

GS1, GS2, and GS3/DURAPULSE Accessories – Fusing

Fusing Overview

Circuit protection devices are essential to prevent costly damage to your AC drive application equipment. Fuses and fuse kits are available from AUTOMATIONDIRECT for the GS1, GS2, and GS3/DURAPULSE AC drives.

The fuse specifications are shown in the table below. Each fuse kit consists of one fuse block and fuses sized to handle the inrush current while providing superior protection for the corresponding GS2 or DURAPULSE AC drive. The larger drives in the DURAPULSE family require three fuse kits (one per phase). Their part numbers are marked in the table with a double

asterisk.

Replacement fuses are also available, and listed in the table next to their companion fuse kits.

| Fuse Kit Specifications for GS1, GS2, and GS3/DURApulse 115–460V Drives | | | | | | | | | | | | |
|---|---------|------------|-----------|------------------------------|---------------------------------|------------------------------|------------------------------|------------------------------|---|------------------------------|------------------------------|---------|
| Fuse Kit | Price | Fuse | | | | | Wire Range | SCCR | Replacement Fuses (5 fuses per package) | Price | | |
| | | Block Type | Type | Rating | Bolt Torque (lb-in) | Block Dimensions | | | | | | |
| GS-10P2-FKIT-1P* | Retired | Two-pole | A3T | 300V@20A | n/a (spring clips) | Figure 1 | Al/Cu #2-14 | 200 kA | GS-10P2-FUSE-1P | Retired | | |
| GS-10P5-FKIT-1P* | Retired | | | 300V@30A | | | | | GS-10P5-FUSE-1P | Retired | | |
| GS-11P0-FKIT-1P* | Retired | | | 300V@50A | | | | | GS-11P0-FUSE-1P | Retired | | |
| GS-20P2-FKIT-1P | Retired | | | 300V@15A | | | | | GS-20P2-FUSE-1P | Retired | | |
| GS-20P2-FKIT-3P | Retired | Three-pole | | 300V@10A | | Figure 2 | | | GS-20P2-FUSE-3P | Retired | | |
| GS-20P5-FKIT-1P | Retired | Two-pole | | 300V@20A | | Figure 1 | | | GS-20P5-FUSE-1P | Retired | | |
| GS-20P5-FKIT-3P | Retired | Three-pole | | 300V@10A | | Figure 2 | | | GS-20P5-FUSE-3P | Retired | | |
| GS-21P0-FKIT-1P | Retired | Two-pole | | 300V@30A | | Figure 1 | | | GS-21P0-FUSE-1P | Retired | | |
| GS-21P0-FKIT-3P | Retired | Three-pole | | 300V@20A | | Figure 2 | | | GS-21P0-FUSE-3P | Retired | | |
| GS-22P0-FKIT-1P | Retired | Two-pole | | 300V@45A | | Figure 1 | | | GS-22P0-FUSE-1P | Retired | | |
| GS-22P0-FKIT-3P | Retired | Three-pole | | 300V@25A | | Figure 2 | | | GS-22P0-FUSE-3P | Retired | | |
| GS-23P0-FKIT-1P | Retired | Two-pole | | 300V@60A | | Figure 1 | | | GS-23P0-FUSE-1P | Retired | | |
| GS-23P0-FKIT-3P | Retired | Three-pole | 300V@40A | Figure 2 | GS-23P0-FUSE-3P | Retired | | | | | | |
| GS-25P0-FKIT | Retired | | 300V@60A | GS-25P0-FUSE | Retired | | | | | | | |
| GS-27P5-FKIT † | Retired | | 300V@100A | 72 | Figure 9 | GS-27P5-FUSE | Retired | | | | | |
| - † | | | 300V@125A | | | GS-2010-FUSE | Retired | | | | | |
| - † | | | 300V@175A | | | GS-2015-FUSE | Retired | | | | | |
| GS-2020-FKIT | Retired | | 300V@250A | 228 | Figure 5 | Al/Cu: 600kcmil-#2 | GS-2020-FUSE | Retired | | | | |
| GS-2025-FKIT | Retired | | 300V@300A | 228 | | | GS-2025-FUSE | Retired | | | | |
| GS-2030-FKIT | Retired | | 300V@350A | 228 | | | GS-2030-FUSE | Retired | | | | |
| GS-2040-FKIT ** | Retired | | One-pole | 300V@450A | 360 | Figure 6 ** | Al/Cu: (2) 600kcmil-#2 | GS-2040-FUSE | Retired | | | |
| GS-2050-FKIT ** | Retired | | One-pole | 300V@500A | 360 | | | GS-2050-FUSE | Retired | | | |
| GS-41P0-FKIT | Retired | Three-pole | A6T | 600V@10A | n/a (spring clips) | Figure 7 | Al/Cu #2-14 | 200 kA | GS-41P0-FUSE | Retired | | |
| GS-42P0-FKIT | Retired | | | 600V@15A | | | | | GS-42P0-FUSE | Retired | | |
| GS-43P0-FKIT | Retired | | | 600V@20A | | | | | GS-43P0-FUSE | Retired | | |
| GS-45P0-FKIT | Retired | | | 600V@30A | | | | | GS-45P0-FUSE | Retired | | |
| GS-47P5-FKIT | Retired | | | 600V@50A | | Figure 8 | | | GS-47P5-FUSE | Retired | | |
| GS-4010-FKIT | Retired | | | 600V@70A | | 72 | | | Figure 9 | Al/Cu: Al/Cu 2/0-#6 | GS-4010-FUSE | Retired |
| GS-4015-FKIT | Retired | | | 600V@90A | | 72 | | | | | GS-4015-FUSE | Retired |
| GS-4020-FKIT | Retired | | | 600V@125A | | 132 | | | Figure 10 | Al/Cu: 350kcmil-#6 | GS-4020-FUSE | Retired |
| GS-4025-FKIT | Retired | | | 600V@150A | | 132 | | | | | GS-4025-FUSE | Retired |
| GS-4030-FKIT | Retired | | | 600V@175A | | 132 | | | | | GS-4030-FUSE | Retired |
| GS-4040-FKIT ** | Retired | One-pole | | 600V@225A | 228 | Figure 11 ** | | | Al/Cu: 600kcmil-#2 | GS-4040-FUSE | Retired | |
| GS-4050-FKIT ** | Retired | | | 600V@250A | 228 | | | | | GS-4050-FUSE | Retired | |
| GS-4060-FKIT ** | Retired | | 600V@350A | 228 | GS-4060-FUSE | | Retired | | | | | |
| GS-4075-FKIT ** | Retired | | 600V@400A | 228 | GS-4075-FUSE | | Retired | | | | | |
| GS-4100-FKIT ** | Retired | | 600V@600A | 360 | Figure 12 ** | | Al/Cu: (2) 600kcmil-#2 | GS-4100-FUSE | | Retired | | |

NOTES:

- * – Single phase 115V fuse kits are for use only with GS1 and GS2 drives.
- ** – Kit includes three single-pole fuse blocks and three fuses.
- † – GS-2010-FKIT and GS-2015-FKIT are no longer available. Please use GS-27P5-FKIT instead.

GS2 and GS3/DURAPULSE Accessories – Fusing

Fuse Block Dimensions

Units = inches

Figure 1

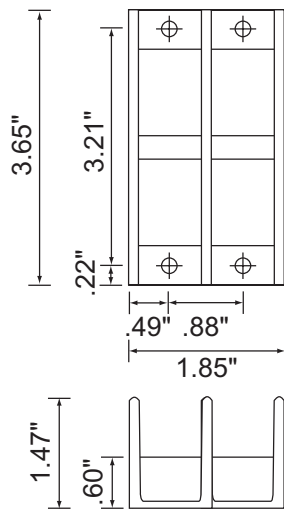


Figure 2

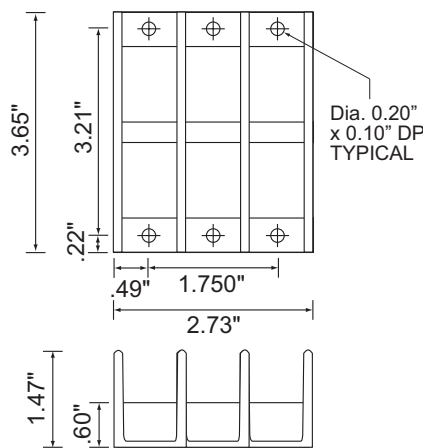


Figure 3

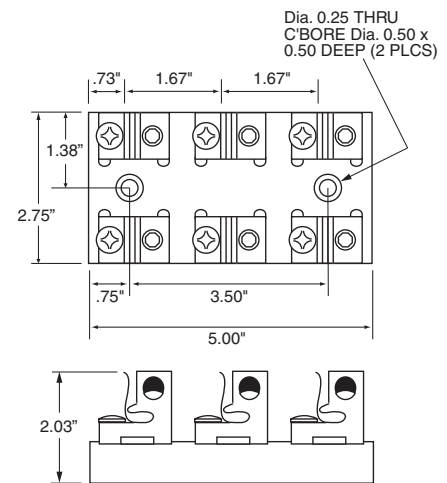


Figure 4

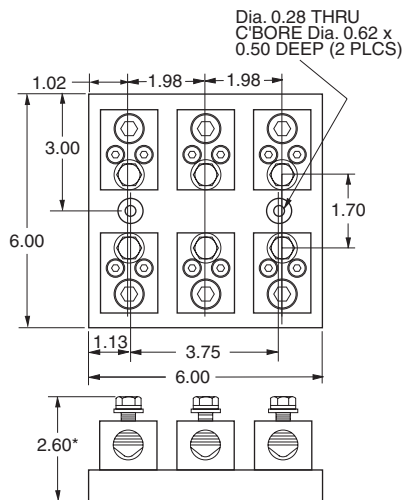


Figure 5

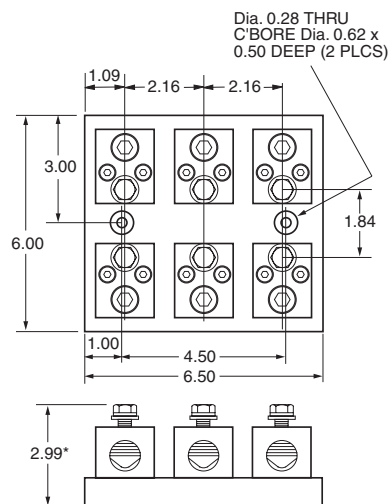
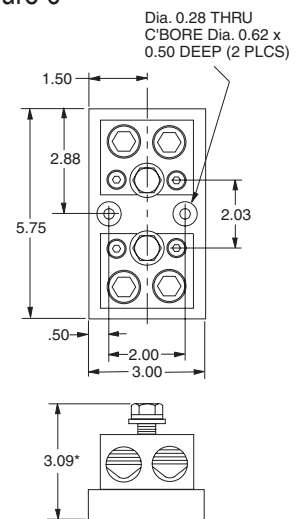


Figure 6



GS2 and GS3/DURAPULSE Accessories – Fusing

Fuse Block Dimensions

Units = inches

Figure 7

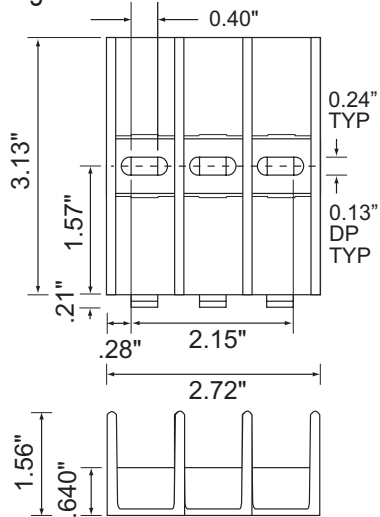


Figure 8

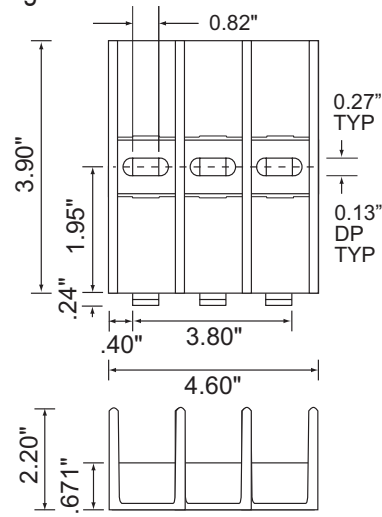


Figure 9

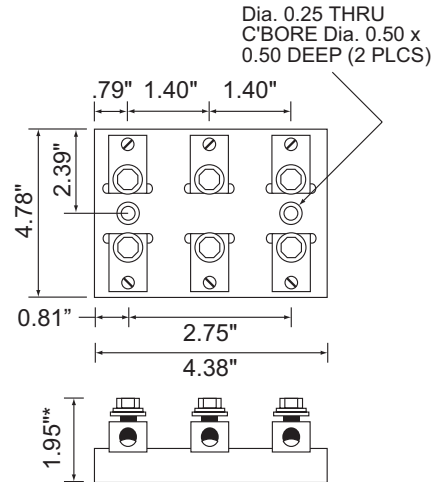


Figure 10

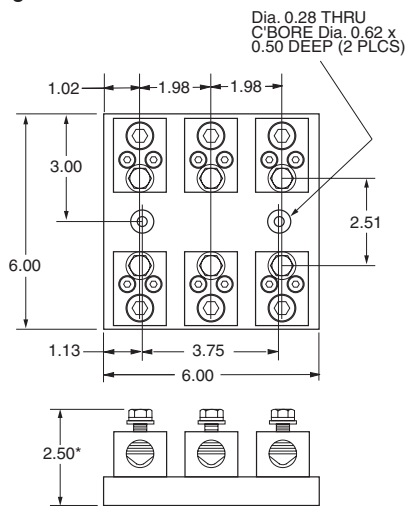


Figure 11

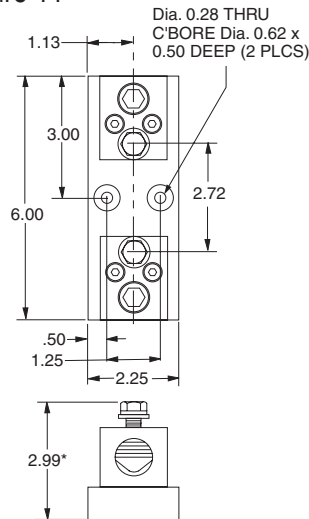
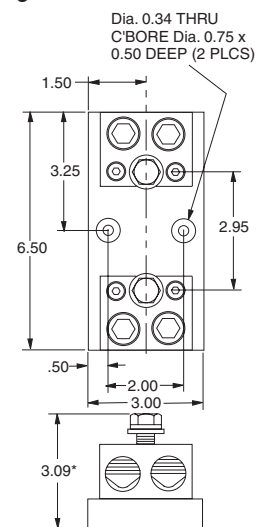


Figure 12



* Height includes nominal fuse blade thickness.

GS4 DURAPULSE Accessories – Fusing

Fuse Selection for GS4 AC Drives

The fuses shown in the table below are available from AutomationDirect. Further information, including dimensional information, is available at AutomationDirect.com.

| Fuse Specification Chart GS4 DURAPULSE Drives | | | | | | | | | | | | | | |
|---|-----------------------------|-------------|-------|----------|----------------|------------------------|--------------------------------------|--|-------------|-------|----------|----------------|------------------------|------------------------|
| Drive Model | For Three-Phase Input Power | | | | | | For Single-Phase Input Power | | | | | | | |
| | HP | Input Power | | | Input Fuse *** | | | HP | Input Power | | | Input Fuse *** | | |
| | | Ø | Volts | GS4 Amps | Fuse Amps | Fast Acting Class T | Edison Class J* | | Ø | Volts | GS4 Amps | Fuse Amps | Fast Acting Class T | Edison Class J* |
| GS4-21P0 | 1 | 3 | 230 | 6.4 | 10 | TJN10 | JHL10 | 0.5 | 1 | 230 | 6.4 | 10 | TJN10 | JHL10 |
| GS4-22P0 | 2 | 3 | 230 | 12 | 15 | TJN15 | JHL15 | 0.75 | 1 | 230 | 9.7 | 15 | TJN15 | JHL15 |
| GS4-23P0 | 3 | 3 | 230 | 16 | 25 | TJN25 | JHL25 | 1 | 1 | 230 | 15 | 20 | TJN20 | JHL20 |
| GS4-25P0 | 5 | 3 | 230 | 20 | 35 | TJN35 | JHL35 | 2 | 1 | 230 | 20 | 30 | TJN30 | JHL30 |
| GS4-27P5 | 7.5 | 3 | 230 | 28 | 50 | TJN50 | JHL50 | 3 | 1 | 230 | 26 | 40 | TJN40 | JHL40 |
| GS4-2010 | 10 | 3 | 230 | 36 | 70 | TJN70 | JHL70 | 3 | 1 | 230 | 26 | 40 | TJN40 | JHL40 |
| GS4-2015 | 15 | 3 | 230 | 52 | 100 | TJN100 | JHL100 | 5 | 1 | 230 | 40 | 70 | TJN70 | JHL70 |
| GS4-2020 | 20 | 3 | 230 | 72 | 125 | TJN125 | JHL125 | 7.5 | 1 | 230 | 58 | 100 | TJN100 | JHL100 |
| GS4-2025 | 25 | 3 | 230 | 83 | 150 | TJN150 | JHL150 | 10 | 1 | 230 | 76 | 125 | TJN125 | JHL125 |
| GS4-2030 | 30 | 3 | 230 | 99 | 175 | TJN175 | JHL175 | 10 | 1 | 230 | 76 | 125 | TJN125 | JHL125 |
| GS4-2040** | 40 | 3 | 230 | 124 | 175 | TJN175 | JHL175 | 10 | 1 | 230 | 63 | 90 | TJN90 | JHL90 |
| GS4-2050** | 50 | 3 | 230 | 143 | 200 | TJN200 | JHL200 | 10 | 1 | 230 | 63 | 90 | TJN90 | JHL90 |
| GS4-2060 | 60 | 3 | 230 | 171 | 250 | TJN250 | JHL250 | 15 | 1 | 230 | 94 | 150 | TJN150 | JHL150 |
| GS4-2075 | 75 | 3 | 230 | 206 | 300 | TJN300 | JHL300 | 20 | 1 | 230 | 124 | 175 | TJN175 | JHL175 |
| GS4-2100 | 100 | 3 | 230 | 245 | 350 | TJN350 | JHL350 | 25 | 1 | 230 | 143 | 200 | TJN200 | JHL200 |
| GS4-41P0 | 1 | 3 | 460 | 4.3 | 6 | TJS6 | JHL6 | single-phase input power not applicable for 460V | | | | | | |
| GS4-42P0 | 2 | 3 | 460 | 5.9 | 10 | TJS10 | JHL10 | | | | | | | |
| GS4-43P0 | 3 | 3 | 460 | 8.7 | 15 | TJS15 | JHL15 | | | | | | | |
| GS4-45P0 | 5 | 3 | 460 | 14 | 20 | TJS20 | JHL20 | | | | | | | |
| GS4-47P5 | 7.5 | 3 | 460 | 17 | 25 | TJS25 | JHL25 | | | | | | | |
| GS4-4010 | 10 | 3 | 460 | 20 | 35 | TJS35 | JHL35 | | | | | | | |
| GS4-4015 | 15 | 3 | 460 | 26 | 45 | TJS45 | JHL45 | | | | | | | |
| GS4-4020 | 20 | 3 | 460 | 35 | 60 | TJS60 | JHL60 | | | | | | | |
| GS4-4025 | 25 | 3 | 460 | 40 | 70 | TJS70 | JHL70 | | | | | | | |
| GS4-4030 | 30 | 3 | 460 | 47 | 90 | TJS90 | JHL90 | | | | | | | |
| GS4-4040** | 40 | 3 | 460 | 63 | 125 | TJS100 | JHL100 | | | | | | | |
| GS4-4050 | 50 | 3 | 460 | 74 | 100 | TJS110 | JHL110 | | | | | | | |
| GS4-4060 | 60 | 3 | 460 | 101 | 125 | TJS150 | JHL150 | | | | | | | |
| GS4-4075 | 75 | 3 | 460 | 114 | 150 | TJS150 | JHL150 | | | | | | | |
| GS4-4100 | 100 | 3 | 460 | 157 | 200 | TJS200 | JHL200 | | | | | | | |
| GS4-4125 | 125 | 3 | 460 | 167 | 250 | TJS250 | JHL250 | | | | | | | |
| GS4-4150 | 150 | 3 | 460 | 207 | 300 | TJS300 | JHL300 | | | | | | | |
| GS4-4175 | 175 | 3 | 460 | 240 | 350 | TJS350 | JHL350 | | | | | | | |
| GS4-4200 | 200 | 3 | 460 | 300 | 450 | TJS450 | JHL450 | | | | | | | |
| GS4-4250 | 250 | 3 | 460 | 380 | 500 | TJS500 | JHL500 | | | | | | | |
| – | – | | | | | | Fast Acting Current Limiting Class L | | | | | | | |
| GS4-4300 | 300 | 3 | 460 | 400 | 700 | LCU700 | | | | | | | | |

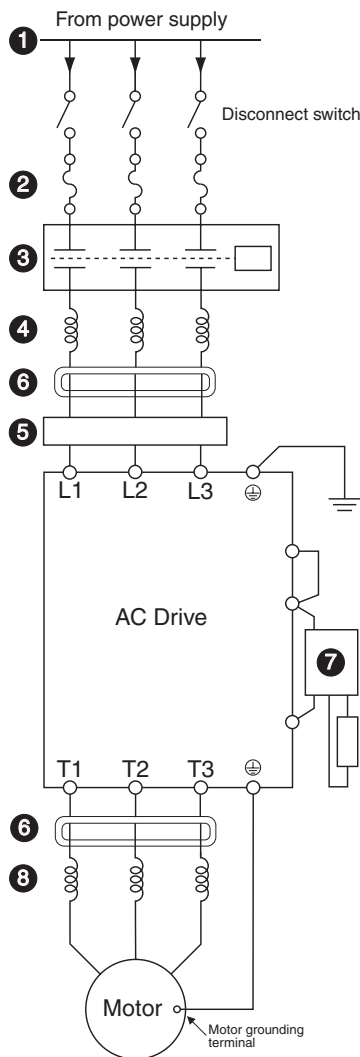
* High-speed Class J

** Includes DC choke

*** The fuses listed above are available from AutomationDirect.com. (Individual web links are associated with each part number listed above.)

AC Drives Optional Accessories – Overview

Drive Accessories
(not all accessories are applicable for every drive model)



1 Power Supply

Please follow the specific power supply requirements as detailed in the specific drive manual.

2 Fuses

Input fuses protect the AC drive from excessive input current due to line surges, short circuits, and ground faults. They are recommended for all installations and may be required for UL-listed installations.

3 Contactor (Optional)

Do not use a contactor or disconnect switch for run/stop control of the AC drive and motor. This will reduce the operating life cycle of the AC drive. Cycling a power circuit switching device while the AC drive is in run mode should be done only in emergency situations.

4 Input Line Reactor (Optional)

See the Line Reactors section at www.automationdirect.com for more information.

Input line reactors protect the AC drive from transient overvoltage conditions, typically caused by utility capacitor switching. The input line reactor also reduces the harmonics associated with AC drives. Input line reactors are recommended for all installations.

5 EMI filter (Optional)

See the EMI Filters section at www.automationdirect.com for more information.

Input EMI filters reduce electromagnetic interference or noise on the input side of the AC drive. They are required for CE compliance and recommended for installations prone to or sensitive to electromagnetic interference.

6 RF filter (Optional)

RF filters reduce the radio frequency interference or noise on the input or output side of the inverter.

7 Braking Unit and/or Braking Resistor (Optional)

Dynamic braking allows the AC drive to produce additional braking (stopping) torque. AC drives can typically produce between 15% & 20% braking torque without the addition of any external components. The addition of optional braking may be required for applications that require rapid deceleration or high inertia loads.

8 Output Load Reactor or Voltage Time (dV/dT) Filter (Optional)

Output line reactors protect the motor insulation against AC drive short circuits and IGBT reflective wave damage, and also "smooth" the motor current waveform, allowing the motor to run cooler. They are **recommended for operating "noninverter-duty" motors and when the length of wiring between the AC drive and motor is less than 100 feet.**

Voltage Time filters provide enhanced protection for motors with distances up to 1,000 feet.

Voltage Time filters provide even more protection against wave reflection and reduce common mode noise. They are recommended when the length of wiring between the AC drive and motor is from 100 feet up to 1,000 feet.

See www.automationdirect.com for specific product offerings.