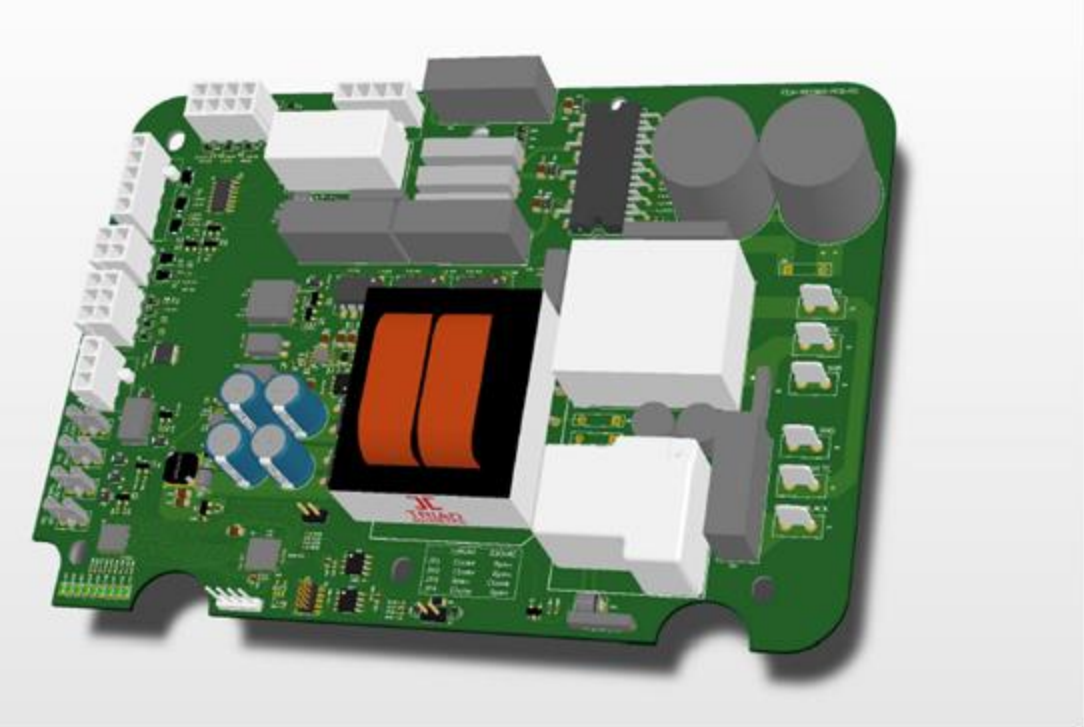
ACV Series - Introduction

ACV Series Drives				
Motor Rating	hp	3	7.5	10
	kW	2.2	5.5	7.5
Three-Phase 230V Class		●	●	
Three-Phase 460V Class			●	●

ACV-003-230-OPT

- RS485: RS-485, OPT: Optical Transceiver
- 230: 200-240VAC, 460: 380-480VAC
- 003:3hp, 075:7.5hp, 010:10hp



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SPECIFICATION SHEET ACV/GEMINI

201605B

Overview

The ACV series of AC drives offers dynamic braking, PID and a removable keypad. The drive can be configured using the built-in digital keypad or with the standard RS-485 serial communications port. The standard keypad allows you to configure the drive, set the speed, start and stop the drive, command forward and reverse direction of motor shaft, and monitor specific parameters during operation. Each ACV features one analog and six programmable digital inputs, and one analog and two programmable relay outputs.

Features

- Simple Volts/Hertz control
- Sinusoidal Pulse Width Modulation
- 1-12 kHz carrier frequency
- IGBT technology
- Starting torque: 125% at 0.5 Hz/150% at 5 Hz
- 150% rated current for one minute
- Electronic overload protection
- Stall prevention
- Adjustable acceleration and deceleration ramps
- S-curve settings for acceleration and deceleration
- Automatic torque compensation
- Automatic slip compensation
- Dynamic braking circuit
- DC braking
- Three skip frequencies
- Trip history
- Programmable jog speed
- Integral PID control
- Removable keypad with speed potentiometer
- Programmable analog input
- Programmable analog output
- Six programmable digital inputs
- Two programmable relay outputs
- RS-485 Modbus communications up to 38.4 Kbps
- Two-year warranty
- UL/CE listed

Accessories

- Optical transceiver (ST connectors)

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AVC Series - Specifications

230V CLASS ACV SERIES				
Model		**ACV-003-230**	**ACV-005-230**	**ACV-075-230**
Motor Rating	**hp**	3hp	5hp	7.5hp
	kW	2.2kW	3.7kW	5.5kW
Rated Output Capacity (kVA)		3.8	6.5	9.5
Rated Input Voltage		Three-phase : 200/208/220/230/240 VAC ±10%; 50/60 Hz ±5%		
Rated Output Voltage		Three-phase : Corresponds to input voltage		
Rated Input Current (A)		27.0/12.5	19.6	28
Rated Output Current (A)		10	17	25
DC Braking		Frequency 60–0 Hz, 0–100% rated current, start time 0.0–5.0 seconds, Stop Time 0.0–25.0 seconds		
Watt Loss @ 100% I (W)		111	185	255
Weight (kg)		3.8	3.8	3.8
Dimensions (HxWxD) (mm)		118.0 x 190.0 x 155.0		
Accessories				
Optical transmitter/Receiver module		ST-5MB-RXTX		

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AVC Series - Specifications

460V CLASS ACV SERIES			
Model		**ACV-075-460**	**ACV-010-460**
Motor Rating	**hp**	7.5hp	10hp
	kW	5.5kW	7.5kW
Rated Output Capacity (kVA)		9.9	13.7
Rated Input Voltage		Three-phase: 380/400/415/440/460/480 VAC ±10%; 50/60 Hz ±5%	
Rated Output Voltage		Corresponds to input voltage	
Rated Input Current (A)		14	23
Rated Output Current (A)		13	18
Watt Loss @ 100% I (W)		240	255
Weight (kg)		3.8	3.8
Dimensions (HxWxD) (mm)		118.0 x 190.0 x 155.0	
	Accessories		
Optical transmitter/Receiver module		ST-5MB-RXTX	

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AVC Series - General Specifications

General Specifications	
Control Characteristics	
Control System	Sinusoidal Pulse Width Modulation, carrier frequency 1kHz–12kHz
Output Frequency Resolution	0.1 Hz
Overload Capacity	150% of rated current for 1 minute
Torque Characteristics	Includes auto-torque boost, auto-slip compensation, starting torque 125% @ 0.5Hz/150% @ 5.0Hz
Braking Torque	20% without dynamic braking resistor, 125% with optional braking resistor
DC Braking	Operation frequency 60–0 Hz, 0–100% rated current. Start time 0.0–5.0 seconds. Stop time 0.0–0 25.0 seconds
Acceleration/Deceleration Time	0.1 to 600 seconds (linear or non-linear acceleration/deceleration), second acceleration/deceleration available
Voltage/Frequency Pattern	V/F pattern adjustable. Settings available for Constant Torque - low and high starting torque, Variable Torque - low and high starting torque, and user configured
Stall Prevention Level	20 to 200% or rated current

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Operation Specifications			
Inputs	Frequency Setting	Keypad	Setting by <UP> or <DOWN> buttons or potentiometer
		External Signal	Potentiometer - 3k to 5kh/2W, 0 to 10VDC (input impedance 10kh), 0 to 20mA / 4 to 20 mA (input impedance 250h), Multi-speed inputs 1 to 3, Serial Communication RS485 (Modbus RTU)
	Operation Setting	Keypad	Setting by <RUN>, <STOP> buttons
		External Signal	Forward/Stop, Reverse/Stop (run/stop, fwd/rev), 3-wire control, Serial Communication RS485 (Modbus RTU)
	Input Terminals	Digital	6 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 (1-3), Jog, External Base Block (N.O./N.C.), Second Acceleration/Deceleration Time, Speed Hold, Increase Speed, Decrease Speed, Reset Speed to Zero, PID Disable (N.O.), PID Disable (N.C.), Input Disable
		Analog	1 user-configurable, 0 to 10VDC (input impedance 10k h) or 0 to 20mA / 4 to 20mA (input impedance 250h), 10 bit resolution Frequency setpoint or PID process variable PV
Outputs	Output Terminals	Digital	2 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, PID Deviation Alarm
		Analog	1 user-programmable: 0 to 10VDC (max load 2mA), 8 bit resolution frequency, current, process variable PV
	Operating Functions		Automatic voltage regulation, voltage/frequency characteristics selection, non-linear acceleration/deceleration, upper and lower frequency limiters, 7-stage speed operation, adjustable carrier frequency (1 to 12 kHz), PID control, skip frequencies, analog gain & bias adjustment, jog, electronic thermal relay, automatic torque boost, trip history, software protection

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Operation Specifications		
Protective Functions		Electronic Thermal, Overload Relay, Auto Restart after Fault, Momentary Power Loss, Reverse Operation Inhibit, Auto Voltage Regulation, Over-Voltage Trip Prevention, Auto Adjustable Acceleration/Deceleration, 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 Interface	Operator Devices	8-key, 4-digit, 7-segment LED, 14 status LEDs, potentiometer
	Programming	Parameter values for setup and review, fault codes
	Status Display	Actual Operating Frequency, RPM, Scaled Frequency, Amps, % Load, Output Voltage, DC Bus Voltage, Process Variable, Set-point Frequency
	Key Functions	RUN, STOP/RESET, FWD/REV, PROGRAM, DISPLAY, <UP>, <DOWN>, ENTER
Environment	Enclosure Rating	Protected chassis, IP20
	Ambient Temperature	-10° to 50°C (14°F to 122°F) -10° to 40°C (14°F to 104°F) For models 7.5 hp (5.5 kW) and higher
	Storage Temperature	-20° to 60 °C (-4°F to 140°F) - during short-term transportation period
	Ambient Humidity	20 to 90% RH (non-condensing)
	Vibration	9.8 m/s^2 (1G), less than 10Hz; 5.9 m/s^2 (0.6G) 10 to 60 Hz

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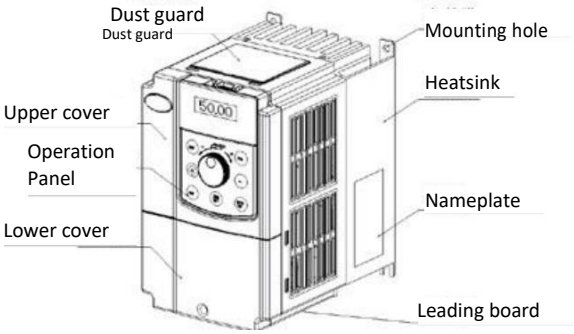
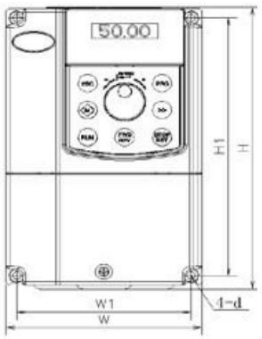
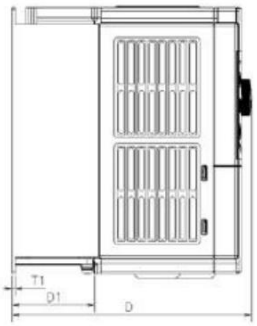
AVC Series – Dimensions







Outline and mounting dimension (mm)								Approximate weight (kg)
W	H	D	W1	H1	D1	T1	Mounting hole diameter	
118	190	155	105	173	40.8	3	5.5	3.8

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