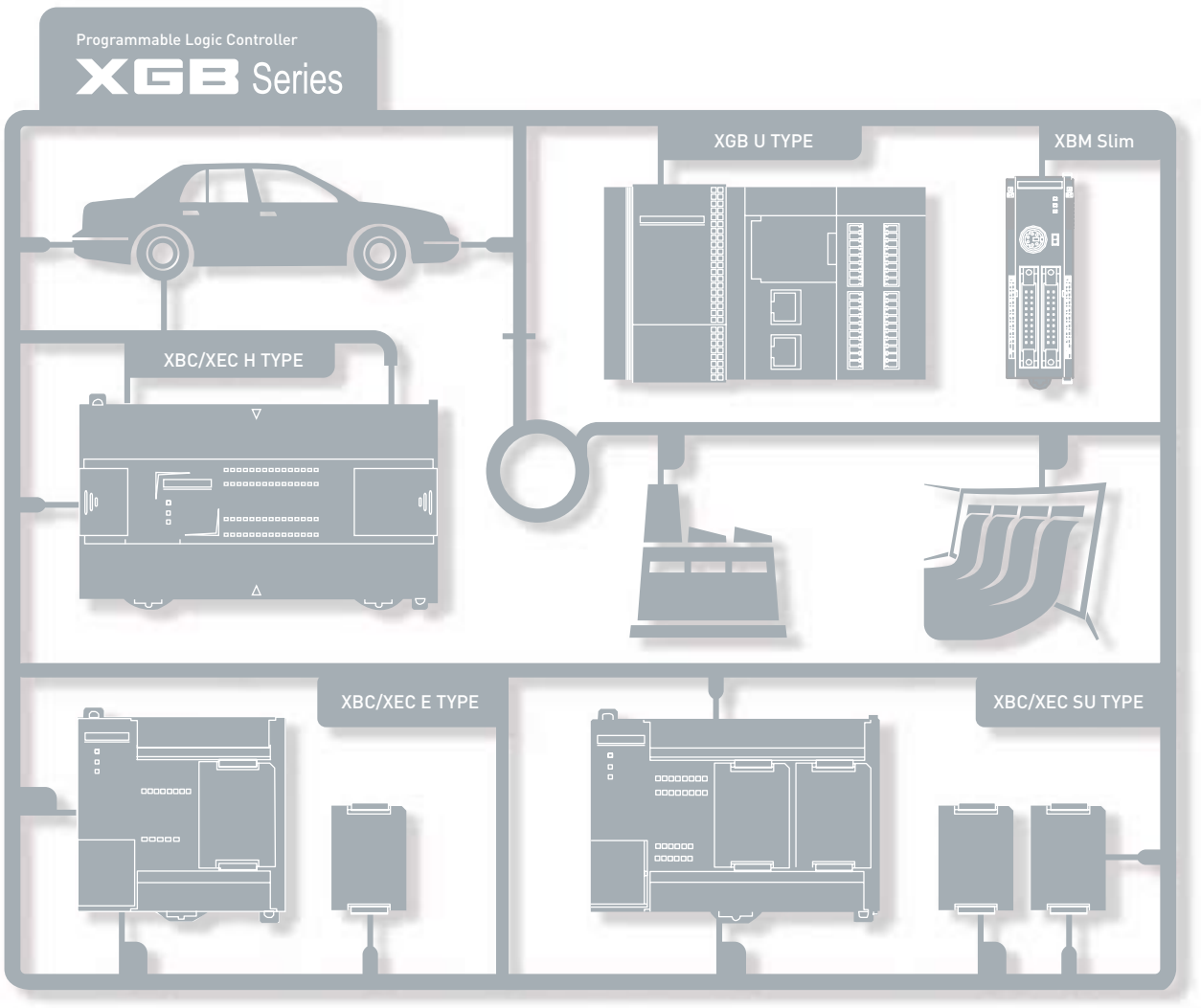
FUTURING SMART ENERGY

www.lsis.com

Programmable Logic Controller

# XGB Series

LS IS




# EASINESS
# COMPACTNESS
# FUNCTIONALITY
# CONVENIENCE
# HIGH PERFORMANCE

Programmable Logic Controller

# XGB Series

# 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<br>Size (W×H×D) | XBC/XEC<br>U Type<br>(Standard) | XBC/XEC<br>H Type | XBC/XEC<br>SU Type | XBC/XEC<br>E Type | XBM<br>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. HSC
- Analog input/ output 8 Ch. IN OUT
- 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

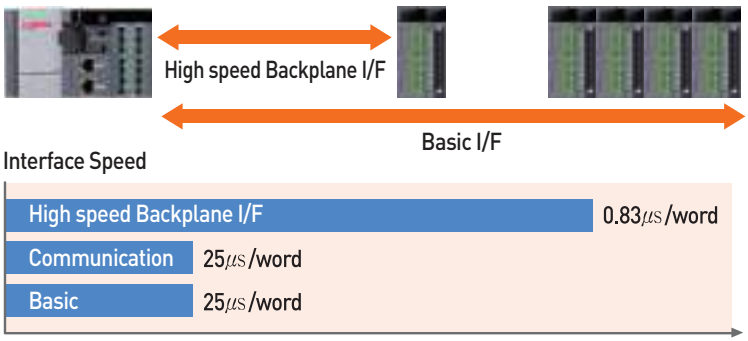
**XGB-U** is a **user-oriented** controller


## 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

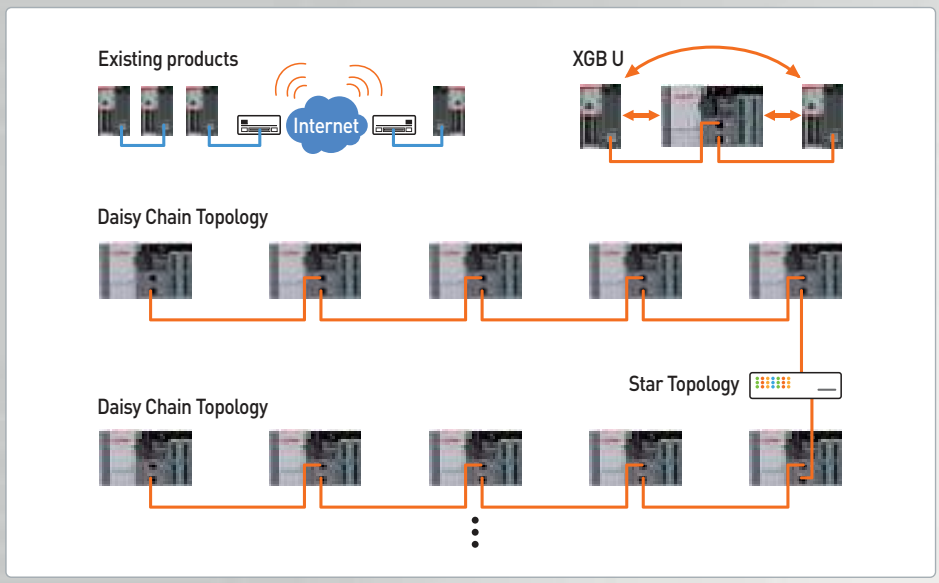



## Data Log

- 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

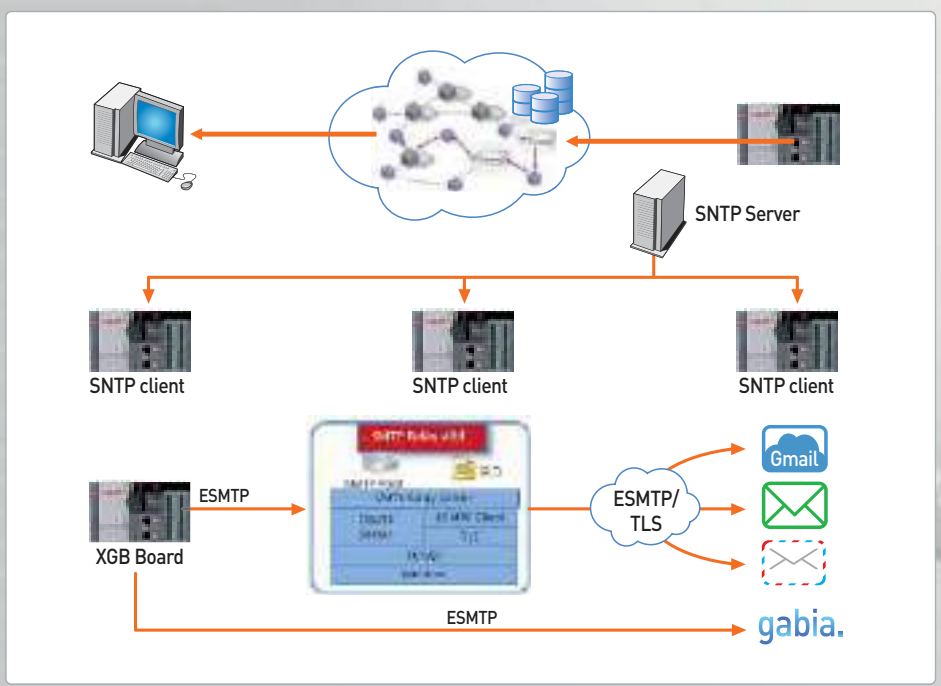
## Dual Port Ethernet(XBC/XEC U type)

- 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)



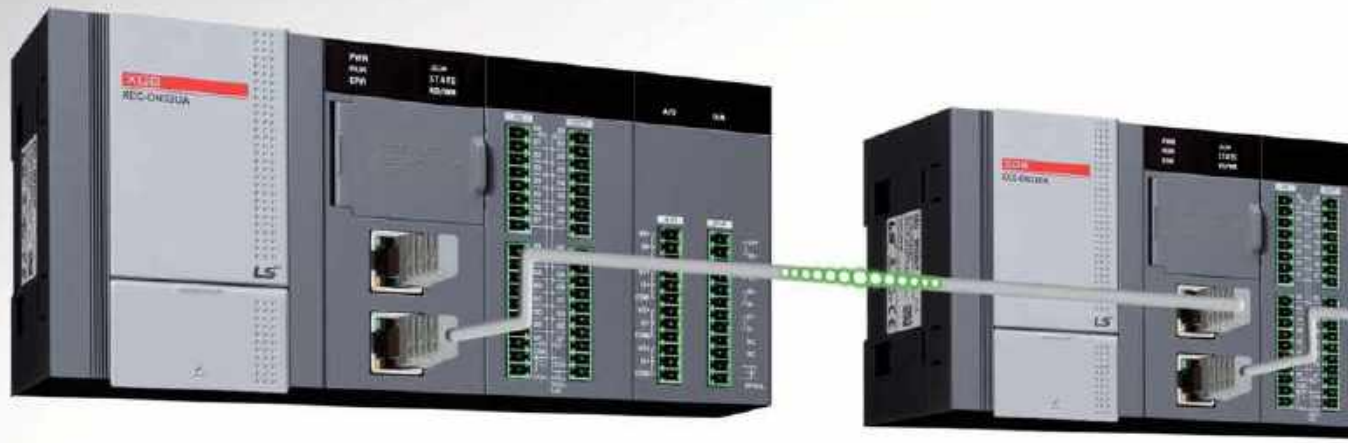
# Ultimate Performance
# Universal IoT
# User Oriented

# 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) | 100kHz(2Ch) | 4kHz | 20kHz |
| | | 20kHz(4Ch) | 20kHz(6Ch) | | |
| | 8Ch | 8Ch | 8Ch | 4Ch | 4Ch |
| 2 Phase | 50kHz(4Ch) | 50kHz(4Ch) | 50kHz(1Ch) | 2kHz | 2 multiplication: 10kHz<br>4 multiplication: 8kHz |
| | | 10kHz(4Ch) | 8kHz(3Ch) | | |
| | 4Ch | 4Ch | 4Ch | 2Ch | 2Ch |



## Built-in PID function

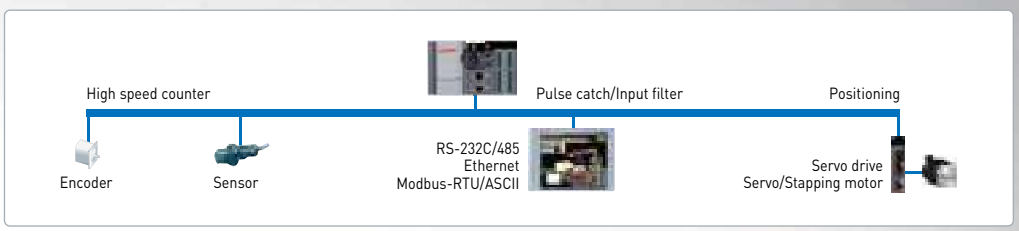
- It supports built-in PID control function up to 16 loops.
  - It provides parameter setting using XG5000, convenient loop state monitoring through trend monitor.
  - It can simply get a coefficient value by improved auto-tuning algorithm
  - Control accuracy improvement by using various additional functions such as PWM output, ⊿MV, ⊿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.




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

## XBC/XEC U

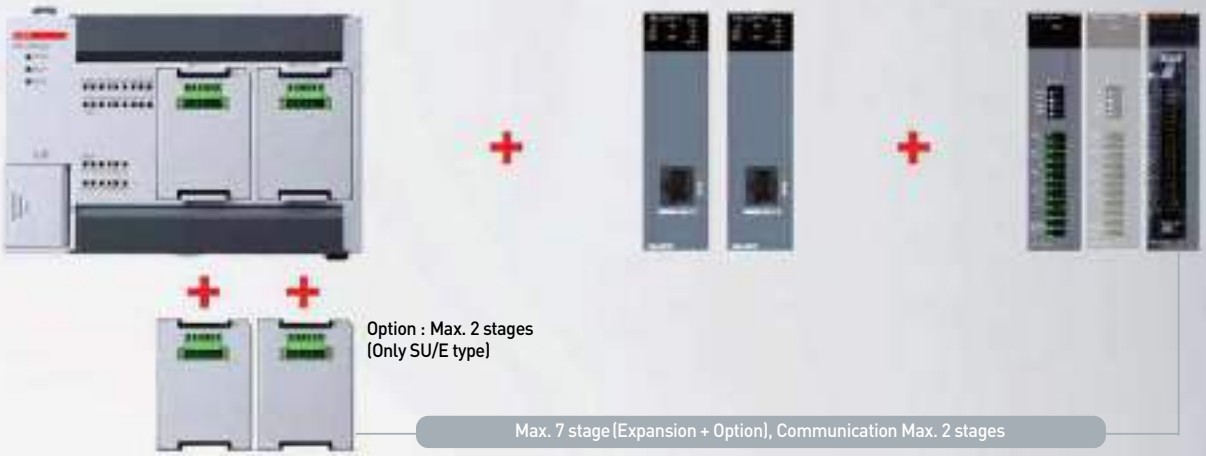
Standard type

Max. 10 stages (High speed interface module : Max. 2 stages)

## XBC/XEC H

Max. 10 stage (Including communication 2 stages)

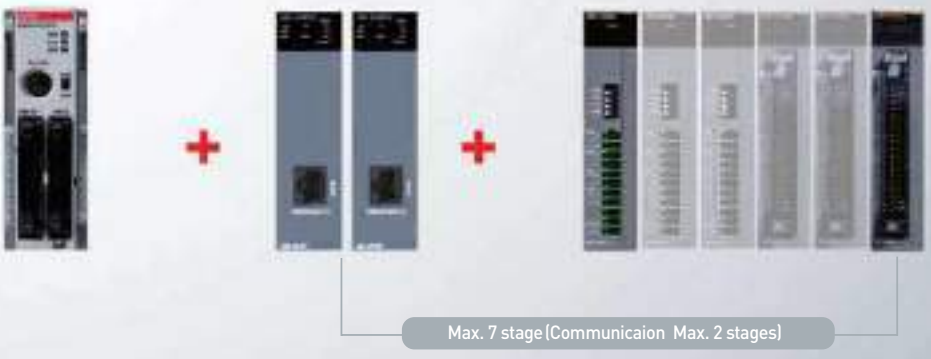
## XBC/XEC SU




## 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

Contents



## 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/s² (1G) | – | | |
| | Continuous vibration | | | | |
| | Frequency | Acceleration | Pulse width | | |
| | 10 ≤ f < 57Hz | – | 0.035mm | | |
| | 57 ≤ f ≤ 150Hz | 4.9m/s² (0.5G) | – | | |
| Shock resistance | • Peak acceleration: 147m/s² (15g) • Duration: 11ms<br>• Pulse waveform: Half-sine, 3times each direction per each axis | | | | IEC61131-2 |
| Noise resistance | Square wave impulse noise | ±500 V | | | LSIS Standard |
| | Electrostatic discharge | 4kV | | | IEC61131-2<br>IEC61000-4-2 |
| | Radiated electromagnetic field noise | 80 ~ 1000MHz, 10V/m | | | IEC61131-2<br>IEC61000-4-3 |
| | Fast transient/ Burst noise | Main unit | Expansion module | | IEC61131-2<br>IEC61000-4-4 |
| | | 2kV | 1kV | | |
| Operating ambience | Free from corrosive gases and excessive dust | | | | |
| Altitude | Up to 2,000m | | | | |
| Pollution level*1) | Less than 2 | | | | |
| Cooling | Air-cooling | | | | |

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

## XBC U

### Performance specifications

| Item | | Specifications | | | | | | Remark |
|---|---|---|---|---|---|---|---|---|
| | | XBC-DN(P)32U | XBC-DR28U | XBC-DN(P)32UA | XBC-DR28UA | XBC-DN(P)32UP | 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 expansioons |
| Data area | P | P00000 ~ P2047F(32,768 point) | | | | | | Input/Ouput |
| | 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, Ethernet | | | | | | |
| 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-DN(P)32U | XEC-DR28U | XEC-DN(P)32UA | XEC-DR28UA | XEC-DN(P)32UP | 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 expansioons |
| 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-DN(P)32U | XBC/XEC-DR28U | XBC/XEC-DN(P)32UA | XBC/XEC-DR28UA | XBC/XEC-DN(P)32UP | XBC/XEC-DR28UP | |
| PID control | | Control by instruction, auto-tunning, 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 | | | | | | |
| | Topology | Line, star | | | | | | |
| | Diagnosis | Module information, service condition | | | | | | |
| | Protocol | XGT dedicated Modbus TCP/IP user define frame | | | | | | Embedded01 P2P:02 High-speed link:01 |
| | 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 : 100KHz 8 channels 2-phase : 50KHz 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

# XEC U

## Positioning

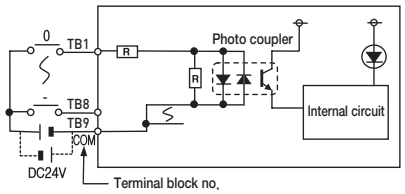
| Item | Specifications | Remark |
|---|---|---|
| **Basic Function** | No. of control axi: 4axis<br>Control Method:Position, Speed, Speed/Position,Feed Control<br>Control Unit: Pulse ,mm, inch, degree<br>Positioning Data: Each axis can have up to 400 data(Step number:1~400)<br>Operation pattern: End,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

## Analog

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

## XBC-DN(P)32U
(16 point input)

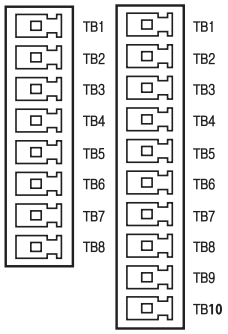
**Circuit configuration**




| No. | Contact |
|---|---|
| TB1 | 0 |
| TB2 | 1 |
| TB3 | 2 |
| TB4 | 3 |
| TB5 | 4 |
| TB6 | 5 |
| TB7 | 6 |
| TB8 | 7 |

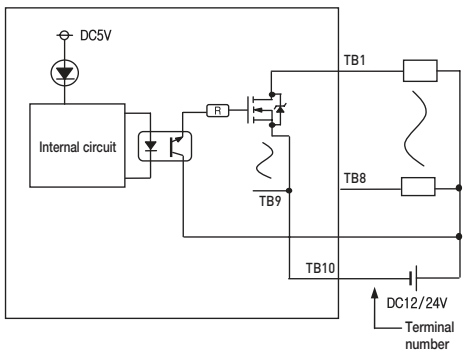
| No. | Contact |
|---|---|
| TB1 | 8 |
| TB2 | 9 |
| TB3 | A |
| TB4 | B |
| TB5 | C |
| TB6 | D |
| TB7 | E |
| TB8 | F |
| TB9 | COM |
| TB10 | COM |

**Type**



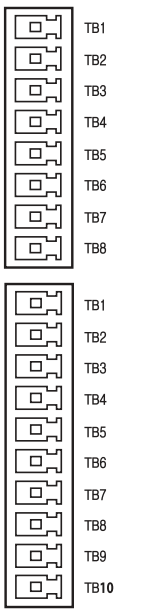

## XBC-DN32U
Transistor output
(Sink type)

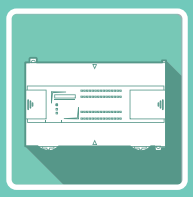
**Circuit configuration**




| No. | Contact |
|---|---|
| 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 |

**Type**





# XBC/XEC H

## High Performance

Contents




XGB
XBC-DN64H
PWR
RUN
ERR
OUT
LS

## High performance type

### Performance specifications

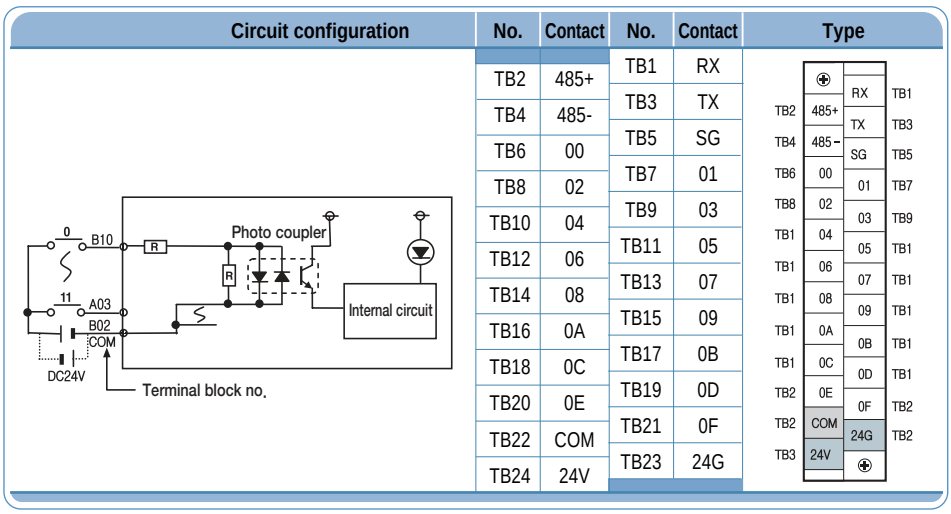
| Item | XBC/XEC-DR32H<br>XBC-DR32H/DC*1)<br>XEC-DR32H/DI | XBC/XEC-DN32H<br>XEC-DP32H*1)<br>XBC-DN32H/DC | XBC/XEC-DR64H<br>XBC-DR64H/DC*1)<br>XEC-DR64H/DI | XBC/XEC-DN64H<br>XEC-DP64H*1)<br>XBC-DN64H/DC |
|---|---|---|---|---|
| Control method | Repetitive, cyclic, interrupt, constant scan | | | |
| 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)*1) | | | |
| Processing speed | 83 ns / Step | | | |
| Program capacity | 15Kstep (IEC type: 200KB) | | | |
| Main unit I/O points | 32<br>(Input:16, Output:16) | 32<br>(Input:16, Output:16) | 64<br>(Input: 32, Output: 32) | 64<br>(Input: 32, Output: 32) |
| Max. I/O points<br>(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,<br>PID control, High-speed counter, Positioning, RTC | | | |

**Data memory**

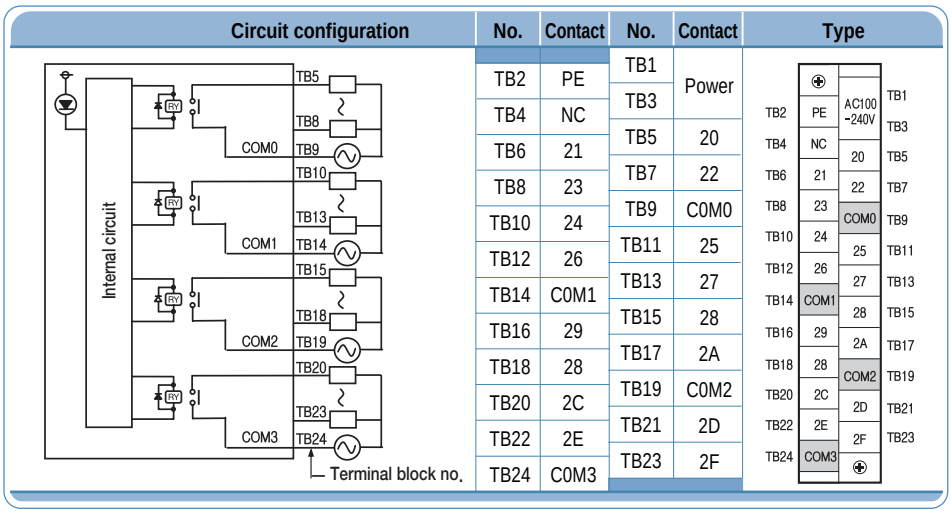
| XBC | | XEC (IEC type) | | |
|---|---|---|---|---|
| P | P0000 ~ P1023F (16,384 points) | Symbolic variable | A | 32KB (Max. 16KB retain setting available) |
| M | M0000 ~ M1023F (16,384 points) | Input variable | I | 2KB (%IX 15.15.63) |
| K | K0000 ~ K4095F (65,536 points) | Output variable | Q | 2KB (%QX 15.15.63) |
| L | L0000 ~ L2047F (32,768 points) | Direct variable | M | 16KB (Max. 8KB retain setting available) |
| F | F0000 ~ F1023F (16,384 points) | | R | 20KB (1 block) |
| T | 100ms, 10ms, 1ms: T0000 ~ T1023<br>(1,024)(Adjustable by parameter setting) | | W | 20KB |
| C | C0000 ~ C1023 (1,024) | Flag variable | F | 2KB |
| S | S00.00 ~ S127.99 | | K | 8KB |
| D | D0000 ~ D10239 (10,240 word) | | L | 4KB |
| U | U00.00 ~ U0A.31<br>(Analog data refresh area: 352 word) | | N | 10KB |
| Z | Z000 ~ Z127 (128 word) | | U | 1KB |
| N | N000 ~ N5119 (5,120 word) | Flash area | R | 20KB (2 blocks) |

*1) XEC is IEC standard language programming.

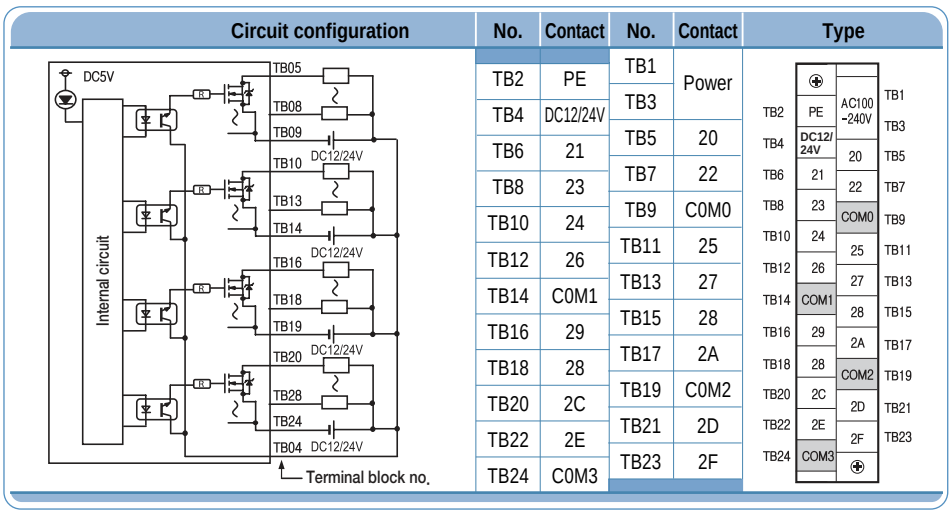
## XBC/XEC-DN(R)32H
## XBC/XEC-DN/DR/DP32H
Input wiring
(sink/source type)




## XBC/XEC-DR32H
Relay output wiring type

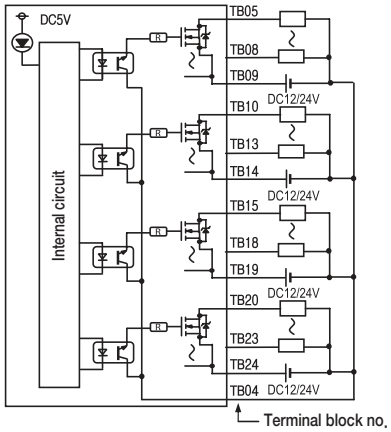



## XBC/XEC-DN32H
Transistor output wiring
(sink type)



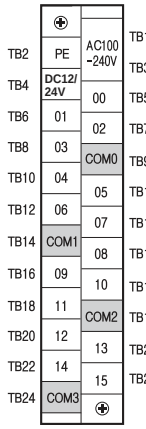

* XBC input : P00~P1F, XEC input : I00~I31  * XBC output : P21~P3F, XEC output : Q00~Q31

## XEC-DP32H
Transistor output wiring
(source type)

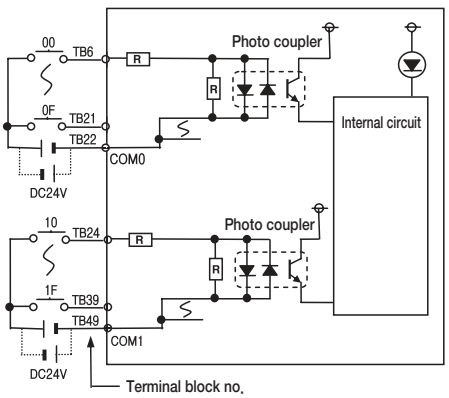



| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | Power |
| TB4 | DC12/24V | TB3 | |
| TB6 | 21 | TB5 | 20 |
| TB8 | 23 | TB7 | 22 |
| TB10 | 24 | TB9 | C0M0 |
| TB12 | 26 | TB11 | 25 |
| TB14 | C0M1 | TB13 | 27 |
| TB16 | 29 | TB15 | 28 |
| TB18 | 28 | TB17 | 2A |
| TB20 | 2C | TB19 | C0M2 |
| TB22 | 2E | TB21 | 2D |
| TB24 | C0M3 | TB23 | 2F |

Type

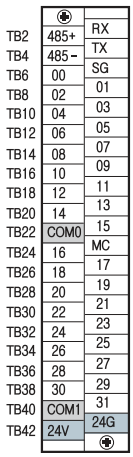



## XBC-DN(R)64H
## XEC-DN/DR/DP64H
Input wiring
(sink/source type)

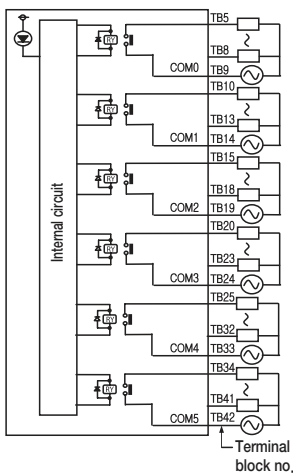



| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | 485+ | TB1 | RX |
| TB4 | 485- | TB3 | TX |
| TB6 | 00 | TB5 | SG |
| TB8 | 02 | TB7 | 01 |
| TB10 | 04 | TB9 | 03 |
| TB12 | 06 | TB11 | 05 |
| TB14 | 08 | TB13 | 07 |
| TB16 | 0A | TB15 | 09 |
| TB18 | 0O | TB17 | 0B |
| TB20 | 0E | TB19 | 0D |
| TB22 | C0M0 | TB21 | 0F |
| TB24 | 10 | TB23 | MC |
| TB26 | 12 | TB25 | 11 |
| TB28 | 14 | TB27 | 13 |
| TB30 | 16 | TB29 | 15 |
| TB32 | 18 | TB31 | 17 |
| TB34 | 1A | TB33 | 19 |
| TB36 | 1C | TB35 | 1B |
| TB38 | 1E | TB37 | 1D |
| TB40 | C0M1 | TB39 | 1F |
| TB42 | 24V | TB41 | 24G |

Type

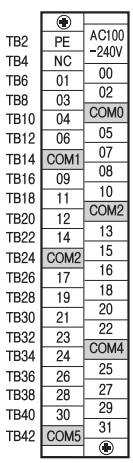



## XBC-DR60H
## XEC-DR64H
Relay output wiring




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | Power |
| TB4 | NC | TB3 | |
| TB6 | 21 | TB5 | 20 |
| TB8 | 23 | TB7 | 22 |
| TB10 | 24 | TB9 | COM0 |
| TB12 | 26 | TB11 | 25 |
| 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 |

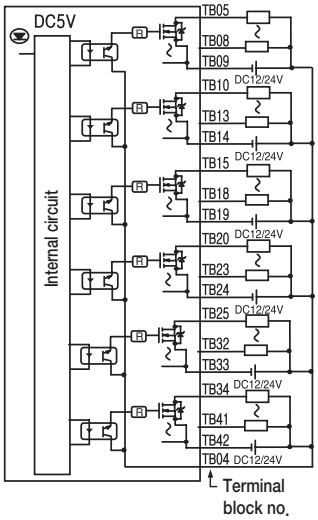
Type




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

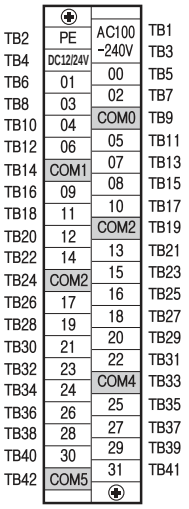
## XBC-DP64H
Transistor output wiring
(sink type)

**Circuit configuration**



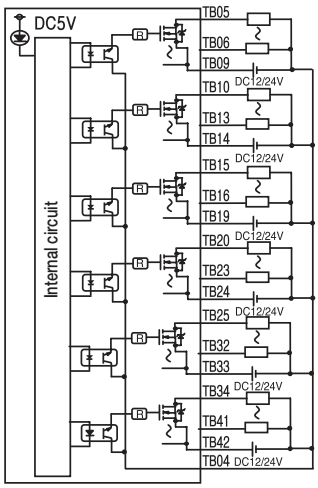

| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | Power |
| TB4 | DC12/24V | TB3 | |
| TB6 | 21 | TB5 | 20 |
| TB8 | 23 | TB7 | 22 |
| TB10 | 24 | TB9 | COM0 |
| TB12 | 26 | TB11 | 25 |
| TB14 | COM1 | TB13 | 27 |
| TB16 | 29 | TB15 | 28 |
| TB18 | 2B | TB17 | 2A |
| TB20 | 2C | 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 |

**Type**



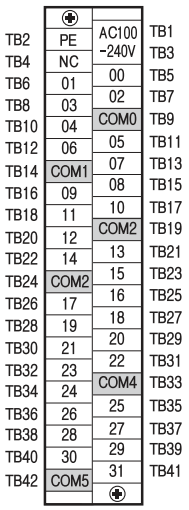

## XBC-DP64H
Transistor output wiring
(source type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | Power |
| TB4 | DC12/24V | TB3 | |
| TB6 | 21 | TB5 | 20 |
| TB8 | 23 | TB7 | 22 |
| TB10 | 24 | TB9 | COM0 |
| TB12 | 26 | TB11 | 25 |
| 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 |

**Type**




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

# XBC/XEC SU

## Standard

Contents



## Standard type

### Performance specifications

| Item | XBC/XEC-DN20SU<br>XBC/XEC-DR20SU<br>XBC/XEC-DP20SU | XBC/XEC-DN30SU<br>XBC/XEC-DR30SU<br>XBC/XEC-DP30SU | XBC/XEC-DN40SU<br>XBC/XEC-DR40SU<br>XBC/XEC-DP40SU | XBC/XEC-DN60SU<br>XBC/XEC-DR60SU<br>XBC/XEC-DP60SU |
|---|---|---|---|---|
| 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, Instruction List | | | |
| Processing speed | 94 ns / Step | | | |
| Program capacity | 15Kstep / 200KB | | | |
| Main unit I/O points | 20<br>(Input:12, Output:8) | 30<br>(Input:18, Output:12) | 40<br>(Input:24, Output:16) | 60<br>(Input:36, Output:24) |
| Max. I/O points<br>(Main + Expansion 7 stages) | 244 points | 254 points | 264 points | 284 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), USB 1 channel (U-type model) | | | |
| 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,<br>PID control, High-speed counter, Positioning | | | |

**Data memory**

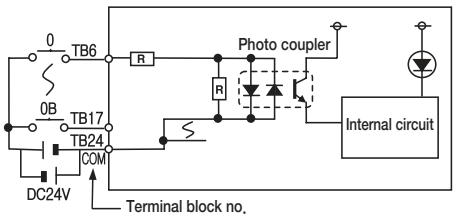
| XBC | | | XEC | | |
|---|---|---|---|---|---|
| Data area | P | P0000 ~ P1023F (16,384 points) | Symbolic variable | A | 16KB (Max. 16KB retain setting abailable) |
| | M | M0000 ~ M1023F (16,384 points) | | | |
| | K | K0000 ~ K4095F (65,536 points) | Input variable | I | 2KB (%IX 15.15.63) |
| | L | L0000 ~ L2047F (32,768 points) | Output variable | Q | 2KB (%QX 15.15.63) |
| | F | F0000 ~ F1023F (16,384 points) | Direct variable | M | 8KB (Max. retain setting available) |
| | T | 100ms, 10ms, 1ms: T0000 ~ T1023 (1,024)<br>(Adjustable by parameter setting) | | R | 20KB (1 block) |
| | C | C0000 ~ C1023 (1,024) | | W | 20KB |
| | S | S00.00 ~ S127.99 | Flag variable | F | 2KB |
| | D | D0000 ~ D10239 (10,240 word) | | K | 8KB |
| | U | U00.00 ~ U0A.31<br>(Analog data refresh area: 352 word) | | L | 4KB |
| | | | | U | 1KB |
| | Z | Z000 ~ Z127 (128 word) | Flash area | | 20KB (2 block) |
| | R | N0000 ~ N10236 (10,240 word) | | | |

*Some products are due in market soon.

## XBC/XEC-DR20SU
## XBC/XEC-DN20SU
## XBC/XEC-DP20SU

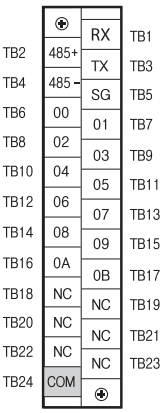
Input wiring
(sink/source type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| 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 |

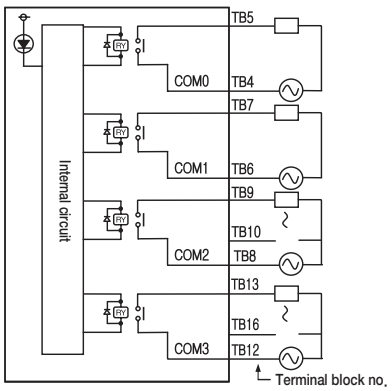
**Type**




## XBC/XEC-DR20SU

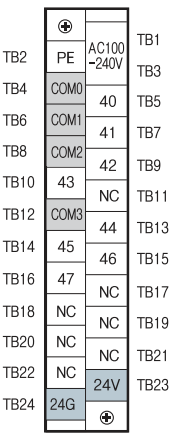
Relay output wiring

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | C0M0 | TB3 | -240V |
| TB6 | C0M1 | TB5 | 40 |
| TB8 | C0M2 | 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 |

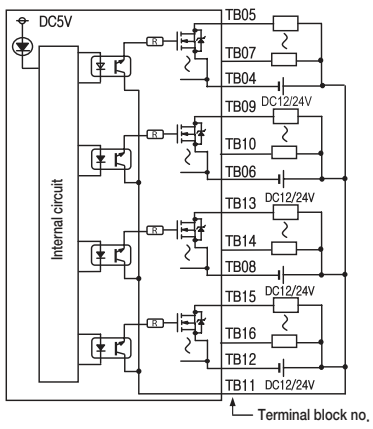
**Type**




## XBC/XEC-DN20SU

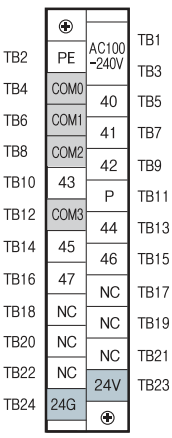
Transistor output wiring
(sink type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | COM0 | TB3 | -240V |
| TB6 | COM1 | TB5 | 40 |
| TB8 | COM2 | TB7 | 41 |
| TB10 | 43 | TB9 | 42 |
| TB12 | COM3 | TB11 | P |
| TB14 | 45 | TB13 | 44 |
| TB16 | 47 | TB15 | 46 |
| TB18 | NC | TB17 | NC |
| TB20 | NC | TB19 | NC |
| TB22 | NC | TB21 | NC |
| TB24 | 24G | TB23 | 24V |

**Type**

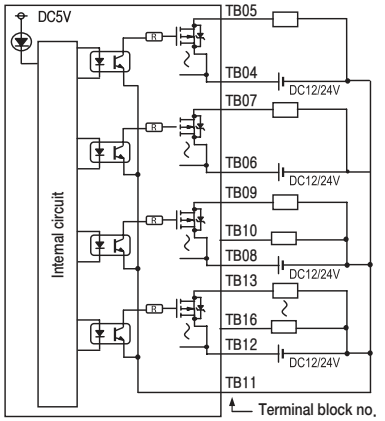



* XBC input : P00~P23, XEC input : I00~I35 * XBC output : P40~P57, XEC output : Q00~Q23

## XBC/XEC-DP32H

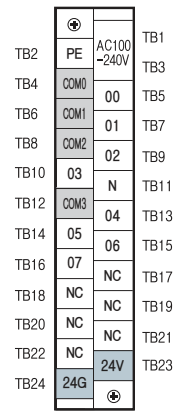
Transistor output wiring
(source type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | C0M0 | TB3 | -240V |
| TB6 | C0M1 | TB5 | Q00 |
| TB8 | C0M2 | TB7 | Q01 |
| TB10 | Q03 | TB9 | Q02 |
| TB12 | COM3 | TB11 | N |
| TB14 | Q05 | TB13 | Q04 |
| TB16 | Q07 | TB15 | Q06 |
| TB18 | NC | TB17 | NC |
| TB20 | NC | TB19 | NC |
| TB22 | NC | TB21 | NC |
| TB24 | 24G | TB23 | 24V |

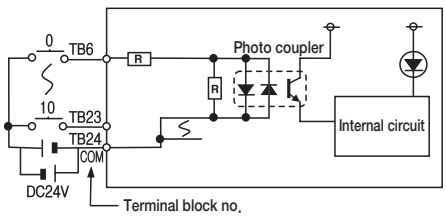
**Type**




## XBC/XEC-DR30SU
## XBC/XEC-DN30SU
## XBC/XEC-DP30SU

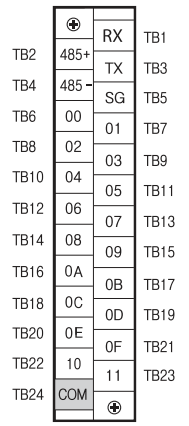
Input wiring
(sink/source type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| 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 |

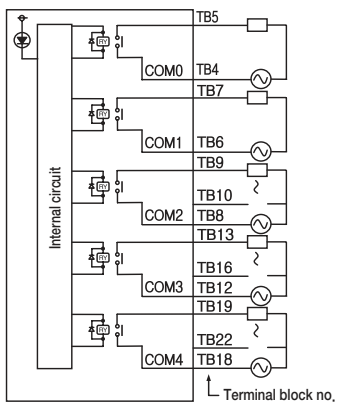
**Type**




## XBC/XEC-DR30SU

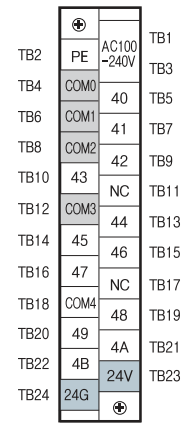
Relay output wiring

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | 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 |

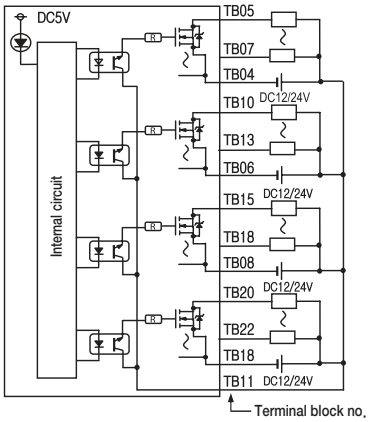
**Type**




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

## XBC/XEC-DN30SU

Transistor output wiring
(sink type)



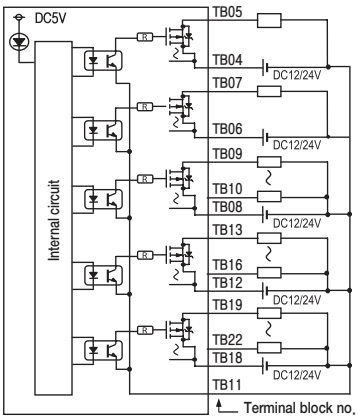

| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | COM0 | TB3 | -240V |
| TB6 | COM1 | TB5 | 40 |
| TB8 | COM2 | TB7 | 41 |
| TB10 | 43 | TB9 | 42 |
| TB12 | COM3 | TB11 | P |
| TB14 | 45 | TB13 | 44 |
| TB16 | 47 | TB15 | 46 |
| TB18 | COM4 | TB17 | NC |
| TB20 |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

Type

| | | | |
|---|---|---|---|
| TB2 | PE | AC100 -240V | TB1 |
| TB4 | COM0 | 40 | TB3 |
| TB6 | COM1 | 41 | TB5 |
| TB8 | COM2 | 42 | TB7 |
| TB10 | 43 | P | TB9 |
| TB12 | COM3 | 44 | TB11 |
| TB14 | 45 | 46 | TB13 |
| TB16 | 47 | NC | TB15 |
| TB18 | COM4 | 48 | TB17 |
| TB20 | 49 | 4A | TB19 |
| TB22 | 4B | 24V | TB21 |
| TB24 | 24G | | TB23 |

## XBC/XEC-DP30SU

Transistor output wiring
(source type)



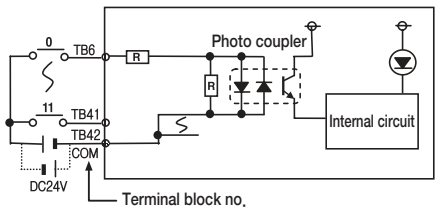

| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | COM0 | TB3 | -240V |
| TB6 | COM1 | TB5 | Q00 |
| TB8 | COM2 | TB7 | Q01 |
| TB10 | Q03 | TB9 | Q02 |
| TB12 | COM3 | TB11 | N |
| TB14 | Q05 | TB13 | Q04 |
| TB16 | Q07 | TB15 | Q06 |
| TB18 | COM4 | TB17 | NC |
| TB20 | Q09 | TB19 | Q08 |
| TB22 | Q11 | TB21 | Q10 |
| TB24 | 24G | TB23 | 24V |

Type

| | | | |
|---|---|---|---|
| TB2 | PE | AC100 -240V | TB1 |
| TB4 | COM0 | 00 | TB3 |
| TB6 | COM1 | 01 | TB5 |
| TB8 | COM2 | 02 | TB7 |
| TB10 | 03 | N | TB9 |
| TB12 | COM3 | 04 | TB11 |
| TB14 | 05 | 06 | TB13 |
| TB16 | 07 | NC | TB15 |
| TB18 | COM4 | 08 | TB17 |
| TB20 | 09 | 10 | TB19 |
| TB22 | 11 | 24V | TB21 |
| TB24 | 24G | | TB23 |

## XBC/XEC-DR40SU
## XBC/XEC-DN40SU
## XBC/XEC-DP40SU

DC24 Input wiring
(sink/source type)



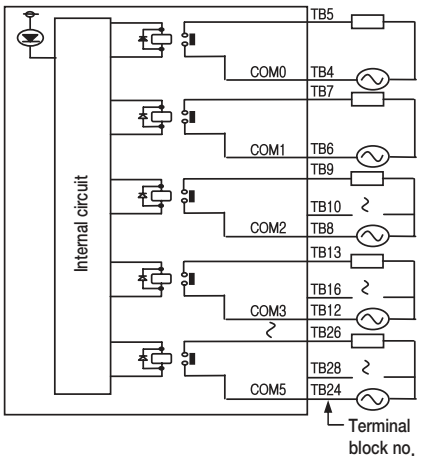

| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | 485+ | TB1 | RX |
| TB4 | 485- | TB3 | TX |
| TB6 | 00 | TB5 | SG |
| TB8 | 02 | TB7 | 01 |
| TB10 | 04 | TB9 | 03 |
| TB12 | 06 | TB11 | 05 |
| TB14 | 08 | TB13 | 07 |
| TB16 | 0A | TB15 | 09 |
| TB18 | 0C | TB17 | 0B |
| TB20 | 0E | TB19 | 0D |
| TB22 | 10 | TB21 | 0F |
| TB24 | 12 | TB23 | 11 |
| TB26 | 14 | TB25 | 13 |
| TB28 | 16 | TB27 | 15 |
| TB30 | COM | TB29 | 17 |

Type

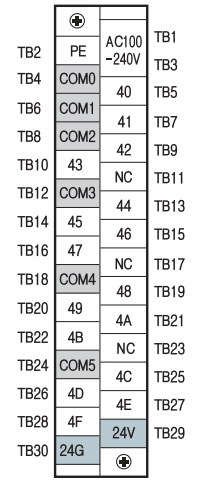
| | | | |
|---|---|---|---|
| TB2 | 485+ | RX | TB1 |
| TB4 | 485- | TX | TB3 |
| TB6 | 00 | SG | TB5 |
| TB8 | 02 | 01 | TB7 |
| TB10 | 04 | 03 | TB9 |
| TB12 | 06 | 05 | TB11 |
| TB14 | 08 | 07 | TB13 |
| TB16 | 0A | 09 | TB15 |
| TB18 | 0C | 0B | TB17 |
| TB20 | 0E | 0D | TB19 |
| TB22 | 10 | 0F | TB21 |
| TB24 | 12 | 11 | TB23 |
| TB26 | 14 | 13 | TB25 |
| TB28 | 16 | 15 | TB27 |
| TB30 | COM | 17 | TB29 |

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

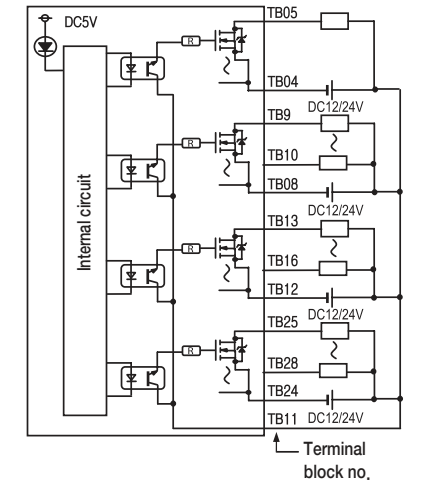
## XBC/XEC-DR40SU
Relay output wiring



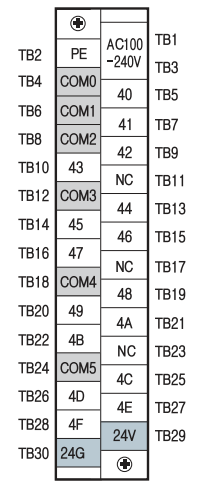

| No. | Contact | No. | Contact |
|---|---|---|---|
| | | TB1 | AC100 |
| TB2 | PE | TB3 | -240V |
| TB4 | COM0 | TB5 | 40 |
| TB6 | COM1 | TB7 | 41 |
| TB8 | COM2 | TB9 | 42 |
| TB10 | 43 | TB11 | NC |
| TB12 | COM3 | TB13 | 44 |
| TB14 | 45 | TB15 | 46 |
| TB16 | 47 | TB17 | NC |
| TB18 | COM4 | TB19 | 48 |
| TB20 | 49 | TB21 | 4A |
| TB22 | 4B | TB23 | NC |
| TB24 | COM5 | TB25 | 4C |
| TB26 | 4D | TB27 | 4E |
| TB28 | 4F | TB29 | 24V |
| TB30 | 24G | | |



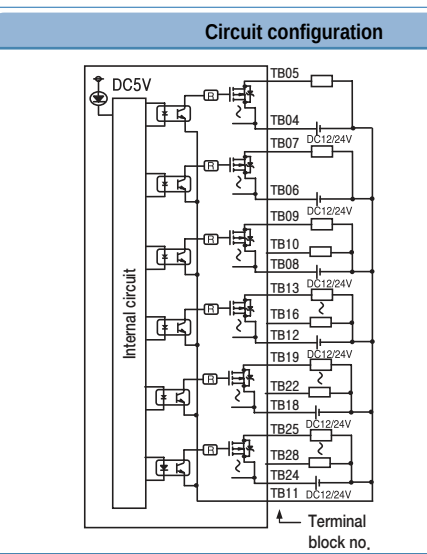

## XBC/XEC-DN40SU
Transistor output wiring
(sink type)



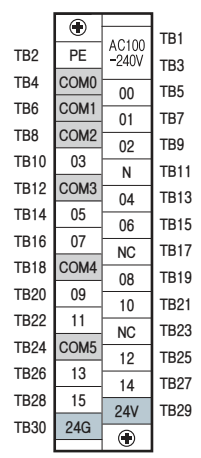

| No. | Contact | No. | Contact |
|---|---|---|---|
| | | TB1 | AC100 |
| TB2 | PE | TB3 | -240V |
| TB4 | COM0 | TB5 | 40 |
| TB6 | COM1 | TB7 | 41 |
| TB8 | COM2 | TB9 | 42 |
| TB10 | 43 | TB11 | P |
| TB12 | COM3 | TB13 | 44 |
| TB14 | 45 | TB15 | 46 |
| TB16 | 47 | TB17 | NC |
| TB18 | COM4 | TB19 | 48 |
| TB20 | 49 | TB21 | 4A |
| TB22 | 4B | TB23 | NC |
| TB24 | COM5 | TB25 | 4C |
| TB26 | 4D | TB27 | 4E |
| TB28 | 4F | TB29 | 24V |
| TB30 | 24G | | |




## XBC/XEC-DP40SU
Transistor output wiring
(source type)

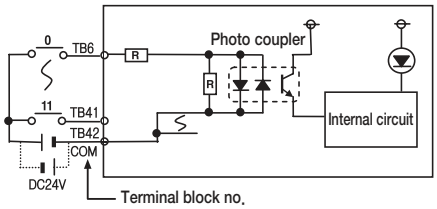



| No. | Contact | No. | Contact |
|---|---|---|---|
| | | TB1 | AC100 |
| TB2 | PE | TB3 | -240V |
| TB4 | COM0 | TB5 | 00 |
| TB6 | COM1 | TB7 | 01 |
| TB8 | COM2 | TB9 | 02 |
| TB10 | 03 | TB11 | N |
| TB12 | COM3 | TB13 | 04 |
| TB14 | 05 | TB15 | 06 |
| TB16 | 07 | TB17 | NC |
| TB18 | COM4 | TB19 | 08 |
| TB20 | 09 | TB21 | 10 |
| TB22 | 11 | TB23 | NC |
| TB24 | COM5 | TB25 | 12 |
| TB26 | 13 | TB27 | 14 |
| TB28 | 15 | TB29 | 24V |
| TB30 | 24G | | |



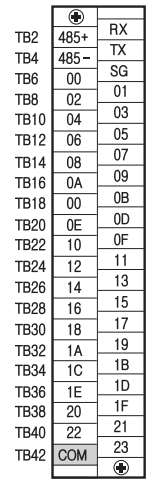

* XBC input : P00~P23, XEC input : I00~I35  * XBC output : P40~P57, XEC output : Q00~Q23

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

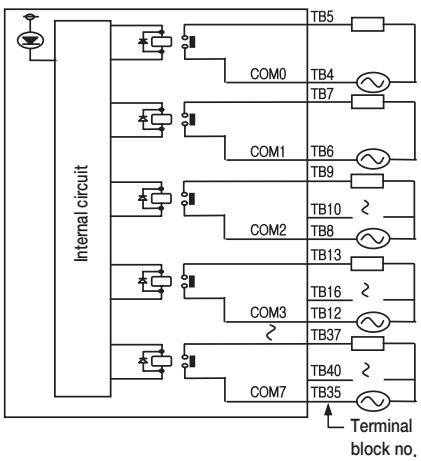



| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | 485+ | TB1 | RX |
| TB4 | 485- | TB3 | TX |
| TB6 | 00 | TB5 | SG |
| TB8 | 02 | TB7 | 01 |
| TB10 | 04 | TB9 | 03 |
| TB12 | 06 | TB11 | 05 |
| TB14 | 08 | TB13 | 07 |
| TB16 | 0A | TB15 | 09 |
| TB18 | 0C | TB17 | 0B |
| TB20 | 0E | TB19 | 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 |

Type

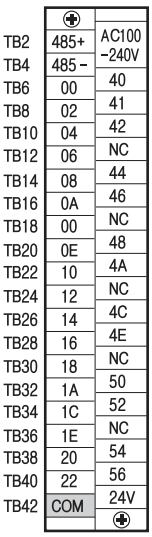



## XBC/XEC-DR60SU
Relay output wiring




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | C0M0 | TB3 | -240V |
| TB6 | C0M1 | TB5 | 40 |
| TB8 | C0M2 | 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 |

Type

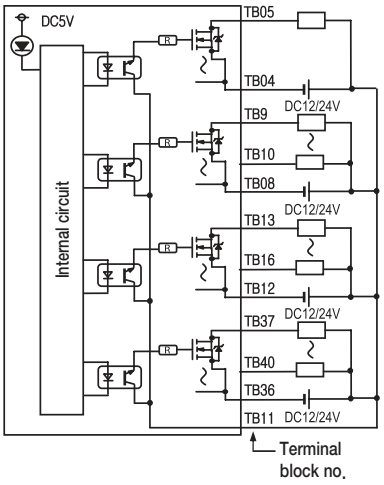



* XBC input : P00~P23, XEC input : I00~I35  * XBC output : P40~P57, XEC output : Q00~Q23

## XBC/XEC-DN60SU

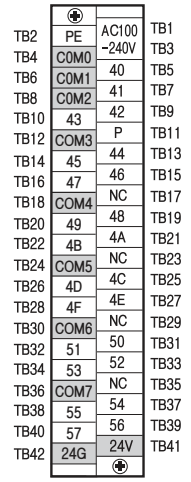
Transistor output wiring (sink type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | C0M0 | TB3 | -240V |
| TB6 | C0M1 | TB5 | 40 |
| TB8 | C0M2 | TB7 | 41 |
| TB10 | 43 | TB9 | 42 |
| TB12 | COM3 | TB11 | P |
| 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 |

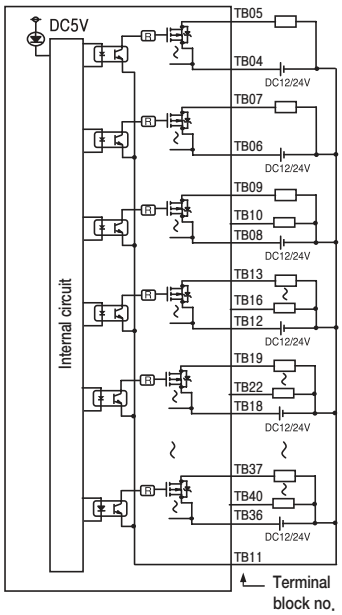
**Type**




## XBC/XEC-DP60SU

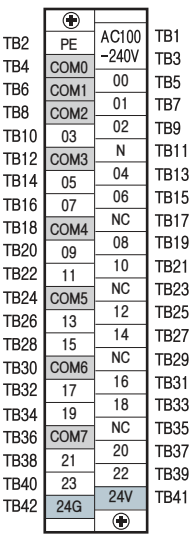
Transistor output wiring (source type)

**Circuit configuration**



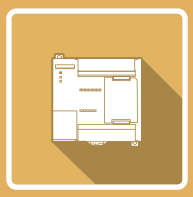

| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | C0M0 | TB3 | -240V |
| TB6 | C0M1 | TB5 | 00 |
| TB8 | C0M2 | TB7 | 01 |
| TB10 | 03 | TB9 | 02 |
| TB12 | COM3 | TB11 | N |
| TB14 | 05 | TB13 | 04 |
| TB16 | 07 | TB15 | 06 |
| TB18 | COM4 | TB17 | NC |
| TB20 | 09 | TB19 | 08 |
| TB22 | 11 | TB21 | 10 |
| TB24 | COM5 | TB23 | NC |
| TB26 | 13 | TB25 | 12 |
| TB28 | 15 | TB27 | 14 |
| TB30 | COM6 | TB29 | NC |
| TB32 | 17 | TB31 | 16 |
| TB34 | 19 | TB33 | 18 |
| TB36 | COM7 | TB35 | NC |
| TB38 | 21 | TB37 | 20 |
| TB40 | 23 | TB39 | 22 |
| TB42 | 24G | TB41 | 24V |

**Type**




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


XGB
PWR
RUN
ERR
IN
OUT
LS



# XBC/XEC E

## Economic

Contents



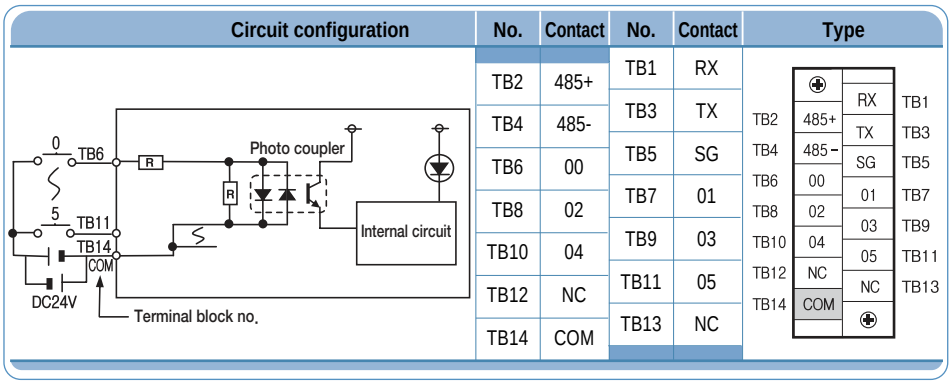
## Economic

### Performance specifications

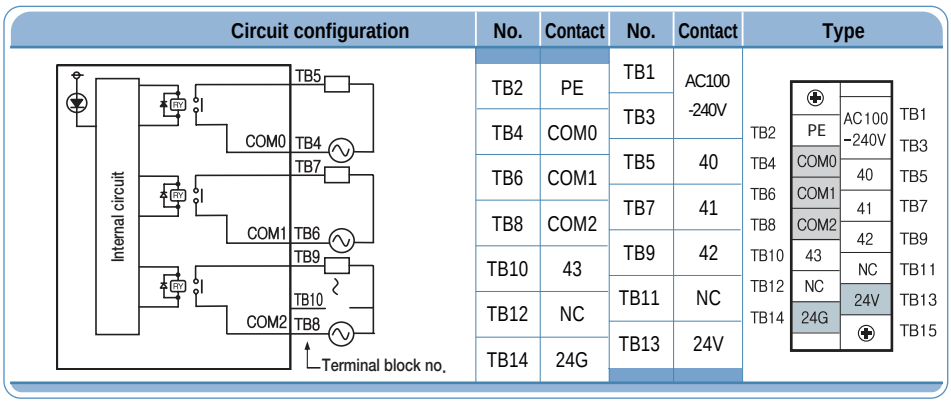
| Item | | Specifications ('E' type) | | | |
|---|---|---|---|---|---|
| | | XBC/XEC-DR10E<br>XBC/XEC-DN10E<br>XBC/XEC-DP10E | XBC/XEC-DR14E<br>XBC/XEC-DN14E<br>XBC/XEC-DP14E | XBC/XEC-DR20E<br>XBC/XEC-DN20E<br>XBC/XEC-DP20E | XBC/XEC-DR30E<br>XBC/XEC-DN30E<br>XBC/XEC-DP30E |
| Program control method | | Reiterative operation, Fixed cycle operation | | | |
| I/O control method | | Scan synchronized batch processing method (Refresh method)<br>Direct method by instruction | | | |
| Program language | | Ladder Diagram (LD), Sequential Function Chart (SFC)<br>Structured Text (ST), Instruction List (IL) | | | |
| Processing speed (Basic instruction) | | 240 ns/step | | | |
| Program capacity | | 4 Kstep (XBC-DXXXE), 50 KB (XEC-DXXXE) | | | |
| Max. I/O points (Main+Option X) | | 14 point<br>(1 option) | 18 point<br>(1 option) | 28 point<br>(2 option) | 38 point<br>(2 option) |
| Operation Mode | | RUN, STOP, DEBUG | | | |
| Total number of program block | | 128 | | | |
| Task | Initialization | 1 | | | |
| | Fixed period | 8 | | | |
| | External input | 4 (%IX0.0.0~%IX0.0.3) | | | |
| | 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,<br>High-speed counter | | | |
| Retain data at power failure | | Latch area setting at basic parameter | | | |

# Wiring | XBC/XEC E input/output wiring

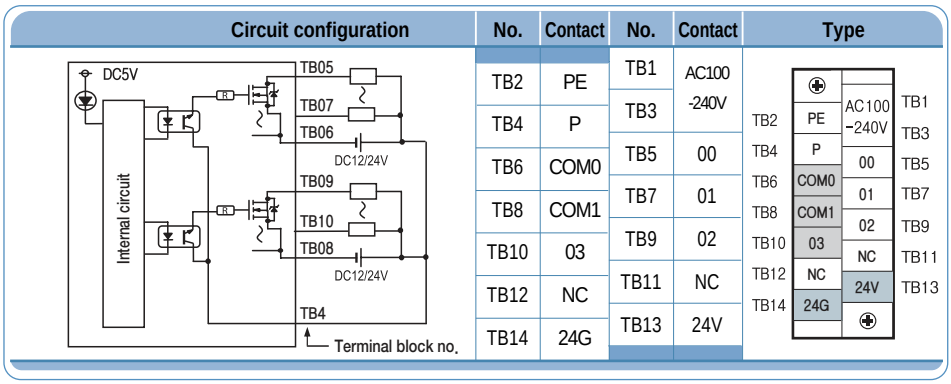
## XBC/XEC-DR10E
## XBC/XEC-DN10E
## XBC/XEC-DP10E
Input iring
(sink/source type)



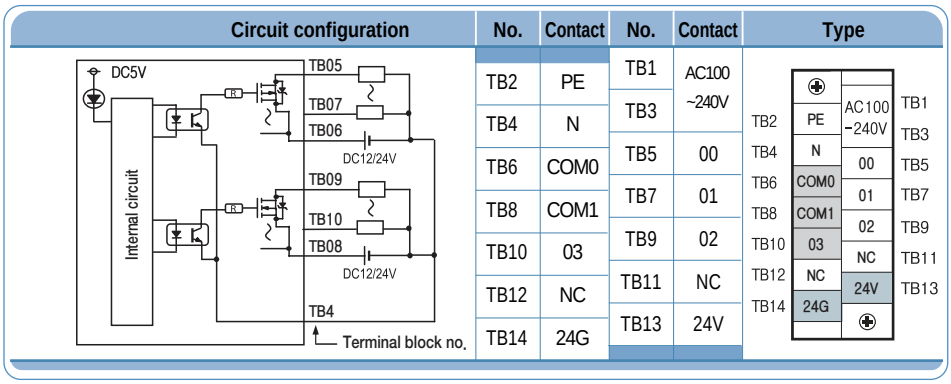

## XBC/XEC-DR10E
Relay output wiring




## XBC/XEC-DN10E
Transistor output wiring
(sink type)

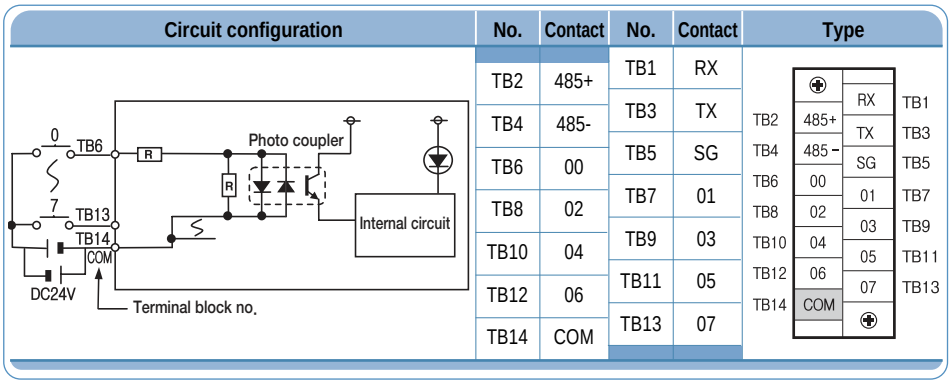



## XBC/XEC-DP10E
Transistor output wiring
(source type)

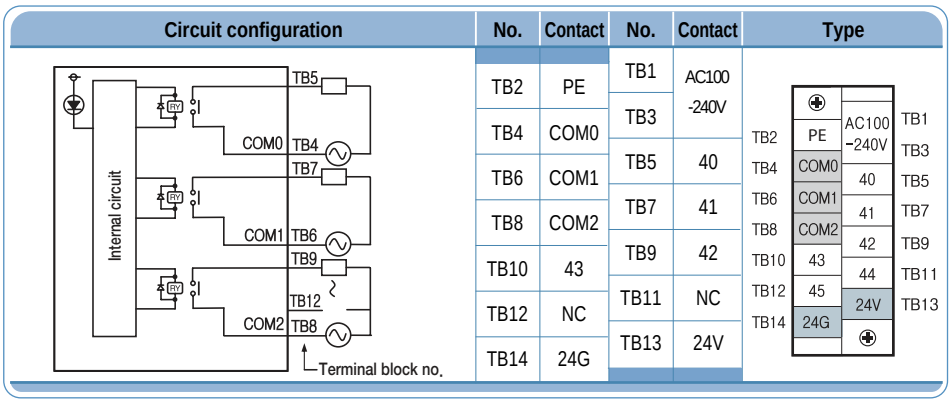



* XBC input : P00~P11, XEC input : I00~I17 * XBC output : P40~P4B, XEC output : Q00~Q11

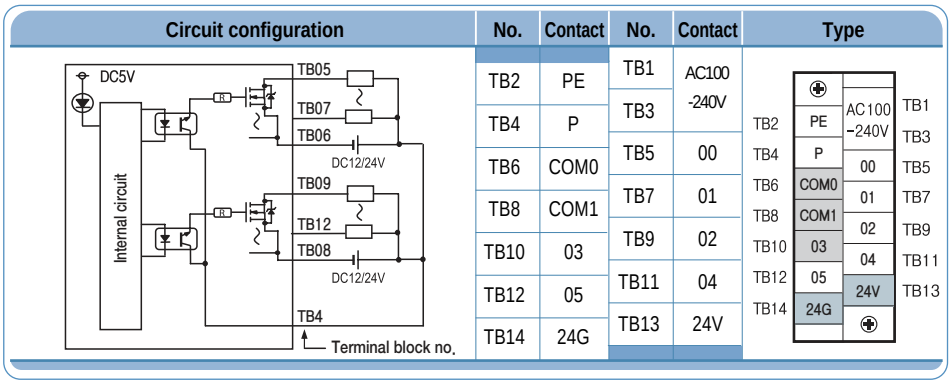
## XBC/XEC-DR14E
## XBC/XEC-DN14E
## XBC/XEC-DP14E
Input iring
(sink/source type)



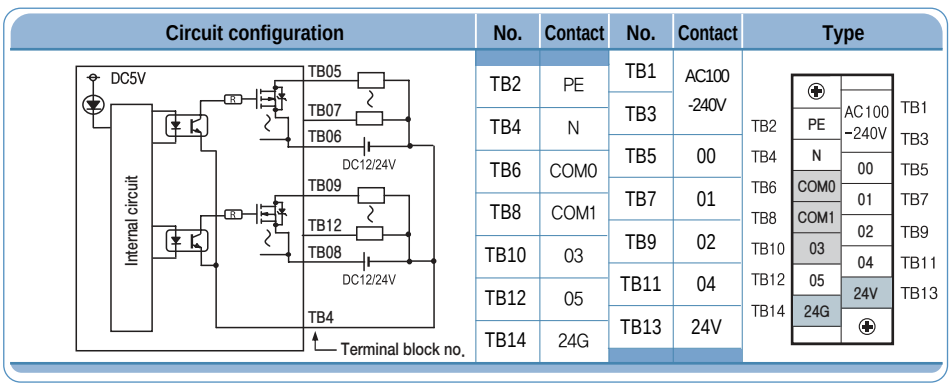

## XBC-DR14E
Relay output wiring




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



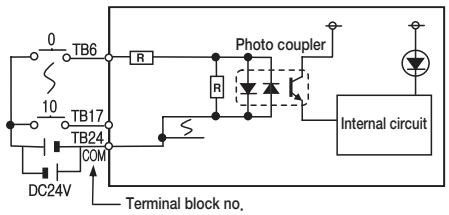

## XBC/XEC-DP14E
Transistor output wiring
(source type)




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

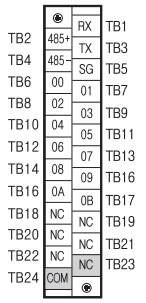
## XBC/XEC-DR20E
## XBC/XEC-DN20E
## XBC/XEC-DP20E
Input iring
(sink/source type)

**Circuit configuration**



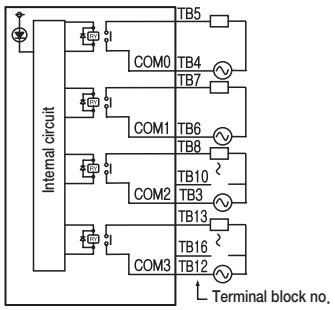

| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | 485+ | TB1 | RX |
| TB4 | 485- | TB3 | TX |
| TB6 | 00 | TB5 | SG |
| TB8 | 02 | TB7 | 01 |
| TB10 | 04 | TB9 | 03 |
| TB12 | 06 | TB11 | 05 |
| TB14 | 08 | TB13 | 07 |
| TB16 | 0A | TB15 | 09 |
| TB18 | NC | TB17 | 0B |
| TB20 | NC | TB19 |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

**Type**



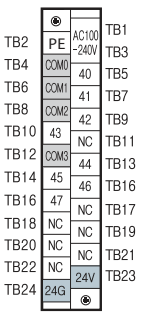

## XBC-DR20E
Relay output wiring

**Circuit configuration**



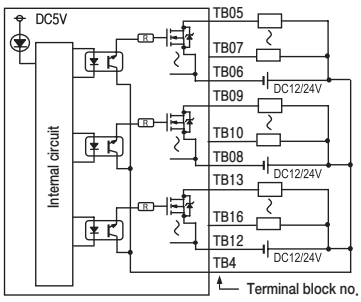

| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | COM0 | TB3 | –240V |
| TB6 | COM1 | TB5 | 40 |
| TB8 | COM2 | TB7 | 41 |
| TB10 | 43 | TB9 | 42 |
| TB12 | 45 | TB11 | NC |
| TB14 | 47 | TB13 | 44 |
| TB16 | NC | TB15 | 46 |
| TB18 | NC | TB17 | NC |
| TB20 | NC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

**Type**



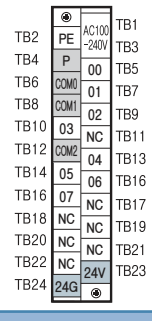

## XBC/XEC-DN20E
Transistor output wiring
(sink type)

**Circuit configuration**



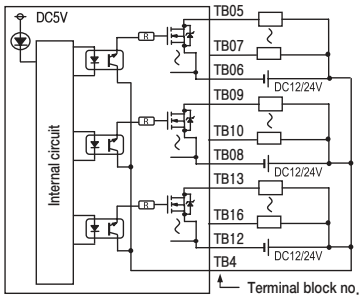

| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | P | TB3 | -240V |
| TB6 | COM0 | TB5 | 00 |
| TB8 | COM1 | TB7 | 01 |
| TB10 | 03 | TB9 | 02 |
| TB12 | COM2 | TB11 | NC |
| TB14 | 05 | TB13 | 04 |
| TB16 | 07 | TB15 | 06 |
| TB18 | NC | TB17 | NC |
| TB20 | NC | TB19 | NC |
| TB22 | NC | TB21 | NC |
| TB24 | 24G | TB23 | 24V |

**Type**



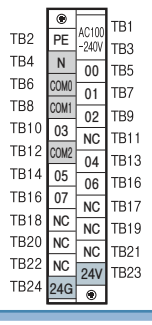

## XBC/XEC-DP20E
Transistor output wiring
(source type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | N | TB3 | -240V |
| TB6 | COM0 | TB5 | 00 |
| TB8 | COM1 | TB7 | 01 |
| TB10 | 03 | TB9 | 02 |
| TB12 | COM2 | TB11 | NC |
| TB14 | 05 | TB13 | 04 |
| TB16 | 07 | TB15 | 06 |
| TB18 | NC | TB17 | NC |
| TB20 | NC | TB19 | NC |
| TB22 | NC | TB21 | NC |
| TB24 | 24G | TB23 | 24V |

**Type**

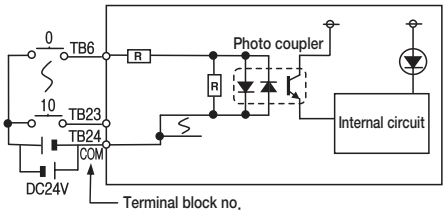



* XBC input : P00~P11, XEC input : I00~I17 * XBC output : P40~P4B, XEC output : Q00~Q11

## XBC/XEC-DR30E
## XBC/XEC-DN30E
## XBC/XEC-DP30E

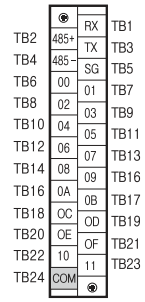
Input iring
(sink/source type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| 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 | OC | TB17 | 0B |
| TB20 | OE | TB19 | OD |
| TB22 | 10 | TB21 | OF |
| TB24 | COM | TB23 | 11 |

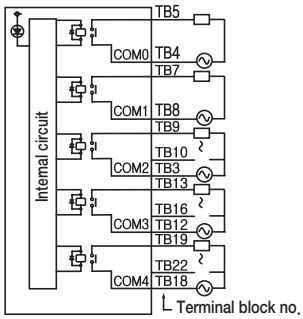
**Type**




## XBC-DR30E

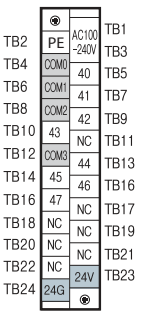
Relay output wiring

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | 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 |

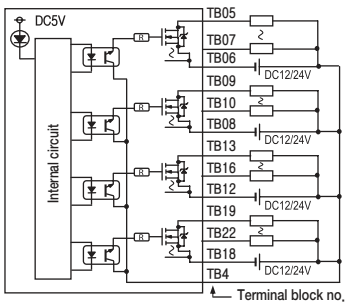
**Type**




## XBC/XEC-DN30E

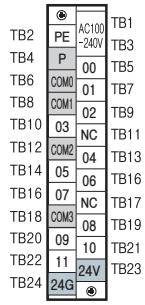
Transistor output wiring
(sink type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | P | TB3 | -240V |
| TB6 | COM0 | TB5 | 00 |
| TB8 | COM1 | TB7 | 01 |
| TB10 | 03 | TB9 | 02 |
| TB12 | COM2 | TB11 | NC |
| TB14 | 05 | TB13 | 04 |
| TB16 | 07 | TB15 | 06 |
| TB18 | COM3 | TB17 | NC |
| TB20 | 09 | TB19 | 08 |
| TB22 | 11 | TB21 | 10 |
| TB24 | 24G | TB23 | 24V |

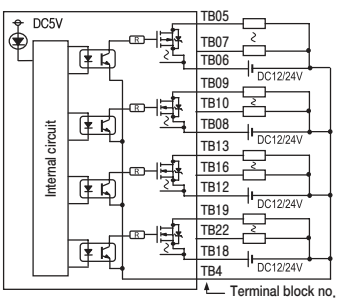
**Type**




## XBC/XEC-DP30E

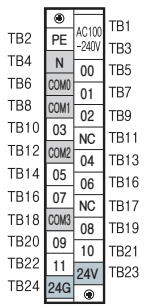
Transistor output wiring
(source type)

**Circuit configuration**

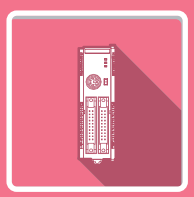



| No. | Contact | No. | Contact |
|---|---|---|---|
| TB2 | PE | TB1 | AC100 |
| TB4 | N | TB3 | -240V |
| TB6 | COM0 | TB5 | 00 |
| TB8 | COM1 | TB7 | 01 |
| TB10 | 03 | TB9 | 02 |
| TB12 | COM2 | TB11 | NC |
| TB14 | 05 | TB13 | 04 |
| TB16 | 07 | TB15 | 06 |
| TB18 | COM3 | TB17 | NC |
| TB20 | 09 | TB19 | 08 |
| TB22 | 11 | TB21 | 10 |
| TB24 | 24G | TB23 | 24V |

**Type**




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



# XBM Slim

## Slim

Contents

## Slim

### Modular type unit
(XBM-DR16S, DN16S, DN32S)

<table>
<tr><th>Item</th><th colspan="5">Descriptions</th><th>Standard</th></tr>
<tr><td>Ambient temperature</td><td colspan="5">0 ~ 55 ˚C</td><td></td></tr>
<tr><td>Storage temperature</td><td colspan="5">- 25 ~ + 70 ˚C</td><td></td></tr>
<tr><td>Ambient humidity</td><td colspan="5">5 ~ 95%RH (Non-condensing)</td><td></td></tr>
<tr><td>Storage humidity</td><td colspan="5">5 ~ 95%RH (Non-condensing)</td><td></td></tr>
<tr><td rowspan="8">Vibration resistance</td><td colspan="3">Occasional vibration</td><td rowspan="8">10 times each direction (X, Y and Z)</td><td rowspan="8">IEC61131-2</td></tr>
<tr><td>Frequency</td><td>Acceleration</td><td>Pulse width</td></tr>
<tr><td>10 ≤ f < 57Hz</td><td>–</td><td>0.075mm</td></tr>
<tr><td>57 ≤ f ≤ 150Hz</td><td>9.8m/s² (1G)</td><td>–</td></tr>
<tr><td colspan="3">Continuous vibration</td></tr>
<tr><td>Frequency</td><td>Acceleration</td><td>Pulse width</td></tr>
<tr><td>10 ≤ f < 57Hz</td><td>–</td><td>0.035mm</td></tr>
<tr><td>57 ≤ f ≤ 150Hz</td><td>4.9m/s² (0.5G)</td><td>–</td></tr>
<tr><td>Shock resistance</td><td colspan="5">• Peak acceleration: 147m/s² (15g) • Duration: 11ms<br>• Pulse waveform: Half-sine, 3times each direction per each axis</td><td>IEC61131-2</td></tr>
<tr><td rowspan="5">Noise resistance</td><td>Square wave impulse noise</td><td colspan="3">±500 V</td><td>LSIS Standard</td></tr>
<tr><td>Electrostatic discharge</td><td colspan="3">4kV</td><td>IEC61131-2<br>IEC61000-4-2</td></tr>
<tr><td>Radiated electromagnetic field noise</td><td colspan="3">80 ~ 1000MHz, 10V/m</td><td>IEC61131-2<br>IEC61000-4-3</td></tr>
<tr><td rowspan="2">Fast transient/ Burst noise</td><td>Main unit</td><td>Expansion module</td><td rowspan="2">IEC61131-2<br>IEC61000-4-4</td></tr>
<tr><td>2kV</td><td>1kV</td></tr>
<tr><td>Operating ambience</td><td colspan="5">Free from corrosive gases and excessive dust</td><td></td></tr>
<tr><td>Altitude</td><td colspan="5">Up to 2,000m</td><td></td></tr>
<tr><td>Pollution level *1)</td><td colspan="5">Less than 2</td><td></td></tr>
<tr><td>Cooling</td><td colspan="5">Air-cooling</td><td></td></tr>
</table>

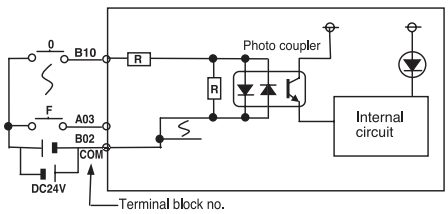
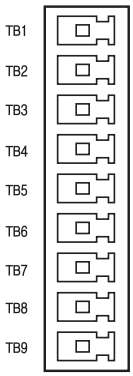
*1) Pollution level indicates the degree to which conductive material is generated in the environment where the equipment is used. Pollution level 2 is the condition that only non-conductive pollution occurred but temporary conductivity may be produced due to condensing.

## Performance specifications

| 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*1) | | |
| Data memory | | | | |
| XBM | | | | |
| Data area | 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.

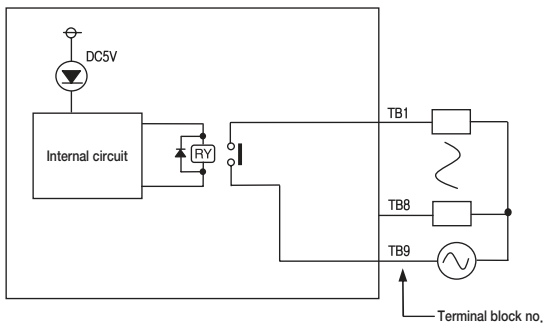
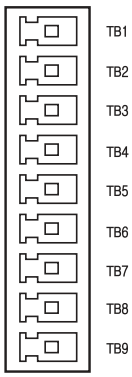
## XBM-DR16S
Input wiring
(sink/source type)

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





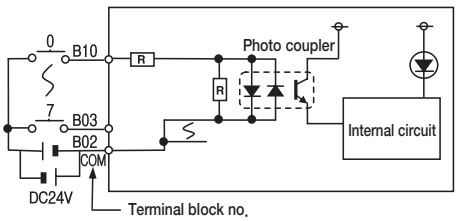
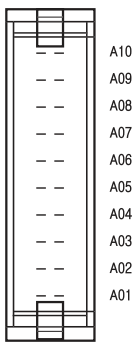
## XBM-DR16S
Relay output wiring

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





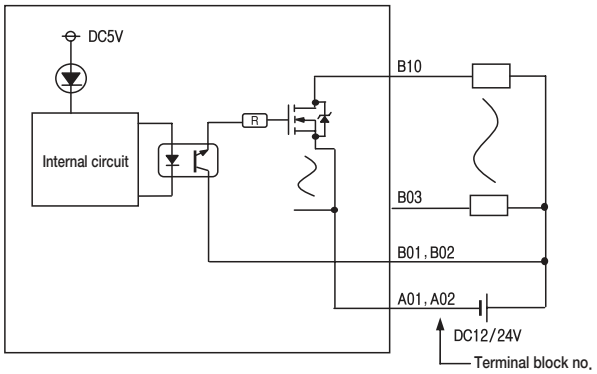
## XBM-DN16S
Input wiring(sink/source type)

| 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

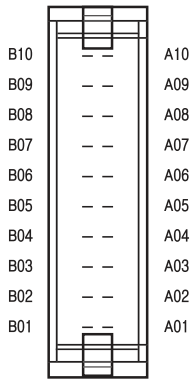
Transistor output wiring
(sink type)

**Circuit configuration**




| No. | Contact |
|---|---|
| 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 | |

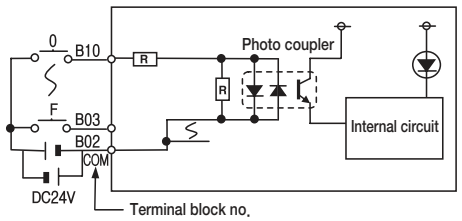
**Type**




## XBM-DN16S

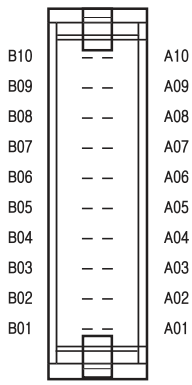
Input wiring(sink/source type)

**Circuit configuration**




| No. | Contact | No. | Contact |
|---|---|---|---|
| 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 | COM |
| B01 | COM | A01 | COM |

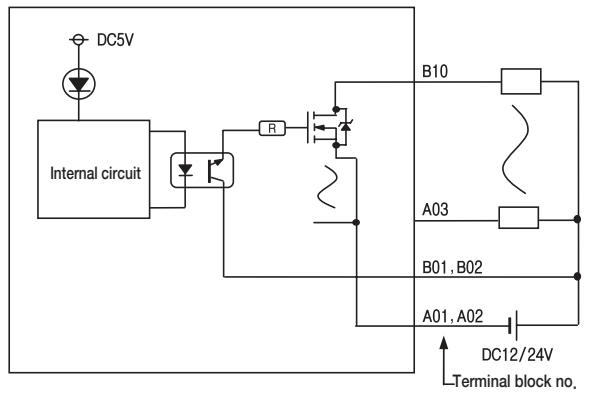
**Type**




## XBM-DR16S

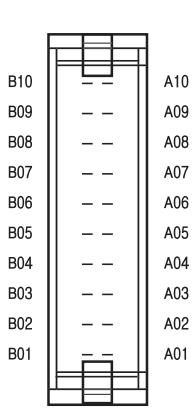
Transistor output wiring
(sink type)

**Circuit configuration**




| No. | Contact |
|---|---|
| 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 | |

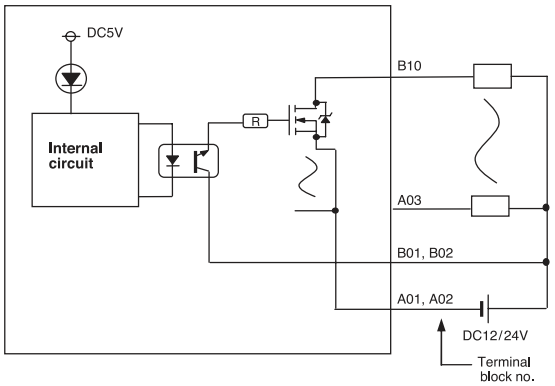
**Type**




XBM Slim

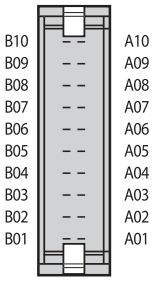
# Slim

## Transistor output wiring
(XBM-DN16S)

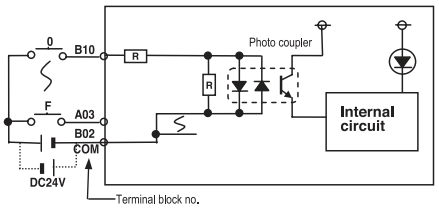



| No. | Contact |
|---|---|
| B10 | 20 |
| B09 | 21 |
| B08 | 22 |
| B07 | 23 |
| B06 | 24 |
| B05 | 25 |
| B04 | 26 |
| B03 | 27 |
| B02 | DC12/ |
| B01 | 24V |
| A10 | NC |
| A09 | NC |
| A08 | NC |
| A07 | NC |
| A06 | NC |
| A05 | NC |
| A04 | NC |
| A03 | NC |
| A02 | COM |
| A01 | |

Type

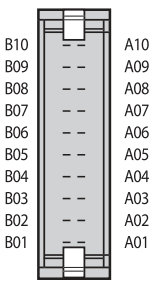



## Input wiring
(XBM-DN32S)

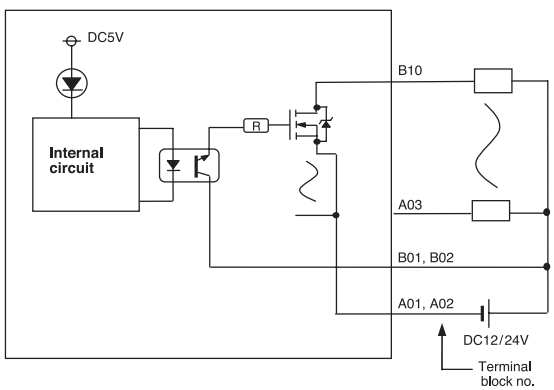



| No. | Contact | No. | Contact |
|---|---|---|---|
| B10 | 00 | A10 | 08 |
| B09 | 01 | A09 | 09 |
| B08 | 02 | A08 | 0A |
| B07 | 03 | A07 | 0B |
| B06 | 04 | A06 | 0C |
| B05 | 05 | A05 | 0D |
| B04 | 06 | A04 | 0E |
| B03 | 07 | A03 | 0F |
| B02 | COM | A02 | COM |
| B01 | COM | A01 | COM |

Type

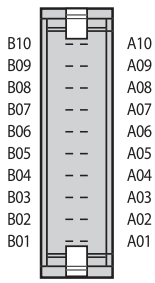



## Transistor output wiring
(XBM-DN32S)




| No. | Contact |
|---|---|
| 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 | |

Type



# Application

## XGB Series

Contents



## U type

### Input specification

| Item | | XEC-DN32U/XEC-DN32UP/XEC-DN32UA<br>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 ㏀ (P00~P07: about 4.7 ㏀) |
| Response time | Off → On | 1/3/5/10/20/70/100ms (Set by I/O parameter) Default: 3ms |
| | On → Off | |
| Insulation pressure | | AC560Vrms/3 cycle (altitude 2000m) |
| Insulation resistance | | 10ms or more by MegOhmMeter |
| Common method | | 16 point/COM |
| Proper cable size | | 0.3~0.75mm² |
| 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 | Off → On | 1ms or less |
| | On → Off | 1ms or less (rated load, resistive load) |
| Common method | | 16 point/COM |
| Proper wire size | | Stranded wire 0.3~0.75mm² (external diameter 2.8mm or less) |
| External power | Voltage | DC12/24V ± 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 | | 5.6kΩ (P00 ~ P07: 2.7kΩ ) | | | | 2.7kΩ (%IX0.0.0~%IX0.0.7:1.8kΩ ) |
| Response time | Off → On | 1/3/5/10/20/70/100 ms (Setting by CPU parameter) Initial value: 3ms | | | | |
| | On → 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 (COSØ = 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 (COSØ = 0.7) 100,000 times or more | |
| | | AC 200V/1A, AC 240V/0.5A (COSØ = 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 → On | 10ms or less | |
| | On → Off | 12ms or less | |
| Common method | | 4 points/COM | P20 ~ 2F: 4 points/COM<br>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 → On | 1ms or less | |
| | On → Off | 1ms or less (Rated load, resistive load) | |
| Common method | | 4 points/COM | P20 ~ 2F: 4 points/COM<br>P30 ~ 3F: 8 points/COM |
| External power supply | Voltage | DC 12/24V ± 10% (Ripple voltage 4 Vp-p or less) | |
| | Current | 10mA or less (DC 24V connection) | |

## Standard type

### Input specification

| Item | | XBC/XEC-DN20SU<br>XBC/XEC-DR20SU | XBC/XEC-DN30SU<br>XBC/XEC-DR30SU | XBC/XEC-DN40SU<br>XBC/XEC-DR40SU | XBC/XEC-DN60SU<br>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<br>XBC/XEC-DR20SU<br>XBC/XEC-DP20SU | XBC/XEC-DN30SU<br>XBC/XEC-DR30SU<br>XBC/XEC-DP30SU | XBC/XEC-DN40SU<br>XBC/XEC-DR40SU<br>XBC/XEC-DP40SU | XBC/XEC-DN60SU<br>XBC/XEC-DR60SU<br>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 absorbe | | Zener Diode | | | |
| Response time | Off → On | DC 12/24V± 10% (Ripple voltage 4Vp-p or less) | | | |
| | On → Off | 25mA or less (DC 24V connection) | | | |

### 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 (COSØ = 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 | 12ms or less | | | |
| 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 (COSØ= 0.7) 10 million times or more | | | |
| | | AC 200V/1A, AC 240V/0.5A (COSØ= 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 5.6kΩ (%I×0.0.0~%I×0.0.3: about 2.7kΩ ) | | | |
| Response time | Off → On | 1/ 3 / 5 / 10 / 20 / 70 / 100ms (Set by I/O parameter) Default: 3ms | | | |
| | On → Off | | | | |
| Insulation pressure | | AC 560Vrms / 3 cycle (Altitude 2000m) | | | |
| Insulation resistance | | 10kΩ or more by MegOhmMeter | | | |
| Common method | | 6 points / COM | 8 points / COM | 12 points / COM | 18 points / COM |
| Proper cable size | | 0.3㎟ | | | |
| Operation indicator | | LED On when Input On | | | |
| External connection method | | 14 point terminal block connector (M3 × 6 screw) | | 24 point terminal block connector (M3 × 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 (COSF = 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 (COØ = 0.7) 100,000 times or more | | | |
| | | AC 200V / 1A, AC 240V / 0.5A (COØ = 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 → On | 10ms or less | | | |
| | On → Off | 12ms or less | | | |
| Common method | | 2 points / COM | 4 points / COM | 4 points / COM | 4 points / COM |
| Proper cable size | | Stranded cable 0.3~0.75㎟ (External diameter 2.8㎜ or less) | | | |
| 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) | |

## 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 0.3~0.75㎟ (External diameter 2.8㎜ 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 | Off → On | 1/3/5/10/20/70/100ms (Set by CPU parameter) Default : 3ms | | |
| | On → Off | | | |
| Common method | | 8 points/COM | | 16 points/COM |

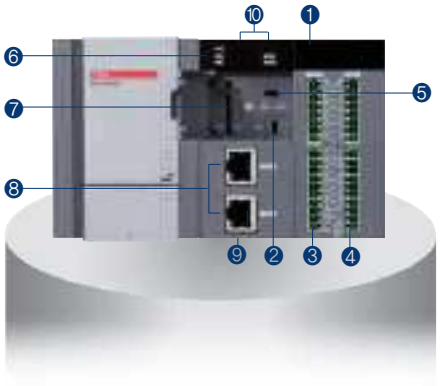
## Relay output specification

| Item | | XBM-DR16S |
|---|---|---|
| Output point | | 8 points |
| Insulation method | | Relay insulation |
| Rated load voltage / current | | DC 24V 2A (Resistive load)/AC 220V 2A (COSØ = 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 (COSØ = 0.7) 100,000 times or more |
| | | AC 200V/1A, AC 240V/0.5A (COSØ = 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 → On | 10ms or less |
| | On → 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 | Off → On | 1ms or less | |
| | On → Off | 1ms or less (Rated load, Resistive load) | |
| Common method | | 8 point / COM | 16 point / COM |
| Extenal power supply | Voltage | DC 12/24V ±10% (Ripple voltage 4 Vp-p or less) | |
| | Current | 25mA or less (DC 24V connection) | |
| External connection method | | 20pin connector | |

## Block type unit (U)

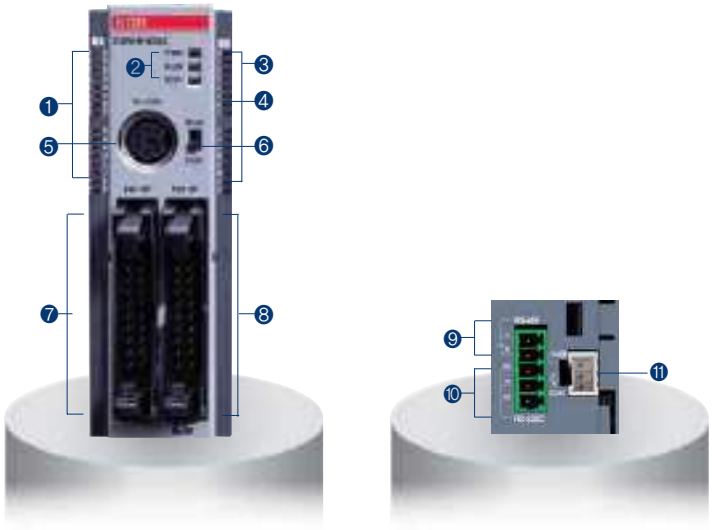



| No. | Name | Descritpions | Remark |
|---|---|---|---|
| ❶ | **LED for displaying input, output** | Displays the On/Off status of input, output contacts | |
| ❷ | **Connector for PADT** | Connector (USB 1channel) to access to XG5000 | |
| ❸ | **Input terminal block** | Terminal block receiving the actual input signal | |
| ❹ | **Output terminal block** | Terminal block outputting the actual output signal | |
| ❺ | **RUN/STOP mode switch** | Sets the basic unit's operation mode.<br>- STOP ➞RUN : Program's operation is executed.<br>- RUN ➞STOP : Program's operation is stopped.<br>(In case of STOP, the remote operation is available.) | |
| ❻ | **Status display LED** | Displays the basic unit's operation status.<br>- PWR (Red light On) : The power is supplied.<br>- RUN (Green light On) : During RUN mode<br>- ERR (Flickering red light) : Occurrence of errors during operation<br>- 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.<br>- RD/WR (Flickering red light) : During SD card Write | |
| ❼ | **SD card connector** | Connector with the SD memory card | |
| ❽ | **Terminal block for the embedded Enet communication** | Terminal block for the embedded Enet communication | |
| ❾ | **Terminal block for the embedded communication** | Terminal block (lower part of the product) for the embedded RS-232C/485 communication | |
| ❿ | **Battery holder** | Battery holder (upper part of the product) | |

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


| No. | Name | Descriptions | Descritpions | Remark |
|---|---|---|---|---|
| ❶ | **Input LED** | Input indication | Red On: Input signal On<br>Red Off: Input signal Off | |
| ❷ | **Condition LED** | PWR: Power indication | Red On: Power On<br>Red Off: Power Off | |
| | | RUN: RUN indication | Green On: PLC Run<br>Green Off: PLC Stop | |
| | | ERR: Error indication | Red On-and-Off: PLC Error<br>Red Off: PLC Normal condition | |
| ❸ | **Output LED** | Output LED | On: Output signal On<br>Off: Output signal Off | |
| ❹ | **Expansion module connector** | Expansion module connector | Connection of expansion module (I/O, Special function, Communication) | |
| ❺ | **PADT connector** | PADT connection | Connector for XG5000/XG-PD connection | |
| ❻ | **Mode switch** | Mode setting | Setting Run/Stop mode of PLC | |
| ❼ | **Input terminal block** | Input wiring connection | - | |
| ❽ | **Output terminal block** | Ouput wiring connection | - | |
| ❾ | **Built-in RS-485 connector** | Built-in RS-485 connection | RS-485 +/- terminal connection | |
| ❿ | **Built-in RS-232C connector** | Built-in RS-232C connection | RS-232C T x D, R x D, SG terminal connection | |
| ⓫ | **Power terminal** | Power supply terminal | AC 100-240V power supply | |
| ⓬ | **Option module slot** | Slot for option module | - | |

## Modular type unit
(XBM-DR16S, DN16S, DN32S)




| No. | Name | Descriptions | Descritpions | Remark |
|---|---|---|---|---|
| ❶ | **Input LED** | Input indication | Red On: Input signal On<br>Red Off: Input signal Off | |
| ❷ | **Condition LED** | PWR: Power indication | Red On: Power On<br>Red Off: Power Off | |
| | | RUN: RUN indication | Green On: PLC Run<br>Green Off: PLC Stop | |
| | | ERR: Error indication | Red On-and-Off: PLC Error<br>Red Off: PLC Normal condition | |
| ❸ | **Output LED** | Output LED | On: Output signal On<br>Off: Output signal Off | |
| ❹ | **Expansion module connector** | Expansion module connector | Connection of expansion module (I/O, Special function, Communication) | |
| ❺ | **PADT connector** | PADT connection | Connector for XG5000/XG-PD connection | |
| ❻ | **Mode switch** | Mode setting | Setting Run / Stop mode of PLC | |
| ❼ | **Input connector / Terminal block** | Input wiring connection | – | |
| ❽ | **Output connector / Terminal block** | Ouput wiring connection | – | |
| ❾ | **Built-in RS-485 connector** | Built-in RS-485 connection | RS-485 +/- terminal connection | |
| ❿ | **Built-in RS-232C connector** | Built-in RS-232C connection | RS-232C TXD, RXD, SG terminal connection | |
| ⓫ | **Power connector** | Power supply connection | DC 24V power supply | |

## XGB U

### Performance specifications

| Items | | Specification | Remark |
|---|---|---|---|
| PID control | | Control by instruction, auto-tunning,<br>PWM output, Forced output,<br>Operation scan time setting,<br>Antiwindup, Delta MV, PV tracking,<br>Hybrid operation,<br>Cascade operation | |
| Serial | Protocol | Dedicated protocol,<br>Modbus protocol<br>User defined protocol ,<br>LS bus (inverter protocol) | Embedded00<br>P2P:01 |
| | Channel | RS-232C 1 port and RS-485 1 port | |
| Ethernet | Transfer spec | Cable: 100Base-TX<br>Speed: 100Mbps<br>Auto-MDIX*1<br>IEEE 802.3 | |
| | Topology | Line, star | |
| | Diagnosis | Module information, service condition | |
| | Protocol | XGT dedicated<br>Modbus TCP/IP<br>user define frame | Embedded01<br>P2P:02<br>High-speed<br>link:01 |
| | Service | P2P, High Speed link,<br>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 : 100MHz 8 channels<br>2-phase : 50MHz 4 channels | |
| | Counter mode | 4 counter modes are supported based on input pulse and INC/DEC method<br>• 1 pulse operation Mode : INC/DEC count by program<br>• 1 pulse operation Mode : INC/DEC count by phase B pulse input<br>• 2 pulse operation Mode : INC/DEC count by input pulse<br>• 2 pulse operation Mode : INC/DEC count by difference of phase | |
| | Function | • Internal/external preset<br>• Latch counter<br>• Compare output<br>• 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

APPLICSTION

## XGB U

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

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

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

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

# XGB H/SU/E, XBM

## Performance specifications

| Classification | | Description | | | |
|---|---|---|---|---|---|
| | | Block type unit | | | Modular type |
| | | H | SU | E | XBM |
| 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 8kpps 3ch | 2kpps 2ch | 2 multiplication: 10kpps |
| | | 50kpps 2ch/8kpps 2ch | | | 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): output contact point of basic unit available | | 1 point / channel (for each channel): 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 |

APPLICSTION

## 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
(XBC-SU)

| 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
(XBC-E)

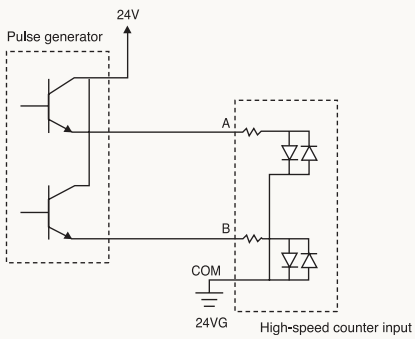
| Terminal No. | Name | | Usage | |
|---|---|---|---|---|
| | 1-phase | 2-Phase | 1-phase | 2-Phase |
| P000 | Ch0 counter input | Ch0 A-phase input | Counter input terminal | A-phase input |
| P001 | Ch1 counter input | Ch0 B-phase input | Counter input terminal | B-phase input |
| P002 | Ch2 counter 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

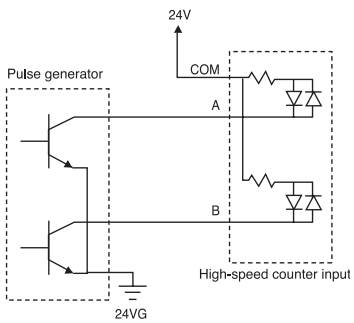
### Modular type
(XBM)

| 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




Voltage output encoder




Open collector encoder

APPLICSTION

# 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㎳ (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㎲ 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 | | | | | | |
| | Approximate zero | DC 24V/4mA | | DC 19V/3.4mA or more | DC 6V/1.1mA or less | 5.6Ω | |
| | zero | | | | | | |

# 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 | → | - |

# I/O specifications | Block type unit

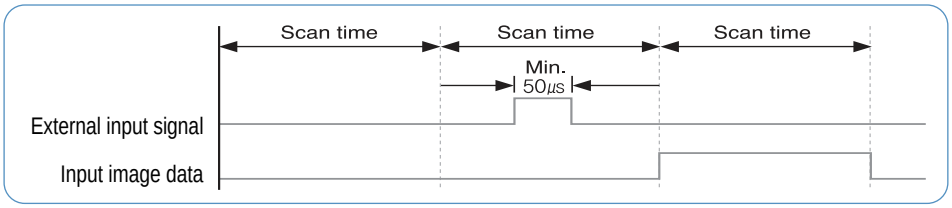
## Performance specification (PID)

| 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

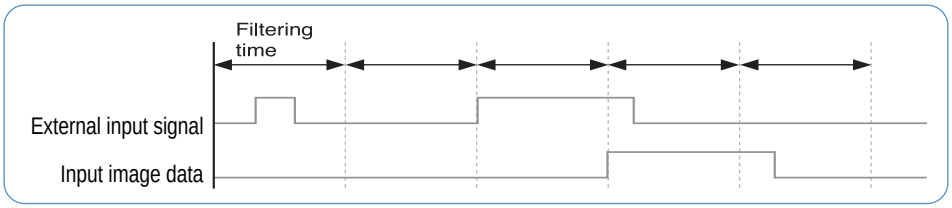
When On-condition time of input signal is shorter than 1 scan time (Min. 50㎲), Pulse catch processes the input signal as normal input.




| Item | Description | | | |
|---|---|---|---|---|
| | Block type unit | | | Modular type |
| | H | SU | E | S |
| Pulse catch | 10㎲: 4 points (P00000~P00003)<br>50㎲: 4 points (P00004~P00007) | 10㎲: 2 points (P00000~P00001)<br>50㎲: 6 points (P00002~P00007) | 50㎲: 4 points (P00000~P00003) | 50㎲: 8 points (P00000~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 ~ 100㎳ (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 | 10μs: 4 points (P00000~P00003)<br>50μs: 4 points (P00004~P00007) | 10μs: 2 points (P00000~P00001)<br>50μs: 6 points (P00002~P00007) | 50μs: 4 points (P00000~P00003) | 50μs: 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 |

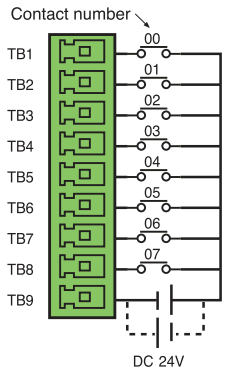
## Specification

XBE-DC08A
XBE-DC16A
XBE-DC32A

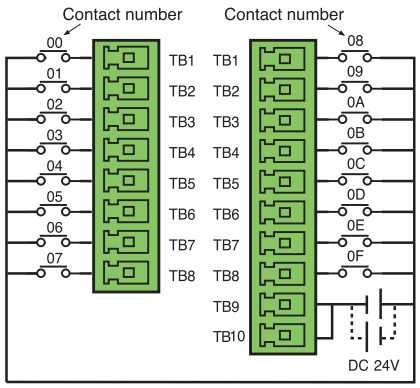
| Specification \ Model | | XBE-DC08A | XBE-DC16A | XBE-DC32A |
|---|---|---|---|---|
| Input point | | 8 points | 16 points | 32 points |
| Rated input voltage/current | | DC 24V / 4mA | | |
| Operation voltage range | | DC 20.4 ~ 28.8V (Ripple rate < 5%) | | |
| Input resistance | | 5.6kΩ | | |
| Response 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)

**8-point DC Input**
**XBE-DC08A**




**16-point DC Input**
**XBE-DC16A**



## Specification

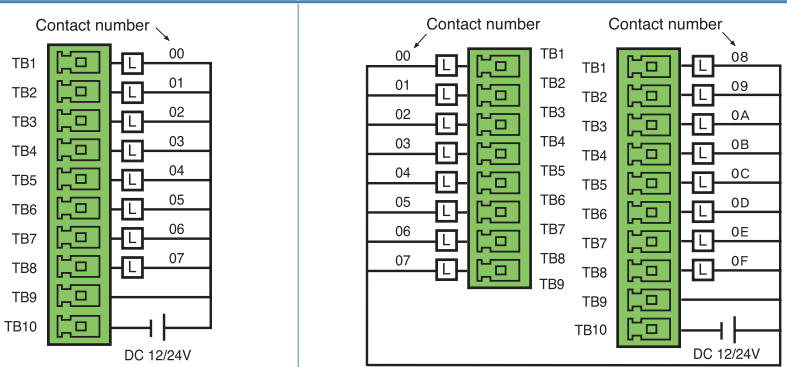
XBE-TN08A
XBE-TN16A
XBE-TN32A

| 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 | Current |
| | Range | | 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 ) |
| 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) | 4000 ~ 20000 (4 ~ 20mA), 0 ~ 20000 (0 ~ 20mA) |
| | | Percentile value | 0 ~ 10000 | |
| Resolution | | | 1/16000 | |
| | | | 0.250mV (1 ~ 5V) 0.3125mV(0 ~ 5V) 0.625mV (0 ~ 10V) 1.250mV(±10V) | 1.0μA (4 ~ 20mA) 1.25μA (0 ~ 20mA) |
| 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 | |

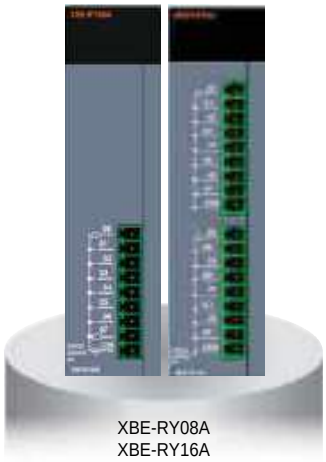
## Wiring
(XBE-TN08A/TN16A)

| 8-point Sink Output | 16-point Sink Output |
|---|---|
| XBE-TN08A | XBE-TN16A |




APPLICSTION

## Specification

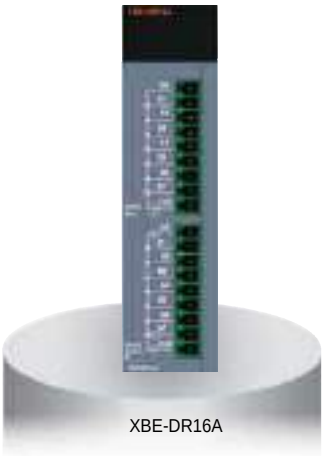


XBE-RY08A
XBE-RY16A

| Specification \ Model | | XBE-RY08A | XBE-RY16A |
|---|---|---|---|
| Output point | | 8 points | 16 points |
| Insulation method | | Relay insulation | |
| Rated input voltage/Current | | DC 24V 2A (resisitive 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 | 20million 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 | | 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 | Current |
| | | Range | DC 1 ~ 5V, DC 0 ~ 5V, DC 0 ~ 10V, DC -10 ~ 10V (Input resistance 1kΩ or more ) | DC 4 ~ 20mA DC 0 ~ 20mA (Input resistance 600MΩ 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) | 4000 ~ 20000 (4 ~ 20mA), 0 ~ 20000 (0 ~ 20mA) |
| | | Percentile value | 0 ~ 10000 | |
| Resolution | | | 1/16000 | |
| | | | 0.250mV (1 ~ 5V) 0.3125mV (0 ~ 5V) 0.625m V(0 ~ 10V) 1.250mV (±10V) | 1.0μA (4 ~ 20mA) 1.25μA (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

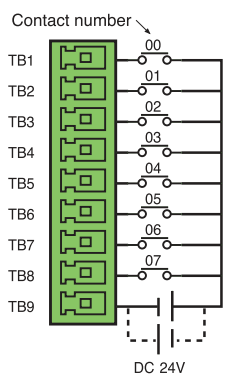
| Specification \ Model | | DC Input (XBE-DR16A) |
|---|---|---|
| Input point | | 8 points |
| Insulation method | | Photocoupler |
| Rated input voltage | | DC 24V |
| Rated input current | | 4mA |
| Operation voltage range | | DC 20.4 ~ 28.8V (Ripple rate < 5%) |
| On voltage/On current | | DC 19V or more/3mA or more |
| Off voltage/Off current | | DC 6V or less/1mA or less |
| Input resistance | | 5.6kΩ |
| Response time | Off → On | 1/3/5/10/20/70/100ms (setting by CPU parameter) init value: 3ms |
| | On → Off | |
| COMMON method | | 8 points/COM |
| Weight | | 81g |

## Relay output specification

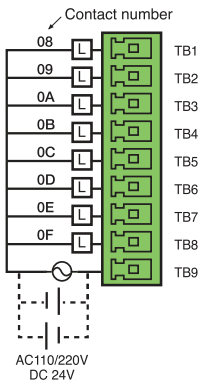
| Specification \ Model | | Relay Output (XBE-DR16A) |
|---|---|---|
| Output point | | 8 points |
| Insulation method | | Relay insulation |
| Rated input voltage/Current | | DC 24V 2A (resisitive load)/AC 220V 2A (COSΨ = 1), 5A /COM |
| Min. load voltage/Current | | DC 5V 1mA |
| Max. load volfage | | 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 | Mechanlcal | 20million 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)

**8-point DC Input**

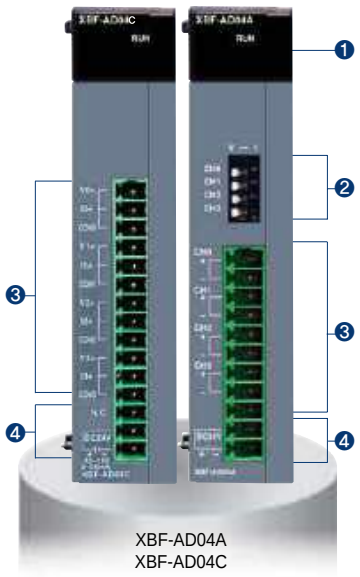



**8-point Relay Output**




APPLICSTION

## Specification



XBF-AD04A
XBF-AD04C

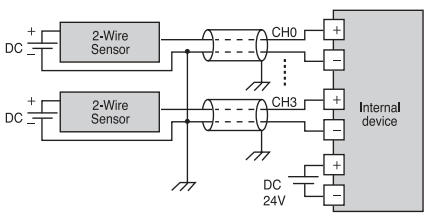
| Item | | | XBF-AD04A | | XBF-AD04C | | XBF-AD08A | |
|---|---|---|---|---|---|---|---|---|
| Analog range | Item | | Voltage | Current | Voltage | Current | Voltage | Current |
| | Range | | DC 0~10V (input resistance : 1MΩ min.) | DC 4~20mA, DC 0~20mA (input resistance: 250Ω) | DC 1 ~ 5V<br>DC 0 ~ 5V<br>DC 0 ~ 10V<br>DC -10 ~ 10V<br>(Input resistance : 1MΩ min) | DC 4 ~ 20mA<br>DC 0 ~ 20mA<br>(Input resistance : 250MΩ) | DC 1~5V<br>DC 0~5V<br>DC 0~10V<br>(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)<br>0~5000 (0~5V)<br>0~10000 (0~5V)<br>-10000~10000 (±10V) | 4000~20000 (4~20mA)<br>0~20000 (0~20mA) | 100~500 (DC 1~5V)<br>0~500 (DC 0~5V)<br>0~1000 (DC 0~10V) | 4000~2000 (DC 4~20mA)<br>0~2000 (DC 0~20mA) |
| | | Percentile value | 0~1000 | | 0~10000 | | 0~1000 | |
| Resolution | | | 2.5mV (1/4000) | 5μA (1/4000) | 1/16000<br>0.250mV (1 ~ 5V)<br>0.3125mV (0 ~ 5V)<br>0.625mV (0 ~ 10V)<br>1.250mV (±10V) | 1.0μA (4 ~ 20mA)<br>1.25μA (0 ~ 20mA) | 1.25mV (DC 1~5V, 0~5v)<br>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 | ± 25mA |
| 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

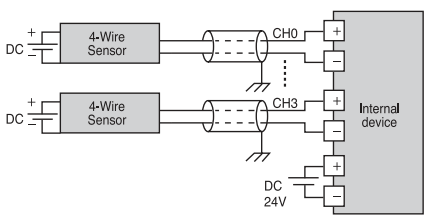
| No. | Name | Descriptions |
|---|---|---|
| ❶ | RUN LED | ▶ Indicates condition of module<br>• LED On: Normal condition<br>• LED On and Off: Flickering<br>• LED Off: Power Off or module malfunction |
| ❷ | Input selection S/W | ▶ Voltage/Current selection switch<br>• V: Voltage input selection<br>• I: Current input selection |
| ❸ | Terminal block | ▶ External device connection |
| ❹ | External power supply terminal | ▶ External DC 24V input |

## Wiring

**Wiring with 2-wire sensor**

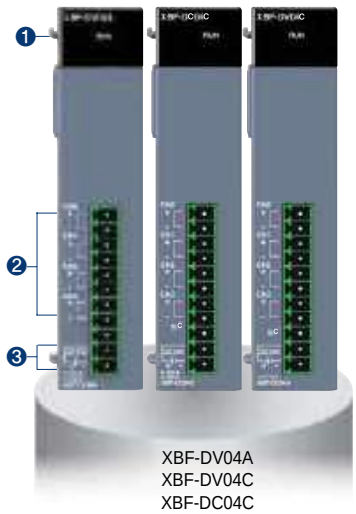



**Wiring with 4-wire sensor**




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

## Specification



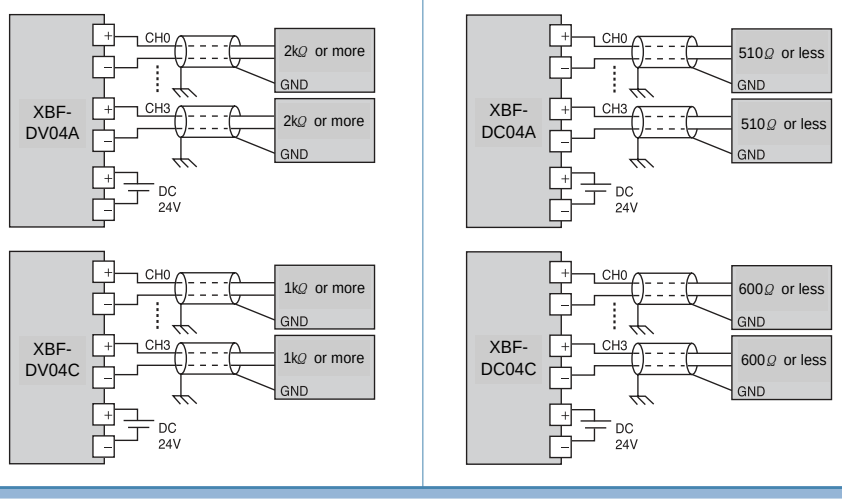
XBF-DV04A
XBF-DV04C
XBF-DC04C

| Item | | XBF-DV04A | XBF-DV04C | XBF-DC04C | XBF-DC04A |
|---|---|---|---|---|---|
| Analog range | | DC 0 ~ 10 V (Load resistance ≥ 2kΩ) | DC 1 ~ 5V<br>DC 0 ~ 5V<br>DC 0 ~ 10V<br>DC -10 ~ 10V<br>(Input resistance : 1kΩ or more) | DC 4 ~ 20mA<br>DC 0 ~ 20mA<br>(Input resistance : 600MΩ or less) | 4 ~ 20mA / 0 ~ 20mA (Load resistance ≤510Ω) |
| Analog range Selection | | - | - | | XG 5000 I/O parameter |
| Digital data | Output range | 0 ~ 10 V | - | | 4 ~ 20mA/0 ~ 20mA |
| | Unsigned value | 0 ~ 4000 | 0 ~16000 | | 0 ~ 4000 |
| | Signed value | - 2000 ~ 2000 | - 8000 ~ 8000 | | - 2000 ~ 2000 |
| | Precise value | 0 ~ 1000 | 1000~5000 (1~5V)<br>0~5000 (0~5V)<br>0~10000 (0~10V)<br>-1000~10000 (±10V) | 4000~20000 (4~20mA)<br>0~20000 (0~20mA) | 400 ~ 2000/0 ~ 2000 |
| | Percentile value | 0~1000 | 0~10000 | | 0~1000 |
| | Data format | Data format of digital input is set by user program or I/O parameter (Setting for each channel is available.) | | | |
| Resolution | | Resolution (1/4000) | 1/1600 | | Resolution (1/4000) |
| | | 2.5mV | 0.250m (1~5V)<br>0.3125m (0~5V)<br>0.625m (0~10V)<br>1.250m (±10V) | 1.0μA (4~20mA)<br>1.25μA (0~20mA) | 5μA |
| Max. conversion speed | | 1ms/channel | 1ms/channel | | 1ms/channel |
| Max. absolute output | | ±15V | - | | ±25mA |
| Accuracy | | ±0.5% or less | - | | ±0.5% or less |
| Analog output channels | | 4 channel/module | 4 channel/module | | 4 channel/module |
| Insulation method | | 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 |
| Connection terminal | | 11-point terminal block | | | |
| Occupied I/O points | | Fixed type: 64 points | | | |
| Current consumption | DC 5V | 110mA | 75mA | | 110mA |
| | DC 24V | 70mA | 170mA | | 120mA |

## Names and Functions

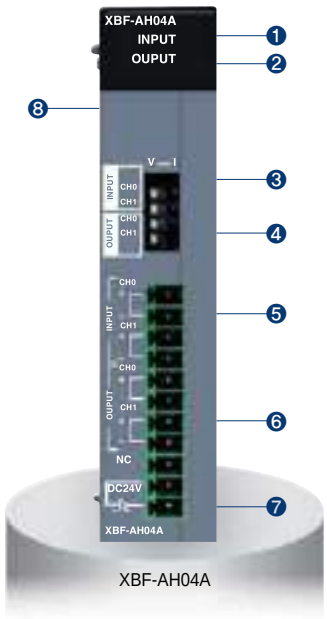
| No. | Name | Descriptions |
|---|---|---|
| 1 | RUN LED | ▶ Indicates condition of module<br>• LED On: Normal condition • LED On and Off: Flickering<br>• LED Off: Power Off or module malfunction |
| 2 | Terminal block | ▶ External device connection |
| 3 | External power supply terminal | ▶ External DC 24V input |

## Wiring




APPLICSTION

## Specification



XBF-AH04A

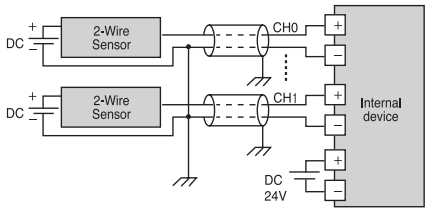
| Item | | XBF-AH04A | |
|---|---|---|---|
| | | Input | Output |
| Analog channel | | 2 channels | 2 channels |
| Analog range | | DC 1 ~ 5V, DC 0 ~ 5V, DC 0 ~ 10V (Input resistance: 1 MΩ min.)<br>DC 4 ~ 20mA, DC 0 ~ 20mA (Input resistance 250Ω ) | DC 1 ~ 5V, DC 0 ~ 5V, DC 0 ~ 10V (Load resistance ≥ 2kΩ )<br>DC 4 ~ 20mA, DC 0 ~ 20mA (Load resistance ≤510Ω ) |
| 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)<br>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)<br>5㎂ (DC 4~20mA, 0~20mA) | |
| Max. conversion speed | | ±15V, 25mA | |
| Max. absolute output | | 1ms / Channel | |
| Accuracy | | ±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

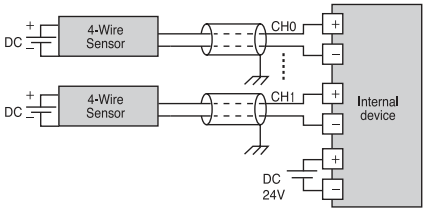
| No. | Name | Descriptions |
|---|---|---|
| 1 | INPUT LED | ▶ Indicates input condition of module<br>• LED On: Normal condition<br>• LED On and Off: Flickering<br>• LED Off: Power Off or module malfunction |
| 2 | OUTPUT LED | ▶ Indicates output condition of module<br>• LED On: Normal condition<br>• LED On and Off: Flickering<br>• LED Off: Power Off or module malfunction |
| 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

**Wiring with 2-wire sensor (for analog input)**

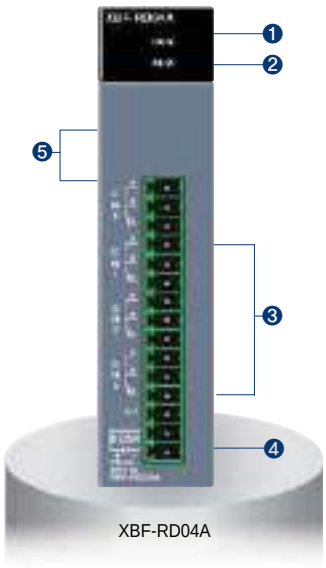



**Wiring with 4-wire sensor (for analog input)**




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

## Specification



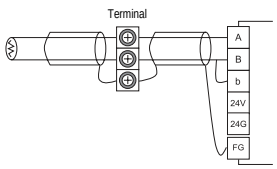
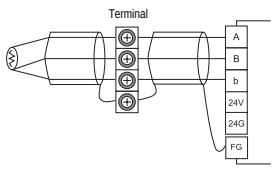
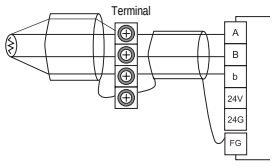
XBF-RD04A

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

## Names and Functions

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

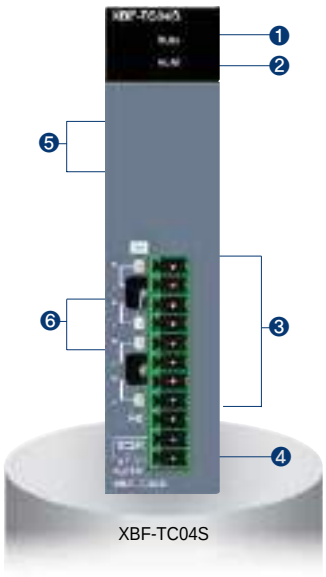
## Wiring

| 2-wire | 3-wire | 4-wire |
|---|---|---|
|  |  |  |



APPLICSTION

## Specification

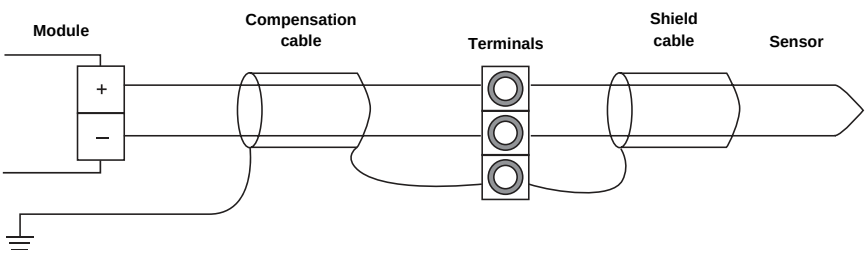



| Item | | XBF-TC04S |
|---|---|---|
| Number of channels | | 4 |
| Input sensor type | | Thermocouple K/J/T/R<br>JIS C1602－1995 |
| Temperature input range | K | －200.0℃ ~ 1300.0℃ (-328.0℉ ~ 2372.0℉) |
| | J | －200.0℃ ~ 1200.0℃ (-328.0℉ ~ 2192.0℉) |
| | T | －200.0℃ ~ 400.0℃ (-328.0℉ ~ 752.0℉) |
| | R | 0.0℃ ~ 1700.0℃ (32.0℉ ~ 3092.0℉) |
| Digital output | Temperature display unit | Display down to one decimal place<br>K, J, T: 0.1℃ R: 0.5℃ |
| | Scaling display (Defined by user) | Unsigned scaling (0 ~ 65535) |
| | | Signed scaling (-32768 ~ 32767) |
| Accuracy | Normal temperature (25℃) | ±0.2% |
| | Temperature coneffcient (0 ~ 55℃) | ±100 ppm / ℃ |
| 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)<br>• On: Normal status<br>• Flickering: Error (0.2s flickering)<br>• Off: hardware error or power off |
| 2 | ALM LED | ▶ Displays the status of the channels (Light fault)<br>• Flickering: Line disconnection (1s flickering)<br>• 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


XBF-TC04TT

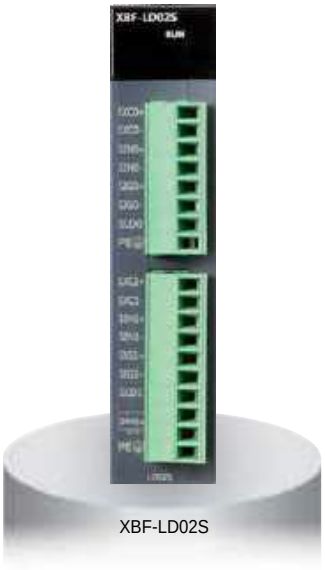
| Item | | | XBF-TC04TT | |
|---|---|---|---|---|
| Control loop | | | 4 loop | |
| Thermocouple type and input range | K | | -200.0 ~ 1300.0 ℃ | |
| | | | 0.0 ~ 500.0 ℃ | |
| | J | | -200.0 ~ 1200.0 ℃ | |
| | | | 0.0 ~ 500.0 ℃ | |
| | T | | -200.0 ~ 800 ℃ | |
| Precision | Standard precision | | ±0.2% or less (25 ℃, normal temperature, except -200~-100 ℃ for the T type) | |
| | Temperature coefficient | | ±100ppm/℃(0.01%/℃) | |
| Cold junction compensation | Compensation method | | Automatic compensation by RJC sensing | |
| | Compensation degree | | ±2.0 ℃ | |
| 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 MΩ 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 ℃/min (30 ℃/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

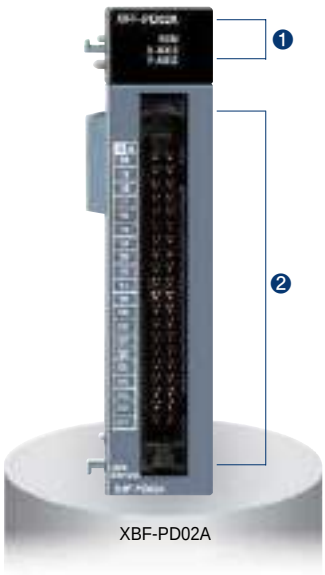
| Item | | | XBF-TC04RT | |
|---|---|---|---|---|
| Control loop | | | 4 loop | |
| RTD type and input range | Pt100 | | -200.0 ~ 850.0 ℃ | |
| | JPt100 | | -200.0 ~ 600.0 ℃ | |
| Precision | Standard precision | | ±0.2% or less (25 ℃, normal temperature) | |
| | Temperature coefficient | | ±100ppm/ ℃(0.01%/ ℃) | |
| 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 MΩ or above |
| | Output terminal- PLC power<br>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 | Specifications | | | |
|---|---|---|---|---|
| Input Channel | 2 Channel (Insulation between Channels) | | | |
| Load Cell Input Voltage | 5VDC ±5%, (8 per 350 Ω load cell channel) | | | |
| Load Cell Type | Four-wire or Six-wire | | | |
| Resolution | 1/40000 | | | |
| Analog Input Range | 0.0~6.0 mV | | | |
| Load Cell Output Sensitivity | 0.125 μV(when the rated output of the load cell is 0.0 ~ 1.0 mV/ V) | | | |
| Input Accuracy | ±0.01% or below (nonlinear accuracy, 25℃)<br>Zero Drift: ±0.25 ℃, Gain Drift: ±15ppm/℃ | | | |
| Sampling Cycle (per channel) | 5 ms | | | |
| Insulation | **Classification** | **Insulation Method** | **Insulation Voltage Resistance (Internal Test Specifications)** | **Insulation Resistance** |
| | Input terminal-Internal circuits | Isolator | AC 550 V<br>50/60 Hz 1 minute,<br>Leakage 10 mA or below | DC500 V,<br>10 MΩ or above |
| | Between input channels | Transformer | | |
| | External power-Internal circuits | DC/DC Converter | | |
| Warm-up time | 30 minutes or above | | | |
| Input Connector | 8 pins Connector(CH0)/10 pins Connector(CH1) | | | |
| IO Occupation Points: | Fixed type:64 points | | | |
| Max. no. of installation | XBM-DxxxS type: 7ea, XB(E)C-DxxxH type: 10ea,<br>XB(E)C-DxxxSU: 7ea, XB(E)C-DxxxU: 10ea, | | | |
| Power Supply | 5V, DC 24 | | | |
| Consumption | Internal DC5V : 110 mA ,External DC24V : 280 mA | | | |

## Specification



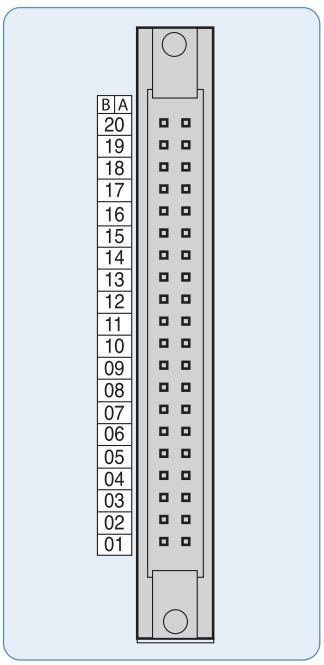
XBF-PD02A

| Item | | XBF-PDO2A |
|---|---|---|
| N0. 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

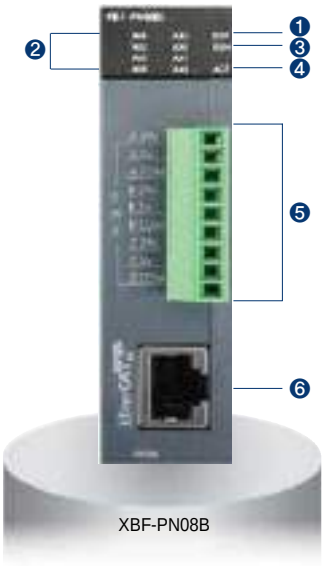
| No. | Name | Descriptions |
|---|---|---|
| ❶ | RUN LED | 1. RUN<br>▶ Displays the hardware operation status<br>• On: Normal status<br>• Off: Abnormal status<br>2. X_AXIS, Y_AXIS<br>• On: Operation<br>• Flickering: Error |
| ❷ | Terminal block | ▶ Terminals to connect the MPG, external device and drive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



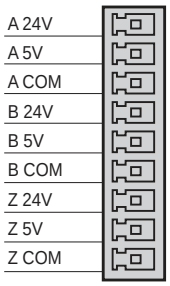

| Item | | XBF-PN08B | | | |
|---|---|---|---|---|---|
| No. of control axis | | 8 | | | |
| Interpolation function | | 2~8 axes linear interpolation, 2 axes circular interpolation, 3 axes helical interpolation | | | |
| Control method | | Position control, Speed control, Speed/Position control, Position/Speed 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(㎛) | -214748364.8~214748364.7(㎛) | -214748364.8~214748364.7(㎛) |
| | | 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(ßÆ/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 | | | |

APPLICSTION

## Names and Functions

| No. | Name | Descriptions |
|---|---|---|
| ❶ | Module ready signal | On: Positioning module normal status<br>Off: Power OFF or CPU module reset status<br>Flicker: Positioning module abnormal status |
| ❷ | Operation indicator LED (AX1 ~ AX8) | On: applicable axis is running<br>Off: applicable axis is stop status<br>Flicker: applicable axis is error status |
| ❸ | Communication status indicator LED | On: communication with servo driver is connected<br>Off: communication with servo driver is disconnected<br>Flicker: Error occurs during communicating with servo driver |
| ❹ | TRX status LED | On: Wiring with servo driver is done<br>Off: Wiring with servo driver is not done<br>Flicker: communicating with servo driver |
| ❺ | Connector for encoder wiring | Connector to connect with encoder |
| ❻ | RJ-45 connector | RJ-45 connector to connect with servo driver |

## Terminal

| Pin arrangement | Pin No. | Signal name | | Signal direction |
|---|---|---|---|---|
|  | 1 | A 24V | Encoder A 24V input | Input |
| | 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

XBF-HO02A
XBF-HD02A

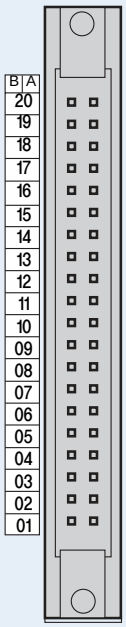
| Item | | Specification | |
|---|---|---|---|
| | | XBF-HO02A | XGF-HD02A |
| Count input signal | Signal | A-phase, B-phase | |
| | Input type | Voltage input (Open Collector) | Differential input (Line Drive): |
| | Signal level | DC 5/12/24V | RS-422A Line Drive/HTL LEVEL Line Drive |
| Maximum coefficient 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,<br>Count latch,<br>Section count(time setting value: 0~60000㎳),<br>Measurement of input frequency(for respective input phase),<br>Measurement of counts per hour(time setting value: 0~60000㎳)<br>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 |
|---|---|---|
| ❶ | Run LED (ØA,ØB, P, G, 00, 01) | ▶ On: Relevant channel pulse inputting, Preset/Auxiliary function signal inputting, Outputting<br>▶ Off: No input of relevant channel pulse, No input of preset/Auxiliary function signal, No output of comparison |
| | Ready signal (RDY) | ▶ On: HSC module normal<br>▶ Off: Power off or CPU module reset, HSC module error<br>• Flicker: HSC module error |
| ❷ | External wiring connector | Connector to conect with external I/O |

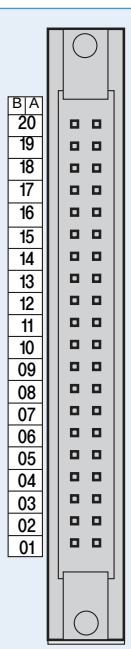
APPLICSTION

## Terminal (XBF-H002A)



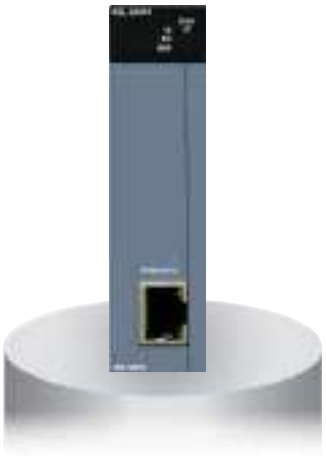

| Pin arrangement | | Signal name | |
|---|---|---|---|
| B ch1 | A ch0 | | |
| 20 | 20 | A 24V | A phase pulse input 24V |
| 19 | 19 | A 12V | A phase pulse input 12V |
| 18 | 18 | A 5V | A phase pulse input 5V |
| 17 | 17 | A COM | A phase pulse input COM |
| 16 | 16 | B 24V | B phase pulse input 24V |
| 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 Ⅰphase differentiation input + |
| 19 | 19 | A Ⅰ- | A Ⅰphase differentiation input - |
| 18 | 18 | A Ⅱ+ | A Ⅱphase differentiation input + |
| 17 | 17 | A Ⅱ- | A Ⅱphase differentiation input - |
| 16 | 16 | B Ⅰ+ | B Ⅰphase differentiation input + |
| 15 | 15 | B Ⅰ- | B Ⅰphase differentiation input - |
| 14 | 14 | B Ⅱ+ | B Ⅱphase differentiation input + |
| 13 | 13 | B Ⅱ- | B Ⅱphase 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 |

## RAPIEnet (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 = $X^{32}+X^{26}+X^{23}+\cdots+X^{2}+X+1$ |
| | Normal communication guarantee | Max. 1,200 (packet/sec) |
| Basic standard | Dimension (mm) | 90(H) x 27(W) x 60(D) |
| | Current consumption(mA) | 290 |
| | Weight (g) | 102 |

APPLICSTION

## Ethernet/IP (XBL-EIPT)

| Item | | XBL- EIPT |
|---|---|---|
| Transmission standard | Transmission speed | 100Mbps |
| | Transmission method | Base band |
| | Max. extension distence between nodes | 100m |
| | Access method to service zone | CSMA/CD |
| | Frame error check | CRC 32 = $X^{32}+X^{26}+X^{23}+\cdots+X^{2}+X+1$ |
| 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<br>Outpuut : 122 Word | |
| Max. Communication size per block | | Input : 64 Word<br>Outpuut : 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 | | ▪ Trunk/drop line<br>▪ Power/Signal cable inside the identical network cable |
| | Bus Type | | ▪ Poll type |
| | Max. number of nods | | Up to 64 (including master) MAC IDs (MAC Identifier) |
| | System Features | | Insertion and removal of nod available in voltage On status |
| | Operation Voltage | | DC 24V |
| | Diagnosis Function | | Module: Checks duplicated station/ Checks CRC error<br>SyCon: Detects defective station/Checks BusOff/Auto-scan function<br>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) | Data process unit | | Word |
| | Send/Receive period | | Select among 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1s, 5s and 10s<br>- 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) |
| Basic Specification | Max. modules installed | | Up to 2 |
| | Internal-consumed current (mA) | | 100mA |
| | Weight (g) | | 110 |

## Rnet (XBL-RMEA)

| Item | | XBL-RMEA |
|---|---|---|
| Transmission Speed | | 1Mbps(Rnet I/F modules common) |
| Max. Tx distance | | Max. 750m |
| Connection Cable | | Twisted pair shielded cable |
| Maximum stations connected | Network | Master station 1[station no:0(fixed)] +<br>Slave stations up to 31[station no:1~63], Note 1)<br>- Only 1 master is available in the network. |
| Diagnostic function | | XG5000 : High Speed Link Monitoring |
| Terminal resistance ( Ω ) | | 110 Ω ( ±5%), 1/2W |
| Master/Slave operation | | Only available as Master |
| XG5000(HS Link) | Data Processing unit | Byte |
| | Tx/Rx cycle | Selection among 20ms, 50ms, 100ms,<br>200ms(default), 500ms, 1s, 5s, 10s |
| | Max. Communication points. | 3,780 Bytes (slave 31stations * 120Bytes/station) |
| | Max. Block number | 64 (setting range : 0~63) |
| | Max. points by Block | 120 Byte (60words) |
| | Auto scanning | Supported |
| Specification | Max. module mounted | 2 modules |

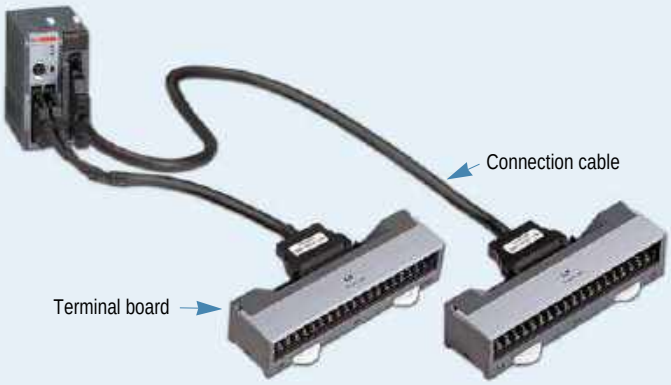
## CANopen Module
(XBL-CMEA, XBL-CSEA)

| 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 | | O | - |
| Size (mm) | | 90 (H)X27 (W)X60 (D) | |
| Current consumption (mA) | | 211 | 202 |
| Weight (g) | | 78 | |

## Option modules

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

## Smart link

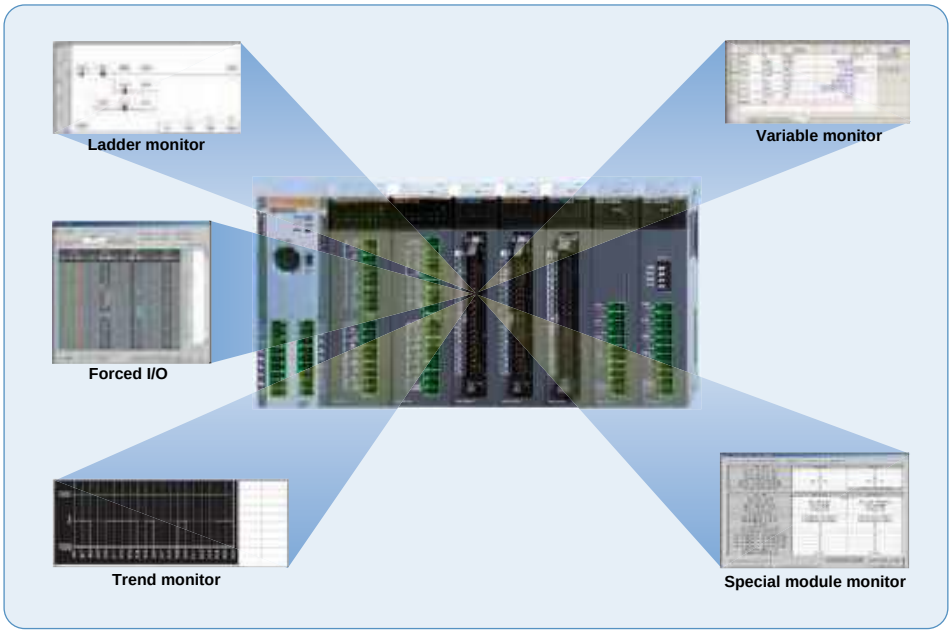



| Terminal board | Connection cable | XBM-DN16S XBM-DN32S | XBE-DC32A | XBE-TN32A | XBE-TP32A | Cable length |
|---|---|---|---|---|---|---|
| TG7-1H40S (Terminal board) | R40H/20HH-05S-XBM3 | ● | – | – | – | 0.5m |
| | R40H/20HH-10S-XBM3 | ● | – | – | – | 1.0m |
| TG7-1H40CA (Terminal board, Common)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

APPLICSTION

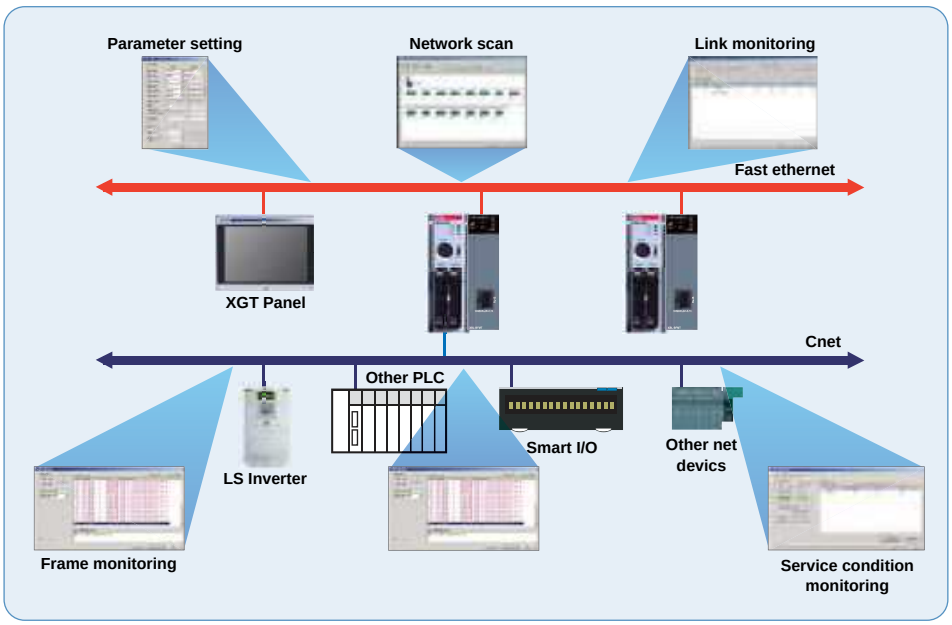
## XG5000
(Programming software)

- 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 conditon, Service condition, Frame monitoring)



# XGT Panel iXP Series



## Main Specification

- 1GHz 32bit RISC Embedded CPU
- 16,777,216 TFT color LCD
- 128MB display data and 1MB back-up memory
- Ethernet 1ch, RS-232C 2ch, RS-422/485 1ch
- USB host 3ch and device 1ch
- SD memory card interface

## Main Functions

- PLC ladder monitoring (XGK/XBC PLC only)
- Web Server/Data Server
- Path through
- XP-Remote : Remote controlling and monitoring

| Item | | iXP50-TTA/DC | iXP70-TTA/DC<br>iXP70-TTA/AC | iXP80-TTA/DC<br>iXP80-TTA/AC | iXP90-TTA/DC<br>iXP90-TTA/AC |
|---|---|---|---|---|---|
| Display type | | TFT color LCD | | | |
| Screen size | | 21.3cm (8.4″) | 26.4cm (10.4″) | 30.7cm (12.1″) | 38.1cm (15″) |
| Display Resolution | | 800×600 pixel(SVGA) | 800×600 pixel(SVGA) | 800×600 pixel(SVGA) | 1,024×768 pixel(SVGA) |
| Color indication | | 16-bit and 24-bit Color (default: 16-bit Color) | | | |
| Indication degree | | Left/Right: 80 deg. Up: 80 deg. Down: 60 deg. | Left/Right: 80 deg. Up: 60 deg. Down: 80 deg. | | |
| Backlight | | LED Type | | | |
| Backlight duration | | 70,000 hours | 60,000 hours | | |
| Brightness | | 500 cd/㎡ | 700 cd/㎡ | 550 cd/㎡ | 800 cd/㎡ |
| Touch panel | | 4-Line type, analog | | | |
| Sound Output | | Magnetic buzzer (85dB) | | | |
| Process | | ARM Cortex-A8 Core (32bit RISC), 1GHz | | | |
| Memory | Flash | 512MB(display 128MB) | 1GB(display 128MB) | | |
| | Operating RAM | 256MB | 512MB | | |
| | Backup RAM | 1MB | | | |
| Backup data | | Date/Hour data, Logging/Alarm/Recipe data and nonvolatile device | | | |
| Battery duration | | Approx. 3 years (Operating ambient temperature of 25℃) | | | |
| Ethernet | | 1 channel, 10/100BASE-TX | | | |
| USB Host | | 3 channels, USB 2.0 host (mouse, keyboard, printer* and USB memory driver is available) | | | |
| | | 1 channel, USB 2.0 slave (for download and upload project file) | | | |
| RS-232C | | 1 channel | | | |
| RS-422/485 | | 1 channel, RS-422/485 mode | | | |
| SD Card | | 1 Slot (SDHC) | | | |
| Human sensor | | - | Detection range: side 1-1.5m, front 40-50cm<br>Angle: high/low 100°, left/right 140° (detecting 5-20 micron infrared light) | | |
| Audio output | | LINE-OUT 1 channel | | | |
| Expansion module | | For communication and I/O option module (available later) | | | |
| VM module | | - | 4 channels video input (available later) | | |
| Multi-language | | Up to 12 language simultaneously | | | |
| Animation | | GIF format is available | | | |
| Recipe | | available | | | |
| Data logging | | available | | | |
| Script executor | | available | | | |
| Certifications | | CE, UL(cUL), KC | | | |
| Protection standard | | IP65 | | | |
| Dimension (mm) | | 240.5×180.0×54.4 | 270.5×212.5×60.0 | 313.0×239.0×56.0 | 395.0×294.0×60.0 |
| Panel cut (mm) | | 228.5×158.5 | 259.0×201.0 | 301.5×227.5 | 383.5×282.5 |
| Rated voltage | | DC24V | DC12/24V(AC 100-240V) | | |
| Power consumption (W) | | 30.8 | 42.3 | 42.3 | 42.3 |
| Weight(Kg) | | 1.9 | 2.2 | 2.4 | 3.9 |

* SEWOO printer only

APPLICSTION

## Main Specification

- TFT LCD-applied wide type
- LED Backlight adopted for enhanced contrast ratio and low-power
- PLC Ladder monitoring function: Only XGK/XBC supports*
- Web Server* / Data Server* / Path-Through Function*
- Remote Viewer Function*
- Screen editor : XP-Builder

+Functions that support only the TTA model

| Item | | eXP20-TTA/DC | eXP40-TTE/DC | eXP40-TTA/DC | eXP60-TTA/DC |
|---|---|---|---|---|---|
| Display Type | | TFT color LCD | | | |
| Display Size | | 10.9cm (4.3 inch) | 17.7cm (7 inch) | | 25.9cm (10.2 inch) |
| Resolution | | 480 x 272 (WQVGA) | 800 x 480 (WVGA) | | |
| Color | | 16.7M colors | | | 65,536 colors |
| Display Angle | | Left/Right: 60 deg. Up: 40 deg. Down: 60 deg. | | | Left/Right: 55 deg. Up: 35 deg. Down: 55 deg. |
| Backlight | | LED mode, Auto On/Off | | | |
| Backlight Capacity | | 30,000 hr or more | 20,000 hr or more | | |
| Brightness(LCD) | | 550 cd/㎡ | 500 cd/㎡ | | 350 cd/㎡ |
| Touch Panel | | 4-wire system, Analogue | | | |
| Sound | | Magnetic buzzer (85dB) | | | |
| Processor | | ARM9 Core (32bit RISC), 454MHz | | | |
| Memory | Flash | 128MB(Screen 64MB) | | | |
| | Operation RAM | 128MB | | | |
| | Backup RAM | 128KB | | | |
| Backup Type | | Date/Time data, Logging/Alarm/Recipe data, non-volatile device | | | |
| Battery Capacity | | Around 3 years (Upon operation at 25℃) | | | |
| RTC Function | | Built-in | | | |
| Ethernet | | 1 channel, 10/100BASE-TX | - | 1 channel, 10/100BASE-TX | |
| USB Port | | 1 channel, USB 2.0 host (mouse, keyboard, printer* and USB memory driver is available) | | | |
| | | - | 1 channel, USB 2.0 slave (for download and upload project file) | | |
| RS-232C | | 1 channel | | | |
| RS-485 | | - | 1 channel | | |
| RS-422/485 | | 1 channel, 422/485 Combination | | | |
| Multi-language | | Up to 12 language simultaneously | | | |
| Animation | | GIF format is available | | | |
| Recipe | | available | | | |
| Data logging | | available | | | |
| Script executor | | available | | | |
| Certification | | CE, UL(cUL), KC | | | |
| Protection | | IP65 | | | |
| Size (mm) | | 128.0 ×102.0 ×32.0 | 208.0 ×154.0 ×44.0 | | 276.0 ×218.0 ×44.2 |
| Panel Cut (mm) | | 119.0 ×93.0 | 192.0 ×138.0 | | 260.0 ×202.0 |
| Power | | DC24V | | | |
| Power Consumption (W) | | 7.1 | 23.1 | | |
| Weight (kg) | | 0.3 | 0.59 | 0.60 | 1.0 |

+SEWOO printer only

## Graphic type XP30/XP40/XP50/XP70/XP80/XP90

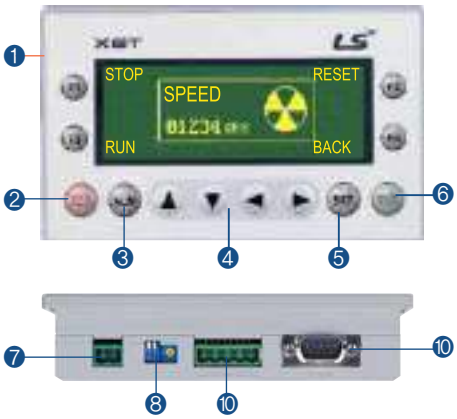
- High and vivid distinction with 65,536 colors
- High quality raster and vector symbols
- Various BMP JPG GIF graphic file support: BMP, JPG, GIF, WMF, etc
- Simple animation effects: animated GIF
- 10/100BASE-T Ethernet interface
- Convenient and easy screen editing
- Strengthened data management: Logging, Recipe, and Alarm
- Read function of a controller's state information: Monitoring and maintenance
- Multi-lingual display: up to 8 languages
- Offline and concurrent simulation with XG5000
- Easy to change the address of the graphic objects: Tag function with XGT Panel
- USB host for peripheral devices: USB Drive, Mouse, keyboard, printer, etc
- Sufficient memory for screen data: 10MB

| Model Type | | | XP30-BTE/DC | XP30-BTA/DC | XP30-TTE/DC | XP30-TTA/DC | XP40-TTE/DC | XP40-TTA/DC | XP50-TTA/DC | XP70-TTA/AC XP70-TTA/DC | XP80-TTA/AC XP80-TTA/DC | XP90-TTA/AC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Mono | | Color | | | | | | | |
| Display Element | | | Mono Blue LCD | | TFT Color LCD | | | | | | | |
| Screen Size | | | 14cm (5.7") | | | | 17.7cm (7") | | 21cm (8.4") | 26cm (10.4") | 31cm (12.1") | 38cm (15") |
| Resolution | | | 320×240 | | | | 800×480 | | 640×480 | | 800×600 | 1024×768 |
| Color | | | 8-column Gray Scale | | 256 colors | 65,536 colors | 65,536 colors | | | | | |
| Backlight | | | LED mode | | | | | | CCFL(can be replaced), Auto On/Off | | | |
| | | | 50,000 hours | | | 60,000 hours | 30,000 hours | | 50,000 hours | | | 60,000 hours |
| Contrast | | | Adjustable | | Fixed | | | | | | | |
| Brightness | | | 230cd/㎡ | | | 600cd/㎡ | 280cd/㎡ | | 480cd/㎡ | 430cd/㎡ | 400cd/㎡ | 450cd/㎡ |
| Viewing Angle | Up/Down(Degree) | | 20/40 | | 80/80 | 70/70 | 50/60 | | 50/60 | 45/65 | 45/75 | 60/50 |
| | Left/Right(Degree) | | 45/45 | | 80/80 | | 65/65 | | 65/65 | 65/65 | 65/65 | 75/75 |
| Touch Panel | | | 4-wire system, analogue | | | | Analog resistive | | 8-wire system, analogue | | | |
| Movement LED | | | Green: Normal RUN (Monitoring & drawing data download) Red: Error (Communication error & drawing data error) | | | | | | | | | |
| Memory | Screen Data | | 4MB | 10MB | 4MB | 10MB | 4MB | 10MB | 10MB | | | 20MB |
| | Backup Data | | 128KB | 512KB | 128KB | 512KB | 128KB | 512KB | | | | |
| Ethernet | | | - | 1ch, 10/100Base-T | - | 1ch, 10/100Base-T | - | 1ch, 10/100Base-T | | | | |
| USB Interface | | | USB Host X 1 | USB Host X 2 | USB Host X 1 | USB Host X 2 | USB Host X 1 | | USB Host X 2 | | | |
| Serial | RS-232C | | 2ch(1 port for PC communication) | | | | | | | | | |
| | RS-422/485 | | 1ch, 422/485 optional mode | | | | | | | | | |
| CF Card Interface | | | - | CF card (TAPE-1)×1 | - | CF card (TAPE-1)×1 | - | | CF card (TAPE-1)×1 | | | |
| AUX Interface | | | - | Optional | - | Optional | - | | Optional | | | |
| Certification | | | CE, UL, KC | | | | | | | | | |
| Protection | | | IP65 (Front Water Proof Structure) | | | | | | | | | |
| Size(W×H×D)mm | | | 181x140x 56.5 | 181 x 140 x 66.5 | 181 x 140 x 56.5 | 181 x 140 x 66.5 | 203.5 x 153.5 x 41.5 | | 240 x 174 x 73 | 317 x 243 x 73 | | 395 x 294 x 73 |
| Panel Cut (W×H)mm | | | 155.0 x 123.5 | | | | 192 x 138 | | 228.5 x 158.5 | 294.5 x 227.5 | | 383.5 x 282.5 |
| Weight (kg) | | | 0.62 | 0.75 | 0.62 | 0.75 | 2.2 | 2.4 | 1.4 | 2.2 | 2.4 | 3.9 |
| Power | Rated Voltage | | DC 24V | | | | | | | AC100~220V, DC 24V | | AC100~220V |
| | Permitted Voltage | AC | - | | | | | | | MIN 85 VAC, MAX 264 VAC | | |
| | | DC | MIN 19.2 VDC, MAX 28.8 VDC | | | | | | | | | - |
| | Power Consumption(W) | AC | - | | | | | | | 21.8 | 31.9 | 31.9 |
| | | DC | 9.7 | 16.9 | 9.6 | 17.4 | 9.8 | 9.8 | 18.7 | 20.1 | 25.7 | - |

APPLICSTION

## Text type XP10

- Screen: 192×64 Graphic STN LCD
- System RAM: 1000 words
- Flash memory: Program/Parameter back up
- Communication: Half-duplex comm.
  - Baud rate: 1200~115200 bps
  - Master/slave setting available
  - RS-232C/RS-485 2 CH separate to use
- Power reguirements - 24 V input or 5 V direct input by LS PLC
- Various function key - ESC, ALM, SET, ENT, F1~F4, Arrow keys
- Panel Editor - Easy programming and H/W setting




1. Key to control PLC device and screen
2. ESC key
3. Alarm history
4. Data input and Screen change
5. PLC data setting
6. Enter key
7. DC24V input terminal
8. RS-232C port to download a project
9. Brightness adjustment
10. RS-422 port

| Item | | Specifications | |
|---|---|---|---|
| | | XP10BKA/DC | XP10BKB/DC |
| Input voltage | 5VDC | DC 4.9 ~ 5.1 (RS-232C port) | |
| | 24VDC | DC 21.6 ~ 26.4 (DC Input connector) | |
| | Consumption current | Less than 200mA | |
| Display | | LED back-light (192 x 64 Dots) | |
| Communication interface | | RS-232C, RS-422/485 | |
| Flash memory | | 256K bytes | |
| Language | | Default: English, Can be switched to Korean/Chinese/Russian | |
| RTC | | None | Supports |
| Download specification | | 115,200bps | |
| Keys | | 12 Keys (F1~F4, ESC, ALM, ▲, ▼, ◀, ▶, SET, ENT) | |

# Product list



## Product list

| Item | Model | Specifications |
|---|---|---|
| Block type unit (U) | XBC/XEC-DN(P)32U | AC 110-220V, 16points DC24V input, 16points transistor sink(source) type output |
| | XBC/XEC-DR28U | AC 110-220V, 16points DC24V input, 12points relay output |
| | XBC/XEC-DN(P)32UP | AC 110-220V, 16points DC24V input, 16points transistor sink(source) type 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-DN(P)32UA | AC 110-220V, DC24V input, 16points transistor sink(source) type output, 8 channel built-in analog |
| | XBC/XEC-DR28UA | AC 110-220V, DC24V input, 12points relay output, 8 channel built-in analog |
| | XBC/XEC-DN(P)32U/DC | DC 24V, 16points DC24V input, 16points transistor sink(source) type output |
| | XBC/XEC-DR28U/DC | DC 24V, 16points DC24V input, 12points relay output |
| | XBC/XEC-DN(P)32UP/DC | DC 24V, 16points DC24V input, 16points transistor sink(source) type output, 4 axes built-in positioning |
| | XBC/XEC-DR28UP/DC | DC 24V, 16points DC24V input, 12points relay output, 4 axes built-in positioning |
| | XBC/XEC-DN(P)32UA/DC | DC 24V, DC24V input, 16points transistor sink(source) type output, 8 channel built-in analog |
| | XBC/XEC-DR28UA/DC | DC 24V, DC24V input, 12points relay output, 8 channel built-in analog |
| Block type unit (High performance) | 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 |
| Block type unit (Standard) | 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) |
| Block type unit (Economic) | XBC/XEC-DR10E | AC 100 - 240V, 6 points DC24V input, 4 point Relay ouput |
| | XBC/XEC-DR14E | AC 100 - 240V, 8 points DC24V input, 6 point Relay ouput |
| | XBC/XEC-DR20E | AC 100 - 240V, 12 points DC24V input, 8 point Relay ouput |
| | XBC/XEC-DR30E | AC 100 - 240V, 18 points DC24V input, 12 point Relay ouput |
| | XBC/XEC-DN10E | AC 100 - 240V, 6 points DC24V input, 4 point transistor output (Sink) |
| | XBC/XEC-DN14E | AC 100 - 240V, 8 points DC24V input, 6 point transistor output (Sink) |
| | XBC/XEC-DN20E | AC 100 - 240V, 12 points DC24V input, 8 point transistor output (Sink) |
| | XBC/XEC-DN30E | AC 100 - 240V, 18 points DC24V input, 12 point transistor output (Sink) |
| | XBC/XEC-DP10E | AC 100 - 240V, 6 points DC24V input, 4 point transistor output (Source) |
| | XBC/XEC-DP14E | AC 100 - 240V, 8 points DC24V input, 6 point transistor output (Source) |
| | XBC/XEC-DP20E | AC 100 - 240V, 12 points DC24V input, 8 point transistor output (Source) |
| | XBC/XEC-DP30E | AC 100 - 240V, 18 points DC24V input, 12 point transistor output (Source) |

## Product list

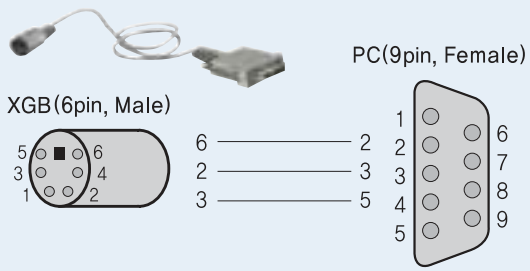
| Item | Model | Specifications |
|---|---|---|
| Modular type unit | XBM-DR16S | DC 24V, 8-point DC24V input, 8-point relay output |
| | XBM-DN16S | DC 24V, 8-point DC24V input, 8-point TR output |
| | XBM-DN32S | DC 24V, 16-point DC24V input, 16-point TR output |
| Expansion I/O module | XBE-DC08A | 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 | 4-channel analog input (current/voltage) |
| | 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-RD01A | 1-channel RTD input |
| | XBF-TC04S | 4-channel Thermocouple input |
| | XBF-TC04TT | Temperature controller, Thermocouple |
| | XBF-TC04RT | Temperature controller, RTD |
| | XBF-LD02S | Load Cell input module |
| | XBF-PD02A | Line drive 2 axis |
| | XBF-PN08B | EtherCAT Positioning module, 8axes (XBC/XEC “U” only) |
| | XBF-PN04B | EtherCAT Positioning module, 4axes (XBC/XEC “U” only) |
| | 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 | Cnet (RS-422/485), 1ch |
| | 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 2 ch.), 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-PSEA | Profibus-DP, Slave, RS-485 |
| | XBL-RMEA | Rnet, Master |
| | 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 |

## Product list

| Item | Model | Specifications |
|---|---|---|
| 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 |

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

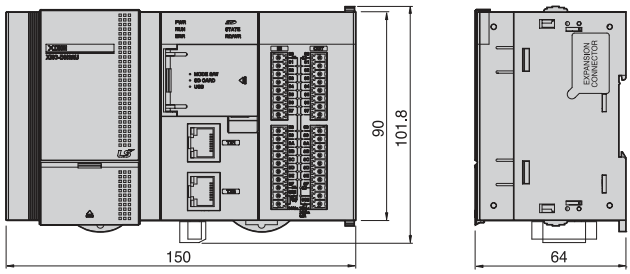
## Download cable diagram



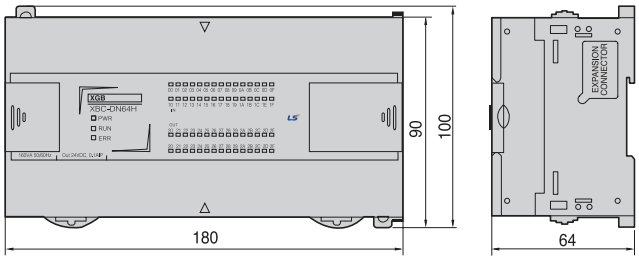

APPLICSTION

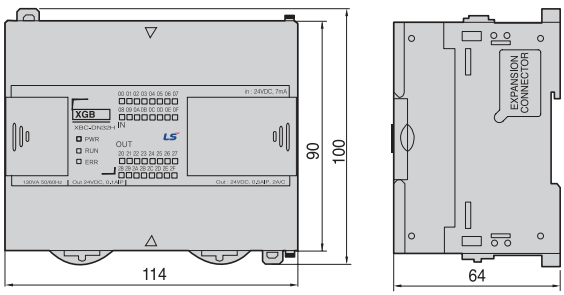
## Block type unit

### XBC/XEC-U (Standard)

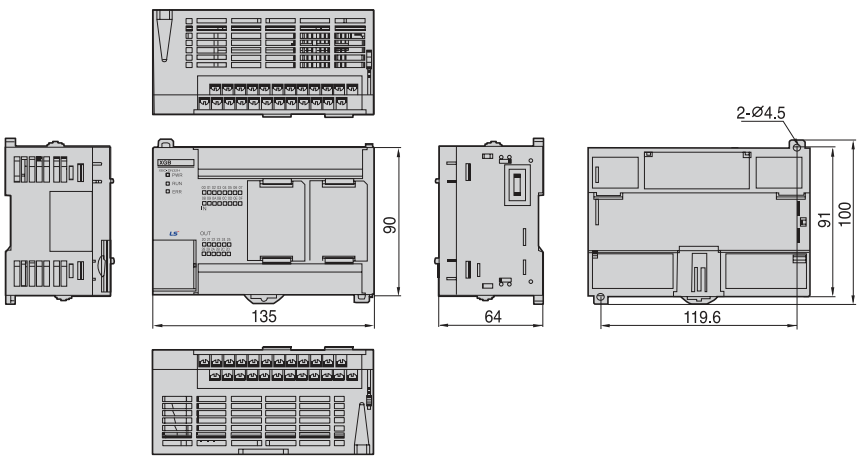



### XBC/XEC-H

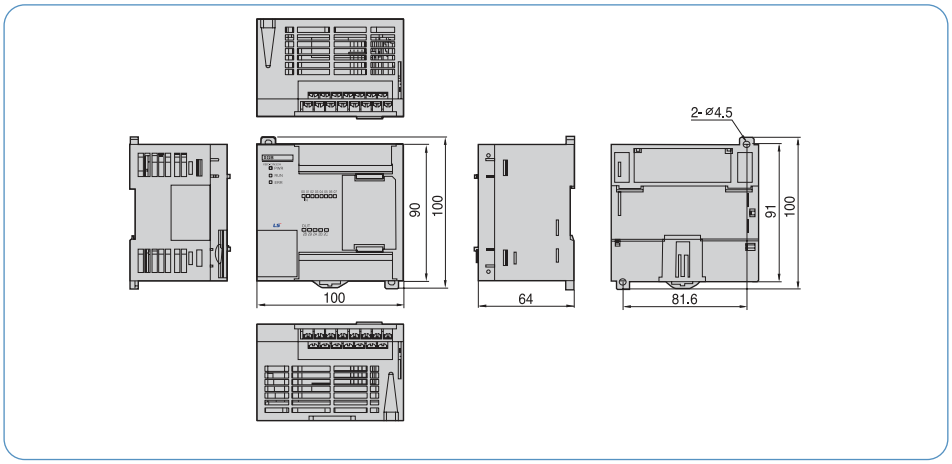


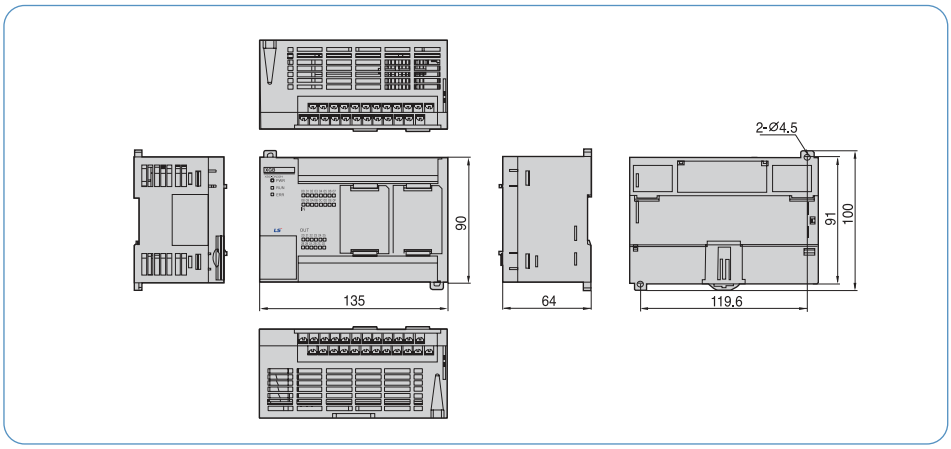




### XBC/XEC-SU



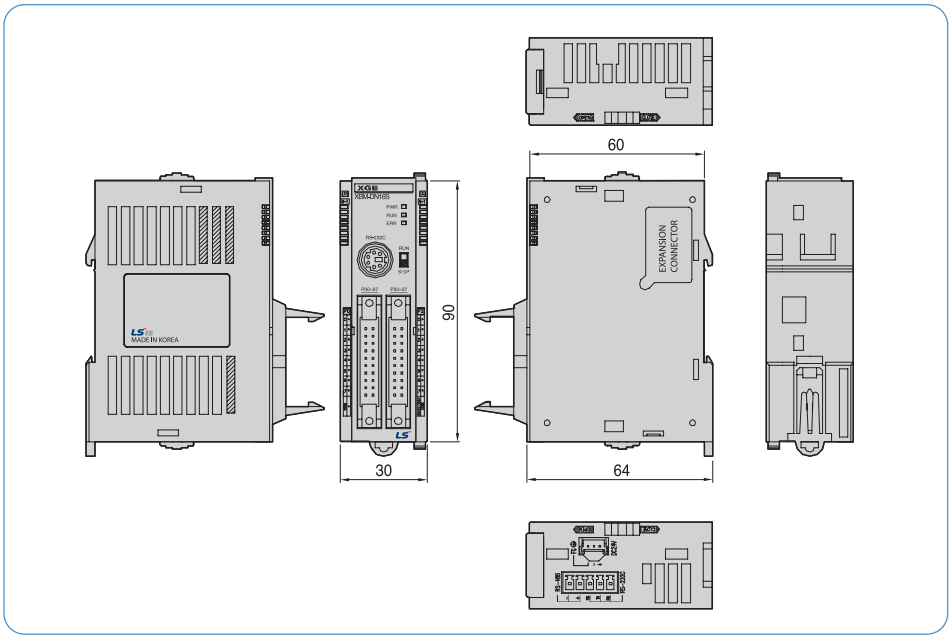
## XBC/XEC-E



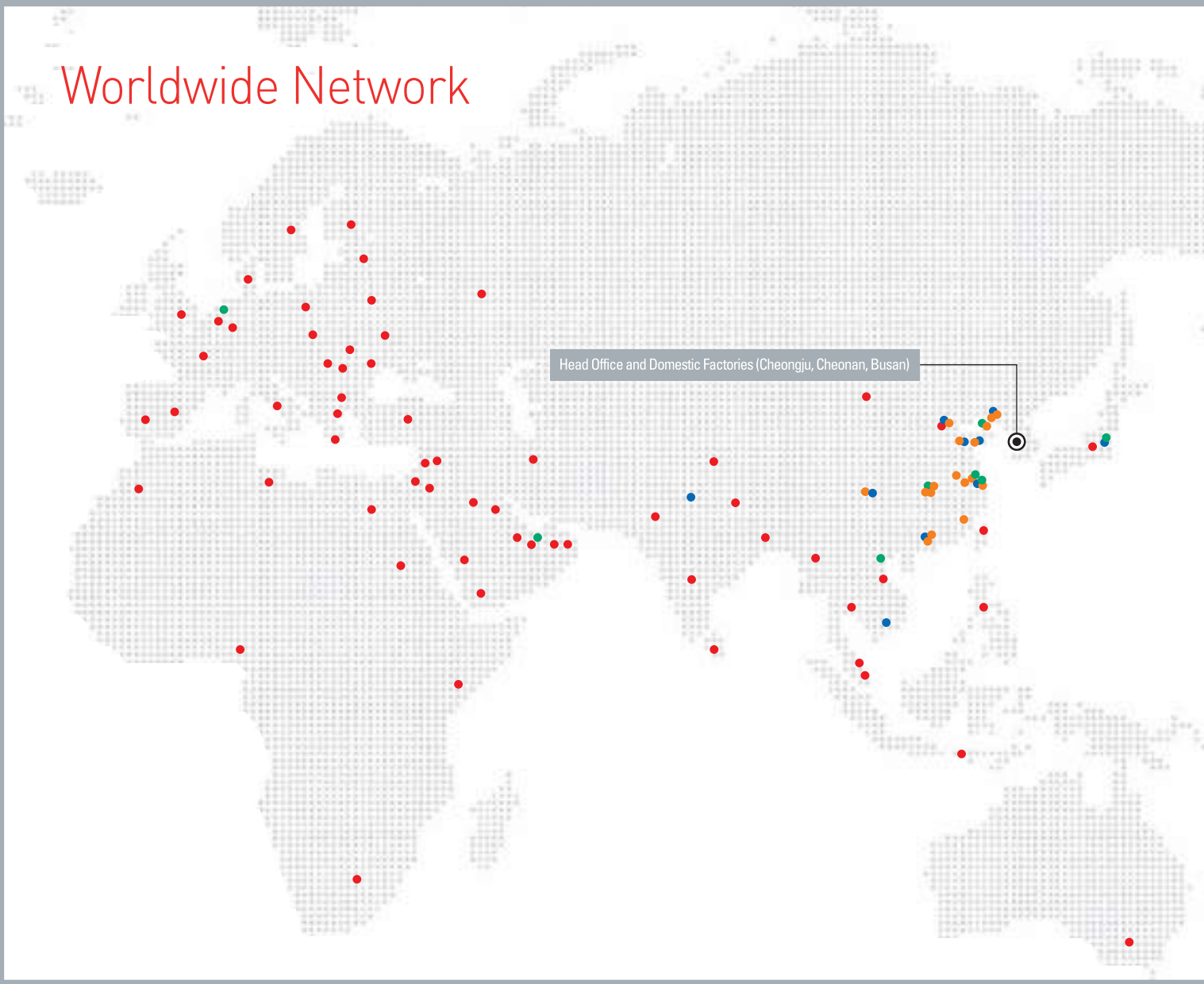




# Modular type unit

## XBM-S



# Worldwide Network

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- Busan Factory
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  No. 15. Liaohexi 3-Road. Economic and Technical Development zone. Dalian 116600. China
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Cheongju Factory

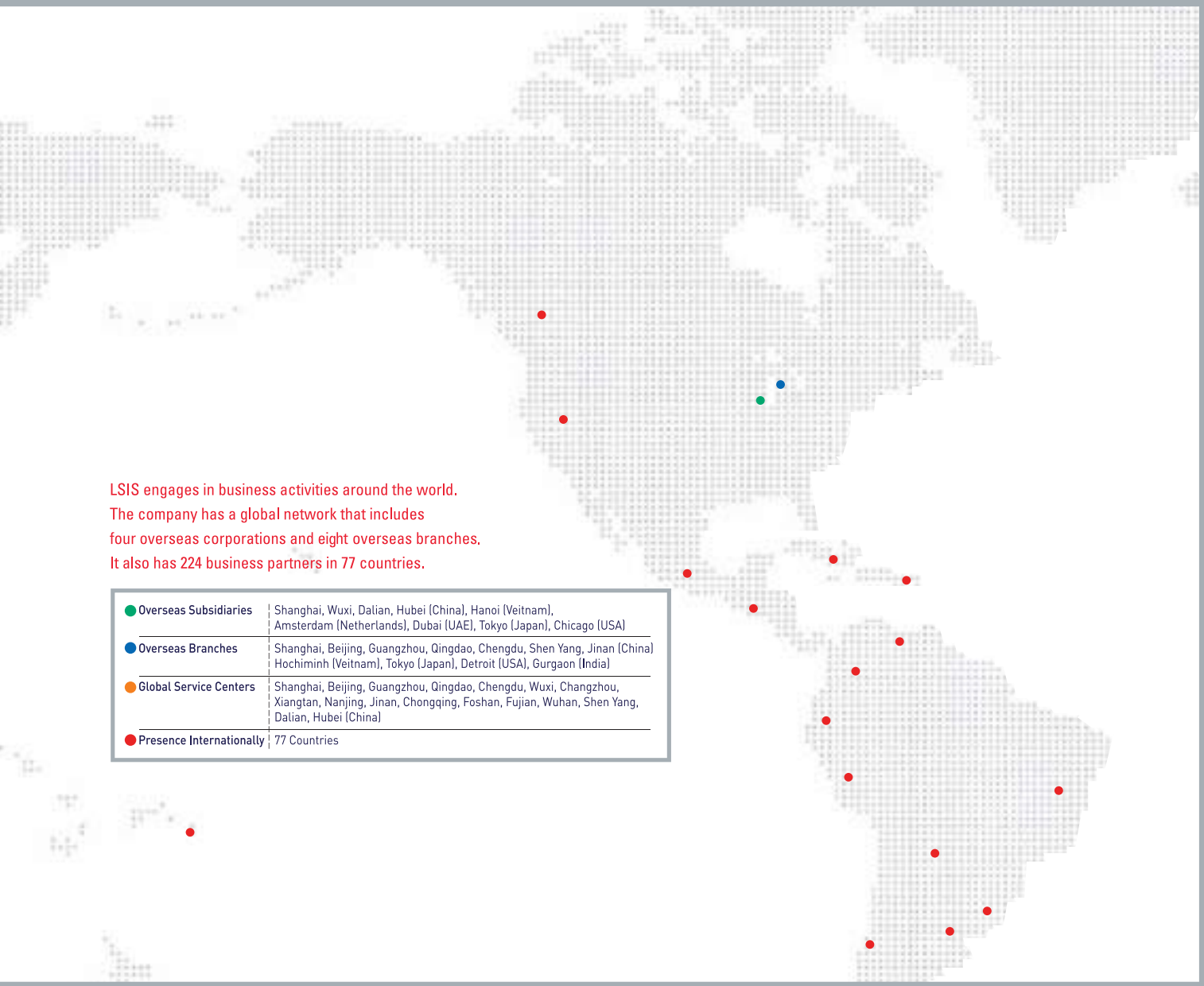
Wuxi Factory (China)

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.

| | |
|---|---|
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| Presence Internationally | 77 Countries |

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FUTURING SMART ENERGY

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.

# LS IS Co., Ltd.




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