

Comprehensive Solution For Industrial Automation



PLC

Programmable Logic Controller

Series BP

Series CP

Series XP



BCH ELECTRIC LIMITED

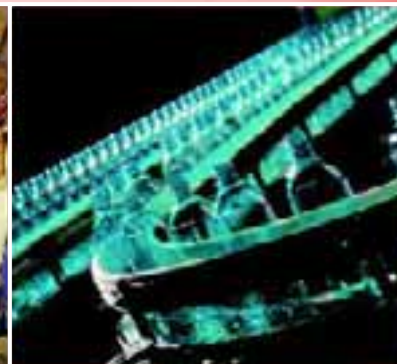
PLC

Programmable Logic Controller

APPLICATIONS



Machine Control



Food & Beverage Industries

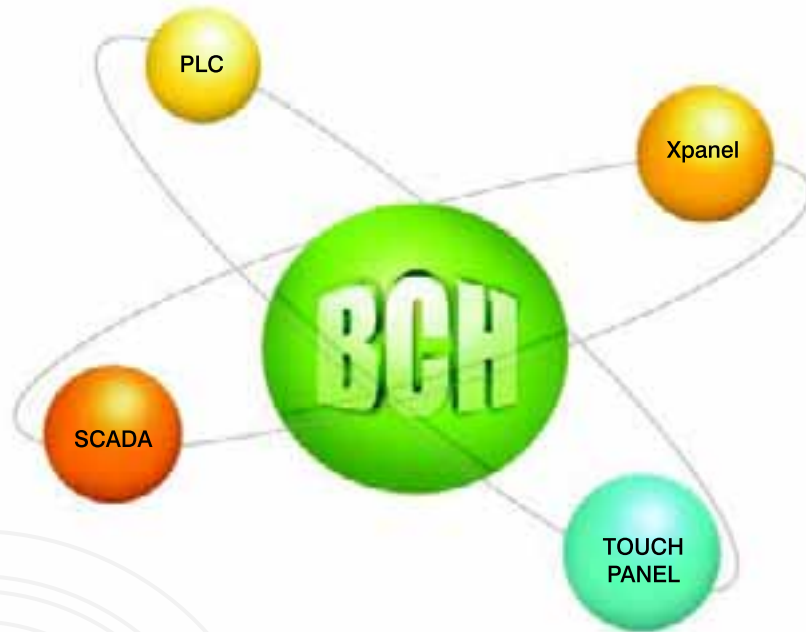


Textile Industries

BCH an ISO 9001-2000 company is one of the largest manufacturer of low voltage electrical and electronic products in India.

Our proven range of Industrial Control, Power Distribution, Automation, Enclosures, Brakes, Starters and Mass Market products have over the years become a benchmark.

BCH is already providing automation solutions with complete range of DC Drives, AC Drives, Soft Starters and Programmable Logic Relays.



BCH Automation Products ...

The high performance architecture that meets all your **Industrial Automation** requirement.



Packaging machines



Steel Plant



Automobile Industries



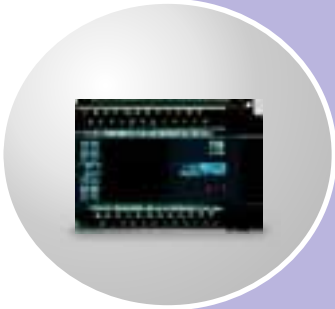
Weighing

and many more...

PLC

Programmable Logic Controller

Series BP



- I/O Capacity upto 128
- BP Series CPU is suitable for a small sized control system
- Series BP furnishes many functions with various instructions as high speed process to apply control sites
- Series BP allows any user to expand IO points easily for analog control or communication
- Integrated power module, CPU and I/O module
- High speed operation : 200 ns/step
- CPU embedded PID function
- Self diagnostic function

Series CP



- I/O Capacity upto 1024
- Compact and high performance PLC
- Self diagnostic system
- High speed processing (200ns/step) by 16 bit PLC processor
- Max of 16 base expansion
- Provides more than 300 instructions
- Separate communication port available
- CPU embedded PID functions

Series XP



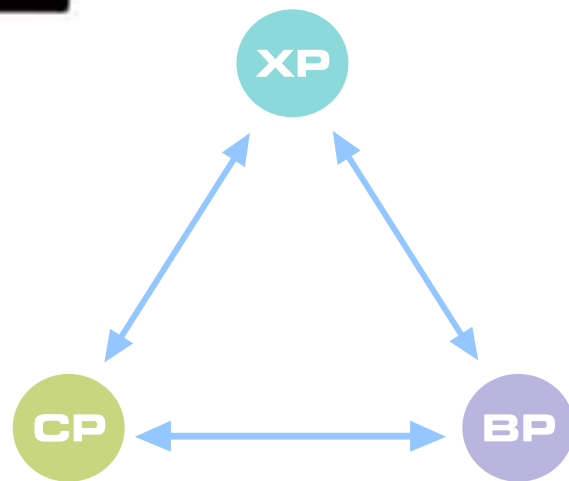
- I/O Capacity upto 8192
- Supports redundant CPU configuration
- High speed processing (75ns/step) by 32 bit PLC processor
- Provides more than 400 instructions
- CPU embedded PID function
- Supports floating point instruction
- Self diagnostic system

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PLC

Programmable Logic Controller



FEATURES OF BCH PLC

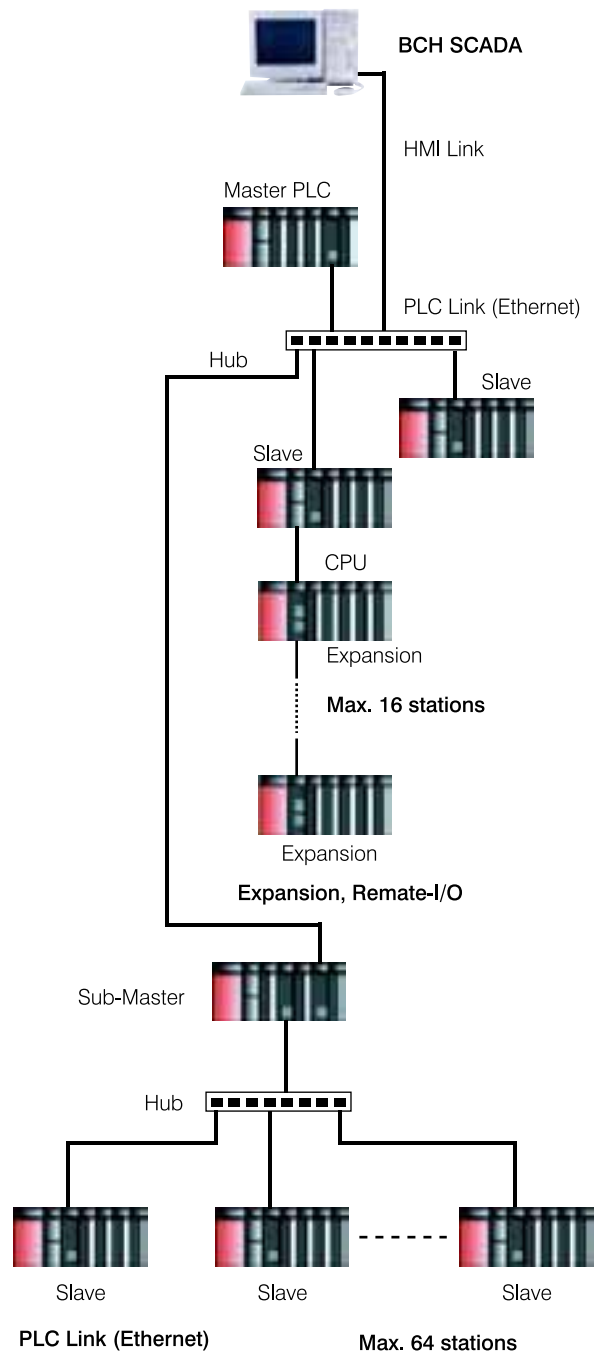
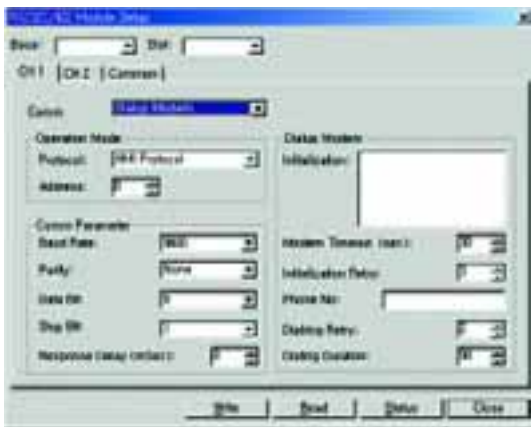
- Bring High Speed into reality by adapting high-tech MPU
- Remote I/O through expansion function
- High Compatibility between series
- By using same loader program, it can be used in identical Environment.
- A sequence program in series CP, XP, or BP is compatible with the other.
- Internal flash memory for ROM operation mode.
- RAM operation mode is used for writing programs and making a test run.
- ROM operation mode in which programs are permanently stored.
- In case of using analog modules, as 1/16000 is selected as the resolution of digital values, digital values of high resolution can be achieved
- Any protocol of various control devices can be edited by using the dialog based protocol program

- Easy to set up the special modules: Ethernet, RS232C, Analog, etc., in the loader programs.
- It is not necessary to write complicated ladder programs. (Dialog boxes to set up special cards)

- BCH PLC adapts ethernet as the standard net work for excellent expandability and compatibility.

DIALOG BOXES TO SET UP SPECIAL MODULES

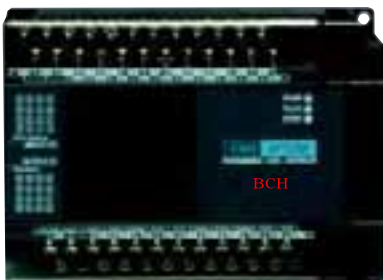
COMPREHENSIVE NETWORKING CONFIGURATION



Series BP

Specifications

- Series BP is suitable for a small-sized control system
- Series BP furnishes many functions with various instructions as high-speed process to apply control sites.
- Series BP allows any user to expand IO Points easily for analog control or communication.
- Integrates power modules, CPU and I/O module: separation modules are not necessary.
- Process High-speed operation with a built-in-high-speed MPU: Process speed: 200ns/step
- Several Hundred of instruction
Sequence : 55 instructions
Application : 289 Instructions



BP32M

1. Abundant program capacity - 8,000 Steps
 - Separate modules are not necessary
2. Devices range:
 - Internal Relay : 4,096 Points
 - Data memory : 5,000 Words
3. Easy expansion connection
 - Max. 3 block expansion

BP16M

1. Abundant program capacity - 4000 Steps
2. Devices range:
 - Assistant relay: 4,000 Points
 - Data memory: 1,000 Words
3. Not expandable

Item	BP32M	BP16M
Power	AC220V / DC24V	
Input	DC24V	
Output	Relay / TR SINK / TR SOURCE	
Expansion Option	AD/DA/AD+DA/RTD/TC/IO(max.3steps)	Not-Expandable
Standard I/O	Input : 16 / Output : 16	Input : 8 / Output : 7
Program Control Type	Stored Program, Cyclic operation, Time Driven Interrupt	
I/O Control Type	Indirect, Direct by Instructions	
Program language	IL (Instruction List), LD (Ladder Diagram)	
Instruction	Sequence	55 Instruction
	Application	289 Instruction
Processing Rate	200n Sec/step (Sequence Instruction)	
Program memory capacity	8k Step	4k step

I/O Point

Item	X	Y	M	L	K	F	T	C	S	D	Z
BP32M	128	128	4,096	1,024	1,024	2,048	256	256	100*100	5,000	1,024
BP16M	16	16	4,096	1,024	1,024	2,048	256	256	100*100	1,000	1,024

Self-diagnosis and Built-in Function

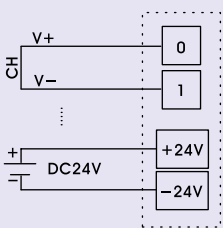
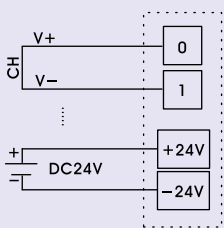
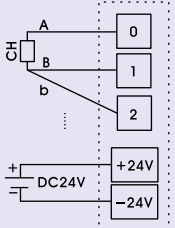
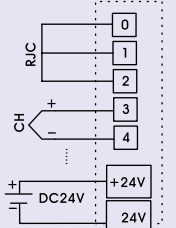
Function	Description	
Self-diagnosis	Operation delay monitoring	Stops PLC operation in case the detected time is over the set time
	Error in memory	Detects errors in flash memory in a CPU or DPRAM of each specialty card
	Power Trouble	Detects temporary breakdown in case input voltage is lower
CPU Built-in	HSC	1-Phase 16Kpps, 2-phase 8Kpps
	PID Auto tuning	Executes automatic PID operation
	Password	Program can be protected
	DC 24V Output	Allows controlling sensors, switches and etc.

I/O specifications

Item	DC Input	Relay Output	Transistor Output
Rated I/O Voltage	DC 24V	AC 220V / DC 24V	DC12 / 24V
Rated I/O Current	4mA	1 Point, 2A / COM 5A	1 Point, 0.5A / COM 4A
On Voltage/On Current	DC 19V / 4mA	-	-
Off Voltage / Off Current	DC 11V / 1mV	-	-
Response Time	Off ->On	5ms or less	10ms or less
	On ->Off	5ms or less	5ms or less
Common Type	4 Points	4 Points	8 Points
Operation Indication	LED	LED	LED
Insulation Type	Photo Coupler	relay	Photo Coupler
Input Type	SINK/SRC	-	-

Series BP

Analog Expansion Block Specifications

Item	Specification			
Power	DC24V External Input			
Type	A/D	D/A	RTD	TC
Digital Data	Signed 16-Bit binary Value (Data :14 Bit)			
Precision	Within $\pm 0.3\%$			
Max Conversion speed	5ms / 1ch	15ms / 4ch		
Absolute Max. I/O	$\pm 12 / \pm 25\text{mA}$	$\pm 15 / \pm 24\text{mA}$		
Insulation Type	Photo Coupler			
Circuit				

- Analog blocks can be expansion max.2 blocks

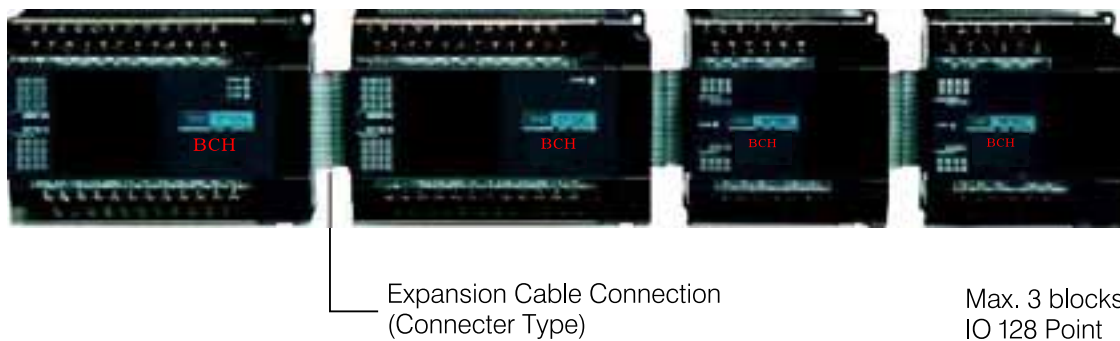
Built-in Communication Block Specifications

Item	RS232C	RS422/485	RS422/485 2Ch	RS232C 1Ch
Model	*R	*S	*U	*T
Power Source	Supplied from CPU			
Comm. Mode	Exclusive	HMI Protocol (1 : n)		
	Loader	x	x	Communication to link with CICON
	User	x	x	Protocol programme
Data Type	Data Bit	7 or 8 Bits		
	Stop Bit	1 or 2 Bits		
	Parity	Even / Odd / None		
Synchronous Type	Asynchronous			
Baud rate	300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400			
Modem Connection Function	Communication with an external modem unit			

Built-in Communication Block Specifications

Item	Ethernet
Power Source	Supplied from a CPU module
Type	10BASE - T
Baud Rate	10Mbps
Max. Segment Length	100m(Node - Hub)
No. of Max. Nodes	Enables to link with 4-line hub
Max. Protocol Size	1500Byte
Access Type	CSMA / CD

Expansion



- Power is supplied from a main block.
- BP16M xx does not support expansion
- Analog modules can be expanded up to 2 modules

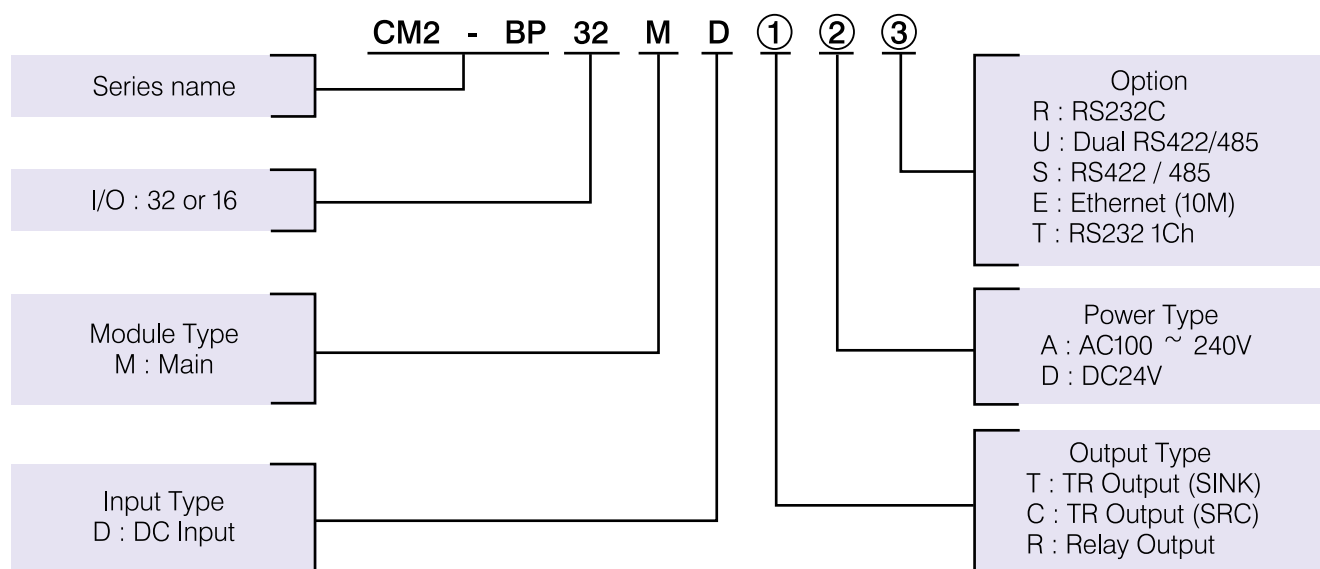
Built-in High Speed Counter



Series BP

Product line

Main Block Model Name



Model	Power Source	Input	Output	Remarks		
CM2-BP32MDTA*	AC 100 ~ 240V	16	DC 24V	16	TR (Sink)	* indicates R : RS232C S : RS422 / 485 E : Ethernet U : RS422 / 485 2Ch T : RS232 1Ch
CM2-BP32MDCA*					TR (Source)	
CM2-BP32MDRA*					RELAY	
CM2-BP32MDTD*	DC 24V	8	DC 24V	7	TR (Sink)	
CM2-BP32MDCD*					TR (Source)	
CM2-BP32MDRD*					RELAY	
CM2-BP16MDTA*	AC 100 ~ 240V	8	DC 24V	7	TR (Sink)	* indicates R : RS232C S : RS422 / 485 E : Ethernet U : RS422 / 485 2Ch
CM2-BP16MDCA*					TR (Source)	
CM2-BP16MDRA*					RELAY	
CM2-BP16MDTD*	DC 24V	8	DC 24V	7	TR (Sink)	
CM2-BP16MDCD*					TR (Source)	
CM2-BP16MDRD*					RELAY	



Main Block(BP32M)



Main Block(BP16M)

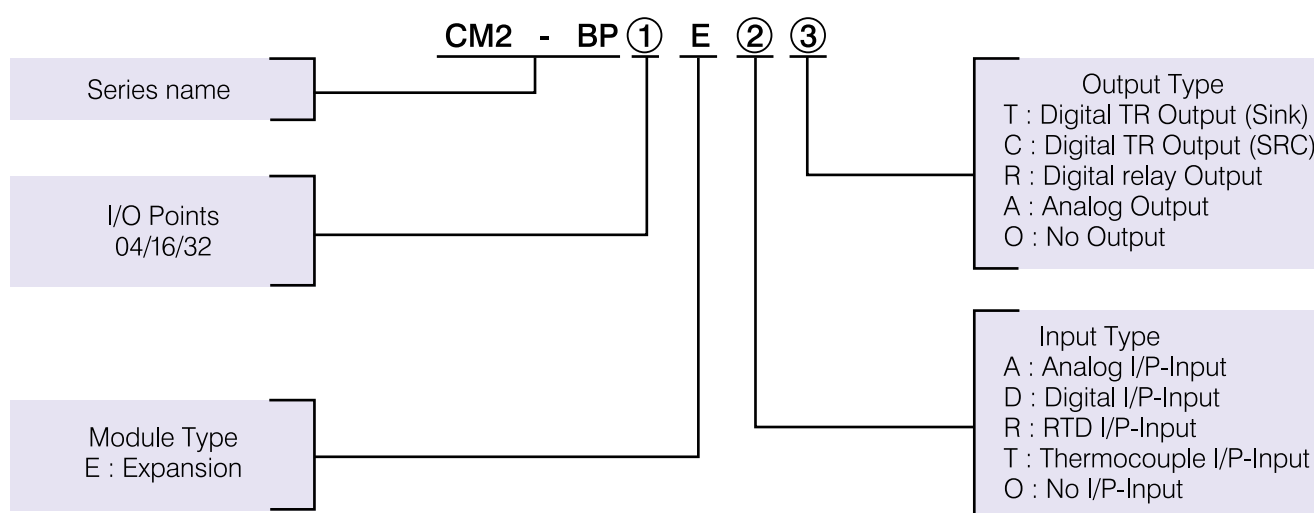


Expansion(DIO)



Expansion(Analog)

Expansion Block Model Name



I/O Expansion Unit

Model	Input		Output		Remarks
CM2-BP16EDT	8	DC 24 V	8	TR (Sink)	Power Source : Supplied from a main unit
CM2-BP16EDC				TR (SRC)	
CM2-BP16EDR				RELAY	
CM2-BP32EDT	16	DC 24 V	16	TR (Sink)	
CM2-BP32EDC				TR (SRC)	
CM2-BP32EDR				RELAY	
CM2-BP16EDO	16		0		
CM2-BP16EOR	0		16	RELAY	
CM2-BP16EOT				TR (SINK)	
CM2-BP16EOC				TR(SRC)	

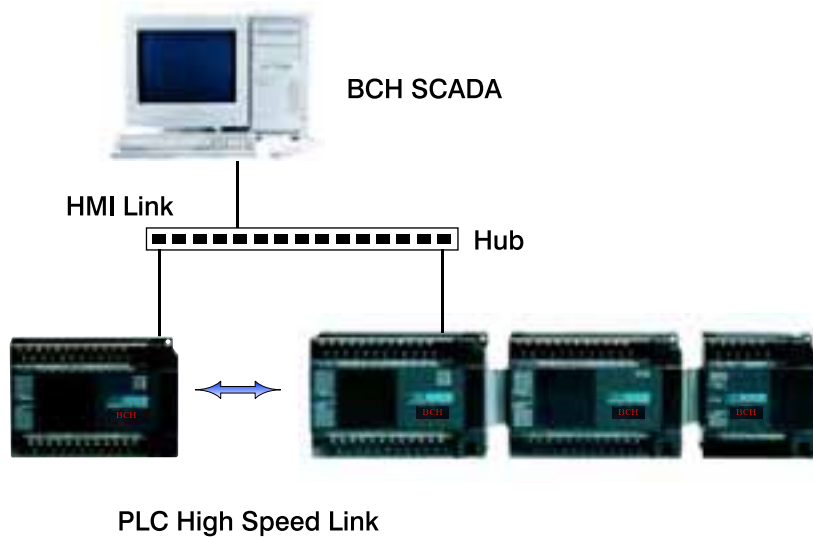
Analog Expansion Unit

Model	Input		Output		Remarks
CM2-BP04EAO	4	AD V/I Input	0	DA V/I Output	Power Source : 24V External
CM2-BP04EAA	2		2		
CM2-BP04EOA	0		4		
CM2-BP04ER0	4	RTD Input	0		
CM2-BP04ET0	4	TC Input	0		

Series BP

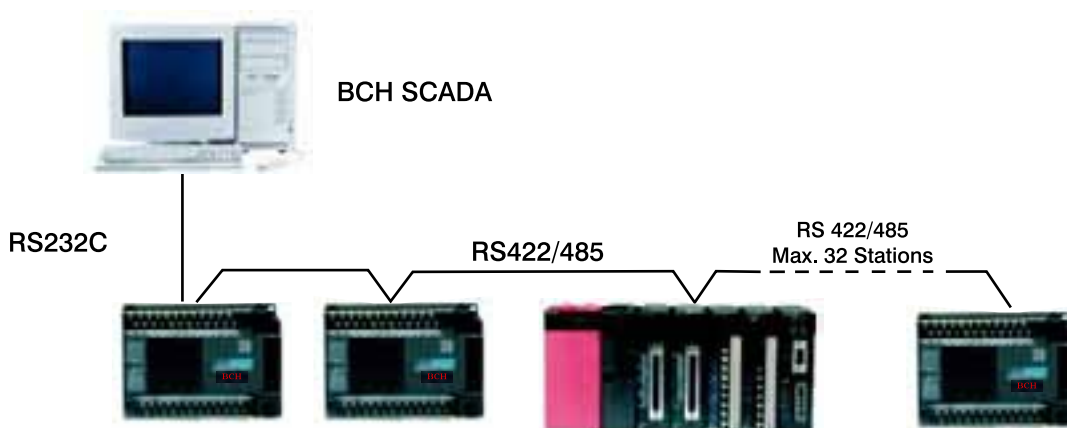
Data Link

Ethernet



Serial Communication

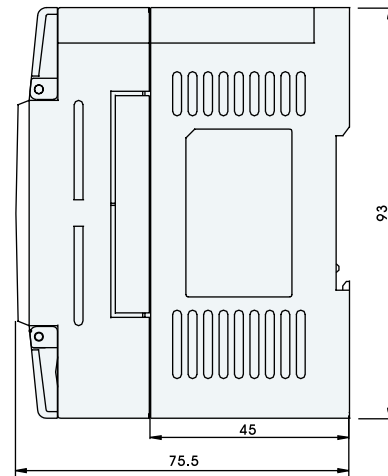
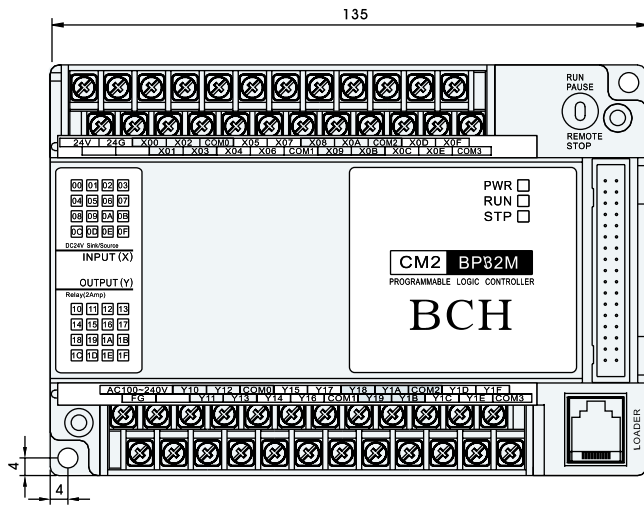
RS232C/422/485 HMI Link



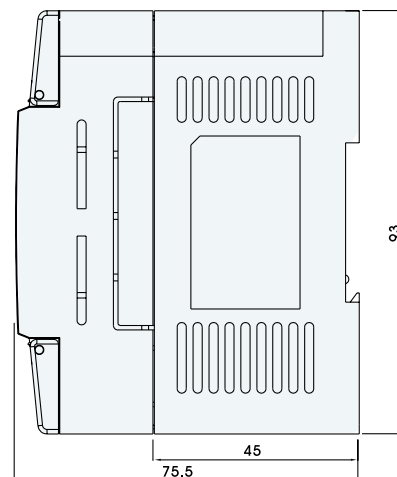
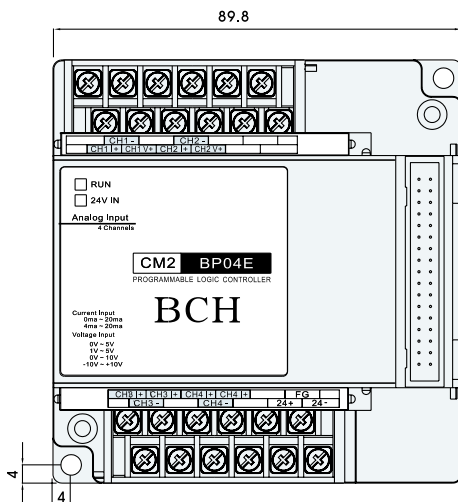
PLC Link 485



Main block, 32 - point Expansion Block



Main Block BP 16M, 16-point Expansion Block, analog Block



Series CP

- Self-diagnostic system gives easy error manipulation
- Maximum of 16 base expansion
- A separate communication port mounted (CM1-CP4C: RS232C, CM1-CP4D: RS422/485)
- Supports variable types of programming
- Provides more than 300 instructions



ITEM		SPECIFICATION	
		CM1-CP3A/B/P	CM1-CP4A/B/C/D/U
Operation Method		Stored Program, Cyclic Operation, Time Driven Interrupt	
I/O control Method		Indirect, Direct by Instructions	
Program Language		IL (Instruction List), LD (Ladder Diagram)	
Data Processing Method		16 Bits	
Instructions	Sequence	55 Instructions	
	Application	293 Instructions	
Processing Speed (Sequence Instruction)		200 ns / step	
Program Memory		32 Ksteps	16 Ksteps
		512Kbyte	256Kbyte
Expansion		Available (Max. 16)	Not available
Data Memory		512Kbyte	256Kbyte
Data Memory Capacity	X	1,024	384
	Y	1,024	384
	M	8,192	
	K	2,048	
	L	2,048	
	F	2,048	
	T	1,024 (10ms, 100ms Selective)	
	C	1,024	
	S	100Card * 100Step	
	D	10000	5000
	Z	1,024	
Timer	Type	On Delay, Off Delay, Accumulated monostable, Retriggerable	
	Range	0.01 sec. ~ 655.35 sec.	
Counter	Type	Up Counter, Down Counter, Up-Down Counter, Ring Counter	
	Range	-32,768 ~ +32,767	
Operation Mode		RUN, STOP, PAUSE, DEBUG	
Self Diagnostic Function		Watch-Dog Timer, Memory Error, I/O Error, Battery Error, power Supply Error	
Base Type		3 slots, 4 slots, 5 slots, 8 slots, 10 slots, 12 slots	
Built-In Function		Computer Link (RS232C) Clock (CP3B/CP4C/CP4D) On-Line editable Program	PID Control, I/O Reservation

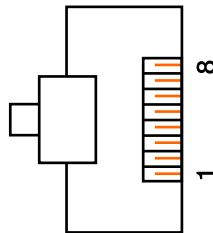
CP CPU



- **CM1-CP4B** : Supports RTC(Real Time Clock)



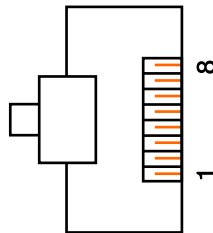
- **CM1-CP4C** :
 - Provides 1 channel of RS232C
 - Supported Protocols : BCH HMI/Loader (auto-detection)
 - Supports RTC(Real Time Clock)
 - Pin Description



CP4C		
Pin	Contents	Name
1	Data Set Ready / Ring	DSR/RI
2	Carrier Detect	CD
3	Data Terminal Ready	DTR
4	Signal Grand	SG
5	Received Data	RXD
6	Transmitted Data	RXD
7	Clear to Send	CTS
8	Request to Send	RTS



- **CM1-CP4D** :
 - Provides / Channel of RS422/485
 - Supported protocols : BCH HMI/Loader (auto-detection)
 - Supports multi-drop communication
 - Pin Description



CP4D		
Pin	Contents	Name
1	Transmitted Data (+)	SDA
2	Transmitted Data (-)	SDB
3	Received Data (+)	RDA
4	-	-
5	Received Data (-)	RDB
6	-	-
7	-	-
8	Signal Ground	SG



- **CM1-CP4U** :
 - Supports USB2.0(for loader connection)
 - Provides all function of CP4D

Series XP

- High speed processing (75ns/step) by 32 bit PLC processor
- Provides more than 400 instructions
- Abundant range of device limit provided : Maximum Input & Output of 8,192 points, data limit of 32,000 Word variable (M-domain, K-domain, L-domain)
- Compact sized high efficient unit
- Supports floating point arithmetic



ITEM		SPECIFICATION		
		CM1-XP1R/A	CM1-XP2A	CM1-XP3A
Program Control Type		Stored Program, Cyclic Operation, Time Driven Interrupt		
Program Language		IL (Instruction List), LD (Ladder Diagram)		
Data Processing Method		32 Bits		
Instructions	Sequence	55 Basic Instructions		
	Application	389 Instructions		
Processing Speed		75 nsec / step		
Program Memory		128K Steps	64K Steps	64K Steps
Capacity		2Mbyte	2Mbyte	2Mbyte
I/O Point		8192	4096	2048
Data Memory Capacity		1 MB		
Timer		4096 (10 ms, 100 ms selectable : 0.01 ~ 6553.5 sec)		
Counter		4,096		
Operation Mode		RUN, STOP, PAUSE, REMOTE		
Data Retention at Power failure		User Selectable (Latch area in parameter setup)		
Number of Program blocks		128		
Program Type	Scan	127 Program blocks in task		
	Periodic	Max 16		
	Special	12		
	Initializing	2 (_INIT, _H_INIT)		
	Sub-Routine	126		
Self Diagnostic function		Watch-Dog timer, Memory Error, I/O Error, Battery Error, Power Supply error		
Restart Mode		Cold, Hot		
Expansion		Max 16 Bases		
Redundancy		Available	Not Supported	Not Supported

BCH PLC XP/CP Series

- Internal power disturbance monitoring function prevents data damage or malfunction

Output Voltage	Usage
+5V	Operating Power of all PLC module
+24V	External Sensor and Switch Power, Analog current output module
+15V	Operating Power of Analog Module
-15V	Operating Power of Analog Module



Item		CM1-SPA	CM1-SPC	CM1-SP2B
Input	Input Voltage	AC 100 ~ 240 V, 50/60 Hz		DC 24V
	Input Current	0.25A Max for 220 VAC		1.8A Max for 24 VDC
	Inrush Current	30A or less		-
	Efficiency	70% or more (Rated Input / Load)		
	Power Disturbance Susceptibility	20 ms or less		
Output	Output Voltage	+5V (3.5A)	+5V (3.5A)	+5V (3.5A)
	Output Current	+24V (0.5A)	+15V (0.5A)	+24V (0.5A)
			-15V (0.3A)	+15V (0.5A)
				+15V (0.3A)
Operating Indicator		LED ON / OFF		

CURRENT CONSUMPTION

capacity of the power module must be checked using following tables

ITEM	MODEL	CURRENT CONSUMPTION	ITEM	MODEL	CURRENT CONSUMPTION
CPU Module	CM1-CP**	130 mA	A/D	CM1-AD04VI	50 mA
Redundancy Module	CM1-RM01A	70 mA	Convert Module	CM1-AD08V	50 mA
	CM1-RC01A	290 mA		CM1-AD08I	55 mA
Expansion Module	CM1-EP***	270 mA	D/A	CM1-DA04V	40 mA
DC Input Module	CM1-XD16A	60 mA	Convert Module	CM1-DA08V	50 mA
	CM1-XD32C	100 mA		CM1-DA04I	40 mA
AC Input Module	CM1-XA08A	30 mA	RTD Module	CM1-DA08I	50 mA
	CM1-XA08B	30 mA		CM1-RD04A	50 mA
I/O Hybrid Module	CM1-XY16DR	180 mA	Module	CM1-RD04B	50 mA
Relay Module	CM1-YR16A	250 mA	TC Measuring Module	CM1-TC04A	60 mA
Transistor Module	CM1-YT16A	110 mA	Communication Module	CM1-SC02A	190 mA
	CM1-YT16B	110 mA		CM1-SC01A	170 mA
	CM1-YT32A	130 mA		CM1-SC01B	170 mA
	CM1-YT32B	130 mA		CM1-SC01DNP	170 mA
SSR Output Module	CM1-YS08A	120 mA		CM1-EC01A	290 mA
High Speed Module	CM1-HS02B	290 mA		CM1-EC01DNP	290 mA

*Analog module must be used with SPC or SP2B (A/D, D/A, RTD, TC modules)

CP/XP Series

Base

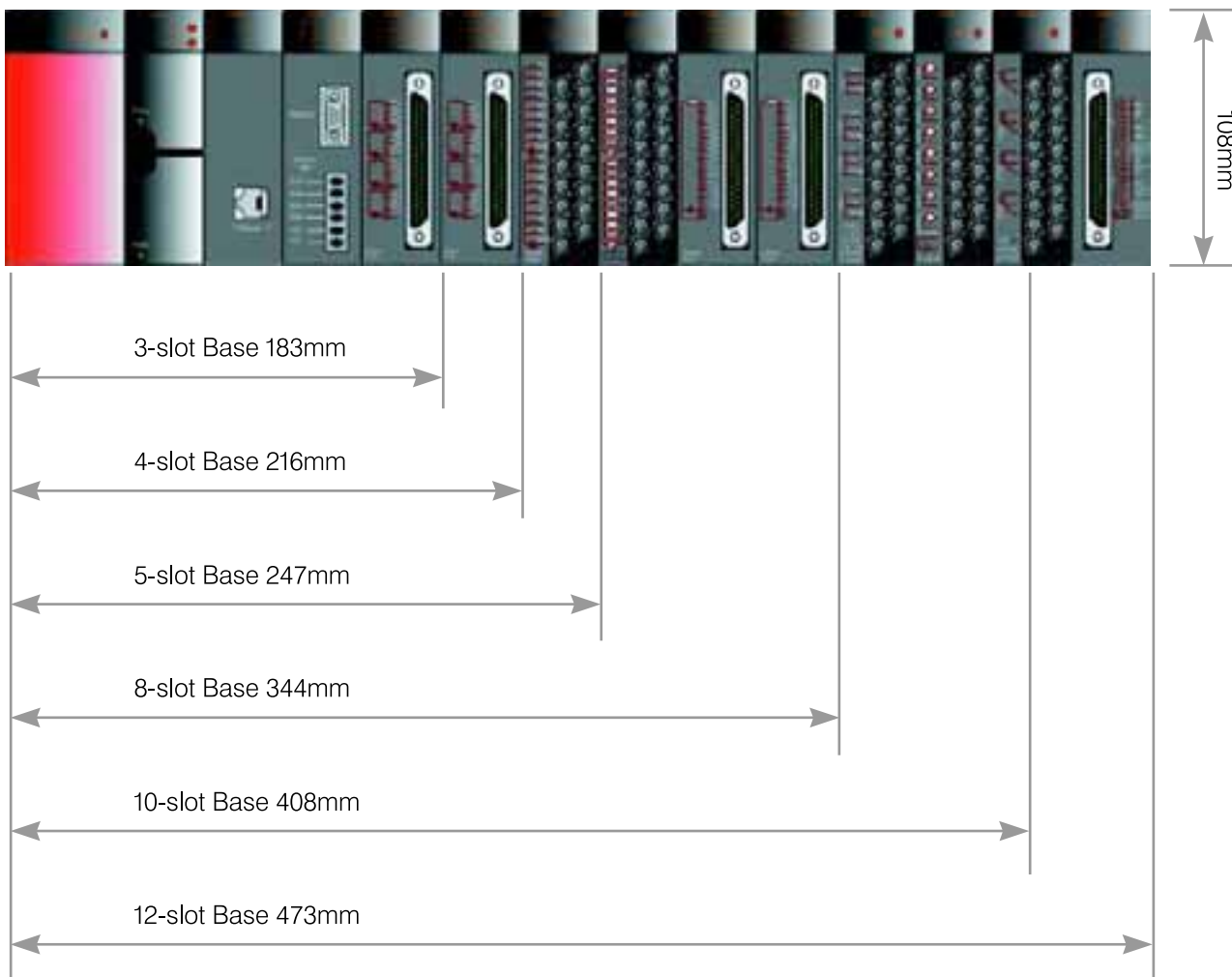
Various Types of Base

Base types such as 3, 4, 5, 8, 10 and 12 slots allow optimal system configuration.

Model	IO Slots	Size (mm)
CM1-BS03A	3 slots	183 x 108
CM1-BS04A	4 slots	216 x 108
CM1-BS05A	5 slots	247 x 108
CM1-BS08A	8 slots	344 x 108
CM1-BS10A	10 slots	408 x 108
CM1-BS12A	12 slots	473 x 108

Minimization Of Mount Space

Even high-performance, the size is as minimized as it could be to save the mount space.



Expansion

Series CP allows expanding a base up to 16



Local



Expansion #1



Expansion #2



Expansion #3



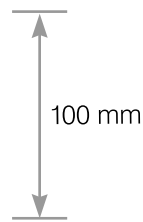
Expansion #14



Expansion #15



Expansion #16



Supports the high-speed expansion communication of 10BASE-T.

Built-in network repeater
Expansion of remote I/O function
Distance between segments : Max. 100m
(Max. entire expansion length : 1,600m)

Expansion number setup by rotary switch



CP/XP Series

Digital Inputs/Outputs

- Internal circuitry is isolated by photo-coupler or relay
- Furnish a LED indicator.

DC Inputs



Model	DC Input			
	CM1-XD16A	CM1-XD32C	CM1-XD16B	CM1-XD32B
No. of Input Points	16 Points	32 Points	16 Points	32 Points
Rated Input Voltage	DC 24 V			
Rated Input Current	4mA			
On Voltage/On Current	DC19V/4mA		DC15/4mA	
Off Voltage/Off Current	DC11V/1mA		DC12/1mA	
Off->On	5 ms or less			
On->Off	5ms or less			
Common Type	8 Points			
Operation Indication	LED is turned on in case input is turned on			
Isolation Type	Photo coupler isolation			
Input Type	SINK/SOURCE			

AC Inputs



Model	AC Input	
	CM1-XA08A	CM1-XA08B
No. of Input Points	8 Points	
Rated Input Voltage	Ac 200 ~ 240V	AC90 ~ 130V
Rated Input Current	9mA	5mA
On Voltage/On Current	AC 160V	AC 80V
Off Voltage/Off Current	AC 60V	AC 30V
Off->On	5 ms or less	
On->Off	5ms or less	
Common Type	8 Points	
Operation Indication	LED is turned on in case input is turned on	
Isolation Type	Photo coupler isolation	

Digital Input/Output

Combination I/O



Model	Combination I/O	
	CM1-XY16DR	
No. of Input Points	8 Points	8 Points
	SINK/SRC	Relay
Rated I/O Voltage	DC 24V	DC 12/24V
		AC 220V
Rated I/O Current	4mA	2A
On Voltage/On Current	DC 19V / 4mA	
Off Voltage/Off Current	DC 11V / 1mA	
Response Time	Off->On	5 ms or less
	On->Off	5ms or less
Common Type	8 Points	8 Points
Operation Indication	LED is turned on in case input is turned on	
Isolation Type	Photo coupler	Relay

Relay Output & SSR Output



Model	Relay Output	SSR Output
	CM1-YR16A	CM1-YS08A
No. of Output Points	16 Points	8 Points
Rated Load Voltage	DC 12/24V	AC100 ~ 240V
	AC 220V	(50 / 60Hz)
Rated Load Current	1Point	1A
	1Com	2A
Response Time	Off->On	10 ms or less
	On->Off	5ms or less
Common Type	8 Points	8 Points
Operation Indication	LED is turned on in case input is turned on	
Isolation Type	Relay	Photo Coupler

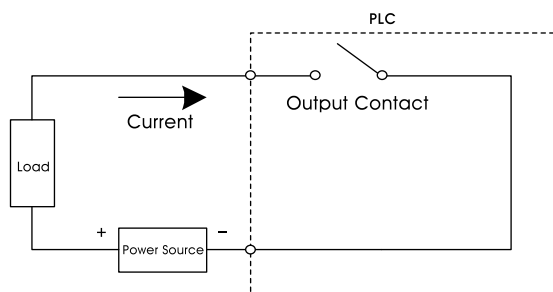
CP/XP Series

Transistor Outputs



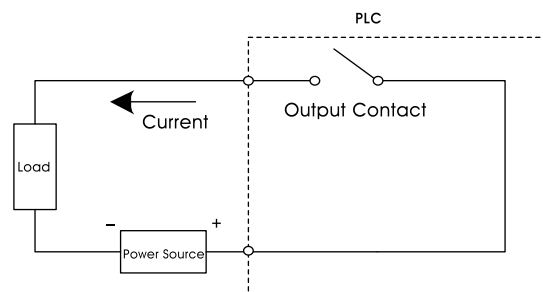
Model		Transistor Output			
		CM1-YT16A	CM1-YT16B	CM1-YT32A	CM1-YT32B
No. of Output Points		16 Points SINK	16 Points SRC	32 Points SINK	32 Points SRC
Rated Load Voltage		DC 12 ~ 24V	DC 12 ~ 24V	DC 12 ~ 24V	DC 12 ~ 24V
Rated Load Current	1Point	0.5A	0.5A	0.2A	0.2A
	1Com	4A	4A	4A	4A
Response Time	Off->On	1 ms or less	1 ms or less	1 ms or less	1 ms or less
	On->Off	1 ms or less	1 ms or less	1 ms or less	1 ms or less
Common Type		16 Points	16 Points	32 Points	32 Points
Operation Indication		LED is turned on in case input is turned on			
Insulation Type		Photo Coupler			

SINK Type



CM1-YT16A and CM1-YT32A are used for Sink type.

Source Type



CM1-YT16B and CM1-YT32B are used for Source type.

Analog Inputs/Outputs

A/D Converters



- 8/4 channel per module
 - Converts ratings by setting offset and gain value
 - Selectable digital converted range from - 8,000 to 8,000 or 0 to 16,000 per channel
 - Realizing lower current consumption per channel
- ★ *Must be used with SPC or SP2B power module*

Model	AD14Bit / 4CH / Voltage-Current Input		AD14Bit / 8CH / Voltage-Current Input	AD14Bit / 8CH / Voltage-Current Input
	CM1-AD04VI		CM1-AD08V	CM1-AD08I
No. of Input Ch.	4 Channels		8 Channels	8 Channels
Analog Input	Voltage	0 ~ 5V, 1 ~ 5V, 0 ~ 10V, -10 ~ +10V	0 ~ 5V, 1 ~ 5V, 0 ~ 10V	0 ~ 20mA 4 ~ 20mA
	Current	0 ~ 20mA 4 ~ 20mA	-10 ~ +10V	
Digital Output	Signed 16 bit Binary Value (Data : 14 Bits)			
Max. Resolution	0 ~ 5V	0.3125mV		
	1 ~ 5V	0.25mV		
	0 ~ 10V	0.625mV		
	-10 ~ 10V	1.25mV		
	0 ~ 20mA	1.25μA		
	4 ~ 20mA	1.0μA		
Precision	Within ±0.3%			
Max. Conversion Rate	5ms /1ch			
Absolute Max. Input	Voltage	±12V		
	Current	±25mA		
Insulation Type	Photo Coupler			

CP/XP Series

D/A Converters



- 8/4 channel per module
- Selectable digital converted range from - 8,000 to 8,000 or 0 to 16,000 per channel
- Realizing lower current consumption per channel
- Various/Flexible output modules by output range
- ★ *Must be used with SPC or SP2B power module*

Model	DA14Bit / Voltage Output		DA14Bit / Voltage Output	
	CM1-DA04V	CM1-DA08V	CM1-DA04I	CM1-DA08I
No. of Input Ch.	4 Channels	8 Channels	4 Channels	8 Channels
Digital Input	Signed 16 Bit Binary Value(Data: 14 Bits)			
Analog Output	-10 ~ 10V		4 ~ 20mA	
Max. Resolution	1.25mV		1.0 μ A	
Precision	Within $\pm 0.3\%$			
Max. Conversion Rate	10ms	16ms	10ms	16ms
Absolute Max. Output	$\pm 15V$		+24mA	
Insulation Type	Photo Coupler			

RTD Module



Features of RTD Module

- Compatible with 3-wired Pt.100/DIN and JIS standard type
- Self-diagnostic function detecting sensor's breakdown per channel
- High accuracy (less than 0.3% of full scale)
- ★ *Must be used with SPC or SP2B power module*

Model	CM1-RD04A	CM1-RD04B
Available RTD	Pt100 (JIS C1640-1989, DIN 43760-1980) JPt100 (KS C1603-1991, JIS C1604-1981)	Pt1000 (DIN EN 60751) Ni1000 (Din43760)
Range of Input Temperatures	Pt100 : -200.0 °C to 600°C (18.48 to 313.59 Ohm) JPt100 : -200.0 °C to 600°C (17.14 to 317.28 Ohm)	Pt1000 : -200.0 °C to 600 °C (184.8 to 3135.9 Ohm) Ni1000 : -60.0 °C to 150 °C (695.2 to 1986.3 Ohm)
Digital Output	Digitally Converted Value: 0 ~ 16,000 Detected Temperature Value: -2000 ~ 6000(Value of the first decimal place*10)	
Breakdown Detection	3 wires by channels	
Precision	±0.3 % (Full scale)	
Max. Conversion Rate	50ms / Channel	
No. of Input Channels	4 Channel	4 Channel
Isolation Type	Photo Coupler(No Isolation between channels)	
Connection Terminal	18 Points Terminal	

CP/XP Series

TC Module



Features of TC Module

- Direct input from temperature sensor's eliminates the external transducer
- Thermocouple sensors compatible with K-J-E-T-B-R-S-type
- Self-diagnostic function detecting sensor's breakdown per channel
- Cold junction compensation is also equipped (automatic)
- Acceptable for worldwide standard as ANSI, DIN, BS, JIS and KS
- ★ Must be used with SPC or SP2B power module

Model	CM1-TC04A			
Available TC	Type K, J, E, T, B, R, S			
Range of Input Temperatures	Type of TC	Standard	Range of Measured Temperatures(°C)	Range of Measured Voltage
	K	ANSI	-200.0 ~ 1200.0	-5891 ~ 48828
	J		-200.0 ~ 800.0	-7890 ~ 45498
	E	DIN	-150.0 ~ 600.0	-7297 ~ 45085
	T	BS	-200.0 ~ 400.0	-5602 ~ 20869
	B	JS	400.0 ~ 1800.0	786 ~ 13585
	R	KS	0.0 ~ 1750.0	0 ~ 21006
	S		0.0 ~ 1750.0	0 ~ 18612
Digital Output	Digitally Converted Value: 0 ~ 16,000, Converted Temperature Value: (Range of Measured Temperature*10)			
Compensation Type	Automatic Compensation			
Breakdown Detection	Detection by Channels			
Precision	±0.3%(Full Scale) +1°C(error for base contact compensate)			
Max. Conversion Rate	50ms/Channel			
No. of Input Ch.	4 Channels/Module			
Connection Terminal	18 Points Terminal			

Thermistor Module



Features of Thermistor Module

- Max. 8 channel NTC thermistor with one module
- Possible to measure NTC (Negative Temperature Coefficient) type Thermistor
- Temperature data accuracy of one decimal place
- For each channel, this unit could detect any thermistor single line input and assuming oversetting of input.
- In the use of the Thermistor temperature-resistance table, it is able to input desired maximum, medium and minimum temperature[®] point and Resistance (Q) to measure.

Model		CM1-TH08A
Thermistor		NTC TYPE
Range of Thermistor Input Resistance		100 ~ 1MΩ
Range of Thermistor Input Resistance		100Ω ~ 40kΩ : 1Ω
		40kΩ ~ 400kΩ : 10Ω
		400kΩ ~ 1MΩ : 30Ω
Convert range	Temperature Convert value Digital value	°C, °F (0.1°C Resolution) 0 ~ 16000, -8000 ~ 8000
Resistance-Temperature Calculation		Steinhart-Hart thermistor polynomial
Precision		±0.3 %(Full Scale)
Max. Conversion Rate		4 sec(8ch)
Temperature Input point		8 points
Insulation method		Photo Coupler
Connection Terminal		18 points

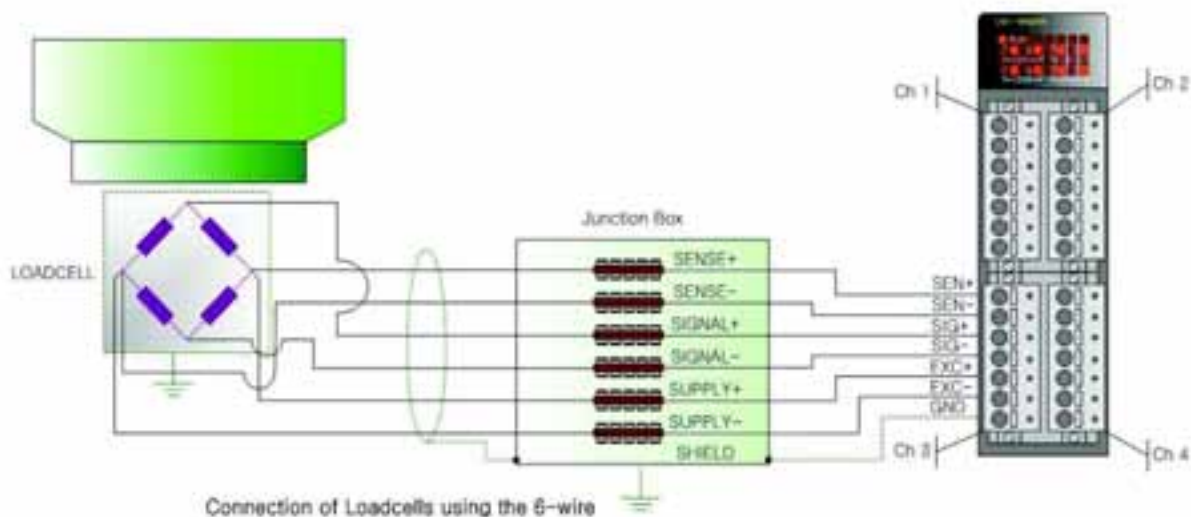
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Load Cell Module

Feature of Load Cell Module

- Able to input 2 channel or 4 channel Load Cell with one module.
- The unit is compatible with various applicable fields such as Unload Scale, Bin Scale, Mixing Scale, Filling Scale (Packaging), etc.
- With 24 Bit Sigma Delta AD Conversion, digital value of resolution can be acquired.
- Speed of Maximum 200 sampling per second.
- Supports internal disposition such as measure of insertion and discharge.

Model	CM1-WG02A	CM1-WG04A
Input Point	2 Channel	4 Channel
Insulation Method	Photo-Coupler	
Load Cell Approval Voltage	DC 9V	
Load Cell Rate	~ 3mV/V	
Input intensity	0.6 and more	
A/D Conversion method	Sigma Delta	
A/D Resolution	1/200.000	
Weight Value resolution	1/10000 (max)	
A/D Conversion Speed	10 times/sec	



HSC Module

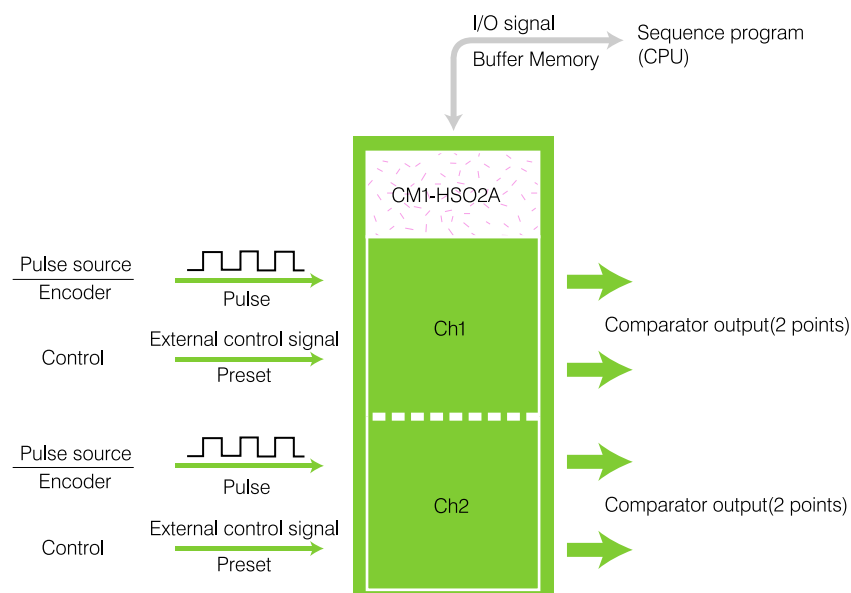
Feature of HSC Module

- Provides adding and subtracting function by a program or inputting Phase B in case of 1-phase input.
- Provides adding and subtracting function by phase difference in case of 2 phase difference.
- Provides 1 - multiple, 2 - multiple, 4 - multiple function in case of 2 phase input.
- Provides presetting function by external input signal or a program.
- Outputs two comparison signals through built - in transistor output contacts, using a base value and a current value.
- Enables ring counting, sampling counting, periodic pulse counting latch.



Model		CM1-HS02D	CM1-HS02B
Channel		2 Channel	
Counting	Signal	1- phase input/2-phase Input	
Input Signal	Level of Signal	Line Drive (RS422A)	DC5/12/24V, 5mA
Range of Counting		32 bit (2,147,483,648 ~ 2,147,483,647)	
Counting rate		200Kpps	200Kpps
Form		Up-down Linear Counting + Ring Counting	
External	Type	Comparative Output(>, =, <)	
Output	Form of Signal	Open Collector Output	

Operation Outline



CP/XP Series

Data logger Module



Features of Data logger Module

- Equipped with large capacity and non-combustible log memory (32 MB or 64 MB)
- Standalone real time data sampling & preserving
- Upon restoration of communication system, upper level system(HMI) data can be obtained
- Maximum of 32 word data can be sampled at the same time with maximum of 10mSec interval.
- Built in HMI Protocol: no necessity of optional communication card (RS232C, Support Modem) Self-diagnostic function (communication error, memory error, capacity check, etc.)
- Trigger Logging by Sequence program
- Provide event logging (COS, VOC)

Model		CM1-LG32 A	CM1-LG64A
Communication Mode	HMI Mode	BCH Protocol	
	Terminal mode	Text transmission	
Dater Mode	dater bit	7/8	
	Stop bit	1/2	
	parity	Even / Odd / None	
Synchronous		Asynchronous	
Transmission speed		300 / 600 / 1200 / 4800 / 9600 / 19200 / 38400	
Communication method		RS232C	
Modem		Cable modem or dial up modem	
Log memory capacity		32Mbytes	64Mbytes
Sampling interval		10msec ~ 327670msec	
Max. Logging data size		32 Words	
Log data		block sampling or Event Data	
Logging method		Periodic, trigger, event (COS / VOC)	
Built in function		Memory condition check, communication Error Check, and Memory capacity check	

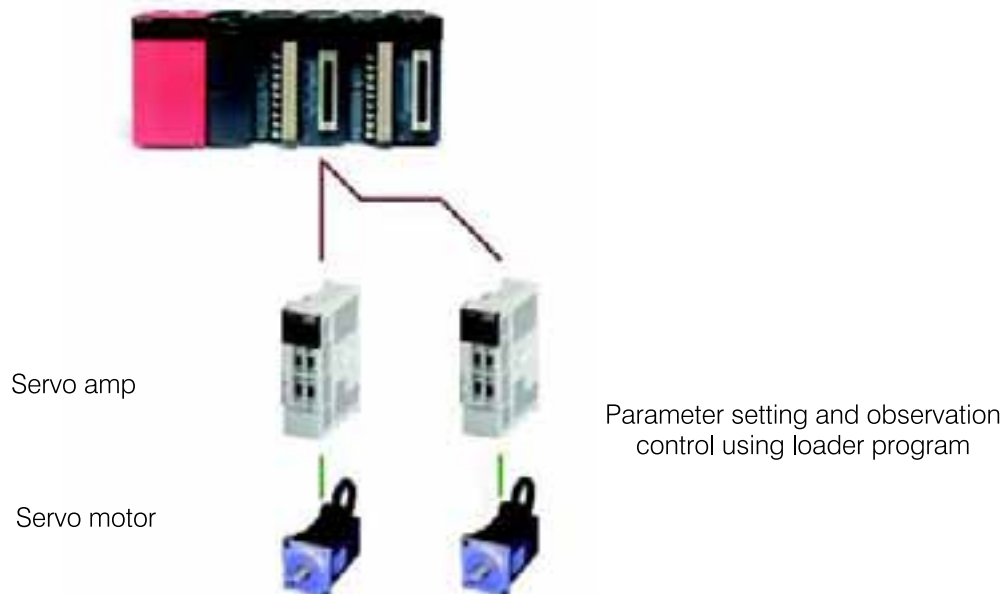
Positioning Module



Features of Positioning Module

- Enable to set max. 600 positioning data include positioning address and operating method.
- Possible to operate position control, speed control, position/speed switch control, or speed/position switch control by control method designed according to positioning data.
- Positioning control of the each axis: linear interpolation, separate/synchronous operation
- Positioning control of the 2 axes: speed control, arc/linear interpolation, separate/synchronous operation
- origin point return method
 - search origin point after approximate origin point OFF
 - search origin point after reducing speed when approximate origin point ON
 - search origin point by origin point and upper/lower limit switch
- enable to set immovable origin point

Operation Outline



CP/XP Series

Model		CM1-PS02A/B
Number of axes		2
Interpolation		2 axes linear/arc interpolation
Control method		position, locus, speed, speed/position, position/ speed control.
Setting Unit		Pulse, mm, inch, degree,
Positioning data		600/axis
Positioning Method		absolute or relative method
Backup		Flash ROM Backup (parameter, positioning data, block data, condition data)
Position address	Position address method	Position control absolute/relative coordinate method
		Position/speed switching control-relative coordinate method
		Speed/position switching control -absolute/relative coordinate method
		Locus control- absolute/relative coordinates method
	Positioning address range	• absolute coordinates method
		-214748364.8 ~ 214748364.7 μ m
		-21474.83648 ~ 21474.83647 inch
		0 ~ 359.9999 degree
		-2147483648 ~ 2147483647 pulse
		• relative coordinate method
		-214748364.8 ~ 214748364.7
		-21474.83648 ~ 21474.83647 inch
		-21474.83648 ~ 21474.83647 degree
		-2147483648 ~ 2147483647 pulse
		• Speed/position switching control (relative coordinate method), position/seed switching control
		0 ~ 214748364.7 μ m
	0 ~ 21474.83647 inch	
	0 ~ 21474.83647 degree	
	0 ~ 2147483647 pulse	
	• Speed/position switching control (absolute coordinate method)	
0 ~ 359.9999 degree		
0.01 ~ 20,000,000.00 (mm/min)		
0.001 ~ 2,000,000.000(inch/min)		
0.001 ~ 2,000,000.000 (pulse/sec)		
1 ~ 1,000,000 (pulse/sec)		
Acceleration/Deceleration pattern	Trapezoidal / S-curve	
Acceleration/Deceleration time	125 ~ 1x106 PPS/Sec	
External disconnection method	40 Pin Connector	
Connector for external	40 Pin Male (Fujitsu)	
Max. Output pulse	A Type : 1 MPPS (Line Driver Pulse Output) B Type : 200 kPPS (Open Collector Pulse Output)	
Max. Distance	A Type : 10 m B Type : 2 m	
Number of Flash ROM saving	25 times after Power ON	

Ethernet Module



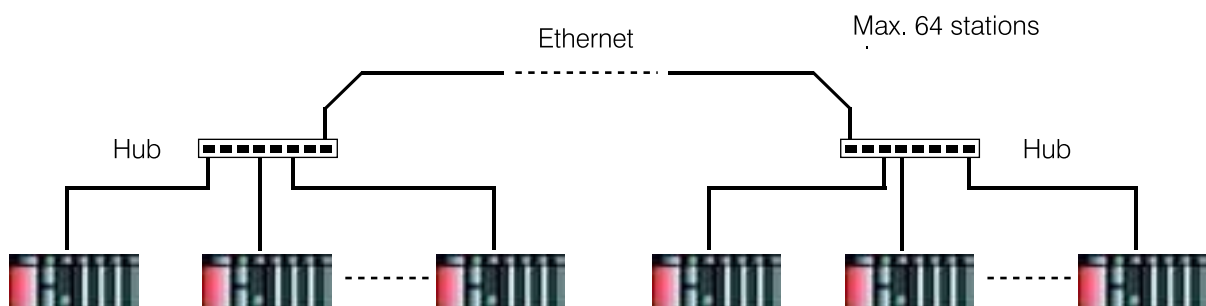
Features of Ethernet Module

- Comply with IEEE802.3 code.
- Support protocols like ARP, ICMP, IP, TCP, UDP.
- No limit on the number of the units mounted on a base.
- Support PLC link function for high-speed data communication among BCH-PLC modules and enable to communicate with 64 stations as maximum at the same time.
- Support DNP3.0 protocol.(CM1-ECO1DNP)

Model	CM1-EC01A	CM1-ECO1DNP
Type	10BASE-T	
Baud Rate	10Mbps	
Transmission Type	Base Band	
Max. Length of Segment	100m (Node to Hub)	
Max. Number of Nodes	Hub 4 steps	
Max. Size of Protocol	1500 Byte	
Network Access Type	CSMA / CD	
Supporting Function	Loader communication through Ethernet PLC dedicated Network, Group Network) HMI Link through TCP / IP, UDP / IP MODBUS	DNP 3.0 Protocol Loader communication through Ethernet

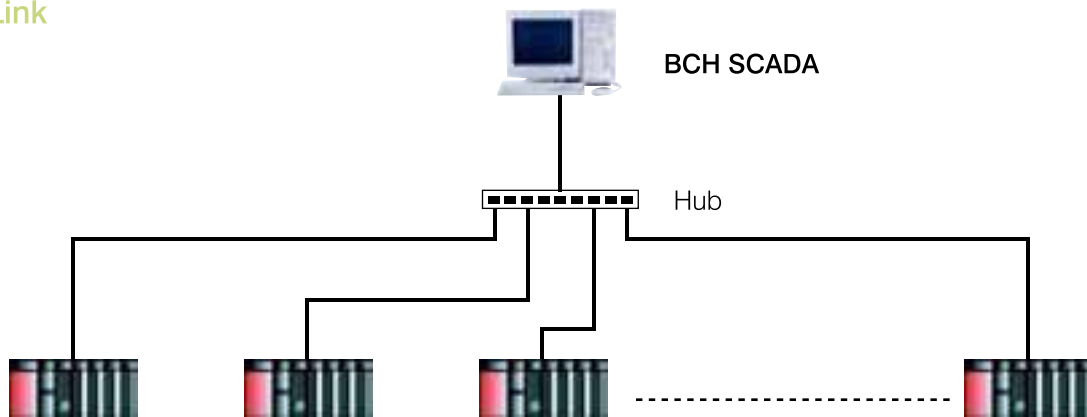
System Configuration

PLC LINK



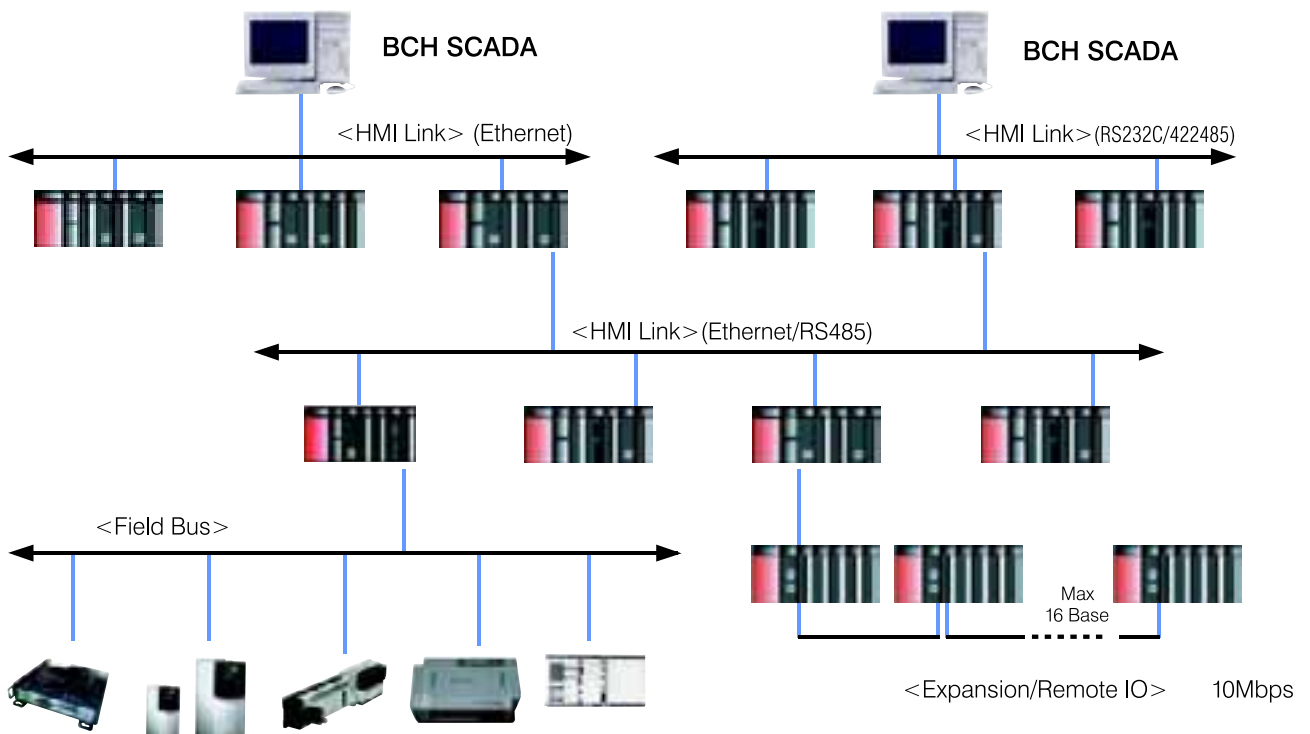
CP/XP Series

HMI Link



No limited (Subject to HMI S/W Specifications)

Comprehensive Ethernet Network



RS232C/422/485 module



Features of RS232C/422/485 module

- Read and write data by using an HMI protocol
- Provide communication function suitable for multi-drop configuration which is able to link 32 units as maximum
- Enable to control a PLC at a long distance with modem communication function
- Allows setting up diverse baud rate from 300bps to 38400bps.
- Enable to use RS232C/RS422(RS485) communication port by setting up as a independent channel or a linked channel.
- Support 1:1 / 1:N / N:M communication (In case of using RS422 channel)
- Support full-duplex(RS422)and half-duplex(RS485) communication form
- Enable to use RS485 channel as RS 485 multi-drop communication channel through the parameter setup
- Equipped with self- diagnosis function and loop-back diagnosis function for diagnosing a breakdown supply
- Supports DNP 3.0 Protocol (CMS-SCO1DNP)

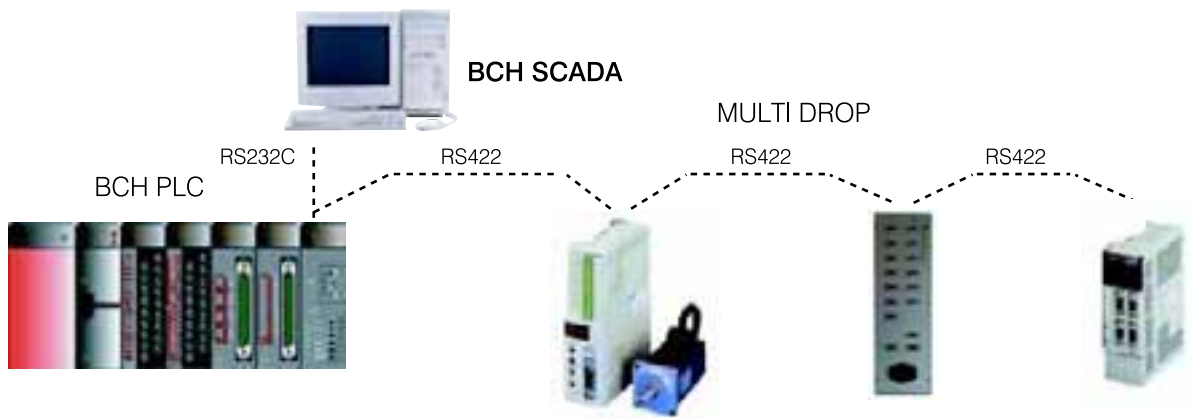
RS232C/422/485

Model		CM1-SC02A	CM1-SC01A	CM1-SC01B	CM1-SC01DNP
Interface		RS232C / RS422 / RS485	RS232C	RS422 / RS485	RS232C
HMI Mode		BCH-CIMON Protocol(Supports 1:n Communication)			-
Comm. Mode	Graphic Loader Mode	BCH-CIMON Communication			-
	MODBUS	MODBUS RTU Mode(Master/Slave)			-
	DNP	-			DNP 3.0 Protocol
	User definition	Protocol Program			
Form of Data	Data Bit	7 or 8 Bit			
	Stop Bit	1 or 2 Bit			
	Parity	Even / Odd / None			
Synchronism		Asynchronous			
Baud Rate		300 / 600 / 1200 / 2400 / 4800 / 9600 / 19200 / 38400			
Modem Link		Long-distance communication by linking with a modem unit			

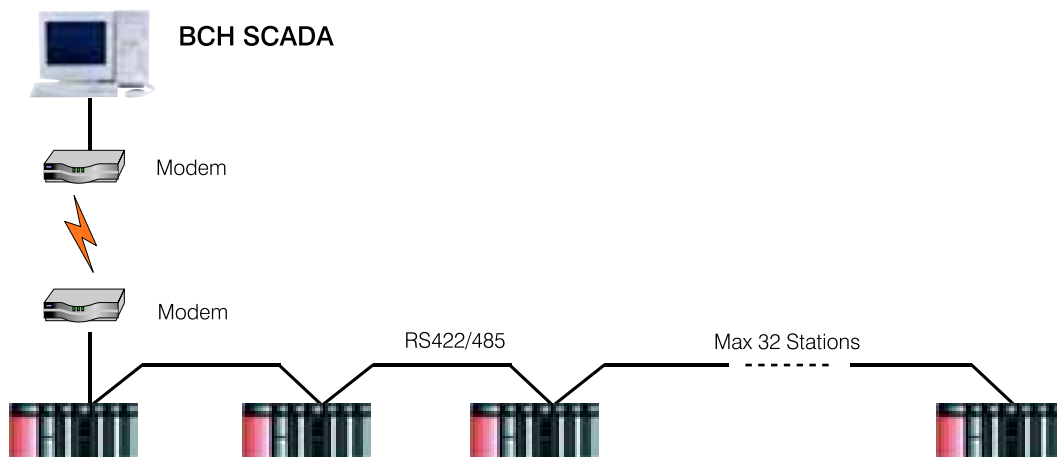
CP/XP Series

System Configuration

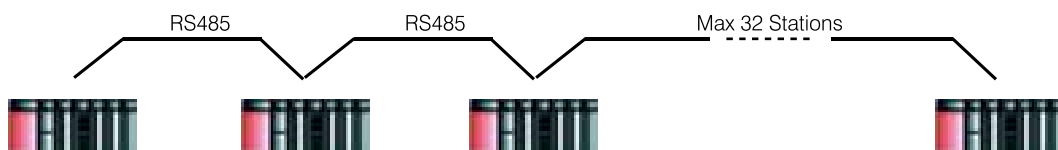
LINK Application by User Protocol



RS232/422 HMI Link (Modems are used)



PLC Link : RS485



Profibus Module



What's Profibus

Profibus is manufacturer selective (vendor independence) and is used vastly for work Automization as an open type fieldbus. The characteristics of open type are stated in Europe standard EN50170 and EN50204.

Profibus enables communication between different manufacturer's devices without any special interface required. Profibus is very efficient and highly on conditions where careful consideration is required to communicate in complex and high speed environment.

Even when more advanced technology comes in effect, Profibus will be the industrial communication system which will be ready for the future

Advantage of Profibus

- Minimal H/W structure available (I/O, terminal blocks, barriers). Easy and fast installation reduces cost to construct hardware.
- Simple Structure (Every device is constructed as one tool). With simple repair and maintenance, operation of the system becomes fast and easy.
- It provides maximum flexibility to the progress of work with power up of main cycle, reducing incidents of ability decline, dependable data log and trustable digital transmitting technology.
- In the area of work automization, input/output signal connection installation cost must be minimized and maximum use of Bus's function to reduce many unnecessary input/output signals.
- In the area of work automization, device is located at danger zone and one Twist Pair cable is used to transfer data to minimize the number of analog I/O card to be used.

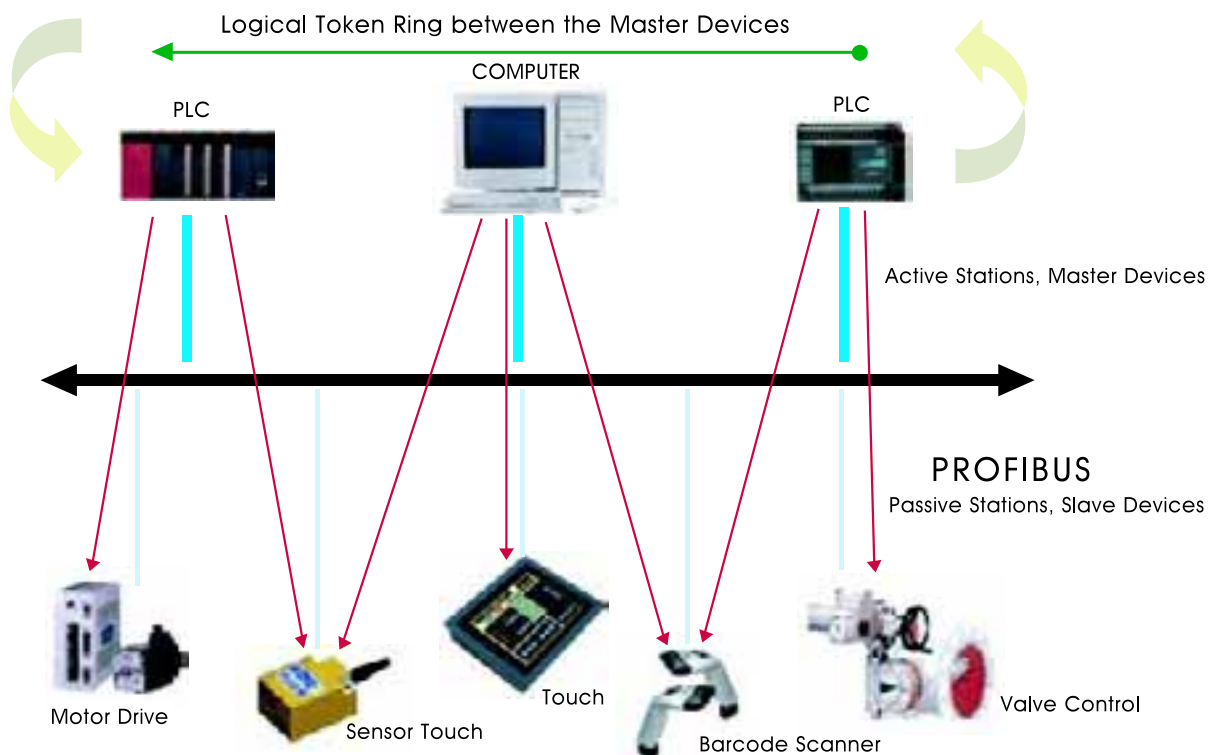
Features of Profibus DP module

- Suitable to communicate between Master Automization Machine and Scatter Slave I/O Machine.
- Supports various communication speed (9.6kbps ~ 12Mbps).
- RS485 Communication method is used.
- Field construction made easier due to use of Twisted Pair Cable
- Supports Maximum of 127 station (32 per segment)
- Network setup is done with Configuration tool.
- 1Kbyte input data can be transferred within 2ms
- Data transition can be done with order or without order
- Individual or Multi master network function available.

CP/XP Series

Model	CM1-PD01A	CM1-PD01B
Interface	RS-485	
Network	Profibus DP	
Media Access	Token Passing & Polling	
Cable	Two wire shielded twisted pair cable	
Number of Max. slave connection/network	127	
Number of Max. slave connection/network	32	
Max. I/O Data slave	244 Byte	
Max. I/O Data	I/O 512 Byte each	I/O 3,584 Byte each
Configuration Tool	Sycon - PB	
Configuration Port	RS-232C	
Communication parameter setting	high-speed link parameter communication setting	

Transmission Distance	9.6K(bps)	19.2K	93.75K	187.5K	500K	1,500K	12,000K
	1200m	1200m	1200m	1000m	400m	200m	100m



DeviceNet



About DeviceNet Open type communication standard DeviceNet enables compatibility among different manufactures' similar typed components.

Advantage of DeviceNet

- By fast and easy installation, DeviceNet saves in labour, time and spaces for any wiring.
- DeviceNET provides easy and great expandability as needed.
- It increases running time and slows status at network by monitoring each device's state; therefore there can be quick reaction.
- It can transfer important messages at anytime by using effective bandwidth and useable bandwidth through product/consumer communication.
- Power does not need to be shut down at the time of installation of DeviceNet.

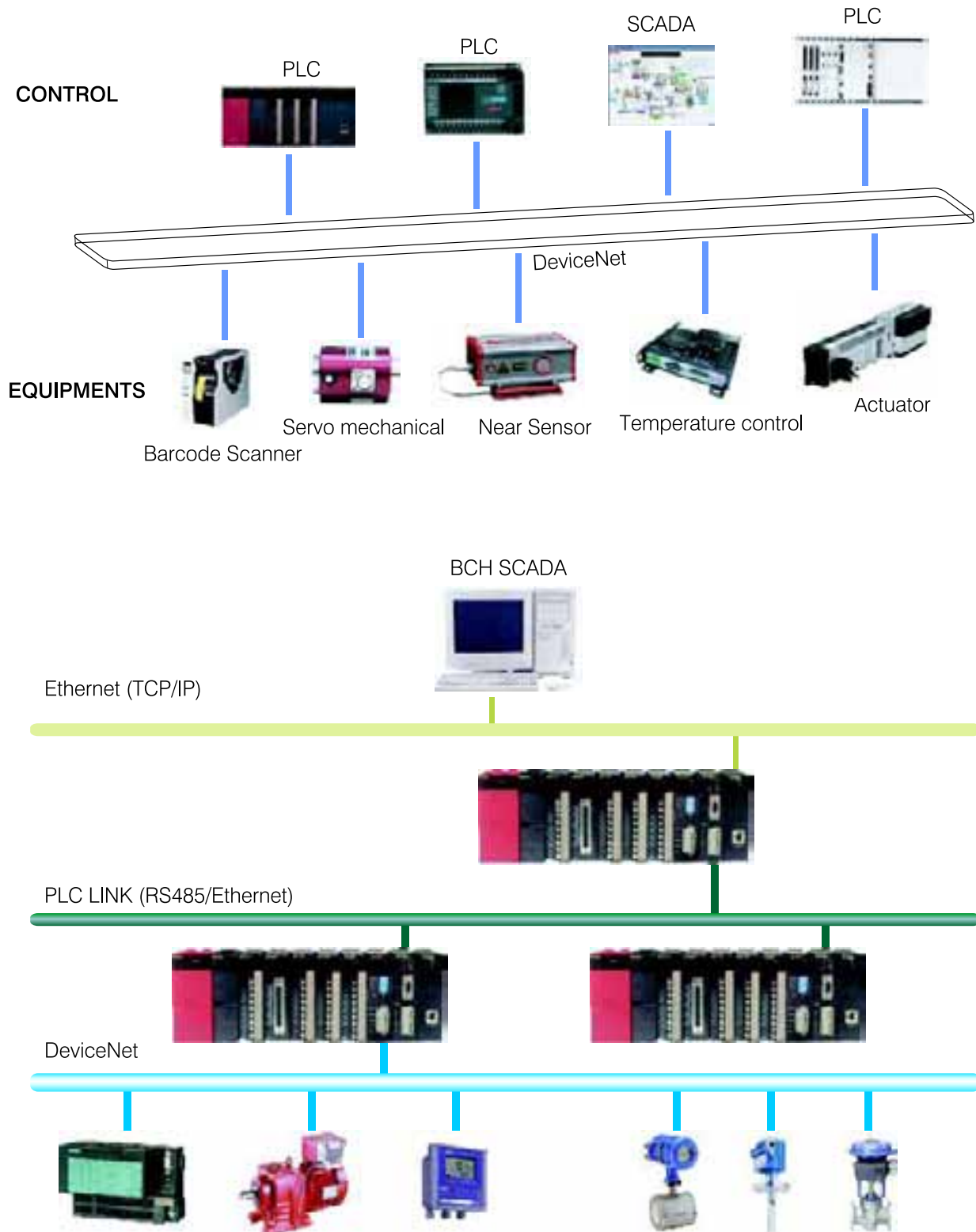
Features of DeviceNet module

- Machine I/O is high speed network of open structure by choosing Global Standard DeviceNet.
- Multi-drop and T-type branch is available and improves flexibility of network installation.
- One network module can manage 63 slave modules and maximum 57,334 points of I/O
- Enables real time managing of lowest level input/output machines within network system.
- Functions such as sequence managing, processing managing and motion managing can be used in many different fields of managing sites.
- Able to connect with various types of slave I/O.
- Max 4 master modules are applicable with one CPU.

Model	CM1-DN01A			
Communication Speed	125K / 250K / 500K			
Transmission	Transmission speed	Network Max. Length	Max. Length	Total distance
	125K	500 (1640 feet)	6m (20feet)	156m (512 feet)
	250K	250m (820 feet)		78m (256 feet)
500K	100m (328 feet)	39m (128 feet)		
Number of connect station	64 stations			
Cable	24V+ /24V-/Shield /CAN H/CAN L(5line)			
Number of Max. Node	MAC ID (Node Address) of Max.64			
Diagnosis function	ID duplication check, inferior station check, detect operating status by LED			

CP/XP Series

System Configuration



BACnet

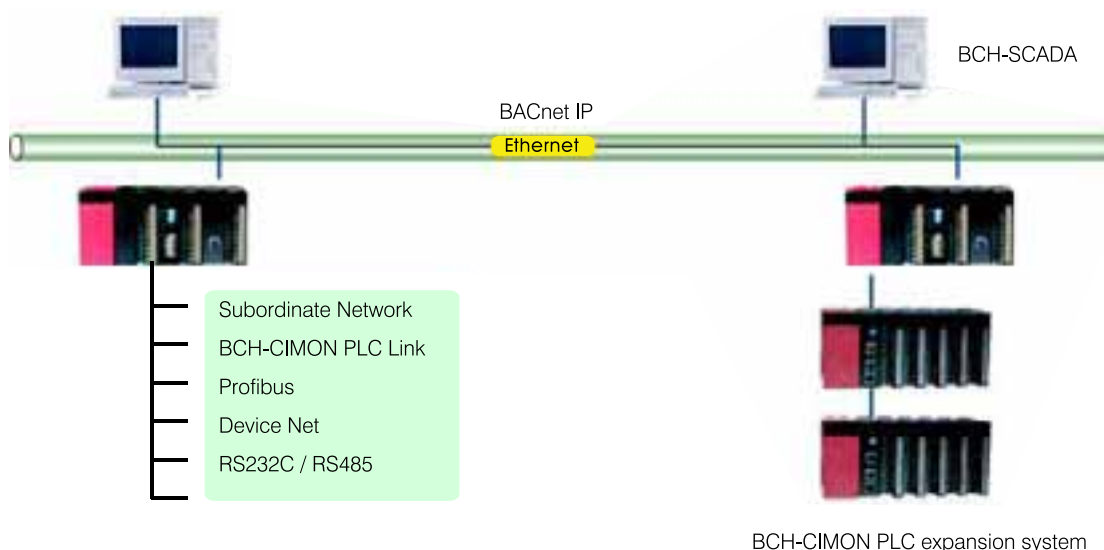


- Abbreviation of Building Automation and Control Networks and is open-type standard protocol for the building auto-control.
- ASHRAE / ANSI, (USA), 1995
- Applicable fields: It is applicable to many building utilities such as HVAC control system, lighting control system, emergency and security system, elevator control system, etc.
- Advantage: It is easy to modify, change and expand due to use of standard protocol

Special feature of BACnet module

- Supports BACnet which is the standard of building automated system.
- Supports the functionality of BACnet class 3 servers.
- Chose Ethernet for communication Physical layer.

Model	CM1 - BN01A
Protocol size	ANSI / ASHRAE 135-1995 (KS X 6909)
Protocol stack	UDP / IP
Physical Standard	ISO / IEC 8802 - 3 (IEEE 802.3, CSMA / CD, 10 Base - T)
data transfer speed	10Mbps
Transfer method	Base Band
Max. segment length	100m
Max. I/O data slave	244 Byte



CP/XP Series

Redundant System

- Redundancy for a CPU module, Power modules, Base and Communication modules is available
- CPU redundancy system is composed of separate bases for ideal redundancy structure
- In case an error occurs in an active CPU module, a back up module is automatically converted to active one for continuous operation
- Furnishes a test button to check and maintain a system easily
- Enables the configuration of network redundancy
- Enables backup within the control scan delay time of 50ms and high speed active conversion
- Enables to construct redundancy network with a high ranking computer
- Supports Power redundancy

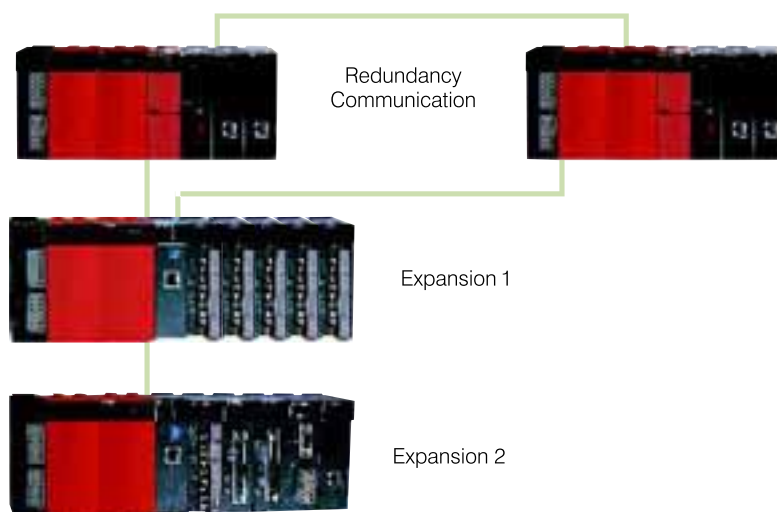
BASIC COMPOSITION OF REDUNDANCY BASE



- Communication Module
- Redundancy Communication(CM1-XP1R)
- Redundancy Interface(CM1-XP1R)
- Redundancy CPU(CM1-XP1R)
- Power(CM1-SPR)
- Power Monitoring Module(CM1-RPW)

Base	Composition Unit	Applicable Module
CPU	Base	All base modules
	Power	All power modules
	CPU	CM1-XPIR
	Redundancy Interface	CM1-RM01A
	Redundancy Comm. Module	CM1-RC01A
	Redundancy Cable	CMO-CBE
Expansion	Communication module	CM1-All comm. modules including CM1-ECO1A
	Expansion Cable	CMO-CBE
	Expansion 1	CM1-EP03A or CM1-EP02A
	Expansion 2 or More	CM1-EP02A or CM1-EP01A
	Base	Modules of all kinds
	Power	
I/O		

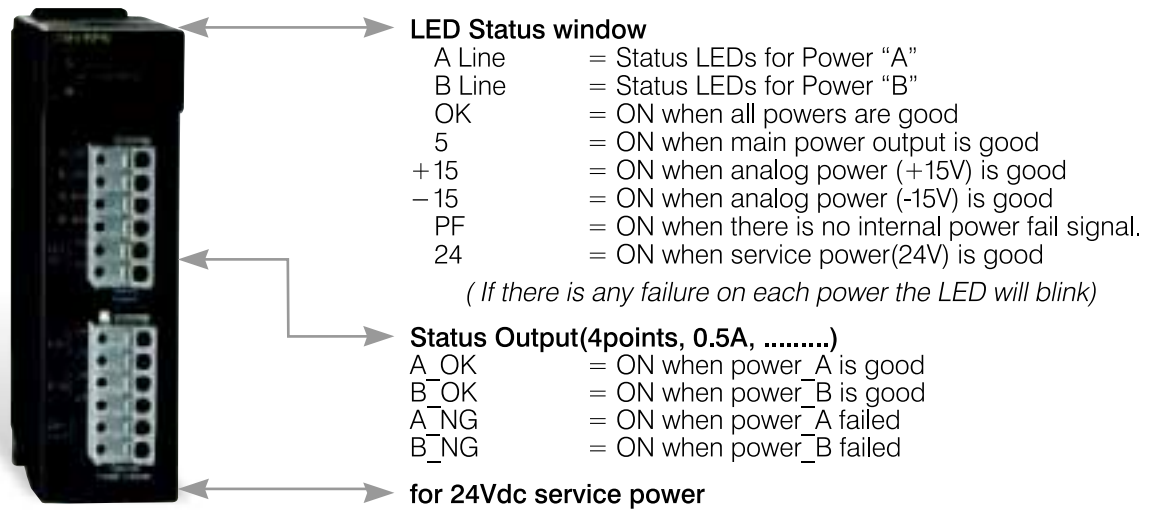
SYSTEM CONFIGURATION



Redundant System

CM1 - RPW (Redundant Power Module)

- Power status is visualized by LEDs
- Power status signals are provided by digital output(DC24V, transistor, Sink)

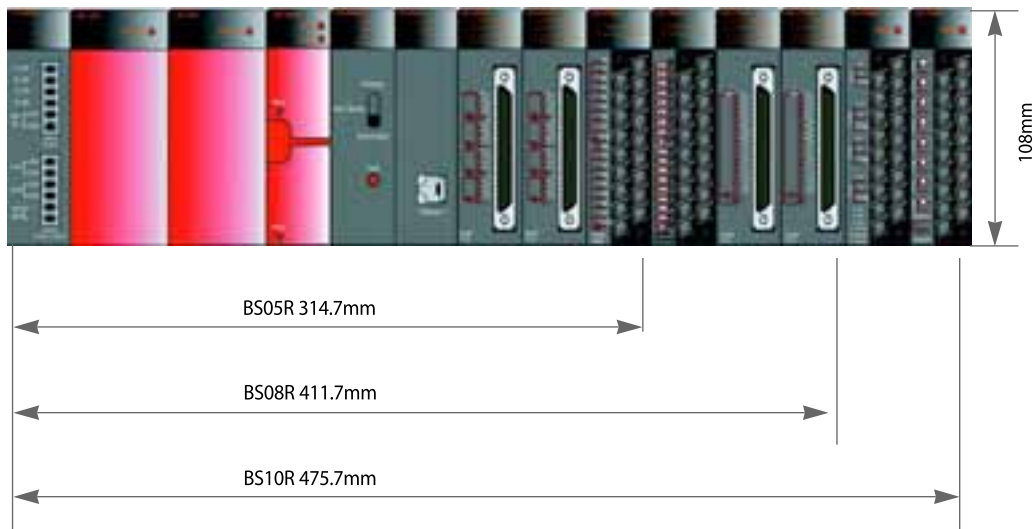


Bases for power redundancy

Three types of bases are provided for power redundancy

Model	No. of slots	Size(mm)
CM1 - BS05R	5 slots	314.7 x 108
CM1 - BS08R	8 slots	411.7 x 108
CM1 - BS10R	10 slots	475.7 x 108

Dimensions

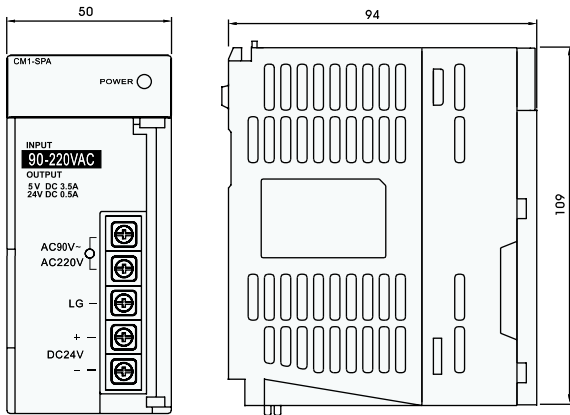


CP/XP Series

Dimension

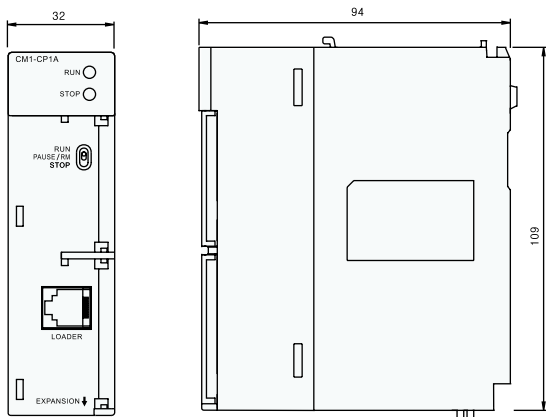
Power Supply

Unit : mm



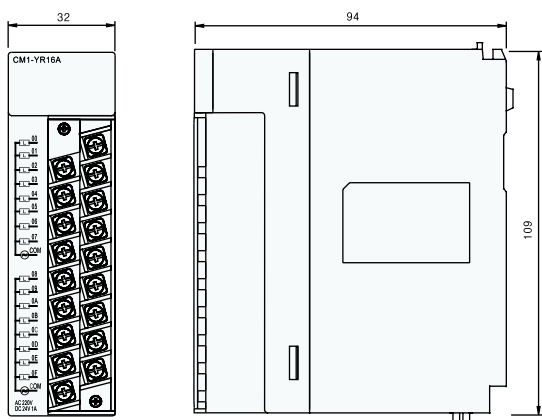
Model	WeightCM1
CM1-SP*	278.3g
CM1-CP*	278.5g
CM1-SP2B	270.5g

CPU Module



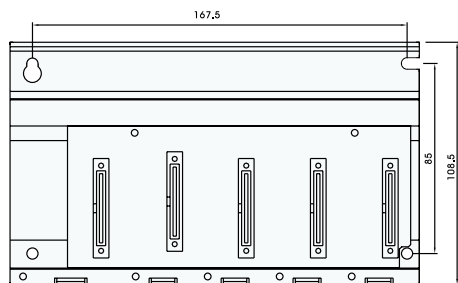
Model	WeightCM1
CM1-CP*	132g

IO Module

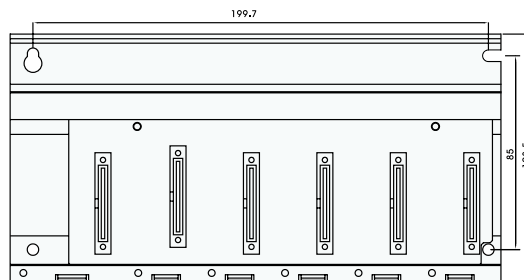


Model	Weight	Model	Weight
CM1-XD16A	158g	CM1-AD04VI	193.5g
CM1-XD32	121g	CM1-AD08I	195.5g
CM1-XA08*	168.5g	CM1-AD08V	194.5g
CM1-YR16A	202g	CM1-DA08I	219g
CM1-YS08A	202.5g	CM1-DA08V	197.5g
CM1-YT16*	159.5g	CM1-RD04A	194.5g
CM1-YT32*	122g	CM1-TC04A	200.5g
CM1-EC01*	111.5G	CM1-SC***	118.5g

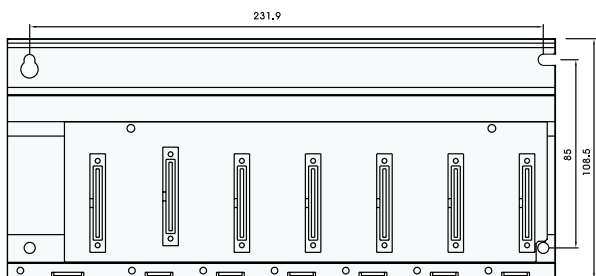
* Dimensions of communication modules & other modules are the same as the ones of I/O modules



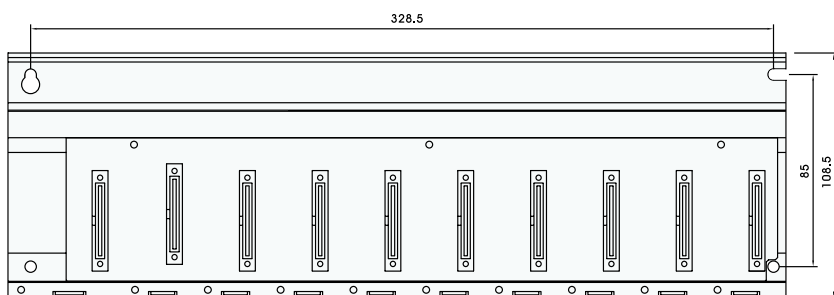
CM1 - BS03A Weight : 258g



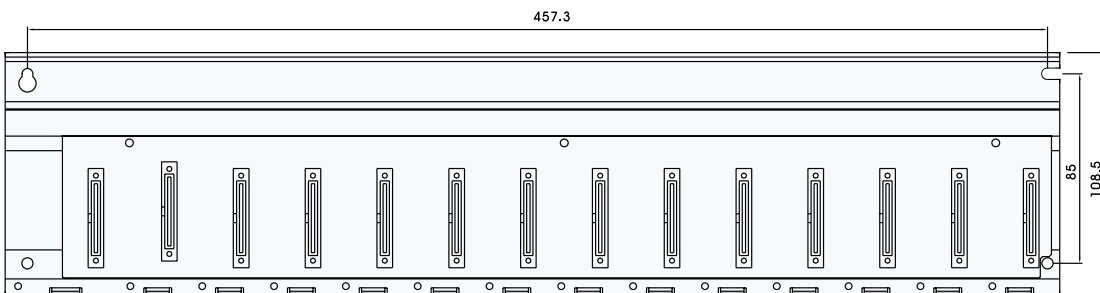
CM1 - BS04A Weight : 304.5g



CM1 - BS05A Weight : 345.5g



CM1 - BS08A Weight : 478g



CM1 - BS12A Weight : 683g

Remote I/O

Configuration

- Real time integrated input/output control
- Various I/O type supports
DC input 16/32 points, TR output 16/32 points, and relay output 16 points
- Enable to connect upto 99 Stations.
- Help to reduce installation and maintenance cost
- Compatible with other manufacturers products
Able to connect with other manufacturer's master with BCH-CIMON remote-IO
- International standard communication protocol(Profibus DP) selected open network intended use.
- Provide various system structure convenient system maintenance and system repair
- To be able to select country code with hardware, system setup is processed more conveniently.
- Simpler Communication programming
Chatting format of special program is used.
- Simple structure & simple to use due to its unify-body
CPU, power, input/output, and communication ability unified into one module
- Monitoring far distanced module's communication status with monitor.
- Supports high speed communication(Max 12 Mbps)
- Master speed governs speed of other units.




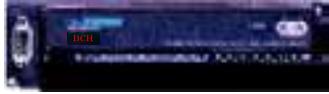
Model	Communication Method	Point
RP-XD16A	Profibus DP	DC24V 16 points, Photo coupler insulation
RP-XD32A		DC24V 32 points, Photo coupler insulation
RP-YR16A		Relay 16 points
RP-YT16A		Transistor Sink Output 16 points, 0.5Amp, Photo coupler Insulation
RP-YT32A		Transistor Sink Output 16 points, 0.5Amp, Photo coupler Insulation
RP-XY32DT		I/O Hybrid (DC24V 16 Points, TR output 16points)

Communication Specifications



Network	Profibus-DP
Media Access	Logical Token Ring
Communication method	RS-485(Electric)
Topology	Bus
Modulation Method	NRZ
Communication Cable	Shielded Twisted Pair
Transmission distance	1200m(9.6k ~ 187kbps)
	400m(500kbps)
	200m(1.5Mbps)
	100m(3M ~ 12Mbps)
No. of Nodes / Network	99 Station
No. of Nodes / Segment	32 Station

I/O Specifications

DC 24V Input

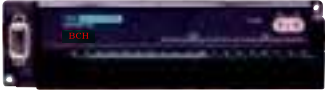
Model		RP-XD16A 	RP-XD32A 
Input point		16 Points	32 Points
Power		DC24V, 0.4A (19VDC - 28VDC)	
Isolation Method		Photo Coupler	
Rated Input (Load Voltage)		DC24V	
Rated Input (Load Current)		7mA	
ON Voltage/ ON Current		DC19V or more / 3.5mA and more	
Off Voltage/ OFF Current		DC6V or less / 1.5mA and less	
Response time	OFF →ON	3 ms or less	
	ON →OFF	3 ms or less	
COMMON		16 points Common	
Operator		LED	
External Connecting Method		Terminal Connector	
Internal Circuit		Sink/Source Combination	

DC 24V Output

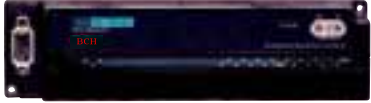
Model		RP-YT16A 	RP-YT32A 
Output point		16 Points	32 Points
Power		DC24V, 0.4A (19VDC - 28VDC)	
Isolation Method		Photo Coupler	
Rated Output		DC24V, 0.5A / 1point, 4A / Common	
Surge		Clamp Diode	
Response time	OFF →ON	2 ms or less	
	ON →OFF	2 ms or less	
COMMON		16 points Common	
Operator		LED	
External Connecting Method		Terminal Connector	
Internal Circuit		Sink Type (NPN Transistor Open Collector)	

Remote I/O

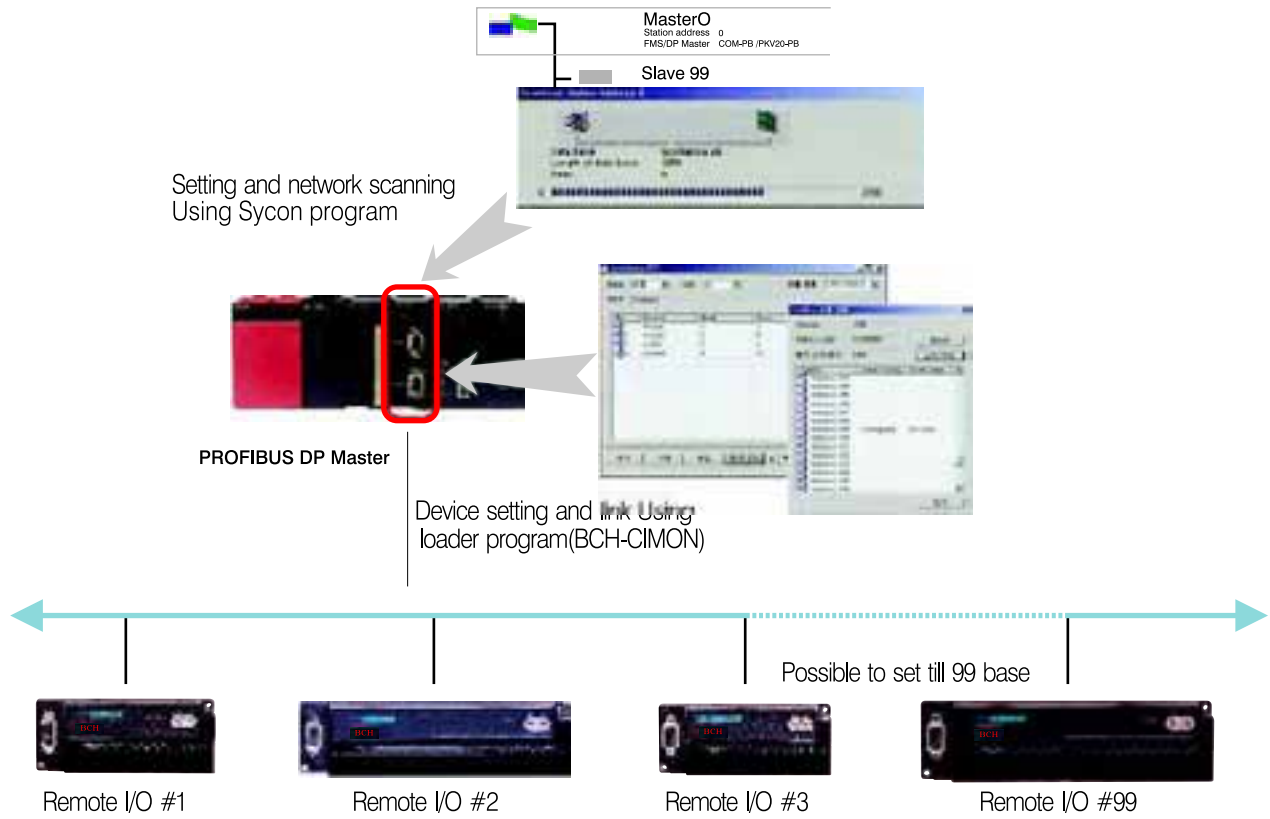
DC 24V Input/Output

Model		RP-XY32DT	
			
I/O		input: DC24V	output: transistor
Power		DC24V, 0.4A (19VDC - 28VDC)	
External Connecting Method		Terminal Connector	
Operator		LED	
I/O Point		16/COM	
COMMON		16 points Common	
Insulation Method		Photo Coupler	
Rated Input (Load Voltage)		DC24V	
Rated Input (Load Current)		7mA	
ON Voltage/ ON Current		DC19V or more / 3.5mA or more	
Off Voltage/ OFF Current		DC6V or less / 1.5mA or less	
Rated Load		DC24V, 0.5A / 1 Point, 4A / Common	
Response time	OFF → ON	3 ms or less	2 ms or less
	ON → OFF	3 ms or less	2 ms or less
Internal Circuit		Sink/Source Combination	Sink Type (NPN Open Collector)

Relay Output

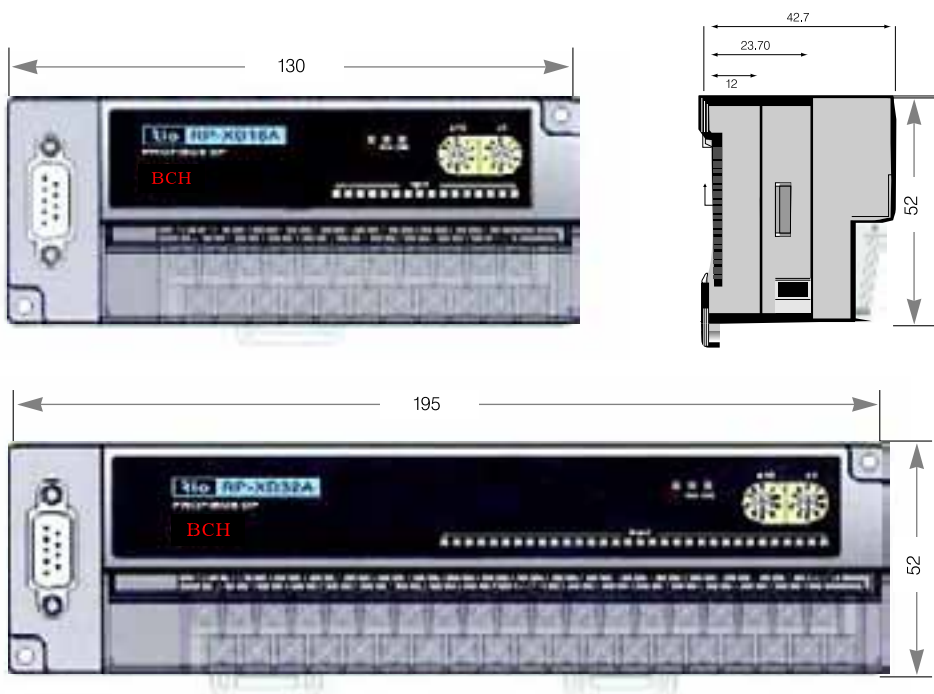
Model		RP-YR16A	
			
Power		DC24V, 0.5A (19VDC - 28VDC)	
Output Point		16 points	
Insulation Method		Relay	
Rated Load		DC24V, 2A/1 Point (Resistant Load), AC220V 2A (COSØ =1)	
Physical Life		20,000,000 or more	
Electrical Life		100,000 or more	
Serge Killer		None	
Response time	OFF → ON	10 ms or less	
	ON → OFF	5 ms or less	
Common		8 points common	
Operator		LED	
External Connecting Method		Terminal Connector	

System Configuration



Dimension

Unit :mm



Accessories

Dummy Module for empty slot



Flash memory pack



Cover for empty slot



CPU battery for data backup



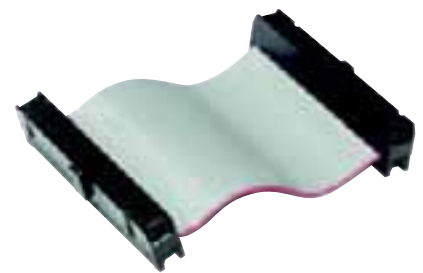
Loader cable(CM-CBL15/30)



Expansion Cable for XP/CP Series



Expansion Cable for BP Series

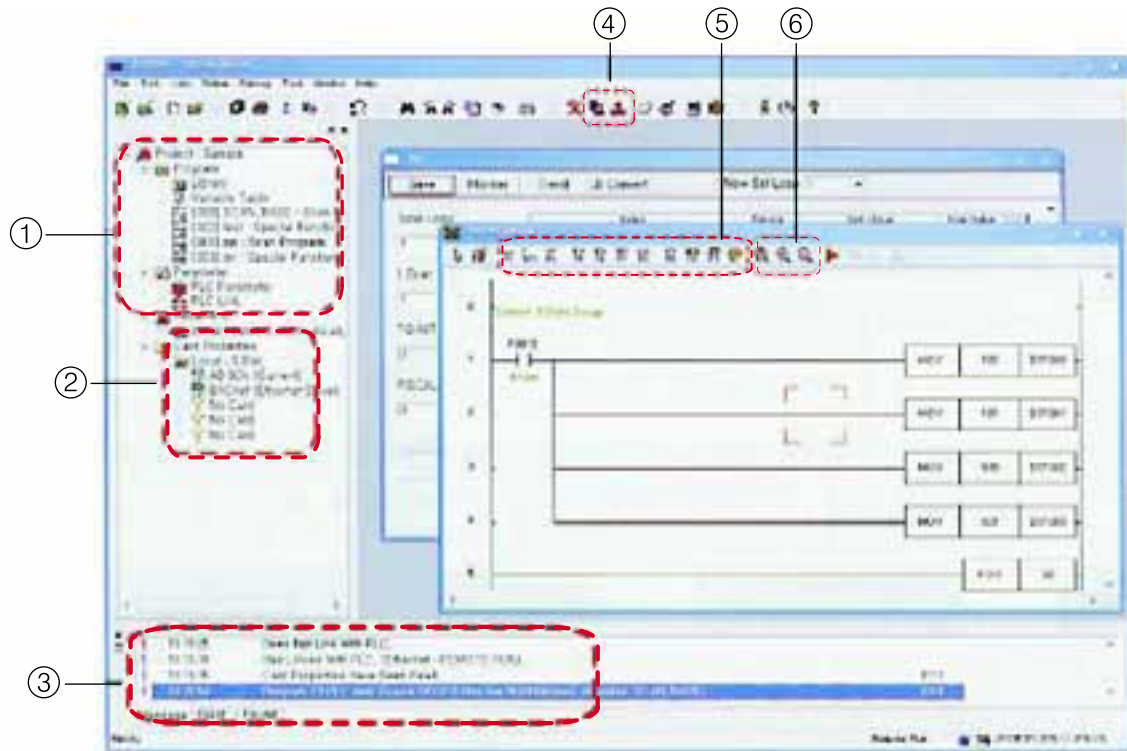


BCH PLC Characteristics

No	Item	Description			
1	Ambient temp	-10°C ~ 56°C			
2	Storage temp	-25°C ~ 80°C			
3	Ambient humidity	5 ~ 95% RH, Non-condensing			
4	Storage humidity	5 ~ 95% RH, Non-condensing			
5	Vibration	Occasional Vibration			
		Frequency	Acceleration	Pulse width	Time
		10 ≤ f < 57Hz	-	0.075mm	10times each direction, each axis
		57 ≤ f < 150Hz	9.8 ^m / _g ² {1G}	-	
		Continuous Vibration			
		Frequency	Acceleration	Pulse width	
10 ≤ f < 57Hz	-----	0.035mm			
57 ≤ f ≤ 150Hz	4.99.8 ^m / _g ² {0.5G}	-			
6	Shocks	• Peak Acceleration : 147 ^m / _g ²			
		• Duration : 11 ms			
		• Half sine, times each direction per each axis			
7	EMS	Impulse Noise	±2,000V		
		ESD	4 KV		
		RS	27 ~ 500 MHZ, 10V/m		
		division	Power supply	Digital I/O (more than 24V)	Digital I/O (less than 24V)
		EFT/B	2kV	2kV	0.25kV
		Isolation	2kV / 1min	2kV / 1Min	0.5kV / 1Min
8	Operation condition	Free from corrosive gases and excessive dust			

BCH-CICON Loader Program

- Provides convenient interface to edit program easily.
- Supports link function of various types by using CPU Loader, RS232C/422/485 and Ethernet.
- Enables to diagnose program errors and system by using debug functions easily.



- | | | | |
|---|---|---|---|
| ① | Manages files by projects | ⑤ | Enables to edit by using hot-keys in a keyboard |
| ② | Reads information on cards automatically. | ⑥ | Provides zoom-in/zoom-out function. |
| ③ | Shows current status in message. | | |
| ④ | Variables and descriptions are stored in a CPU and can be uploaded. | | |

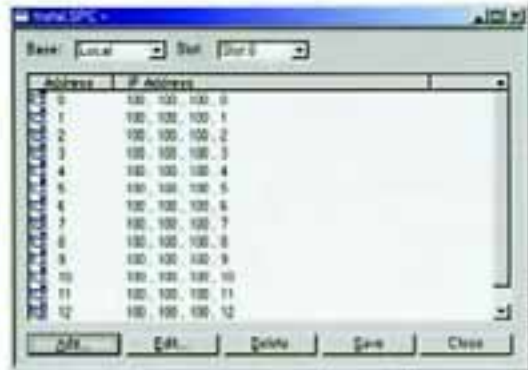
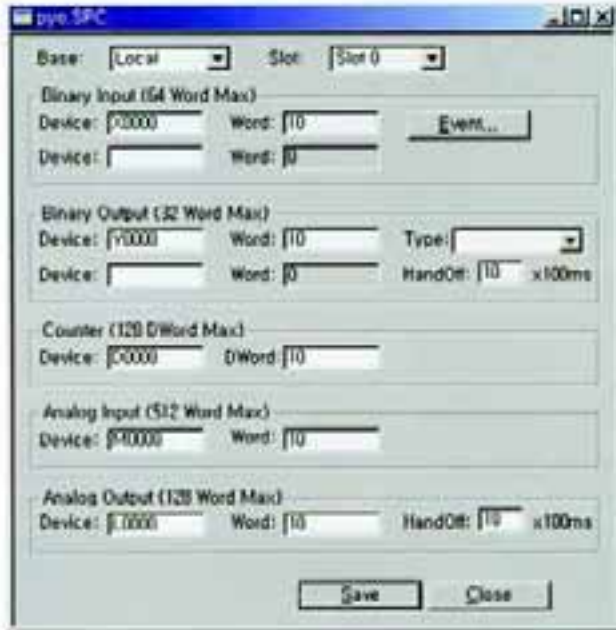


Free conversion program between IL and LD



BCH-CICON Loader Program

- Writing program by using dialog boxes(Special program)
Complicated ladder program is not necessary - Communication set up & PID



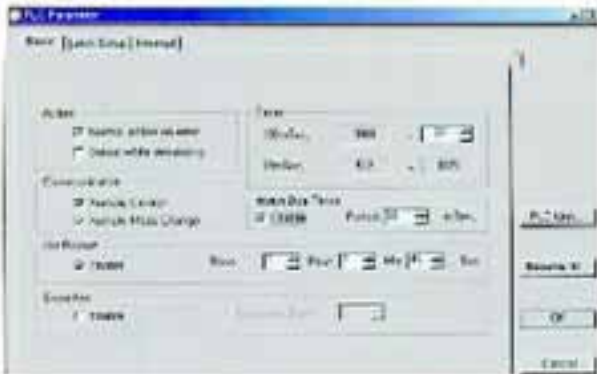
Variable list setting

Supports variable communication method to connect



BCH-CICON Loader Program

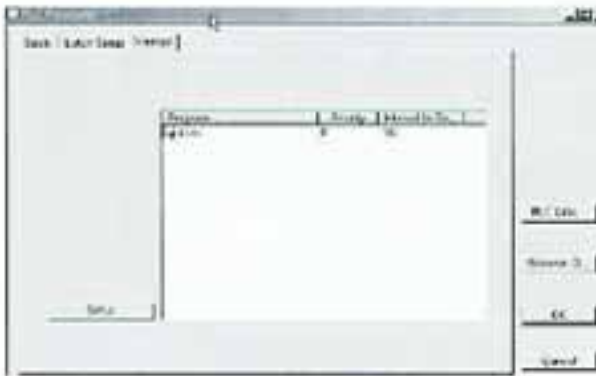
Setting up Parameter



Setting up non-volatile device(Latch device)



Setting up constant interval interrupt



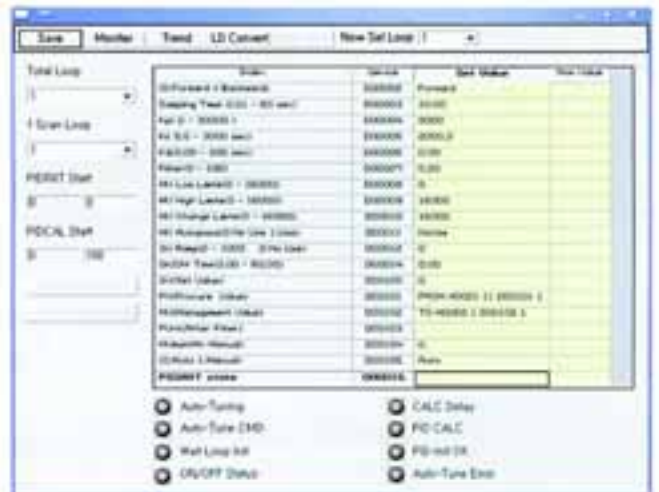
Special Module Setting



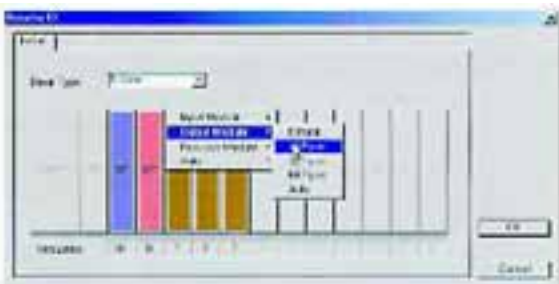
Monitoring PLC status diversely and error status in CPU & each card



Perfect PID AUTO TUNING
Easy control by using conversational dialog box



I/O reservation - Reserving the assigned slot and checking whether cards are mounted correctly.



Components

Series BP

Block	Model	Input Power	Input	Output	Option
Main	CM2-BP32MDTA*	AC100 ~ 240V	16 Points DC24V	16 Points TR (SNK)	* indicates R : RS232C S : RS422/485 T : RS232C 1ch E : Ethernet U : 422/485 2Ch
	CM2-BP32MDCA*			16 Points TR (SRC)	
	CM2-BP32MDRA*			16 Points RELAY	
	CM2-BP32MDTD*	DC24V		16 Points TR (SNK)	
	CM2-BP32MDCD*			16 Points TR (SRC)	
	CM2-BP32MDRD*			16 Points RELAY	
Main-mini	CM2-BP16MDTA*	AC100 ~ 240V	8 Points DC24V	7 Points TR (SNK)	* indicates R : RS232C S : RS422/485 Not-Expandable
	CM2-BP16MDCA*			7 Points TR (SRC)	
	CM2-BP16MDRA*			7 Points RELAY	
	CM2-BP16MDTD*	DC24V		7 Points TR (SNK)	
	CM2-BP16MDCD*			7 Points TR (SRC)	
	CM2-BP16MDRD*			7 Points RELAY	
I/O Expansion	CM2-BP16EDT	Supplied from main block	8 Points DC24V	8 Points TR (SNK)	16 Points DC24V
	CM2-BP16EDC			8 Points TR (SRC)	
	CM2-BP16EDR			8 Points RELAY	
	CM2-BP32EDT		16 Points DC24V	16 Points TR (SNK)	
	CM2-BP32EDC			16 Points TR (SRC)	
	CM2-BP32EDR			16 Points RELAY	
	CM2-BP16EDO		X	16Points RELAY	
	CM2-BP16EOR			16Points TR (SINK)	
	CM2-BP16EOT			16Points TR (SRC)	
	CM2-BP16EOC				
Analog Expansion	CM2-BP04EAO	24V External Power Source	4 AD V/I Input	X	
	CM2-BP04EAA		2 AD V/I Input	2 DA V/I Output	
	CM2-BP04EOA		X	4 DA V/I Output	
	CM2-BP04ERO		4 RTD Input	X	
	CM2-BP04ETO		4 TC Input	X	

Remote I/O

NO	Item	Division	Description
1	RP-XD16A	Input	DC24V 16 points, Photo coupler insulation
2	RP-XD32A	Input	DC24V 32 points, Photo coupler insulation
3	RP-YR16A	output	Relay 16 points
4	RP-YT16A	output	Transistor Sink Output 16 points, 0.5Amp
5	RP-YT32A	output	Transistor Sink Output 16 points, 0.5Amp
6	RP-XY32A	Input/output	I/O Hybrid(DC24V 16 Points)

Accessories

Accessory	Model	Specification
Graphic Programming S/W	CM1-GL	Microsoft Windows 98/ME/2000/XP
Dummy Module	CM0-DM	Dummy
Loader Cable	CM0-CBL15/30	1.5 / 3.0m
CP Expansion Cable	CM0-CBE05	0.5m
BP Expansion Cable	CM2-CBE05	5cm
Base Slot Cover	CM0-BSCVR	Base Slot Cover
Battery	CM0-BAT	Battery
Memory Pack	CM1-FM512	Flash memory for Program storage
Training Kit	PEK-408	BCH-PLC Training Kit

Components

Series CP/XP

Type	Module	Model	Specification
Standard	CPU	CM1-XP1A/XP1R	128K Steps/8192 Points/Expandable / RTC / floating point /Redundancy(XP1R)
		CM1-XP2A	64K Steps/4096 Points/Expandable / floating point
		CM1-XP3A	64K Steps/2048 Points/Expandable / floating point
		CM1-CP3A/B/P	24K Steps/1024 Points/Expandable
		CM1-CP4A/B/C/D	16K Steps/384 Points
	Power Supply	CM1-SPA	Input-AC 110~ 220V, Output-5V 3.5A / 24V 0.5A
		CM1-SPC	Input-AC 110~ 220V Output-5V 3A / +15V 0.5A / -15V 0.2A / 24V 0.2A
		CM1-SP2B	Input-DC24V, Output-5V 3.5A / +15V 0.5A / -15V 0.3A
	Base	CM1-BS03A	3 Slot
		CM1-BS04A	4 Slot
		CM1-BS05A	5 Slot
		CM1-BS08A	8 Slot
		CM1-BS10A	10 Slot
		CM1-BS12A	12 Slot
	Expansion	CM1-EP01A	10Mbps Ethernet, 1 Port
		CM1-EP02A	10Mbps Ethernet, 2 Port
		CM1-EP03A	CPU Redundancy, 3 Port-Hub
	DC Input	CM1-XD16A	DC24V Input/16 Points/SINK & SRC / ON Voltage 19 V
		CM1-XD32C	DC24V Input/32 Points/SINK & SRC / ON Voltage 19V
CM1-XD16B		DC24V Input /16 Points SINK & SRC / ON Voltage 15V	
CM1-XD32B		DC24V Input /32 Points SINK & SRC / ON Voltage 15V	
AC Input	CM1-XA08A	AC220V Input/8 Points	
	CM1-XA08B	AC110V Input/8 Points	
Combination I/O	CM1-XY16DR	DC24V Input/8 Points, Relay Ouptu/8 Points/2A	
Relay Output	CM1-YR16A	Relay Output/ 16 Points/2A	
Transistor Output	CM1-YT16A	TR Output/16 Points/0.5A SINK	
	CM1-YT16B	TR Output/16 points/0.5A SOURCE	
	CM1-YT32A	TR Output/32 Points/0.2A SINK	
	CM1-YT32B	TR Output/32 points/0.2A SOURCE	
SSR Output	CM1-YS08A	SSR Output/ 8 Points/1A	
Analog	A/D Converter	CM1-AD04VI	AD 14 Bits/4 Channels/Current & Voltage Input
		CM1-AD08V	AD 14 Bits/8 Channels/Voltage Input
		CM1-AD08I	AD 14 Bits/8 Channels/Current Input
	D/A Converter	CM1-DA04V	DA 14 Bits/4 Channels/Voltage Output
		CM1-DA08V	DA 14 Bits/8 Channels/Voltage Output
		CM1-DA04I	DA 14 Bits/4 Channels/Current Output
		CM1-DA08I	DA 14 Bits/8 Channels/Current Output

Series CP/XP

Type	Module	Model	Specification
Special	RTD	CM1-RD04A	4 Channel, Pt100
		CM1-RD04B	4 Channel, Pt1000
	TC	CM1-TC04A	4 Channel
	Thermistor	CM1-TH08A	8 Channel / NTC Type
		Loadcell	CM1-WG02A
	CM1-WG04A		4 Channel / Strainguage
	HSC	CM1-HS02B	2 Channel, 2Outputs/ Channel, 200kPPS
	Positioning	CM1-PS02A	2-axis / linear / arc interpolation / 1 MPPS / Line Driver Pulse
Data logger	CM1-LG32A	Real-time Sampling data / 32Mbytes / Built Comm.port	
	CM1-LG64A	Real-time Sampling data / 64Mbytes / Built Comm.port	
Communication	Redundancy	CM1-RM01A	LED Status and test button
		CM1-RC01A	10Mbps communication for data Sync. between CPUs
Communication	RS232C/422/485	CM1-SC02A	RS232C, RS422/485
		CM1-SC01A	RS232C
		CM1-SC01B	RS422/485
	DNP3.0	CM1-SC01DNP	RS232C, DNP3.0
		CM1-EC01DNP	10Mbps, UDP/IP, TCP/IP, DNP3.0
	Ethernet	CM1-EC01A	10Mbps, UDP/IP, TCP/IP
	Profibus DP	CM1-PD01A	Profibus DP Master, I/O 512Byte
CM1-PD01B		Profibus DP Master, I/O 3,584Byte	
DeviceNet	CM1-DN01A	DeviceNet Master	
BACNet	CM1-BN01A	BACNet IP, Ethernet, 10Mbps	

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Ambala	93541-18839
Durgapur	97320-03364

Kolhapur	98906-26205
Nashik	98900-12944
Salem	98433-19533
Udaipur	98292-44085
Bhopal	98266-66093
Ghaziabad	98107-44937
Jabalpur	98268-03656

Kota	98290-14899
Navi Mumbai	98923-00701
Silchar	94354-04033
Vijayawada	98662-20504
Baddi	93187-78975
Gorakhpur	98392-24988
Jalandhar	98763-47188

Mangalore	98457-31944
Pondichery	98942-22033
Siliguri	98320-11433
Bhilai	98266-12907
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Since product improvement is a continuous process, the data furnished in this brochure may undergo revision without prior notice.