and installation kit for 24 optically isolated digital input signals. The 24 inputs are divided into two independent 12 bit groups addressed as separate input devices. Inputs can be configured to generate a processor interrupt signal on negative signal transitions, positive signal transitions, both positive and negative signal transitions, or no interrupts at all by jumpers on the interface printed circuit card.

Installation kit includes:

I/O Adapter (190-1716-00)

Documentation (Schematics, Operation Instructions, and Diagnostic Software)

#### Input Circuit Configuration



#### DIGITAL OUTPUT INTERFACE KIT Part Number 117-0327-00

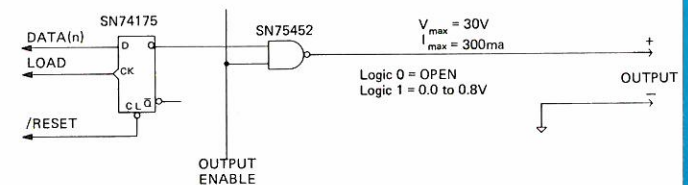
Interface card and installation kit for 24 TTL level output signals. The 24 outputs are divided into two independent 12 bit groups addressed as separate output devices. Outputs can be static signals or pulsed signals as selected by jumpers on the interface printed circuit card.

Installation kit includes:

I/O Adapter (190-1716-00)

Documentation (Schematics, Operation Instructions, and Diagnostic Software)

#### Output Circuit Configuration



#### DIGITAL OUTPUT INTERFACE KIT Part Number 117-0328-00

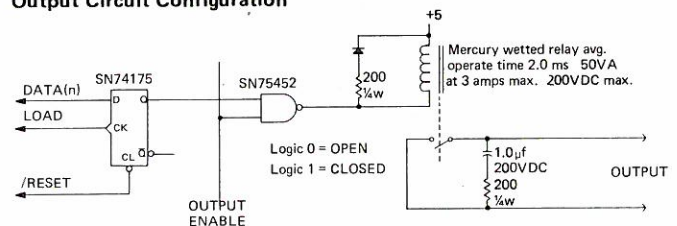
Interface card and installation kit for 24 contact closure outputs. The 24 outputs are divided into two independent 12 bit groups addressed as separate output devices. Outputs can be static signals or pulsed signals as selected by jumpers on the interface printed circuit card.

Installation kit includes:

I/O Adapter (190-1716-00)

Documentation (Schematics, Operating instructions and Diagnostic Software)

#### Output Circuit Configuration



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