NJI-555BX

HITACHI
Inspire the Next

EHV+ series CPU module Instruction manual

Thank you for purchasing a Hitachi Programmable Logic Controller.

To operate it safely, please read this instruction manual and all the user manuals carefully. Please be sure to use the latest versions of user manuals and keep them at hand of end users for future reference.

■ Warranty period and coverage

The warranty period is either 18 months after manufacturing date (MFG No) or 12 months after installation.
Examination and repair within the warranty period is covered. However within the warranty period, the warranty will be void if the fault is due to ;

(1) Incorrect use from instructed in this manual and the application manual.
(2) Malfunction or failure of external other devices than this unit.
(3) Attempted repair by unauthorized personnel.
(4) Natural disasters.

The warranty is for the PLC only, any damage caused to third party equipment by malfunction of the PLC is not covered by the warranty.

■ Repair

Any examination or repair after the warranty period is not covered. And within the warranty period any repair and examination which results in information showing the fault was caused by any of the items mentioned above, the repair and examination cost are not covered. If you have any questions regarding the warranty or repair cost, please contact your supplier or the local Hitachi Distributor. (Depending on failure part, repair might be impossible.)

■ Ordering spare parts and inquiries

Please contact your local suppliers for ordering products/spare parts or any inquiries with providing the following information.

(1) Product name
(2) Manufacturing number (MFG No.)
(3) Details of failure

Safety precautions

■ Definitions and Symbols

DANGER — Indicates a potentially hazardous situation which, if not avoided, can result in serious injury or death.

CAUTION — Indicates a potentially hazardous situation which, if not avoided, can result in minor to moderate injury, or serious damage of product.

: Indicates Prohibition

: Indicates Compulsion

DANGER

- Do not touch terminals while power ON. There is a danger of electric shock and/or injury.
- Be sure to install external safety devices outside of the PLC like emergency stop circuit or interlock circuit.

CAUTION

- Be sure that the rated voltage matches the power supply voltage of the unit. Otherwise, there is a danger of breakdown and/or injury and/or fire.
- Only qualified personnel shall carry out wiring work. Otherwise, there is a danger of breakdown and/or injury and/or fire.

COMPULSION

- Be sure to ground the unit. Otherwise, there is a danger of electric shock and/or malfunction.

PROHIBITION

- Do not attempt to modify nor disassemble the unit. There is a danger of breakdown and/or injury and/or fire.
- Do not connect or disconnect cable unless power has been switched off or the area is known to be Non-Hazardous. (This unit is industrial control equipment for use in hazardous locations "class I, Division2, Groups A,B,C,D")

PLC Wiring

■ Power Wiring

- Appropriate emergency circuitry, interlock circuitry and similar safety measures should be added to the system.
- Appropriate safety measures should be included in the system for unexpected breaking of wire or malsignal caused from instantaneous power failure.
- Applied voltage must be in the range specified in the manual. Otherwise, there is a danger of breakdown and/or injury and/or fire.
- Install external earth leakage breakers to avoid short circuit accident.
- In case of the following operations, turn off power. Otherwise, there is a danger of breakdown and/or injury and/or fire.
  - Mounting or dismounting CPU and I/O modules.
  - Assembling cabinet or machine including PLC.
  - Wiring.
- Install net filter specified in Table 1 or similar. The input and output cable of the net filter should be separated as much as possible. Be sure to ground the net filter. Use shielded cable for input of net filter.
- A shielded and insulated transformer is recommended.
- The basic and expansion unit should be connected to common power source and powered up together as shown in Figure 1.
- Recommends installing a lightning arrester to prevent lightning damages.

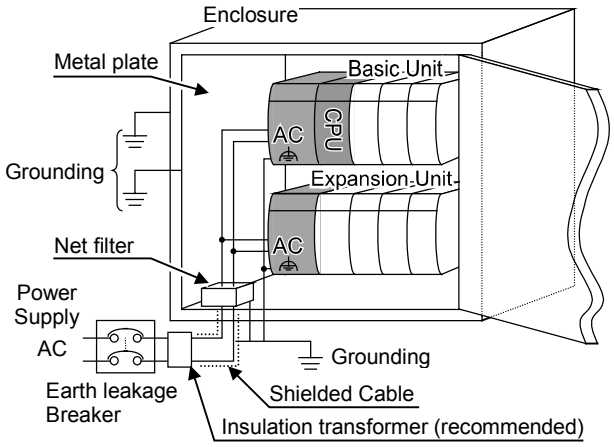


Figure 1 Power wiring example

Table 1 Specifications of the net filter

Item		Spec.
Rated voltage (V AC)		250
Rated current (A)		5
Withstand voltage (V) (between Terminal and case)		1500
Insulation resistance (MΩ) (500VDC, 1 min., between terminal and case)		100 (min.)
Attenuation Frequency range (MHz)	Differential mode, more than 40dB	0.5 to 30
	Common mode, more than 40dB	0.15 to 30

Reference : EMC filter ZAC2205-00U (TDK), MC1206(DENSEI-LAMBDA)

■ I/O Wiring

- Be sure that the input/output voltage matches the specified voltage. Otherwise, there is a danger of breakdown and/or fire.
- Use shielded cable for relay outputs module, and connect shields to a functional ground for one side or both sides depending on applications.
- Route the AC power line and I/O lines separated as much as possible. Do not route both cables in a same duct.
- Route the I/O lines and data lines as close as possible to the grounded surfaces such as cabinet elements, metal bars and cabinets panels.

Cable for wiring			Torque to tighten the terminal
Wire Size	Material	Type	
22－14 AWG	Cu	Sol / Str	9in.-lbs (1.02 Nm)

■ Common precautions

- Use proper cable ferrules for terminals. Using improper cable ferrules or connecting bare wires to terminals directly might result in fire.
- Do not turn on power, if the unit appears damaged.
- Be sure to check all field wiring before PLC power on. Otherwise, there is a risk of fire.
- Do not attempt to disassemble, repair or modify any part of the PLC.
- Do not pull on cables or bend cables beyond their natural limit. Otherwise, there is a risk of breaking of wire.
- Check carefully your PLC program before operation.
- Keep PLC modules in their boxes during storage and transport.

Installation environment

Avoid the following locations to install the PLC.

- Excessive dusts, salty air, or conductive materials (iron powder, etc.)
- Direct sunlight.
- Temperature less than 0°C or more than 55°C.
- Humidity less than 20% or more than 90%.
- Dew condensation.
- Direct vibration or impact to the unit.
- Corrosive, explosive or combustible gases.
- Water, chemicals or oil splashing on the PLC.
- Close to noise emission devices.

Application Manual

Read the following application manual carefully to use the PLC safely and properly. Be sure to keep the latest version**.**

Manual name	Manual No.
EHV+ series APPLICATION MANUAL	NJI-564*(X)

*: Alphabet before (X) indicates version (A,B…).

Installation / Mounting

≺ Base unit mounting ≻

- Fix the base unit by four screws (M4, 20mm (0.78in.) length or more) or by DIN rail tightly.
- To operate PLC within the range of ambient temperature,
  (1) Be sure to take enough draft space. (Top and bottom; 50mm (1.97in.) or more, right and left; 10mm (0.39in.) or more)
  (2) Avoid mounting over heat generating devices such as heater, transformer, and high capacity resistor.
  (3) When ambient temperature becomes 55℃ or more install a fan or cooler so that ambient temperature is less than 55℃.
- Avoid mounting inside the panel installed the high-voltage device.
- Mount 200mm (7.87in.) or more away from the high-voltage wire and the power wire.
- Avoid inverted mounting, vertical mounting, and horizontal mounting.

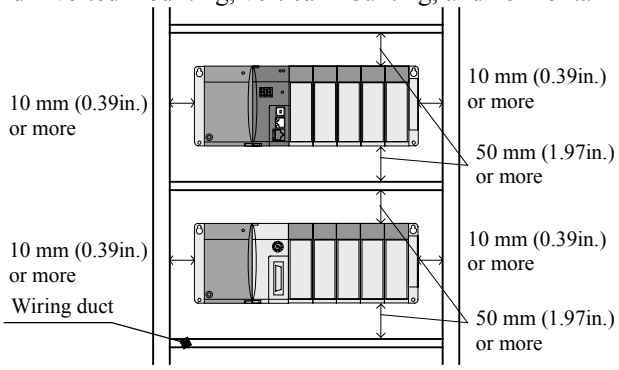
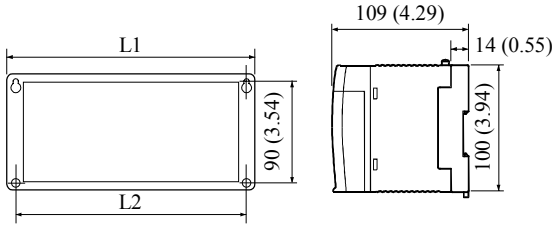


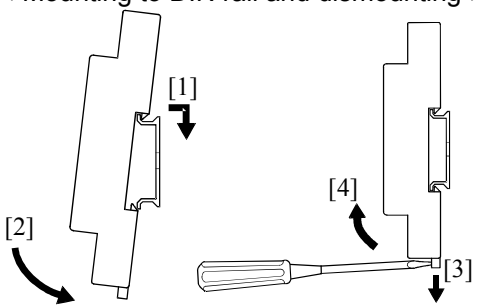
Figure 2 Mounting space



Dimension (mm (in.))

Base	L1	L2
3 slots	222.5 (8.76)	207 (8.15)
5 slots	282.5 (11.12)	267 (10.51)
6 slots	312.5 (12.30)	297 (11.69)
8 slots	372.5 (14.67)	357 (14.04)
11 slots	462.5 (18.21)	447 (17.60)

≺ Mounting to DIN rail and dismounting ≻

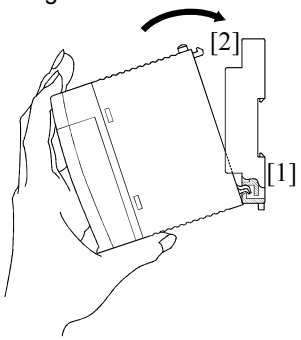


[1] Hang a fixed hook on the back of the base on the DIN rail.
[2] Push the base unit into the DIN rail till it goes click.
Note) After mounting, make sure of fixing the base unit.

[3] Pull the mounting lever fixed on the DIN rail down.
[4] Take the base off like raising the upper part.

≺ Mounting Module ≻

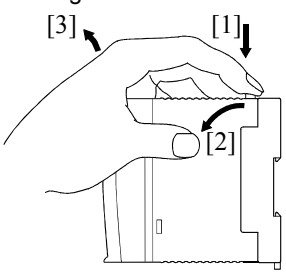
(1) Mounting



[1] Hang the hook in the lower part of the module on the hole in the base unit.
[2] Push the upper part of the module till it goes click.

Note 1) After mounting the module, check that the module does not come off.
Note 2) The power module is mounted on the left-most side of the base unit.
Note 3) CPU module and I/O controller are mounted on the right side of the power module.

(2) Dismounting



[1] Push the lock button.
[2] Pull the upper part of the module forward with pushing the lock button.
[3] Raise the module above while pulling out.

Note) Pull the power module out with pushing two lock buttons.

System Equipment

■ Modules

Table 2, 3 show supported modules used with EHV+ series CPU.

Table 2 List of system equipment (1 / 2)

Product	Type	Specification	I/O type	Current consump-tion [mA]	Remarks
Power module	EH-PSA	Input 85 to 264V AC, Output 5V DC 3.8 A, 24V DC 0.4 A	—	—	
	EH-PSD	Input 21.6 to 26.4 V DC, Output 5 V DC 3.8 A	—	—	
I/O controller	EH-IOCH2	I/O control module (1 unit / expansion base unit) *1	—	80	Mounted in CPU position
Base unit	EH-BS3A	3 I/O modules installed	—	200	Commonly used for basic or expansion base
	EH-BS5A	5 I/O modules installed	—	200	
	EH-BS6A	6 I/O modules installed	—	200	
	EH-BS8A	8 I/O modules installed	—	200	
	EH-BS11A	11 I/O modules installed	—	200	
Input module	EH-XD8	8 pts., 24V DC input	16 DI	30	
	EH-XD16	16 pts., 24V DC input	16 DI	50	
	EH-XDL16	16 pts., 24V DC input, with input filter	16 DI	50	
	EH-XD32	32 pts., 24V DC input	32 DI	60	
	EH-XDL32	32 pts., 24V DC input, with input filter	32 DI	60	
	EH-XD32E	32 pts., 24V DC input, Spring type terminal	32 DI	60	
	EH-XDL32E	32 pts., 24V DC input, Spring type terminal, with input filter	32 DI	60	
	EH-XD32H	32 pts., 24V DC input, compatible connector with PIM/H-DM (EM/H-200)	32 DI	60	
	EX-XD64	64 pts., 24V DC input	64 DI	80	
	EH-XA16	16 pts., 100 to 120V AC input	16 DI	50	
	EH-XAH16	16 pts., 200 to 240V AC input	16 DI	50	
Output module	EH-YR8B	8 pts., Independent relay output, 100/240V AC, 24V DC	16 DO	220	
	EH-YR12	12 pts., Relay, 100/240V AC, 24 V DC	16 DO	40	
	EH-YR16	16 pts., Relay, 100/240V AC, 24 V DC	16 DO	430	
	EH-YT8	8 pts., Transistor, 12/24V DC (sink type)	16 DO	30	
	EH-YTP8	8 pts., Transistor, 12/24V DC (source type)	16 DO	30	
	EH-YT16	16 pts., Transistor, 12/24V DC (sink type)	16 DO	50	
	EH-YTP16	16 pts., Transistor, 12/24V DC (source type)	16 DO	50	
	EH-YTP16S	16 pts., Transistor, 12/24V DC (source type)	16 DO	50	Electric short circuit Protection
	EH-YT32	32 pts., Transistor, 12/24V DC (sink type) *2	32 DO	90	
	EH-YTP32	32 pts., Transistor, 12/24V DC (source type) *2	32 DO	90	
	EH-YT32E	32 pts., Transistor, 12/24V DC (sink type), Spring type terminal	32 DO	90	
	EH-YTP32E	32 pts., Transistor, 12/24V DC (source type), Spring type terminal	32 DO	90	
	EH-YT32H	32 pts., Transistor, 5/12/24V DC (sink type), compatible connector with POM/H-DM (EM/H-200)	32 DO	90	
	EH-YT64	64 pts., Transistor, 12/24V DC (sink type)	64 DO	120	Electric short circuit protection
	EH-YTP64	64 pts., Transistor, 12/24V DC (source type)	64 DO	120	
	EH-YS4	4 pts., Triac, 100/240V AC	16 DO	70	
	EH-YS16	16 pts., Triac, 100/240V AC	16 DO	250	
Analog input module	EH-AX44	12 bits, 8 ch. (4 ch. of 4 to 20mA, 4 ch. of 0 to10V)	8 AI	100	
	EH-AX8V	12 bits, 8 ch., Voltage (0 to 10 V)	8 AI	100	
	EH-AX8H	12 bits, 8 ch., Voltage (−10 to +10 V)	8 AI	100	
	EH-AX8I	12 bits, 8 ch., Current (4 to 20 mA)	8 AI	100	
	EH-AX8IO	12 bits, 8 ch., Current (0 to 22 mA)	8 AI	100	
	EH-AXH8M	14 bits, 8 ch. (0 to 22mA, 4 to 22mA, −10 to +10V, 0 to 10V)	8 AI	70	
Analog output module	EH-AY22	12 bits, 4 ch. (2 ch. of 4 to 20mA, 2 ch. of 0 to 10 V)	8 AO	100	
	EH-AY2H	12 bits, 2 ch., Voltage (−10 to +10 V)	8 AO	100	
	EH-AY4V	12 bits, 4 ch., Voltage (0 to 10 V)	8 AO	100	
	EH-AY4H	12 bits, 4 ch., Voltage (−10 to +10 V)	8 AO	100	
	EH-AY4I	12 bits, 4 ch., Current (4 to 20 mA)	8 AO	130	
	EH-AYH8M	14 bits, 8 ch. (0 to 22mA, 4 to 22mA, 0 to 10V)	8 AO	70	

*1 CPUs, power modules and I/O controllers (IOCH2,IOCP,IOCD) are mounted on reserved positions only.
*2 Short circuit protection version is from May 2001 production. (MFG No. 01Exx)

Table 3 List of system equipment (2 / 2)

Product	Type	Specification	I/O type	Current consump-tion [mA]	Remarks
RTD input module	EH-PT4	Signed 15 bits, 4 ch. Resistance Temperature Detector input, PT100/PT1000	4 AI	160	
Thermocouple input module	EH-TC8	Signed 15 bits, 8 ch. Thermocouple input (K,E,J,T,B,R,S,N)	8 AI	70	
Counter and Positioning module	EH-CU	2 ch. high-speed counter input, 100 kHz, 4 pts. open collector output	CU/E	310	
	EH-CUE	1 ch. high-speed counter input, 100 kHz, 2 pts. open collector output	CU/E	310	
	EH-POS	1 axis pulse output positioning module	POS/4	300	
Communication and network module	EH-SIO	Serial interface module, general-purpose or Modbus-RTU master, RS-232C ×1 + RS-232C/422/485 ×1	SIO	250	
	EH-RMD	Device Net master module, 256/256 words I/O	RMP	280	8 units per CPU
	EH-RMP	PROFIBUS-DP master module, 256/256 words I/O	RMP	600	8 units per CPU
	EH-IOCD	Device Net slave controller, 256/256 words I/O	—	320	Mounted in CPU position
	EH-IOCP	PROFIBUS-DP slave controller, 208 words I/O	—	600	
Dummy module	EH-DUM	Module for empty slot	Empty	0	

[Installing restriction]

EH-RMP/RMD can be mounted up to 8 units per CPU. Available position is from slot 0 to 7 of basic base only.

⚠ Caution

Due to limited capacity of power supply module, available module configuration depends on total current consumption of I/O modules. Please select I/O module and base unit according to the current consumption listed in the table 2 and 3.

■ Peripheral device

Table 4 List of peripheral device

Product	Type	Specification	Remarks
Programming software EHV-CoDeSys	EHV-CDS	IEC 61131-3 full complient programming software with ST (Structured Text), SFC (Sequential Function Chart), FBD (Function Block Diagram), LD (Ladder Diagram) and IL (Instruction List).	

Note) Windows® XP is registered trademarks of Microsoft Corporation in U.S.

Note) "CoDeSys" is a Trademark of the company 3S-Smart Software Solutions GmbH. "EHV-CoDeSys" is same tool as "CoDeSys" however, Hitachi specific device description files and libraries are preinstalled.

■ Connection cable

Table 5 List of connection cable

Product	Type	Specification	Remarks
Expansion cable	EH-CB05A	0.5 m (basic/expansion base to I/O controller)	
	EH-CB10A	1 m (basic/expansion base to I/O controller)	
	EH-CB20A	2 m (basic/expansion base to I/O controller)	
I/O cable for 32/64 points module (connectors in both ends)	EH-CBM01W	1m (32/64 pts. module to external terminal block)	*3
	EH-CBM03W	3m (32/64 pts. module to external terminal block)	*3
	EH-CBM05W	5m (32/64 pts. module to external terminal block)	*3
	EH-CBM10W	10m (32/64 pts. module to external terminal block)	*3
I/O cable for 32/64 points module (connector and open end)	EH-CBM01	1m (32/64 pts. module to external terminal block)	*3
	EH-CBM03	3m (32/64 pts. module to external terminal block)	*3
	EH-CBM05	5m (32/64 pts. module to external terminal block)	*3
	EH-CBM10	10m (32/64 pts. module to external terminal block)	*3
I/O cable for 32/64 points module (EM/H-200 compatible)	CBM-02	EM/H-200 compatible 32 point module cable, open and connector end (2m)	
	CBM-05	EM/H-200 compatible 32 point module cable, open and connector end (5m)	
	CBM-10	EM/H-200 compatible 32 point module cable, open and connector end (10m)	
Counter module cable	EH-CUC01	Counter module cable, open and connector end (1m)	
	EH-CUC02	Counter module cable, open and connector end (2m)	
	EH-CUC03	Counter module cable, open and connector end (3m)	
	EH-CUC04	Counter module cable, open and connector end (4m)	
	EH-CUC05	Counter module cable, open and connector end (5m)	
Serial communication cable	EH-VCB02	2 m, RJ45 and D-sub 9-pin	

*3 Rated withstand voltage is 30V. Be sure to use with 32/64 I/O modules in the cabinet PLC installed.

■ Optional

Table 6 List of optional

Product	Type	Remarks
Lithium battery	LIBAT-H	For retentive data and real time clock. Commonly used in H/EH series

One battery is packed in CPU module.

[Reference]

The life of battery (Total power failure time) [Hr]	
Min. @55°C	Max. @25°C
2,000	17,700

General Specification

Item		Specification
Input Power voltage	AC	100/110/120V AC (50/60 Hz), 200/220/240V AC (50/60 Hz)
	DC	24 V DC
Power voltage fluctuation range		85 to 264V AC
		21.6 to 26.4V DC
Allowable instantaneous power failure		85 to 100 V AC: when instantaneous power failure of less than 10 ms, operation continues 100 to 264 V AC: when instantaneous power failure of less than 20 ms, operation continues
Operational temperature		0 to 55 °C
Storage temperature		−10 to 75 °C
Operational humidity		20 to 90 % RH (no condensation)
Storage humidity		10 to 90 % RH (no condensation)
Vibration resistance		Conforms to IEC 60068-2-6
Noise resistance		○ Noise voltage 1,500 Vpp, Noise pulse width 100 ns, 1μs (Noise input by a noise simulator across input terminals of a power module according to measuring method of Hitachi-IES. ○ Based on IEC61131-2 (not applied for input modules) ○ Static noise 3,000 V at electrode part
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

EHV+ series CPU module Performance specification

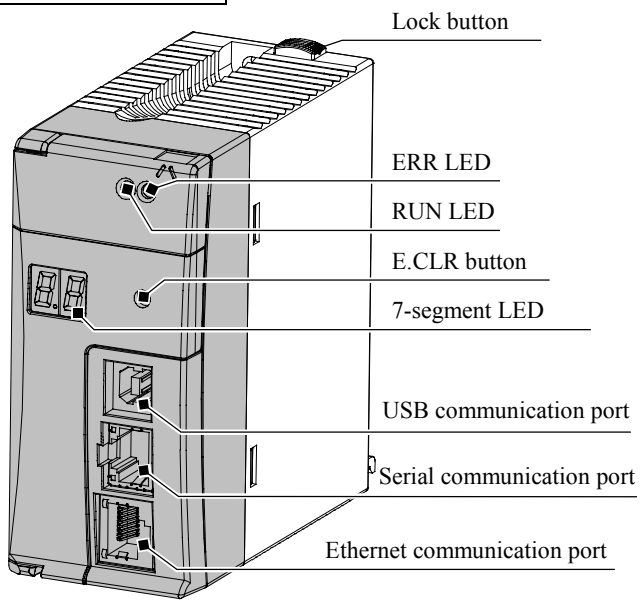
Item		Specification			
		EHV-CPU1006	EHV-CPU1025	EHV-CPU1051	EHV-CPU1102
User program memory		64KB	256KB	512KB	1024KB
Source file memory		2MB	6MB		
Data Memory (non retain)		256KB			
Data memory (retain)		16KB (incl. 4KB persistent variables)			
Field bus memory		16KB (2KB/slot × 8)			
No. of expansion bases		0	5		
No. of I/O (using 64 points module)		704	4,224		
Programming language		IEC61131-3 compliant 5 languages LD : Ladder Diagram FBD : Function Block Diagram (incl. CFC : Continuous Function Chart) SFC : Sequential Flow 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*[1])			
	Ethernet	10BASE-T / 100BASE-TX (Gateway *[1], Modbus-TCP*[2] client/server)			
	Serial	RS-232C/422/485 (Gateway*[1], Modbus-RTU*[2] master, General purpose)			
Switch, Indications	Indications	RUN LED, ERR LED, 7-segment LED (2 digit)			
	RUN Switch	STOP / RUN (Remote STOP/RUN enabled when the switch position is RUN.)			
	E.CLR button	Reset error information			
Calendar / Clock		Support (Built-in RTC)			
Battery		LIBAT-H (for retentive data and Real time clock)			
Maintenance function		Diagnosis (micro processor error, watch dog timer error, memory error, battery error, etc.)			

*1 Gateway : Communication with CoDeSys

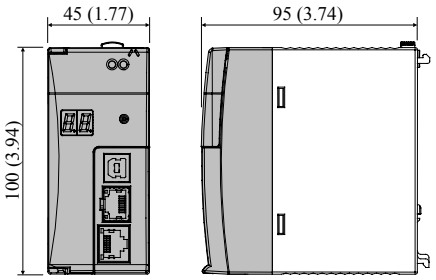
*2 If Modbus-RTU or Modbus-TCP function is needed, be sure to use EHV-CPU1025 or higher model because Modbus libraries require about 100KB of user program memory.

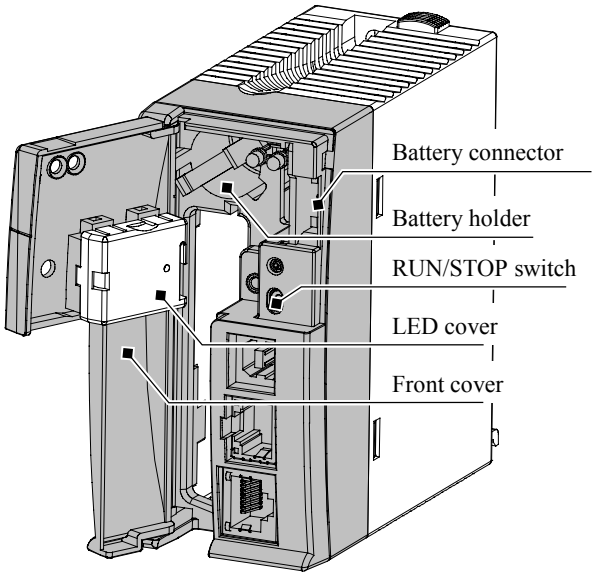
■ CPU module

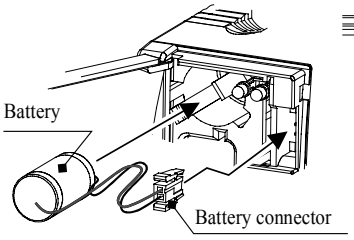
Module features



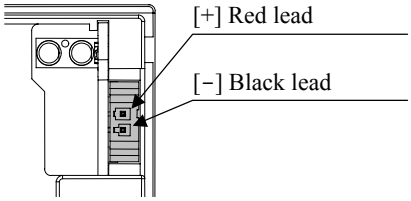
Type	EHV-CPU1006
	EHV-CPU1025
	EHV-CPU1051
	EHV-CPU1102
Weight	Approx. 0.2 kg (0.44 lb.)
Current consumption	750 mA
Dimensions (mm (in.))	







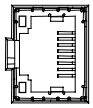
Battery connector part



Serial communication port

SD

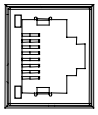
RD

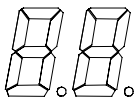


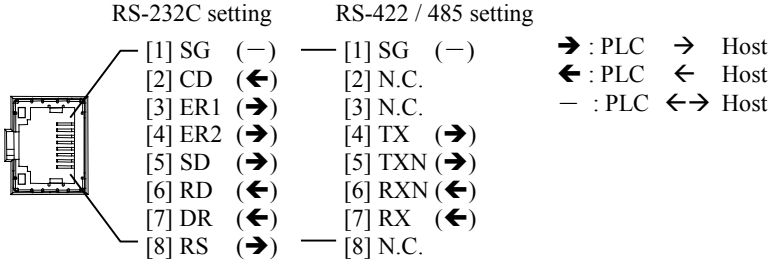
Ethernet communication port

LINK

RX



Item	Description
RUN LED	Indicates operation status. (Green lighting: RUN / off: STOP)
ERR LED	Indicates error status. (Red lighting: Error / Red blinking: Battery error)
7-segment LED	Indicates error code. 
E.CLR button	If any error occurs, error code is displayed in 7-segment LED and remains after the error cause is removed. When pressing this button, error code is cleared. If the error cause is still remaining, error code will be displayed again.

Item	Description
USB communication port	USB port supports gateway function (with EHV-CoDeSys) only. USB cable is not included with CPU package nor supplied by Hitachi-IES. Use a standard USB cable.
Serial communication port	Serial port has both gateway function (with EHV-CoDeSys) and IEC programming function supporting Modbus-RTU master and general purpose communication. * Both a gateway / IEC programming function can be switched to RS-232C / RS-422 / RS-485.  [Note] Be noted that RD LED could light in a moment at power ON/OFF.
Ethernet communication port	Ethernet port has both gateway function (with EHV-CoDeSys) and IEC programming function supporting Modbus-TCP client/server. In addition, network variables are transferred to/from other EHV+ CPUs over Ethernet network.
RUN / STOP switch	When this switch position is in RUN, CPU start executing program. At the same time, remote controlling is enabled, in which case, CPU is started or stopped by EHV-CoDeSys over communication. When this switch position is in STOP. CPU stops executing program. In this status, remote controlling is disabled.
Lock button	Press this button to dismount. Module can be fixed firmly by a screw of M4×10 mm(0.39in.).
Front cover	Open this cover when operating the RUN switch or replacing the battery. Keep the cover closed while the module is running. When the cover is opened, do not touch the printed wiring board.
Battery holder Battery Battery connector	[Battery] Following data are maintained by battery. (1) Data specified as VAR RETAIN and VAR PERSISTENT. (2) RTC (real time clock) data [Note] - Battery has polarity. Check polarity in connecting the battery although opposite connection is mechanically impossible. - Be noted that the battery is not connected with factory default to prevent unnecessary battery consumption. - When using the CPU module, check the battery and plug the battery connector to CPU as shown above. - Refer to the table on page 6 for the life of battery. Replace the battery every two years even when total power failure time is less than the guaranteed value.

⚠ Caution

Note the following matters for the communication port.

(1) Do not connect Ethernet cable to the serial port of CPU module. This could cause damage the CPU or connected equipment.

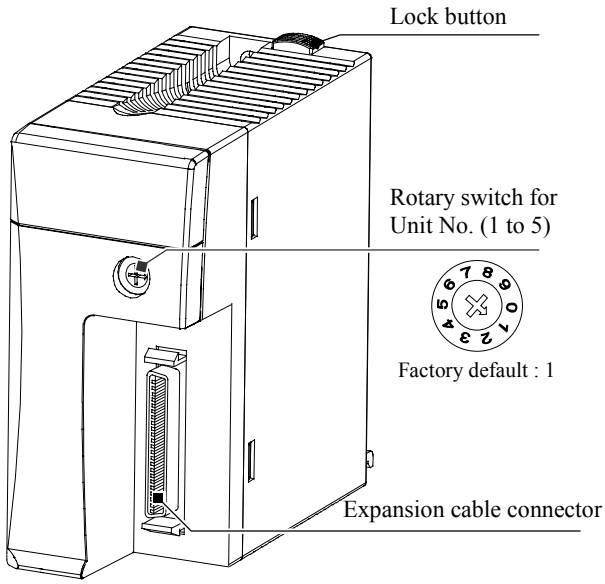
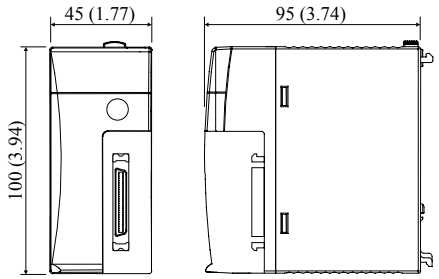
(2) In 100BASE-TX (100Mbps) communication of Ethernet, connection could be unstable due to external noise depending on cable length, installation environment and etc. In this case, take following countermeasures.

1] Increase the number of times to retry in connected device.

2] Change Ethernet communication speed to 10Mbps.

(3) USB communication could be unstable under severe noise environment. Be sure to use short cable and route apart from power line or other communication cables.

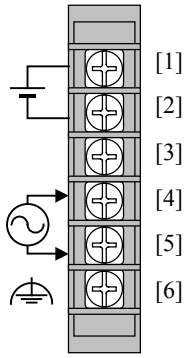
■ I/O controller

Module features		
	Type	EH-IOCH2
	Weight	Approx. 0.14 kg (0.31 lb.)
	Current consumption	80mA
	Dimension (mm (in.))	

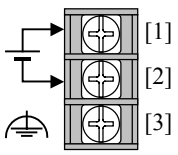
Explanation of function	I/O controller is mounted on CPU's position of an expansion base and controls I/O modules mounted on the same base according to user program in CPU module. Be sure to set unit number with the rotary switch. Unit number must be ascending order from 1 to 5. [Note] - Do not set any other number than 1 to 5. - Although EH-IOCH (predecessor) and EH-IOCH2 can be used together, do not use EH-IOCH in the 5th expansion base. EH-IOCH2 must be used in 5th expansion base.

■ Power module

Item	EH-PSA		EH-PSD
Rated output voltage	5V DC	24V DC	5 V DC
Maximum DC output current	3.8A	0.4A	3.8A
Efficiency	65 % minimum (5 min. after power up with max. load in room temperature and humidity		70 % minimum With max. load (5VDC 3.8 A)
Input voltage range	85 to 264 V AC		21.6 to 26.4 V DC
Input current	1A maximum (85 to 264V AC)		1.25 A maximum (at 24 V DC)
Input rush current	50A maximum (Ta=25 °C), 100A maximum (Ta=55 °C)		
Output over-current protection	Output short circuit protection		
Input leak current	3.5 mA maximum (60 Hz, 264 V AC)		—
Dielectric withstand voltage	1,500V AC for 1 min. between AC input and DC output 750V AC for 1 min. between DC output and FE		1,500 V AC for 1 min. DC output and FE
Insulation resistance	20 MΩ minimum (500V DC) (1) between AC input and FE (2) between AC input and DC output		20 MΩ minimum (500V DC) between DC input and FE
Vibration resistance	Conforms to JIS C 0911 16.7 Hz double amplitude 3 mm (0.12 in.) X, Y, Z each direction Conforms to JIS C 0040 10－57 Hz single amplitude 0.075 mm, 57－150 Hz constant acceleration 9.8 m/s^2		
Shock resistance	Conforms to JIS C 0912 10G / X, Y, Z each direction, conforms to JIS C 0040 15G / X, Y, Z each direction		



No.	EH-PSA
[1]	24 VDC+
[2]	24 VDC−
[3]	N.C.
[4]	100 to 240 VAC
[5]	100 to 240 VAC
[6]	FE

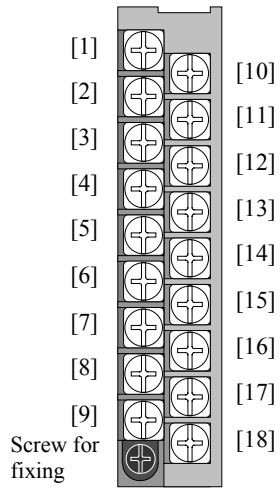


No.	EH-PSD
[1]	24 VDC+
[2]	24 VDC−
[3]	FE

■ Input module

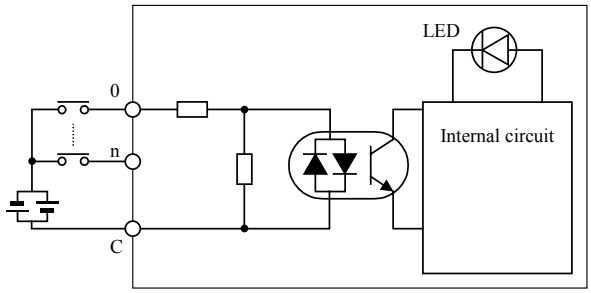
(1) DC Input, AC Input (8 points / 16 points)

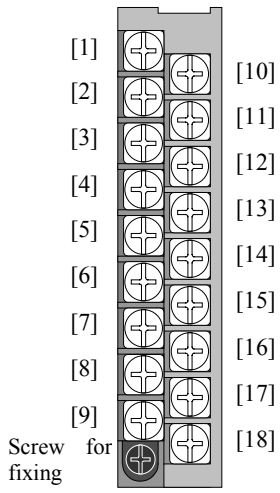
		EH-XD8	EH-XD16	EH-XDL16	EH-XA16	EH-XAH16
Input type		DC (common for sink and source)			AC	
Number of inputs		8	16		16	
Input voltage		24V DC (19.2 to 30V DC)			100V AC (85 to 132V AC)	200V AC (170 to 264V AC)
Input current		Approx. 6.9mA	Approx. 4.0mA		4.8 to 7.6mA (100V AC / 50Hz)	4.3 to 8.0mA (200V AC / 50Hz)
Input impedance		Approx. 3.5kΩ	Approx. 5.9kΩ		Approx. 16kΩ (50Hz) / Approx. 13kΩ (60Hz)	Approx. 32kΩ (50Hz) / Approx. 27kΩ (60Hz)
Operating voltage	ON voltage	15V minimum			79V AC minimum	164V AC minimum
	OFF voltage	5V maximum			20V AC maximum	40V AC maximum
Input response time	OFF➔ON	5ms max.		16ms max.	15 ms max.	
	ON➔OFF	5ms max.		16ms max.	25 ms max.	
Insulation method		Photo-coupler insulation				
Input display		Green LED				
External connection		Removable type screw terminal block (M3)				
Number of inputs / common		8	16 (1 common, 2 terminals)			
Internal current consumption		30mA max.	50mA max.			



No.	Signal name EH-XD8	Signal name EH-XD16	Signal name EH-XDL16
[1]	0	0	0
[2]	1	1	1
[3]	2	2	2
[4]	3	3	3
[5]	4	4	4
[6]	5	5	5
[7]	6	6	6
[8]	7	7	7
[9]	C	C	C
[10]	N.C.	8	8
[11]	N.C.	9	9
[12]	N.C.	10	10
[13]	N.C.	11	11
[14]	N.C.	12	12
[15]	N.C.	13	13
[16]	N.C.	14	14
[17]	N.C.	15	15
[18]	C	C	C

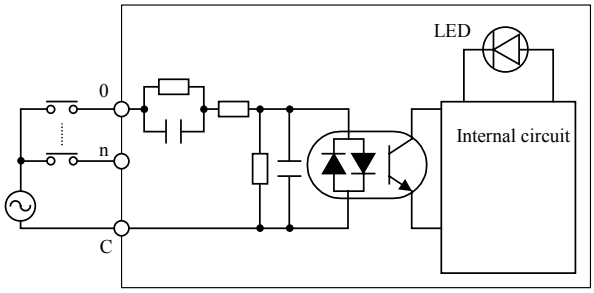
Internal circuit





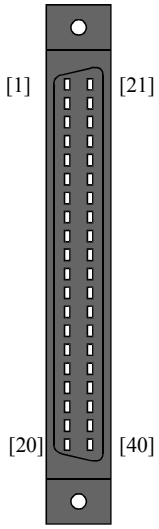
No.	Signal name EH-XA16	Signal name EH-XAH16
[1]	0	0
[2]	1	1
[3]	2	2
[4]	3	3
[5]	4	4
[6]	5	5
[7]	6	6
[8]	7	7
[9]	C	C
[10]	8	8
[11]	9	9
[12]	10	10
[13]	11	11
[14]	12	12
[15]	13	13
[16]	14	14
[17]	15	15
[18]	C	C

Internal circuit



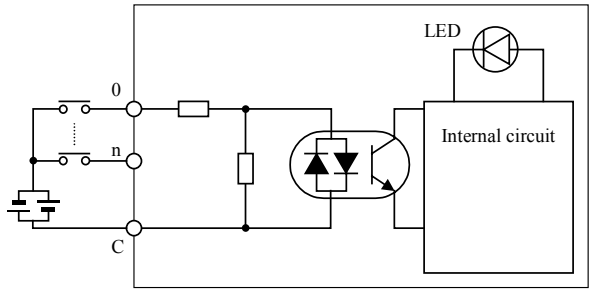
(2) DC Input (32 points)

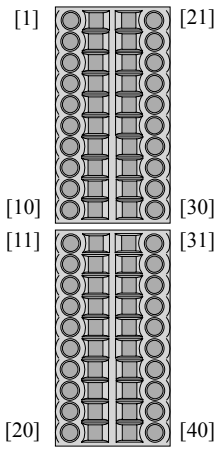
		EH-XD32	EH-XDL32	EH-XD32E	EH-XDL32E	EH-XD32H
Input type		DC input (common for sink and source)				
Number of inputs		32				
Input voltage		24V DC (20.4 to 28.8 V DC)				24V DC (21.6 to 26.0V DC)
Input current		Approx. 4.3mA				Approx. 4.1mA
Input impedance		Approx. 5.6kΩ				Approx. 5.9kΩ
Operating voltage	ON voltage	15V minimum				19V minimum
	OFF voltage	5V maximum				7V maximum
Input response time	OFF➔ON	5ms max.	16ms max.	1ms max.	16ms max.	4ms max.
	ON➔OFF	5ms max.	16ms max.	1ms max.	16ms max.	4ms max.
Insulation method		Photo-coupler insulation				
Input display		Green LED				
External connection		Connector		Spring type removable terminal		Connector
Number of inputs / common		32 (1 common, 4 terminals)		8 (4 commons, 8 terminals)		32 (1 common, 4 terminals)
Internal current consumption		60mA maximum				



EH-XD32, EH-XDL32			
No.	Signal name	No.	Signal name
[1]	0	[21]	16
[2]	1	[22]	17
[3]	2	[23]	18
[4]	3	[24]	19
[5]	4	[25]	20
[6]	5	[26]	21
[7]	6	[27]	22
[8]	7	[28]	23
[9]	C	[29]	C
[10]	8	[30]	24
[11]	9	[31]	25
[12]	10	[32]	26
[13]	11	[33]	27
[14]	12	[34]	28
[15]	13	[35]	29
[16]	14	[36]	30
[17]	15	[37]	31
[18]	C	[38]	C
[19]	N.C.	[39]	N.C.
[20]	N.C.	[40]	N.C.

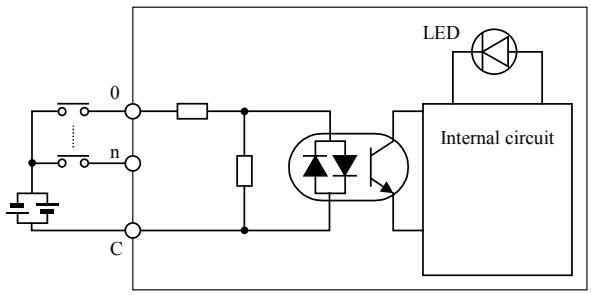
Internal circuit

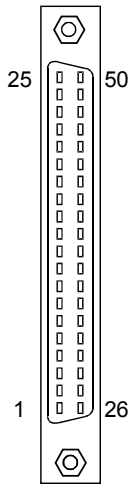




EH-XD32E, EH-XDL32E			
No.	Signal name	No.	Signal name
[1]	0	[21]	16
[2]	1	[22]	17
[3]	2	[23]	18
[4]	3	[24]	19
[5]	4	[25]	20
[6]	5	[26]	21
[7]	6	[27]	22
[8]	7	[28]	23
[9]	C1	[29]	C3
[10]	C1	[30]	C3
[11]	8	[31]	24
[12]	9	[32]	25
[13]	10	[33]	26
[14]	11	[34]	27
[15]	12	[35]	28
[16]	13	[36]	29
[17]	14	[37]	30
[18]	15	[38]	31
[19]	C2	[39]	C4
[20]	C2	[40]	C4

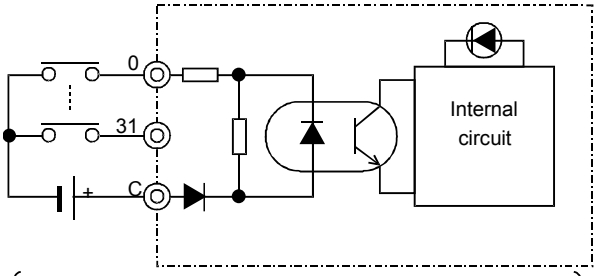
Internal circuit



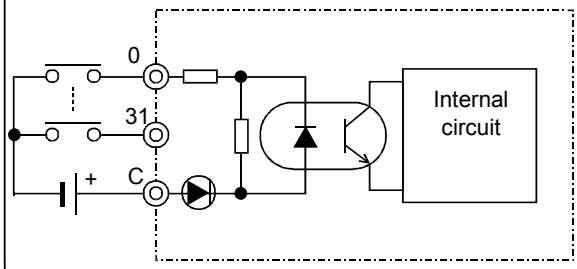


EH-XD32H				Internal circuit
No.	Signal name	No.	Signal name	
[25]	NC	[50]	NC	
[24]	NC	[49]	NC	
[23]	NC	[48]	NC	
[22]	NC	[47]	NC	
[21]	15	[46]	31	
[20]	14	[45]	30	
[19]	13	[44]	29	
[18]	12	[43]	28	
[17]	11	[42]	27	
[16]	10	[41]	26	
[15]	9	[40]	25	
[14]	8	[39]	24	
[13]	NC	[38]	NC	
[12]	C	[37]	C	
[11]	NC	[36]	NC	
[10]	7	[35]	23	
[9]	6	[34]	22	
[8]	5	[33]	21	
[7]	4	[32]	20	
[6]	3	[31]	19	
[5]	2	[30]	18	
[4]	1	[29]	17	
[3]	0	[28]	16	
[2]	NC	[27]	NC	
[1]	C	[26]	C	

EH -XD32H (This product)

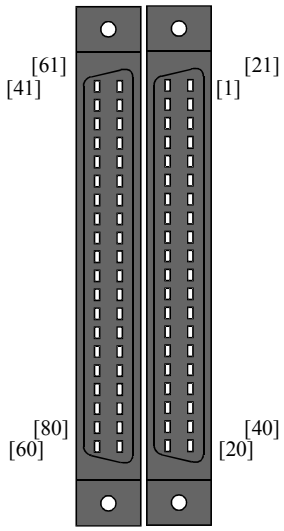


PIM-DM, PIH-DM (for replacing) [Reference]

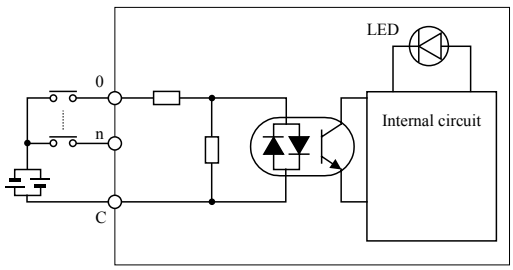


(3) DC Input (64 points)

		EH-XD64
Input type		DC input (common for sink and source)
Number of inputs		64 points
Input voltage		24V DC (20.4 to 28.8 V DC)
Input current		Approx. 4.3mA
Input impedance		Approx. 5.6kΩ
Operating voltage	ON voltage	15V minimum
	OFF voltage	5V maximum
Input response time	OFF➔ON	1ms maximum
	ON➔OFF	1ms maximum
Insulation method		Photo-coupler insulation
Input display		Green LED
External connection		Connector
Number of inputs / common		32 (2 commons, 8 terminals)
Internal current consumption		80mA maximum



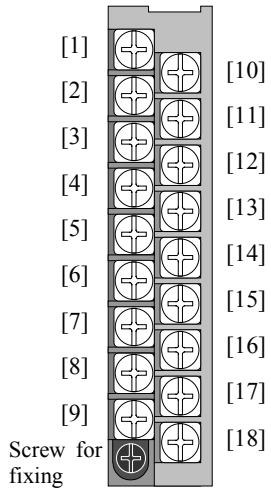
EH-XD64								Internal circuit
No.	Signal name	No.	Signal name	No.	Signal name	No.	Signal name	
[41]	32	[61]	48	[1]	0	[21]	16	
[42]	33	[62]	49	[2]	1	[22]	17	
[43]	34	[63]	50	[3]	2	[23]	18	
[44]	35	[64]	51	[4]	3	[24]	19	
[45]	36	[65]	52	[5]	4	[25]	20	
[46]	37	[66]	53	[6]	5	[26]	21	
[47]	38	[67]	54	[7]	6	[27]	22	
[48]	39	[68]	55	[8]	7	[28]	23	
[49]	C2	[69]	C2	[9]	C1	[29]	C1	
[50]	40	[70]	56	[10]	8	[30]	24	
[51]	41	[71]	57	[11]	9	[31]	25	
[52]	42	[72]	58	[12]	10	[32]	26	
[53]	43	[73]	59	[13]	11	[33]	27	
[54]	44	[74]	60	[14]	12	[34]	28	
[55]	45	[75]	61	[15]	13	[35]	29	
[56]	46	[76]	62	[16]	14	[36]	30	
[57]	47	[77]	63	[17]	15	[37]	31	
[58]	C2	[78]	C2	[18]	C1	[38]	C1	
[59]	N.C.	[79]	N.C.	[19]	N.C.	[39]	N.C.	
[60]	N.C.	[80]	N.C.	[20]	N.C.	[40]	N.C.	



■ Output module

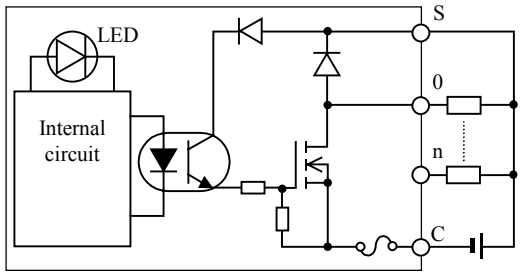
(1) Transistor Output (8 points / 16 points)

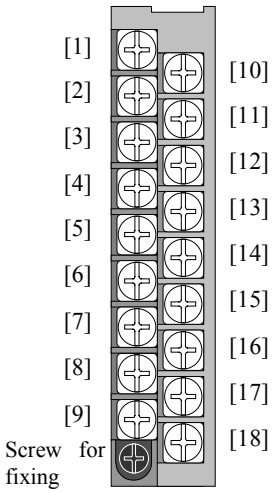
		EH-YT8	EH-YT16	EH-YTP8	EH-YTP16	EH-YTP16S
Output specification		Sink type		Source type		
Number of outputs		8	16	8	16	
Rated load voltage		12 / 24 V DC (+10%, -15%)				
Minimum switching current		1 mA				
Leak current		0.1 mA				
Maximum load current	1 circuit	0.3A (MFG No. 02F** or older) 0.5A (MFG No. 02G** or newer)		0.3A (MFG No. 02F** or older) 0.5A (MFG No. 02G** or newer)		0.8A
	1 common	2.4A	4A	2.4A	4A	5A
Output response time	OFF➔ON	0.3ms max.				
	ON➔OFF	1ms max.				
Insulation method		Photo-coupler insulation				
Output display		Green LED				
External connection		Removable type screw terminal block (M3)				
Number of outputs / common		8	16	8	16	
Surge removal circuit		Diode				Built-in
Fuse		4A / 1 common	8A / 1 common	4A / 1 common	8A / 1 common	None
External power supply		12 / 24 V DC (+10%, -15%) (Maximum 30mA)				
Internal current consumption		30mA max.	50mA max.	30mA max.	50mA max.	
Short circuit protection function		None				Available



No.	Signal name	
	EH-YT8	EH-YT16
[1]	0	0
[2]	1	1
[3]	2	2
[4]	3	3
[5]	4	4
[6]	5	5
[7]	6	6
[8]	7	7
[9]	C	C
[10]	N.C.	8
[11]	N.C.	9
[12]	N.C.	10
[13]	N.C.	11
[14]	N.C.	12
[15]	N.C.	13
[16]	N.C.	14
[17]	N.C.	15
[18]	S	S

Internal circuit

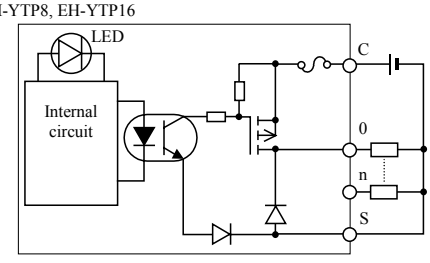




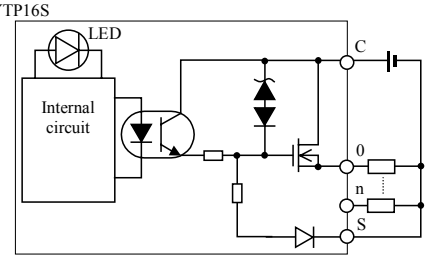
No.	Signal name		
	EH-YTP8	EH-YTP16	EH-YTP16S
[1]	0	0	0
[2]	1	1	1
[3]	2	2	2
[4]	3	3	3
[5]	4	4	4
[6]	5	5	5
[7]	6	6	6
[8]	7	7	7
[9]	C	C	C
[10]	N.C.	8	8
[11]	N.C.	9	9
[12]	N.C.	10	10
[13]	N.C.	11	11
[14]	N.C.	12	12
[15]	N.C.	13	13
[16]	N.C.	14	14
[17]	N.C.	15	15
[18]	S	S	S

Internal circuit

EH-YTP8, EH-YTP16

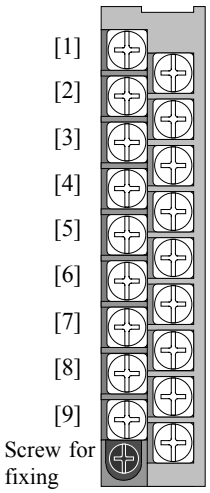


EH-YTP16S



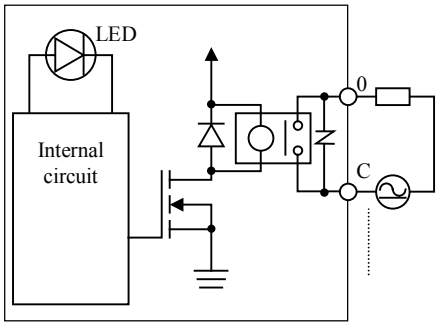
(2) Relay Output (8 points with varistor / 12 points / 16 points)

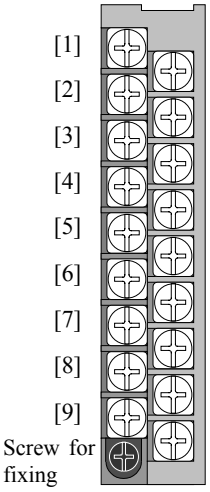
		EH-YR8B	EH-YR12	EH-YR16
Output specification		Relay output		
Number of outputs		8 points	12 points	16 points
Rated load voltage		100 / 240 V AC, 24 V DC		
Minimum switching current		1 mA (5V DC) (This value can change due to switching frequency and)		
Leak current		None		
Maximum load current	1 circuit	2A		
	1 common	2 A	5A	8 A
Output response time	OFF➔ON	10ms max.		
	ON➔OFF	10ms max.		
Insulation method		Relay insulation	Photo-coupler insulation	Relay insulation
Output display		Green LED		
External connection		Removable type screw terminal block (M3)		
Number of outputs / common		1 (8 commons)	12 (1 common, 2 terminals)	16 (1 common, 2 terminals)
Surge removal circuit		Varistor (varistor voltage 423 to 517V)	None	
Fuse		None		
External power supply		Unnecessary	24VDC (+10%, −15%) (Maximum 70mA)	Unnecessary
Internal current consumption		220mA max.	40mA max.	430mA max.



EH-YR8B	
No.	Signal name
[1]	0
[2]	1
[3]	2
[4]	3
[5]	4
[6]	5
[7]	6
[8]	7
[9]	N.C.
[10]	C.0
[11]	C.1
[12]	C.2
[13]	C.3
[14]	C.4
[15]	C.5
[16]	C.6
[17]	C.7
[18]	N.C.

Internal circuit

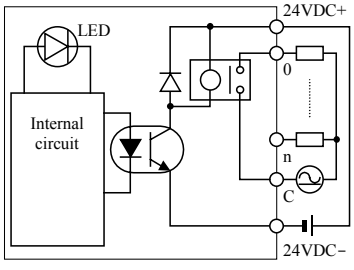




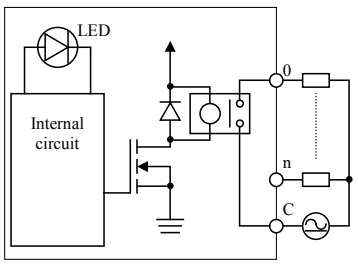
No.	Signal name	
	EH-YR12	EH-YR16
[1]	24VDC+	0
[2]	N.C.	1
[3]	0	2
[4]	1	3
[5]	2	4
[6]	3	5
[7]	4	6
[8]	5	7
[9]	C	C
[10]	24VDC−	8
[11]	N.C.	9
[12]	6	10
[13]	7	11
[14]	8	12
[15]	9	13
[16]	10	14
[17]	11	15
[18]	C	C

Internal circuit

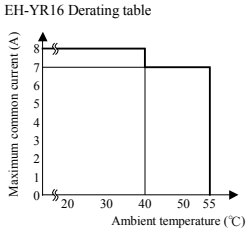
EH-YR12



EH-YR16

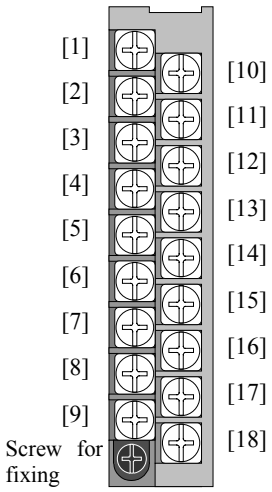


EH-YR16 Derating table



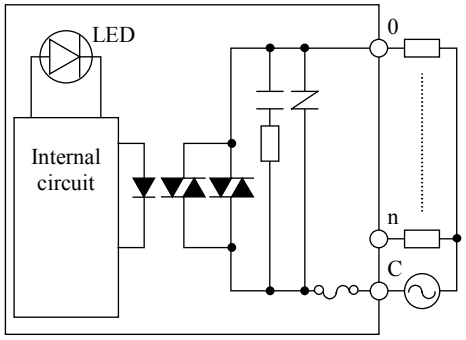
(3) Triac Output Module (4 points / 16 points)

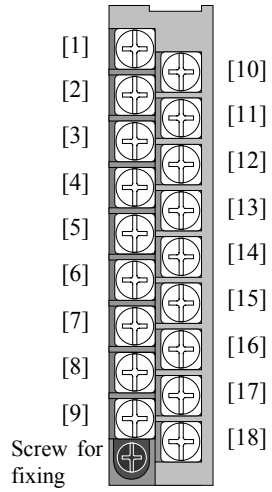
		EH-YS4	EH-YS16
Output specification		Triac output	
Number of outputs		4	16
Rated load voltage		100 / 240 V AC (85 to 250 V AC)	
Minimum switching current		100mA	10mA
Leak current		5 mA max.	2 mA max.
Maximum load current	1 circuit	0.5A	0.3 A
	1 common	2A	4.0 A (ambient temperature 45℃), see the derating table below
Output response time	OFF➔ON	1 ms max.	
	ON➔OFF	1 ms + 1/2 cycle max.	
Insulation method		Photo-triac insulation	
Output display		Green LED	
External connection		Removable type screw terminal block (M3)	
Number of outputs / common		4	16 (1 common, 2 terminals)
Surge removal circuit		Varistor	
Fuse		4A / 1 common	6.3A / 1 common (Fuse installation to external is necessary.)
External power supply		unnecessary	
Internal current consumption		70 mA max.	250 mA max.



EH-YS4	
No.	Signal name
[1]	0
[2]	N.C.
[3]	1
[4]	N.C.
[5]	2
[6]	N.C.
[7]	3
[8]	N.C.
[9]	C
[10]	N.C.
[11]	N.C.
[12]	N.C.
[13]	N.C.
[14]	N.C.
[15]	N.C.
[16]	N.C.
[17]	N.C.
[18]	N.C.

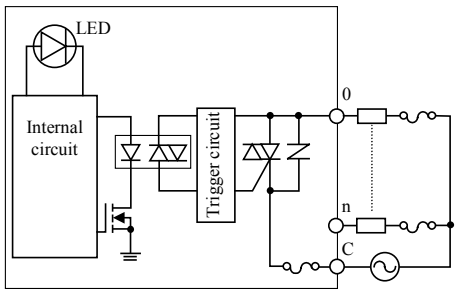
Internal circuit



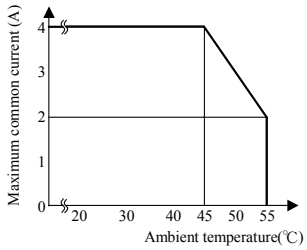


EH-YS16	
No.	Signal name
[1]	0
[2]	1
[3]	2
[4]	3
[5]	4
[6]	5
[7]	6
[8]	7
[9]	C
[10]	8
[11]	9
[12]	10
[13]	11
[14]	12
[15]	13
[16]	14
[17]	15
[18]	C

Internal circuit

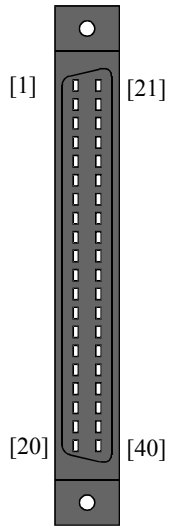


Derating table



(4) Transistor Output Module (32 points)

		EH-YT32	EH-YTP32	EH-YT32E	EH-YTP32E	EH-YT32H
Output specification		Sink type	Source type	Sink type	Source type	Sink type
Number of outputs		32 points				
Rated load voltage		12 / 24 V DC (+10%, −15%)				5 to 27V
Minimum switching current		1 mA				
Leak current		0.1 mA max.				0.05 mA max.
Maximum load current	1 circuit	0.2 A				0.1 A
	1 common	4.0 A		1.0 A		0.8 A
Output response time	OFF➔ON	0.3 ms max.				1 ms max.
	ON➔OFF	1 ms max.				1 ms max.
Insulation method		Photo-coupler insulation				
Output display		Green LED				
External connection		Connector		Spring type removable terminal		Connector
Number of outputs / 1 common		32 (1 common, 4 terminals)		8 (4 commons, 4 terminals)		
Surge removal circuit		Diode				
Fuse		10A / 1 common				2A / 1 common
External power supply		12 / 24 V DC (+10%, −15%) (Maximum 30mA)				5 to 27V (100mA max.)
Internal current consumption		90mA maximum				
Short circuit protection function		Available				None (2A fuse)

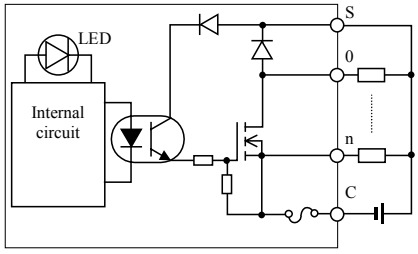


EH-YT32, EH-YTP32

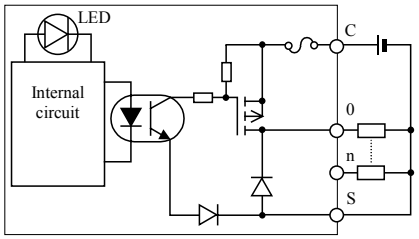
No.	Signal name	No.	Signal name
[1]	0	[21]	16
[2]	1	[22]	17
[3]	2	[23]	18
[4]	3	[24]	19
[5]	4	[25]	20
[6]	5	[26]	21
[7]	6	[27]	22
[8]	7	[28]	23
[9]	C	[29]	C
[10]	S	[30]	S
[11]	8	[31]	24
[12]	9	[32]	25
[13]	10	[33]	26
[14]	11	[34]	27
[15]	12	[35]	28
[16]	13	[36]	29
[17]	14	[37]	30
[18]	15	[38]	31
[19]	C	[39]	C
[20]	S	[40]	S

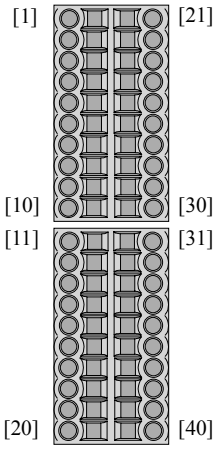
Internal circuit

EH-YT32



EH-YTP32



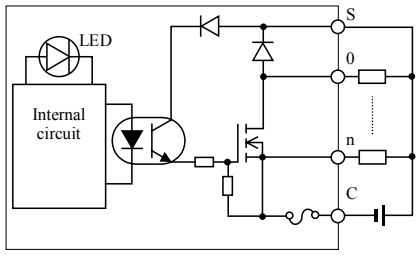


EH-YT32E, EH-YTP32E

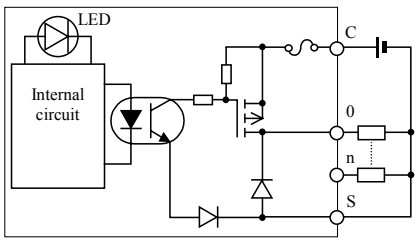
No.	Signal name	No.	Signal name
[1]	0	[21]	16
[2]	1	[22]	17
[3]	2	[23]	18
[4]	3	[24]	19
[5]	4	[25]	20
[6]	5	[26]	21
[7]	6	[27]	22
[8]	7	[28]	23
[9]	C1	[29]	C3
[10]	S1	[30]	S3
[11]	8	[31]	24
[12]	9	[32]	25
[13]	10	[33]	26
[14]	11	[34]	27
[15]	12	[35]	28
[16]	13	[36]	29
[17]	14	[37]	30
[18]	15	[38]	31
[19]	C2	[39]	C4
[20]	S2	[40]	S4

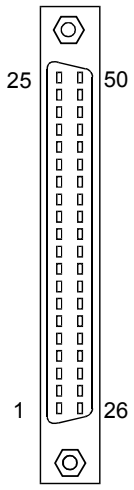
Internal circuit

EH-YT32E

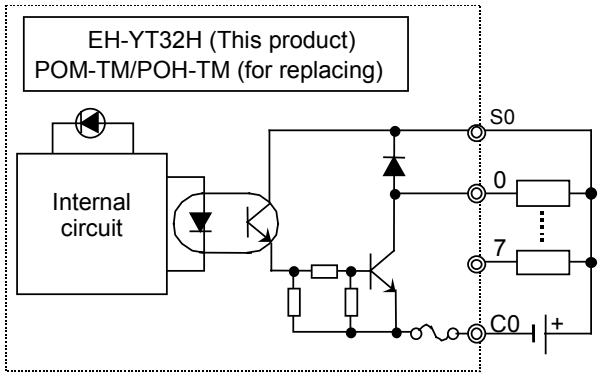


EH-YTP32E



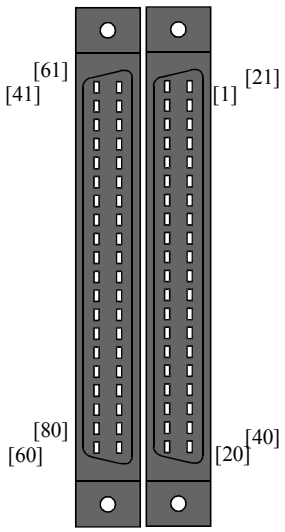


EH-YT32H				Internal circuit
No.	Signal name	No.	Signal name	
[25]	NC	[50]	NC	
[24]	NC	[49]	NC	
[23]	NC	[48]	NC	
[22]	NC	[47]	NC	
[21]	15	[46]	31	
[20]	14	[45]	30	
[19]	13	[44]	29	
[18]	12	[43]	28	
[17]	11	[42]	27	
[16]	10	[41]	26	
[15]	9	[40]	25	
[14]	8	[39]	24	
[13]	S1	[38]	S3	
[12]	C1	[37]	C3	
[11]	NC	[36]	NC	
[10]	7	[35]	23	
[9]	6	[34]	22	
[8]	5	[33]	21	
[7]	4	[32]	20	
[6]	3	[31]	19	
[5]	2	[30]	18	
[4]	1	[29]	17	
[3]	0	[28]	16	
[2]	S0	[27]	S2	
[1]	C0	[26]	C2	



(5) Transistor Output Module (64 points)

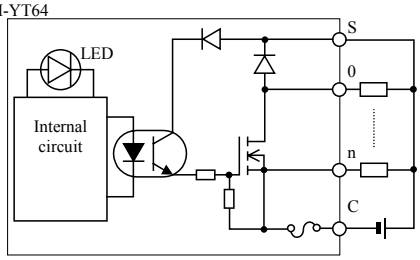
		EH-YT64	EH-YTP64
Output specification		Sink type	Source type
Number of output points		64 points	
Rated load voltage		12 / 24 V DC (+10%, −15%)	
Minimum switching current		1 mA	
Leak current		0.1 mA maximum	
Maximum load current	1 circuit	0.1 A	
	1 common	3.2 A	
Output response time	OFF➔ON	0.3 ms maximum	
	ON➔OFF	1 ms maximum	
Insulation method		Photo-coupler insulation	
Output display		Green LED	
External connection		Connector	
Number of output points / 1 common		32 (2 commons, 8 terminals)	
Surge removal circuit		Diode	
Fuse		5A / 1 common	
External power supply		12 / 24 V DC (+10%, −15%) (Maximum 100 mA)	
Internal current consumption		120 mA maximum	
Short circuit protection function		Available	



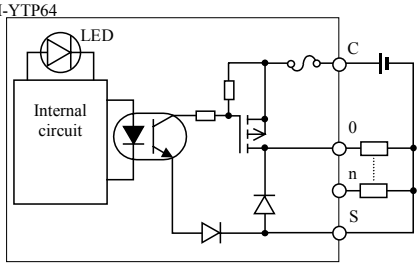
EH-YT64							
No.	Signal name	No.	Signal name	No.	Signal name	No.	Signal name
[41]	32	[61]	48	[1]	0	[21]	16
[42]	33	[62]	49	[2]	1	[22]	17
[43]	34	[63]	50	[3]	2	[23]	18
[44]	35	[64]	51	[4]	3	[24]	19
[45]	36	[65]	52	[5]	4	[25]	20
[46]	37	[66]	53	[6]	5	[26]	21
[47]	38	[67]	54	[7]	6	[27]	22
[48]	39	[68]	55	[8]	7	[28]	23
[49]	C2	[69]	C2	[9]	C1	[29]	C1
[50]	S2	[70]	S2	[10]	S1	[30]	S1
[51]	40	[71]	56	[11]	8	[31]	24
[52]	41	[72]	57	[12]	9	[32]	25
[53]	42	[73]	58	[13]	10	[13]	26
[54]	43	[74]	59	[14]	11	[34]	27
[55]	44	[75]	60	[15]	12	[35]	28
[56]	45	[76]	61	[16]	13	[36]	29
[57]	46	[77]	62	[17]	14	[37]	30
[58]	47	[78]	63	[18]	15	[38]	31
[59]	C2	[79]	C2	[19]	C1	[39]	C1
[60]	S2	[80]	S2	[20]	S1	[40]	S1

Internal circuit

EH-YT64

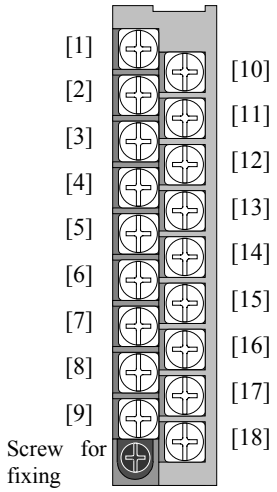


EH-YTP64



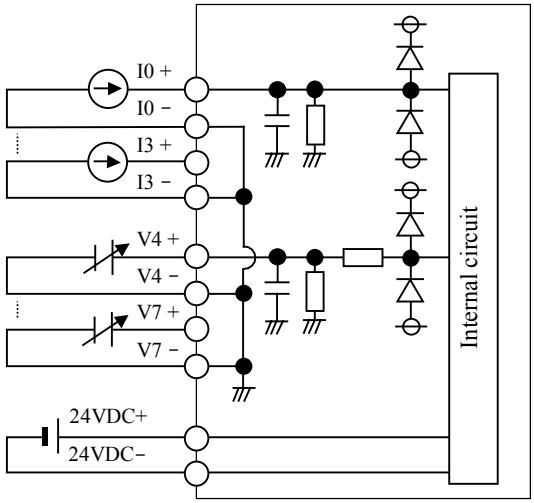
■ Analog Input Module

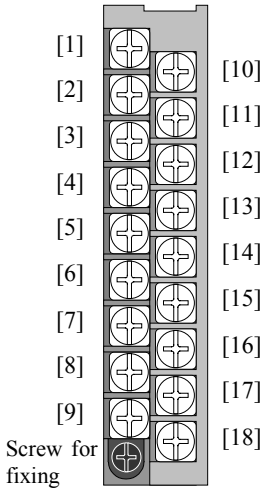
		EH-AX44	EH-AX8I	EH-AX8IO	EH-AX8V	EH-AX8H
Current range		4 to 20mA		0 to 22 mA	—	
Voltage range		0 to 10 V DC	—		0 to 10 V DC	±10 V DC
Number of channels	Current	4	8		—	
	Voltage	4	—		8	
Resolution		12 bits				
Conversion time		5ms maximum				
Overall precision		±1% maximum (of full scale value)				
Input impedance	Current	Approx. 100 Ω			—	
	Voltage	Approx. 100k Ω	—		Approx. 100k Ω	
Insulation	Channel · Internal circuit	Photo-coupler insulation				
	Between channels	No insulation				
External connection		Removable type screw terminal block (M3)				
Internal current consumption		100mA maximum				
External power supply		24V DC (+20%, −15%) Approx. 0.15A (Approx. 0.4A at power-up)				
External wiring		2-core shield wire (20m (65.62ft.) maximum)				



EH-AX44	
No.	Signal name
[1]	I0 +
[2]	I1 +
[3]	I2 +
[4]	I3 +
[5]	V4 +
[6]	V5 +
[7]	V6 +
[8]	V7 +
[9]	24 VDC +
[10]	I0 −
[11]	I1 −
[12]	I2 −
[13]	I3 −
[14]	V4 −
[15]	V5 −
[16]	V6 −
[17]	V7 −
[18]	24 VDC −

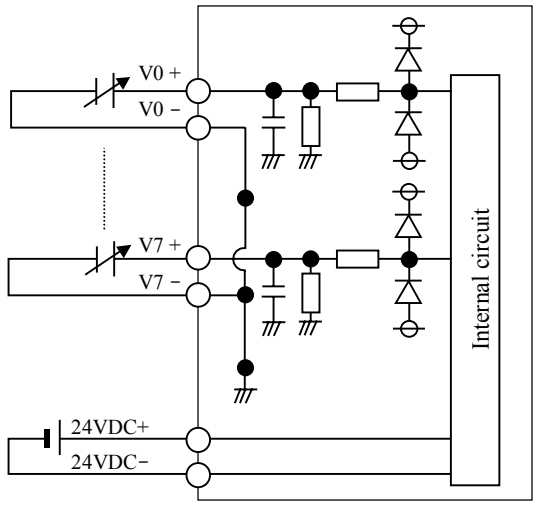
Internal circuit

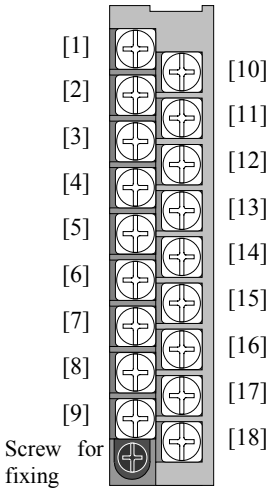




No.	Signal name	
	EH-AX8V	EH-AX8H
[1]	V0 +	V0 +
[2]	V1 +	V1 +
[3]	V2 +	V2 +
[4]	V3 +	V3 +
[5]	V4 +	V4 +
[6]	V5 +	V5 +
[7]	V6 +	V6 +
[8]	V7 +	V7 +
[9]	24 VDC +	24 VDC +
[10]	V0 −	V0 −
[11]	V1 −	V1 −
[12]	V2 −	V2 −
[13]	V3 −	V3 −
[14]	V4 −	V4 −
[15]	V5 −	V5 −
[16]	V6 −	V6 −
[17]	V7 −	V7 −
[18]	24 VDC −	24 VDC −

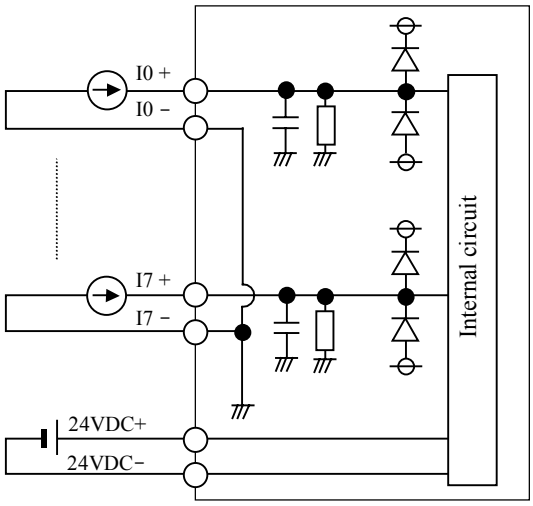
Internal circuit





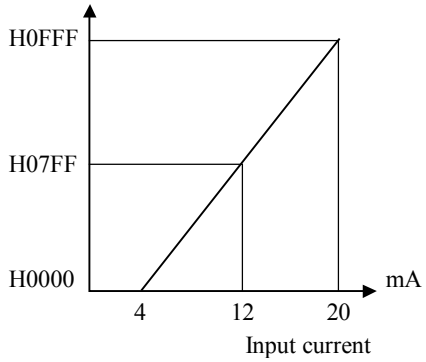
No.	Signal name	
	EH-AX8I	EH-AX8IO
[1]	I0 +	I0 +
[2]	I1 +	I1 +
[3]	I2 +	I2 +
[4]	I3 +	I3 +
[5]	I4 +	I4 +
[6]	I5 +	I5 +
[7]	I6 +	I6 +
[8]	I7 +	I7 +
[9]	24 VDC +	24 VDC +
[10]	I0 −	I0 −
[11]	I1 −	I1 −
[12]	I2 −	I2 −
[13]	I3 −	I3 −
[14]	I4 −	I4 −
[15]	I5 −	I5 −
[16]	I6 −	I6 −
[17]	I7 −	I7 −
[18]	24 VDC −	24 VDC −

Internal circuit

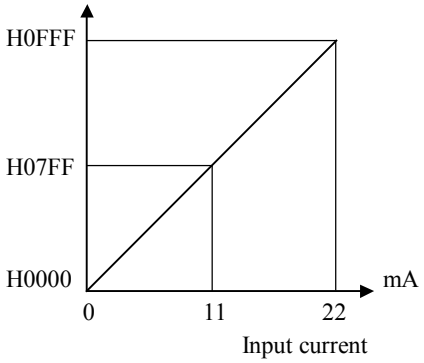


Relation between analog and digital data

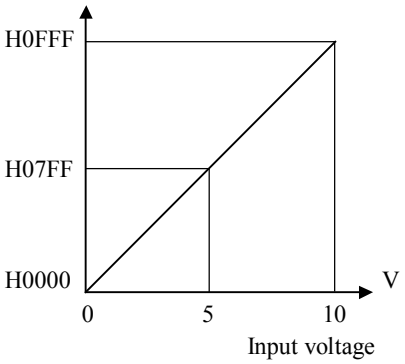
EH-AX44, EH-AX8I



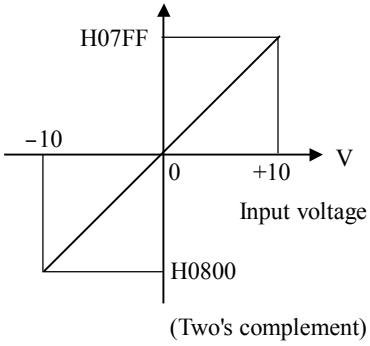
EH-AX8IO



EH-AX44, EH-AX8V

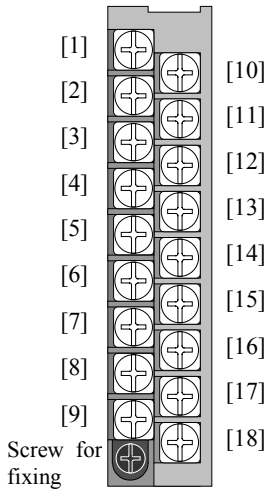


EH-AX8H



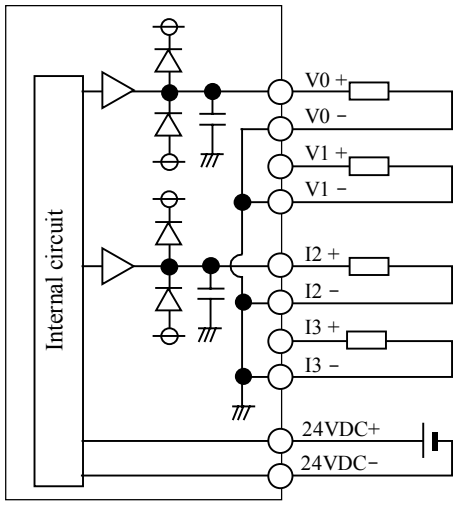
■ Analog Output Module

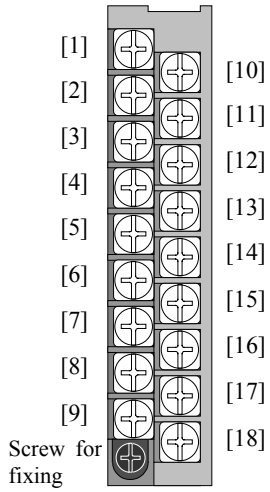
		EH-AY22	EH-AY2H	EH-AY4I	EH-AY4V	EH-AY4H
Current range		4 to 20mA	—	4 to 20mA	—	
Voltage range		0 to 10V DC	±10V DC	—	0 to 10V DC	±10V DC
Number of channels	Current	2	—	4		
	Voltage	2		—	4	
Resolution		12 bits				
Conversion time		5ms maximum				
Overall precision		±1% (of full scale value)				
External load resistance	Current	500Ω max.	—	350Ω max.	—	
	Voltage	10kΩ minimum		—	10kΩ minimum	
Insulation	Channels · Internal circuit	Photo-coupler insulation				
	Between channels	No insulation				
External connection		Removable type screw terminal block (M3)				
Internal current consumption		100mA max.		130mA max.	100mA max.	
External power supply		24 V DC (+20% / −15%) Approx. 0.15A (Approx. 0.5A at power-up)				
External wiring		2-core shield wire (20m (65.62ft.) maximum)				



No.	Signal name	
	EH-AY22	EH-AY2H
[1]	V0 +	V0 +
[2]	V1 +	V1 +
[3]	I2 +	N.C.
[4]	I3 +	N.C.
[5]	N.C.	N.C.
[6]	N.C.	N.C.
[7]	N.C.	N.C.
[8]	N.C.	N.C.
[9]	24 VDC +	24 VDC +
[10]	V0 −	V0 −
[11]	V1 −	V1 −
[12]	I2 −	N.C.
[13]	I3 −	N.C.
[14]	N.C.	N.C.
[15]	N.C.	N.C.
[16]	N.C.	N.C.
[17]	N.C.	N.C.
[18]	24 VDC −	24 VDC −

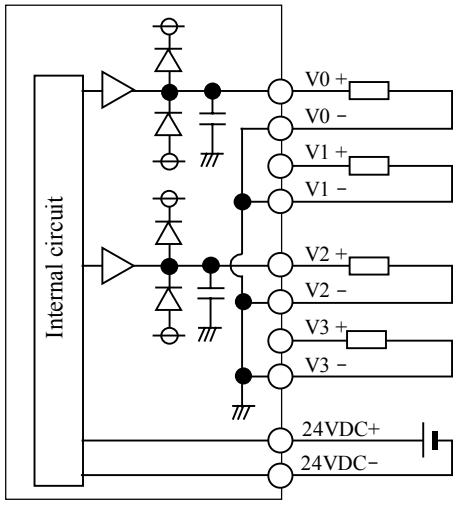
Internal circuit

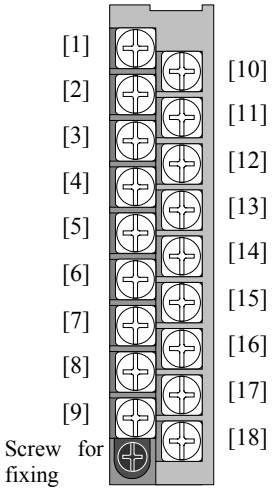




No.	Signal name	
	EH-AY4V	EH-AY4H
[1]	V0 +	V0 +
[2]	V1 +	V1 +
[3]	V2 +	V2 +
[4]	V3 +	V3 +
[5]	N.C.	N.C.
[6]	N.C.	N.C.
[7]	N.C.	N.C.
[8]	N.C.	N.C.
[9]	24 VDC +	24 VDC +
[10]	V0 −	V0 −
[11]	V1 −	V1 −
[12]	V2 −	V2 −
[13]	V3 −	V3 −
[14]	N.C.	N.C.
[15]	N.C.	N.C.
[16]	N.C.	N.C.
[17]	N.C.	N.C.
[18]	24 VDC −	24 VDC −

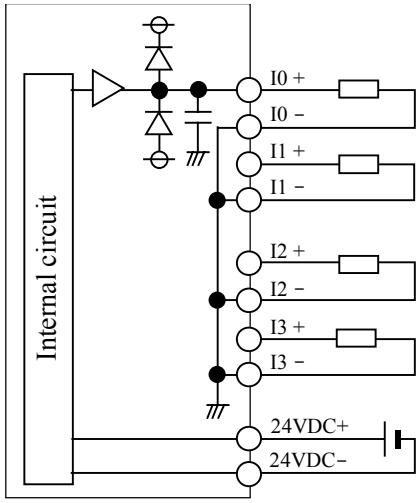
Internal circuit





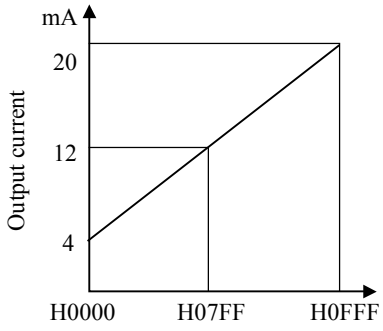
EH-AY4I	
No.	Signal name
[1]	I0 +
[2]	I1 +
[3]	I2 +
[4]	I3 +
[5]	N.C.
[6]	N.C.
[7]	N.C.
[8]	N.C.
[9]	24 VDC +
[10]	I0 −
[11]	I1 −
[12]	I2 −
[13]	I3 −
[14]	N.C.
[15]	N.C.
[16]	N.C.
[17]	N.C.
[18]	24 VDC −

Internal circuit

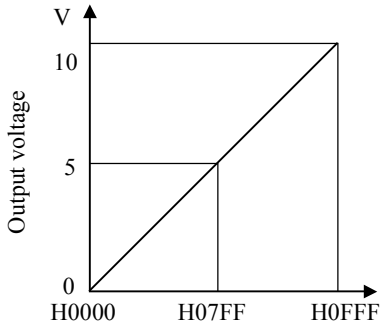


Relation between analog and digital data

EH-AY22, EH-AY4I



EH-AY22, EH-AY4V



EH-AY2H, EH-AY4H