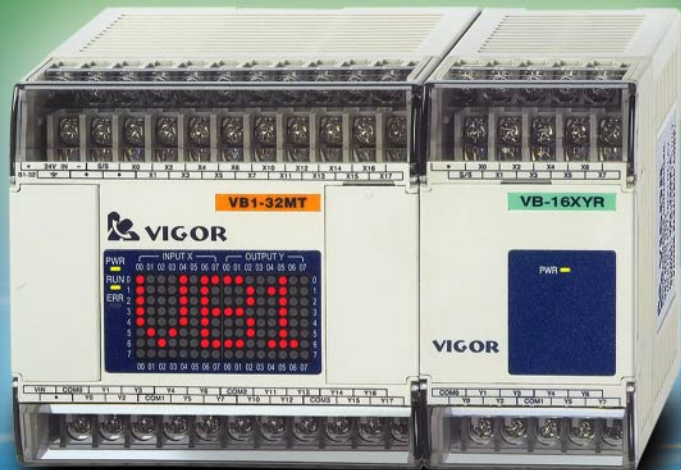


# Programmable Controllers

## Professional Manufacturer



**Multi-Function**

**VB Series ▶**



**Ultra Valuable**

**◀ VH Series**

## VB Series Functional Specifications

Item		VB0 Series	VB1 Series	VB2 Series
Operation Control Method		Cyclic Operation by Stored Program		
Programming Language Method		Electric Ladder Diagram + SFC		
I/O Control Method		Batch Processing		
Operation Processing Time	Basic Instruction	0.375~12.56 $\mu$ s		
	Applied Instruction	Server $\mu$ s ~ Server 100 $\mu$ s		
Number of Instructions	Basic Instructions	27 (including: LDP, LDF, ANDP, ANDF, ORP, ORF and INV, etc.)		
	Stepladder Instructions	2		
	Applied Instructions	133	138	133
Operation Memory Capacity	Program Capacity (Flash ROM)	Built-in 8 K Steps	Built-in 16 K Steps	Built-in 16 K Steps
	Comment Capacity	2730 words (16 words or 8 double-words for each comment)		
	Program Comment Capacity	20,000 words or 10,000 double-words		
Max. Input / Output Points		128 points: X0~X77, Y0~Y77	256 points: X0~177, Y0~Y177	512 points: X0~377, Y0~Y377
Internal Relay	Auxiliary Relay (M)	General	3120 points: M0 ~ M1999, M4000 ~ M5119	
		Latched	2000 points: M2000 ~ M3999	
		Special	256 points: M9000 ~ M9255	
	State Relay (S)	Initial	10 points: S0 ~ S9	
		General	490 points: S10 ~ S499	
		Latched	400 points: S500 ~ S899	
Annunciator		100 points: S900 ~ S999 (Latched)		
Timer (T)	100 ms	200 points: T0 ~ T199 (Timer range: 0.1 ~ 3276.7 sec.)		
	10 ms	46 points: T200 ~ T245 (Timer range: 0.01 ~ 327.67 sec.)		
	1 ms (Retentive)	4 points: T246 ~ T249 (Timer range: 0.001 ~ 32.767 sec.)		
	100 ms (Retentive)	6 points: T250 ~ T255 (Timer range: 0.1 ~ 3276.7 sec.)		
Counter (C)	16-bit Up	General	100 points: C0 ~ C99	
		Latched	100 points: C100 ~ C199	
	32-bit Bi-directional	General	20 points: C200 ~ C219	
		Latched	15 points: C220 ~ C234	
High Speed Counter (C)	32-bit Bi-directional, Latched	1-phase Counter	11 points: C235 ~ C245 (Signal Frequency: 10 kHz Max.)	
		2-phase Counter	5 points: C246 ~ C250 (Signal Frequency: 10 kHz Max.)	
		A/B Phase Counter	5 points: C251 ~ C255 (Signal Frequency: 5 kHz Max.)	
Data Register (D)		General	7680 points: D0 ~ D6999, D7512 ~ D8191	
		Latched	512 points: D7000 ~ D7511	
		File Register	7000 points: D1000 ~ D7999	
		Special	256 points: D9000 ~ D9255	
		Index	16 points: V0 ~ V7, Z0 ~ Z7	
Pointer		Call Pointer (P)	256 points: P0 ~ P255	
		Interrupt Pointer (I)	15 points: 6 points for external interrupt, 3 points for timer interrupt, and 6 points for counter interrupt	
		Nest Pointer (N)	8 points: N0 ~ N7	
Range of Constants	Decimal (K)	16 Bits	-32768 ~ 32767	
		32 Bits	-2147483648 ~ 2147483647	
	Hexadecimal (H)	16 Bits	0H ~ FFFFH	
		32 Bits	0H ~ FFFFFFFFH	
Hardware 32-bit Bi-directional High Speed Counter		—	2 channels; Max. 200 kHz	—
Pulse Output		2 points; Max. 7 kHz	2 points; 20 kHz & 2 points; 200 kHz	2 points; Max. 7 kHz
Programming Device Link Interface		RS-232C		
Communication Link Interface (Optional)		RS-232C or RS-422 / RS-485		
Real Time Clock (Optional)		To indicates year, month, day, hour, min., sec. and week		
The Number of Special Modules Limited		4 Special Modules Max.	8 Special Modules Max.	16 Special Modules Max.
Multi-Functional Displayer		128 points (16 X 8 LED) displayer for I/O status and information		
Analog Potentiometers		2 Analog Rotary Potentiometers, each one can be setting as 0~255		

# VB Series Product List

Item	Model No.	Specifications	Exterior	
VB0 Series Main Unit	VB0-14M★-◆	8 points DC24V Signal input; 6 points output; the barrier terminal style I/O	Drawing A	
	VB0-20M★-◆	12 points DC24V Signal input; 8 points output; the barrier terminal style I/O		
	VB0-28M★-◆	16 points DC24V Signal input; 12 points output; the barrier terminal style I/O		
	VB0-32M★-◆	16 points DC24V Signal input; 16 points output; the barrier terminal style I/O		
	VB0-32M★-◆C	16 points DC24V Signal input; 16 points output; the ATX connector I/O (including cables)		
VB1 Series Main Unit	VB1-14MT-D	DC24V power input, 8 points DC24V Signal input; 6 points NPN transistor output; the barrier terminal style I/O	Drawing B	
	VB1-24MT-D	DC24V power input, 14 points DC24V Signal input; 10 points NPN transistor output; the barrier terminal style I/O		
	VB1-32MT-D	DC24V power input, 16 points DC24V Signal input; 16 points NPN transistor output; the barrier terminal style I/O		
VB2 Series Main Unit	VB2-16M★-◆	8 points DC24V Signal input; 8 points output; the barrier terminal style I/O	Drawing A	
	VB2-32M★-◆	16 points DC24V Signal input; 16 points output; the barrier terminal style I/O		
	VB2-32M★-◆C	16 points DC24V Signal input; 16 points output; the ATX connector I/O (including cables)		
Expansion Unit	VB-32E★-◆	16 points DC24V Signal input; 16 points output; the barrier terminal style I/O	Drawing A	
	VB-32E★-◆C	16 points DC24V Signal input; 16 points output; the ATX connector I/O (including cables)		
Expansion Module	VB-32XY★	16 points DC24V Signal input; 16 points output; the barrier terminal style I/O	Drawing B	
	VB-16XY★	8 points DC24V Signal input; 8 points output; the barrier terminal style I/O		
	VB-16X	16 points DC24V Signal input; the barrier terminal style Input		
	VB-16Y★	16 points output; the barrier terminal style output		
	VB-8XY★	4 points DC24V Signal input; 4 points output; the barrier terminal style I/O	Drawing B	
	VB-8X	8 points DC24V Signal input; the barrier terminal style Input		
	VB-8Y★	8 points output; the barrier terminal style output	Drawing A	
	VB-32XY★-C	16 points DC24V Signal input; 16 points output; the ATX connector I/O (including cables)		
	VB-16XY★-C	8 points DC24V Signal input; 8 points output; the ATX connector I/O (including cables)		
	VB-16X-C	16 points DC24V Signal input; the ATX connector Input (including cables)		
	VB-8X-C	8 points DC24V Signal input; the ATX connector Input (including cables)		
	VB-8Y★-C	8 points output; the ATX connector output (including cables)		
	Special Module	VB-4AD	4 channels, 12-bit resolution Analog Input Module; selectable Voltage or Circuit Input	Drawing B
		VB-2DA	2 channels, 12-bit resolution Analog output Module; selectable Voltage or Circuit Input	
VB-4DA		4 channels, 8-bit resolution Analog output Module; selectable Voltage or Circuit Input		
VB-3A		2 channels Input, 1 channel Output, 12-bit resolution Analog I/O Module; selectable Voltage or Circuit I/O		
VB-6A		4 channels Input, 2 channel Output, 12-bit resolution Analog I/O Module; selectable Voltage or Circuit I/O		
VB-2VC		2 channels Valve Controls Modules; 12-bit DAC, up to 1.111A/Ch		
VB-4T		4 channels temperature input module	K/J type thermocouple inputs, 0.1°C (0.18°F) resolution, Equipped with the cold junction compensation, open circuit detection and digital filter	
VB-8T		8 channels temperature input module		
VB-2PT		2 channels temperature input module	3-wire PT-100 3850PPM/°C, 0.1°C (0.18°F) resolution, Equipped with open circuit detection and digital filter	
VB-4PT		4 channels temperature input module		
VB-2LC		2 channels temperature control module	K/J type thermocouple or 3-wire PT-100 3850PPM/°C inputs, 0.1°C (0.18°F) resolution, Support CT input for observe current, Open-collector output to perform PID control, Auto Tuning and provide 14 alarm modes	
VB-1PG		Single-axle pulse output position control module; Output pulse frequency: 10 pps ~ 100 Kpps		
VB-1HC		1 channels High-Speed Counter module; MAX.45 kHz Input; 2 hardware comparator outputs		
VB-1COM		Serial-line communication module; Photocoupler Isolated RS-232/RS-485 interface; communication Distance of RS-485 is up to 1,000M 3280'		
VB-PWR		Power Expansion Module; Input: AC 85V ~ 264V; Output: DC5V, 0.4A / DC12V, 0.8A for linked modules and DC24V, 0.5A for sensors		
Communication Module		VB-485A	RS 485 communication Module; Photocoupler Isolated; Max. Distance:1000M 3280'	
	VB-CADP	Dual-Port Communication Expansion module; one Isolated RS-232/485 port and one Isolated RS-485 port; Max. Distance:1,000M 3280' (RS-232:15M 49')		
Communication Card	VB-232	RS-232C Communication Expansion Card	Drawing B	
	VB-485	RS-422/RS-485 communication Expansion Card, non-Isolated; Max. Distance:50M 164'		
Memory Card Slot Expansion Card	VB-MP1R	16K Steps Flash ROM Program Memory Card (Only 8K Steps for the VB0); including the RTC (Real Time Clock)function	-	
	VB-RTC	RTC (Real Time Clock) Expansion Card		
	VB-DB1R	128K Words Data Storage Expansion Card; including the RTC (Real Time Clock) function		
Connection Cable	VBUSB-200	Cable between a PLC (CP1 A-type USB) and Computer A-type USB Port; Length :200cm 6'7"	-	
	MWPC-200	Cable between a PLC (CP1 A-type USB) and Computer (9-pin female connector); Length :200cm 6'7"		
	VBEC-050	VB series PLC Expansion Extended Cable; Length :50cm 19.7"		
	VBEC-100	VB series PLC Expansion Extended Cable; Length :100cm 3'3"		

★ -- Output type  
◆ -- Power type

R: relay output

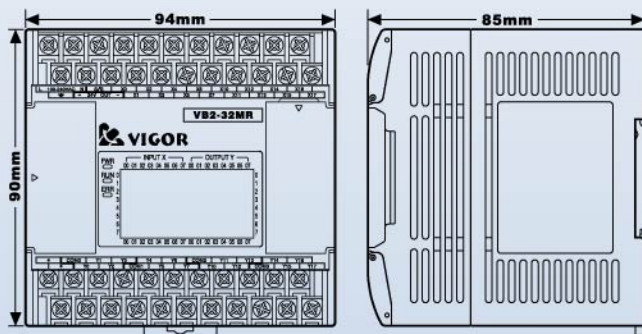
T: NPN transistor output

P: PNP transistor output

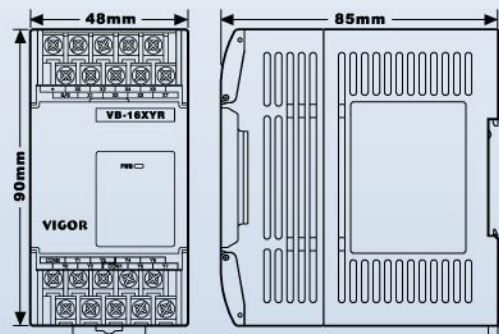
A: AC 85V ~ 264V input ; with DC24V 420mA output

D: DC24V -15% / +20% input

**Drawing A**



**Drawing B**



## VH Series Functional Specifications

Item		Specifications	
Operation Control Method		Cyclic operation by stored program	
Programming Language		Electric Ladder Diagram + SFC	
I/O Control Method		Batch Processing	
Operation Processing Time	Basic Instructions	0.375 ~ 12.56 $\mu$ S	
	Applied Instructions	Several $\mu$ S ~Several 100 $\mu$ S	
Number of Instructions	Basic Instructions	27 (including LDP, LDF, ANDP, ANDF, ORP, ORF, INV)	
	Stepladder Instructions	2	
	Applied Instructions	81	
Memory Capacity	Program capacity	4K Steps (Flash ROM built into the unit)	
	Component Comment Capacity	2730 comments (16 characters or 8 Chinese characters for each comment)	
	Program Comment Capacity	20,000 characters (10,000 Chinese characters)	
Max. Input/ Output Points		128 points : X0~X77, Y0~Y77	
Internal Relay	Auxiliary Relay (M)	General	384 points : M0~M383
		Latched	128 points : M384~M511
		Special	256 points : M9000~M9255
	State Relay (S)	Initial	10 points : S0~S9 (Latched)
Latched		118 points : S10~S127	
Timer (T)	100mS		63 points : T0~T62 (Timer range : 0.1~3276.7 Sec.)
	10mS		31 points : T32~T62 (Timer range : 0.01~327.67 Sec.) When M9028=ON
	1mS		1 points : T63 (Timer range : 0.001~32.767 Sec.)
Counter (C)	16-bit Up	General	16 points : C0~C15
		Latched	16 points : C16~C31
High Speed Counter (C)	32-bit Up/Down, Latched	1-phase Counter	11 points : C235~C245 (Signal Frequency : 10KHz Max.)
		2-phase Counter	5 points : C246~C250 (Signal Frequency : 10KHz Max.)
		A/B Phase Counter	4 points : C251~C254 (Signal Frequency : 5KHz Max.)
Data Register (D)	General		128 points : D0~D127
	Latched		128 points : D128~D255
	Special		256 points : D9000~D9255
	Index		16 points : V0~V7, Z0~Z7
Level	Branch Level (P)		64 points : P0~P63
	Interrupt Level (I)		15 points : 6 points for external interrupt, 3 points for timer interrupt, and 6 points for counter interrupt
	Nest Level (N)		8 points : N0~N7
Constants	Decimal (K)	16 Bits	-32768~32767
		32 Bits	-2147483648~2147483647
	Hexadecimal(H)	16 Bits	0H~FFFFH
		32 Bits	0H~FFFFFFFFH
Pulse Output		1 point ; Output frequency : 7KHz Max.	
Program Writer Port CP1		RS-232C, directly connected to a computer, Human-Machine Interface or MODEM	
Communication Link Interface CP2 (Optional)		RS-232C or RS-422/RS-485, multi-functional expansion communication port	
Communication Link Interface CP3 (Optional)		RS-485, directly connected to a computer or Human-Machine Interface	
Real Time Clock (Optional)		To indicate year, month, day, hour, min., sec. and week	
Error Codes Display Function		The multifunction displayer provided to display 109 error Codes : 01~99 and E0~E9	
Analog Potentiometer		2 Analog Rotary Potentiometers, each one can be setting as 0~255	

## VH-20AR/VH-20AT Main Units

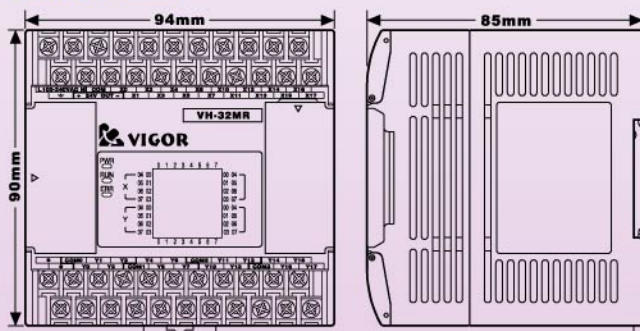


Item	Specification
Controller Core	VH series PLC (function specifications are the same as that of VH series)
Program Capacity	4K Steps Flash ROM
Max. Input/Output Points	128 points: X0 ~ X77, Y0 ~ Y77
Power Source	DC24V + 20% / -15% power input
Digital Input	8 points DC24V input
Digital Output	VH-20AR   6 points 2A relay output VH-20AT   6 points 0.5A NPN transistor output
Analog Input	4 points 12-bit input: -10V ~ +10V / 4 ~ 20mA / -20mA ~ +20mA Photocoupler isolation between PLC and input circuits; no isolation between input channels
Analog Output	2 points 12-bit output: -10V ~ +10V / 4 ~ 20mA / -20mA ~ +20mA Photocoupler isolation between PLC and output circuits; no isolation between output channels

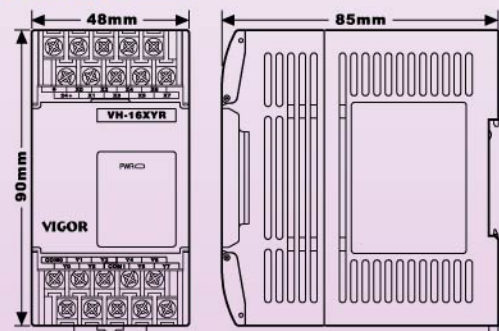
## VH Series Product List

Item	Model No.	Specifications	Exterior
Main Unit	VH-10MR	6 points DC24V input, 4 points relay output, power source : DC24V	Drawing B
	VH-14MR	8 points DC24V input, 6 points relay output, power source : DC24V	
	VH-20MR	12 points DC24V input, 8 points relay output, power source : AC 100~240V one set DC24V 420mA power output	Drawing A
	VH-24MR	14 points DC24V input, 10 points relay output, power source : AC 100~240V one set DC24V 420mA power output	
	VH-28MR	16 points DC24V input, 12 points relay output, power source : AC 100~240V one set DC24V 420mA power output	
	VH-32MR	16 points DC24V input, 16 points relay output, power source : AC 100~240V one set DC24V 420mA power output	
	VH-40MR	24 points DC24V input, 16 points relay output, power source : AC 100~240V one set DC24V 420mA power output	32MR+8X
	VH-60MR	36 points DC24V input, 24 points relay output, power source : AC 100~240V one set DC24V 420mA power output	32MR+28XYR
Expansion Unit	VH-32ER	16 points DC24V input, 16 points relay output, power source : AC 100~240V one set DC24V 420mA power output	Drawing A
Expansion Module	VH-28XYR	20 points DC24V input, 8 points relay output	Drawing B
	VH-16XYR	8 points DC24V input, 8 points relay output	
	VH-16X	16 points DC24V input	
	VH-8XYR	4 points DC24V input, 4 points relay output	
	VH-8X	8 points DC24V input	
	VH-8YR	8 points relay output	
Communication Module	VB-485A	RS-485 Communication Module, photocoupler isolated, communication distance 1000M 3K ft.	
	VB-CADP	Dual Communication Ports Expansion Module, 1 isolated RS-422/RS-485 port, 1 isolated RS-485 port, communication distance 1000M 3K ft.	
Communication Card	VB-232	RS-232 Communication Expansion Card	
	VB-485	RS-422/RS-485 Communication Expansion Card	
Expansion Card	VB-MP1R	Flash ROM Memory Cartridge (only 4K Steps programs stored for VH Series), including RTC function	-
	VB-RTC	RTC (Real Time Clock) Expansion Card	
Connection Cable	VBUSB-200	200cm 6.56 ft. length connection cable from PLC's Program Writer Port to a computer (A-Type USB female connector)	-
	MWPC-200	200cm 6.56 ft. length connection cable from PLC's Program Writer Port to a MODEM (9-pin male connector)	
	VHEC-050	50cm 1.64 ft. length of VH Series PLC Expansion cable	

**Drawing A**



**Drawing B**



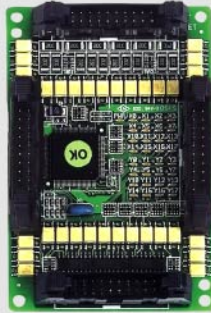
## CD01 Controller (VB Series Board Type)

### ◆CD01-32MT Main Unit



Item	Specification
Controller Core	VB0 series PLC (function specifications are the same as that of VB0 series)
Program Capacity	8K Steps Flash ROM
Max. Input/Output Points	128 points: X0 ~ X77, Y0 ~ Y77
Power Source	DC24V + 20% / -15% power input by ATX connector
Input Signal	16 points DC24V input by IDC connector
Output Signal	16 points 0.1A NPN transistor output by IDC connector
Expansion Capability	Provided with I/O Expansion Slot, Communication Expansion Slot and Memory Card Slot
Indicator Light	Provided with PWR/RUN/ERR system indicator lights, 16 input status indicator lights and 16 output status indicator lights

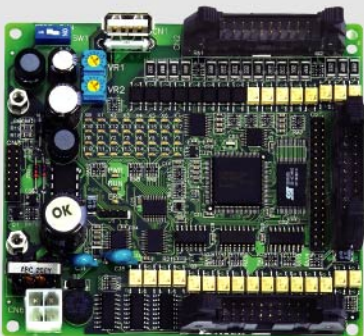
### ◆CD01-32ET Expansion Board



Item	Specification
Power Source	Power is derived from an internal bus
Input Signal	16 points DC24V input by IDC connector
Output Signal	16 points 0.1A NPN transistor output by IDC connector
Expansion Capability	Provided with I/O Expansion Slot
Indicator Light	Provided with PWR indicator lights, 16 input status indicator lights and 16 output status indicator lights

## CD03 Controller (VH Series Board Type)

### ◆CD03-32MT Main Unit



Item	Specification
Controller Core	VH series PLC (function specifications are the same as that of VH series)
Program Capacity	4K Steps Flash ROM
Max. Input/Output Points	128 points: X0 ~ X77, Y0 ~ Y77
Power Source	DC24V + 20% / -15% power input by ATX connector
Input Signal	16 points DC24V input by IDC connector
Output Signal	16 points 0.1A NPN transistor output by IDC connector
Expansion Capability	Provided with I/O Expansion Slot, Communication Expansion Slot and Memory Card Slot
Indicator Light	Provided with PWR/RUN/ERR system indicator lights, 16 input status indicator lights and 16 output status indicator lights

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