

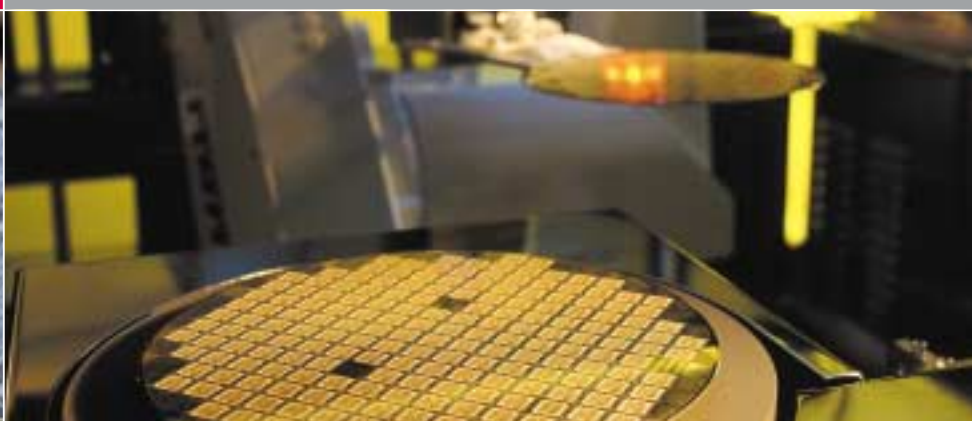
XGB

Programmable Logic Controller

Slim & Compact Solution



Automation Solution



Programmable Logic Controller

XGB



All-In-One PLC With Next Generation Technology

XGB is the micro PLC that offers maximum automation at minimum cost.

With its high performance and functionality, it can support from simple control to complex task.

Strengthening its communication functions, XGB offers user-oriented integrated control.

Based on its strengths, it can be used in many fields of applications.





Contents

• Features	4
• Main Unit	7
• Built-in functions	14
• Expansion	19
• DC Input	19
• Transistor Output	21
• Relay Output	23
• DC Input / Relay Output	24
• Analog Input	25
• Analog Output	26
• RTD	27
• Thermocouple	28
• Communication	29
• Software	30
• Product list	31
• Dimension	32

It's Slim

(Unit: mm)

	Item	W	H	D
XBM	DR/DN16S (16pt)	30	90	60
	DN32S (32pt)			
XBC	DR/DN32H (32pt)	114	90	64
	DR/DN64H (64pt)	180	90	64
Expansion	Relay output / Ethernet	27	90	60
	Others	20	90	60

Compactness

XGB is even more compact but provides powerful functions and performance.
Compact & Powerful solutions & XGB's steadfast competitiveness.

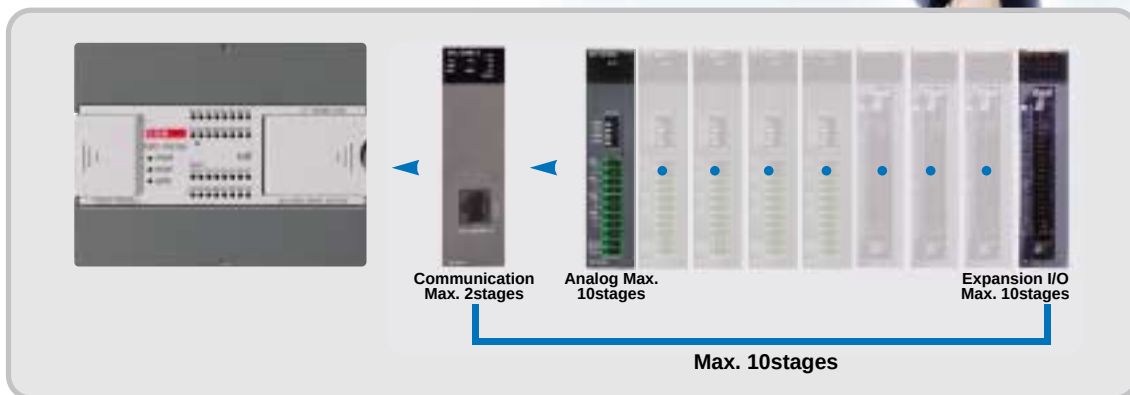


High Performance

With its high-speed processing and system capability, XGB offers utmost efficiency for your applications.

XBC (H-Type)

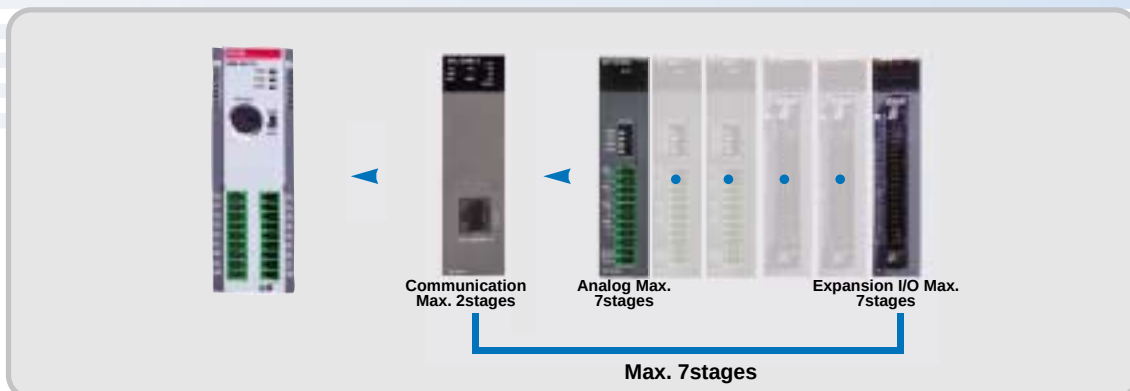
- 83ns/Step processing speed and floating-point arithmetic with on-board CPU
- Max 10 expansion modules, Max. 704* I/O point control: PLC systems for Small- and medium-scale applications
- Max. 5-Ch Communication with built-in functions and expansion modules



* With 64-point I/O modules (due in 2009)

XBM (S-Type)

- 160ns/Step processing speed and floating-point arithmetic with on-board CPU
- Max 7 expansion modules, Max. 480* I/O point control: PLC systems for Small- and medium-scale applications
- Max. 5-Ch Communication with built-in functions and expansion modules



* With 64-point I/O modules (due in 2009)

Easiness & Convenience

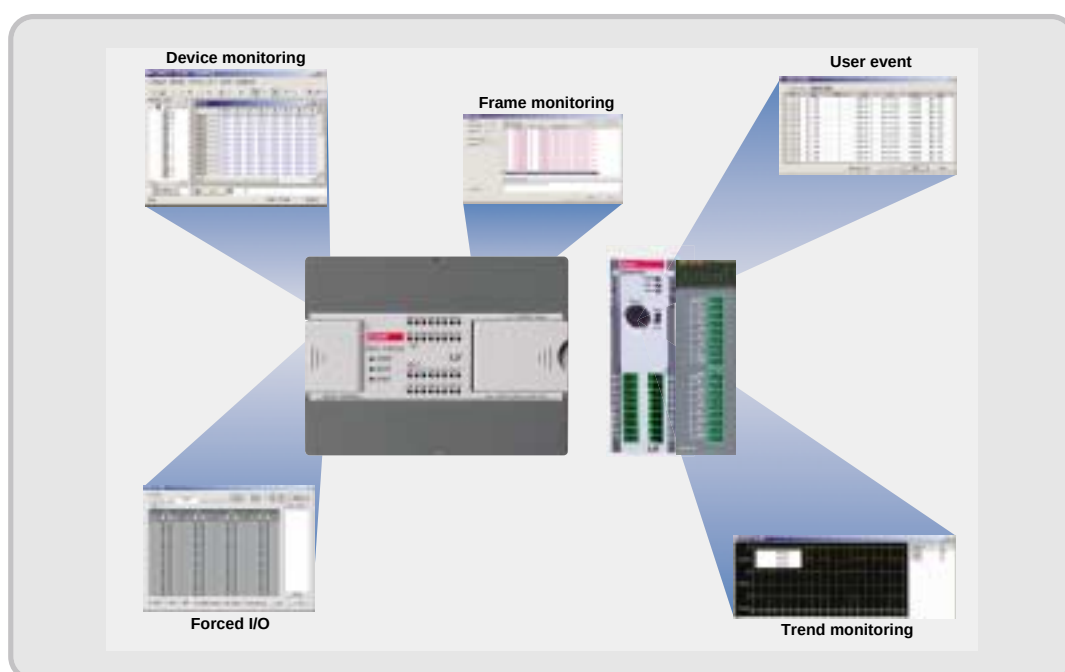
XGB offers convenient user interface with various network diagnosis & monitoring functions and back-up function

Integrated programming environment

- Enhanced user interface with XG5000 / XG-PD
- Various monitoring functions.
- Network diagnosis and monitoring
- Batteryless back-up

Optimum communication environment

- Powerful communication: Built-in RS-232C / 485, 2 Expansions for communication
- Network configuration via Ethernet and Cnet I/F



Main Unit | DC power

Programmable Logic Controller

General Specification



XBM-DR16S

Item	Descriptions			Standard	
Ambient temperature	0 ~ 55 °C				
Storage temperature	- 25 ~ + 70 °C				
Ambient humidity	5 ~ 95%RH (Non-condensing)				
Storage humidity	5 ~ 95%RH (Non-condensing)				
Vibration resistance	Occasional vibration		10 times each direction (X, Y and Z)	IEC61131-2	
	Frequency	Acceleration			Pulse width
	10 ≤ f < 57Hz	—			0.075mm
	57 ≤ f ≤ 150Hz	9.8m/s² (1G)			—
	Continuous vibration				
	Frequency	Acceleration			Pulse width
	10 ≤ f < 57Hz	—	0.035mm		
	57 ≤ f ≤ 150Hz	4.9m/s² (0.5G)	—		
Shock resistance	• Peak Acceleration: 147m/s² (15g) • Duration: 11ms • Pulse waveform: Half-sine, 3times each direction per each axis			IEC61131-2	
Noise resistance	Square wave impulse noise	±500 V		LSIS Standard	
	Electrostatic discharge	4kV		IEC61131-2 IEC61000-4-2	
	Radiated electromagnetic field noise	80 ~ 1000MHz, 10V/m		IEC61131-2 IEC61000-4-3	
	Fast transient/ Burst noise	Main unit	Expansion module	IEC61131-2 IEC61000-4-4	
		2kV	1kV		
Operating Ambience	Free from corrosive gases and excessive dust				
Altitude	Up to 2,000m				
Pollution level ^{*1)}	Less than 2				
Cooling	Air-cooling				

^{*1)} Pollution level indicates the degree to which conductive material is generated in the environment where the equipment is used. Pollution level 2 is the condition that only non-conductive pollution occurred but temporary conductivity may be produced due to condensing.

Performance Specification

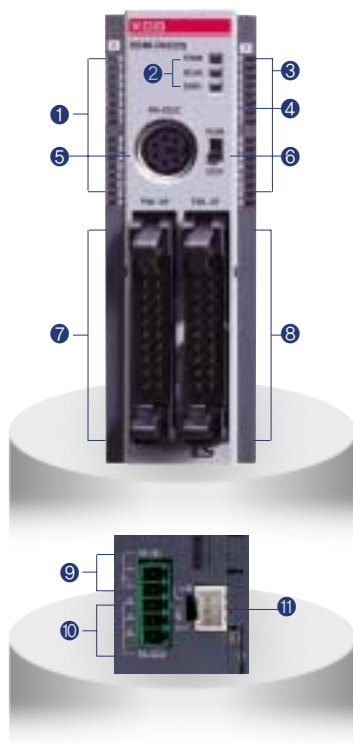


XBM-DN16S
XBM-DN32S

Item		XBM-DR16S	XBM-DN16S	XBM-DN32S
Control method		Repetitive, cyclic, interrupt, constant scan		
I/O control mode		Refresh mode (Batch processing by scan synchronization) Direct mode by instruction		
Programming language		Ladder Diagram, Instruction List		
No. of instructions		Basic: 28, Applied: 677		
Processing speed		0.16μs / Step (for basic instruction)		
Program capacity		10k steps		
Max. I/O points		464 points (Main + 7 expansions)		480 points
Data memory	P	P0000 ~ P127F (2,048 points)		
	M	M0000 ~ M255F (4,096 points)		
	K	K00000 ~ K2559F (Special area: K2600 ~ 2559F) (40,960 points)		
	L	L00000 ~ L1279F (20,480 points)		
	F	F000 ~ F255F (4,096 points)		
	T	100ms, 10ms, 1ms: T000 ~ T255 (Changeable by Parameter setting)		
	C	C000 ~ C255		
	S	S00.00 ~ S127.99		
	D	D0000 ~ D5119 (5,120 word)		
	U	U00.00 ~ U07.31 (Analog data refresh area: 256 word)		
	Z	Z000 ~ Z127 (128 word)		
	N	N0000 ~ N3935 (3,936 word)		
Number of program		128		
Operation mode		RUN, STOP, DEBUG		
Self diagnosis		Operation delay monitoring, memory error, I/O error, etc.		
Program port		RS-232C		
Data retention at power failure		Latch range setting at Basic parameter		
Built-in function		RS-232C/485, High-speed counter, PID control, Pulse catch, Input filter External interrupt, Positioning ^{*1)}		
Internal current consumption		400mA	250mA	280mA
Weight		140g	100g	110g
Rated voltage		DC24V		

^{*1)} XBM-DR16S doesn't have built-in positioning function.

Names and Functions



	Name	Descriptions	Descriptions	Remark
①	Input LED	Input indication	Red On: Input signal On Red Off: Input signal Off	
②	Condition LED	PWR: Power indication	Red On: Power On Red Off: Power Off	
		RUN: RUN indication	Green On: PLC Run Green Off: PLC Stop	
		ERR: Error indication	Red On-and-Off: PLC Error Red Off: PLC Normal condition	
③	Output LED	Output LED	On: Output signal On Off: Output signal Off	
④	Expansion module connector	Expansion module connector	Connection of expansion module (I/O, Special function, Communication)	
⑤	PADT connector	PADT connection	Connector for XG5000 / XG-PD connection	
⑥	Mode switch	Mode setting	Setting Run / Stop mode of PLC	
⑦	Input connector / Terminal block	Input wiring connection	-	
⑧	Output connector / Terminal block	Output wiring connection	-	
⑨	Built-in RS-485 connector	Built-in RS-485 connection	RS-485 + /terminal connection	
⑩	Built-in RS-232C connector	Built-in RS-232C connection	RS-232C T×D, R×D, SG terminal connection	
⑪	Power connector	Power supply connection	DC 24V power supply	

Input specification

Item	XBM-DR16S	XBM-DN16S	XBM-DN32S
Input point	8 point	8 point	16 point
Rated input voltage	DC24 V		
Rated input current	4mA (00 ~ 03: 7mA)		
Operation voltage range	DC20.4 ~ 28.8V (ripple rate < 5%)		
Response time	Off → On	1 / 3 / 5 / 10 / 20 / 70 / 100ms (set by CPU parameter) Default: 3ms	
	On → Off		
Common Method	8 point / COM		16 point / COM

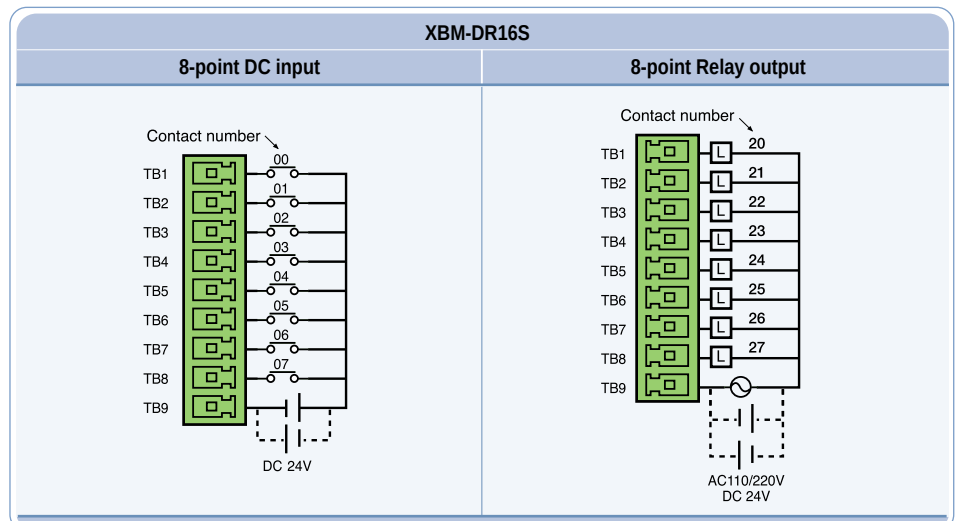
Relay output specification

Item	XBM-DR16S	
Output point	8 point	
Insulation method	Relay insulation	
Rated load voltage / current	DC 24V 2A (Resistive load) / AC 220V 2A (COS ϕ = 1), 5A / COM	
Min. load voltage / current	DC 5V / 1mA	
Max. load voltage	AC 250V, DC 125V	
Off leakage current	0.1mA (AC 220V, 60Hz)	
Max. On / Off frequency	3,600 times / hr	
Service life	Mechanical	20millions times or more
	Electrical	Rated load voltage / current 100,000 times or more
		AC 200V / 1.5A, AC 240V / 1A (COS ϕ = 0.7) 100,000 times or more
		AC 200V / 1A, AC 240V / 0.5A (COS ϕ = 0.35) 100,000 times or more
Response time	Off → On	10ms or less
	On → Off	12ms or less
Common method	8 point / COM	

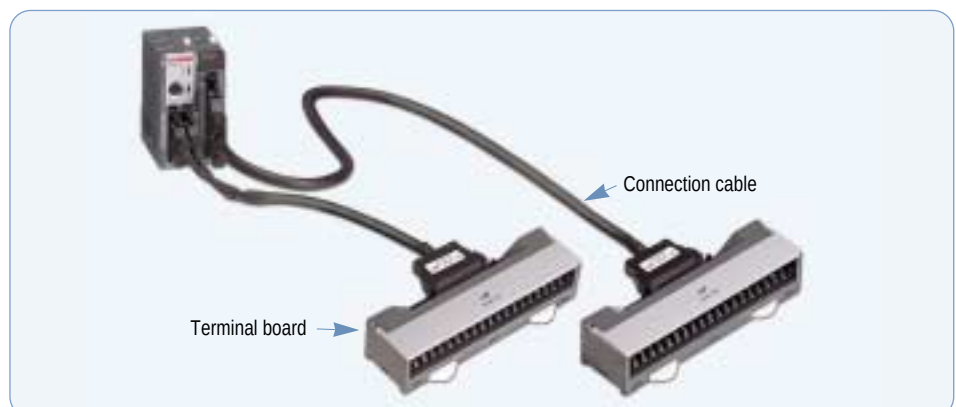
Transistor output specification

Item	XBM-DN16S	XBM-DN32S
Output point	8 point	16 point
Insulation method	Photo coupler insulation	
Rated load voltage	DC 12/24V	
Load voltage range	DC 10.2 ~ 26.4 V	
Max. load voltage	0.2A / 1 point (P 20 ~ 23: 0.1A / Point)	
Max. inrush current	4A / 10ms or less	
Max. voltage drop (On)	DC 0.4V or less	
Response time	Off → On	1ms or less
	On → Off	1ms or less (Rated load, resistive load)
Common method	8 point / COM	16 point / COM
External power supply	Voltage	DC 12 / 24V $\pm 10\%$ (ripple voltage 4 Vp-p or less)
	Current	25mA or less (DC 24V connection)
External connection method	20pin connector	

Wiring (XBM-DR16S)



wiring (XBM-DN16S / DN32S)



Terminal board	Connection cable	XBM-DN16S XBM-DN32S	Remark
SLP-T40P	SLT-CT051-XBM	●	1. Cable length CT051: 0.5m CT101: 1.0m
	SLT-CT101-XBM	●	2. Board type T40P: Terminal board RY4A: Relay board

XGB Main Unit | AC power

General Specification



XBC-DR32H
XBC-DN32H

Item	Descriptions			Standard	
Ambient temperature	0 ~ 55 °C				
Storage temperature	- 25 ~ +70 °C				
Ambient humidity	5 ~ 95%RH (Non-condensing)				
Storage humidity	5 ~ 95%RH (Non-condensing)				
Vibration resistance	Ocnasional vibration		10 times each direction (X, Y and Z)	IEC61131-2	
	Frequency	Acceleration			Pulse width
	10 ≤ f < 57Hz	-			0.075mm
	57 ≤ f ≤ 150Hz	9.8m/s2 (1G)			-
	Continuous vibration				
	Frequency	Acceleration			Pulse width
	10 ≤ f < 57Hz	-	0.035mm		
	57 ≤ f ≤ 150Hz	4.9m/s2 (0.5G)	-		
Shock resistance	• Peak Acceleration: 147m/s2 (15g) • Duration: 11ms • Pulse waveform: Half-sine, 3times each direction per each axis			IEC61131-2	
Noise resistance	Square wave impulse noise	± 1,500 V		LSIS Standard	
	Electrostatic discharge	4kV		IEC61131-2 IEC61000-4-2	
	Radiated electromagnetic field noise	80 ~ 1000 MHz, 10V/m		IEC61131-2 IEC61000-4-3	
	Fast transient/ Burst noise	Main unit 2kV	Expansion module 1kV	IEC61131-2 IEC61000-4-4	
Operating Ambience	Free from corrosive gases and excessive dust				
Altitude	Up to 2,000m				
Pollution level *1)	Less than 2				
Cooling	Air-cooling				

^{*1)} Pollution level indicates the degree to which conductive material is generated in the environment where the equipment is used. Pollution level 2 is the condition that only non-conductive pollution occurred but temporary conductivity may be produced due to condensing.

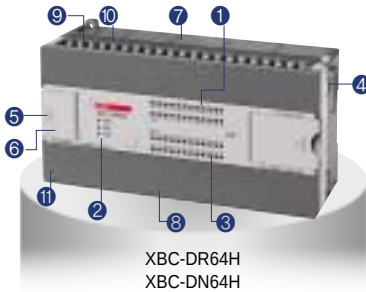
Performance Specification



XBC-DR64H
XBC-DN64H

Item		XBC-DR32H	XBC-DN32H	XBC-DR64H	XBC-DN64H
Control method		Repetitive, cyclic, interrupt, constant scan			
I/O control mode		Refresh mode (Batch processing by scan synchronization)			
		Direct mode by instruction			
Programming language		Ladder Diagram, Instruction List			
No. of instructions		Basic: 28, Applied: 687			
Processing speed		83ns / Step (for basic instruction)			
Program capacity		15k step			
Max. I/O points		672 points(Main + 10 expansions)		704 points (Main + 10 expansions)	
Data memory	P	P0000 ~ P1023F (16,384 points)			
	M	M0000 ~ M1023F (16,384 points)			
	K	K00000 ~ K4095F (Special area: K2600~3339F) (65,536 points)			
	L	L00000 ~ L2047F (32,768 points)			
	F	F000 ~ F1023F (16,384 points)			
	T	100ms, 10ms, 1ms: T000 ~ T1023 (Changeable by Parameter setting)			
	C	C000 ~ C1023			
	S	S00.00 ~ S127.99			
	D	D0000 ~ D10,239 (10,240 word)			
	U	U00.00 ~ U0A.31 (Analog data refresh area: 352 word)			
	Z	Z000 ~ Z127 (128 word)			
N	N0000 ~ N5119 (5120 word)				
R	R0000 ~ R10239				
Number of program		128			
Operation mode		RUN, STOP, DEBUG			
Self diagnosis		Operation delay monitoring, memory error, I/O error, battery error, power error, etc.			
Program port		USB (Rev 1.1), RS-232C			
Data retention at power failure		Latch range setting at Basic parameter			
Built-in function		RS-232C / 485, High-speed counter, PID control, Pulse catch, Input filter External interrupt, Positioning			
RTC		Built-in			
Internal current consumption		660mA	260mA	1040mA	330mA
Weight		600g	500g	900g	800g
Rated voltage		AC 100 ~ 240V			

Names and Functions



	Name	Descriptions	Descriptions	Remark
1	Input LED	Input indication	Red On: Input signal On Red Off: Input signal Off	
2	Condition LED	PWR: Power indication	Red On: Power On Red Off: Power Off	
		RUN: RUN indication	Green On: PLC Run Green Off: PLC Stop	
		ERR: Error indication	Red On-and-Off: PLC Error Red Off: PLC Normal condition	
3	Output LED	Output LED	On: Output signal On Off: Output signal Off	
4	Expansion module connector	Expansion module connector	Connection of expansion module (I/O, Special function, Communication)	
5	PADT connector	PADT connection	Connector for XG5000 / XG-PD connection	
6	Mode switch	Mode setting	Setting Run/Stop mode of PLC	
7	Input Terminal block	Input wiring connection	-	
8	Output Terminal block	Output wiring connection	-	
9	Built-in RS-485 connector	Built-in RS-485 connection	RS-485 + /-terminal connection	
10	Built-in RS-232C connector	Built-in RS-232C connection	RS-232C T×D, R×D, SG terminal connection	
11	Power terminal	Power supply terminal	AC 110-220V power supply	

Input Specification

Item		XBC-DR32H	XBC-DN32H	XBC-DR64H	XBC-DN64H
Input points		16 point		32 point	
Rated input voltage		DC 24V			
Rated input current		4mA (Contact 0~7: 9mA)			
Operation voltage range		DC 20.4 ~ 28.8V (Ripple rate < 5%)			
On voltage / On current		DC 19V or more / 3mA or more			
Off voltage / Off current		DC 6V or less / 1mA or less			
Input resistance		5.6k Ω (P00 ~ P07: 2.7k Ω)			
Response time	Off $\rightarrow$ On	1 / 3 / 5 / 10 / 20 / 70 / 100 ms (Setting by CPU parameter) Initial value: 3ms			
	On $\rightarrow$ Off				
Weight		600g	500g	900g	800g

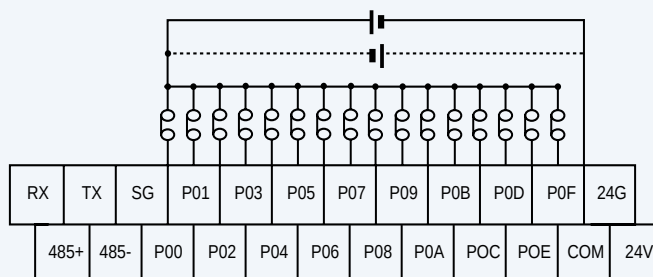
Relay output specification

Item	XBC-DR32H	XBC-DR64H
Output point	16 point	32 point
Insulation method	Relay insulation	
Rated load voltage / current	DC 24V 2A (Resistive load) / AC 220V 2A (COS ϕ = 1), 5A / COM	
Min. load voltage / current	DC 5V / 1mA	
Max. load voltage	AC 250V, DC 125V	
Off leakage current	0.1mA (AC 220V, 60Hz)	
Max. On / Off frequency	3,600 times / hr	
Service life	Mechanical	20millions times or more
	Electrical	Rated load voltage / current 100,000 times or more
		AC 200V / 1.5A, AC 240V / 1A (COS ϕ = 0.7) 100,000 times or more
		AC 200V / 1A, AC 240V / 0.5A (COS ϕ = 0.35) 100,000 times or more
Response time	Off → On	10ms or less
	On → Off	12ms or less
Common method	4 point / COM	P20 ~ 2F: 4 point / COM P30 ~ 3F: 8 point / COM

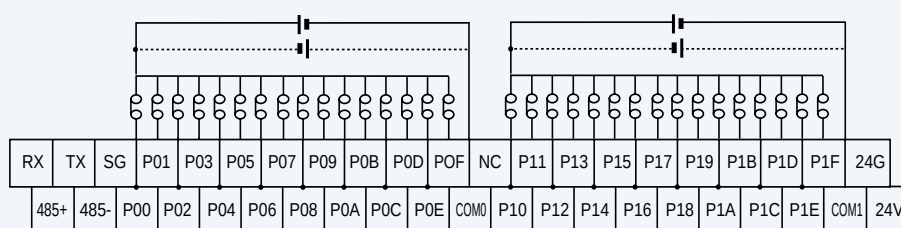
Transistor output specification

Item	XBC-DN32H	XBC-DN64H
Output point	16 point	32 point
Insulation method	Photo coupler insulation	
Rated load voltage	DC 12 / 24V	
Load voltage range	DC 10.2 ~ 26.4 V	
Max. load voltage	0.5A / 1point (P 20 ~ 23: 0.1A / point)	
Off leakage current	0.1mA or less	
Max. inrush current	4A / 10ms or less	
Max. voltage drop (On)	DC 0.4V or less	
Surge absorber	Zener Diode	
Response time	Off → On	1ms or less
	On → Off	1ms or less (Rated load, resistive load)
Common method	4 point / com	P20 ~ 2F: 4 point / COM P30 ~ 3F: 8 point / COM
External power supply	Voltage	DC 12 / 24V ± 10% (ripple voltage 4 Vp-p or less)
	Current	10mA or less (DC 24V connection)

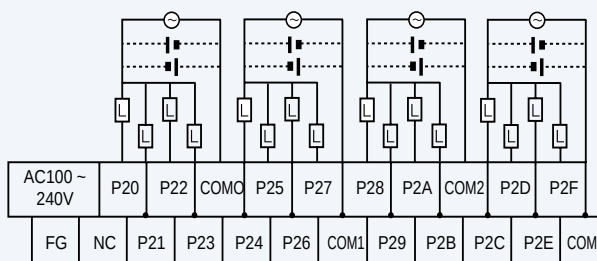
Input wiring XBC-DR32H / XBC-DN32H)



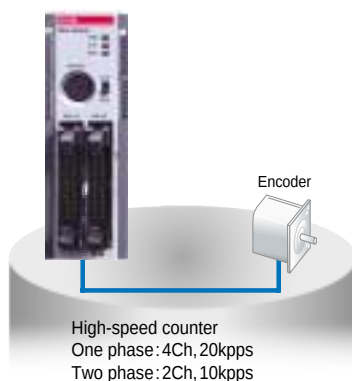
Input wiring (XBC-DR64H / XBC-DN64H)



Relay output wiring (XBC-DR32H)

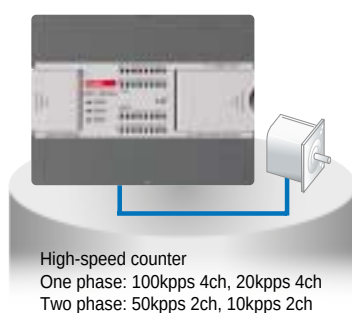


Terminal (XBM)



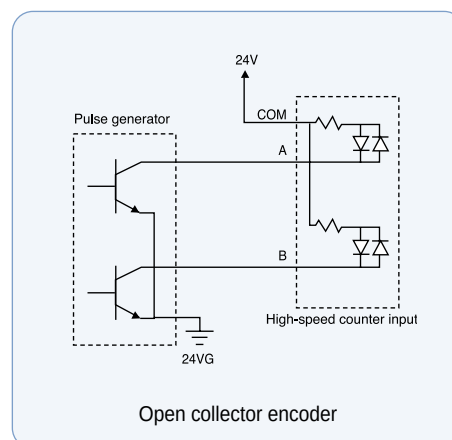
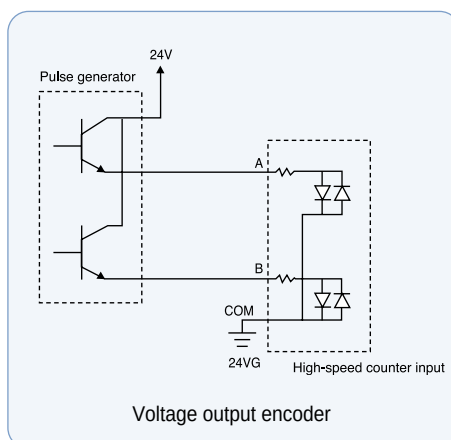
Terminal number	1-Phase		2-Phase	
	Signal name	Description	Signal name	Description
000	CH0 counter input	Counter input	Ch0 A-phase input	A-phase input
001	CH1 counter input	Counter input	Ch0 B-phase input	B-phase input
002	CH2 counter input	Counter input	Ch2 A-phase input	A-phase input
003	CH3 counter input	Counter input	Ch2 B-phase input	B-phase input
004	Ch0 preset 24V	Preset input	Ch0 preset 24V	preset input
005	Ch1 preset 24V	Preset input	-	-
006	Ch2 preset 24V	Preset input	Ch2 preset 24V	preset input
007	Ch3 preset 24V	Preset input	-	-
COM0	Input COMMON	COMMON	Input COMMON	COMMON

Terminal (XBC)



Terminal number	1-Phase		2-Phase	
	Signal name	Description	Signal name	Description
P000	CH0 counter input	Counter input	Ch0 A-phase input	A-phase input
P001	CH1 counter input	Counter input	Ch0 B-phase input	B-phase input
P002	CH2 counter input	Counter input	Ch2 A-phase input	A-phase input
P003	CH3 counter input	Counter input	Ch2 B-phase input	B-phase input
P004	CH4 counter input	Counter input	Ch4 A-phase input	A-phase input
P005	CH5 counter input	Counter input	Ch4 B-phase input	B-phase input
P006	CH6 counter input	Counter input	Ch6 A-phase input	A-phase input
P007	CH7 counter input	Counter input	Ch6 B-phase input	B-phase input
P008	Ch0 preset 24V	Preset input	Ch0 preset 24V	preset input
P009	Ch1 preset 24V	Preset input	-	-
P00A	Ch2 preset 24V	Preset input	Ch2 preset 24V	preset input
P00B	Ch3 preset 24V	Preset input	-	-
P00C	Ch4 preset 24V	Preset input	Ch4 preset 24V	preset input
P00D	Ch5 preset 24V	Preset input	-	-
P00E	Ch6 preset 24V	Preset input	Ch6 preset 24V	preset input
P00F	Ch7 preset 24V	Preset input	-	-
COM0	Input COMMON	COMMON	Input COMMON	COMMON

Wiring



Built-in functions | High-speed counter

Programmable Logic Controller

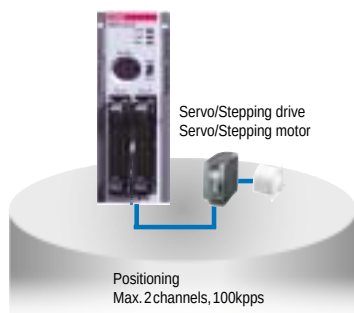
Performance Specification

Item		Description
Count input signal	Signal	A-phase, B-phase
	Input type	Voltage input (Open collector)
	Signal level	24V
Max. counting speed		XBM: One phase: 20kpps 4ch Two phase: 10kpps 2ch XBC: One phase: 100kpps 4ch, 20kpps 4ch Two phase: 50kpps 2ch, 10kpps 2ch
Number of channels		XBM: 4 channels (In case of 2-phase, 2 channels available) XBC: 8 channels (In case of 2-phase, 4 channels available)
Counting range		Signed 32 Bit (-2,147,483,648 ~ 2,147,483,647)
Count mode (Program setting)		Linear count (if 32-bit range exceeded, Carry/Borrow occurs) Ring count (repeated count within setting range)
Input mode (Program setting)		1-phase input 2-phase input CW/CCW input
Signal type		Voltage
Up/Down setting	1 phase input	Increasing/decreasing operation setting by B-phase input Increasing/decreasing operation setting by program
	2 phase input	Automatic setting by difference in phase
	CW/CCW	A-phase input: increasing operation B-phase input: decreasing operation
Multiplication function	1 phase input	1 multiplication
	2 phase input	4 multiplication
	CW/CCW	1 multiplication
Control input	Signal	Preset instruction input
	Signal level	DC 24V input type
	Signal type	Voltage
External output	Output points	1 point/channel (for each channel): terminal output available (XBC: 2points)
	Type	Select single-compared (>, >=, =, <=, <) or section compared output (included or excluded) (program setting)
	Output type	Relay, Open-collector output (Sink)
Count Enable		To be set through program (count available only in enable status)
Preset function		To be set through terminal (contact) or program
Auxiliary mode		Count Latch

Input Specification

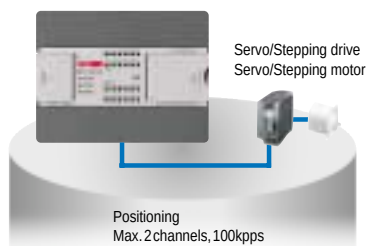
Item	Description
Input voltage	24V DC (20.4V ~ 28.8V)
Input current	4mA
On voltage (min.)	20.4V
Off voltage (max.)	6V

Terminal (XBM)



Pin layout	Item	Pin number		Signal name		Direction of positioning signal to external	Operating condition
		X axis	Y axis				
	Output	A1	A2	Pulse	Pulse output (Open collector)	→	-
		A3	A4	Direction	Pulse output (Open collector)	→	-
		A9/A10		DC 24V	External 24V power supply	→	-
		B9/B10		Output COM	External 24V GND	→	-
						→	-
	Input	A1	A3	Limit L	Low limit	←	Edge
		A2	A4	Limit H	High limit	←	Edge
		A5	A7	DOG	Near point	←	Edge
		A6	A8	Zero	Zero signal (+24V)	←	Edge
		A9/A10, B9/B10		Input COM	Common	←	-

Terminal (XBC)



Pin layout	Item	Pin number		Signal name		Direction of positioning signal to external	Operating condition
		X axis	Y axis				
	Input	P0008	P000A	Limit L	Low limit	←	7.4mA 24V
		P0009	P000B	Limit H	High limit	←	
		P000C	P000E	DOG	Near point	←	
		P000D	P000F	Origin	Zero signal (+24V)	←	
		COM		Input COM	Common	←	
	Output	P0020	P0021	Pulse	Pulse/CW (Open collector)	→	DC5~24V
		P0022	P0023	Direction	Direction/CCW (Open collector)	→	
		P		DC12V	External power supply	→	
		COMO		Output COM	External 24V GND	→	
						→	

Performance Specification

Item		Description
No. of control axis		2 axes
Interpolation		2-axis linear interpolation
Control mode		Position control, Speed control, Speed/Position switching control, Position/speed switching control
Control unit		Pulse
Positioning data		30-step pattern for each axis (XBC: 80step) (operation step number: 1 ~ 30, XBC: 1~80)
Positioning monitor		Dedicated monitoring function for positioning in XG5000
Back-up		Permanent Backup of downloaded parameter (FLASH memory)
		2-month Super Cap. Backup of parameter/data modified during operation (RAM)
		Permanent Backup of parameter/data in RAM by instruction (FLASH memory)
Positioning	Positioning method	Absolute / incremental method
	Positioning range	-2,147,483,648 ~ 2,147,483,647
	Speed range	1 ~ 100,000 (pulse/sec)
	Acceleration / Deceleration type	Trapezoidal acceleration / deceleration
	Acceleration / Deceleration time	1 ~ 10,000ms (4 patterns each can be set)
Max. output pulse		100 Kpps
Max. distance of connection		2m

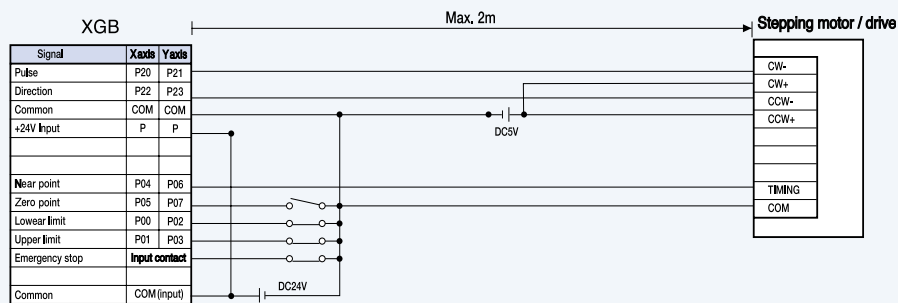
Built-in functions | Positioning

Electrical specification

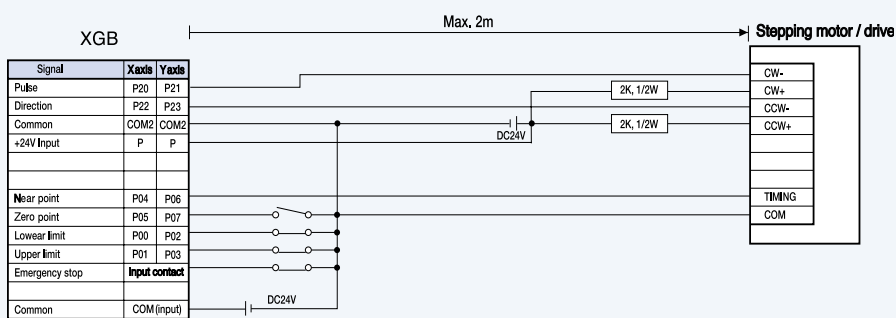
Output	Signal	Rated input voltage	Load voltage range	Max. load current/inrush current	Max. voltage drop (On)	Leakage current (Off)	Response time
	Output pulse	DC 5~24V	DC 4.75~26.4V	100mA(1 point) 1A/10ms or less	DC 0.3V or less	0.1mA or less	100 μ s or less
Input	Signal	Rated input voltage/current	Load voltage range	On voltage/current	Off voltage/current	Input resistance	Response time
	External high limit	DC 24V/7mA	DC 20.4 ~ 28.8V	DC 19V/5.7mA or more	DC 6V/1.8mA or less	3.3 Ω	0.5ms or less
	External low limit						
	Approximate zero zero	DC 24V/4mA		DC 19V/3.4mA or more	DC 6V/1.1mA or less	5.6 Ω	

Wiring

Wiring with DC 5V



Wiring with DC 24V

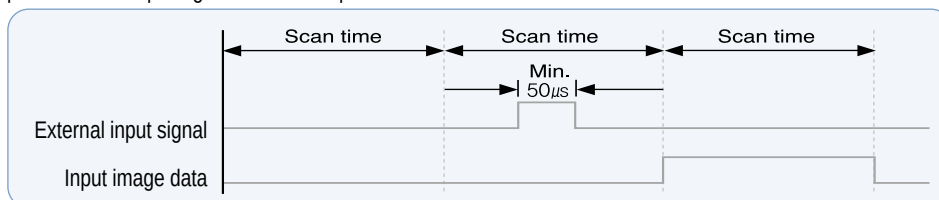


Performance Specification (PID)

Item		Description
No. of control loop		16-loop independent control
Control mode		P control, PI control, PD control, PID control
Control period		10ms ~ 6,563.5ms (Setting unit: 0.1ms)
Function	Forward/Reverse Mixed control	Switching control direction automatically when exceeding dead band
	Cascade	Improved control precision by serial connection between Master loop and Slave loop
	SV Ramp	Preventing overload caused by excessive SV change by setting variation slope
	Alarm	Improved control stability with various alarm function such as MV high limit/low limit, PV high limit/low limit, PV variation width
	Auto tuning	Auto tuning with improved auto-tuning algorithm
	Additional function	PWM output, PV Tracking, Δ MV, Δ PV, etc

Pulse catch

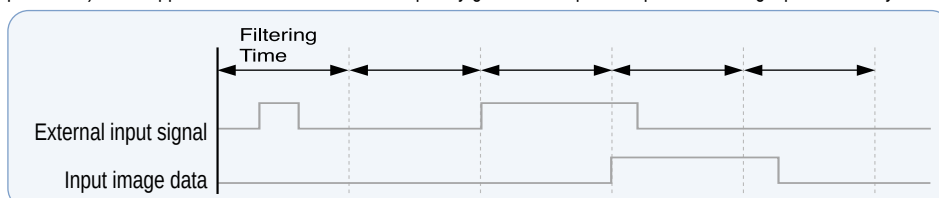
When the On-condition time of input signal (P0000~P0007) is shorter than 1 scan time (Min. 50 μ s), Pulse catch processes the input signal as normal input.



Item	XBM	XBC	
No. of setting points	8 points: P000 ~ P007	4 points: P000 ~ P003	4 points: P004 ~ P007
Min. pulse width	50 μ s	10 μ s	50 μ s

Input filter

Input filter prevents processing of the input signal that is shorter than the filtering time. (Filtering time is set by parameter) In the application site where noise is frequently generated, input filter prevents wrong input caused by noise.



Item	Description
No. of setting points	Every input contact
Input filtering time setting	Assigning for each module
Setting range	1 ~ 100ms (1,3,5,10,20,70,100)

Task

Task function is the processing method of internal/external signal generated periodically or aperiodically. (Total 24 task can be assigned.) It stops operation of scan program for the moment and then execute the assigned task.

Types of Task

1. Initialization task setting

Running a task one time before INIT_DONE at initial execution

3. External points task setting

Item	XBM	XBC	
No. of setting points	P000 ~ P007	P000 ~ P003	P004 ~ P007
Min. pulse width	50 μ s	10 μ s	50 μ s
Condition	Up, Down, Change		

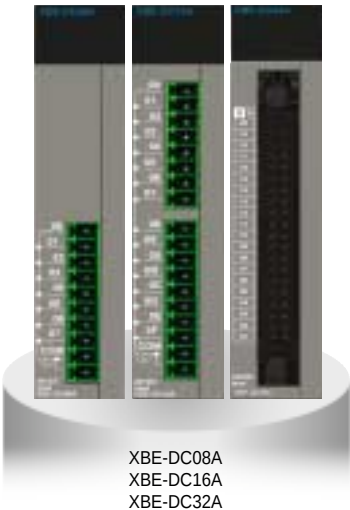
2. Fixed-cycle task setting

Item	Description
No. of setting points	8 points
Setting range	1~42,94,967,295ms

4. Internal device task setting

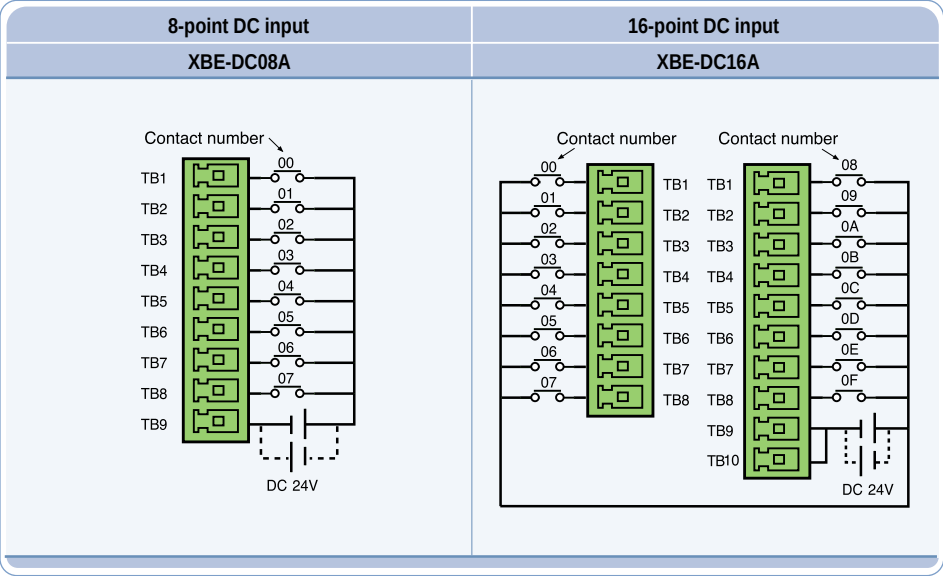
Item	Description
No. of setting points	8 points
Condition	Up, Down, Change, On, Off

Specification

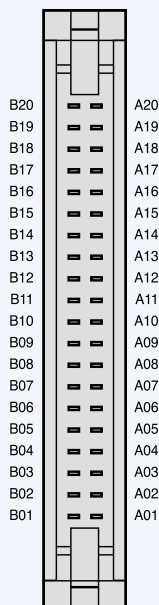


Specification	Model	XBE-DC08A	XBE-DC16A	XBE-DC32A
Input point		8 point	16 point	32 point
Rated input voltage / current		DC 24V / 4mA		
Operation voltage range		DC 20.4 ~ 28.8V (Ripple rate < 5%)		
Input resistance		5.6kΩ		
Response time	Off → On	1 / 3 / 5 / 10 / 20 / 70 / 100ms (setting by CPU parameter) Initial value: 3ms		
	On → Off			
Insulation pressure		AC 560Vrms / 3 Cycle (altitude 2000m)		
Insulation resistance		10MΩ or more by megger		
COMMON method		8 points / COM	16 points / COM	32 points / COM
Internal current consumption		30mA	40mA	50mA

Wiring (XBE-DC08A / DC16A)



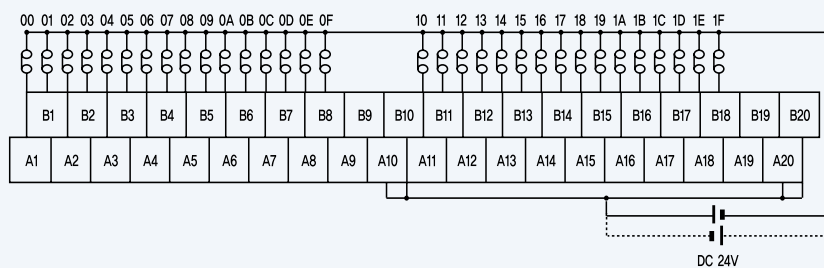
Wiring (XBE-DC32A)



PLC				Smart Link	
Pin number		XBE-DC32A		SLP-T40P	
B20	A20	00	10	A1	A11
B19	A19	01	11	B1	B11
B18	A18	02	12	A2	A12
B17	A17	03	13	B2	B12
B16	A16	04	14	A3	A13
B15	A15	05	15	B3	B13
B14	A14	06	16	A4	A14
B13	A13	07	17	B4	B14
B12	A12	08	18	A5	A15
B11	A11	09	19	B5	B15
B10	A10	0A	1A	A6	A16
B09	A09	0B	1B	B6	B16
B08	A08	0C	1C	A7	A17
B07	A07	0D	1D	B7	B17
B06	A06	0E	1E	A8	A18
B05	A05	0F	1F	B8	B18
B04	A04	NC	NC	A9	A19
B03	A03	NC	NC	B9	B19
B02	A02	COM	COM	A10	A20
B01	A01			B10	B20

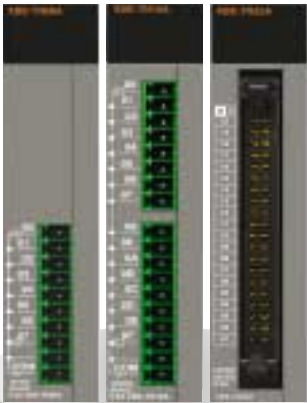
Input wiring with Smart Link (XBE-DC32A)

Terminal number



Expansion | Transistor Output

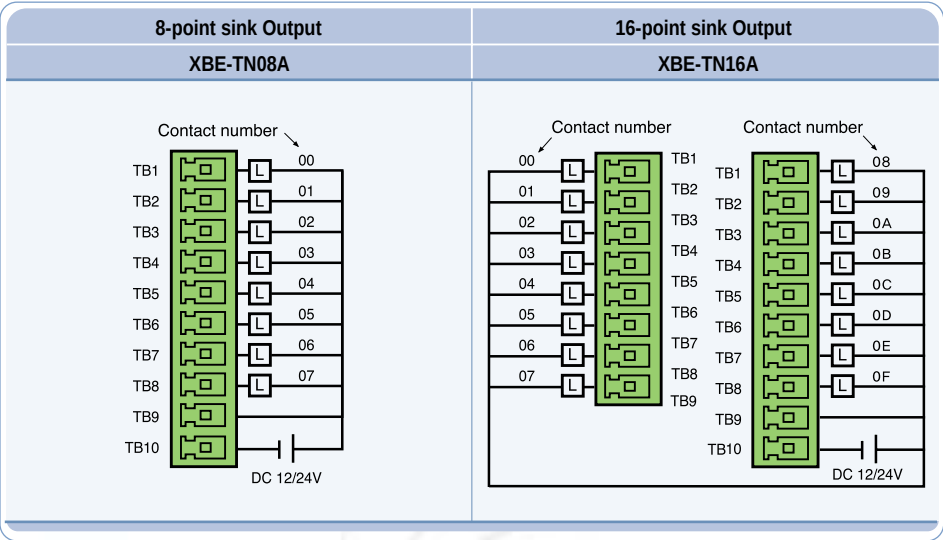
Specification



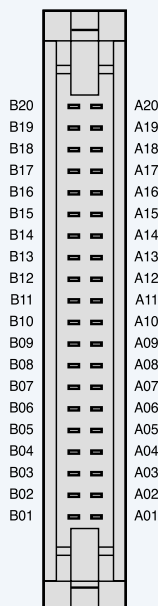
XBE-TN08A
XBE-TN16A
XBE-TN32A

Model		XBE-TN08A	XBE-TN16A	XBE-TN32A
Specification				
Output point		8 point	16 point	32 point
Rated load voltage		DC 12 / 24V		
Load voltage range		DC 10.2 ~ 26.4 V		
Max. load current		0.2A / 1point	0.2A / 1point, 2A / COM	
Off leakage current		0.1mA or less		
Max. voltage drop (On)		DC 0.4V		
Response time	Off → On	1mA or less		
	On → Off	1mA or less (Rated load, resistive load)		
Common method		8 points / COM	16 points / COM	32 points / COM
Internal current consumption		40mA	60mA	120mA
External Power supply	Voltage	DC 12 / 24V ± 10% (Ripple voltage ≤ 4 Vp-p)		
	Current	10mA or less (DC 24V connection)		20mA or less (DC 24V connection)

Wiring (XBE-TN08A / TN16A)



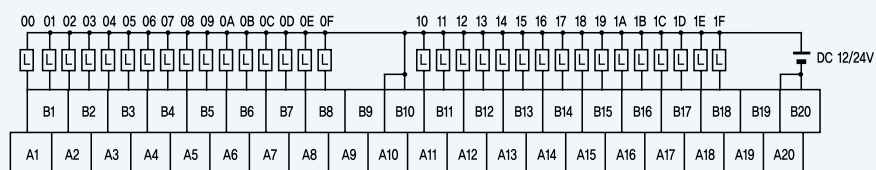
Wiring (XBE-TN32A)



PLC				Smart Link	
Pin number		XBE-DC32A		SLP-T40P	
B20	A20	00	10	A1	A11
B19	A19	01	11	B1	B11
B18	A18	02	12	A2	A12
B17	A17	03	13	B2	B12
B16	A16	04	14	A3	A13
B15	A15	05	15	B3	B13
B14	A14	06	16	A4	A14
B13	A13	07	17	B4	B14
B12	A12	08	18	A5	A15
B11	A11	09	19	B5	B15
B10	A10	0A	1A	A6	A16
B09	A09	0B	1B	B6	B16
B08	A08	0C	1C	A7	A17
B07	A07	0D	1D	B7	B17
B06	A06	0E	1E	A8	A18
B05	A05	0F	1F	B8	B18
B04	A04	NC	NC	A9	A19
B03	A03	NC	NC	B9	B19
B02	A02	DC 12 / 24V	COM	A10	A20
B01	A01			B10	B20

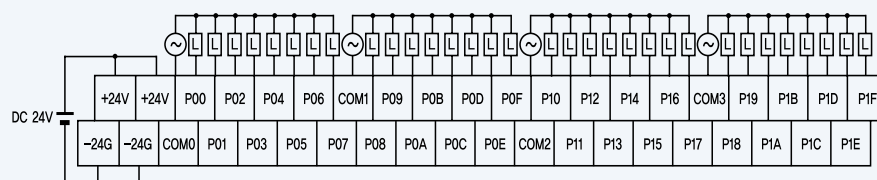
SLP-T40P Output wiring (XBE-TN32A)

Terminal number



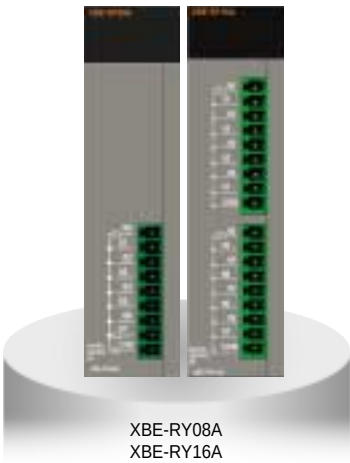
SLP-RY4A Output wiring (XBE-TN32A)

Terminal number



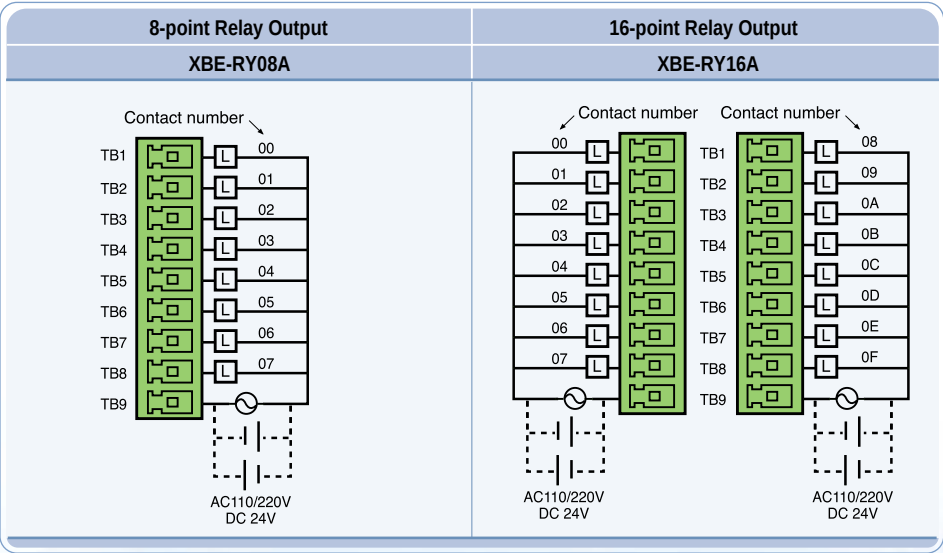
Expansion | Relay Output

Specification

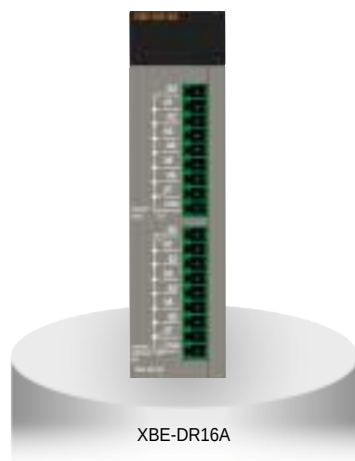


Model		XBE-RY08A	XBE-RY16A
Specification			
Output point		8 point	16 point
Insulation method		Relay insulation	
Rated input voltage / current		DC 24V 2A (resistive load) / AC 220V 2A (COS ψ = 1), 5A /COM	
Min. load voltage / current		DC5V 1mA	
Max. load voltage		AC 250V, DC 125V	
Off leakage current		0.1mA (AC 220V, 60Hz)	
Max. on / off frequency		3,600 times / hr	
Surge absorber		None	
Service life	Mechanical	20million times or more	
	Electrical	Rated load voltage / current 100,000 times or more	
		AC 200V / 1.5A, AC 240V / 1A (COS ψ = 0.7) 100,000 times or more	
		AC 200V / 1A, AC 240V / 0.5 (COS ψ = 0.35) 100,000 tiems or more	
Response time	Off $\rightarrow$ On	10ms or less	
	On $\rightarrow$ Off	12ms or less	
COMMON method		8 points / 1COM	
Internal current consumption		230mA	420mA
Operation indicator		Output On, LED On	
External connection method		9-pin terminal block connector	9-pin terminal block connector $\times$ 2

Wiring (XBE-RY08A / RY16A)



DC Input Specification

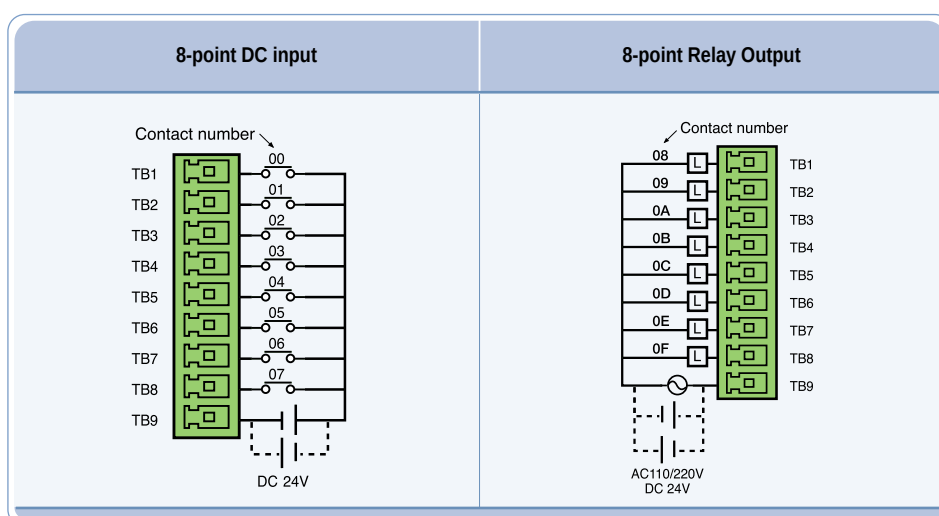


Specification	Model	DC Input (XBE-DR16A)
Input point		8 points
Insulation method		Photo coupler
Rated input voltage		DC24V
Rated input current		4mA
Operation voltage range		DC20.4 ~ 28.8V (Ripple rate < 5%)
On voltage / On current		DC19V or more / 3mA or more
Off voltage / Off current		DC6V or less / 1mA or less
Input resistance		5.6kΩ
Response time	Off → On On → Off	1 / 3 / 5 / 10 / 20 / 70 / 100ms (setting by CPU parameter) init value: 3ms
COMMON method		8 points / COM
Weight		81g

Relay Output Specification

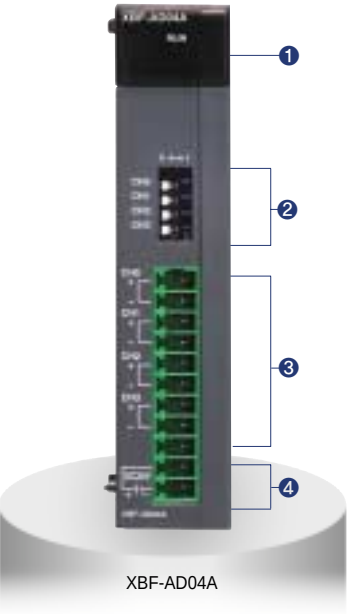
Specification	Model	Relay output (XBE-DR16A)
Output point		8 points
Insulation method		Relay insulation
Rated input voltage / current		DC 24V 2A (resistive load) / AC 220V 2A (COS ψ = 1), 5A /COM
Min. load voltage / current		DC5V 1mA
Max. load voltage		AC 250V, DC 125V
Off leakage current		0.1mA (AC 220V, 60Hz)
Max. on / off frequency		3,600 times / hr
Surge absorber		None
Service life	Mechanical	20million times or more
	Electrical	Rated load voltage / current 100,000 times or more
		AC 200V / 1.5A, AC 240V / 1A (COS ψ = 0.7) 100,000 times or more
		AC 200V / 1A, AC 240V / 0.5 (COS ψ = 0.35) 100,000 tiems or more
Response time	Off → On	10ms or less
	On → Off	12ms or less
COMMON method		8 points / 1COM
Internal current consumption		250mA
Operation indicator		Output On, LED On
External connection method		9-pin terminal block connector

Wiring (XBE-DR16A)



Expansion | Analog Input

Specification



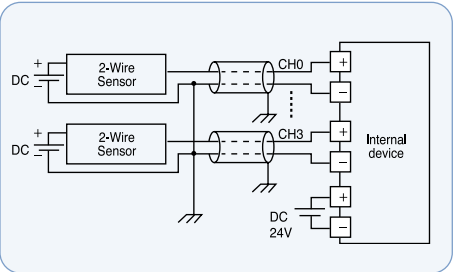
Item	XBF-AD04A			
Analog range	DC 0 ~ 10 V (input resistance: 1M Ω min.) DC 4 ~ 20mA, DC 0 ~ 20mA (input resistance 250 Ω)			
Analog range selection	XG5000 I/O Parameter			
Digital data	Analog range	0 ~ 10V	4 ~ 20mA	0 ~ 20mA
	Unsigned Value	0 ~ 4000		
	Signed Value	-2000 ~ 2000		
	Precise Value	0 ~ 1000	400 ~ 2000	0 ~ 2000
	Percentile Value	0 ~ 1000		
	Data format of digital output is set by user program or I/O parameter (Setting for each channel is available.)			
Resolution	Analog input	Resolution (1 / 4000)	Analog input	Resolution (1 / 4000)
	0 ~ 10V	2.5mV	4 ~ 20mA 0 ~ 20mA	5.0 μ A
Max. conversion speed	1.5ms / channel			
Max. absolute input	± 15 V			± 25 mA
Accuracy	$\pm 0.5\%$ or less			
Analog Input channels	4 channel / module			
Insulation method	Photocoupler insulation between I/O terminal and power supply			
Connection terminal	11-point terminal block			
Occupied I/O points	Fixed type: 64 points			
Current consumption(DC 24V)	DV 24V: 62mA (External input)			

Names and Functions

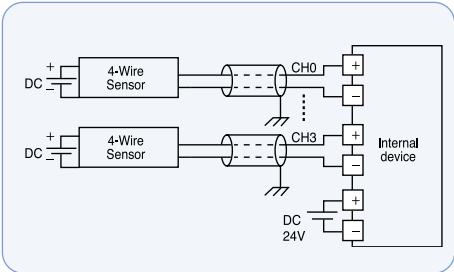
	Name	Descriptions
1	RUN LED	► Indicates condition of module • LED On: Normal condition • LED On and Off: Error • LED Off: Power Off or module malfunction
2	Input selection S/W	► Voltage / Current selection switch • V: Voltage input selection • I: Current input selection
3	Terminal block	► External device connection
4	External power supply terminal	► External DC 24V input

Wiring

Wiring with 2-wire sensor

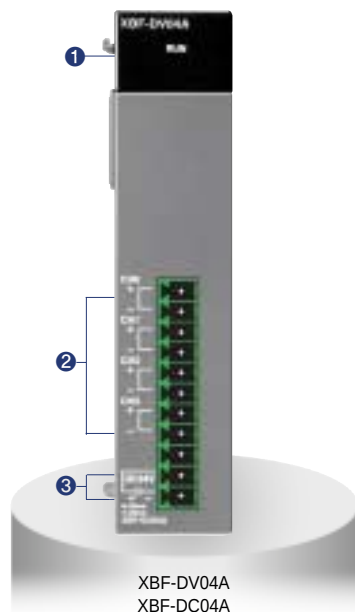


Wiring with 4-wire sensor



※ Use 22AWG, 2 conductor, twist shielded cable when wiring between analog module and external device.

Specification

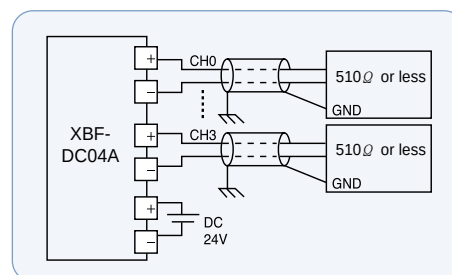
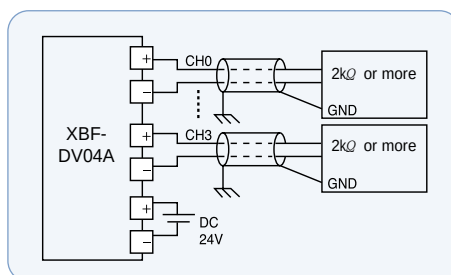


Item	XBF-DV04A	XBF-DC04A
Analog range	DC 0 ~ 10 V (Load resistance $\geq 2k\Omega$)	4 ~ 20mA / 0 ~ 20mA (Load resistance $\leq 510\Omega$)
Analog range Selection	–	XG 5000 I/O parameter
Digital data	Output range	0 ~ 10 V
	Unsigned value	0 ~ 4000
	Signed value	– 2000 ~ 2000
	Precise value	0 ~ 1000
	Percentile value	0 ~ 1000
Data format of digital input is set by user program or I/O parameter (Setting for each channel is available.)		
Resolution	Resolution (1 / 4000)	
	2.5mV	5 μ A
Max. conversion speed	1ms / channel	
Max. absolute output	$\pm 15V$	$\pm 25mA$
Accuracy	$\pm 0.5\%$ or less	
Analog output channels	4 channel / module	
Insulation method	Photocoupler insulation between I/O terminal and power supply	
Connection terminal	11-point terminal block	
Occupied I/O points	Fixed type: 64 points	
Current consumption (DC 24V)	70mA	120mA

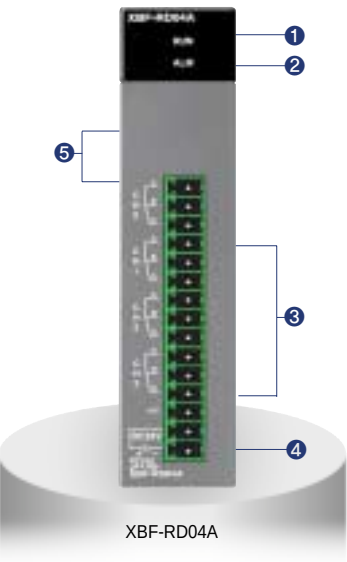
Names and Functions

	Name	Descriptions
①	RUN LED	- Indicates condition of module - LED On: Normal condition - LED On and Off: Error - LED Off: Power Off or module malfunction
②	Terminal block	External device connection
③	External power supply terminal	External DC 24V input

Wiring



Specification

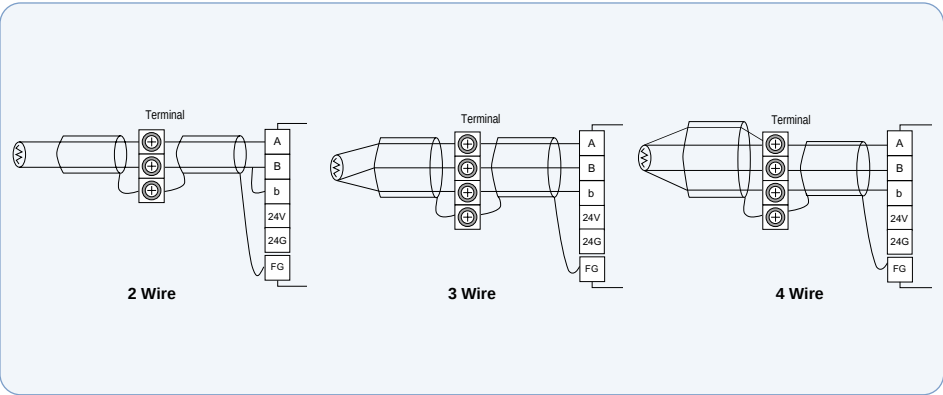


Item		XBF-RD04A
Number of channels		4
Sensor Type	PT 100	JIS C1804-1997
	JPT 100	JIS C1604-1981, KS C1603-1991
Temperature range	PT 100	- 200 ~ 600℃
	JPT 100	- 200 ~ 600℃
Digital output	PT 100	- 2000 ~ 6000
	JPT 100	- 2000 ~ 6000
	Scaling	0 ~ 4000
Accuracy	25℃	± 0.3% or less
	0 ~ 55℃	± 0.5% or less
Conversion speed		40ms / Ch
Wiring method		3Wire
Current consumption	DC 5V	100mA
	DC 24V	100mA

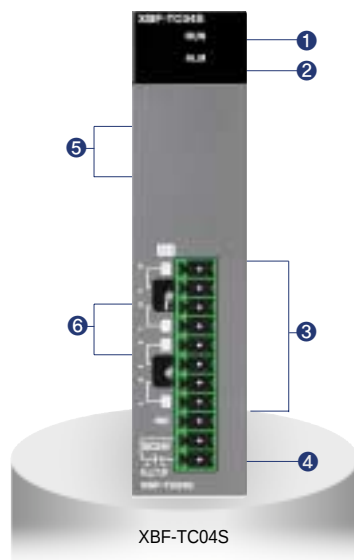
Names and Functions

No.	Name	Descriptions
①	RUN LED	▶ Displays the hardware operation status (Fatal fault) • On: Normal status • Flickering: Error (0.2s flickering) • Off: hardware error or power off
②	ALM LED	▶ Displays the status of the channels (Light fault) • Flickering: Line disconnection (1s flickering) • Off: Normal status
③	Terminal block	▶ 3-wire RTD sensors can be connected
④	External power terminal	▶ Supplies the external DC 24V
⑤	Expansion connector	▶ Connects the module with an expansion module

Wiring



Specification

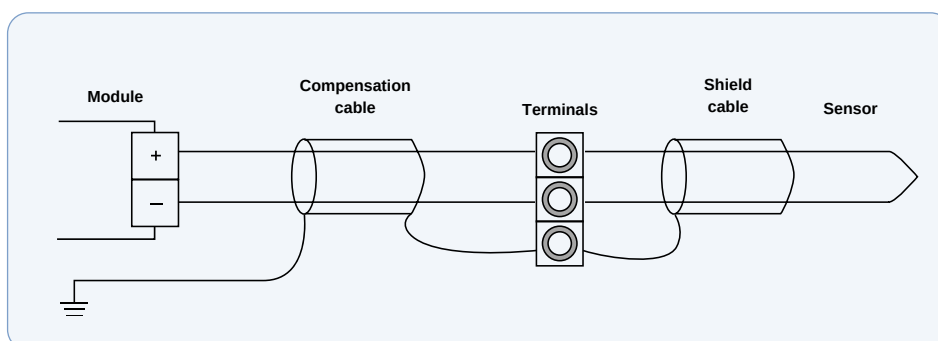


Item		XBF-TC04S
Number of channels		4
Input sensor type		Thermocouple K / J / T / R JIS C1602-1995
Temperature Input range	K	- 200.0℃ ~ 1300.0℃ (-328.0°F ~ 2372.0°F)
	J	- 200.0℃ ~ 1200.0℃ (-328.0°F ~ 2192.0°F)
	T	- 200.0℃ ~ 400.0℃ (-328.0°F ~ 752.0°F)
	R	0.0℃ ~ 1700.0℃ (32.0°F ~ 3092.0°F)
Digital output	Temperature display unit	Display down to one decimal place K, J, T: 0.1℃ R: 0.5℃
	Scaling display (Defined by user)	Unsigned scaling (0 ~ 65535) Signed scaling (-32768 ~ 32767)
Accuracy	Normal temperature (25℃)	±0.2%
	Temperature coefficient (0 ~ 55℃)	±100 ppm / °C
Max. conversion speed		50ms / Channel
Warming-up time		15 minutes or more
Terminal		11-point terminal
I/O points occupied		64 points
Current consumption	Internal DC 5V	100mA
	External DC 24V	100mA

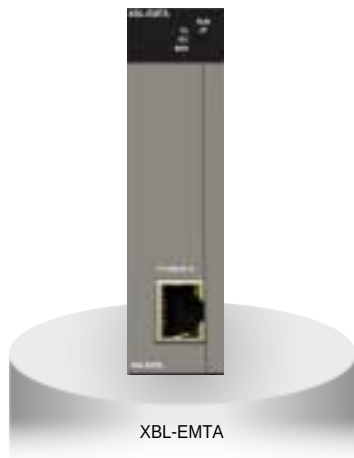
Names and Functions

No.	Name	Descriptions
1	RUN LED	► Displays the hardware operation status (Fatal fault) • On: Normal status • Flickering: Error (0.2s flickering) • Off: hardware error or power off
2	ALM LED	► Displays the status of the channels (Light fault) • Flickering: Line disconnection (1s flickering) • Off: Normal status
3	Terminal block	► Terminals to connect the thermo-couple sensor
4	External power terminal	► Terminals to supply the external DC 24V
5	Expansion connector	► Terminal to connect the expansion modules
6	RJC	► Device for reference junction compensation

Wiring



Ethernet (XBL-EMTA)



Item		XBL-EMTA
Communication spec.		10 / 100 Base-TX
Protocol		TCP / IP, UDP / IP
Service	With LS PLCs	High-speed link, P2P service
	With other devices	P2P service
	Application	Dedicated protocol service, XG5000 service
HS link sending / receiving data		200words / block (Max. 64blocks)
No. of channel connectable to upper stage		6 channels
Service		Communication with PC (HMI) and external devices, High-speed communication among LSIS PLCs
Media		UTP / STP Category 5
Current consumption (mA)		300

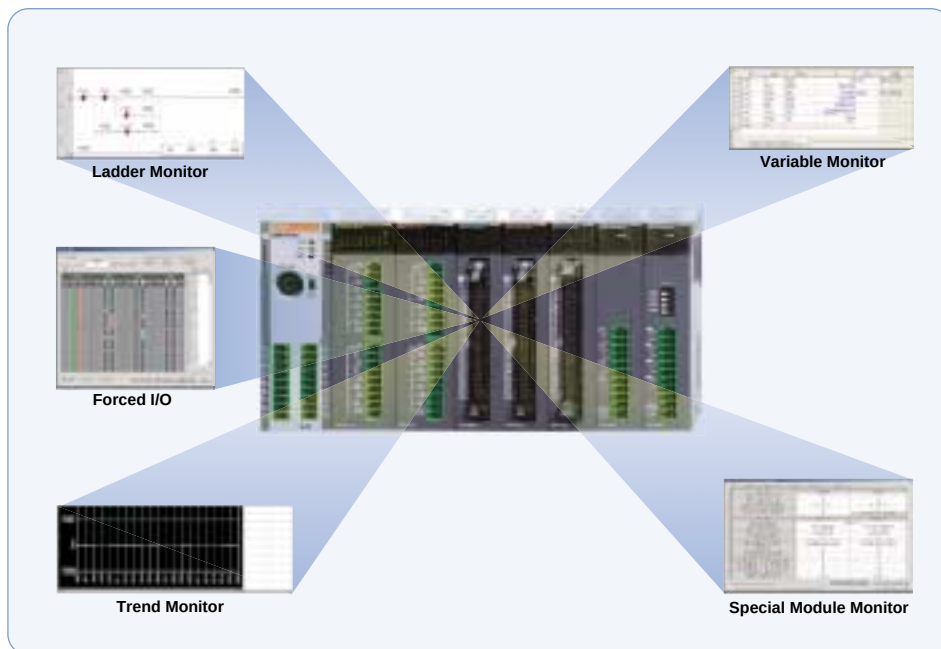
RS-232C, RS-422 / 485



Item		Built-in RS-232C	XBL-C21A	Built-in RS-485	XBL-C41A
Interface		RS-232C 1Ch	RS-232C 1Ch	RS-485 1Ch	RS-422 / 485 1Ch
MODEM Function		Remote communication via the external MODEM (XBL-C21A Only)			
Mode	Dedicate	1:1 or 1:N via the dedicated protocol			
	XG5000 mode	Program download, upload and control via the remote control			
	P2P	Communication defined by the protocol using XG-PD XGT / Modbus master			
Operation Mode	Server (slave)	XGT / Modbus Server, User-defined communication			
	Client (master)	XGT / Modbus P2P Master, User-defined communication			
Data format	Start Bit	1			
	Data Bit	7 or 8			
	Stop Bit	1 or 2			
	Parity	Even / Odd / None			
	Setting	Setting by XG-PD parameter			
Synchronous		Asynchronous			
Speed (bps)		1,200 / 2,400 / 4,800 / 9,600 / 19,200 / 38,400 / 57,600 / 115,200 bps			
Station number		Setting by XG-PD, Max. 32 stations			
Distance		RS-232C: Max.15m (Expansion by MODEM), RS-422/485: Max 500m			
MODEM communication		–	Support	–	–
Network		1: 1		1: N	
Diagnostic		Via LED and XG-PD			
Max. expansion		Built-in	2 stages	Built-in	2 stages

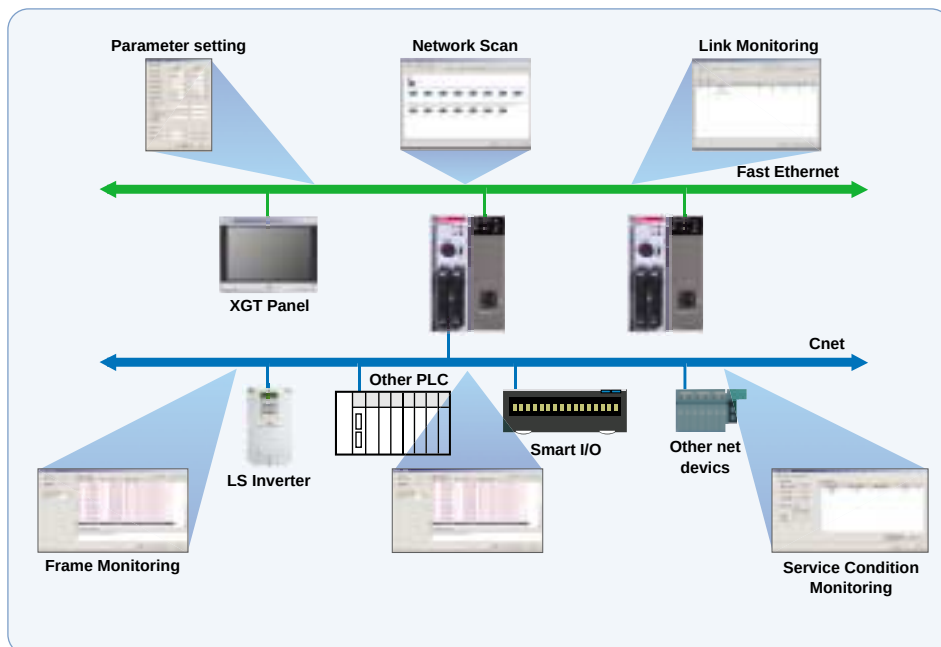
XG5000 (Programming software)

- Program editing & Engineering software
- Windows-based easy operation
- Multi-PLC, Multi-programming support
- Various monitoring and diagnosis functions
- Windows 2000, XP (Limited use in Windows 98, ME)



XG -PD (Network setting software)

- Convenient network setting
- Extended monitoring function for network system and communication modules
- Fast interface with CPU by effective network management
- Various built-in diagnosis, functions
(CPU condition, Link condition, Service condition, Auto scan, LOG, Frame monitoring)



Product list

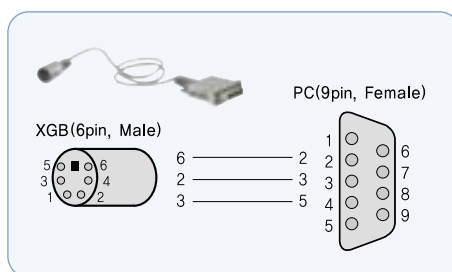
Product list

Item	Model	Specification
Main unit	XBM-DR16S	DC24V power supply, 8-point DC24V input, 8-point relay output
	XBM-DN16S	DC24V power supply, 8-point DC24V input, 8-point TR output, Built-in positioning function
	XBM-DN32S	DC24V power supply, 16-point DC24V input, 16-point TR output, Built-in positioning function
	XBC-DR32H	AC110~220V, 16-point DC input, 16-point Relay output
	XBC-DN32H	AC110~220V, 16-point DC input, 16-point TR output
	XBC-DR64H	AC110~220V, 32-point DC input, 32-point Relay output
Expansion I/O module	XBC-DN64H	AC110~220V, 32-point DC input, 16-point TR output
	XBE-DC08A	8-point DC24V input
	XBE-DC16A	16-point DC24V input
	XBE-DC32A	32-point DC24V input
	XBE-RY08A	8-point relay output
	XBE-RY16A	16-point relay output
	XBE-TN08A	8-point Transistor (sink) output
	XBE-TN16A	16-point Transistor (sink) output
Special module	XBE-TN32A	32-point Transistor (sink) output
	XBE-DR16A	8-point DC24V input, 8-point relay output
	XBF-AD04A	4-channel analog input (current/voltage)
	XBF-DV04A	4-channel analog output (voltage)
	XBF-DC04A	4-channel analog output (current)
	XBF-RD04A	4-channel RTD input
Communication module	XBF-TC04S	4-channel Thermocouple input
	XBL-C41A	Cnet (RS-422/485) I/F
	XBL-C21A	Cnet (RS-232C) I/F
Loader Cable	XBL-EMTA	Ethernet I/F
	PMC-310S	Connection cable (PC to PLC), 9pin (PC)-6pin (PLC), Soft tube type cable
	USB-301A	Connection cable (PC to PLC), USB

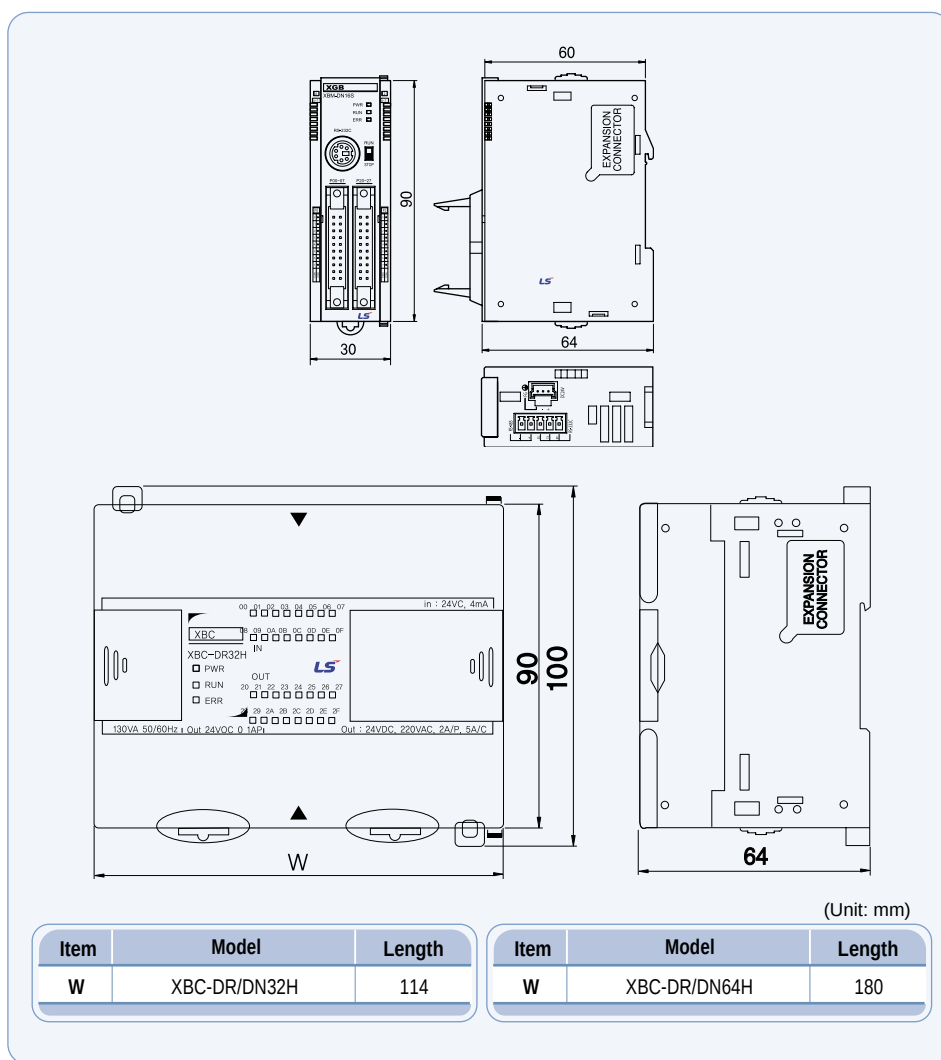
Terminal board	Connection cable	XBM-DN16S XBM-DN32S	XBE-DC32A	XBE-TN32A	Remark
SLP-T40P	SLT-CT051-XBM	●	-	-	1. Cable length CT051: 0.5m CT101: 1.0m CT151: 1.5m CT201: 2.0m CT301: 3.0m
	SLT-CT101-XBM	●	-	-	
	SLT-CT051-XBE	-	●	●	
	SLT-CT101-XBE	-	●	●	
	SLT-CT151-XBE	-	●	●	
	SLT-CT201-XBE	-	●	●	
	SLT-CT301-XBE	-	●	●	
SLP-RY4A	SLP-CT051-XBE	-	-	●	2. Board Type T40P: Terminal board RY4A: Relay board
	SLP-CT101-XBE	-	-	●	
	SLP-CT151-XBE	-	-	●	
	SLP-CT201-XBE	-	-	●	
	SLP-CT301-XBE	-	-	●	

XGB Dimension

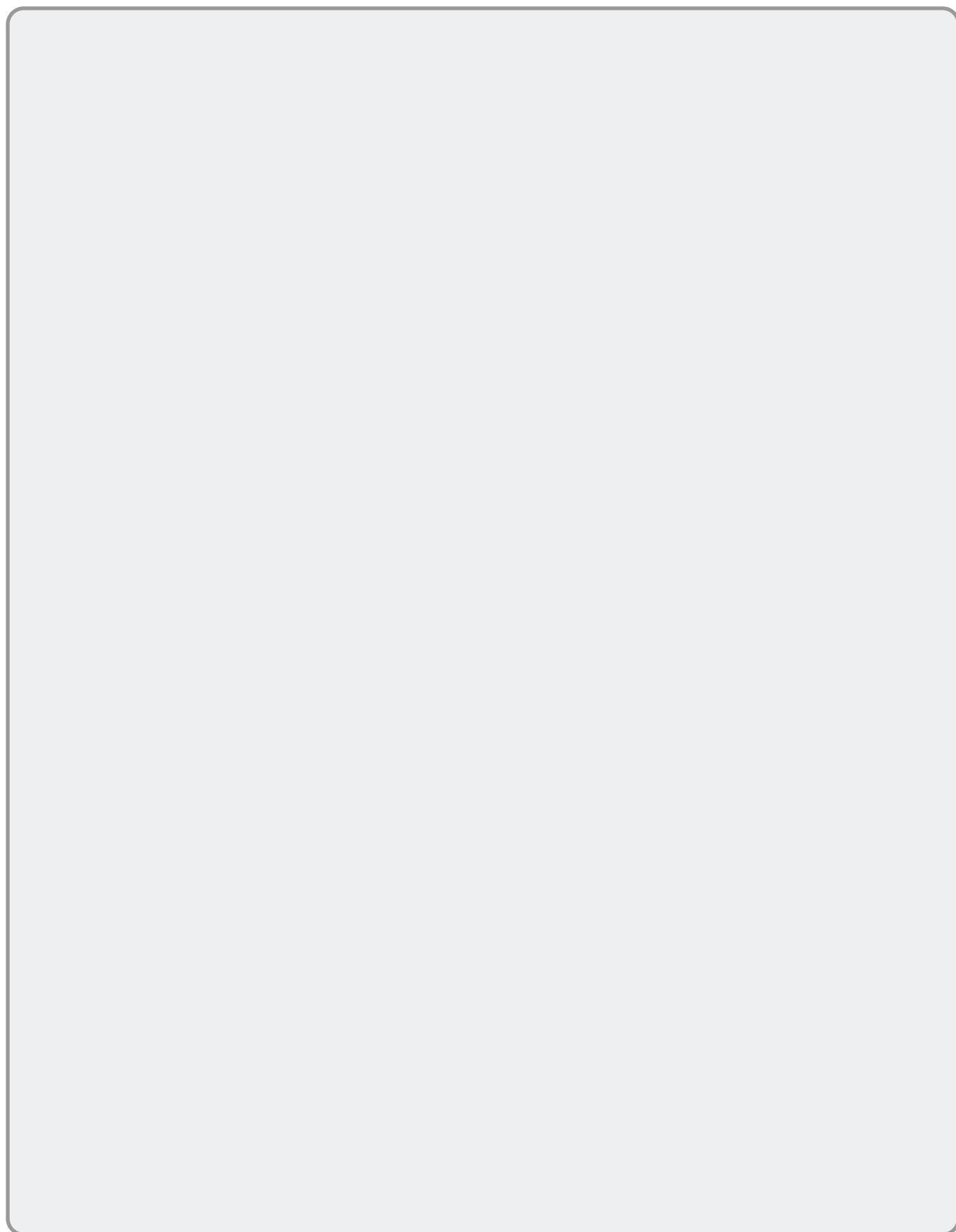
[Download cable diagram](#)

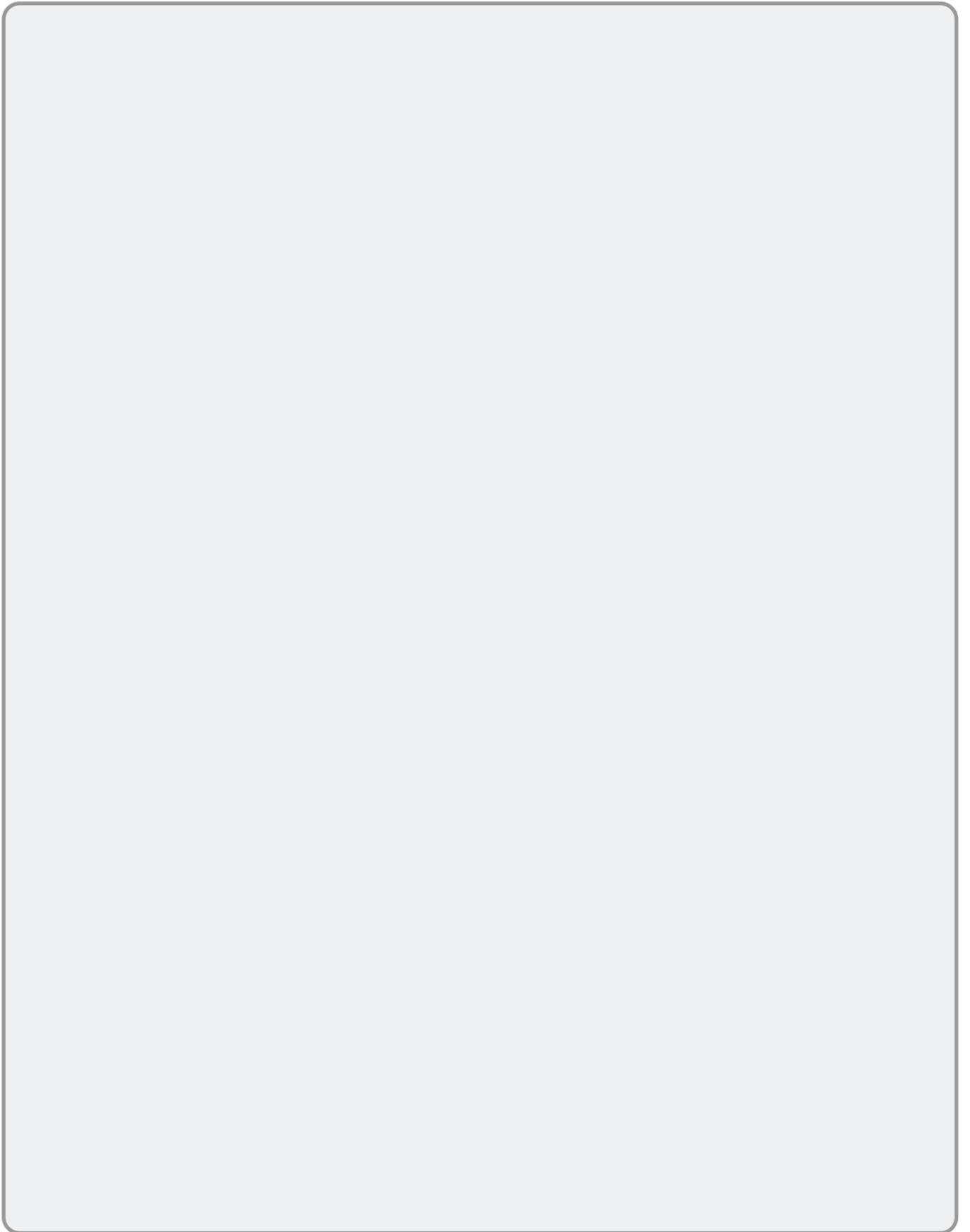


Dimension



Item	Model	W	H	D
XBM	Main unit	30	90	60
XBC	DR/DN32H (32pt)	114	90	64
	DR/DN64H (64pt)	180	90	64
Common	RY output / EMTA	27	90	60
	DC input	20	90	60
	TR output			
	Analog			





Leader in Electrics & Automation



Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact qualified service technician when you need maintenance.
Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.

© 2006. LS Industrial Systems Co., Ltd. All Rights Reserved.

LS Industrial Systems Co., Ltd.

www.lsis.biz

■ HEAD OFFICE

LS Tower 1026-6, Hoggie-dong, Dongan-gu, Anyang-si,
Gyeonggi-do 431-848, Korea

Tel. 82-2-2034-4888, 4689

E-mail: kykim2@lsis.biz, cshwang@lsis.biz

<http://www.lsis.biz>

■ Global Network

- **LS Industrial Systems (Middle East) FZE >> Dubai, U.A.E.**
Address: P.O.Box-114216, API World Tower, 303B, Sheikh Zayed Road, Dubai, U.A.E.
Tel: 971-4-332-8289 Fax: 971-4-332-9444 e-mail: hwyim@lsis.biz
- **Dalian LS Industrial Systems Co., Ltd. >> Dalian, China**
Address: No.15, Liaohezi 3-Road, Economic and Technical Development zone, Dalian
116600, China
Tel: 86-411-8273-7777 Fax: 86-411-8730-7560 e-mail: lixk@lsis.com.cn
- **LS Industrial Systems (Wuxi) Co., Ltd >> Wuxi, China**
Address: 102-A, National High & New Tech Industrial Development Area, Wuxi, Jiangsu,
214028, P.R. China
Tel: 86-510-8534-6666 Fax: 86-510-522-4078 e-mail: xuhg@lsis.com.cn
- **LS-VINA Industrial Systems Co., Ltd >> Hanoi, Vietnam**
Address: Nguyen Khe - Dong Anh - HaNoi - VietNam
Tel: 84-4-882-0222 Fax: 84-4-882-0220 e-mail: srjo@hn.vnn.vn
- **LS Industrial Systems Tokyo Office >> Tokyo, Japan**
Address: 16FL, Higashi-Kan, Akasaka Twin Tower 17-22, 2-chome, Akasaka, Minato-ku
Tokyo 107-8470, Japan
Tel: 81-3-3582-9128 Fax: 81-3-3582-2667 e-mail: jschuna@lsis.biz
- **LS Industrial Systems Shanghai Office >> Shanghai, China**
Address: Room E-G, 12FL Huamin Empire Plaza, No.726, West Yan'an Road Shanghai
200050, P.R. China
Tel: 86-21-5237-9977 (609) Fax: 89-21-5237-7191 e-mail: jnhk@lsis.com.cn
- **LS Industrial Systems Beijing Office >> Beijing, China**
Address: B-Tower 17FL, Beijing Global Trade Center B/D, No.36, BeiSanHuanDong-Lu,
DongCheng-District, Beijing 100013, P.R. China
Tel: 86-10-5825-6025, 7 Fax: 86-10-5825-6026 e-mail: cuixiaorong@lsis.com.cn
- **LS Industrial Systems Guangzhou Office >> Guangzhou, China**
Address: Room 1403,14FL, New Poly Tower, 2 Zhongshan Liu Road, Guangzhou,
P.R. China
Tel: 86-20-8326-6764 Fax: 86-20-8326-6287 e-mail: linsz@lsis.biz
- **LS Industrial Systems Chengdu Office >> Chengdu, China**
Address: 12FL, Guodong Buiding, No.52 Jindun Road Chengdu, 610041, P.R. China
Tel: 86-28-8612-9151 Fax: 86-28-8612-9236 e-mail: yangcf@lsis.com.cn
- **LS Industrial Systems Qingdao Office >> Qingdao, China**
Address: 7B40, Haixin Guangchang Shenye Building B, No.9, Shandong Road Qingdao
26600, P.R. China
Tel: 86-532-8501-6568 Fax: 86-532-583-3793 e-mail: ljir@lsis.com.cn

Specifications in this catalog are subject to change without notice due to continuous product development and improvement.