



AGC series is a family of high performance, standalone 3-axis controllers with Ethernet, USB, CAN bus, RS232 and RS485 communication ports to interface with any kind of host devices. It can control any external drivers, either in analog +/-10V format or digital Pulse & Direction format. It has 18 digital inputs, 17 digital outputs, 4 analog inputs, 4 analog outputs and 8 bi-directional differential I/Os. Supporting 3-axis coordinated motion, this controller is very suitable to control XYZ stages, XY-Theta stages, flexible-link gantry, SCARA robot, tip-tilt stages, etc.

General Specifications

Description	AGC300-ET	AGC301-ET
Number of Axes	3	
Power Supply	9-36VDC	
Isolated inputs ¹	11	18
Isolated outputs ²	4	17
Differential Input (RS422)	8	8 Bi-Directional Differential I/Os (software configurable as input or output)
Differential Output (RS422)	4	
Analog inputs ³	4 (12-bit to 16-bit)	
Analog outputs	4 (16-bit)	
Encoder Port	3 Ports (each port is software configurable as AquadB, Absolute Biss-C or EnDat2.2 ⁴). Ports 1 and 2 support also Sin/Cos 1Vpp encoders.	3 Ports (each port is software configurable as AquadB, Sin/Cos 1Vpp, Absolute Biss-C or EnDat2.2).
Communication	Ethernet, CAN bus, RS232, USB, RS485	
Control filter sampling rate	16 KHz (position, velocity, optional force, current)	
Operational modes	Position, Velocity, Force or Current (Torque) modes	
Motion modes	Point to Point, Repetitive, Jog, ECAM, Gearing, Joystick, Handwheel, Pulse & Direction, Gantry, CNC sequential contour (G-codes)-, Vector and Tracking motion modes. Motion parameters, such as speed, acceleration, deceleration, and target position can be all modified on-the-fly.	
Features	Encoder Error Mapping: 1D, 2D or 3D, Auto-Loop Shaping (auto-tuning), Frequency Domain System Identification and Modelling, Flexible Gain Scheduling, Position Lock and Event, Ultra-Precision Mode (UPM), Input-Shaping, Profile-Shaping, Machine Vibration Control, Spring and Friction Compensation, Complex-Kinematics (robot kinematics), etc.	
Programming Interfaces	Standalone User Program – high level script-based program executed in the controller (up to 8 multi-threading programs with priority setting for each thread). IDE integrated in PCSuite Windows .Net API – available in NuGet Manager. Standard TCP/IP communication – ASCII string commands or binary CAN format.	

¹ Note 1: Digital isolated input can be configured as NPN or PNP, in groups of 3 or 4.

² Note 2: Digital isolated output can sink up to 500mA or source up to 300mA.

³ Note 3: 16-bit analog inputs available in some product options. Consult your sales channel.

⁴ Note 4: EnDat 2.2 supported by dedicated FPGA version (consult with sales engineer).

Ordering Information

Product Part Number	Description	Optional Accessories	Accessories Description
AGC300-ET	3-axis Controller (Gen 1)	AGC300-ET-CK	AGC300-ET Connector Kit
AGC301-ET	3-axis Controller (Gen2) with 12-bit analog input	AGC301-ET-CK	AGC301-ET Connector Kit
AGC301-ET-001	3-axis Controller (Gen2) with 16-bit analog input		