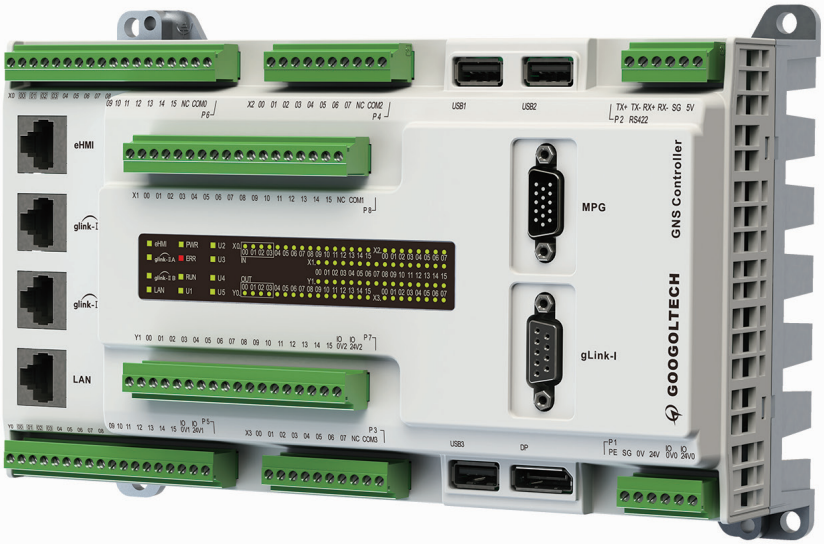
GOOGOLTECH

GNS Series

Embedded Multi-axis Network Motion Controller



GNS Series is the type of embedded multi-axis network motion controller that is based on gLink-II bus (Gigabit Ethernet Communication Protocol provided by Googoltech) or EtherCAT bus. Users can select various types of axis control module (4/6-axis module, GTM module) to set up the control system quickly according to their own requirements; and satisfy the distributed motion control and control system requirements for flexible production line. Gigabit net ring 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 of VC, VB, C#, and low coding, etc. which is provided by the controller, users can easily realize programming and constructing the automatic control system of the controller.

GNS series multi-axis network motion controller has a compact structure and high performance-cost ratio. It also provides multi-axis, multiple I/O points of new generation reliable inter-connected control solution for equipment manufacture, widely applied in CNC machinery, robotic arm, non-standard automatic equipment, 3C device, lithium battery equipment, textile, packaging, assembly line work station, etc.

Googol Technology (Overseas) Ltd.

www.googoltech.com info@googoltech.com +(852)-23581033

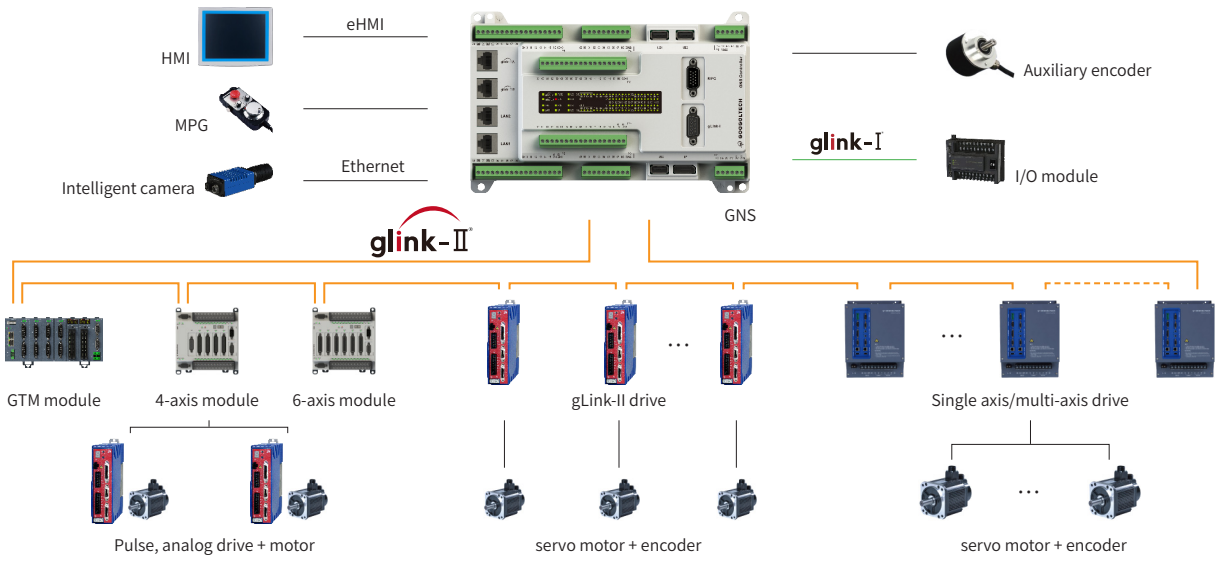
Feature

- Supports multi-axis application (up to 32 axes)
- Supports gLink-II or EtherCAT bus
- Networks to GSHD drives via gLink or EtherCAT
- Supports networking to various types of axis control module
- Supports local multi-channel digital I/O and MPG

Specification

Motion Control	
Number of controlled axis	gLink-II: 16 axes / 24 axes EtherCAT: 16 axes / 32 axes
Control mode	gLink-II / EtherCAT bus
Motion mode	Point-to-point (Trap), Jog, PT / PVT, electronic gear, ECAM, interpolation (2 axes / 3 axes / 4 axes linear, arc), backlash compensation, pitch error compensation, look ahead preprocessing, laser control (supports gLink-II)
Hardware Resource	
CPU	Single core: 1.46GHz; 4-core: 2.0GHz
Hard drive	8G/16G/32G
RAM	2GB
PC interface	VGA*1, USB 2.0*3, LAN*2 (gLink-II)/LAN*1 (EtherCAT), eHMI*1, DP*1, RS422/RS485*1 (default is RS485)
Local digital I/O	48DI/32DO
MPG interface	1-channel quadruple incremental encoder, maximum frequency 10KHz (quadruple), 7-channel general-purpose input (optocoupler isolation)
Electric Parameter	
Voltage	24VDC ±10%
Current	3A or above
Miscellaneous	
OS	Windows CE
Operating temperature (°C)	0~55
Humidity	5%~90%, non-condensing
Dimension (W*H*D)	296mm x 160mm x 77mm

System Structure



Ordering Guide

Required		
Type	Model number	Description
Controller	GNS-016-G31-ECH00	EtherCAT bus, 16 axes, Windows CE+CPAC, 8G, E3815, 800×480
	GNS-016-G31-ECH01	EtherCAT bus, 16 axes, Windows CE+CPAC, 8G, E3815, 800×600
	GNS-032-G31-ECH00	EtherCAT bus, 32 axes, Windows CE+CPAC, 8G, E3815, 800×480
	GNS-032-G31-ECH01	EtherCAT bus, 32 axes, Windows CE+CPAC, 8G, E3815, 800×600
	GNS-024-G31-G2H00	gLink-II bus, 24 axes, Windows CE+CPAC, 8G, E3815, 800×480
	GNS-024-G31-G2H01	gLink-II bus, 24 axes, Windows CE+CPAC, 8G, E3815, 800×600

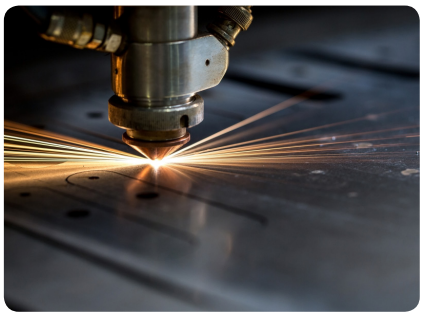
Optional		
Type	Model number	Description
4-axis module	GNM-401-00	4-axis, pulse control, with axis analog, MPG*1, extension I/O*1, 22 DI, 10 DO
	GNM-401-01	4-axis, pulse control, MPG*1, extension I/O*1, 22 DI, 10 DO
	GNM-402-00	4-axis, pulse control, dual auxiliary encoders, MPG*1, extension I/O*1, laser interface*1, HSIO interface*1, 22 DI, 10 DO
	GNM-403-00	4-axis, pulse control, with axis analog, MPG*1, extension I/O*1, laser interface*1, galvo interface*1, 22 DI, 10 DO
	GNM-403-01	4-axis, pulse control, MPG*1, extension I/O*1, laser interface*1, galvo interface*1, 22 DI, 10 DO
	GNM-403-02 ①	4-axis, pulse control, with axis analog, MPG*1, extension I/O*1, laser interface*1, galvo interface*1, 22 DI, 10 DO
	GNM-403-03 ②	4-axis, pulse control, with axis analog, MPG*1, extension I/O*1, laser interface*1, galvo interface*1, 22 DI, 10 DO
	GNM-403-06	4-axis, pulse control, with axis analog, MPG*1, extension I/O*1, 3D PSO function, 22 DI, 10 DO
	GNME-401-00	Pulse control, analog, EtherCAT bus
6-axis module	GNM-601-00	6-axis, pulse control, MPG*1, extension I/O*1, 16 DI, 10 DO
	GNM-602-00	6-axis, pulse control, dual auxiliary encoders, 16 DI, 10 DO
	GNME-601-00	Pulse control, MPG, extension I/O, EtherCAT bus
GTM axis control module	CBEX-0107-IBE01	GTM dedicated back plate module, includes 1 communication module slot and 7 functional module slots
	CCE6-0000-PR201	GTM communication module, includes input power port, 2 net ring ports
	CEEX-0000-SG201	GTM general-purpose axis control module, includes 2-channel axis port, no analog
	CEEX-4816-DTD01	GTM general-purpose digital I/O module, 48-channel Din, 16-channel Dout
	CEEX-3232-DTD01	GTM general-purpose digital I/O module, 32-channel Din, 32-channel Dout
	CEEX-0000-LA201	GTM general-purpose laser module, 2-channel PSO port (no analog, 24V output), single 2-channel Aout (-10V~+10V)
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 can be selected 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 can be selected 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 can be selected 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, input and output both support single channel multiple measuring ranges selection(0~5V, 0~10V, -5~5V, -10~10V, 0-20mA, 4-20mA)
	HCB5-0606-A1201	6 AI/6 AO, 12-bit resolution, input and output both support single channel multiple measuring ranges 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, output first 2 channels are transistor output 0.5A, sourcing output (high edge output), subsequent 8 channels 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, 1 cable for each extension I/O module, other lengths can be customized according to requirement

① : GNM-403-02 axis enabled, alarm clearance signal active high; other model numbers: axis enabled, alarm clearance signal active low.
② : GNM-403-03 laser switch, PWM signal supports 5V level; other model numbers of modules with laser function: PWM signal supports 3.6V level.

Applications

Electronic Products

Electrical Products



Precision Processing

Contouring

Automobile

Logistics

Googol Technology Co., Ltd.
Tel: +(86)0755-26970839
E-mail: googol@googoltech.com
Web: www.googoltech.com.cn

Googol Technology (Overseas) Ltd.
Tel: +(852)-23581033
E-mail: sales@googoltech.com
Web: www.googoltech.com

Statement: Googol Technology reserves the right to modify the above product models and descriptions without prior statement.