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 μs		
	Applied Instruction		Server μs ~ Server 100 μs		
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		

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		Drawing A
	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		
	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		
	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		
	VB-16XY★	8 points DC24V Signal input; 8 points output; the barrier terminal style I/O		Drawing B
	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		
	VB-8X	8 points DC24V Signal input; the barrier terminal style Input		
	VB-8Y★	8 points output; the barrier terminal style output		
	VB-32XY★-C	16 points DC24V Signal input; 16 points output; the ATX connector I/O (including cables)		Drawing A
	VB-16XY★-C	8 points DC24V Signal input; 8 points output; the ATX connector I/O (including cables)		Drawing B
	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		
	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℃ (0.18℉) 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/℃, 0.1℃(0.18℉) 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/℃ inputs, 0.1℃ (0.18℉) 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		—
	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"		

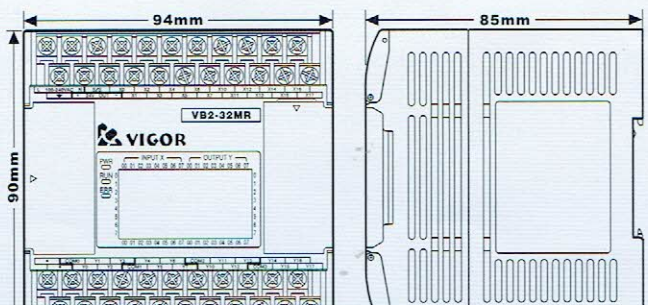
★-- Output type
◆-- Power type

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

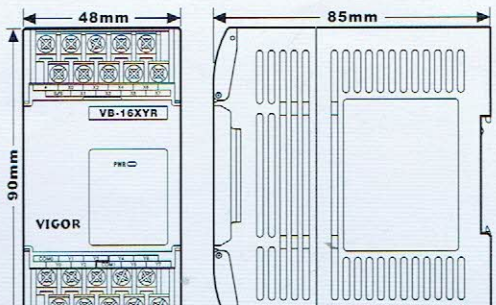
T: NPN transistor output

P: PNP transistor output
D: DC24V −15% / +20% input

Drawing A



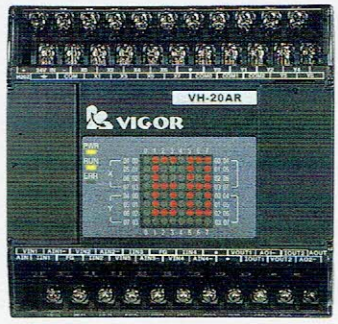
Drawing B



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 μS
	Applied Instructions		Several μS ~Several 100 μS
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 Leve l (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

VH-20AR / VH-20AT Main Units

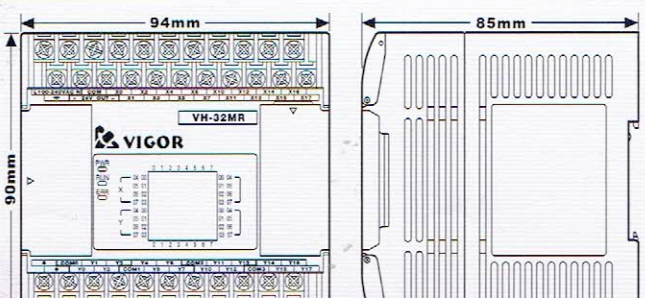


Item	Specification	
Controller Core	VH series PLC (function specifications are the same as that of VH series)	
Program Capacity	4K Steps Flash ROM	
Max. Input/Output Points	128 points: X0 ~ X77, Y0 ~ Y77	
Power Source	DC24V + 20% / -15% power input	
Digital Input	8 points DC24V input	
Digital Output	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	
	VH-16XYR	8 points DC24V input, 8 points relay output	Drawing B
	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