

The Web Controller enables monitoring and control any time and anywhere. Utilising real-time control functionality to provide complete monitoring and controlling.

Existing or new equipment used in a factory or a building can now be connected to a LAN network quickly and affordably and can then be accessed remotely by use of a VPN or similar secure remote access protocol.

The Web controller is an all-in-one controller with the power, CPU, input/output, web server, SMTP Protocol and communication interface all-in-one module, reducing space and time required for installation.

The Web Controller has been designed to operate in industrial environments and is therefore equipped to cope with continuous 24 hour operation and monitoring without nuisance reliability issues commonly faced with Personal Computer's, such as locking up.

The Web Controller is both a PLC and a Web Server, the PLC functionality with built in input/outputs allows normal PLC operation such as controlling, processing, monitoring and data storing of the machine it is connected to.

The Web server function allows html pages to be stored in the unit which can display any value within the PLC itself and then by using a standard PC browser an operator or manager can monitor or interact with their equipment from any location around the world.

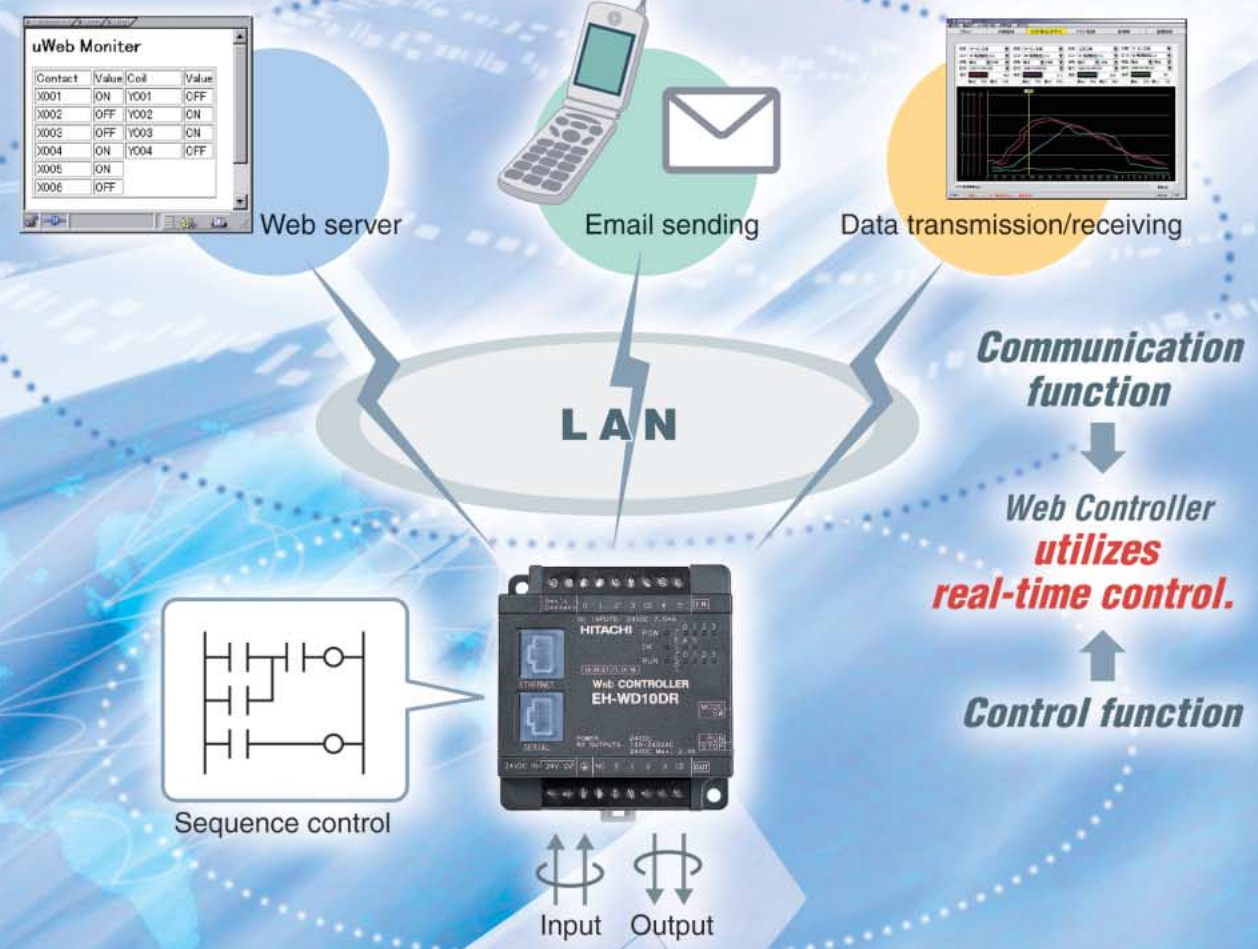
Using the SMTP Protocol e-mail's can be automatically sent when required to warn of a fault or show status of the equipment.

The automatic data transmission / receiving function allows data to be transmitted periodically to a specified personal computer or another PLC.

The web controller uses the real-time control function to process simultaneously the sequence control function of the PLC and the communication function of the web server, email sending and data transmission/ receiving.



23-point type includes analog input and outputs as standard, and extension units are available.



Micro size 10-point type (EH-WD10DR)

- 6 DC inputs / 4 Relay outputs
- Ethernet port(10BASE-T)
- Serial port(RS-232C)
- dedicated protocol / free protocol



Excellent expandability 23-point type (EH-WA23DR)

- 13 DC inputs / 10 Relay outputs
- 2 Analog inputs / 1 Analog output
- Maximum 4 expansion units can be connected *1
- Max. 77 inputs, Max. 58 outputs
- Max. 18 analog inputs. Max 9 analog outputs
- Ethernet port(10BASE-T / 100BASE-TX)
- Serial port(RS-232C, RS-422/485)
- dedicated protocol / free protocol

*1 The extension unit for MICRO-EH series is used.



Cable length : Max. 2 m in total

23-point type can use various expansion units.

- A maximum of four 28-point expansion units can be connected. (77 Inputs, 58 outputs)
- A maximum of four analog expansion units can be connected. (18 analog inputs / 9 analog outputs)
- In addition, 14-point expansion, 8-point and 16-point expansions are available.

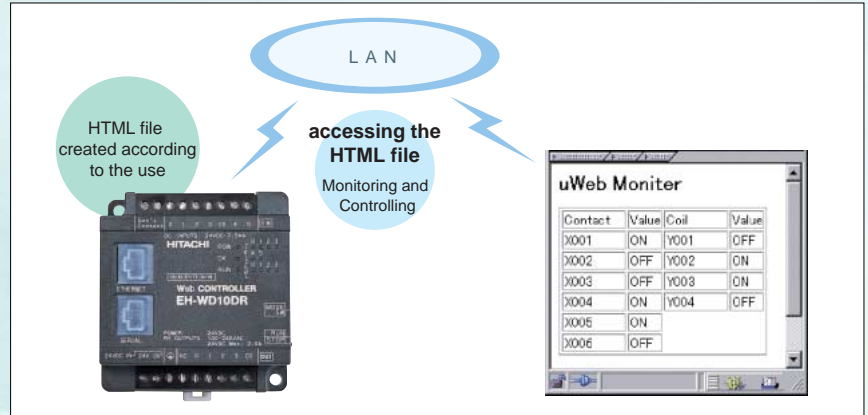
Function of the Web Controller

Web server function

The HTML file created according to the use (Monitoring and Controlling) can be saved for a Web Controller.

Remote Monitoring and Controlling of equipment can be easily performed by accessing the HTML file saved for Web Controller through LAN.

Remote Monitoring and Controlling by PC or cellphone

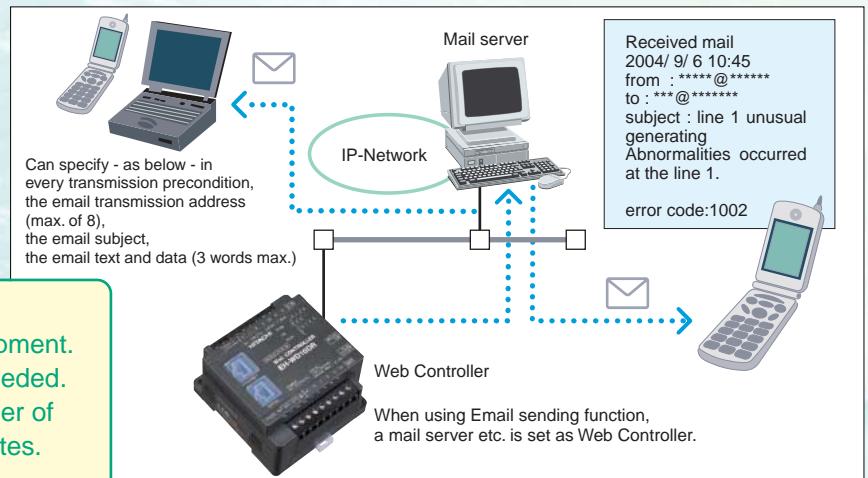


Email sending function

Email can be sent from the Web Controller when a fault occurs etc.

Max.16 Email can be registered.

For example,
When abnormalities occur in equipment.
When a surveillance value is exceeded.
When you want to know the number of production of a line every 30 minutes.
etc.

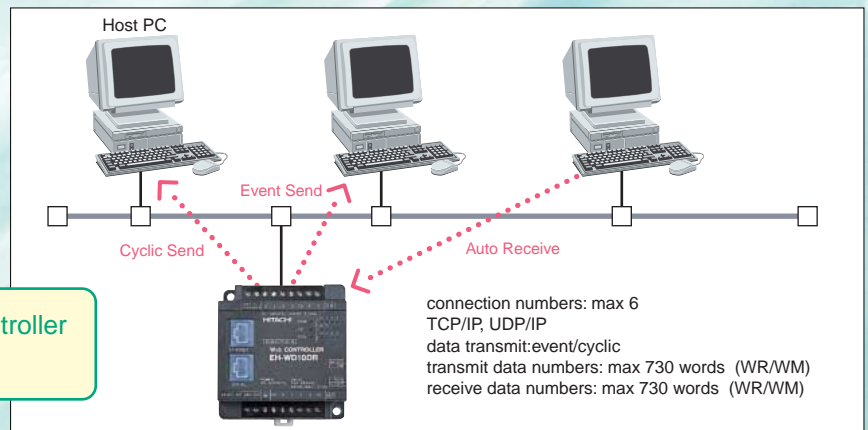


Automatic data transmission / Receiving function

Data in Web Controller can be sent to the specified personal computer at a the specified time.

Web Controller can also receive from the personal computer.

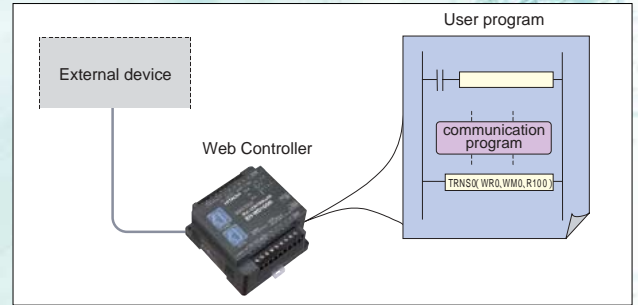
The data collected by the Web controller is stored in a personal computer.



Serial Port Communication Function

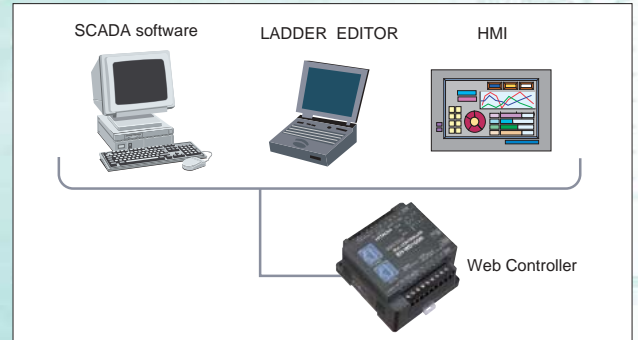
1. General Purpose Communication

When an external device only uses a third party communication protocol, The Web Controller can still communicate with those devices in this mode. The communication protocol should be programmed by users.



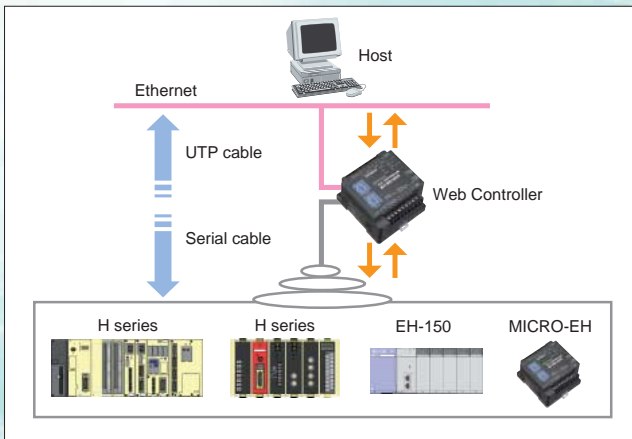
2. Passive-HIPROTOCOL Communication

In the Passive-HIPROTOCOL communication mode, the Web Controller acts as a slave module of HIPROTOCOLI. The Web Controller supports the task codes of HIPROTOCOLI, so that each I/O of the Web Controller can be controlled (monitored). Same as the HITACHI H/EH series PLC's.



3. Active-HIPROTOCOL Communication

In the Active-HIPROTOCOL communication mode, The Web Controller acts as a master module. It helps to control other HITACHI H/EH series PLC's easily.



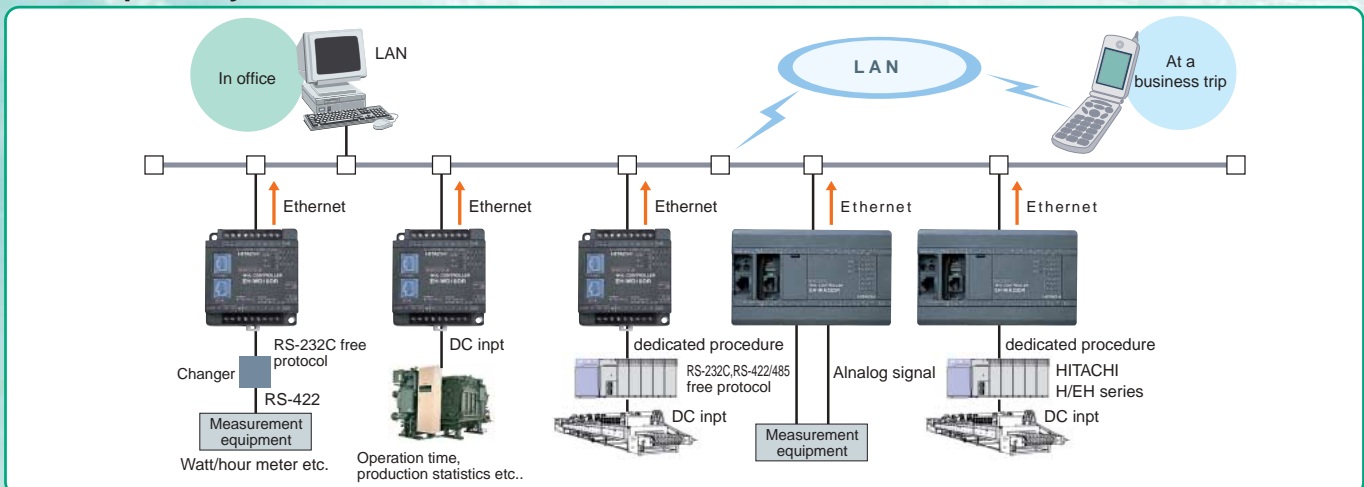
As the RS-232C port of the Web-Controller supports the Hitachi PLC protocol, any data already existing in the Hitachi PLC can be read and written. The Web-Controller can be a gateway module to Ethernet for PLC's without Ethernet function.

The Web-Controller can be useful for;

With requirements to supervise an existing systems via the network, but with the following restrictions:

- No change allowed for existing system configuration.
- No space remaining for Ethernet module.
- No Ethernet module available for existing PLC.
- Large investment is not made to network introduction.

Example of system



A P P L I C A T I O N

1. Security

The security system by combination with a Web camera.

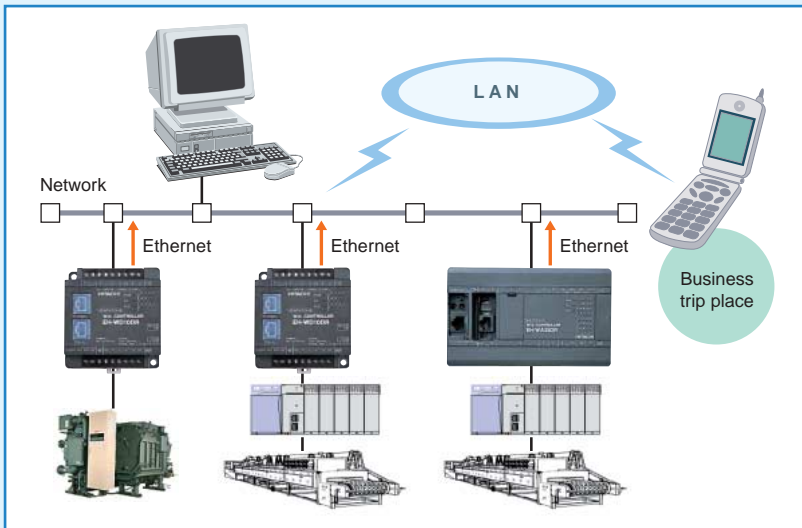
A sensor detects abnormalities, such as trespass into security area, and abnormalities are notified to an administrator by e-mail. An administrator checks a picture with a Web camera.



2. Monitoring and FA Controlling Equipment

The remote Monitoring and FA Controlling Equipment.

By monitoring the signal of the equipment wired directly to Web Controller, or the data received by the Web Controller from PLC using the serial cable, the status of FA equipment can be checked in real time at the office or while on a business trip.



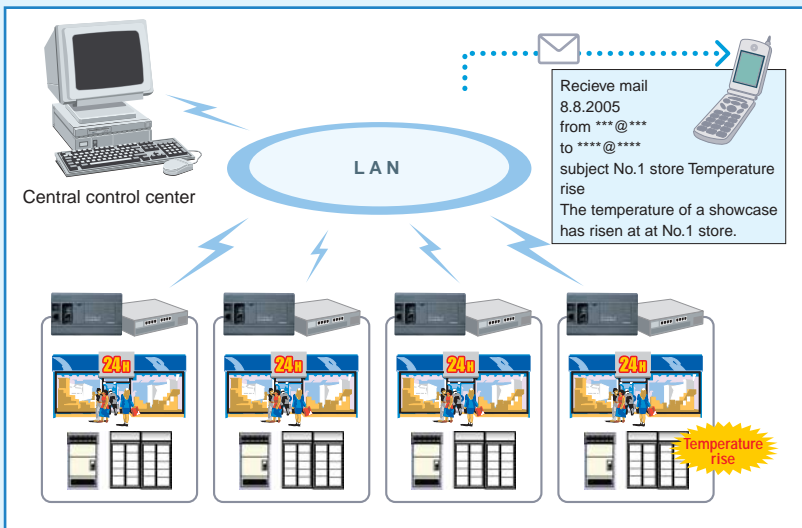
3. Store automation

The Web Controller can monitor and remotely control the operational status of various equipment such as a showcase, an air-conditioning machine, of convenience store, etc.

Intensive surveillance in a central control center.

When the temperature of a showcase rises at midnight, mail to the owner of a store.

It responds to such needs.



Web communication Specifications

Item		EH-WD10DR	EH-WA23DR
Webserver	HTTP Version	1.0	
	Allowed file format (file extension)	.htm / .gif / .jpg	.htm/html / .jpg/jpe/jpeg / .gif / .bmp / .css / .js / .class / .wav/wave / .swf
Web page registration	Number of files	Max. 40 (No.1 to 40)	Max. 320 (No.1 to 320)
	File size	Fix No1 to 8 : 16kbyte, No9 to 24 : 8kbyte, No25 to 40 : 4kbyte total320kbyte	Variable : 1 to 64kbyte total320kbyte
	Creation	HTML and special tag with special CGI access	
Web browsing	Recommendation browser	Microsoft Internet Explorer version6 or subsequent newer	
	Screen built in system	(1) Administrator registration screen Administrator name : max. 4 users (16 characters), Password (16 characters)	
		(2) System Configuration screen 1. HTML Registration 2. IP Address 3. Mail Settings 4. Ethernet Protocol 5. Serial Protocol 6. ID/Password 7. Change password for mail settings 8. Change password for I/O writing 9. HTML File Addition Sector Size Change 10. SNMP Community Name 11. Analog Interface 12. Configuration file Upload / Download (9,10,11,12 are supported by EH-WA23DR)	
		(3) mail address edit Based on CHTML. Mail address for each mail title.	
	User authentication	Access control with ID/password for each HTML file.	
Number of registration ID	16 (ID:16 characters, password: 16 characters)		

Mail sending Specifications

Item	EH-WD10DR	EH-WA23DR
Mail Server Protocol	SMTP	
User authentication	POP before SMTP (Account : up to 64 characters, password : up to 64 characters)	
Server setting	DNS supported.	
	SMTP server: up to 64 characters POP server: up to 64 characters	
Number of own e-mail address	1, up to 56 characters	
Trigger	16 (in R0 to R7FF)	
Number of own e-mail destination	Max. 8 (every trigger), less than 56 characters	
SubjectS	up to 64 characters	
Text	up to 256 characters	
Sent Data	3 words (in WR0 to 3FFF , WRF000 to F19F), Comment, up to 16 characters	

Ethernet Communication Specifications

Item		EH-WD10DR	EH-WA23DR
Basic specification	Ethernet standard	Based on IEEE802.3, 10BASE-T	Based on IEEE802.3/ IEEE802.3 μ , 10BASE-T/100BASE-TX(Auto negotiation)
	Protocol	TCP/IP, UDP/IP, ICMP, ARP	
	Connecting cable	Category 5 UTP or STP cable	
Message communication specification	Communication protocol	free protocol	
	Connection	6 (TCP/IP or UDP/IP)	
	Data sending method	Event transmission : Trigger bit Cyclic transmission : sets up per 1 s	
	Data receiving method	Automatic receiving to designated area	
	Maximum message length	730 words (1460 byte)	
	Sending and Receiving area	Sending : WR/WM/WX Continuation area Receiving : WR/WM/WY Continuation area	
Task code communication specification	Communication protocol	Task code command (Hi-Protocol)	
	Connection	4	
Time data specification	Communication protocol	SNTP	
	Read cycle	Configurable(0 hour 1 minute to 99 hours and 59 minutes)	
	Time data	Year/month/day/Day of the week/hour/minute/second(Supported Time zone)	

Calculation Specifications

Item		EH-WD10DR	EH-WA23DR	
Control specification	CPU	32-bit RISC processor		
	Processing system	Stored program cyclic system		
	Processing speed	Basic instructions	3.1 μ s/instruction	
		Application instructions	Several 10 μ s/instruction	
User program memory	Max. 3 k steps (FLASH memory)	Max. 8 k steps (FLASH memory)		
I/O processing specifications	External I/O	24V DC Input	6 points	13 points
		Relay Output	4 points	10 points
		Analogue Input	—	2 points (current/voltage change)
		Analogue Output	—	1 points (current/voltage change)
	Internal data Capacity	Bit	1,984 points (R)	1,984 points (R)
		Word	16k words (WR)	50k words (WR)
		Bit/word shared	16,384 points /1,024 words (M/WM)	
	Timer counter	Comment	256 points (from web browser) Max. 128 byte /comment	
		Number of points	256 points(Timer + Counter)	
		Timer set value	0 to 65,535, timer base 0.01 s, 0.1 s, 1 s (max. 64 points for 0.01s)	
Counter set value	1 to 65,535 times			

Serial Communication Specifications

Item	EH-WD10DR	EH-WA23DR	
Basic specification	Communication system	Half duplex	
	Synchronization	Asynchronous	
	Transmission system	Serial transmission (bit serial transmission)	
	Interface	RS-232C	RS-232C or RS-422/485 (set by System Configuration page)
	Transmission distance	Max. 15 m	RS-232C : Max.15 m RS-422/485 : Max.500 m
	Connection mode	1 : 1	RS-232C 1 : 1 RS-422/485 1 : N (Max. 31)
	Connector	TM5RJ3-88 8-pin modular connector	
General communication specification	Operation	Special command in user ladder program (TRNS0/RECV0)	
	Communication speed	300/600/1,200/2,400/4,800/9,600/19.2k/38.4k/57.6kpbs (select)	
	Communication system	Sending, Receiving after Sending, Sending after Receiving	
	Communication code	ASCII/Binary (user setting)	
	Format	7 or 8 bits, 1 start bit, 1 or 2 stop bit, even/odd/non parity	
	Maximum message length	1,024 bytes (including control characters)	
	Protocol	None (programmable)	
Active-HIPROTOCOL specification	Support PLC (Hitachi PLC)	<ul style="list-style-type: none"> H-20/28/40/64, H-200/250/252, H-300/700/2000 H-302/702/1002/2002/4010, EH-150, MICRO-EH 	
	Communication area of PLC	WR/WM/WL	
	Data transfer mode	1. Reading 2. Reading and writing upon trigger bit 3. Data Link (monitoring setting)	
	Data size	120 words for reading, 100 words for writing	
	Communication speed	Auto detection	
	Control procedure	H series protocol (Hiprotocol) standard (procedure 1) or simplified (procedure 2)	
Passive-HIPROTOCOL specification	Transmission speed	Without Modem	None Modem mode : 4,800/9,600/19.2k/38.4kpbs (select)
		With Modem	Modem mode : 2,400/4,800/9,600/19.2k/38.4k/57.6kpbs (select)
	Start up sequence	Activated by Web controller	
	Transmission code	ASCII	
Control procedure	H series protocol (Hiprotocol) standard (procedure 1) or simplified (procedure 2)		

General Specifications

Item	EH-WD10DR	EH-WA23DR
Power	24 V DC	100/110/120 V AC(50/60Hz) 200/220/240 V AC(50/60Hz)
Power consumption	150 mA	Normal 0.4A Rush 15A (100V AC) Normal 0.2A Rush 40A (264V AC)
Power voltage fluctuation range	19.2 to 26.4 V DC	85 to 264 V AC wide range
Allowable momentary power failure	19.2 to 26.4 V DC: For a momentary power failure of less than 1 ms, operation continues	85 to 100 V AC : For a momentary power failure of less than 10 ms, operation continues 100 to 264 V AC : For a momentary power failure of less than 20 ms, operation continues
Operating ambient temp	0 to 55 (Storage ambient temp-10 to 75)	
Operating ambient humidity	5 to 95 % RH (no condensation) (Storage ambient humidity 5 to 95 % RH(no condensation))	
Vibration proof	Conforms to JIS C 0911	
Noise resistance	<ul style="list-style-type: none"> Noise voltage 500 Vpp Noise pulse width 100 ns, 1 μs (by the noise simulator) Static noise : 3,000 V at metal exposed area Conforms with IEC61131-2 (2003) 	<ul style="list-style-type: none"> Noise voltage 1,500 Vpp Noise pulse width 100 ns, 1 μs (by the noise simulator) Static noise : 3,000 V at metal exposed area Conforms with EN50081-2, EN50082-2
Supported standards	Conforms with CE markings and C-TICK	
Insulation resistance	20 M or more between the DC external power supply terminal and the protection earth (PE) terminal (based on 500 V DC megger)	20 M or more between the AC external terminal and the protection earth (PE) terminal (based on 500 V DC megger)
Dielectric withstand voltage	500 V DC for one minute between the DC external power supply terminal and the protection earth (PE) terminal	1,500 V AC for one minute between the AC external terminal and the protection earth (PE) terminal
Grounding	Class D dedicated grounding (grounded by a power supply module)	
Environment used	No corrosive gases and no excessive dirt	
Structure	Attached on an open wall	
Cooling	Natural air cooling	

Input/Output Specifications

(1) DC input

Item	EH-WD10DR	EH-WA23DR	Circuit diagram
Input voltage	24V DC		
Allowable input voltage range	0 to 30V DC		
Input impedance	ON voltage	Approx. 2.8 k	
	OFF voltage	7.5 mA typical	
Input current	OFF to ON	15 VDC (min) / 4.5 mA (max)	
	ON to OFF	5 VDC (max) / 1.5 mA (max)	
Operating voltage	0.5 to 20 ms (configurable)		
Input lag	0.5 to 20 ms (configurable)		
Number of Input points	6	13	
Number of common	1	3 *1	
Polarity	None		
Insulation system	Photocopler insulation		
Input display	LED (green)		
External connection	fixed type terminal block	Removable type screw terminal block (M3)	

*1: Common terminals are not connected internally.

(2) Relay output

Item	EH-WD10DR	EH-WA23DR	Circuit diagram
Rated load voltage	5 to 250 V AC, 5 to 30 V DC		
Minimum switching current	1 mA		
Maximum load current ^b	1 circuit	2A (24V DC, 240V AC)	
	1common	5A	
Output response time	OFF to ON	15 ms (max)	
	ON to OFF	15 ms (max)	
Number of Output points	4	10	
Number of common	1	6	
Surge removing circuit	None		
Fuse	None		
Insulation system	Relay insulation		
Output display	LED (green)		
Externally supplied power (for driving the relays)	Not necessary		
Contact life *2	20,000,000 times (mechanical)		
	200,000 times (electrical : 2 A)		
Insulation	1,500 V or more (external-internal) 500 V or more (external-external)		
External connection	fixed type terminal block	Removable type screw terminal block (M3)	

(3) Analogue Input Specifications (Only EH-WA23DR)

Item	EH-WD23DR	Circuit diagram
Input channel	2 ch	
Input range	0-10 V (10.24V max.)	
	0-20 mA (20.48 mA max.)	
Resolution	12 bits	
Accuracy	± 1 % of full scale	
Linearity	Max. +/-3 units	
Current input impedance	Approx. 249	
Voltage input impedance	Approx. 100 k	
Input delay time	20 ms	
Channel to internal circuit insulation	Not insulated	
Channel-to-channel insulation	Not insulated	

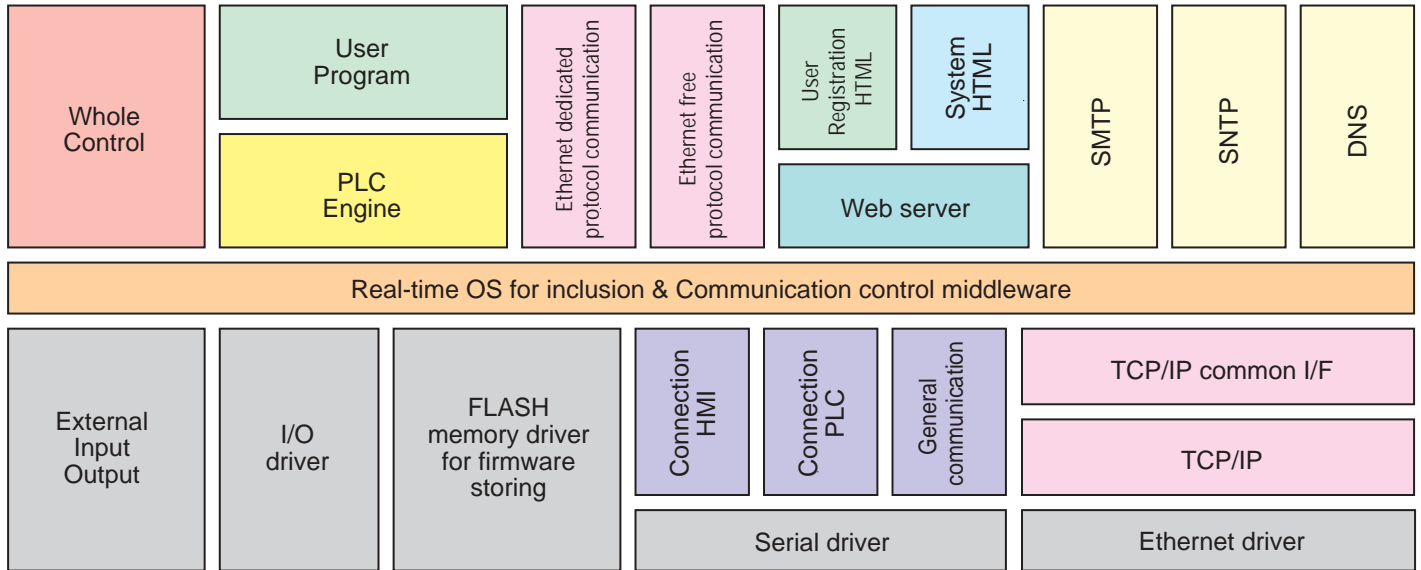
(4) Analogue Output Specifications (Only EH-WA23DR)

Item	EH-WD23DR	Circuit diagram
Output channel	1ch	
Output range	0-10 V (10.24V max.) 0-20 mA (20.48 mA max.)	
Resolution	12 bits	
Accuracy	± 1 % of full scale	
Current output Allowable load Output allowable capacity Output allowable inductance	10 to 500 Maximum 2,000 pF Maximum 1 H	
Voltage output Allowable load Output allowable impedance	Minimum 10 k Maximum 1 μF	
Channel to internal circuit insulation Channel-to-channel insulation	Not insulated Not insulated	

Web Controller (Extension unit is applicable only to EH-A28DR)

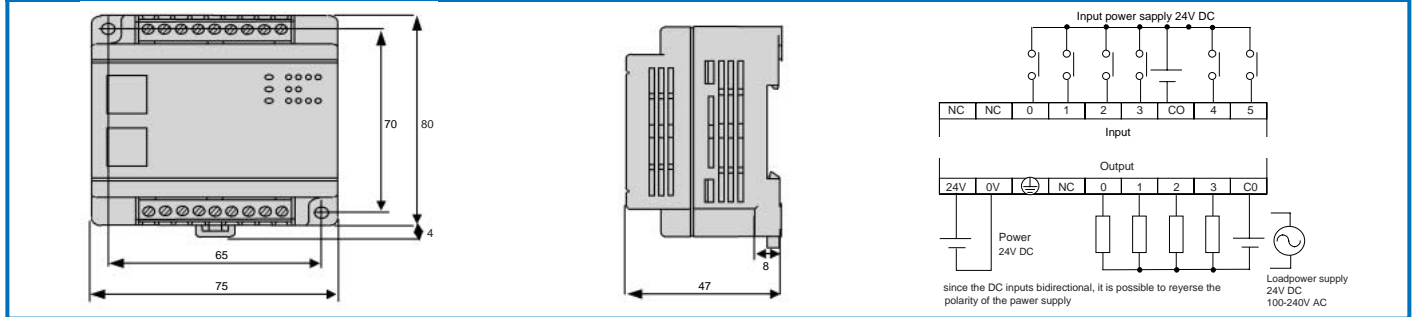
No.	Classification	Model Name	Specifications			Remarks
			Power	Input	output	
1	10 point type	EH-WD10DR	24V DC	24V DC X 6	Relay x 4	
2	23 point type	EH-WA23DR	100/200V AC	24V DC x 13 Analog x 2	Relay x 10 Analog x 1	
3	8 Points Expansion unit	EH-D8ED	24V DC	24V DC x 8	—	1 piece of 0.1 m expansion cable (EH-MCB01) is attached.
4		EH-D8ER	24V DC	—	Relay x 8	
5		EH-D8ETPS	24V DC	—	Transistor(Source) x 8 (short circuit protection)	
6		EH-D8ET	24V DC	—	Transistor(Sink) x 8	
7		EH-D8EDR	24V DC	24V DC x 4	Relay x 4	
8		EH-D8EDTPS	24V DC	24V DC x 4	Transistor(Source) x 4 (short circuit protection)	
9		EH-D8EDT	24V DC	24V DC x 4	Transistor(Sink) x 4	
10		14 Points Expansion unit	EH-D14EDT	24V DC	24V DC x 8	
11	EH-D14EDTP		24V DC	24V DC x 8	Transistor(Source) x 6	
12	EH-D14EDTPS		24V DC	24V DC x 8	Transistor(Source) x 6 (short circuit protection)	
13	EH-D14EDR		24V DC	24V DC x 8	Relay x 6	
14		EH-A14EDR	100/200V AC	24V DC x 8	Relay x 6	
15	16 Points Expansion unit	EH-D16ED	24V DC	24V DC x 16	—	
16		EH-D16ER	24V DC	—	Relay x 16	
17		EH-D16ETPS	24V DC	—	Transistor(Source) x 16 (short circuit protection)	
18		EH-D16ET	24V DC	—	Transistor(Sink) x 16	
19	28 Points Expansion unit	EH-D28EDT	24V DC	24V DC x 16	Transistor(Sink) x 12	
20		EH-D28EDTP	24V DC	24V DC x 16	Transistor(Source) x 12	
21		EH-D28EDTPS	24V DC	24V DC x 16	Transistor(Source) x 12 (short circuit protection)	
22		EH-D28EDR	24V DC	24V DC x 16	Relay x 12	
23		EH-A28EDR	100/200V AC	24V DC x 16	Relay x 12	
24	Analog Expansion unit	EH-D6EAN	24V DC	Analog x 4	Analog x 2	
25		EH-A6EAN	100/200V AC	Analog x 4	Analog x 2	
26	RTD Expansion unit	EH-A6ERTD	100/200V AC	RTD X 4	Analog x 2	
27		EH-A4ERTD	100/200V AC	RTD X 4	—	
28		EH-D6ERTD	24V DC	RTD X 4	Analog x 2	
29		EH-D4ERTD	24V DC	RTD X 4	—	
30	Expasion cable	EH-MCB10	Expasion cable (1.0m)			
31		EH-MCB05	Expasion cable (0.5m)			
32		EH-MCB01	Expasion cable (0.1m)			
33	Lithium battery	EH-MBAT	For data memory back-up (only 23point type)			
34	Programming software	HLW-PC3E	LADDER EDITOR for Wndwvs®			

Software Structure

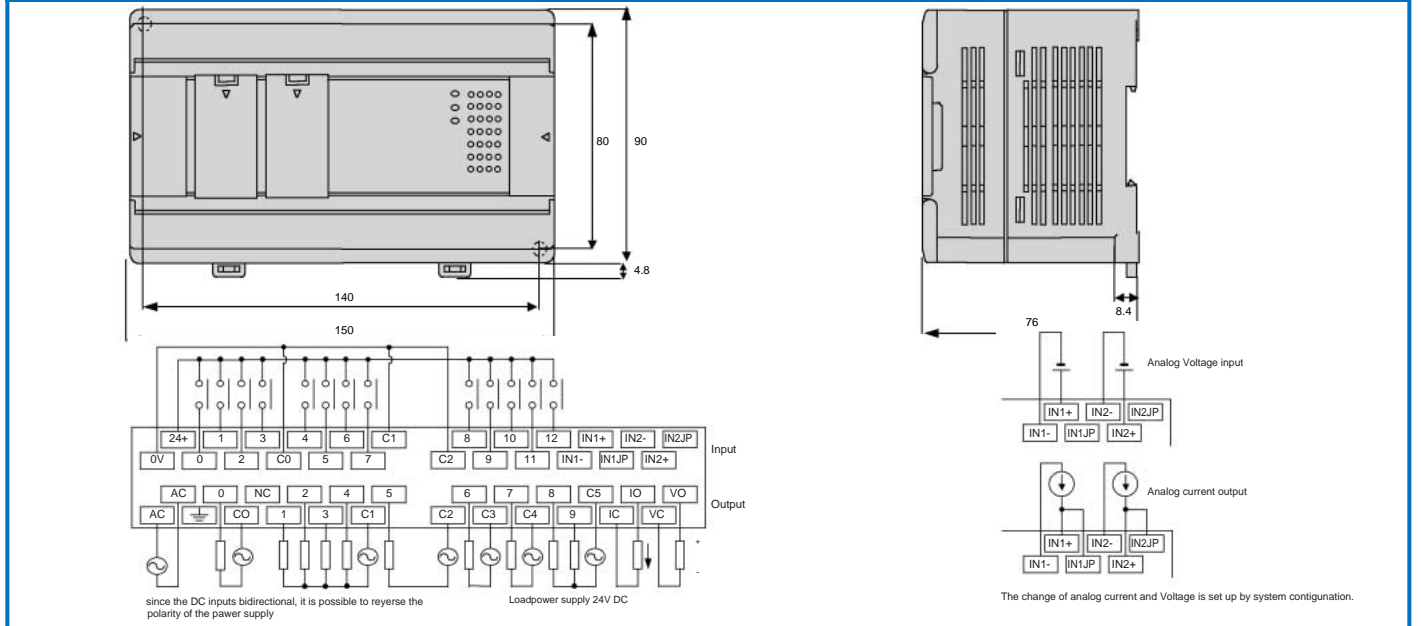


Dimensions (mm) / Terminal Layout and wiring

10-point type



23-point type



Specifications in this catalog are subject to change with or without notice, as Hitachi continues to develop the latest technologies and products for its customers.

Hitachi Industrial Equipment Systems Co., Ltd.

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