TOYODA

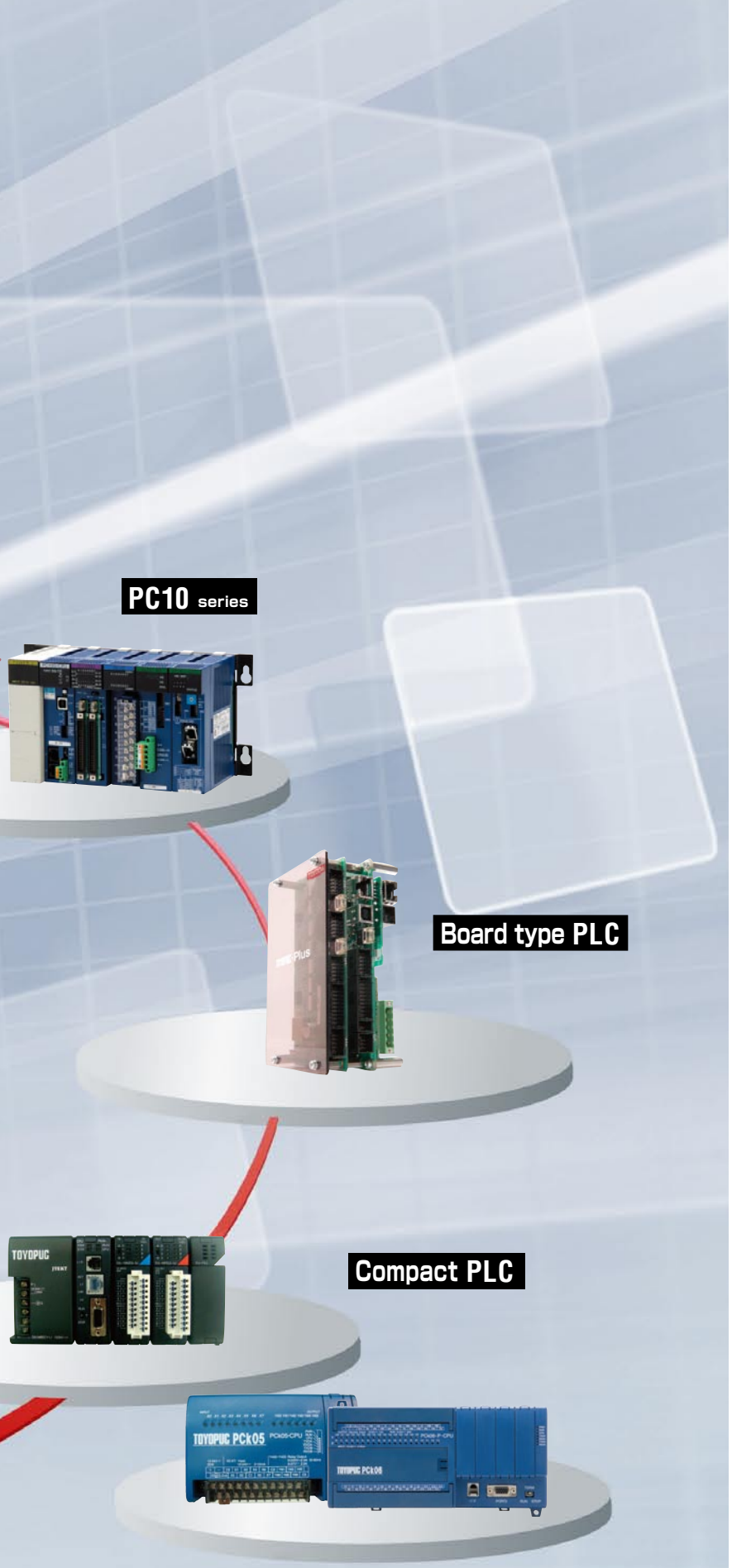
TOYOPUC Programmable Controller | Line Up

JTEKT

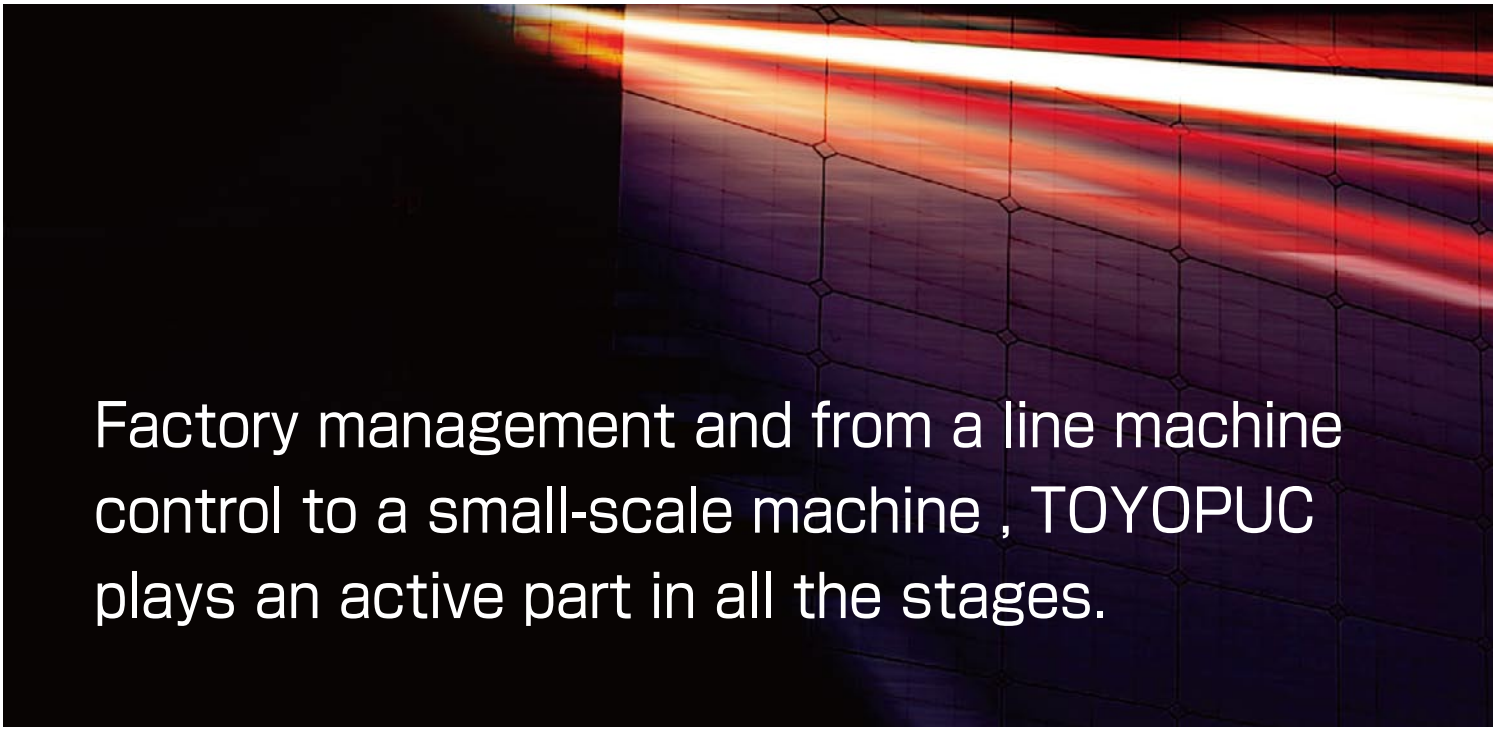
JTEKT CORPORATION

JTEKT Koyo TOYODA

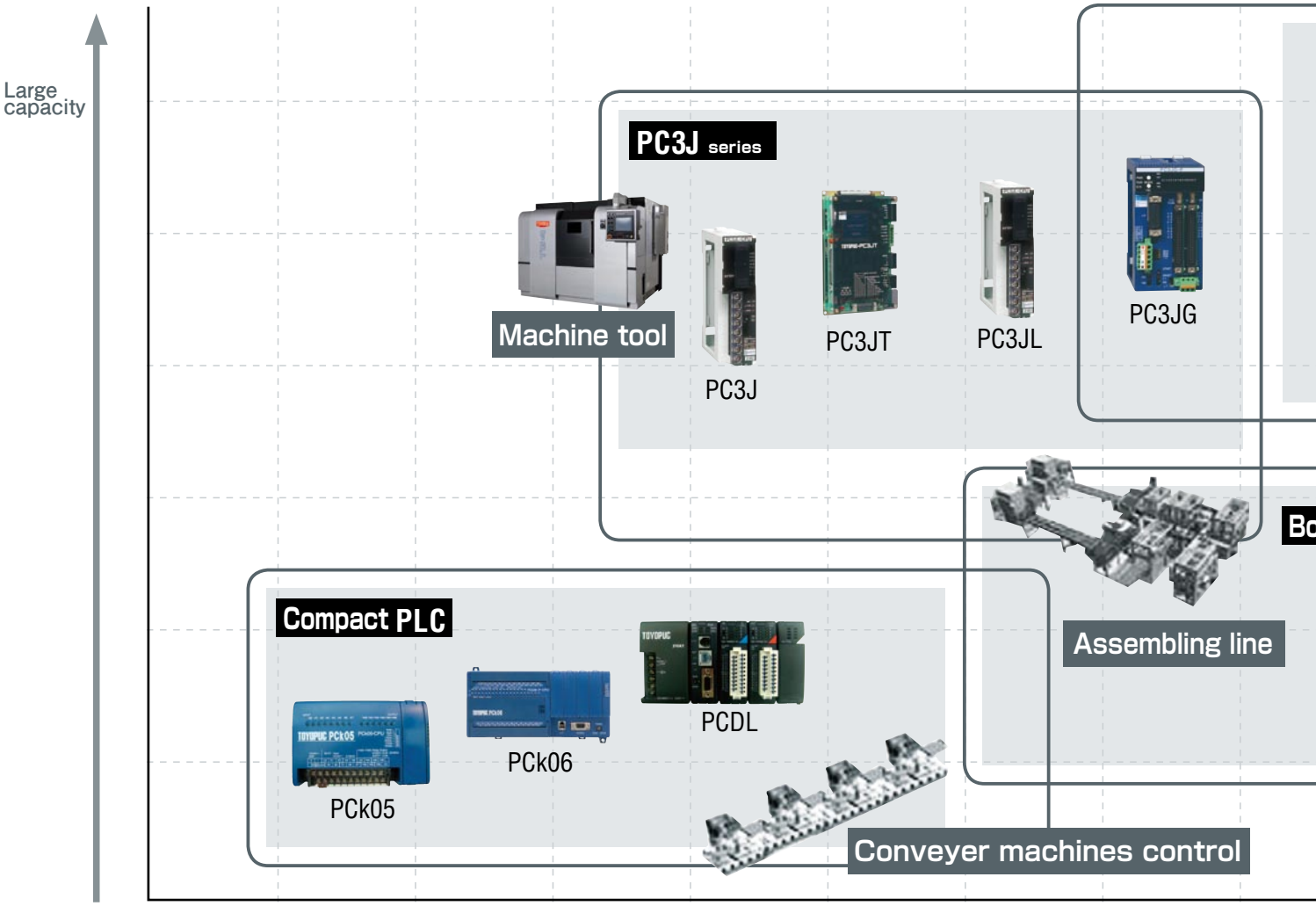
Just fitting with the needs of customer "Further expanding TOYOPUC series in FA solution"

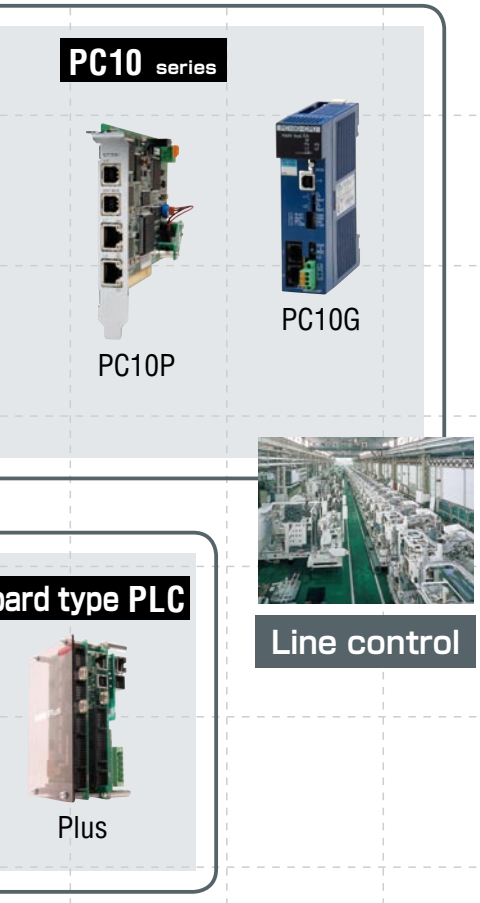


CONTENTS



Memory capacity





TOYOPUC-Line up will match every facility scale

1. Large-scale facility, high performance, and high speed processing application :PC10 series
2. Middle-scale facility :PC3J series
3. From manual assembly equipment to full automatic equipment: board type PLC Plus
4. Small-scale/Simple facility :Compact PLC PCDL, PCk05, PCk06

Supporting flexible applications.

1. Selection from memory 2K words ～ 180K words and I/O 14 points ～2048 points.
2. 3 programs can be created independently. (PC10, PC3J series)

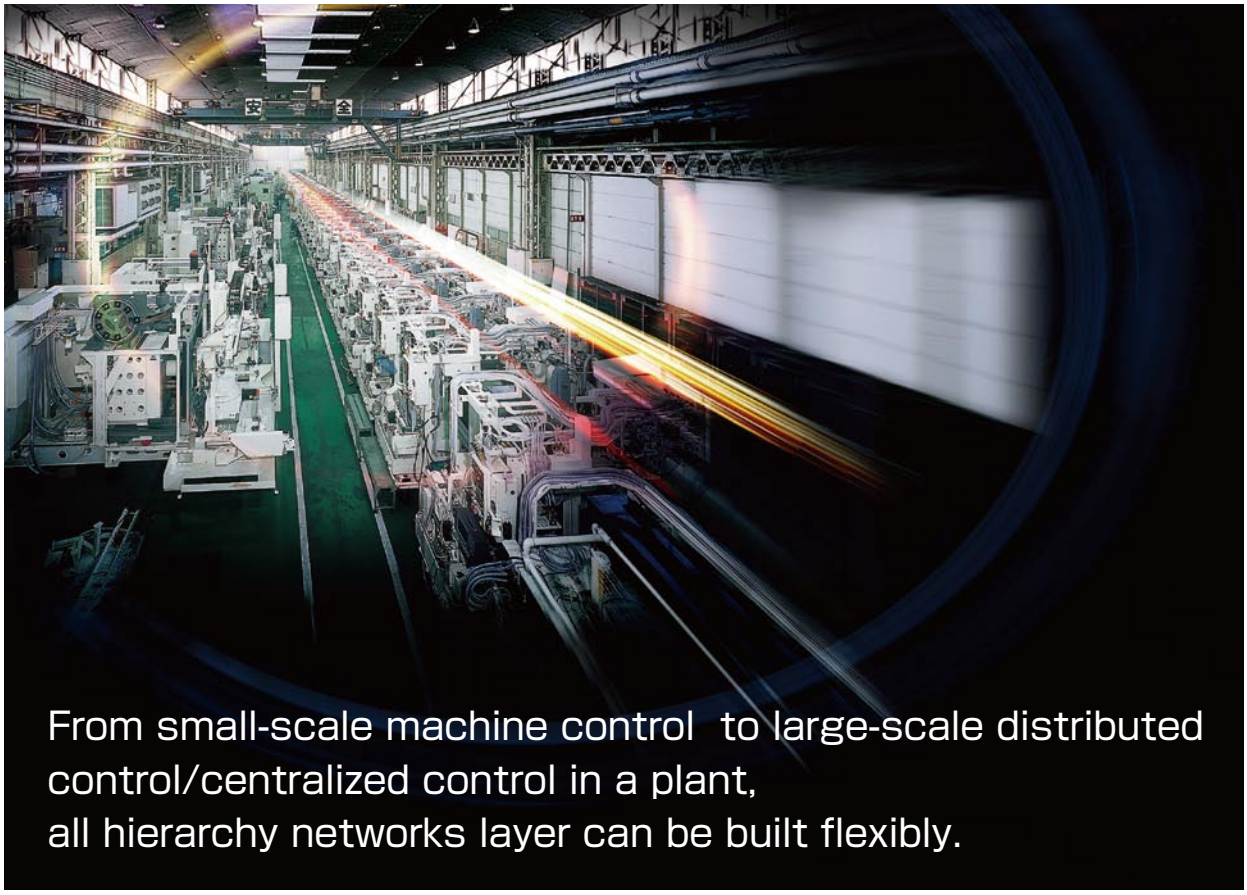
Abundant functions

1. The test mode function, which can return to the original program instantly after modifications (PC10 series)
2. 3 languages comments can be installed in a PLC (PC10 series)

Facility memory capacity can realize Visualization

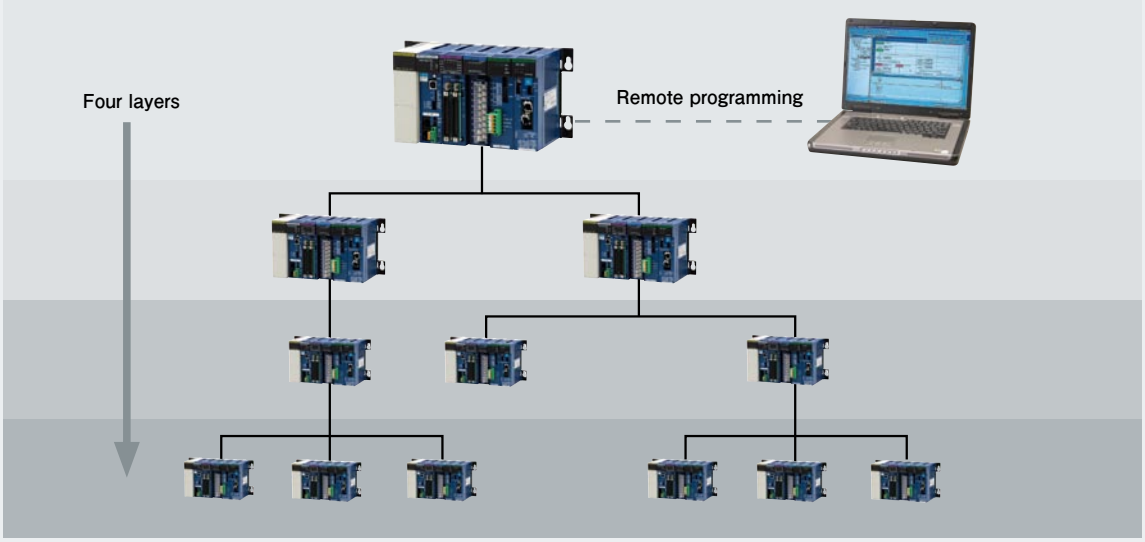
1. Containing the program comment and SFC-FB information. (PC10, PC3J series, Plus)
2. Containing I/O drawing, and realizes CAD-less (PC10 series).

Network configuration drawing



Programming tool (PCwin) can be connected by a network.

1. All communication modules, such as FL-net*, Ethernet, and HPC can be connectable
2. Remote programming up to four layers can be possible

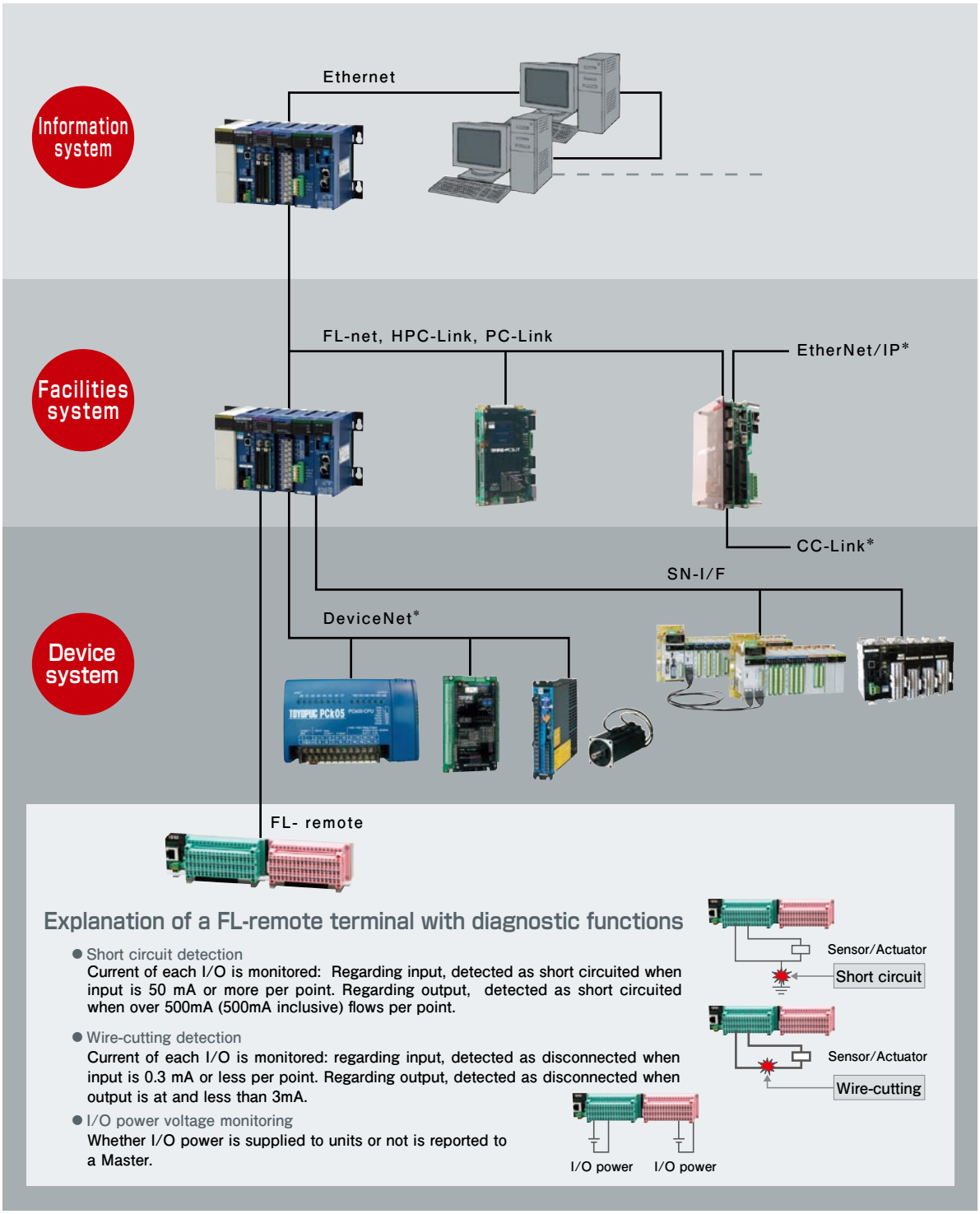


*FL-net is a controller level network (OPCN-2) which JEMA (Japan Electrical Manufacturers' Association) defined.
Ethernet is a registered trademark of Fuji Xerox.

All network modules ,which covers all hierarchies layers, are prepared.

1 . Each Layer is communized by FL-net and Ethernet common use.

2 . FL remote realizes the best high speed device communication.



Explanation of a FL-remote terminal with diagnostic functions

- Short circuit detection
  Current of each I/O is monitored: Regarding input, detected as short circuited when input is 50 mA or more per point. Regarding output, detected as short circuited when over 500mA (500mA inclusive) flows per point.
- Wire-cutting detection
  Current of each I/O is monitored: regarding input, detected as disconnected when input is 0.3 mA or less per point. Regarding output, detected as disconnected when output is at and less than 3mA.
- I/O power voltage monitoring
  Whether I/O power is supplied to units or not is reported to a Master.

*EtherNet/IP and DeviceNet are registered trademarks of Open DeviceNet Vendor Association Inc.
*CC-Link is a registered trademark of CC-Link Association

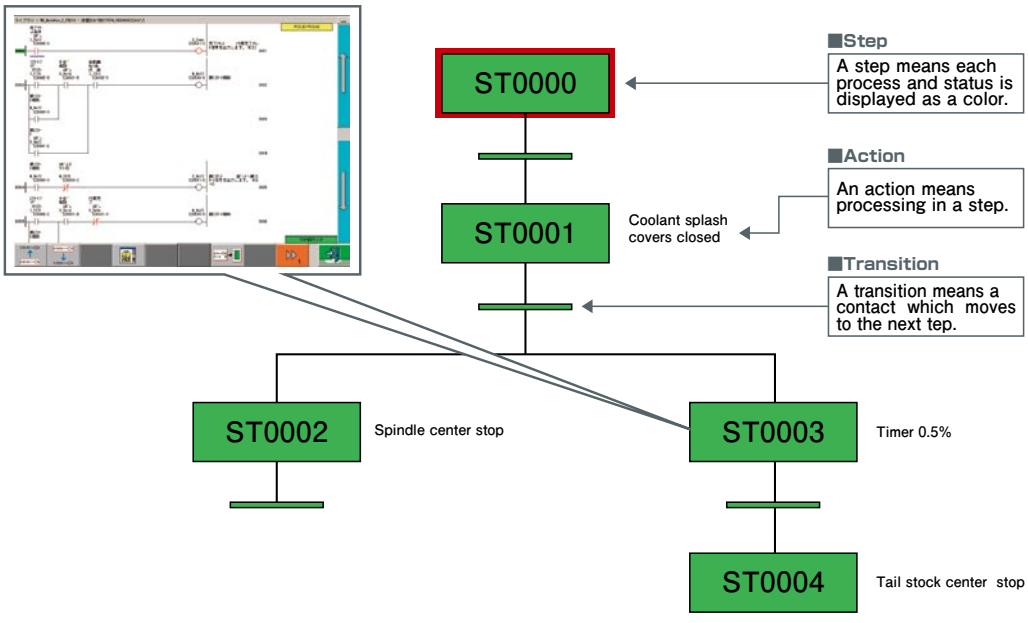
TOYOPUC-PC10 series

The programmable controller who knows all about machines

- The CPU function sticking to user-easy-operation
- The large memory which realizes "Visualization"
- Various communication functions

SFC*(Sequential Function Chart) programming is available.

Process operation progress, which has been unclear in the conventional ladder circuit, "Visualization of process operation" can be performed and maintenance is easy.

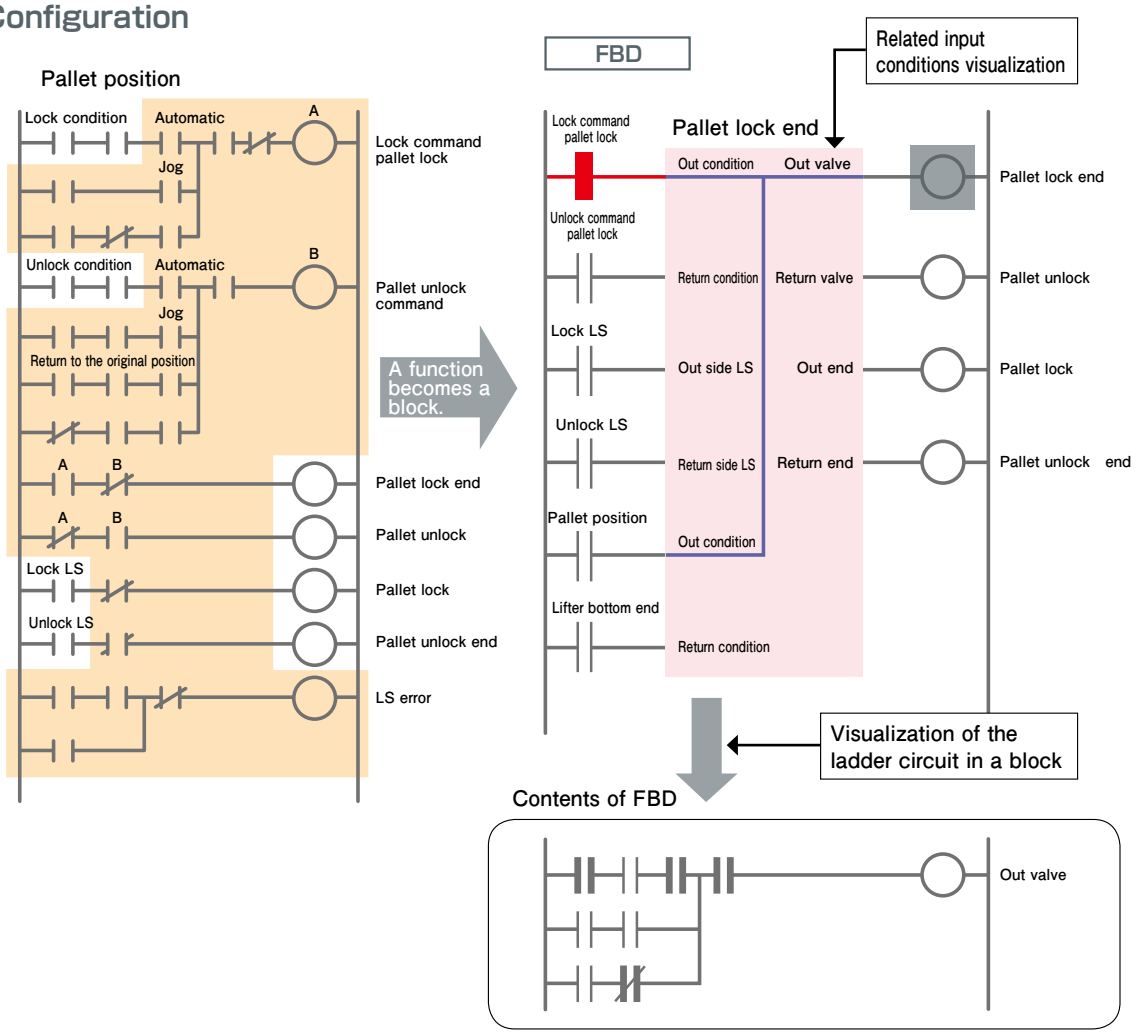


*SFC(Sequential Function Chart):One of five programming languages of PLC, which is defined by IEC 61131-3 Standard.

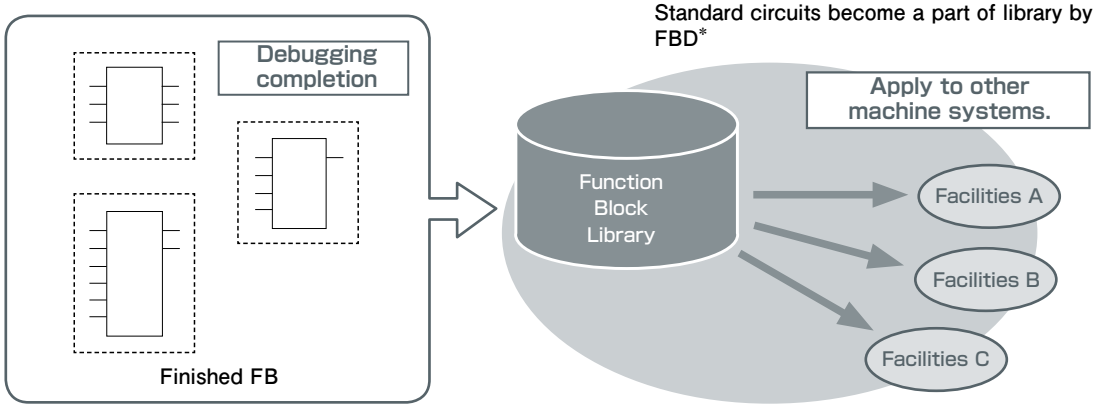
FBD*(Function Block Diagram) function is standard

Multi-function controls become a program component, **a complicated ladder circuit becomes unnecessary** and "Visualization" of a program can be realized.

Configuration



Re-use



*FBD(Function Block Diagram): One of five programming languages of PLC, which is defined by IEC 61131-3 Standard.

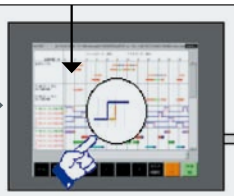
Wide range functions

Cycle monitor, I/O recorder

Cycle monitor

Cycle diagram just before the machine stop is displayed

This action is abnormal



USB Memory

Record of preset data
Max.999 machine cycles

Detailed analysis

I/O recorder

This signal is abnormal

Record of automatically-obtained actual I/O (512Kbyte:≒10 machine cycles)

All I/O information is displayed

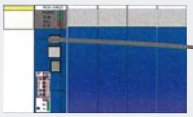
Recurrence prevention by root cause can be performed

Program returning function

Machine improvement

A change of this part seems to shorten the cycle time

PC10



Test mode “ON”

Program change, Write-in

Stop due to an error

No good! Return to the original program

Test mode “OFF”

You can immediately return even when making a mistake in circuit change

Layout and wiring-diagram

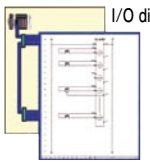
PCwin

Layout·wiring diagrams are also contained in PLC

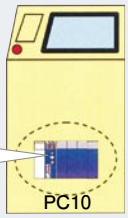
Program

Layout, wiring

I/O diagram



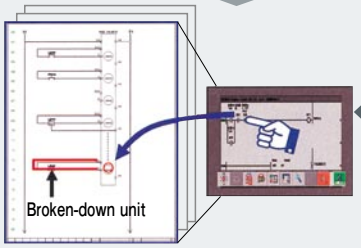
Control cabinet



PC10

Power supply drawings can also be drawn.

This is wrong



Broken-down unit

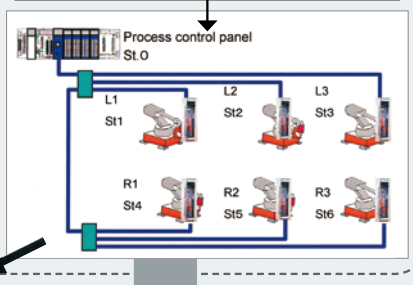
Traceable on monitor screen

A communication-system drawing is also memorized in a PLC.

Design

FL-net

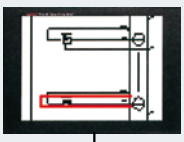
Displayed data are input into PLC as they are



Communication error at L2

The red-color display for error part

Production Maintenance



A part causing an error can be found at a glance

TOYOPUC-PC10G

High-power functions in a small body

Efficient CPU function

Various sequence programs such as "Equipment control", "Equipment diagnosis" and "Information processing" are treatable with high-speed processing to exceed PC3JG by the basic instruction of 0.015μs/instruction word and application instruction of 0.05μs/instruction word. There are more than 700 kinds of application instructions, and the operation with the sign and the floating point arithmetic are possible.

Large capacity memory

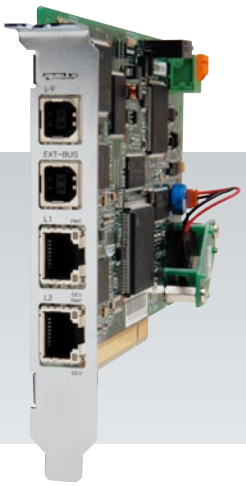
In the large capacity equipment information memory (4Mbyte), helpful information that is useful for adjustment of equipment or maintenance work such as comments, project, SFC and I/O diagram can be stored.
The basic area of each program and the memory capacity of a common area have been greatly expanded. Due to the expansion of the basic area, it is possible to store 64 CPU alarm histories. Large capacity expansion USB flash drive 4Mbyte can be used.

Various communication functions

Ports L1 and L2 are provided to select FL-net capable of 10Mbps/100Mbps communication, Ethernet and FL remote M. Built-in Ethernet is capable of 32 ports opened simultaneously.
Port L3 is provided to select the communication with CMP link (computer link), PC link, or SN-I/F (safety PLC TOYOPUC-PCS).
By using USB2.0 in connection with PCwin, reading and writing of the program have been achieved at more high-speed than the past.
※Please use the cables recommended by JTEKT.

TOYOPUC-PC10P

PLC for PCI buses



Feature

TOYOPUC-PC10P is a programmable controller that can be built into the robot controller with PCI bus, and the data exchange to the robot controller is possible through PCI bus.
The CPU function of PC10P is the same function as PC10G-CPU.
PC1OP-CPU can be enhanced by using FL remote I/O board and TOYOPUC BUS-EXP (EXPANDED BUS).
FL remote I/O board is the remote I/O module of FL remote communication, can be equipped with 40 inputs and 40 outputs, and can be fixed them to a PCI bus rack like PC10P-CPU.
TOYOPUC BUS-EXP (EXPANDED BUS) is a special expansion module for PC10P using the USB communication. Various modules of the PC2J/3J series can be enhanced by using a conventional base unit and the power supply module, and by mounting TOYOPUC BUS-EXP (EXPANDED BUS) on the CPU/SEL slot.

Efficient CPU function

Various sequence programs such as "Equipment control", "Equipment diagnosis" and "Information processing" are treatable with high-speed processing to exceed PC3JP/PC3JG by the basic instructions at 0.015μs /word (min) and application instruction of 0.05μs/word (min).
Moreover, high-speed reading and writing are available by using USB2.0 for communication with PCwin.

Mass memory

The equipment data memory is enhanced to 4MB.

Various communication function

PC10P is equipped with one USB port for communication with a peripheral device and one USB port for communication with TOYOPUC BUS-EXP (EXPANDED BUS) as a standard feature. It is also has two ports (L1, L2) for FL-net capable of 10 Mbps/100 Mbps communication speed, Ethernet and FL remote M as a standard feature.

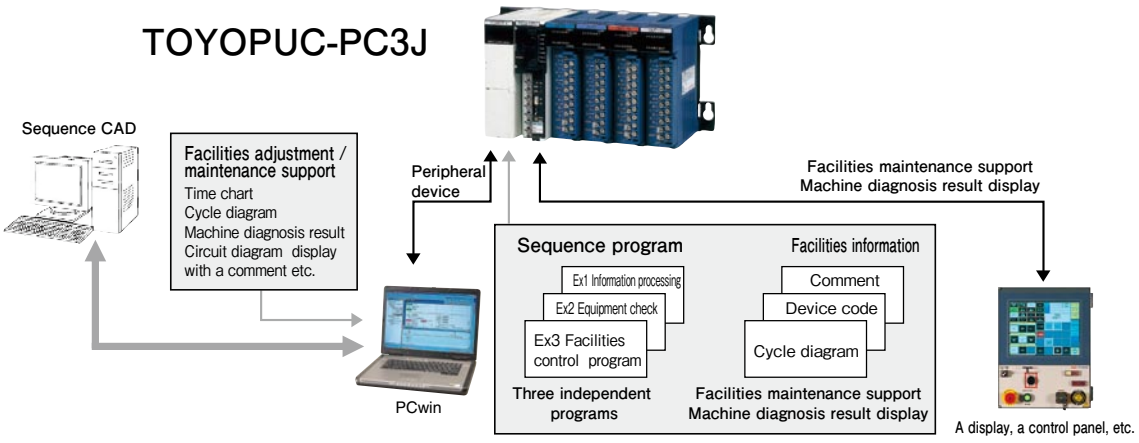
TOYOPUC PC3-J series

The programmable controller friendly to machines

- Executing 3 independent programs.
- Mounting facilities information memory which realizes " Visualization"
- Built-in communication ports

PC3J supports electrical circuit design, machine adjustment and maintenance.

- Three programs can be created and edited independently, and job efficiency is much improved.
- The facilities information contained in PC3J supports machine adjustment and maintenance.
- Supporting electrical circuit design by CAD combination



TOYOPUC-PC3JG-P

A PLC containing I/O function and communication function in one unit

Reinforced memory capacity

Program capacity is expanded by 3.7 times. The inner I/O is increased by 5.3 times, and data register capacity is expanded by 3.6 times (comparison with our PC3JD). And can meet the data increase due to recent sophisticated control system.
SFC programming is available.

Message communication is available by DLNK MASTER

Parameter setting and error history records reading are available by message communication with special function slave station.
And the trouble shooting time will be much reduced possibility by this function.

Communication ports are provided as standard

One port for SN-I/F, PC-LINK and CMP-LINK , one port for DeviceNet are provided as standard.

Event monitor function

Data change information (like coil ON/OFF etc) are detected as an event and transmit data (like time and character strings etc.) to data registers.
An Error history record ,an error record collection system or error message display are supported by combination of this function and PC or HMI panel.

TOYOPUC-PC3JL

More powerful functions with library function and built-in 2 communication ports

Built-in library function

Independent 3 sequence programs and library program area are provided. Making standard circuit program library and contribute sequence circuit design productivity (only PC3J mode is available)

Event monitor function

Data change information (like coil ON/OFF etc) are detected as an event and transmit data (like time and character strings etc.) to data registers. An Error history record ,an error record collection system or error message display are supported by combination of this function and PC or HMI panel.

2 built-in communication ports are provided as standard specifications

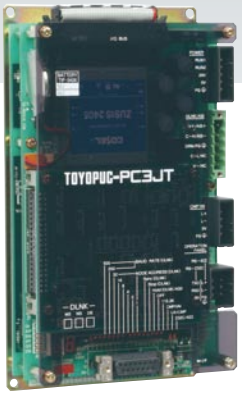
2 ports of built-in PC/CMP LINK are standard specifications. Realize saving space.

Running status display with 7 segments display unit

Built-in 7 segments display unit.
Easy visual recognition of CPU status like RUN/ERR/ALM

TOYOPUC-PC3JT

A thin body PLC but many functions.



Thin and space saving type

As the basic configuration, PC3JT-CPU, DLNK, I/O, cover and Base 2: thickness 55.2mm Installation space: 200×110 mm. Compact space.
It will contribute saving space of a whole system , because it can be installed in an operation panel.

Built-in communication port

One port for operation panel communication and one port of PC/CMP link are built-in as standards. Moreover, one port (DeviceNet master DLNK or AS-i master AS-iM) addition is available as an option.

Many additional modules

Many kinds of additional modules are available.

Input/Output module

Building-block type modules makes economical adaptable system for different purposes.

- Adoption of the detachable terminal modules simplifies replacement of a wired module.
- LED Monitor helps check the condition of inputs/outputs visually.

Input module

Model	Name	Type	Input type	Points/module	Isolation method	Rated input voltage	Rated input current	Rated response time OFF → ON	Rated response time ON → OFF	Input display	External connection	Common connection
PC10 ／PC3J	IN-11	THK-2749	AC input	16 points	Photocoupler isolation	AC100/115V	8.5mA	15ms or less	15ms or less	LED illumination when turned on	Terminal block	8 points/ common
	IN-12	THK-2750	DC input			DC24V	10mA					
	IN-22D	THK-2871		32 points			5mA	10ms or less	10ms or less	LED illumination when turned on*1	connector	16 points/ common
	IN-22H	THK-6831	DC high speed input	32 points				1ms～8ms (possible to set per 1 m) initial value: 8 ms		LED illumination when turned on	Free screw terminal stand	8 points/ common
	IN-SW	THK-5977	——	16 points	——	——	——	——	——	——	——	——

*1 It adopts a 16-points display switching system.

Output module

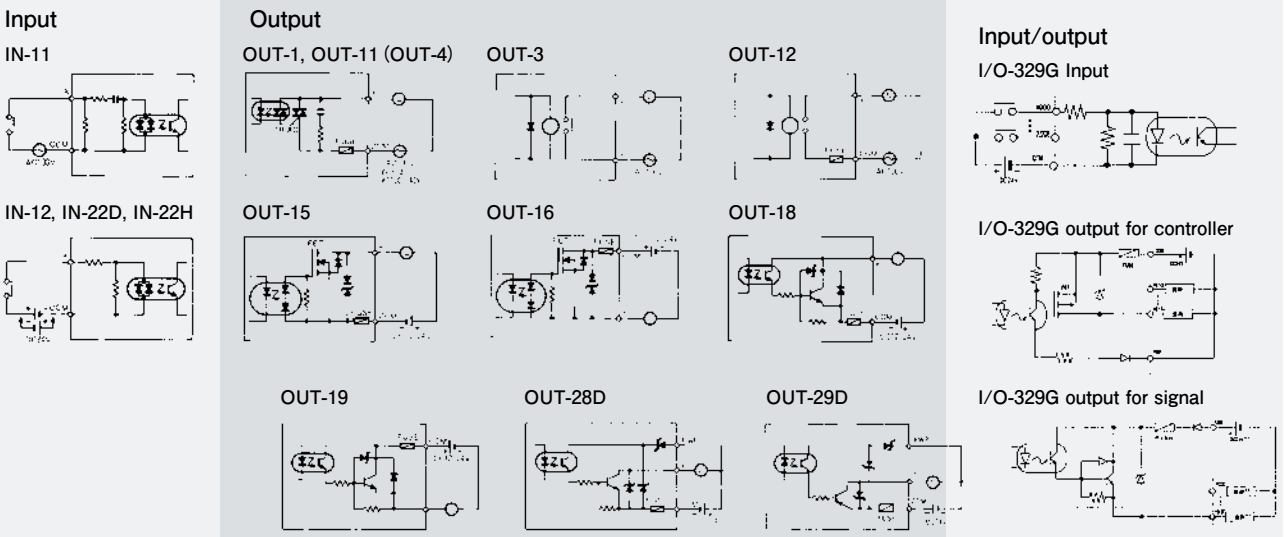
Model	Name	Type	Output type	Points/module	Isolation method	Rated load voltage	Max, load current	Leak current	Fuse	Output display	External connection	Common connection
PC10 ／PC3J	OUT-1	THK-2751	Triac	8 points	Photocoupler isolation	AC100/115V	1A/Point, 4A/common	1.5A or less	5A/common	LED illumination when turned on	Terminal block	8 points/ common
	OUT-3	THK-2931	Independent Relay contact		Relay isolation	AC240/DC24V	2A/Point	——	on fuse			independent
	OUT-4	THK-5040	Triac		Photocoupler isolation	AC240V	1A/Point, 4A/common	1.5A or less	5A/common			8 points/ common
	OUT-11	THK-2795		16 points		AC100/115V	0.5A/Point, 2A/common		3.2A/common			
	OUT-12	THK-2752	Relay contact		Relay isolation	AC240/DC24V	2A/Point, 5A/common	——	7.5A/common			
	OUT-15	THK-2790	MOS FET (−) common		Photocoupler isolation	DC5/12/24V	1A/Point, (2A/2point) 4A/common	0.1mA or less	6.3A/common			
	OUT-16	THK-2791	MOS FET (+) common									
	OUT-18	THK-2753	Transistor (−) common			DC12/24V	0.5A/Point, 2A/common		3.2A common*1			
	OUT-19	THK-2754	Transistor (+) common									
	OUT-28D	THK-2870	Transistor (−) common	32 points			0.2A/Point, 2A/common			LED illumination when turned on*2	connector	16 points/ common
	OUT-29D	THK-5025	Transistor (+) common									

*1 Fuse replacement unavailable (soldered). *2 It adopts a 16-points display switching system.

Input/output module

Model	Name	Type	Input/output type	Points/module	Isolation method	Rated input voltage Rated load voltage	Rated input current Max, load current	Rated response time OFF→ON, ON→OFF	Leak current	Fuse	Input/output display
PC10 ／PC3J	I/O-329G	THK-6410	DC input	input 32 points	Photocoupler isolation	DC24V	5mA	10msecor less	——	——	LED illumination when turned on
			MOS FET (+) common	output 16 points for controller			0.3A/Point, 2A/16Poin	1msecor less	0.1mA or less	3.2A/common	
			Transistor (+) common	output 16 points for signal			0.05A/Point, 0.8A/16Point		0.5mA or less	——	

Block diagram



Module line up

Input module

AC100V IN-11

THK-2749

DC24V IN-12

THK-2750

DC24V IN-22D

THK-2871

DC24V IN-22H

THK-6831

IN-SW

THK-5977

Output module

TRIAC OUT-1

THK-2751

Independent Relay contact OUT-3

THK-2931

TRIAC OUT-4

THK-5040

TRIAC OUT-11

THK-2795

Relay contact OUT-12

THK-2752

FET(−) common OUT-15

THK-2790

FET(+) common OUT-16

THK-2791

Transistor (−)common OUT-18

THK-2753

Transistor (+)common OUT-19

THK-2754

Transistor (−)common OUT-28D

THK-2870

Transistor (+)common OUT-29D

THK-5025

Input/output module

I/O-329G

THK-6410

Communication module
2PORT-EFR

FL-net function
● Adoption of standard protocol for FL-net
Various makers' devices can connect with a common network by adoption of the FL-net(OPCN-2) protocol which JEMA(Japan Element Manufactures' Association) defines. This module applies to "Version 2" of FL-net.

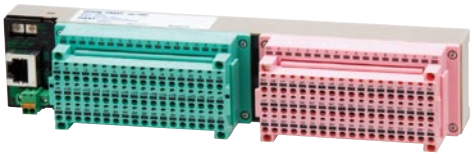
Ethernet function
● Adoption of global standard protocol
TOYOPUC connects with a computer by the Ethernet. The protocol corresponds to TCP/IP and UDP/IP.

FL remote function
● Collection of I/O communication and diagnostic information
By connecting with FRMT series, remote I/O communication, which performs I/O data exchange regularly, and diagnostic information can be collected by just link parameter setting.

Model		PC10G／PC3J
Name		2PORT-EFR
Type		THU-6404
FL-net	Station number	Max. 254 stations
	Relay link number	2048/8192 points (8192 points are applied to since PC3JG and PC10G)
	Register link number	2048/6144/8192 words (selected by a switch) (6144/8192 words are applied to since PC3JL, PC3JD, PC3JG, and PC10G)
	Transmission rate	10Mbps/100Mbps
	Date link method	N:N communication, 1:N communication
Ethernet	Port number	Max. 8 ports
	Computer link data capacity	Max. 1K byte × 8 ports
	File memory data capacity	Transmission 2Kbyte × 8 ports Receiving 2Kbyte × 8 ports
	Transmission rate	10Mbps/100Mbp
	Transmission function	①Computer link function, ②File memory function
FL remote	Station number	Max. 63 stations (except Master)
	I/O points	Input: Max. 2048 points, Output: Max. 2048 points
	I/O points per 1 slave	Input: Max. 64 points, Output: Max. 64 points
	Transmission rate	10Mbps/100Mbps

FL remote function

FRMT Series



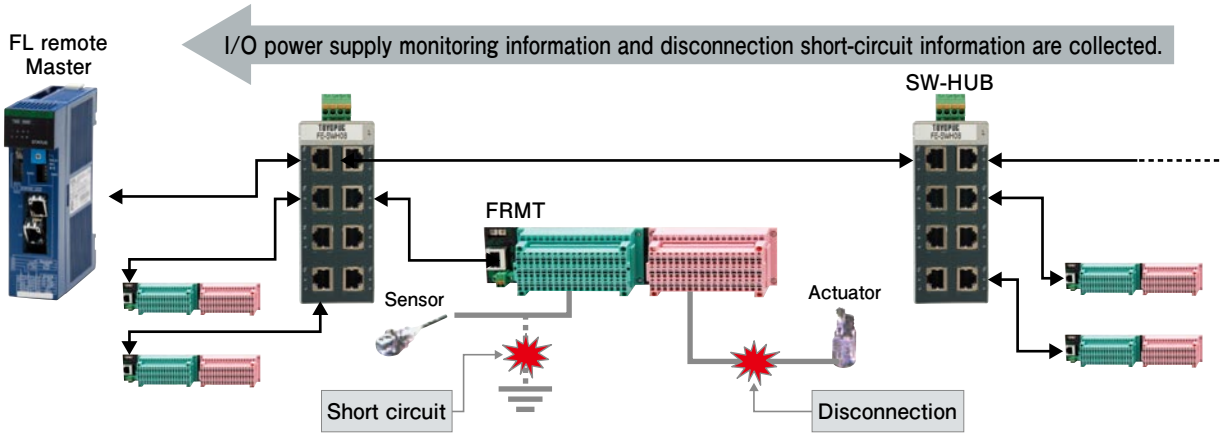
Name	Input number	Output number	Type	Polarity
FRMT-32/00P	32 points	0 point	TCU-6405	PNP
FRMT-00/32P	0 point	32 points	TCU-6406	PNP
FRMT-16/16P	16 points	16 points	TCU-6407	PNP

SW-HUB

FE-SWH05　FE-SWH08

Name	Specifications	Type
FE-SWH05	5 port switching HUB	TCU-6414
FE-SWH08	8 port switching HUB	TCU-6415

A system configuration example



DeviceNet※

Master

DLNK-M2

J-DLNK-M2 is a TOYOPUC-PC 3J/10G DeviceNet compatible master module.

● Remote I/O and message communication are supported.

Full time I/O data exchange remote I/O communication and message communication which transmit on-demand command and receiving data are supported. The message communication can write and read special information (error information, status and so on) and setting data to a slave which has a special function.

● Diagnose information collection

The result information of diagnostic function I/O remote terminal can be collected by just link parameter setting, not with making message issue program.

● DLNK-M2 communication specifications

Items	Specifications			
Type	THU-6099			
Communication speed	500/250/125kbps(selected by a switch)			
Max.connected node	64 units(Master 1, Slave 63)			
I/O points	Max. 2048(256 byte), input and output			
I/O allocation	Minimum 8 points unit			
Link aera	X・Y, L, M, EX・EY, EL, EM, GX・GY, GM			
Communication distance	speed	Network max. length	Branch length	Total branch length
	500kbps	Less than 100m	Less than 6m	Less than 39m
	250kbps	Less than 250m	Less than 6m	Less than 79m
	125kbps	Less than 500m	Less than 6m	Less than 156m

※DeviceNet is a registered trademark of Open DeviceNet Vendor Association Inc.

Slave

DLNK-S, DLNK-S2

An abundant I/O mdules are available, which are mounted on the PC10G/PC3J base.

DLNK-S
THU-5441

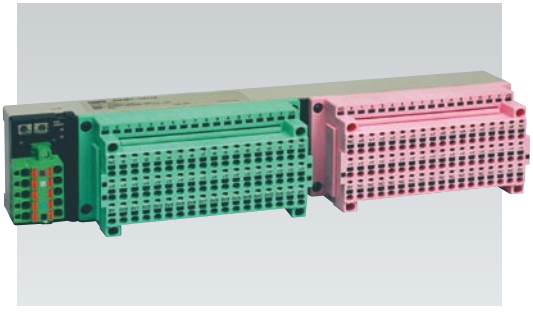
● Large line up of I/O modules

Being able to use a large number of I/O modules of PC10G/PC3J enables you to select any kinds of actuator and sensors(24V DC, 100V AC) as widely as you like. J-DLNK-S2 can perform I/O data exchange among computers.

With diagnostic functions

Remote I/O terminal DRMT Series

The DRMT series is DeviceNet compatible Remote I/O terminal with input/output wiring short circuit or wire-cutting detection function.



Name	Input points	Output points	Type	Polarity
DRMT-32/00P	32p.	0p.	TFU-6110	PNP
DRMT-00/32P	0p.	32p.	TFU-6111	
DRMT-16/16P	16p.	16p.	TFU-6112	
DRMT-32/00	32p.	0p.	TFU-6120	NPN
DRMT-00/32	0p.	32p.	TFU-6121	
DRMT-16/16	16p.	16p.	TFU-6122	

PC link/Computer link

- PC and computer link functions have been combined.
- Built-in 3 or 2 communication port allows you to select the PC link function and computer link function.

Model	PC10G／PC3J	
Name	PC/CMP-LINK	*2 2PORT-LINK
Type	THU-2755	THU-2927
Interface	EIA RS-422	
Transmission cable	Shielded twisted pair wires*1	
Transmission distance	Max.1km[0.62mile](Total length)	
Synchronization method	Asynchronous, half-duplex	
Linkage method	1:N	
No. ofcommunication port	1	2

*1 Use of JTEKT recommended cable is desirable.
*2 2 port ……2 ports of PC/CMP function is available for one module.

High-speed PC link

- High-speed communications and high-speed processing are realized with this PLC link.
- Distributed control by up to 32 stations is available.
- A data link can be constructed with a maximum of 2048 relay link points or a maximum of 1792 register link bytes.
- Because modules are connected with twisted pair wires even for high-speed link, wiring is simple.
- Connection of a programmer (PCwin) allows remote monitoring and programming of any station.

Model	PC10G / PC3J
Name	HPC-LINK
Type	THU-2758
Transmission rate	625Kbps
Transmission cable	Shielded twisted pair wires*
Transmission distance	Max. 500m[0.31mile](Total length)
No.of linked stations	Max. 32(Master1,satellite31)
No.of linkage points	Relay Link Max. 2048points Register Link Max. 1792bytes
linkage method	N:N

*Use of JTEKT recommended cable is desirable.

High-speed remote I/O

- Enables you to distribute data to I/O devices in remote locations with greatly reduced wiring costs. Reliability and maintainability are also remarkably improved.
- High-speed transmission and high-speed processing reduce the response delay of satellite I/O.
- Input/output modules are randomly located freely in a satellite station.
- Wiring is simple, with a twisted-pair cable sufficient even for high-speed linkage.
- Remote monitoring and programming of the master station CPU from the satellite station are available using a programmer (PCwin).
- Terminal

Model	PC10G / PC3J	
Name	RMT-I/O M	RMT-I/O S
Type	TUH-2756	TUH-2757
Function	Master	Satellite
Transmission rate	625kbps	
Transmission cable	Shielded twisted pair wires*1	
Transmission distance	Max. 500m[0.31 mile](Total length)	
No.of linked stations	Max. 32(Master 1,satellite 31)	
Transmission timing	Synchronous to sequence scan or asychronous(selected by a switch)	
No.of linkage points	Max. 2048	
No.of I/O points	—	Max. 256*2
Power supply voltage	—	—

*1 Use of JTEKT recommended cable is desirable.
*2 With 8 32-point modules on an 8-slot base.

Serial I/O

Interface module which performs data exchange with devices such as ID controller, bar code reader,magnetic card reader, printer and message display module which are equipped with serial communication port (RS-232C).

- A single module is equipped with two independent communication port channels. The ports allow simultaneous communication with two devices.
- Addition of a leading code and an end code and setup of various check functions are available.

Model	PC10G / PC3J
Name	SIO
Type	THK-2782
Interface*	EIA RS-232C
No.of channels	2
Transmission rate	300/600/1200/2400/4800/9600/19200 bps
Transmission distance	15m(4.9ft)
Transmission timing	Asychronous timing
Transmission type	duplex
Data type	data length(7/8bits), parity(even/odd/none), stop bit(1/2bits)
Communication Data	1024bytes/channel

*PC2J-SIO:RS-232C

AS-i M

- A master module, which can connect to AS-i (Actuator Sensor Interface : open-network system for devices) compatible modules by just one cable.
- You can fit a slave module at anywhere you like by just one AS-i cable wiring. No-special terminated processing is necessary for a cable, and free cable diverging.
- One touch connection with I/O devices like slaves, sensors or switches by a M12 connector.
- Best fit to a transfer system or conveyor or material handling system, which has not large size of input and output.

Model	PC10G / PC3J
Name	AS-iM
Type	THU-5503
Transmission speed	156kbps
Transmission Cable	2-wires communication
Transmission distance	Max. 100m(Up to 300m is available using a repeater.)
No.of linked stations	Max. 31 stations
No.of linkage points	Input:124 Output:124(Allocation128/128)
Connection configuration	Bus diverge, Tree configuration
Data communication method	Master/Slave (polling)

* AS-i is an open network of AS-international (AS-i association).

Special module

High-performance analog input AD-10

- 8 channels and 16-bit high resolution are available (using PC10 mode)
- Very high precision ±0.3% (using PC10 mode)
- Very high conversion speed at 60 μ sec/channel (using PC10 mode)

Model	PC10G / PC3J				
Type	TCK-6529				
Mode	PC10 mode		Conventional I/O mode	Extended I/O mode	
Analog input range	−10～+10V、0～+10V、0～+5V、+1～+5V、0～20mA、4～20mA	User range	0～+10V、0～+5V、+1～+5V、0～20mA、4～20mA	−10～+10V、0～+10V、0～+5V、+1～+5V、0～20mA、4～20mA	User range
Digital output	16 Bit With Sign		12 Bit Binary	16 Bit With Sign	
Resolution	1/32000	1/24000	1/4000	1/32000	1/24000
Total accuracy	±0.3%	±1.5%	±0.4%	±0.3%	±1.5%
Conversion speed	60 μs/channel				
Number of channels	8 channels		4 channels	3 channels	
Range selection	Settings for every channel		All channel same		
Input impedance	Voltage 1M ohm Current 250 ohms				
Maximum input	Voltage±15V Current ±30mA				
Wire length	Less than 30m (to avoid noise influence , please shorten as much as possible.)				
Isolation	Insulation by an isolator (between a PLC-analog input) Non-isolation between analog input channels.				
I/O Address	by link parameters		by mounting positions (I/O handling).		
Occupied I/O point	0 point		64 points		

Analogue input/output

The analogue input module has automatic offset and gain software triming functions and realizes customer's characteristic input/output conversion without hardware trimers.

Analogue Input

- 4channels/module
- Resolution 1/4000
- Conversion speed 2.5ms
- Sampling or averaging selectable
- Offset and gain adjuster without variable resistor

Analogue output

- 2channels/module
- Resolution 1/4095
- Conversion speed 2.5mS
- Voltage output or current output selectable

Model	PC10G / PC3J				
Description	Analogue input			Analogue output	
Name	AD-1	AD-2	AD-3	DA-1	DA-2
Type	THK-7936	THK-7937	THK-7938	THK-7931	THK-7932
Input	1～5V 4～20mA	0～10V	0～5V 0～20mA	12-bit binary data／channel	
Output	12-bit binary data (0−4095)			1～5V 4～20mA	0～10V
Conversion speed	2.5ms／channel			2.5ms	
No.of channels	4			2	
Resolution	Full scale／4000			Full scale／4095	
Overall accuracy	±1%FS			±1%FS	
Power supply	External power supply 24VDC±10%, internal power supply 5VDC			External power supply 24VDC±10%, internal power supply 5VDC	
Max.input	Voltage input±15V, current input±30mA			—	
Max.output	——			Voltage output 10V(External load 670Ω or over), current output 20mA(Extenal load 400Ω or less)	
I/O points occupied	64 points			32 points	

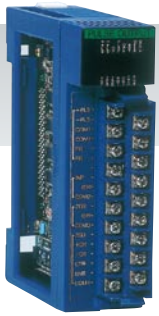
High-speed counter

The high-speed counter module performs counting and comparison of high-speed inputs pulses which cannot be counted by ordinary input module and counter instructions. It can also be used for counting and comparison of high-speed pulses from a rotary encoder and positioning control.

- Capable to count up to max.50kpps.
- Capable to count up to 16,777,216.
- Incorporated 8 points of comparison output.

Model	PC10G / PC3J
Name	COUNTER
Type	THK-2932
Counting input	1-phase addition, 1-phase substruction, 2-phase up-down counter, 2-phase addition, substruction counter
Rated input voltage	5／12−24VDC
Counting speed	Max.50kpps
Counting range*	6 digits BIN (0 ～FFFFFF / 0～±7FFFFFF)
No.of comparison points	external 6 points　internal 8 points
Comparison output	Transistor output on when the value in within preset comparison range.
I/O points occupied	64 points

Pulse output



The pulse output module performs independent single-axis simple-position control of a servo motor or stepping motor, which is combined with a pulse-input type motor driver.

- Operation mode

・Positioning control —— Pulses are output until reaching to the command position.
・External signal positioning —— At the stop command ON, pulses are decreased and then stopped. This operation can be performed by a travel completion signal or an external signal using together with positioning control.
・Jogging —— Speed change at real-time is possible.
・Travel of command pulse amount —— Pulse are output at the amount of command. The amount of command pulse can be changed at a real-time.
・Step —— Pulses are output at a step of 1, 10, 100, 1000 pulses.

- Others

・Backlash compensation　・Setting of current position　・Teaching

Model		PC10G / PC3J
Name		PULSE OUTPUT
Type		THK-5109
No.of control axes		1
Position command range		-134,217,728-134,217,727 pulse
Acceleration pattern		Trapezoidal
Feed rate		(1-8192)×30pps(max 245,730pps)
Output	No.of points	2
	Signals	Forward pulse, reverse pulse
	Rated load voltage	5−24VDC
	Max. load current	50mA/signal
Input	No.of points	7
	Signals	Origin, near origin, +limit, −limit, external positioning signal, in position, operable
	Rated load voltage	24V DC(5V input possible for origin, in position)
	Rated input current	10mA

Configuration

Input module

AC100V IN-11 — THK-2749
DC24V IN-12 — THK-2750
DC24V IN-22D — THK-2871
DC24V IN-22H — THK- 6831
IN-SW — THK-5977

Output module

TRIAC OUT-1 — THK-2751
Independent Relay contact OUT-3 — THK-2931
TRIAC OUT-4 — THK-5040
TRIAC OUT-11 — THK-2795
Relay contact OUT-12 — THK-2752
FET(−) common OUT-15 — THK-2790
FET(+) common OUT-16 — THK-2791

Transistor (−) common OUT-18 — THK-2753
Transistor (+) common OUT-19 — THK-2754
Transistor (−) common OUT-28D — THK-2870
Transistor (+) common OUT-29D — THK-5025

Input/output module

I/O-329G — THK-6410

Communication module

PC/CMP-LINK — THU-2755
2PORT-LINK — THU-2927
High-speed PC link HPC-LINK — THU-2758
High-speed remote I/O Master station RMT-I/O M — THU-2756
High-speed remote I/O Satellite station RMT-I/O S — THU-2757
J-DLNK-S — THU-5441
J-DLINK M2 — THU-6099
J-DLINK S2 — THU-5563
2PORT-EFR — THU-6404
FL/ET-T-V2H — THU-6289
AS-i M — THU-5503
Serial I/O SIO — THU-2782

Special module

Analogue input AD1-AD3 — THK-7936 THK-7937 THK-7938
Analogue output DA1-DA2 — THK-7931 THK-7932
Pulse output PULSE-OUT — THK-5109
High-speed counter COUNTER — THK-2932
Analogue input AD10 — TCK-6529
Motion controller — TCI-6721

Base (Use the specific base for PC2 JS/JR)

8-slot base(2) THR-2872
8-slot base THR-2766
6-slot base THR-2813
4-slot base THR-2775
2-slot base THR-2814

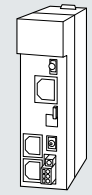
I/O cable / I/O branch module

I/O cable
0.5m THY-2770
1m THY-2771
I/O branch module — THU-2774

Selector base

8-slot selector base THR-5643
6-slot selector base THR-5644
4-slot selector base THR-5645

PC10G



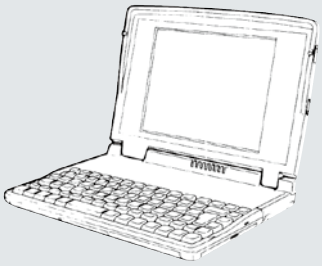
PC10G-CPU TCC-6353

Peripheral equipment

PCwin

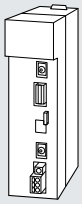
Windows 2000/XP/Vista/7

TJA-2032



USB* connection

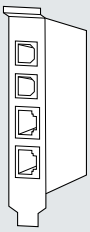
PC10P dedicated extension module



TOYOPUC BUS-EXP
(EXPANDED BUS)
TCU-6367

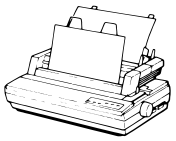
USB* connection

PLC built into a robot controller with PCI bus



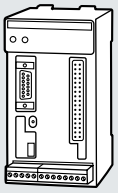
PC10P-CPU
TCC-6372

Printer



(Purchased on the market)

PC3J CPU module



15P connector connection

TXY-6266

PC3J-CPU TIC-5339
PC3JL-CPU TIC-5783

PC3JG-P-CPU TIC-6088
PC3JG-CPU TIC-6125
MX-CPU TIC-5755

PC3J CPU built-in option

PC3J-CPU PC/CMP

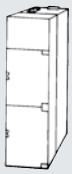
TIU-5366

*Dedicated to PC3 J-CPU TIC-5339

*Recommended USB cable
Elecom-made
USB2-FS05 0.5m
USB2-FS15 1.5m
USB2-FS3 3.0m

Selector module

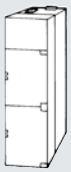
SELECTOR



THU-2765

Power module

AC85～264V
POWER1



THV-2747

DC24V
POWER2H

THV-6374

Board type PLC

TOYOPUC-Plus

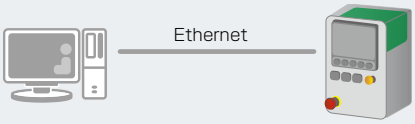
Evolving in line with change, from hand-assembled to semi-automatic, then on to fully-automatic equipment

- The ideal board-type PLC for built-in application.
- It is possible to configure everything from the independent control of hand-assembled equipment to the decentralized control of fully-automatic equipment.

Achieving the simple configuration of equipment control

TOYOPUC-Plus, being only the size of a postcard, works away diligently behind-the-scenes.
By having TOYOPUC-Plus built in to your operation panel, a simple control system with an equipment control function is possible.
Functions can be built freely depending on screen data and sequence programs, and external devices can be connected through communication.

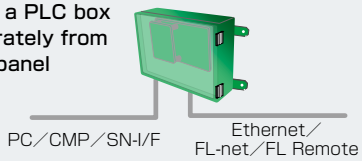
Connection with the upper server/PCs



Connection with remote I/O

Connection with other equipment/processes

An example of a PLC box installed separately from the operation panel

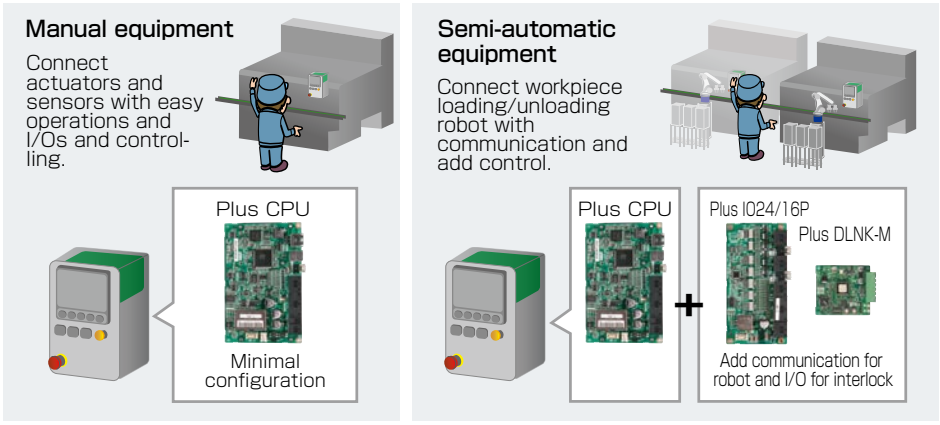


* FL-net is the controller level network (OPCN-2) stipulated by JEMA (The Japan Electrical Manufacturers' Association)
* Ethernet is a registered trademark of Fuji Xerox.

It can be expanded into a control system suitable for the equipment scale

On TOYOPUC-Plus, functions can be added per board.
Controlling small scale equipment with a minimal configuration (1 board).
TOYOPUC-Plus allows for expansion in the limited space of automatic equipment and configures the ideal control system.
TOYOPUC-Plus does not require PLC model changes, but meets fluctuations in production volume with flexibility.

An equipment and control configuration example



Achieving visualization of control through an array of functions

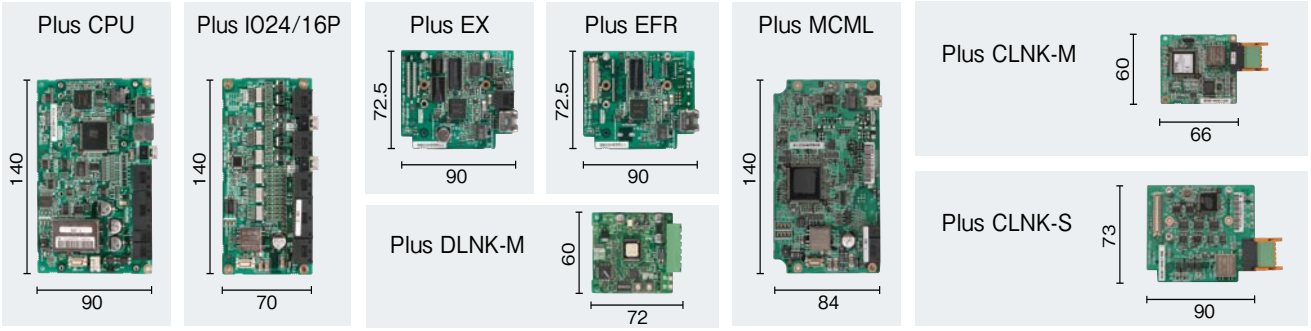
SFC and FBD functions are equipped as standard, and can be easily operated using the follow-up monitor.

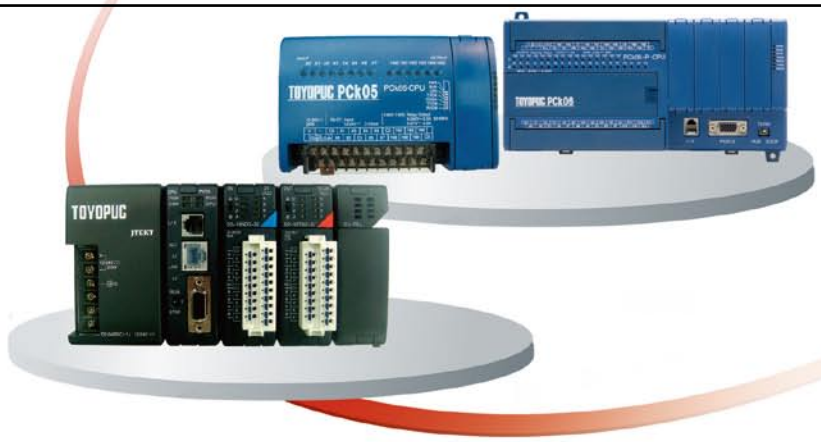
＊SFC (Sequencial Function Chart), FBD (Fanction Block Diagram)

Achieving a motion control function

Achieves max. 16-axis compact motor control. (When mounting two Plus MCMLs)

Board type (total 8 types)





Compact PLC

TOYOPUC-PCDL

Multiple-purpose distributed control is available using the various communication function in a small size.

Main features

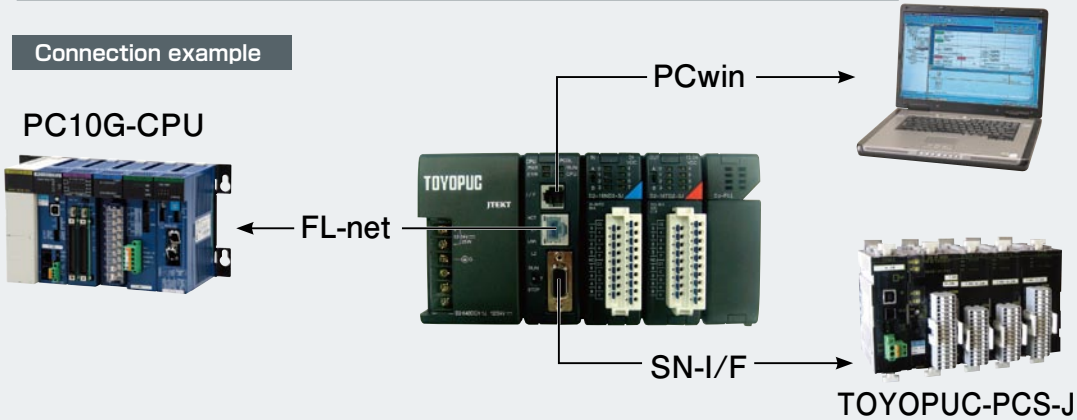
- Conventional user-friendly TOYOPUC programming is inherited.
- Flexible programming by 3 languages (LD, SFC, FBD) possible.
- The optimal compact PLC suitable for space-saving distributed control with the communication function.
- Flexible system extendibility by abundant communication functions.

Base module
(for 2, 3, 5 or 8 slots)
- Built-in power supply
- DIN rail fixing
- A base module for AC power or DC power available

Various modules
- Input/output module
- Analogue module
- Extension module

CPU module
Program capacity: 16K words (LD, SFC part) One program (FBD:8K words)
Machine information memory: 64KB
Communication functions
- I/F : RS232C (PCwin) / MODBUS-RTU (Slave) → A selection from 2 kinds
- L1 : FL-net
- L2 : CMP-LINK/MODBUS-RTU (Slave) / Serial I/O (SIO) / PC-LINK / SN-I/F
  → A selection from 5 kinds

Connection example



TOYOPUC-PCk series

Compact, yet it is applicable to multipurpose usage

PCk05-CPU

PCk05-CPU is a micro type PLC with 8-point input and 6-point output.

- RS 232C port is equipped as a standard feature.
- 1 slot is arranged for expansion. It is possible to expand to the max. 30 points.
- The DeviceNet slave module is also arranged. It is easy to communicate with various TOYOPUC series.

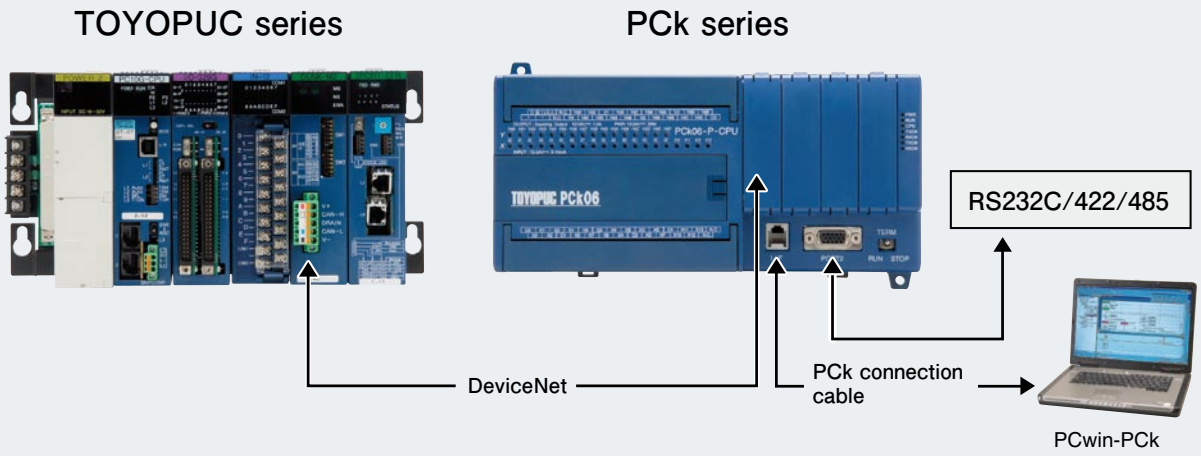
PCk06-P-CPU

PCk06-P-CPU is a mixed type PLC of all-in-one design type with 20-point input and 16-point output and module type.

- It is a small type PLC with 20-point input and 16-point output.
- RS 232C/422/485 ports are equipped as a standard feature.
- 4 slots are arranged for expansion. It is possible to expand to the max. 100 points.
- The DeviceNet slave module is also arranged. It is easy to communicate with various TOYOPUC series.

Rich convenient functions

- It is possible to communicate with TOYOPUC series, using DeviceNet Slave module of kDLNK.
- I/F is possible to connect with PCwin-PCk.
- Port 2 of PCk06-P-CPU is possible to connect with RS232C/422/485 MODBUS.



DC input specifications

Items \ Model	PCk05-CPU (TKC-6471)		PCk06-P-CPU (TKC-6472)	
Address allocation	X0～X2 (high speed input)	X3～X7 (standard input)	X0～X3 (high speed input)	X4～X13 (standard input)
Rated input voltage	DC12-24V		DC12-24V	
Max. input current	6mA (DC12V)	4mA (DC12V)	6mA (DC12V)	4mA (DC12V)
	13mA (DC24V)	8.5mA (DC24V)	13mA (DC24V)	8.5mA (DC24V)

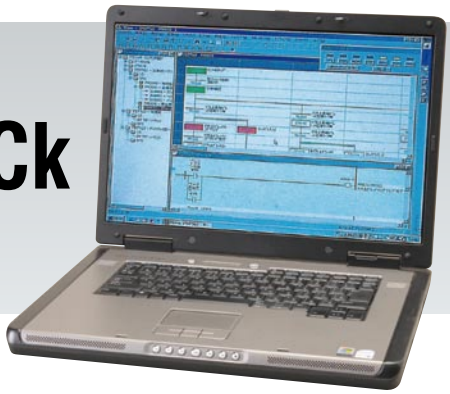
Output specifications

Model / Items	PCk05-CPU (TKC-6471)	PCk06-P-CPU (TKC-6472)	
	Relay output specifications	DC output specifications	
Address allocation	Y400～Y405	Y400～Y401 (pulse output)	Y402～40F (standard output)
Rated load voltage	DC6-27V、AC6～240V (47～63Hz)	DC12-24V	
Max. load current	2A/point, 6A/common	0.5A/point	1A/point

TOYOPUC
programming software for Windows

PCwin/PCwin-PCk

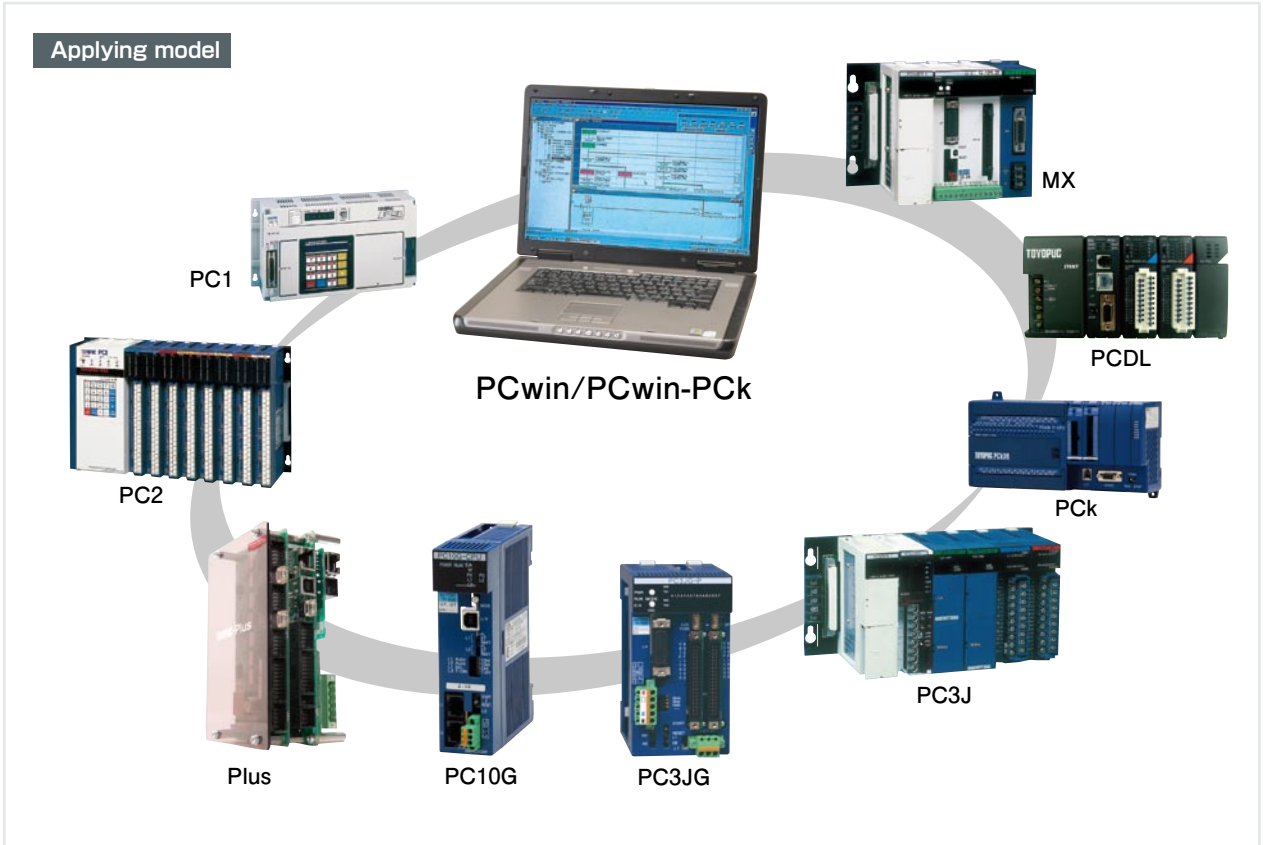
A convenient functional all-in-one



- The model TOYOPUC PC1 to the model TOYOPUC PC10/PC3J, Plus, and TOYOPUC MX, PCk ··· "from a control design up to maintenance"··· it supports.
- The all-in-one of TOYOPUC GL1, Hellowin and the CAD conversion function was carried out to PCwin.
- PCwin is a programming tool which is conformity with the SFC programming language and FBD (Function Block Diagram) specified by IEC61131-3 (Option 1 is necessary for using FBD)
- The SFC is a programming language which expresses simply a series of production processes by means of various kinds of graphic objects.
- The conventional LD (ladder) programming does not present a clear"operation and progress at each process of an equipment." The PCwin presents visually them with flow charts.
- Limited-to-LD (ladder) programming is also available.
- Editing of FB library can be limited to an authorized person. (Option: Security tool)
- Printing list of the CAD drawing style is enabled. (Option 2)
- I/O diagram function which was impossible without CAD is available (only when using PC10G/PC3JG).

Applicable model	PCwin							PCwin-PCk
Series / Program area	PC10G PC3J Series	PC2 compatibility mode of PC3J Series	PC2 Series	PC1 Series	MX	PCDL	Plus	PCk
P1	○	○	○	○	○	○	○	○
P2	○				○		○ (When mounting EX board)	
P3	○				○		○ (When mounting EX board)	

Applying model

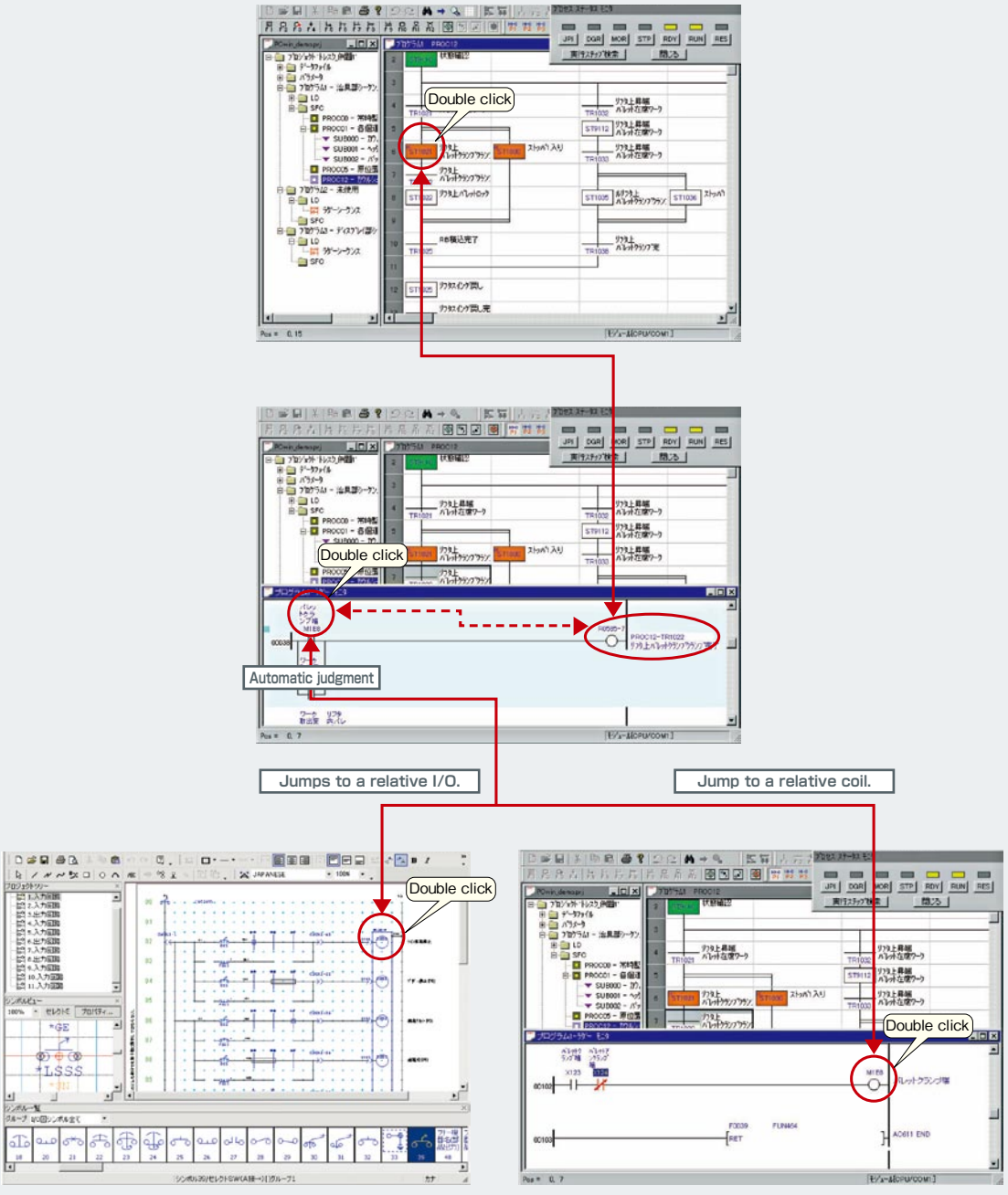


Rich convenient functions

The PCwin is fully equipped with convenient functions which are needed in every process for planning, adjusting and maintaining.

Jumping monitor between SFC, LD and I/O drawing

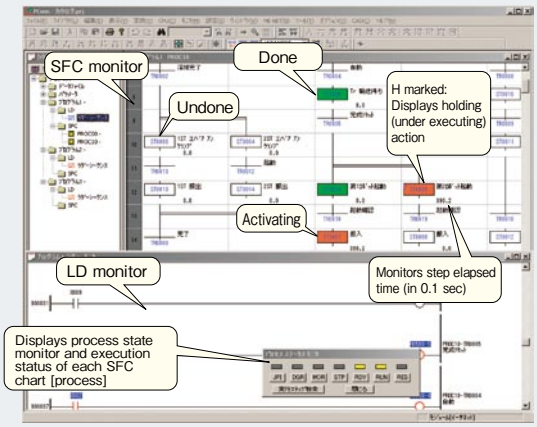
It helps to your search time for abnormal points of the equipment.
Double-clicking the SFC step [ ] transition [+] during PLC monitoring enables direct jumping to the appropriate LD.
Double-clicking the LD contact point enables direct jumping to the coil or I/O drawing (automatic judgment).
And, double-clicking the coil or I/O drawing makes it return to the original contact point.
Maximum 16 jumps are possible.



Rich convenient functions

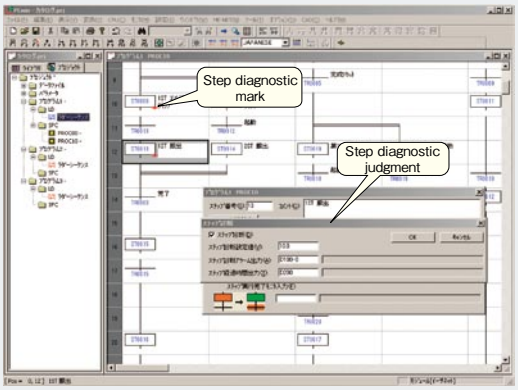
Simultaneous monitoring of SFC, LD and process status

Progress of an equipment process is easily grasped due to color change of SFC steps and a ladder monitor



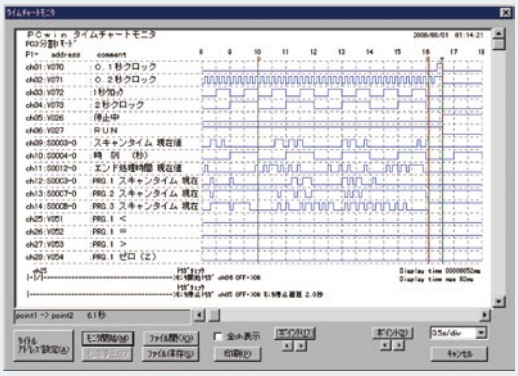
Step diagnostic function

An easy setting can monitor the execution time of each step. If despite the expiration of a setting time, the execution of the step does not finish, it will give you an alarming.



Time chart monitor function

Select the bit device address in the connected PLC, and it displays an ON and OFF time charts on real time

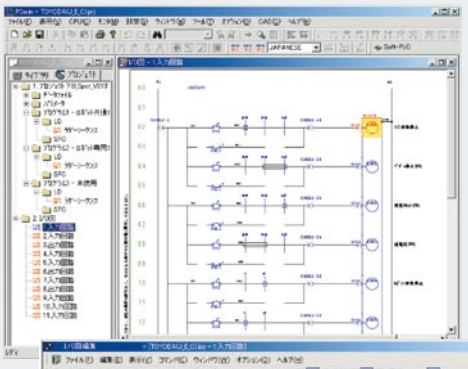


	Regular time-chart monitor	Scanning time-chart monitor
Corresponding CPU	PC3 series, MX PC10 series PCDL Plus	PC3JG (PC3JG-P) PC3JB-G (PC3JB-GP) PC3JP-G (PC3JP-GP) PC10G series Plus
Corresponding operation mode	All operation mode	PC3JG/PC10 Standard mode PC10 mode Plus expansion mode
Corresponding PCwin version	since Ver2.1 Rev00	since Ver7.2 Rev01
Sampling points	1 to 32 points	1 to 64 points
Sampling accuracy	0.2sec	one scan
Sampling amount (time)	0.2 to 600 sec	1 to 6000 scan
Scale width	0.5/1/2/4 (s/div)	1/5/10/20/40 (scan /div)

Editing function for I/O diagram

I/O diagram and the network drawing data can be edited and printed. The edited data can be written and read in CPU.
The I/O diagram and the network drawing written in CPU are available for display/jumping monitor, network diagnosis, and short circuit/wire-cutting diagnosis on the direct circuit monitor.
This function can be used with the PC10 series and Plus (during Plus expansion mode).
Creating/editing the I/O drawing and network drawing requires the I/O drawing function expansion tool [TXY-6351].

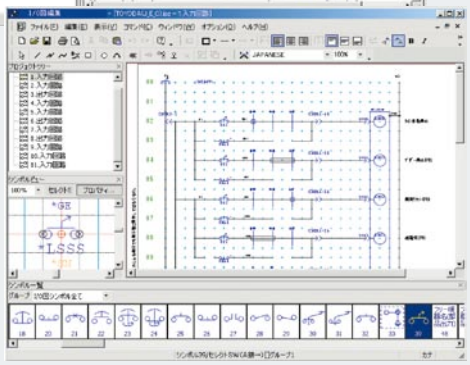
PCwin



PC10G-CPU

I/O diagram
and network drawing
Writing/Reading

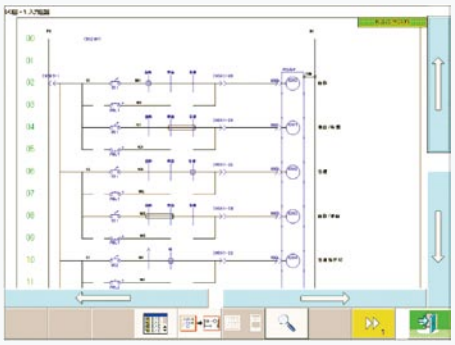
I/O diagram and
network drawing
Reading/Monitoring



I/O diagram and network drawing editing

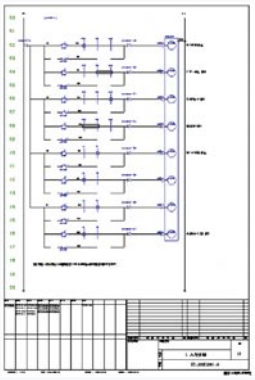
Print

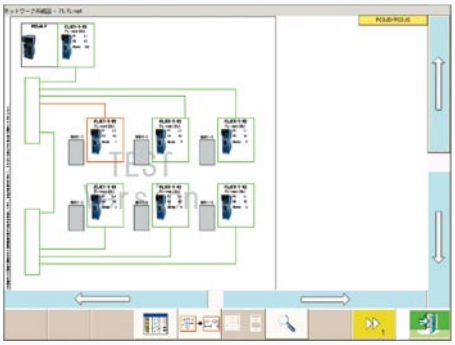
Direct circuit monitor



I/O diagram

Option:
"I/O diagram function expansion tool (TXY-6351)" Sentinel attached is necessary.





Network drawing (Only PC10 series)

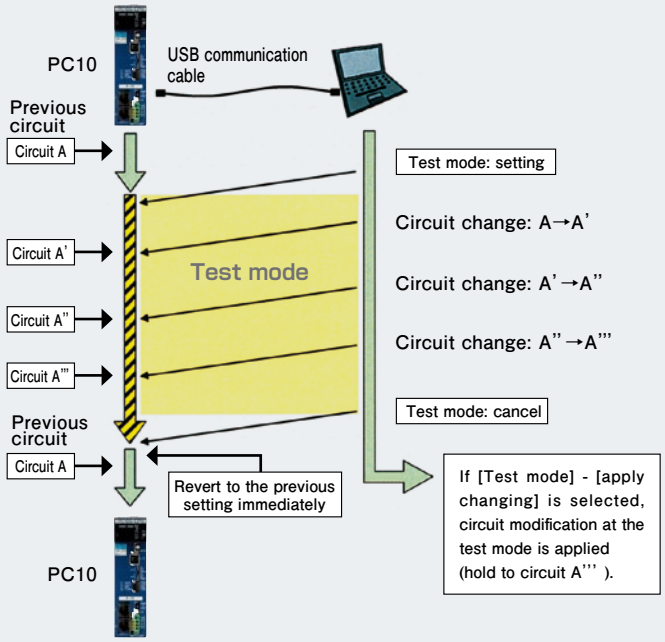
Rich convenient functions

Test mode function (PC10 series)

As for circuit modification with CPU carried out at test mode, the circuit can be reverted to the previous setting immediately. The modification which was done at the test mode can be applied also.

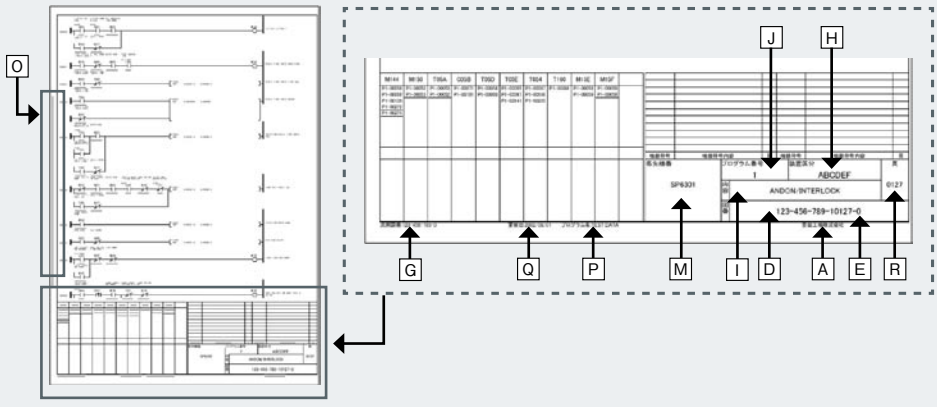
The function is available in PC10 series, but not with other CPU.

The function works only for a communication module named "CPU-USB".



Printing of the drawing style function

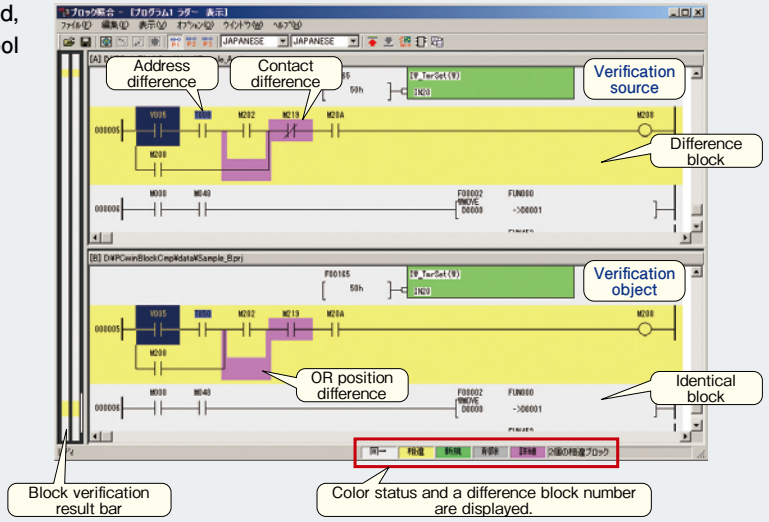
A printing list with a frame of drawing style can be output by selecting [File]-[Printing of the drawing style].



A	Manufacturer
D	Drawing number
E	Designs change number
G	Diversion drawing number
H	Device class
I	Contents
J	Program number
M	Customer machine number
O	Note 1 (Writing)
P	Program name
Q	Renewal date
R	Page number

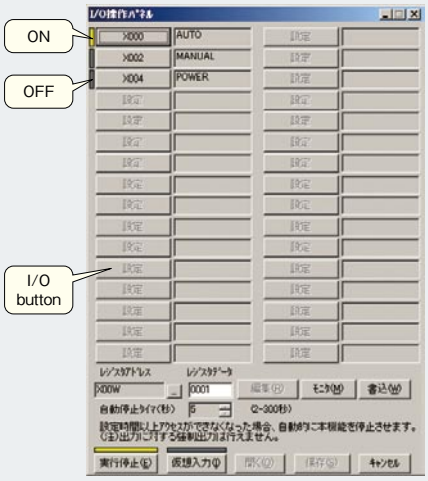
Block verification

Two circuit data are compared, and a difference block/symbol or only one exists block/ symbol are displayed.



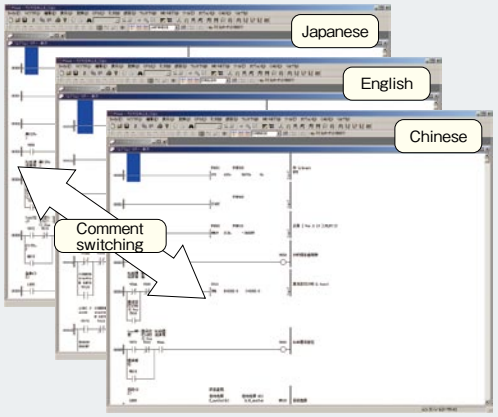
I/O operation panel

When actual input devices are not connected, but I/O operation is possible.
After an I/O operation setting can maintain I/ O status.



3 languages comment switching

Ladder circuits and I/O drawing comments can be displayed in a maximum of 3 languages from Japanese, English, Chinese, French, Czech, and Russian.
Three languages comments can be installed in PLC.
Also, a direct circuit monitor can display in three language .



Required system

Basic software	Windows* 2000/XP 32 bit edition/Vista 32 bit edition/7 32 bit edition, 64 bit edition
Computer	Personal computer mounting more than Pentium*III 500MHz
Memory	512MB or more
Hard disk	200MB or more free space is required.
Disk unit	A CD-ROM drive is need.
Display unit	1,024x768 or more dot color display

* Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries.
* Pentium is a registered trademark of Intel in the U.S. and other countries.
Note) After the version 7.0, it does not operate under Windows 95/98/NT.

DM Direct circuit monitor

JTEKT, who knows machine control, contributes to user's production availability improvement and machine safety .

Visualization of machine control is also realized.

- Visualization of control circuits
- Visualization of safety circuits
- Visualization of machine errors

The touch-panel display which displays necessary information of facilities directly

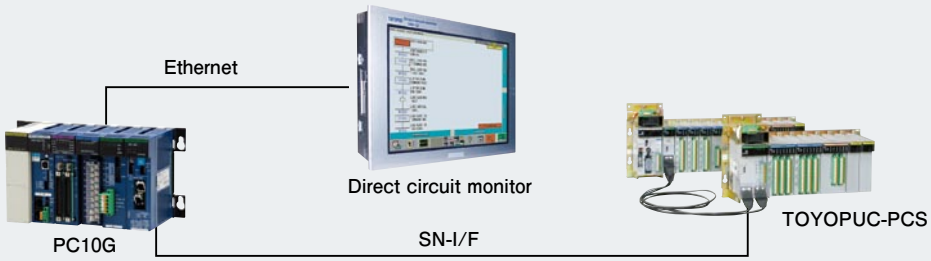
Direct circuit monitor

DM-12 series mounted Windows XP Embedded TM as OS, and, in addition to the control panel function, various facilities monitor software are mounted Safety circuits can be seen with a control panel.

Machine maintenance becomes very easy, because a personal computer and paper drawings is not necessary.

Main features

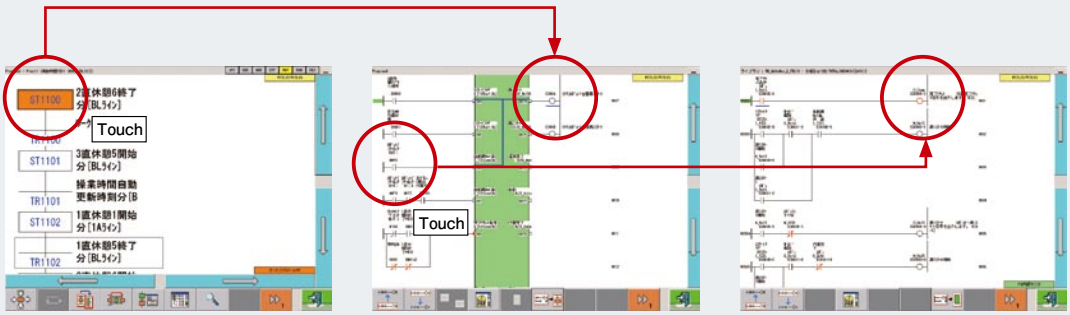
- SFC, FBD, and LD circuits display/monitor can be performed.
- Safety circuits display/monitor can be performed.
- I/O drawing can be displayed.
- When an error caused, trouble shooting can be performed by just screen menu manipulation. Therefore, MTTR* (Mean Time To Repair) can be shortened dramatically.
- A CF card is used instead of a hard disk . Hard disk-less is realized.



*MTTR (Mean Time To Repair): The average time needed to return a faulty component or system to its proper operation

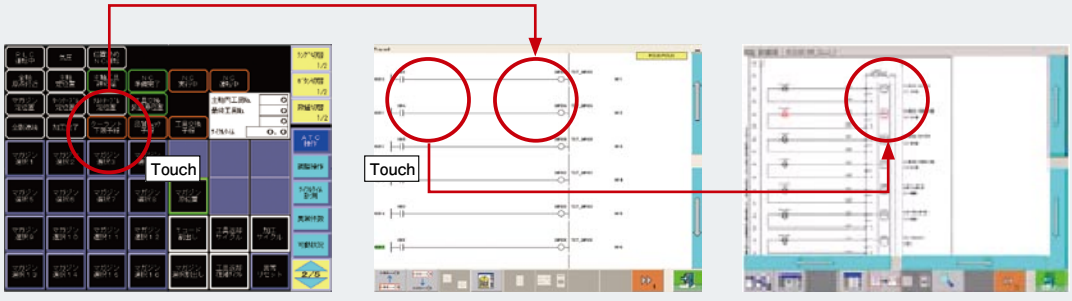
"Circuit monitor" function, which can display/monitor SFC, FBD, and LD circuit.

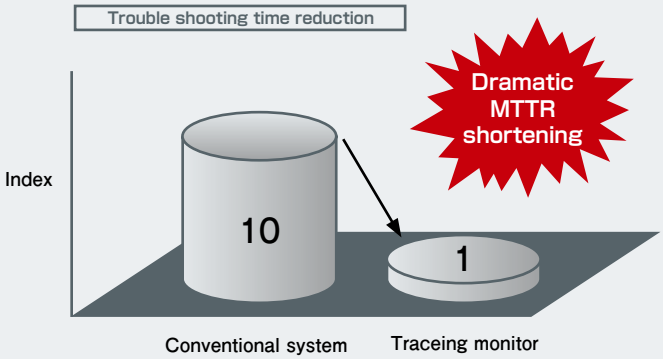
PLC direct monitoring SFC ,which displays machine operation step as a flow chart.
Therefore, when machine stops, the stopping operation step can be known at a glance.
Touching the stopping operation step , a stop conditions is searched and relative FB and a relative ladder are displayed.



"Tracing monitor" function, which can locate a fault position at pinpoint from an error button to an I/O drawing

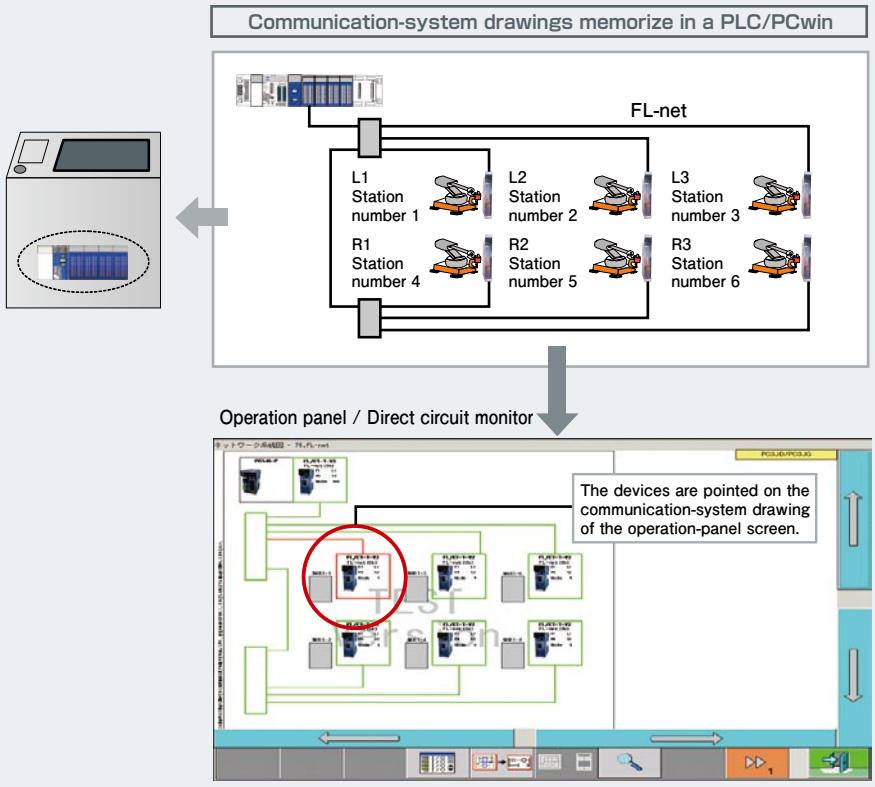
Touching an error button on an operation panel screen and search the error conditions in a ladder circuit, then the relative circuits are displayed.
Touching ladder circuit conditions, then the cause of error can be traced.
Furthermore, if error conditions are I/O, the error cause can be traced at I/O drawings, therefore the machine error place can be specified quickly and MTTR can be shortened.
A worker can be released from the stress of reading many circuit diagrams or I I/O drawings as before he did.





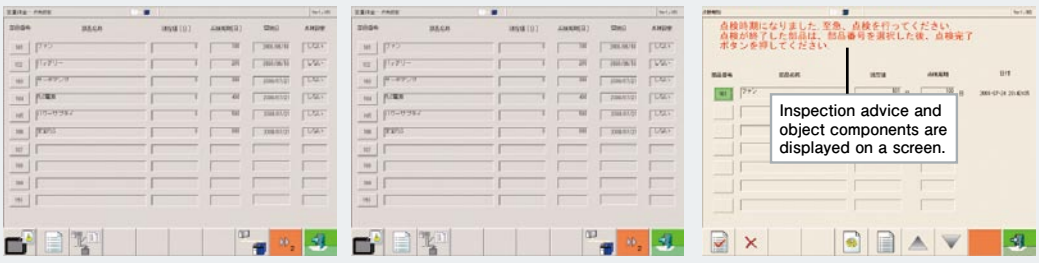
"Network diagnostic" function shows the failure place of a communication device or wiring place

Communication errors of devices or grounding and disconnection place are diagnosed and the error place can be pinpointed.
Functions are applicable for FL-net, DeviceNet and FL remote.
Grounding and disconnection are applicable for DeviceNet and FL remote.



From record of the number of device operations, and record of usable years, the inspection time limit can be seen by "fixed-quantity and periodic maintenance" function

100 components for the fixed quantity maintenance and 100 components for periodic maintenance can be registered
A machine is always monitored, if a actual value exceeds an inspection period, an inspection advice message will be displayed on a screen.
Therefore, a maintenance plan like spare-parts preparation can be planned



General specifications

Item \ Model	DM-12WD2	DM-12WD3	DM-12WK	DM-10WF	DM-7WS
Operating ambient temperature	0-55 degrees C	0-55 degrees C	0-55 degrees C	0-55 degrees C	0-50 degrees C
Operating ambient humidity	10～90%RH, no dew condensation.	10～90%RH, no dew condensation.	25～85%RH, no dew condensation.	30～85%RH, no dew condensation.	5～85%RH, no dew condensation.
Storage temperature range	-20～60 degree C	-20～60 degree C	-10～70 degree C	-40～85 degree C	-20～60 degree C
Power supply	AC100/240V (50/60Hz) less than 110VA	DC24V less than 40W	DC24V less than 50W	DC24V less than 30W	DC24V less than 32W
Grounding method	D class grounding	D class grounding	D class grounding	D class grounding	D class grounding
Protective construction	IP65f equivalent	IP65f equivalent (when surface sheet attached)	IP65f equivalent (when surface sheet attached)	IP65f equivalent (when surface sheet attached)	IP20 (Compatible with IEC 60529)
External dimensions (mm)	313(W) ×239 (H) ×78 (D)	306(W)×260(H)×79.4(D)	306(W)×261(H)×57.6(D)	233.2(W)×213(H)×65.4(D)	214(W)×158(H)×79.6(D)
Panel-cut dimension (mm)	301.5 (W) ×227.5 (H)	270(W)×206(H)	266(W)×203(H)	224.7(W)×174(H)	197(W)×141(H)
Cooling method	Forced air cooling by a CPU fan	Natural air cooling	Natural air cooling	Natural air cooling	Natural air cooling
Weight (kg)	4.4	4.2	3.4	1.8	1.5

Performance specifications

Item \ Model	DM-12WD2	DM-12WD3	DM-12WK	DM-10WF	DM-7WS
OS	Windows XP Embedded SP2 ※	Windows XP Embedded SP2 ※	Windows Embedded Standard 2009 ※	Windows Embedded Standard 2009	Windows Embedded Standard 2009
CPU	Intel Celeron M320 1.3GHz	Intel ULV Celeron M 1.0GHz	Intel Atom N270 1.6GHz	Intel Atom N450 1.6GHz	Intel Atom E640 1.0GHz
Main memory (RAM)	512MB	512MB	512MB	1GB	1GB
System memory	1GB	2GB	2GB	1GB	4GB
Touch panel	Analog resistance film system (1024x1024)	Analog resistance film system (1024x1024)	Analog resistance film system (1024x1024)	Resistance film (4-line type)	Analog resistance film system
Display	TFT 12.1 inches color LCD	TFT 12.1 inches color LCD	TFT 12.1 inches color LCD	TFT 10.4 inches color LCD	TFT 7 inches color LCD
Display resolution	1024x768 (XGA)	1024x768 (XGA)	1024x768 (XGA)	1024×768 (XGA)	800×480 (WVGA)
Resume function	10 minutes-suspend condition is maintained	–	–	–	–
Battery pack	Nickel-Cd battery (rechargeable)	–	–	–	–

Interface specifications

Item \ Model	DM-12WD2	DM-12WD3	DM-12WK	DM-10WF	DM-7WS
USB	5 ports (for data communicaiton and for maintenance purposes)	5 ports (for data communicaiton and for maintenance purposes)	4 ports (for data communicaiton and for maintenance purposes)	2 ports (for data communicaiton and for maintenance purposes)	3 ports (for data communicaiton and for maintenance purposes)
Serial port	1 ports	2 ports	2 ports	1 ports	1 ports
Ethernet	2 ports (LAN1 : for TOYOPUC connection, LAN2 : for upper PC connection)	2 ports (LAN1 : for TOYOPUC connection, LAN2 : for upper PC connection)	2 ports (LAN1 : for TOYOPUC connection, LAN2 : for upper PC connection)	2 ports (LAN1 : for TOYOPUC connection, LAN2 : for upper PC connection)	2 ports (LAN1 : for TOYOPUC connection, LAN2 : for upper PC connection)
PCI bus	Connection with PC10P is possible by an extension unit (option).	–	–	–	–
CF card	1 slot (for system disc)	1 slot (for system disc)	1 slot (for system disc)	2 slot (for system disc)	1 slot (for system disc)
Analog RGB	Mini D-SUB15 pin (socket)	Mini D-SUB15 pin (socket)	Mini D-SUB15 pin (socket)	Mini D-SUB15 pin (socket)	–

Type

Item \ Model		DM-12WD2		DM-12WD3		DM-12WK		DM-10WF		DM-7WS	
		Name	Specifications	Name	Specifications	Name	Specifications	Name	Specifications	Name	Specifications
Main body		TYD-6411	Direct circuit monitor Main body	TYD-6661	Direct circuit monitor Main body	TYD-6662	Direct circuit monitor Main body	TYD-6745	Direct circuit monitor Main body	TYD-6797	Direct circuit monitor Main body
		–	–	TYD-6674	Set with sheet (main unit, surface sheet, protective sheet)	TYD-6731	Set with sheet (main unit, surface sheet, protective sheet)	TYD-6754	Set with sheet (main unit, surface sheet, protective sheet)		
Maintenance parts	Battery unit	TYD-6516	Battery unit 1 piece (for DM-12WD2)	–	–	–	–	TYD-6871	Battery for clock 1	TYD-6869	Battery for clock 1
	Back light for replacement	TYD-6513	Back light 1 piece (for DM-12WD2)	TYD-6677	Back light 1 piece (for DM-12WD3)	–	Refundable product	–	Refundable product	–	Refundable product
	Cooling fan for replacement	TYD-6515	Cooling fan 1 unit (for DM-12WD2)	–	–	–	–	–	–	–	–
	Surface sheet	–	–	TYD-6666	Surface sheet (for DM-12WD3)	TYD-6735	Surface sheet (for DM-12WK)	TYD-6833	Surface sheet (for DM-10WF)	–	–
	Protection sheet	TYD-6514	Protection sheet for replacement 1 sheet (for DM-12WD2)	TYZ-5929	Protective sheet for screen 1 sheet	TYZ-5929	Protective sheet for screen 1 sheet	TYZ-6778	Protective sheet for screen 1 sheet (for DM-10WF)	TYD-6812	Protective sheet for screen 1 sheet (for DM-7WS)

Drawing tool type (Common to DM-12WD2, DM-12WD3, DM-12WK, DM-10WF)

Item	Name	Specifications	OS
ScreenWorks-T	TJD-6183	Japanese version	Windows 2000/XP 32 bit edition/Vista 32 bit edition/7 32 bit edition Japanese version
ScreenWorks-TE	TJD-6184	English version	Windows 2000/XP 32 bit edition/Vista 32 bit edition/7 32 bit edition

Drawing tool type (DM-7WS)

Item	Name	Specifications	OS
ScreenWorks-T	TJD-6183	Japanese version	Windows 2000/XP 32 bit edition/Vista 32 bit edition/7 32 bit edition Japanese version
Screen helper 7	TJD-6854	Japanese version	Windows 2000/XP 32 bit edition Japanese version

※ Windows 2000/XP/Vista/7,Windows XP Embedded,Windows Embedded Standard are the registered trademarks of U.S. Microsoft Corp.

General purpose operation panel

Contributes to startup time reduction for production equipment as well as moveable efficiency improvement with an array of operation panels optimum for equipment size

General purpose operation panel series

- FP-12XXGK (12-inch display)
- FP-07XXGS (7-inch display)
- FP-06CGK (6-inch display)

Employs a touch panel display (excluding FP-06CGK) which directly shows the desired equipment information.

High functionality operation panel with built-in support tools for all types of controllers as well as operation panel functions, with a mounted panel computer on the display.

Main features

1. Operation panel function

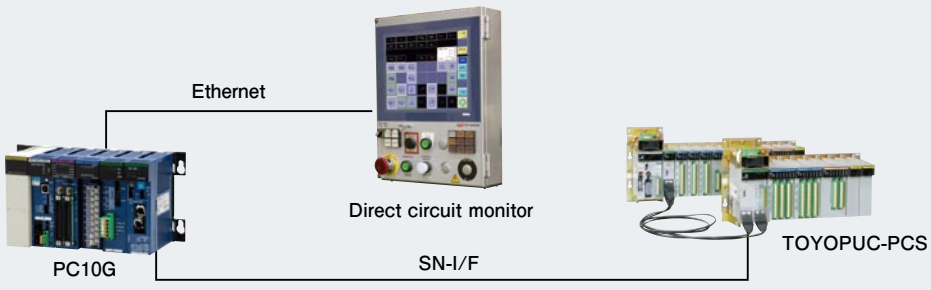
- Standardly equipped with the necessary button switches and lamps for equipment operation.
- Button switches and lamps can be added if needed.

2. PLC tool function

- SFC, FBD and LD circuits can be displayed and monitored.
- The safety circuit can be displayed and monitored.
- The I/O drawing can be displayed.
- If an error occurs, it can be tracked to each affected area using only screen operations.

3. Motion tool function

- Present value monitor and parameter settings can be performed for MCML, MC1K, etc.



*MTTR (Mean Time To Repair): The average time needed to return a faulty component or system to its proper operation

FP-12XXGK specification list

		FP-12XXGK-S1 (General equipment specifications)	FP-12XXGK-S2 (Robot equipment specifications)
Buttons	Selection switch	○ (AUTO/MANU.)	○ (CONT./MANU.)
	START/ RESET START	Mounting when needed by customer (wiring only)	○
	CONT. OFF	Mounting when needed by customer (wiring only)	○
	EXECUTE	○	
	Buzzer button	Mounting when needed by customer (wiring only)	
	EMERGENCY STOP	○	
	MASTER ON	○	
	RETURN	Mounting when needed by customer (wiring only)	
	Operation power ON/OFF switch	Mounting when needed by customer (wiring only)	
Lamps	POWER	○	
	RUN	○	
	NO PART	Mounting when needed by customer (wiring only)	○
	FULL PARTS	Mounting when needed by customer (wiring only)	○
	DOOR OPEN	○	
	GENERAL FAULT	○	
	Returnable	NONE	
	Automatic robot operation	NONE	○
	TEACH-IN	NONE	○
Others	Buzzer	Mounting when needed by customer (wiring only)	
	Paint color	Cream color (C17)	

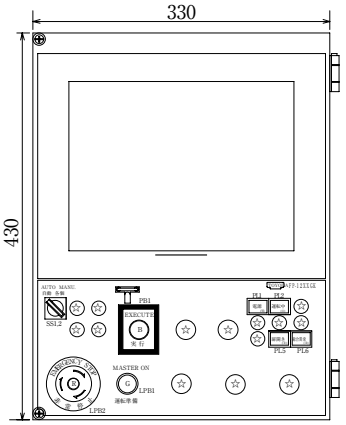
Type

Series name		How to operate	Language	Specifications
FP-12XXGK	—	R	E	S1

- No symbol : machine specifications
- S1: General equipment specifications — No MPG connector, No return button, No display power
- S2: Robot equipment specifications — No MPG connector, No return button, No display power
- How to operate: R: Right-hand specification, L: Left-hand specification
- Language: No symbol : Japanese, E : English, C : Chinese
- FP-12XXGK: 12-inch general purpose operation panel with global compatibility, along with correspondence to emergency stop lockout

External drawing

External dimensions: H430×W330×D100 mm



FP-07XXGS specification list

	Type	FP-07XXGS
Buttons	Selection switch (CONT./MANU.)	○
	START/RESET START (Illuminated type)	○
	CONT. OFF	○
	EXECUTE	○
	FAULT RESET	○
	EMERGENCY STOP (illuminated type)	○ (with lockout mechanism)
	MASTER ON (illuminated type)	○
Lamps	POWER	○
	RUN	○
	GENERAL FAULT	○
	DOOR OPEN	○
	NO PART	○
	FULL PARTS	○
Others	Paint color	Cream color (C17)

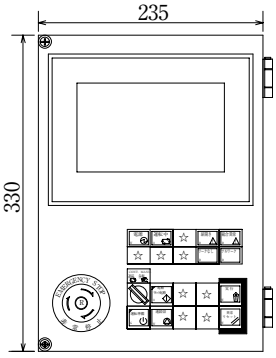
Type

Series name		Connection		Shape	How to operate	Language
FP-07XXGS	—	D	—	O	R	E

- Connection: D: Device network specifications
- Shape: No symbol: Box specifications, O: Open frame specifications
- How to operate: R: Right-hand specification, L: Left-hand specification
- Language: No symbol : Japanese, E : English, C : Chinese

External drawing

External dimensions: H330×W235×D100 mm



FP-06CGK specification list

		FP-06CGK-D-※
Buttons	Selection switch (AUTO/MANU.)	○
	START/RESET START	Mounting when needed by customer (wiring only)
	CONT. OFF	Mounting when needed by customer (wiring only)
	EXECUTE	○
	EMERGENCY STOP	○
	MASTER ON	○
	RETURN	Mounting when needed by customer (wiring only)
	Alarm buzzer	Mounting when needed by customer (wiring only)
Lamps	POWER	○
	RUN	○
	NO PART	Mounting when needed by customer (wiring only)
	FULL PARTS	Mounting when needed by customer (wiring only)
	DOOR OPEN	○
	GENERAL FAULT	○
	START/RESET	Mounting when needed by customer (wiring only)
	MASTER ON	○
	Returnable	Mounting when needed by customer (wiring only)
Others	Buzzer	Mounting when needed by customer (wiring only)
	Paint color	Cream color (C17)

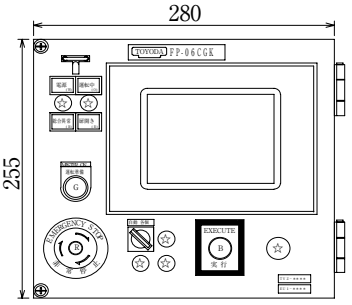
Type

Series name		Connection		How to operate	Language
FP-06CGK	—	D	—	R	E

- Connection: D: Device network specifications, IO: IO specifications
- How to operate: R: Right-hand specification, L: Left-hand specification
- Language: No symbol : Japanese, E : English, C : Chinese

External drawing

External dimensions: H255×W280×D120 mm



Safety PLC

Conformity to the international safety standards broadens and secures workshop safety dramatically

- A Safety PLC ensures worker's safety and contributes to the productivity of a plant.
- Better machine productivity is achieved by safety circuit visualization by Safety PLC.
- Global standard level machine safety is realized by the international safety standards conformed safety PLC.
- A Safety PLC TOYOPUC-PCS/PCS-J series covers large-sized to small machine.

What is safety ?

1.View of conventional safety

An accident and disaster must not happen.
The correct operation is strictly observed by worker attention

→ Safety is controlled

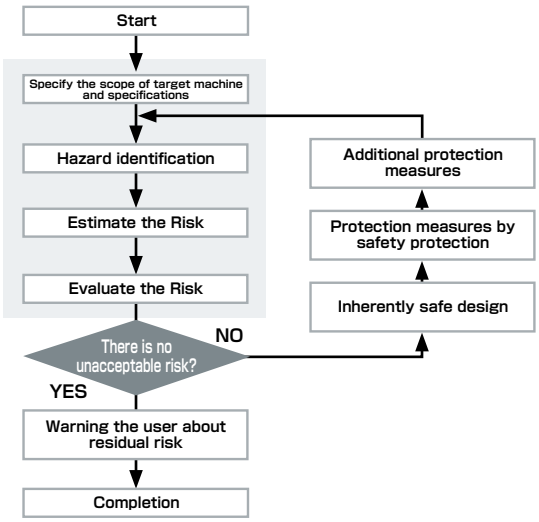
2.View of the present safety (Europe and the U.S.)

Safety is the status that "Hazard (risk) must be minimum status."
The risk of machine is assessed and safety measures are taken.

→ Risk is controlled.

What is "Risk is controlled"?

"Risk is controlled" means "There is no unacceptable risk"



What is the International Safety Standards ?

The origin of International Safety Standards is the Machine Directive from European Union

1. Machinery Directive

In EU, if someone designs, manufactures, supplies, purchases or uses a machine, must observe the Directive.
(EU countries must match their lows to the Directive)

2. International Safety Standards about a Safety PLC

1 EN954-1 (1997)
Safety of machinery Safety-related parts of control systems
Safety category B, 0-4

2 IEC61508 1-7 (2002)
Functional safety of electrical/electronic/programmable electronic safety related system
Safety category SIL1-4

3 IEC13849-1(2006)
Safety of machinery Safety-related parts of control systems
Performance Level a - e

→ A Safety PLC must conform to these three standards and acquire the certifications

What is Safety Integrity Level(SIL)? (IEC 61508)

IEC61508 specifies SIL (Safety Integrity Level) from 1 to 4.
About SIL, there are two-kinds, the low demand mode, and the high demand/continuous mode.
In FA field, usually use the high demand/continuous mode.
In this case, SIL is specified by PFH (average of dangerous failure rate per hour).

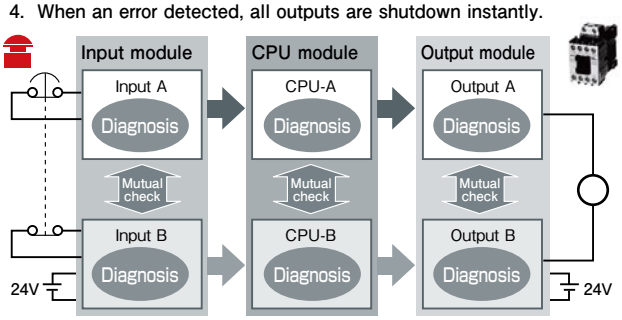
SIL	Average of dangerous failure rate per hour
1	$10^{-6} \leqq \times < 10^{-5}$
2	$10^{-7} \leqq \times < 10^{-6}$
3	$10^{-8} \leqq \times < 10^{-7}$
4	$10^{-9} \leqq \times < 10^{-8}$

TOYOPUC-PCS/ PCS-J conform to SIL3 and can be used for all FA applications.
The normal FA application is up to SIL3.

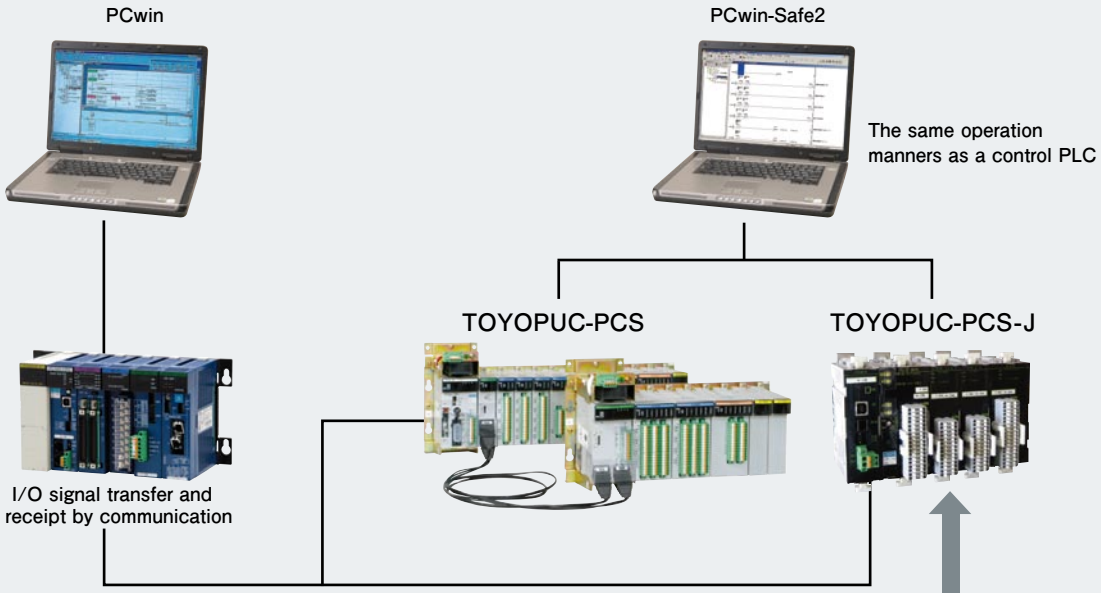
SIL4 is applicable for a railroad and nuclear-power-station level.

Safety PLC architecture

1. Hardware and software are redundant (Redundant configuration like A+B)
2 Diagnostic function
(System self-diagnosis and device connection diagnosis are always implemented)
3. Mutual check (operation check between A and B)
4. When an error detected, all outputs are shutdown instantly.



Basic configuration



Zero wiring mistake

Wirings are changed to software programming, and circuit standardization by FB
The signal data communication with a standard PLC

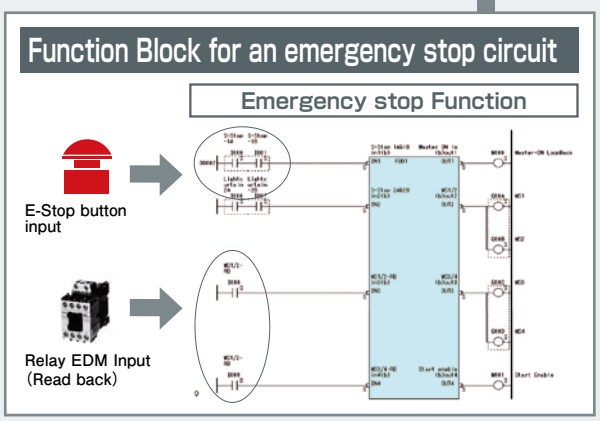
Better short circuit resistance and EMC resistance

Electrical isolation by optic fiber communication

Shorter design time and adjustment time

A program development by same manners as standard PLC programming

Function Block for an emergency stop circuit



TOYOPUC-PCS

The Safety PLC "TOYOPUC-PCS" realized the global top level processing speed and user-friendly operations

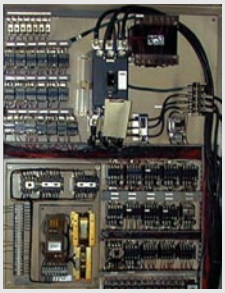
- The safety software circuits has been realized by the redundancy logic circuits.
- Short E-Stop reaction time by hi-speed processing time and space saving has been realized.
- More reliable safety circuit program is available by fault detection function and shorten design lead time.
- Down-sizing of safety control circuit and standardization are realized by FBD function
- Field wiring reduction by Safety-networking and safety signal communication.
- MTTR improvement by employment of control visualization technology.
- A gateway module is provided to connect TOYOPUC-PCS to various open-networks.

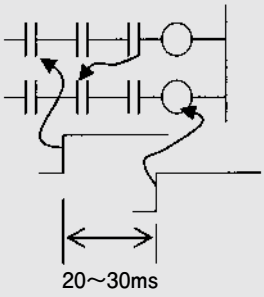
Scan and response time of TOYOPUC-PCS

High speed scanning

Realize the high speed Scan speed within a relay-circuit response time

Relay circuit





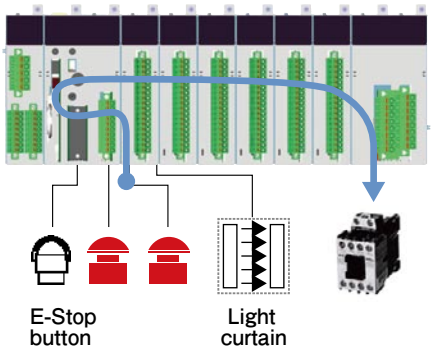
TOYOPUC-PCS scanning speed

TOYOPUC-PCS 9.5ms

TOYOPUC-PCS realizes the high speed Scan speed within a relay-circuit response time

High speed response

17ms response time from an emergency stop signal input to an output OFF.
(stand-alone system at semiconductor output)



TOYOPUC-PCS component modules list

CPU, Remote I/O module

Name	Type		Item		Specifications	
CPU	TAC-6089	1	Program method		Stored program method	
 Current, Weight 180mA, 400g		2	Program control method		Cyclic operation method	
		3	Input/Output control method		Image resister method	
		4	Scanning speed		At the standalone 9.5 ms / scan	At the networking 18ms / scan
		5	Program capacity		12K words (Internal memory : 64KB) (TIP-5426)	
		6	Memory device		・CMOS-RAM ・Flash ROM	
		7	Battery		Rechargeable (Lithium secondary battery : 5 years life)	
		8	External Input/Output		128 points	
		9	Internal Output		2048 points	
		10	Display unit		Dot-matrix LED display unit Displays are changed by MOD and INC switches	
S-BUS	TAU-6098	1	Physical layer		Optical fiber cable method	
Safety communication master		2	Commun. speed		6Mbps	
		3	Max. commun. length		100m (inter-station) 1km (Total commun. length of between stations)	
		4	Max. stations		24 st. (Master Slave)	16 st. (Master Slave)
Current 155mA Weight 150g		5	Max. communication	All station total	1472 points (184 byte) = (32 Input+32 Output)×23 stations	1920 points (240 byte) = (64 Input+64 Output)×15stations
RMT-S	TAU-6102			I/O points per 1 slave Input/output	32 points (4 byte) /32 points (4 byte)	64 points (8 byte) /64 points (8 byte)
Safety communication remote satellite station		6	Network topology		Ring	
		7	Network layer		1	
Current 220mA Weight 360g		8	Commun. format		HDLC flame conformity	
		9	Check manner		CRC-CCITT	

I/O Module

No	1	2	3	4	5
Name	DI001	DI003	SPM002	DO002	DO003
Current Weight	 65mA 160kg	 100mA 320g	 65mA 150g	 55mA 320g	 70mA 340g
Type	TAK-6090	TAK-6104	TAK-6177	TAK-6093	TAK-6108
Device	Photo coupler	Photo coupler	Photo coupler	FET / Relay	FET
I/O pointsnumber	4 Sink (−common) 4 Source (+common)	12 Sink (−common) 12 Source (+common)	8 Sink (−common)	2 Sink (−common) 2 Source (+common) / 2	12 Sink (−common) 12 Source (+common)
Voltage /Current	24VDC 5mA / point	24VDC 5mA / point	24VDC 5mA / point	24VDC 0.25A / point / 3A / point	24VDC 0.25A / point
Remarks	Dry contact points Input	Dry contact points Input	For Light curtain Inputs (−)common Input	Relay and FET mix Output	FET Output

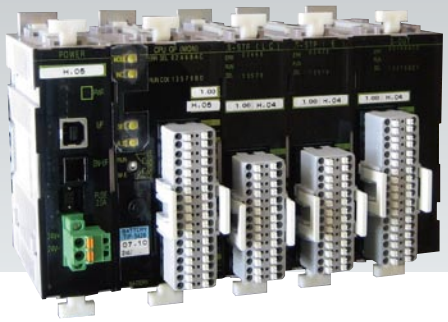
Gateway module (usable for TOYOPUC-PCS and PCS-J)

Name	Type		Item		Specifications			
SNGW-DL	TAF-6291	1	Stations		Master (TOYOPUC-PCS) 1:1 Slave (Gateway side)			
Gateway DeviceNet ※1		2	Physical layer		RS-485			
		3	Communication cable (SN-I/F)		0.5mm² Twisted pair wires			
SNGW-CL	TAF-6293	4	Communication method		288kbps Asynchronous timing			
Gateway CC-Link ※2		5	Data linkage area		Bit area: Input/output=32/32 byte, Register area: Input/output=32/32 byte			
SNGW-PF	TAF-6295	6	Communication byte number	Communication type	Bit		Register	
					Input	Output	Input	Output
Gateway PROFIBUS ※3				DeviceNet	Max. 32 byte	Max. 32 byte	32 byte	32 byte
				PROFIBUS	Max. 32 byte	Max. 32 byte	32 byte	32 byte
				CC-Link	Max. 8 byte	Max. 8 byte	Max. 32 byte	Max. 32 byte

※1 DeviceNet is a trademark of Open DeviceNet Vendor Association Inc. ※2 CC-Link is a registered trademark of MITSUBISHI ELECTRIC Corporation.
※3 PROFIBUS is a trademark of PROFIBUS Association.

TOYOPUC-PCS-J

JTEKT, leader in the field of safety, now offers a small-sized safety PLC with ultimate user-friendliness.



- Realize down-sizing and easier using.
- Safety circuits visualization
- Realize top level program capacity and rapid response time in compact size.

I/O built-in CPU modules

Smallest configuration saving space at 75mm

Smallest configuration = 2 modules (75mm)

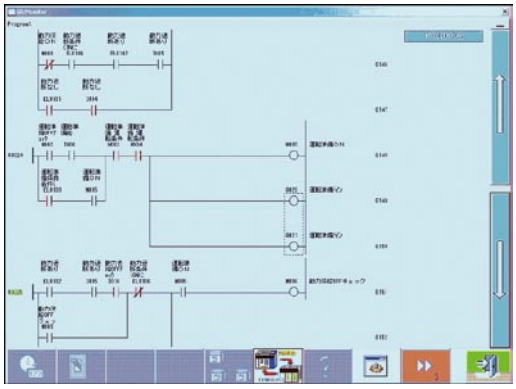
POWER CPU-OP（MON）

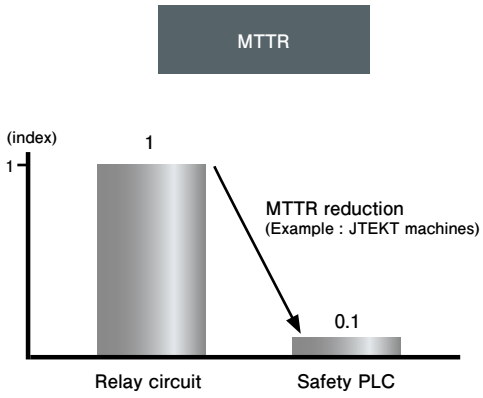
Input/output combined I/O module

The ideale I/O configuration

SUB MON : 8 points(input)/6 points(output)
S-STP(3 types) : 6 points(input)/4 points(output)

Monitor display of the safety circuit. MTTR is dramatically reduced as circuit drawings and a tester are no longer necessary.

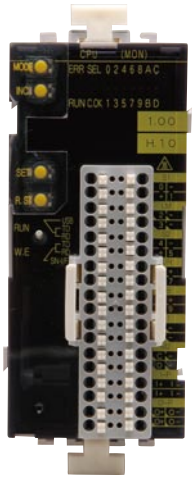




System component device list

CPU module (I／O built-in)

Part name	Model	Item			Specifications	
CPU-OP(MON)	TDC-6344	CPU section	1	Program method	Stored program method	
Consumption current : 70mA Mass : 260g			2	Program control method	Cyclic computing method	
			3	Input/output control method	Image register method	
			4	Scanning speed	15ms／scan	
			5	Program capacity	Source program size: max 16K words (Executed program size:64KB)	
			6	Hold memory	Program	Flash ROM
					Safety data	No memory held
			7	Battery	Rechargeable (Lithium secondary battery : 5 years life)	
			8	Maximum connection slot number	15-slot (including CPU-OP(MON))	
			9	External input/output points	256 points	
			10	Internal output points	2048 points	
			11	Display unit	7-seg LED display Display contents switch between MOD SW and INC SW operations	
		I／O section	1	Input/output format	Input	Photo coupler
					Output	FET
			2	I/O points	Input	2 points Source (+common)
						6 points Sink (−common)
					Output	6 points Source (+common)
			3	Voltage/Current	Input	24VDC,5mA／point
					Output	24VDC,0.5A／point
			4	Remarks	Double input 2 system (contact input×2) Double output 2 system	



I/O module

No		1	2	3
Part name		SUB MON	S-STP(E)	S-STP(LC)
Format Consumption current		TDK-6340 74mA	TDK-6346 68mA	TDK-6347 68mA
Input/ output format	Input	Photo coupler	Photo coupler	Photo coupler
	Output	FET	FET	FET
I/O point	Input	2 points Source (+common) 6 points Sink (−common)	2 points Source (+common) 4 points Sink (−common)	6 points Sink (−common)
	Output	6 points Source (+common)	4 points Source (+common)	4 points Source (+common)
Voltage/ Current	Input	24VDC,5mA／point	24VDC,5mA／point	24VDC,5mA／point
	Output	24VDC,0.5A／point	24VDC,0.5A／point	24VDC,0.5A／point
Mass		200g	185g	185g
Remarks		Double input 2 system (connection input×2) Double output 2 system	Double input 2 system (connection input×2) Double output 2 system	Double input 2 system (light curtain input×2) Double output 2 system

No		4	5	6	7
Part name		S-STP(E/LC)	S-IN(E)	S-IN(LC)	S-OUT
Format Consumption current		TDK-6348 68mA	TDK-6356 62mA	TDK-6357 62mA	TDK-6358 74mA
Input/ output format	Input	Photo coupler	Photo coupler	Photo coupler	—
	Output	FET	—	—	FET
I/O point	Input	1 points Source (+common) 5 points Sink (−common)	8 points Source (+common) 8 points Sink (−common)	16 points Sink (−common)	—
	Output	4 points Source (+common)	—	—	16 points Source (+common)
Voltage/ Current	Input	24VDC,5mA／point	24VDC,5mA／point	24VDC,5mA／point	—
	Output	24VDC,0.5A／point	—	—	24VDC,0.3A／point
Mass		185g	190g	190g	250g
Remarks		Double input 2 system (connection input×2, light curtain input×2) Double output 2 system	Double input 8 system (connection input×2)	Double inaput 8 system (light curtain input×2)	Double output 8 system

Power source/base/parts

No	Name	Model	Specifications
1	Lithium battery	TIP-5426	CPU-OP(MON)rechargeable battery(spare parts)
2	BASE 	TDR-6341	Base for connecting modules ※Bases do not come with each module. Make sure to purchase the base also if purchasing modules other than the power module.
3	POWER 	TDV-6338	Power supply module Able to supply up to 9 modules including the CPU SN-I／F(Interface with the control PLC) USB connection (for a programmer connection)
4	BOOSTER 	TDV-6339	Auxiliary power supply module Needed, when using more than 9 sets of modules including the CPU Mounting between the 9th module and the 10th module

Programming tool PCwin-Safe2

No	Name	Model	Specifications
1	PCwin-Safe2 (Japanese)[CD-ROM]	TJA-2071	TOYOPUC-PCS／PCS-J programming software (PCwin-Safe、PCwin-Safe-J integrated environment software) [CD-ROM Japanese version]
2	PCwin-Safe2 (English)[CD-ROM]	TJA-2073	TOYOPUC-PCS／PCS-J programming software (PCwin-Safe、PCwin-Safe-J integrated environment software) [CD-ROM Japanese version]

Safety-related conformed standards

TOYOPUC-PCS

No	Conformed standards	Outline
1	IEC 61508-1-7 : 2002	Functional safety of Electrical/Electronic/Programmable electronics safety-related system
2	EN 954-1 : 1996 ISO 13849-1 : 2008	Safety of Machinery Safety related parts of control system Part 1: General principles for design
3	EN 61131-2 : 2000	Programmable Controllers - Part 2 : Equipment requirements and tests
4	EN 50178 : 1998	Electronic Equipment for use in Power Installations
5	EN 61000-2-5/IEC 61000-2-5	Electromagnetic Compatibility (EMC)
6	NFPA79 : 2002	Electrical Standard for Industrial Machinery (NFPA :National Fire Protection Association)

TOYOPUC-PCSJ

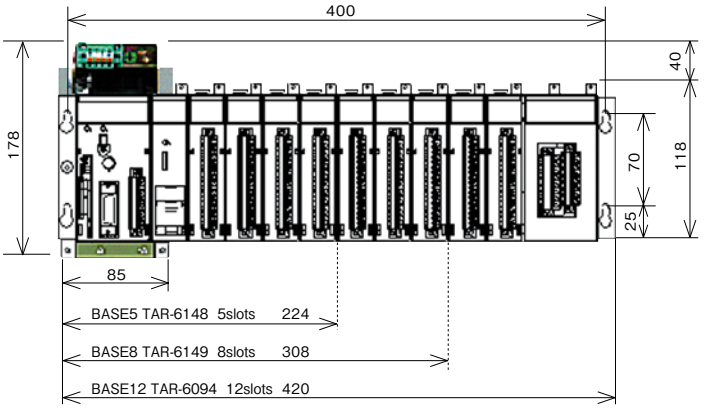
No	Conformed standards	Outline
1	IEC 61508-1-7 : 2002	Functional safety of Electrical/Electronic/Programmable electronics safety-related system
2	EN 954-1 : 1996 ISO 13849-1 : 2008	Safety of Machinery Safety related parts of control system Part 1: General principles for design
3	EN 50178 : 1998	Electronic Equipment for use in Power Installations
4	EN 61000-2-5/IEC 61000-2-5	Electromagnetic Compatibility (EMC)
5	NFPA79 : 2006	Electrical Standard for Industrial Machinery (NFPA :National Fire Protection Association)

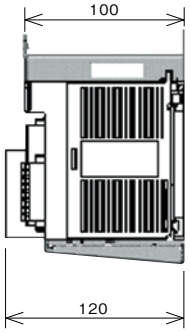
General specifications

No	Item	Test standards	TOYOPUC-PCS		TOYOPUC-PCS-J	
1	Power supply		Rated : 24VDC 2.5A (tolerance : DC 21.6~26.4V)		Voltage: 24VDC Current:Max 1A(Allowable range: DC21.6~26.V)	
2	Power consumption		60W		24W	
3	Ambient temperature		0~50℃		0~55℃	
4	Relative humidity		30~85%RH(No condensation allowed)			
5	Atmosphere		No corrosive gas allowed			
6	Vibration resistance	IEC 60068-2-6	Frequency	Acce.	Ampl.	Scans
			10~57Hz	—	0.35mm	20 times (1 octave/min)
			57~150Hz	49m/s²	—	
7	Shock resistance		IEC60068-2-29 conformity (98m/s² 1000±10 times/axis X, Y, Z, axes)		IEC60068-2-27 147m/s² ±X, Y, Z axis 3 times each	
8	Electric discharge immunity	IEC-61000-4-2	Aerial discharge:±8KV Contact discharge:±6KV			
9	Burst immunity (Fast transient test)	IEC-61000-4-4	Signal line : ±1KV, DC power line:±1KV, functional grounding ports:±1KV			
10	Surge immunity	IEC-61000-4-5	To ground:±1KV			
11	Wireless frequency electromagnetic field conducted interference	IEC-61000-4-6	0.15~80MHz 10V 80%			
12	Radioactivity, wireless frequency electromagnetic field immunity	IEC-61000-4-3	80~2000MHz 10V/m 80%			

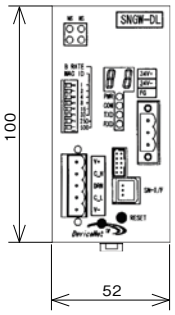
External dimensions

TOYOPUC-PCS



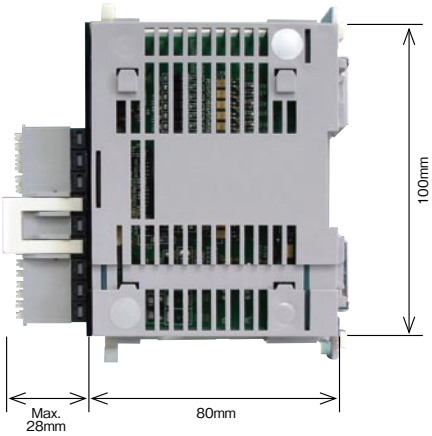


Gateway Module



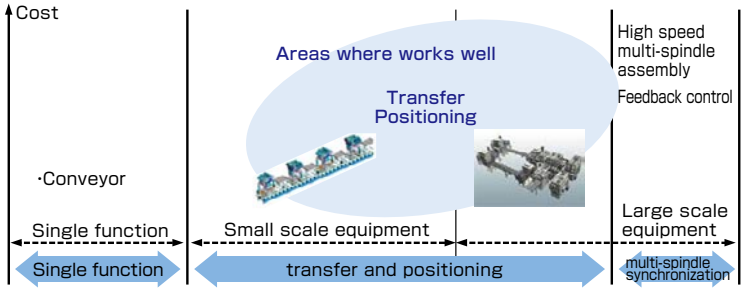
TOYOPUC-PCS-J

POWER	S-STP(LC)	CPU-OP(MON)
BOOSTER	S-STP(E／LC)	S-OUT
SUB MON	S-N(E)	
S-STP(E)	S-N(LC)	



Motion controller

Motion system is best suited for multi-axis transfer and positioning



	Item		Motion control
1	No. of control	Max. control axes	8 axes/module
		No. of modules	Max. 24 (MCML/MCSSC) Max. 2 (Plus MCML)
2	Command type		SFC, ladder, FBD Possible to command from Plus-CPU
3	Control	Position control	○
		Speed control	○
		Torque control	○

* FBD: Function Block Diagram * SFC: Sequential Function Chart

Application example 1

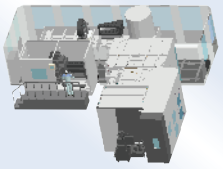
[Application] Workpiece transfer
[Structure] X,Y and Z 3 axes
+ turning 1 axis

Best suited for multi-axis positioning control, from small to large size.

Gantry loader

Application example 2

[Application] Pallet transfer
[Structure] X and Y 2 axes



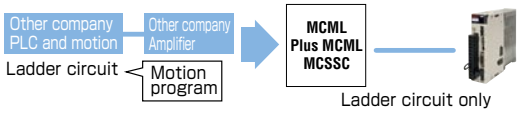
Simplified teaching makes setting easy even when eventhere is a lot of positioning information

Transfer vehicle for FMS

Motion system will solve the weak points of your current motions

Weak point 1

Both ladder circuits and motion programs are necessary for motion control.

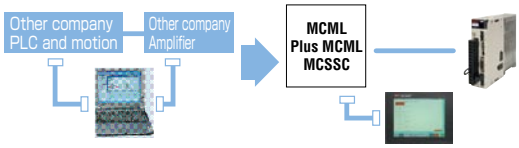


Solution1 Easy designing

Motion control can be realized just by using control circuits. Simpler PLC circuits due to an introduction of the function blocks. Motion control circuits using SFC allows movement of equipment to be expressed simpler and easier to-understand. Also, the movement can be changed with ease.

Weak point 2

Setting is necessary for controllers and servo amps.

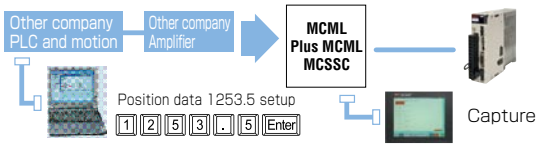


Solution2 Easy setup

All setup can be carried out on an operation panel (or peripheral tools). No need to switch computer specialty application tools or cables.

Weak point 3

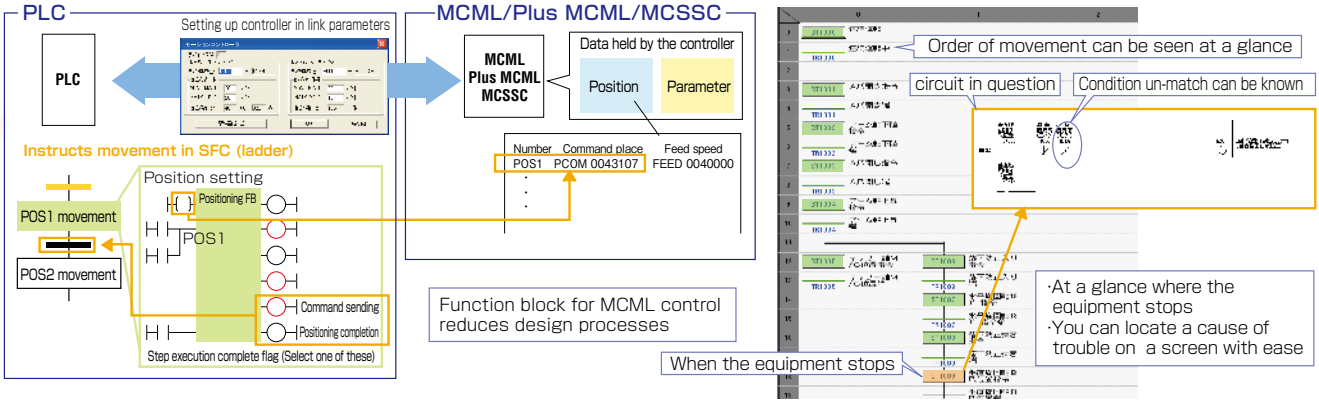
Numerical values are necessary for setting position.



Solution3 Easy teaching

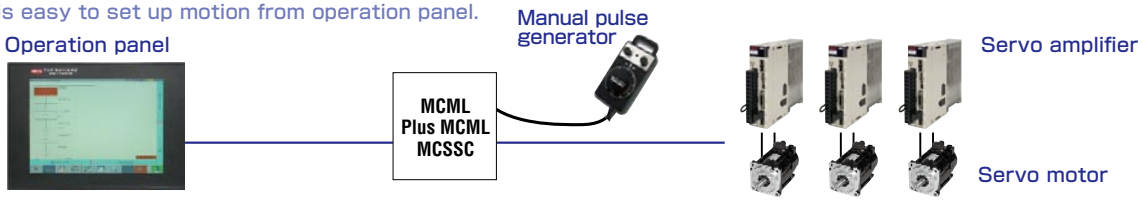
Thanks to the easy teaching function, just operate and press the read button. Current location can be easily set to a target location in one go.

Realizes motion control only using ladder circuits. In addition to this feature, being able to control with SFC and FBD allows you to design more easily.



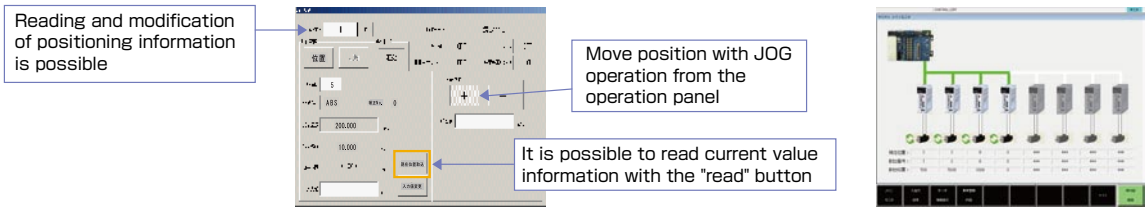
No personal computers are necessary for setting up systems. Easy setup from operation panel.

It is easy to set up motion from operation panel.



It is easy to monitor motors; teaching of target position setting is also easily carried out through operation panel screens.

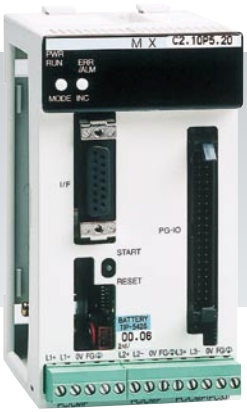
By operating in JOG mode or with a manual pulse generator, teaching can be done in one go.

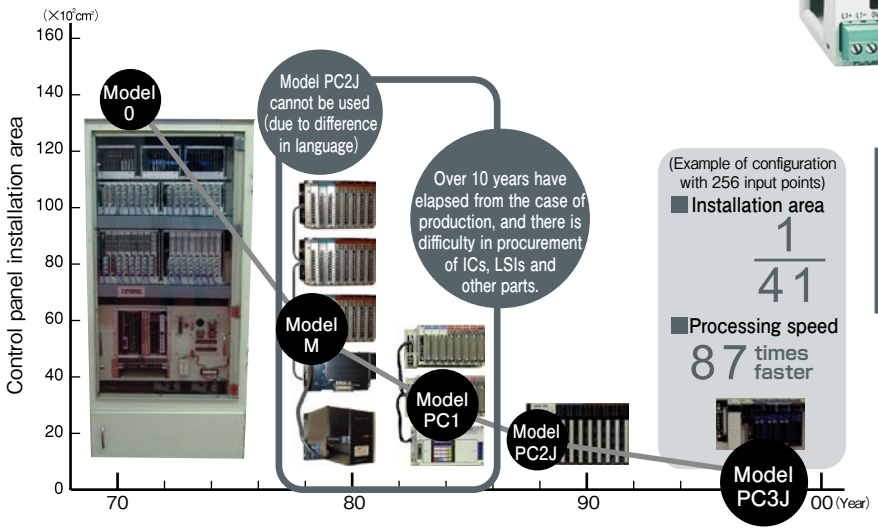


Functions		MCML	Plus MCML	MCSSC
No. of control axes		1-8 axes		
Control mode		Positioning control		
		Speed control		
		Torque control		
Encoder method		Absolute type		
Positioning control	Positioning method	PTP control (each axis independent movement)		
	Interpolation control	No linear compensation		
		Arc compensation none		
	No. of points	700 points / axis, max. 5600 points (700x8 axes)		
Position command	Position command unit	mm, deg		
	Command setting unit	Can be set up by parameters from decimal 0 to 5 digits		
	Linear axis position command range	-2147483647 ~ 2147483647		
		-214748364.7 ~ 214748364.7		
		-21474836.47 ~ 21474836.47		
		-2147483.647 ~ 2147483.647		
		-214748.3647 ~ 214748.3647		
		-21474.83647 ~ 21474.83647		
Speed command	Speed command unit	mm/s, deg/s		
	Speed command range	0 ~ 2091752000		
Acceleration / deceleration setting	Acceleration / deceleration processing	Trapezoid acceleration / deceleration (setting can be made per acceleration/deceleration. 2-step changeable)		
	Acceleration / deceleration setting range	1 ~ 65535		
Setup data	Positioning control	Setting data (700 points/axis)		
	Position output	position output data (16 points/axis)		
	Control mode	Parameter (for controller and servo amplifier)		
Stroke		65536 rotations		
Communication	Method	MECHATROLINK-Ⅲ		SSCNETⅢ
	Speed	100Mbps		50Mbps
Compensation function		Index position compensation function		
Others		Unlimited long rotation function (endless operation function) / Jog feed function / Current restraint function		
Supported PLC		TOYOPUC-PC10G, PC10P, PC3J, PC3JL, PC3JD, PC3JG	TOYOPUC-Plus CPU	TOYOPUC-PC10G, PC10P, PC3J, PC3JL, PC3JD, PC3JG

TOYOPUC-MX

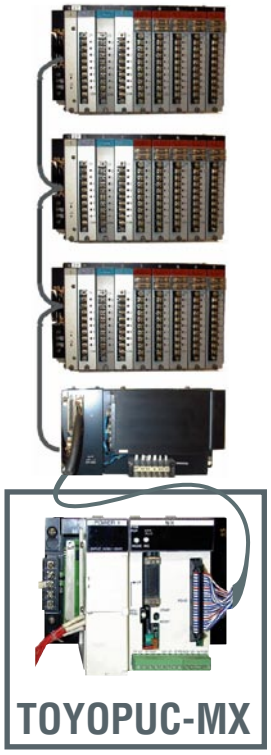
Renewal of TOYOPUC-M and PC1





Old model M and PC1 renewal

Easy program transporting
Drawings and wiring changes are minimized



The programs of M and PC1 are ported.

PG1

8KW — Special program area for M and PC1

PG2

16KW

PG3

16KW

Special program area for PC3J

Alteration in control drawings and wiring can be made minimal.

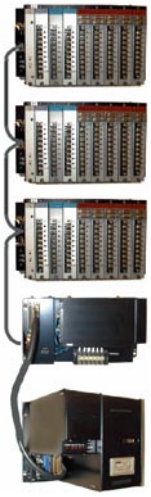
Various modules of PC3J can be used.

- Use of modules for a feed system
- Apply to a general purpose operation panel
- Development of maintenance improvement activity

Use of communication modules, built-in CPU

PC-LINK
Computer link

TOYOPUC M, PC1

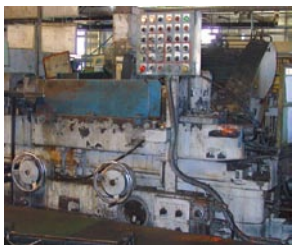


I/O rack
I/O module
I/O cable

CPU
Model M, PC1

Module	
I/O rack I/O selector module Various I/O modules I/O cable	Use old parts
M, PC1-CPU Memory module	not-used

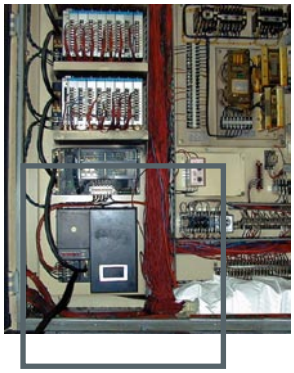
Replacement sample with MX

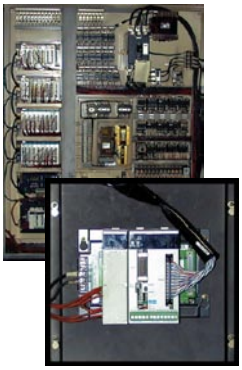


GR1299 grinder

Back up **TOYOPUC-M** program and transplant to **TOYOPUC-MX**

It takes 30 minutes to change to TOYOPUC-MX.

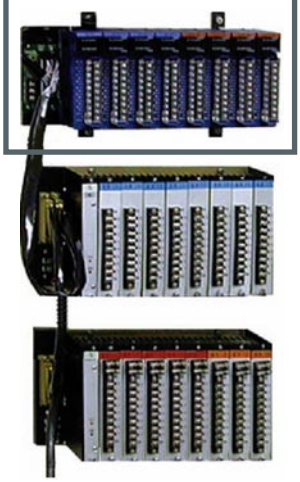




Further, functions of PC3J and I/O modules can be used.

The I/O module can be replaced with a new one by a rack.

MX base



When using the MX base, direct connection to the M and PC1 buses is enabled, and the PC3J I/O module can be used as is.

Specifications

No.	Item	Specification	
		PC1 function(Program 1)	PC3J function(Program 2, 3)
1	Programming method	Stored program method	
2	Program control	Cyclic calculation	Cyclic calculation (with subroutine function)
3	I/O control	Direct	Image register
4	Basic instruction processing speed	2-16 μs/instruction (incl. timer and counter)	0.08-0.48 μs/instruction
5	Application instruction processing speed	0.6μs/instruction	
6	Basic instructions	15 types	19 types
7	Timer and counter instructions	2 types	21 types
8	Application instructions	63 types or more	450 types or more
9	Program capacity	8K words	16K words + 16K words
10	Memory element	CMOS−RAM, E2PROM	
11	Battery	Charging method (lithium secondary battery: battery life 5years)	
12	External I/O points	1024 points	1024 points
13	Internal output points	Selection among 1016, 1528 and 2048 points (incl. keep relays, timers and counters)	2048 points (8192 points)*1
14	Keep relay points		768 points (4096 points)*1
15	Timer function Counter function	0.1 to 25.5 sec. 1～255	0.1 to 6553.5 sec. 0.01 to 655.35 sec. Total 512 points (2048 points)*1
16	Link relay points		2048 points (8192 points)*1
17	Rising and falling edge detection		512 points (4096 points)*1
18	Data register	2 KB / 8 bits	4K words / 16 bits
19	Link register		2K words / 16 bits
20	Number of special modules	Unavailable	Communication (link) module max. 14 pieces (however, sum of memory consumption of communication modules: 60K bytes or less)
21	Built-in communication function (These are allocated to the program 1.)	Communication port L1: PC link / remote master station /computer link (PC1, PC3J)	
		Communication port L2: PC link / remote master station /computer link (PC1, PC3J)	
		Communication port L3: PC link / remote master station /computer link (PC3J)	

*1: Description in parentheses ( ) indicates the extended area.

PC10, PC3J Series control specifications

Items \ Model	PC10G	PC10P	PC3JG	PC3JL/PC3JT	PC3J
Programming method	Stored program method Event monitor function by parameter setting			Stored program method	
Program control method	Cyclic operation method Constant period interruption function (1 ms～)		Cyclic operation method		
Input/output control method	Image registration method				
Basic instruction processing speed	Contact…0.015μs～ /instruction		Contact…0.08μs～ /instruction		
Application instruction processing speed	0.05μs～ few μs/instruction		0.6μs～few 10μs/instruction		
Basic instruction	19 instructions + 1 instruction (the inversion output for screen buttons)	19 instructions			
Timer counter instruction	21 instructions + 1 ms timer, 1s timer	21 instructions			
Application instruction	700 instructions or more The operation with the sign is possible. The floating decimal point is possible.	450 instructions or more			
Program capacity	180K words (60K words × 3) (60k words / 60K words / 60K words, 120k words / 60K words, 180K words) + FB library 60K words + Standard library 32K words + User library 32K words	180K words (60K words × 3) + FB library 60K words + Standard library 32K words + User library 32K words		16K words × 3 + Standard library 32K words + User library 32K words	16K words × 3
Memory element	CMOS-RAM, Flash EPROM				
Battery	Rechargeable (Lithium secondary battery: battery longevity 5 years)				
No. of external I/O	2048 points (Increase is possible by DeviceNet※ and remote I/O			1024 points (Increase is possible by DeviceNet※ and remote I/O	
No. of internal output	86,016 points (4,096 points × 3 + 8,192 points + 65,536 points)	79,872 points (2,048 points × 3 + 8,192 points + 65,536 points)		14,336 points (2,048 points × 3 + 8,192 points)	
No. of keep relay	6,400 points (768 points × 3 + 4,096 points)				
Timer function Counter function	0.1～6553.5 sec / 0.01～655.35 sec 0.001～65.535 sec / 1～65535 sec total 9,728 points 1～65,535 (2,560 points × 3 + 2,048 points)	0.1～6553.5 sec / 0.01～655.35 sec total 3,584 points 1～65,535 (512 points × 3 + 2,048 points)			
No. of link relay	39,912 points (10,240 points × 3 + 8,192 points)	14,336 points (2,048 points × 3 + 8,192 points)			
Detection of start-up and start-down	11,776 points (2,560 points × 3 + 4,096 points)	5,632 points (512 points × 3 + 4,096 points)			
Data register	164K words / 16 bit (12K words × 3 +128K words) Extension buffer register: 256K words / 16 bit Flash register: 4Mbyte flash drive (read only)*1	44K words / 16 bit (4K words × 3 + 32K words) Extension buffer register: 128K words / 16 bit		12K words / 16 bit (4K words × 3 + 32K words)	
Link register	6K words / 16 bit (2K words × 3)				
Equipment data memory	4Mbyte Program comment, SFC data, FB data, I/O diagram, network diagram		640Kbyte Program comment, SFC data, FB data	448Kbyte Program comment	
Special module installation amount	Communication (link) module: Max 24 sheets No number of sheets limitation by the consumption memory	——*2	Communication (link) module: Max 15 sheets Consumption memory: 60Kbyte or less		
Visualization function: SFC	○		○	×	×
Visualization function: F B	○		○	×	×
Library function: F B	○		○	×	×
Library function: Standard	○		○(Ver. 2.01～)	○	×
Library function: User	○		○(Ver. 2.01～)	○	×
Event monitor function (possible to monitor at the cycle)	○		○	○	×
Compulsion ON/OFF function	○		○	×	×
Scan unit trace function	○		○	×	×
Maintenance support: Equipment diagnosis function	○ Diagnostic dummy: 2,048 points 128 histories		×	×	×
Maintenance support: Network diagnosis function	○		×	×	×
Maintenance support: I/O diagram display	○		×	×	×
I/O recorder	○ 512Kbyte (50 points / change point in one cycle → memory of about 40 cycles)		×	×	×
Test mode	○ Function to return instantaneously to former program when program change is confirmed		×	×	×
Programmer I/F	USB (V2.00) 480Mbps		RS-422 38.4kbps		
Built-in communication function	L1: FL / ET / F remote M 10Mbps/100Mbps L2: FL / ET / F remote M 10Mbps/100Mbps L3: PC／CMP／SN-I/F	L3: PCI bus I/F	L1: DeviceNet※ L2: PC／CMP／SN-I/F	L1: PC / CMP L2: PC / CMP (except PC3JT)	L1: PC / CMP L2: PC / CMP (L2: Possible to add the option)

*1 The range where special instruction is necessary for writing in.
*2 By using BUS-EXP(EXPANDED BUS), PC10P can be equipped with the special module.

※DeviceNet is the registered trademark of Open DeviceNet Vendor Association Inc.

Compact PLC PCk series control specifications

Items \ Model		PCk05-CPU	PCk06-P-CPU
CPU function	Programming method	Stored program method	
	Program control method	Cyclic operation method (with sub routine function)	
	Program language	LD	
	Input/Output control method	Image register method	
	Basic instruction processing speed	Contact 1.3～2.3μs/instruction, Output 6.8～34.4μs/instruction	Contact 0.37～0.67μs/instruction, Output 1.82～9.2μs/instruction
	Application instruction processing speed	2.4～several 100μs/instruction	
	Basic instruction	13 kinds	
	Timer/Counter instruction	6 kinds	
	Application instruction	More than 110 instructions	
	Program capacity	2,048 words	7,679 words
	Memory device	USB flash drive, RAM	
	Battery	——	Commercial battery CR2354 (Battery life: 5 years, however, please replace to a new battery if the system was shut down for 10 days or more.)
	External I/O points	Input : built-in 8 points + points of mounting modules Output : built-in 6 points (Relay output) + points of mounting modules	Input: built-in 20 points + points of mounting modules Output: built-in 16 points (Source output) + points of mounting modules
	Internal output points	256 points	512 points
	Keep relay points	256 points	512 points
	Timer function	128 points, 0.1～999.9sec./0.01～99.99sec. 128 points, 1～9,999	256 points, 0.1～999.9sec./0.01～99.99sec. 128 points, 1～9,999
	Counter function	Input 1,024 points, output 1,024 points	
	Link relay points	512 points	
	Rising/Downing edge detection	3,200 words	7,296 words
External power		Data register	
No. of modules possible to install		1	4
Installation method		DIN rail or set screw (screw size: M4)	
Communication function	I/F	PCwin-PCk for programmer only	
	Port 2	RS232C (MODBUS※)	RS232C/422/485 (MODBUS)
Peripheral software	Programmer	PCwin-PCk	
	Cable	Cable connecting PCk (TKY-6485)	

※MODBUS is a registered trademark of Schneider Automation Inc.

Compact PLC PCDL control specifications

Items \ Model		PCDL
CPU function	Programming method	Stored program method
	Program control method	Cyclic operation method (with sub routine function)
	Program language	LD, SFC, FBD
	Input/Output control method	Image register method
	Basic instruction processing speed	Contact 0.14μs～/instruction
	Application instruction processing speed	0.94μs～several 10μs/instruction
	Basic instruction	13 kinds
	Timer/Counter instruction	21 kinds
	Application instruction	More than 450 instructions
	Program capacity	16KW(LD,SFC)1 program (FBD:8KW)
	Memory device	MRAM, Flash memory
	Battery	———
	External I/O points	1,024 points
	Internal output points	10,240 points (2,048 points+8,192 points)
	Keep relay points	4,864 points(768 points+4,096 points)
	Timer function Counter function	0.1～6553.5 sec./0.01～655.35 sec 1～65,535 } Total 2,560 points *1 (512 points+2,048 points)
	Link relay points	10,240 points(2,048 points+8,192 points)
	Rising/Downing edge detection	4,608 points(512 points+4,096 points)
		4KW/16 bits
		2KW/16 bits *2
	Machine information memory	64KB
	Clock function	Available (no-battery).
External power		AC100V/DC24V
Installation		DIN rail or screws (M4) fixing
Communication function	I/F	RS232C(PCwin)/MODBUS-RTU(slave)
	L1	FL-net
	L2	CMP-LINK/MODBUS-RTU(slave) / Multi purpose communication(SIO) / PC-LIN / SN-I / F
Programmer	Programmer	PCwin (Ver.12 or more)
	Cable	PCk connection cable D-SUB 9P⇔RJ12 conversion cable and RJ12⇔RJ12 programmer connection cable (2m) sets

*1 When using SFC, it becomes 512 points. *2 When using SFC, it becomes 1kW.

Board type PLC Plus control specifications

Items \ Model	Plus	
	Plus standard mode	Plus expansion mode (When mounting EX board)
Program type	Stored program type	
Program control type	Cyclic calculation method, constant scan, fixed cycle interrupt	
Input/output control type	Image register type	
Program language	SFC, LD, FB	
Program size	16KW(+FB_8KW)	16KW×3=48KW(+FB_32KW)
Data memory size	32Kbyte	64Kbyte+128Kbyte
Processing speed	Basic command 21ns (maximum speed)	
Application command	Data format: BIN, BCD Size: Byte, word, double word	Data format: BIN,BCD BIN with symbols Floating decimal point (single accuracy, double accuracy) Size: byte, word, double word
Index register	None	With
Equipment information memory	64Kbyte	4Mbyte
Other functions	None	Event monitor (for cycle monitor) 64Kbyte Standard library function
I/O recorder	None	With
Scan unit trace	None	With
Forced ON/OFF	None	I/O operation panel, forced output supported
Peripheral equipment I/F	USB2.0 high speed (480Mbps)	
Battery	Not used (backup for non-volatile RAM)	
Display	LED display, POWER, RUN, ERR only	
Clock	None	With (can run for approx. 10 days with power off)
RUN output	Relay output (DC24V／0.5A)	
Communication	①Ethernet／FL-net／FL Remote 10Mbps/100Mbps ②PC／CMP／SIO(RS422/RS232C)／MODBUS	
Input	12 points (5mA/24V 6 points/common Working voltage range: 21.6 to 26.4V Digital filter 1ms to 5ms)	
Output	8 points 0.5A/1 point, 1.6A/(8 points) Working voltage range:10.8 to 26.4V	

Board type PLC Plus combination of communication module

●:1 piece implementation. ●Numbers: Actually implemented no.

Module	Mounting combination list														
Plus CPU	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Plus CLNK-M	—	●	●	●	●	●	—	—	—	●	●	●	—	—	—
Plus CLNK-S	—	—	—	—	—	—	●	●	●	●	●	●	●	●	●
Plus DLNK-M	—	—	—	—	—	—	—	—	—	—	—	—	●	●	●
Plus EX	—	—	●	—	●	—	—	●	—	—	●	—	—	●	—
Plus EFR	—	—	—	●	●	●2	—	—	●	—	—	●	—	—	●
CC Link master	—	1 board					—			1 board			—		
CC Link slave	—						1 board			1 board			1 board		
Ethernet/FL-net /FL Remote	1 board		2 board		3 board		1 board	2 board		1 board	2 board		1 board	2 board	
DeviceNet	—						—			—			1 board		
PC/CMP/SIO/MODBUS/SN-I/F *1	1 board		2 board	1 board	2 board	1 board	1 board	2 board	1 board	1 board	2 board	1 board	1 board	2 board	1 board

*1 When Plus EX is mounted, SN-I/F can be used only in the Plus EX port.

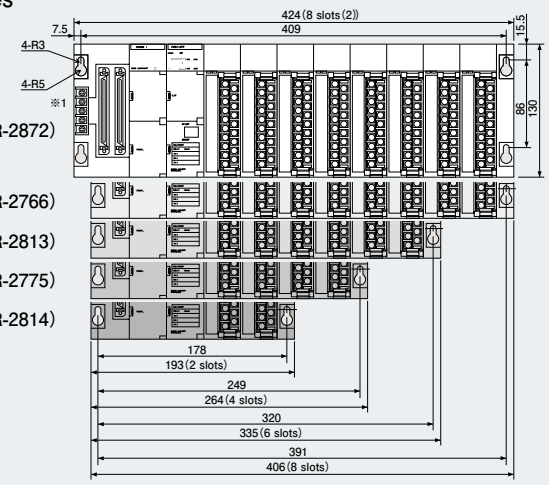
※ FL-net is the controller level network (OPCN-2) stipulated by JEMA (The Japan Electrical Manufacturers' Association) ※ Ethernet is a registered trademark of Fuji Xerox

※ DeviceNet is a registered trademark of Open DeviceNet Vendor Association Inc. ※ Windows is a trademark of Microsoft Corporation, USA in the USA and other countries.

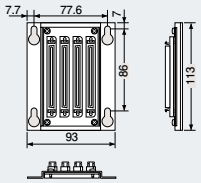
External dimensions

PC10G／PC3J series

8-slot base 2 (THR-2872)
8-slot base (THR-2766)
6-slot base (THR-2813)
4-slot base (THR-2775)
2-slot base (THR-2814)

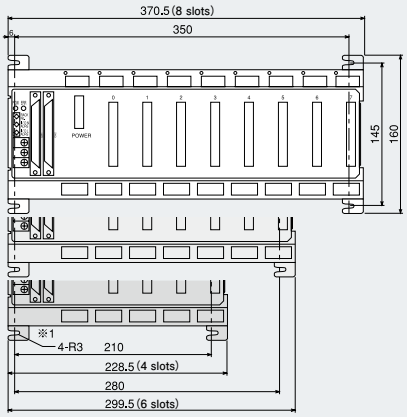


I/O branch module (THU-2774)

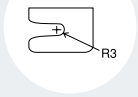


PC10G／PC3J select base

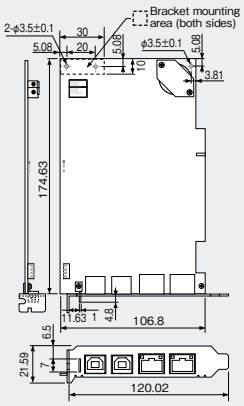
8-slot selector base (THR-5643)
6-slot selector base (THR-5644)
4-slot selector base (THR-5645)



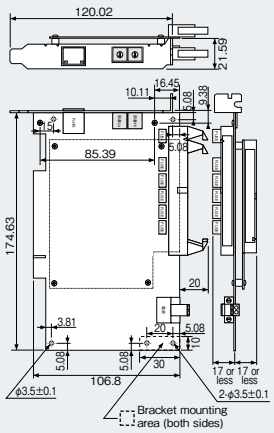
※1 Mounting hole details



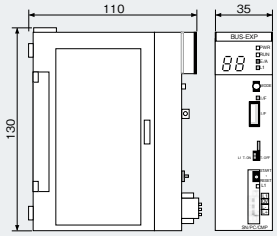
PC10P (TCC-6372)



FL remote I/O board (TCU-6421)

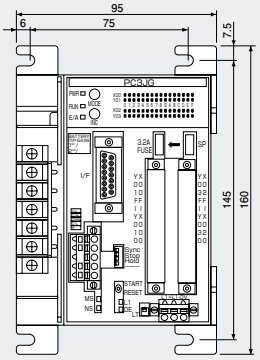


TOYOPUC BUS-EXP (EXPANDED BUS) (TCU-6367)

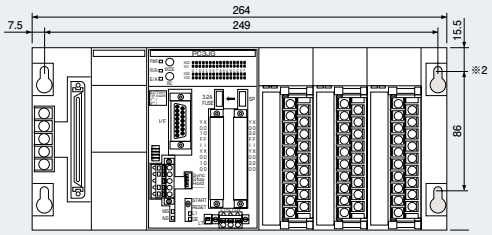


PC3JG

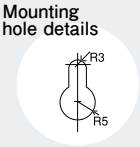
Mounting on a special base



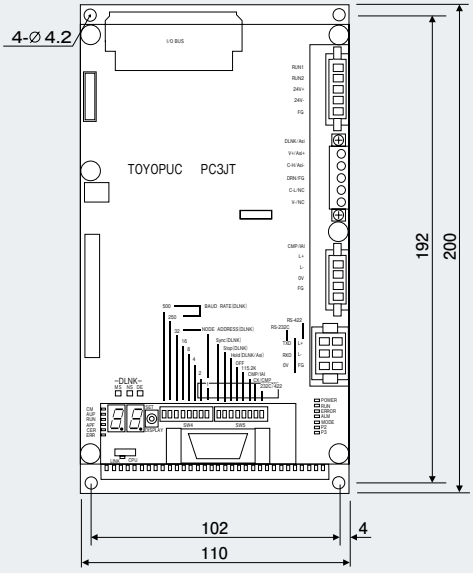
Mounting on a 4 slot base

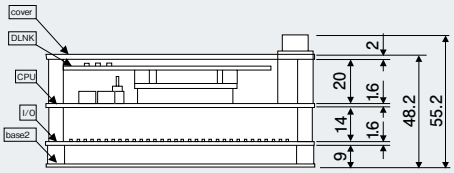


※2 Mounting hole details

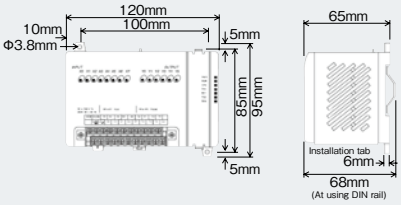


PC3JT

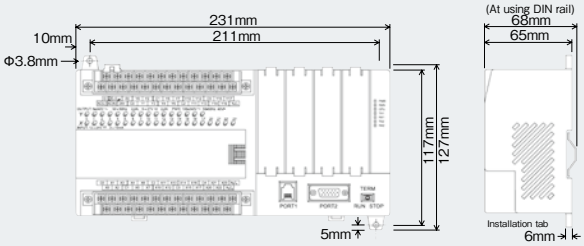




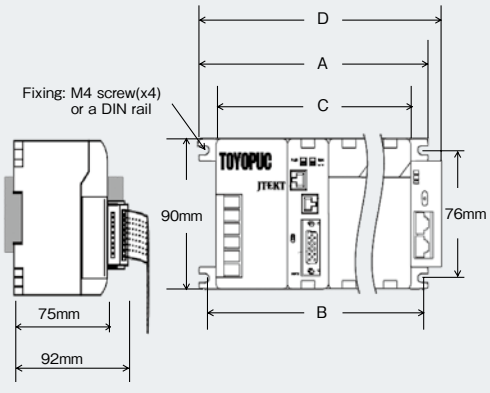
PCk05-CPU



PCk06-P-CPU



PCDL



(mm)

Number of slots (Except for a CPU slot)	A (Total base width)	B (Fixing pitch)	C (Module width)	D (Width including an extension unit)
2 slots	172	163	148	184
3 slots	203	194	179	215
5 slots	265	256	241	277
8 slots	358	349	334	370

Device list

TOYOPUC-PC10G／PC3J

Device	Name		Specification	Type	CSA	CE	＊
PC10G	PC10G-CPU		Memory 180K words (60K×3), FL-net/Ethernet/FL remote (selected by a parameter) 2port, SN-1/F/PC-LINK/CMP-LINK (selected by a parameter) built-in 1port, peripheral port available for USB2.0	TCC-6353	○	○	
PC10P	PC10P		Memory 180K words (60K word x3), PCI bus, USB port for a peripheral device (PCwin) communication USB port for TOYOPUC BUS-EXP (EXPANSION BUS) communication, FL-net/Ethernet/FL remote 2 ports	TCC-6372	○	○	
FL remote I/O board	FL remote I/O board		FL remote I/O PNP Input/output 40/40	TCU-6421	○	○	
		Connecter terminal block	One set: 1 unit for input 50 pins and 1 unit for output 60 pins	TRS-5104			
Dedicated PC10P expansion module	BUS-EXP(EXPANDED BUS)		USB port for PC10P communication SN-I/F, PC-LINK, CMP-LINK 1 port	TCU-6367	○	○	
PC3J CPU module	PC3J-CPU		Memory 48K-word(16K×3)+PC/CMP, 3 programs available	TIC-5339	○	○	
	Option	PC3J-CPU PC／CMP	CPU built-in option PC-link or CMP-link is available	TIU-5366			
	PC3JL-CPU		Memory 48K-word(16K×3)+PC/CMP(2port), 3 programs available	TIC-5783	○	○	
PC3JG	PC3JG-P-CPU		Memory 180K-word(60K×3) Input(-) common32points (5mA),output(+) common16points (0.3A)+output(+) common16points (0.05A), SN-I/F, PC, CMP(1port), DLNK-M2 function	TIC-6088	○	○	
	PC3JG-CPU		Memory 48K-word(16K×3) Input(+) common32points (5mA),output(-) common16points (0.3A)+output(-) common16points (0.05A), SN-I/F, PC, CMP(1port), DLNK-M2 function	TIC-6125	○	○	＊
Power module	POWER1		Input 85-264VAC, Output 5VDC 4A	THV-2747			
	POWER2H		Input DC24V Output DC5V 5A	THV-6374	○	○	
Selector module	SELECTOR		For setting of rack No. and I/O address	THU-2765	○	○	
Base			For mounting CPU or selector,				
	8 slot base		8 miseellaneous modules, 1 I/O connector	THR-2766	○	○	
	8 slot base (2)		8 miseellaneous modules, 2 I/O connectors	THR-2872	○	○	
	6 slot base		6 miseellaneous modules, 1 I/O connector	THR-2813	○	○	
	4 slot base		4 miseellaneous modules, 1 I/O connector	THR-2775	○	○	
	2 slot base		2 miseellaneous modules, 1 I/O connector	THR-2814	○	○	
Selector base	8-slot selector base		Base only for 8-slot expansion with built-in selector function, 2 I/O connectors	THR-5643	○	○	
	6-slot selector base		Base only for 6-slot expansion with built-in selector function, 2 I/O connectors	THR-5644	○	○	
	4-slot selector base		Base only for 4-slot expansion with built-in selector function, 2 I/O connectors	THR-5645	○	○	
I/O cable	I/O cable 0.5m		For connection between a CPU base or I/O base and another I/O base:0.5m	THY-2770	○		
	I/O cable 1m		For connection between a CPU base or I/O base and another I/O base:1m	THY-2771	○		
	I/O cable 1.5m		For connection between a CPU base or I/O base and another I/O base:1.5m	THY-5146	○		＊
	I/O cable 2m		For connection between a CPU base or I/O base and another I/O base:2m	THY-5045	○		＊
	I/O cable 2.5m		For connection between a CPU base or I/O base and another I/O base:2.5m	THY-5689	○		＊
	I/O cable 3m		For connection between a CPU base or I/O base and another I/O base:3m	THY-2995	○		＊
I/O branch module			For connection of 3 or more beses	THU-2774	○		
Input/Output module	Input	IN-11	100VAC input, 16 points	THK-2749		○	
		IN-12	24VDC input, 16 points	THK-2750	○	○	
		IN-22D	24VDC input, 32 points	THK-2871	○	○	
		IN-22H	24VDC input, 32 points, high speed input, free screw terminal stand	THK-6831	○	○	
		IN-SW	Switch input, 16 points	THK-5977	○	○	
	Output	OUT-1	Triac output 8 points, 1A/points, 4A/8 points, 100-115VAC	THK-2751		○	
		OUT-3	Independent relay contact 8 points (240VAC/24VDC), 2A/point	THK-2931	○		
		OUT-4	Triac output 8 points, 1A/point, 4A/8 points, 240VAC	THK-5040			
		OUT-11	Triac output 16 points, 0.5A/point, 2A/8 point, 100-115VAC	THK-2795		○	
		OUT-12	Relay contact output 16 points, 2A/point, 5A/8 points (240VAC/24VDC)	THK-2752	○	○	
		OUT-15	MOS FET output (−) common, 16 points, 1A/point, 4A/8 points	THK-2790	○		
		OUT-16	MOS FET output (+) common, 16 points, 1A/point, 4A/8 points	THK-2791	○	○	
		OUT-18	Transister output (−) common, 16 points, 0.5A/point, 2A/8 points	THK-2753	○	○	
		OUT-19	Transister output (+) common, 16 points, 0.5A/point, 2A/8 points	THK-2754	○	○	
		OUT-28D	Transister output (−) common, 32 points, 0.2A/point, 2A/16 points	THK-2870	○	○	
		OUT-29D	Transister output (+) common, 32 points, 0.2A/point, 2A/16 points	THK-5025	○	○	
	Input/Output	I/O-329G	Input:32 points(5mA), Output:16 points(0.3mA)+Output:16 points(0.05mA)	THK-6410	○	○	
Flat cable for I/O-329G	IO 2 - 004M		Flat cable 0.4m	TXY-6573	○		＊
	IO 2 - 010M		Flat cable 1.0m	TXY-6576	○		＊
	IO 2 - 016M		Flat cable 1.6m	TXY-6579	○		＊
	IO 2 - 022M		Flat cable 2.2m	TXY-6583	○		＊
	IO 2 - 030M		Flat cable 3.0m	TXY-6587	○		＊
Unit for I/O-329	Connector conversion unit		40P flat cable → conversion of non-screw terminal block	TXU-6086			＊

＊ Produced on special order

- ○ Marked at CSA column are CSA／NRTL／C( )certified products.
- UL Marked at CSA column are UL( )certied products.
- ○ Marked at CE column are CE approved products.
- ＊Marked at the column are oder-made products.
  Please ask detail delivery when you order.

Device	Name		Specification		Type	CSA	CE	✻
Communication module	PC/CMP-LINK	PC/CMP-LINK	Selection of PC link 19.2/57.6kbps, (16 stations 512 points) or Computer link 0.3-19.2kbps, (32 station)	1-port	THU-2755	○		
	2PORT-LINK	2PORT-LINK		2-port	THU-2927	○	○	
	High-speed PC link	HPC-LINK	625kbps, 32 station, 2,048 points, 1,792 bytes		THU-2758	○	○	
	2PORT FL/ET/RMT	2PORT-EFR	FL-net/Ethernet/FL remote (2port)		THU-6404	○	○	
	FL-net Ethernet	FL/ET-T-V2H	FL-net (version2), Ethernet interface		THU-6289	○	○	
	High-speed remote I/O Master	RMT-I/O M	Master station, 625kbps Max. 31 satellites		THU-2756	○	○	
	High-speed remote I/O Satellite	RMT-I/O S	Satellite		THU-2757	○	○	
Special module	DeviceNet	DLNK-M2	Master station, 500/250/125kbps, 63 stations, 4,096 points		THU-6099	○	○	
		DLNK-S	Satellite, I/O terminal type, 500/250/125kbps, 512 points		THU-5441	○	○	
		DLNK-S2	Satellite, between-PC link type, 500/250/125 kbps, input and output 512 points respectively		THU-5563	○	○	
	AS-i M	AS-i M	ASi interface		THU-5503	○	○	
	Serial I/O	SIO	RS-232C, 0.3−19.2kbps, 2ch		THK-2782	○	○	
	High-speed counter	COUNTER	50kpps 1−, 2-phase		THK-2932	○	○	
	Analogue input	AD-1	1−5V, 4−20mA 4 points		THK-7936	○	○	✻
		AD-2	0−10V 4 points		THK-7937	○	○	✻
		AD-3	0−5V, 0−20mA 4 points		THK-7938	○	○	✻
		AD-10	−10~10V, 0~10V, 0~5V, 1~5V, 0~20mA, 4~20mA 8 points		TCK-6529	○	○	
	Analogue output	DA-1	1−5V, 4−20mA 2 points		THK-7931	○	○	✻
		DA-2	0−10V 2 points		THK-7932	○	○	
	PULSE OUT	PULSE OUT	Pulse output 1-axis easy positioning		THK-5109			
	Motion controller	MCML	Max. 8-axis positioning, MECHATROLINK-Ⅲ		TCI-6721	○	○	

※ MECHATROLINK is a registered trademark of MECHATROLINK Association.

TOYOPUC-PC3JT

Device		Name			Specification	Type	CSA	CE	✻
CPU		PC3JT-CPU			Memory 48K-word(16K×3), CX/CMP link and PC/CMP link built-in	TIC-5994	○	○	
			Option	DLNK	Master station, 500/250/125kbps, 63 stations, 2,048 points	TIU-5996	○	○	
			Option	AS-i M	ASi I/F	TIU-6026	○	○	
Input/Output module		PC3JT-I/O(+)			16 points DC24V input 16 points MOS-FET output(+) common,0.1A/point, 1A/16 points	TIU-6212	○	○	
		PC3JT-I/O(−)			16 points DC24V input 16 points MOS-FET output(-) common,0.1A/point, 1A/16 points	TIU-6213	○	○	
Communication	FL-net,Ethernet	PC3JT-FL/ET-V2			FL-net I/F, Ethernet I/F	TIU-6021	○	○	
	High-speed PC link High-speed remote I/O	PC3JT-HPC			PC link : 625 kbps, 32 stations, 2048 points, 1792 bytes, 1 : N communication. Remote I/O : Master station 625kbps, 2048 points, selection of max. 31satellites, built in 2 port	TIU-6022	○	○	
	S-LINK	PC3JT-S-LINK			S-LINK interface made by Sunx	TIU-6025	○	○	
Special	Serial I/O	PC3JT-SIO			RS-232C, 0.3−19.2Kbps, 2ch	TIU-6024	○	○	
Cover		PC3JT cover			The cover for PC3JT	TIU-6027			
Base		PC3JT base2			The base for PC3JT	TIU-6146			

✻ Produced on special order

TOYOPUC-PCk

Device	Name		Specification	Type	CSA	CE	✻
CPU	PCk05-CPU		Program capacity 2,048 words Input: Built-in 8 points Output: Built-in 6 points (relay output)	TKC-6471	UL	○	
	PCk06-P-CPU		Program capacity 7,679 words Input: Built-in 20 points Output: Built-in 16 points (source output)	TKC-6472	UL	○	
Input/output module	Input	IN-k93	Input (10 points, DC12-24V)	TKK-6473	UL	○	
		IN-k14	Input (16 points, DC20-28V)	TKK-6474	UL	○	
	Output	OUT-k12	Output (16 points, DC12-24V, source)	TKK-6475	UL	○	
		OUT-k81	Relay output (8 points, DC6-27V, AC6-240V)	TKK-6478	UL	○	
	Input-output	I/O-k831	Input-output (input 4 points DC12-24V, relay output 3 point)	TKK-6476	UL	○	
Communication module	Device net Slave	kDLNK	Device net Slave	TKU-6477			
Connector with a cable			Connector with a cable for a 16-point modules 1m	TKY-6486			

Device list

PCDL

Device			Name	Specification	Type	CSA	CE	*
CPU			PCDL	Memory 16K words Built-in communication I/F: RS232C(PCwin)/MODBUS-RTU(Slave) L1 : FL-net L2 : CMP-LINK/MODBUS-RTU(Slave)/ Serial I/O(SIO) /PC-LINK/SN-I/F	TKC-6688	UL	○	
Base module	AC power supply base		D2-03B-1J	2 module base (AC power supply)	TKR-6689	UL	○	
			D2-04B-1J	3 module base (AC power supply)	TKR-6690	UL	○	
			D2-06B-1J	5 module base (AC power supply)	TKR-6691	UL	○	
			D2-09B-1J	8 module base (AC power supply)	TKR-6692	UL	○	
	DC power supply base		D2-03BDC1-1J	2 module base (DC power supply)	TKR-6693	UL	○	
			D2-04BDC1-1J	3 module base (DC power supply)	TKR-6694	UL	○	
			D2-06BDC1-1J	5 module base (DC power supply)	TKR-6695	UL	○	
			D2-09BDC1-1J	8 module base (DC power supply)	TKR-6696	UL	○	
Input/ Output module	DC input		D2-08ND3	8 points DC12/24V (+/-)common	TKK-6697	UL	○	
			D2-16ND3-3J	16 points DC24V (+/-)common	TKK-6698	UL	○	
			D2-32ND3	32points DC24V (+/-)common (connector type)	TKK-6718	UL	○	
	DC output		D2-08TD2	8 points Open collector output DC12/24V (+) common	TKK-6699	UL	○	
			D2-16TD2-3J	16 points Open collector output DC12/24V (+) common	TKK-6700	UL	○	
			D2-32TD2	32 points Open collector output DC12/24V (+) common (connector type)	TKK-6719		○	
	AC output		D2-08TA	8 points SSR output AC100V/200V	TKK-6701	UL	○	
Analogue module	Analogue input	Current input	F2-08AD-1	8ch/common, 4～20mA	TKK-6705	UL	○	
		Voltage input	F2-08AD-2	8ch/common, 0～5V／0～10V／±5V／±10V	TKK-6706	UL	○	
	Analogue output	Current output	F2-08DA-1	8ch, single end, 4-20mA	TKK-6707	UL	○	
		Voltage output	F2-08DA-2	8ch, single end, 0-5V/0-10V	TKK-6708	UL	○	
Communication module	M-NET		D2-02RM	M-NET specifications (8 stations, 256 points)	TKU-6728	UL	○	
	CUnet		D2-HSIO	CUnet specifications (64 stations, 4096 points)	TKU-6832			
Other modules	Expansion controller		D2-CM	Mounted on a base module CPU slot.	TKU-6702	UL	○	
	Expansion controller		D2-EM	Mounted at the right side of a base module.	TKU-6703	UL	○	
	Dummy panel		D2-FILL	Covering for empty slots	TKU-6704			
Programmer	Programming tool		PCwin (Ver.12 or more)	PC10/3/2/1 series･MX･PCDL Programmer	TJA-2032			
	Connecting cable		PCk connecting cable	D-SUB 9P⇔RJ12 conversion connector and RJ12⇔RJ12 Programmer connecting cable (2m) set	TKY-6485			

TOYOPUC-Plus

Device	Name	Specification	Type	CSA	CE	*
CPU	Plus CPU	16K/48K words, Ethernet/FL-net/FL Remote (selected by a parameter) 1port, PC/CMP/SIO/MODBUS 1port, peripheral port available for USB2.0	TCC-6740	○	○	
Additional functions	Plus EX	Plus expansion mode (enabled when EX board is implemented)	TCU-6741	○	○	
		Ethernet / FL-net / FL Remote 10Mbps / 100Mbps				
		PC / CMP / SIO(RS422 / RS232C / SN- I / F / MODBUS)				
Communication	Plus EFR	Ethernet / FL-net / FL Remote 10Mbps / 100Mbps	TCU-6743	○	○	
	Plus DLNK-M	DeviceNet master	TCU-6744	○	○	
	Plus CLNK-M	CC Link master Ver 2.00 compatible	TCU-6824	○	○	
	Plus CLNK-S	CC Link slave Ver 2.00 compatible	TCU-6830	○	○	
Motion	Plus MCML	Positioning / torque / speed control max. 8-axis MECHATROLINK-III	TCI-6819	○	○	
Input/output	Plus IO24/16P	24 inputs (5mA/24V, (-) common)	TCU-6742	○	○	
		16 outputs (0.5A/24V, (+) common)				

TOYOPUC-MX

Device	Name	Specification	Type	CSA	CE	*
CPU	MX-CPU	Memory 40k words (M/PC1 specified area 8k) + PC/RMT/CMP (3 ports)	TIC-5755	○		
Expansion base for PC3J/2J	MX-base	Connects to PC1 BUS, 8 slot, I/O module for PC3J/2J, expansion base for mounting	TIR-5782	○		

- ○ Marked at CSA column are CSA／NRTL／C( )certified products.
- UL Marked at CSA column are UL( )certied products.
- ○ Marked at CE column are CE approved products.
- *Marked at the column are oder-made products.
  Please ask detail delivery when you order.

Communication terminal

Device	Name			Specification		Type	CSA	CE	✻
Communication terminal	PC link		PC link terminal	Input 8 points (24VDC), output 8 points (FET output (−) common 0.5A/point)		TXU-5095	○		
			PC link terminal 160	Input 16 points (DC24V)		TXU-5376	○		
		URT3 series	128URT3P	Input 64 points (24VDC), output 64 points (MOS FET (−) common)		TXU-5066	○		
			128URT3P(+)	Input 64 points (24VDC), output 64 points (MOS FET (+) common)		TXU-5194	○		
	DeviceNet		DLNK TERMINAL40/24	Input 40 points, output 24 points	Input current 7mA/point, output 0.3A/point, 2 A/common	TFU-5423	○	○	
			DLNK TERMINAL32/32	Input 32 points, output 32 points		TFU-5424	○	○	
			DLNK TERMINAL00/64	Output 64 points		TFU-5425	○	○	
			DLNK TERMINAL8/8	Input 8 points, output 8 points	Input current 7 mA/point, output 0.5A/point, 2 A/common	TFU-5440	○	○	
			DLNK TERMINAL16/0	Input 16 points		TFU-5442	○	○	
			DLNK TERMINAL0/16	Output 16 points	Output 0.5A/point, 4A/common	TFU-5834	○	○	
			DLNK TERMINAL24/16	Input 24 points, output 16 points	Input 7mA output 50mA, 0.8A/common	TFU-5777	○	○	
			DLNK TERMINAL24/16P	Input 24 points, output 16 points (+) common		TFU-5918	○	○	
			DRMT-32/00	Input 32 points	Input 6mA/point Output 0.5A/point 4A/common with diagnostic function	TFU-6120	UL	○	✻
			DRMT-00/32	Output 32 points		TFU-6121	UL	○	✻
			DRMT-16/16	Input 16 points, output 16 points		TFU-6122	UL	○	✻
			DRMT-32/00P	Input 32 points (+) common		TFU-6110	UL	○	✻
			DRMT-00/32P	Output 32 points (+) common		TFU-6111	UL	○	✻
			DRMT-16/16P	Input 16 points, output 16 points (+) common		TFU-6112	UL	○	✻
	FL remote I/O terminal with diagnostic function		FRMT-32/00P	FL remote terminal input 32 points		TCU-6405	○	○	
			FRMT-00/32P	FL remote terminal output 32 points		TCU-6406	○	○	
			FRMT-16/16P	FL remote terminal input 16 points output 16 points		TCU-6407	○	○	
	Switching hub		FE-SWH05	5 port switching HUB		TCU-6414	UL	○	
			FE-SWH08	8 port switching HUB		TCU-6415	UL	○	

✻ Produced on special order

Peripheral equipment

Device		Name		Specification		Type	CSA	CE	✻
Programmer		PCwin/PCwin-PCk		A software which uses a Windows*2000/XP/Vista/7 personal computer as a programmer (System software for PC10/PC3 J/ PC2/L2/PC1/MX/PCk/PCDL) A personal computer is not included.	(Japanese) CD-ROM	TJA-2032			
					(Japanese) CD-ROM License 5	TJA-2051			
					(English) CD-ROM	TJA-2031			
					(English) CD-ROM License 5	TJA-2054			
					(Chinese) CD-ROM	TJA-6233			
					(Chinese) CD-ROM License 5	TJA-6234			
					(French)*1 CD-ROM	TJA-6285			
					(French)*1 CD-ROM License 5	TJA-6286			
	Software option		Option 1*2 [Symbolic・FBD]	Calling FBD is enabled	(required for French, Czech and Russian versions) FD	TJA-6036			
					(required for French, Czech and Russian versions) FD License 5	TJA-6039			
			Option 2*2 [printing of the drawing style]	Printing of the drawing style is enabled	(required for French, Czech and Russian versions) FD	TJA-6042			
					(required for French, Czech and Russian versions) FD License 5	TJA-6045			
			PCwin A set with I/O drawing function expansion tool	PCwin[TJA-2032]+I/O drawing expansion tool [TXY-6351]	(Japanese) CD-ROM	TJA-6365			
				PCwin[TJA-2031]+ I/O drawing expansion tool [TXY-6351]	(English) CD-ROM	TJA-6366			
	Hardware option		I/O drawing function expansion tool	For locking of I/O drawing creation & editing	Sentinel USB	TXY-6351			
			USB I/F cable	Connection cable between TOYOPUC and PCwin 3m (TOYOPUC 15P male - PC USB)		TXY-6266			
			PCk connection cable	Connection cable between TOYOPUC-PCDL, PCk and PCwin 2m (TOYOPUC-PCk modular 6P male - PC 9P female)		TKY-6485			

✻ Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

✻ Produced on special order

✻1 FBD call and printing drawing style functions are not included. And does not support PCk system software

✻2 FD is required, when using function blocks or printing of the drawing style with the PCwin French , Czech and Russian version.

Device list

Parts

Device	Name	Specification	Type	CSA	CE	*
Lithium battery	For PC10/PC3J-CPU	For TOYOPUC-PC10/PC3J CPU, Coin-type secondary cell	T I P-5426			
	For CPU	For TOYOPUC-PC2/PC2J/L2 CPU, PC2F/PC2FS	TXP-2789			
Connector	External connector for PC3JG and I/O-329G	A 40-pin square shape connector of soldering type (with a 40-pin resin enclosure)	T I P-5867			

TOYOPUC-PCS

Device	Name		Specification	Type	CSA	CE	*
CPU	CPU		Memory 12K words Built-in SN-I/F(Communication with TPYOPUC-PC3 JG/PC10)	TAC-6089	○	○	
Input /output module	Input module	DI001	8 points (for Cat.4 : 4 points). dry contact input 24VDC	TAK-6090	○	○	
		DI003	24 points (for Cat.4 : 12 points) dry contact input 24VDC	TAK-6104	○	○	
	Output module	DO002	4 points (for Cat.4 : 2 points). semiconductor output 24VDC 0.25A /point +	TAK-6093	○	○	
		DO003	4 points (for Cat.4 : 2 points). semiconductor output 24VDC 0.25A /point +	TAK-6108	○	○	
	Input module for a light curtain	SPM002	8 points (Cat.4 : 4 points) 24VDC (-) common type (PNP output type for light curtain connection)	TAK-6177	○	○	
Communication module	S-BUS		Safety communication Master	TAU-6098	○	○	
	RMT-S		Safety communication remote Slave	TAU-6102	○	○	
Base	BASE5		5 slot base	TAR-6148	○	○	
	BASE8		8 slot base	TAR-6149	○	○	
	BASE12		12 slot base	TAR-6094	○	○	
Power supply filter	P-FLT		Power supply filter for CPU, RMT-S	TAU-6207	○	○	
Fan unit 2	FAN2		Cooling fan for CPU, RMT-S	TAU-6208	○	○	
Cover	BLANK		Cover for empty slot protection	TAU-6211	○	○	

TOYOPUC-PCS-J

Device	Name		Specification	Type	CSA	CE	*
CPU	CPU-OP(MON)		Memory 16K words Built-in SN-I/F (Communication with TPYOPUC-PC3 JG/PC10) 8 points (Cat.4 : 4 points) dry contact input 24VDC 6 points (Cat.4 : 3 points) semiconductor output 24VDC 0.5A /point	TDC-6344	○	○	
Power module	POWER		System power input 24VDC System power supply to each module USB I/F (for peripheral devices) SN-I/F communication port (communication with TPYOPUC-PC3 JG/PC10)	TDV-6338	○	○	
	BOOSTER		24VDC auxiliary power module The module should be mounted when the 10 or more modules including CPU. Mounting between 9th module and 10th module	TDV-6339	○	○	
Input/output module	Input/output module	SUB-MON	8 points (Cat.4 : 4 points) dry contact input 24VDC 6 points (Cat.4 : 3 points) semiconductor output 24VDC 0.5A /point	TDK-6340	○	○	
		S-STP(E)	6 points (Cat.4 : 3 points) dry contact input 24VDC 4 points (Cat.4 : 2 points) semiconductor output 24VDC 0.5A /point	TDK-6346	○	○	
		S-STP(LC)	6 points (Cat.4 : 3 points) dry contact input 24VDC 4 points (Cat.4 : 2 points) semiconductor output 24VDC 0.5A /point	TDK-6347	○	○	
		S-STP(E/LC)	6 points (Cat.4 : 3 points) contact input 24VDC 4 points (Cat.4 : 2 points) semiconductor output 24VDC 0.5A /point	TDK-6348	○	○	
	Input module	S-IN(E)	16 points (Cat.4 : 8 points) dry contact input 24VDC	TDK-6356	○	○	
		S-IN(LC)	16 points (Cat.4 : 8 points) contact input 24VDC	TDK-6357	○	○	
	Output module	S-OUT	16 points (Cat.4 : 8 points) semiconductor output 24VDC 0.3A /point	TDK-6358	○	○	
BASE	BASE		Base	TDR-6341	○	○	

Gateway module

Device	Name		Specification	Type	CSA	CE	*
Gateway module	Device net	SNGW-DL	Transmission speed: 125k/250k /500k bps Number of transfers: bit area input/output = maximum 32bytes/maximum 32bytes Register area input/output = 32byte/32byte	TAF-6291	○	○	
	CC-LINK	SNGW-CL	Transmission speed: 156k/625k/2.5M/5.0M/10.0Mbps Number of transfers: bit area input/output = maximum 32bytes/maximum 32bytes Register area input/output = 32bytes/32bytes	TAF-6293	○	○	
	PROFIBUS	SNGW-PF	Transmission speed: 9.6k/19.2k/45.45k/93.75k/187.5k 500k/1.5M/3.0M/6.0M/12.0Mbps Number of transfers: bit area input/output = maximum 8bytes/maximum 8bytes Register area input/output = maximum 32bytes/maximum 32bytes	TAF-6295	○	○	

* Produced on special order

- ○ Marked at CSA column are CSA／NRTL／C( )certified products.
- UL Marked at CSA column are UL( )certied products.
- ○ Marked at CE column are CE approved products.
- *Marked at the column are oder-made products.
  Please ask detail delivery when you order.

Parts

Device	Name	Specification	Type	CSA	CE	✻
Lithium battery	Battery for TOYOPUC-PCS/ TOYOPUC-PCS-J	Coin type lithium rechargeable battery for TOYOPUC-PCS/TOYOPUC-PCS-J	TIP-5426			
SN-I/F cable	SN-I/F CABLE 0.5m	SN-I/F cable for TOYOPUC-PCS-J Cable length: 0.5m Terminal A: AMP connector/Terminal B: Phoenix contact AI 1-10RD	TXY-6670			
	SN-I/F CABLE 1.5m	SN-I/F cable for TOYOPUC-PCS-J Cable length: 1.5m Terminal A: AMP connector/Terminal B: Phoenix contact AI 1-10RD	TXY-6671			
	SN-I/F CABLE 3.0m	SN-I/F cable for TOYOPUC-PCS-J Cable length: 3.0m Terminal A: AMP connector/Terminal B: Phoenix contact AI 1-10RD	TXY-6672			
	SN-I/F CABLE 3.0m(Free)	SN-I/F cable for TOYOPUC-PCS-J Cable length: 3.0m Terminal A: Terminal A: AMP connector/Terminal B: No connector	TXY-6673			

Peripheral device

Device	Name	Specification	Type	CSA	CE	✻
Programmer (Windows2000/XP)	PCwin-Safe2	TOYOPUC-PCS/TOYOPUC-PCS-J Programming software (PCwin-Safe and PCwin-Safe-J integrated software) [CD-ROM Japanese version]	TJA-2071			
		TOYOPUC-PCS/TOYOPUC-PCS-J Programming software (PCwin-Safe and PCwin-Safe-J integrated software) [CD-ROM English version]	TJA-2073			
		TOYOPUC-PCS/TOYOPUC-PCS-J Programming software (PCwin-Safe and PCwin-Safe-J integrated software) [CD-ROM Chinese version]	TJA-6314			
	PCwin-Safe	Programming software for TOYOPUC-PCS [CD-ROM Czech version]	TJA-6254			
		Programming software for TOYOPUC-PCS [CD-ROM French version]	TJA-6287			
	Option 1 [symbolic ・FBD]	Option 1 software [Floppy disk English version] (This option is necessary for using PCwin-Safe function blocks in Czech, French, and Russian version)	TJA-6049			
Communication cable	Personal computer connection cable 2	Between TOYOPUC-PCS and a peripheral devices (personal computer) connection	TXY-6071			
	USB I/F cable	Between TOYOPUC-PCS and a peripheral devices (personal computer) connection	TXY-6266			

✻ Produced on special order

Motion controller

Device	Name	Specification	Type	CSA	CE	✻
Motion controller	TOYOPUC-MCML	Motion controller for TOYOPUC-PC10G and PC3JG, MECHATROLINK-Ⅲ	TCI-6721			
	TOYOPUC-Plus MCML	Motion controller for TOYOPUC-Plus, MECHATROLINK-Ⅲ	TCI-6819			
	TOYOPUC-MCSSC	Motion controller for TOYOPUC-PC10G and PC3JG, SSCNETⅢ	TCI-6805			
Manual pulse generator	JHC1MCA-□□	Manual operation box at hand for the positioning adjustment for each axis. Possible to directly connect to Plus MCML				
Servo amplifier	JSGDV-□□□□	Servo amplifier for JTEKT motion system.				
Servo motor	JSGMJV type (middle moment small capacity) JSGMAV type (low moment small capacity) JSGMSV type (low moment medium capacity) JSGMPS type (middle moment small capacity) JSGMGV type (middle moment medium capacity)	Servo motor for JTEKT motion system.				

Motion controller setting tool

Device	Name	Specification		Type	CSA	CE	✻
MCML setting tool	MOTION Tool	Software using Windows 2000, XP, Vista and 7 personal computers as a setup tool	(Japanese version) CD-ROM	TJA-6821			
			(Japanese version) CD-ROM Licenses 5	TJA-6825			
			(English version) CD-ROM	TJA-6882			
			(English version) CD-ROM Licenses 5	TJA-6883			

JTEKT CORPORATION

NAGOYA HEAD OFFICE
No. 7-1, Meieki 4-chome, Nakamura-ku, Nagoya, Aichi Pref., 450-8515, JAPAN TEL: (81)52-527-1900 FAX: (81)52-527-1911

OSAKA HEAD OFFICE
No. 5-8, Minamisemba 3-chome, Chuo-ku, Osaka, 542-8502, JAPAN TEL: (81)6-6271-8451 FAX: (81)6-6245-3712

SALES & MARKETING HEADQUARTERS
No. 5-8, Minamisemba 3-chome, Chuo-ku, Osaka, 542-8502, JAPAN TEL: (81)6-6245-6087 FAX: (81)6-6244-9007

— GLOBAL NETWORK —
MACHINE TOOLS & MECHATRONICS BUSINESS OPERATIONS

MACHINE TOOLS & MECHATRONICS OVERSEAS SALES DEPT.
1, Asahimachi 1-chome, Kariya, Aichi Pref., 448-8652, JAPAN
TEL: (81)566-25-5171 FAX: (81)566-25-5467

OVERSEAS AFFILIATED COMPANIES

TOYODA MACHINERY USA CORP.
HEADQUARTERS
316 W.University Drive,
Arlington Heights, IL 60004
U.S.A.
TEL: (1)847-253-0340
FAX: (1)847-577-4680

TOYODA MACHINERY USA CORP.
AUTOMOTIVE PRODUCTS & SPECIAL MACHINES DIVISION
51300 W. Pontiac Trail
Wixom, MI. 48393-1003
U.S.A.
TEL: (1)248-624-5755
FAX: (1)248-624-8597

TOYODA MACHINERY AND ENGINEERING EUROPE SAS
2 Grande Allee P.A des Petits Carreaux
94380 Bonneuil sur Marne, FRANCE
TEL: (33)1-49.56.85.80
FAX: (33)1-43.77.47.50

TOYODA MACHINERY EUROPE GmbH
HEADQUARTERS
Bischofstr, 118 47809 Krefeld GERMANY
TEL: (49)2151-5188-300
FAX: (49)2151-5188-333

TOYODA MACHINERY (DALIAN) CO., LTD.
HEADQUARTERS
46 Developing Zone In DaLian, 116600 China
Dalian, CHINA
TEL: (86)-411-8733-4601
FAX: (86)-411-8733-4602

TOYODA MACHINERY (DALIAN)CO., LTD.
BEIJING OFFICE
Room 1017, Fortune Building No.5 Dong San Huan North Road Chaoyang,
Beijing, 100004 CHINA
TEL: (86)-10-6590-9356～58
FAX: (86)-10-6590-9359

TOYODA MACHINERY (DALIAN)CO., LTD.
SHANGHAI OFFICE
Room 25B3, V-Capital Building 333 Xianxia Road Changning District,
Shanghai, 200336 CHINA
TEL: (86)-21-5178-1088
FAX: (86)-21-5178-1099

TOYODA MACHINERY (DALIAN)CO., LTD.
FOSHAN OFFICE
2 Wushaxinhui Road, Daliang Street Shunde District, Foshan,
Guangdong, 52833 CHINA
TEL: (86)-757-2232-6651～52
FAX: (86)-757-2232-6650

TOYODA MACHINERY (DALIAN)CO., LTD.
CHONGQING OFFICE
701 Lanmei Dadao(Lanmei Averue)Hi-Tech Zone, Chongqing, 400039 CHINA
TEL: (86)-23-6171-1133
FAX: (86)-23-6171-1133

TPA ENGINEERING CORP.
84BL-19Lot,
Namdong Industrial Complex,
675-18, Gojan-Dong, Namdong-ku,
Incheon, KOREA
TEL: (82)-032-822-0305
FAX: (82)-032-822-0306

TOYODA MACHINERY S.E. ASIA CO., LTD.
313, Bangna-Trad Road, KM.1
Kwang Bangna, Khet Bangna,
Bangkok, 10260 THAILAND
TEL: (66-2)361-8250～1
FAX: (66-2)361-8252

PT.JTEKT INDONESIA
MM2100 Industrial Town
Jl. Halmahera Block DD-3
Cikarang Barat, Bekasi 17520 INDONESIA
TEL: (62)21-8998 3275
FAX: (62)21-8998 3274

TOYODA KOKI DO BRASIL INDUSTRIA E COMERCIO DE MAQUINAS, LTDA.
Rua Rego Barros 1319,
Vila Antonieta,Sao Paulo-SP, BRASIL
TEL: (55)11-6724-5711
FAX: (55)11-6727-3450

TOYODA MICROMATIC MACHINERY INDIA LIMITED
Plot No.550-E, 2nd Floor
Place City-II, Sector-37, Gurgaon 122 001
INDIA
TEL: (91)-124-4264601/02/03
FAX: (91)-124-4288355

JTEKT

http://www.jtekt.co.jp

Information presented in this brochure is subject to change without prior notice.
Available machines or machines shown may vary depending on optional equipment or periodic design changes.
The export of products defined as restricted commodities (or technologies) under Japan's "Foreign Exchange and Foreign Trade Act" requires an export license issued by the Japanese Government. Furthermore, similar licenses may be required for re-transfer, re-sale or re-export of such products, therefore please do not fail to contact JTEKT in advance.
In order to observe laws and regulations and prevent inappropriate export, re-sale and relocation, JTEKT has equipped all of our NC machine tools with devices that detect relocation. If this device is activated, the machine will cease operation and will not restart until it has been checked by JTEKT. JTEKT may refuse to restart the machine should it be deemed that such an action would amount to the inappropriate export of a commodity or technology, or violate export regulations. In such a case, JTEKT will not be liable for any damages arising from the refusal to restart machine operation and do not bear any liability to perform services pertaining to product warranty.
Please contact your JTEKT representative for details. Always read manuals carefully before using any machinery to ensure safe and proper use.

Type of Equipment : Programmable Controller
Model Number : TOYOPUC

Cat. No. M2063-8E

Printed in Japan 131205T
This publication was made using recycled paper for the protection of forests.