

GSD5 Series DC Drives

GSD5 Introduction



GSD5-240-10C



GSD5-240-10N4-x

GSD5 Series DC Drives

Motor Rating Range @ 120/240 VAC_{LN}

1/8 – 2 hp

Overview

IronHorse GSD5 series DC drives offer superb flexibility, reliability, and value. A general purpose, economical line of drives rated to 2 horsepower, it provides the ultimate in standard features and versatility, offered in open-frame and NEMA 4/12 enclosed models.

A logical, easily-accessible layout simplifies installation and adjustment. Clean design, quality components and careful assembly are trademarks of IronHorse GSD DC drives.

Features

- Dual input voltage – 120/240 VAC, 50/60Hz
- Adjustable horsepower settings
- Barrier terminal strip
- Packaged bridge supply (full wave)
- 1% speed regulation with armature voltage feedback ($\pm 1/2\%$ with tach feedback)
- Adjustable minimum speed
- Adjustable maximum speed
- Adjustable IR compensation
- Adjustable linear acceleration
- Adjustable current limit
- Line voltage compensation
- 5k Ω speed potentiometer with leads, knob, and dial included
- Power on/off switch (enclosed models)
- 50:1 speed range
- Overload capacity: 150% for one minute
- Transient voltage protection
- Voltage following mode or DC tachometer follower by supplying ungrounded analog input signal
- DC tachometer feedback
- Inhibit circuit – permits start and stop without breaking AC lines
- Remote start/stop via pot circuit or inhibit circuit
- Shunt field supply provided
- AC line fuse
- Enclosed models rated NEMA 4/12 with threaded conduit holes

Accessories

- Replacement speed potentiometer kit
- Digital potentiometer
- Manual reverse switch
- Analog current input card
- Analog voltage input card

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
- Printing and labeling machines
- Small shop machine tools
- Spray / print reciprocating head

GSD5 Series DC Drives

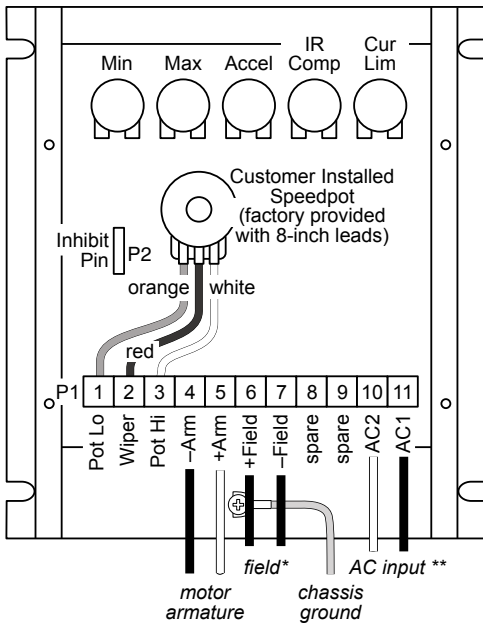
GSD5 Selection and Specifications

GSD5 Series DC Drives – Selection & Specifications					
Model	GSD5-240-10C	GSD5-240-10N4	GSD5-240-10N4-A	GSD5-240-10N4-R	GSD5-240-10N4-V
Price	\$136.00	\$179.00	\$248.00	\$268.00	\$271.00
Package Configuration	open frame	NEMA 4/12			
Power Quality Form Factor	1.4				
Special Features	none		current follower	manual reversing	voltage follower
Input Voltage (@50/60Hz)	120/240 VAC ±10%				
Output Voltage	0–90/180 VDC				
Shunt Field Voltage	100VDC @ 120VAC input ; 200VDC @ 240VAC input ; (1A max)				
Motor Rating (hp)	1/8 – 1 hp @ 90VDC ; 1/4 – 2 hp @ 180VDC				
Output Current (continuous)	150mA – 10.8A (DC)				
Current Overload Capacity	150% for 60s				
Current Limit (adjustable)	1–15A (DC)				
Transient Protection	Metal Oxide Varistor (MOV)				
I.R. Compensation	adjustable				
Speed Adjustment	5kΩ 2W potentiometer or 0–10VDC isolated input signal				
Speed Range	50:1				
Speed Regulation	±1% of base speed (0.5% with tachometer feedback)				
Maximum Speed	adjustable from 66% to 110% of base speed				
Minimum Speed	linear ramp 0–30% of adjustable maximum speed				
Acceleration	linear ramp adjustable 0.5–8s				
Deceleration	adjustable 0.06–80s (dependent on acceleration time setting)				
Dynamic Braking	no				
Plugging Capability **	no				
Electrical Connections	barrier-type terminal strip; 26–12 AWG				
External Fusing Required	Bussman ABC or Littlefuse 314 series ceramic fuses or equivalent Refer to wiring diagrams for details				
Operating Temperature	-10 to 45 °C [14 to 113 °F]				
Thermal Protection	current limiting				
Mounting Orientation	can be mounted in any orientation				
Corrosive Gases	NOT compatible with any corrosive gases				
Weight	16.25 oz [413g]	25.50 oz [723g]			
Agency Approvals	cUL _{US} listed (E333109), RoHS				RoHS
Optional Accessories *					
Replacement Potentiometer	GSDA-5K				
Digital Potentiometer	GSDA-DP				
Manual Reverse Switch	GSDA-MREV	–	–	included	–
Analog Current Input Card	GSDA-AI-A	–	included	–	–
Analog Voltage Input Card	GSDA-AI-V5	–	–	–	included
* 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.					

GSD5 Series DC Drives

GSD5 Wiring Diagrams

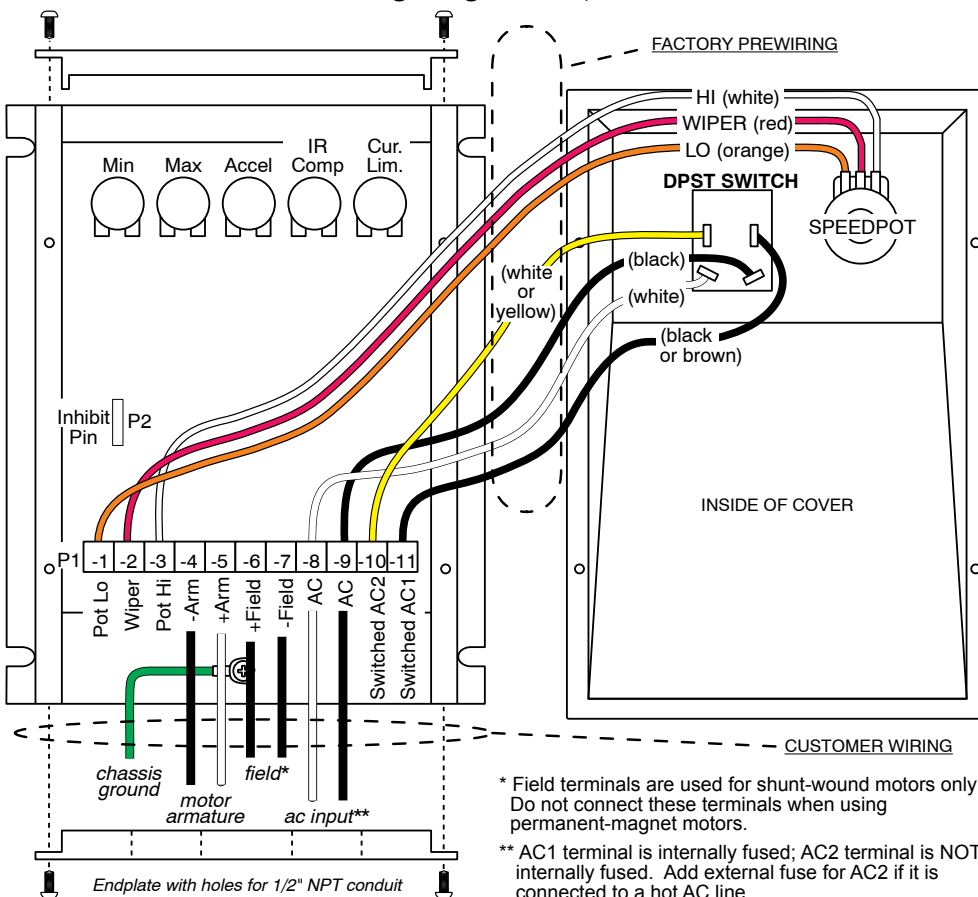
GSD5-240-10C Basic Wiring Diagram – (refer to User Manual for more detailed wiring information)



* Field terminals are used for shunt-wound motors only!
Do not connect these terminals when using permanent-magnet motors.

** AC1 terminal is internally fused; AC2 terminal is NOT internally fused.
Add external fuse for AC2 if it is connected to a hot AC line.

GSD5-240-10N4 Basic Wiring Diagram – (refer to User Manual for more detailed wiring information)



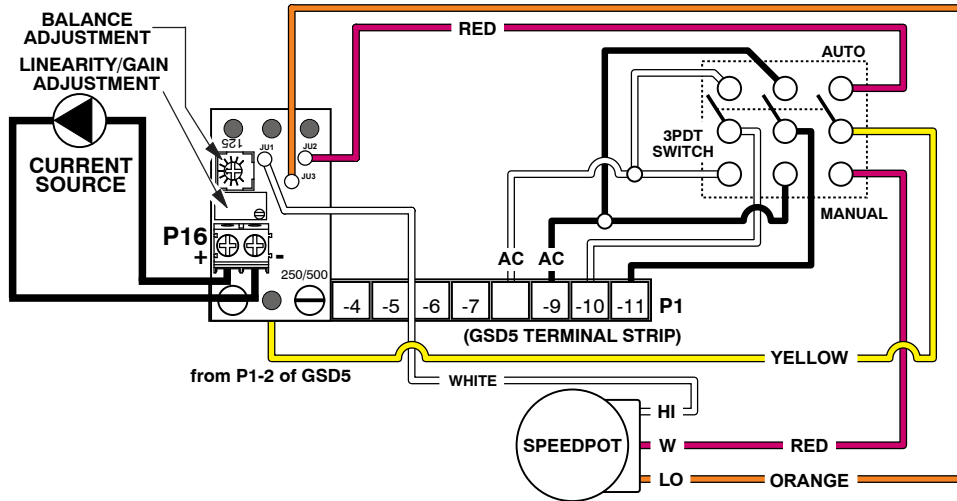
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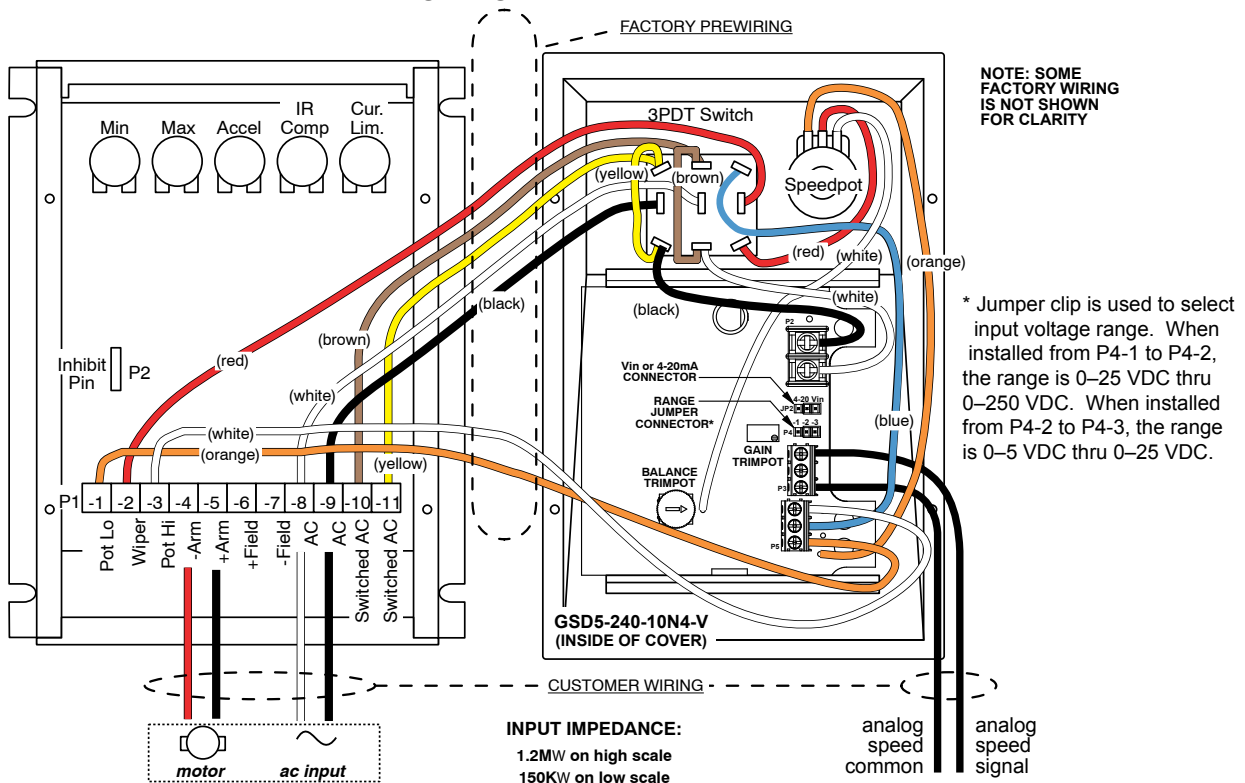
GSD5 Series DC Drives

GSD5 Wiring Diagrams

GSD5-240-10N4-A Basic Wiring Diagram – (refer to User Manual for more detailed wiring information)



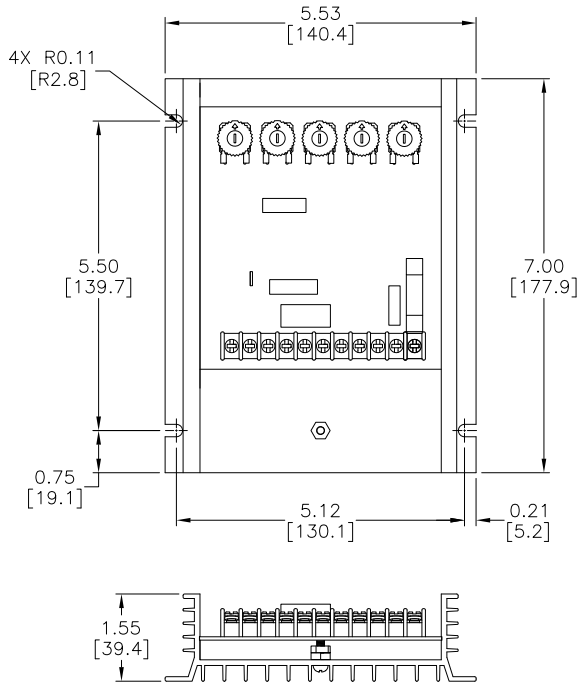
GSD5-240-10N4-V Basic Wiring Diagram – (refer to User Manual for more detailed wiring information)



GSD5 Series DC Drives

GSD5 Dimensions – dimensions = in [mm]

GSD5-240-10C Dimensions



GSD5-240-10N4-x Dimensions

