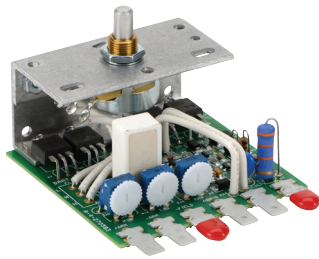
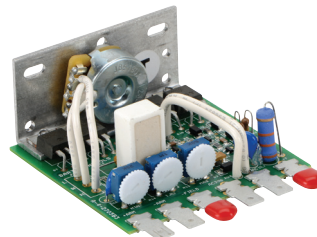


# GSD3 Series DC Drives

## GSD3 Introduction



GSD3-xxx-2CJ



GSD3-xxx-2CL



GSD3-24x-3N4

### GSD3 Series DC Drives

Motor Rating Range @ 12/24 VAC <sub>IN</sub>	1/50 – 1/12 hp
Motor Rating Range @ 120/240 VAC <sub>IN</sub>	1/50 – 2/3 hp

## Overview

IronHorse GSD3 series DC drives are general-purpose, economical variable-speed controllers for small DC and universal motor applications.

Models are offered with dual input voltages of 12/24 VAC or 120/240 VAC with a DC output current rating of 2 Amps, adjustable trim pot settings, and quick-connect terminal pins.

GSD3 series DC drives are available in two compact panel-mount styles – open-frame and NEMA 4 enclosed.

## Features

- Dual input voltage models of 12/24 VAC or 120/240 VAC
- Full-wave bridge power supply
- Adjustable minimum speed
- Adjustable maximum speed
- Adjustable IR compensation
- Fixed acceleration (0.5 seconds)
- 5kΩ speed potentiometer with leads, knob and dial included
- 25:1 speed range
- 1% speed regulation
- Shunt field supply provided (1 Amp max):
  - 10V for 12VAC; 20V for 24VAC input, 100V for 120VAC; 200V for 240VAC input
- Overload capacity of 200% for one minute
- Transient voltage protection
- Power on/off switch (enclosed models)
- AC line fuse (120–240 VAC NEMA 4 only)

## Accessories

- Replacement speed potentiometer kit
- Detailed descriptions and specifications for GSD accessories are available in the “GSD Series DC Drives Accessories” section.*

## Typical Applications

- Auger feeders
- Automated door actuators
- Commercial cooking equipment
- Commercial lift
- Food production
- Industrial pumping systems
- Measurement instruments
- Miniature lathes and mills
- Packaging / material-handling equipment
- PLC-controlled reversing
- Printing and labeling machines
- Small shop machine tools
- Spray / print reciprocating head

# GSD3 Series DC Drives

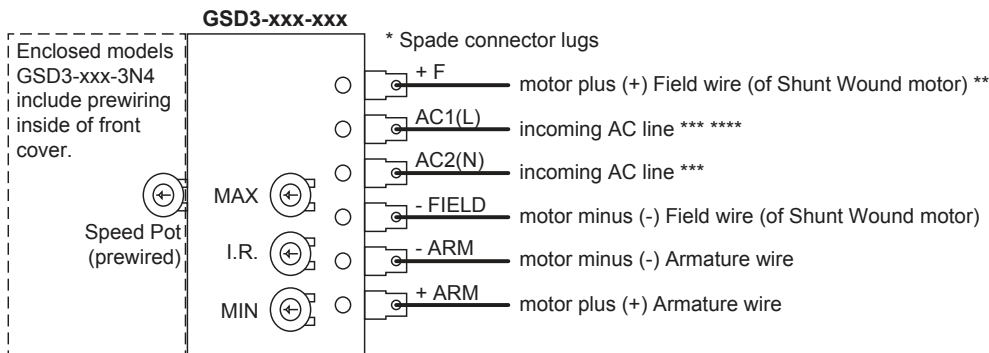
## GSD3 Selection and Specifications

GSD3 Series DC Drives – Selection & Specifications						
Model	GSD3-24A-2CJ	GSD3-24A-2CL	GSD3-24A-3N4	GSD3-240-2CJ	GSD3-240-2CL	GSD3-240-3N4
Price	\$100.00	\$97.00	\$185.00	\$96.00	\$94.00	\$191.00
Package Configuration	Open frame		NEMA 4	Open frame		NEMA 4
Power Quality Form Factor	1.4					
Input Voltage	12/24 VAC ±10% @ 50/60 Hz			120/240 VAC ±10% @ 50/60 Hz		
Output Voltage	0–12 or 0–24 VDC			0–90 or 0–180 VDC		
Shunt Field Voltage & Current	10VDC @ 12 VAC 20VDC @ 24 VAC (1A max)	10VDC @ 12 VAC 20VDC @ 24 VAC (0.75A max)	10VDC @ 12 VAC 20VDC @ 24 VAC (0.75A max)	100VDC @ 120 VAC 200VDC @ 240 VAC (1A max)	100VDC @ 120 VAC 200VDC @ 240 VAC (0.75A max)	100VDC @ 120 VAC 200VDC @ 240 VAC (0.75A max)
Motor Rating (hp)	1/50–1/40 @ 11V 1/25–1/20 @ 22V	1/50–1/25 @ 11V 1/25–1/12 @ 22V	1/50–1/25 @ 11V 1/25–1/12 @ 22V	1/50–1/6 @ 90V 1/25–1/3 @ 180V	1/50–1/3 @ 90V 1/25–2/3 @ 180V	1/50–1/3 @ 90V 1/25–2/3 @ 180V
Output Current (continuous)	150 mA to 2A (DC)		150 mA to 3A (DC)	150 mA to 2A (DC)		150 mA to 3A (DC)
Current Overload Capacity	200% for 60s					
Current Limit	None					
Transient Protection	Metal Oxide Varistor (MOV)					
I.R. Compensation	Adjustable – full range					
Speed Adjustment	5kΩ potentiometer					
Speed Range	25:1					
Speed Regulation	±1% of base speed					
Maximum Speed	Adjustable from 40% to 120% of base speed					
Minimum Speed	Adjustable from 0% to 30% of maximum speed					
Acceleration	0.5s (fixed)					
Deceleration	n/a (follows the ramp of the reference)					
Dynamic Braking	No					
Plugging Capability **	No					
Electrical Connections	Spade-connector lugs					
External Fusing Required	Bussman ABC or Littlefuse 314 series ceramic fuses or equivalent GSD3-240-3N4 includes internal fusing adequate for 120 VAC line and neutral inputs Refer to wiring diagrams for external fusing requirements for other wiring configurations					
Operating Temperature	-10 to 45 °C [14 to 113 °F]	-10 to 45 °C [14 to 113 °F]	-10 to 45 °C [14 to 113 °F]	-10 to 45 °C [14 to 113 °F]	-10 to 45 °C [14 to 113 °F]	-10 to 45 °C [14 to 113 °F]
Thermal Protection	None					
Mounting Orientation	Can be mounted in any orientation					
Corrosive Gases	NOT compatible with any corrosive gases					
Weight	2.9 oz [83g]	2.6 oz [75g]	20.3 oz [575g]	2.9 oz [83g]	2.6 oz [75g]	20.3 oz [575g]
Agency Approvals	RoHS			cUL <sub>US</sub> listed (E333109), RoHS		
<b>Optional Accessories *</b>						
Replacement Potentiometer	<a href="#">GSDA-5K</a>					
Manual Reverse Switch	<a href="#">GSDA-MREV***</a>					
* For accessories details, refer to the "GSD Series DC Drives Accessories" section.						
** Plugging is a method of rapidly changing motor direction by reversing motor armature polarity, while the motor is still running.						
***To meet NEMA4 requirements, GSDA-MREV requires a user provided external enclosure.						

# GSD3 Series DC Drives

## GSD3 Wiring Diagrams

**GSD3-24x-xxx Basic Wiring Diagram** – (refer to User Manual for more detailed wiring information)



\* For wiring connections, use customer-supplied Sta-Kon 0.25 in x 0.25 in spade connectors or similar.

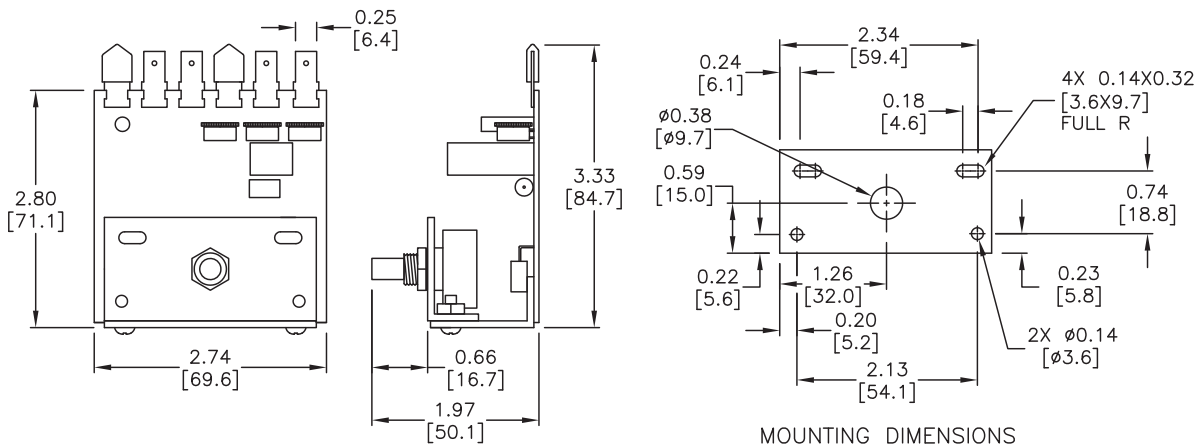
\*\* +F connection is only for Shunt Wound motor; NOT for Permanent Magnet motor.  
For motors with dual voltage field, i.e. 50/100V or 100/200V, connect the highest value.

\*\*\* Use normal-blow fuses in series with all ungrounded (hot) AC inputs, rated to 125% of motor current.  
NOTE: Fuse both AC input lines for 240 VAC input, where both lines are hot. For line-to-neutral circuits, fuse the hot input line and connect it to AC1.

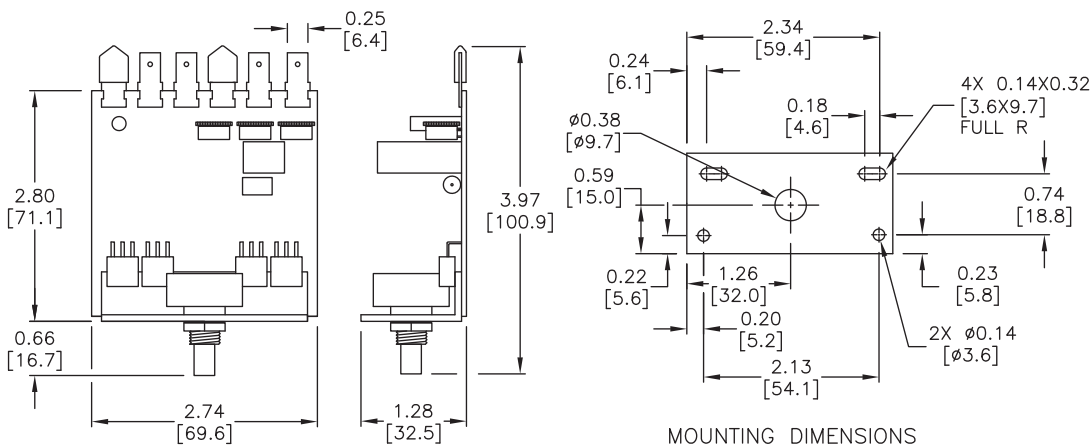
\*\*\*\* GSD3-240-3N4 drives include a replaceable built-in fuse wired in line with AC1.  
(Fuse is 250VAC, 6.3A Littlefuse 21606.30 or equivalent.)

## GSD3 Dimensions — dimensions = in [mm]

### GSD3-24x-2CJ Dimensions



### GSD3-24x-2CL Dimensions



# GSD3 Series DC Drives

## GSD3 Dimensions — dimensions = in [mm]

### GSD3-24x-3N4 Dimensions

