VEICHI

VH-IV Series
Compact PLC

Official Website

Stock Code: 688698

About Us

Veichi Electric (Stock Code: 688698) is a leading high-tech enterprise specializing in R&D, production and sales of industrial automation products. Headquartered in Suzhou with R&D centers in Shenzhen and Xi'an and a subsidiary in India, we serve the global markets with competitive and reliable products and system solutions.
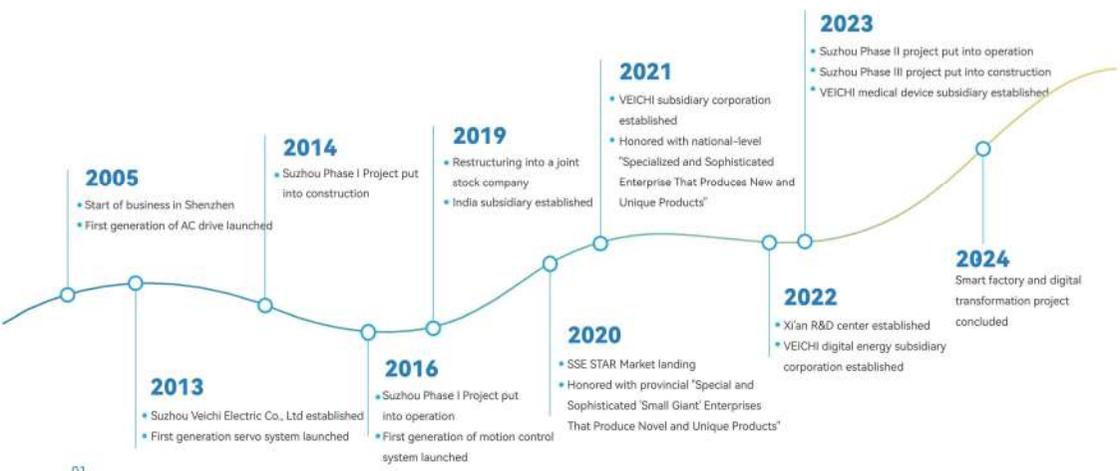
The comprehensive product portfolio - spanning AC drives, servo systems, control systems and digital energy solutions, covers all industrial automation layers—management, control, drive, and execution, which is transforming operations in heavy industries, advanced manufacturing, renewable energy, and medical equipment through smart, scenario-based implementations. Moreover, Veichi is also expanding into robotics, new energy and medical fields with innovative products like coreless motors, frameless motors, PV energy storage inverters and surgical power systems.

With 214 patents (including 56 invention patents) as of December 31, 2024, its core technological competencies encompasses: Advanced Motor Control-Comprehensive solutions including vector control, HF injection, auto-tuning, and high-speed flux-weakening control for both PMSMs and AMs, Next-Generation Power Electronics-Cutting-edge SiC applications and robust IGBT drive protection systems, Intelligent Operation-Innovative fly track technology for smooth motor startup and reliable V/F scalar control and Thermal Management-High-density water cooling layout solutions for optimal system performance.

These breakthroughs have garnered the company prestigious accreditations from national and provincial authorities, including: Third Batch National Specialized, Sophisticated, Distinctive and Innovative 'Little Giant' Enterprise, National High-Tech Enterprise, Jiangsu Provincial Engineering Technology Research Center, Jiangsu Provincial Enterprise Technology Center, and Jiangsu Industrial Internet Development Demonstration Enterprise (Benchmark Factory Category).

Moving forward, Veichi will uphold the mission of "market-driven innovation and technology-led development," and continue to redouble its commitment to core technology breakthroughs and product upgrades towards high-performance, high-quality, and high-reliability applications, fostering technological progress across the global electrical transmission and industrial control sectors.

Timeline

2005
- Start of business in Shenzhen
- First generation of AC drive launched

2013
- Suzhou Veichi Electric Co., Ltd established
- First generation servo system launched

2014
- Suzhou Phase I Project put into construction

2016
- Suzhou Phase I Project put into operation
- First generation of motion control system launched

2019
- Restructuring into a joint stock company
- India subsidiary established

2020
- SSE STAR Market landing
- Honored with provincial "Special and Sophisticated 'Small Giant' Enterprises That Produce Novel and Unique Products"

2021
- VEICHI subsidiary corporation established
- Honored with national-level "Specialized and Sophisticated Enterprise That Produces New and Unique Products"

2022
- Xi'an R&D center established
- VEICHI digital energy subsidiary corporation established

2023
- Suzhou Phase II project put into operation
- Suzhou Phase III project put into construction
- VEICHI medical device subsidiary established

2024
- Smart factory and digital transformation project concluded

Product Profile
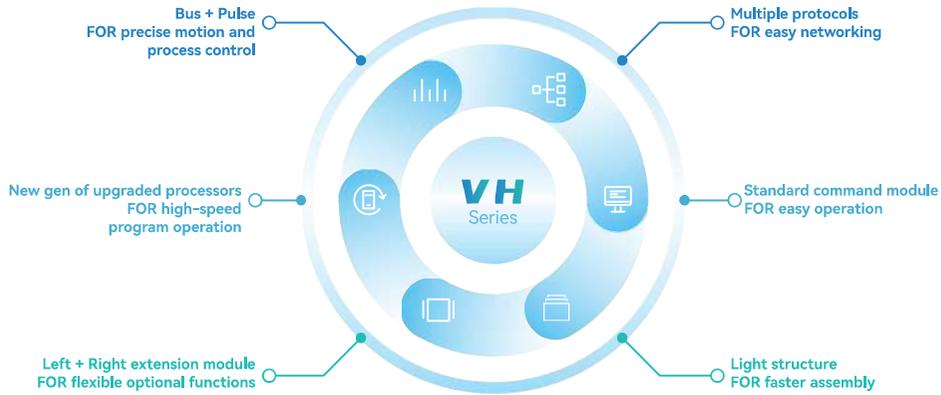
VH Series Compact PLC:

This lineup includes the VH100, VH200, VH300, VH500, VH600, and VH series remote modules, covering the applications from small to medium-sized automation control in multi-axis motion control, temperature and other analog control, as well as communication networking.

The slim footprint allows more expansion boards and modules to fit in the narrow space without compromise on performance.

A variety of industrial network communication protocols are integrated for easier data acquisition with other devices on site.

And the programming software is continuously updated with more functions and easy operation in line with the customer needs.

Product Orientation

VH600 P16-P19

VH500 P11-P15

VH300 P08-P10

VH200 P06-P07

VH100 P04-P05

System Performance →
- CODESYS-based medium controller
- EtherCAT type
- High*performance type
- General type
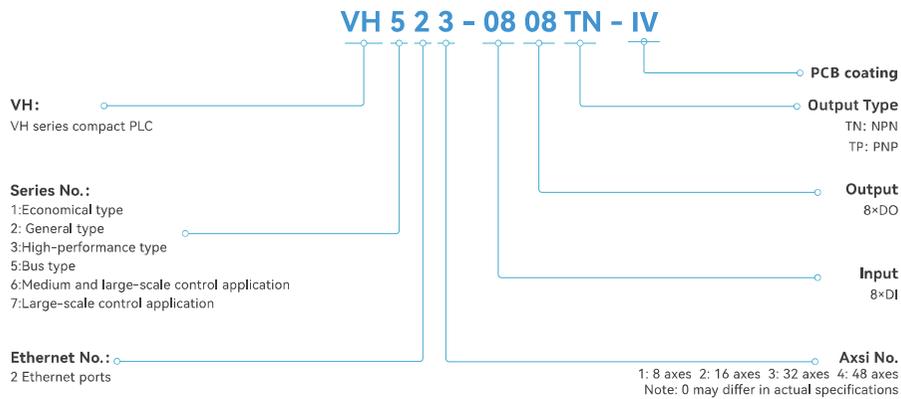- Economical type

Operative difficulty index →

Note: For details of expansion modules related to VH series products, please refer to P18-P29; for product installation dimensions, please refer to P32.
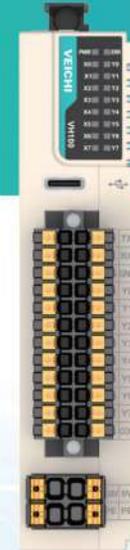
Product Features

Bus + Pulse
FOR precise motion and
process control

Multiple protocols
FOR easy networking

New gen of upgraded processors
FOR high-speed
program operation

VH
Series

Standard command module
FOR easy operation

Left + Right extension module
FOR flexible optional functions

Light structure
FOR faster assembly

VH100-0808TN-IV
Economical Type

- Stand-alone PLC
- Narrow scenario application
- Excellent price/performance ratio
- RS-232 and RS-485 communication
- 8×DI and 8×DO
- Small-scale automation application

Naming Rules

VH 5 2 3 - 08 08 TN - IV

VH:
VH series compact PLC

Series No.:
1:Economical type
2: General type
3:High-performance type
5:Bus type
6:Medium and large-scale control application
7:Large-scale control application

Ethernet No.:
2 Ethernet ports

PCB coating

Output Type
TN: NPN
TP: PNP

Output
8×DO

Input
8×DI

Axsi No.
1: 8 axes 2: 16 axes 3: 32 axes 4: 48 axes
Note: 0 may differ in actual specifications

Product Features

8 × HSC

2×high-spped counting(50kHz)
6×high-spped counting(10kHz)
Single/two-phase(Up/Down) and
AB phase(1x and 4x) counting

**Serial
Comm Port**

1×RS232 and 1×RS485
COM0 and COM1 respectively, up to 115.2K
COM0 for programming port and Modbus RTU slave
COM1 for Modbus RTU master and slave, FreePort and N:N
Built-in termination resistor selected by dip switch

3 × PTO

3×high-speed pulse train output(100kHz)
Positioning control command
group for easy start

USB Port

USB2.0
Common Type-C USB cable-compliant
Quicker firmware upgrade

**Slim
Structure**

24mm in the width for smaller footprint
Plug-in wiring for easy maintenance

Technical Specifications

Item		Specification
Communication	Interface	2×Asynchronous serial port: COM0 for RS232 and COM1 for RS485. 1×USB interface
	Baud rate	1.2kbps~115.2kbps
	Communication protocol	Modbus/FreePort/N:N
	USB	USB 2.0, Type-C for uploading/downloading/monitoring/firmware update
DI and DO Characteristics	Input type	Sourcing/sinking
	Rated voltage	DC24V，4mA
	Logic 1 [Voltage range]	> 15VDC
	Logic 0 [Voltage range]	< 5VDC
	Input filter	Digital filter to X0 ~ X7, up to user programs
	Max. leakage current	1mA
	Isolation	2kV capacitor
	High-speed counter	Single-phase: 2×50kHz; 6×10kHz Two-phase: 1×25kHz; 3×5kHz
	Max.pulse output(transistor)	3×100kHz high-speed pulse train output
Common Characteristics	Basic command time	0.2μs
	Program capacity	16k Bytes
	Real-time clock	NO
	Max extension module	NO
	Power-down save	FLASH for permanent save, 2k word elements max
	Power supply	DC24V
	Programming language	Proprietary software AutoStudio with LD, IL and SFC

VH200 Series
General Type

- Lightweight structure with flexible extensions
- I/O and analog extension modules available according to actual requirements
- Up to 16 right-side extension modules.
- EtherNET, RS-232, RS-485, and other communication compatibility
- Some models standard with built-in analog I/O for flexible configuration

Product Features

Flexible Extensions

Slim and compact design with optional right extensions
Analog/digital I/O control modules available for selection

Communication & Connectivity

Built-in 1 × EtherNet, 1 × RS232, and 1 × RS485 for basic communication needs

Built-in Analog I/O

1 × AD and 1 × DA for flexible configuration based on customer requirements

Ultra-Slim Design

24mm in thickness, ideal for space-constrained wiring scenarios
Plug-and-play terminal blocks for easy maintenance

Technical Specifications

Item		VH210-0808TN/P-IV	VH210-0808TN/P1-IV
Program capacity		32kBytes	
Data capacity		128 kBytes (user soft components) / 32 kBytes (power-off save)	
Local extension		16 right extension modules; left extension cards not supported	
Real-time clock		NO	
Programming language		Proprietary software Auto Studio with LD, FBD, SFC	
Ethernet		Modbus-TCP Master/Slave: Former with 6 slaves max; and latter for 4 masters max. TCP free protocol with 4 connections	
RS485	Terminal resistor	1×isolated RS485 port with terminal resistor; master(up to 31 Modbus-RTU slaves)/slave compatibility	
	Baud rate	1.2 kbps ~115.2 kbps	
	Communication protocol	Modbus/Free Port/N:N	
RS232		1×RS232 USB with baud rate: 1.2 kbps ~ 115.2 kbps	
USB		TYPE-C interface (USB 2.0 Full Speed) for program uploading/downloading, monitoring, and firmware upgrades	
High-speed I/O	Pulse input	2×50 kHz high-speed inputs; 6×10 kHz mid-speed input	
	Pulse output	4×100 kHz high-speed outputs	
Analog specifications	AD input range	NO	1×AI (0mA~20mA)
	AD input accuracy	NO	±1% (full scale, @25℃)
	DA output range	NO	1×AO (0mA~20mA)
	DA output accuracy	NO	±1% (full scale, @25℃)

VH300 Series
High-performance Type

- Slim modular design
- Strong performance with dual CPUs of 600M clock speed
- Improved arithmetic processing
- Multi-channel pulse control application
- 16×right extension modules addable
- 1×left extension board for more functions

Product Features

Flexible Extensions

Optional left and right extension boards or modules modules covering a variety of communication functions and analog/digital I/O control.

Various Comm Interface

1×RS-485 for CANopen and Modbus TCP master/slave
TYPE-C port for debugging and SD card for firmware upgrade
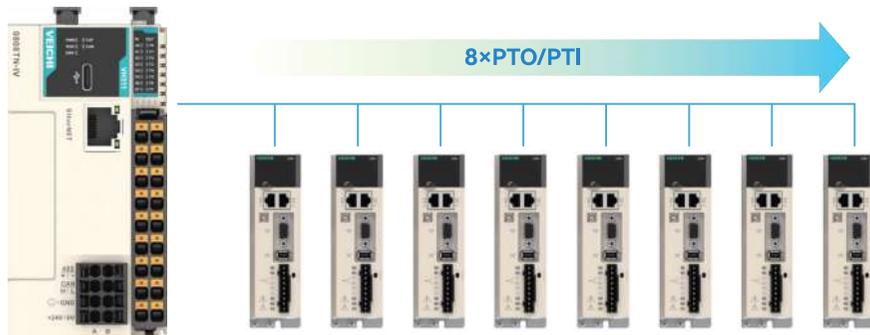
8×PTO/PTI

8×high-speed pulse train input and output
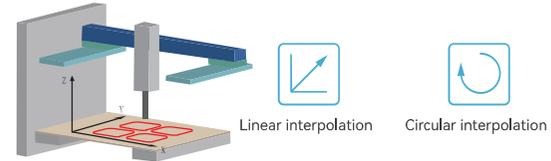Positioning control command group for easy start

Slim Structure

Vertical structure for smaller footprint
Quick release terminals for faster maintenance
Direct wiring with push-in terminals for tool-free installation

Multiple Motion Control Channels

8×PTO/PTI

Various Motion Control Modes

Single-axis	Speed control	Position control	Home	Torque control
Multiple-axis	**Electronic gear** Speed sync	**Electronic cam** Position sync	**Interpolation** Multiple-axis interpolation	
Others	**Rotary cut** Easy command for easy operation	**Probe** High speed and high precision capture		

Linear and Circular Interpolation

Linear interpolation   Circular interpolation

2-axis linear and circular interpolation corresponds to the 2-axis XY platform control to realize the accurate positioning of the slide.

Electronic Gear and Cam
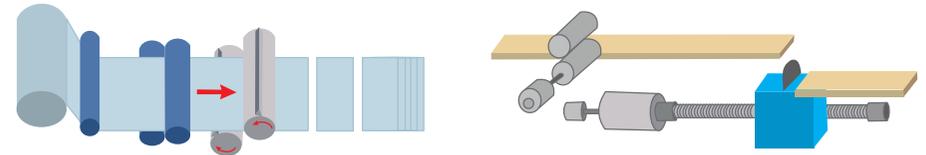
Flying Shear: By tracking the progress of the material and setting the cutting length, it can automatically plan the movement trajectory to cut the material at fixed length.

Chasing Shear: Set the starting point and length of the sync zone to determine the allowable travel range of the chasing shear axis and the starting point and end point of the round-trip movement, and plan the cam trajectory curve to realize sync cutting.

Technical Specifications

Item		VH301-0808TN/P-IV	VH311-0808TN/P-IV
Power supply		DC24V	
Program capacity		200K Bytes	
Power-down save		128K bytes for user soft components, about 84k bytes for power-down save 1M bytes for user-defined variables, about 128k bytes for power-down save	
Programming language		Proprietary software AutoStudio with LD, IL and SFC	
Right extension No.		16 modules expandable on the right	
Real-time clock		No real-time clock, expandable on the left	
Left extension		1 board	
SD card		For firmware upgrade	
USB		USB 2.0, Type-C for uploading/downloading/monitoring/firmware update	
I/O	Input	8×high-speed pulse train output(200kHz) for single/two-phase(Up/Down) and AB phase (1x and 4x) counting	
	Output	8×high-speed pulse train output(100kHz), and positioning control command group supported	
Serial Port RS-485	Baud rate	1.2kbps~115.2kbps	
	Comm protocol	1×built-in and 2 more expandable on the left for Modbus/FreePort/N:N	
	Termination resistor	Built-in, master or slave application, 31 Modbus-RTU slaves max.	
CAN		NO	CANopen master with up to 31 slaves
EtherNET		NO	Modbus TCP master/slave for uploading/downloading and monitoring.16 slaves and 4 masters max at the same time.TCP free protocol for 4 connections
Motion control		Positioning control command group, linear and circular interpolation, electronic gear, and electronic cam	

VH500 Series

EtherCAT Type

- Slim modular design
- 16×right extension modules and 1× left extension board
- EtherCAT bus control and dual-port network switching
- Process encapsulation and re-application through FB/FC functions
- Multi-level network communication through RS485, Ethernet, CAN and EtherCAT interfaces

Product Features

1G CPU

Substantial increase in command processing speed over previous products for high speed and high precision motion control and stable process control

Bus + Pulse Motion Control

Up to 48 real axes for EtherCAT bus motion control, 64 real and virtual axes in total
8×high-speed pulse input and output(200kHz)

Multi-level Network

1×RS 485 on the product for CANopen communication, 72 EtherCAT slaves max.
Dual Ethernet ports for easy networking over levels

Self-developed Programming Soft

ST in programming to write complex algorithms and logic
Offline debugging and online modification functions to reduce on-site debugging time
Function block encapsulation to quick apply the process algorithms

48-Axis EtherCAT

48-axis high-speed bus control with sync movement for complex production. Fast and precise control for higher end-user benefits.

Simple wiring for lower design and labor cost and quicker maintenance.

EtherNet/USB/COM

SD700 Servo System

48 Axes Max

Programming Software

Jerk ACC and DEC
Jerk value regulation for smoother ACC/DEC curve and less mechanical shock
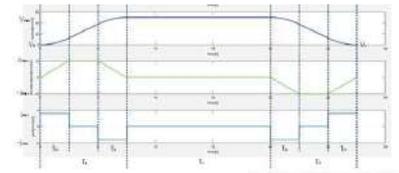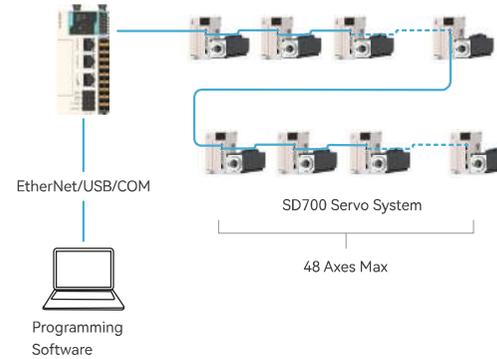
x-coordinat: Time
1st Y-coordinate: Speed
2nd Y-coordinate: Acceleration
3rd Y-coordinate: Acceleration change rate

- Change rate of ACC/DEC speed obtained directly from the ACC/DEC time without calculation
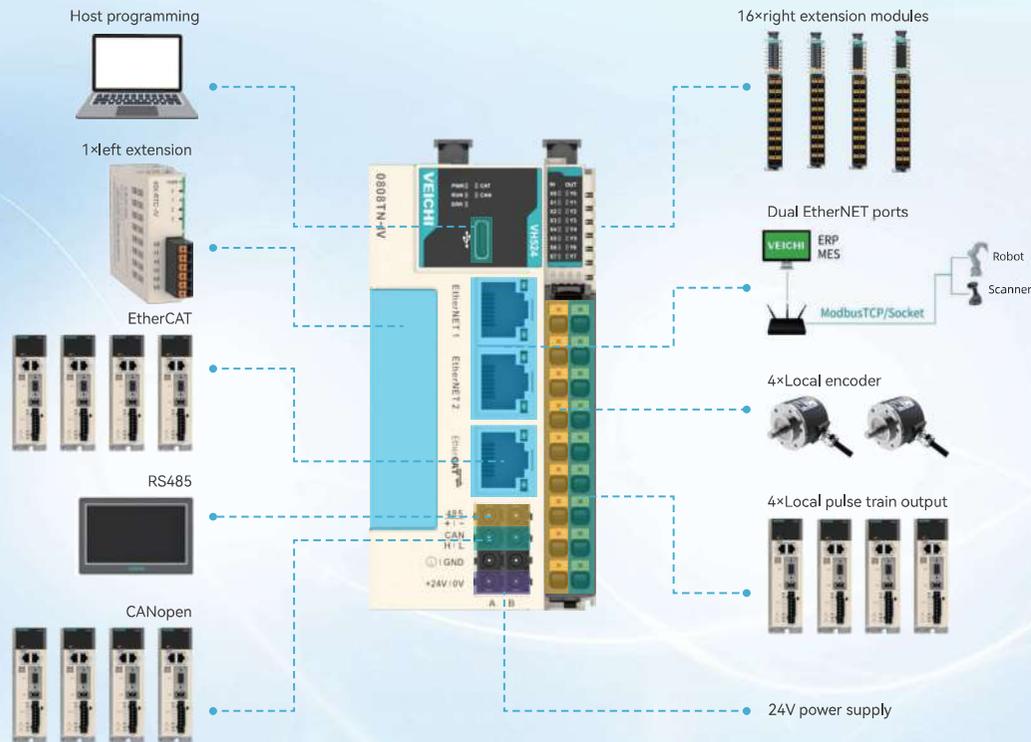- Change rate visualized in the smoothness of the ACC/DEC curves

Real/visual axes	Max real axis EtherCAT buses	Max EtherCAT slaves
64	**48**	**72**

Advanced industrial Ethernet and distributed master/slave

Easy installation for faster information transfer cycle and faster communication and sync

Communication cycle	Sync accuracy	High-speed I/O
250μs	**±80**ns	**8×200**kHz

Linear arc interpolation, cams and other modes available

- Motion network bus EtherCAT with communication cycle as fast as 250μs.
- Multi-axis commands such as e-gear and e-cam.
- Single-axis motion commands such as position, speed, and home.
- Main axis for encoder or virtual axis, real axis, external input, etc.
- Servo probe, high-speed counter probe, encoder probe available
- Phase compensation, motion superposition, etc.

Host programming

16×right extension modules

1×left extension

EtherCAT

RS485

CANopen

Dual EtherNET ports

ERP
MES

ModbusTCP/Socket

Robot

Scanner

4×Local encoder

4×Local pulse train output

24V power supply

Multi-level Network
One-stop Control

Technical Specifications

Item		VH511-0808TN/P-IV	VH522-0808TN/P-IV	VH523-0808TN/P-IV	VH524-0808TN/P-IV
Power supply		DC24V			
Program capacity		200K Bytes			
Power-down save		128K bytes for user soft components, about 84K bytes for power-down save 1M bytes for user-defined variables, about 128K bytes for power-down save			
Programming language		Proprietary software AutoStudio with LD, IL and SFC			
Right extension No.		16			
Real-time clock		No real-time clock, expandable on the left extension			
Left extension		1 board			
SD card		For firmware upgrade			
USB		USB 2.0, Type-C for uploading/downloading/monitoring/firmware update			
I/O	Input	8	8×high-speed pulse train output(200kHZ) for single/two-phase(Up/Down) and AB phase(1x and 4x) counting		
	Output	8	8×high-speed pulse train output(100kHZ), and positioning control command group supported		
Serial Port RS-485	Comm port		1×built-in and 2 more expandable on the left for Modbus/FreePort/N:N		
	Termination resistor		Built-in. PLC for master/slave application，31 Modbus-RTU slaves max.		
CAN		NO	CANopen master with up to 31 slaves		
EtherNET	Port No.	1	2×Ethernet ports with shared network board and IP address, network switching supported		
	Protocol		Modbus TCP master/slave for uploading/downloading and monitoring.16 slaves and 4 masters max at the same time. TCP free protocol for 4 connections		
Motion control		Positioning control command group, linear and circular interpolation, electronic gear, and electronic cam			
EtherCAT	Axis No.	8	16	32	48
	Slave No.		72 slaves max(including servo axes), real and visual axes 48 in total		
	Axis performance		Communication cycle in 250μs~8ms		

Programming Software

Self-developed Programming Software
AUTO STUDIO
Upgrade Non-stop

Oscilloscope

ST Language

Network Configuration

FB Function Block

Customized Function Block

Offline Simulation

VH600 Series
CODESYS-based Medium Controller

This is the first medium-sized PLC independently developed by VEICHI. Based on years of experience in the industrial control development and analysis of actual situations from various cases, this robust medium controller comes out specifically for high-end equipment and factory automation.

It provides users with ultra-high-speed computing and processing, excellent system performance, and a range of integrated functions. So, it is ideal for large-scale automation control of different processes, production lines and the whole factories.

Product Features

Standard Development Platform

Full conformity to IEC61131-3 and PLCopen specification.
Diversified programming languages (LD, FBD, ST, SFC, CFC)
Customized function library encapsulation
Integrated with rich motion control libraries, mathematical models, etc. for rapid development

Multi-level Network

2×EtherNet (shared IP, built-in switch) 2×EtherCAT for up to 128 slaves.
Sync cycle for 8 axes in 1ms, 16 axes in 2ms
EtherNet/IP(master/salve)
ModbusTCP(master/salve)
3×RS485, each for 50 slaves、16×OPCUA client connection
CANopen communication for 31 slaves
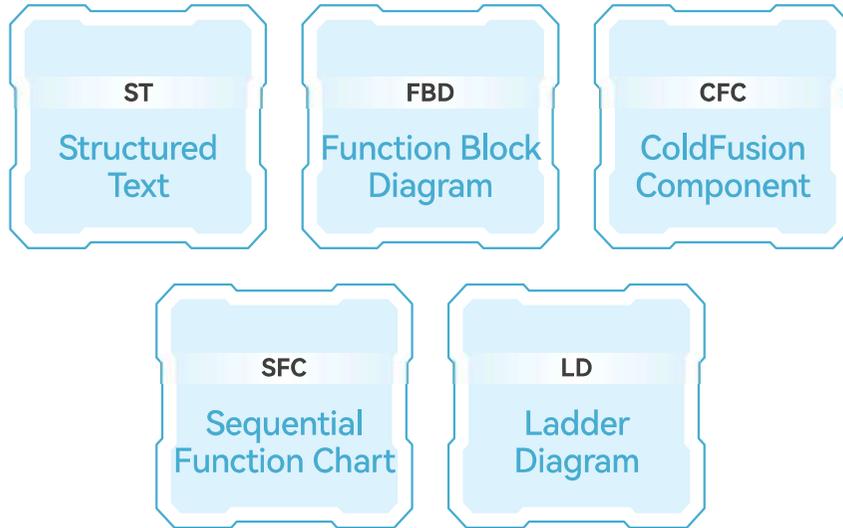
Modular Free Configuration

16 modules expandable on the right
Analog I/O, digital I/O, RS485, RCT clock optional on the left
SD card for upgrade

Fast and Precise Motion Control

8×high-speed counting input(200K) and 8×high-speed pulse output(200K)
Complex control functions such as single-axis/multi-axis movement, interpolation, electronic cams and electronic gears, G-code, robots, etc.

Standard Programming

- CODESYS-based programming in full conformity to IEC61131-3
- Diversified programming languages of ST, FBD, CFC, SFC and LD

ST
Structured Text

FBD
Function Block Diagram

CFC
ColdFusion Component

SFC
Sequential Function Chart

LD
Ladder Diagram

Convenient Programming

- Online program modification, breakpoint tuning, and single-step cycle for enhanced efficiency
- Perfect error diagnosis function with TRACE function to monitor the movement track and locate locate the fault
- Powerful project management covering multi-task and multi-device download to deal with large-scale projects
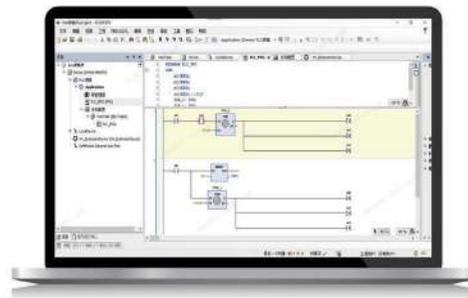
Motion Control

- Multi-core processors assignment, Multicore 4 Cores supported
- Faster command processing and response, 8-axis sync cycle under bus control as fast as in 1ms.
- Single/multi-axis commands such as e-gear and e-cam Linear, circular, and axis combination interpolation
- Robot motion control, customized motion models, visualization functions, OPC UA functions, etc. available for complex and diverse scenarios

CNC G-code
Customized motion models
Robot kinematics
Visualization functions
OPC UA Function
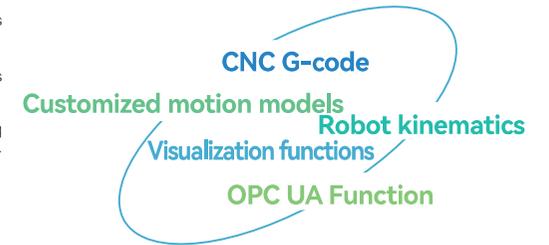
Rich Motion Library

- Motion control libraries in conformity to PLCopen specifications
- User-defined encapsulation of function libraries and function blocks available
- Motion control libraries, robot libraries, customized kinematics and mathematical models integrated

Cam Command Relative Position Command Gear Command

Superimpose Command

Extensive Standard Industrial Network
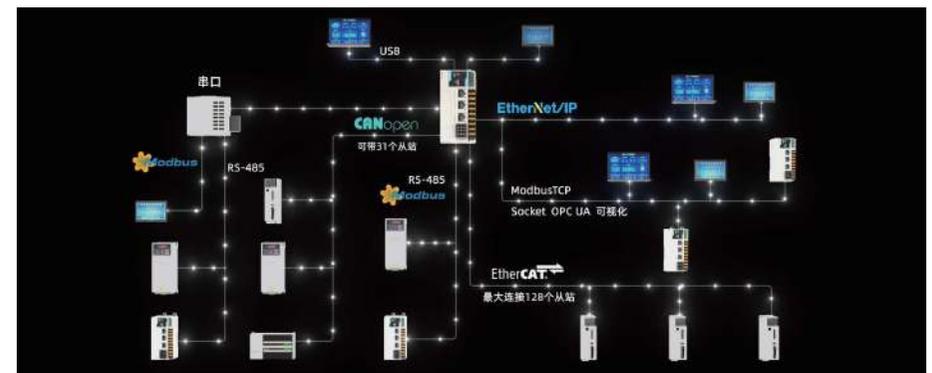
VH600-0808TN-IV Specifications

Item	Specification			
Model	VH600-0808TN/P-IV	VH601-0808TN/P-IV	VH602-0808TN/P-IV	VH603-0808TN/P-IV
Axis No.	128 axes max	8	16	32
Rated voltage	DC24V			
RS485	1×RS485			
CAN	CANopen master with up to 31 slaves			
EtherNet	2×EtherNet(built-in switch) for ModbusTCP, and program upload/download			
EtherCAT	128 EtherCAT slaves max. (including servo axes)			
High speed input	8×200K			
High speed output	8×200K, sourcing/sinking for option			
Left extension	2×RS485 expandable			
Right extension	16 max.			
SD card	1×32G SD card			
Data capacity	10MB for programs, and 512kb for power-down save (Flash),20MB for data			
Language	LD, FBD, IL, ST, SFC, CFC in conformity to IEC 61131-3 Programming Language			
Motion control	Linear and circular interpolation, electronic gear, and electronic cam			

VTC Series
Temperature Controller

- A new-generation multi-channel high-precision temperature control product
- 8×high-speed, high-accuracy sampling and multi-loop PID regulation
- Suitable for various temperature control applications
- Compatible with thermocouples and RTDs for high measurement accuracy
- Integrated multi-channel digital output with rich functionality for user convenience

Product Features

Dedicated Debugging Software

Proprietary self-developed PC software for easy user configuration

Multi-channel Temperature Control

Integrated multi-channel temperature control with centralized data management in the PC software
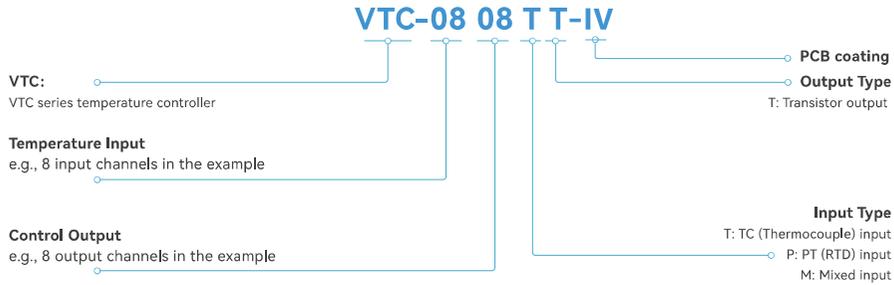
Convenient Communication

Supports RS485 and USB communication, enabling seamless data exchange between the temperature controller and other devices or PC software

Precision Control

Auto-tuning and multi-segment temperature setting functions ensure high-precision temperature control

Naming Rules

VTC-08 08 T T-IV

VTC:
VTC series temperature controller

Temperature Input
e.g., 8 input channels in the example

Control Output
e.g., 8 output channels in the example

PCB coating

Output Type
T: Transistor output

Input Type
T: TC (Thermocouple) input
P: PT (RTD) input
M: Mixed input

Specifications

Item		VTC-0408MT-IV	VTC-0808TT-IV
AI	Thermocouple	K , J , E , N , T , R , S , B	
	RTD	PT100 , PT1000 , Cu100 , JPt100 , Cu50 , Ni120	NO
DO	Output type	8×NPN, loop supply voltage: 5V~24V; loop current: 0.3A/24VDC	
	Response time	<0.5ms	
Sampling cycle		Depends on valid input and control channels, min. 60ms, max. 400ms	
Control cycle		Depends on control object, min. 100ms	
Control mode		PID control, ON/OFF control, manual control	
Temperature measurement range		–200℃~1800℃	
Rated temperature range	K-type	–120℃ ~ 1360℃	
	J-type	–90℃ ~ 1190℃	
	E-type	–70℃ ~ 990℃	
	N-type	–200℃ ~ 1290℃	
	T-type	–140℃ ~ 390℃	
	R-type	–40℃ ~ 1750℃	
	S-type	–40℃ ~ 1750℃	
	B-type	60℃ ~ 1800℃	
	Pt100	–190℃ ~ 650℃	NO
	JPT100	–190℃ ~ 650℃	NO
	PT1000	–190℃ ~ 300℃	NO
	Cu100	–40℃ ~ 140℃	NO
	Cu50	–40℃ ~ 140℃	NO
	Ni120	–60℃ ~ 290℃	NO
	Thermocouple	±0.3% of full scale, ambient temperature compensation error ≤2℃	
	RTD	±0.5% of input range	NO
Isolation		Isolation between sampling channels and power supply and between sampling channels and outputs	
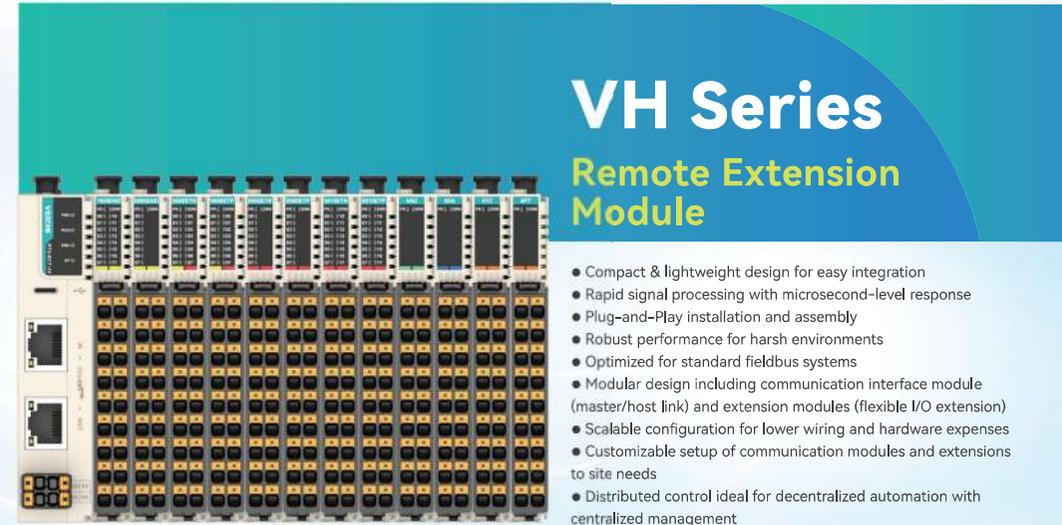
VH Series
Remote Extension Module

● Compact & lightweight design for easy integration
● Rapid signal processing with microsecond-level response
● Plug-and-Play installation and assembly
● Robust performance for harsh environments
● Optimized for standard fieldbus systems
● Modular design including communication interface module (master/host link) and extension modules (flexible I/O extension)
● Scalable configuration for lower wiring and hardware expenses
● Customizable setup of communication modules and extensions to site needs
● Distributed control ideal for decentralized automation with centralized management

Free Configuration

Stable Performance

Easy operation

Product Features

16×modules max.

New generation of bus speeds up to **100Mbps**

Cabinet space reduced by **2/3**

D-BUS design
Metal plate fitted on both sides for higher reliablity

VH-RTU-ECT-IV
(EtherCAT Master Communication)

Item	Specification
Extension No.	16 in total, including IO and special modules
Backplane bus	VBUS, VEICHI-defined
Backplane speed	100M
Transfer cycle	125 μs min.
Backplane bus compatibility	Remote modules compatible with local module communication protocols
Backplane communication	Daisy-chain fast-forwarding mode
EtherCAT port	IN: EtherCAT input OUT: EtherCAT output for EtherCAT slaves
Rated input voltage	24V DC（20.4V DC~ 28.8V DC)
Rated input current	0.6A (typical at 24V)
Power output derating	Derate 85% at 55℃
Isolation	24V not isolated from DO/DI, while DO/DI isolated from AO/AI
Power protection	Overcurrent protection, anti-reverse connection protection, and surge absorption
Input PDO No.	1024 bytes max.
Output PDO No.	1024 bytes max.
Input mailbox	256 bytes max.
Output mailbox	256 bytes max.
IO mapping	Three IO mapping methods: bit access, byte access, and word access
Stop output mode	Output according to fault stop mode and preset value, no more refresh

VH-RTU-PN-IV
(PROFINET Master Communication)

Item	Specification
Communication mode	RT mode
Min.transfer cycle	1ms
I&M data	I&M0~I&M3
PROFINET version	V2.3
Extension No.	16 modules max.
PROFINET port	2
PROFINET switch	Networking supported
Physical layer	100BASE-TX
Traffic rate	100 Mbit/s（PROFINET)
Communication	Full duplex
Topology	Line, star, and tree type
Transmission medium	Cat5e and above
Transmission distance	<100m between two nodes
Prioritized startup	YES
Port disable	YES
Reconfiguration after replacent	NO(PN module of the same kind)
Factory reset	YES
Extension factory reset	NO
Firmware upgrade	YES

VH-RTU-DP-IV
(PROFIBUS DP Master Communication)

Item	Specification
Physical layer	RS485
Communication rate	12 Mbit/s (PROFIBUS)
Communication mode	Half-duplex
Topology	Daisy-chain
Transmission medium	Shielded twisted pair
Transmission distance	< 100m between two nodes
Extension capacity	Up to 16 in total, including I/O modules and certain special modules
Backplane bus	VBUS (VHICHI-defined)
Backplane speed	100M
Backplane bus compatibility	Remote modules and local modules communication protocols compatible
Backplane communication mode	Daisy-chain fast-forwarding mode
PROFIBUS interface	DB9
I/O mapping	Bit access, byte access, and word access (three I/O mapping modes)

VH Series
Right Extension Module

- VH200, VH300, VH500, VH600 and VH series communication module compatibility
- 16×right extension modules addable for all
- New generation of bus speed up to 100Mbps

Product Features

Status diagnostics indicators for quick checks
Colored plates for quick I/O function checks
Clearly codes on wiring

D-BUS connectors
Corrosion-resistant connector materials
Better stability than SMD design

Removable terminals
Convenient terminals for module replacement without rewiring

Large terminal diameter for higher cable compatibility
Push-in terminals for higher wiring efficiency

DI Module Specifications

Item	Specification
Input method	Sourcing/sinking selectable via "S/S" terminal (except the Input/output hybrid module)
Isolation	Comes with the module
Input voltage	24V DC
Input current	4mA(Typical)
Input impedance	6k(reference)
ON voltage	>15V DC
OFF voltage	<5V DC
Response time	1ms
Software filter time	(0~255) *0.25μs
Operating temperature	-20℃~55℃
Bus power rated current	100mA (Typical at 5V DC)
Module hot swap	NO

Model	Specification
VH-1600END-IV	16×DI module
VH-0800END-IV	8×DI module
VH-0808ETN-IV	8×DI module, sinking 8×NPN DO module
VH-0808ETP-IV	8×DI module, sourcing 8×PNP DO module

DO Module Specifications

Item	Specification
Output mode	Sourcing or sinking for different models
Isolation	Optocoupler-isolated
Output voltage	24V DC
Output load (Resistance)	0.5A/terminal, 2A/module
Output load (Inductance)	7.2W/terminal,12W/module
Output load (Lamp)	5W/terminal, 9W/module
Response time	100μs
Indicator	Indicator lights up when the optocoupler works
Leakage current under open circuit	<0.1Ma/30V DC
Min. load	5mA （5V ~ 24Vdc)
Protections	Short circuit protection
Operating temperature	-20℃~55℃
Bus power rated current	100mA (Typical at 5V DC)
Module hot swap	NO

Model	Specification
VH-0016ETN-IV	16×NPN DO
VH-0016ETP-IV	16×PNP DO
VH-0008ETN-IV	8×NPN DO
VH-0008ETP-IV	8×PNP DO
VH-0808ETN-IV	8×DI module, sinking 8×NPN DO module
VH-0808ETP-IV	8×DI module, sourcing 8×PNP DO module

VH-4AD-IV Module Specifications

Item	Specification
Input type	AI
Isolation	Capacitor isolation between analog and digital circuits Internal isolation between analog circuit and module 24V DC power No isolation between analog channels
Input method	Voltage/current
Input channel	4
Resolution	16-bit
Switching time	60μs/channel
Voltage range	±10V, 0V~10VV, ±5V, 0V~5V, 1V~5V
Voltage impedance	1MΩ
Voltage accuracy (25℃)	±0.1% (full-scale)
Voltage limit	±12V
Voltage diagnosis	No disconnection detection
Current range	±20mA, 0mA~20mA, 4mA~20mA
Current sampling impedance	250Ω
Current accuracy (25℃)	±0.1%(full-scale)
Voltage limit	±30mA for instantaneous range, ±24mA avg.
Current diagnosis	Disconnection detection on under 4mA~20mA
Operating temperature	-20℃~55℃
Bus power rated current	120mA (Typical at 5V DC)
Module hot swap	NO

VH-4DA-IV Module Specifications

Item	Specification
Output type	AO
Isolation	Communication between analog and digital circuits isolated by capacitors Internal isolation between analog circuit and module 24V DC power No isolation between analog channels
Output method	Voltage/current
Output channel	4
Resolution	12-bit
Switching time	250μs/channel
Voltage range	±10V, 0V~10V, ±5V, 0V~5V, 1V~5V
Voltage impedance	1KΩ
Voltage accuracy (25℃)	±1% (full-scale)
Voltage diagnosis	No short circuit detection
Current range	0mA~20mA, 4mA~20mA
Current sampling impedance	0Ω~600Ω
Current accuracy (25℃)	±1% (full-scale)
Current diagnosis	No open circuit detection
Bus power rated current	80mA (Typical at 5V DC)
Module hot swap	NO

VH-4PT-IV Module Specifications

Item	Specification			
	Celsius (℃)		Fahrenheit (℉)	
Input signal	PT100, PT500, PT1000, Cu50, Cu100, KTY84, NTC5K, NTC10K, 4 chanels in total			
Resolution	24-bit			
Slew rate	(15±2%) ms × 4 channels (unused channels not converted)			
Rated temperature	PT100/500/1000	−150.0℃ ~ 600.0℃	PT100/500/1000	−238.0℉ ~ 1112.0℉
	Cu100/Cu50	−30℃ ~ 120℃	Cu100/Cu50	−22℉ ~ 248℉
	KTY84	0.0℃ ~ 200.0℃	KTY84	32.0℉ ~ 392.0℉
	NTC5K/10K	−30.0℃/−25℃ ~ +200.0℃	NTC5K/10K	−22.0℉/−13℉ ~ 392.0℉
Sensitivity	0.1℃		0.1℉	
Accuracy (25℃)	Full scale*±0.1%			
Accuracy (−20℃~+55℃)	Full scale*±0.3%			
Isolation	Communication between analog and digital circuits isolated by capacitors Internal isolation between analog circuit and module 24V DC power ; No isolation between analog channels			
Bus power rated voltage	5V DC (4.75V~5.25V DC)			
Bus power rated current	120mA (Typical at 5V DC)			
Module hot swap	NO			

VH-2WT-IV Module Specifications

Item	Specification
Channel No.	2
Isolation	Unified Isolation (No isolation between channels)
Resolution	24-bit
Digital range	32-bit
Conversion speed	150 SPS, 300 SPS, 450 SPS (Configurable per channel)
Bridge measurement (Rated)	±39mV
Reference measurement (Rated)	5V
Sensor sensitivity	0V/V~6mV/V
Load capacity	40 Ω~4010 Ω
Calibration method	Manual calibration, copy calibration parameters
Hardware filter	Low-pass filter (below 10 kHz)
Software filter	Power frequency filter, moving average filter
Weighing accuracy	0.01%

VH-4TC-IV Module Specifications

Item	Specification		
	Celsius (°C)		Fahrenheit (°F)
I/O occupancy	No		
Input signal	Thermocouples: Types K, J, E, B, N, T, R, S for channels, 4 channels in total		
Resolution	24-bit		
Slew rate	(240±2%)ms × 4 channels (unused channels not converted)		
Compensation method	Cold junction compensation		
Rated temperature	Type K	—100℃ ~ 1200℃	Type K	—148°F ~ 2192°F
	Type J	—100℃ ~ 1000℃	Type J	—148°F ~ 1832°F
	Type E	-100.0℃ ~ 1000℃	Type E	—148°F ~ 1832°F
	Type B	200℃ ~ 1800℃	Type B	392°F ~ 3272.°F
	Type N	—100℃ ~ 1200℃	Type N	—148°F ~ 2192°F
	Type T	—200℃ ~ 400℃	Type T	—328°F ~ 752°F
	Type R	0℃ ~ 1600℃	Type R	32°F ~ 2912°F
	Type S	0℃ ~ 1600℃	Type S	32°F ~ 2912°F
Sensitivity	0.1℃		0.1°F
Accuracy (25℃)	(±0.1%) (±100mV full scale) + cold junction compensation error		
Accuracy (-20℃~+55℃)	(±0.3%) (±100mV full scale) + cold junction compensation error		
Isolation	Communication between analog and digital circuits isolated by capacitors DC/DC isolation between the analog circuit power supply and the 24Vdc power supply		
Bus power rated voltage	5V DC (4.75V~5.25V DC)		
Bus power rated current	120mA (Typical at 5V DC)		
Module hot swap	NO		

Note: With appropriate mode settings, both °C and °F data can be obtained.

VH Series
Left Extension Module

VH300, VH500, VH600 Series
One expansion board to the left for all

VH-RS485(-RTC)-IV

Item		Specification
RS485	Channel No.	2
	Isolation	YES
	Termination resistor	Controlled by a dip switch, connected by default
	Slave No.	Up to 31 slaves (VH600 for 50 slaves), the distance between each slave <3m.
	Baud rate	9.6 kbit/s, 19.2 kbit/s, 38.4 kbit/s, 57.6 kbit/s, 115.2 kbit/s
	Distance	<100m for 115.2kbit/s <1000m for 19.2kbit/s

VH-2AD1DA-V/I-（RTC)-IV

| Item	Input	Output
Channel No.	2	1
Voltage range	0V ~ 10V	
Current range	0mA ~ 20mA	
Voltage input impedance/output load	> 200kΩ	> 2kΩ
Current sampling impedance/output load	250Ω	<500Ω
Slew rate	2ms/channel	
Input accuracy (25℃)	Voltage ±1%, current ±1% (full-scale)	±1% (full-scale)
Input accuracy (full temperature scale)	Voltage ±3%, current ±3% (full-scale)	±5% (full-scale)
Resolution	12bit	
Digital Output	0 ~ 10000	

VH-4DI-(RTC)-IV

Item		Specification
Input type		DI
Input channel		4
Input method		Sourcing and sinking
Input voltage level		24V DC±10%（21.6V~26.4V DC）
Common input	Current when input ON	> 2.5mA
	Current when input OFF	< 1mA
	Response time	≈10ms(RC filter time)
	Input impedance	6kΩ
ON voltage		≥15V DC
OFF voltage		≤5V DC
Software filter time		NO
Isolation		Optocoupler isolated
Public terminal		One public terminal shared by 4 inputs (Input power supply polarity +/- changeable)
Input display		Indicator ON during input (controlled by hardware)

VH-4DO-TN-(RTC)-IV

Item		Specification
Output type		Digital transistor low side output
Output channel		4
Voltage level		24V DC (21.6V DC~26.4V DC)
Common output	Output load (Resistance)	0.5A/terminal, 1A/Public terminal
	Output load (Inductance)	6W/24V DC
	Output load (Lamp)	1W/24V DC
	Hardware response time ON/ OFF	≤100μs （OFF→ON and ON→OFF）
	Load current	≥5mA
	Max. output frequency	Resistance load 100Hz, inductance load 0.5Hz, lamp load 10Hz
OFF leakage current		<50μA
Max. ON residual voltage		<0.5V DC
Isolation		Optocoupler isolated
Public terminal		One public terminal shared by 4 inputs(Output power -)
Surge suppressor		Zener diode
Short circuit protection		NO
Output display		Indicator ON during output (controlled by hardware)
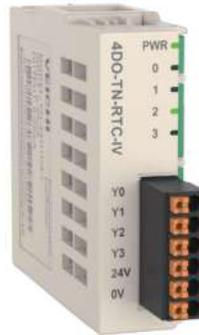
VH-RTC-IV

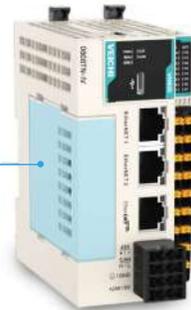| Item	Specification
Communication	I²C
Clock accuracy	120 seconds/month
Clock format	Year-Month-Day Hour-Minute-Second
Battery	CR2354-corded coin cell battery, 5 years life, replaceable

VH Series Main Module Models

Type	Model	Input	Output	Type-C	Serial Port	CANopen	Ethernet	EtherCAT
General Medium-sized PLC	VH600-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	128 axes max.
	VH600-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	128 axes max.
	VH601-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	8 axes max.
	VH601-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	8 axes max.
	VH602-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	16 axes max.
	VH602-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	16 axes max.
	VH603-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	32 axes max.
	VH603-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	32 axes max.
Motion Control PLC	VH524-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	48 axes max.
	VH524-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	48 axes max.
	VH523-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	32 axes max.
	VH523-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	32 axes max.
	VH522-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	16 axes max.
	VH522-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	Master	Dual	16 axes max.
	VH511-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	NO	Single	8 axes max.
	VH511-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	NO	Single	8 axes max.
High-performance PLC	VH311-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	Master	Single	NO
	VH311-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	Master	Single	NO
	VH301-0808TN-IV	8×200kHz	8×NPN(200kHz)	Program download	1×RS485, expandable on left	NO	NO	NO
	VH301-0808TP-IV	8×200kHz	8×PNP(200kHz)	Program download	1×RS485, expandable on left	NO	NO	NO
General PLC	VH210-0808TN1-IV	2×50kHz, 6×Medium-speed,1×AD	4×NPN(100kHz),1×DA	Program download	1×RS485，1×RS232	NO	Single	NO
	VH210-0808TP1-IV	2×50kHz, 6×Medium-speed,1×AD	4×NPN(100kHz),1×DA	Program download	1×RS485，1×RS232	NO	Single	NO
	VH210-0808TN-IV	2×50kHz, 6×Medium-speed	4×NPN(100kHz)	Program download	1×RS485，1×RS232	NO	Single	NO
	VH210-0808TP-IV	2×50kHz, 6×Medium-speed	4×PNP(100kHz)	Program download	1×RS485，1×RS232	NO	Single	NO
Ecnomical PLC	VH100-0808TN-IV	2×50kHz, 6×Medium-speed	3×NPN(100kHz)	Program download	1×RS485，1×RS232	NO	NO	NO
	VH100-0808TP-IV	2×50kHz, 6×Medium-speed	3×PNP(100kHz)	Program download	1×RS485，1×RS232	NO	NO	NO
Temperature Controller	VTC-0408MT-IV	4×PT/TC	8×NPN	Program download	1×RS485	NO	NO	NO
	VTC-0808TT-IV	8×TC	8×NPN	Program download	1×RS485	NO	NO	NO
Remote Communication	VH-RTU-ECT-IV	EtherCAT remote communication interface modules		Message reading	NO	NO	NO	Slave
	VH-RTU-PN-IV	PROFINET remote communication interface modules		Message reading	NO	NO	NO	NO
	VH-RTU-DP-IV	Profibus DP remote communication interface modules		Message reading	NO	NO	NO	NO

Left Extension Models

| Model	Specification
VH-RS485-1-IV	1×RS485
VH-RS485-IV	2×RS485
VH-RS485-RTC-1-IV	1×RS485 + Real-Time Clock (RTC)
VH-RS485-RTC-IV	2×RS485 + Real-Time Clock (RTC)
VH-ADI-IV	4×DI
VH-ADI-RTC-IV	4×DI + Real-Time Clock (RTC)
VH-ADO-TN-RTC-IV	4×Sinking Digital Output + Real-Time Clock (RTC)
VH-2AD1DA-I-IV	2×AI, 1×AO(Current Type)
VH-2AD1DA-I-RTC-IV	2×AI, 1×AO (Current Type) + RTC
VH-2AD1DA-V-IV	2×AI, 1×AO (Voltage Type)
VH-2AD1DA-V-RTC-IV	2×AI, 1×AO (Voltage Type) + RTC
VH-RTC-IV	Real-Time Clock Extenion Board

Right Extension Models

| Model	Specification
VH-1600END-IV	16×DI
VH-0800END-IV	8×DI
VH-0016ETN-IV	16×NPN DO
VH-0016ETP-IV	16×PNP DO
VH-0808ETN-IV	8×DI+ 8×NPN DO
VH-0808ETP-IV	8×DI+ 8×PNP DO
VH-0008ETN-IV	8×NPN DO
VH-0008ETP-IV	8×PNP DO
VH-4AD-IV	4×AI
VH-4DA-IV	4×AO
VH-4DA2-IV	4×AO (0.1% Accuracy)
VH-4PT-IV	4×RTD (Resistance Temperature Detector) Input
VH-4TC-IV	4×Thermocouple Input
VH-2WT-IV	2×Weighing Input

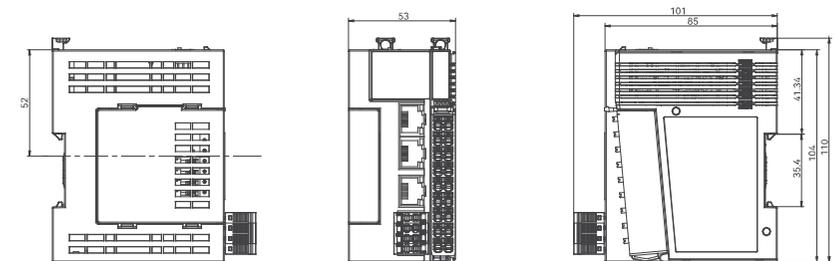## Installation Dimensions(mm)

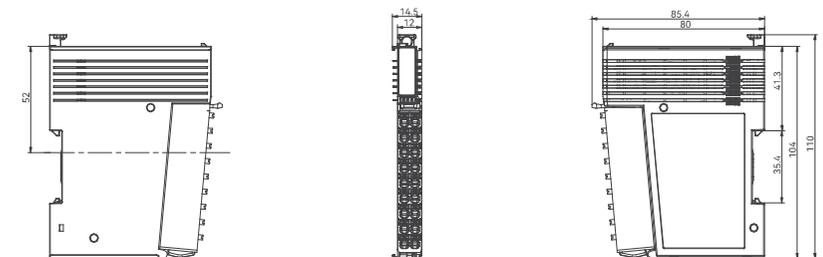### VH100/200/VTC
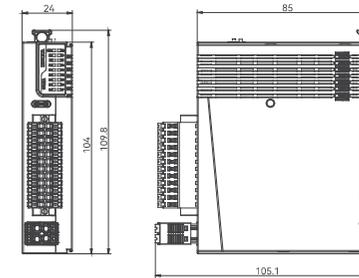
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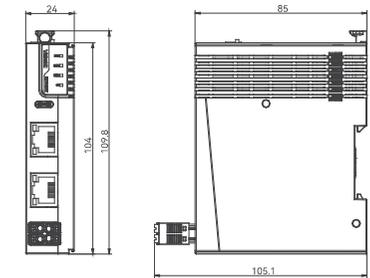
VH300/500/600

VH Right Extension

Research and Production

R&D and Technology Platform

> Consolidating a dynamic force of top-tier professionals and technical experts in domestic industrial control, our R&D team represents 37.16% of our workforce, with 74.62% of our technical staff boasting bachelor's degrees or higher.

> Guided by philosophy of "Innovate with technology and strive for excellence," VEICHI is deeply customer-centric by providing stable and reliable products and technologies designed to the evolving needs of our clients.

> Investing 10% of our revenue into R&D, VEICHI has crafted advanced labs for EMC, safety, reliability, and performance testing to ensure product quality.

> In-depth cooperation with many famous universities and research institutions in China has been established and "Jiangsu Postdoctoral Innovation Practice Base" and "Jiangsu Postgraduate Workstation" are set up successively.

Intelligent Automation

> Digitally driven from inception to production, VEICHI boasts an annual capacity of 914,600 units with streamlined efficiency.

> 5 imported SMT placement lines, 5 automated coating lines, 4 DIP test lines, a robotic arm-equipped automated line, and 12 production lines are equipped with the latest intelligent manufacturing tools.

> All of the product checks are carried out automatically by the management mode of 3 (tri-inspection system)+ 1(proportional inspection) during the whole process for standard performance.

> Three major production management system WMS, MES and ERP together ensure that the unique code of each product is traceable in the system to manage product quality.

Service and Support

Home

21 service outlets and 258 contracted marketing channels have been established, covering 22 provinces and cities including Hong Kong, Macao and Taiwan.

Abroad

Offices and service outlets have been established in major cities in Southeast Asia, South Asia, the CIS, the Middle East, Europe, Africa and the Americas, gradually expanding to the whole globe.

Pre-sales

01 Technology promotion, site survey and energy efficiency assessment

In-sales

02 Customization, design consultation, installation and commissioning, and site training

Post-sales

03 Regular return visits, timely maintenance and repair and user training