AGA10x Series: Central-i DC Remote Amplifiers

Centralized Network Control

Datasheet rev 02

The AGA10x series is family of Central-i remote power amplifiers.
AGA amplifiers are controlled by AGM series Central-i master, which gets encoder reading and current samples from each amplifier, performs control loops calculation and generate PWM commands to each amplifier. Fast Central-i fieldbus is used to communicate between AGA amplifiers and AGM master, that allows 16kHz sample rate motion profiler and all servo loops. Amplifiers are powered by 12-90V DC power supply. To support remote operation and minimize cables length from the actuator, each remote amplifier is equipped with variety of digital and analog I/Os. The isolated digital outputs are capable of sourcing up to 300mA or sinking up 500mA. This is sufficient to drive most external devices, end effectors, etc., hence, eliminated the need to have an external relay circuit. The compact form factor of the DC amplifiers is ideal for them to be mounted close to the actuator, such as the link in an articulated robot arm.

AGA101 AGA102 AGA103*

Upcoming in Q1-2021

General Specifications

Description	AGA101-CI- 2D01/2D02/2D05	AGA102-CI- 1D01/1D02/1D05	AGA103-CI[4]
Number of Axes	1	1	1
Power Supply	12-90 VDC	12-48 VDC	12-48 VDC
Continuous Current (Arms)	1.4 / 2.8 / 5.6	1.4 / 2.8 / 5.6	2.8
Peak current (Arms)	2.8 / 5.6 / 11.2	2.8 / 5.6 / 11.2	5.6
Isolated inputs[1]	11	7	5
Isolated outputs[2]	3	2	2
Bi-Directional Differential I/Os (RS422)	1	1	1
Analog inputs[3]	2 (12-bit)	1 (12-bit)	2
Analog outputs	0	0	0
PT100/PT1000	0	0	0
Brake output[5]	1	0	0
Regeneration Output	1	0	0
Encoder Port 1	Configurable as AquadB, Absolute Biss-C or EnDat2.2 Port	Configurable as AquadB, Sin/Cos 1Vpp, Absolute Biss-C or EnDat2.2	Configurable as AquadB, Sin/Cos 1Vp, Absolute Biss-C or EnDat2.2
Encoder Port 2	Configurable as AquadB, Sin/Cos 1Vpp, Absolute Biss-C or EnDat2.2	NA	NA
Motor Types	Voice Coil , Brushed or Brushless Linear or Rotary Motor. 2-Phase Steppers (Open and Closed Loop, micro-stepping)	Voice Coil , Brushed or Brushless Linear or Rotary Motor. 2-Phase Steppers (Open and Closed Loop, micro-stepping)	Voice Coil , Brushed or Brushless Linear or Rotary Motor. 2-Phase Steppers (Open and Closed Loop, micro-stepping)
Communication	Central-i	Central-i	Central-i
Sampling rate	16 KHz	16 KHz	16 KHz

[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: Hardware option for 16-bit available.*
[4] *Note 4: Upcoming in Q1 2021*

[5] *Note 5: Brake output up to 48VDC, 3A.*

Ordering Information

Product Part Number	Description	Optional Accessories	Accessories Description
AGA101-CI-2D01	CENTRAL-I REMOTE AMPLIFIER – 90VDC, 1.4ARMS CONTINUOUS CURRENT	AGA101-CI-CK	AGA101-CI Connector Kit
AGA101-CI-2D02	CENTRAL-I REMOTE AMPLIFIER – 90VDC, 2.8ARMS CONTINUOUS CURRENT		
AGA101-CI-2D05	CENTRAL-I REMOTE AMPLIFIER – 90VDC, 5.6ARMS CONTINUOUS CURRENT		
AGA102-CI-1D01	CENTRAL-I REMOTE AMPLIFIER – 48VDC, 1.4ARMS CONTINUOUS CURRENT	AGA102-CI-CK	AGA102-CI Connector Kit
AGA102-CI-1D02	CENTRAL-I REMOTE AMPLIFIER – 48VDC, 2.8ARMS CONTINUOUS CURRENT		
AGA102-CI-1D05	CENTRAL-I REMOTE AMPLIFIER – 48VDC, 5.6ARMS CONTINUOUS CURRENT		