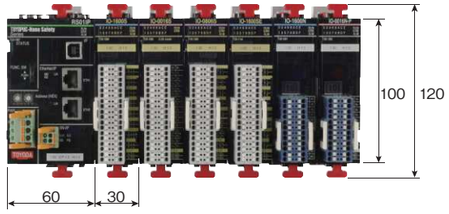
■ TOYOPUC-Nano Safety Performance Specifications

Item		Specifications
Safety category		ISO13849-1 PLe　IEC61508 SIL3
Program method		Stored program method
Program control method		Cyclic arithmetic method
I/O control method		Image register method
Program language		LD(+ FBD)
Scan time	Master	20ms
	Slave	5.0ms
Response speed	Master	Depending on configuration and settings. (See the instruction manual)
	Slave	9.7ms
Program capacity (object size)	Master	512KB (Safety only)
	Slave	64KB (Safety) + 64KB (standard)

■ TOYOPUC-Nano Safety External Dimensions

(When W=330 is used with up to 9 IO modules, protrusion is not included.)

Unit: mm　D=80



■ TOYOPUC-Nano Safety Lineup　(Please contact your sales representative for the release date.)

Equipment		Name	Type	Specifications	Remarks
Safety slave module	Without SN-I/F	RS00IP	TUU-1086	24 V DC system power input, system power supply to IO module USB I/F (for peripherals) Memory: Safe 64 KB, standard 64 KB EtherNet/IP (safe communication: CIP safety): With 1 port HUB	
	With SN-I/F	RS01IP	TUU-1087	24 V DC system power input, system power supply to IO module USB I/F (for peripherals) Memory: Safe 64 KB, Standard 64 KB EtherNet/IP (safe communication: CIP Safety): with 1 port HUB Serial communication: SN-I/F, MODBUS-RTU (selective)	
Safety input/output module	16 points input	IO-1600S	TUK-1088	24 V DC 16 points input (Cat.4, Cat.2) dry contact input, OSSD input (-common), semiconductor input (-common) (configurable at a minimum increment of 1 point from peripheral)	PCS-J S-IN(LC) Terminal block compatible
	16 points input	IO-1600SE	TUK-1144	24 V DC 16 points input (Cat.4, Cat.2) dry contact input (inverse input specification)	PCS-J S-IN(E) Terminal block compatible
	16 points FET output	IO-0016S	TUK-1090	24 V DC 16 points FET output 0.3A/point (Cat.4, Cat.2) or 16 points FET output 0.5A/point (Cat.4, Cat.2) or 8 points FET output 0.5A/point (Cat.4, Cat.2) (select one from the peripherals)	One point for Cat.4, Cat.2 PCS-J S-OUT Terminal block compatible
	8 points input 6 points FET output	IO-0806S	TUK-1089	8 points DC 24 V input (Cat.4, Cat.2) 6 points FET output 0.5A/point (Cat.4, Cat.2)	One point output, support for Cat.4, Cat.2 compatible with PCS-J sub-MON
Standard input/output module	16 points input	IO-1600N	TUK-1091	24 V DC 16 points input (8 points/common) ··· nonpolar	
	16 points FET output	IO-0016N-P	TUK-1092	24 V DC 16 points (8 points/common) 0.5A/point 4A/common (+) common with short-circuit protection function	
Base	Base	BASE	TUR-1093	Base (connection between safety slave and input/output module or input/output modules)	

※Ethernet is a registered trademark of Fuji Xerox.
※EtherCAT is a registered trademark of Beckhoff Automation GmbH.
※FL-net is a controller-level network (OPCN-2) provided by JEMA (Japan Electrical manufacturers Association) and is a registered trademark of JEMA
※MODBUS is a registered trademark of Schneider Electric USA, Inc.
※MTConnect is a registered trademark of AMT (The Association for Manufacturing Technology)
※IO-Link is a registered trademark of PROFIBUS Nutzerorganization e.V.

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TOYODA

TOYOPUC-Nano 10GX
TOYOPUC-Nano Safety

New architecture next Operation

JTEKT
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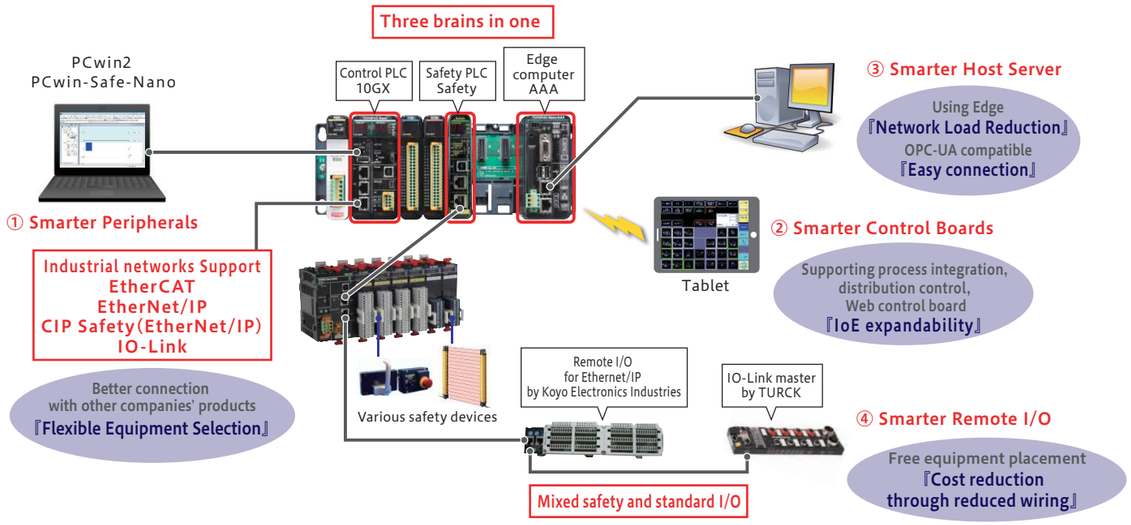
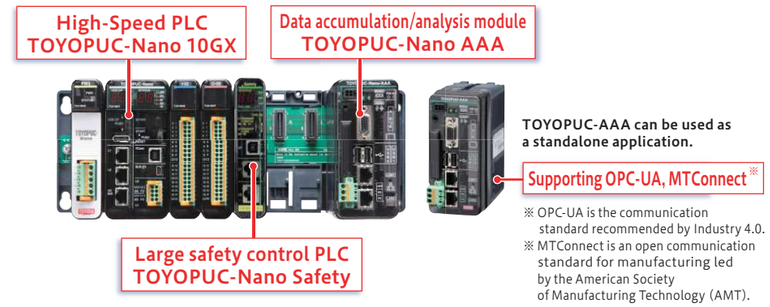
Smart Equipment with Three Brains



New architecture

New High-speed Platforms and Three Brains. Realization of Fast and Advanced Big Data Processing

- Six times faster than PC10G
  (Comparison of processing speed of basic instructions)
- Advanced analysis with parallel use of data accumulation/ analysis module
- Strongly supported IoE with compatibility with OPC-UA and MTConnect as a new function
- Seamlessly connected standard data, secure data, and big data with the common platform



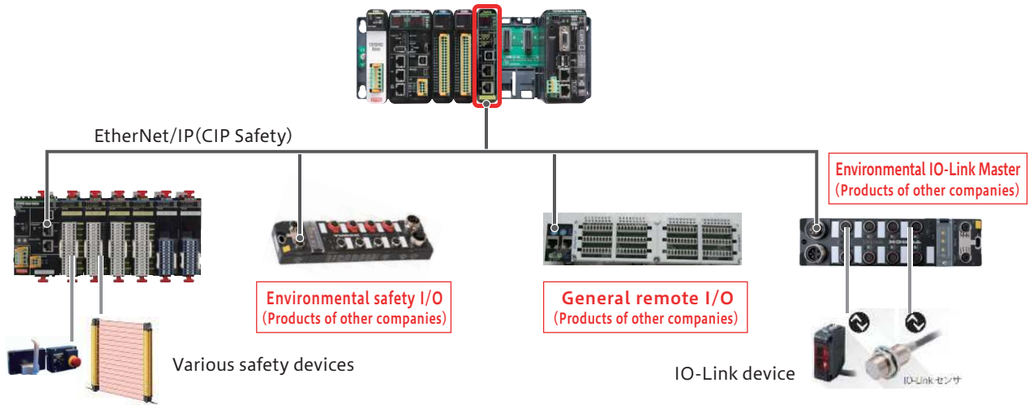
TOYOPUC-AAA can be used as a standalone application.

Supporting OPC-UA, MTConnect※

※ OPC-UA is the communication standard recommended by Industry 4.0.
※ MTConnect is an open communication standard for manufacturing led by the American Society of Manufacturing Technology (AMT).

Next operation

Reduced Wiring Due to Mixed Safety and Standard I/O

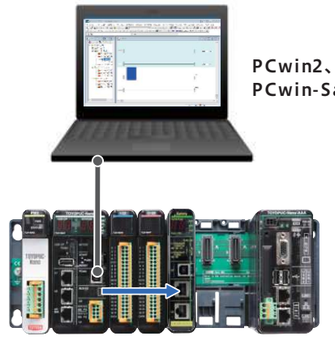


■ Programming tool

Item	Type		Function
PCwin2	TJA-1137	Japanese version No CD	PCwin for TOYOPUC-PC10G Series PCwin 2 for TOYOPUC-Nano 10GX
	TJA-1138	English version No CD	
PCwin-Safe2	TJA-1139	Japanese version No CD	PCwin -Safe for TOYOPUC-PCS PCwin -Safe-J for TOYOPUC-PCS-J: PCwin -Safe-Plus for TOYOPUC-Plus Safety PCwin -Safe-Nano for TOYOPUC-Nano Safety
	TJA-1140	English version No CD	

PCwin2、PCwin-Safe-Nano

- Tool compatible
- Operability and data are conventionally compatible



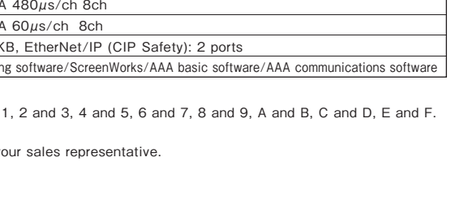
■ TOYOPUC-Nano 10GX Performance Specifications

Item	Specifications
Programming language	Ladder (LD), SFC, FBD, ST
Processing speed of basic instructions	2.6 ns to /instruction
Instruction words	20 basic instructions, 23 timer counters, more than 700 applied instructions
External input/output points	4,096 points
Internal input/output points	86,016 points (4,096 points × 3 + 8,192 points + 65,536 points)
Keep relay points	6,400 points (768 points × 3 + 4,096 points)
Timer function	9,728 points in total
Counter function	1 to 65,535 (2,560 points × 3 + 2,048 points)
Link relay points	38,912 points (10,240 points × 3 + 8,192 points)
Rising/falling edge detection	11,776 points (2,560 points × 3 + 4,096 points)
Data register	164KW (12KW × 3 + 128KW), Flash registers: 4Mbyte extended buffer registers: 256 KW direct designation is available.
Link register	6KW/16 bits (2KW × 3)
Number of link modules	Up to 24 links

■ TOYOPUC-Nano External Dimensions

(When 8BS is used, protrusion is not included.)

Unit: mm D=112



■ TOYOPUC-Nano Lineup

Equipment		Name	Type	Specifications
24VDC power supply module		PW2	TUV-6942	Rated 24 V DC tolerance 20.4 to 28.8 V DC, 30VA or less (with a diagnostic function)
CPU module *1		10GX	TUC-1157	Communication: 2 Ethernet ports and 2 serial ports
Input module	16 points input	I-12	TUK-1006	24 V DC 16 points input (8 points/common) nonpolar
	32 points input	I-22	TUK-6948	24 V DC 32 points input (8 points/common) nonpolar
	Switch input	SW	TUK-6965	16 points switch input
Output module	16 points contact output	O-12	TUK-1007	24 V DC 16 points (8 points/common) 2 A/point 5A/common nonpolar, with IO power monitor
	16 points FET output With short circuit diagnostics	O-18	TUK-1008	12/24 V DC 16 points (8 points/common) 1.0A/point 4A/common (-) common *2, With IO power monitor
		O-19	TUK-1009	12/24 V DC 16 points (8 points/common) 1.0A/point 4A/common (+) common *2, With IO power monitor
	32 points FET output With short circuit diagnostics	O-29	TUK-6947	12/24 V DC 32 points (8 points/common) 0.5A/point 2A/common (+) common, with IO power monitor
		O-2A	TUK-1041	12/24 V DC 32 points (16 points/common) 0.5A/2 points 2A/common (-) common with IO power monitor
		O-2B	TUK-1042	12/24 VDC 32 points (16 points/common) 0.5A/point 2A/common (+) common, with IO power monitor
Input/output module	32 points input/output With short circuit diagnostics	IO-328	TUK-1005	24 V DC 32 points input (16 points/common) (+) common 24 V DC 32 points output (16 points/common) 0.3A/point 2A/common (-) common, with IO power monitor
		IO-329	TUK-6952	24 V DC 32 points input (16 points/common) (-) common 24 V DC 32 points output (16 points/common) 0.3A/point 2A/common (+) common, with IO power monitor
Base	10 base	10BS	TUR-1043	Possible to load 10GX + up to 9 modules or SL + up to 10 modules
	8 base	8BS	TUR-6943	Possible to load 10GX + up to 7 modules or SL + up to 8 modules
	6 base	6BS	TUR-6966	Possible to load 10GX + up to 5 modules or SL + up to 6 modules
	4 base	4BS	TUR-6967	Possible to load 10GX + up to 3 modules or SL + up to 4 modules
Communication module	2 ports ether	2ET	TUU-6949	Ethernet/EtherNet/IP/EtherCAT *3 /FL-net/FL remote selective two ports
	Device net	DL	TUU-6956	DeviceNet master/slave selective
	2 ports link	2ML	TUU-6954	PC-LINK/CMP-LINK/ MODBUS RTU Slave/SIO 2 ports selectable
	Selector	SL	TUU-6955	For rack expansion, up to 100 m between racks, up to 8 racks (including CPU racks)
Special module	High-speed counter	CT	TUK-6974	8Mpps, DC5V/12V/24V/ RS- 422
	Analogue input	AD	TUK-6975	-10～10V, 0～20mA 480μs/ch 8ch
	Analogue output	DA	TUK-6976	-10～10V, 0～20mA 60μs/ch 8ch
Safety module *1	Safety master	Safety	TUC-1085	Memory: Safe 512KB, EtherNet/IP (CIP Safety): 2 ports
Edge analysis module*4	Edge computer	AAA	TUK-6987-02	Direct circuit monitoring software/ScreenWorks/AAA basic software/AAA communications software

*1 Please contact your sales representative for the release date.
*2 The O-18, O-19 output current should be less than or equal to 1A for the sum of addresses 0 and 1, 2 and 3, 4 and 5, 6 and 7, 8 and 9, A and B, C and D, E and F.
*3 EtherCAT can only be used on one port, including the built-in CPU port.
*4 As for details regarding the timing of adding OPC-UA and MTConnect functions, please contact your sales representative.