

GNC Series Embedded Motion Controller



Overview

GNC series embedded motion controller is an embedded multi-axis motion controller based on the gLink-II bus and EtherCAT bus. Customers can choose different types of axis control modules (3/4/6 axis modules) according to their own needs, and quickly build a motion control system to meet their demand for distributed field motion control and control system flexibility.

gLink-II gigabit network protocol is based on the ring network architecture, which can cascade up to 240

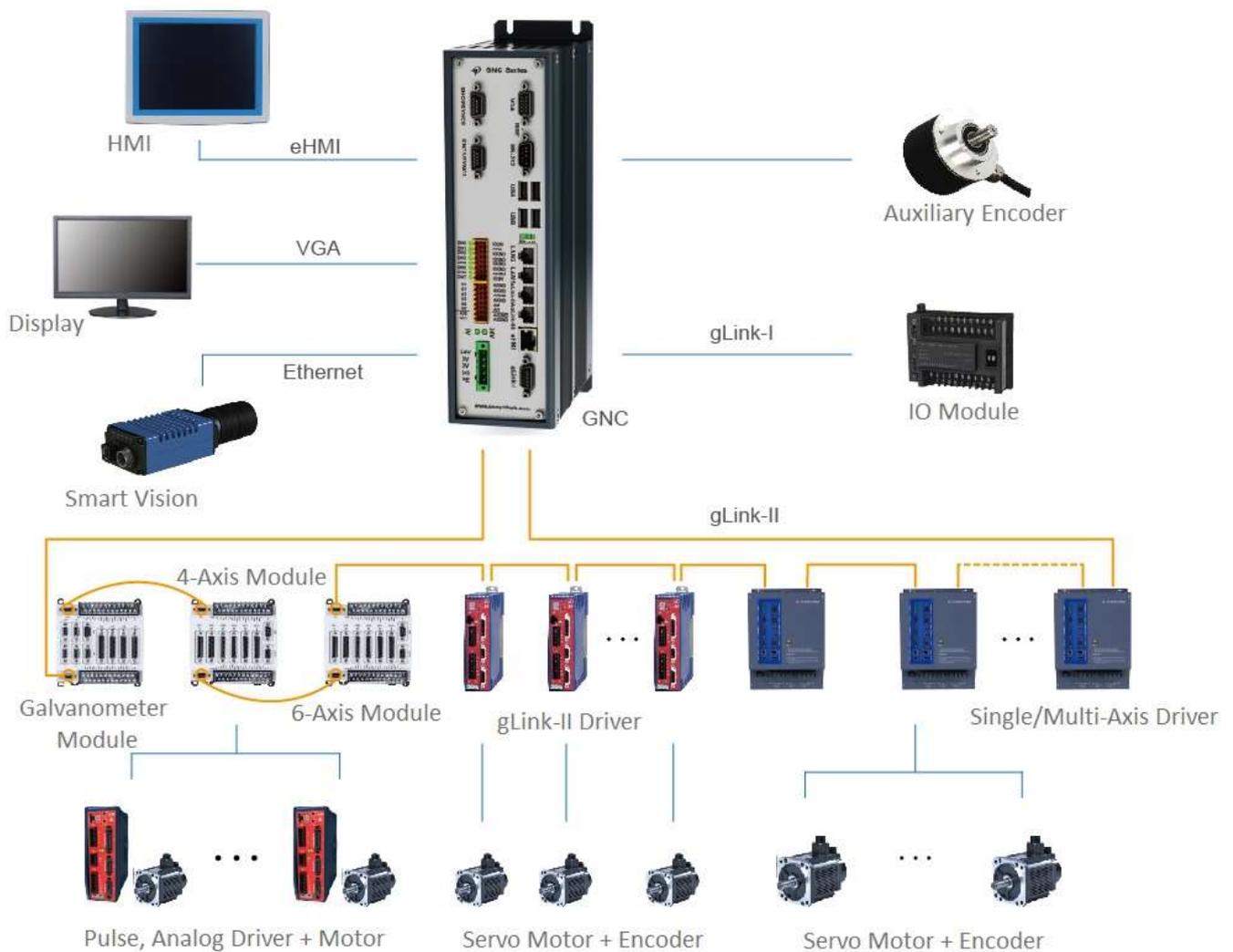
sites, and realize the precise tracking and synchronization control of multiple machines. The gigabit protocol has a fast transmission speed and a large amount of information. The system master station can debug and manage the control information and sensor information of all slave stations, which greatly facilitates equipment debugging and expansion, and is very suitable for applications in digital and intelligent factories. Through the library files provided by the controller in the development environment, such as VC, VB, C#, etc. Users can easily realize the programming of the controller and build an automated control system.

GNC series embedded motion controllers provide equipment manufacturers with a new generation of reliable and fully interconnected motion control solutions with multiple axes and multiple IO points, which can be applied to non-standard automation equipment, 3C equipment, lithium battery equipment, textiles, packaging, Assembly line workstations, etc.

Main Features

- 24/32 axis synchronous motion control, the shortest control cycle: 250uS.
- Support multi-axis interpolation, point position, Jog, electronic gear and electronic cam.
- Compatible with gLink-II and Ether-CAT bus control modes.
- Support incremental encoder or absolute encoder, or can be configured with multiple GNC controllers for synchronous control.
- Embedded computer and motion controller are seamlessly connected to improve the reliability and stability of the user control system.
- Support remote diagnosis and analysis.
- With encryption chip design and power-down protection function. (Optional)

System Structure



Specifications

Motion Control	
No. of Controlled Axis	16/24/32/48/64 axis
Control Method	gLink-II/EtherCAT bus
Control Cycle	24 Axis: 250us; 32 Axis: 500us/1ms
Motion Control Function	Point to point motion, Jog motion, PT/PVT, electronic gear, electronic cam, linear interpolation, arc interpolation, compensation algorithm, look-ahead preprocessing.
Digital I/O	8 Channels DIO, 24V level.
Analog I/O	8 Channels input, 2 channels output; voltage range: $\pm 10V$, accuracy: 12 bits.
Encoder	2 Channels incremental encoder, can be used for synchronous control between multiple controllers.

Specifications

Motion Control	
PLC Function	IEC61131-3 Control core; expandable gLink-I, bus IO module.
Development Environment	OtoStudio
Hardware	
CPU	1.66GHz/2.0GHz
Hard Disk	4GB (default)
RAM	DDR3, 2GB
Display	VGA for display, eHMI for HMI
USB	4 x USB2.0 (N455 mainboard) or 2x USB2.0 + 1x USB3.0 (R688 mainboard)
Ethernet	2 x RJ45, 10/100/1000Mbps
COM	1 x RS-232
gLink-II	Ring network interface, 2 x RJ45, 1000Mbps
gLink-I	Network IO expansion interface, 1 x DB9F, 6.125Mbps
Electrical Parameters	
Voltage	24VDC \pm 10%
Current	3A (Minimum)
Other	
OS	WinCE 6.0, Linux, Windows
Operating Temperature(°C)	0-55°C
Humidity	5% - 90%, non-condensing
Dimension (mm)	296 x 160 x 77
Installation	Panel mounting

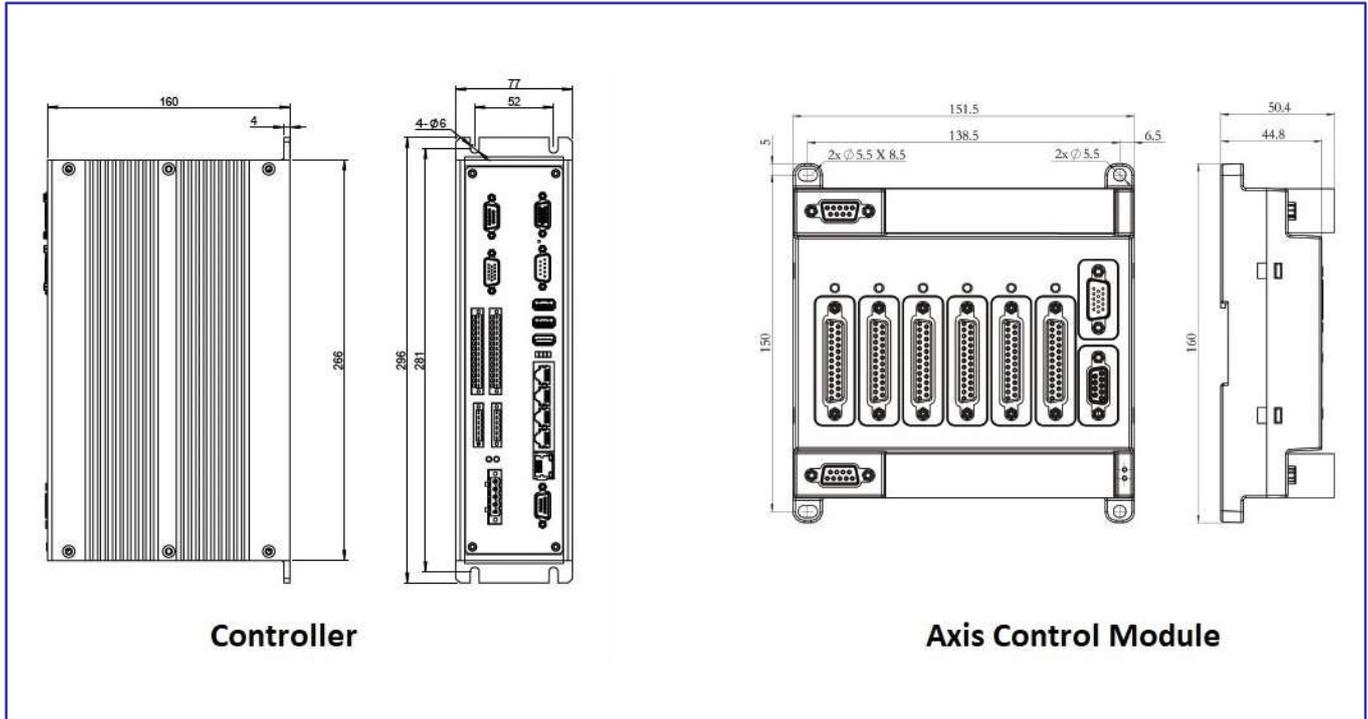
Ordering Guide

Type	Ordering Number	Description
Controller	GNC-024-G25-G2V00	24-axis, gLink-II bus, N455 mainboard
	GNC-016-G25-ECV00	16-axis, EtherCAT bus, N455 mainboard
	GNC-032-G25-ECV00	32-axis, EtherCAT bus, N455 mainboard
	GNC-024-G30-G2V00	24-axis, gLink-II bus, R688C mainboard
	GNC-048-G30-G2V00	48-axis, gLink-II bus, R688C mainboard
	GNC-016-G30-ECV00	16-axis, EtherCAT bus, R688C mainboard
	GNC-032-G30-ECV00	32-axis, EtherCAT bus, R688C mainboard
	GNC-064-G30-ECV00	64-axis, EtherCAT bus, R688C mainboard

Ordering Guide

Type	Ordering Number	Description
6-Axis Module	GNM-601-00	Pulse control, MPG, extended IO, gLink-II bus
	GNM-600-EM	Pulse control, MPG, extended IO, EtherCAT bus
	GNM-602-00	Pulse control, dual auxiliary editing, gLink-II bus
4-Axis Module	GNM-401-00	Pulse control, analog quantity, gLink-II bus
	GNM-401-EM	Pulse control, analog quantity, EtherCAT bus
gLink-II Connection Cable	GN-LINK-CAT5e-RJ45-DB9M-1M5	Gigabit Ethernet cable, 1.5m, the connecting cable between controller and axis control module.
	GN-LINK-CAT5e- RJ45-DB9M-3M	Gigabit Ethernet cable, 3.0m, the connecting cable between controller and axis control module.
	GN-LINK-CAT5e-DB9M-DB9M-1M5	DB9 Gigabit Ethernet cable, 1.5m. A module set is composed of the controller main card, the axis control module and the connecting cable between the axis control module.
	GN-LINK-CAT5e-DB9M-DB9M-10M	DB9 Gigabit Ethernet cable, 10m. A module set is composed of the controller main card, the axis control module and the connecting cable between the axis control module.
Extended IO Module	HCB5-1616-DTD01	16DI/16DO, input active low, sink output.
	HCB5-1616-DTS01	16DI/16DO, input active high/low selectable, source output.
	HCB5-0606-A1201	6AI/6AO, IO resolution 12bit.
Extended IO Connection Cable	DB9P F/M L=0.3m	One cable per extended IO module, 0.3m.
	DB9P F/M L=1.5m	One cable per extended IO module, 1.5m.
Driver Connection Cable	ACC5-D01005/10/15/20	Panasonic series driver connection cable, 0.5m/1.0m/1.5m/2.0m.
	ACC5-D01005/10/15/20 (Brake)	Panasonic series driver connection cable, brake, 0.5m/1.0m/1.5m/2.0m.
	ACC5-SP01015	Sanyo series driver connection cable, 1.5m.
	ACC5-D03015/30	Yaskawa series driver connection cable, 1.5m/3.0m.
	ACC5-D03015/30 (Brake)	Yaskawa series driver connection cable, brake, 1.5m/3.0m.
	HPCN36P/M+DB25P/M	GTHD series driver connection cable, 1.5m.

Dimension



Controller

Axis Control Module



GOOGOL TECHNOLOGY (HK) LIMITED
 Unit 1008-09, 10/F C-Bons International Center, 108
 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong
 Tel.: +(852) 2358-1033
 Fax: +(852) 2719-8399
 E-mail: hkgoogol@gmail.com / sales@googoltech.com
 Web: http://www.googoltech.com

GOOGOL TECHNOLOGY (SZ) LIMITED
 Room W211, IER Building (PKU-HKUST High-
 tech Industrial Park, Nanshan District, Shenzhen,
 PRC (Postal Code: 518057)
 Tel.: +(86) 755-26970817, 755-26970824,
 Fax: +(86) 755- 26970821
 E-mail: googol@googoltech.com
 Web: www.googoltech.com.cn

GOOGOL TECHNOLOGY (TWN) LIMITED
 2F., No. 22, Ln. 10, Fuzhong 2nd St., Xitun
 Dist., Taichung City 407, Taiwan
 Tel.: +(886) 4-2358-8245
 E-mail: twinfo@googoltech.com
 Web: http://www.googoltech.com

