

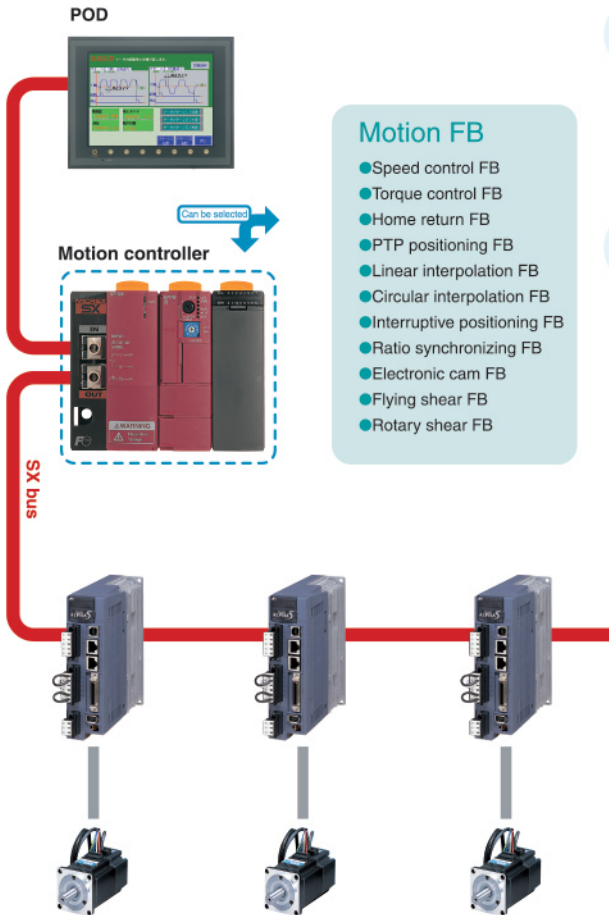
Integrated Controllers **MICREX-SX** Series Programmable Controllers



Features

- **Built-in 32-bit high performance processor**
- **N: 1 Redundancy**
- **Various motion control realized with function blocks**
 - Speed control • Position control • Torque control
- **3 types of tasks**
 - Default task • Contact – period task • Event task
- **High speed processing**
 - Program scan period 1ms (fastest)
 - Refreshment of 1024 I/O points: 1m
- **Compatible to 25Mbps serial bus (SXbus)**
- **Controller complying with international standards**
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 - Compliant with “common specifications for electric equipment work” stipulated by Ministry of Land, Infrastructure and Transport
 - Standard model supporting CE marking and UL/cUL

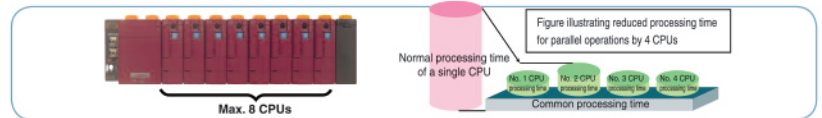
MOTION CONTROL SYSTEM



PROCESS CONTROL SYSTEM

Multi-CPU System Applicable to Up to 8 CPUs

Parallel processing with up to 8 CPUs (SPH300/SPH2000/SPH3000)

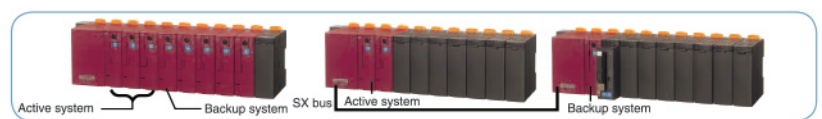


Redundant System Assuring System Safety and Reliability

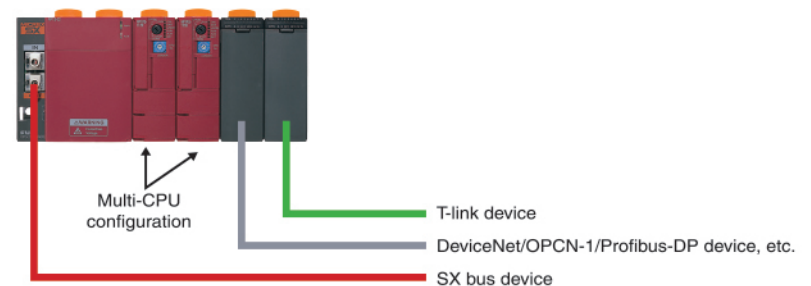
1-to-1 warm-standby feature (SPH300/SPH2000)



N-to-1 backup feature (SPH300)



Configuration example



CPU Module Features

- Ultra high-speed processing
The CPU module carries out ultra high-speed processing as bellow;
The SPH3000 processes basic instructions in 9ns,
the SPH300 processes basic instructions in 20ns,
the SPH200 processes basic instructions in 70ns,
and the SPH2000 processes basic instructions in 30ns.
- Multi-CPU configurations (SPH300/SPH2000/SPH3000)
Up to 8 CPUs can be configured, effective for high-speed control by load distribution.
- Compatible with USB and user ROM
The SPH300/SPH2000/SPH3000 of the USB and user ROM versions with separate formats are offered (NP1PS-32R/74R/117R/245R, NP1PM-48R/48E/256E, NP1PU-048E/256E).
- Redundancy (SPH300/SPH2000)
1-to-1 hot standby feature and N-to-1 backup feature improves the system safety and reliability.



- IEC 61131-3
Complete compliance with the IEC 61131-3 international standard languages enables programming understood worldwide.
- Large-capacity battery (optionally available)
SPH300 (74K/117K/245K steps) can extend the memory backup time to 3.5 years (25°C) by adding the large-capacity battery as an option.

Types/Ordering codes

Names	Types (Ordering codes)	Specifications, Names		
CPU module	SPH200	NP1PH-08	SPH200 Program memory capacity 8K steps Max. No. of I/O points 8192 points	
		NP1PH-16	SPH200 Program memory capacity 16K steps Max. No. of I/O points 8192 points	
	SPH300	NP1PS-32	SPH300 Program memory capacity 32K steps Max. No. of I/O points 8192 points	
		NP1PS-32R	SPH300 Program memory capacity 32K steps User ROM/USB adapted, Max. No. of I/O points 8192 points	
		NP1PS-74R	SPH300 Program memory capacity 74K steps User ROM/USB adapted, Max. No. of I/O points 8192 points	
		NP1PS-117R	SPH300 Program memory capacity 117K steps User ROM/USB adapted, Max. No. of I/O points 8192 points	
		NP1PS-245R	SPH300 Program memory capacity 245K steps User ROM/USB adapted, Max. No. of I/O points 8192 points	
	SPH300EX	NP1PS-74D	SPH300EX Program memory capacity 74K steps x 2 User ROM/USB adapted, Max. No. of I/O points 8192 points x 2	
	SPH2000	NP1PM-48R	SPH2000 Program memory capacity 48K steps User ROM/USB adapted, Max. No. of I/O points 8192 points	
		NP1PM-48E	SPH2000 Program memory capacity 48K steps User ROM/USB/Ethernet adapted, Max. No. of I/O points 8192 points	
		NP1PM-256E	SPH2000 Program memory capacity 256K steps User ROM/USB/Ethernet adapted, Max. No. of I/O points 8192 points	
		NP1PM-256H	SPH2000 Program memory capacity 256K steps, Redundantly function adapted, User ROM/USB adapted, Max. No. of I/O points 8192 points	
	SPH3000	NP1PU-048E	SPH3000 Program memory capacity 48K steps User ROM/USB/Ethernet adapted, Max. No. of I/O points 8192 points	
		NP1PU-256E	SPH3000 Program memory capacity 256K steps User ROM/USB/Ethernet adapted, Max. No. of I/O points 8192 points	
Power supply module	NP1S-22	100/240V AC Input power supply, output capacity 35W, Accessories: Connector for ALM contact, Voltage selection jumper plate		
	NP1S-91	100 to 120V AC Input power supply 15W (1 slot)		
	NP1S-81	200 to 240V AC Input power supply 15W (1 slot)		
	NP1S-42	24V DC Input power supply, output capacity 35W, Accessories: Connector for ALM contact		
Base board	NP1BS-03	For 3 slots Processor buses 2 slots		
	NP1BS-06	For 6 slots Processor buses 3 slots		
	NP1BS-08	For 8 slots Processor buses 3 slots		
	NP1BS-11	For 11 slots Processor buses 3 slots		
	NP1BS-13	For 13 slots Processor buses 3 slots		
	NP1BP-13	For 13 slots Processor buses 10 slots (High speed type)		
Digital input module *1	NP1X1606-W	24V DC, 16 points, 7mA 1 to 100ms variable	Screw terminal	
	NP1X3206-W	24V DC, 32 points, 4mA 1 to 100ms variable, Optional Connector	Connector	
	NP1X3202-W	5V/12V DC, 32 points, 3mA/9mA 1 to 100ms variable, Optional Connector	Connector	
	NP1X3206-A	24V DC, 32 points, 4mA 0 to 100ms variable, Pulse catch 20kHz, Optional Connector	Connector	
	NP1X6406-W	24V DC, 64 points, 4mA 1 to 100ms variable, Optional Connector	Connector	
	NP1X1607-W	48V DC, 16 points, 5mA 1 to 100ms variable	Screw terminal	
	NP1X0810	100/120V AC, 8 points, 10mA 10ms	Screw terminal	
	NP1X1610	100/120V AC, 16 points, 10mA 10ms	Screw terminal	
	NP1X0811	200/240V AC, 8 points, 10mA 10ms	Screw terminal	
	NP1X1611-RI	200/240V AC, 16 points, 7mA 10ms	Screw terminal	

Types/Ordering codes

Names	Types (Ordering codes)	Specifications, Names		
Digital output module *1	NP1Y08T0902	Tr sink, 12 to 24V DC, 8 points, 2.4A/point, 4A/common	Screw terminal	
	NP1Y16T09P6	Tr sink, 12 to 24V DC, 16 points, 0.6A/point, 4A/common	Screw terminal	
	NP1Y32T09P1-A	Tr sink, 24V DC, 32 points, 0.12A/point, 3.2A/common, Pulse train output 20kHz x 4ch (Built-in), Optional Connector	Connector	
	NP1Y32T09P1	Tr sink, 12 to 24V DC, 32 points, 0.12A/point, 3.2A/common, Optional Connector	Connector	
	NP1Y64T09P1	Tr sink, 12 to 24V DC, 64 points, 0.12A/point, 3.2A/common, Optional Connector	Connector	
	NP1Y16T10P2	Tr sink, 48V DC, 16 points, 0.2A/point, 1.6A/common	Screw terminal	
	NP1Y08U0902	Tr source, 12 to 24V DC, 8 points, 2.4A/point, 4A/common	Screw terminal	
	NP1Y16U09P6	Tr source, 12 to 24V DC, 16 points, 0.6A/point, 4A/common	Screw terminal	
	NP1Y32U09P1	Tr source, 12 to 24V DC, 32 points, 0.12A/point, 3.2A/common, Optional Connector	Connector	
	NP1Y64U09P1	Tr source, 12 to 24V DC, 64 points, 0.12A/point, 3.2A/common, Optional Connector	Connector	
	NP1Y08S	SSR, 100 to 240V AC, 8 points: all points are independent, 2.2A/points	Screw terminal	
	NP1Y08R-04	Ry, 110V DC, 240V AC, 8 points, 30V DC/ 264V AC: 2.2A/point, 4A/common	Screw terminal	
	NP1Y16R-08	Ry, 110V DC, 240V AC, 16 points, 30V DC/ 264V AC: 2.2A/point, 8A/common	Screw terminal	
	NP1Y08R-00	Ry, 110V DC, 240V AC, 8 points, 30V DC/ 264V AC: 2.2A/point, independent	Screw terminal	
	Digital I/O mixed module *1	NP1W1606T	24V DC 8 points source input, 12 to 24V DC 8 points Tr sink output	Screw terminal
		NP1W1606U	24V DC 8 points sink input, 12 to 24V DC 8 points Tr source output	Screw terminal
NP1W3206T		24V DC 16 points source input, 12 to 24V DC Tr sink 16 points output, Optional Connector	Connector	
NP1W3206U		24V DC 16 points sink input, 12 to 24V DC Tr source 16 points output, Optional Connector	Connector	
NP1W6406T		24V DC 32 points source input, 12 to 24V DC Tr sink 32 points output, Optional Connector	Connector	
NP1W6406U		24V DC 32 points interactive input, 12 to 24V DC Tr source 32 points output, Optional Connector	Connector	
Analog input module	NP1AX04-MR	Standard type multi-range input 4ch, resolution: 10 bits	Screw terminal	
	NP1AXH4-MR	High speed type multi-range input 4ch, resolution: 14 bits	Screw terminal	
	NP1AX08V-MR	Standard type multi-range input 8ch, resolution: 10 bits (voltage type)	Screw terminal	
	NP1AX08I-MR	Standard type multi-range input 8ch, resolution: 10 bits (current type)	Screw terminal	
	NP1AXH8V-MR	High speed type multi-range input 8ch, resolution: 14 bits (voltage type)	Screw terminal	
	NP1AXH8I-MR	High speed type multi-range input 8ch, resolution: 14 bits (current type)	Screw terminal	
	NP1AXH8VG-MR	High speed type multi-range input 8ch, between channels insulated, resolution: 16 bits (voltage type)	Screw terminal	
	NP1AXH8IG-MR	High speed type multi-range input 8ch, between channels insulated, resolution: 16 bits (current type)	Screw terminal	
	NP1AXH4-PT	Resistance thermometer element input (Pt100Ω/JPt100Ω) 4ch, accuracy: ± 0.3% (ambient temperature: 18 to 28°C), ± 0.7% (ambient temperature: 0 to 55°C)	Screw terminal	
	NP1AXH6G-PT	High accuracy resistance thermometer element input (Pt100Ω/JPt100Ω) 6ch, accuracy: ± 0.05 to ± 0.07% (ambient temperature: 18 to 28°C), ± 0.239% (ambient temperature: 0 to 55°C)	Screw terminal	
	NP1AXH4-TC	Thermo-couple input module 4ch, resolution: 14 bits accuracy: ± 0.3% (ambient temperature: 18 to 28°C), ± 0.7% (ambient temperature: 0 to 55°C)	Screw terminal	
	NP1AXH8G-TC	High accuracy thermo-couple input module 8ch, accuracy: ± 0.05 to ± 0.26% (ambient temperature: 18 to 28°C), ± 0.3 to ± 0.6% (ambient temperature: 0 to 55°C)	Screw terminal	
NP1AXH4DG-MR	Distributor module, 4ch, between channels high dielectric strength insulated, resolution: 16 bits accuracy: ± 0.1% of F.S.R. (ambient temperature: 25°C)	Screw terminal		
Analog output module	NP1AY02-MR	Standard type multi-range output 2ch, resolution: 10 bits	Screw terminal	
	NP1AYH2-MR	High speed type multi-range output 2ch, resolution: 14 bits	Screw terminal	
	NP1AYH4V-MR	High speed type multi-range output 4ch, resolution: 14 bits (voltage type)	Screw terminal	
	NP1AYH4I-MR	High speed type multi-range output 4ch, resolution: 14 bits (current type)	Screw terminal	
	NP1AYH4VG-MR	High speed type multi-range output 4ch, between channels insulated, resolution: 14 bits (voltage type)	Screw terminal	
	NP1AYH4IG-MR	High speed type multi-range output 4ch, between channels insulated, resolution: 14 bits (current type)	Screw terminal	
	NP1AYH8V-MR	High speed type multi-range output 8ch, resolution: 14 bits (voltage type)	Screw terminal	
	NP1AYH8I-MR	High speed type multi-range output 8ch, resolution: 14 bits (current type)	Screw terminal	
	NP4N-IPAC	SX instrumentation package (Japanese version)	Screw terminal	
Extended FB software package	NP4N-ITGR	Fuji Integrated support tool (@E.Integrator)		
	NP4H-SEDBV3	Programming support tool based on IEC 61131-3 Expert (D300win) software package Version 3		
Personal computer loader *4	NP4H-SWN	Programming support tool based on IEC 61131-3 Standard		
	NP4H-CB2	Programming support tool connection cable for AT compatible personal computer (Necessary to the signal converter: NW0H-CNV)		
Loader connecting cable	NW0H-CNV	Programming support tool for AT compatible personal computer. Signal converter for CPU module connecting (It used to with combined the loader connecting cable (NP4H-CB2 Optional).		

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