

# C Series

## Micro 1Ø Input Sensorless Vector Inverter

# TITAN

Constant Torque  
Sensorless/Space Vector Control  
0.5 to 3HP, 200-230VAC  
1Ø input, 3Ø output

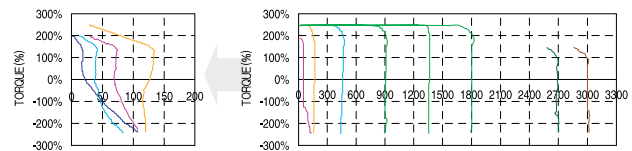


### Standard Features

- Sensorless & space vector control (PWM by IGBT)
- Motor parameter auto-tuning for easy set-up
- 150% torque at 0.5Hz.
- 1~400Hz output frequency
- Heavy duty: rated at 100% load at 15kHz carrier frequency
- PID control for built-in process applications
- Built-in potentiometer
- Programmable I/O
- PNP/NPN selectable signal input
- 0~10VDC analog output
- Optional ModBus communications
- Ground fault protection
- Built-in RFI filter (class A)

### Sensorless vector control

The C Series adopts sensorless vector control algorithm, and it improves not only the torque control characteristics, but the speed controllability in an uncertain condition caused by the load variation as well.



### Auto Tuning

- Easy user setup
- Improved torque at low speed
- Optimized motor control

The auto tuning algorithm in the C Series sets the motor and simplifies commissioning particularly at low speeds with variable loads.

### ORDERING INFORMATION

Application Motor		200V
HP	kW	1 phase
0.5	0.4	CI-000-C21P
1	0.75	CI-001-C21P
2	1.5	CI-002-C21P
3	2.2	CI-003-C21P



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## PNP and NPN Switchable Dual Signals

The C Series provides PNP and NPN signals for outside controllers for use with all PLCs using 24VDC control signals.

## Communication Interface, and ModBus-RTU

The C Series optionally provides the most popular communication interface, Modbus-RTU for remote control by PLC or other devices.

## Programmable PID Process Control

PID process control is used in the C Series to make speed corrections quickly with a minimal amount of overshoot and oscillation for the control of flow, temperature, pressure, and etc.

## SPECIFICATIONS

Model		CI-000-C2-1P	CI-001-C2-1P	CI-002-C2-1P	CI-003-C2-1P
Motor rating	(HP)	0.5	1	2	3
	(kW)	0.4	0.75	1.5	2.2
Output ratings	Capacity (kVA)	0.95	1.9	3	4.5
	FLA (A)	2.5	5	8	12
	Voltage (V)	Three phase, 200-230V			
	Frequency (Hz)	0-400Hz			
Input Ratings	Voltage (V)	Three phase, 200-230V (±10%)			
	Frequency (Hz)	50-60Hz (±5%)			

Control method	• V/F • Sensorless Vector
Frequency setting resolution	• Digital reference: 0.01Hz • Analog reference: 0.06Hz at 60Hz
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
RFI filter	None
Multi-function input terminals	Total 5 inputs (programmable)
Analog output	0-10V linear

Input signal	Operator Control	• 3 digits LED keypad • Terminals • ModBus communication
	Frequency setting	• Analog: 0-10V, 4-20mA • Digital: Keypad • Communication: ModBus • Potentiometer
	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	• PID control • Up-down operation • 3-wire operation • Frequency limit • Frequency jump • Second motor function • Slip compensation
		• Auto restart
		• Reverse rotation prevention
	Emergency stop	Interrupting output from inverter
	Jog	Jog operation
Fault reset	Reset fault signal when protective function is active	
Output Signal	Operational status	• Frequency detection • Overload alarm • Stall • Overvoltage • Undervoltage • Inverter overheat • Run • Stop
		• Constant speed • Speed search • Fault output (Relay and Open collector output)
	Indicator	• Output frequency • Output current • Output voltage • DC bus voltage
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 • CPU error
		• Stall • Overload

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