

GTSD14



Overview

GTSD14 series servo driver is an integrated control and drive product which combines industrial PC, motion control and servo drive. Its power covers 3 kW-45 kW. Highly integrated system architecture greatly simplifies customer electrical design and improves equipment performance and reliability. OtoStudio software development platform is based on WINCE operating system to meet the real-time, security and open requirements of industrial customers. The software platform is

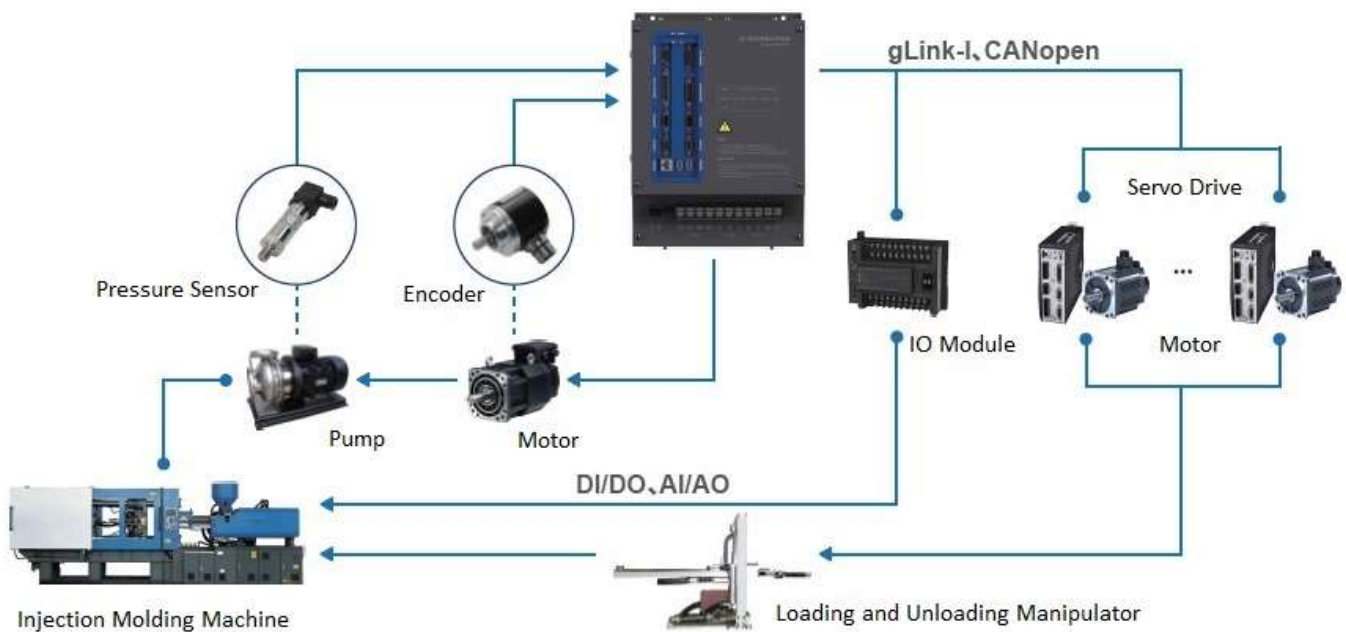
aimed at the mechanical manufacturer and system integrator who have the ability to develop, and adopts the secondary development system architecture. It can provide customized system solutions for customized process.

GTSD14 series servo driver can be used in CNC machine tools, hydraulic press, servo press, injection molding machine, punch, flying shear, flying saw and other fields.

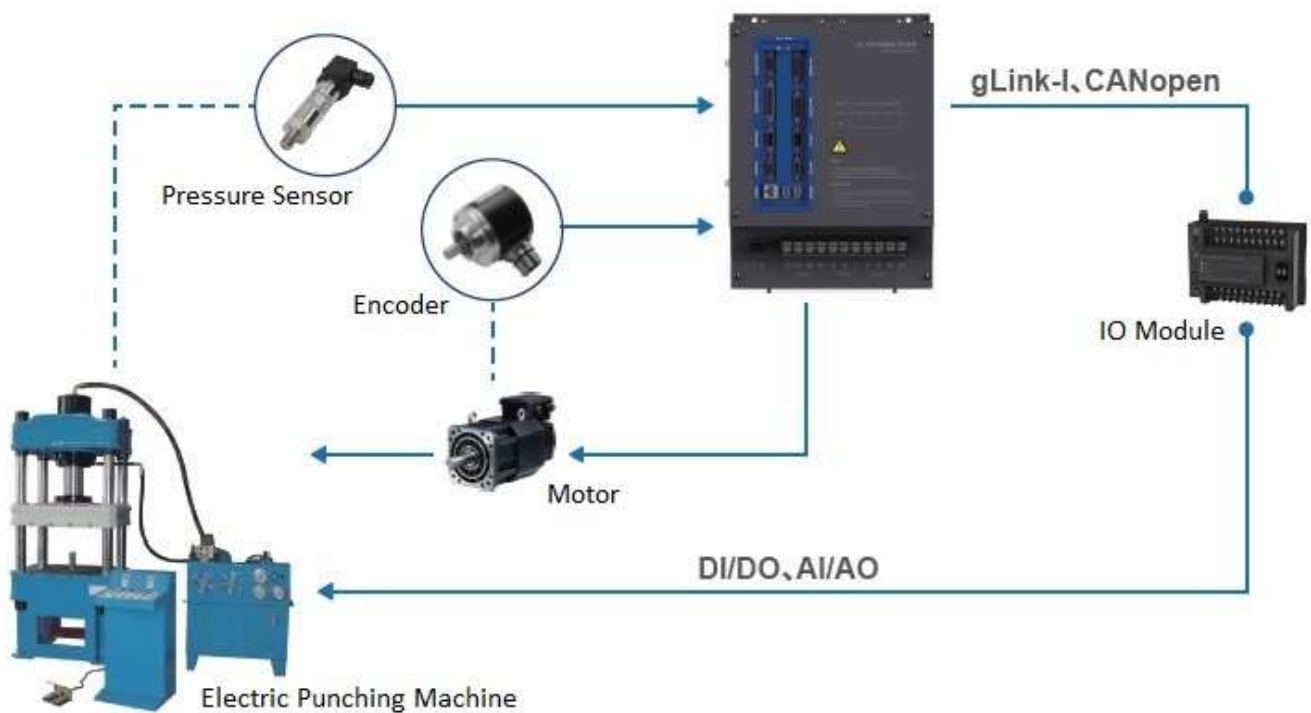
Main Features

- The system integrates industrial PC, motion control and servo drive to realize closed-loop control of current, speed and position.
- Achieve multi axis motion control, and facilitate system configuration.
- High dynamic response, high precision current, speed and position control using multi-degree of freedom and nonlinear control algorithm.
- Supports high-precision sine-cosine encoder, absolute encoder, incremental encoder and Hall encoder speed feedback, single-loop resolution up to 24 bits, supports broken line detection.
- Support high-speed pulse + directional or AB phase burst input.
- Support high speed local IO and remote extended IO. High speed and high precision local analog input, input resolution 14 bits.
- Automatic identification and correction of motor parameters and loop parameter self-tuning.
- OtoStudio development platform real-time observation curve, easy debugging, firmware and software online upgrade.

System Structure



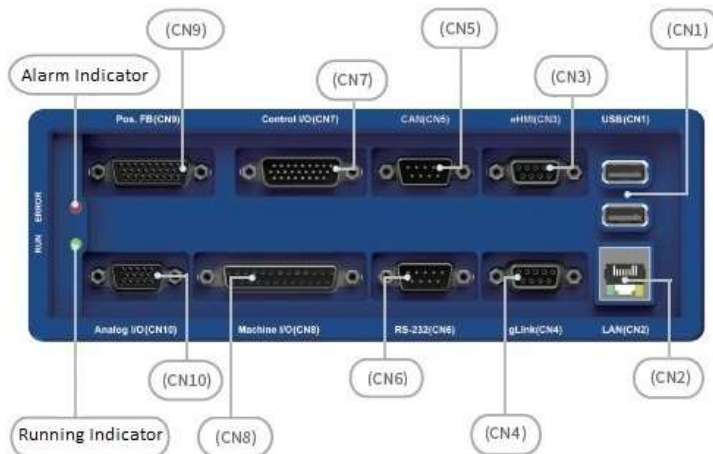
Oil Electric Hybrid Injection Molding Machine Solution



Electric Punching Machine Solution



Hardware Connection



Location	Description	Connector Type
CN1	USB2.0 HOST	USB
CN2	Ethernet 10/100M	RJ45
CN3	eHMI	DB9 (Female)
CN4	gLink-I	DB9 (Female)
CN5	CAN	DB9 (Male)
CN6	RS232	DB9 (Male)
CN7	Control IO	DB26 (Male)
CN8	Machine IO	DB25 (Female)
CN9	Motor Position Feedback	DB26 (Female)
CN10	Analog IO	DB15 (Female)



Terminal Name	Description
L, N	220V Power Input
	GND
DC+, DC-	DC Bus Output
BR, DC+	External Braking Resistor
R, S, T	Three phases AC 380V Input
U, V, W	Three phases AC Output

Specifications

Function	Item	Description
Computer Function	CPU	800MHz
	Memory	500M
	Storage	4GB HDD
	OS	WinCE 6.0
Main Loop Power	Rated Voltage	3 Phases: 380V, fluctuation range -15% ~ 10% (323V ~ 418V)
	Rated Frequency	50Hz ~ 60Hz, Fluctuation range $\pm 5\%$
Control Loop Power	Rated Voltage	Single-phase 220V/50Hz
	Input Voltage Range	AC 220V $\pm 15\%$
	Input Frequency Range	47Hz ~ 53Hz
IO Interface Power	Input Voltage	12V ~ 24V
	Allowable Voltage Fluctuation	-10% ~ 10%
	Power Capacity (mA)	Over 500 mA (The local 24V power only provides 200 mA current).



Specifications

Function	Item	Description
Output Features	Applicable Motor (kW)	Please refer the Ordering Guide
	Rated Output Current (A)	Please refer the Ordering Guide
	Output Voltage (V)	Output 3 phases under rated conditions, 0V ~ rated input voltage.
	Output Frequency (Hz)	0 ~ 1000Hz
	Overload Features	HD: 120% rated current for 30 seconds, 300% rated current for 0.5 seconds.
IO Interface	Digital Input	13 Channels optocoupler isolated input
	Digital Output	2 Channels optocoupler isolated output (Output $\leq 10\text{mA}$ per channel)
	MOS Output	5 Channels MOS output (Output $\leq 0.5\text{A}$ per channel)
	Analog Input	4 Channels analog input: $-10\text{V} \sim +10\text{V}$; 1 Channel analog input: $-10\text{V} \sim +10\text{V}$ or $4\text{mA} \sim 20\text{mA}$ current input
	Position Command Input	Pulse + direction input or AB phase pulse train input. (4MHz)
	Motor Position Output	ABZ output (4MHz)
Encoder Interface	Support for rotary encoder, incremental encoder, sine and cosine encoder, absolute encoder, and Hall encoder.	
Communication Interface	CANopen, USB 2.0, Ethernet, RS-232, gLink-I	
Protective Function	Alarm contents: overvoltage, undervoltage, overcurrent, driver overheating, encoder disconnection, and phase loss detection.	
Display Interface	eHMI (optional): 1 channel, including LVDS, PS/2, RS232, USB, gLink-I signals.	
Environment	Efficiency	95%
	Installation Method	Wall mount
	Protection Level	IP20
	Cooling	Fan cooling
	Use Place	Indoor, free from direct sunlight, no dust, corrosive gas, flammable gas, oil mist, water vapor, dripping or salt, etc.
	Altitude	Less than 2000 meters (Derating for use above 2000 meters, derating 1% for every 100 meters)
	Operating Temperature	$-20^{\circ}\text{C} \sim +55^{\circ}\text{C}$ (Derating when the ambient temperature is higher than 55°C)
	Storage Temperature	$-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$
	Atmospheric Pressure	$80\text{kPa} \sim 110\text{kPa}$
	Humidity	Less than 90% Relative humidity, non-condensing.
	Installation Direction	In order to ensure the cooling effect of the drive, please be sure to install it vertically.

OtoStudio Development Platform

Development Environment Features

- Provide 6 programming languages including graphics and text, and also support high-level languages such as C or C++.
- Flexible configuration of the HMI.
- Support remote network access and maintenance.
- Multiple encryption to ensure user intellectual property rights.
- Support network variables.
- Convenient for intelligent manufacturing and production management.



Selection Guide

GTSD14 – T4 – K011 – X 1 – N01 – X0

Input Voltage:

T2: Two phases 220V
T3: Three phases 220V
T4: Three phases 380V

Adapt to Maximum Motor Power:

003: 3kW
007: 7.5kW
011: 11kW
015: 15kW
018: 18kW
025: 25kW
035: 35kW
045: 45kW

Chassis Type:

F: Filter type
L: Liquid cooled type
X: Standard type

Installation Method:

1: Wall mount

Encoder Type:

01: Sine and cosine encoder + absolute encoder + incremental encoder + Hall encoder
02: Rotary encoder + absolute encoder + incremental encoder + Hall encoder
03: Rotary encoder + absolute encoder + Hall encoder
04: Sine and cosine encoder + absolute encoder + Hall encoder
05: Rotary encoder + incremental encoder + Hall encoder
06: Sine and cosine encoder + incremental encoder + Hall encoder



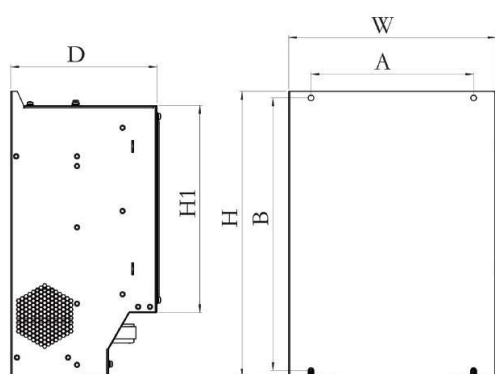
Ordering Guide

Type	Ordering Number	Description	
Universal intelligent Servo Driver	GTSD14-T4-K003X1-N01X0	Support for sin-cos encoder, absolute encoder, incremental encoder, and Hall encoder.	Maximum motor power: 3kW; Rated output current: 7A; Maximum output current: 30A/s
	GTSD14-T4-K007X1-N01X0		Maximum motor power: 7.5kW; Rated output current: 16A; Maximum output current: 35A/s
	GTSD14-T4-K011X1-N01X0		Maximum motor power: 11kW; Rated output current: 20A; Maximum output current: 53A/s
	GTSD14-T4-K015X1-N01X0		Maximum motor power: 15kW; Rated output current: 28A; Maximum output current: 63A/s
	GTSD14-T4-K018X1-N01X0		Maximum motor power: 18kW; Rated output current: 35A; Maximum output current: 100A/s
	GTSD14-T4-K025X1-N01X0		Maximum motor power: 25kW; Rated output current: 53A; Maximum output current: 138A/s
	GTSD14-T4-K035X1-N01X0		Maximum motor power: 35kW; Rated output current: 75A; Maximum output current: 190A/s
	GTSD14-T4-K045X1-N01X0		Maximum motor power: 45kW; Rated output current: 95A; Maximum output current: 254A/s
	GTSD14-T4-K003X1-N02X0	Support for rotary encoder, absolute encoder, incremental encoder, and Hall encoder.	Maximum motor power: 3kW; Rated output current: 7A; Maximum output current: 30A/s
	GTSD14-T4-K007X1-N02X0		Maximum motor power: 7.5kW; Rated output current: 16A; Maximum output current: 35A/s
	GTSD14-T4-K011X1-N02X0		Maximum motor power: 11kW; Rated output current: 20A; Maximum output current: 53A/s
	GTSD14-T4-K015X1-N02X0		Maximum motor power: 15kW; Rated output current: 28A; Maximum output current: 63A/s
	GTSD14-T4-K018X1-N02X0		Maximum motor power: 18kW; Rated output current: 35A; Maximum output current: 100A/s
	GTSD14-T4-K025X1-N02X0		Maximum motor power: 25kW; Rated output current: 53A; Maximum output current: 138A/s
	GTSD14-T4-K035X1-N02X0		Maximum motor power: 35kW; Rated output current: 75A; Maximum output current: 190A/s
	GTSD14-T4-K045X1-N02X0		Maximum motor power: 45kW; Rated output current: 95A; Maximum output current: 254A/s

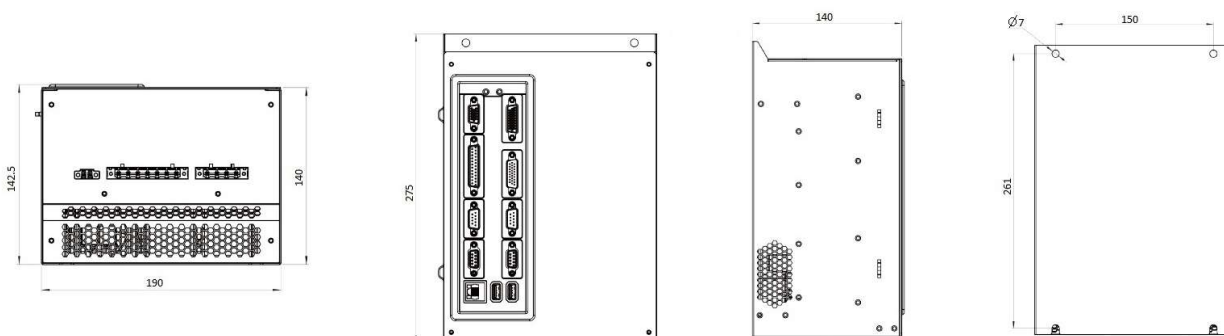
Ordering Guide

Type		Ordering Number	Description
Standard	Encoder Cable	14900557	DB26P(M), Rotary encoder or Sin-Cos encoder cable, 3m
		14900593	DB26P(M), Rotary encoder or Sin-Cos encoder cable, 5m
	Braking Resistor	10500093	Power aluminum shell resistor, 75Ω/780W, GTSD14-T4-K007X1 series used.
		10500131	Corrugated winding braking resistor, 16Ω 1000W accuracy ±5%, GTSD14-T4-K011X1 series used.
		10500145	Corrugated winding braking resistor, TYPE B 30R 1.5kW accuracy ±10%, GTSD14-T4-K015X1 series used.
		10500146	Corrugated winding braking resistor, TYPE B 16R 2.5kW accuracy ±10%, GTSD14-T4-K025X1 series used.
Optional	Extended IO Module	HCB3-1616-DTD01	16DI / 16DO, input active low, sink output.
		HCB3-1616-DTS01	16DI / 16DO, input high and low active selection, source output.
		HCB3-0606-A1201	6AI / 6AO, 12-bit precision, voltage range: 0-5V, 0-10V, ±5V, ±10V
	gLink-I Interface Cable	14900526	DB9P F M, extended IO connection cable, 0.3m
		14900544	DB9P F/M, extended IO connection cable, 1.5m
	IO Interface Cable	14900619	DB25P/M, 2m
		14900565	DB25P/M, 1.5m
	Ethernet HMI Cable	14900620	CABLE-eHMI/DB9M-DB9F CAT5E, 6m
	Axis Control Cable	14900563	DB25M-HDDB26F, 1.5m

Dimension



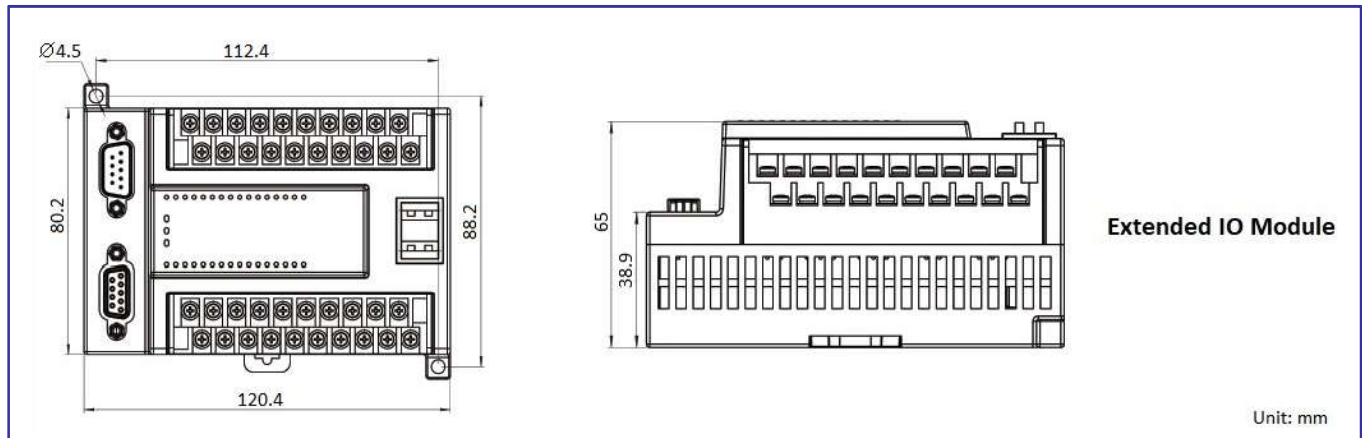
Model	Mounting Hole Size		Dimensions			
	A	B	H	H1	W	D
GTSD14-T4-K007X1	200	334	350	253.7	255	180
GTSD14-T4-K011X1						
GTSD14-T4-K015X1						
GTSD14-T4-K018X1	195	431	450	345.4	295	190
GTSD14-T4-K025X1						
GTSD14-T4-K035X1	180	548	570	469.8	300	300
GTSD14-T4-K045X1						



GTSD14-T4-K003X1 Series

Unit: mm

Dimension



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