G4 Digital AC Input Modules

Features

- 4000 volts optical isolation (transient)
- Built-in LED status indicator
- Small footprint design
- UL recognized, CSA certified, CE approved
- Passes NEMA Showering Arc Test (ICS 2-230)
- Meets IEEE Surge Withstand Specification (IEEE-472)
- Built-in filtering for transient suppression and noise rejection
- Operating temperature: -30 °C to 70 °C

G4IAC5 Module

G4IAC5MA Module

Description

Opto 22's G4 AC input modules are used to detect on/off AC (or DC) voltage levels. Each module provides up to 4000 volts of optical isolation (transient) between field inputs and the logic output of the circuit.

All AC input modules are designed with filtering on the input and a hysteresis amplifier, providing high noise rejection and transient-free "clean" switching.

The G4IAC5MA is a special module featuring a manual-on/manual-off/automatic switch, ideal for diagnostic testing of control applications.

Typical applications for G4 input modules include sensing the presence or absence of voltage, and sensing contact closure from sources such as proximity switches, limit switches, float switches, selector switches, push buttons, toggle switches, and thermostats.

Part Numbers

Part	Description
G4IAC5	G4 AC Input 90–140 VAC/VDC, 5 VDC Logic
G4IAC5A	G4 AC Input 180–280 VAC/VDC, 5 VDC Logic
G4IAC5L	G4 AC Input 90–140 VAC/VDC, 5 VDC Logic, Low Input Impedence
G4IAC5MA	G4 AC Input 90–140 VAC/VDC, 5 VDC Logic with Manual/Auto Switch
G4IAC15	G4 AC Input 90–140 VAC/VDC, 15 VDC Logic
G4IAC15A	G4 AC Input 180–280 VAC/VDC, 15 VDC Logic
G4IAC24	G4 AC Input 90–140 VAC/VDC, 24 VDC Logic
G4IAC24A	G4 AC Input 190–280 VAC/VDC, 24 VDC Logic

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Specifications

	Units	G4IAC5	G4IAC5L	G4IAC5A	G4IAC5MA
Input voltage range	VAC or VDC	90–140	90–140	180–280	90–140
Key feature	--	--	Low R in	--	Diagnostic switch
Input current at maximum line	mA	5	11	5	5
Isolation, input-to-output (transient): 1 ms 1 minute	 V V	 4000 1500	 4000 1500	 4000 1500	 4000 1500
Turn-on time	ms	20	20	20	20
Turn-off time	ms	20	20	20	20
Input allowed for off-state	mA, V	1.4, 40	3, 45	0.7, 45	1.4, 40
Nominal output voltage supply	VDC	5	5	5	5
Output supply voltage range	VDC	4.5–6	4.5–6	4.5–6	4.5–6
Output supply current at nominal logic voltage	mA	12	12	12	12
Input resistance (R1 in schematic)	ohms	28 K	14 K	70K	28 K
Control resistance (R_c in schematic)	ohms	220	220	220	220
Output voltage drop	V @ 50 mA	0.4	0.4	0.4	0.4
Output current (sinking)	mA	50	50	50	50
Output leakage with no input	microamps @ 30 VDC	100	100	100	100
Transistor	V breakdown	30	30	30	30
Temperature Operating: Storage:	 °C °C	 -30 to +70 -30 to +85	 -30 to +70 -30 to +85	 -30 to +70 -30 to +85	 -30 to +70 -30 to +85

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G4 Digital AC Input Modules

Specifications (continued)

	Units	G4IAC15	G4IAC15A	G4IAC24	G4IAC24A
Input voltage range	VAC or VDC	90–140	180–280	90–140	180–280
Key feature	--	--	--	--	--
Input current at maximum line	mA	5	5	5	5
Isolation, input-to-output (transient): 1 ms 1 minute	 V V	 4000 1500	 4000 1500	 4000 1500	 4000 1500
Turn-on time	ms	20	20	20	20
Turn-off time	ms	20	20	20	20
Input allowed for off-state	mA, V	1.4, 40	0.7, 45	1.4, 40	0.7, 45
Nominal output supply voltage	VDC	15	15	24	24
Output supply voltage range	VDC	12–18	12–18	20–30	20–30
Output supply current at nominal logic voltage	mA	15	15	15	15
Input resistance (R1 in schematic)	ohms	28 K	70 K	28 K	70 K
Control resistance (Rc in schematic)	ohms	1 K	1 K	2.2 K	2.2 K
Output voltage drop	V @ 50 mA	0.4	0.4	0.4	0.4
Output current (sinking)	mA	50	50	50	50
Peak repetitive voltage	VAC	500	500	500	500
Output leakage with no input	microamps @ 30 VDC	100	100	100	100
Transistor	V breakdown	30	30	30	30
Temperature Operating: Storage:	 °C °C	 -30 to +70 -30 to +85	 -30 to +70 -30 to +85	 -30 to +70 -30 to +85	 -30 to +70 -30 to +85

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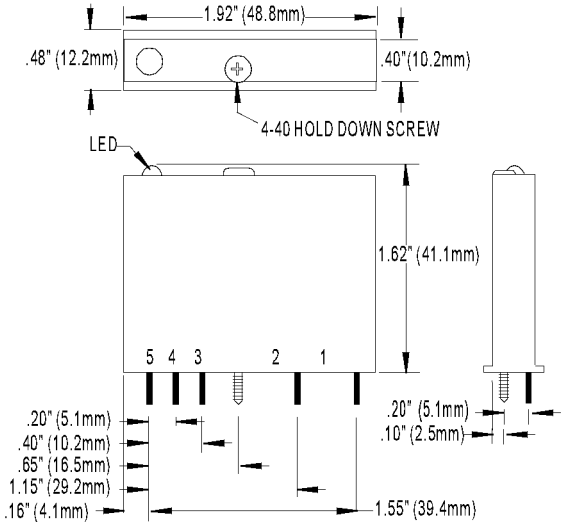
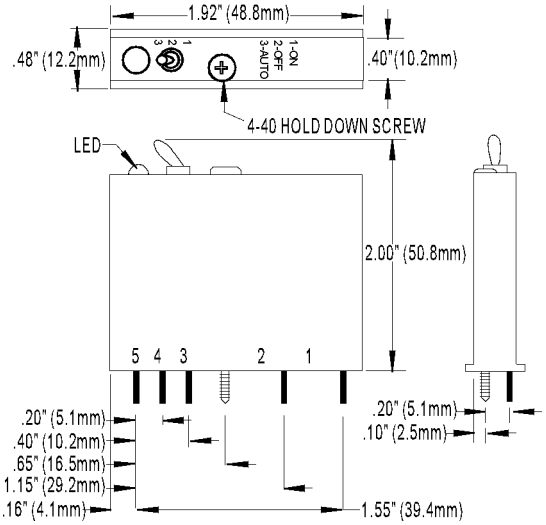
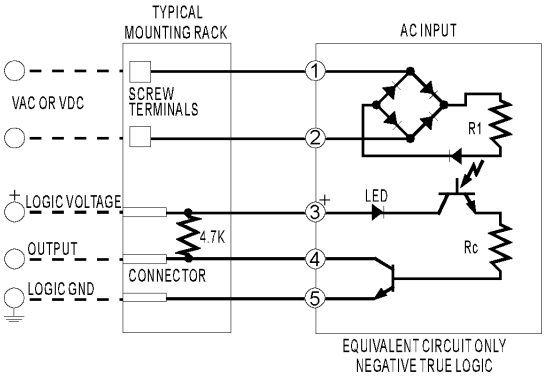
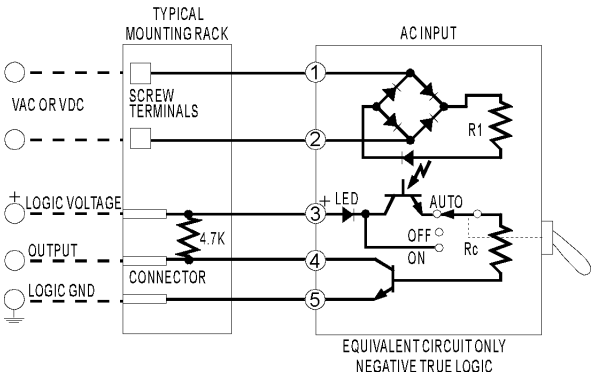
Dimensions





Schematics





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More About Opto 22

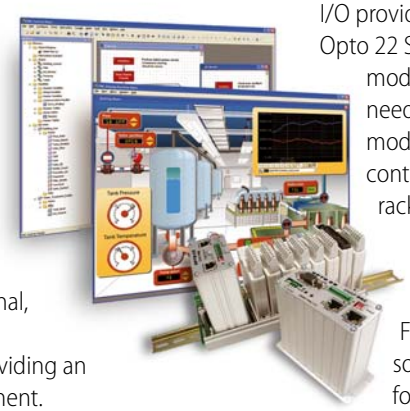
Products

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. 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, for more information or email 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.

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