

# Fuses

## Features

- Reliable replacements for fuses used in Opto 22 products.
- Convenient multi-packs for SNAP fuses.

## Description

For your convenience, you can purchase replacement fuses for classic, G4, and SNAP racks, modules, power supplies, and other Opto 22 products.

Fuses can also be purchased from other manufacturers, such as Littelfuse or Wickmann.

Part numbers for fuses, clips, and holders are listed in the table at right. The tables that follow list Opto 22 products in alphabetical order and show the fuse to use with each one. If your part number is not listed, contact Opto 22 Inside Sales (951-695-3000).

For modules—see [page 2](#).

For racks—see [page 3](#).

For other Opto 22 products—see [page 5](#).



Replacement Fuses

## Part Numbers

Part	Description
FUSE.125	1/8-amp fuse for standard analog I/O channel loop source
FUSE01	1-amp fuse for standard digital logic power
FUSE02	2-amp fuse for standard analog logic power and some 32-channel digital logic power
FUSE05	5-amp fuse for standard digital output modules
FUSEG4	4-amp fuse for G4 digital modules
FUSE01G4	1-amp fuse for G4 digital rack logic power and brick regulator
G4 FUSE CLIP	Pack of 10 fuse clips for G4 products
SNAP-FUSE1AB	Pack of 25 1-amp fuses for SNAP racks and power supplies
SNAP-FUSE1AC	Pack of 25 1-amp fuses for breakout racks
SNAP-FUSE2AB	Pack of 25 2-amp fast-acting fuses for SNAP-PS5-24DC power supplies
SNAP-FUSE4AB	Pack of 25 4-amp fuses for SNAP racks and modules
SNAP-FUSE7.5AB	Pack of 25 7.5-amp fuses for SNAP M-series and SNAP PAC racks
SNAP-FUSE10AB	Pack of 25 10-amp fuses for SNAP-IT TMS modem
SNAP-MODFUSEHLDRB	Pack of 10 fuse holders for the 4-amp fuses used with SNAP products

**Fuses for Opto 22 Modules**

Opto 22 PN	Description	Fuse
AD3	4 to 20 mA Input	FUSE.125
DA3	4 to 20 mA Output	FUSE.125
DA8	0 to 20 mA Output	FUSE.125
G4HDAR,BSC	G4HDAR for Bethlehem Steel	FUSE01G4
G4IAC5M	G4 AC Input with Fuse Millar	FUSEG4
G4IDC5GFAST	G4 DC Input with Fuse Millar	FUSEG4
G4IDC5M	G4 DC Input with Fuse Millar	FUSEG4
G4IDC5WF	G4 DC Input Module with Fuse	FUSEG4
G4OAC15	G4 AC Output 12–140 VAC, 15 VDC Logic	FUSEG4
G4OAC15A	G4 AC Output 24–280 VAC, 15 VDC Logic	FUSEG4
G4OAC24	G4 AC Output 12–140 VAC, 24 VDC Logic	FUSEG4
G4OAC24A	G4 AC Output 24–280 VAC, 24 VDC Logic	FUSEG4
G4OAC24A, WEIDMULLER	G4 AC Output Module Weidmuller	FUSEG4
G4OAC24ADC	G4 AC Output	FUSEG4
G4OAC24AFC	G4OAC24A with Fuse Clip	FUSEG4
G4OAC24FC	G4OAC24 with Fuse Clip	FUSEG4
G4OAC5	G4 AC Output 12–140 VAC, 5 VDC Logic	FUSEG4
G4OAC5A	G4 AC Output 24–280 VAC, 5 VDC Logic	FUSEG4
G4OAC5A5	G4 AC Output, 24–280 VAC, 5 VDC Logic, NC	FUSEG4
G4OAC5A5FM	G4 AC Output 24–280 VAC, 5 VDC Logic , NC, FM	FUSEG4
G4OAC5ADC	G4 AC Output	FUSEG4
G4OAC5AFC-ABB	G4 AC Output ABB-no.2005ap2	FUSEG4
G4OAC5AFM	G4 AC Output 24–280 VAC, 5 VDC Logic, Factory Mutual Approved	FUSEG4
G4OAC5AMA	G4 AC Output 24–280 VAC, 5 VDC Logic with HOA/SW	FUSEG4
G4OAC5FM	G4 AC Output 12–140 VAC, 5 VDC Logic, FM Approved	FUSEG4
G4OAC5MA	G4 AC Output 12–140 VAC, 5 VDC Logic with HOA/SW	FUSEG4
G4ODC15	G4 DC Output 5–60 VDC, 15 VDC Logic	FUSEG4
G4ODC24	G4 DC Output 5–60 VDC, 24 VDC Logic	FUSEG4
G4ODC24, WEIDMULLER	G4ODC24 Private Label for Weidmuller	FUSEG4
G4ODC24A	G4 DC Output 5–200 VDC, 24 VDC Logic	FUSEG4

Opto 22 PN	Description	Fuse
G4ODC24AFC	G4ODC24A with Fuse Clip	FUSEG4
G4ODC24FC	G4ODC24 with Fuse Clip	FUSEG4
G4ODC5, WEIDMULLER	G4ODC5 Private Label for Weidmuller	FUSEG4
G4ODC5	G4 DC Output 5–60 VDC, 5 VDC Logic	FUSEG4
G4ODC5, ELECTROC	EC-ODC060-3	FUSEG4
G4ODC5,KENT	ABB Instrumentation 2005ap10100a	FUSEG4
G4ODC5A	G4 DC Output 5–200 VDC, 5 VDC Logic	FUSEG4
G4ODC5A, ELECTRO	EC-ODC200-1	FUSEG4
G4ODC5A, KENT	ABB Instrumentation 2005ap10110a	FUSEG4
G4ODC5AFM	G4 DC Output 5–200 VDC, 5 VDC Logic, FM Approved	FUSEG4
G4ODC5FM	G4 DC Output 5–60 VDC, 5 VDC Logic, FM Approved	FUSEG4
G4ODC5MA	G4 DC Output 5–60 VDC, 5 VDC Logic with HOA/SW	FUSEG4
G4ODC5R	G4 Reed Relay Output, 5 VDC Logic	FUSE01G4
G4ODC5R5	G4 Reed Relay Output, 5 VDC Logic, NC	FUSE01G4
G4ODC5R5FM	G4 Reed Relay Output, 5 VDC Logic, NC, FM Approved	FUSE01G4
G4ODC5RFM	G4 Reed Relay Output, 5 VDC Logic, FM Approved	FUSE01G4
G4ODC5RFR	G4 Reed Relay Fr-epoxy	FUSE01G4
SNAP-OAC5	4-channel AC Output 12–280 VAC, 5 VDC Logic	SNAP-FUSE4AB
SNAP-ODC5ASNK	SNAP DC Output Reed Relay	SNAP-FUSE4AB
SNAP-ODC5SNKFM	4 Channel DC Output 5–60 Logic Sinking	SNAP-FUSE4AB
SNAP-ODC5SNK	4-channel DC Output 5–60 VDC, 5 VDC Logic Sink	SNAP-FUSE4AB
SNAP-ODC5SRC	4-channel DC Output 5–60 VDC, 5 VDC Logic Source	SNAP-FUSE4AB
SNAP-ODC5SRCFM	4-channel DC Output 5–60 VDC, 5 VDC FM Logic Source	SNAP-FUSE4AB
SNAP-ODC5SRC-T	4-channel DC Output Transient Protect	SNAP-FUSE4AB

# Fuses

## Fuses for Opto 22 Racks

Opto 22 PN	Description	Fuse
G4PB16	G4 16-channel I/O Module Rack	FUSEG4
G4PB16H	G4 16-channel Rack with Header Connector	FUSE01 (logic) FUSEG4 (I/O)
G4PB16HC	G4 16-channel Rack with Header Connector and Extra Terminal Strip	FUSE01 (logic) FUSEG4 (I/O)
G4PB16I	G4 16-channel I/O Module Rack Isolated Control	FUSEG4
G4PB16J	G4 DC Input 4–16 VDC 16-channel Integral	FUSE01G4
G4PB16K	G4 DC Input 16–28 VDC 16-channel Integral	FUSE01G4
G4PB16L	G4 DC Output 5–60 VDC 16-channel Integral	FUSE01G4
G4PB16T	G4 16-channel I/O Module Rack Extra Terminal Strip	FUSEG4
G4PB24	G4 24-channel I/O Module Rack	FUSEG4
G4PB32DEC	G4 32-channel I/O Module Rack	FUSEG4
G4PB32H	G4 32-channel Rack with Header Connector for B4 Brain	FUSE02 (logic) FUSEG4 (I/O)
G4PB32JY-IN	G4 32 Point Rack Inputs JYC-systems	FUSE01G4 (logic) FUSEG4 (I/O)
G4PB32JY-OUT	G4 32 Point Rack JYC-systems	FUSE01G4 (logic) FUSEG4 (I/O)
G4PB4	G4 4-channel I/O Module Rack	FUSEG4
G4PB4R	G4 4-channel Output Module Rack	FUSEG4
G4PB8	G4 8-channel I/O Module Rack	FUSEG4
G4PB8H	G4 8-channel Rack with Header Connector	FUSE01 (logic) FUSEG4 (I/O)
G4PB16FB1	Foxboro G4PB16 Single Wetting	FUSE01 (logic) FUSEG4 (I/O)
G4PB16FB2	Foxboro G4PB16 Dual Wetting	FUSE01 (logic) FUSEG4 (I/O)
PB16A	16-channel I/O Module Rack	FUSE05
PB16AH	16-channel Analog Mounting Rack	FUSE02
PB16C	16-channel I/O Module Rack Extra Terminal Strip	FUSE05
PB16H	16-channel Rack with Header Connector	FUSE01 (logic) FUSE05 (I/O)

Opto 22 PN	Description	Fuse
PB16HC	16-channel Rack with Header Connector and Extra Terminal Strip	FUSE01 (logic) FUSE05 (I/O)
PB16HQ	Quad 4-module Position Rack	FUSE01 (logic) FUSE05 (I/O)
PB16J	DC Input 4–16 VDC 16-channel Integral	FUSE01
PB16K	DC Input 16–28 VDC 16-channel Integral	FUSE01
PB16L	DC Output 5–60 VDC 16-channel Integral	FUSE01
PB16P1	Pamux 1	FUSE01 (logic) FUSE05 (I/O)
PB16T	16-channel I/O Module Rack	FUSE05
PB24	24-channel I/O Module Rack	FUSE01 (logic) FUSE05 (I/O)
PB24HQ	Quad 6-module Position Rack with Header Connector	FUSE01 (logic) FUSE05 (I/O)
PB24Q	Quad 6-module Position Rack	FUSE01 (logic) FUSE05 (I/O)
PB32DEC	Quad 8-module Position Rack	FUSE01 (logic) FUSE05 (I/O)
PB32HQ	Quad 8-module Rack with Header Connector for B4 Brain	FUSE02 (logic) FUSE05 (I/O)
PB32P2	Pamux 2	FUSE02 (logic) FUSE05 (I/O)
PB4	4-channel I/O Module Rack	FUSE05
PB4H	4-channel Rack with header Connector	FUSE01 (logic) FUSE05 (I/O)
PB4R	4-channel Output Module Rack	FUSE05
PB8	8-channel I/O Module Rack	FUSE05
PB8H	8-channel Rack with Header Connector	FUSE05
SNAP-AIMA-HDB	Breakout Board for SNAP-AIMA-32 Analog Input Module	SNAP-FUSE1AC
SNAP-AIMA-HDB-FM	Breakout Board for SNAP-AIMA-32 Analog Input Module, FM-apprv.	SNAP-FUSE1AC
SNAP-B12M	12-module Rack	SNAP-FUSE4AB
SNAP-B12MC	12-module Rack with Extra Terminal Block for Field Wiring	SNAP-FUSE4AB
SNAP-B12MC-P	12-module Rack with Extra Terminal Block for Field Wiring, Pluggable	SNAP-FUSE4AB

Opto 22 PN	Description	Fuse
SNAP-B16M	16-module Rack	SNAP-FUSE4AB
SNAP-B16MC	16-module Rack with Extra Terminal Block for Field Wiring	SNAP-FUSE4AB
SNAP-B16MC-P	16-module Rack with Extra Terminal Block for Field Wiring, Pluggable	SNAP-FUSE4AB
SNAP-B16MC-SF1	16-module Smart Rack for Sputter Film	SNAP-FUSE4AB
SNAP-B4M	4-module Brain Rack	SNAP-FUSE4AB
SNAP-B8M	8-module Rack	SNAP-FUSE4AB
SNAP-B8MC	8-module Rack with Extra Terminal Block for Field Wiring	SNAP-FUSE4AB
SNAP-B8MC-P	8-module Rack with Extra Terminal Block for Field Wiring, Pluggable	SNAP-FUSE4AB
SNAP-D12M	12-module Rack	SNAP-FUSE1AB
SNAP-D12MC	12-module Rack with Extra Terminal Block for Field Wiring	SNAP-FUSE1AB
SNAP-D12MC-P	12-module Rack with Extra Terminal Block for Field Wiring, Pluggable	SNAP-FUSE1AB
SNAP-D4M	4-module Rack	SNAP-FUSE1AB
SNAP-D4MC	4-module Rack with Extra Terminal Block for Field Wiring	SNAP-FUSE1AB
SNAP-D4MC-P	4-module Rack with Extra Terminal Block for Field Wiring, Pluggable	SNAP-FUSE1AB
SNAP-D6M	6-module Rack	SNAP-FUSE1AB
SNAP-D6MC	6-module Rack with Extra Terminal Block for Field Wiring	SNAP-FUSE1AB
SNAP-D6MC-P	6-module Rack with Extra Terminal Block for Field Wiring, Pluggable	SNAP-FUSE1AB
SNAP-D64RS	SNAP 64-point Digital Rack	SNAP-FUSE4AB
SNAP-D8M	8-module Rack	SNAP-FUSE1AB
SNAP-D8MC	8-module Rack with Extra Terminal Block for Field Wiring	SNAP-FUSE1AB
SNAP-D8MC-P	8-module Rack with Extra Terminal Block for Field Wiring, Pluggable	SNAP-FUSE1AB

Opto 22 PN	Description	Fuse
SNAP-IDC-HDB	Breakout Rack for SNAP 32-channel Digital Input Module	SNAP-FUSE1AC
SNAP-IDC-HDB-FM	Breakout Rack for SNAP 32-channel Digital Input Module, FM-apprv.	SNAP-FUSE1AC
SNAP-ODC-HDB	Breakout Rack for SNAP 32-channel Digital Output Modules	SNAP-FUSE1AC
SNAP-ODC-HDB-FM	Breakout Rack for SNAP 32-channel Digital Output Modules, FM-apprv.	SNAP-FUSE1AC
SNAP-M16	4-module Rack	SNAP-FUSE7.5AB
SNAP-M32	8-module Rack	SNAP-FUSE7.5AB
SNAP-M48	12-module Rack	SNAP-FUSE7.5AB
SNAP-M64	16-module Rack	SNAP-FUSE7.5AB
SNAP-PAC-RCK4	4-module Rack	SNAP-FUSE7.5AB
SNAP-PAC-RCK4-FM	4-module Rack, FM-app.	SNAP-FUSE7.5AB
SNAP-PAC-RCK8	8-module Rack	SNAP-FUSE7.5AB
SNAP-PAC-RCK8-FM	8-module Rack, FM-app.	SNAP-FUSE7.5AB
SNAP-PAC-RCK12	12-module Rack	SNAP-FUSE7.5AB
SNAP-PAC-RCK12-FM	12-module Rack, FM-app.	SNAP-FUSE7.5AB
SNAP-PAC-RCK16	16-module Rack	SNAP-FUSE7.5AB
SNAP-PAC-RCK16-FM	16-module Rack, FM-app.	SNAP-FUSE7.5AB
SNAP-TEX-FB16-H	16-channel Breakout Board, Fuses and Bussed Power (120-240 V)	FUSE01G4
SNAP-TEX-FB16-L	16-channel Breakout Board, Fuses and Bussed Power (12-24 V)	FUSE01G4

# Fuses

## Fuses for Other Opto 22 Products

Opto 22 PN	Description	Fuse
BUNNMAS-TER	Bunn Master System	FUSE01G4
CATTRON-FUSE	Two 5 A Fuses	FUSE05
CUBIC-9375-0125	8-point Digital Rack Loaded for Cubic	SNAP-FUSE1AB
CUBIC-9375-0144	8 -point Digital Rack Loaded for Cubic	SNAP-FUSE1AB
G4A8L	Local Analog 8-channel Multifunction I/O Unit Mystic Protocol	FUSE01G4
G4A8P	Mistic 100 8-pt Analog Brick	FUSE01G4
G4A8R	Remote Analog 8-channel Multifunction I/O Unit Mystic Protocol	FUSE01G4
G4D16L	Local Digital 16 Channel Multifunction I/O Unit Mystic Protocol	FUSE01G4
G4D16LS	Local Digital 16 Channel I/O Unit Mystic Protocol	FUSE01G4
G4D16P	Mistic 100 Digital Brick	FUSE01G4
G4D16R	Remote Digital 16-channel Multifunction I/O Unit Mystic Protocol	FUSE01G4
G4D32RS	Remote Digital 32-channel I/O Unit Mystic Protocol	FUSE01G4
G4HDAL	Local Analog 32-channel High Resolution Multifunction I/O Unit Mystic Protocol	FUSE01G4
G4HDALB	High Density Analog Local Brain	FUSE01G4
G4HDAR	Remote Analog 32-channel High Resolution Multifunction I/O Unit Mystic Protocol	FUSE01G4
G4HDARB	High Density Analog Remote Brain	FUSE01G4
G4HDML	G4 High Density Motion Local	FUSEG4
G4HDMR	G4 High Density Motion Remote	FUSEG4
G4IOL	Local Panel Interface Mystic Protocol	FUSE01G4 (logic) FUSEG4 (I/O)
G4IOP	Mistic 100 I/O Cable Adapter	FUSE01G4 (logic) FUSEG4 (I/O)
G4IOR	Remote Panel Interface Mystic Protocol	FUSE01G4 (logic) FUSEG4 (I/O)
G4IOR-NS	G4IOR with No Switches	FUSE01G4 (logic) FUSEG4 (I/O)

Opto 22 PN	Description	Fuse
G4IOR-S	Remote Panel Interface Sealed Switches	FUSE01G4 (logic) FUSEG4 (I/O)
G4LC32	Opto 22 Classic Controller	FUSE01G4
G4LC32ISA-LT	Opto 22 ISA Lite Controller	FUSE01G4
G4LC32ISASER	ISA Serial Adapter for G4LC32ISA	FUSEG4
G4OAC5, KENT	ABB Instrumentation 2005ap10120a	FUSEG4
G4OAC5A, KENT	ABB Instrumentation 2005ap10130a	FUSEG4
G4OAC5A-11, ELEC	EC-OAC240-3	FUSEG4
G4OAC5A5, KENT	ABB Instrumentation 2005ap10140a	FUSEG4
G4OAX	Optomux Analog Extender	FUSE01G4
G4RAX	Remote Analog 8-channel I/O Unit Extender	FUSE01G4
G4RCOMM KIT	Remote Brick Communication Kit	FUSE01G4 (logic) FUSEG4 (I/O)
G4REG	Brick Power Regulation Module	FUSE01G4
LCM4EXT PWR	LCM4 External Power Board	FUSE01
M4SHART	M4 Slave Interface	FUSE01G4
SNAP-IT-PM	Panel-mounted SNAP-IT Monitoring Unit (All Models Including Tower Management Systems)	SNAP-FUSE04AB (rack, modules, modem) SNAP-FUSE10AB (modem)
SNAP-PS24	SNAP Power Supply - Loop Power - 110 VAC To 24 VDC	SNAP-FUSE1AB
SNAP-PS5-24DC	SNAP DC-to-DC Power Supply	SNAP-FUSE2AB
SNAP-PS5	SNAP Power Supply - Single Rack - 110 VAC to 5 VDC	SNAP-FUSE1AB
SNAP-PS5-AT	SNAP Power Supply - (Argonaut)	SNAP-FUSE1AB
TMSDC-DC CONVERTER	DC-DC Converter for TMS Units	SNAP-FUSE4AB



# More About Opto 22

## Products

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

### OptoEMU Energy Management System

The easy-to-use OptoEMU Sensor monitors electrical energy use in your facility and delivers detailed, real-time data you can see and analyze. The Sensor can monitor energy data from pulsing meters, electrical panels or subpanels, and equipment. View energy data online using a software service or incorporate the data into your control system for complete energy management.

### SNAP PAC System

Designed to simplify the typically complex process of selecting 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, modular controllers based on open standards.

Opto 22 has been manufacturing PACs for over two decades. 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 for 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 easily, without the expense and limitations of proprietary networks and protocols.

### PAC Project Software Suite

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

Control programming includes both easy-to-learn flowcharts and optional scripting. 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 controller 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, and serial 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, 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 California-based Product Support Group offers free, comprehensive technical support for Opto 22 products. Our staff of support engineers represents decades of training and experience. Support is available in English and Spanish by phone or email, Monday–Friday, 7 a.m. to 5 p.m. PST.

Additional support is always available on our website: how-to videos, OptoKnowledgeBase, self-training guide, troubleshooting and user's guides, and OptoForums.

In addition, hands-on training is available for free at our Temecula, California headquarters, and you can [register online](#).

## 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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