Digital488/80A™

80-Bit IEEE 488/Digital I/O Interface

Features

- **Enables an IEEE 488 interface to program or read the state of 80 bits of TTL level signals**
- **Divides signals into two 40-bit channels, which are further divided into individual 8-bit ports**
- **Nonvolatile memory stores power-up state of all 80 lines, as well as up to 100 predefined configurations**
- **Available with optional 200 mA high current drive capability and +12V, +24V, and +48V logic levels (HVCX1)**

Digital488/80A provides an economical link between an IEEE controller and digital signals

The Digital488/80A™ is an IEEE 488/digital I/O interface that enables an IEEE 488 controller to program 80 bits of TTL-level signals as either inputs or outputs. Its two channels of 40 TTL lines can be treated as multiple 8-bit ports. Six high level ASCII commands configure the ports as all inputs, all outputs, or combinations of these. In addition, with optional HVCX1, the unit's outputs can be configured for high current for switching relays, turning on LEDs, or driving indicating devices. When interfacing to non-TTL-level devices, the HVCX1 also provides compatibility with 12V, 24V, and 48V logic.

Handshake and Control

Six handshake/control lines are also provided for each 40-bit channel, including Trigger, Data Strobe, Inhibit, Clear, Service Request, and External Data Ready lines. The line's Trigger output is pulsed when a Group Execute Trigger (GET) is received on the bus. The Data Strobe output is pulsed when the IEEE 488 controller presents new data on the I/O lines. The Inhibit output line is asserted while the IEEE 488 controller is reading data from input lines. The Clear output line is pulsed whenever a Device Clear or Selected Device Clear command is received from the IEEE 488 controller. The Service Request input can be used to generate a service request to the IEEE controller. The External Data Ready input line is used to latch digital input data on the I/O lines into the buffer at up to 10 kHz.

Nonvolatile Power-up & Setup Configuration

The Digital488/80A's nonvolatile memory can store power-up information, enabling the input/output status and logic level of every I/O line to be defined when power is applied. In addition to predefined power-up information, the Digital488/80A has internal pull-up resistors, ensuring a logic "HIGH" the instant power is applied. When using the high current outputs, the internal pull-up resistors ensure that the high current outputs are switched off the instant power is applied—a requirement for process control applications. The unit's nonvolatile memory can store up to 100 different setups, allowing a single pre-defined command from the IEEE 488 controller to control up to 80 bits of information.

High Current Driver

With optional HVCX1, each 8-bit port can be configured to control high current open collector drivers capable of sinking up to 200 mA per I/O line. Each high current driver has an internal fly-back diode for protection when switching inductive devices such as relays.

High-Voltage Logic Levels

When interfacing inputs to +12V, +24V, or +48V logic levels, optional HVCX1 configures the Digital488/80A with resistor networks to interface to 12V, 24V, or 48V logic. When interfacing outputs to 12V, 24V, or 48V logic levels, HVCX1 uses the high-current open collector drivers in conjunction with optional pull-up resistors to achieve the appropriate level. HVCX1 also includes circuitry for the six handshake and control lines to interface to 12V, 24V, or 48V logic.

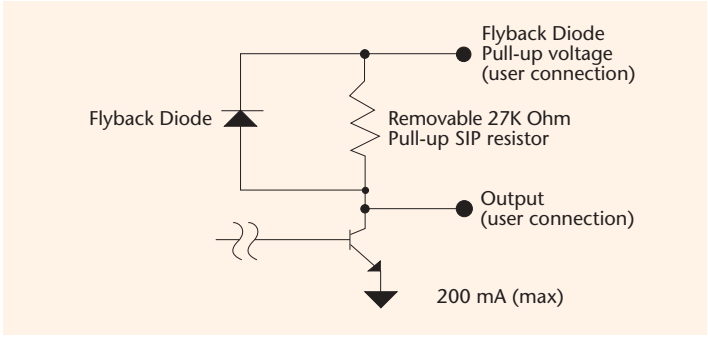
Internal Buffer

A built-in data buffer in the Digital488/80A can store up to 8,000 bytes—an amount large enough to permit the capture of 1,000 patterns from one 40-bit I/O channel. When interfacing to slow devices, the data buffer relieves the controller of the need to constantly read data from the Digital488/80A.

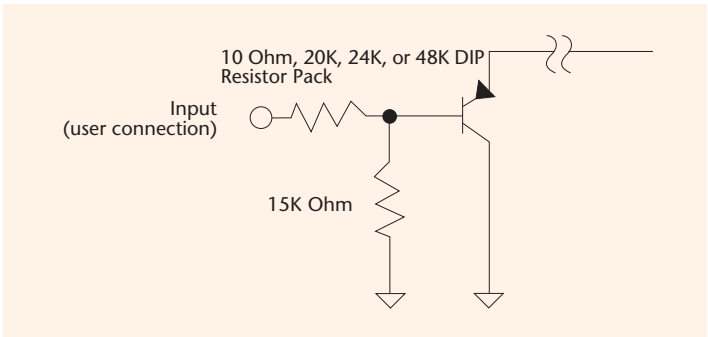
Digital488/80A™

Specifications & Ordering Information

HVCX1 Option (partial schematic)



Option HVCX1 high current/voltage output



Option HVCX1 12V, 24V, or 48V logic input

The HVCX1 option is user-configurable as either input or output in 8-channel multiples

Specifications

Digital I/O Interface

Digital I/O Capability: Dual channels, each with five 8-bit ports, programmable as inputs or outputs; programmable handshake lines, data latching capability, an SRQ input, and trigger and clear outputs
Logic Levels: Outputs will drive 2 TTL loads (3.2 mA sink); optional 12V, 24V, and 48V logic support for both 40-bit I/O channels available with the HVCX1 interface module
Optional High-Current Outputs: With HVCX1, the outputs can be configured, in groups of eight, as high current outputs; each high-current output is capable of sinking up to 200 mA at 50 VDC max; total current sinking capability, 8A max
Update Rate: In the binary mode, the Digital488/80A can update one 40 bit I/O channel at up to 2 kHz
I/O Port Connections: 2 D-shell 50-pin connectors; mating solder tab connectors supplied

IEEE 488 Interface

Interface Subsets: SH1, AH1, T4, TE8, L4, LE4, SR1, PP0, RL0, DC1, DT1, C0, and E1
Connector: Standard IEEE 488 connector with metric studs

General

Indicators: LEDs for Talk, Listen, SRQ, Error, and Power
Power: 90 to 125V or 210 to 250V, 50/60 Hz; 20 VAC max
Environment: 0° to 50°C; 0 to 95% RH, non-condensing
Controls: Power switch, external dip switch for IEEE 488 addressing mode and IEEE 488 address
Optional Accessory: HVCX1 option for both 40-bit I/O channels consists of:

HVCX1	High Voltage/Current Interface Option
RN-3-20K	20K Resistor DIP Pack (12)
RN-3-56K	56K Resistor DIP Pack (12)
RN-3-120K	120K Resistor DIP Pack (12)
RN-9-27K	27K Pull-up Resistor SIP Pack (10)

Dimensions: 425 mm W x 203 mm D x 45 mm H (16.75" x 8" x 1.75")
Weight: 4.5 kg (10 lbs)

Input Ranges (HVCX1 option only)			
Input Range	**Nominal Logic Low Voltage (±10%)**	**Nominal Logic High Voltage (±10%)**	**Input Resistance**
0 to 5V	0.8V	2.4V	15K Ohm
0 to 12V	1.9V	5.75V	35K Ohm
0 to 24V	4.2V	11.5V	61K Ohm
0 to 48V	8.4V	23V	135K Ohm

Ordering Information

Description	Part No.
80-bit IEEE 488/digital I/O interface, including two mating solder-tab D-shell connectors; power cord; and rack-mount kit	Digital488/80A

Accessories & Cables

High current/voltage interface module	HVCX1
Shielded IEEE 488 cable, 6 ft.	CA-7-3
50-pin ribbon cable, 6 ft.	CA-88

For complete information on accessories and cables, visit **www.iotech.com/acc**

Related Products

Hardware
Personal488 Series p. 307