

SNAP Digital Output Modules

Features

- Four channels per module
- Convenient pluggable wiring terminals; accepts up to 14 AWG wire
- Powered by a single 5-volt supply
- Channel-specific LEDs
- Operating temperature: 0 to 70 °C
- UL and CE approved (most modules); Factory Mutual approved (part numbers ending in FM)



SNAP Digital Output Modules

Description

Opto 22 SNAP I/O digital output modules are part of the SNAP PAC System.

Customers can choose from AC or DC models. Optical isolation on all solid-state modules provides 4,000 volts of transient (4000 V for 1 ms) protection for sensitive control electronics from industrial field signals.

All SNAP digital modules have removable top-mounted connectors to provide easy access for field wiring. All operate on 5 VDC control logic. Each digital module features integral channel-specific LEDs for convenient troubleshooting and maintenance.

Each module is factory tested twice before shipment, and most modules are UL and CE approved. In addition, part numbers ending in FM are Factory Mutual approved.

SNAP output modules are used to switch up to four separate AC or DC loads. Output modules that are fused use a standard fuse with a convenient handle for easy replacement. DC outputs are available in either a source or sink configuration. AC outputs are zero voltage turn on and zero current turn off for transient-free switching.

The dry contact modules allow switching of low power signals where signal integrity must be maintained, or where

Part Numbers

| Part | Description | See pages |
|----------------|--|-----------|
| SNAP-OAC5 | SNAP 4-channel 12–250 VAC output, 5 VDC logic | 3, 5 |
| SNAP-OAC5MA | SNAP 4-channel isolated 12–250 VAC output, 5 VDC logic with manual/auto switches | 3, 6 |
| SNAP-OAC5FM | SNAP 4-channel 12–250 VAC output, 5 VDC logic | 4, 5 |
| SNAP-OAC5-i | SNAP 4-channel isolated 12–250 VAC output, 5 VDC logic | 3, 7 |
| SNAP-OAC5-iFM | SNAP 4-channel isolated 12–250 VAC output, 5 VDC logic | 4, 7 |
| SNAP-ODC5SRC | SNAP 4-channel 5–60 VDC output, 5 VDC logic source | 8, 12 |
| SNAP-ODC5SRCFM | SNAP 4-channel 5–60 VDC output, 5 VDC logic source | 10, 12 |
| SNAP-ODC5SNK | SNAP 4-channel 5–60 VDC output, 5 VDC logic sink | 8, 13 |
| SNAP-ODC5SNKFM | SNAP 4-channel 5–60 VDC output, 5 VDC logic sink | 10, 13 |
| SNAP-ODC5ASNK | SNAP 4-channel 5–200 VDC output, 5 VDC logic sink | 9, 13 |
| SNAP-ODC5R* | SNAP 4-channel dry contact output, normally open | 8, 14 |
| SNAP-ODC5RFM* | SNAP 4-channel dry contact output, normally open | 10, 14 |
| SNAP-ODC5R5* | SNAP 4-channel dry contact output, normally closed | 8, 14 |
| SNAP-ODC5R5FM* | SNAP 4-channel dry contact output, normally closed | 10, 14 |
| SNAP-ODC5MA | SNAP 4-channel isolated 5–60 VDC output, 5 VDC logic with manual/auto switches | 9, 15 |
| SNAP-ODC5-i | SNAP 4-channel isolated 5–60 VDC output, 5 VDC logic | 9, 16 |
| SNAP-ODC5-iFM | SNAP 4-channel isolated 5–60 VDC output, 5 VDC logic | 11, 16 |
| SNAP-ODC5A-i | SNAP 4-channel isolated 5–200 VDC output, 5 VDC logic | 9, 16 |
| SNAP-ODC5A-iFM | SNAP 4-channel isolated 5–200 VDC output, 5 VDC logic | 11, 16 |
| SNAP-RETN4 | SNAP 4-module retention rail (OEM) | ----- |
| SNAP-RETN4B | SNAP 4-module retention rail, 25-pack (OEM) | ----- |
| SNAP-RETN6 | SNAP 6-module retention rail (OEM) | ----- |
| SNAP-RETN6B | SNAP 6-module retention rail, 25-pack (OEM) | ----- |
| SNAP-FUSE4AB | SNAP 4-amp fuse, 25-pack | ----- |
| SNAP-MODFUSEH | SNAP digital output module fuse holder, 10-pack | ----- |

*Not UL approved

SNAP Digital Output Modules

Specifications—DC Modules (continued)

| | SNAP-ODC5MA | SNAP-ODC5-i | SNAP-ODC5A-i | SNAP-ODC5ASNK |
|--|---|---|---|---|
| Key Feature | Diagnostic switches Four isolated channels | Four isolated channels | Four isolated channels | Load sinking |
| Field Side Ratings (each channel) | | | | |
| Line Voltage - Range | 5–60 VDC | 5–60 VDC | 5–200 VDC | 5–200 VDC |
| Line Voltage - Nominal | 5–48 VDC | 5–48 VDC | 5–200 VDC | 5–200 VDC |
| Current Rating 0 °C to 70 °C Ambient | 2 amps per module 0.5 amps per channel | 3 amps per module | 3 amps per module | 3 amps per module |
| Surge Current | 1.5 amps peak for 1 second | 5 amps peak for 1 second | 5 amps peak for 1 second | 5 amps peak for 1 second |
| Minimum Load | 20 mA | 20 mA | 20 mA | 20 mA |
| Output Voltage Drop | 1.6 volts max. @ 0.75 amps | 1.6 volts max. @ 0.75 amps | 1.6 volts max. @ 0.75 amps | 1.6 volts max. @ 0.75 amps |
| Off-state Leakage | 1 mA @ 60 VDC | 1 mA @ 60 VDC | 1 mA @ 200 VDC | 1 mA @ 200 VDC |
| Peak Blocking Voltage | 60 VDC | 60 VDC | 200 VDC | 200 VDC |
| Fuse (Common to all Channels) | Has four isolated channels. User must provide own fusing. | Has four isolated channels. User must provide own fusing. | Has four isolated channels. User must provide own fusing. | 250 VAC - 4A 5x20 mm Fast-acting Bell Fuse Part No. BEL 5HF4 Opto 22 Part No. SNAP-4A |
| Channel-to-channel isolation | 300 VAC (1500 V transient) | 300 VAC (1500 V transient) | 300 VAC (1500 V transient) | Not applicable |
| Logic Side Ratings | | | | |
| Pickup Voltage | 4 V @ 5.5 mA | 4 V @ 5.5 mA | 4 V @ 5.5 mA | 4 V @ 5.5 mA |
| Dropout Voltage | 1 VDC | 1 VDC | 1 VDC | 1 VDC |
| Control Resistance | 220 ohms | 220 ohms | 220 ohms | 220 ohms |
| Logic Supply Voltage | 5 VDC ± 0.25 VDC | 5 VDC ± 0.25 VDC | 5 VDC ± 0.25 VDC | 5 VDC ± 0.25 VDC |
| Logic Supply Current | 50 mA maximum | 50 mA maximum | 50 mA maximum | 50 mA maximum |
| Module Ratings | | | | |
| Number of Channels Per Module | 4 | 4 | 4 | 4 |
| Turn-on Time | 100 usec | 100 usec | 100 usec | 100 usec |
| Turn-off Time | 750 usec | 750 usec | 750 usec | 750 usec |
| Isolation (Field Side to Logic Side) | 4,000 volts (transient) | 4,000 volts (transient) | 4,000 volts (transient) | 4,000 volts (transient) |
| Temperature | 0 ° to 70 °C, operating -30 ° to 85 °C, storage | 0 ° to 70 °C, operating -30 ° to 85 °C, storage | 0 ° to 70 °C, operating -30 ° to 85 °C, storage | 0 ° to 70 °C, operating -30 ° to 85 °C, storage |

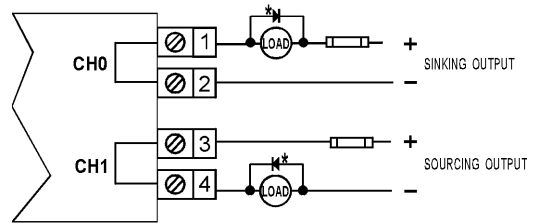
SNAP Digital Output Modules

Schematics

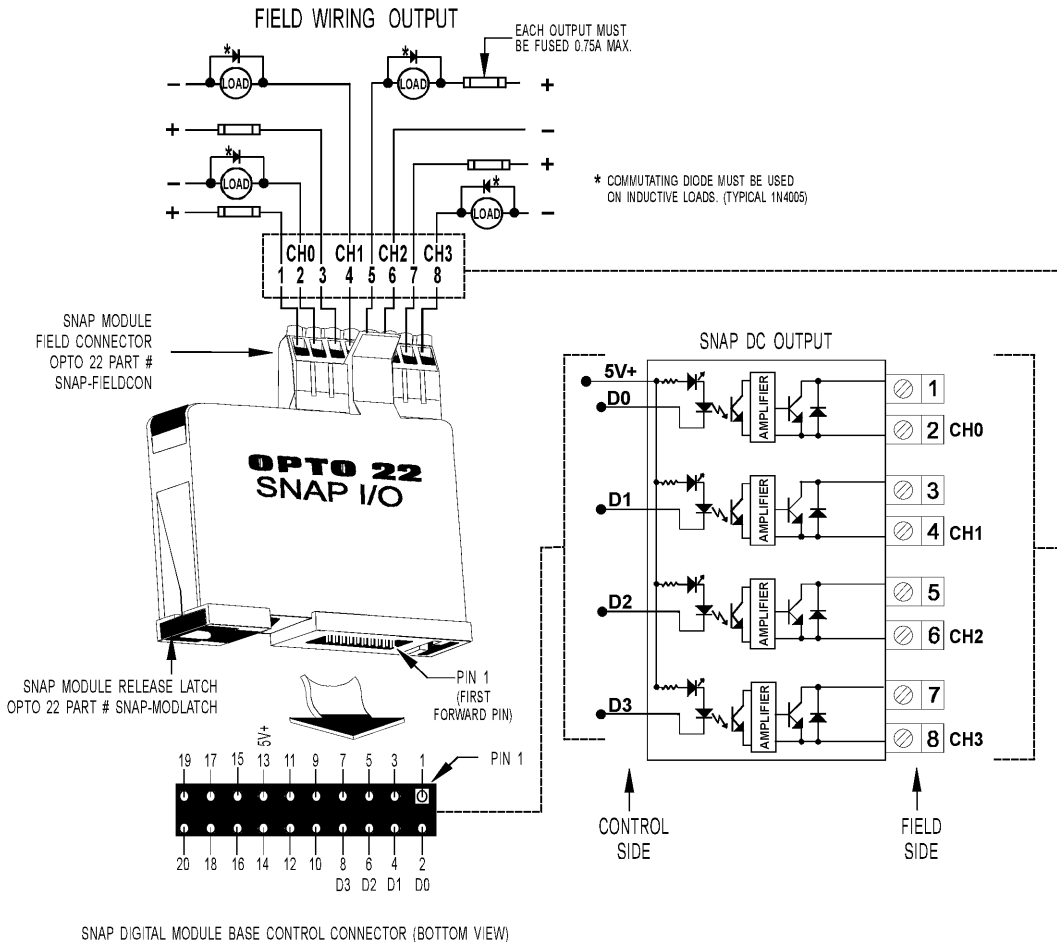
SNAP-ODC5-i and SNAP-ODC5A-i Isolated Output Module

| Part Number | Description |
|----------------|--|
| SNAP-ODC5-i | 4-channel isolated DC output 5–60 VDC, 5 VDC logic |
| SNAP-ODC5A-i | 4-channel isolated DC output 5–200 VDC, 5 VDC logic |
| SNAP-ODC5-iFM | 4-channel isolated DC output 5–60 VDC, 5 VDC logic, Factory Mutual approved |
| SNAP-ODC5A-iFM | 4-channel isolated DC output 5–200 VDC, 5 VDC logic, Factory Mutual approved |

TYPICAL WIRING EXAMPLES



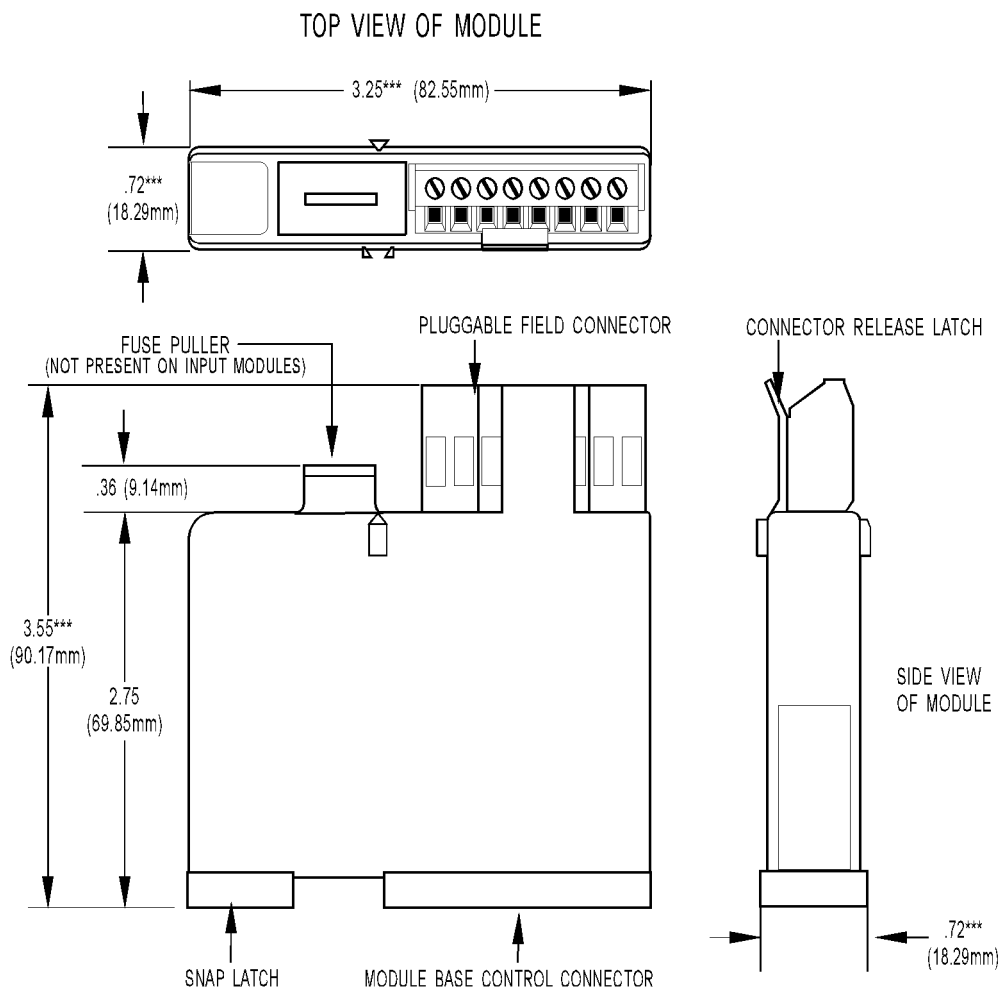
* COMMUTATING DIODE MUST BE USED ON INDUCTIVE LOADS. (TYPICAL 1N4005)



SNAP Digital Output Modules

Dimensional Drawing

All Models Except MA



TOLERANCES LEGEND
 * $\pm .010"$ ** $\pm .020"$
 *** $\pm .030"$ **** $\pm .060"$
 NO * REFERENCE ONLY

SNAP Digital Output Modules

Dimensional Drawing

All Models

SNAP Digital Module Mounted on SNAP Rack

