GOOGOLTECH

GNC Series

Embedded Multi-axis Network Motion Controller

GNC Series network controller is the type of embedded multi-axis motion controller that is based on gLink-II bus (Gigabit Ethernet Communication Protocol provided by Googoltech). Users can select various types of axis control module, such as 4/6-axis module or GTM module, to set up the motion control system quickly according to the requirements and to satisfy the requirements for distributed motion control and control system flexibility. gLink-II gigabit network protocol is based on the net ring architecture, and up to 240 stations can be cascaded to achieve precise follow-up and synchronous control of multiple machines. Gigabit protocol has the advantage of high transfer rate and massive data transfer; the system master station can tune and manage all the control and sensor information of slave station, it greatly facilitates equipment tuning and expansion, and is suitable for application of digital and intelligent factory. By using the library file of development environment such as VC, VB, C#, etc. which are provided by the controller, users can easily realize programming and build up the automation control system of the controller.

GNC series multi-axis network motion controller provides multi-axis, multiple I/O points of new generation reliable and fully inter-connected control system total solution for equipment manufacturers; it can be used in non-standard automatic equipment, 3C devices, lithium battery equipment, textile, packaging, assembly line work station, etc.

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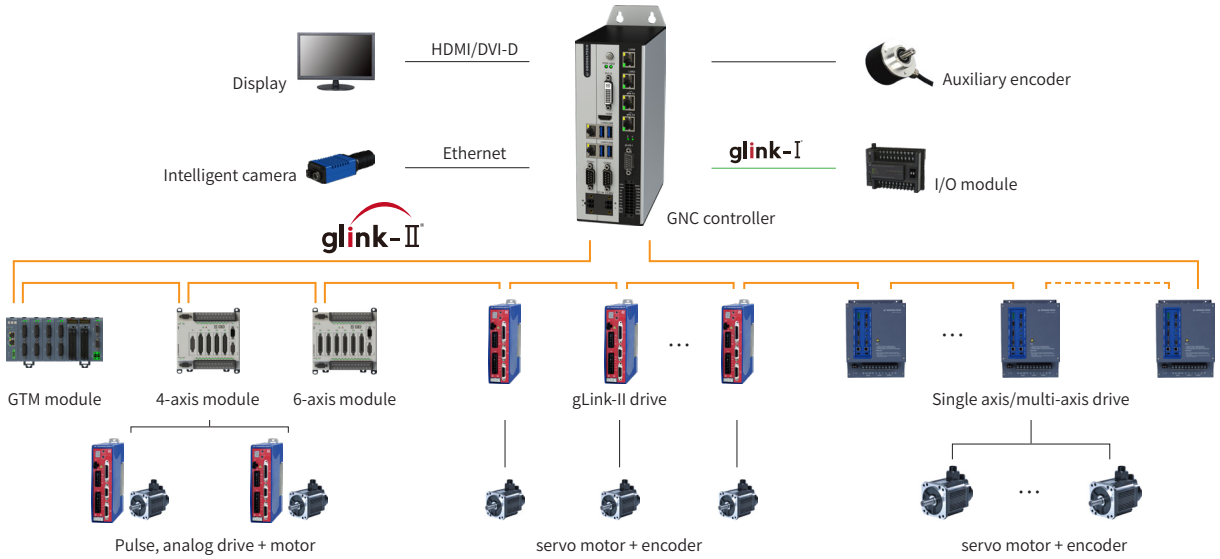
Feature

- 8/24/64 axes synchronized motion control
- Supports multi-axis interpolation, point-to-point, Jog, E-gear and ECAM
- Supports gLink-II (2 gigabit Ethernet ports and axis control module networking) protocol motion control
- Supports HDMI, DVI high definition output, 4-channel USB3.0 and 4-channel gigabit Ethernet ports
- Supports incremental encoder or absolute encoder; can also implement synchronized control with multiple GNC controllers
- Seamless connection of embedded PC and motion controller to improve the reliability and stability of user control system
- Supports remote diagnosis and analysis
- With encrypted chip design and power failure protection functions (optional)

Specification

Motion control	
Number of axis	8/24/64 axes
Control mode	gLink-II bus
Motion mode	Point-to-point (Trap), Jog, PT/PVT, E-gear, ECAM, interpolation (2/3 axes linear, arc), backlash compensation, pitch error compensation, look-ahead preprocessing, 5-axis processing, robotic arm control algorithm, laser control
Hardware resource	
CPU	Intel Core i3-6100/i5-6400/i7-6700
Hard drive	64G/256G/512G (i7 doesn’ t support 64G, 512G supports i7 only)
RAM	4G/8G/16G (i7 does not support 4G, 16G supports i7 only)
PC interface	USB 3.0*4, LAN*4, RS232/RS485*2, HDMI*1, DVI-D*1
Local digital I/O	8 DI/8 DO (opto-coupler isolation)
Electric parameter	
Voltage	24VDC±10%
Current	5A or above
Miscellaneous	
OS	Windows 10
Operating temperature (°C)	0~55
Humidity	5%~90%, non-condensing
Dimension (W*H*D)	74.8mm x 249mm x 154mm

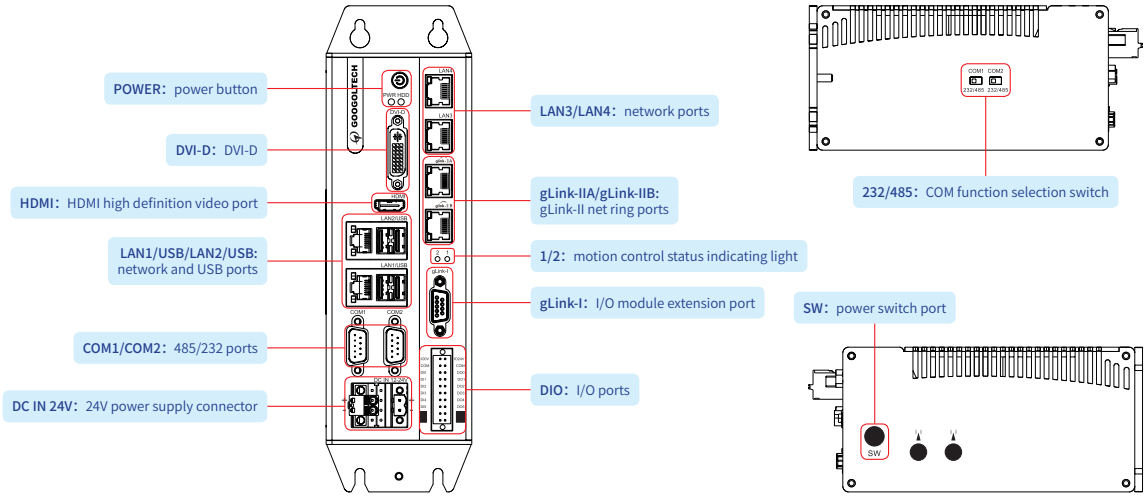
System Structure



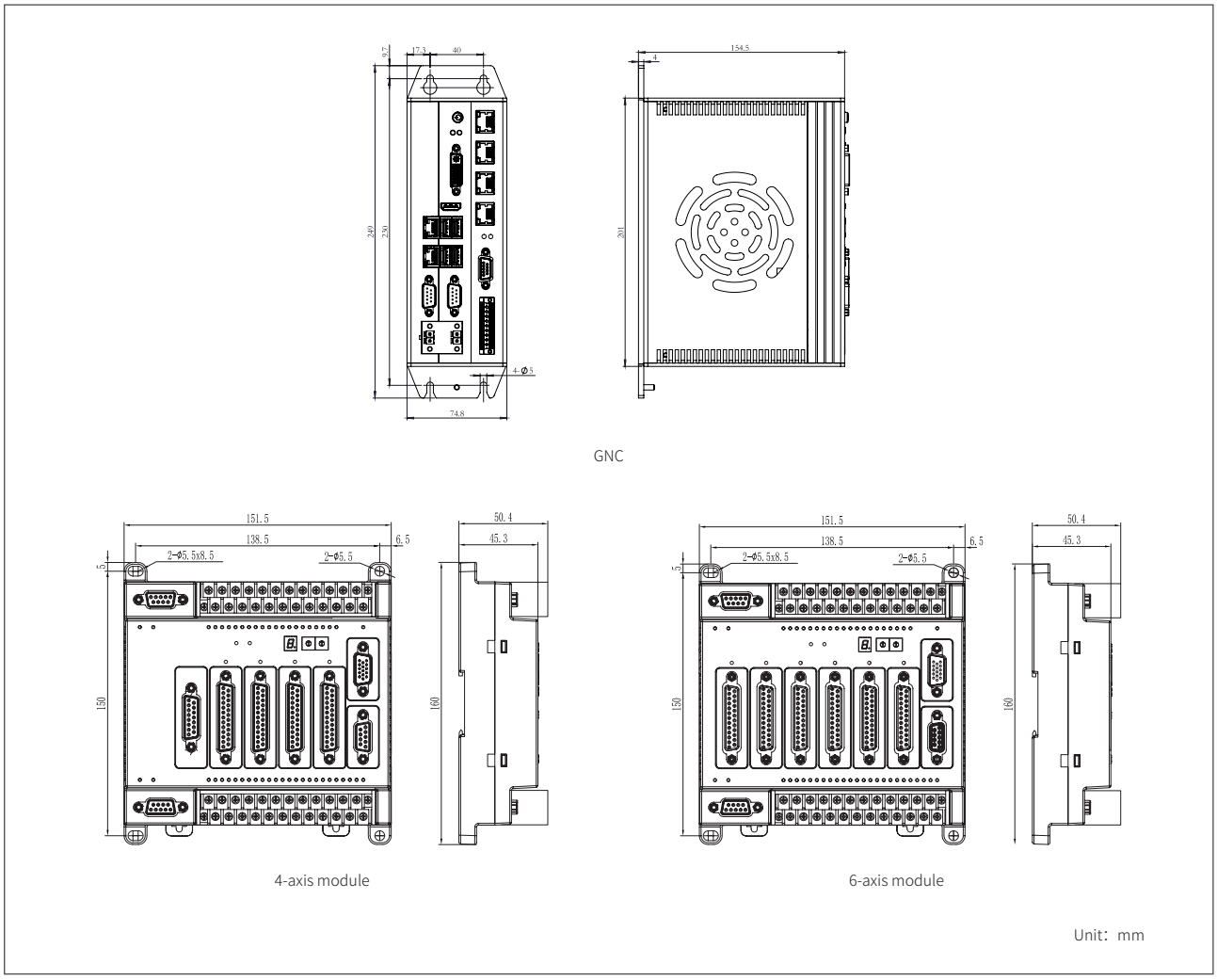
Ordering Guide

Required		
Type	Model number	Description
Controller	GNC-008-G40-G2V00	8 axes, Windows 10, 2 gLink-II + 4 LAN, i3-6100, 4G RAM, 64G hard drive
	GNC-008-G40-G2V01	8 axes, Windows 10, 2 gLink-II + 4 LAN, i3-6100, 8G RAM, 256G hard drive
	GNC-008-G41-G2V00	8 axes, Windows 10, 2 gLink-II + 4 LAN, i5-6400, 4G RAM, 64G hard drive
	GNC-008-G41-G2V01	8 axes, Windows 10, 2 gLink-II + 4 LAN, i5-6400, 8G RAM, 256G hard drive
	GNC-008-G42-G2V00	8 axes, Windows 10, 2 gLink-II + 4 LAN, i7-6700, 8G RAM, 256G hard drive
	GNC-008-G42-G2V01	8 axes, Windows 10, 2 gLink-II + 4 LAN, i7-6700, 16G RAM, 512G hard drive
	GNC-024-G40-G2V00	24 axes, Windows 10, 2 gLink-II + 4 LAN, i3-6100, 4G RAM, 64G hard drive
	GNC-024-G40-G2V01	24 axes, Windows 10, 2 gLink-II + 4 LAN, i3-6100, 8G RAM, 256G hard drive
	GNC-024-G41-G2V00	24 axes, Windows 10, 2 gLink-II + 4 LAN, i5-6400, 4G RAM, 64G hard drive
	GNC-024-G41-G2V01	24 axes, Windows 10, 2 gLink-II + 4 LAN, i5-6400, 8G RAM, 256G hard drive
	GNC-024-G42-G2V00	24 axes, Windows 10, 2 gLink-II + 4 LAN, i7-6700, 8G RAM, 256G hard drive
	GNC-024-G42-G2V01	24 axes, Windows 10, 2 gLink-II + 4 LAN, i7-6700, 16G RAM, 512G hard drive
Optional		
Net ring drive	GSHD series servo drive	220V, rotary motor / linear motor, rated current 3A~24A
		220V, gantry dual drive, rated current 3A~24A
		380V, rotary motor / linear motor , rated current 12A
4-axis module	GNM-401-00	4-axis, 22 DI+10 DO, axis AO, MPG, 8 AI, EXIO
	GNM-401-01	4-axis, 22 DI+10 DO, MPG, 8 AI, EXIO
	GNM-402-00	4-axis, 22 DI+10 DO, MPG, EXIO, 2 ENC, HSIO, laser (no AO), PSO
	GNM-403-00	4-axis, 22 DI+10 DO, axis AO, MPG, EXIO, laser, PSO
	GNM-403-01	4-axis, 22 DI+10 DO, MPG, EXIO, laser, SCAN, PSO
	GNM-403-06	4-axis, 22 DI+10 DO, axis AO, MPG, EXIO, laser, advanced PSO
6-axis module	GNM-601-00	6-axis, 16 DI+10 DO, MPG, EXIO
	GNM-602-00	6-axis, 16 DI+10 DO, 2 ENC
gLink-II communication cable	GN-RJ45-DB9M-0M3/1M0/1M5/3M0/5M0/10M/15M/20M/30M/50M	RJ45-DB9 gigabit network cable, 0.3m/1.0m/1.5m/3.0m/5.0m/10m/15m/20m/30m/50m, length is selectable according to requirement
	GN-DB9M-DB9M-0M3/1M5/3M0/5M0/10M/15M/20M/30M/40M/50M	DB9M-DB9M gigabit network cable, 0.3m/1.5m/3.0m/5.0m/10m/15m/20m/30m/40m/50m, length is selectable according to requirement, 1 cable is required for 1 axis control module
	GN-RJ45-RJ45-0M2/0M3/0M5/0M6/0M7/1M0/1M5/3M0/5M0/10M/20M/30M/50M	Cat. 5e shielded twisted pair, RJ45 at two ends, 0.2m/0.3m/0.5m/0.6m/0.7m/1.0m/1.5m/3.0m/5.0m/10m/20m/30m/50m, length is selectable according to requirement
Extension I/O module	HCB5-1616-DTD01	16 DI/16 DO, input active low, transistor 0.5A sinking output
	HCB5-1616-DTS01	16 DI/16 DO, input active high/low selectable, transistor 0.5A sourcing output
	HCB5-3200-DXX01	32 DI, input active high/low selectable, no output
	HCB5-0604-A1201	6 AI/4 AO, 12-bit resolution, I/O supports single channel multiple measuring range selection (0~5V, 0~10V, -5~5V, -10~10V, 0~20mA, 4~20mA)
	HCB5-0606-A1201	6 AI/6 AO, 12-bit resolution, I/O supports single channel multiple measuring range selection (0~5V, 0~10V, -5~5V, -10~10V, 0~20mA, 4~20mA)
	HCB5-1610-DRA01	16 DI/10 DO, input active high/low selectable, the first two channels of output are transistor output 0.5A, sourcing output (high voltage output), the subsequent eight channels of output are normal-open relay switch 2A
	HCS5-3216-DRA01	32 DI/16 DO, DO: 2A relay
Extension I/O connection cable	DB9P F/M L=0.3m/1.5m	0.3m/1.5m, one for each extension I/O module, other lengths can be customized according to requirement

Interface Definition



Dimension Figure



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