# Programmable Logic Controllers
EHV+ Series

HITACHI
Inspire the Next

Full compliance with the
IEC61131-3 International Standard

EHV+ Series CPU modules

The EHV+ Series is a fully IEC61131-3 compliant PLC Series which offers effective programming features and reduced debugging and commissioning time.

CPU module "EHV+"

The powerful hardware performances of existing EHV Series are succeeded to EHV+, such as multi-programming port (USB, Ethernet, Serial), compatibility of I/O modules for EH-150 Series, high reliability, superior in quality and much more.

Programming software "HX-CODESYS"

HX-CODESYS is a professional development tool based on CODESYS V3.5 by 3S.
Compared to standard CODESYS, following components are additionally included in the installation file (setup.exe)
- Device description files (.xml) for EHV+ Series
- Special libraries for EHV+ Series. (get_error_info, Counter_interface, etc.)

Well over 200 renowned device manufacturers from different industrial sectors program their automation devices with CODESYS. Today, CODESYS is the widest-spread IEC61131-3 development tool in Europe and has established itself as the standard in controller and PLC programming. Advantages of CODESYS are introduced as follows.

■Standardized programming style with 5 programming languages (LD, FBD, IL, ST, SFC).

■No need to study manufacturer's specific programming way.

■Easy to start using Hitachi PLC for those who having;

　No experience of PLC

　Experience of other manufacturer's programming

　Experience of high level languages

■Same Variable names are shared by PLC, HMI, SCADA, and other I/O devices.

■Offline simulation function on programming software.

EHV+ CPU Series: Scalable memory size (2 Models)

EHV-CPU1025 (512 KB)
EHV-CPU1102 (2,048 KB)

Hitachi version of CODESYS by 3S-Smart Software Solutions GmbH

EHV+ CPU module

User program memory Max. 2,048 KB

7 Segment LED Display
Error code is displayed here.

3 commutation ports
● USB port (Ver2.0 FullSpeed 12 Mbps)
● Serial port (RS-232C / RS-422 / RS-485)
● Ethernet port (10BASE-T/100BASE-TX)

User program is stored in non-volatile FLASH memory.
(Data is stored in volatile RAM memory retained by battery.)

The battery can be replaced easily with CPU module mounted.

Battery

Battery connector

The Ethernet and the Serial port have LEDs of communication status.

Modbus-TCP master / slave function EtherCAT® master function.

EtherCAT® master function is in corporated into the LAN port of the CPU module.
A combined use of an EtherCAT® slave (I/O terminals, Variable Frequency Drivers and so on) is possible.

No. of I/O is Max. 4,224 (using 64 pts. modules)

Power module

CPU module

I/O module

Basic base

Expansion cable

Input and output controller

Power module

Expansion base

A max. of 5 expansion base
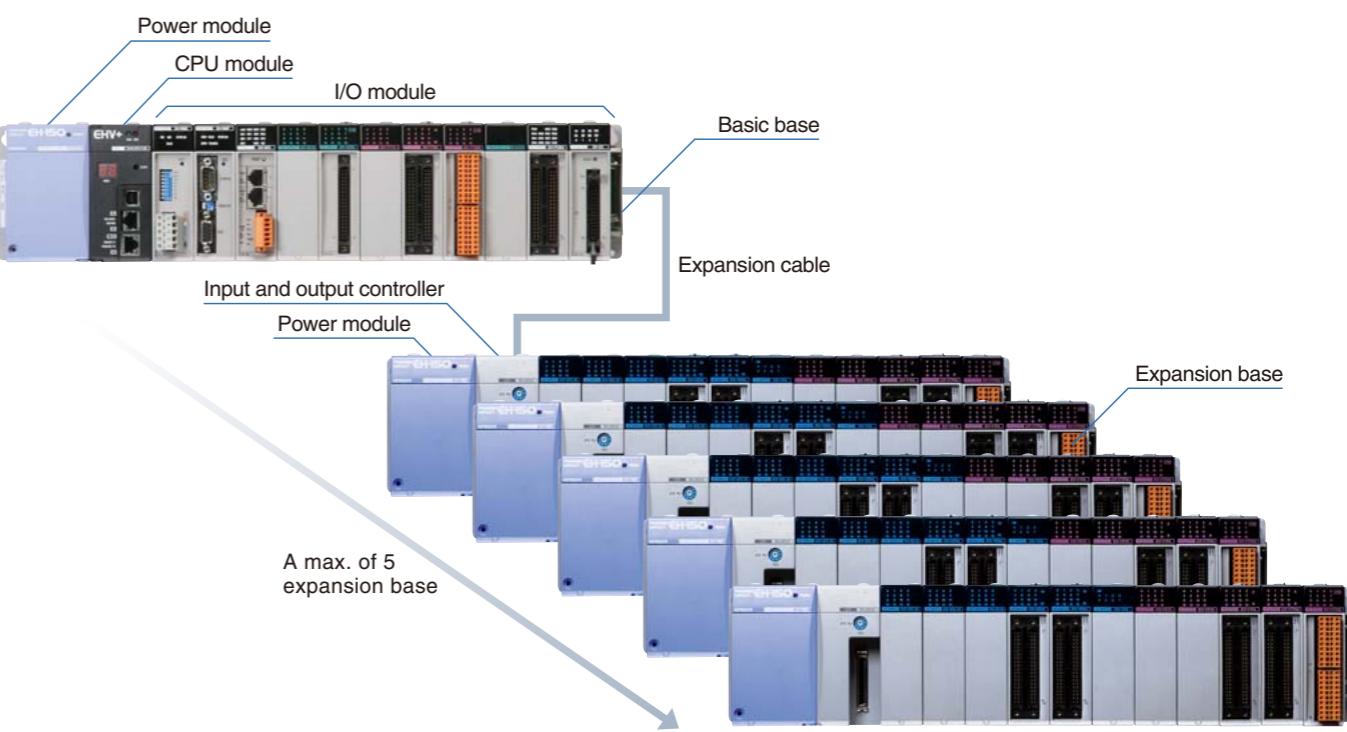
EHV+ Series is small size but powerful PLC covering wide range of applications since it is possible to expand up to 5 expansion bases, which offers max. 4,224 I/O points in 66 I/O modules.

Specifications

■CPU Module

Items		EHV-CPU1025	EHV-CPU1102
User program memory		512 KB	2,048 KB
Source file memory		4,864 KB	
Data memory (non retain)		384 KB	
Data memory (retain)		64 KB	
Data memory (persistent)		64 KB	
Data memory (Fieldbus)		16 KB (2 KB×8 = 1 KW×8)	
No. of expansion base		5	
No. of I/O (using 64 pts module)		4,224	
No. of logical port for Gateway＊		6	
Programming languages		IEC61131-3 compliant 5 languages 　LD : Ladder Diagram 　FBD: Function Block Diagram (incl. CFC: Continuous Function Chart) 　SFC: Sequential Function Chart 　IL　: Instruction List 　ST ： Structured Text	
I/O updating cycle		Refresh processing	
Communication	Protocol	CODESYS V3 protocol	
	USB	USB 2.0 Full speed (Gateway＊)	
	Ethernet	10BASE-T / 100BASE-TX (Gateway＊, Modbus-TCP client / server, EtherCAT® master, Global network variables)	
	Serial	RS-232C / 422 / 485 (Modbus-RTU master, General purpose)	
Switch, indications	Indications	RUN LED, ERR LED, 7-segment LED (2 digits)	
	RUN switch	STOP / RUN (Remote RUN / STOP enabled when the switch position is in RUN.)	
	E.CLR button	Reset error information	
Calendar clock		Support (Built-in RTC)	
Battery		LIBAT-H (for RTC and RETAIN data)	
Maintenance function		Diagnosis (micro processor error, watch dog timer error, memory error, battery error, etc.)	

＊Gateway: Communication with HX-CODESYS

■EtherCAT® Master Specifications

Items	Specifications
Communication protocol	EtherCAT® protocol
Supported services	CoE (process data communications and SDO communications)
Synchronization	None (DC is not supported)
Physical layer	100BASE-TX
Modulation	Baseband
Baud rate	100 M bits/s (100BASE-TX)
Duplex mode	Full / Auto
Topology	Daisy chain, branch wiring
Transmission media	Category 5 shielded twisted-pair cable or higher
Transmission distance	Distance between nodes: 100 m or less (IEEE802.3)
Maximum number of slaves	255
Maximum process data size	Input 5,736 bytes, Output 5,736 bytes
Maximum data sizes per slave	Input 1,434 bytes, Output 1,434 bytes
Maximum message size	2,048 bytes
Minimum communications cycle	10 ms
Sync jitter between slaves	1 μs
Process data communications	PDO mapping using CoE Fail-soft operation for slave communications errors Stop operation for slave communications errors
SDO communications	CoE - Emergency message server (receptions from slaves) - SDO requests and responses
Configuration	Setting node address using HX-CODESYS network scan Display of network configuration information
RAS functions	Slave configuration check when starting network Reading of error information Trouble shooting information
Slave information	- Automatic reboot of the slaves - Scanning slaves supported
Mailbox support	CoE (CAN open / CAN application layer over EtherCAT®) SoE (Servodrive over EtherCAT®) FoE (File over EtherCAT®) VoE (Vendor over EtherCAT®)

Note:
• Please note that using various Ethernet based communication (EtherCAT®, Modbus-TCP, NVL, Gateway) at the same time will limit the communication performance.
• If connected slave devices are drives (e.g. servo drives), it is strongly recommended to use profile mode in their operation mode.
　Since EtherCAT® cycle of the CPU is not fast enough, cyclic synchronous mode may not work in full performance.

Programming software "HX-CODESYS"

● Five programming language editors

The user can freely select among the 5 programming languages of the IEC61131-3 standard according to the intended purpose and the programmer's skills and experience.

LD
Ladder Diagram

FBD
Function Block Diagram

SFC
Sequential Function Chart

IL
Instruction List

LD	bVar
ST	inst1.IN
JMPC	ml
CAL	inst1(
	PT:=tl,
	ET:=>tout1)
LD	inst1.Q
ST	inst2.IN

ST
Structured Text

```
1   a := a + 1;
2   tl(IN:=FALSE, PT:= T#5S);
3   tl(IN:=TRUE);
4   FOR i := 0 TO count DO
5     test_l_int();
6   END_FOR
7   IF value < 7 THEN
8     WHILE value < 8 DO
9       value:=value+1;
10    END_WHILE;
11  END_IF;
```
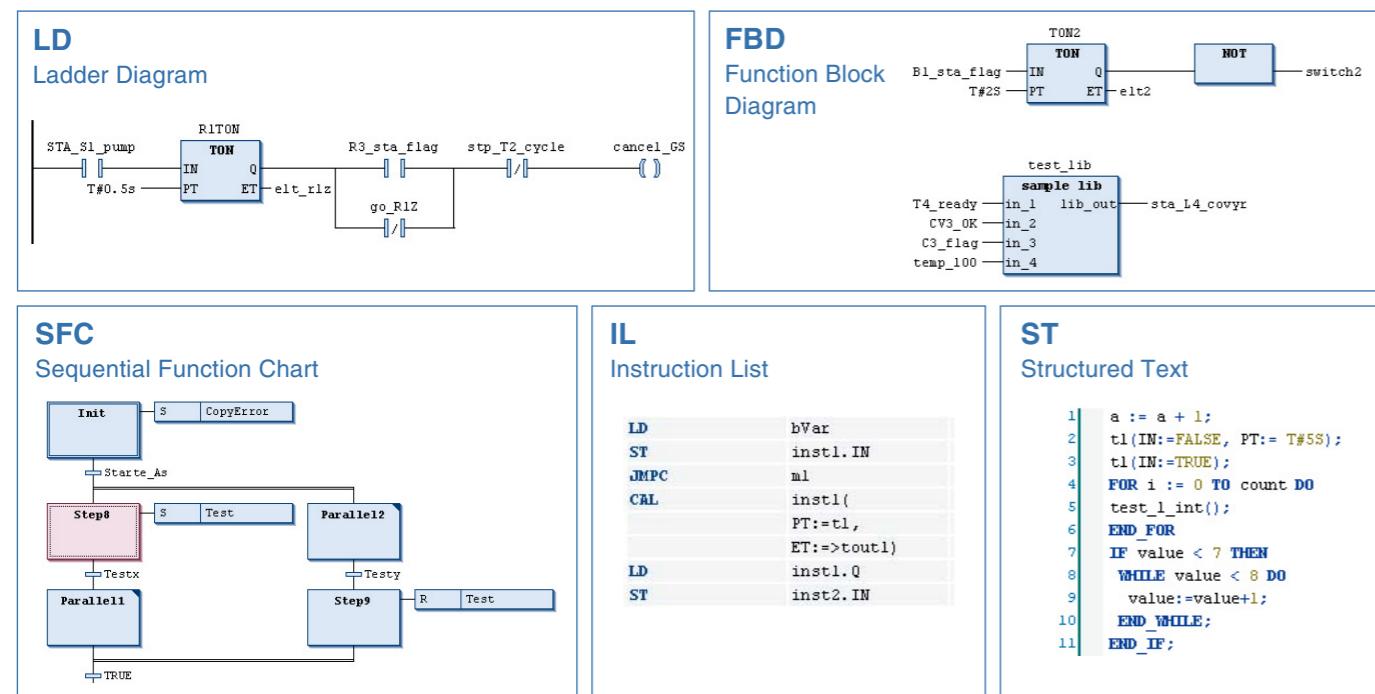
● Easy and efficient programming

Structured Programming
Task configuration and structured-based editors on POU (Program Organization Unit) enable flexible programming.

Programming with variable names
Programming with variable name enables you to be free from I/O addressing of PLC.
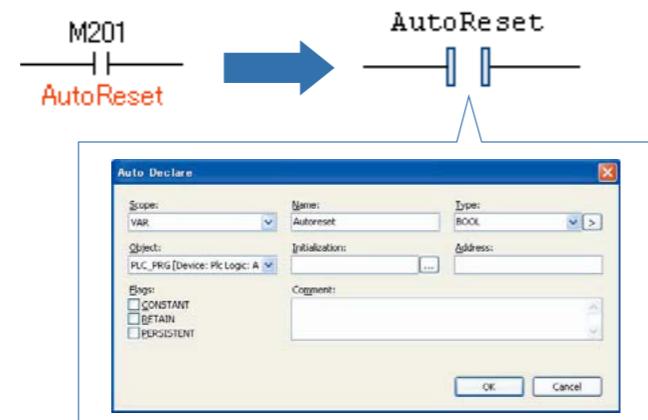
■Specifications of HX-CODESYS

Items		Descriptions
System requirements	RAM	1 GB
	Operating system	Windows® 7 / 8 / 10 (32 / 64 bit)
	CPU	x 86 1 GHz
	Hard disk	1 GB
	Screen resolution	1,024x768
Communication cables	USB	Standard USB cable (Type-B connector)
	Ethernet	UTP or STP cable (cat 5E)

Minimal requirements for small projects with up to 100 POUs, 10 visualizations, 8 field bus devices.

● Reduces software development costs

**Local variables and global variables**
It is possible to define local variables, which are only effective for each program, and global variables, which are common to all programs. Properly using local variables and global variables makes it possible to create application programs with high rates of reusability.

Structured programming
It is possible to create a hierarchy of programs and function blocks. This enhances the readability of application programs, and improves the stability, and as a result enhances efficiency in application development.

Creating a library
Since function blocks of commonly used process can be registered in the library, frequently used process can be easily reused in other application programs. Process contents of these function blocks can be also set as hidden, therefore can be distributed to end users without disclosing technical information to outside.
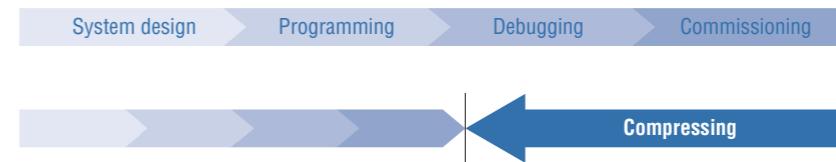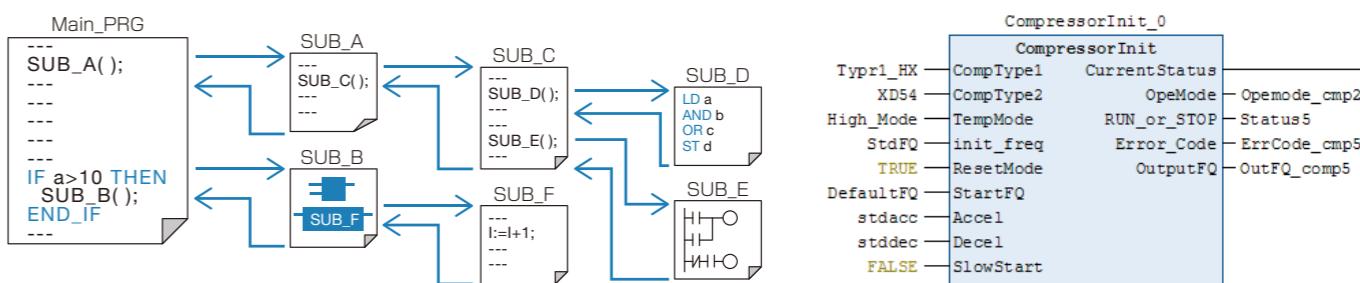
● The powerful debugging function reduces launch costs

- Online monitor
- Offline simulation
- Break points
- Force
- Single step execution
- Single cycle scan
- Flow control
- Changes while running
- Trace
- Visualization

Overview of the I/O module lineup
Big variety of modules to meet various applications demands

DC and AC digital input and output modules

8 / 16 pts. Input module (terminal block)
EH-XD8   : 8 pts. 24 V DC (Input lag 5 ms max.)
EH-XD16   : 16 pts. 24 V DC (Input lag 5 ms max.)
EH-XDL16 : 16 pts. 24 V DC (Input lag 16 ms max.)
EH-XDS16 : 16 pts. 24 V DC (Input lag 1 ms max.)
EH-XA16   : 16 pts. 100 to 120 V AC (Input lag 15 ms max.)
EH-XAH16: 16 pts. 200 to 240 V AC (Input lag 15 ms max.)

8 / 16 pts. Output module (terminal block)
EH-YT8   : 8 pts. Transistor (sink)
EH-YTP8   : 8 pts. Transistor (source)
EH-YT16   : 16 pts. Transistor (sink)
EH-YTP16   : 16 pts. Transistor (source)
EH-YTP16S: 16 pts. Transistor (source with short circuit protection)
EH-YS16   : 16 pts. Triac
EH-YR12   : 12 pts. Relay
EH-YR16   : 16 pts. Relay
EH-YR8B   : 8 pts. Isolated relay
EH-YR16D : 16 pts. Relay (2 common)

32 pts. Input module (connector)
EH-XD32 : 32 pts. 24 V DC (Input lag 5 ms max.)
EH-XDL32: 32 pts. 24 V DC (Input lag 15 ms max.)
EH-XDS32: 32 pts. 24 V DC (Input lag 1 ms max.)

32 pts. Output module (connector)
EH-YT32 : 32 pts. Transistor (sink)
EH-YTP32: 32 pts. Transistor (source)

64 pts. Input module (connector)
EH-XD64: 64 pts. 24 V DC (Input lag 1 ms max.)

64 pts. Output module (connector)
EH-YT64 : 64 pts. Transistor (sink)
EH-YTP64: 64 pts. Transistor (source)

32 pts. Input module (Spring type terminal block)
EH-XD32E : 32 pts. 24 V DC (Input lag 5 ms max.)
EH-XDL32E: 32 pts. 24 V DC (Input lag 16 ms max.)

32 pts. Output module (Spring type terminal block)
EH-YT32E : 32 pts. Transistor (sink)
EH-YTP32E: 32 pts. Transistor (source)

Digital input and output modules

DC Input and DC Output modules
EH-XD32H: 32 pts. DC 24 V input (EM / H-200 compatible connector type)
EH-YT32H: 32 pts. DC 24 V output (EM / H-200 compatible connector type)

Analog input and output modules

Analog Input module
EH-AX44   : 12-bit analog input, Current 4 to 20 mA, Voltage 0 to 10 V, 4 ch each
EH-AX8V   : 12-bit analog input, Voltage 0 to 10 V, 8 ch
EH-AX8H   : 12-bit analog input, Voltage -10 to 10 V, 8 ch
EH-AX8I   : 12-bit analog input, Current 4 to 20 mA, 8 ch
EH-AX8IO : 12-bit analog input, Current 0 to 22 mA, 8 ch
EH-AXH8M: 14-bit analog input, Current 0 to 22 mA / 4 to 22 mA, Voltage -10 to 10 V / 0 to 10 V, 8 ch
EH-AXG5M: 16-bit analog input, Current 0 to 22 mA / 4 to 22 mA, Voltage -10 to 10 V / 0 to 10 V, 5 ch Isolated

Analog Output module
EH-AY22   : 12-bit analog output, Current 4 to 20 mA, Voltage 0 to 10 V, 2 ch each
EH-AY4V   : 12-bit analog output, Voltage 0 to 10 V, 4 ch
EH-AY4H   : 12-bit analog output, Voltage -10 to 10 V, 4 ch
EH-AY4I   : 12-bit analog output, Current 4 to 20 mA
EH-AY2H   : 12-bit analog output, Voltage -10 to 10 V, 2 ch
EH-AYH8M: 14-bit analog output, Current 0 to 22 mA / 4 to 22 mA, Voltage 0 to 10 V, 8 ch
EH-AYG4M: 16-bit analog output, Current 0 to 22 mA / 4 to 22 mA, Voltage -10 to 10 V / 0 to 10 V, 4 ch Isolated

Temperature Detective Input module
EH-PT4   : Signed 15-bit, Pt 100 / Pt 1,000, 4 ch
EH-TC8   : Signed 15-bit, Thermo-couple (K, E, J, T, B, R, S, N) 8 ch
EH-RTD8 : Signed 15-bit, Pt 100 / Pt 1,000, 6 ch (3 wire) / 8 ch (2 wire)

Counter modules

High speed counter module
EH-CU : Maximum 100 kHz, 2 ch
EH-CUE: Maximum 100 kHz, 1 ch

Communication and Network modules

Serial communication Module: EH-SIO

Interface: RS-232C×1, RS-232C / 422 / 485×1
Communication mode : Half-duplex
Communication speed : 300-57,600 bps
Communication protocol: Non-protocol
Modbus-RTU master

PROFIBUS® DP V0 Master / Slave Controller

Number of slave-connected units: Max. 125
(of which maximum 22 units are EH-IOCP2)
Communication speed Max. 12 Mbps
Communication distance Max. 1,200 m (Lower than 93.75 kbps)
Input / Output data 512 words / 512 words

DeviceNet™ Master / Slave Controller

Number of slave-connected units: Max. 63
(of which maximum 22 units are EH-IOCD2)
Communication speed Max. 500 Kbps
Communication distance Max. 500 m (Lower than 125 kbps)
Input / Output data 256 words / 256 words

EtherCAT® slave controller

☑ **1,408 points for maximum input and output (analog input and output 176 ch)**
Users can create any configurations because of the coupler type. It can be also applied to the large-scale control system.

☑ **Passing down the I/O module assets of the EH-150 / EHV / EHV+ Series**
Power supplies, bases, and I/O modules (some are excluded) of the EH-150 / EHV / EHV+ Series can be used.

☑ **High-speed response and high reliability**
At the fastest pace, the communication cycle is 200 μs. When communication abnormalities occur, the output data can be retained.

■**EtherCAT® Slave Controller Specifications**

Items	Model	Specifications
		EH-IOCA
Communication specifications	Communication protocol	EtherCAT® dedicated protocol
	Modulation method	Baseband
	Transmission speed	100 Mbps
	Physical layer	100BASE-TX (IEEE802.3)
	Connector	RJ45 (IN, OUT)
	Topology	Daisy chain
	Communication cable	Category 5 or higher STP cable
	Communication distance	Within 100 m in distance between nodes (slaves)
	Communication cycle	200 μs or higher＊1
	Node address range	1 to 99: Setting by the node address switch 1 to 65,535: Setting by EtherCAT® master
	Process data	Fixed PDO mapping
	Mail box	Support
	Synchronous mode	Free Run mode (asynchronous)
	Output hold function	Support (set by master)
Functional specifications	Usable base	EH-BS3A / 5A / 6A / 8A / 11A / 8R
	Number of mounted modules	Maximum 22 units per slave device
	Input and output points	1,408 points for digital input and output, 176 ch for analog input and output
	Number of extendable stages	1 stage
	Refresh time	500 μs fixed
	Self-diagnostics	WDT check
	Error display	LED
	Consumption current	350 mA

＊1: The communication cycle depends on EtherCAT® master specifications.

[Configuration Example]

EtherCAT® master

CAT 5 or higher LAN cable (Maximum 100 m between stations)

EH-IOCA   EH-IOCA   EH-IOCA

Slave   Slave   Redundant power supply   Slave

Input and output controller EH-IOCH2
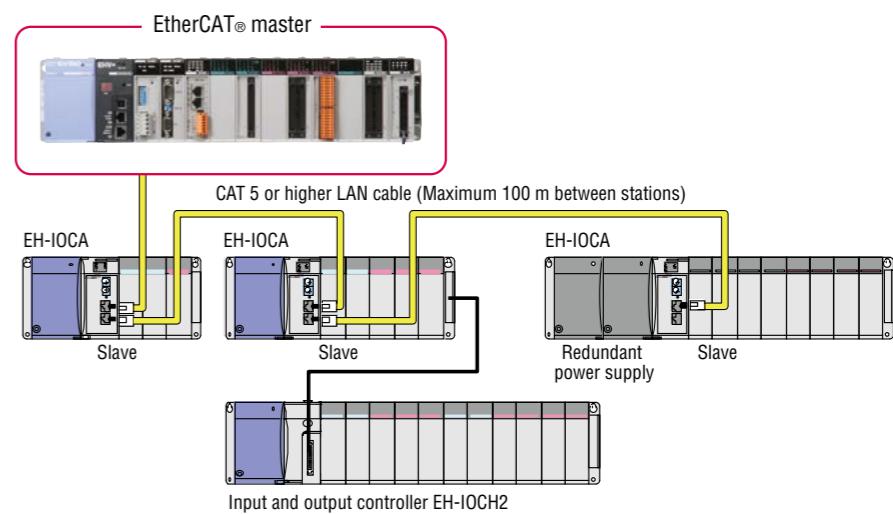
Components list

Items	Model	Specifications	I/O type	Basic base (＊1)	Expansion base (＊2)	Salve (＊3)	Remarks
CPU module	EHV-CPU1025	Program capacity 512 KB, Max. 4,224 I/O points(＊5), Ethernet port / Serial port / USB port	—	☆	—	—	＊4
	EHV-CPU1102	Program capacity 2014 KB, Max. 4,224 I/O points(＊5), Ethernet port / Serial port / USB port	—	☆	—	—	
Power module	HX-PSA	Input 100 to 240 V AC, Output 5 V DC 3.8 A, 24 V DC 0.4 A	—	☆	☆	☆	＊4
	HX-PSD	Input 24 VDC, Output 5 V DC 3.8 A	—	☆	☆	☆	
	EH-PSR	Input 100 to 240 V AC, Output 5 V DC 5.6 A	—	☆	☆	☆	
I/O controller	EH-IOCH2	I/O control module (1 unit / expansion base)	—	—	☆	—	＊4
Base unit	EH-BS3A	3 I/O modules installed	—	☆	☆	☆	＊6
	EH-BS5A	5 I/O modules installed	—	☆	☆	☆	
	EH-BS6A	6 I/O modules installed	—	☆	☆	☆	
	EH-BS8A	8 I/O modules installed	—	☆	☆	☆	
	EH-BS11A	11 I/O modules installed	—	☆	☆	☆	
Input module	EH-XD8	8 pts., 24 V DC input (response time 5 ms)	DI 16	☆	☆	☆	
	EH-XD16	16 pts., 24 V DC input (response time 5 ms)	DI 16	☆	☆	☆	
	EH-XDL16	16 pts., 24 V DC input (response time 16 ms)	DI 16	☆	☆	☆	
	EH-XDS16	16 pts., 24 V DC input (response time 1 ms)	DI 16	☆	☆	☆	
	EH-XD32	32 pts., 24 V DC input (response time 5 ms)	DI 32	☆	☆	☆	
	EH-XDL32	32 pts., 24 V DC input (response time 16 ms)	DI 32	☆	☆	☆	
	EH-XDS32	32 pts., 24 V DC input (response time 1 ms)	DI 32	☆	☆	☆	
	EH-XD32E	32 pts., 24 V DC input (response time 1 ms), Spring type terminal	DI 32	☆	☆	☆	
	EH-XDL32E	32 pts., 24 V DC input (response time 16 ms), Spring type terminal	DI 32	☆	☆	☆	
	EH-XD32H	32 pts., 24 V DC input (response time 4 ms), compatible connector with PIM / H-DM (EM / H-200)	DI 32	☆	☆	☆	
	EH-XD64	64 pts., 24 V DC input (response time 1 ms)	DI 64	☆	☆	☆	
	EH-XA16	16 pts., 100 to 120 V AC input (response time 15 ms)	DI 16	☆	☆	☆	
	EH-XAH16	16 pts., 200 to 240 V AC input (response time 15 ms)	DI 16	☆	☆	☆	
Output module	EH-YR8B	8 pts., Independent relay output, 100 / 240 V AC, 24 V DC	DO 16	☆	☆	☆	
	EH-YR12	12 pts., Relay output, 100 / 240 V AC, 24 V DC	DO 16	☆	☆	☆	
	EH-YR16	16 pts., Relay output, 100 / 240 V AC, 24 V DC	DO 16	☆	☆	☆	
	EH-YR16D	16 pts., Relay output, 100 / 240 V AC, 24 V DC, 2-common type	DO 16	☆	☆	☆	
	EH-YT8	8 pts., Transistor output, 12 / 24 V DC (sink type)	DO 16	☆	☆	☆	
	EH-YTP8	8 pts., Transistor output, 12 / 24 V DC (source type)	DO 16	☆	☆	☆	
	EH-YT16	16 pts., Transistor output, 12 / 24 V DC (sink type)	DO 16	☆	☆	☆	
	EH-YTP16	16 pts., Transistor output, 12 / 24 V DC (source type)	DO 16	☆	☆	☆	
	EH-YTP16S	16 pts., Transistor output, 12 / 24 V DC (source type)	DO 16	☆	☆	☆	
	EH-YT32	32 pts., Transistor output, 12 / 24 V DC (sink type)	DO 32	☆	☆	☆	＊7
	EH-YTP32	32 pts., Transistor output, 12 / 24 V DC (source type)	DO 32	☆	☆	☆	
	EH-YT32E	32 pts., Transistor output, 12 / 24 V DC (sink type), Spring type terminal	DO 32	☆	☆	☆	
	EH-YTP32E	32 pts., Transistor output, 12 / 24 V DC (source type), Spring type terminal	DO 32	☆	☆	☆	
	EH-YT32H	32 pts., Transistor output, 5 / 12 / 24 V DC (sink type), compatible connector with POM / H-DM (EM / H-200)	DO 32	☆	☆	☆	
	EH-YT64	64 pts., Transistor output, 12 / 24 V DC (sink type)	DO 64	☆	☆	☆	＊7
	EH-YTP64	64 pts., Transistor output, 12 / 24 V DC (source type)	DO 64	☆	☆	☆	
	EH-YS16	16 pts., Triac output, 100 / 240 V AC	DO 16	☆	☆	☆	
Analog input module	EH-AX44	12 bits, analog input 8 ch. (4 ch. of 4 to 20 mA, 4 ch. of 0 to 10 V)	AI 8	☆	☆	☆	
	EH-AX8V	12 bits, analog input 8 ch., Voltage (0 to 10 V)	AI 8	☆	☆	☆	
	EH-AX8H	12 bits, analog input 8 ch., Voltage (-10 to +10 V)	AI 8	☆	☆	☆	
	EH-AX8I	12 bits, analog input 8 ch., Current (4 to 20 mA)	AI 8	☆	☆	☆	
	EH-AX8IO	12 bits, analog input 8 ch, Current (0 to 22 mA)	AI 8	☆	☆	☆	
	EH-AXH8M	14 bits, analog input 8 ch. (0 to 22 mA, 4 to 22 mA, -10 to +10 V, 0 to 10 V)	AI 8	☆	☆	☆	
	EH-AXG5M	16 bits, isolated analog input 5 ch. (0 to 22 mA, 4 to 22 mA, -10 to +10 V, 0 to 10 V)	AI 8	☆	☆	☆	
Analog output module	EH-AY22	12 bits, analog output 4 ch. (2 ch. of 4 to 20 mA, 2 ch. of 0 to 10 V)	AO 8	☆	☆	☆	
	EH-AY2H	12 bits, analog output 2 ch., Voltage (-10 to +10 V)	AO 8	☆	☆	☆	
	EH-AY4V	12 bits, analog output 4 ch., Voltage (0 to 10 V)	AO 8	☆	☆	☆	
	EH-AY4H	12 bits, analog output 4 ch., Voltage (-10 to +10 V)	AO 8	☆	☆	☆	
	EH-AY4I	12 bits, analog output 4 ch., Current (4 to 20 mA)	AO 8	☆	☆	☆	
	EH-AYH8M	14 bits, analog output 8 ch. (0 to 22 mA, 4 to 22 mA, 0 to 10 V)	AO 8	☆	☆	☆	
	EH-AYG4M	16 bits, isolated analog output 4 ch. (0 to 22 mA, 4 to 22 mA, -10 to +10 V, 0 to 10 V)	AO 8	☆	☆	☆	

Note: Please check the usable units, restrictions, and other matters in the product manual before selecting components.

＊1: ☆ means mountable on the basic base.
＊2: ☆ means mountable on the expansion base.
＊3: ☆ means mountable on the EtherCAT® and PROFIBUS®-DP slave, DeviceNet™ slave base.
＊4: CPU, power module and I/O controller (IOCH2, IOCD2, IOCP2, IOCA) can be mounted on reserved positions only.
＊5: In case of 64 points I/O module is used
＊6: Commonly used for basic, expansion or slave base.
＊7: With short circuit protection

Items	Model	Specifications	I/O type	Basic base (＊1)	Expansion base (＊2)	Salve (＊3)	Remarks
RTD input module	EH-PT4	Signed 15 bits, 4 ch. Resistance Temperature Detector input, PT100 / PT1,000	AI 4	☆	☆	☆	
	EH-RTD8	Signed 15 bits, 6 ch. (3-wire) / 8 ch. (2-wire) Resistance Temperature Detector input, PT100 / PT1,000	AI 8 / AI 4	☆	☆	☆	
Thermocouple input module	EH-TC8	Signed 15 bits, 8 ch. Thermocouple input (K, E, J, T, B, R, S, N)	AI 8	☆	☆	☆	
High function and communication module	EH-CU	2 ch. high-speed counter input, 100 kHz, 4 points open collector output	EH-CU / E	☆	☆	☆	
	EH-CUE	1 ch. high-speed counter input, 100 kHz, 2 points open collector output	EH-CU / E	☆	☆	☆	
	EH-SIO	Serial interface module	EH-SIO	☆	☆	☆	
	EH-RMD2	DeviceNet™ master module, 256 / 256 words I/O	EH-LNK	☆	—	—	
	EH-RMP2	PROFIBUS®-DP master module, 512 / 512 words I/O	EH-LNK	☆	—	—	
	EH-IOCD2	DeviceNet™ slave controller, 1,408 points (176 words) I/O	—	—	—	☆	
	EH-IOCP2	PROFIBUS®-DP slave controller, 1,408 points (176 words) I/O	—	—	—	☆	＊4
	EH-IOCA	EtherCAT® slave controller, 1,408 points (176 words) I/O	—	—	—	☆	
Others	EH-DUM	Module for empty slot	Empty	☆	☆	☆	
	EH-TMCV	Half-size terminal block cover (Lot 10 configuration)	—	☆	☆	☆	
Expansion cables	EH-CB05A	Expansion cable (0.5 m)	—				
	EH-CB10A	Expansion cable (1 m)	—				
	EH-CB20A	Expansion cable (2 m)	—				
32/64 points module cables	EH-CBM01	32 / 64-point module cable, open and connector end (1 m)	—				
	EH-CBM03	32 / 64-point module cable, open and connector end (3 m)	—				
	EH-CBM05	32 / 64-point module cable, open and connector end (5 m)	—				
	EH-CBM10	32 / 64-point module cable, open and connector end (10 m)	—				
	CBM-02	EM / H-200 compatible 32 point module cable, open and connector end (2 m)	—				
	CBM-05	EM / H-200 compatible 32 point module cable, open and connector end (5 m)	—				
	CBM-10	EM / H-200 compatible 32 point module cable, open and connector end (10 m)	—				
Counter module cables	EH-CUC01	Counter module cable, open and connector end (1 m)	—				
	EH-CUC02	Counter module cable, open and connector end (2 m)	—				
	EH-CUC03	Counter module cable, open and connector end (3 m)	—				
	EH-CUC04	Counter module cable, open and connector end (4 m)	—				
	EH-CUC05	Counter module cable, open and connector end (5 m)	—				
Battery	LIBAT-H	Lithium battery for retentive data and RTC	—				

Note: Please check the usable units, restrictions, and other matters in the product manual before selecting components.

＊1: ☆ means mountable on the basic base.
＊2: ☆ means mountable on the expansion base.
＊3: ☆ means mountable on the EtherCAT® and PROFIBUS®-DP slave, DeviceNet™ slave base.
＊4: CPU, power module and I/O controller (IOCH2, IOCD2, IOCP2, IOCA) can be mounted on reserved positions only.

Items	Model	Specifications	Remarks
Integrated development environment HX-CODESYS	HX-CDS	Integrated development environment in conformance with IEC61131-3	＊8

＊8: A cable for connecting the PC to the CPU (A-mini B type USB cable or LAN cable) must be obtained by the customer.

■General Specifications

Items	Specifications
Operational temperature	0 to 55 ℃
Storage temperature	−10 to 75 ℃
Operational humidity	5 to 95 % RH (no condensation)
Storage humidity	5 to 95 % RH (no condensation)
Vibration resistance	Conforms to IEC 60068-2-6
Noise resistance	○ Noise voltage 1,500 Vpp, Noise pulse width 100 ns, 1 μs (Noise input by a noise simulator across input terminals of a power module according to measuring method of Hitachi-IES.) ○ Based on IEC 61131-2 (not applied for input modules) ○ Static noise 3,000 V at electrode part
Certifications	CE, RCM
Insulation resistance	20 MΩ minimum between AC terminal and frame ground (FE) terminal (based on 500 V DC megger)
Dielectric withstand voltage	1,500V AC for 1 minute between AC input terminal and frame ground (FE) terminal
Ground	Class D grounding (grounding with the power supply module)
Usage environment	No corrosive gases, no excessive dust
Structure	Open wall-mount type
Cooling	Natural air cooling

■Dimensions

[Unit:mm]

Base	EH-BS11A	EH-BS8A	EH-BS6A	EH-BS5A	EH-BS3A
Number of I/O modules	11	8	6	5	3
L1	447	357	297	267	207
L2	462.5	372.5	312.5	282.5	22.5
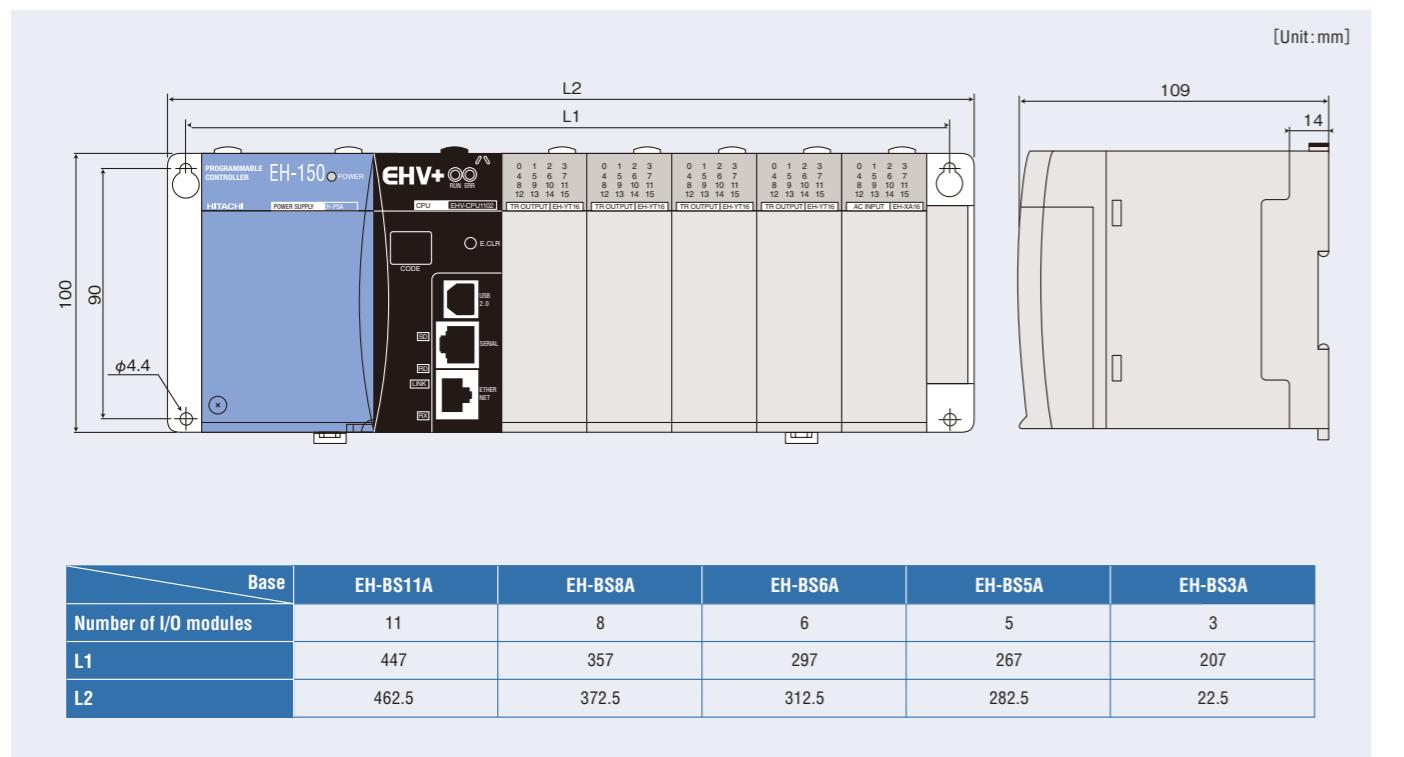
■About the Trademarks Described in this Catalog

- EtherCAT® is patented technology licensed by Beckhoff Germany Automation GmbH, and its registered trademarks.
- DeviceNet™ is a registered trademark of ODVA (Open DeviceNet Vendor Association.)
- PROFIBUS® is a registered trademark of PROFIBUS® User Organization.
- Other company names and product names described in this catalog are the trademarks or registered trademarks of their respective companies.

MEMO

Network

Germany

Hitachi Europe GmbH,
Industrial Components & Equipment Group
Am Seestern 18 (Euro Center)
D-40547 Düsseldorf, GERMANY
TEL: ⟨+49⟩ (211) 5283-0
FAX: ⟨+49⟩ (211) 5283-649
http://www.hitachi-eu.com/
http://www.hitachi-ds.com/

U.S.A

Hitachi America, Ltd.
Industrial Components & Equipment Division
50 Prospect Avenue,
Tarrytown, NY 10591-4698
TEL: +1 (914) 332-5800
FAX: +1 (914) 332-5555
http://www.hitachi-america.us/ice/

China

**Hitachi Industrial Equipment Systems
(CHINA) Co., Ltd.**
(Shanghai Office)
Industrial Equipment Systems Division
12th Floor, Rui Jin Building No. 205,
Maoming Road (S) Shanghai, 200020
TEL: +86 (21) 5489-2378
FAX: +86 (21) 3356-5070
(Beijing Office)
14th Floor Beijing Fortune Building,
5 Dong San Huan Bei Lu,
Chao Yang District, Beijing 100004
TEL: +86 (10) 6590-8180
FAX: +86 (10) 6590-8189

**Hitachi Industrial Equipment Systems
(Hong Kong) Co., Ltd.**
(Hong Kong Office)
6th Floor, North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon Hong Kong.
TEL: +852-2735-9218
FAX: +852-2735-6793

Taiwan Hitachi Asia Pacific Co., Ltd.
3rd Floor, Hung Kuo Building No.167
Tun-Hwa North Road, Taipei (105), Taiwan
TEL: ⟨+886⟩ (2) 2514-3666
FAX: ⟨+886⟩ (2) 2514-7664

Singapore

Hitachi Asia Ltd.
Industrial Components & Equipment Division
No.30 Pionner Crescent
#10-15, West Park Bizcentral
Singapore 628560
TEL: ⟨+65⟩ (6305)-7400
FAX: ⟨+65⟩ (6305)-7401
http://www.hitachi.com.sg/

Thailand

Hitachi Asia (Thailand) Co., Ltd.
18th Floor, Ramaland Building,
952 Rama IV Road, Bangrak
Bangkok 10500
TEL: ⟨+66⟩ (2) 632-9292
FAX: ⟨+66⟩ (2) 632-9299
http://www.hitachi.co.th/

Australia

Hitachi Australia Pty Ltd.
Suite 801, Level 8, 123 Epping Road,
North Ryde, NSW, 2113, Australia
TEL: ⟨+61⟩ (2) 9888-4100
FAX: ⟨+61⟩ (2) 9888-4188
http://www.hitachi.com.au/

Information in this brochure is subject to change without notice.

⊚Hitachi Industrial Equipment Systems Co., Ltd.

For further information, please contact your nearest sales representative.

ISO 14001
JQA-EM5428

ISO 9001
JQA-1000

The EH-150 series PLCs are produced at the factory registered under the ISO 14001 standard for environmental management system and the ISO 9001 standard for quality management system.