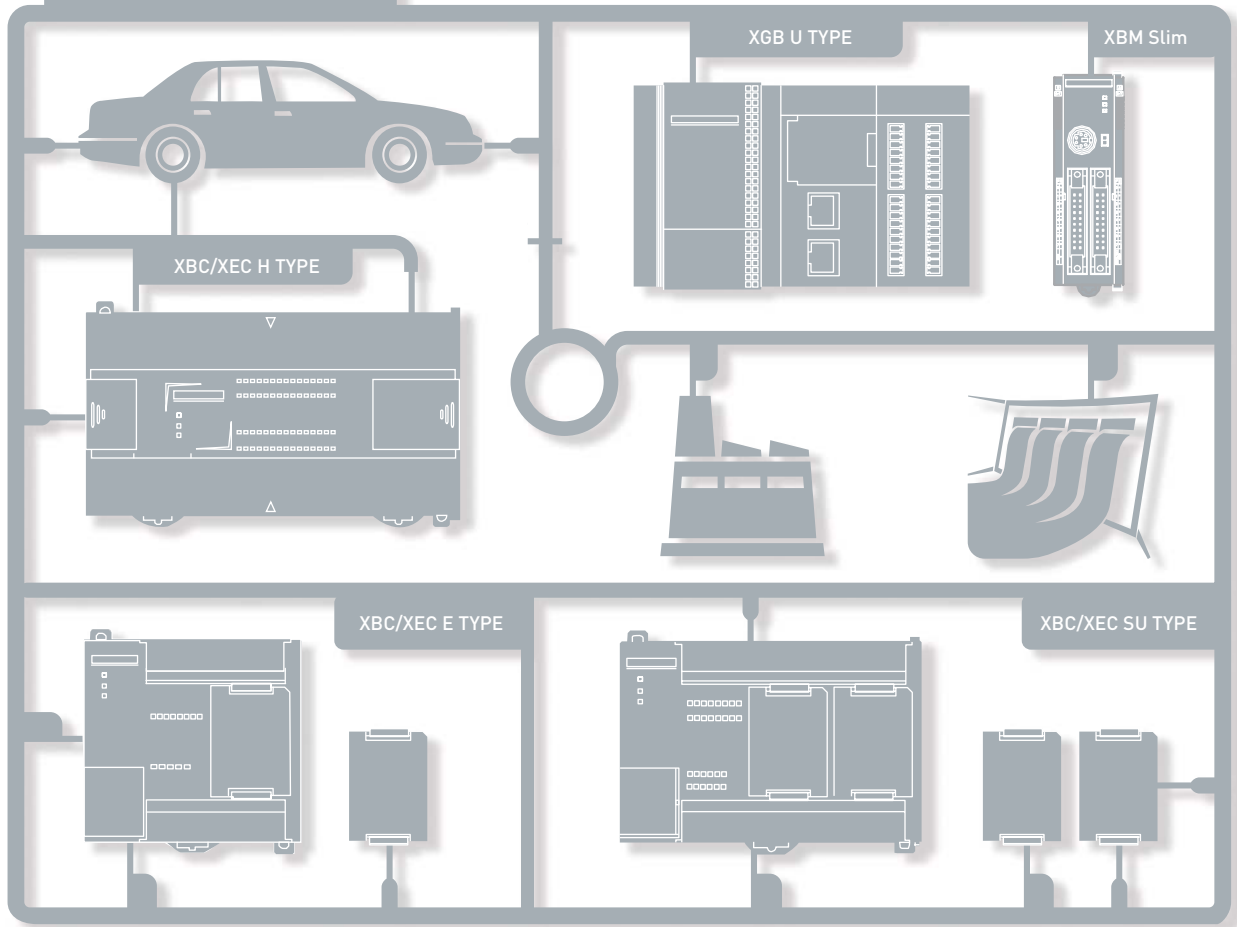




Programmable Logic Controller  
**XGB Series**

Programmable Logic Controller

**XGB** Series



EASINESS

COMPACTNESS

FUNCTIONALITY

CONVENIENCE

HIGH PERFORMANCE

Programmable Logic Controller  
**XGB Series**



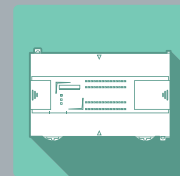
**FEATURES**  
4 ~ 15

FEATURES



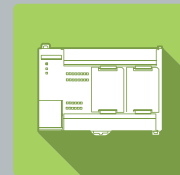
**XGB U**  
16 ~ 23

XGB U



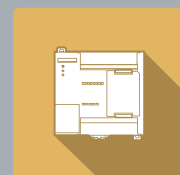
**XBC/XEC H**  
24 ~ 29

XBC/XEC H



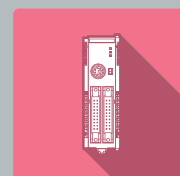
**XBC/XEC SU**  
30 ~ 33

XBC/XEC SU



**XBC/XEC E**  
40 ~ 47

XBC/XEC E



**XBM Slim**  
48 ~ 55

XBM Slim



**APPLICATION**  
56 ~ 101

APPLICATION

# All-In-One PLC

With Next Generation Technology



# XGB

XGB is a micro PLC that offers maximum performance at minimum cost.

With its high functionality, XGB supports from simple control system to complex task.

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

Based on its strengths, XGB can be used in many application fields.



# Series



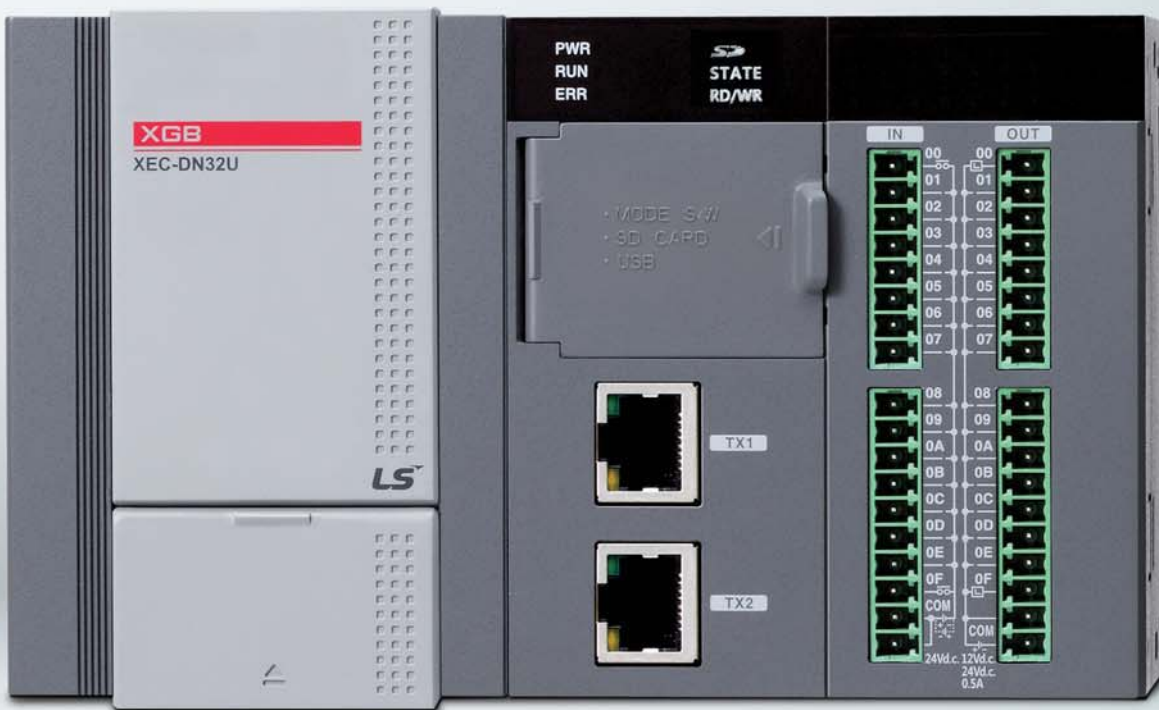
# It's Slim It's Powerful



It's Slim

Item Size(W×H×D)	XBC/XEC U Type (Standard)	XBC/XEC H Type	XBC/XEC SU Type	XBC/XEC E Type	XBM Slim Type
Size(W×H×D)	150×64×90	114×64×90	135×64×90	100×64×90	30×60×90

Expansion	Special Module	Communication Module
Size(W×H×D)	20×63×90	27×63×90



※ The actual size of the product

### It's Powerful

Ethernet  
1 Ch.  
(Dual Port)

RS-232C  
1 Ch.

RS-485  
1 Ch.

PID

Web  
Server

Data Log

USB

Pulse catch

High speed  
counter  
8 Ch.

Analog  
input/  
output 8 Ch.

Positioning  
4 axes

External  
interrupt

※ XBC/XEC U Type

What you have dreamed of, we make it happen.

XGB U sets new standards in **Ultimate performance** with its many innovations

IoT (Internet of Things) realizes smart factories

XGB-U is a **user-oriented** controller

### High Speed Backplane I/F Module

30 times faster than basic module





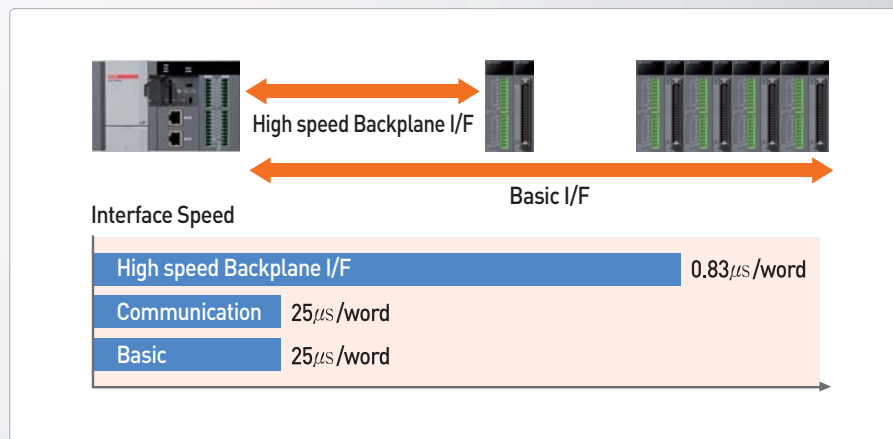


## Various Expansion

- Compatible with XGB expansion modules
- Max. 2 High speed backplane expansion modules
- Max. 10 expansion modules
- Max. 352 I/O points
- Expansion I/O module
  - DC24 input, Transistor output, Relay output
- Special module
  - Analog input, Analog output, RTD, Thermocouple, High-speed counter, Positioning (Line drive 2 axes, EtherCAT network 8 axes)
- Communication modules
  - RS-232C, RS-422/485, Ethernet, CANopen (Master/Slave), Profibus-DP (Master/Slave), DeviceNet (Slave), EtherNet/IP, RAPIEnet

## Expansion(XBC/XEC U Type)

- Max. 10 expansion modules
  - Max. 2 High speed backplane modules
  - Max. 2 Communication modules

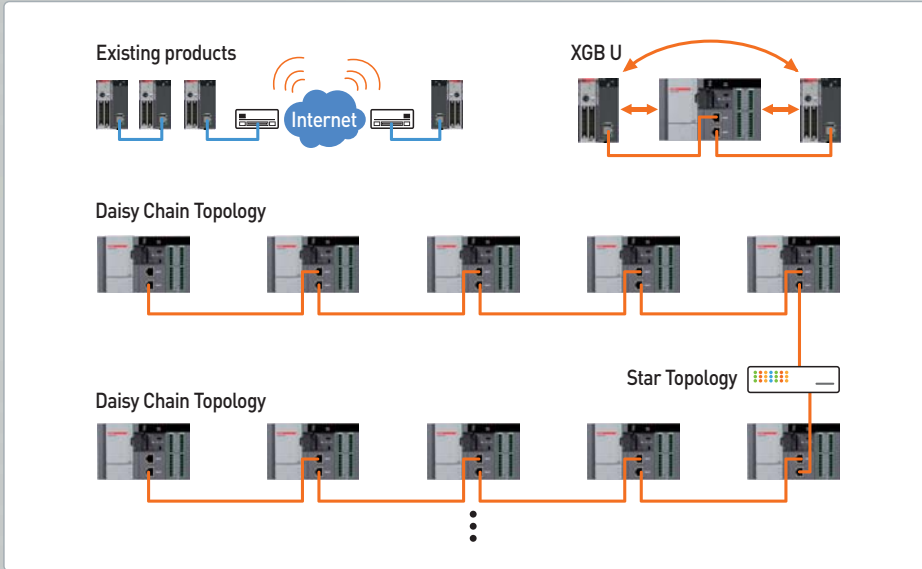


## Data Log

- Easy parameter set up for [General save], [Trigger save], [Event save] without instruction
- 16GB of operation data storable
- Additional function
  - SD memory format, FTP link, Diagnosis, Sending email attached with a data log file
  - PLC program upload/download
  - O/S update

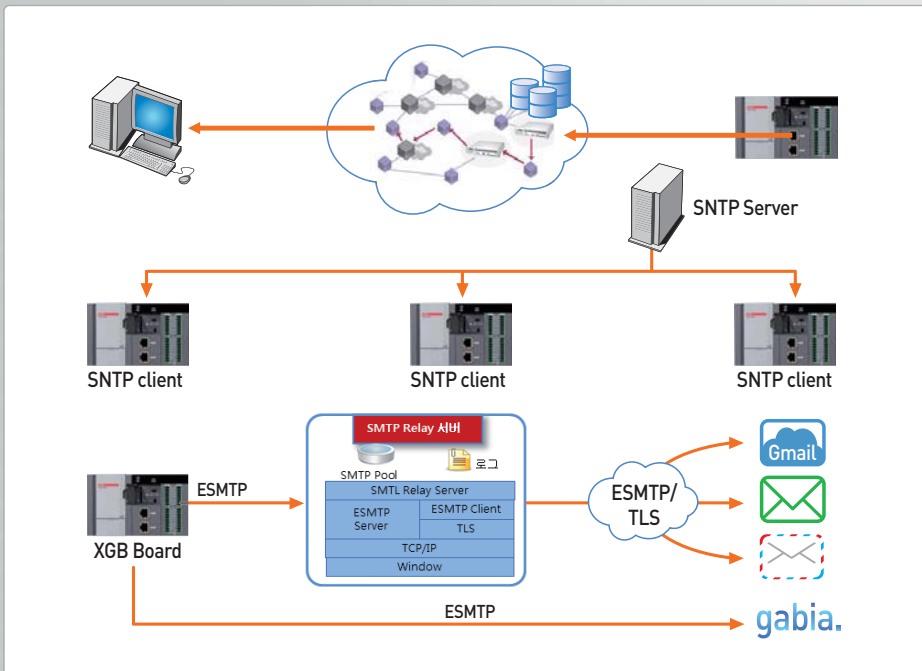
### Dual Port Ethernet(XBC/XEC U type)

- 2 ports unmanaged Ethernet switch support
- Cost saving through simple wiring
- FTP server support (Data logging)



### Web Server

- Monitoring of PLC information and data through web browser (PLC basic info., module info., diagnosis, device monitoring, flag monitoring, data log file download, O/S update, ladder program update, etc.)
- Time synchronization by setting basic parameters (SNTP: Simple Network Time Protocol)
- Email service through commercial email (SMTP: Simple Mail Transfer Protocol)



Compactness Function  
High Performance Easiness

# Ultimate Performance Universal IoT User Oriented



U will experience the utmost efficiency for your applications with U's outstanding features

### Powerful built-in function

#### Built-in high speed counter

Phase	XBC/XEC				XBM
	U	H	SU	E	
1 Phase	100kHz(8Ch)	100kHz(4Ch) 20kHz(4Ch)	100kHz(2Ch) 20kHz(6Ch)	4kHz	20kHz
	8Ch	8Ch	8Ch	4Ch	4Ch
2 Phase	50kHz(4Ch)	50kHz(4Ch) 10kHz(4Ch)	50kHz(1Ch) 8kHz(3Ch)	2kHz	2 multiplication: 10kHz 4 multiplication: 8kHz
	4Ch	4Ch	4Ch	2Ch	2Ch





### Built-in PID function

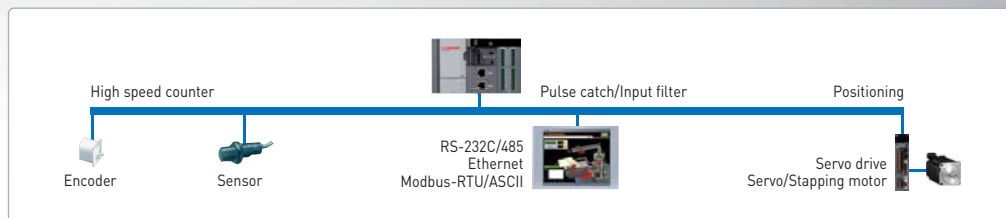
- It supports built-in PID control function up to 16 loops.
  - It provides parameter setting using XG5000, convenient loop state monitoring through trend monitor.
  - It can simply get a coefficient value by improved auto-tuning algorithm
  - Control accuracy improvement by using various additional functions such as PWM output,  $\Delta$  MV,  $\Delta$  PV, SV Ramp, etc.
  - It provides various control modes such as forward/reverse mixed operation, 2-stage SV PID control, cascade control, etc.
  - Various alarm functions such as MV high/low limit, PV high/low limit, PV variation

### Built-in analog I/O function (Available for XBC/XEC-DN32UA type only)

- Built-in analog input 4 channels (voltage/current, 14bit)
- Built-in analog output 4 channels (voltage/current 14bit)

### Built-in position control function (Available for XBC/XEC-DN32UP type only)

- Line drive output positioning function with up to 2Mpps 4-axis
- Parameter set up by XG-PM providing operation data edition, divers monitoring and diagnosis functions.

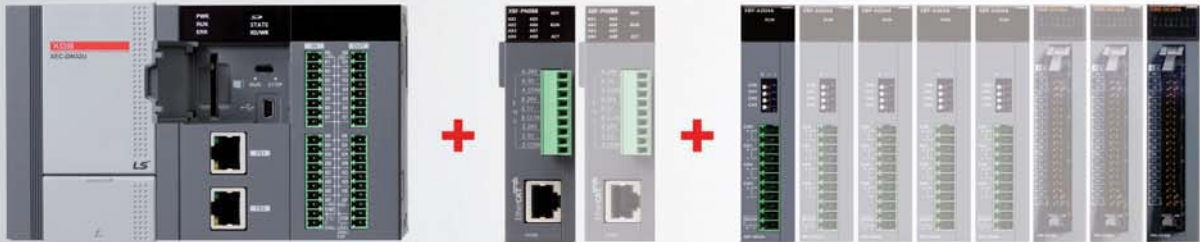


Features

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



XBC/XEC U



Standard type

High speed interface module :  
Max. 2 stages

High speed interface module +  
Basic expansion module : Max. 10 stages

XBC/XEC H

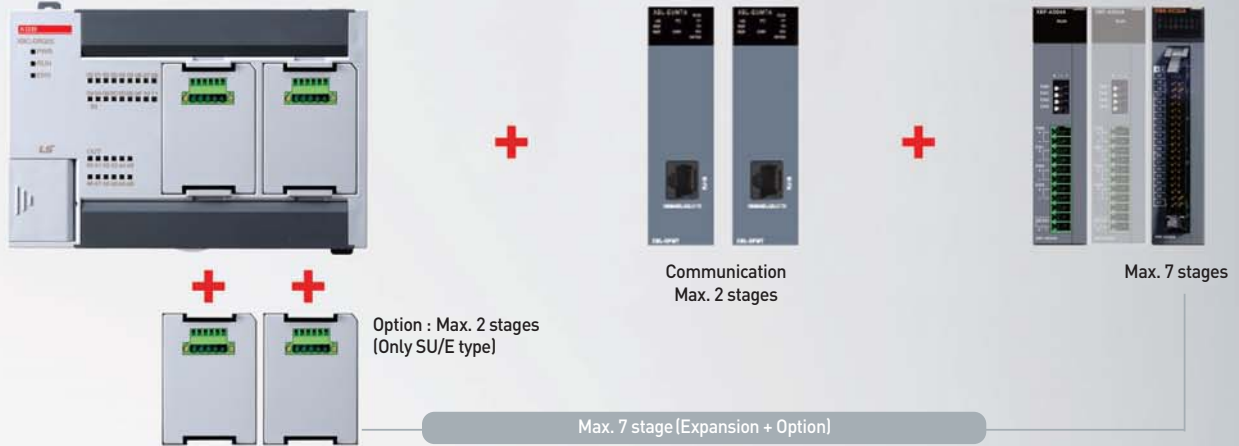


Communication Max. 2 stages

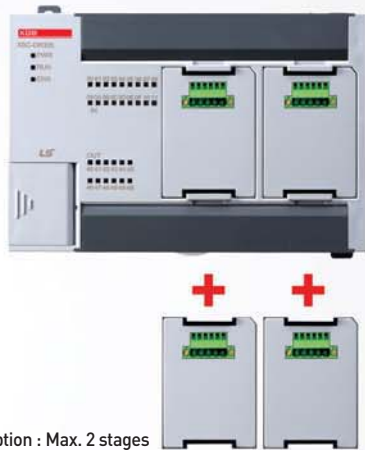
Max. 10 stages

Max. 10 stage (Including communication 2 stages)

### XBC/XEC SU

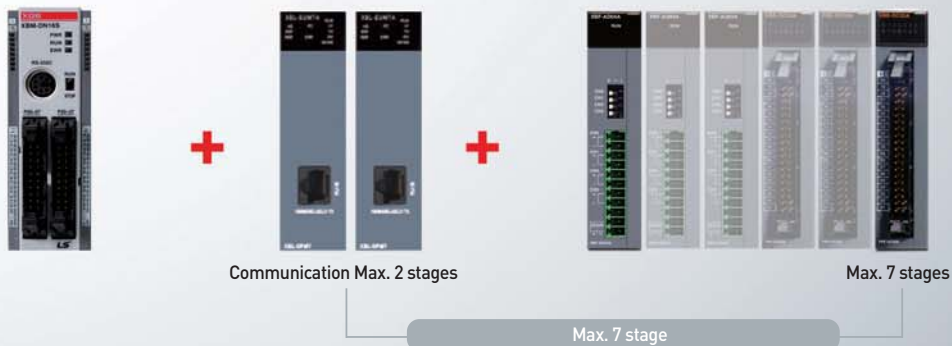


### XBC/XEC E



Option modules	
XBO-M2MB	Memory / program READ/WRITE
XBO-RTCA	RTC (Real time clock), Battery
XBO-DC04A	DC 24V, Input 4 points
XBO-TN04A	TR (Sink), Output 4 points
XBO-AD02A	Voltage/Current, Input 2ch
XBO-DA02A	Voltage/Current, Output 2ch
XBO-AH02A	Voltage/Current, Input 1ch / Voltage/Current, Output 1ch
XBO-RD01A	RTD (Resistance temperature detector), Input 1ch
XBO-TC02A	TC (Thermo couple), Input 2ch

### XBM Slim





# XGB U

Ultimate Performance  
Universal IoT  
User Oriented

## C o n t e n t s

General specifications .....	18
Performance specifications .....	19
Wiring .....	23







## Block type unit (U, H, SU, E)



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/s <sup>2</sup> (1G)	-	
	Continuous vibration			
	Frequency	Acceleration	Pulse width	
10 ≤ f < 57Hz	-	0.035mm		
57 ≤ f ≤ 150Hz	4.9m/s <sup>2</sup> (0.5G)	-		
Shock resistance	<ul style="list-style-type: none"> <li>• Peak acceleration: 147m/s<sup>2</sup> (15g)</li> <li>• Duration: 11ms</li> <li>• Pulse waveform: Half-sine, 3times each direction per each axis</li> </ul>			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	
2kV		1kV		
Operating ambience	Free from corrosive gases and excessive dust			
Altitude	Up to 2,000m			
Pollution level <sup>*1)</sup>	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 specifications | Block type unit

## XBC U

### Performance specifications

Item	Specifications						Remark
	XBC-DN32U	XBC-DR28U	XBC-DN32UA	XBC-DR28UA	XBC-DN32UP	XBC-DR28UP	
Program control method	Cyclic execution of stored program, Time-driven interrupt, Process-driven interrupt						
I/O control method	Batch processing by simultaneous scan (Refresh method), Directed by program instruction						
Program language	Ladder Diagram, Instruction List						
Number of instructions	Basic						28
	Application						677
Processing speed (Basic instruction)	60ns/step						
Program capacity	32Kstep						
Max. I/O points	352points	348points	352points	348points	352points	348points	Main + 10 expansions
Data area	P	P00000 ~ P2047F(32,768 point)					Input/Output
	M	M00000 ~ M2047F(32,768 point)					
	K	K00000 ~ K8191F(131,072 point)					
	L	L00000 ~ L4095F (65,536 point)					Link
	F	F00000 ~ F2047F (32,768 point)					Flag
	T	100ms, 10ms, 1ms: T0000 ~ T2047 (2,048 point)					Timer
	C	C000 ~ C2047 (2,048 point)					Counter
	S	S00.00 ~ S127.99					Step
	D	D00000 ~ D19999(20000word)					Data register
	U	U00.00 ~ U0B.31 (384 word)					Analog Data
	Z	Z000~Z127 (128 word)					
	N	N0000~N10239(10,240 word)					
File register	R	RAM area 2 block (R0 ~ R16,383)					
		FLASH area : 4 block (128Kbyte)					
Total program	256						
Initial task	Initial task	1					
	Cyclic task	Max 16					
	I/O task	Max 8					
	Internal device task	Max 16					
	High Speed Counter task	Max 8					
Operation mode	RUN, STOP, DEBUG						
Self-diagnosis function	Detects errors of scan time, memory, I/O and power supply						
Program port	USB 1 channel						
Retain data at power failure	Latch area setting in basic parameter						
Internal consumption current	700mA	990mA	780mA	1,040mA	1,250mA	1,550mA	
Weight	571g	630g	683g	732g	673g	722g	

\*1) Auto-MDIX (Automatic medium-dependent interface crossover) :  
It is the function to automatically detect whether the cable connected to the Ethernet port is peer-to-peer(straight) or cross cable

## XEC U

### Performance specifications

Item	Specifications						Remark		
	XEC-DN32U	XEC-DR28U	XEC-DN32UA	XEC-DR28UA	XEC-DN32UP	XEC-DR28UP			
Program control method	Cyclic execution of stored program, Time-driven interrupt, Process-driven interrupt								
I/O control method	Batch processing by simultaneous scan (Refresh method), Directed by program instruction								
Program language	Ladder Diagram, Instruction List, SFC, ST								
Number of instructions	Operator	18							
	Basic function	136 + Floating-point Arithmetic Functions							
	Basic function block	43							
	Special function block	Each special module has own special function blocks							
Processing speed (Basic instruction)	60ns/step								
Program memory	384Kbyte								
Max. I/O points	352points	348points	352points	348points	352points	348points	Main + 10 expansions		
Data area	Symbolic variable(A)	64KB (Retain setting available)							
	Input variable(I)	2KB							
	Output variable(Q)	2KB							
	Direct variable	M	32KB (Retain setting available)						
		R	32KB * 2blocks						
		W	64KB						Same area with R
	Flag variable	F	4KB						System flag
		K	16KB						Keep relay
		L	8KB						Link relay
		U	768 Byte						Analog data refresh area
N		20KB						P2P parameter	
Flash area	4blocks (128Kbyte)						Using R device		
Timer	No limit in points (Time range: 0.001~ 4,294,967.295)								
Counter	No limit in points (Counter range: 64 bit range)								
Total program	256								
Initial task	Initial task	1							
	Cyclic task	Max 16							
	Initial task	1							
	Cyclic task	Max 16							
	I/O task	Max 8							
	Internal device task	Max 16							
	High Speed Counter task	Max 8							
Operation mode	RUN, STOP, DEBUG								
Self-diagnosis function	Detects errors of scan time, memory, I/O and power supply								
Program port	USB 1 channel								
Retain data at power failure	Latch area setting in basic parameter								
Internal consumption current	700mA	990mA	780mA	1,040mA	1,250mA	1,550mA			
Weight	571g	630g	683g	732g	673g	722g			



Built-in function

Item		Specifications					Remark
		XBC/XEC-DN32U	XBC/XEC-DR28U	XBC/XEC-DN32UA	XBC/XEC-DR28UA	XBC/XEC-DN32UP	
PID control		Control by instruction, auto-tuning, PWM output, Forced output, Operation scan time setting, Antiwindup, Delta MV, PV tracking, Hybrid operation, Cascade operation					
Seria	Protocol	Dedicated protocol, Modbus protocol, User defined protocol, LS bus(inverter protocol)					Embedded00 P2P:01
	Channel	RS-232C 1 port and RS-485 1 port					
Ethernet	Transfer spec	Cable: 100Base-TX Speed: 100Mbps Auto-MDIX *1 IEEE 802.3					Embedded01 P2P:02 High-speed link:01
	Topology	Line, star					
	Diagnosis	Module information, service condition					
	Protocol	XGT dedicated Modbus TCP/IP user define frame					
	Service	P2P, High Speed link, Remote connection					
Datalog	Group	Max 10 group					
	Data set	32 per group					
	Extension	csv file					
	File size	Max 16Mbyte					
	SD memory type	SD,SDHC type(Recommand: SanDisk,Transcend)					
	Memory size	Max 16GB					
	File system	FAT32					
High Speed Counter	Performance	1-phase : 100β' 8 channels 2-phase : 50β' 4 channels					
	Counter mode	4 counter modes are supported based on input pulse and INC/DEC method • 1 pulse operation Mode : INC/DEC count by program • 1 pulse operation Mode : INC/DEC count by phase B pulse input • 2 pulse operation Mode : INC/DEC count by input pulse • 2 pulse operation Mode : INC/DEC count by difference of phase					
	Function	• Internal/external preset • Latch counter • Compare output • No. of rotation per unit time					

\*1) Auto-MDIX(Automatic medium-dependent interface crossover) : It is the function to automatically detect whether the cable connected to the Ethernet port is peer-to-peer(straight) or cross cable

XGB U

## XEC U

### Positioning

Item	Specifications	Remark
<b>Basic Function</b>	No. of control axis: 4axis Control Method:Position, Speed, Speed/Position,Feed Control Control Unit: Pulse ,mm, inch, degree Positioning Data: Each axis can have up to 400 data(Step number:1~400) Operation pattern: End, Keep, Continuous Operation method: Singular, Repeat	Available On UP type
<b>interpolation</b>	2/3/4 axis linear interpolation 2 axis circular interpolation 3 axis helical interpolation	
<b>Positioning</b>	Method: Absolute/Incremental method Address range: 2,147,483,648~2,147,483,647 Speed: Max 2Mpps(1~2,000,000pps) Acc /Dec process: Trapezoid type, S-type	
<b>Homing method</b>	DOG+HOME(Off), DOG+HOME(On), Upper limit + HOME,DOG, High speed, Upper/Lower limit, HOME	
<b>Manual operation</b>	Jog operation, MPG operation, Inching operation	
<b>Encoder input</b>	Line drive(RS-422A) input 1Channel(Max 200kpps)	

### Analog

Item	Specifications	Remark			
<b>Analog input</b>	<b>Channels</b>	4channels (current/voltage)	Available On UP type		
	<b>Specification</b>	<b>Input Range</b>		Voltage: 1~5V, 0~5V, 0~10V, -10~10V, Current: 4~20 mA,0~20 mA Current input or Voltage input can be selected through the external terminal wiring setting.	
		<b>Input resistance</b>		1 MΩ or more(voltage input), 250 Ω (current input)	
		<b>Max.Resolution</b>		1/16000	
				0.250mV(1 ~ 5V), 0.3125mV(0 ~ 5V) 0.625mV(0 ~ 10V), 1.250mV(±10V)	1.0 μA (4 ~ 20 mA) 1.25 μA (0 ~ 20 mA)
		<b>Accuracy</b>		±0.2% or less (When ambient temperature is 25 °C) ±0.3% or less (When ambient temperature is 0 ~ 55 °C)	
<b>Analog output</b>	<b>Channels</b>	Voltage 2 channels ,Current 2 channels	Available On UP type		
	<b>Specification</b>	<b>Output Range</b>		Voltage: 1~5V, 0~5V, 0~10V, -10~10V, Current: 4~20 mA,0~20 mA Output ranges are set in user program or I/O parameter per each channel.	
		<b>Load resistance</b>		1 MΩ or more(voltage output), 600 Ω or less(current output)	
		<b>Max.Resolution</b>		1/16000	
				0.250mV(1 ~ 5V), 0.3125mV(0 ~ 5V) 0.625mV(0 ~ 10V), 1.250mV(±10V)	1.0 μA (4 ~ 20 mA) 1.25 μA (0 ~ 20 mA)
		<b>Accuracy</b>		±0.2% or less (When ambient temperature is 25 °C) ±0.3% or less (When ambient temperature is 0 ~ 55 °C)	

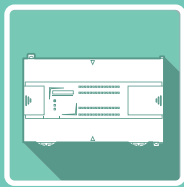
## XBC-DN32U (16 point DC24V input)

Circuit configuration		No.	Contact	No.	Contact	Type
	TB1	0	TB1	8		
	TB2	1	TB2	9		
	TB3	2	TB3	A		
	TB4	3	TB4	B		
	TB5	4	TB5	C		
	TB6	5	TB6	D		
	TB7	6	TB7	E		
	TB8	7	TB8	F		
			TB9	COM		
		TB10	COM			

## XBC-DN32U 16 point transistor output (Sink type)

Circuit configuration		No.	Contact	Type
	TB1	0		
	TB2	1		
	TB3	2		
	TB4	3		
	TB5	4		
	TB6	5		
	TB7	6		
	TB8	7		
	TB1	8		
	TB2	9		
	TB3	A		
	TB4	B		
	TB5	C		
	TB6	D		
	TB7	E		
	TB8	F		
TB9	DC12/24V			
TB10	COM			

XGB U



# XBC/XEC H

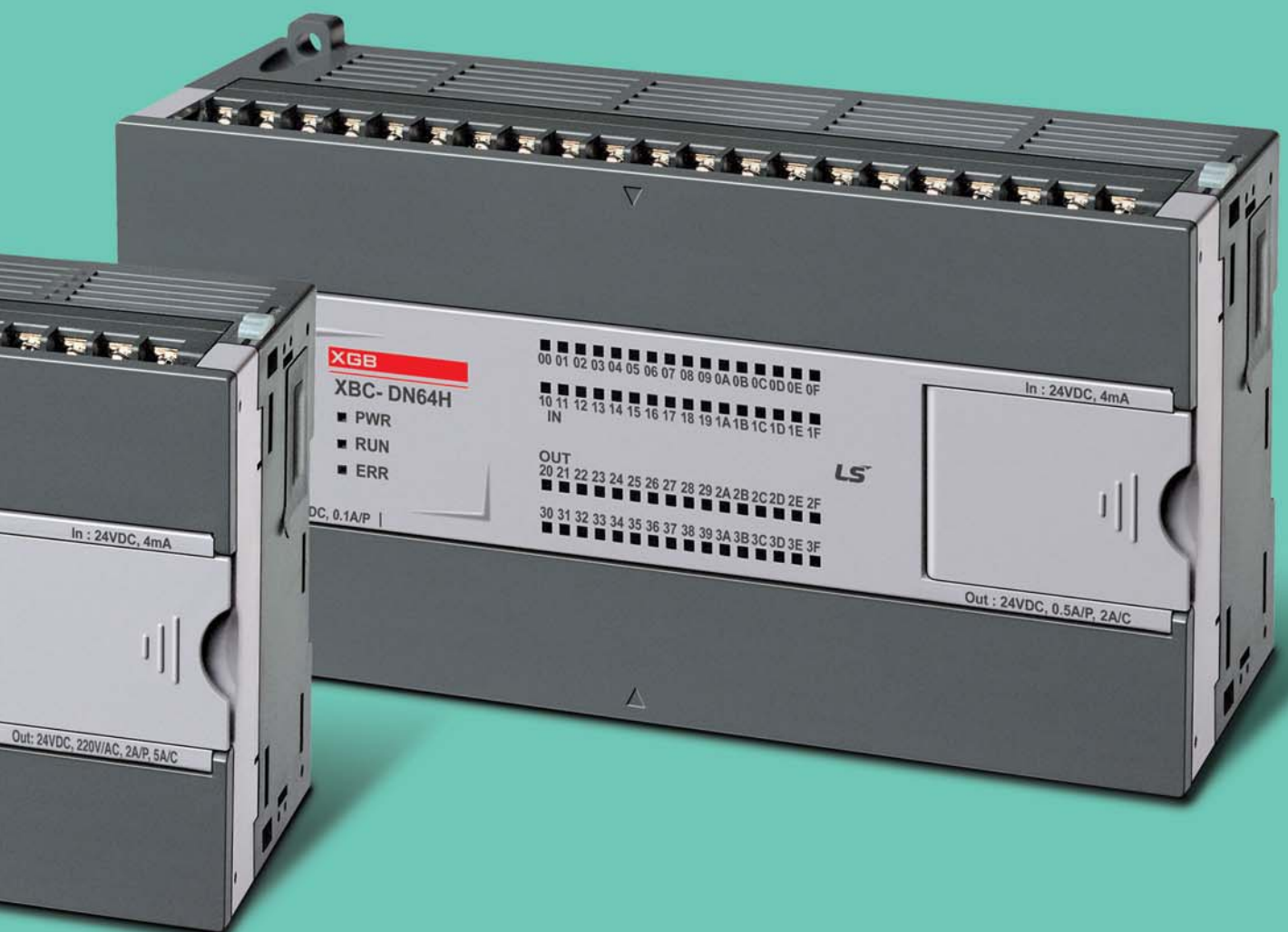
High Performance

## C o n t e n t s

Performance specifications ..... 26  
Wiring ..... 27







## High performance type

### Performance specifications

Item	XBC/XEC-DR32H	XBC/XEC-DN32H	XBC/XEC-DR64H	XBC/XEC-DN64H
	XBC-DR32H/DC <sup>*1)</sup>	XEC-DP32H <sup>*1)</sup>	XBC-DR64H/DC <sup>*1)</sup>	XEC-DP64H <sup>*1)</sup>
	XEC-DR32H/DI	XBC-DN32H/DC	XEC-DR64H/DI	XBC-DN64H/DC
Control method	Repetitive, cyclic, interrupt, constant scan			
I/O control method	Refresh mode (Batch processing by scan synchronization), Direct mode by instruction			
Programming language	Ladder diagram or IEC standard (LD, SFC, ST) <sup>*1)</sup>			
Processing speed	83 ns / Step			
Program capacity	15Kstep (IEC type: 200KB)			
Main unit I/O points	32 (Input:16, Output:16)	32 (Input:16, Output:16)	64 (Input: 32, Output: 32)	64 (Input: 32, Output: 32)
Max. I/O points (Main + Expansion 10 stages)	352 points		384 points	
Total program	128			
Operation mode	RUN, STOP, DEBUG			
Self diagnosis	Detects errors of scan time, memory error, I/O error, battery error, power error, etc.			
Program port	USB (Rev 1.1), RS-232C 1 channel (Loader)			
Retain data at power failure	Latch area setting at basic parameter			
Built-in functions	RS-232C / RS-485 (2 ch), Pulse catch, Input filter, External interrupt, PID control, High-speed counter, Positioning, RTC			
<b>Data memory</b>				
<b>XBC</b>		<b>XEC (IEC type)</b>		
P	P0000 ~ P1023F (16,384 points)	<b>Symbolic variable</b>	A	32KB (Max. 16KB retain setting available)
M	M0000 ~ M1023F (16,384 points)	<b>Input variable</b>	I	2KB (%IX 15.15.63)
K	K0000 ~ K4095F (65,536 points)	<b>Output variable</b>	Q	2KB (%QX 15.15.63)
L	L0000 ~ L2047F (32,768 points)	<b>Direct variable</b>	M	16KB (Max. 8KB retain setting available)
F	F0000 ~ F1023F (16,384 points)		R	20KB (1 block)
T	100ms, 10ms, 1ms: T0000 ~ T1023 (1,024)(Adjustable by parameter setting)		W	20KB
C	C0000 ~ C1023 (1,024)	<b>Flag variable</b>	F	2KB
S	S00.00 ~ S127.99		K	8KB
D	D0000 ~ D10239 (10,240 word)		L	4KB
U	U00.00 ~ U0A.31 (Analog data refresh area: 352 word)		N	10KB
Z	Z000 ~ Z127 (128 word)		U	1KB
N	N000 ~ N5119 (5,120 word)	<b>Flash area</b>	R	20KB (2 blocks)

<sup>\*1)</sup> XEC is IEC standard language programming.

# Wiring | XBC/XEC H input/output wiring

**XBC/XEC-DN(R)32H**  
**XBC/XEC-DN/DR/DP32H**  
 Input wiring  
 (sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type																																																																																																					
<p>Terminal block no.</p>	TB2	485+	TB1	RX	<table border="1"> <tr><td>⊕</td><td></td><td></td></tr> <tr><td></td><td>RX</td><td>TB1</td></tr> <tr><td>TB2</td><td>485+</td><td>TX</td><td>TB3</td></tr> <tr><td></td><td>TX</td><td></td><td></td></tr> <tr><td>TB4</td><td>485-</td><td>SG</td><td>TB5</td></tr> <tr><td></td><td>SG</td><td></td><td></td></tr> <tr><td>TB6</td><td>P00</td><td>P01</td><td>TB7</td></tr> <tr><td></td><td>P01</td><td></td><td></td></tr> <tr><td>TB8</td><td>P02</td><td>P03</td><td>TB9</td></tr> <tr><td></td><td>P03</td><td></td><td></td></tr> <tr><td>TB1</td><td>P04</td><td>P05</td><td>TB1</td></tr> <tr><td></td><td>P05</td><td></td><td></td></tr> <tr><td>TB1</td><td>P06</td><td>P07</td><td>TB1</td></tr> <tr><td></td><td>P07</td><td></td><td></td></tr> <tr><td>TB1</td><td>P08</td><td>P09</td><td>TB1</td></tr> <tr><td></td><td>P09</td><td></td><td></td></tr> <tr><td>TB1</td><td>P0A</td><td>P0B</td><td>TB1</td></tr> <tr><td></td><td>P0B</td><td></td><td></td></tr> <tr><td>TB1</td><td>P0C</td><td>P0D</td><td>TB1</td></tr> <tr><td></td><td>P0D</td><td></td><td></td></tr> <tr><td>TB2</td><td>P0E</td><td>P0F</td><td>TB2</td></tr> <tr><td></td><td>P0F</td><td></td><td></td></tr> <tr><td>TB2</td><td>COM</td><td>24G</td><td>TB2</td></tr> <tr><td></td><td>24G</td><td></td><td></td></tr> <tr><td>TB3</td><td>24V</td><td>⊕</td><td></td></tr> </table>	⊕				RX	TB1	TB2	485+	TX	TB3		TX			TB4	485-	SG	TB5		SG			TB6	P00	P01	TB7		P01			TB8	P02	P03	TB9		P03			TB1	P04	P05	TB1		P05			TB1	P06	P07	TB1		P07			TB1	P08	P09	TB1		P09			TB1	P0A	P0B	TB1		P0B			TB1	P0C	P0D	TB1		P0D			TB2	P0E	P0F	TB2		P0F			TB2	COM	24G	TB2		24G			TB3	24V	⊕		TB4	485-	TB3	TX
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TB22	COM	TB21	0F																																																																																																								
TB24	24V	TB23	24G																																																																																																								

**XBC/XEC-DR32H**  
 Relay output wiring type

Circuit configuration		No.	Contact	No.	Contact	Type																																																																																																				
<p>Terminal block no.</p>	TB2	FG	TB1	Power	<table border="1"> <tr><td>⊕</td><td></td><td></td></tr> <tr><td></td><td>AC100</td><td>TB1</td></tr> <tr><td>TB2</td><td>FG</td><td>-240V</td><td>TB3</td></tr> <tr><td></td><td>-240V</td><td></td><td></td></tr> <tr><td>TB4</td><td>NC</td><td>P20</td><td>TB5</td></tr> <tr><td></td><td>P20</td><td></td><td></td></tr> <tr><td>TB6</td><td>P21</td><td>P22</td><td>TB7</td></tr> <tr><td></td><td>P22</td><td></td><td></td></tr> <tr><td>TB8</td><td>P23</td><td>COM0</td><td>TB9</td></tr> <tr><td></td><td>COM0</td><td></td><td></td></tr> <tr><td>TB10</td><td>P24</td><td>P25</td><td>TB11</td></tr> <tr><td></td><td>P25</td><td></td><td></td></tr> <tr><td>TB12</td><td>P26</td><td>P27</td><td>TB13</td></tr> <tr><td></td><td>P27</td><td></td><td></td></tr> <tr><td>TB14</td><td>COM1</td><td>P28</td><td>TB15</td></tr> <tr><td></td><td>P28</td><td></td><td></td></tr> <tr><td>TB16</td><td>P29</td><td>P2A</td><td>TB17</td></tr> <tr><td></td><td>P2A</td><td></td><td></td></tr> <tr><td>TB18</td><td>P28</td><td>COM2</td><td>TB19</td></tr> <tr><td></td><td>COM2</td><td></td><td></td></tr> <tr><td>TB20</td><td>P2C</td><td>P2D</td><td>TB21</td></tr> <tr><td></td><td>P2D</td><td></td><td></td></tr> <tr><td>TB22</td><td>P2E</td><td>P2F</td><td>TB23</td></tr> <tr><td></td><td>P2F</td><td></td><td></td></tr> <tr><td>TB24</td><td>COM3</td><td>⊕</td><td></td></tr> </table>	⊕				AC100	TB1	TB2	FG	-240V	TB3		-240V			TB4	NC	P20	TB5		P20			TB6	P21	P22	TB7		P22			TB8	P23	COM0	TB9		COM0			TB10	P24	P25	TB11		P25			TB12	P26	P27	TB13		P27			TB14	COM1	P28	TB15		P28			TB16	P29	P2A	TB17		P2A			TB18	P28	COM2	TB19		COM2			TB20	P2C	P2D	TB21		P2D			TB22	P2E	P2F	TB23		P2F			TB24	COM3	⊕		TB4	NC	TB3
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**XBC/XEC-DN32H**  
 Transistor output wiring  
 (sink type)

Circuit configuration		No.	Contact	No.	Contact	Type																																																																																																				
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\* XBC input : P00~P1F, XEC input : I00~I31 \* XBC output : P21~P3F, XEC output : Q00~Q31

## XEC-DP32H

Transistor output wiring  
(source type)

Circuit configuration		No.	Contact	No.	Contact	Type																																																											
	TB2	FG	TB1	Power	<table border="1"> <tr><td>TB1</td><td>⊕</td><td></td><td></td></tr> <tr><td>TB2</td><td>FG</td><td>AC100</td><td>TB1</td></tr> <tr><td>TB3</td><td>N</td><td>~240V</td><td>TB3</td></tr> <tr><td>TB4</td><td></td><td>Q00</td><td>TB5</td></tr> <tr><td>TB5</td><td>Q01</td><td>Q02</td><td>TB7</td></tr> <tr><td>TB6</td><td>Q03</td><td>COM0</td><td>TB9</td></tr> <tr><td>TB7</td><td>Q04</td><td>Q05</td><td>TB11</td></tr> <tr><td>TB8</td><td>Q06</td><td>Q07</td><td>TB13</td></tr> <tr><td>TB9</td><td>COM1</td><td>Q08</td><td>TB15</td></tr> <tr><td>TB10</td><td>Q09</td><td>Q10</td><td>TB17</td></tr> <tr><td>TB11</td><td>Q11</td><td>COM2</td><td>TB19</td></tr> <tr><td>TB12</td><td>Q12</td><td>Q13</td><td>TB21</td></tr> <tr><td>TB13</td><td>Q14</td><td>Q15</td><td>TB23</td></tr> <tr><td>TB14</td><td>COM3</td><td>⊕</td><td></td></tr> </table>	TB1	⊕			TB2	FG	AC100	TB1	TB3	N	~240V	TB3	TB4		Q00	TB5	TB5	Q01	Q02	TB7	TB6	Q03	COM0	TB9	TB7	Q04	Q05	TB11	TB8	Q06	Q07	TB13	TB9	COM1	Q08	TB15	TB10	Q09	Q10	TB17	TB11	Q11	COM2	TB19	TB12	Q12	Q13	TB21	TB13	Q14	Q15	TB23	TB14	COM3	⊕		TB4	DC12/24V	TB3	
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## XBC-DN(R)64H XEC-DN/DR/DP64H

Input wiring  
(sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type																																																																																																																																																																											
	TB2	485+	TB1	RX	<table border="1"> <tr><td>TB1</td><td>⊕</td><td></td><td></td></tr> <tr><td>TB2</td><td>485+</td><td>RX</td><td>TB1</td></tr> <tr><td>TB3</td><td>485-</td><td>TX</td><td>TB3</td></tr> <tr><td>TB4</td><td>00</td><td>SG</td><td>TB5</td></tr> <tr><td>TB5</td><td>01</td><td>I01</td><td>TB7</td></tr> <tr><td>TB6</td><td>02</td><td>I02</td><td>TB9</td></tr> <tr><td>TB7</td><td>03</td><td>I03</td><td>TB11</td></tr> <tr><td>TB8</td><td>04</td><td>I04</td><td>TB13</td></tr> <tr><td>TB9</td><td>05</td><td>I05</td><td>TB15</td></tr> <tr><td>TB10</td><td>06</td><td>I06</td><td>TB17</td></tr> <tr><td>TB11</td><td>07</td><td>I07</td><td>TB19</td></tr> <tr><td>TB12</td><td>08</td><td>I08</td><td>TB21</td></tr> <tr><td>TB13</td><td>09</td><td>I09</td><td>TB23</td></tr> <tr><td>TB14</td><td>0A</td><td>I10</td><td>TB25</td></tr> <tr><td>TB15</td><td>0B</td><td>I11</td><td>TB27</td></tr> <tr><td>TB16</td><td>0C</td><td>I12</td><td>TB29</td></tr> <tr><td>TB17</td><td>0D</td><td>I13</td><td>TB31</td></tr> <tr><td>TB18</td><td>0E</td><td>I14</td><td>TB33</td></tr> <tr><td>TB19</td><td>0F</td><td>I15</td><td>TB35</td></tr> <tr><td>TB20</td><td>0E</td><td>MC</td><td>TB37</td></tr> <tr><td>TB21</td><td>0F</td><td>24V</td><td>TB39</td></tr> <tr><td>TB22</td><td>COM0</td><td>24V</td><td>TB41</td></tr> <tr><td>TB23</td><td>MC</td><td></td><td></td></tr> <tr><td>TB24</td><td>10</td><td></td><td></td></tr> <tr><td>TB25</td><td>11</td><td></td><td></td></tr> <tr><td>TB26</td><td>12</td><td></td><td></td></tr> <tr><td>TB27</td><td>13</td><td></td><td></td></tr> <tr><td>TB28</td><td>14</td><td></td><td></td></tr> <tr><td>TB29</td><td>15</td><td></td><td></td></tr> <tr><td>TB30</td><td>16</td><td></td><td></td></tr> <tr><td>TB31</td><td>17</td><td></td><td></td></tr> <tr><td>TB32</td><td>18</td><td></td><td></td></tr> <tr><td>TB33</td><td>19</td><td></td><td></td></tr> <tr><td>TB34</td><td>1A</td><td></td><td></td></tr> <tr><td>TB35</td><td>1B</td><td></td><td></td></tr> <tr><td>TB36</td><td>1C</td><td></td><td></td></tr> <tr><td>TB37</td><td>1D</td><td></td><td></td></tr> <tr><td>TB38</td><td>1E</td><td></td><td></td></tr> <tr><td>TB39</td><td>1F</td><td></td><td></td></tr> <tr><td>TB40</td><td>COM1</td><td></td><td></td></tr> <tr><td>TB41</td><td>24G</td><td></td><td></td></tr> <tr><td>TB42</td><td>24V</td><td>⊕</td><td></td></tr> </table>	TB1	⊕			TB2	485+	RX	TB1	TB3	485-	TX	TB3	TB4	00	SG	TB5	TB5	01	I01	TB7	TB6	02	I02	TB9	TB7	03	I03	TB11	TB8	04	I04	TB13	TB9	05	I05	TB15	TB10	06	I06	TB17	TB11	07	I07	TB19	TB12	08	I08	TB21	TB13	09	I09	TB23	TB14	0A	I10	TB25	TB15	0B	I11	TB27	TB16	0C	I12	TB29	TB17	0D	I13	TB31	TB18	0E	I14	TB33	TB19	0F	I15	TB35	TB20	0E	MC	TB37	TB21	0F	24V	TB39	TB22	COM0	24V	TB41	TB23	MC			TB24	10			TB25	11			TB26	12			TB27	13			TB28	14			TB29	15			TB30	16			TB31	17			TB32	18			TB33	19			TB34	1A			TB35	1B			TB36	1C			TB37	1D			TB38	1E			TB39	1F			TB40	COM1			TB41	24G			TB42	24V	⊕		TB4	485-	TB3	TX
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TB42	24V	TB41	24G																																																																																																																																																																														

## XBC-DR60H XEC-DR64H

Relay output wiring

Circuit configuration		No.	Contact	No.	Contact	Type																																																																																															
	TB2	FG	TB1	Power	<table border="1"> <tr><td>TB1</td><td>⊕</td><td></td><td></td></tr> <tr><td>TB2</td><td>FG</td><td>AC100</td><td>TB1</td></tr> <tr><td>TB3</td><td>N</td><td>~240V</td><td>TB3</td></tr> <tr><td>TB4</td><td></td><td>Q00</td><td>TB5</td></tr> <tr><td>TB5</td><td>Q01</td><td>Q02</td><td>TB7</td></tr> <tr><td>TB6</td><td>Q03</td><td>COM0</td><td>TB9</td></tr> <tr><td>TB7</td><td>Q04</td><td>Q05</td><td>TB11</td></tr> <tr><td>TB8</td><td>Q06</td><td>Q07</td><td>TB13</td></tr> <tr><td>TB9</td><td>COM1</td><td>Q08</td><td>TB15</td></tr> <tr><td>TB10</td><td>Q09</td><td>Q10</td><td>TB17</td></tr> <tr><td>TB11</td><td>Q11</td><td>COM2</td><td>TB19</td></tr> <tr><td>TB12</td><td>Q12</td><td>Q13</td><td>TB21</td></tr> <tr><td>TB13</td><td>Q14</td><td>Q15</td><td>TB23</td></tr> <tr><td>TB14</td><td>COM2</td><td>Q16</td><td>TB25</td></tr> <tr><td>TB15</td><td>Q17</td><td>Q18</td><td>TB27</td></tr> <tr><td>TB16</td><td>Q19</td><td>Q20</td><td>TB29</td></tr> <tr><td>TB17</td><td>Q21</td><td>Q22</td><td>TB31</td></tr> <tr><td>TB18</td><td>Q23</td><td>COM4</td><td>TB33</td></tr> <tr><td>TB19</td><td>Q24</td><td>Q25</td><td>TB35</td></tr> <tr><td>TB20</td><td>Q26</td><td>Q27</td><td>TB37</td></tr> <tr><td>TB21</td><td>Q28</td><td>Q29</td><td>TB39</td></tr> <tr><td>TB22</td><td>Q30</td><td>Q31</td><td>TB41</td></tr> <tr><td>TB23</td><td>COM5</td><td>⊕</td><td></td></tr> </table>	TB1	⊕			TB2	FG	AC100	TB1	TB3	N	~240V	TB3	TB4		Q00	TB5	TB5	Q01	Q02	TB7	TB6	Q03	COM0	TB9	TB7	Q04	Q05	TB11	TB8	Q06	Q07	TB13	TB9	COM1	Q08	TB15	TB10	Q09	Q10	TB17	TB11	Q11	COM2	TB19	TB12	Q12	Q13	TB21	TB13	Q14	Q15	TB23	TB14	COM2	Q16	TB25	TB15	Q17	Q18	TB27	TB16	Q19	Q20	TB29	TB17	Q21	Q22	TB31	TB18	Q23	COM4	TB33	TB19	Q24	Q25	TB35	TB20	Q26	Q27	TB37	TB21	Q28	Q29	TB39	TB22	Q30	Q31	TB41	TB23	COM5	⊕		TB4	NC	TB5	20
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\* XBC input : P00~P1F, XEC input : I00~I31 \* XBC output : P21~P3F, XEC output : Q00~Q31

**XBC-DP64H**

Transistor output wiring  
(sink type)

Circuit configuration	No.	Contact	No.	Contact	Type																																																																																				
	TB2	FG	TB1	Power	<table border="1"> <tr> <td>TB1</td> <td>FG</td> <td>AC100</td> <td>TB1</td> </tr> <tr> <td>TB3</td> <td>N</td> <td>-240V</td> <td>TB3</td> </tr> <tr> <td>TB5</td> <td>Q01</td> <td>Q00</td> <td>TB5</td> </tr> <tr> <td>TB7</td> <td>Q03</td> <td>Q02</td> <td>TB7</td> </tr> <tr> <td>TB9</td> <td>Q04</td> <td>COM0</td> <td>TB9</td> </tr> <tr> <td>TB11</td> <td>Q06</td> <td>Q05</td> <td>TB11</td> </tr> <tr> <td>TB13</td> <td>Q07</td> <td>Q07</td> <td>TB13</td> </tr> <tr> <td>TB15</td> <td>Q08</td> <td>Q08</td> <td>TB15</td> </tr> <tr> <td>TB17</td> <td>Q10</td> <td>Q10</td> <td>TB17</td> </tr> <tr> <td>TB19</td> <td>Q11</td> <td>COM2</td> <td>TB19</td> </tr> <tr> <td>TB21</td> <td>Q12</td> <td>Q13</td> <td>TB21</td> </tr> <tr> <td>TB23</td> <td>Q14</td> <td>Q15</td> <td>TB23</td> </tr> <tr> <td>TB25</td> <td>Q15</td> <td>Q16</td> <td>TB25</td> </tr> <tr> <td>TB27</td> <td>Q17</td> <td>Q18</td> <td>TB27</td> </tr> <tr> <td>TB29</td> <td>Q19</td> <td>Q20</td> <td>TB29</td> </tr> <tr> <td>TB31</td> <td>Q21</td> <td>Q22</td> <td>TB31</td> </tr> <tr> <td>TB33</td> <td>Q23</td> <td>COM4</td> <td>TB33</td> </tr> <tr> <td>TB35</td> <td>Q24</td> <td>Q25</td> <td>TB35</td> </tr> <tr> <td>TB37</td> <td>Q28</td> <td>Q27</td> <td>TB37</td> </tr> <tr> <td>TB39</td> <td>Q30</td> <td>Q29</td> <td>TB39</td> </tr> <tr> <td>TB41</td> <td>Q31</td> <td>Q31</td> <td>TB41</td> </tr> </table>	TB1	FG	AC100	TB1	TB3	N	-240V	TB3	TB5	Q01	Q00	TB5	TB7	Q03	Q02	TB7	TB9	Q04	COM0	TB9	TB11	Q06	Q05	TB11	TB13	Q07	Q07	TB13	TB15	Q08	Q08	TB15	TB17	Q10	Q10	TB17	TB19	Q11	COM2	TB19	TB21	Q12	Q13	TB21	TB23	Q14	Q15	TB23	TB25	Q15	Q16	TB25	TB27	Q17	Q18	TB27	TB29	Q19	Q20	TB29	TB31	Q21	Q22	TB31	TB33	Q23	COM4	TB33	TB35	Q24	Q25	TB35	TB37	Q28	Q27	TB37	TB39	Q30	Q29	TB39	TB41	Q31	Q31	TB41
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**XBC-DP64H**

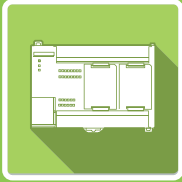
Transistor output wiring  
(source type)

Circuit configuration	No.	Contact	No.	Contact	Type																																																																																				
	TB2	FG	TB1	Power	<table border="1"> <tr> <td>TB1</td> <td>FG</td> <td>AC100</td> <td>TB1</td> </tr> <tr> <td>TB3</td> <td>N</td> <td>-240V</td> <td>TB3</td> </tr> <tr> <td>TB5</td> <td>Q01</td> <td>Q00</td> <td>TB5</td> </tr> <tr> <td>TB7</td> <td>Q03</td> <td>Q02</td> <td>TB7</td> </tr> <tr> <td>TB9</td> <td>Q04</td> <td>COM0</td> <td>TB9</td> </tr> <tr> <td>TB11</td> <td>Q06</td> <td>Q05</td> <td>TB11</td> </tr> <tr> <td>TB13</td> <td>Q07</td> <td>Q07</td> <td>TB13</td> </tr> <tr> <td>TB15</td> <td>Q08</td> <td>Q08</td> <td>TB15</td> </tr> <tr> <td>TB17</td> <td>Q10</td> <td>Q10</td> <td>TB17</td> </tr> <tr> <td>TB19</td> <td>Q11</td> <td>COM2</td> <td>TB19</td> </tr> <tr> <td>TB21</td> <td>Q12</td> <td>Q13</td> <td>TB21</td> </tr> <tr> <td>TB23</td> <td>Q14</td> <td>Q15</td> <td>TB23</td> </tr> <tr> <td>TB25</td> <td>Q15</td> <td>Q16</td> <td>TB25</td> </tr> <tr> <td>TB27</td> <td>Q17</td> <td>Q18</td> <td>TB27</td> </tr> <tr> <td>TB29</td> <td>Q19</td> <td>Q20</td> <td>TB29</td> </tr> <tr> <td>TB31</td> <td>Q21</td> <td>Q22</td> <td>TB31</td> </tr> <tr> <td>TB33</td> <td>Q23</td> <td>COM4</td> <td>TB33</td> </tr> <tr> <td>TB35</td> <td>Q24</td> <td>Q25</td> <td>TB35</td> </tr> <tr> <td>TB37</td> <td>Q28</td> <td>Q27</td> <td>TB37</td> </tr> <tr> <td>TB39</td> <td>Q30</td> <td>Q29</td> <td>TB39</td> </tr> <tr> <td>TB41</td> <td>Q31</td> <td>Q31</td> <td>TB41</td> </tr> </table>	TB1	FG	AC100	TB1	TB3	N	-240V	TB3	TB5	Q01	Q00	TB5	TB7	Q03	Q02	TB7	TB9	Q04	COM0	TB9	TB11	Q06	Q05	TB11	TB13	Q07	Q07	TB13	TB15	Q08	Q08	TB15	TB17	Q10	Q10	TB17	TB19	Q11	COM2	TB19	TB21	Q12	Q13	TB21	TB23	Q14	Q15	TB23	TB25	Q15	Q16	TB25	TB27	Q17	Q18	TB27	TB29	Q19	Q20	TB29	TB31	Q21	Q22	TB31	TB33	Q23	COM4	TB33	TB35	Q24	Q25	TB35	TB37	Q28	Q27	TB37	TB39	Q30	Q29	TB39	TB41	Q31	Q31	TB41
	TB1	FG	AC100	TB1																																																																																					
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	TB17	Q10	Q10	TB17																																																																																					
	TB19	Q11	COM2	TB19																																																																																					
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	TB31	Q21	Q22	TB31																																																																																					
	TB33	Q23	COM4	TB33																																																																																					
	TB35	Q24	Q25	TB35																																																																																					
	TB37	Q28	Q27	TB37																																																																																					
	TB39	Q30	Q29	TB39																																																																																					
TB41	Q31	Q31	TB41																																																																																						
TB4	DC12/24V	TB3																																																																																							
TB6	21	TB5	20																																																																																						
TB8	23	TB7	22																																																																																						
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TB14	COM1	TB13	27																																																																																						
TB16	29	TB15	28																																																																																						
TB18	2B	TB17	2A																																																																																						
TB20	2C	TB19	COM2																																																																																						
TB22	2E	TB21	2D																																																																																						
TB24	COM2	TB23	2F																																																																																						
TB26	31	TB25	30																																																																																						
TB28	33	TB27	32																																																																																						
TB30	35	TB29	34																																																																																						
TB32	37	TB31	36																																																																																						
TB34	38	TB33	COM4																																																																																						
TB36	3A	TB35	39																																																																																						
TB38	3C	TB37	38																																																																																						
TB40	3E	TB39	3D																																																																																						
TB42	COM5	TB41	3F																																																																																						

\* XBC input : P00~P1F, XEC input : I00~I31 \* XBC output : P21~P3F, XEC output : Q00~Q31

XBC/XEC H





# XBC/XEC SU

Standard

## C o n t e n t s

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Wiring .....33





## Standard type

### Performance specifications

Item	XBC/XEC-DN20SU	XBC/XEC-DN30SU	XBC/XEC-DN40SU	XBC/XEC-DN60SU		
	XBC/XEC-DR20SU	XBC/XEC-DR30SU	XBC/XEC-DR40SU	XBC/XEC-DR60SU		
	XBC/XEC-DP20SU	XBC/XEC-DP30SU	XBC/XEC-DP40SU	XBC/XEC-DP60SU		
<b>Control method</b>	Repetitive, cyclic, interrupt, constant scan					
<b>I/O control method</b>	Refresh mode (Batch processing by scan synchronization), Direct mode by instruction					
<b>Programming language</b>	Ladder diagram, Instruction List					
<b>Processing speed</b>	94 ns / Step					
<b>Program capacity</b>	15Kstep / 200KB					
<b>Main unit I/O points</b>	20 (Input:12, Output:8)	30 (Input:18, Output:12)	40 (Input:24, Output:16)	60 (Input:36, Output:24)		
<b>Max. I/O points (Main + Expansion 7 stages)</b>	244 points	254 points	264 points	284 points		
<b>Total program</b>	128					
<b>Operation mode</b>	RUN, STOP, DEBUG					
<b>Self diagnosis</b>	Detects errors of scan time, memory error, I/O error, battery error, power error, etc.					
<b>Program port</b>	RS-232C 1 channel (Loader), USB 1 channel (U-type model)					
<b>Retain data at power failure</b>	Latch area setting at basic parameter					
<b>Built-in functions</b>	RS-232C / RS-485(2 ch), Pulse catch, Input filter, External interrupt, PID control, High-speed counter, Positioning					
<b>Data memory</b>						
<b>XBC</b>			<b>XEC</b>			
<b>Data area</b>	<b>P</b>	P0000 ~ P1023F (16,384 points)	<b>Symbolic variable</b>	<b>A</b>	16KB (Max. 16KB retain setting available)	
	<b>M</b>	M0000 ~ M1023F (16,384 points)		<b>Input variable</b>	<b>I</b>	2KB (%IX 15.15.63)
	<b>K</b>	K0000 ~ K4095F (65,536 points)	<b>Output variable</b>		<b>Q</b>	2KB (%QX 15.15.63)
	<b>L</b>	L0000 ~ L2047F (32,768 points)		<b>Direct variable</b>	<b>M</b>	8KB (Max. retain setting available)
	<b>F</b>	F0000 ~ F1023F (16,384 points)	<b>R</b>		20KB (1 block)	
	<b>T</b>	100ms, 10ms, 1ms: T0000 ~ T1023 (1,024) (Adjustable by parameter setting)	<b>W</b>		20KB	
	<b>C</b>	C0000 ~ C1023 (1,024)	<b>Flag variable</b>		<b>F</b>	2KB
	<b>S</b>	S00.00 ~ S127.99		<b>K</b>	8KB	
	<b>D</b>	D0000 ~ D10239 (10,240 word)		<b>L</b>	4KB	
	<b>U</b>	U00.00 ~ U0A.31 (Analog data refresh area: 352 word)		<b>U</b>	1KB	
	<b>Z</b>	Z000 ~ Z127 (128 word)	<b>Flash area</b>		20KB (2 block)	
	<b>R</b>	R0000 ~ R10236 (10,240 word)				

\*Some products are due in market soon.

# Wiring | XBC/XEC SU input/output wiring

XBC/XEC-DR20SU  
XBC/XEC-DN20SU  
XBC/XEC-DP20SU  
DC24 Input wiring  
(sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type																																										
		TB2	485+	TB1	RX	<table border="1"> <tr><td>⊕</td><td>RX</td><td>TB1</td></tr> <tr><td>485+</td><td>TX</td><td>TB3</td></tr> <tr><td>485-</td><td>SG</td><td>TB5</td></tr> <tr><td>P00</td><td>P01</td><td>TB7</td></tr> <tr><td>P02</td><td>P03</td><td>TB9</td></tr> <tr><td>P04</td><td>P05</td><td>TB11</td></tr> <tr><td>P06</td><td>P07</td><td>TB13</td></tr> <tr><td>P08</td><td>P09</td><td>TB15</td></tr> <tr><td>POA</td><td>POB</td><td>TB17</td></tr> <tr><td>NC</td><td>NC</td><td>TB19</td></tr> <tr><td>NC</td><td>NC</td><td>TB21</td></tr> <tr><td>NC</td><td>NC</td><td>TB23</td></tr> <tr><td>COM</td><td></td><td></td></tr> <tr><td>⊕</td><td></td><td></td></tr> </table>	⊕	RX	TB1	485+	TX	TB3	485-	SG	TB5	P00	P01	TB7	P02	P03	TB9	P04	P05	TB11	P06	P07	TB13	P08	P09	TB15	POA	POB	TB17	NC	NC	TB19	NC	NC	TB21	NC	NC	TB23	COM			⊕		
		⊕	RX	TB1																																												
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⊕																																																
TB4	485-	TB3	TX																																													
TB6	00	TB5	SG																																													
TB8	02	TB7	01																																													
TB10	04	TB9	03																																													
TB12	06	TB11	05																																													
TB14	08	TB13	07																																													
TB16	0A	TB15	09																																													
TB18	NC	TB17	0B																																													
TB20	NC	TB19	NC																																													
TB22	NC	TB21	NC																																													
TB24	COM	TB23	NC																																													

XBC/XEC-DR20SU  
Relay output wiring

Circuit configuration		No.	Contact	No.	Contact	Type																																										
		TB2	FG	TB1	AC100	<table border="1"> <tr><td>⊕</td><td>RX</td><td>TB1</td></tr> <tr><td>485+</td><td>TX</td><td>TB3</td></tr> <tr><td>485-</td><td>SG</td><td>TB5</td></tr> <tr><td>P00</td><td>P01</td><td>TB7</td></tr> <tr><td>P02</td><td>P03</td><td>TB9</td></tr> <tr><td>P04</td><td>P05</td><td>TB11</td></tr> <tr><td>P06</td><td>P07</td><td>TB13</td></tr> <tr><td>P08</td><td>P09</td><td>TB15</td></tr> <tr><td>POA</td><td>POB</td><td>TB17</td></tr> <tr><td>NC</td><td>NC</td><td>TB19</td></tr> <tr><td>NC</td><td>NC</td><td>TB21</td></tr> <tr><td>NC</td><td>NC</td><td>TB23</td></tr> <tr><td>COM</td><td></td><td></td></tr> <tr><td>⊕</td><td></td><td></td></tr> </table>	⊕	RX	TB1	485+	TX	TB3	485-	SG	TB5	P00	P01	TB7	P02	P03	TB9	P04	P05	TB11	P06	P07	TB13	P08	P09	TB15	POA	POB	TB17	NC	NC	TB19	NC	NC	TB21	NC	NC	TB23	COM			⊕		
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⊕																																																
TB4	COM0	TB3	-240V																																													
TB6	COM1	TB5	40																																													
TB8	COM2	TB7	41																																													
TB10	43	TB9	42																																													
TB12	COM3	TB11	NC																																													
TB14	45	TB13	44																																													
TB16	47	TB15	46																																													
TB18	NC	TB17	NC																																													
TB20	NC	TB19	NC																																													
TB22	NC	TB21	NC																																													
TB24	24G	TB23	24V																																													

XBC/XEC-DN20SU  
Transistor output wiring  
(sink type)

Circuit configuration		No.	Contact	No.	Contact	Type																																													
		TB2	FG	TB1	AC100	<table border="1"> <tr><td>⊕</td><td></td><td>TB1</td></tr> <tr><td>FG</td><td>AC100</td><td>TB1</td></tr> <tr><td>-240V</td><td></td><td>TB3</td></tr> <tr><td>COM0</td><td>P40</td><td>TB5</td></tr> <tr><td>COM1</td><td>P41</td><td>TB7</td></tr> <tr><td>COM2</td><td>P42</td><td>TB9</td></tr> <tr><td>P43</td><td>P</td><td>TB11</td></tr> <tr><td>COM3</td><td>P44</td><td>TB13</td></tr> <tr><td>P45</td><td>P46</td><td>TB15</td></tr> <tr><td>P47</td><td>NC</td><td>TB17</td></tr> <tr><td>NC</td><td>NC</td><td>TB19</td></tr> <tr><td>NC</td><td>NC</td><td>TB21</td></tr> <tr><td>NC</td><td>NC</td><td>TB23</td></tr> <tr><td>24G</td><td>24V</td><td>TB23</td></tr> <tr><td>⊕</td><td></td><td></td></tr> </table>	⊕		TB1	FG	AC100	TB1	-240V		TB3	COM0	P40	TB5	COM1	P41	TB7	COM2	P42	TB9	P43	P	TB11	COM3	P44	TB13	P45	P46	TB15	P47	NC	TB17	NC	NC	TB19	NC	NC	TB21	NC	NC	TB23	24G	24V	TB23	⊕		
		⊕		TB1																																															
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		-240V		TB3																																															
		COM0	P40	TB5																																															
		COM1	P41	TB7																																															
		COM2	P42	TB9																																															
		P43	P	TB11																																															
		COM3	P44	TB13																																															
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\* XBC input : P00~P23, XEC input : I00~I35 \* XBC output : P40~P57, XEC output : Q00~Q23

### XBC/XEC-DP20SU

Transistor output wiring  
(source type)

Circuit configuration		No.	Contact	No.	Contact	Type																																					
	TB05	TB1	AC100	<table border="1"> <tr><td>⊕</td><td></td><td>TB1</td></tr> <tr><td>FG</td><td>AC100</td><td>TB3</td></tr> <tr><td></td><td>-240V</td><td>TB5</td></tr> <tr><td>COM0</td><td>Q00</td><td>TB7</td></tr> <tr><td>COM1</td><td>Q01</td><td>TB9</td></tr> <tr><td>COM2</td><td>Q02</td><td>TB11</td></tr> <tr><td>COM3</td><td>N</td><td>TB13</td></tr> <tr><td>COM3</td><td>Q04</td><td>TB15</td></tr> <tr><td>COM3</td><td>Q06</td><td>TB17</td></tr> <tr><td>COM3</td><td>NC</td><td>TB19</td></tr> <tr><td>COM3</td><td>NC</td><td>TB21</td></tr> <tr><td>COM3</td><td>24V</td><td>TB23</td></tr> <tr><td>⊕</td><td></td><td></td></tr> </table>	⊕		TB1	FG	AC100	TB3		-240V	TB5	COM0	Q00	TB7	COM1	Q01	TB9	COM2	Q02	TB11	COM3	N	TB13	COM3	Q04	TB15	COM3	Q06	TB17	COM3	NC	TB19	COM3	NC	TB21	COM3	24V	TB23	⊕		
	⊕		TB1																																								
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TB04	TB2	FG	TB3	-240V																																							
TB07	TB4	COM0	TB5	Q00																																							
TB06	TB6	COM1	TB7	Q01																																							
TB09	TB8	COM2	TB9	Q02																																							
TB10	TB10	Q03	TB11	N																																							
TB12	TB12	COM3	TB13	Q04																																							
TB14	TB14	Q05	TB15	Q06																																							
TB16	TB16	Q07	TB17	NC																																							
TB13	TB18	NC	TB19	NC																																							
TB16	TB20	NC	TB21	NC																																							
TB12	TB22	NC	TB23	24V																																							
TB11	TB24	24G																																									

### XBC/XEC-DR30SU

### XBC/XEC-DN30SU

### XBC/XEC-DP30SU

DC24 Input wiring  
(sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type																																									
	TB2	485+	TB1	RX	<table border="1"> <tr><td>⊕</td><td></td><td>TB1</td></tr> <tr><td>485+</td><td>RX</td><td>TB3</td></tr> <tr><td>485-</td><td>TX</td><td>TB5</td></tr> <tr><td>00</td><td>SG</td><td>TB7</td></tr> <tr><td>02</td><td>01</td><td>TB9</td></tr> <tr><td>04</td><td>03</td><td>TB11</td></tr> <tr><td>06</td><td>05</td><td>TB13</td></tr> <tr><td>08</td><td>07</td><td>TB15</td></tr> <tr><td>0A</td><td>09</td><td>TB17</td></tr> <tr><td>0C</td><td>0B</td><td>TB19</td></tr> <tr><td>0E</td><td>0D</td><td>TB21</td></tr> <tr><td>10</td><td>0F</td><td>TB23</td></tr> <tr><td>COM</td><td>P11</td><td>TB25</td></tr> <tr><td></td><td>⊕</td><td></td></tr> </table>	⊕		TB1	485+	RX	TB3	485-	TX	TB5	00	SG	TB7	02	01	TB9	04	03	TB11	06	05	TB13	08	07	TB15	0A	09	TB17	0C	0B	TB19	0E	0D	TB21	10	0F	TB23	COM	P11	TB25		⊕	
	⊕		TB1																																												
	485+	RX	TB3																																												
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TB20	0E	TB19	0D																																												
TB22	10	TB21	0F																																												
TB24	COM	TB23	11																																												

### XBC/XEC-DR30SU

Relay output wiring

Circuit configuration		No.	Contact	No.	Contact	Type																																								
	TB5	TB1	AC100	<table border="1"> <tr><td>⊕</td><td></td><td>TB1</td></tr> <tr><td>FG</td><td>AC100</td><td>TB3</td></tr> <tr><td></td><td>-240V</td><td>TB5</td></tr> <tr><td>COM0</td><td>P40</td><td>TB7</td></tr> <tr><td>COM1</td><td>P41</td><td>TB9</td></tr> <tr><td>COM2</td><td>P42</td><td>TB11</td></tr> <tr><td>COM3</td><td>NC</td><td>TB13</td></tr> <tr><td>COM3</td><td>P44</td><td>TB15</td></tr> <tr><td>COM3</td><td>P46</td><td>TB17</td></tr> <tr><td>COM3</td><td>NC</td><td>TB19</td></tr> <tr><td>COM3</td><td>P48</td><td>TB21</td></tr> <tr><td>COM3</td><td>P4A</td><td>TB23</td></tr> <tr><td>COM3</td><td>24V</td><td></td></tr> <tr><td>⊕</td><td></td><td></td></tr> </table>	⊕		TB1	FG	AC100	TB3		-240V	TB5	COM0	P40	TB7	COM1	P41	TB9	COM2	P42	TB11	COM3	NC	TB13	COM3	P44	TB15	COM3	P46	TB17	COM3	NC	TB19	COM3	P48	TB21	COM3	P4A	TB23	COM3	24V		⊕		
	⊕		TB1																																											
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TB4	TB2	FG	TB3	-240V																																										
TB7	TB4	COM0	TB5	40																																										
TB6	TB6	COM1	TB7	41																																										
TB9	TB8	COM2	TB9	42																																										
TB10	TB10	43	TB11	NC																																										
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TB14	TB14	45	TB15	46																																										
TB16	TB16	47	TB17	NC																																										
TB18	TB18	COM4	TB19	48																																										
TB22	TB20	49	TB21	4A																																										
TB18	TB22	4B	TB23	24V																																										
TB18	TB24	24G																																												

\* XBC input : P00~P23, XEC input : I00~I35 \* XBC output : P40~P57, XEC output : Q00~Q23

**XBC/XEC-DN30SU**

Transistor output wiring  
(sink type)

Circuit configuration		No.	Contact	No.	Contact	Type																																													
	TB2	FG	TB1	AC100	<table border="1"> <tr><td>⊕</td><td></td><td>TB1</td></tr> <tr><td>FG</td><td>AC100</td><td>TB3</td></tr> <tr><td></td><td>-240V</td><td>TB5</td></tr> <tr><td>COM0</td><td>P40</td><td>TB7</td></tr> <tr><td>COM1</td><td>P41</td><td>TB9</td></tr> <tr><td>COM2</td><td>P42</td><td>TB11</td></tr> <tr><td>P43</td><td>P</td><td>TB13</td></tr> <tr><td>COM3</td><td>P44</td><td>TB15</td></tr> <tr><td>P45</td><td>P46</td><td>TB17</td></tr> <tr><td>P47</td><td>NC</td><td>TB19</td></tr> <tr><td>COM4</td><td>P48</td><td>TB21</td></tr> <tr><td>P49</td><td>P4A</td><td>TB23</td></tr> <tr><td>P4B</td><td>24V</td><td></td></tr> <tr><td>24G</td><td></td><td>⊕</td></tr> </table>	⊕		TB1	FG	AC100	TB3		-240V	TB5	COM0	P40	TB7	COM1	P41	TB9	COM2	P42	TB11	P43	P	TB13	COM3	P44	TB15	P45	P46	TB17	P47	NC	TB19	COM4	P48	TB21	P49	P4A	TB23	P4B	24V		24G		⊕	TB4	COM0	TB3	-240V
	⊕		TB1																																																
	FG	AC100	TB3																																																
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	COM1	P41	TB9																																																
	COM2	P42	TB11																																																
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	24G		⊕																																																
	TB6	COM1	TB5	40																																															
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TB10	43	TB9	42																																																
TB12	COM3	TB11	P																																																
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TB16	47	TB15	46																																																
TB18	COM4	TB17	NC																																																
TB20	49	TB19	48																																																
TB22	4B	TB21	4A																																																
TB24	24G	TB23	24V																																																

**XBC/XEC-DP30SU**

Transistor output wiring  
(source type)

Circuit configuration		No.	Contact	No.	Contact	Type																																													
	TB2	FG	TB1	AC100	<table border="1"> <tr><td>⊕</td><td></td><td>TB1</td></tr> <tr><td>FG</td><td>AC100</td><td>TB3</td></tr> <tr><td></td><td>-240V</td><td>TB5</td></tr> <tr><td>COM0</td><td>Q00</td><td>TB7</td></tr> <tr><td>COM1</td><td>Q01</td><td>TB9</td></tr> <tr><td>COM2</td><td>Q02</td><td>TB11</td></tr> <tr><td>Q03</td><td>N</td><td>TB13</td></tr> <tr><td>COM3</td><td>Q04</td><td>TB15</td></tr> <tr><td>Q05</td><td>Q06</td><td>TB17</td></tr> <tr><td>Q07</td><td>NC</td><td>TB19</td></tr> <tr><td>COM4</td><td>Q08</td><td>TB21</td></tr> <tr><td>Q09</td><td>Q10</td><td>TB23</td></tr> <tr><td>Q11</td><td>24V</td><td></td></tr> <tr><td>24G</td><td></td><td>⊕</td></tr> </table>	⊕		TB1	FG	AC100	TB3		-240V	TB5	COM0	Q00	TB7	COM1	Q01	TB9	COM2	Q02	TB11	Q03	N	TB13	COM3	Q04	TB15	Q05	Q06	TB17	Q07	NC	TB19	COM4	Q08	TB21	Q09	Q10	TB23	Q11	24V		24G		⊕	TB4	COM0	TB3	-240V
	⊕		TB1																																																
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**XBC/XEC-DR40SU**

**XBC/XEC-DN40SU**

**XBC/XEC-DP40SU**

DC24 Input wiring  
(sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type																																																			
	TB2	485+	TB1	RX	<table border="1"> <tr><td>⊕</td><td></td><td>TB1</td></tr> <tr><td>485+</td><td>RX</td><td>TB3</td></tr> <tr><td>485-</td><td>TX</td><td>TB5</td></tr> <tr><td>00</td><td>SG</td><td>TB7</td></tr> <tr><td>02</td><td>01</td><td>TB9</td></tr> <tr><td>04</td><td>03</td><td>TB11</td></tr> <tr><td>06</td><td>05</td><td>TB13</td></tr> <tr><td>08</td><td>07</td><td>TB15</td></tr> <tr><td>0A</td><td>09</td><td>TB17</td></tr> <tr><td>0C</td><td>0B</td><td>TB19</td></tr> <tr><td>0E</td><td>0D</td><td>TB21</td></tr> <tr><td>10</td><td>0F</td><td>TB23</td></tr> <tr><td>12</td><td>11</td><td>TB25</td></tr> <tr><td>14</td><td>13</td><td>TB27</td></tr> <tr><td>16</td><td>15</td><td>TB29</td></tr> <tr><td>COM</td><td></td><td>⊕</td></tr> </table>	⊕		TB1	485+	RX	TB3	485-	TX	TB5	00	SG	TB7	02	01	TB9	04	03	TB11	06	05	TB13	08	07	TB15	0A	09	TB17	0C	0B	TB19	0E	0D	TB21	10	0F	TB23	12	11	TB25	14	13	TB27	16	15	TB29	COM		⊕	TB4	485-	TB3	TX
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	485-	TX	TB5																																																						
	00	SG	TB7																																																						
	02	01	TB9																																																						
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	0A	09	TB17																																																						
	0C	0B	TB19																																																						
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TB18	0C	TB17	0B																																																						
TB20	0E	TB19	0D																																																						
TB22	10	TB21	0F																																																						
TB24	12	TB23	11																																																						
TB26	14	TB25	13																																																						
TB28	16	TB27	15																																																						
TB30	COM	TB29	17																																																						

\* XBC input : P00~P23, XEC input : I00~I35 \* XBC output : P40~P57, XEC output : Q00~Q23



## XBC/XEC-DR40SU Relay output wiring

Circuit configuration		No.	Contact	No.	Contact	Type																																												
	TB2	FG	TB1	AC100	<table border="1"> <tr> <td>TB1</td> <td>AC100</td> <td>TB1</td> </tr> <tr> <td>TB3</td> <td>-240V</td> <td>TB3</td> </tr> <tr> <td>TB5</td> <td>P40</td> <td>TB5</td> </tr> <tr> <td>TB7</td> <td>P41</td> <td>TB7</td> </tr> <tr> <td>TB9</td> <td>P42</td> <td>TB9</td> </tr> <tr> <td>TB11</td> <td>NC</td> <td>TB11</td> </tr> <tr> <td>TB13</td> <td>P44</td> <td>TB13</td> </tr> <tr> <td>TB15</td> <td>P46</td> <td>TB15</td> </tr> <tr> <td>TB17</td> <td>NC</td> <td>TB17</td> </tr> <tr> <td>TB19</td> <td>P48</td> <td>TB19</td> </tr> <tr> <td>TB21</td> <td>P4A</td> <td>TB21</td> </tr> <tr> <td>TB23</td> <td>NC</td> <td>TB23</td> </tr> <tr> <td>TB25</td> <td>P4C</td> <td>TB25</td> </tr> <tr> <td>TB27</td> <td>P4E</td> <td>TB27</td> </tr> <tr> <td>TB29</td> <td>24V</td> <td>TB29</td> </tr> </table>	TB1	AC100	TB1	TB3	-240V	TB3	TB5	P40	TB5	TB7	P41	TB7	TB9	P42	TB9	TB11	NC	TB11	TB13	P44	TB13	TB15	P46	TB15	TB17	NC	TB17	TB19	P48	TB19	TB21	P4A	TB21	TB23	NC	TB23	TB25	P4C	TB25	TB27	P4E	TB27	TB29	24V	TB29
	TB1	AC100	TB1																																															
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	TB19	P48	TB19																																															
	TB21	P4A	TB21																																															
	TB23	NC	TB23																																															
	TB25	P4C	TB25																																															
	TB27	P4E	TB27																																															
TB29	24V	TB29																																																
TB4	COM0	TB3	-240V																																															
TB6	COM1	TB5	P40																																															
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TB24	COM5	TB23	NC																																															
TB26	4D	TB25	P4C																																															
TB28	4F	TB27	P4E																																															
TB30	24G	TB29	24V																																															

## XBC/XEC-DN40SU Transistor output wiring (sink type)

Circuit configuration		No.	Contact	No.	Contact	Type																																												
	TB2	FG	TB1	AC100	<table border="1"> <tr> <td>TB1</td> <td>AC100</td> <td>TB1</td> </tr> <tr> <td>TB3</td> <td>-240V</td> <td>TB3</td> </tr> <tr> <td>TB5</td> <td>40</td> <td>TB5</td> </tr> <tr> <td>TB7</td> <td>41</td> <td>TB7</td> </tr> <tr> <td>TB9</td> <td>42</td> <td>TB9</td> </tr> <tr> <td>TB11</td> <td>P</td> <td>TB11</td> </tr> <tr> <td>TB13</td> <td>44</td> <td>TB13</td> </tr> <tr> <td>TB15</td> <td>46</td> <td>TB15</td> </tr> <tr> <td>TB17</td> <td>NC</td> <td>TB17</td> </tr> <tr> <td>TB19</td> <td>48</td> <td>TB19</td> </tr> <tr> <td>TB21</td> <td>4A</td> <td>TB21</td> </tr> <tr> <td>TB23</td> <td>NC</td> <td>TB23</td> </tr> <tr> <td>TB25</td> <td>4C</td> <td>TB25</td> </tr> <tr> <td>TB27</td> <td>4E</td> <td>TB27</td> </tr> <tr> <td>TB29</td> <td>24V</td> <td>TB29</td> </tr> </table>	TB1	AC100	TB1	TB3	-240V	TB3	TB5	40	TB5	TB7	41	TB7	TB9	42	TB9	TB11	P	TB11	TB13	44	TB13	TB15	46	TB15	TB17	NC	TB17	TB19	48	TB19	TB21	4A	TB21	TB23	NC	TB23	TB25	4C	TB25	TB27	4E	TB27	TB29	24V	TB29
	TB1	AC100	TB1																																															
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## XBC/XEC-DP40SU Transistor output wiring (source type)

Circuit configuration		No.	Contact	No.	Contact	Type																																												
	TB2	FG	TB1	AC100	<table border="1"> <tr> <td>TB1</td> <td>AC100</td> <td>TB1</td> </tr> <tr> <td>TB3</td> <td>-240V</td> <td>TB3</td> </tr> <tr> <td>TB5</td> <td>Q00</td> <td>TB5</td> </tr> <tr> <td>TB7</td> <td>Q01</td> <td>TB7</td> </tr> <tr> <td>TB9</td> <td>Q02</td> <td>TB9</td> </tr> <tr> <td>TB11</td> <td>N</td> <td>TB11</td> </tr> <tr> <td>TB13</td> <td>Q04</td> <td>TB13</td> </tr> <tr> <td>TB15</td> <td>Q06</td> <td>TB15</td> </tr> <tr> <td>TB17</td> <td>NC</td> <td>TB17</td> </tr> <tr> <td>TB19</td> <td>Q08</td> <td>TB19</td> </tr> <tr> <td>TB21</td> <td>Q10</td> <td>TB21</td> </tr> <tr> <td>TB23</td> <td>NC</td> <td>TB23</td> </tr> <tr> <td>TB25</td> <td>Q12</td> <td>TB25</td> </tr> <tr> <td>TB27</td> <td>Q14</td> <td>TB27</td> </tr> <tr> <td>TB29</td> <td>24V</td> <td>TB29</td> </tr> </table>	TB1	AC100	TB1	TB3	-240V	TB3	TB5	Q00	TB5	TB7	Q01	TB7	TB9	Q02	TB9	TB11	N	TB11	TB13	Q04	TB13	TB15	Q06	TB15	TB17	NC	TB17	TB19	Q08	TB19	TB21	Q10	TB21	TB23	NC	TB23	TB25	Q12	TB25	TB27	Q14	TB27	TB29	24V	TB29
	TB1	AC100	TB1																																															
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	TB25	Q12	TB25																																															
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TB4	COM0	TB3	-240V																																															
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TB24	COM5	TB23	NC																																															
TB26	Q13	TB25	Q12																																															
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\* XBC input : P00~P23, XEC input : I00~I35 \* XBC output : P40~P57, XEC output : Q00~Q23

XBC/XEC-DR60SU  
 XBC/XEC-DN60SU  
 XBC/XEC-DP60SU  
 DC24 Input wiring  
 (sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type
		TB2	485+	TB1	RX	
		TB4	485-	TB3	TX	
		TB6	00	TB5	SG	
		TB8	02	TB7	01	
		TB10	04	TB9	03	
		TB12	06	TB11	05	
		TB14	08	TB13	07	
		TB16	0A	TB15	09	
		TB18	0C	TB17	0B	
		TB20	0E	TB19	0D	
		TB22	10	TB21	0F	
		TB24	12	TB23	11	
		TB26	14	TB25	13	
		TB28	16	TB27	15	
		TB30	18	TB29	17	
		TB32	1A	TB31	19	
		TB34	1C	TB33	1B	
		TB36	1E	TB35	1D	
		TB38	20	TB37	1F	
		TB40	22	TB39	21	
		TB42	COM	TB41	23	

TB2	485+	RX	TB1
TB4	485-	TX	TB3
TB6	P00	SG	TB5
TB8	P02	P01	TB7
TB10	P04	P03	TB9
TB12	P06	P05	TB11
TB14	P08	P07	TB13
TB16	P0A	P09	TB15
TB18	P0C	P0B	TB17
TB20	P0E	P0D	TB19
TB22	P10	P0F	TB21
TB24	P12	P11	TB23
TB26	P14	P13	TB25
TB28	P16	P15	TB27
TB30	P18	P17	TB29
TB32	P1A	P19	TB31
TB34	P1C	P1B	TB33
TB36	P1E	P1D	TB35
TB38	P20	P1F	TB37
TB40	P22	P21	TB39
TB42	COM	P23	TB41

XBC/XEC-DR60SU  
 Relay output wiring

Circuit configuration		No.	Contact	No.	Contact	Type
		TB2	FG	TB1	AC100	
		TB4	COM0	TB3	-240V	
		TB6	COM1	TB5	40	
		TB8	COM2	TB7	41	
		TB10	43	TB9	42	
		TB12	COM3	TB11	NC	
		TB14	45	TB13	44	
		TB16	47	TB15	46	
		TB18	COM4	TB17	NC	
		TB20	49	TB19	48	
		TB22	4B	TB21	4A	
		TB24	COM5	TB23	NC	
		TB26	4D	TB25	4C	
		TB28	4F	TB27	4E	
		TB30	COM6	TB29	NC	
		TB32	51	TB31	50	
		TB34	53	TB33	52	
		TB36	COM7	TB35	NC	
		TB38	55	TB37	54	
		TB40	57	TB39	56	
		TB42	24G	TB41	24V	

TB2	485+	AC100	TB1
TB4	485-	-240V	TB3
TB6	P00	40	TB5
TB8	P02	41	TB7
TB10	P04	42	TB9
TB12	P06	NC	TB11
TB14	P08	44	TB13
TB16	P0A	46	TB15
TB18	P0C	NC	TB17
TB20	P0E	48	TB19
TB22	P10	4A	TB21
TB24	P12	NC	TB23
TB26	P14	4C	TB25
TB28	P16	4E	TB27
TB30	P18	NC	TB29
TB32	P1A	50	TB31
TB34	P1C	52	TB33
TB36	P1E	NC	TB35
TB38	P20	54	TB37
TB40	P22	56	TB39
TB42	COM	24V	TB41

\* XBC input : P00~P23, XEC input : I00~I35 \* XBC output : P40~P57, XEC output : Q00~Q23

XBC/XEC SU

## XBC/XEC-DN60SU

Transistor output wiring  
(sink type)

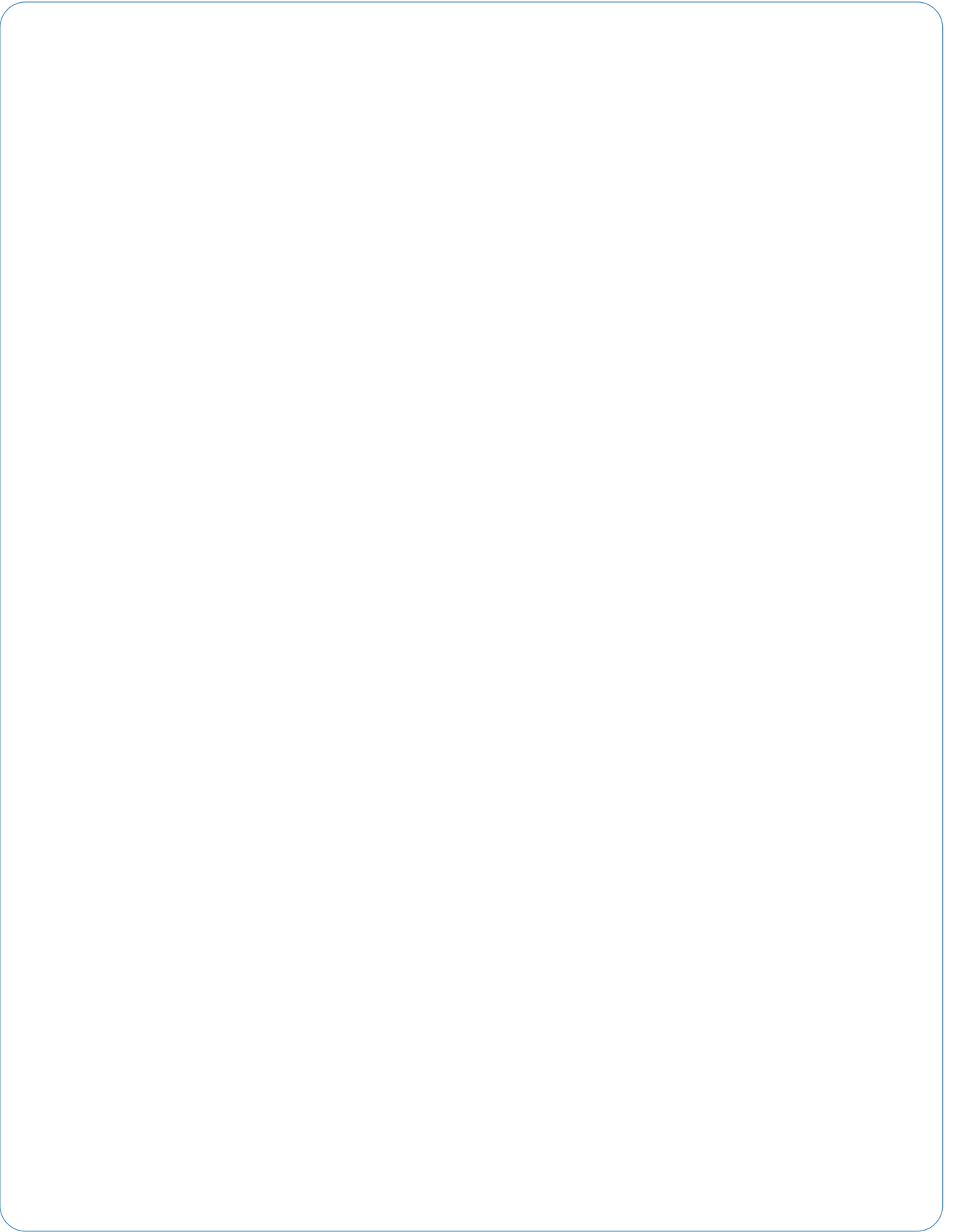
Circuit configuration		No.	Contact	No.	Contact	Type																																																																								
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TB42	24G	TB41	24V																																																																											

## XBC/XEC-DP60SU

Transistor output wiring  
(source type)

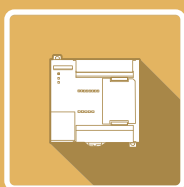
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TB40	Q23	TB39	Q22																																																																								
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\* XBC input : P00~P23, XEC input : I00~I35 \* XBC output : P40~P57, XEC output : Q00~Q23



XBC/XEC-SU





# XBC/XEC E

Economic

## C o n t e n t s

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## Economic

### Performance specifications

Item	Specifications ('E' type)			
	XBC/XEC-DR10E	XBC/XEC-DR14E	XBC/XEC-DR20E	XBC/XEC-DR30E
	XBC/XEC-DN10E	XBC/XEC-DN14E	XBC/XEC-DN20E	XBC/XEC-DN30E
	XBC/XEC-DP10E	XBC/XEC-DP14E	XBC/XEC-DP20E	XBC/XEC-DP30E
Program control method	Reiterative operation, Fixed cycle operation			
I/O control method	Scan synchronized batch processing method (Refresh method) Direct method by instruction			
Program language	Ladder Diagram (LD), Sequential Function Chart (SFC) Structured Text (ST), Instruction List (IL)			
Processing speed (Basic instruction)	240 ns/step			
Program capacity	4 Kstep (XBC-Dxxx E), 50 KB (XEC-Dxxx E)			
Max. I/O points (Main+Option X)	14 point (1 option)	18 point (1 option)	28 point (2 option)	38 point (2 option)
Operation Mode	RUN, STOP, DEBUG			
Total number of program block	128			
Task	Initialization	1		
	Fixed period	8		
	External input	4 (%I × 0.0.0 ~ %I × 0.0.3)		
	Internal device	8		
Program port	RS-232C 1 channel (Loader)			
Self - diagnostic functions	Watchdog Timer, Memory error detection I/O error detection, etc.			
Built -in functions	RS-232C or RS-485(1 ch), Pulse catch, Input filter, External interrupt, High-speed counter			
Retain data at power failure	Latch area setting at basic parameter			

# Wiring | XBC/XEC E input/output wiring

**XBC/XEC-DR10E**  
**XBC/XEC-DN10E**  
**XBC/XEC-DP10E**  
 DC24V Input wiring  
 (sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type																								
		TB2	485+	TB1	RX	<table border="1"> <tr><td>⊕</td><td>RX</td><td>TB1</td></tr> <tr><td>485+</td><td>TX</td><td>TB3</td></tr> <tr><td>485-</td><td>SG</td><td>TB5</td></tr> <tr><td>P00</td><td>P01</td><td>TB7</td></tr> <tr><td>P02</td><td>P03</td><td>TB9</td></tr> <tr><td>P04</td><td>P05</td><td>TB11</td></tr> <tr><td>NC</td><td>NC</td><td>TB13</td></tr> <tr><td>COM</td><td>⊕</td><td></td></tr> </table>	⊕	RX	TB1	485+	TX	TB3	485-	SG	TB5	P00	P01	TB7	P02	P03	TB9	P04	P05	TB11	NC	NC	TB13	COM	⊕	
		⊕	RX	TB1																										
		485+	TX	TB3																										
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		NC	NC	TB13																										
		COM	⊕																											
		TB4	485-	TB3	TX																									
		TB6	00	TB5	SG																									
		TB8	02	TB7	01																									
		TB10	04	TB9	03																									
		TB12	NC	TB11	05																									
TB14	COM	TB13	NC																											

**XBC/XEC-DR10E**  
 Relay output wiring

Circuit configuration		No.	Contact	No.	Contact	Type																								
		TB2	FG	TB1	AC100	<table border="1"> <tr><td>⊕</td><td>AC100</td><td>TB1</td></tr> <tr><td>FG</td><td>~240V</td><td>TB3</td></tr> <tr><td>COM0</td><td>P40</td><td>TB5</td></tr> <tr><td>COM1</td><td>P41</td><td>TB7</td></tr> <tr><td>COM2</td><td>P42</td><td>TB9</td></tr> <tr><td>P43</td><td>NC</td><td>TB11</td></tr> <tr><td>NC</td><td>24V</td><td>TB13</td></tr> <tr><td>24G</td><td>⊕</td><td>TB15</td></tr> </table>	⊕	AC100	TB1	FG	~240V	TB3	COM0	P40	TB5	COM1	P41	TB7	COM2	P42	TB9	P43	NC	TB11	NC	24V	TB13	24G	⊕	TB15
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**XBC/XEC-DN10E**  
 Transistor output wiring  
 (sink type)

Circuit configuration		No.	Contact	No.	Contact	Type																								
		TB2	FG	TB1	AC100	<table border="1"> <tr><td>⊕</td><td>AC100</td><td>TB1</td></tr> <tr><td>FG</td><td>~240V</td><td>TB3</td></tr> <tr><td>P</td><td>Q00</td><td>TB5</td></tr> <tr><td>COM0</td><td>Q01</td><td>TB7</td></tr> <tr><td>COM1</td><td>Q02</td><td>TB9</td></tr> <tr><td>Q03</td><td>NC</td><td>TB11</td></tr> <tr><td>NC</td><td>24V</td><td>TB13</td></tr> <tr><td>24G</td><td>⊕</td><td></td></tr> </table>	⊕	AC100	TB1	FG	~240V	TB3	P	Q00	TB5	COM0	Q01	TB7	COM1	Q02	TB9	Q03	NC	TB11	NC	24V	TB13	24G	⊕	
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		TB12	NC	TB11	NC																									
TB14	24G	TB13	24V																											

**XBC/XEC-DP10E**  
 Transistor output wiring  
 (source type)

Circuit configuration		No.	Contact	No.	Contact	Type																								
		TB2	FG	TB1	AC100	<table border="1"> <tr><td>⊕</td><td>AC100</td><td>TB1</td></tr> <tr><td>FG</td><td>~240V</td><td>TB3</td></tr> <tr><td>N</td><td>Q00</td><td>TB5</td></tr> <tr><td>COM0</td><td>Q01</td><td>TB7</td></tr> <tr><td>COM1</td><td>Q02</td><td>TB9</td></tr> <tr><td>Q03</td><td>NC</td><td>TB11</td></tr> <tr><td>NC</td><td>24V</td><td>TB13</td></tr> <tr><td>24G</td><td>⊕</td><td></td></tr> </table>	⊕	AC100	TB1	FG	~240V	TB3	N	Q00	TB5	COM0	Q01	TB7	COM1	Q02	TB9	Q03	NC	TB11	NC	24V	TB13	24G	⊕	
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TB14	24G	TB13	24V																											

\* XBC input : P00~P11, XEC input : I00~I17 \* XBC output : P40~P4B, XEC output : Q00~Q11

XBC/XEC E

**XBC/XEC-DR14E**  
**XBC/XEC-DN14E**  
**XBC/XEC-DP14E**  
 DC24V Input wiring  
 (sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type																														
		TB2	485+	TB1	RX	<table border="1"> <tr><td>+</td><td></td><td></td></tr> <tr><td>485+</td><td>RX</td><td>TB1</td></tr> <tr><td>485-</td><td>TX</td><td>TB3</td></tr> <tr><td>485-</td><td>SG</td><td>TB5</td></tr> <tr><td>P00</td><td>P01</td><td>TB7</td></tr> <tr><td>P02</td><td>P03</td><td>TB9</td></tr> <tr><td>P04</td><td>P05</td><td>TB11</td></tr> <tr><td>P06</td><td>P07</td><td>TB13</td></tr> <tr><td>COM</td><td></td><td></td></tr> <tr><td></td><td>+</td><td></td></tr> </table>	+			485+	RX	TB1	485-	TX	TB3	485-	SG	TB5	P00	P01	TB7	P02	P03	TB9	P04	P05	TB11	P06	P07	TB13	COM				+	
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		P06	P07	TB13																																
		COM																																		
			+																																	
		TB4	485-	TB3	TX																															
		TB6	00	TB5	SG																															
		TB8	02	TB7	01																															
TB10	04	TB9	03																																	
TB12	06	TB11	05																																	
TB14	COM	TB13	07																																	

**XBC-DR14E**  
 Transistor output wiring  
 (sink type)

Circuit configuration		No.	Contact	No.	Contact	Type																														
		TB2	FG	TB1	AC100	<table border="1"> <tr><td>+</td><td></td><td></td></tr> <tr><td>FG</td><td>AC100</td><td>TB1</td></tr> <tr><td></td><td>-240V</td><td>TB3</td></tr> <tr><td>COM0</td><td>P40</td><td>TB5</td></tr> <tr><td>COM1</td><td>P41</td><td>TB7</td></tr> <tr><td>COM2</td><td>P42</td><td>TB9</td></tr> <tr><td>P43</td><td>P44</td><td>TB11</td></tr> <tr><td>P45</td><td>24V</td><td>TB13</td></tr> <tr><td>24G</td><td></td><td></td></tr> <tr><td></td><td>+</td><td></td></tr> </table>	+			FG	AC100	TB1		-240V	TB3	COM0	P40	TB5	COM1	P41	TB7	COM2	P42	TB9	P43	P44	TB11	P45	24V	TB13	24G				+	
		+																																		
		FG	AC100	TB1																																
			-240V	TB3																																
		COM0	P40	TB5																																
		COM1	P41	TB7																																
		COM2	P42	TB9																																
		P43	P44	TB11																																
		P45	24V	TB13																																
		24G																																		
			+																																	
		TB4	COM0	TB5	40																															
		TB6	COM1	TB7	41																															
		TB8	COM2	TB9	42																															
TB10	43	TB11	NC																																	
TB12	NC	TB13	24V																																	
TB14	24G																																			

**XBC/XEC-DN14E**  
 Transistor output wiring  
 (sink type)

Circuit configuration		No.	Contact	No.	Contact	Type																														
		TB2	FG	TB1	AC100	<table border="1"> <tr><td>+</td><td></td><td></td></tr> <tr><td>FG</td><td>AC100</td><td>TB1</td></tr> <tr><td></td><td>-240V</td><td>TB3</td></tr> <tr><td>P</td><td>Q00</td><td>TB5</td></tr> <tr><td>COM0</td><td>Q01</td><td>TB7</td></tr> <tr><td>COM1</td><td>Q02</td><td>TB9</td></tr> <tr><td>Q03</td><td>Q4</td><td>TB11</td></tr> <tr><td>Q5</td><td>24V</td><td>TB13</td></tr> <tr><td>24G</td><td></td><td></td></tr> <tr><td></td><td>+</td><td></td></tr> </table>	+			FG	AC100	TB1		-240V	TB3	P	Q00	TB5	COM0	Q01	TB7	COM1	Q02	TB9	Q03	Q4	TB11	Q5	24V	TB13	24G				+	
		+																																		
		FG	AC100	TB1																																
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		24G																																		
			+																																	
		TB4	P	TB3	-240V																															
		TB6	COM0	TB5	Q00																															
		TB8	COM1	TB7	Q01																															
TB10	Q03	TB9	Q02																																	
TB12	Q05	TB11	Q04																																	
TB14	24G	TB13	24V																																	

**XBC/XEC-DP14E**  
 Transistor output wiring  
 (source type)

Circuit configuration		No.	Contact	No.	Contact	Type																														
		TB2	FG	TB1	AC100	<table border="1"> <tr><td>+</td><td></td><td></td></tr> <tr><td>FG</td><td>AC100</td><td>TB1</td></tr> <tr><td></td><td>-240V</td><td>TB3</td></tr> <tr><td>N</td><td>Q00</td><td>TB5</td></tr> <tr><td>COM0</td><td>Q01</td><td>TB7</td></tr> <tr><td>COM1</td><td>Q02</td><td>TB9</td></tr> <tr><td>Q03</td><td>Q4</td><td>TB11</td></tr> <tr><td>Q5</td><td>24V</td><td>TB13</td></tr> <tr><td>24G</td><td></td><td></td></tr> <tr><td></td><td>+</td><td></td></tr> </table>	+			FG	AC100	TB1		-240V	TB3	N	Q00	TB5	COM0	Q01	TB7	COM1	Q02	TB9	Q03	Q4	TB11	Q5	24V	TB13	24G				+	
		+																																		
		FG	AC100	TB1																																
			-240V	TB3																																
		N	Q00	TB5																																
		COM0	Q01	TB7																																
		COM1	Q02	TB9																																
		Q03	Q4	TB11																																
		Q5	24V	TB13																																
		24G																																		
			+																																	
		TB4	N	TB3	-240V																															
		TB6	COM0	TB5	Q00																															
		TB8	COM1	TB7	Q01																															
TB10	Q03	TB9	Q02																																	
TB12	Q05	TB11	Q04																																	
TB14	24G	TB13	24V																																	

\* XBC input : P00~P11, XEC input : I00~I17 \* XBC output : P40~P4B, XEC output : Q00~Q11

XBC/XEC-DR20E  
XBC/XEC-DN20E  
XBC/XEC-DP20E  
DC24V Input wiring  
(sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type
		TB2	485+	TB1	RX	
		TB4	485-	TB3	TX	
		TB6	00	TB5	SG	
		TB8	02	TB7	01	
		TB10	04	TB9	03	
		TB12	06	TB11	05	
		TB14	08	TB13	07	
		TB16	0A	TB15	09	
		TB18	NC	TB17	0B	
		TB20	NC	TB19	NC	
		TB22	NC	TB21	NC	
		TB24	COM	TB23	NC	

XBC-DR20E  
Relay output wiring

Circuit configuration		No.	Contact	No.	Contact	Type
		TB2	FG	TB1	AC100	
		TB4	COM0	TB3	-240V	
		TB6	COM1	TB5	40	
		TB8	COM2	TB7	41	
		TB10	43	TB9	42	
		TB12	45	TB11	NC	
		TB14	47	TB13	44	
		TB16	NC	TB15	46	
		TB18	NC	TB17	NC	
		TB20	NC	TB19	NC	
		TB22	NC	TB21	NC	
		TB24	24G	TB23	24V	

XBC/XEC-DN20E  
Transistor output wiring  
(sink type)

Circuit configuration		No.	Contact	No.	Contact	Type
		TB2	FG	TB1	AC100	
		TB4	P	TB3	-240V	
		TB6	COM0	TB5	Q00	
		TB8	COM1	TB7	Q01	
		TB10	Q03	TB9	Q02	
		TB12	COM2	TB11	NC	
		TB14	Q05	TB13	Q04	
		TB16	Q07	TB15	Q06	
		TB18	NC	TB17	NC	
		TB20	NC	TB19	NC	
		TB22	NC	TB21	NC	
		TB24	24G	TB23	24V	

XBC/XEC-DP20E  
Transistor output wiring  
(source type)

Circuit configuration		No.	Contact	No.	Contact	Type
		TB2	FG	TB1	AC100	
		TB4	N	TB3	-240V	
		TB6	COM0	TB5	Q00	
		TB8	COM1	TB7	Q01	
		TB10	Q03	TB9	Q02	
		TB12	COM2	TB11	NC	
		TB14	Q05	TB13	Q04	
		TB16	Q07	TB15	Q06	
		TB18	NC	TB17	NC	
		TB20	NC	TB19	NC	
		TB22	NC	TB21	NC	
		TB24	24G	TB23	24V	

\* XBC input : P00~P11, XEC input : I00~I17 \* XBC output : P40~P4B, XEC output : Q00~Q11

XBC/XEC E

**XBC/XEC-DR30E**  
**XBC/XEC-DN30E**  
**XBC/XEC-DP30E**  
 DC24V Input wiring  
 (sink/source type)

Circuit configuration		No.	Contact	No.	Contact	Type
	TB2	485+	TB1	RX		
	TB4	485-	TB3	TX		
	TB6	00	TB5	SG		
	TB8	02	TB7	01		
	TB10	04	TB9	03		
	TB12	06	TB11	05		
	TB14	08	TB13	07		
	TB16	0A	TB15	09		
	TB18	0C	TB17	0B		
	TB20	0E	TB19	0D		
	TB22	10	TB21	0F		
	TB24	COM	TB23	11		

**XBC-DR30E**  
 Relay output wiring

Circuit configuration		No.	Contact	No.	Contact	Type
	TB2	FG	TB1	AC100		
	TB4	COM0	TB3	-240V		
	TB6	COM1	TB5	40		
	TB8	COM2	TB7	41		
	TB10	43	TB9	42		
	TB12	COM3	TB11	NC		
	TB14	45	TB13	44		
	TB16	47	TB15	46		
	TB18	COM4	TB17	NC		
	TB20	49	TB19	48		
	TB22	4B	TB21	4A		
	TB24	24G	TB23	24V		

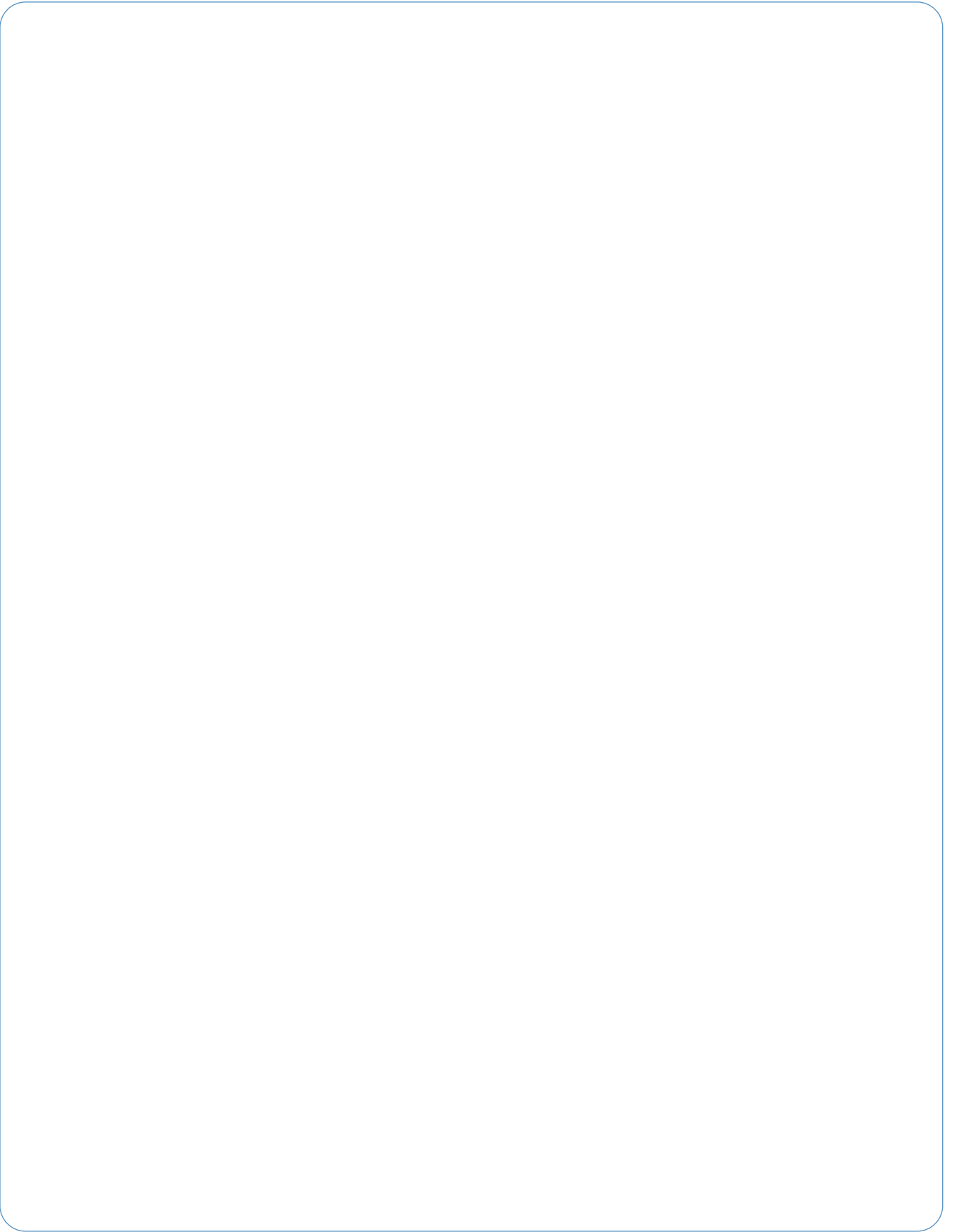
**XBC/XEC-DN30E**  
 Transistor output wiring  
 (sink type)

Circuit configuration		No.	Contact	No.	Contact	Type
	TB2	FG	TB1	AC100		
	TB4	P	TB3	-240V		
	TB6	COM0	TB5	Q00		
	TB8	COM1	TB7	Q01		
	TB10	Q03	TB9	Q02		
	TB12	COM2	TB11	NC		
	TB14	Q05	TB13	Q04		
	TB16	Q07	TB15	Q06		
	TB18	COM3	TB17	NC		
	TB20	Q09	TB19	Q08		
	TB22	Q11	TB21	Q10		
	TB24	24G	TB23	24V		

**XBC/XEC-DP30E**  
 Transistor output wiring  
 (source type)

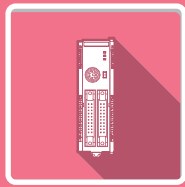
Circuit configuration		No.	Contact	No.	Contact	Type
	TB2	FG	TB1	AC100		
	TB4	N	TB3	-240V		
	TB6	COM0	TB5	Q00		
	TB8	COM1	TB7	Q01		
	TB10	Q03	TB9	Q02		
	TB12	COM2	TB11	NC		
	TB14	Q05	TB13	Q04		
	TB16	Q07	TB15	Q06		
	TB18	COM3	TB17	NC		
	TB20	Q09	TB19	Q08		
	TB22	Q11	TB21	Q10		
	TB24	24G	TB23	24V		

\* XBC input : P00~P11, XEC input : I00~I17 \* XBC output : P40~P4B, XEC output : Q00~Q11



XBC/KEC E





# XBM Slim

Slim

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# XGB General specification

## Slim

Modular type unit  
[XBM-DR16S, DN16S, DN32S]



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/s <sup>2</sup> (1G)	-	
	Continuous vibration			
	Frequency	Acceleration	Pulse width	
10 ≤ f < 57Hz	-	0.035mm		
57 ≤ f ≤ 150Hz	4.9m/s <sup>2</sup> (0.5G)	-		
Shock resistance	<ul style="list-style-type: none"> <li>• Peak acceleration: 147m/s<sup>2</sup> (15g)</li> <li>• Duration: 11ms</li> <li>• Pulse waveform: Half-sine, 3times each direction per each axis</li> </ul>			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	
2kV		1kV		
Operating ambience	Free from corrosive gases and excessive dust			
Altitude	Up to 2,000m			
Pollution level <sup>*1)</sup>	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 specifications | Modular type unit

## Performance specifications

Item	XBM-DR16S	XBM-DN16S	XBM-DN32S
Control method	Repetitive, cyclic, fixed cycle operation, constant scan		
I/O control method	Refresh mode (Batch processing by scan synchronization), Direct mode by instruction		
Programming language	Ladder diagram, Instruction List		
Processing speed	160 ns/Step		
Program capacity	10Kstep		
Main unit I/O points	16 points (Input:8, Output:8)	16 points (Input:8, Output:8)	32 points (Input:16, Output:16)
Max. I/O points (Main + Expansion 7 stages)	240 points		256 points
Total program	128		
Operation mode	RUN, STOP, DEBUG		
Self diagnosis	Detects errors of scan time, memory error, I/O error, battery error, power error, etc.		
Program port	RS-232C 1 channel (Loader)		
Retain data at power failure	Latch area setting at basic parameter		
Built-in functions	RS-232C/RS-485(2 ch), Pulse catch, Input filter, External interrupt, PID control, High-speed counter, Positioning <sup>*1)</sup>		
<b>Data memory</b>			
<b>XBM</b>			
<b>Data area</b>	P	P0000 ~ P127F (2,048 points)	
	M	M0000 ~ M255F (4,096 points)	
	K	K0000 ~ K2559F (Special area: K2600~K2559F) (40,960 points)	
	L	L0000 ~ L1279F (20,480 points)	
	F	F000 ~ F255F (4,096 points)	
	T	100ms, 10ms, 1ms: T000 ~ T255 (256) (Adjustable by parameter setting)	
	C	C000 ~ C255 (256)	
	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)	

\*1) XBM-DR16S does not have built-in positioning function.

### XBM-DR16S

Input wiring  
(sink/source type)

Circuit configuration		No.	Contact	Type
		TB1	0	
		TB2	1	
		TB3	2	
		TB4	3	
		TB5	4	
		TB6	5	
		TB7	6	
		TB8	7	
		TB9	COM	

### Transistor output wiring

(XBC-DN32H / XEC-DN32H)

Circuit configuration		No.	Contact	Type
		TB1	20	
		TB2	21	
		TB3	22	
		TB4	23	
		TB5	24	
		TB6	25	
		TB7	26	
		TB8	27	
		TB9	COM	

### XBM-DN16S

(Input wiring[sink/source type])

Circuit configuration		No.	Contact	No.	Contact	Type
		B10	0	A10	NC	
		B09	1	A09	NC	
		B08	2	A08	NC	
		B07	3	A07	NC	
		B06	4	A06	NC	
		B05	5	A05	NC	
		B04	6	A04	NC	
		B03	7	A03	NC	
		B02	COM	A02	NC	
		B01	COM	A01	NC	

**XBM-DR16S**

Transistor output wiring  
(sink type)

Circuit configuration		No.	Contact	Type
	B10	20		A10 A09 A08 A07 A06 A05 A04 A03 A02 A01
	B09	21		
	B08	22		
	B07	23		
	B06	24		
	B05	25		
	B04	26		
	B03	27		
	B02	DC12 /24V		
	B01	NC		
	A10	NC		
	A09	NC		
	A08	NC		
	A07	NC		
	A06	NC		
	A05	NC		
A04	NC			
A03	NC			
A02	COM			
A01	COM			

**XBM-DN16S**

(Input wiring[sink/source type])

Circuit configuration		No.	Contact	No.	Contact	Type
	B10	0	A10	NC		A10 A09 A08 A07 A06 A05 A04 A03 A02 A01
	B09	1	A09	NC		
	B08	2	A08	NC		
	B07	3	A07	NC		
	B06	4	A06	NC		
	B05	5	A05	NC		
	B04	6	A04	NC		
	B03	7	A03	NC		
	B02	COM	A02	COM		
	B01	COM	A01	COM		

**XBM-DR16S**

Transistor output wiring  
(sink type)

Circuit configuration		No.	Contact	Type
	B10	20		A10 A09 A08 A07 A06 A05 A04 A03 A02 A01
	B09	21		
	B08	22		
	B07	23		
	B06	24		
	B05	25		
	B04	26		
	B03	27		
	B02	DC12 /24V		
	B01	NC		
	A10	28		
	A09	29		
	A08	2A		
	A07	2B		
	A06	2C		
	A05	2D		
A04	2E			
A03	2F			
A02	COM			
A01	COM			

XBM Slim



## Slim

### Transistor output wiring (XBM-DN16S)

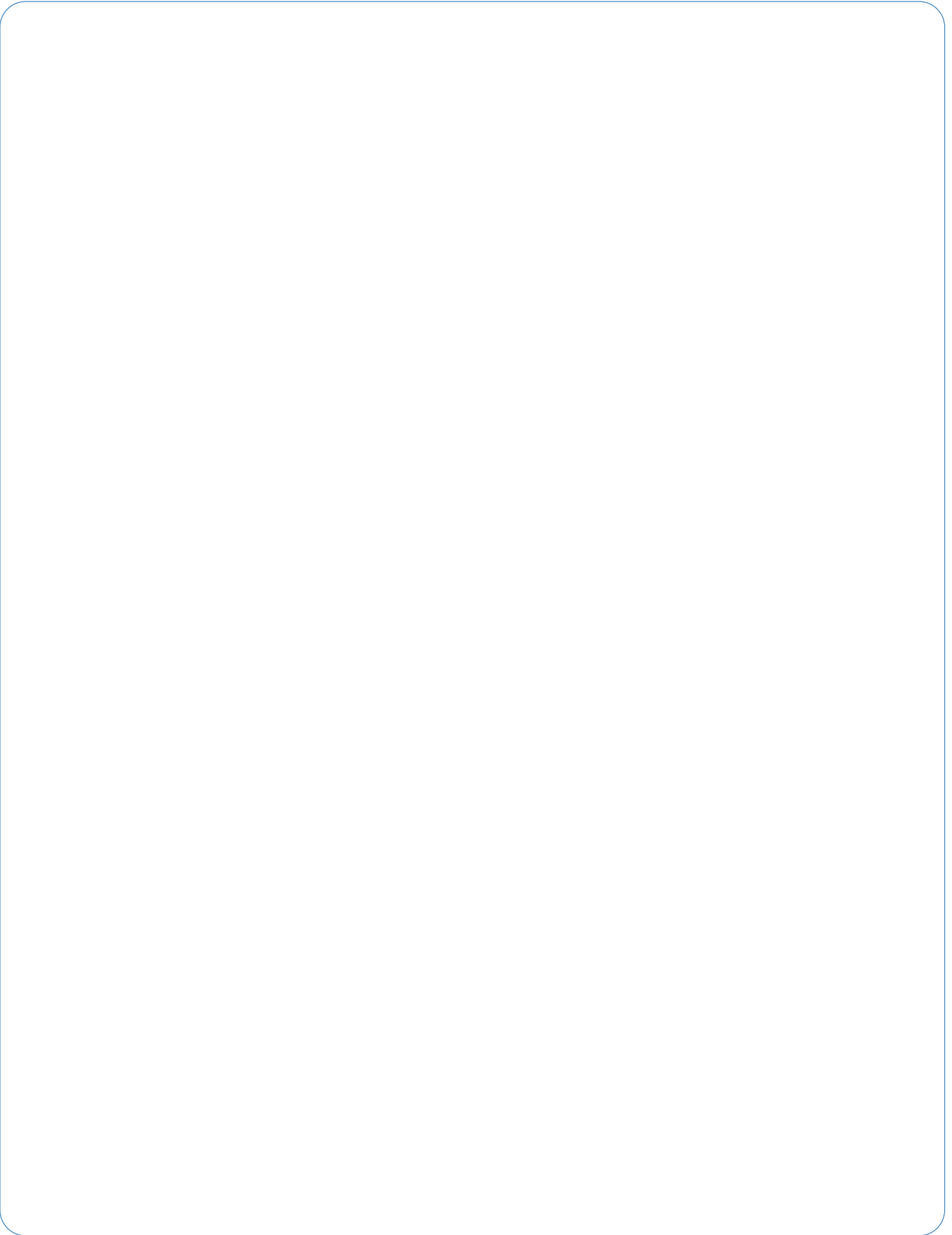
Circuit configuration		No.	Contact	Type
	B10	20		
	B09	21		
	B08	22		
	B07	23		
	B06	24		
	B05	25		
	B04	26		
	B03	27		
	B02	DC12/		
	B01	24V		
	A10	NC		
	A09	NC		
	A08	NC		
	A07	NC		
	A06	NC		
	A05	NC		
A04	NC			
A03	NC			
A02	COM			
A01	COM			

### Input wiring (XBM-DN32S)

Circuit configuration		No.	Contact	No.	Contact	Type
	B10	00	A10	08		
	B09	01	A09	09		
	B08	02	A08	0A		
	B07	03	A07	0B		
	B06	04	A06	0C		
	B05	05	A05	0D		
	B04	06	A04	0E		
	B03	07	A03	0F		
	B02	COM	A02	COM		
	B01	COM	A01	COM		

### Transistor output wiring (XBM-DN32S)

Circuit configuration		No.	Contact	Type
	B10	20		
	B09	21		
	B08	22		
	B07	23		
	B06	24		
	B05	25		
	B04	26		
	B03	27		
	B02	DC12/		
	B01	24V		
	A10	28		
	A09	29		
	A08	2A		
	A07	2B		
	A06	2C		
	A05	2D		
A04	2E			
A03	2F			
A02	COM			
A01	COM			





# Application

## XGB Series

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## U type

### Input specification

Item	XEC-DN32U/XEC-DN32UP/XEC-DN32UA XEC-DR28U/XEC-DR28UP/XEC-DR28UA
Input point	16 point
Insulation method	Photo coupler insulation
Rated input voltage	DC24V
Rated input current	About 4mA (Contact point 0~3: about 7mA)
Operation voltage range	DC20.4~28.8V (within ripple rate 5%)
On voltage / On current	DC19V or higher / 3mA or higher
Off voltage / Off current	DC6V or lower / 1mA or lower
Input resistance	About 5.6 $\Omega$ (P00~P07: about 4.7 $\Omega$ )
Response time	1/3/5/10/20/70/100ms (Set by I/O parameter) Default: 3ms
Off $\rightarrow$ On On $\rightarrow$ Off	
Insulation pressure	AC560Vrms/3 cycle (altitude 2000m)
Insulation resistance	10ms or more by MegOhmMeter
Common method	16 point/COM
Proper cable size	0.3~0.75mm <sup>2</sup>
Operation indicator	LED On when Input On
External connection method	8 point terminal block + 10point terminal connector
Weight	571g

### Transistor output specification

Item	XEC-DN32U/XEC-DN32UP/XEC-DN32UA	
Output point	16 point	
Insulation method	Photo coupler insulation	
Rated load voltage	DC 12/24V	
Operation load voltage range	DC 10.2 ~ 26.4V	
Max. load current	0.5A/1 point, 2A/1COM	
Off leakage current	0.1mA or less	
Max. inrush current	4A/10ms or less	
Max. voltage drop when On	DC 0.4V or less	
Surge absorber	Zener diode	
Response time	1ms or less 1ms or less (rated load, resistive load)	
Off $\rightarrow$ On On $\rightarrow$ Off		
Common method	16 point/COM	
Proper wire size	Stranded wire 0.3~0.75mm <sup>2</sup> (external diameter 2.8mm or less)	
External power	Voltage	DC12/24V $\pm$ 10% (Ripple voltage 4 Vp-p or less)
	Current	10mA or less (When connecting DC24V)
Operation indicator	LED On when Output On	
External connection method	8 point terminal block connector + 10 point terminal block connector	
Weight	571g	

## High performance type

### Input specification

Item	XBC/XEC-DR32H	XBC/XEC-DN32H XEC-DP32H	XBC/XEC-DR64H	XBC/XEC-DN64H XEC-DP64H	XEC-DR32H/D1 XEC-DR64H/D1
Input points	16 points		32 points		16 points
Rated input voltage	DC 24V				DC 12/24V
Rated input current	4mA (Contact 0~7: 9mA)				5/10mA (Contact 0~7: 7/15mA)
Operation voltage range	DC 20.4 ~ 28.8V (Ripple rate < 5%)				DC 9.5~30V (Ripple rate < 5%)
On voltage / On current	DC 19V or more/3mA or more				DC 9V or more/3mA or more
Off voltage / Off current	DC 6V or less/1mA or less				DC 5V or less/1mA or less
Input resistance	5.6k $\Omega$ (P00 ~ P07: 2.7k $\Omega$ )				2.7k $\Omega$ (%IX0.0.0~%IX0.0.7:1.8k $\Omega$ )
Response time	Off $\rightarrow$ On	1/3/5/10/20/70/100 ms (Setting by CPU parameter) Initial value: 3ms			
	On $\rightarrow$ Off				

### Relay output specification

Item	XBC/XEC-DR32H	XBC/XEC-DR64H
Output point	16 points	32 points
Insulation method	Relay insulation	
Rated load voltage / current	DC 24V 2A (Resistive load)/AC 220V 2A (COS $\phi$ = 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 $\phi$ = 0.7) 100,000 times or more
		AC 200V/1A, AC 240V/0.5A (COS $\phi$ = 0.35) 100,000 times or more
	DC 24V/1A, DC 100V/0.1A (L / R = 7ms) 100,000 times or more	
Response time	Off $\rightarrow$ On	10ms or less
	On $\rightarrow$ Off	12ms or less
Common method	4 points/COM	P20 ~ 2F: 4 points/COM P30 ~ 3F: 8 points/COM

### Transistor output specification

Item	XBC-DN32H/XEC-DN(P)32H	XBC-DN64H/XEC-DN(P)64H
Output point	16 points	32 points
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 (P20 ~ 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 $\rightarrow$ On	1ms or less
	On $\rightarrow$ Off	1ms or less (Rated load, resistive load)
Common method	4 points/COM	P20 ~ 2F: 4 points/COM P30 ~ 3F: 8 points/COM
External power supply	Voltage	DC 12/24V $\pm$ 10% (Ripple voltage 4 Vp-p or less)
	Current	10mA or less (DC 24V connection)



## Standard type

### Input specification

Item	XBC/XEC-DN20SU	XBC/XEC-DN30SU	XBC/XEC-DN40SU	XBC/XEC-DN60SU
	XBC/XEC-DR20SU	XBC/XEC-DR30SU	XBC/XEC-DR40SU	XBC/XEC-DR60SU
Input point	12 points	18 points	24 points	36 points
Rated input voltage	DC 24V			
Rated input current	4mA (Contact point 0~1:16mA, 2~7 :10mA), DN20SU (DN30SU) : 4mA (Contact point 0~7: 10mA)			
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	5.6kΩ (P00 ~ P07 : 2.7kΩ)			
Response time	Off → On	1/3/5/10/20/70/100ms (Setting by CPU parameter) Initial value : 3ms		
	On → Off			

### Transistor output specification (Sink/Source type)

Item	XBC/XEC-DN20SU	XBC/XEC-DN30SU	XBC/XEC-DN40SU	XBC/XEC-DN60SU
	XBC/XEC-DR20SU	XBC/XEC-DR30SU	XBC/XEC-DR40SU	XBC/XEC-DR60SU
	XBC/XEC-DP20SU	XBC/XEC-DP30SU	XBC/XEC-DP40SU	XBC/XEC-DP60SU
Output point	8 points	12 points	16 points	24 points
Insulation method	Photo coupler insulation			
Rated load voltage	DC 12/24V			
Load voltage range	DC 10.2 ~ 26.4V			
Max. load voltage	0.5A/1 point, 2A/ 1COM			
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	DC 12/24V± 10% (Ripple voltage 4Vp-p or less)		
	On → Off			

### Relay output specification

Item	XBC/XEC-DR20SU	XBC/XEC-DR30SU	XBC/XEC-DR40SU	XBC/XEC-DR60SU
Output point	8 points	12 points	16 points	24 points
Insulation method	Relay insulation			
Rated load voltage/current	DC 24V 2A/AC 220V 2A (COSϕ = 1), 5A/COM			
Min. load voltage/current	DC 5V/1mA			
Max. load Current	AC 250V, DC 125V			
Off leakage current	0.1mA (AC 220V, 60Hz)			
Surge absorber	-			
Response time	Off → On	10ms or less		
	On → Off			
Common method (/ COM)	4 points/COM (P40, P41 : 1 point/COM), (P42 P43 : 2 points/COM)			
Life-cycle	Mechanical	Rated load voltage/Current 10 million times or more		
	Electrical	AC 220V/1.5A, AC 240V/1A (COSϕ= 0.7) 10 million times or more		
		AC 200V/1A, AC 240V/0.5A (COSϕ= 0.35) 10 million times or more		
		DC 24V/1A, DC 100V/0.1A (L / R = 7ms) 10 million times or more		

## Economic type

### Input specification

Specification	Modal	Main unit			
		XBC/XEC-DR10E XBC/XEC-DN10E	XBC/XEC-DR14E XBC/XEC-DN14E	XBC/XEC-DR20E XBC/XEC-DN20E	XBC/XEC-DR30E XBC/XEC-DN30E
Input point		6 points	8 points	12 points	18 points
Insulation method		Photo coupler insulation			
Rated input voltage		DC 24V			
Rated input current		About 4mA (Contact point 0~3: about 7mA)			
Operation voltage range		DC 20.4~28.8V (Within ripple rate 5%)			
On voltage / On current		DC 19V or higher / 3mA or higher			
Off voltage / Off current		DC 6V or lower / 1mA or lower			
Input resistance		About 5.6k $\Omega$ (%I $\times$ 0.0.0~%I $\times$ 0.0.3: about 2.7k $\Omega$ )			
Response time	Off $\rightarrow$ On	1 / 3 / 5 / 10 / 20 / 70 / 100ms (Set by I/O parameter) Default: 3ms			
	On $\rightarrow$ Off				
Insulation pressure		AC 560Vrms / 3 cycle (Altitude 2000m)			
Insulation resistance		10k $\Omega$ or more by MegOhmMeter			
Common method		6 points / COM	8 points / COM	12 points / COM	18 points / COM
Proper cable size		0.3mm <sup>2</sup>			
Operation indicator		LED On when Input On			
External connection method		14 point terminal block connector (M3 $\times$ 6 screw)		24 point terminal block connector (M3 $\times$ 6 screw)	
Weight		330g	340g	450g	465g
		313g	315g	418g	423g

### Relay output specification

Specification	Modal	Main unit			
		XBC/XEC-DR10E	XBC/XEC-DR14E	XBC/XEC-DR20E	XBC/XEC-DR30E
Output point		4 points	6 points	8 points	12 points
Insulation method		Relay insulation			
Rated load voltage / Current		DC 24V 2A (resistive load) / AC 220V 2A (COS $\phi$ = 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 / hour			
Surge absorber		None			
Service life	Mechanical	20 million times or more			
	Electrical	Rated load voltage / Current 100,000 times or more			
		AC 200V / 1.5A, AC 240V / 1A (CO $\phi$ = 0.7) 100,000 times or more			
		AC 200V / 1A, AC 240V / 0.5A (CO $\phi$ = 0.35) 100,000 times or more			
Response time	Off $\rightarrow$ On	10ms or less			
	On $\rightarrow$ Off	12ms or less			
Common method		2 points / COM	4 points / COM	4 points / COM	4 points / COM
Proper cable size		Stranded cable 0.3~0.75mm <sup>2</sup> (External diameter 2.8mm or less)			
Operation indicator		LED On when Output On			
External connection method		14 point terminal block connector (M3 $\times$ 6 screw)		24 point terminal block connector (M3 $\times$ 6 screw)	

## Economic type

### Transistor output specification (Sink / Source type)

Specification	Modal	Main unit			
		XBC/XEC-DN10E XBC/XEC-DP10E	XBC/XEC-DN14E XBC/XEC-DP14E	XBC/XEC-DN20E XBC/XEC-DP20E	XBC/XEC-DN30E XBC/XEC-DP30E
Output point		4 points	6 points	8 points	12 points
Insulation method		Photo coupler insulation			
Rated load voltage		DC 12/24V			
Operation load voltage range		DC 10.2~26.4V			
Max. load current		0.5A/1 point, 2A/1COM			
Off leakage current		0.1mA or less			
Max. inrush current		4A/10ms or less			
Max. voltage drop when On		DC 0.4V or less			
Surge absorber		Zener diode			
Response time	Off → On	1ms less			
	On → Off	1ms less (Rated load, resistive load)			
Common method		4 point / COM			
Proper wire size		Stranded wire 0.3~0.75mm <sup>2</sup> (External diameter 2.8mm or less)			
External power	Voltage	DC 12/24V ± 10% (Ripple voltage 4 Vp-p or less)			
	Current	25mA or less (When connecting DC 24V)			
Operation indicator		LED On when Output On			
External connection method		14 point terminal block connector (M3 × 6 screw)		24 point terminal block connector (M3 × 6 screw)	

## Slim type

### Input specification

Item	XBM-DR16S	XBM-DN16S	XBM-DN32S
Input point	8 points	8 points	16 points
Rated input voltage	DC 24V		
Rated input current	4mA (00 ~ 03: 7mA)		
Operation voltage range	DC 20.4 ~ 28.8V (Ripple rate < 5%)		
Response time	1/3/5/10/20/70/100ms		
	(Set by CPU parameter) Default : 3ms		
Common method	8 points/COM		16 points/COM

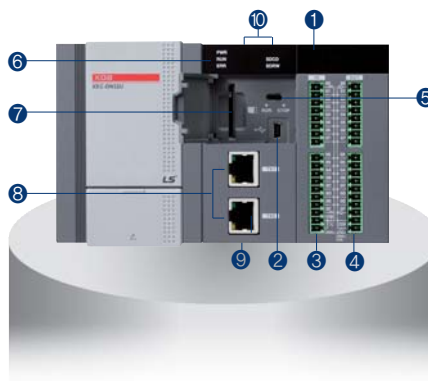
### Relay output specification

Item	XBM-DR16S	
Output point	8 points	
Insulation method	Relay insulation	
Rated load voltage / current	DC 24V 2A (Resistive load)/AC 220V 2A (COS $\phi$ = 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	20 millions times or more
	Electrical	Rated load voltage/Current 100,000 times or more
		AC 200V/1.5A, AC 240V/1A (COS $\phi$ = 0.7) 100,000 times or more
		AC 200V/1A, AC 240V/0.5A (COS $\phi$ = 0.35) 100,000 times or more
	DC 24V/1A, DC 100V/0.1A (L / R = 7ms) 100,000 times or more	
Response time	Off $\rightarrow$ On	10ms or less
	On $\rightarrow$ Off	12ms or less
Common method	8 points / COM	

### Transistor output specification

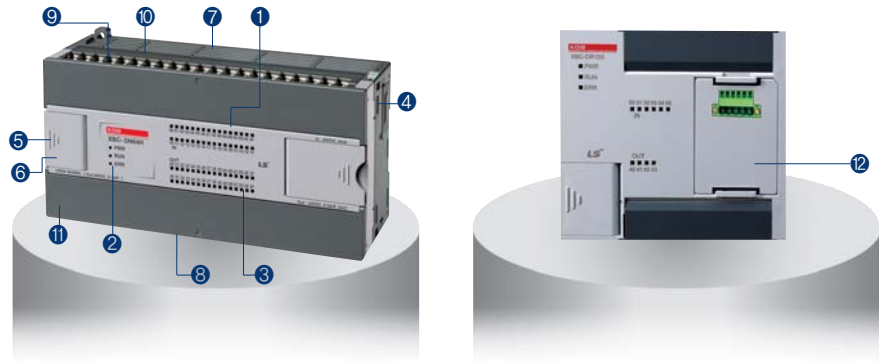
Item	XBM-DN16S	XBM-DN32S
Output point	8 point	16 point
Insulation method	Photo coupler insulation	
Rated load voltage	DC 12/24V	
Load voltage range	DC 10.2 ~ 26.4V	
Max. load voltage	0.2A/1 point (P20 ~ 23: 0.1A/Point)	
Max. inrush current	4A/10ms or less	
Max. voltage drop (On)	DC 0.4V or less	
Response time	1ms or less	
	1ms or less (Rated load, Resistive load)	
Common method	8 point / COM	16 point / COM
External power supply	DC 12/24V $\pm$ 10% (Ripple voltage 4 Vp-p or less)	
	25mA or less (DC 24V connection)	
External connection method	20pin connector	

## Block type unit (U)



No.	Name	Descriptions	Remark
1	LED for displaying input, output	Displays the On/Off status of input, output contacts	
2	Connector for PADT	Connector (USB 1channel) to access to XG5000	
3	Input terminal block	Terminal block receiving the actual input signal	
4	Output terminal block	Terminal block outputting the actual output signal	
5	RUN/STOP mode switch	Sets the basic unit's operation mode. - STOP → RUN : Program's operation is executed. - RUN → STOP : Program's operation is stopped. (In case of STOP, the remote operation is available.)	
6	Status display LED	Displays the basic unit's operation status. - PWR (Red light On) : The power is supplied. - RUN (Green light On) : During RUN mode - ERR (Flickering red light) : Occurrence of errors during operation - STATE (Red light On/flickering Red light): When the SD card is installed, the red light is turned On; when the SD card error occurs, the red light is flickering. - RD/WR (Flickering red light) : During SD card Write	
7	SD card connector	Connector with the SD memory card	
8	Terminal block for the embedded Enet communication	Terminal block for the embedded Enet communication	
9	Terminal block for the embedded communication	Terminal block (lower part of the product) for the embedded RS-232C/485 communication	
10	Battery holder	Battery holder (upper part of the product)	

**Block type unit**  
(High performance,  
Standard, Economic)



No.	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 100-240V power supply	
⑫	Option module slot	Slot for option module	-	



## Modular type unit

(XBM-DR16S, DN16S, DN32S)



No.	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 TxD, RxD, SG terminal connection	
⑪	Power connector	Power supply connection	DC 24V power supply	

# Built-in functions

## U

### Performance specifications

Items		Specification	Remark
<b>PID control</b>		Control by instruction, auto-tuning, PWM output, Forced output, Operation scan time setting, Antiwindup, Delta MV, PV tracking, Hybrid operation, Cascade operation	
<b>Serial</b>	<b>Protocol</b>	Dedicated protocol, Modbus protocol User defined protocol , LS bus (inverter protocol)	Embedded00 P2P:01
	<b>Channel</b>	RS-232C 1 port and RS-485 1 port	
<b>Ethernet</b>	<b>Transfer spec</b>	Cable: 100Base-TX Speed: 100Mbps Auto-MDIX <sup>*1</sup> IEEE 802.3	
	<b>Topology</b>	Line, star	
	<b>Diagnosis</b>	Module information, service condition	
	<b>Protocol</b>	XGT dedicated Modbus TCP/IP user define frame	Embedded01 P2P:02 High-speed link:01
<b>Service</b>	P2P, High Speed link, Remote connection		
<b>Datalog</b>	<b>Group</b>	Max 10 group	
	<b>Data set</b>	32 per group	
	<b>Extension</b>	csv file	
	<b>File size</b>	Max 16Mbyte	
	<b>SD memory type</b>	SD,SDHC type (Recommand: SanDisk,Transcend)	
	<b>Memory size</b>	Max 16GB	
	<b>File system</b>	FAT32	
<b>High speed counter</b>	<b>Performance</b>	1-phase : 100MHz 8 channels 2-phase : 50MHz 4 channels	
	<b>Counter mode</b>	4 counter modes are supported based on input pulse and INC/DEC method • 1 pulse operation Mode : INC/DEC count by program • 1 pulse operation Mode : INC/DEC count by phase B pulse input • 2 pulse operation Mode : INC/DEC count by input pulse • 2 pulse operation Mode : INC/DEC count by difference of phase	
	<b>Function</b>	• Internal/external preset • Latch counter • Compare output • No. of rotation per unit time	

\*1 Auto-MDIX (Automatic medium-dependent interface crossover) :

It is the function to automatically detect whether the cable connected to the Ethernet port is peer-to-peer (straight) or cross cable

## U

### Built-in positioning function (XBC/XEC-DxxxUP)

Items	Specification	Remark
<b>Basic function</b>	No. of control axi: 4axis Control Method:Position, Speed, Speed/Position, Feed Control Control Unit: Pulse ,mm, inch, degree Positioning Data: Each axis can have up to 400 data (Step number:1~400) Operation pattern: End, Keep, Continuous Operation method: Singular, Repeat	Availavle on Analog
<b>Interpolation</b>	2/3/4 axis linear interpolation 2 axis circular interpolation 3 axis helical interpolation	
<b>Positioning</b>	Method: Absolute/Incremental method Address range: 2, 147, 483, 648~2, 147, 483, 647 Speed: Max 2Mpps (1~2,000,000pps) Acc /Dec process: Trapezoid type, S-type	
<b>Homing method</b>	DOG+HOME (Off), DOG+HOME (On), Upper limit + HOME, DOG, High speed, Upper/Lower limit, HOME	
<b>Manual operation</b>	Jog operation, MPG operation, Inching operation	
<b>Encoder input</b>	Line drive (RS-422A) input 1Channel (Max 200kpps)	

### Built-in analog function (XBC/XEC-DxxxUA)

Items	Specification	Remark			
<b>Analog input</b>	<b>Channels</b>	4channels (current/voltage)	Availavle on Analog		
	<b>Specification</b>	<b>Input Range</b>		Voltage: 1~5V, 0~5V, 0~10V, -10~10V Current: 4~20 mA, 0~20 mA Current input or Voltage input can be selected through the external terminal wiring setting.	
		<b>Input resistance</b>		1MΩ or more (voltage input), 250Ω (current iput)	
		<b>Max. resolution</b>		1/16000	
				0.250 mV (1 ~ 5V) 0.3125 mV (0 ~ 5V) 0.625 mV (0 ~ 10V) 1.250 mV (±10V)	1.0 μA (4 ~ 20 mA) 1.25 μA (0 ~ 20 mA)
<b>Accuracy</b>	±0.2% or less (When ambient temperature is 25 °C) ±0.3% or less (When ambient temperature is 0 ~ 55 °C)				
<b>Analog output</b>	<b>Channels</b>	Voltage 2 channels ,Current 2 channels			
	<b>Specification</b>	<b>Output Range</b>		Voltage: 1~5V, 0~5V, 0~10V, -10~10V Current: 4~20 mA, 0~20 mA Output ranges are set in user program or I/O parameter per each channel.	
		<b>Load resistance</b>		1MΩ or more(voltage output), 600Ω or less(current output)	
		<b>Max. resolution</b>		1/16000	
			0.250 mV (1 ~ 5V) 0.3125 mV (0 ~ 5V) 0.625 mV (0 ~ 10V) 1.250 mV (±10V)	1.0 μA (4 ~ 20 mA) 1.25 μA (0 ~ 20 mA)	
<b>Accuracy</b>	±0.2% or less (When ambient temperature is 25 °C) ±0.3% or less (When ambient temperature is 0 ~ 55 °C)				

## Slim

### Performance specifications

Classification		Description			
		Block type unit			Modular type
		H	SU	E	S
Count input Signal	Signal	A-phase, B-phase			
	Input type	Voltage input (Open collector)			
	Signal level	DC 24V			
Max. count speed		100kpps	100kpps	4kpps	20kpps
Number of channels	1 phase	100kpps 4ch/20kpps 4ch	100kpps 2ch/20kpps 6ch	4kpps 4ch	20kpps 4ch
	2 phase	50kpps 2ch/10kpps 2ch	50kpps 1ch	2kpps 2ch	2 multiplication: 10kpps
		50kpps 2ch/8kpps 2ch	8kpps 3ch		4 multiplication: 8kpps
Count range		Signed 32bit (-2,147,483,648 ~ 2,147,483,647)			
Count mode (Program setting)		Linear count (If 32bit 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	2 point / channel (for each channel):	1 point / channel (for each channel):		
		output contact point of basic unit available		output contact point of basic unit available	
	Type	Select program setting, signal-compared (>, >=, =, <=, <) or section compared output (Included or excluded)			
Output type		Relay, Open-collector output (Sink)			
Count enable		To be set through program			
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

## Parts designation | Block type unit

### High performance type (XBC-H)

Terminal No.	Name		Usage	
	1-phase	2-Phase	1-phase	2-Phase
P000	Ch0 counter input	Ch0 A-phase input	Counter input terminal	A-phase input
P001	Ch1 counter input	Ch0 B-phase input	Counter input terminal	B-phase input
P002	Ch2 counter input	Ch2 A-phase input	Counter input terminal	A-phase input
P003	Ch3 counter input	Ch2 B-phase input	Counter input terminal	B-phase input
P004	Ch4 counter input	Ch4 A-phase input	Counter input terminal	A-phase input
P005	Ch5 counter input	Ch4 B-phase input	Counter input terminal	B-phase input
P006	Ch6 counter input	Ch6 A-phase input	Counter input terminal	A-phase input
P007	Ch7 counter input	Ch6 B-phase input	Counter input terminal	B-phase input
P008	Ch0 preset 24V	Ch0 preset 24V	Preset input terminal	Preset input terminal
P009	Ch1 preset 24V	-	Preset input terminal	No use
P00A	Ch2 preset 24V	Ch2 preset 24V	Preset input terminal	Preset input terminal
P00B	Ch4 preset 24V	-	Preset input terminal	No use
P00C	Ch5 preset 24V	Ch4 preset 24V	Preset input terminal	Preset input terminal
P00D	Ch6 preset 24V	-	Preset input terminal	No use
P00E	Ch7 preset 24V	Ch6 preset 24V	Preset input terminal	Preset input terminal
P00F	Ch8 preset 24V	-	Preset input terminal	No use
COM0	Input common	Input common	Input common	Input common

### High performance type (XEC-H)

Terminal No.	Name		Usage	
	1-phase	2-Phase	1-phase	2-Phase
IX0.0.0	Ch0 counter input	Ch0 A-phase input	Counter input terminal	A-phase input
IX0.0.1	Ch1 counter input	Ch0 B-phase input	Counter input terminal	B-phase input
IX0.0.2	Ch2 counter input	Ch2 A-phase input	Counter input terminal	A-phase input
IX0.0.3	Ch3 counter input	Ch2 B-phase input	Counter input terminal	B-phase input
IX0.0.4	Ch4 counter input	Ch4 A-phase input	Counter input terminal	A-phase input
IX0.0.5	Ch5 counter input	Ch4 B-phase input	Counter input terminal	B-phase input
IX0.0.6	Ch6 counter input	Ch6 A-phase input	Counter input terminal	A-phase input
IX0.0.7	Ch7 counter input	Ch6 B-phase input	Counter input terminal	B-phase input
IX0.0.8	Ch0 preset 24V	Ch0 preset 24V	Preset input terminal	Preset input terminal
IX0.0.9	Ch1 preset 24V	-	Preset input terminal	No use
IX0.0.10	Ch2 preset 24V	Ch2 preset 24V	Preset input terminal	Preset input terminal
IX0.0.11	Ch4 preset 24V	-	Preset input terminal	No use
IX0.0.12	Ch5 preset 24V	Ch4 preset 24V	Preset input terminal	Preset input terminal
IX0.0.13	Ch6 preset 24V	-	Preset input terminal	No use
IX0.0.14	Ch7 preset 24V	Ch6 preset 24V	Preset input terminal	Preset input terminal
IX0.0.15	Ch8 preset 24V	-	Preset input terminal	No use
COM0	Input common	Input common	Input common	Input common

### Standard type

Terminal No.	Name		Usage	
	1-phase	2-Phase	1-phase	2-Phase
P000	Ch0 counter input	Ch0 A-phase input	Counter input terminal	A-phase input
P001	Ch1 counter input	Ch0 B-phase input	Counter input terminal	B-phase input
P002	Ch2 counter input	Ch2 A-phase input	Counter input terminal	A-phase input
P003	Ch3 counter input	Ch2 B-phase input	Counter input terminal	B-phase input
P004	Ch4 counter input	Ch4 A-phase input	Counter input terminal	A-phase input
P005	Ch5 counter input	Ch4 B-phase input	Counter input terminal	B-phase input
P006	Ch6 counter input	Ch6 A-phase input	Counter input terminal	A-phase input
P007	Ch7 counter input	Ch6 B-phase input	Counter input terminal	B-phase input
P008	Ch0 preset 24V	Ch0 preset 24V	Preset input terminal	Preset input terminal
P009	Ch1 preset 24V	-	Preset input terminal	No use
P00A	Ch2 preset 24V	Ch2 preset 24V	Preset input terminal	Preset input terminal
P00B	Ch4 preset 24V	-	Preset input terminal	No use
P00C	Ch5 preset 24V	Ch4 preset 24V	Preset input terminal	Preset input terminal
P00D	Ch6 preset 24V	-	Preset input terminal	No use
P00E	Ch7 preset 24V	Ch6 preset 24V	Preset input terminal	Preset input terminal
P00F	Ch8 preset 24V	-	Preset input terminal	No use
COM0	Input common	Input common	Input common	Input common

Economic type

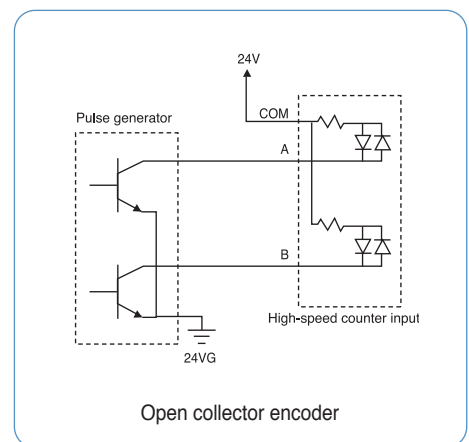
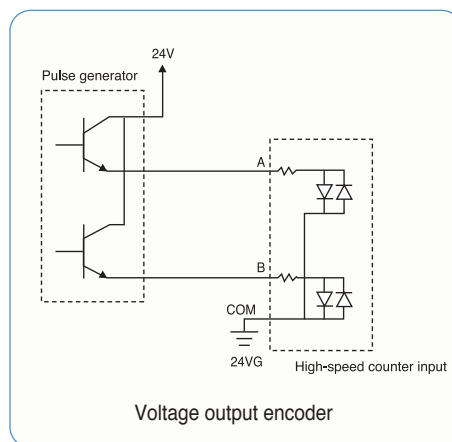
Terminal No.	Name		Usage	
	1-phase	2-Phase	1-phase	2-Phase
P000	Ch0 counter input	Ch0 A-phase input	Counter input terminal	A-phase input
P001	Ch1 counter input	Ch0 B-phase input	Counter input terminal	B-phase input
P002	Ch2 counter input	Ch2 A-phase input	Counter input terminal	A-phase input
P003	Ch3 counter input	Ch2 B-phase input	Counter input terminal	B-phase input
P004	Ch0 preset 24V	Ch0 preset 24V	Preset input terminal	Preset input terminal
P005	Ch1 preset 24V	-	Preset input terminal	No use
P006	Ch2 preset 24V	Ch2 preset 24V	Preset input terminal	Preset input terminal
P007	Ch4 preset 24V	-	Preset input terminal	No use
COM0	Input common	Input common	Common terminal	Common terminal

Parts designation | Modular type unit

Slim type

Terminal No.	Name		Usage	
	1-phase	2-Phase	1-phase	2-Phase
P000	Ch0 counter input	Ch0 A-phase input	Counter input terminal	A-phase input
P001	Ch1 counter input	Ch0 B-phase input	Counter input terminal	B-phase input
P002	Ch2 counter input	Ch2 A-phase input	Counter input terminal	A-phase input
P003	Ch3 counter input	Ch2 B-phase input	Counter input terminal	B-phase input
P004	Ch0 preset 24V	Ch0 preset 24V	Preset input terminal	Preset input terminal
P005	Ch1 preset 24V	-	Preset input terminal	No use
P006	Ch2 preset 24V	Ch2 preset 24V	Preset input terminal	Preset input terminal
P007	Ch3 preset 24V	-	Preset input terminal	No use
COM0	Input common	Input common	Common terminal	Common terminal

Wiring



## Parts designation | Block type unit

### Performance specification

Classification	Description		
	Block type unit		Modular type
	H-type	SU-type	S-type
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(XBM) battery back-up (XBC)		
	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 ~ 10,000 <sub>ms</sub> (4 patterns each can be set)	
Max. output pulse	100 Kpps		
Max. distance of connection	2m		

※ Economic block type unit (E-type) dose not support built-in positioning functions

### Electrical specification

	Signal	Rated input voltage	Load voltage range	Max. load current / Inrush current	Max. voltage drop (On)	Leakage current (Off)	Response time
Output	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 <sub>μs</sub> or less
	Signal	Rated input voltage/ Current	Load voltage range	On voltage / Current	Off voltage / Current	Input resistance	Response time
Input	External high limit	DC 24V/7mA	DC 20.4 ~ 28.8V	DC 19V/5.7mA or more	DC 6V/1.8mA or less	3.3Ω	0.5ms or less
	External low limit			DC 19V/3.4mA or more	DC 6V/1.1mA or less		
	Approximate zero zero	DC 24V/4mA				5.6Ω	



## I/O specifications | Block type unit

### High performance type

(XBC/XEC-H)

Item	XBC pin number (XEC pin number)		Signal name		Direction of positioning signal to external	Operating condition
	X axis	Y axis				
Input	P00008 (%IX0.0.8)	P0000A (%IX0.0.10)	Limit L	Low limit	←	4mA / 24V
	P00009 (%IX0.0.9)	P0000B (%IX0.0.11)	Limit H	High limit	←	
	P0000C (%IX0.0.12)	P0000E (%IX0.0.14)	DOG	Near point	←	
	P0000D (%IX0.0.13)	P0000F (%IX0.0.15)	Origin	Zero signal (+24V)	←	
	COM		Input COM	Common	←	
Output	P00020 (%QX0.0.0)	P00021 (%QX0.0.1)	Pulse	Pulse/CW (Open collector)	→	DC 12~24V
	P00022 (%QX0.0.2)	P00023 (%QX0.0.3)	Direction	Direction/CCW (Open collector)	→	
	P		DC 12V~24V	External power supply	→	
	COM 0~3		Output COM	External 24V GND	→	

### Standard type

(XBC/XEC-SU)

Item	XBC pin number		Signal name		Direction of positioning signal to external	Operating condition
	X axis	Y axis				
Input	P00008 (%IX0.0.8)	P0000A (%IX0.0.10)	Limit L	Low limit	←	4mA / 24V
	P00009 (%IX0.0.9)	P0000B (%IX0.0.11)	Limit H	High limit	←	
	P0000C (%IX0.0.12)	P0000E (%IX0.0.14)	DOG	Near point	←	
	P0000D (%IX0.0.13)	P0000F (%IX0.0.15)	Origin	Zero signal (+24V)	←	
	COM		Input COM	Common	←	
Output	P00040 (%QX0.0.0)	P00041 (%QX0.0.1)	Pulse	Pulse/CW (Open collector)	→	DC 12~24V
	P00042 (%QX0.0.2)	P00043 (%QX0.0.3)	Direction	Direction/CCW (Open collector)	→	
	P		DC 12V~24V	External power supply	→	
	COM 0~3		Output COM	External 24V GND	→	

## I/O specifications | Modular type unit

### Standard type

Item	XBM pin number		Signal name		Direction of positioning signal to external	Operating condition
	X axis	Y axis				
Input	P00000	P00002	Limit L	Low limit	←	Edge
	P00001	P00003	Limit H	High limit	←	Edge
	P00004	P00006	DOG	Near point	←	Edge
	P00005	P00007	Origin	Zero signal (+24V)	←	Edge
	COM		Input COM	Common	←	-
Output	P00020	P00021	Pulse	Pulse/CW (Open collector)	→	-
	P00022	P00023	Direction	Direction/CCW (Open collector)	→	-
	12/24V		DC 12/24V	External power supply	→	-
	COM		Output COM	External 24V GND	→	-

APPLICATION

## I/O specifications | Block type unit

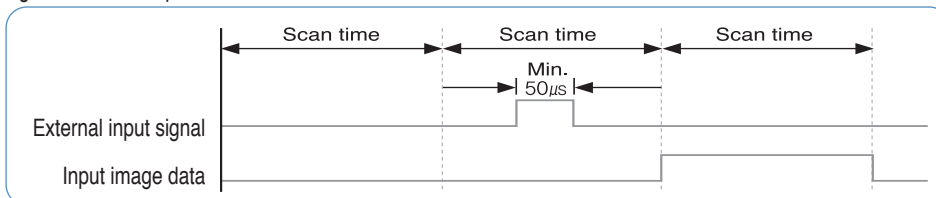
### Performance specification (PID)

Classification	Description		
	Block type unit		Modular type
	H	SU	S
No. of control loop	16-loop independent control		
Control mode	P control, PI control, PD control, PID control		
Control period	10ms ~ 6,553.5ms (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, ΔMV, ΔPV, etc	

※ Economic block type unit (E-type) dose not support built-in PID functions

### Pulse catch

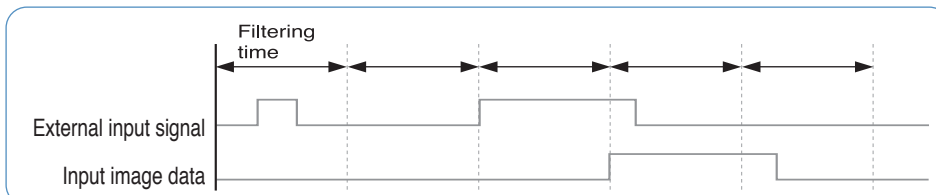
When On-condition time of input signal is shorter than 1 scan time (Min. 50μs), Pulse catch processes the input signal as normal input.



Item	Description			
	Block type unit			Modular type
	H	SU	E	S
Pulse catch	10μs: 4 points (P00000~P00003)	10μs: 2 points (P00000~P00001)	50μs: 4 points (P00000~P00003)	50μs: 8 points (P00000~P00007)
	50μs: 4 points (P00004~P00007)	50μs: 6 points (P00002~P00007)		

### 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.



Classification	Description			
	Block type unit			Modular type
	H	SU	E	S
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. It stops operation of scan program for the moment and then execute the assigned task.

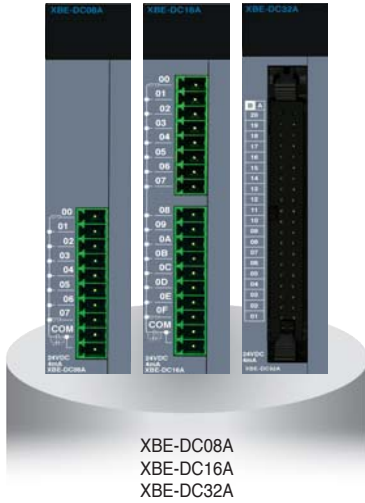
Classification	Description			
	Block type unit			Modular type
	H	SU	E	S
Initial task	1(_INT)			
Cyclic task	8			
I/O task	8	8	4	8
Internal device task	8			
External interrupt	10 $\mu$ S: 4 points (P00000~P00003) 50 $\mu$ S: 4 points (P00004~P00007)	10 $\mu$ S: 2 points (P00000~P00001) 50 $\mu$ S: 6 points (P00002~P00007)	50 $\mu$ S: 4 points (P00000~P00003)	50 $\mu$ S: 8 points (P00000~P00007)

### RTC

RTC function is for time management of system and error log. RTC function is executed steadily when power is off or instantaneous power cut status. Current time of RTC is renewed every scan by system operation status information flag.

Classification	Description			
	Block type unit			Modular type
	H	SU	E	S
RTC	Built-in	Option module	Option module	Not available

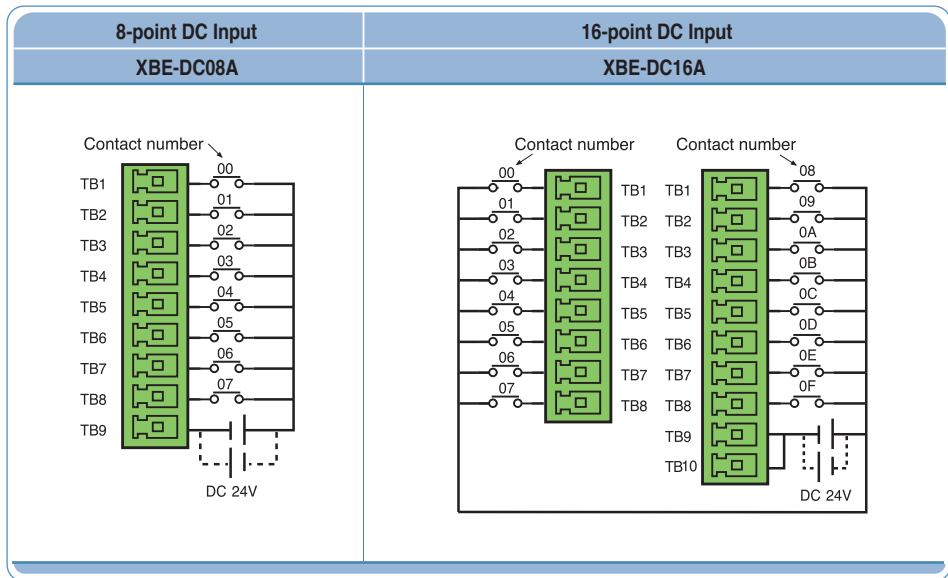
## Specification



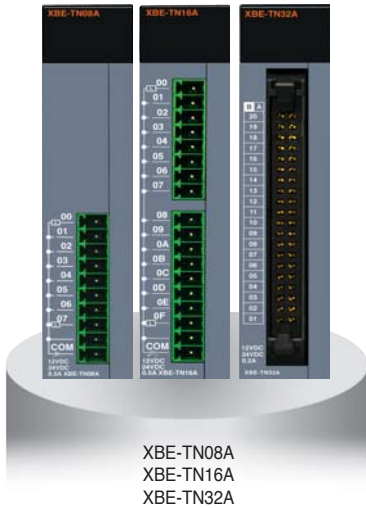
Specification	Model	XBE-DC08A	XBE-DC16A	XBE-DC32A
Input point		8 points	16 points	32 points
Rated input voltage/current		DC 24V / 4mA		
Operation voltage range		DC 20.4 ~ 28.8V (Ripple rate < 5%)		
Input resistance		5.6kΩ		
Response time	Off → On	1 / 3 / 5 / 10 / 20 / 70 / 100ms (setting by CPU parameter) 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)



### Specification

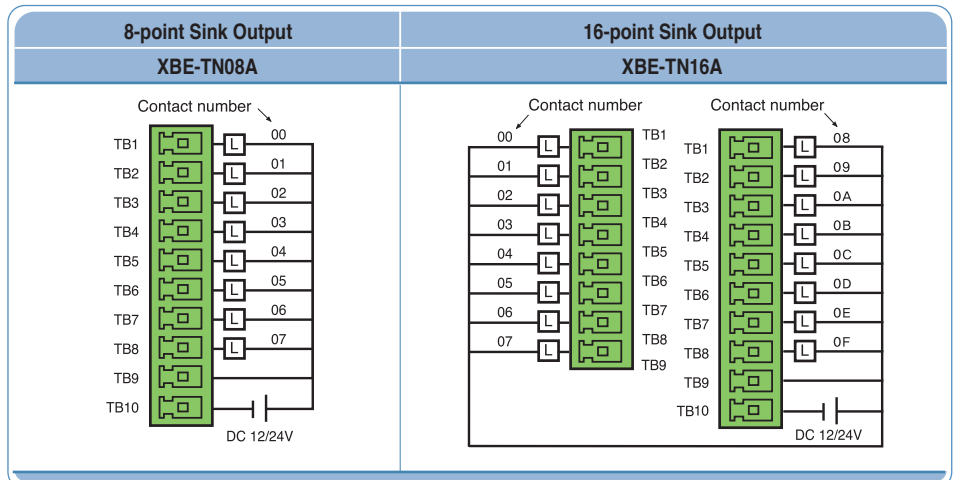


Specification	Model	XBE-TN08A	XBE-TP08A	XBE-TN16A	XBE-TP16A	XBE-TN32A	XBE-TP32A
Type		Sink	Source	Sink	Source	Sink	Source
Output point		8 point		16 point		32 point	
Rated load voltage		DC 12 / 24V					
Load voltage range		DC 10.2 ~ 26.4 V					
Max. load current		0.2A / 1point		0.2A / 1point, 2A / COM			
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)	

Item		XBF-AD04C	
Analog range	Item	Voltage	
	Range	DC 1 ~ 5V, DC 0 ~ 5V, DC 0 ~ 10V, DC -10 ~ 10V (Input resistance 1MΩ min)	Current DC 4 ~ 20mA DC 0 ~ 20mA (Input resistance 250MΩ)
Digital Output Range	Type	16bit binary data (Data : 14bit)	
	Unsigned value	0 ~ 16000	
	Signed value	-8000 ~ 8000	
	Precise value	1000 ~ 5000 (1 ~ 5V), 0 ~ 5000 (0 ~ 5V), 0 ~ 10000 (0 ~ 10V)	4000 ~ 20000 (4 ~ 20mA), 0 ~ 20000 (0 ~ 20mA)
Resolution		0 ~ 10000 1/16000	
Max. conversion speed		1ms/channel	
Max. absolute input		DC ±15V	DC ±3mA
Analog Input Channels		4 channel/module	
Insulation method		Photo-coupler insulation between input terminal and PLC power (no insulation between channels)	
Connection terminal		15-point terminal block	
Occupied I/O points		Fixed type : 64points	
Current consumption	DC 5V	110mA	
	DC 24V	100mA	

### Wiring

(XBE-TN08A/TN16A)



APPLICATION

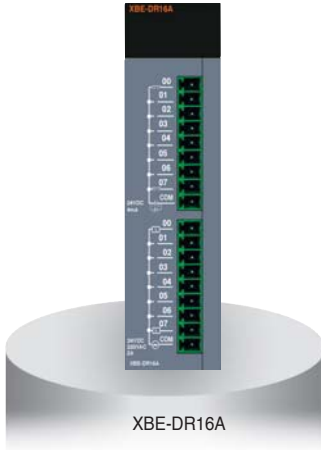
## Specification



Specification	Model	XBE-RY08A	XBE-RY16A
Output point		8 points	16 points
Insulation method		Relay insulation	
Rated input voltage/Current		DC 24V 2A (resistive load)/AC 220V 2A (COS $\psi$ = 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	
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 $\psi$ = 0.7) 100,000 times or more	
		AC 200V/1A, AC 240V/0.5 (COS $\psi$ = 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 X 2

Item		XBF-DV04C	XBF-DC04C
Analog range	Item	Voltage	
	Range	DC 1 ~ 5V, DC 0 ~ 5V, DC 0 ~ 10V, DC -10 ~ 10V (Input resistance 1k $\Omega$ or more )	Current DC 4 ~ 20mA DC 0 ~ 20mA (Input resistance 600M $\Omega$ or less )
Digital Output	Type	16bit binary data (Data : 14bit)	
	Range	Unsigned value 0 ~ 16000	
		Signed value -8000 ~ 8000	
		Precise value	1000 ~ 5000 (1 ~ 5V), 0 ~ 5000 (0 ~ 5V), 0 ~ 10000 (0 ~ 10V)
Percentile value	0 ~ 10000 1/16000		
Resolution	0.250mV (1 ~ 5V) 0.3125mV (0 ~ 5V) 0.625m V(0 ~ 10V) 1.250mV ( $\pm$ 10V)		1.0 $\mu$ A (4 ~ 20mA) 1.25 $\mu$ A (0 ~ 20mA)
Max. conversion speed	1ms/channel		
Analog Input Channels	4 channel/module		
Insulation method	Photo-coupler insulation between output terminal and PLC power (no insulation between channels)		
Connection terminal	11-point terminal block		
Occupied I/O points	Fixed type : 64points		
Current consumption	DC 5V	75mA	
	DC 24V	170mA	

DC Input specification



XBE-DR16A

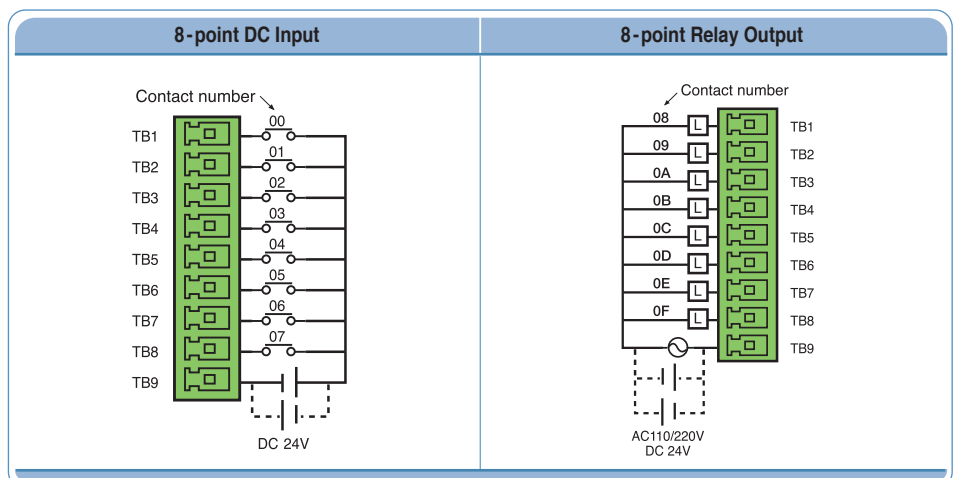
Relay output specification

Specification	Model	DC Input (XBE-DR16A)
Input point		8 points
Insulation method		Photocoupler
Rated input voltage		DC 24V
Rated input current		4mA
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		5.6kΩ
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

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 (COSψ = 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
Surge absorber		None
Service life	Mechanical	20 million times or more
	Electrical	Rated load voltage/Current 100,000 times or more
		AC 200V/1.5A, AC 240V/1A (COSψ = 0.7) 100,000 times or more
		AC 200V/1A, AC 240V/0.5 (COSψ = 0.35) 100,000 tiems or more
	DC 24V/1A, DC 100V/0.1A (L / R = 7ms) 100,000 times 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

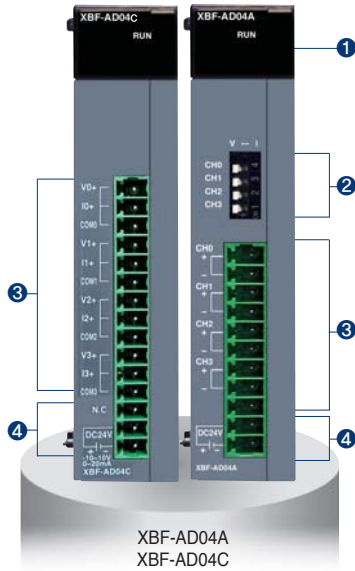
(XBE-DR16A)



APPLICATION



## Specification

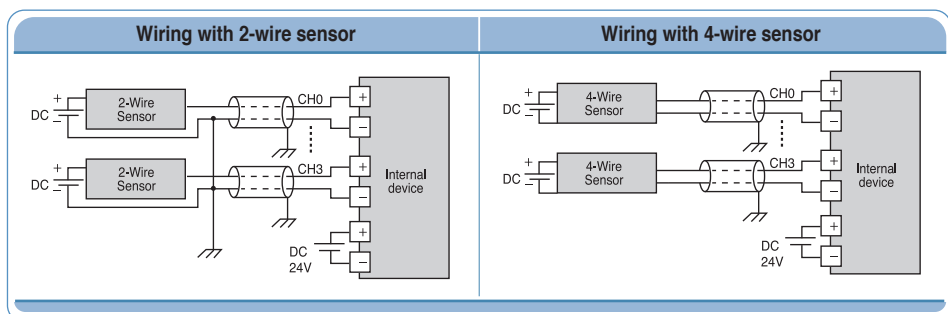


Item		XBF-AD04A		XBF-AD04C		XBF-AD08A		
Analog range	Item	Voltage	Current	Voltage	Current	Voltage	Current	
	Range	DC 0~10V (input resistance : 1MΩ min.)	DC 4~20mA, DC 0~20mA (input resistance: 250Ω)	DC 1~5V DC 0~5V DC 0~10V DC -10~10V (Input resistance : 1MΩ min)	DC 4~20mA DC 0~20mA (Input resistance : 250MΩ)	DC 1~5V DC 0~5V DC 0~10V (Input resistance : 250MΩ)	DC 4~20mA, DC 0~20mA (input resistance: 250Ω)	
Digital output	Type	12bit binary data		16bit binary data (Data : 14bit)		12bit binary data		
	Range	Unsigned value	0~4000		0 ~ 16000		0~4000	
		Signed value	-2000~2000		-8000~8000		-2000~2000	
		Precise value	0~1000	4000~2000/ 0~2000	100~5000 (1~5V) 0~5000 (0~5V) 0~10000 (0~5V) -10000~10000 (±10V)	4000~20000 (4~20mA) 0~20000 (0~20mA)	100~500 (DC 1~5V) 0~500 (DC 0~5V) 0~1000 (DC 0~10V)	4000~2000 (DC 4~20mA) 0~2000 (DC 0~20mA)
Percentile value	0~1000		0~10000		0~1000			
Resolution	2.5mV (1/4000)	5μA (1/4000)	1/16000		1.25mV (DC 1~5V, 0~5V) 2.5mV (DC 0~10V)	5μA (DC 4~20mA, 0~20mA)		
Max. conversion speed	1.5ms / channel		1ms / channel		1.5ms / channel			
Max. absolute input	±15V		±25mA		DC±15V	DC±3mA	±15V	
Analog Input channels	4 channel/module		4 channel/module		8 channel/module			
Insulation method	Photocoupler insulation between I/O terminal and power supply		Photo-coupler insulation between input terminal and PLC power (No insulation between channels)		Photocoupler insulation between I/O terminal and power supply			
Connection terminal	11-point terminal block		15-point terminal block		11-point terminal block			
Occupied I/O points	Fixed type : 64 points							
Current consumption	DC 5V	120mA		110mA		105mA		
	DC 24V	62mA		100mA		85mA		

## Names and Functions

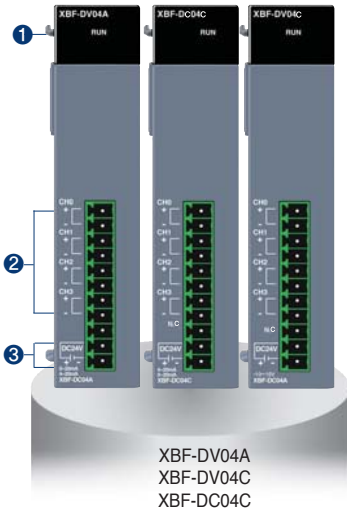
No.	Name	Descriptions
①	RUN LED	<ul style="list-style-type: none"> <li>▶ Indicates condition of module</li> <li>• LED On: Normal condition</li> <li>• LED On and Off: Flickering</li> <li>• LED Off: Power Off or module malfunction</li> </ul>
②	Input selection S/W	<ul style="list-style-type: none"> <li>▶ Voltage/Current selection switch</li> <li>• V: Voltage input selection</li> <li>• I: Current input selection</li> </ul>
③	Terminal block	▶ External device connection
④	External power supply terminal	▶ External DC 24V input

## Wiring



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

### Specification

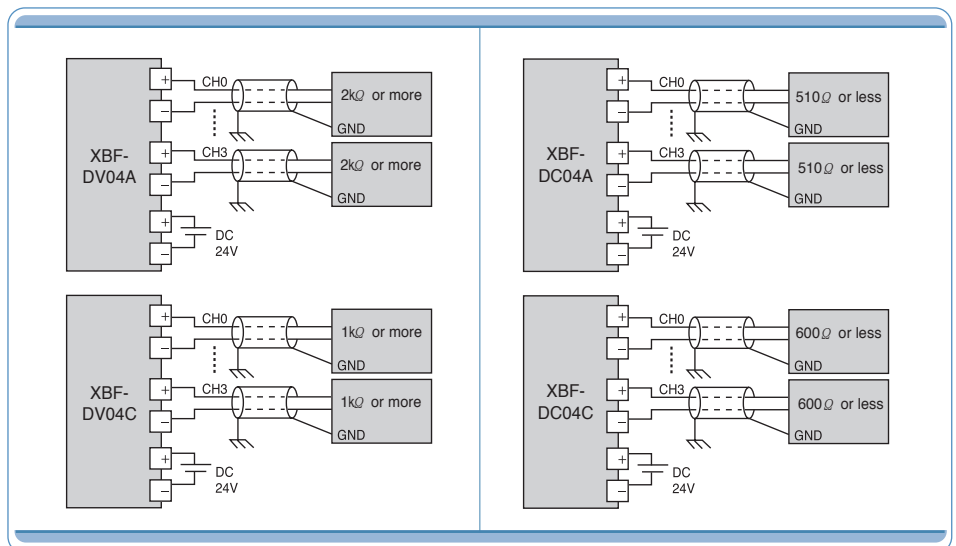


Item	XBF-DV04A	XBF-DV04C	XBF-DC04C	XBF-DC04A	
<b>Analog range</b>	DC 0 ~ 10 V (Load resistance $\geq 2k\Omega$ )	DC 1 ~ 5V DC 0 ~ 5V DC 0 ~ 10V DC -10 ~ 10V (Input resistance : 1k $\Omega$ or more)	DC 4 ~ 20mA DC 0 ~ 20mA (Input resistance : 600M $\Omega$ or less)	4 ~ 20mA / 0 ~ 20mA (Load resistance $\leq 510\Omega$ )	
<b>Analog range Selection</b>	-	-	-	XG 5000 I/O parameter	
<b>Digital data</b>	<b>Output range</b>	0 ~ 10 V	-	4 ~ 20mA/0 ~ 20mA	
	<b>Unsigned value</b>	0 ~ 4000	0 ~ 16000	0 ~ 4000	
	<b>Signed value</b>	- 2000 ~ 2000	- 8000 ~ 8000	- 2000 ~ 2000	
	<b>Precise value</b>	0 ~ 1000	1000~5000 (1~5V) 0~5000 (0~5V) 0~10000 (0~10V) -1000~10000 ( $\pm 10V$ )	4000~20000 (4~20mA) 0~20000 (0~20mA)	400 ~ 2000/0 ~ 2000
	<b>Percentile value</b>	0~1000	0~10000	0~1000	
<b>Data format</b>	Data format of digital input is set by user program or I/O parameter (Setting for each channel is available.)				
<b>Resolution</b>	Resolution (1/4000)	1/1600		Resolution (1/4000)	
	2.5mV	0.250m (1~5V) 0.3125m (0~5V) 0.625m (0~10V) 1.250m ( $\pm 10V$ )	1.0 $\mu$ A (4~20mA) 1.25 $\mu$ A (0~20mA)	5 $\mu$ A	
<b>Max. conversion speed</b>	1ms/channel	1ms/channel		1ms/channel	
<b>Max. absolute output</b>	$\pm 15V$	-		$\pm 25mA$	
<b>Accuracy</b>	$\pm 0.5\%$ or less	-		$\pm 0.5\%$ or less	
<b>Analog output channels</b>	4 channel/module	4 channel/module		4 channel/module	
<b>Insulation method</b>	Photocoupler insulation between I/O terminal and power supply	Photo-coupler insulation between output terminal and PLC power (no insulation between channels)		Photocoupler insulation between I/O terminal and power supply	
<b>Connection terminal</b>	11-point terminal block				
<b>Occupied I/O points</b>	Fixed type: 64 points				
<b>Current consumption</b>	DC 5V	110mA	75mA	110mA	
	DC 24V	70mA	170mA	120mA	

### Names and Functions

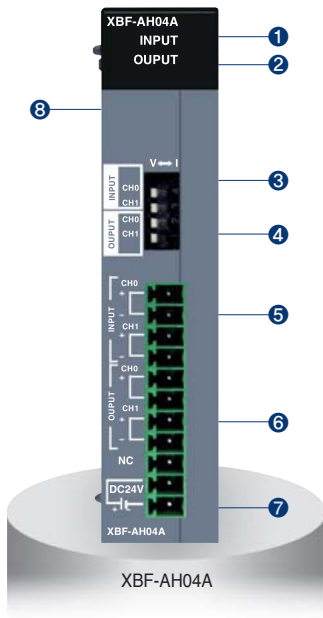
No.	Name	Descriptions
①	<b>RUN LED</b>	<ul style="list-style-type: none"> <li>Indicates condition of module</li> <li>LED On: Normal condition</li> <li>LED On and Off: Flickering</li> <li>LED Off: Power Off or module malfunction</li> </ul>
②	<b>Terminal block</b>	External device connection
③	<b>External power supply terminal</b>	External DC 24V input

### Wiring



APPLICATION

## Specification

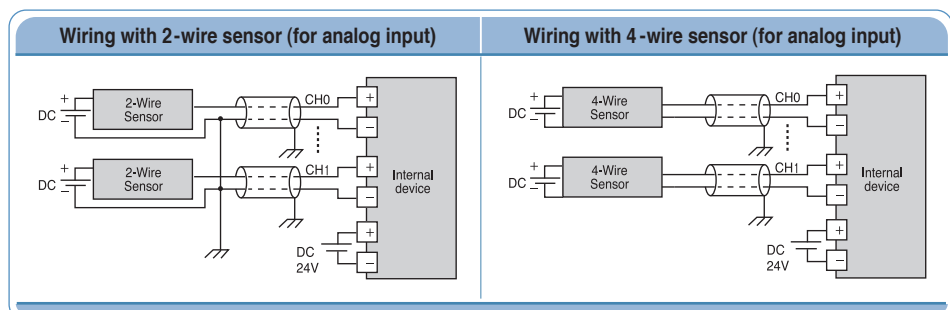


Item	XBF-AH04A	
	Input	Output
Analog channel	2 channels	2 channels
Analog range	DC 1 ~ 5V, DC 0 ~ 5V, DC 0 ~ 10V (Input resistance: 1 M $\Omega$ min.) DC 4 ~ 20mA, DC 0 ~ 20mA (Input resistance 250 $\Omega$ )	DC 1 ~ 5V, DC 0 ~ 5V, DC 0 ~ 10V (Load resistance $\geq$ 2k $\Omega$ ) DC 4 ~ 20mA, DC 0 ~ 20mA (Load resistance $\leq$ 510 $\Omega$ )
Analog range selection	XG 5000 I/O parameter and External switch	
Digital data	Unsigned value	0 ~ 4000
	Signed value	-2000 ~ 2000
	Precise value	100 ~ 500 (DC 1 ~ 5V), 0 ~ 500 (DC 0 ~ 5V), 0 ~ 1000 (DC 0 ~ 10V) 400 ~ 2000 (DC 4 ~ 20mA), 0 ~ 2000 (DC 0 ~ 20mA)
	Percentile value	0 ~ 1000
Resolution (1/4000)	1.25mV (DC 1~5V, 0~5V), 2.5mV (DC 0~10V) 5 $\mu$ A (DC 4~20mA, 0~20mA)	
Max. conversion speed	$\pm$ 15V, 25mA	
Max. absolute output	1ms / Channel	
Accuracy	$\pm$ 0.5% or less	
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 5V	120mA
	DC 24V	130mA

## Names and Functions

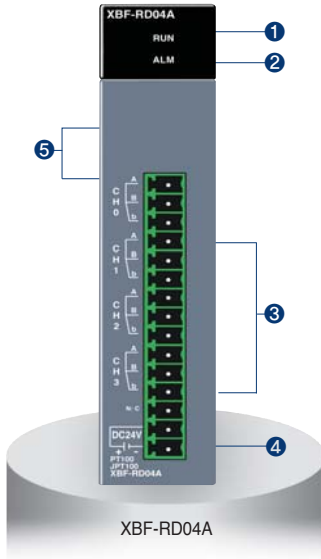
No.	Name	Descriptions
1	INPUT LED	<ul style="list-style-type: none"> <li>Indicates input condition of module</li> <li>LED On: Normal condition</li> <li>LED On and Off: Flickering</li> <li>LED Off: Power Off or module malfunction</li> </ul>
2	OUTPUT LED	<ul style="list-style-type: none"> <li>Indicates output condition of module</li> <li>LED On: Normal condition</li> <li>LED On and Off: Flickering</li> <li>LED Off: Power Off or module malfunction</li> </ul>
3	Input selection S/W	▶ Voltage / Current selection switch for input
4	Output selection S/W	▶ Voltage / Current selection switch for output
5	Terminal block	▶ Terminal for external input device
6		▶ Terminal for external output device
7	External power supply terminal	▶ Terminal for external DC 24V input
8	Expansion connector	▶ Terminal for expansion

## Wiring



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

Specification

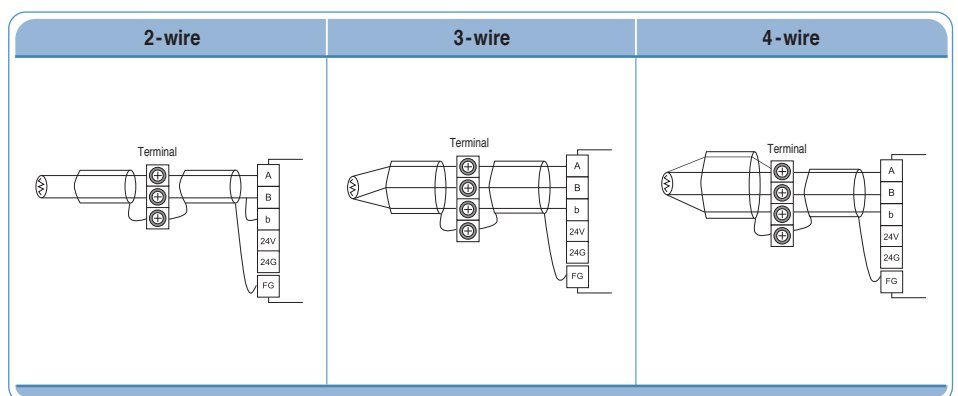


Item		XBF-RD04A
Number of channels		4
Sensor type	PT 100	JIS C1804-1997
	JPT 100	JIS C1604-1981, KS C1603-1991
Temperature range	PT 100	- 200 ~ 600°C
	JPT 100	- 200 ~ 600°C
Digital output	PT 100	- 2000 ~ 6000
	JPT 100	- 2000 ~ 6000
	Scaling	0 ~ 4000
Accuracy	25°C	±0.3% or less
	0 ~ 55°C	±0.5% or less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

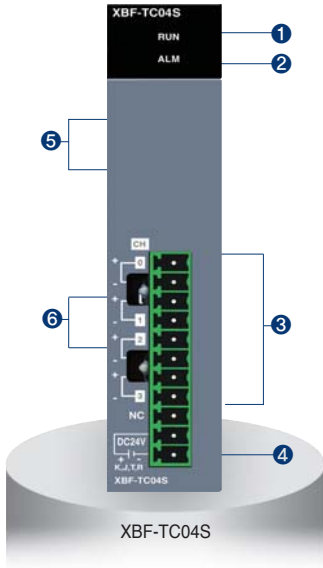
Names and Functions

No.	Name	Descriptions
1	RUN LED	<ul style="list-style-type: none"> <li>▶ Displays the hardware operation status (Fatal fault)                             <ul style="list-style-type: none"> <li>• On: Normal status</li> <li>• Flickering: Error (0.2s flickering)</li> <li>• Off: hardware error or power off</li> </ul> </li> </ul>
2	ALM LED	<ul style="list-style-type: none"> <li>▶ Displays the status of the channels (Light fault)                             <ul style="list-style-type: none"> <li>• Flickering: Line disconnection (1s flickering)</li> <li>• Off: Normal status</li> </ul> </li> </ul>
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

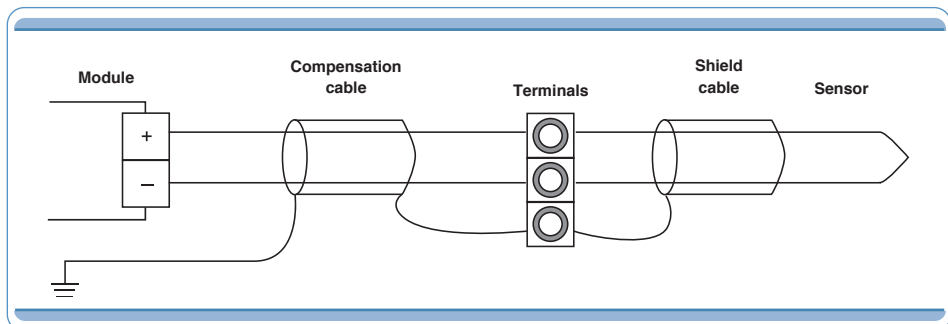


Item		XBF-TC04S
Number of channels		4
Input sensor type		Thermocouple K/J/T/R JIS C1602-1995
Temperature input range	K	- 200.0°C ~ 1300.0°C (-328.0°F ~ 2372.0°F)
	J	- 200.0°C ~ 1200.0°C (-328.0°F ~ 2192.0°F)
	T	- 200.0°C ~ 400.0°C (-328.0°F ~ 752.0°F)
	R	0.0°C ~ 1700.0°C (32.0°F ~ 3092.0°F)
Digital output	Temperature display unit	Display down to one decimal place K, J, T: 0.1°C R: 0.5°C
	Scaling display (Defined by user)	Unsigned scaling (0 ~ 65535) Signed scaling (-32768 ~ 32767)
Accuracy	Normal temperature (25°C)	±0.2%
	Temperature coefficient (0 ~ 55°C)	±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	DC 5V	100mA
	DC 24V	100mA

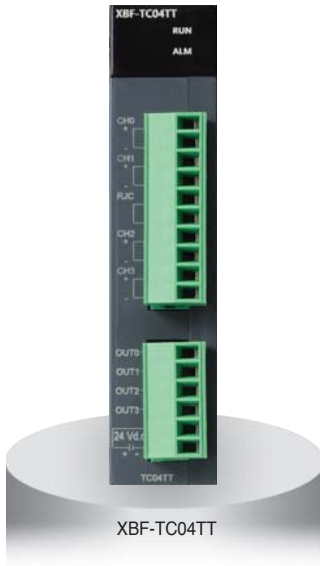
## Names and Functions

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	▶ Terminals to connect the thermo-couple sensor
④	External power terminal	▶ Terminals to supply the external DC 24V
⑥	RJC	▶ Device for Reference Junction Compensation

## Wiring

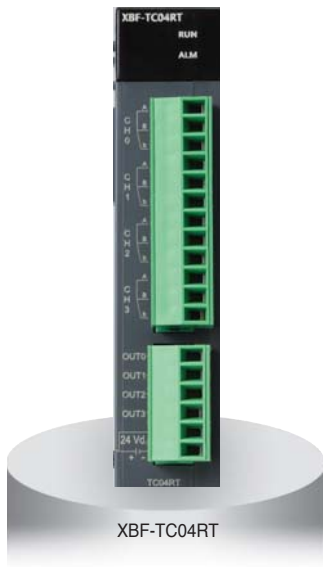


### Specification



Item		XBF-TC04TT	
Control loop		4 loop	
Thermocouple type and input range	K	-200.0 ~ 1300.0 °C	
		0.0 ~ 500.0 °C	
	J	-200.0 ~ 1200.0 °C	
T	0.0 ~ 500.0 °C		
	-200.0 ~ 800 °C		
Precision	Standard precision	±0.2% or less (25 °C, normal temperature, except -200~-100 °C for the T type)	
	Temperature coefficient	±100ppm/°C (0.01%/°C)	
Cold junction compensation	Compensation method	Automatic compensation by RJC sensing	
	Compensation degree	±2.0 °C	
Sampling period		500ms/ 4 loop	
Control method		PID CONTROL, ON/OFF CONTROL	
Control parameter	Target value (SV)	Setting within range according to input type (temperature unit setting)	
	Proportional gain	0: ON/OFF CONTROL, REAL	
	Integral time	0: Except integral control, REAL	
	Derivative time	0: Except derivative control, REAL	
Transistor output	Output point	4	
	Rated load voltage	DC 24 V	
	Max. load current	0.1 A / Output point	
	Max. voltage drop when on	DC 1.2 V or less	
	Leakage current when off	0.1 mA or less	
	Response time	On => Off	1 ms or less
		Off => On	1 ms or less
Control output cycle	0.5 ~ 120.0 sec (Setting unit: 0.5 sec.)		
Time proportional resolution	Larger one of either 10 ms or 0.05% of the full-scale		
Insulation	Between input channels	Photo relay	Withstanding voltage: 400V AC, 50/60Hz 1min, leakage current 10mA or less
	Input terminal-PLC power	Photo relay	Insulation resistor: 500V DC, 10 M Ω or above
	Output terminal-PLC power	Non-insulation	
	Between output channels		
Averaging function	Weighted average	0 ~ 99% (setting range)	
	Moving average	0 ~ 99 times (setting range)	
Warm-up		20 minutes or above	
Maximum rate of ambient temperature changing		0.5 °C/min (30 °C/hour) or less	
Access terminal		16 point terminal (10 point terminal 1ea, 6 point terminal 1ea)	
IO occupation point		Fixed: 64 points	
Max. no. of installation		XBM-DxxxS type: 7ea, XB(E)C-DxxxH type: 10ea, XB(E)C-DxxxSU: 7ea, XB(E)C-DxxxU: 10ea	
Power supply		5 V, DC 24 V	
Current consumed		Internal DC 5 V : 120 mA, External DC 24 V : 100 mA	

## Specification

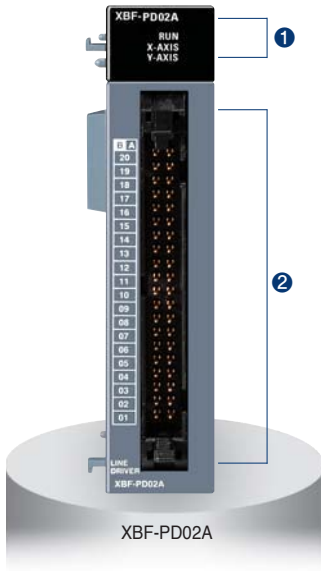


XBF-TC04RT

Item		XBF-TC04RT		
Control loop		4 loop		
RTD type and input range	Pt100	-200.0 ~ 850.0 °C		
	JPt100	-200.0 ~ 600.0 °C		
Precision	Standard precision	±0.2% or less (25 °C, normal temperature)		
	Temperature coefficient	±100ppm/ °C (0.01%/ °C)		
Sampling period		500ms/ 4 loop		
Control method		PID CONTROL, ON/OFF CONTROL		
Control parameter	Target value (SV)	Setting within range according to input type (temperature unit setting)		
	Proportional gain	0: ON/OFF CONTROL, REAL		
	Integral time	0: Except integral control, REAL		
	Derivative time	0: Except derivative control, REAL		
Transistor output	Output point	4		
	Rated load voltage	DC 24 V		
	Max. load current	0.1 A/Output point		
	Max. voltage drop when on	DC 1.2 V or less		
	Leakage current when off	0.1 mA or less		
	Response time	On => Off	1 ms or less	
		Off => On	1 ms or less	
	Control output cycle	0.5 ~ 120.0 sec (Setting unit: 0.5 sec.)		
Time proportional resolution	Larger one of either 10 ms or 0.05% of the full-scale			
Insulation	Between input channels	Photo relay	Withstanding voltage: 1500V AC, 50/60Hz 1min, leakage current 10mA or less	
	Input terminal- PLC power	Photo relay	Insulation resistor: 500V DC, 10 M Ω or above	
	Output terminal- PLC power Between output channels	Non-insulation		
Averaging function	Weighted average	0 ~ 99% (setting range)		
	Moving average	0 ~ 99 times (setting range)		
Access terminal		18 point terminal (12 point terminal 1ea, 6 point terminal 1ea)		
IO occupation point		Fixed: 64 points		
Max. no. of installation		XBM-DxxxS type: 7ea, XB(E)C-DxxxH type: 10ea, XB(E)C-DxxxSU: 7ea, XB(E)C-DxxxU: 10ea		
Power supply		5 V, DC 24 V		
Current consumed		Internal DC 5 V : 120 mA, External DC 24 V : 100 mA		



### Specification

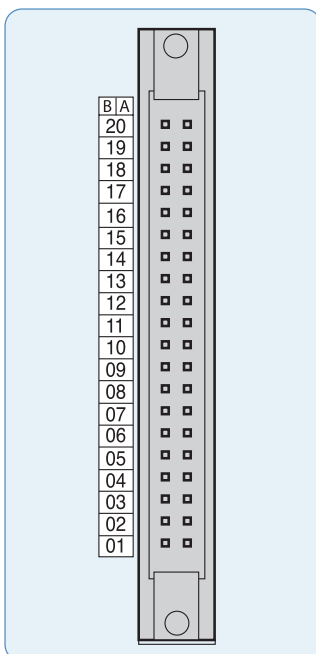


Item		XBF-PD02A
NO. of control axis		2 axis
Pulse output type		Line drive
Max. pulse output		2Mpps
Max. connection length		10m
Control mode		Position control, Speed control, Speed /Position switching control, Position /Speed switching control
Interpolation		Linear interpolation, Circula interpolation
Positioning data		150 operation data for each axis
Configuration tool		Built-in function parameter of XG5000
Back-up		Flash memory
Positioning	Positioning method	Absolute/Incremental method
	Unit	pulse
	Positioning range	- 2,147,483,648 ~ 2,147,483,648
	Speed range	1 ~ 2,000,000 (pulse/sec)
	Acceleration/Deceleration type	Trapezoidal acceleration/deceleration
Acceleration/Deceleration time		0 ~ 65,535ms, Asymmetric acceleration/deceleration
Max. encoder input		200kpps (Line drive)
Error/Operation		LED
I/O occupied points		Fixed type: 64 points
Connection terminal		40pin connector
Current consumption (mA)		500

### Names and Functions

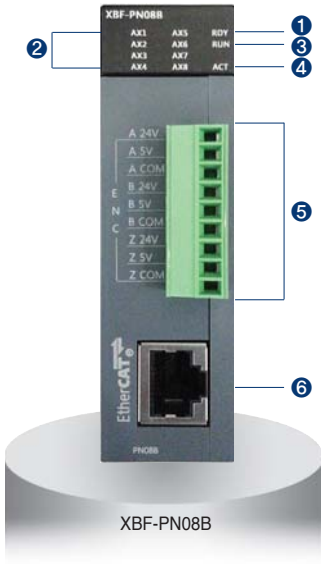
No.	Name	Descriptions
1	RUN LED	1. RUN ▶ Displays the hardware operation status • On: Normal status • Off: Abnormal status 2. X_AXIS, Y_AXIS • On: Operation • Flickering: Error
2	Terminal block	▶ Terminals to connect the MPG, external device and drive device.

### Terminal



Pin number		Signal name	
X axis	Y axis		
	B20	MPG A+	Manual Pulse Generator/Encoder A+ input
	A20	MPG A-	Manual Pulse Generator/Encoder A- input
	B19	MPG B+	Manual Pulse Generator/Encoder B+ input
	A19	MPG B-	Manual Pulse Generator/Encoder B- input
A18	B18	FP+	Forward pulse+
A17	B17	FP-	Forward pulse-
A16	B16	RP+	Reverse pulse+
A15	B15	RP-	Reverse pulse-
A14	B14	OV+	High limit
A13	B13	OV-	Low limit
A12	B12	DOG	Near point
A11	B11	NC	-
A10	B10		
A09	B09	COM	Common
A08	B08	NC	-
A07	B07	INP	Inposition signal
A06	B06	INP COM	Inposition signal common
A05	B05	CLR	Deviation counter clear signal
A04	B04	CLR COM	Deviation counter clear signal common
A03	B03	HOME +5V	Zero signal (DC 5V)
A02	B02	HOME COM	Zero signal Common
A01	B01	NC	-

## Specification






























Item		XBF-PN08B			
No. of control axis		8			
Interpolation function		2~8 axes linear interpolation, 2 axes circular interpolation, 3 axes helical interpolation			
Control method		Position control, Speed control, Speed/Position control, Position/Speed control, Position/Torque Control, Feed control			
Control unit		Pulse, mm, inch, degree			
Positioning data		Each axis can have up to 400 operation data .(Operation step number : 1~400) Available to set with XG-PM or program			
XG-PM	Connection	RS-232C port of CPU module or USB			
	Setting data	Common, Basic, Extended, Servo parameter, Operation data, Cam data, Command information			
	Monitor	Operation information, Trace, Input terminal information, Error information			
Back-up		Save the parameter, operation data in MRAM ROM (No need of Battery)			
Positioning	Positioning method	Absolute method/Incremental method			
	Position address range		Absolute	Incremental	Speed/Position, Position/Speed Switching control
		mm	-214748364.8~-214748364.7( $\mu$ m)	-214748364.8~-214748364.7( $\mu$ m)	-214748364.8~-214748364.7( $\mu$ m)
		Inch	-21474.83648~-21474.83647	-21474.83648~-21474.83647	-21474.83648~-21474.83647
		degree	-21474.83648~-21474.83647	-21474.83648~-21474.83647	-21474.83648~-21474.83647
		pulse	-2147483648~-2147483647	-2147483648~-2147483647	-2147483648~-2147483647
	Speed range	mm	0.01~20000000.00( $\beta$ /E/min)		
		Inch	0.001~2000000.000(Inch/min)		
		degree	0.001~2000000.000(degree/min)		
		pulse	1~20,000,000(pulse/SEC)		
rpm		0.1~100000.0(RPM)			
Acc./Dec. process	Trapezoid type, S-type				
Acc./Dec. time	1~2,147,483,647ms selection is available from 4 types of acceleration/deceleration pattern				
Manual Operation		Jog Operation, MPG Operation, Inching Operation			
Homing method		Refer to the method supported by the servo driver			
Speed change function		Speed change (Percent/Absolute value)			
Torque unit		Rated torque % designation			
Absolute position system		Available (when using absolute encoder type servo driver)			
External Encoder input	Channel	1 channel			
	Max. Input	200 kpps			
	Input form	Line drive input (RS-422A IEC specification), open collector output type encoder			
	Input type	CW/CCW, PULSE/DIR, Phase A/B			
	Connection connector	9-point connector			
Communication Period		1ms			
Max. transmission distance		100m			
Communication cable		Over CAT.5 STP (Shielded Twisted-pair) cable			
Error indication		Indicated by LED			
Communication status indication		Indicated by LED			
Consumable current		510mA			
Weight		115g			

### Names and Functions

No.	Name	Descriptions
①	Module ready signal	On: Positioning module normal status Off: Power OFF or CPU module reset status Flicker: Positioning module abnormal status
②	Operation indicator LED (AX1 ~ AX8)	On: applicable axis is running Off: applicable axis is stop status Flicker: applicable axis is error status
③	Communication status indicator LED	On: communication with servo driver is connected Off: communication with servo driver is disconnected Flicker: Error occurs during communicating with servo driver
④	TRX status LED	On: Wiring with servo driver is done Off: Wiring with servo driver is not done Flicker: communicating with servo driver
⑤	Connector for encoder wiring	Connector to connect with encoder
⑥	RJ-45 connector	RJ-45 connector to connect with servo driver

### Terminal

Pin arrangement	Pin No.	Signal name	Signal direction																			
<table border="0"> <tr><td>A 24V</td><td></td></tr> <tr><td>A 5V</td><td></td></tr> <tr><td>A COM</td><td></td></tr> <tr><td>B 24V</td><td></td></tr> <tr><td>B 5V</td><td></td></tr> <tr><td>B COM</td><td></td></tr> <tr><td>Z 24V</td><td></td></tr> <tr><td>Z 5V</td><td></td></tr> <tr><td>Z COM</td><td></td></tr> </table>	A 24V		A 5V		A COM		B 24V		B 5V		B COM		Z 24V		Z 5V		Z COM		1	A 24V	Encoder A 24V input	Input
	A 24V																					
	A 5V																					
	A COM																					
	B 24V																					
	B 5V																					
	B COM																					
	Z 24V																					
	Z 5V																					
Z COM																						
2	A 5V	Encoder A 5V input																				
3	A COM	Encoder A input COM																				
4	B 24V	Encoder B 24V input																				
5	B 5V	Encoder B 5V input																				
6	B COM	Encoder B input COM																				
7	Z 24V	Encoder Z 24V input																				
8	Z 5V	Encoder Z 5V input																				
9	Z COM	Encoder Z input COM																				

## Specification

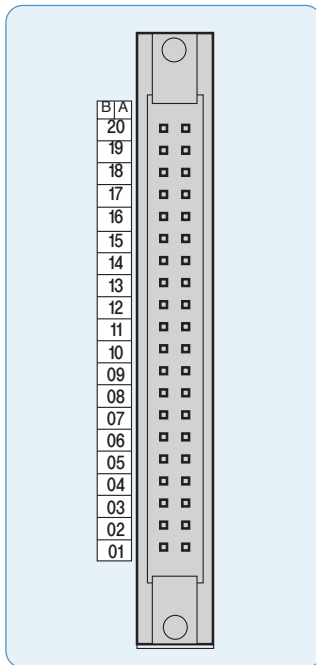


Item		Specification	
		XBF-H002A	XGF-HD02A
Count input signal	Signal	A-phase, B-phase	
	Input type	Voltage input (Open Collector)	Differential input (Line Drive):
	Signal level	DC 5/12/24V	RS-422A Line Drive/HTL LEVEL Line Drive
Maximum coefficient speed		200kpps	500kpps (HTL input : 250kpps)
Number of channels		2 Channels	
Coefficient range		Signed 32-bit (-2,147,483,648 ~ 2,147,483,647)	
Count mode		Linear Count (When 32-bit range exceeded, Carry/Borrow occurs, The count value stopped)	
		Ring Count (Repeated count within setting range)	
Input pulse mode		1-phase input	
		2-phase input	
		CW/CCW input	
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	1/2 multiplication	
	2-phase input	1/2/4 multiplication	
	CW/CCW	1- multiplication	
Control input	Signal	Preset instruction input, Auxiliary mode instruction input	
	Signal level	DC 5V/12V/24V (by terminal selection) input type	
	Signal type	Voltage	
External output	Output points	2-point/channel (for each channel): Terminal output available	
	Type	Select single-compared (>, >=, =, <=, <) or section compared output (Included or excluded)	
	Output type	Open collector output (Sink)	
Operation status display	Input signal	A-phase input, B-phase input, Preset instruction input, Auxiliary mode instruction input	
	Output signal	External output 0, External output 1	
	Busy status	Module Ready	
Count enable		To be set through program (Count available only in enable status)	
Preset function		To be set through terminal or program	
Auxiliary mode function		Count clear, Count latch, Section count(time setting value: 0~60000ms), Measurement of input frequency(for respective input phase), Measurement of counts per hour(time setting value: 0~60000ms) Count prohibited function	
Terminal		40 pin connector	
I/O occupied points		Fixed point: 64	
Current consumption(mA)		200	260
Weight		90g	

## Names and Functions

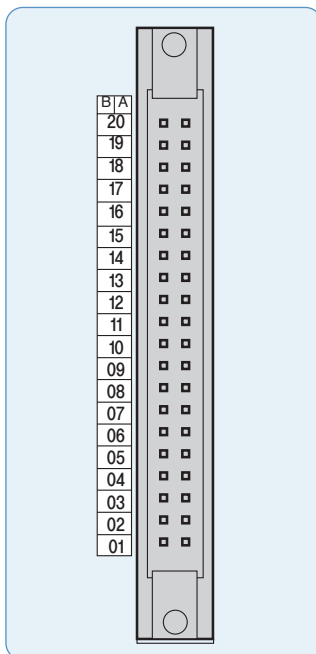
No.	Name	Descriptions
①	Run LED (ØA, ØB, P, G, 00, 01)	<ul style="list-style-type: none"> <li>▶ On: Relevant channel pulse inputting, Preset/Auxiliary function signal inputting, Outputting</li> <li>▶ Off: No input of relevant channel pulse, No input of preset/ Auxiliary function signal, No output of comparison</li> </ul>
	Ready signal (RDY)	<ul style="list-style-type: none"> <li>▶ On: HSC module normal</li> <li>▶ Off: Power off or CPU module reset, HSC module error</li> <li>• Flicker: HSC module error</li> </ul>
②	External wiring connector	Connector to connect with external I/O

Terminal (XBF-H002A)



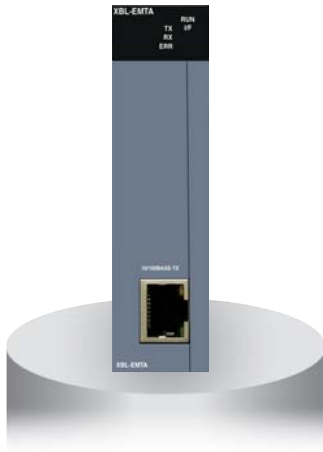
Pin arrangement		Signal name	
B ch1	A ch0		
20	20	A 24V	A phase pulse input 24V
19	19	A 12V	A phase pulse input 12V
18	18	A 5V	A phase pulse input 5V
17	17	A COM	A phase pulse input COM
16	16	B 24V	B phase pulse input 24V
15	15	B 12V	B phase pulse input 12V
14	14	B 5V	B phase pulse input 5V
13	13	B COM	B phase pulse input COM
12	12	P 24V	Preset input 24V
11	11	P 12V	Preset input 12V
10	10	P 5V	Preset input 5V
09	09	P COM	Preset input COM
08	08	G 24V	Auxiliary function input 24V
07	07	G 12V	Auxiliary function input 12V
06	06	G 5V	Auxiliary function input 5V
05	05	G COM	Auxiliary function input COM
04	04	OUT0	Comparison output 0
03	03	OUT1	Comparison output 1
02	02	24V	External power input 24V
01	01	24G	External power input GND

Terminal (XBF-HD02A)



Pin arrangement		Signal name	
B ch1	A ch0		
20	20	A I +	A I phase differentiation input +
19	19	A I -	A I phase differentiation input -
18	18	A II +	A II phase differentiation input +
17	17	A II -	A II phase differentiation input -
16	16	B I +	B I phase differentiation input +
15	15	B I -	B I phase differentiation input -
14	14	B II +	B II phase differentiation input +
13	13	B II -	B II phase differentiation input -
12	12	P 24V	Preset input 24V
11	11	P 12V	Preset input 12V
10	10	P 5V	Preset input 5V
09	09	P COM	Preset input COM
08	08	G 24V	Auxiliary function input 24V
07	07	G 12V	Auxiliary function input 12V
06	06	G 5V	Auxiliary function input 5V
05	05	G COM	Auxiliary function input COM
04	04	OUT0	Comparison output 0
03	03	OUT1	Comparison output 1
02	02	24V	External power input 24V
01	01	24G	External power input GND

## 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	XGT Dedicated protocol Server/Client, Modbus/TCP Server/Client
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



XBL-C21A  
XBL-C41A

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	Dedicated mode	1:1 or 1:N via the dedicated protocol		
	XG5000 mode	Program download, Upload and control via the remote control		
	P2P mode	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

## RAPiNet (XBL-EIMT)



Item	XBL-EIMT	
Transmission standard	Transmission speed	100Mbps
	Transmission method	Base band
	Max. extension distance between nodes	100m
	Max. number of nodes	64
	Max. protocol size	1,516 bytes
	Access method to service zone	CSMA / CD
	Frame error check	$CRC\ 32 = X^{32} + X^{26} + X^{23} + \dots + X^2 + X + 1$
Basic standard	Normal communication guarantee	Max. 1,200 (packet/sec)
	Dimension (mm)	90(H) x 27(W) x 60(D)
	Current consumption (mA)	290
	Weight (g)	102

Ethernet/IP (XBL-EIPT)



Item		XBL- EIPT
Transmission standard	Transmission speed	100Mbps
	Transmission method	Base band
	Max. extension distance between nodes	100m
	Access method to service zone	CSMA/CD
	Frame error check	$CRC\ 32 = X^{32} + X^{26} + X^{23} + \dots + X^2 + X + 1$
Topology		Line, Star
The number of connections (Client/Server)	TCP	16 / 32
	CIP (IO communication)	32 / 64
Number of Max. services (P2P)		2
Number of Max. installations		2
Max. setting data size per block	Periodic client	500 bytes
	Aperiodic client	512 bytes
Basic standard	Dimension (mm)	90(H) x 27(W) x 60(D)
	Current consumption(mA)	290
	Weight (g)	102

Profibus-DP Module  
(XBL-PMEC, XBL-PSEA)



Item		XBL-PMEC	XBL-PSEA
Module Type		Slave	
Network Type		Profibus-DP	
Standard		EN501170/DIN19245	
Interface		RS-485 (Electric)	
Topology		Bus type	
Modulation Type		NRZ (Non Return to Zero)	
Protocol		Profibus DP-V0	
Max. Distance & Transmission Speed	Distance (m)	Send Speed (bps)	
		1,200	9.6k/19.2k/93.75k/187.5k
	400	500k	
	200	1.5M	
	100	3M/6M/12M	
Max. number of stations per segment		32 (including master & repeater)	
Cable used		Electric-twist shielded pair cable	
Max. Communication size		Input : 122 Word Output : 122 Word	
Max. Communication size per block		Input : 64 Word Output : 64 Word	
Communication Transmission cycle		10/20/50/100/200/500ms, 1/5/10s	
Communication Receive cycle		Main unit scan × 2 + Data receive time + Communication module scan	
Max. number of units installed		2 units	
Communication Parameters to set		XG5000 (setting station and high-speed link parameter block)	
Internal-consumed current (mA)		300	250
Weight (g)		86 (including connector: 122)	



## DeviceNet Module (XBL-DSEA)



Item		XBL-DSEA	
Transmission Specification	Transmission Speed (kbps)	125/250/500	
	Transmission Type	Poll, Bit strobe, COS, Cyclic	
	Communication distance (m)	Thick Cable	500 (125kbps)/250 (250kbps)/100 (500kbps)
		Thin Cable	100 (125/250/500kbps)
	Terminal resistance (Ω)	121 (1%, 1/4W)	
	Max. drop length (m)	125 kbps	6 (Max. extended length 156)
		250 kbps	6 (Max. extended length 78)
		500 kbps	6 (Max. extended length 39)
	Data Packet	0~8 Bytes	
	Message Access Control	CSMA/NBA	
	Network Structure	<ul style="list-style-type: none"> <li>Trunk/drop line</li> <li>Power/Signal cable inside the identical network cable</li> </ul>	
	Bus Type	<ul style="list-style-type: none"> <li>Poll type</li> </ul>	
	Max. number of nodes	Up to 64 (including master) MAC IDs (MAC Identifier)	
	System Features	Insertion and removal of node available in voltage On status	
Operation Voltage	DC 24V		
Diagnosis Function	Module: Checks duplicated station/ Checks CRC error SyCon: Detects defective station/Checks BusOff/Auto-scan function XG5000: Monitors High-speed link		
Master/Slave Operation	Available only in slave		
Parameter setting	Setting to High-speed link of XG5000 (RS-232C of CPU module or USB port)		
XG5000 (High-speed link) Specification	Data process unit	Word	
	Send/Receive period	Select among 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1s, 5s and 10s - Default : 20ms	
	Max. communication point	Send 2048points, Receive 2048 points, 256 bytes respectively	
	Max. block number	64 (Setting range: 0~63)	
	Max. point number per block	1024 points (64 Words)	
	Max. modules installed	Up to 2	
	Internal-consumed current (mA)	100mA	
Basic Specification	Weight (g)	110	

## CANopen Module (XBL-CMEA, XBL-CSEA)



Item		XBL-CMEA	XBL-CSEA
Transmission Speed		10, 20, 50, 100, 125, 250, 500, 800, 1000Kbps	
Num. of port		1	
Max. node		32	-
PDO	TPDO	Total 32	64
	RPDO		64
Max. size of data per PDO		8Byte	
PDO transfer type		Synchronous acyclic (0), synchronous cyclic (1~240), RTR (252~253), time-event trigger (254~255)	
Support SDO		Client 127/Server 1	Server 1
SDO transfer type		Expedited, Normal	
Access method		CSMA/BA (Carrier Sense Multiple Access/Bitwise Arbitration)	
Topology		BUS	
SYNC Service		Producer Cycle : 20~5000ms	Consumer
NMT. eode control		NMT master	NMT slave
Emergency		Save the last five per slave	Save up to last 10
NMT. error control		Heartbeat, Life guarding	Heartbeat
Network scan		○	-
Size (mm)		90 (H)X27 (W)X60 (D)	
Current consumption (mA)		211	202
Weight (g)		78	

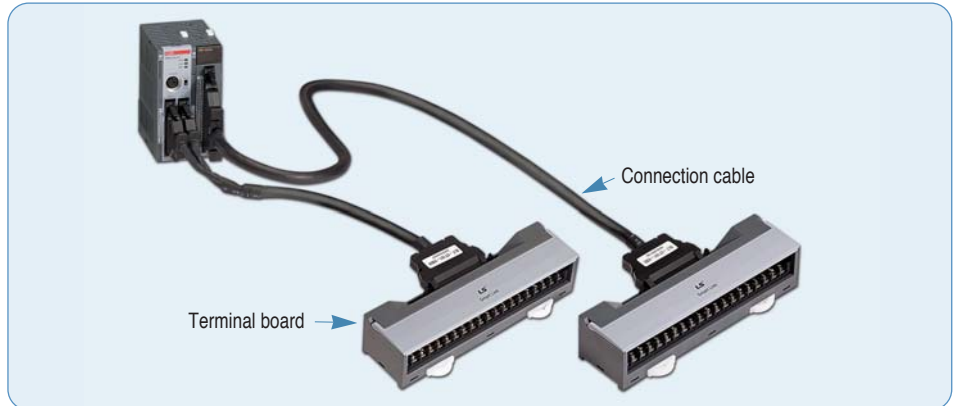
Option modules



Option modules

<b>XBO-AD02A</b>	Voltage/Current, Input 2 chs
<b>XBO-DA02A</b>	Voltage/Current, Output 2 chs
<b>XBO-AH02A</b>	Voltage/Current, Input 1 ch Voltage/Current, Output 1 ch
<b>XBO-TC02A</b>	TC (Thermocouple), Input 2 chs
<b>XBO-RTCA</b>	RTC (Real Time Clock)
<b>XBO-DC04A</b>	DC 24V, Input 4 points
<b>XBO-TN04A</b>	Transistor (Sink), Output 4 point
<b>XBO-RD01A</b>	RTD (Resistance Temperature Detect, Input 1 ch)

Smart link

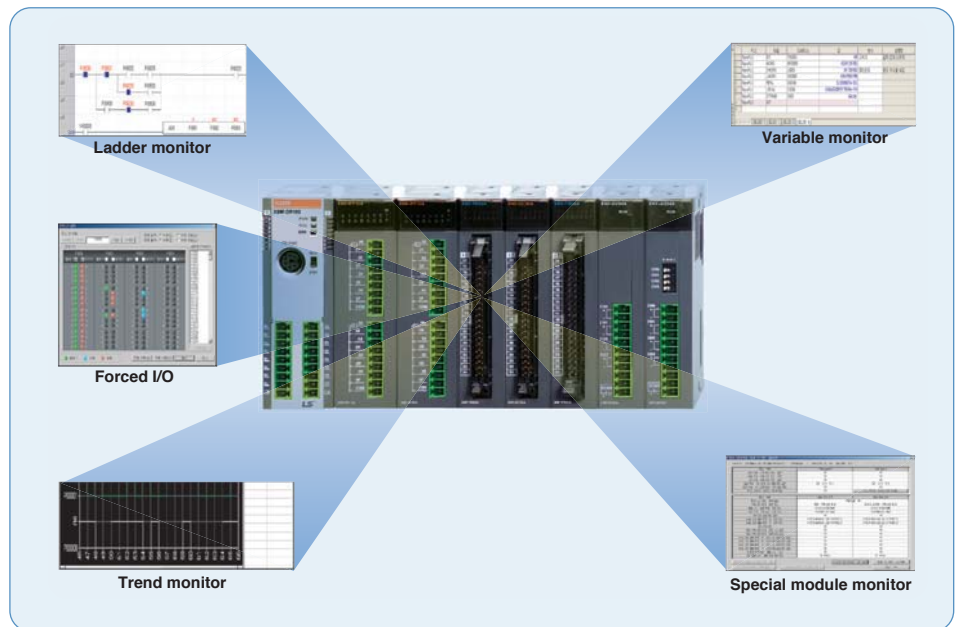


Terminal board	Connection cable	XBM-DN16S XBM-DN32S	XBE-DC32A	XBE-TN32A	XBE-TP32A	Cable length
<b>TG7-1H40S</b> (Terminal board)	R40H/20HH-05S-XBM3	●	-	-	-	0.5m
	R40H/20HH-10S-XBM3	●	-	-	-	1.0m
<b>TG7-1H40CA</b> (Terminal board, Common)	C40HH-05SB-XBI	-	●	●	●	0.5m
	C40HH-10SB-XBI	-	●	●	●	1.0m
	C40HH-15SB-XBI	-	●	●	●	1.5m
	C40HH-20SB-XBI	-	●	●	●	2.0m
<b>R32C-NS5A-40P</b> (Relay board : sink)	C40HH-30SB-XBI	-	●	●	●	3.0m
	C40HH-05SB-XBI	-	-	●	-	0.5m
	C40HH-10SB-XBI	-	-	●	-	1.0m
	C40HH-15SB-XBI	-	-	●	-	1.5m
<b>R32C-PS5A-40P</b> (Relay board : source)	C40HH-20SB-XBI	-	-	●	-	2.0m
	C40HH-05PH-XBP	-	-	-	●	0.5m
	C40HH-15PH-XBP	-	-	-	●	1.5m
	C40HH-20PH-XBP	-	-	-	●	2.0m

## XG5000

(Programming software)

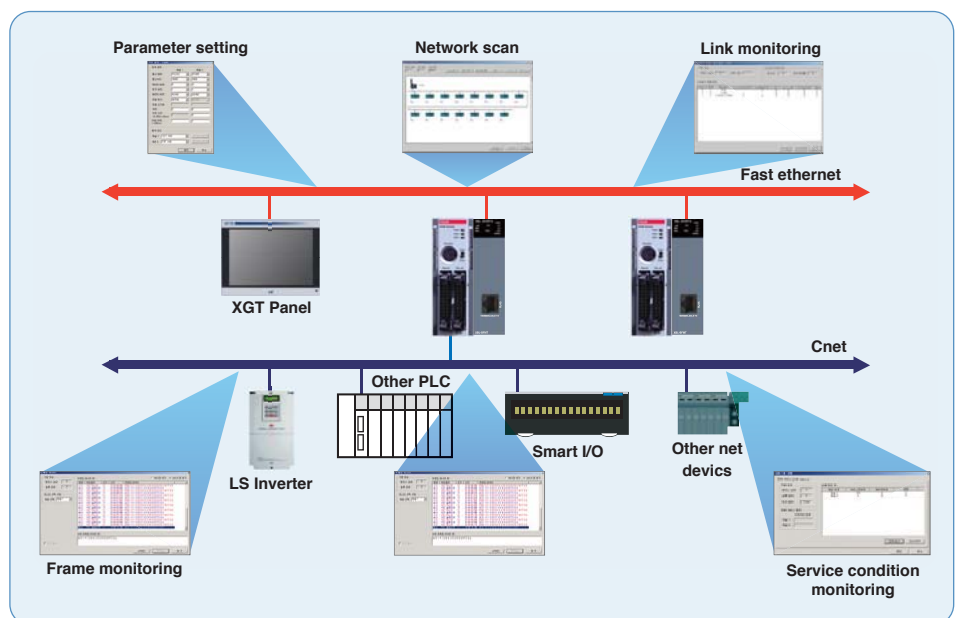
- Program editing & Engineering software
- Windows-based easy operation
- Multi-PLC, Multi-programming support
- Various monitoring and diagnosis functions
- Vista 2000, XP (Limited use in Windows 98, ME)



## 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, Frame monitoring)



# Product list

## Product list

Item	Model	Specifications
<b>Block type unit (U)</b>	XBC/XEC-DN32U	AC 110 - 220V, 16points DC24V input, 16points transistor output
	XBC/XEC-DR28U	AC 110 - 220V, 16points DC24V input, 12points relay output
	XBC/XEC-DN32UP	AC 110 - 220V, 16points DC24V input, 16points transistor output, 4 axes built-in positioning
	XBC/XEC-DR28UP	AC 110 - 220V, 16points DC24V input, 12points relay output, 4 axes built-in positioning
	XBC/XEC-DN32UA	AC 110 - 220V, DC24V input, 16points transistor output, 8 channel built-in analog
	XBC/XEC-DR28UA	AC 110 - 220V, DC24V input, 12points relay output, 8 channel built-in analog
<b>Block type unit (High performance)</b>	XBC/XEC-DR32H	AC 100 - 240V, DC24 input 16 points, relay output 16 points
	XBC/XEC-DR64H	AC 100 - 240V, DC24 input 32 points, relay output 32 points
	XBC/XEC-DN32H	AC 100 - 240V, DC24 input 16 points, transistor output 16 points (Sink)
	XBC/XEC-DN64H	AC 100 - 240V, DC24 input 32 points, transistor output 32 points (Sink)
	XEC-DP32H	AC 100 - 240V, DC24 input 16 points, transistor output 16 points (Source)
	XEC-DP64H	AC 100 - 240V, DC24 input 32 points, transistor output 32 points (Source)
	XBC-DR32H/DC	DC 24V, DC24 input 16 points, relay output 16 points
	XBC-DR64H/DC	DC 24V, DC24 input 32 points, relay output 32 points
	XBC-DN32H/DC	DC 24V, DC24 input 16 points, transistor output 16 points (Sink)
	XBC-DN64H/DC	DC 24V, DC24 input 32 points, transistor output 32 points (Sink)
	XEC-DR32H/D1	DC 12/24V, DC12/24 input 16 points, relay output 16 points
	XEC-DR64H/D1	DC 12/24V, DC12/24 input 32 points, relay output 32 points
<b>Block type unit (Standard)</b>	XBC/XEC-DR20SU	AC 100 - 240, DC24V input 12 points, relay output 8 points
	XBC/XEC-DR30SU	AC 100 - 240, DC24V input 18 points, relay output 12 points
	XBC/XEC-DR40SU	AC 100 - 240, DC24V input 24 points, relay output 16 points
	XBC/XEC-DR60SU	AC 100 - 240, DC24V input 36 points, relay output 24 points
	XBC/XEC-DN20SU	AC 100 - 240, DC24V input 12 points, transistor output 8 points (Sink)
	XBC/XEC-DN30SU	AC 100 - 240, DC24V input 18 points, transistor output 12 points (Sink)
	XBC/XEC-DN40SU	AC 100 - 240, DC24V input 24 points, transistor output 16 points (Sink)
	XBC/XEC-DN60SU	AC 100 - 240, DC24V input 36 points, transistor output 24 points (Sink)
	XBC/XEC-DP20SU	AC 100 - 240, DC24V input 12 points, transistor output 8 points (Source)
	XBC/XEC-DP30SU	AC 100 - 240, DC24V input 18 points, transistor output 12 points (Source)
	XBC/XEC-DP40SU	AC 100 - 240, DC24V input 24 points, transistor output 16 points (Source)
	XBC/XEC-DP60SU	AC 100 - 240, DC24V input 36 points, transistor output 24 points (Source)
<b>Block type unit (Economic)</b>	XBC/XEC-DR10E	AC 100 - 240V, 6 points DC input, 4 point Relay output
	XBC/XEC-DR14E	AC 100 - 240V, 8 points DC input, 6 point Relay output
	XBC/XEC-DR20E	AC 100 - 240V, 12 points DC input, 8 point Relay output
	XBC/XEC-DR30E	AC 100 - 240V, 18 points DC input, 12 point Relay output
	XBC/XEC-DN10E	AC 100 - 240V, 6 points DC input, 4 point transistor output (Sink)
	XBC/XEC-DN14E	AC 100 - 240V, 8 points DC input, 6 point transistor output (Sink)
	XBC/XEC-DN20E	AC 100 - 240V, 12 points DC input, 8 point transistor output (Sink)
	XBC/XEC-DN30E	AC 100 - 240V, 18 points DC input, 12 point transistor output (Sink)
	XBC/XEC-DP10E	AC 100 - 240V, 6 points DC input, 4 point transistor output (Source)
	XBC/XEC-DP14E	AC 100 - 240V, 8 points DC input, 6 point transistor output (Source)
	XBC/XEC-DP20E	AC 100 - 240V, 12 points DC input, 8 point transistor output (Source)
	XBC/XEC-DP30E	AC 100 - 240V, 18 points DC input, 12 point transistor output (Source)
<b>Modular type unit</b>	XBM-DR16S	DC 24V, 8-point DC 24V input, 8-point relay output
	XBM-DN16S	DC 24V, 8-point DC 24V input, 8-point TR output
	XBM-DN32S	DC 24V, 16-point DC 24V input, 16-point TR output

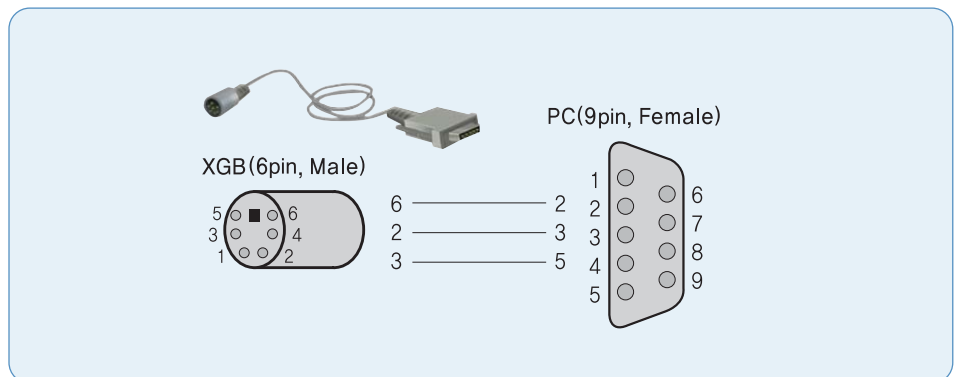
## Product list

Item	Model	Specifications
Expansion I/O module	XBE-DC08A	8-point DC 24V input
	XBE-DC16A	16-point DC 24V input
	XBE-DC32A	32-point DC 24V 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
	XBE-TN32A	32-point Transistor (sink) output
	XBE-TP08A	8-point Transistor (source) output
	XBE-TP16A	16-point Transistor (source) output
	XBE-TP32A	32-point Transistor (source) output
	XBE-DR16A	8-point DC 24V input, 8-point relay output
	Special module	XBF-AD04A
XBF-AD04C		4-channel analog input (current/voltage, resolution : 1/16000)
XBF-AH04A		2-channel analog input (current/voltage)/2-channel analog output (current/voltage)
XBF-DV04A		4-channel analog output (voltage)
XBF-DV04C		4-channel analog input (voltage, resolution : 1/16000)
XBF-DC04A		4-channel analog output (current)
XBF-DC04C		4-channel analog input (current, resolution : 1/16000)
XBF-RD04A		4-channel RTD input
XBF-TC04S		4-channel Thermocouple input
XBF-TC04TT		Temperature controller, Thermocouple
XBF-TC04RT		Temperature controller, RTD
XBF-PD02A		Line drive 2 axis
XBF-PN08B		EtherCAT Positioning module, 8axes
XBF-AD08A		8-channel analog input (Current/voltage)
XBF-HO02A		2-channel High-speed counter input (Open collector)
XBF-HD02A		2-channel High-speed counter input (Line drive)
Communication module		XBL-C41A
	XBL-C21A	Cnet (RS-232C), 1ch
	XBL-EMTA	Fast Ethernet (100Mbps), 1ch
	XBL-EIMT	RAPIEnet, 2 ch
	XBL-EIPT	Ethernet/IP, 2 ch
	XBL-EIMF	RAPIEnet I/F, Max. 2km (Fiber 2ch.), 100Mbps
	XBL-EIMH	RAPIEnet I/F (Twisted pair 1ch, Fiber 2 ch.), 100Mbps
	XBL-PMEC	Profibus-DP, Master, RS-485
	XBL-PSEA	Profibus-DP, Slave, RS-485
	XBL-DSEA	DeviceNet, Slave
	XBL-CMEA	CANopen (10, 20, 50, 100, 125, 250, 500, 800, 1000Kbps, Num of PDO : 32)
	XBL-CSEA	CANopen (10, 20, 50, 100, 125, 250, 500, 800, 1000Kbps, Num of PDO : 64)
Loader cable	PMC-310S	Connection cable (PC to PLC), 9pin(PC)-6pin(PLC)
	USB-301A	Connection cable (PC to PLC), USB
Memory module	XBO-M2MB	Memory
Option modules	XBO-AD02A	Voltage/Current, Input 2 ch
	XBO-DA02A	Voltage/Current, Output 2 ch
	XBO-AH02A	Voltage/Current, Input 1ch/Voltage/Current, Output 1ch
	XBO-TC02A	TC (Thermo couple), Input 2 ch
	XBO-RTCA	RTC (Real time clock), Battery
	XBO-DC04A	DC 24V, Input 4 points
	XBO-TN04A	TR (Sink), Output 4 points
	XBO-RD01A	RTD (Resistance temperature detector), Input 1ch

Product list

Terminal board	Connection cable	XBM-DN16S XBM-DN32S	XBE-DC32A	XBE-TN32A	XBE-TP32A	Cable length
XTB-40H (TG7-1H40S) (Terminal board)	R40H/20HH-05S-XBM3	●	-	-	-	0.5m
	R40H/20HH-10S-XBM3	●	-	-	-	1.0m
	C40HH-05SB-XBI	-	●	●	●	0.5m
	C40HH-10SB-XBI	-	●	●	●	1.0m
TG7-1H40CA (Terminal board, Common)	C40HH-15SB-XBI	-	●	●	●	1.5m
	C40HH-20SB-XBI	-	●	●	●	2.0m
	C40HH-30SB-XBI	-	●	●	●	3.0m
R32C-NS5A-40P (Relay board: sink)	C40HH-05SB-XBI	-	-	●	-	0.5m
	C40HH-10SB-XBI	-	-	●	-	1.0m
	C40HH-15SB-XBI	-	-	●	-	1.5m
	C40HH-20SB-XBI	-	-	●	-	2.0m
R32C-PS5A-40P (Relay board: source)	C40HH-30SB-XBI	-	-	●	-	3.0m
	C40HH-05PH-XBP	-	-	-	●	0.5m
	C40HH-15PH-XBP	-	-	-	●	1.5m
	C40HH-20PH-XBP	-	-	-	●	2.0m

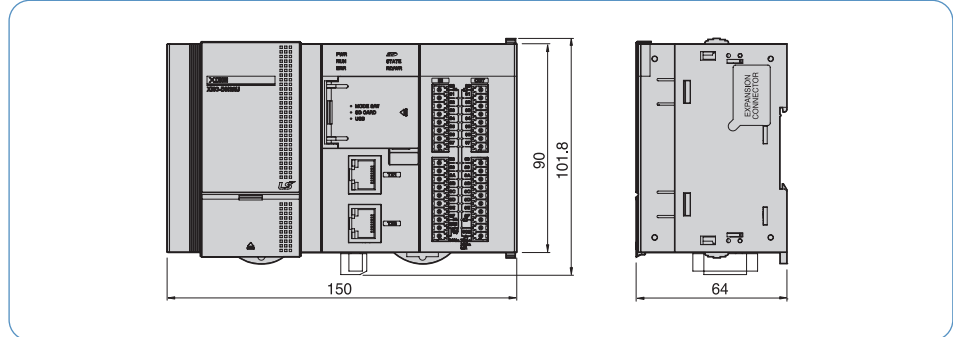
Download cable diagram



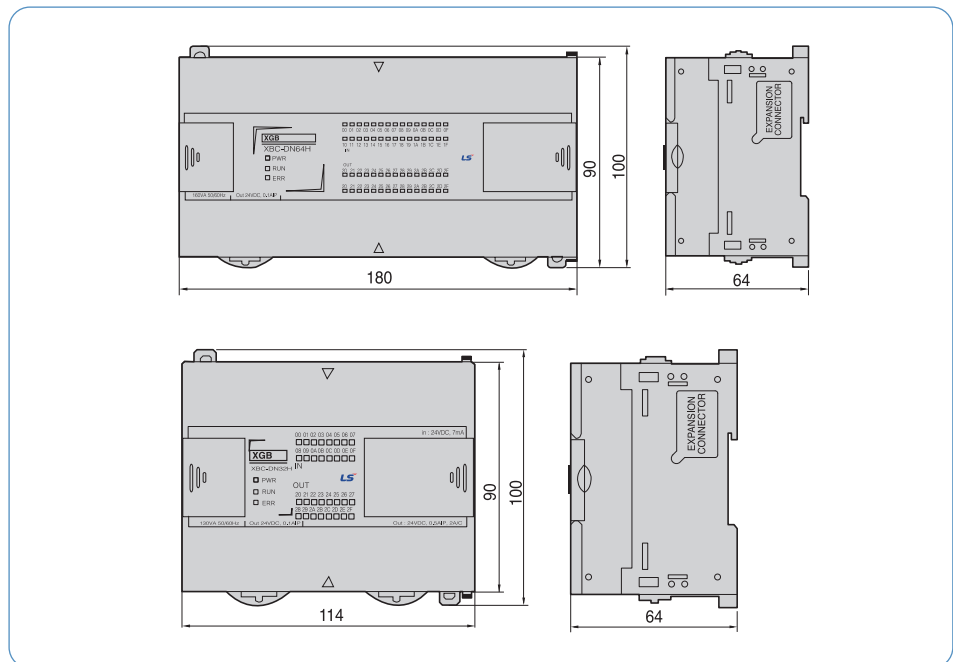
# XGB Dimension

## Block type unit

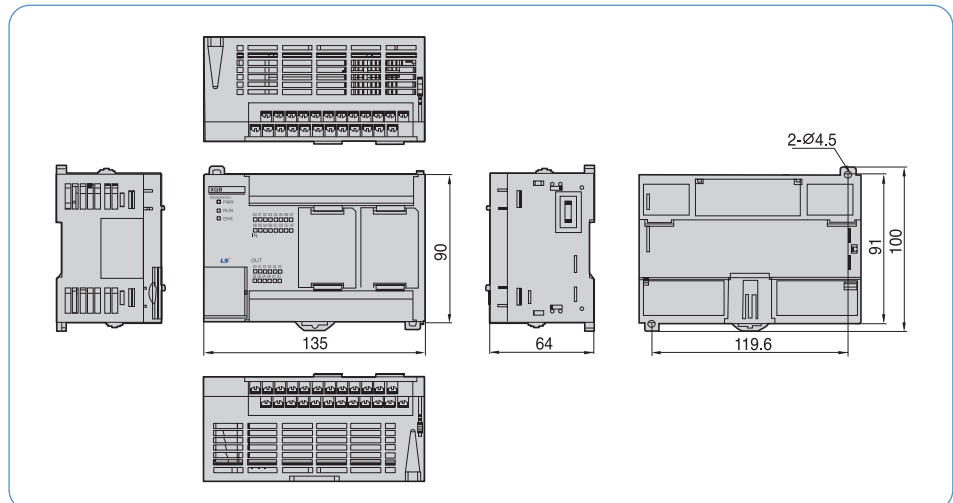
### XBC/XEC-U (Standard)



### XBC/XEC-H

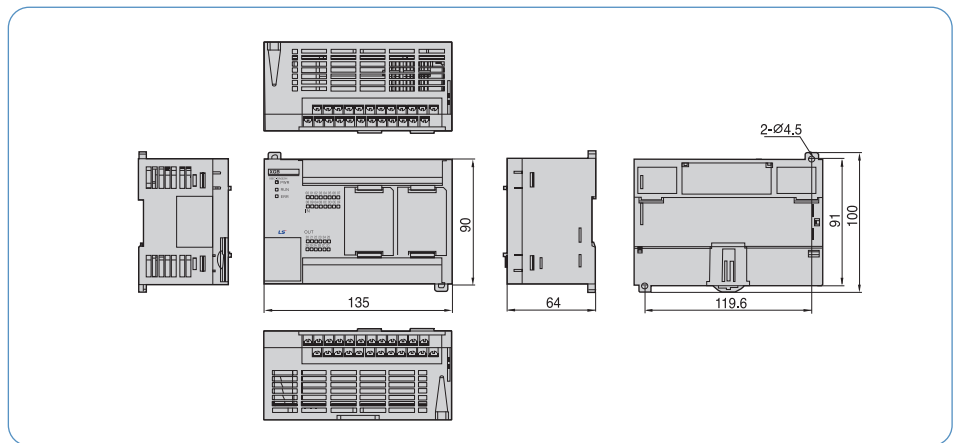
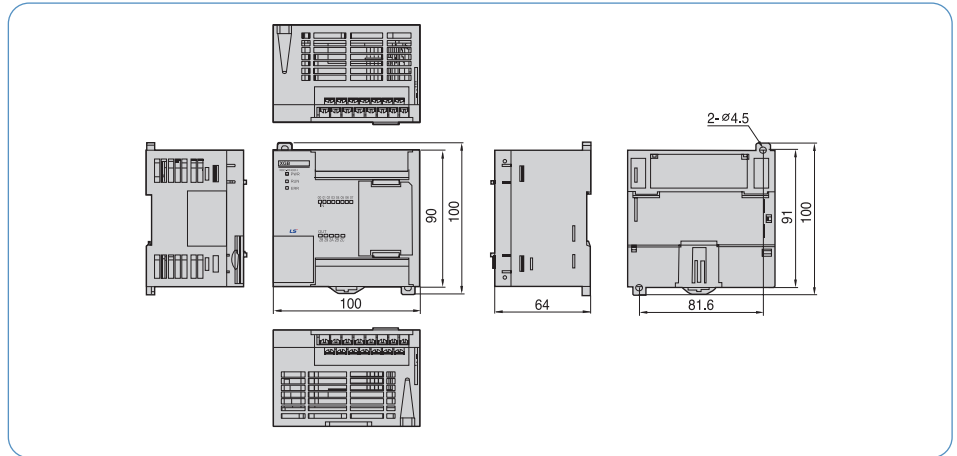


### XBC/XEC-SU



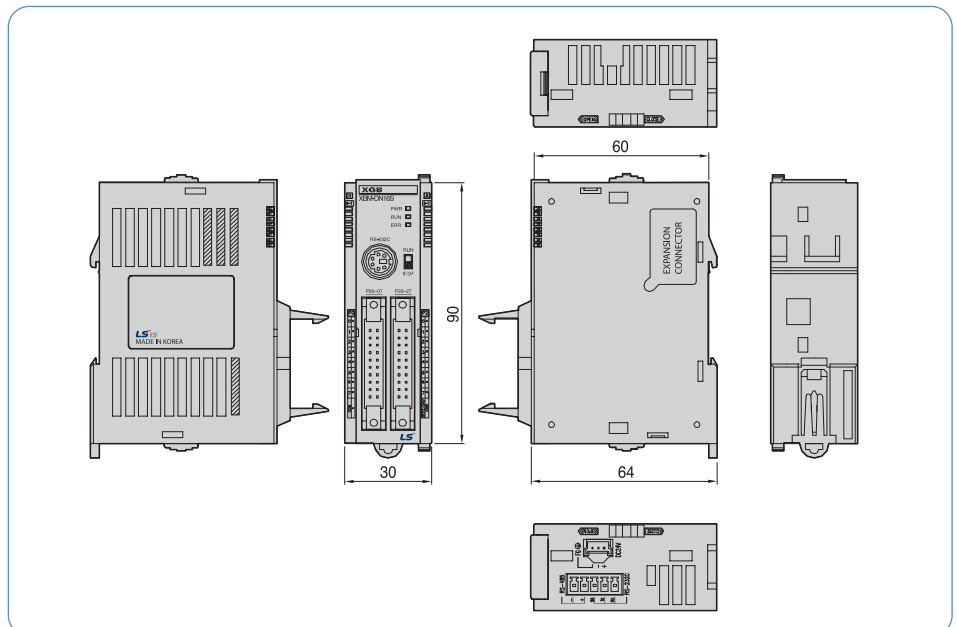


XBC/XEC-E



Modular type unit

XBM-S



# Worldwide Network

Head Office and Domestic Factories (Cheongju, Cheonan, Busan)

## Domestic Factories

- **Head Office**  
LS Tower, 127, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-Do, 431-848, Korea  
Tel : 82-2-2034-4870 Fax : 82-2-2034-3660-7021
- **Cheongju Factory**  
1 Songjeong-dong, Cheongju-si, Chungbuk-do, 361-720, Korea  
Tel : 82-43-261-6114 Fax : 82-43-261-6602
- **Cheonan Factory**  
181 Samseong-ri, Mokcheon-myeon, Cheonan-si Chungnam-do, 330-840 Korea  
Tel : 82-41-550-8114 Fax : 82-41-566-8408
- **Busan Factory**  
1-19 Block Hwajeon-dong, Gangseo-gu, Busan, 618-280, Korea  
Tel : 82-51-795-6114 Fax : 82-51-795-6169

## Overseas Factories

- **Wuxi Factory, CHINA**  
102-A. National High & New Tech Industrial Development Area, Wuxi. Jiangsu. 214028. P.R. China  
Tel : 86-510-8534-6666 Fax : 86-510-8534-4078
- **Dalian Factory, CHINA**  
No. 15. Liaohexi 3-Road. Economic and Technical Development zone. Dalian 116600. China  
Tel : 86-411-273-7777 Fax : 86-411-8730-7560
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181 Samseong-ri, Mokcheon-myeon, Cheonan-si, Chungcheongnam-do, 330-840, Korea  
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Cheongju Factory



Wuxi Factory (China)



Cheonan Factory



Dalian Factory (China)



Busan Factory



Hanoi Factory (Vietnam)

LSIS engages in business activities around the world.  
 The company has a global network that includes  
 four overseas corporations and eight overseas branches.  
 It also has 224 business partners in 77 countries.

● Overseas Subsidiaries	Shanghai, Wuxi, Dalian, Hubei (China), Hanoi (Vietnam), Amsterdam (Netherlands), Dubai (UAE), Tokyo (Japan), Chicago (USA)
● Overseas Branches	Shanghai, Beijing, Guangzhou, Qingdao, Chengdu, Shen Yang, Jinan (China) Hochiminh (Vietnam), Tokyo (Japan), Detroit (USA), Gurgaon (India)
● Global Service Centers	Shanghai, Beijing, Guangzhou, Qingdao, Chengdu, Wuxi, Changzhou, Xiangtan, Nanjing, Jinan, Chongqing, Foshan, Fujian, Wuhan, Shen Yang, Dalian, Hubei (China)
● Presence Internationally	77 Countries

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### 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.

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