

- Digital I/O Module With 32-Bit Capability
- Choice of 16-Bit I/O, 32-Bit Input or 32-Bit Output
- Choice of Output Types: TTL, CMOS or Open Collector
- TTL Output Option Suitable for Driving External Logic
- Open-Collector Outputs Option Suitable for Driving External Relay Coils
- Programmable By Bit, Byte or Word (16 Bits)



***Please contact Pickering for alternative PXI/LXI/USB solutions**

The 10-410B range of Digital I/O Modules are suitable for operating external devices, such as heavy duty relays (power, RF and high voltage types), solenoids, lamps etc., or for interfacing with external logic, e.g. a programmable instrument with a BCD interface. Writing and reading can be done at bit, byte or word level to simplify programming effort. Applications include generating control signals, stimulus and sensing status from digital devices.

Two choices of output drive are available: TTL for interacting with external logic and Open Collector Transistor for operating external devices with voltages to 50V DC and currents to 500mA.

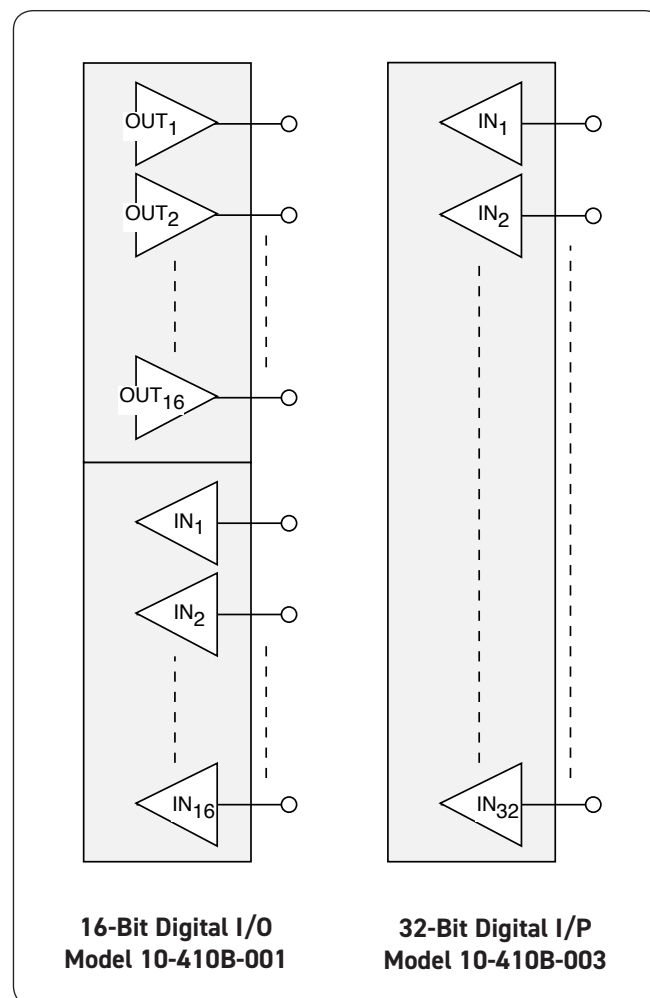
Model 10-410B-004 is intended for driving the 20-310/320 high voltage modules, these modules are optically isolated when mounted in a separate case.

Range Description:

- **10-410B-001** Digital I/O Module with 16-Bit TTL Output and 16 Bit TTL Input.
- **10-410B-002** 32-Bit Digital Output Module.
- **10-410B-003** 32-Bit Digital Input Module.
- **10-410B-004** 32-Bit High Voltage Driver Module.

One of the following options may also be specified:

- **-C** CMOS Compatible Logic
- **-O** Open Collector Output



Programming

The Digital I/O module is simple to program either by single bit or by word (8 or 16 bits).

ARESET a	Clear all outputs on module a
CLOSE a,b	Set bit number b on module a
DELAY t	Force a minimum delay of t milliseconds between two instructions
OPEN a,b	Clear bit number b on module a
READ? a[,b]	Read word (8 or 16 bits) on module a . If the bit number b is supplied then a 1 or 0 value for that bit only is returned
RESET	Clear all bits/switches on all modules
VIEW? a[,b]	View status of module a , can be viewed at any time either as a word or by bit b as a logical value (1 or 0)
WRITE a,w	Send word w to module a

Mechanical Characteristics

All modules conform to the 3U height (128mm) Eurocard standard and are 160mm deep screened plug-in card. Front panel width for all versions is 2.4 inches.

Connectors

Connections are made via 2 front panel mounted 37-pin D-type male plugs except 10-410B-004 which has a single 37-pin D-type plug.

Operating/Storage Conditions

Operating Conditions

Operating Temperature:	0°C to +55°C
Humidity:	Up to 95% non-condensing
Altitude:	5000m

Storage and Transport Conditions

Storage Temperature:	-20°C to +75°C
Humidity:	Up to 95% non-condensing
Altitude:	15000m

Safety & CE Compliance

All modules are fully CE compliant and meet applicable EU directives: Low-voltage safety EN61010-1:2010, EMC Immunity EN61326-1:2013, Emissions EN55011:2009+A1:2010.

Input and Output Driver Specifications

TTL Compatible Output Driver (Model 10-410B-001/002)

Driver I.C.:	74LS673
Maximum drive:	15 TTL inputs
Max Voltage:	7V
Max Current Drive:	Sink: 8mA max Source: 0.4mA
Operate/Release Time:	<1ms (after internal bus DAV)

Open Collector Transistor Driver (Option -O)

Driver I.C.:	ULS2803A
Maximum Standoff Volts:	50V
Max Power per O/P:	1.0W
Max Power per Byte:	1.6W
Max Current Drive	500mA
Operate/Release Time:	<1ms (after internal bus DAV)

Digital TTL Compatible Input (Model 10-410B-001/003)

Driver I.C.:	74LS674
Maximum Standoff Voltage:	7V
Nominal True voltage:	>2.0V
Nominal False voltage:	<0.8V
Data is strobed when the READ? operation executes	

Note: Care must be taken when interfacing the 10-410B module with external circuits which may produce high voltage spikes or RF interference. Additional noise protection may be required, please contact Pickering if you wish to discuss your requirement.

Product Order Codes

Digital Input/Output Module:

TTL 16-Bit Input + TTL 16-Bit Output	10-410B-001
TTL 32-Bit Output	10-410B-002
TTL 32-Bit Input	10-410B-003
32-Bit High Voltage Remote Driver	10-410B-004

Optional CMOS Compatible Logic	-C
Optional Open Collector Outputs	-O

Product Customization

Pickering System 10 modules are designed and manufactured on our own flexible manufacturing lines, giving complete product control and enabling simple customization to meet very specific requirements.

Customization can include:

- Alternative relay types
- Mixture of relay types
- Alternative number of relays
- Different performance specifications

All customized products are given a unique part number, fully documented and may be ordered at any time in the future. Please contact your local sales office to discuss.

Mating Connectors & Cabling

37-Pin D-type Socket with Crimp Pins 10-960-001

For other 37-pin connection accessories for the 10-410B series modules please refer to the [90-007D](#) 37-pin D-type Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.