

## FEATURES

- Transient Protection: Meets the requirements of IEEE 472, "Surge Withstanding Capability Test"
- SPST, Normally Open
- Zero Crossing Turn-On
- UL, CSA, CE, TÜV Certified
- Optical Isolation
- OpenLine® and G5 Modules Provide Replaceable 5x20 mm Glass Fuses
- Built-in Status LED
- Lifetime Warranty



70L-OAC      70G-OAC      70-OAC      70M-OAC

## DIMENSIONS

For complete dimensional drawings, see pages L-4 or L-5.

## FUSES

G5 Fuses are 5 Amp Littelfuse part number 217005 or equivalent. OpenLine® fuses are 3.15 Amp Littelfuse part number 2173.15.



## Maximum Current Versus Ambient Temperature

The chart indicates continuous current to limit the junction temperatures to 100°C. Information is based on steady state heat transfer in a 2 cubic foot sealed enclosure.

## CIRCUITRY



## SPECIFICATIONS: By Package Style

| Package Style                             |              | Std (70-)   | Mini (70M-) | G5 (70G-)   | OL (70L-)      |
|---|--------------|-------------|-------------|-------------|----------------|
| <b>Specifications</b>                     | <b>Units</b> |             |             |             |                |
| Load Current Range <sup>1</sup>           | A rms        | 0.03 to 3.5 | 0.03 to 3.0 | 0.03 to 3.5 | 0.03 to 2.0/CH |
| Maximum 1 Cycle Surge <sup>2</sup>        | A rms        | 80          | 80          | 80          | 30             |
| Maximum Turn-On-Time (60 Hz) <sup>3</sup> | mSec         | 8.33        | 8.33        | 8.33        | 8.33           |
| Maximum Turn-Off Time (60 Hz)             | mSec         | 8.33        | 8.33        | 8.33        | 8.33           |
| Static dv/dt <sup>7</sup>                 | V/μsec       | 3000        | 3000        | 3000        | 3000           |
| Typ. Power Dissipation                    | W/A          | 1.0         | 1.0         | 1.0         | 1.0            |
| Isolation Voltage <sup>4</sup>            | V rms        | 4000        | 4000        | 4000        | 2500           |
| Vibration <sup>5</sup>                    |              | MIL-STD-202 | MIL-STD-202 | MIL-STD-202 | IEC68-2-6      |
| Mechanical Shock <sup>6</sup>             |              | MIL-STD-202 | MIL-STD-202 | MIL-STD-202 | IEC68-2-27     |
| Storage Temp. Range                       | °C           | -40 to 125  | -40 to 125  | -40 to 125  | -40 to 100     |
| Operating Temp. Range                     | °C           | -40 to 100  | -40 to 100  | -40 to 100  | -40 to 85      |
| Warranty                                  |              | Lifetime    | Lifetime    | Lifetime    | Lifetime       |

<sup>1</sup> See Figure 1 for derating.

<sup>2</sup> Maximum 10 cycle surge is 50% of 1 cycle surge. Application of maximum surge may not be repeated until module temperature has returned to its steady state value.

<sup>3</sup> Except 70-OAC5A5 which is 200 μSec and 70-OAC5A-11, 70M-OAC5A-11, and 70G-OAC5A-11 which are 100 μSec.

<sup>4</sup> Field to logic and channel-to-channel if Grayhill racks are used.

<sup>5</sup> MIL-STD-202, Method 204, 20, 10-2000 Hz or IEC68-2-6, 0.15 mm/sec<sup>2</sup>, 10-150 Hz.

<sup>6</sup> MIL-STD-202, Method 213, Condition F, 1500G or IEC68-2-27, 11 mS, 15g.

<sup>7</sup> Except part numbers with -L suffix which have a dv/dt rating of 200 V/μSec.

## SPECIFICATIONS: By Part Number

### Standard and Miniature Modules

| Type/Function  |          | Grayhill Part Number |              |           |            |           |              |
|--|----------|----------------------|--------------|-----------|------------|-----------|--------------|
| Miniature, Normally Open, Random Turn-on             |          |                      | 70M-OAC5A-11 |           |            |           |              |
| Miniature, Normally Open, Zero Voltage Turn-on (ZVT) |          | 70M-OAC5             | 70M-OAC5A    | 70M-OAC15 | 70M-OAC15A | 70M-OAC24 | 70M-OAC24A   |
| Miniature, Normally Open, ZVT, Inductive Load        |          | 70M-OAC5-L           | 70M-OAC5A-L  |           |            |           |              |
| Standard, Normally Closed, Random Turn-on            |          |                      | 70-OAC5A5    |           |            |           |              |
| Standard, Normally Open, Random Turn-on              |          |                      | 70-OAC5A-11  |           |            |           | 70-OAC24A-11 |
| Standard, Normally Open, ZVT                         |          | 70-OAC5              | 70-OAC5A     | 70-OAC15  | 70-OAC15A  | 70-OAC24  | 70-OAC24A    |
| Standard, Normally Open, ZVT, Inductive Load         |          | 70-OAC5-L            | 70-OAC5A-L   |           |            |           |              |
| Specifications                                       | Units    |                      |              |           |            |           |              |
| Nominal Line Voltage                                 | Vac      | 120                  | 240          | 120       | 240        | 120       | 240          |
| Load Voltage Range                                   | Vac      | 24-140               | 24-280       | 24-140    | 24-280     | 24-140    | 24-280       |
| Minimum Peak Blocking Voltage                        | Volts    | 400                  | 600          | 400       | 600        | 400       | 600          |
| Maximum Off-state Leakage @ 60Hz                     | mA, rms  | 2                    | 4            | 2         | 4          | 2         | 4            |
| Nominal Logic Voltage (Vcc)                          | Vdc      | 5                    | 5            | 15        | 15         | 24        | 24           |
| Logic Voltage Range                                  | Vdc      | 2.5-10               | 2.5-10       | 10-18     | 10-18      | 15-30     | 15-30        |
| Max. Logic Supply Current @ Nominal Vcc              | mA       | 16                   | 16           | 9         | 9          | 9         | 9            |
| Nominal Input Resistance (Rx)                        | $\Omega$ | 240                  | 240          | 1800      | 1800       | 2700      | 2700         |
| Minimum Drop Out Voltage                             | Vdc      | 1                    | 1            | 1         | 1          | 1         | 1            |
| Maximum Reverse Logic Voltage                        | Vdc      | -5                   | -5           | -5        | -5         | -5        | -5           |

## G5 Modules

| Type/Function                                  |         | Grayhill Part Number |              |             |              |             |              |
|--|---------|----------------------|--------------|-------------|--------------|-------------|--------------|
| G5 Fusible, Normally Open, ZVT                 |         | 70G-OAC5             | 70G-OAC5A    | 70G-OAC15   | 70G-OAC15A   | 70G-OAC24   | 70G-OAC24A   |
| G5 Fusible, Normally Open, ZVT, Inductive Load |         | 70G-OAC5-L           | 70G-OAC5A-L  | 70G-OAC15-L | 70G-OAC15A-L | 70G-OAC24-L | 70G-OAC24A-L |
| G5 Fusible, Normally Open, Random Turn-on      |         |                      | 70G-OAC5A-11 |             |              |             |              |
| Specifications                                 | Units   |                      |              |             |              |             |              |
| Nominal Line Voltage                           | Vac     | 120                  | 240          | 120         | 240          | 120         | 240          |
| Load Voltage Range                             | Vac     | 24-140               | 24-280       | 24-140      | 24-280       | 24-140      | 24-280       |
| Minimum Peak Blocking Voltage                  | Volts   | 400                  | 600          | 400         | 600          | 400         | 600          |
| Maximum Off-state Leakage @ 60Hz               | mA, rms | 2                    | 4            | 2           | 4            | 2           | 4            |
| Nominal Logic Voltage (Vcc)                    | Vdc     | 5                    | 5            | 15          | 15           | 24          | 24           |
| Logic Voltage Range                            | Vdc     | 4-6                  | 4-6          | 8-20        | 8-20         | 18-32       | 18-32        |
| Max. Logic Supply Current @ Nominal Vcc        | mA      | 20                   | 20           | 12          | 12           | 8           | 8            |
| Nominal Input Resistance (Rx)                  | W       | 100                  | 100          | 1000        | 1000         | 2700        | 2700         |
| Minimum Drop Out Voltage                       | Vdc     | 1                    | 1            | 1           | 1            | 1           | 1            |
| Maximum Reverse Logic Voltage                  | Vdc     | -5                   | -5           | -5          | -5           | -5          | -5           |

## OpenLine® Modules

| Type/Function                                     |          | Grayhill Part Number |            |
|---|----------|----------------------|------------|
| Dual, Fusible, Normally Open, ZVT                 |          | 70L-OAC              | 70L-OACA   |
| Dual, Fusible, Normally Open, ZVT, Inductive Load |          | 70L-OAC-L            | 70L-OACA-L |
| Specifications                                    | Units    |                      |            |
| Nominal Line Voltage                              | Vac      | 120                  | 240        |
| Load Voltage Range                                | Vac      | 24-140               | 24-280     |
| Minimum Peak Blocking Voltage                     | Volts    | 600                  | 600        |
| Maximum Off-State Leakage @ 60 Hz                 | mA, rms  | 2                    | 4          |
| Nominal Logic Voltage                             | Vdc      | 5                    | 5          |
| Logic Voltage Range                               | Vdc      | 4.5-28               | 4.5-28     |
| Max. Logic Supply Current @ Nominal Vcc           | mA       | 7/CH                 | 7/CH       |
| Module ID Resistance to Logic Ground              | $\Omega$ | 2.15K                | 2.15K      |
| Minimum Drop Out Voltage                          | Vdc      | 1                    | 1          |

Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.

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