

# Standard DC Input Modules

## Features

- Rugged construction
- Up to 4000 volts of optical isolation (transient)
- Most have a bridge-rectifier input, and accept AC or DC inputs.



**IDC5 Input Module**

## Description

Input modules are used for sensing ON/OFF voltage levels. All AC and DC input modules, with the exception of the IDC5B and the IDC5D, have a bridge-rectifier input, and accept AC or DC inputs.

The IDC5B module is a fast-switching input module for signals produced by photoelectric switches or TTL level devices. The IDC5D is a low cost, DC only, input module for use in data acquisition applications.

Each module provides up to 4000 volts (transient) of optical isolation between the field inputs and the output side of the circuit.

Typical uses and applications include sensing the presence or absence of voltage or sensing contact closures from sources such as:

- Proximity switches
- Limit switches
- Selector switches
- Push buttons
- Photoelectric switches
- TTL-compatible devices

## Part Numbers

Part	Description
IDC5	AC/DC Input 10-32, 5 VDC Logic
IDC5B	DC Input 4-16, 5 VDC Logic High Speed
IDC5D	DC Input 2.5-28 VDC, 5 VDC Logic
IDC5G	AC/DC Input 35-60 VDC, 5 VDC Logic
IAC5	AC/DC Input 90-140 VAC, 5 VDC Logic
IAC5A	AC/DC Input 180-280 VAC, 5 VDC Logic
IDC15	AC/DC Input 10-32 VAC, 15 VDC Logic
IAC15	AC/DC Input 90-140 VAC, 15 VDC Logic
IAC15A	AC/DC Input 180-280 VAC, 15 VDC Logic
IDC24	AC/DC Input 10-32 VDC, 24 VDC Logic
IAC24	AC/DC Input 90-140 VAC, 24 VDC Logic
IAC24A	AC/DC Input 180-280 VAC, 24 VDC Logic

# Standard DC Input Modules

## Module Specifications

### General

Operating Ambient Temperature	- 30 to 70 °C
Isolation, Input-to-Output (Transient)	4000 V
Output Voltage Drop: logic side	0.4 volts @ 50 mA
Output Current	50 mA
Output Leakage With No Input IDC5D Only	0.1 mA @ 30 VDC 0.01 mA @ 30 VDC
Transistor	30 volts breakdown

### DC Input Module Specifications

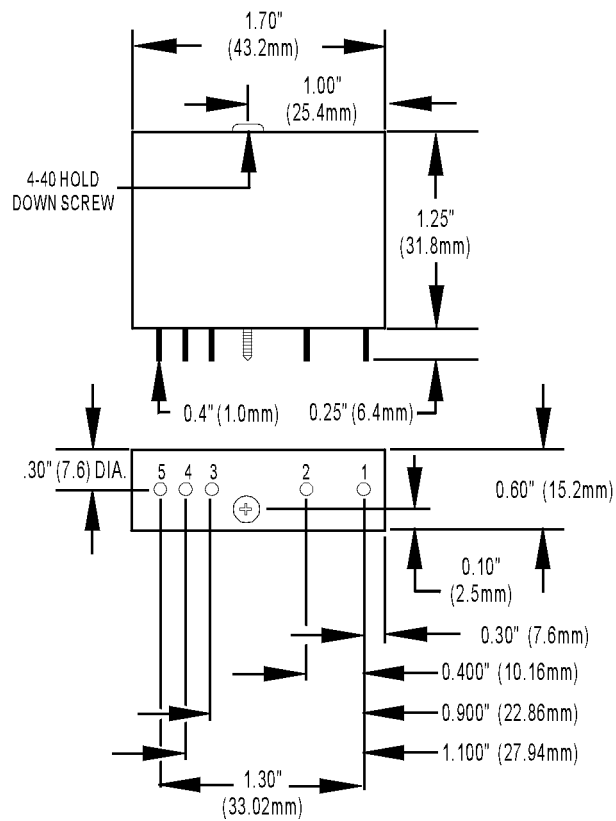
	Unit	IDC5	IDC5B	IDC5D	IDC5G	IDC15	IDC24
Input Voltage Range	VDC	10–32	4–16	2.5–28	35–60	10–32	10–32
	VAC	12–32	4–16	—	35–60	12–32	12–32
Input Current @ Max Line	mA	25	45	30	6	25	25
Turn-on Time	msec	5	0.05	1	10	5	5
Turn-off Time	msec	5	0.1	1.5	10	5	5
Input Allowed for No Output	mA	1	0.7	0.2	0.7	1	1
	Volts	3	1	1	7	3	3
Output Supply Voltage-Nominal	VDC	5	5	5	5	15	24
Output Supply Voltage-Range	VDC	4.5–6	4.5–6	4.5–6	4.5–6	12–18	20–30
Output Supply Current @ Nominal Logic Voltage	mA	12	12	12	12	15	18
Input Resistance	Ohms	1.5k	300	900	10k	1.5k	1.5k
Control Resistance (Rc in schematic diagram)	Ohms	220	220	470	220	1k	2.2k

	Unit	IAC5	IAC15	IAC24	IAC5A	IAC15A	IAC24A
Input Voltage Range	VDC	90–140	90–140	90–140	180–280	180–280	180–280
	VAC	90–140	90–140	90–140	180–280	180–280	180–280
Input Current @ Max Line	mA	5	5	5	5	5	5
Turn-on Time	msec	20	20	20	20	20	20
Turn-off Time	msec	20	20	20	20	20	20
Input Allowed for No Output	mA	3	3	3	1	1	1
	Volts	45	45	45	45	45	45
Output Supply Voltage-Nominal	VDC	5	15	24	5	15	24
Output Supply Voltage-Range	VDC	4.5–6	12–18	20–30	4.5–6	12–18	20–30
Output Supply Current @ Nominal Logic Voltage	mA	12	15	18	12	15	15
Input Resistance	Ohms	28k	28k	28k	70k	70k	70k
Control Resistance (Rc in schematic diagram)	Ohms	220	1k	2.2k	220	1k	2.2k

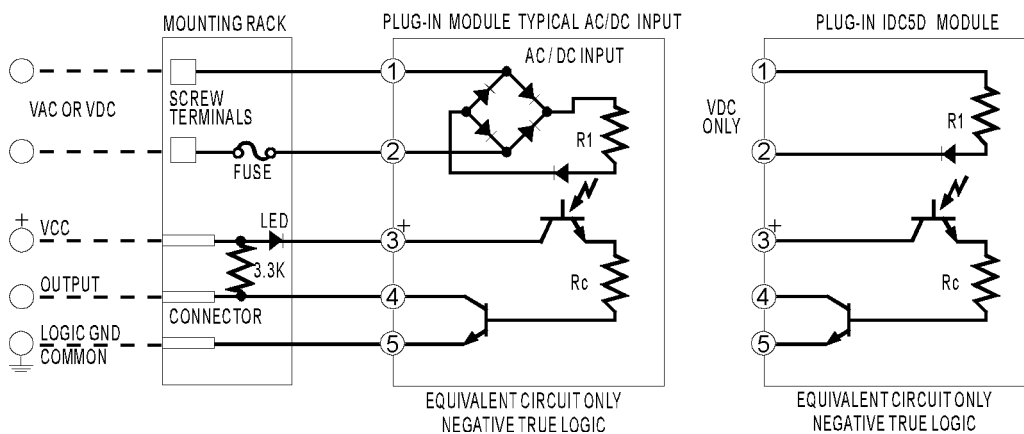
# Standard DC Input Modules

## Dimensions

### Typical, All Models



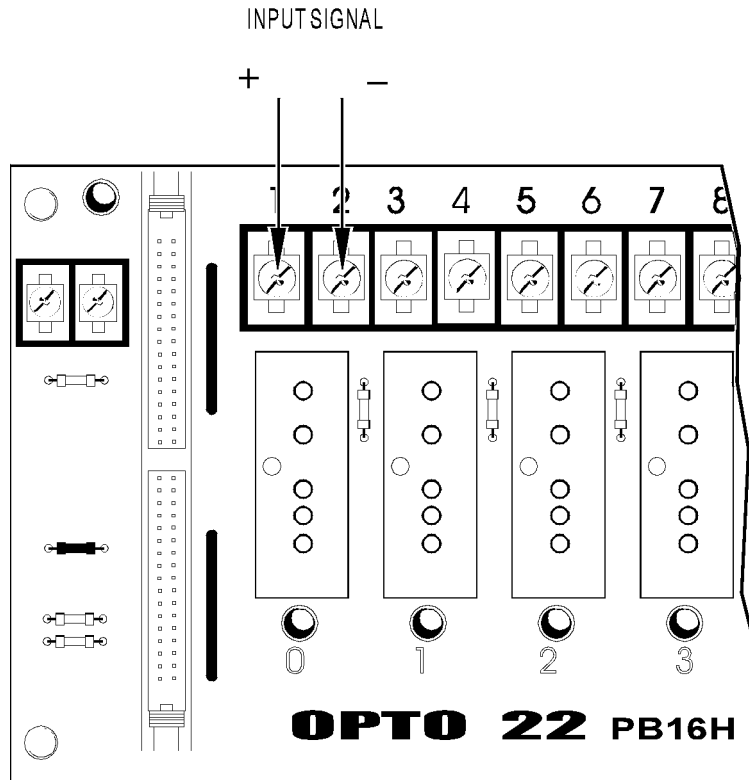
## Schematic



# Standard DC Input Modules

## Connections

### Field Connection Diagram



# More About Opto 22

## Products

Opto 22 develops and manufactures reliable, flexible, easy-to-use hardware and software products for industrial automation, remote monitoring, and data acquisition applications.

### SNAP PAC System

Designed to simplify the typically complex process of understanding, selecting, buying, and applying an automation system, the SNAP PAC System consists of four integrated components:

- SNAP PAC controllers
- PAC Project™ Software Suite
- SNAP PAC brains
- SNAP I/O™

### SNAP PAC Controllers

Programmable automation controllers (PACs) are multifunctional, multidomain, modular controllers based on open standards and providing an integrated development environment.

Opto 22 has been manufacturing PACs for many years. The latest models include the standalone SNAP PAC S-series and the rack-mounted SNAP PAC R-series. Both handle a wide range of digital, analog, and serial functions and are equally suited to data collection, remote monitoring, process control, and discrete and hybrid manufacturing.

SNAP PACs are based on open Ethernet and Internet Protocol (IP) standards, so you can build or extend a system without the expense and limitations of proprietary networks and protocols.

### PAC Project Software Suite

Opto 22's PAC Project Software Suite provides full-featured and cost-effective control programming, HMI (human machine interface) development and runtime, OPC server, and database connectivity software to power your SNAP PAC System.

These fully integrated software applications share a single tagname database, so the data points you configure in PAC Control™ are immediately available for use in PAC Display™, OptoOPCServer™, and OptoDataLink™. Commands are in plain English; variables and I/O point names are fully descriptive.

PAC Project Basic offers control and HMI tools and is free for download on our website, [www.opto22.com](http://www.opto22.com). PAC Project Professional, available for separate purchase, adds OptoOPCServer, OptoDataLink, options for Ethernet link redundancy or segmented networking, and support for legacy Opto 22 serial *mistic*™ I/O units.

### SNAP PAC Brains

While SNAP PAC controllers provide central control and data distribution, SNAP PAC brains provide distributed intelligence for I/O processing and communications. Brains offer analog, digital, and serial functions, including thermocouple linearization; PID loop control; and optional high-speed digital counting (up to 20 kHz), quadrature counting, TPO, and pulse generation and measurement.

### SNAP I/O

I/O provides the local connection to sensors and equipment. Opto 22 SNAP I/O offers 1 to 32 points of reliable I/O per module, depending on the type of module and your needs. Analog, digital, serial, and special-purpose modules are all mixed on the same mounting rack and controlled by the same processor (SNAP PAC brain or rack-mounted controller).

## Quality

Founded in 1974 and with over 85 million devices sold, Opto 22 has established a worldwide reputation for high-quality products. All are made in the U.S.A. at our manufacturing facility in Temecula, California. Because we do no statistical testing and each part is tested twice before leaving our factory, we can guarantee most solid-state relays and optically isolated I/O modules for life.

## Free Product Support

Opto 22's Product Support Group offers free, comprehensive technical support for Opto 22 products. Our staff of support engineers represents decades of training and experience. Product support is available in English and Spanish, by phone or email, Monday through Friday, 7 a.m. to 5 p.m. PST.

## Free Customer Training

Hands-on training classes for the SNAP PAC System are offered at our headquarters in Temecula, California. Each student has his or her own learning station; classes are limited to nine students. Registration for the free training class is on a first-come, first-served basis. See our website, [www.opto22.com](http://www.opto22.com), for more information or email [training@opto22.com](mailto:training@opto22.com).

## Purchasing Opto 22 Products

Opto 22 products are sold directly and through a worldwide network of distributors, partners, and system integrators. For more information, contact Opto 22 headquarters at 800-321-6786 or 951-695-3000, or visit our website at [www.opto22.com](http://www.opto22.com).

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