



# TITAN

A CERUS INDUSTRIAL PRODUCT

0.5 to 5.0 HP  
200-230VAC, 380-460VAC, 3Ø  
Sensorless and VF control

## GS Series

 **SPACE VECTOR**



## Powerful & Compact!



### Built-in PID Control for easy, direct integration

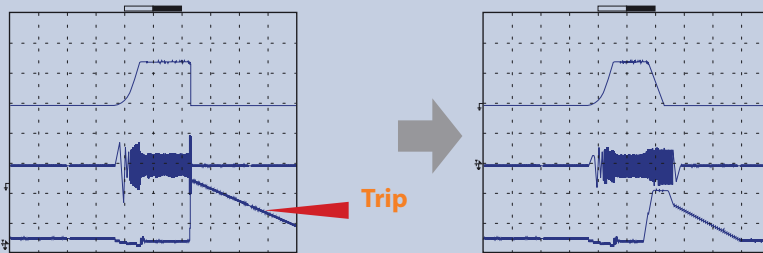
Built-in PID controls flow, temperature, pressure, etc. through the proportional, integral and differential calculus between the feedback value and reference value in closed loop.

### Built-in Communication Interface

The G Series integrates popular communication interfaces such as Modbus-RTU and RS232/485.

### Optimum Acceleration and Deceleration

Trip-free mode achieves maximum torque during accel/deceleration. The 32-bit DSP CPU monitors the current transition to program an optimum curve below trip-triggering levels.



**Sensorless Vector**

### Intelligent High Performance

- Precise control and high starting torque (up to 150% at 0.5 Hz (Space Vector PWM by IGBT)
- Auto carrier frequency adjusts inversely in relation to temperature of drive for long term reliability
- Ground fault protection of output terminal during run
- Quiet operation thanks to fan control coordination with motor start/stop

### Easy to set up and operate

- New 4-direction keypad makes parameter settings a snap
- Trip-free operation algorithm
- Auto & manual torque boost
- Optimum acceleration and deceleration curves set automatically for maximum torque - or choose one of three different patterns
- 8 preset speeds

### Flexible

- ModBus 485 communication for easy integration
- Built in dynamic braking (provision for external braking) provides up to 150% braking torque
- Removable, downloadable keypad for easy programming
- PNP/NPN selectable signal
- Built-in fault memory (stores last five fault conditions)

Dimensions				
Model	Height	Width	Depth	Weight
CI-000-GS2	5.04"	2.76"	5.12"	1.70 lbs.
CI-001-GS2	5.04"	3.94"	5.12"	2.47 lbs.
CI-002-GS2	5.04"	5.51"	6.10"	4.06 lbs.
CI-005-GS2	5.04"	5.51"	6.10"	4.17 lbs.
CI-000-GS4	5.04"	2.76"	5.12"	1.70 lbs.
CI-001-GS4	5.04"	3.94"	5.12"	2.47 lbs.
CI-002-GS4	5.04"	5.51"	6.10"	4.06 lbs.
CI-005-GS4	5.04"	5.51"	6.10"	4.17 lbs.



**CERUS INDUSTRIAL**  
Excellence in Motor Controls

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# Save valuable panel space!

The GS is 50% smaller than its predecessor! It's so compact you can mount it in smaller enclosures using DIN rail with less weight. Improve your system design with the GS series.



*The compact GS Series, is ideal for demanding applications, including food processing machinery*

Kit & cable options		
Description	Part number	
NEMA 1 kit for CI-000-GS2, CI-001-GS2	INV, NEMA OPTION 1	
CI-000-GS4, CI-001-GS4, CI-002-GS2, CI-002-GS4	INV, NEMA OPTION 2	
CI-003-GS2, CI-003-GS4, CI-005-GS2, CI-005-GS4	INV, NEMA OPTION 3	
DinRail mounting kit CI-000-GS2, CI-001-GS2	CI-DRM-K1	
CI-000-GS4, CI-001-GS4, CI-002-GS2, CI-002-GS4	CI-DRM-K2	
CI-003-GS2, CI-003-GS4, CI-005-GS2, CI-005-GS4	CI-DRM-K3	
Remote mounting cable between inverter and keypad plus fixture	2 meter cable	REMOTE CABLE 2M
	3 meter cable	REMOTE CABLE 3M
	5 meter cable	REMOTE CABLE 5M

Model Part #	CI-000-GS2	CI-001-GS2	CI-002-GS2	CI-003-GS2	CI-005-GS2	CI-000-GS4	CI-001-GS4	CI-002-GS4	CI-003-GS4	CI-005-GS4
Motor rating (HP)	0.5	1	2	3	5	0.5	1	2	3	5
(kW)	0.4	0.75	1.5	2.2	3.7	0.4	0.75	1.5	2.2	3.7
Output Capacity (kVA)	0.95	1.9	3.0	4.5	6.1	0.95	1.9	3.0	4.5	6.1
ratings FLA (A)*	2.5	5	8	12	16	1.25	2.5	4	6	8
(380V based) Voltage (V)	Three phase, 200~230V					Three phase, 380~480V				
Frequency (Hz)	0~400Hz					0~400Hz				
Input Voltage (V)	Three phase, 200~230V (+10%, -15%)					Three phase, 380~480V (+10%, -15%)				
ratings Frequency (Hz)	50~60Hz (±5%)					50~60Hz (±5%)				
3% input line reactor separate enclosure (type 1)	LDRAS4LC1	LDRAS5LC1	LDRAS7LC1	LDRAS8LC1	LDRAS12LC1	LDRAS16LC1	LDRAS25LC1	LDRAS30LC1	LDRAS45LC1	LDRAS61LC1

Control method	• Sensorless Vector, V/F control (Space vector PWM)
Frequency setting resolution	• Digital reference: 0.01Hz (below 99Hz) & 0.1Hz (100Hz and over) • Analog reference: 0.03Hz at 50Hz
Frequency setting accuracy	• Digital: 0.01% of maximum output frequency • Analog: 0.1% of maximum output frequency
V/F ratio	• Linear • Square • User V/F
Overload capacity	• 1 minute at 150% • 30 seconds at 200% (with inverse characteristic proportional to time)
Torque boost	• Auto • Manual (0~15%)
Assigned terminals	• FX (forward) • RX (reverse) • BX (inverter gate blocking) • RST (reset) • JOG (jog)
Multi-function input terminals	Total 3 inputs (programmable)
Analog output	• 0~10V linear

Operator control	• 4 digits LED keypad • Terminals • ModBus communication
Frequency setting	• Analog: 0~10V, 4~20mA • Digital: Keypad • Communication: ModBus
Start signal	• Forward • Reverse
Multi-step operation	Setting up to 8 speeds (using multi-function terminal)
Multi-step accel./decel. time	0.1~6000 seconds. Maximum 8 pre-defined steps using multi-function terminals
Operational functions	• DC braking • Frequency limit • Frequency jump • Second motor function • Slip compensation • Reverse rotation prevention • Auto restart • PID controls
Emergency stop	Interrupting output from inverter
Jog	Jog operation
Fault reset	Resets fault signal when protective function is active
Operational status	• Frequency detection • Overload alarm • Stall • Overvoltage • Undervoltage • Inverter overheat • Run • Stop • Constant speed
Indicator	• Speed search • Fault output (relay and open collector output)
	• Output frequency • Output current • Output voltage • DC voltage • rpm

Protective functions	Trip	• Overvoltage • Undervoltage • Overcurrent • Inverter overheat • Motor overheat • I/O phase loss • I/O miss wiring
	Alarm	• Overload • Speed command loss • Hardware fault • Communication error
		• Stall • Overload

Operating environment	Ambient temperature	-10°~ 50°C
	Storage temperature	-20°~ 65°C
	Humidity	90%RH max.(non condensing)
	Altitude & Vibration	1000m max, 5.9m/sec <sup>2</sup> (0.6g) max.
	Application site	No corrosive gas, flammable gas, oil mist or dust

\*Note: Derating is required when carrier frequency is set above 3kHz.