1-800-633-0405 **DURAPULSE GS3 AC Drives – Introduction**

GS3 AC Drives																
Motor Doting	HP	1	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100
Motor Rating	kW	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
230V Single-Phase Input / 230V Three-Phase Output		\checkmark	\checkmark	\checkmark												
230V Three-Phase Input / Output		\checkmark														
460V Three-Phase Input / Output		\checkmark														

Overview

The DURAPULSE series of AC drives offers all of the features of our GS2 series of drives including dynamic braking, PID, removable keypad and RS-485 Modbus communication. The DURAPULSE AC drive also offers sensorless vector control with the option of encoder feedback for enhanced speed control. The standard smart keypad (or Human Interface Module) is designed with defaults for the North American customer and allows you to configure the drive, set the speed, start and stop the drive, and monitor critical parameters for your application. In addition, this keypad has internal memory that allows four complete programs to be stored and transferred to any DURAPULSE drive. The DURAPULSE series offers three analog inputs, eleven digital inputs, and one SPDT relay output.



Features

- Simple Volts/Hertz control
- · Sensorless vector control with autotune
- Sensorless vector control with optional encoder feedback card, for better speed control
- Sinusoidal pulse width modulation (PWM) • Variable carrier frequency, depending on
- model
- IGBT technology
- Starting torque: 125% @ 0.5 Hz/150% @ 1Hz
- 150% rated current for one minute
- · Electronic overload protection
- Stall prevention
- · Adjustable accel and decel ramps with linear and S-curve settings
- Automatic torgue and slip compensation
- Internal dynamic braking circuit for models under 20 hp; optional baking units available for models 20 hp and above
- DC braking
- · Five skip frequencies
- Trip history
- · Programmable jog speed
- Integral PID control
- Removable smart keypad with parameter upload/download
- Keypad with memory to store up to four programs of any *DURAPULSE* drive
- Eleven programmable digital inputs
- Three programmable analog inputs
- Three digital and one SPDT relay programmable outputs
- One programmable analog output
- One digital frequency output
- RS-485 Modbus communications
- · Ethernet communication optional
- Two-year warranty
- UL/cUL/CE listed

Accessories

- AC line reactors
- EMI filters
- RF filter
- Braking resistors
- Braking units (for models 20 hp and above)
- Fuse kits and replacement fuses
- · Replacement cooling fans
- · Remote panel adapter
- Replacement keypad
- Keypad cables in 1, 3, and 5-meter lengths
- Ethernet interface
- Four and eight-port RS-485 multi-drop termination boards
- GSoft drive configuration software
- GS3-FB feedback card
- GS-485HD15-CBL **ZIP**Link RS485 communication cable for connection to the DL06 and D2-260 15-pin ports
- USB-485M USB to RS-485 PC adapter (see "Communications Products" chapter for detailed information)
- Detailed descriptions and specifications for GS accessories are available in the "GS/DURAPULSE Accessories" section.

Typical Applications

- Conveyors
- Fans
- Pumps
- Compressors
- HVAC
- Material handling
- Mixing
- · Shop tools
- Extruding
- Grinding

1-800-633-0405 **DURAPULSE** GS3 AC Drives Specifications

			230V	Class			
Model N	ame		<u>GS3-23P0</u>	<u>GS3-2020</u>	<u>GS3-2030</u>	<u>GS3-2040</u>	<u>GS3-2050</u>
Price			Retired	Retired	Retired	Retired	Retired
Output Rating	Max Matar Output	HP	3.0	20	30	40	50
	Max Motor Output	kW	2.2	15	22	30	37
	Rated Output Current (A)		11	65	90	120	145
naung	Max Output Voltage	Three-phase 200 to 240V (proportional to input voltage)					
	Rated Frequency	0.1 to 400 Hz					
* Input	Rated Voltage/Frequency		Single/Three- phase Three-phase				
Rating				Retired Retired 20 30 15 22 65 90 ree-phase 200 to 240V (proportio 0.1 to 400 Hz 200/208/220/230/240 VAC 60 90 Voltage: ± 10% Frequen 750 1300 26.5 26.5	C, 50/60Hz		
	Rated Input Current (A)		22 / 15.5	60	90	110	142
Voltage/Frequency Tolerance Voltage: ± 10%			± 10% Frequer	icy: ± 5%			
Watt Loss @ 100% I (W) 130 750 1300 1340			1430				
Weight (lb [kg])		9.4 [4.24]	26.5 [12]	26.5 [12]	77.2 [35]	77.2 [35]
* 411 0		. 4.2 1					

* All 3-phase power sources must be symmetrical.

Do not connect any DURAPULSE drives to grounded, center-tapped delta transformers (which are typically used for lighting circuits).

Model I	Vame		<u>GS3-4010</u>	<u>GS3-4020</u>	<u>GS3-4040</u>	<u>GS3-4060</u>	<u>GS3-4100</u>		
Price			Retired	Retired	Retired	Retired	Retired		
	Maximum	HP	10	20	40	60	100		
Output Rating	Motor Output	kW	7.5	15	30	45	75		
	Rated Out Current (A		18	32	60	91	150		
	Maximum Output Voltage			al to input voltage)					
	Rated Frequency	,	0.1 to 400 Hz						
*Input	Rated Voltage/ Frequency		Three-phase, 380/400/415/440/460/480VAC, 50/60Hz						
Rating	Rated Inp Current (A	ut	19	32	60	90	160		
Voltage Toleran	/Frequency ce	'	Voltage: ± 10% Frequency: ± 5%						
Watt Lo 100% I	<u> </u>		345	620	1420	2020	3840		
Weight (lb [kg])			13.5 [6.106]	26.5 [12]	77.2 [35]	77.2 [35]	116.8 [53]		

1-800-633-0405 **DURAPULSE GS3 AC Drives General Specifications**

			General Specifications				
			Control Characteristics				
Control System			Pulse Width Modulation, Carrier frequency adjustable from 1–15 kHz depending on the model. This system determines the control methods of the AC drive. 00: V/Hz open loop control 01: V/Hz closed loop control 02: Sensorless Vector 03: Sensorless Vector with external feedback				
Rated Output Frequency			0.1 to 400.0 Hz				
Output Frequency Resolution		1	0.1 Hz				
Overload Capad		<u> </u>	150% of rated current for 1 minute				
Torque Charact			Includes auto-torque boost, auto-slip compensation, starting torque 125% @ 0.5 Hz / 150% @ 1.0 Hz				
Braking Torque			20% without braking resistor, 125% with optional braking resistor (braking circuit built-in only for units under 20 hp)				
DC Braking			Operation frequency 60–0 Hz, 0–100% rated current, Start time 0.0–5.0 seconds, Stop time 0.0–25.0 seconds				
Acceleration/De	eceleration Ti	ime	0.1 to 600 seconds (linear or non-linear acceleration/deceleration), second acceleration/deceleration available				
Voltage/Freque	ncy Pattern		Settings available for Constant Torque - low & high starting torque, Variable Torque - low & high starting torque, and user configured				
Stall Prevention	n Level		20 to 200% of rated current				
			Operation Specifications				
		Keypad	Setting by <up> or <down> buttons</down></up>				
	Frequency Setting	External Signal	Potentiometer - 3 to 5 k Ω , 0 to 10 VDC (input impedance 10 k Ω), -10 to +10 VDC, 4 to 20 mA (input impedance 250 Ω), 0 to 20 mA; Multi-Speed Inputs 1 to 4. RS-232C/RS-485 communication interface				
	Oneration	Keypad	Setting by <run>, <stop>, <jog> , <fwd>, <rev> buttons</rev></fwd></jog></stop></run>				
· · · ·	Operation Setting	External Signal	Forward/Stop, Reverse/Stop (run/stop, fwd/rev), 3-wire control, Serial Communication RS-232C & RS-485 (Modbus				
Inputs	Input	Digital Sink/Source	RTU) 11 user-programmable: FWD/STOP, REV/STOP, RUN/STOP, REV/FWD, RUN momentary (N.O.), STOP momentary (N.C.), External Fault (N.O./N.C.), External Reset, Multi-Speed Bit (1-4), Manual Keyboard Control, Jog, External Base Block (N.O./N.C.), Second Accel/Decel Time, Speed Hold, Increase Speed, Decrease Speed, Reset Speed to				
	Terminals	Selectable Analog	Zero, PID Disable (N.O.), PID Disable (N.C.), Input Disable 3 user-configurable, 0 to 10V (input impedance 10 k Ω), 0 to 20 mA, 4 to 20 mA (input impedance 250 Ω), 10 bit				
		Digital 3 transistors 1 relay	resolution -10V to +10V, 10 bit resolution 4 user-programmable: Inverter Running, Inverter Fault, At Speed, Zero Speed, Above Desired Frequency, Below Desired Frequency, At Maximum Speed, Over Torque Detected, Above Desired Current, Below Desired Current, PIE Deviation Alarm, Heatsink Overheat Warning (OH), Soft Braking Signal, Above desired Frequency 2, Below desired				
Outputs	Output Terminals	Digital Square Wave	Frequency 2, Encoder Loss One digital square wave output representing drive frequency				
		Analog	1 user-programmable, 0 to 10V, 8 bit resolution frequency, current, process variable PV				
Operating Func	tions	Innerog	Automatic voltage regulation, voltage/frequency characteristics selection, non-linear acceleration/deceleration, uppe and lower frequency limiters, 15-stage speed operation, adjustable carrier frequency (1 to 15 kHz), PID control, 5 skip frequencies, analog gain & bias adjustment, jog, electronic thermal relay, automatic torque boost, trip history, software protection				
Protective Func	tions		Electronic Thermal, Overload Relay, Auto Restart after Fault, Momentary Power Loss, Reverse Operation Inhibit, Auto Voltage Regulation, Over-Voltage Stall Prevention, Auto Adjustable Accel/Decel, Over-Torque Detection Mode, Over-Torque Detection Level, Over-Torque Detection Time, Over-Current Stall Prevention during Acceleration, Over- Current Stall Prevention during Operation				
	Operator De	evices	9-key, 2 line x 16 character LCD display, 5 status LEDs				
Operator	Programmin	ng	Parameter values for setup and review, fault codes				
Interface	Status Disp	lay	Output Frequency, Motor Speed, Scaled Frequency, Output Current, Motor Load, Output Voltage, DC Bus Voltage, PID Setpoint, PID Feedback, Frequency Setpoint				
	Key Functio		RUN, STOP/RESET, FWD/REV, PROGRAM, DISPLAY, <up>, <down>, ENTER</down></up>				
	Enclosure R	· · · · · · · · · · · · · · · · · · ·	Protected Chassis, IP20				
	Ambient Ter	-	-10°C to 40°C (14°F to 104°F)				
Environment	Storage Ten		-20°C to 60°C (-4°F to 140°F) – during short term transportation period				
	Ambient Hu	midity	20 to 90% RH (non-condensing)				
	Vibration		9.8 m/s ² (1G) less than 10 Hz; 5.9 m/s ² (0.6G) 10 to 60 Hz				
Online	Installation	Location	Altitude 1000m or lower above sea level, keep from corrosive gas, liquid and dust Noise filter, input AC reactor, output AC reactor, cable for remote operator, programming software, dynamic braking resistor, dynamic braking unit; RF filter; remote panel adapter; Ethernet interface; four and eight port RS-485 multi-				
Options			drop termination boards, replacement keypads, fuse kits and replacement fuses				

1-800-633-0405 **DURAPULSE GS3 AC Drives Specifications –** Installation

Understanding the installation requirements for your DURAPULSE AC drive will help to ensure that it operates within its environmental and electrical limits.

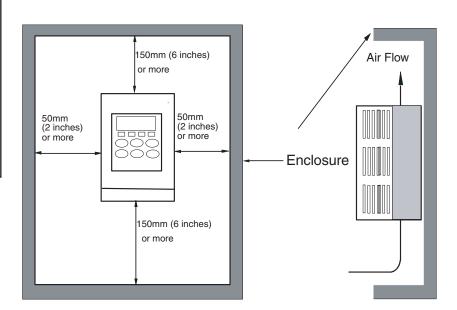
Note: Never use only this catalog for installation instructions or operation of equipment; refer to the user manual, GS3-M.

Environmental Specifications				
Protective Structure ¹	IP20			
Ambient Operating Temperature ²	-10 to 40°C (14°F to 104°F)			
Storage Temperature ³	-20 to 60°C (-4°F to 140°F)			
Humidity	To 90% (no condensation)			
Vibration ⁴	9.8 m/s² (1g), less than 10 Hz 5.9 m/s² (0.6g),10 to 60 Hz			
Location	Altitude 1,000 m or less, indoors (no corrosive gases, liquids or dust)			

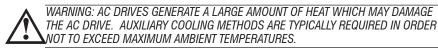
nperature must be in the range of -10° to 40°C. If the range will be up to 50°C, you will need to set the carrier frequency to 2.1 kHz or less and derate the output current to 80% or less.

- 3: The storage temperature refers to the short-term temperature during transport.
- 4: Conforms to the test method specified in JIS CO911 (1984)

Watt-loss Chart						
GS3 Drive Model	At full load					
<u>GS3-23P0</u>	130					
<u>GS3-2020</u>	750					
<u>GS3-2030</u>	1300					
<u>GS3-2040</u>	1340					
<u>GS3-2050</u>	1430					
<u>GS3-4010</u>	345					
<u>GS3-4020</u>	620					
<u>GS3-4040</u>	1420					
<u>GS3-4060</u>	2020					
<u>GS3-4100</u>	3840					



Minimum Clearances and Air Flow



WARNING: MAXIMUM AMBIENT TEMPERATURES MUST NOT EXCEED 50°C (122°F), OR 40°C (104°F) FOR MODELS 7.5 HP (5.5 KW) AND HIGHER!

1-800-633-0405 **DURAPULSE** GS3 AC Drives Specifications — **Terminals**

Maii	Main Circuit Terminals						
Terminal	Description						
L1, L2, L3 Input Power							
T1, T2, T3 AC Drive Output							
B1, B2	Braking Resistor Connection (Under 20HP)						
+2, – (negative)	External Dynamic Brake Unit (20HP & Over)						
÷	Ground						



	Ca	ntrol Circuit Terminals
Terminal Symbol	Description	Remarks
+24V	DC Voltage Source	(+24V, 20mA), used only for AC drive digital inputs wired for source mode operation
DI1	Digital Input 1	
DI2	Digital Input 2	
DI3	Digital Input 3	
DI4	Digital Input 4	
DI5	Digital Input 5	Input Voltage: Internally Supplied (see Warning below) Sink Mode: Low active, V _{int} Min = 0V, V _{int} Max = 15V,
DI6	Digital Input 6	lin Min = 2.1mA, I_{in} Max = 7.0mA
DI7	Digital Input 7	Source Mode: High active, V _{inH} Min = 8.5V, V _{inH} Max = 24V, I _{in} Min = 2.1mA, I _{in} Max = 7.0mA
DI8	Digital Input 8	Input response: 12–15 msec Also see "Basic Wiring Diagram" on the next pages.
DI9	Digital Input 9	Also see basic winnig Diagram on the next pages.
DI10	Digital Input 10	
DI11	Digital Input 11	
DCM	Digital Common	
+10V	Internal Power Supply	+10VDC (10mA maximum load)
AI1	Analog Input	0 to +10 V input only
AI2	Analog Input	0 to 20mA / 4 to 20mA input
AI3	Analog Input	-10 to +10 V input only
АСМ	Analog Common	
R10	Relay Output 1 Normally Open	Resistor Load: 240VAC - 5A (N.O) / 3A (N.C.)
R1C	Relay Output 1 Normally Closed	24VDC - 5A (N.O.) / 3A (N.C.) Inductive Load:
R1	Relay Output 1 Common	240VAC - 1.5A (N.O) / 0.5A (N.C) 24VDC - 1.5A (N.O) / 0.5A (N.C) See P 3.01 to P 3.03
D01	Photocoupled digital output	
D02	Photocoupled digital output	Maximum 48VDC, 50mA
D03	Photocoupled digital output	
DOC	Digital Output Common	
AO	Analog Output	0 to +10 V 2mA Output
FO	Digital Frequency Output	Square wave pulse train output



WARNING: DO NOT CONNECT EXTERNAL VOLTAGE SOURCES TO THE DIGITAL INPUTS. PERMANENT DAMAGE MAY RESULT.

Note: Use twisted-shielded, twisted-pair or shielded-lead wires for the control signal wiring. It is recommended to run all signal wiring in a separate steel conduit. The shield wire should only be connected at the AC drive. Do not connect shield wire on both ends.

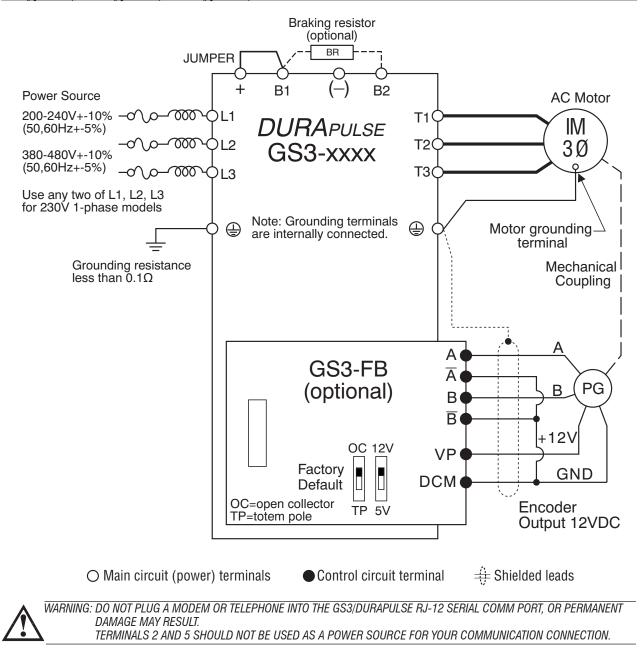
For the latest prices, please check AutomationDirect.com.

1-800-633-0405 **DURAPULSE GS3 AC Drives – Basic Wiring** Diagram

Power Wiring Diagram – drives under 20 hp

Note: Users MUST connect wiring according to the circuit diagram shown below. (Refer to user manual GS3-M for additional specific wiring information.)

Note: Please refer to the following pages for explanations and information regarding feedback cards (pg.tGSX-115), line reactors (pg.tGSX-117), braking components (pg.tGSX-17), EMI filters (pg.tGSX-149), RF filters (pg.tGSX-157), and fuses (pg.tGSX-158).

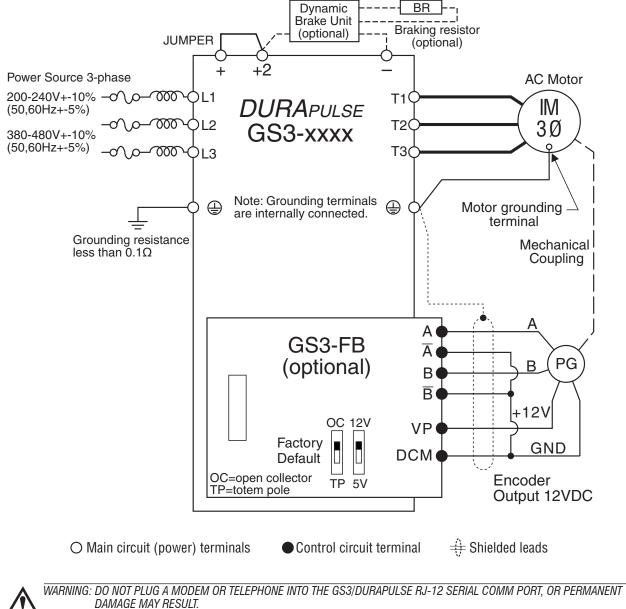


1-800-633-0405 **DURAPULSE GS3 AC Drives – Basic Wiring Diagram**

Power Wiring Diagram – 20 to 30 hp (230 VAC) & 20 to 60 hp (460 VAC)

Note: Users MUST connect wiring according to the circuit diagram shown below. (Refer to user manual GS3-M for additional specific wiring information.)

Note: Pleaserefertothefollowingpagesforexplanationsandinformationregardingfeedbackcards(pg.tGSX-115), linereactors(pg.tGSX-117), brakingcomponents(pg.tGSX-17), EMIfilters (pg.tGSX-149), RF filters (pg.tGSX-157), and fuses (pg.tGSX-158).



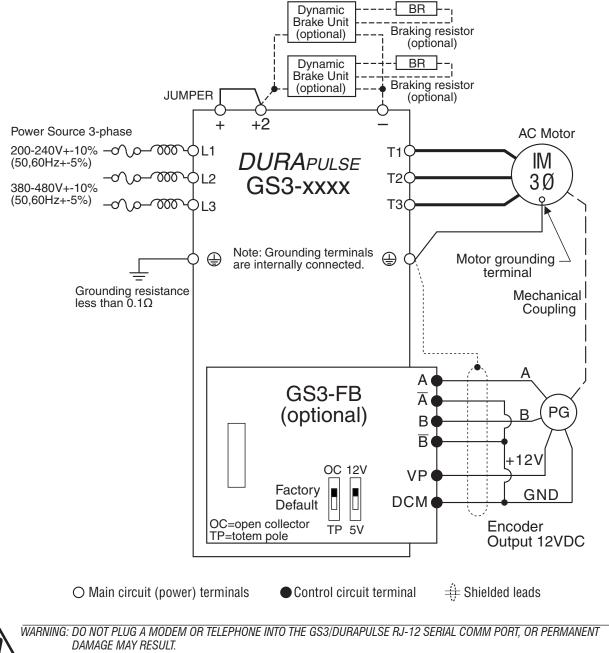
TERMINALS 2 AND 5 SHOULD NOT BE USED AS A POWER SOURCE FOR YOUR COMMUNICATION CONNECTION.

1-800-633-0405 **DURAPULSE GS3 AC Drives – Basic Wiring Diagram**

Power Wiring Diagram - 40 to 50 hp (230 VAC) & 75 to 100 hp (460 VAC)

Note: Users MUST connect wiring according to the circuit diagram shown below. (Refer to user manual GS3-UMP for additional specific wiring information.)

Note: Please refer to the following catalog pages in the Drives section of our catalog for explanations and information regarding feedback cards (X), line reactors (X), braking units (X) and resistors (X), EMI (X) and RF (X) filters, and fuses (X).

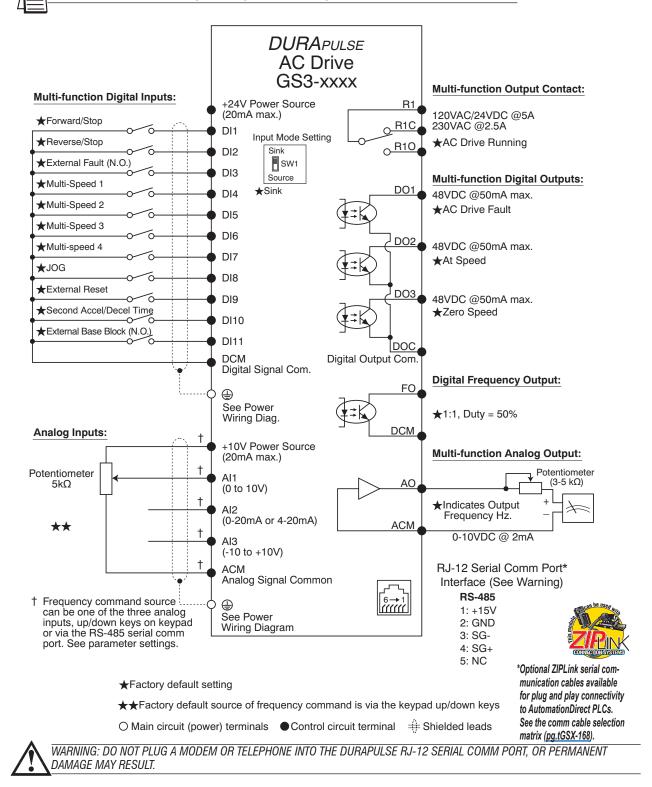


TERMINALS 2 AND 5 SHOULD NOT BE USED AS A POWER SOURCE FOR YOUR COMMUNICATION CONNECTION.

1-800-633-0405 For the latest prices, please check AutomationDirect.com. DURAPULSE GS3 AC Drives – Control Wiring Diagram – DI Connection to Sinking Outputs

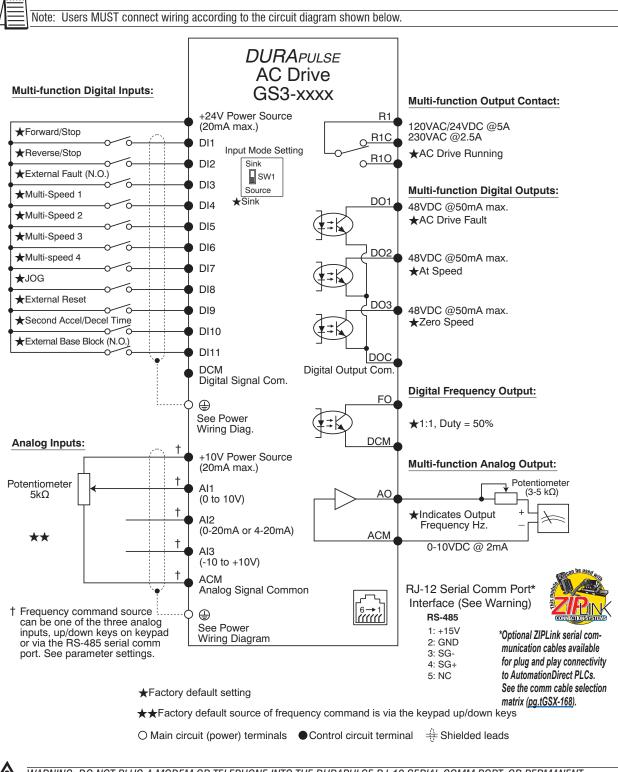
Control Wiring Diagram - Digital Input Connections to Sinking Output Devices

Note: Users must connect wiring according to the circuit diagram shown below.



1-800-633-0405 **DURAPULSE GS3 AC Drives – Control Wiring Dia**gram – DI Connections to Sourcing Outputs

Control Wiring Diagram - Digital Input Connections to Sourcing Output Devices

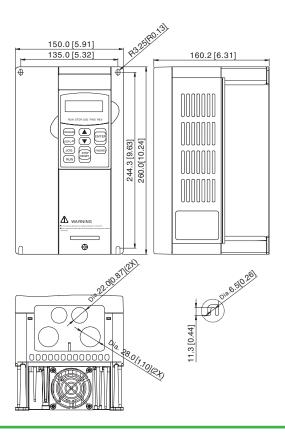


WARNING: DO NOT PLUG A MODEM OR TELEPHONE INTO THE DURAPULSE RJ-12 SERIAL COMM PORT, OR PERMANENT DAMAGE MAY RESULT.

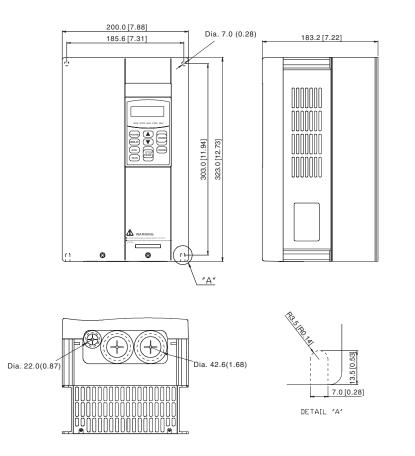
For the latest prices, please check AutomationDirect.com.

DURAPULSE GS3 AC Drives – Dimensions

GS3-23P0



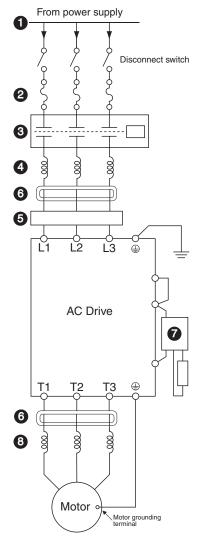
GS3-4010



unit: mm(in)

1-800-633-0405 **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.

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.

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.

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.

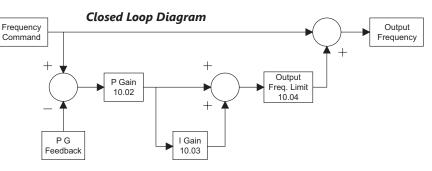
1-800-633-0405 **GS3 DURAPULSE Accessories – Feedback Card**

Feedback Card for <i>DURA</i> pulse AC Drives						
Part Number	Price	Drive Model				
<u>GS3-FB</u>	\$66.00	GS3-xxxx				
The GS3-FB feedback card is for use only with DURAPULSE AC drives.						

Description

The GS3-FB card is used to add another layer of precision control to the already precise control algorithm utilized in the DURAPULSE drive series. This added control is activated by selecting control modes V/Hz closed loop control or sensorless vector with external feedback. The feedback mechanism uses pulses generated by an external encoder or pulse generator. Unlike other feedback types, the GS3-FB accommodates the four most common encoder signal types: output voltage, open collector, line driver, and complimentary.

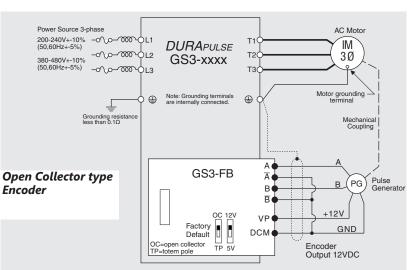




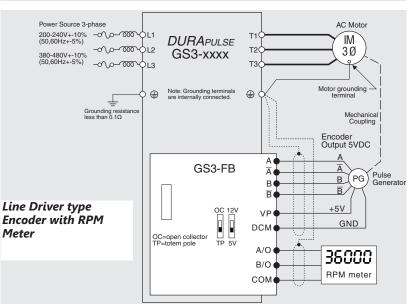
Turn	an of Encodoro	SW1 and SW2	switches
Тур	es of Encoders	5V	12V
Output Voltage		OC12V D TP 5V	OC12V TP 5V
Open collector		OC12V TP 5V	OC12V TP 5V
Line driver		OC12V	OC12V TP 5V
Complimentary	VCC O/P OV	OC12V D TP 5V	OC12V

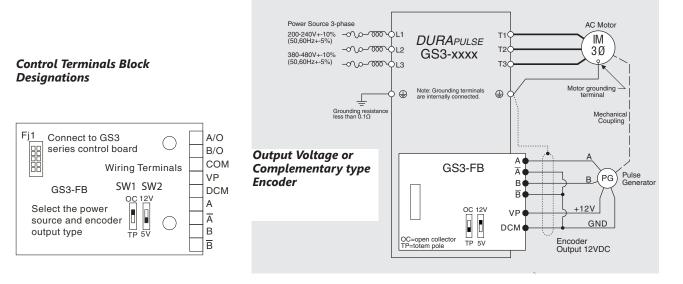
1-800-633-0405 **GS3 DURAPULSE** Accessories – Feedback Card

Wiring Diagrams



Terminal Symbols	Description
VP	Power source of GS3-FB (SW1 can be switched to 12V or 5V) Output Voltage: (+12VDC ±5% 200mA) or (+5VDC ±2% 400mA)
DCM	Power source (VP) and input signal (A, B) common
A, NOT A B, NOT B	Input signal from Encoder. Input type is selected by SW2; Maximum 500kp/ sec
A/O, B/O	GS3-FB output signal for use with RPM Meter. (Open Collector) Maximum DC24V 100mA
СОМ	GS3-FB output signal (A/O, B/O) common







Wiring Solutions

Wiring Solutions using the **ZIP**Link Wiring System

ZIPLinks eliminate the normally tedious process of wiring between devices by utilizing prewired cables and DIN rail mount connector modules. It's as simple as plugging in a cable connector at either end or terminating wires at only one end. Prewired cables keep installation clean and efficient, using half the space at a fraction of the cost of standard terminal blocks. There are several wiring solutions available when using the **ZIP**Link System ranging from PLC I/O-to-**ZIP**Link Connector Modules that are ready for field

termination, options for connecting to third party devices, GS, DuraPulse and SureServo Drives, and specialty relay, transorb and communications modules. Pre-printed I/O-specific adhesive label strips for quick marking of *ZIP*Link modules are provided with *ZIP*Link cables. See the following solutions to help determine the best *ZIP*Link system for your application.

Solution 1: DirectLOGIC, CLICK and Productivity I/O Modules to ZIPLink Connector Modules

When looking for quick and easy I/O-to-field termination, a *ZIP*Link connector module used in conjunction with a prewired *ZIP*Link cable, consisting of an I/O terminal block at one end and a multi-pin connector at the other end, is the best solution.

Using the PLC I/O Modules to *ZIP*Link Connector Modules selector tables located in this section,

- 1. Locate your I/O module/PLC.
- 2. Select a **ZIP**Link Module.
- 3. Select a corresponding **ZIP**Link Cable.



Solution 2: DirectLOGIC, CLICK and Productivity I/O Modules to 3rd Party Devices

When wanting to connect I/O to another device within close proximity of the I/O modules, no extra terminal blocks are necessary when using the *ZIP*Link Pigtail Cables. *ZIP*Link Pigtail Cables are prewired to an I/O terminal block with color-coded pigtail with soldered-tip wires on the other end.

Using the I/O Modules to 3rd Party Devices selector tables located in this section,

- 1. Locate your PLC I/O module.
- 2. Select a **ZIP**Link Pigtail Cable that is compatible with your 3rd party device.



Solution 3: GS Series and DURAPULSE Drives Communication Cables

Need to communicate via Modbus RTU to a drive or a network of drives?

ZIPLink cables are available in a wide range of configurations for connecting to PLCs and *Sure*Servo, *Sure*Step, Stellar Soft Starter and AC drives. Add a **ZIP**Link communications module to quickly and easily set up a multi-device network.

Using the **Drives Communication** selector tables located in this section,

- 1. Locate your Drive and type of communications.
- 2. Select a **ZIP**Link cable and other associated hardware.





Wiring Solutions

Solution 4: Serial Communications Cables

ZIPLink offers communications cables for use with **Direct**LOGIC, CLICK, and Productivity CPUs, that can also be used with other communications devices. Connections include a 6-pin RJ12 or 9-pin, 15-pin and 25-pin D-sub connectors which can be used in conjunction with the RJ12 or D-Sub Feedthrough modules.

Using the **Serial Communications Cables** selector table located in this section,

• 1. Locate your connector type 2. Select a cable.



Solution 5: Specialty ZIPLink Modules

For additional application solutions, *ZIP*Link modules are available in a variety of configurations including stand-alone relays, 24VDC and 120VAC transorb modules, D-sub and RJ12 feedthrough modules, communication port adapter and distribution modules, and SureServo 50-pin I/O interface connection.

Using the *ZIPLink Specialty Modules* selector table located in this section,

- 1. Locate the type of application.
- 2. Select a ZIPLink module.



Solution 6: ZIPLink Connector Modules to 3rd Party Devices

If you need a way to connect your device to terminal blocks without all that wiring time, then our pigtail cables with color-coded soldered-tip wires are a good solution. Used in conjunction with any compatible *ZIP*Link Connector Modules, a pigtail cable keeps wiring clean and easy and reduces troubleshooting time.

Using the Universal Connector Modules and Pigtail Cables table located in this section,

- 1. Select module type.
- Select the number of pins.
 Select cable.
- 5. Select cable.





PINK Motor Controller Communication

AC Driv	<i>ve / Controller</i>	C	ommunication	S	2	IPLink Cable	
Controller	Comm Port Type	Network/Protocol	Connects to	Comm Port Type	Cable (2 meter length)	Cable Connectors	Other Hard- ware Required
			BRX MPUs	RS-485, 3-Pin			
			P1 CPUs				
			P2 CPUs	RS-485	ZL-RJ12-CBL-2P	RJ12 to pigtail	
			P3 CPUs				
			P2-SCM	RS-485, 4-Pin			
			P3-SCM	110-400, 4-1 111			
is1	RJ12	RS-485 Modbus RTU	DL06 PLCs	Port 2 (HD15)	GS-485HD15-	RJ12 to HD15	N/A
			D2-260, D2-262 CPU		CBL-2		
			GS-EDRV100	RJ12	GS-EDRV-CBL-2		
			ZL-CDM-RJ12Xxx *	RJ12	GS-485RJ12- CBL-2	RJ12 to RJ12	
			FA-ISOCON	5-pin connector	GS-ISOCON- CBL-2	RJ12 to 5-pin plug	
			BRX MPUs	RS-232/485, 3-Pin			
			P1 CPUs				
			P2 CPUs	RS-485	ZL-RJ12-CBL-2P	RJ12 to pigtail	
		RS-232 Modbus RTU	P3 CPUs				N/A
			P2-SCM	Ports 1, 2 & 3			
			P3-SCM	Ports 1 to 4			_
			CLICK PLCs	Port 2 (RJ12)			
			DL05 PLCs		GS-RJ12-CBL-2		
			DL06 PLCs	Port 2 (HD15)		RJ12 to RJ12	
			D2-250-1 CPU				FA-15HD
	5.44		D2-260, D2-262 CPU				
			D4-450, D4-454 CPU	Port 3 (25-pin)			FA-CABKIT
GS2	RJ12		BRX MPUs	RS-232/485, 3-Pin	_	RJ12 to pigtail	
			P1 CPUs	RS-485	ZL-RJ12-CBL-2P		
			P2 CPUs				
			P3 CPUs				
		RS-485 Modbus RTU	P2-SCM	RS-485, 4-Pin			
			P3-SCM	,			N/A
			DL06 PLCs	Port 2 (HD15)	GS-485HD15-	RJ12 to HD15	IN/A
			D2-260, D2-262 CPU	. ,	CBL-2		-
			GS-EDRV100	RJ12	GS-EDRV-CBL-2	RJ12 to RJ12	
			ZL-CDM-RJ12Xxx *	RJ12	GS-485RJ12- CBL-2		_
			FA-ISOCON	5-pin connector	GS-ISOCON- CBL-2	RJ12 to 5-pin plug	
			BRX MPUs	RS-485, 3-Pin	-		
			P1 CPUs	 			
			P2 CPUs	RS-485	ZL-RJ12-CBL-2P	RJ12 to pigtail	
			P3 CPUs		-		
			P2-SCM P3-SCM	RS-485, 4-Pin			
<i>JuraPulse</i>	RJ12	RS-485 Modbus RTU	DL06 PLCs		GS-485HD15-		N/A
GS3)			D2-260, D2-262 CPU	Port 2 (HD15)	CBL-2	RJ12 to HD15	
			GS-EDRV100	RJ12	GS-EDRV-CBL-2		-
			ZL-CDM-RJ12Xxx *	RJ12	GS-485RJ12- CBL-2	RJ12 to RJ12	
			FA-ISOCON	5-pin Connector	GS-ISOCON- CBL-2	RJ12 to 5-pin plug	-