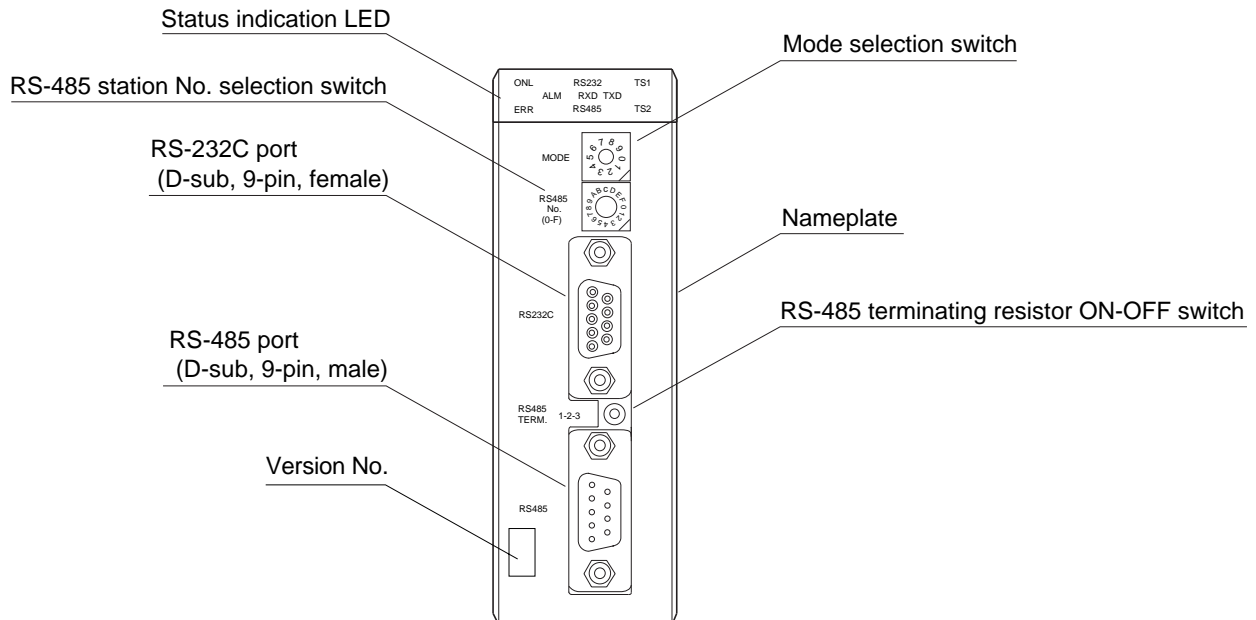


(1) General purpose communication module (NP1L-RS1)

Item	Specification	
Type	NP1L-RS1	
No. of SX bus connectable modules	Max. 16/configuration (Class B)	
Port	RS-232C 1 channel	RS-485 1 channel
Communication method	Full-duplex or half-duplex communication (selected by the software)	
Synchronization method	Start-stop synchronous transmission	
Transmission speed	1200/2400/4800/9600/19200/38400/57600 bps (Max. 57600bps or less in total of 2 channels)	
Transmission distance	15m or less	1km or less (transmission speed: 19.2kbps or less)
No. of connectable modules	1 : 1 (One external device)	1 : 31 (Max.) (The station No. of this module is limited 0 to F)
Connection method	D-sub, 9-pin connector (female)	D-sub, 9-pin connector (male)
Transmission protocol	Depends on the application program (FB) in the CPU module. Non-procedural FB (Included in D300win), FA package (Optional)	
Isolation method	Photocoupler	
Dielectric strength	445V AC 1 minute (between I/O connector pins and frame ground)	
Insulation resistance	10MΩ or more with 500V DC megger (between I/O connector pins and frame ground)	
Occupied slot	1 slot	
Internal current consumption	24V DC, 110mA or less	
Mass	Approx. 170g	

* For more information about this module, refer to the "User's Manual General Purpose Communication Module" (FEH225).

<Names>

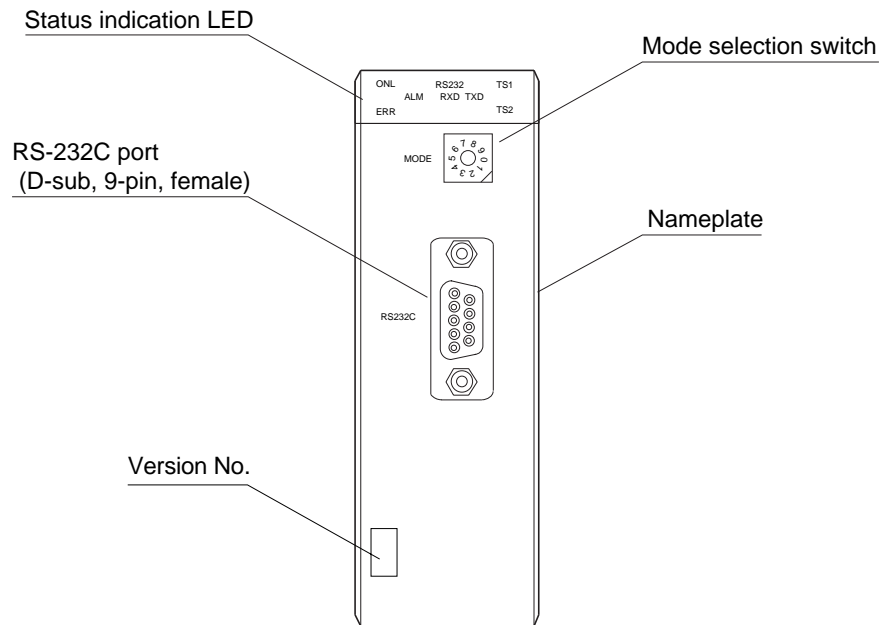


(2) General purpose communication module (NP1L-RS2)

Item	Specification
Type	NP1L-RS2
No. of SX bus connectable modules	Max. 16/configuration (Class B)
Port	RS-232C 1 channel
Communication method	Full-duplex or half-duplex communication (selected by the software)
Synchronization method	Start-stop synchronous transmission
Transmission speed	1200/2400/4800/9600/19200/38400/57600 bps
Transmission distance	15m or less
No. of connectable modules	1 : 1 (One external device)
Connection method	D-sub, 9-pin connector (female)
Transmission protocol	Depends on the application program (FB) in the CPU module. Non-procedural FB (Included in D300win), FA package (Optional)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between I/O connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between I/O connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 90mA or less
Mass	Approx. 160g

* For more information about this module, refer to the "User's Manual General Purpose Communication Module" (FEH225).

<Names>

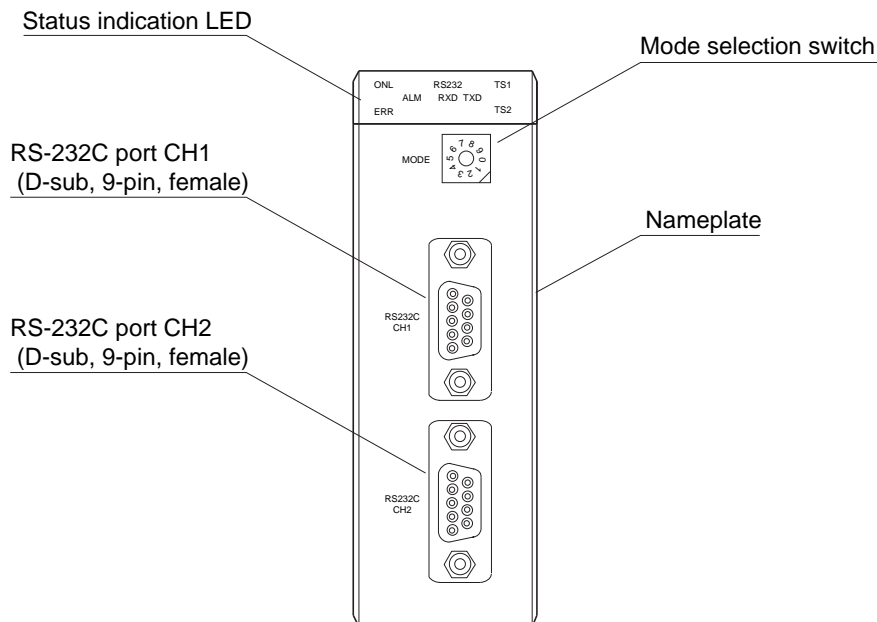


(3) General purpose communication module (NP1L-RS3)

Item	Specification
Type	NP1L-RS3
No. of SX bus connectable modules	Max. 16/configuration (Class B)
Port	RS-232C 2 channel
Communication method	Full-duplex or half-duplex communication (selected by the software)
Synchronization method	Start-stop synchronous transmission
Transmission speed	1200/2400/4800/9600/19200/38400/57600 bps
Transmission distance	15m or less
No. of connectable modules	1 : 1 (One external device)
Connection method	D-sub, 9-pin connector (female)
Transmission protocol	Depends on the application program (FB) in the CPU module. Non-procedural FB (Included in D300win), FA package (Optional)
Isolation method	Not isolated
Dielectric strength	445V AC 1 minute (between I/O connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between I/O connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 110mA or less
Mass	Approx. 140g

* For more information about this module, refer to the "User's Manual General Purpose Communication Module" (FEH225).

<Names>

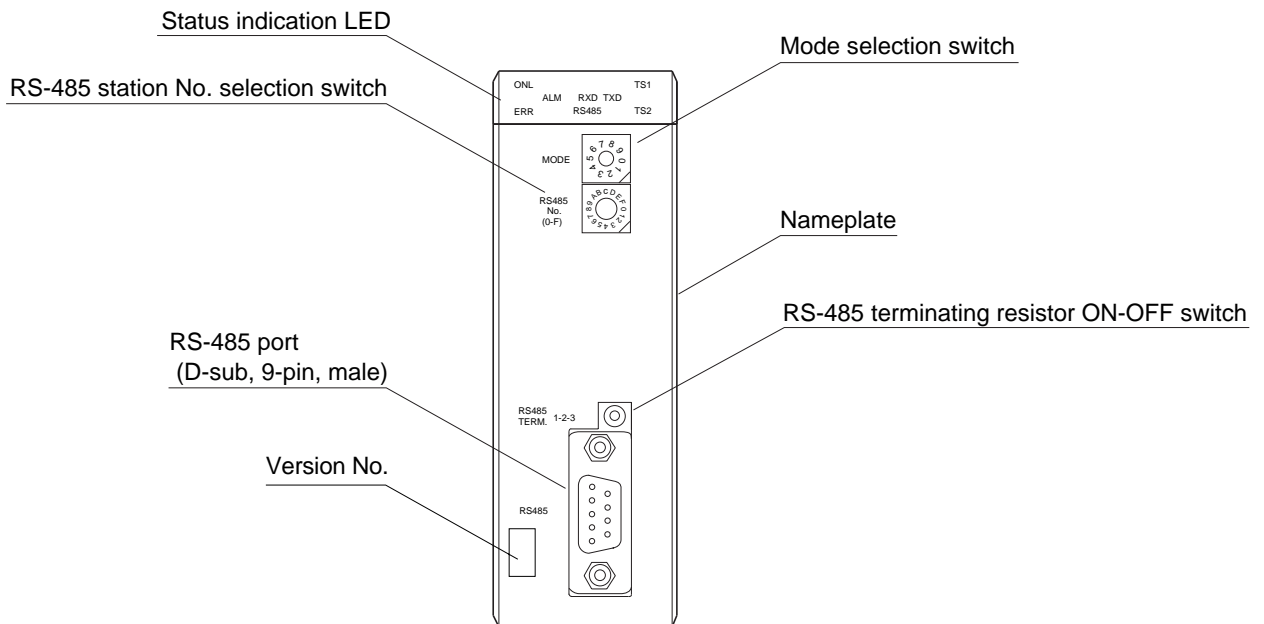


(4) General purpose communication module (NP1L-RS4)

Item	Specification
Type	NP1L-RS4
No. of SX bus connectable modules	Max. 16/configuration (Class B)
Port	RS-485 1 channel
Communication method	Full-duplex or half-duplex communication (selected by the software)
Synchronization method	Start-stop synchronous transmission
Transmission speed	1200/2400/4800/9600/19200/38400/57600 bps
Transmission distance	1km or less (transmission speed: 19.2kbps or less)
No. of connectable modules	1 : 31 (Max.) (The station number of this module is limited 0 to F)
Connection method	D-sub, 9-pin connector (male)
Transmission protocol	Depends on the application program (FB) in the CPU module. Non-procedural FB (Included in D300win), FA package (Optional)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between I/O connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between I/O connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 80mA or less
Mass	Approx. 160g

* For more information about this module, refer to the "User's Manual General Purpose Communication Module" (FEH225).

<Names>

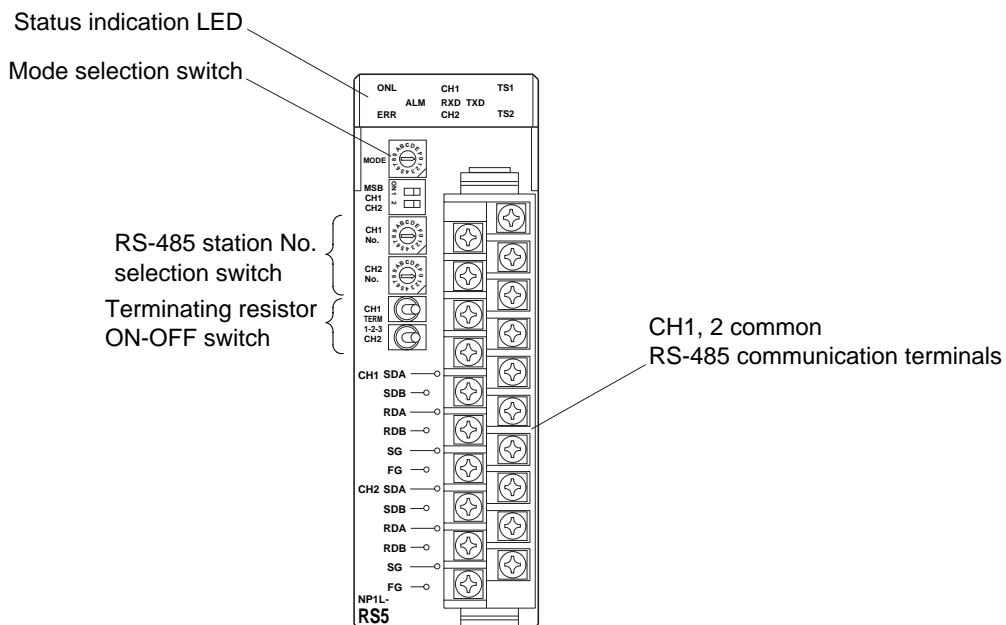


(5) General purpose communication module (NP1L-RS5)

Item	Specification
Type	NP1L-RS5
No. of SX bus connectable modules	Max. 16/configuration (Class B)
Port	RS-485 2 channels
Communication method	Full-duplex or half-duplex communication (selected by the software)
Synchronization method	Start-stop synchronous transmission
Transmission speed	1200/2400/4800/9600/19200/38400/57600 bps
Transmission distance	1km or less (transmission speed: 19.2kbps or less)
No. of connectable modules	1 : 31 (Max.) (The station number of this module is limited 0 to F)
Connection method	Detachable screw terminal block (M3) 20 poles
Transmission protocol	Depends on the application program (FB) in the CPU module. Non-procedural FB (Included in D300win), FA package (Optional)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between I/O connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between I/O connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 110mA or less
Mass	Approx. 190g

* For more information about this module, refer to the "User's Manual General Purpose Communication Module" (FEH225).

<Names>



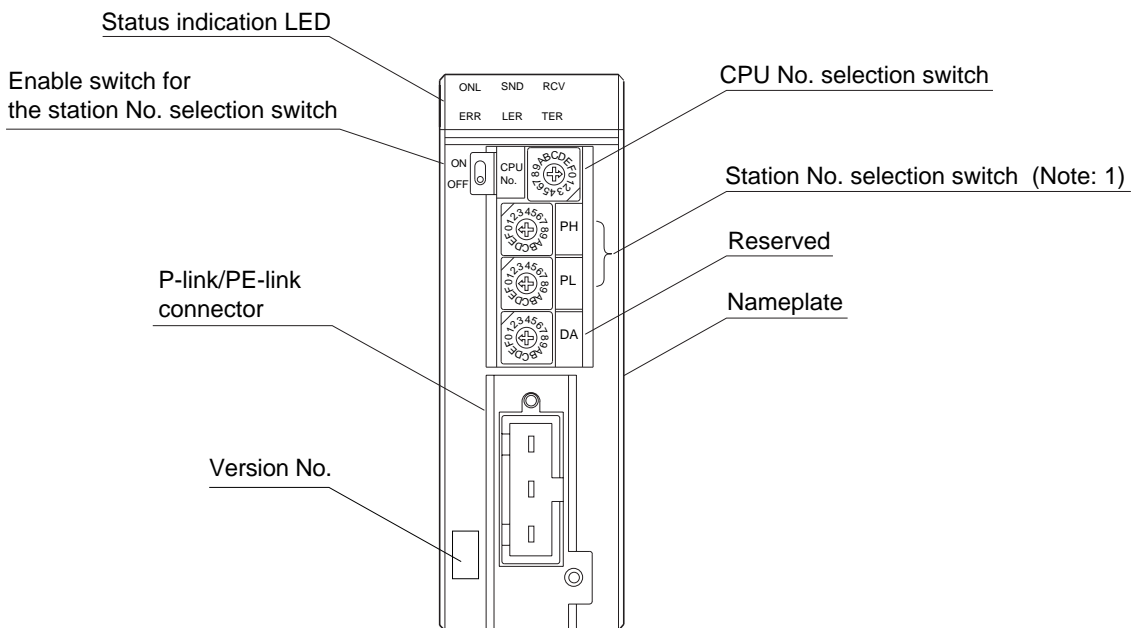
(6) P-link module (NP1L-PL1) / PE-link module (NP1L-PE1)

Item	Specification	
Type	NP1L-PL1	NP1L-PE1
No. of SX bus connectable modules	Max. 2/configuration (Note)	
No. of P-link connectable modules	Max. 16/system	Max. 64/system
Connection method	Detachable dedicated connector (M3.5)	
Transmission line format	Bus configuration (multi-drop)	
Transmission line	Electrical transmission line: Coaxial cable Total length: Max. 250m (P-link), Optical transmission line: SI/GI quartz cable Total length: Max. 500m (PE-link) (Optical converter is needed for the optical transmission line)	
Transmission method	Half-duplex, serial transmission	
Data exchange method	N : N (token passing) method, memory refresh method	
Transmission speed	5Mbps	
Error check	FCS (frame check sequence), Number of data words check, Collision detection	
Data transfer	Broadcast communication, message transmission	
Isolation method	Pulse transform	
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)	
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)	
Occupied slot	1 slot	
Internal current consumption	24V DC, 160mA or less	
Mass	Approx. 235g (module), Approx. 40g (P/PE-link connector)	

Note: The total of P-link modules, PE-link modules, FL-net modules should add up to 2.

* For more information about this module, refer to the "User's Manual P/PE-Link Master Module" (FEH203).

<Names>



Note: 1) Only PL is used for the P-link module. (0 to F)

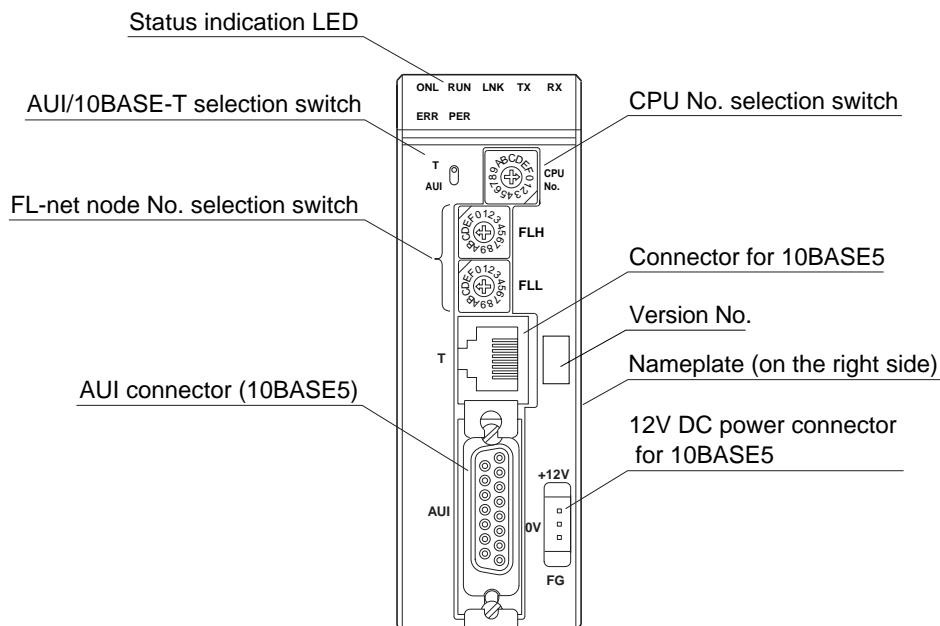
(7) FL-net module (NP1L-FL1 / NP1L-FL2)

Item	Specification
Type	NP1L-FL1 (based on FL-net Ver. 1), NP1L-FL2 (based on FL-net Ver. 2)
No. of SX bus connectable modules	Max. 2/configuration Note)
No. of FL-net connectable modules	100 node/segment (max. 256: at using a repeater)
Connection method	AUI connector (10BASE5) or UTP connector(10BASE-T)
Transmission line format	Bus configuration (Multi-drop)
Transmission method	Base band (Manchester coding)
Data exchange method	<ul style="list-style-type: none"> Cyclic transmission system using common memory Data size: Max. 8704 words (512 words + 8192 words) Message transmission method
Transmission speed	10Mbps
Error check	CRC (AUTODIN II)
Isolation method	Pulse transformer insulation
Dielectric strength	1500V AC 1 minute (between connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 105mA or less
External power supply	12V DC, 500mA or less (Necessary only to use 10BASE5)
Mass	Approx. 220g

Note: The total of P-link modules, PE-link modules, FL-net modules should add up to 2.

* For more information about this module, refer to the "User's Manual FL-net Module" (FEH234).

<Names>



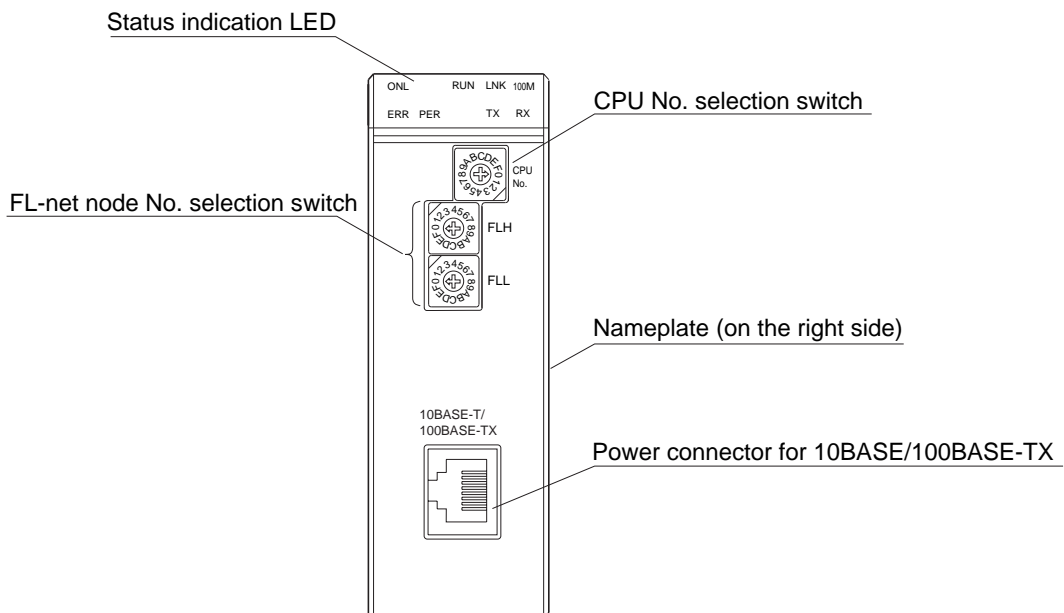
(8) FL-net module (NP1L-FL3)

Item	Specification
Type	NP1L-FL3 (based on FL-net Ver. 2)
No. of SX bus connectable modules	Max. 2/configuration Note)
No. of FL-net connectable modules	100 node/segment (max. 256: at using a repeater)
Connection method	UTP connector (10BASE-T), (100BASE-TX)
Transmission line format	Bus configuration (Multi-drop)
Transmission method	Base band (Manchester coding)
Data exchange method	<ul style="list-style-type: none"> Cyclic transmission system using common memory Data size: Max. 8704 words (512 words + 8192 words) Message transmission method
Transmission speed	10Mbps/100Mbps
Error check	CRC (AUTODIN II)
Isolation method	Pulse transformer insulation
Dielectric strength	1500V AC 1 minute (between connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 160mA or less
Mass	Approx. 220g

Note: The total of P-link modules, PE-link modules, FL-net modules should add up to 2.

* For more information about this module, refer to the "User's Manual FL-net Module" (FEH234).

<Names>



(9) T-link master module (NP1L-TL1)

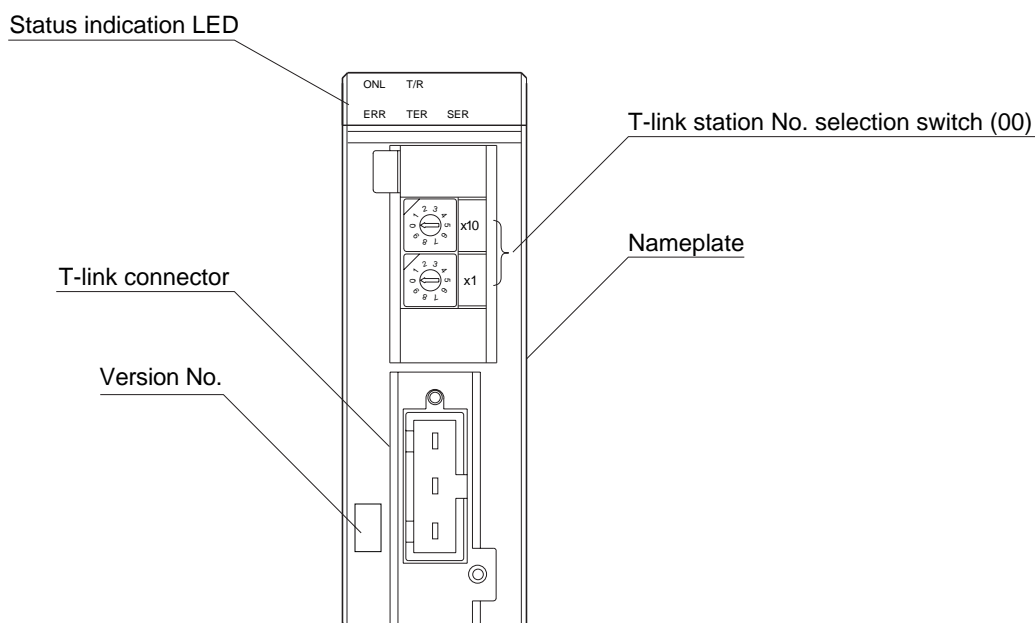
This module is a remote I/O master module which constitutes one T-link system.

Item	Specification
Type	NP1L-TL1
No. of SX bus connectable modules	Max. 8/configuration (Class A) (Note)
No. of connectable T-link slaves	32/master module
Connection method	Detachable dedicated connector (M3.5)
Transmission line format	Bus configuration (multi-drop)
Transmission line	Electrical transmission line: Twisted pair cable Total length: Max. 1km Optical transmission line: SI/GI quartz cable, multicomponent cable (Optical connector FNC120/130 is needed for the optical transmission line)
Transmission method	Half-duplex, serial transmission
Data exchange method	1 : N (polling / selecting) method
Transmission speed	500kbps
Error check	FCS (frame check sequence)
No. of I/O points	Max. 2048 points (128 words)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 140mA or less
Mass	Approx. 200g (module), Approx. 40g (T-link connector)

Note: When other remote I/O master module or slave module are connected to SX bus, the number of connectable remote I/O master modules and slave modules are 8 in total.

* For more information about this module, refer to the "User's Manual T-Link Master Module / T-Link Interface Module / T-Link slave Module" (FEH204).

<Names>



(10) T-link slave module (NP1L-TS1)

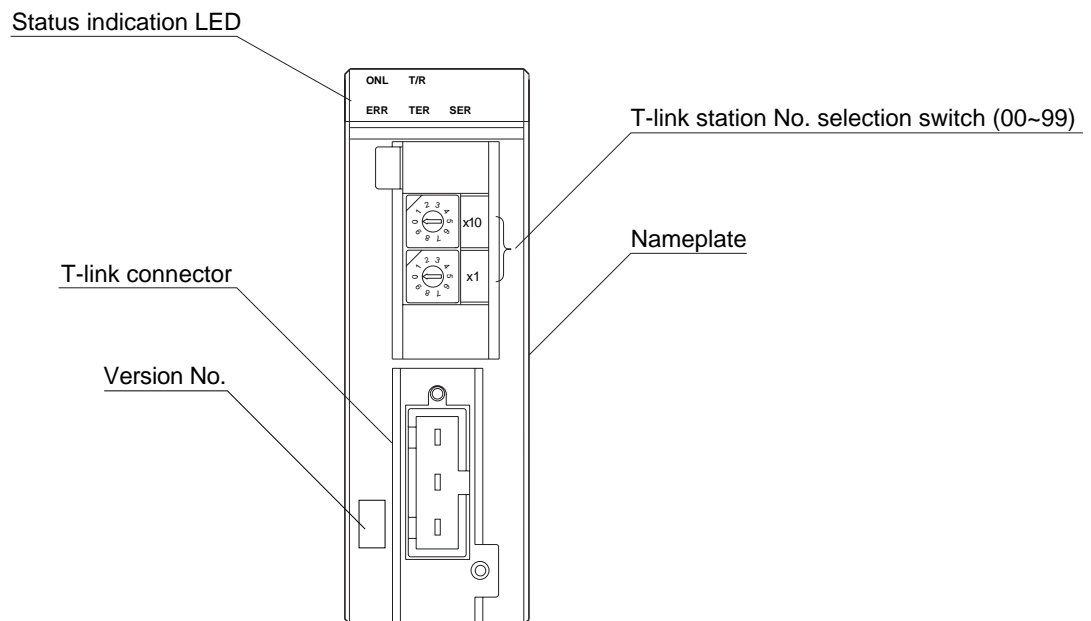
This is the communication module that is connected to a base board directly connected to SX bus to communicate I/O data between configurations of MICREX-SX series or with other PLC system having the T-link master function.

Item	Specification
Type	NP1L-TS1
No. of SX bus connectable modules	Max. 8/configuration (Class A) (Note)
Connection method	Detachable dedicated connector (M3.5)
Connectable type	MICREX-SX, MICREX-F, FLEX-PC
Communication function	I/O transmission (without message transmission function)
No. of link I/O points (input/output)	1 word/1 word, 2 words/2 words, 4 words/4 words, 8 words/8 words, 32 words/32 words
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 140mA or less
Mass	Approx. 200g (module), Approx. 40g (T-link connector)

Note: When other remote I/O master module or slave module are connected to SX bus, the number of connectable remote I/O master modules and slave modules are 8 in total.

* For more information about this module, refer to the “User’s Manual T-Link Master Module / T-Link Interface Module / T-Link slave Module” (FEH204).

<Names>



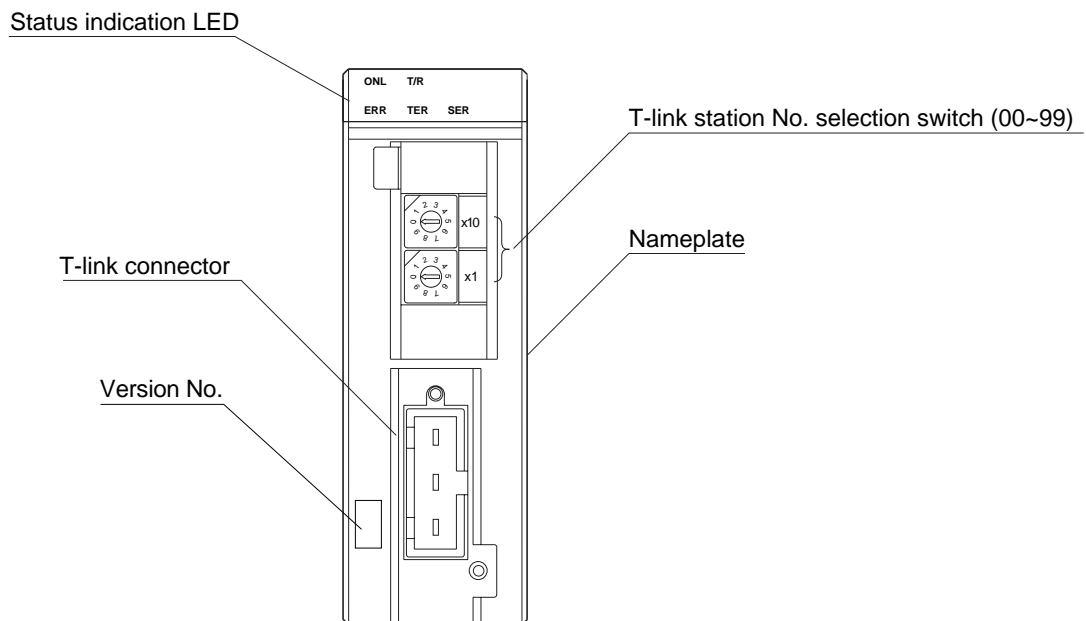
(11) T-link interface module (NP1L-RT1)

This interface module is used to construct SPH I/O modules via T-link.

Item	Specification
Type	NP1L-RT1
Connection method	Detachable dedicated connector (M3.5)
Usable base board	NP1BS-06 (6-slots type), NP1BS-11 (11-slots type), NP1BS-03 (3-slots type), NP1BS-11S (11-slots type), NP1BS-13S (13-slots type), NP1BS-08 (6-slots type), NP1BS-13 (13-slots type), NP1BS-08S (8-slots type), NP1BP-13 (13-slots type), NP1BP-13S (13-slots type)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 140mA or less
Mass	Approx. 200g (module), Approx. 40g (T-link connector)

* For more information about this module, refer to the “User’s Manual T-Link Master Module / T-Link Interface Module / T-Link slave Module” (FEH204).

<Names>



(12) OPCN-1 master module (NP1L-JP1)

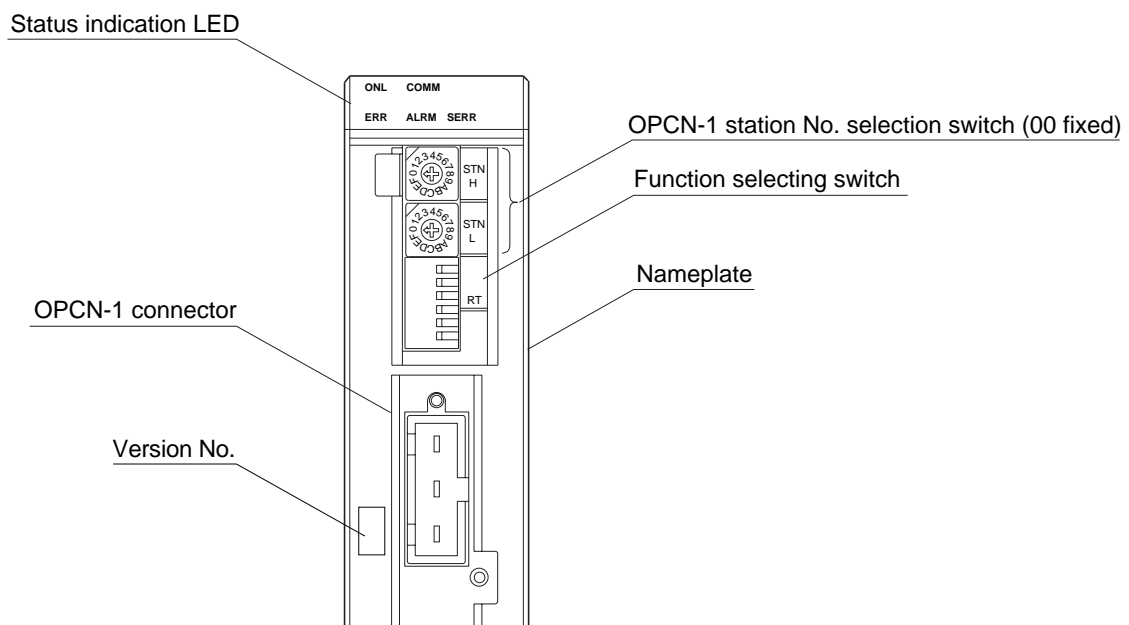
This module is a remote I/O master module which constitutes one OPCN-1 system.

Item	Specification
Type	NP1L-JP1
No. of SX bus connectable modules	Max. 8/configuration (Class A) (Note)
No. of connectable T-link slaves	31/master module
Connection method	Detachable dedicated connector (M3.5)
Transmission line format	Bus configuration (multi-drop)
Transmission line	Electrical transmission line: Twisted pair cable, Total length depends on the baud rate.
Transmission method	Half-duplex, serial transmission, based on EIA RS-485
Transmission speed (Max. total length)	125kbps (1000m), 250kbps (800m), 500kbps (480m), 1Mbps (240m)
Encoding method	NRZI (Non Return to Zero Inverted)
Error check	FCS (frame check sequence CRC-16)
No. of I/O points	Max. 2032 points (127 words)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 130mA or less
Mass	Approx. 200g (module), Approx. 40g (JPCN-1 connector)

Note: When other remote I/O master module or slave module are connected to SX bus, the number of connectable remote I/O master modules and slave modules are 8 in total.

* For more information about this module, refer to the "User's Manual OPCN-1 Master Module / OPCN-1 Interface Module" (FEH238).

<Names>



(13) OPCN-1 slave module (NP1L-JS1)

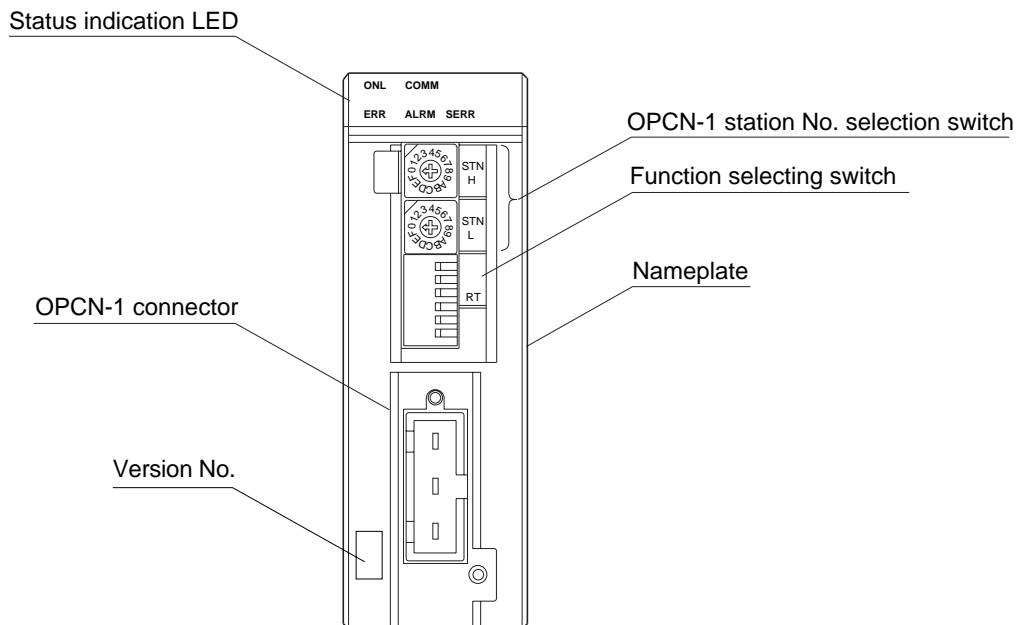
This is the communication module that is mounted on a base board directly connected to SX bus to communicate I/O data between configurations of MICREX-SX series or with other PLC system having the OPCN-1 master function.

Item	Specification
Type	NP1L-JS1
No. of SX bus connectable modules	Max. 8/configuration (Class A) (Note)
Connection method	Detachable dedicated connector (M3.5)
Connectable type	Programmable controller having the OPCN-1 master function.
Communication function	I/O transmission (without message transmission function)
No. of link I/O points	Input: 0 to 64 words, output: 0 to 64 words * The number of words occupied by I/O are 128 words (total of input/output).
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 130mA or less
Mass	Approx. 200g (module), Approx. 40g (OPCN-1 connector)

Note: When other remote I/O master module or slave module are connected to SX bus, the number of connectable remote I/O master modules and slave modules are 8 in total.

* For more information about this module, refer to the "User's Manual OPCN-1 Master Module / OPCN-1 Interface Module" (FEH238).

<Names>



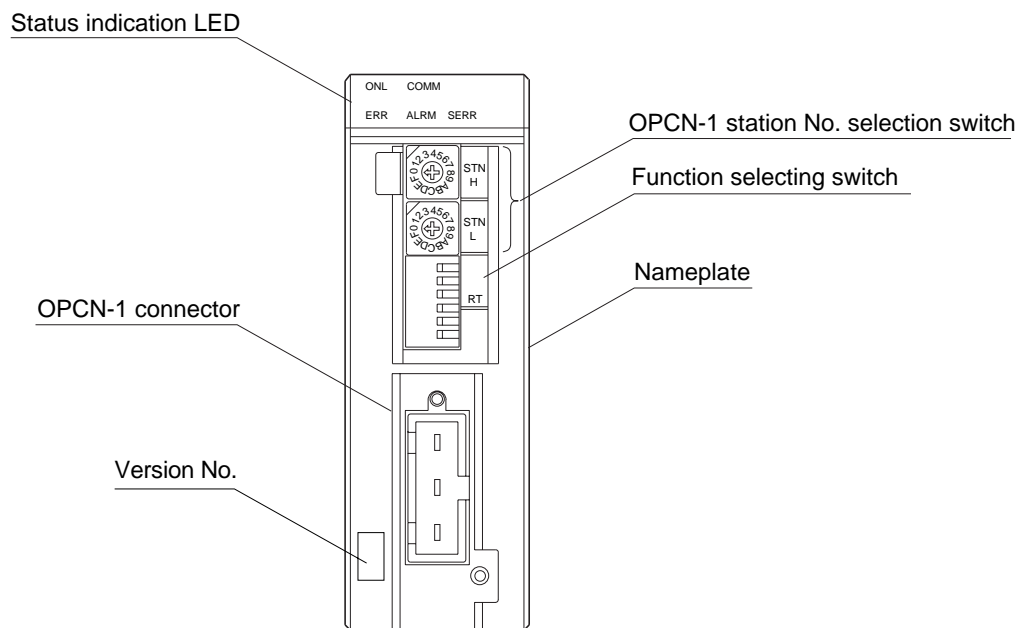
(14) OPCN-1 interface module (NP1L-RJ1)

This interface module is used to construct SPH I/O modules via OPCN-1.

Item	Specification
Type	NP1L-RJ1
Connection method	Detachable dedicated connector (M3.5)
Usable base board	NP1BS-06 (6-slots type), NP1BS-11 (11-slots type), NP1BS-03 (3-slots type), NP1BS-11S (11-slots type), NP1BS-13S (13-slots type), NP1BS-08 (6-slots type), NP1BS-13 (13-slots type), NP1BS-08S (8-slots type), NP1BP-13 (13-slots type), NP1BP-13S (13-slots type)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)
Occupied slot	1 slot
Internal current consumption	24V DC, 130mA or less
Mass	Approx. 200g (module), Approx. 40g (OPCN-1 connector)

* For more information about this module, refer to the “User’s Manual OPCN-1 Master Module / OPCN-1 Interface Module” (FEH238).

<Names>



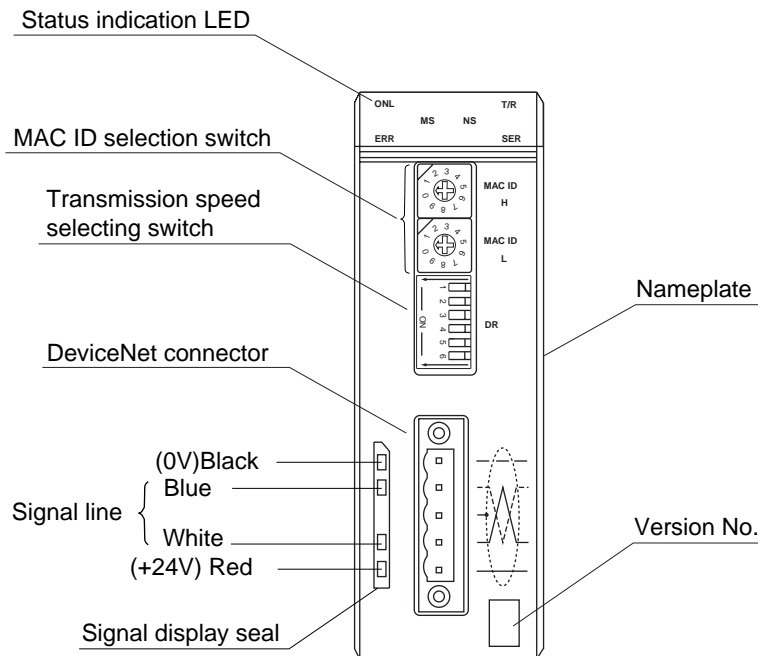
(15) DeviceNet master module (NP1L-DN1)

Item	Specification
Type	NP1L-DN1
No. of SX bus connectable modules	Max. 8/configuration (Class A) (Note)
No. of connectable slave node	Max. 63
Connection method	Screw connector (Open type)
Transmission line format	Bus configuration (Multi-drop)
Transmission line	Trunk line, Drop line
Transmission speed (Max. total length)	125kbps (500m), 250kbps (250m), 500kbps(100m)
No. of I/O points	Max. 2032 points (127 words)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)
Insuration resistance	10MΩ or more with 500V DC megger (between connector pins and frame)
Internal current consumption	24V DC, 90mA or less
Network current consumption	24V DC, 45mA or less
Mass	Approx. 170g

Note: When other remote I/O master module or slave module are connected to SX bus, the number of connectable remote I/O master modules and slave modules are 8 in total.

* For more information about this module, refer to the "User's Manual DeviceNet Master Module" (FEH232).

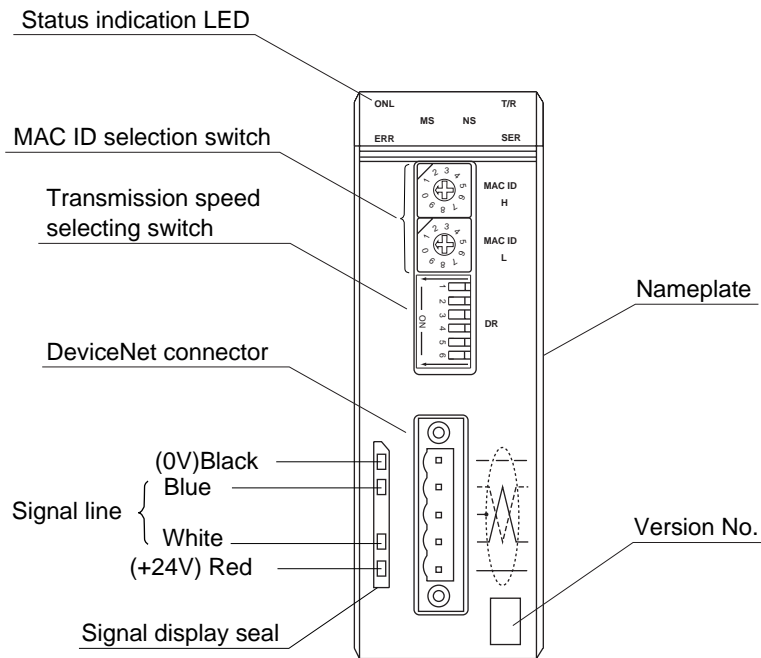
<Names>



(16) DeviceNet slave module (NP1L-DS1)

Item	Specification
Type	NP1L-DS1
Connection method	Screw connector (Open type) (MSTB2.5/5-STF-5.08AU, Phoenix Co., LTD made from)
Usable base board	NP1BS-06 (6-slot type), NP1BS-08 (8-slot type), NP1BS-11 (11-slot type), NP1BS-13 (13-slot type)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)
Insuration resistance	10MΩ or more with 500V DC megger (between connector pins and frame)
Occupied slot	1 slot
Internal current consumption	24V DC, 90mA or less
Network current consumption	24V DC, 45mA or less
Mass	Approx. 170g

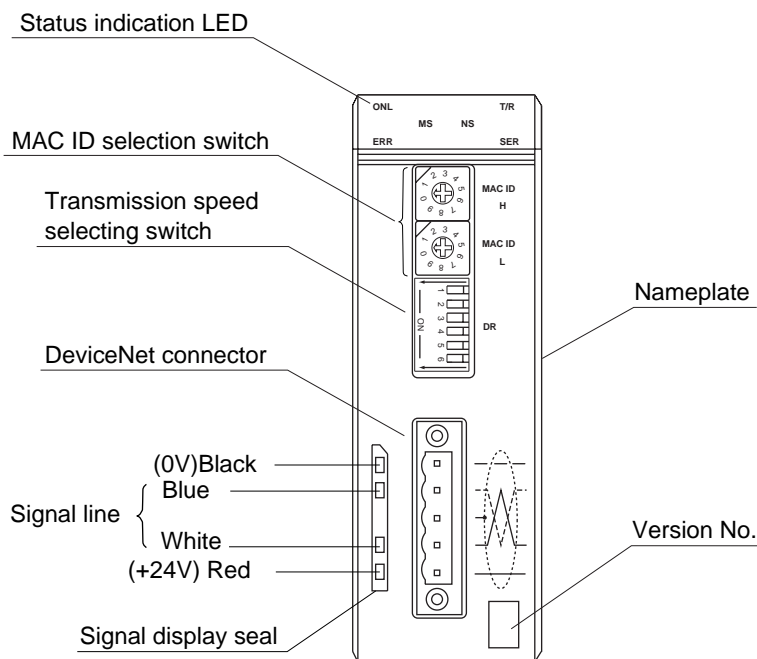
<Names>



(17) DeviceNet interface module (NP1L-RD1)

Item	Specification
Type	NP1L-RD1
Connection method	Screw connector (Open type) (MSTB2.5/5-STF-5.08AU, Phoenix Co., LTD made from)
Usable base board	NP1BS-06 (6-slots type), NP1BS-11 (11-slots type), NP1BS-03 (3-slots type), NP1BS-11S (11-slots type), NP1BS-13S (13-slots type), NP1BS-08 (6-slots type), NP1BS-13 (13-slots type), NP1BS-08S (8-slots type), NP1BP-13 (13-slots type), NP1BP-13S (13-slots type)
Isolation method	Photocoupler
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)
Insuration resistance	10MΩ or more with 500V DC megger (between connector pins and frame)
Occupied slot	1 slot
Internal current consumption	24V DC, 90mA or less
Network current consumption	24V DC, 45mA or less
Mass	Approx. 170g

<Names>



(18) PROFIBUS-DP master module (NP1L-PD1)

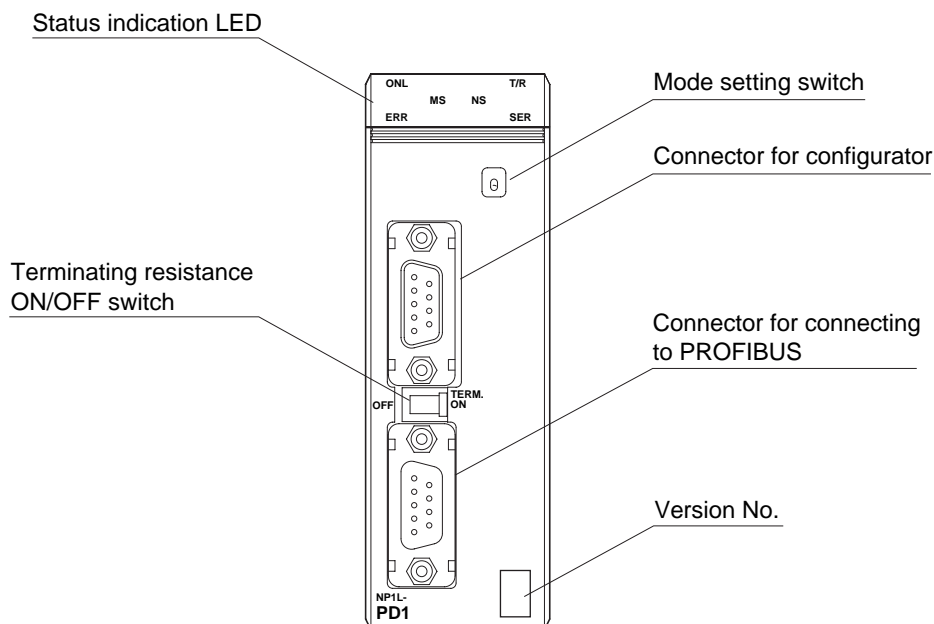
This is the remote I/O master module that is connected to a base board directly connected to the SX bus to construct one PROFIBUS-DP system.

Item	Specifications
Type	NP1L-PD1
No. of SX bus connectable modules	Max. 8/configuration (Class A) (Note)
Communication function	PROFIBUS-DP master (DPM1) function
Number of connectable slave stations	Max. 32 (126 when repeater is used)
Station No. (station address) setting range	0 to 125
Transmission line format	Bus configuration (multi-drop)
Communication protocol	Conforming to EN50 170 and DIN 19245
Data interchange system	1: N (polling / selecting system)
Transmission rate	9.6k, 19.2k, 93.75k, 187.5k, 500k, 1.5M, 12M (bps) * Setting on by the configurator
Transmission distance	Maximum transmission distance depends on transmission rate. 1200 m when 9.6, 19.2 or 93.75 kbps, 1000 m when 187.5 kbps, 400 m when 500 kbps, 200 m when 1.5 Mbps, and 100 m when 12 Mbps
Number of input / output points	Total 510 words for input and output Maximum words for input or output: 255
Isolation method	Photocoupler
Dielectric strength	500V AC 1 minute
Insulation resistance	10MΩ or more with 500V DC megger
Number of slots occupied	1
Internal current consumption	Max. 200mA, 24V DC
Mass	Approx. 250 g

Note: When other remote I/O master module or slave module are connected to SX bus, the number of connectable remote I/O master modules and slave modules are 8 in total.

* For more information about this module, refer to the "User's Manual PROFIBUS-DP Master Module" (FEH237).

<Names>



(19) PROFIBUS-DP slave module (NP1L-PS1)

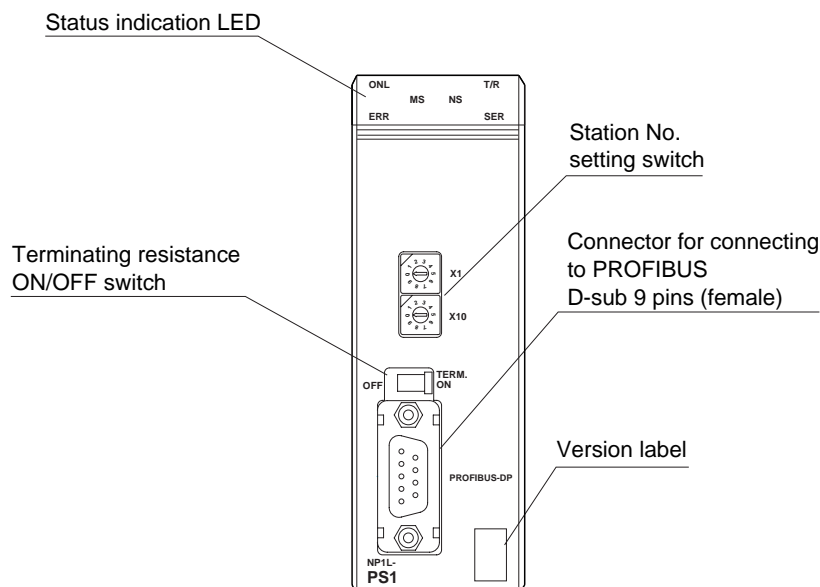
This is the communication module that is connected to a base board directly connected to the SX bus to communicate I/O data between configurations of MICREX-SX series or with other PLC system having the PROFIBUS-DP master function.

Item	Specifications
Type	NP1L-PS1
No. of SX bus connectable modules	Max. 8/configuration (Class A) (Note)
Communication function	PROFIBUS-DP slave function
GSD file	HMS_1003. GSD
Station No. (station address) setting range	0 to 99 (decimal)
Transmission line format	Bus configuration (multi-drop)
Communication protocol	Conforming to EN50 170 and DIN 19245
Data interchange system	1: N (polling / selecting) system
Transmission rate	9.6k, 19.2k, 93.75k, 187.5k, 500k, 1.5M, 3M, 6M, 12M (bps) * Setting on by the configurator
Transmission distance	Maximum transmission distance depends on transmission rate. 1200m when 9.6, 19.2 or 93.75kbps, 1000m when 187.5kbps, 400m when 500kbps, 200m when 1.5Mbps, and 100m when 3, 6 and 12Mbps
Number of input / output points	The setting ranges are 128 words or less (total of the number of I/O words). * The ratio of the number of I/O words are free. However, set it within the following ranges. Input: 122 words. Output: 122 words. * Depends on parameter setting in system configuration definition (on the D300win loader)
Isolation method	Photocoupler
Dielectric strength	500V AC 1 minute
Insulation resistance	10MΩ or more with 500V DC megger
Number of slots occupied	1
Internal current consumption	Max. 150mA, 24V DC
Mass	Approx. 180g

Note: When other remote I/O master module or slave module are connected to SX bus, the number of connectable remote I/O master modules and slave modules are 8 in total.

* For more information about this module, refer to the "User's Manual PROFIBUS-DP Master Module" (FEH237).

<Names>



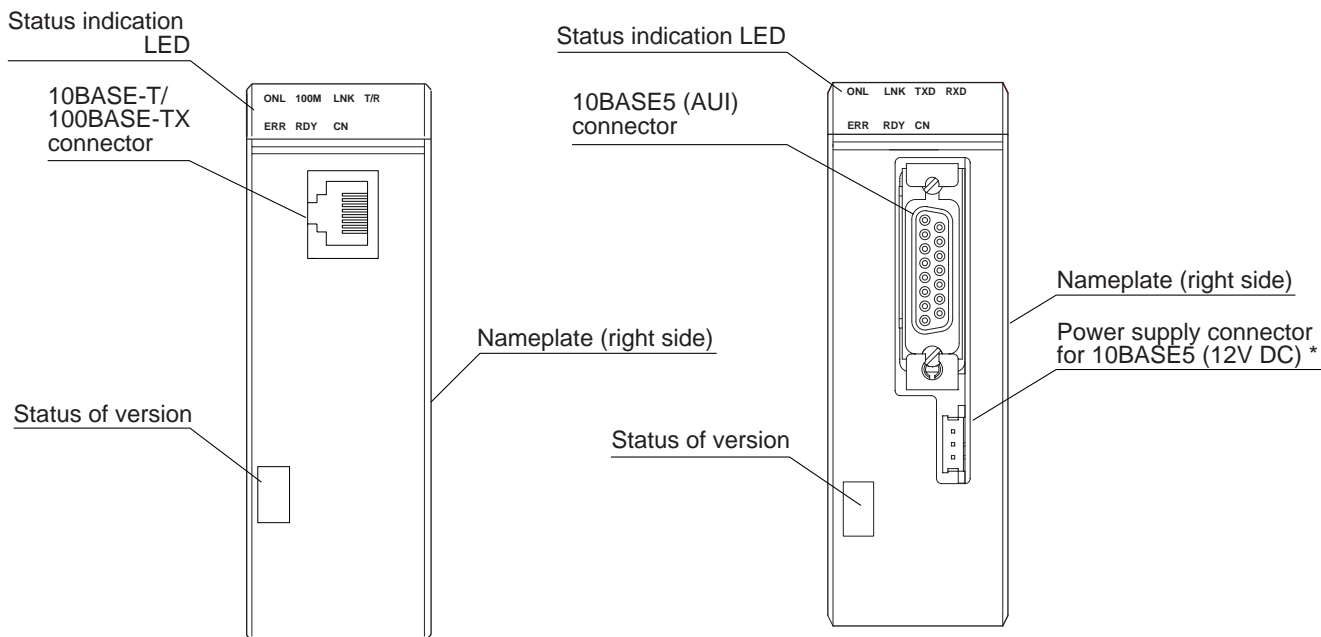
(20) Ethernet interface module (NP1L-ET1/NP1L-ET2)

This is the communication module that is connected to a base board directly connected to SX bus to communicate with other PLC system via Ethernet.

Item	Specifications		
Type	NP1L-ET1	NP1L-ET2	
No. of SX bus connectable modules	Max. 4/configuration		
Communication function	General purpose communication mode, Fixed buffer communication mode, Loader command communication mode		
Interface	10BASE-T	100BASE-TX	10BASE5
Transmission speed	10Mbps	100Mbps	10Mbps
Media control	IEEE802.3	IEEE802.3u	IEEE802.3
Interface switching style	Auto-negotiation (Auto-switching)		-
Maximum segment length	100m		500m
Isolation method	Pulse transform		
Dielectric strength	500V AC 1 minute		
Insulation resistance	10MΩ or more with 500V DC megger		
Number of slots occupied	1 slot		
Internal current consumption 24V DC	150mA or less		
Mass	Approx. 140g		

* For more information about this module, refer to the "User's Manual Ethernet Interface Module" (FEH259).

<Names>



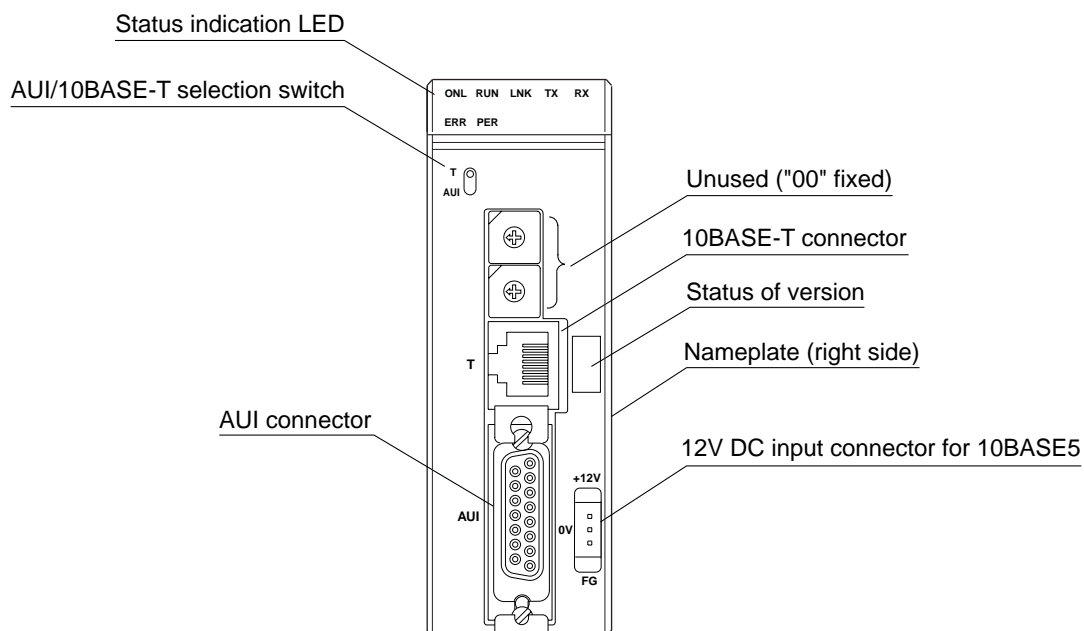
(21) ADS-net module (NP1L-AD1)

This is the communication module that is connected to a base board directly connected to SX bus to connect to an Ethernet based autonomous distributed network (ADS-net).

Item	Overview
Type	NP1L-AD1
No. of SX bus connectable modules	Max. 16/configuration (Class B)
Communication functions	<ul style="list-style-type: none"> • Multicast communication (function class: Base-1) Note 1) • Survival signal transmission (function class: Base-2) Note 2) • Failure information transmission (function class: Opt-2-a) Note 2)
Interface	10BASE-T or 10BASE5
Transmission rate	10Mbps
Maximum segment length	10BASE-T: 100m, 10BASE5: 500m (2500m max. when a repeater is used)
Maximum number of nodes	10BASE-T: 1 unit/segment, 10BASE5: 100 units/segment
Transmission protocol	UDP/IP, self-directed distributed protocol (R3.0)
Isolation method	Pulse transform
Dielectric strength	500V AC 1 minute
Insulation resistance	10MΩ or more with 500V DC megger
Number of slots occupied	1 slot
Internal current consumption	24V DC, 140mA or less
External power supply	12V DC, 500mA (when used to 10BASE5)
Mass	Approx. 220g

* For more information about this module, refer to the "User's Manual ADS-net Module" (FEH248).

<Names>



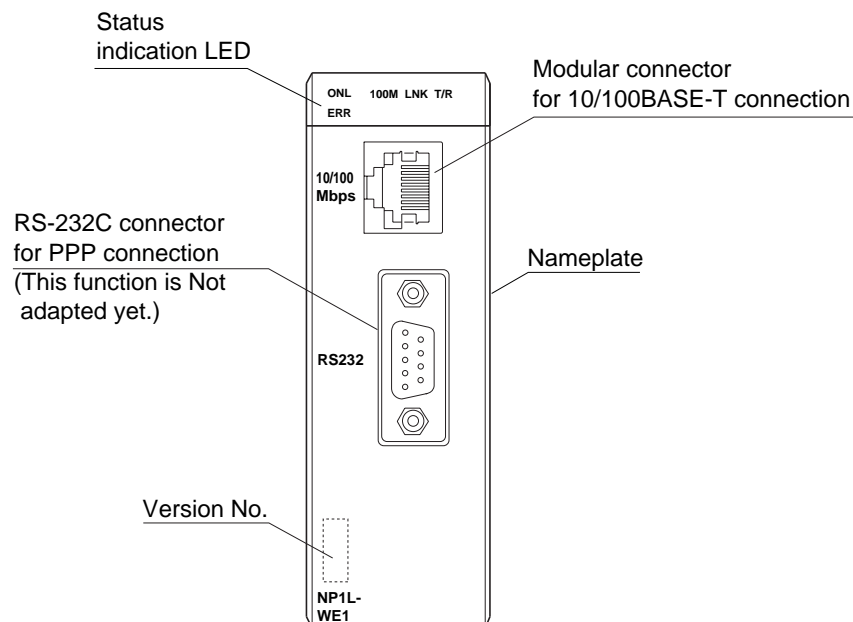
(22) WEB module (NP1L-WE1)

This is the communication module that can monitor SX data from the browser of personal computer or send mail from SX via Internet or Intranet.

Item	Specification
Type	NP1L-WE1
No. of SX bus connectable modules	Max. 4/configuration
Function	<p>1) WEB server function</p> <ul style="list-style-type: none"> • Setting of each function: Each function are setting on the browser display. <ul style="list-style-type: none"> • Basic setting of IP address etc., host information and FTP server etc.. • Registration of monitoring data (SX I/O, setting of the data in the internal memory space, setting of the sampling period etc..) • Table data setting, trend data setting, E-mail setting etc.. • Standard monitoring display: Table format output of controller data, trend graph indication of stored controller data, table format indication of event logging lists, and output operation of PLC can be on the table format indication display. <p>2) User contents adaptation and download function: Support function for browser monitoring by user production contents.</p> <p>3) E-mail send function: Send to address by pre-setting event</p> <p>4) FTP send function: The preset periodically trend data and event log data are saved on to the external FTP sever by binary format file.</p> <p>5) Remote loader function: Remote operation of support tool of the SX (D300win software package) can be from personal computer to monitoring of sequence of PLC etc..</p> <p>6) Security function: The user and the setting operation can be limited by using the user's names and the pass words.</p>
Isolation method	Pulse transform (The parts of the RS-232C are not Isolated)
Dielectric strength	500V AC 1 minute
Insulation resistance	10MΩ or more with 500V DC megger
Occupied slot	1 slot
Internal current consumption	24V DC, 120mA or less
Mass	Approx. 150g

* For more information about this module, refer to the "User's Manual WEB Module" (FEH258).

<Names>

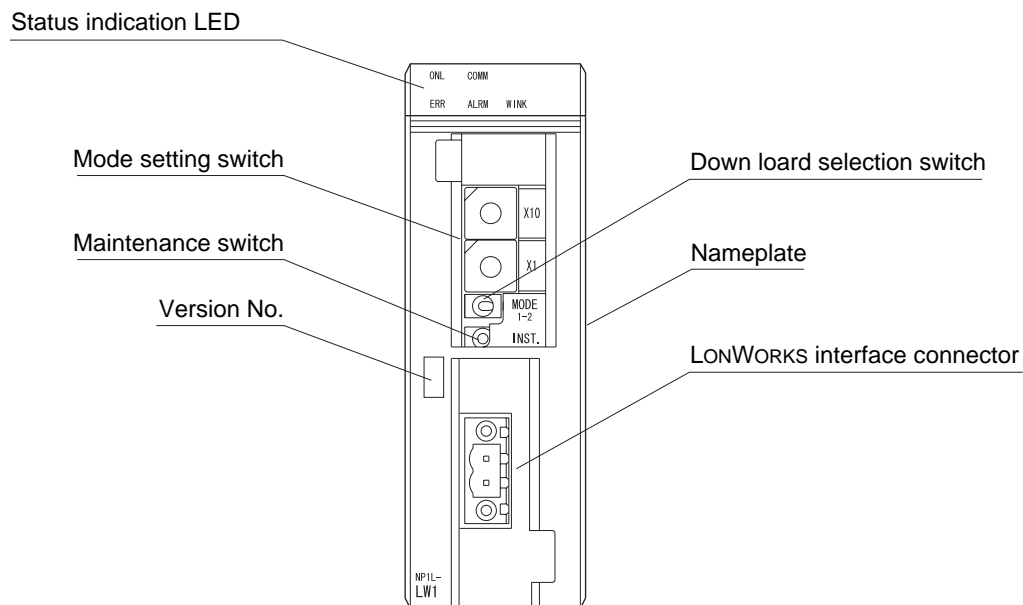


(23) LonWORKS network adaptive module (NP1L-LW1)

Item	Specification
Type	NP1L-LW1
Number of units connected	Up to 2 units for each configuration
Number of units connected to LonWORKS Network	Up to 64 units, Up to 32385 units can be added using a router.
Transmission line connection form	Free topology connection, bus connection
Transmission distance	Free topology connection: 500m, Bus connection: 2200m
Transmission rate	78kbps (This module does not support 1.25MHz.)
Transmission mode	LonTalk system (Predicted persistent CSMA system)
Maximum number of NV	300
Maximum number of CP	200
Number of words occupying I/O area	Input: Up to 64 words, Output: Up to 64 words (A total of 128 words fixed)
Isolation method	Photocoupler
Dielectric strength	500V AC 1 minute
Insulation resistance	10MΩ or more with 500V DC megger
Occupied slot	1 slot
Internal current consumption	24V DC 140mA or less
Mass	Approx. 195g (only a module), Approx. 5g (network connector)

* For more information about this module, refer to the "User's Manual" (FEH229).

<Names>



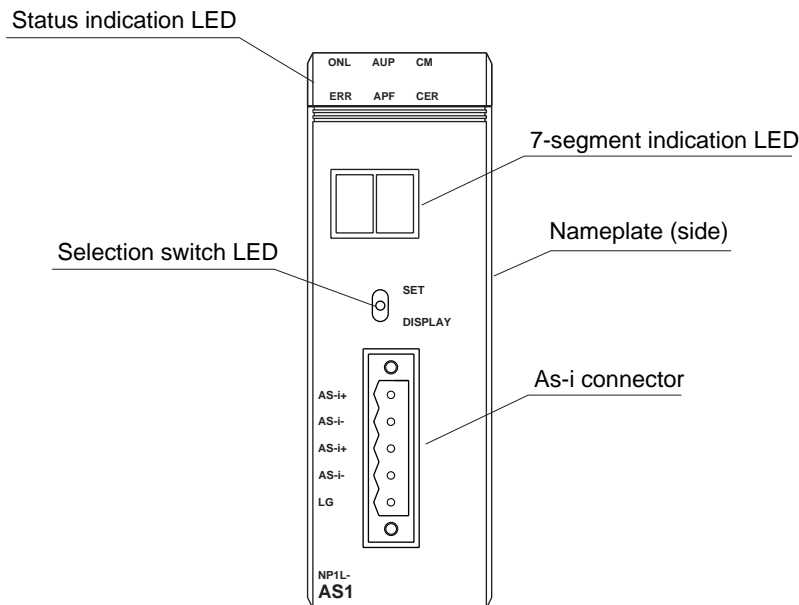
(24) AS-i master module (NP1L-AS1/NP1L-AS2)

This module is a master module which constitutes one AS-i system.

Item	Specification	
Type	NP1L-AS1	NP1L-AS2
No. of SX bus connectable modules	Max. 19/configuration	Max. 12/configuration
No. of connectable slaves	31/master module	62/master module
Total length	100m (Max. 300m: at using a repeater)	
Applicable cable	AS-i flat cable, standard cable	
Connection method	Screw terminal block (M3.5) 3 poles	
Refresh time	Max. 5ms	Max. 10ms
Error check	FCS (frame check sequence CRC-16)	
No. of I/O points	Total points: Max. 124	Total points: Max. 434
Isolation method	Photocoupler	
Dielectric strength	445V AC 1 minute (between connector pins and frame ground)	
Insulation resistance	10MΩ or more with 500V DC megger (between connector pins and frame ground)	
Occupied words	26 words/master module	42 words/master module
Occupied slot	1 slot	
Internal current consumption	24V DC, 100mA or less	
Mass	Approx. 180g	

* For more information about this module, refer to the “User’s Manual AS-Interface Master Module” (FEH231).

<Names>



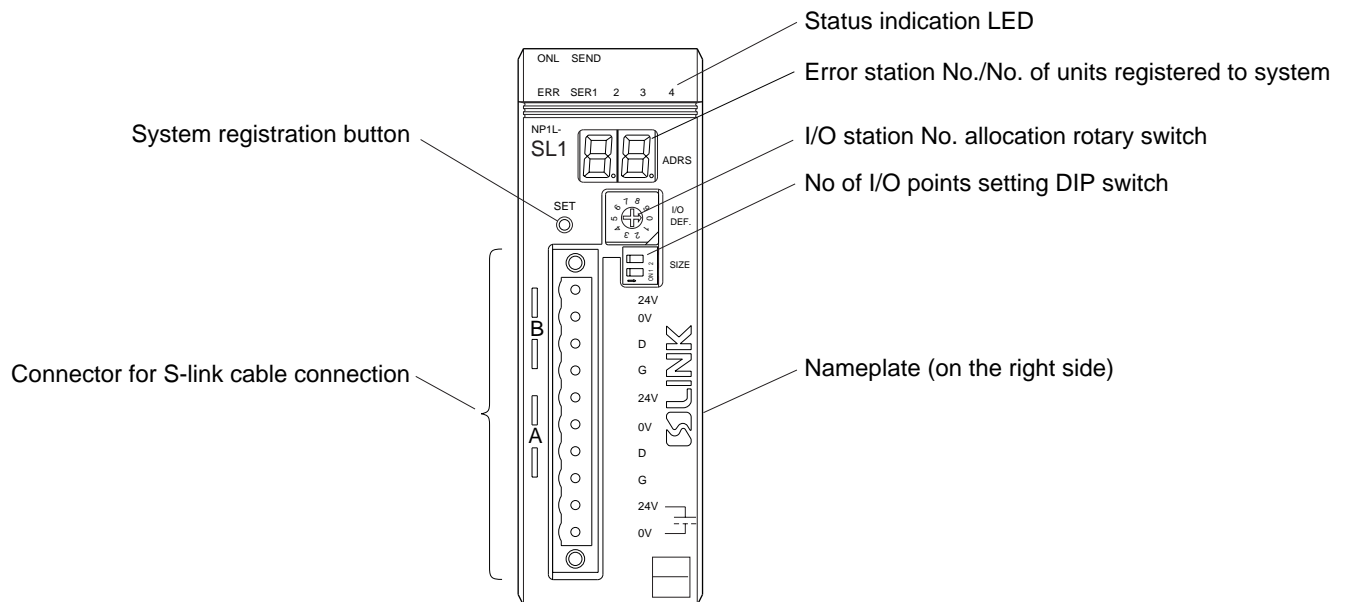
(25) S-LINK master module (NP1L-SL1)

This is the communication module that is connected to a base board directly connected to SX bus to construct one S-LINK system.

Item	Specification
Type	NP1L-SL1
No. of units connectable to SX bus	Max. 28 per configuration
Transmission procedure	S-LINK protocol
Transmission distance	Total length 200m (400m when booster is used)
No. of I/O points	Max. 128
Isolation characteristics	S-LINK master module is functionally insulated and therefore must not be subjected to withstand voltage test.
No. of occupied slots	1
Current consumption of module inside	24V DC, 80mA or less
Mass	Approx. 200g

* For more information about this module, refer to the "User's Manual S-LINK Master Module" (FEH230).

<Names>



(26) SX bus optical-link module (NP1L-OL1) / SX bus optical converter (NP2L-OE1)

Item		Specification	
Type		NP1L-OL1	NP2L-OE1
No. of connectable modules		Max. 64/configuration (Total of NP1L-OL1 and NP2L-OE1)	
Optical fiber	Type	PCF (Polymer Clad Fiber)	
	Core/Clad diameter	200μm/230μm	
	Min. bending radius	50mm Note 1)	
	Optical connector	Type: F07	
Transmission distance		Between stations Max. 800m (Total extension distance 25.6km) Note 2)	
Permissible attenuations of quantity of light		7dB or less Note 2)	
Occupied slot		1 slot	–
Internal current consumption		24V DC 54mA or less	24V DC 70mA or less
Power supply	Terminal form	–	3-pole type M3 (Tightening torque is 0.5 to 0.7N·m)
	Rated input voltage	–	24V DC (22.8 to 26.4V DC) Note 3)
	Cable size	–	AWG#16
	Inrush current	–	165mA or less when switching power 50A _{o-p} -70μs:24V DC (In case of switching power in not used)
Mass		Approx. 135g	Approx. 155g

Note 1: Depending on the type of optical fiber cable, the minimum bend radius may be different from this value, which is for CCV-HG-20/08 from Sumitomo Electric Industries, Ltd.

Note 2: The transmission distance of an optical fiber cable is determined by the cable attenuation. Attenuation increases when ambient temperature drops (when used in low temperatures), when the optical fiber cable suffers from bending stress, or when the end connectors are not polished, resulting in shortened transmission distance. This value is for the condition in which the cable is used at the specified working temperature (25°C), the cable does not suffer from bending stress, and both of the end connectors are polished. Note that attenuation also increases with deterioration from aging.

[Reference]

Attenuation calculation formula for CCV-HG-20/08 from Sumitomo Electric Industries, Ltd., and the transmission distance at the specified ambient temperature

<Calculation formula for 100 m or shorter cables>

Attenuation [dB] = 1.4 dB + Low temperature loss + Loss due to unpolished connectors

"1.4 dB" is the cable transmission loss for 100 m or shorter cables.

For low-temperature loss, use a value in the "100 m cable" column of the following table.

<Calculation formula for 100 m or longer cables>

Attenuation [dB] = (8 - 6 x log (cable length)) x Cable length + Low - temperature loss + Loss due to unpolished connectors
Unit for cable length is "km".

* The loss due to unpolished connectors is 0.75 dB for each unpolished connector, namely 1.5 dB when neither of the two end connectors is polished.

<Low-temperature loss for CCV-HG-20/08>

Temperature [° C]	Loss[dB]	
	1km cable	100m cable
25	0	0
10	0.40	0.25
0	0.80	0.35
-5	1.05	0.6
-10	1.30	0.8
-15	1.55	1.03
-20	1.80	1.25

<Relation between ambient temperature and transmission distance of CCV-HG-20/08>

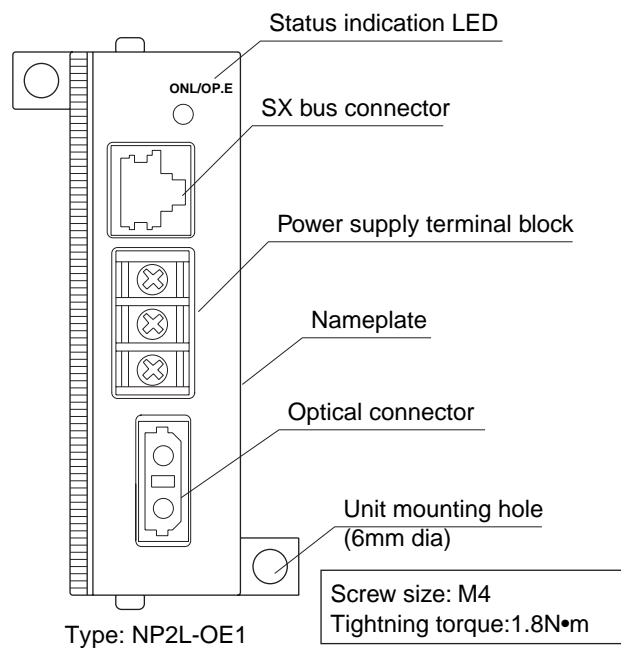
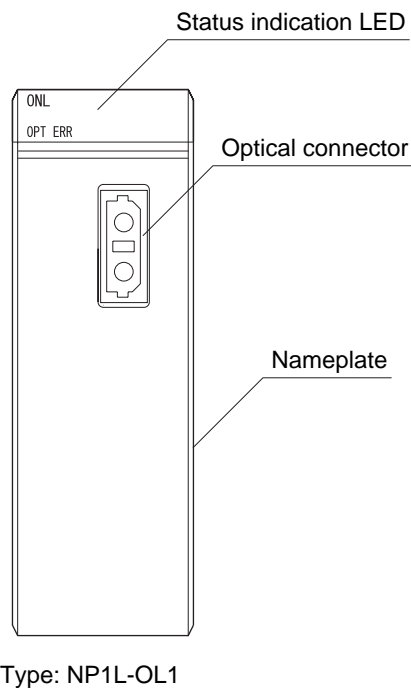
Ambient temperature[° C]	Both end connectors are polished	Neither end connector is polished
25	800m	500m
20	800m	500m
15	700m	500m
10	700m	500m
5	700m	500m
0	600m	400m
-5	600m	400m
-10	600m	400m
-15	500m	300m
-20	500m	300m

Note 3: To supply power from an external source, be sure to use a switching power supply with reinforced insulation and a capacity of 24 VDC, 1 A or more per unit. For the wiring method, refer to "4-4-5 Wiring of power supply for SX bus optical converter".

Note 4: Transmission delay time of optical link system

With an optical link system, a transmission delay occurs, which can be calculated by using the following formula. For system design, be sure to take the SX Bus contact time into consideration. Transmission delay time [μs]= (No. of optical devices) x 1μs + (Total length of optical cable (km)) x 4.97μs

<Names>



* The following are recommended

Optical fiber: SUYMITOMO ELECTRIC INDUSTRIES, LTD CCV-HG-20/08 (Type: H-PCF)

Optical connector: SUMITOMO ELECTRIC INSUSTRIES, LTD CF-2071

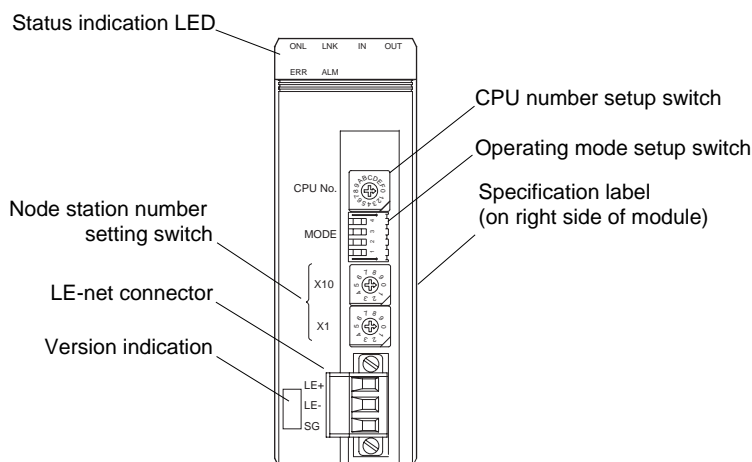
Crimping tool: SUMITOMO ELECTRIC INDUSTRIES, LTD CAK-0057

(27) LE-net module (NP1L-LE1)

Item	Specification
Connection node quantity	Up to 64 units
Node number setting range	0 to 63
Connection distance/communication speed (Total extension)	800m/62.5kbps, 500m/125kbps, 250m/250kbps, 100m/500kbps, 40m/1Mbps
Connection method	Multi drop, bus
Communication method	Semi-duplex
Communication protocol	1) N:N broadcast communication 2) 1:1 single division message method
Remote support function	Loader network: up to 2 layers (3 hierarchical)
Transmission error check system	CRC16
Frame size (Amount of communication data)	1) Broadcast communication: 48 words at maximum per node (3 words x 16 stations) * Occupies 4 words for each station. Since the system uses one word, the user can use 3 words for each station. 2) Message communication: 49 words at maximum (when R_READ or R_WRITE is used) 61 words at maximum (when M_OPEN+M_RECEIVE or M_OPEN+M_SEND is used)
Number of communication ports which can be opened simultaneously	5 ports * Uses one port for each M_OPEN. Uses one M_OPEN for M_SEND or M_RECEIVE.
Communication cable	Shielded twist pair cable * T-link cable (T-KPEV-SB: Recommended to made by The Furukawa Electric Co., Ltd., Japan)
Isolation method	Not isolated
Occupied slot	1 slot
Internal current consumption	24V DC, 70mA or less
Mass	Body: Approx. 130g, Connector: Approx. 6g

* For more information about this module, refer to the "User's Manual LE-net Module" (FEH198).

<Names>

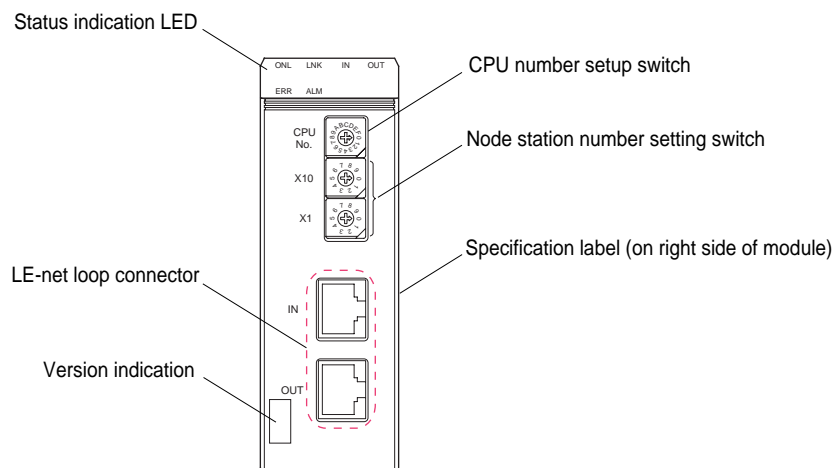


(28) LE-net loop/LE-net loop 2 module (NP1L-LL1/NP1L-LL2)

Item	Specification	
Type	NP1L-LL1	NP1L-LL2
Connection node quantity	Up to 64 units	
Node number setting range	0 to 63	
Connection distance	Total extension 500m, 100m between nodes	
Connection method	Single loop duplex wiring	
Communication method	Semi-duplex, double-system transmission and first-come first-received method	
Communication protocol	1) N: N broadcast communication 2) 1: 1 single division message method	
Remote support function	Loader network: up to 2 layers (3 hierarchical)	
Transmission error check system	CRC16	
Communication speed	Fixed to 5Mbps	
Frame size (Amount of communication data) Broadcast communication	4 words per one station (net valid data: 3 words) 48 words at maximum per node (3 words x 16 stations) * Occupies 4 words for each station. Since the system uses one word for each station, the user can use 3 words for each station.	48 words per one station (net valid data: 48 words) 768 words at maximum per node (48 words x 16 stations)
Frame size (Amount of communication data) Message communication	1) 49 words at maximum (when R_READ or R_WRITE is used) 2) 61 words at maximum (when M_OPEN+M_RECEIVE or M_OPEN+M_SEND is used)	1) The module has no limitation on the amount of communication data. With the D300win loader, however, the maximum capacity is 4096 words because of the limitation on the derived data type. (when R_READ or R_WRITE is used) 2) 245 words at maximum (when M_OPEN+M_SEND is used)
Number of communication ports which can be opened simultaneously	5 ports * Uses one port for each M_OPEN. Uses one M_OPEN for M_SEND or M_RECEIVE.	
Communication cable	Shielded twist pair cross cable of Category 5	
Isolation method	Not isolated	
Occupied slot	1 slot	
Internal current consumption	24V DC, 80mA or less	
Mass	Approx. 140g	

* For more information about this module, refer to the "User's Manual LE-net Loop/LE-net Loop 2 Module" (FEH224).

<Names>



(29) SX bus electrical repeater (NP2L-RP1)

Item		Specification
Total length of SX bus		100m
Number of connectable device		Max. 3 / configuration
Number of branches		Max. 25 including base board
Internal current consumption		24V DC, 70mA or less
Power supply	Terminal type	3-poles M3 screw terminal (tightening torque: 0.5 to 0.7N•m)
	Rated input voltage	24V DC (Note 1)
	Applicable wire size	AWG#16 (1.25mm ²)
	Inrush current	165mA or less when switching power supply is used (Note 2)
Minimum radius of curvature of SX bus cable		50mm or more
Operating ambient temperature		0 to 55° C
Mass		Approx. 150g

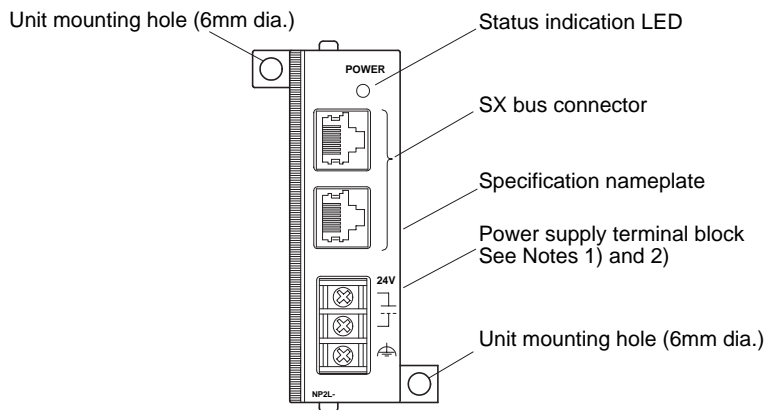
Note 1: When a device (servo amplifier, inverter, etc.) that is connected to SX bus is used, 24V DC or higher input voltage (maximum 26.4V DC) must be applied.

When power supply is supplied from externally, the switching power supply with reinforced insulation (UL approved) that can supply 24V DC , 1A or more per unit shall be used.

Moreover, wire for this unit and the switching power supply to become 10m or less.

Note 2: The inrush current when 24V DC is directly applied is 50A_{0-P-70μs} (reference value). This value depends on the condition of power supply.

<Names>



Note 1:
Mounting screw: M4
Tightening torque: 1.8N-m

(30) Remote terminal master/slave module (NP1L-RM1)

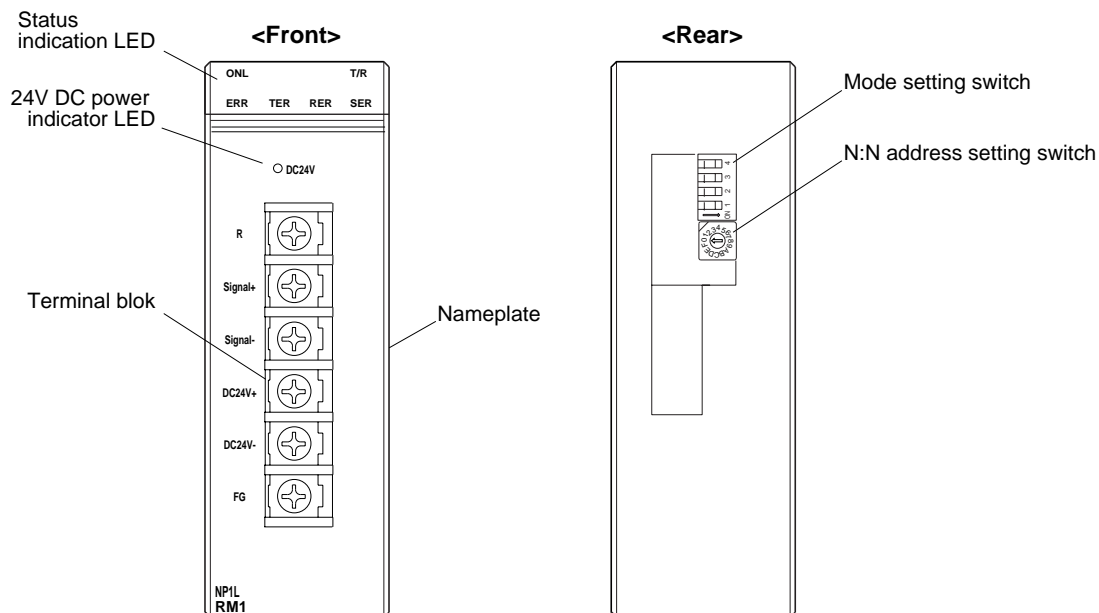
This is a remote I/O master module that, using one unit, can build one remote terminal system. It is also possible to set the DIP switch so that this module operates as a slave.

Item	Specification
No. of remote terminal link	1
No. of SX bus connectable modules	Max. 8/configuration (Category A) (Note)
No. of connectable remote terminals (No. of signals)	1: 1 mode: 1 slave module (1024 points) 1: N or N: N mode: RM21/22 series terminal 128 units (1024 points)
Cable type	CPEV, KPEV cable
Wire size/Total distance	∅ 0.9/2.0km (at 128 remote stations) ∅ 1.2/3.5km (at 128 remote stations) 2mm ² /5km (at 64 remote stations)
Occupied slot	1 slot
Operating ambient temperature	0 to 55° C
Internal current consumption	24V DC, 140mA or less
Mass	Approx. 210g

Note: When other remote I/O master module or slave module are connected to SX bus, the number of connectable remote I/O master modules and slave modules are 8 in total.

* For more information about this module, refer to the "User's Manual Remote Terminal Master/Interface/Slave Module (FEH195).

<Names>

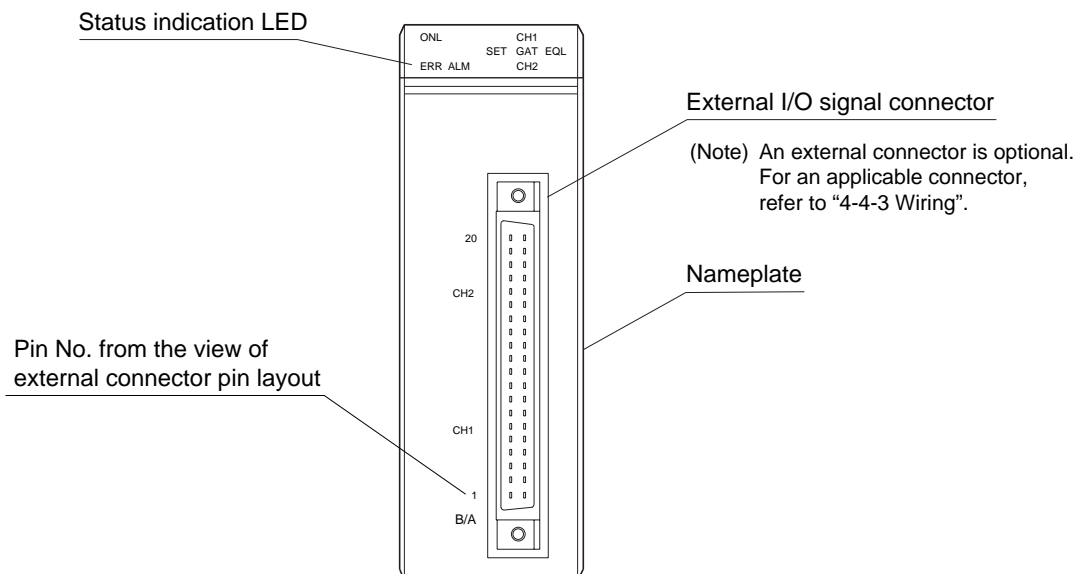


(1) High-speed counter module (NP1F-HC2/NP1F-HC2MR/NP1F-HC2MR1)

Item		Specification		
Type		NP1F-HC2	NP1F-HC2MR	NP1F-HC2MR1
Count input signal	Input phase	2-Phase signal (90° phase difference), forward/reverse signal, coded pulse etc., (Selected by the software)		
	Level	Open collector signal or differential signal, square wave (The differential signal is applied only to NP1F-HC2.)		
	Input voltage	5V DC	5V/12V/24V DC	
Counter0	Type	Ring counter function, reset function, gate function, comparison function, phase Z detection		
	No. of channels	2 channels (independent)		
	Counting speed	500kHz	200kHz	50kHz
	Counting range	-2,147,483,648 to 2,147,483,647 (DINT type)		
	Multiplication function	x4 (2-phase signal only)		
	Reset function	Soft command		
	Gate function	External input signal and soft command		
	Comparison function	Soft command		
	Phase Z detection	External input signal and soft command Selectable rising edge or falling edge for external input signal		
	Comparison	No. of output points	1 point/channel	
Comparison range		Same as the counting range		
Comparison contents		(Counted value) ≥ (Compared value) to Output ON		
Comparison output		Open collector output (sink type), 24V DC, Rated load: Max. 100mA		
Isolation method		Photocoupler		
Dielectric strength		1500V AC 1 minute (between I/O connector pins and frame ground)		
Insulation resistance		10MΩ or more with 500V DC megger (between I/O connector pins and frame ground)		
Occupied words		16 words		
Occupied slot		1 slot		
Internal current consumption		24V DC, 85mA or less		
External power supply		24V DC		
Mass		Approx. 140g		

* For more information about this module, refer to the "User's Manual High-speed Counter Module" (FEH210).

<Names>

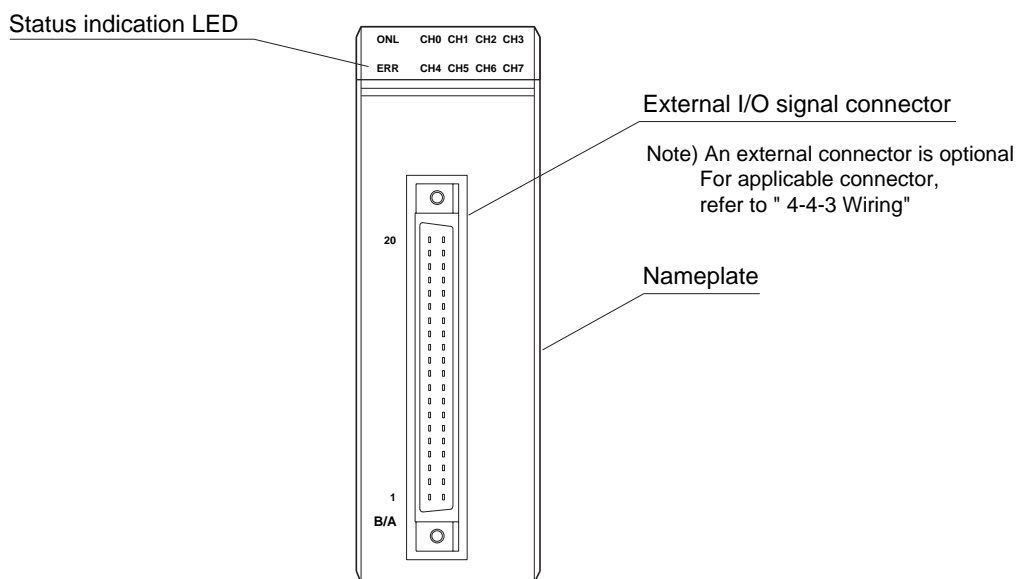


(2) Multi channel high-speed counter module (NP1F-HC8)

Item		Spcification
Type		NP1F-HC8
Count input signal	Input phase	2-phase signal (90° phase difference), forward/reverse signal, coded pulse etc., (Selected by the software)
	Level	Open collector signal or differential signal, square wave
	Input voltage	5V DC
Counter	Type	Ring counter function, reset function, gate function
	No. of cahnnels	8 channels (independent)
	Counting speed	50kHz
	Counting range	– 32768 to 32767(INT type)
	Multiplication function	x 4 (2-phase signal only)
	Reset function	Soft command
Gate function		External input signal and soft command
Isolation method		Photocoupler
Dielectric strength		1500V AC 1 minute (between I/O connector pins and frame ground)
Insulation resistance		10MΩ or more with 500V DC megger (between I/O connector pins and frame ground)
Occupied words		12 words
Occupied slot		1 slot
Internal current consumption		24V DC, 100mA or less
External power supply		24V DC is supplied from an external power supply
Mass		Approx. 195g

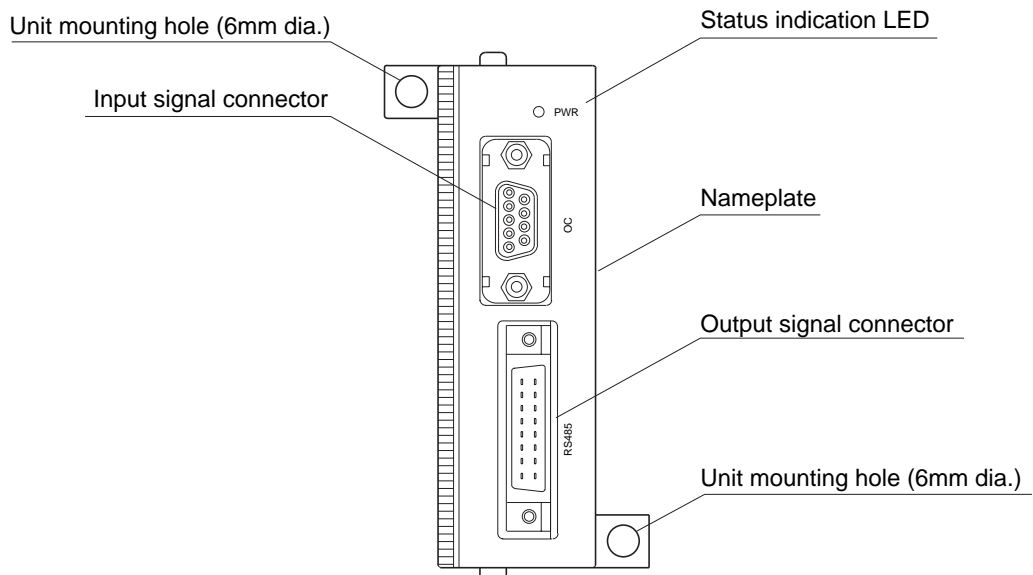
* For more information about this module, refer to the “User’s Manual High-speed Counter Module” (FEH210).

<Names>



(3) Positioning control signal converter (NP2F-LEV)

Item		Specification
Type		NP2F-LEV
No. of control axes		4 axes (4 channels)
Input signal	Input frequency	Max. 1 MHz
	Input type	Open collector input
Output signal	Output frequency	Max. 1 MHz
	Output type	Differential signal
Isolation method		Not isolated (between input signal and output signal), External power supply is isolated
External power supply		24V DC, 40mA
Mass		Approx. 130g

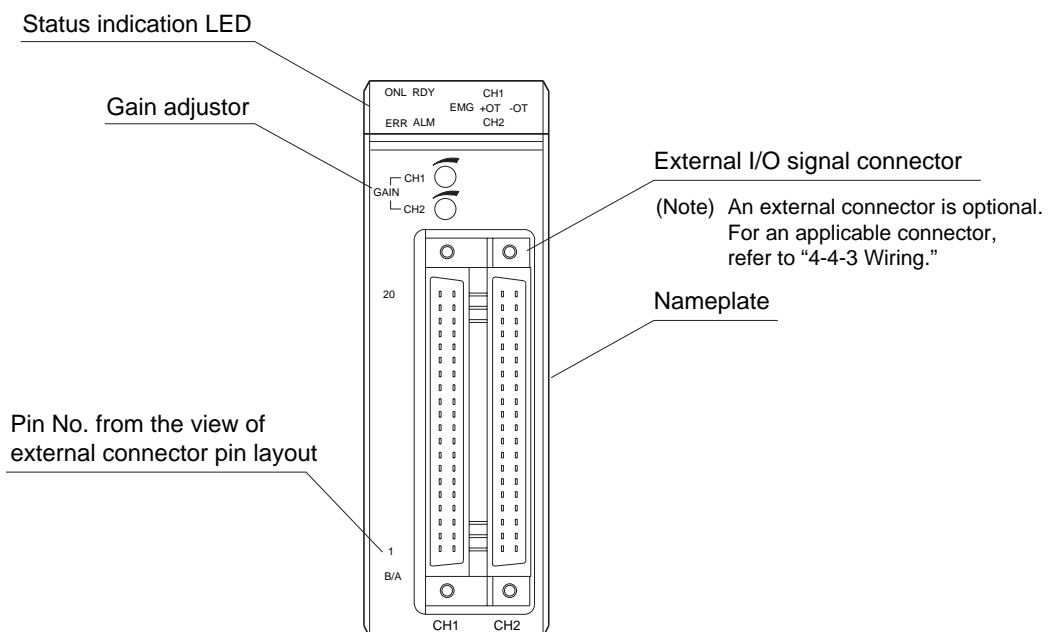
<Names>

(4) Two-axis analog duplex command positioning control module (NP1F-MA2)

Item	Specification	
Type	NP1F-MA2	
No. of control axes	2 axes	
Positioning control	Semi-closed loop	
Acceleration/deceleration characteristics	Trapezoidal (at occurrence mode)	
Position data	Max. $2^{32}-1$ pulse/command	
Speed command	Command voltage	Analog speed command (0 to $\pm 10.24V$)
	Signal type	Analog voltage command
Feedback pulse	Input frequency	500kHz
	Input type	Open collector input or differential signal (90° phase difference, phase A, phase B and phase Z)
Manual pulse unit	Input frequency	500kHz
	Input type	Open collector input or differential signal (90° phase difference, phase A, phase B and forward pulse + reverse pulse)
Control functions	Pulse occurrence mode, positioning command mode, positioning control mode	
Combination actuator	Servo system prepared analog speed command input	
Isolation method	Not isolated (between amplifier interfaces and between manual pulse unit interfaces), Photocoupler (digital I/O) * External connectable devices should be isolated strongly.	
Occupied words	Input: 14 words / Output: 8 words	
Occupied slot	1 slot	
Internal current consumption	24V DC, 150mA or less	
Mass	Approx. 200g	

* For more information about this module, refer to the “User’s Manual Analog Duplex Command Positioning Control Module” (FEH213).

<Names>

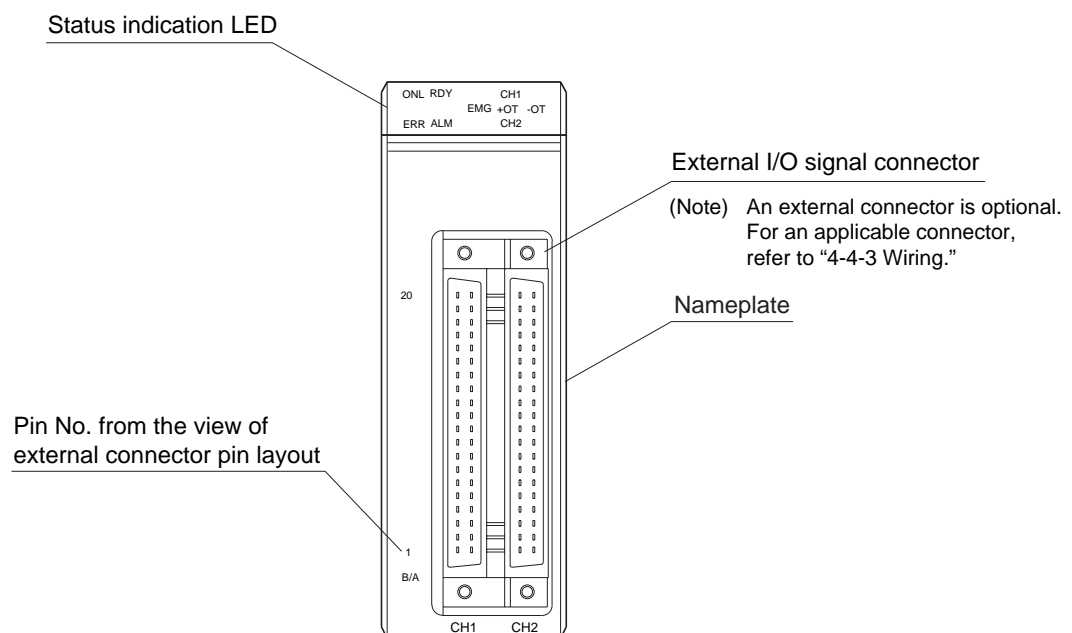


(5) Two-axis pulse train duplex positioning control module (NP1F-MP2)

Item	Specification	
Type	NP1F-MP2	
No. of control axes	2 axes	
Positioning control	Open loop	
Acceleration/deceleration characteristics	Trapezoidal (at pulse generation mode)	
Position data	Max. $2^{32}-1$ pulse/command	
Command pulse	Command frequency	250kHz
	Frequency resolution	16bit/20bit
	Output type	Open collector output (forward pulse + reverse pulse)
Feedback pulse	Input frequency	500kHz
	Input type	Open collector input or differential signal (90° phase difference, phase A, phase B and phase Z)
Manual pulse unit	Input frequency	500kHz
	Input type	Open collector input or differential signal (90° phase difference, phase A, phase B and forward pulse + reverse pulse)
Control functions	Pulse generation mode, positioning command mode	
Combination actuator	Servo system prepared analog speed command input or stepping motor	
Isolation method	Photocoupler	
Dielectric strength	1500V AC 1 minute (between I/O connector pins and frame ground)	
Insulation resistance	10M Ω or more with 500V DC megger (between I/O connector pins and frame ground)	
Occupied words	Input: 14 words / Output: 8 words	
Occupied slot	1 slot	
Internal current consumption	24V DC, 95mA or less	
External power supply	24V DC, 35mA	
Mass	Approx. 200g	

* For more information about this module, refer to the "User's Manual Pulse Train Duplex Positioning Control Module" (FEH214).

<Names>

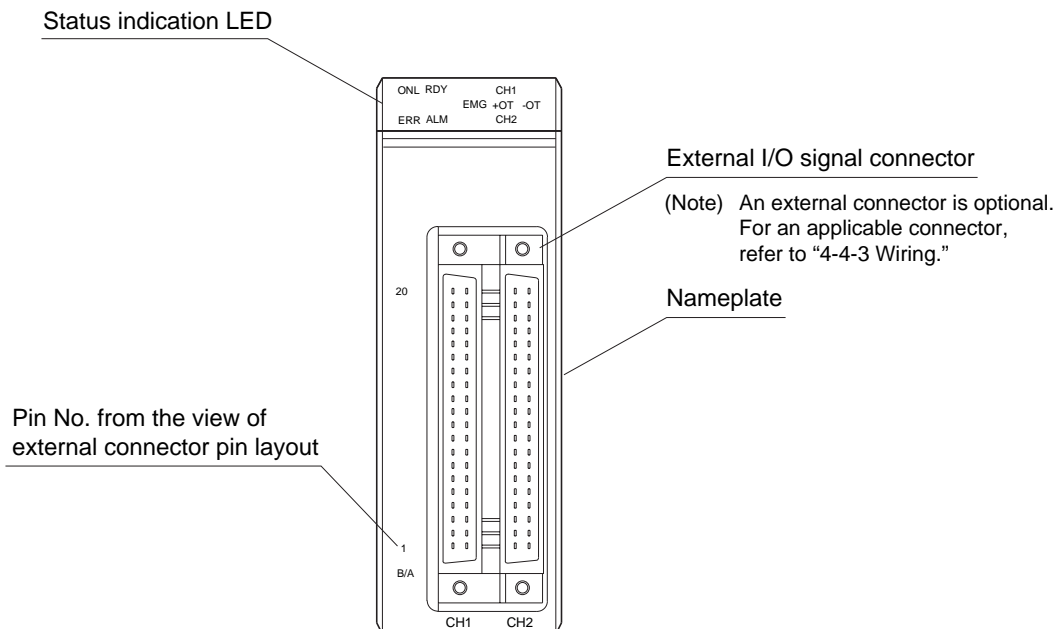


(6) Pulse train output positioning control module (NP1F-HP2)

Item	Specification	
Type	NP1F-HP2	
No. of control axes	2 axes	
Positioning control	Open loop	
Acceleration/deceleration characteristics	Trapezoidal (at pulse generation mode)	
Position data	Max. 2 ³² -1 pulse/command	
Command pulse	Command frequency	250kHz
	Frequency resolution	16bit/20bit
	Output type	Open collector output (forward pulse + reverse pulse)
Control functions	Pulse generation mode	
Combination actuator	Servo system prepared analog speed command input or stepping motor	
Isolation method	Photocoupler	
Dielectric strength	1500V AC 1 minute (between I/O connector pins and frame ground)	
Insulation resistance	10MΩ or more with 500V DC megger (between I/O connector pins and frame ground)	
Occupied words	Input: 8 words / Output: 8 words	
Occupied slot	1 slot	
Internal current consumption	24V DC, 95mA or less	
External power supply	24V DC, 35mA	
Mass	Approx. 180g	

* For more information about this module, refer to the “User’s Manual Pulse Train Output Positioning Control Module” (FEH215).

<Names>

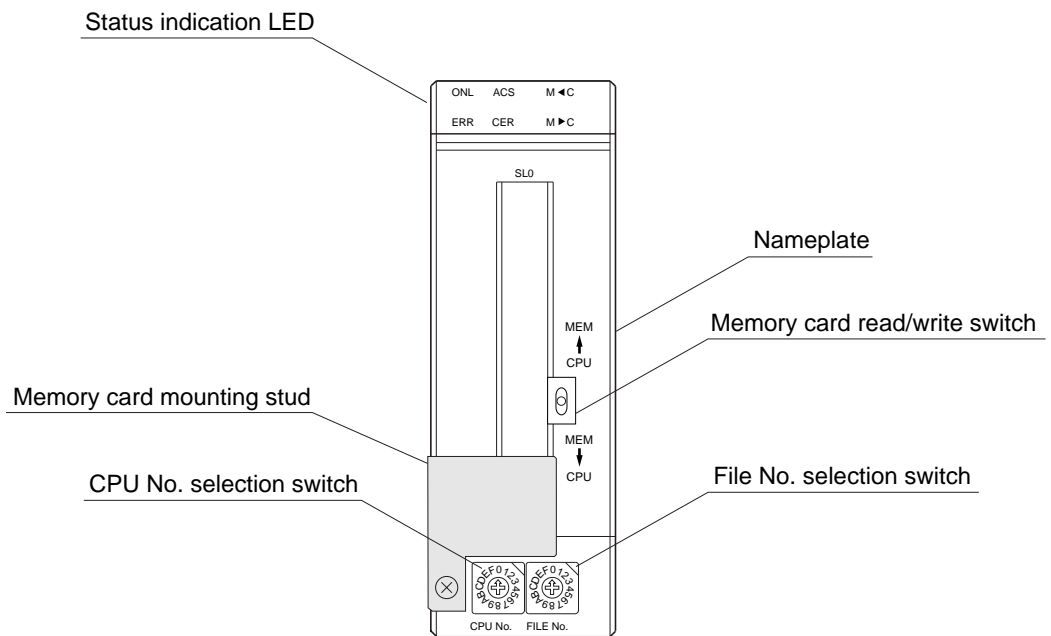


(1) Memory card interface module (NP1F-MM1)

Item	Specification
Type	NP1F-MM1
No. of SX bus connectable modules	Class B
Memory card interface	Based on JEIDA Ver. 4.1/PCMCIA Type I, II x 2 slots 5V
Card type	Memory card (SRAM card)
Function	Program reading/writing, data reading/writing
Isolation method	Not isolated
Occupied slot	1 slot
Internal current consumption	120mA or less
Mass	Approx. 200g

* For more information about this module, refer to the "User's Manual Memory Card Interface Module" (FEH227).

<Names>



(2) Dummy module (NP1F-DMY)

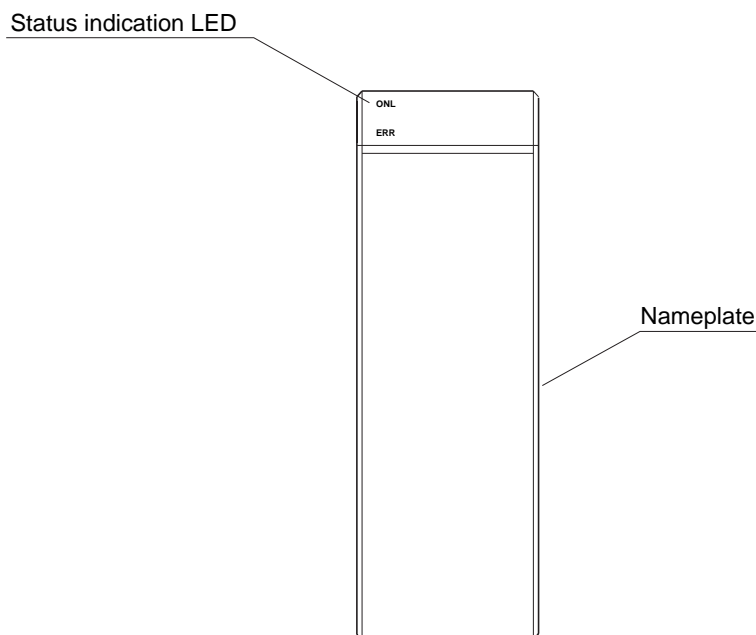
The dummy module is mounted to replace a failed module in a running system to make it possible to restart the system. However, the dummy module cannot perform the functions of a failed module.

Item	Specification
Type	NP1F-DMY
Module substituted for (Note 1)	All modules except power module and CPU module
Mounting place	On a baseboard directly connected to SX bus cannot be mounted on a T-link baseboard or other remote I/O module.
Related system memory	%MX10.42.14: "Dummy module existence" flag Turn on when the dummy module is mounted on the SX bus.
Data refresh specification	Input data: 0 fixed ("Forced ON/OFF" by D300win is available.) Output value reference input: 0 fixed ("Forced ON/OFF" by D300win is available.) Output data: Disabled
Operation specification for message communication	System message: Not sent to dummy module (Note 2) User message: Abnormal termination if message communication with dummy module is attempted using message-related FB.
Processor bus access	When the dummy module is used to replace a module that uses a processor bus to communicate data with the CPU of a P-link module or the like, if the processor bus is accessed from the application program, then a "Processor bus access error" (for dummy module) occurs.
Applicable CPU version	Standard CPU: V33 or newer firmware version High-performance CPU: V38 or newer firmware version
Occupied slot	1 slot
Occupied words	0 word
Internal current consumption	24V DC 26mA or less
Mass	Approx. 120g

Note 1: The dummy module cannot perform the functions of a failed module.

Note 2: When modules are started after powering on the system, it is necessary for the CPU to transmit parameter data (input filtering time for input module, for example) to an individual module. This operation is referred to as "System Message."

<Names>



(3) Multiuse communication module (NP1F-MU1)

This is a general purpose communication module for accommodating high-speed responsibility and communication protocols between PLC applications and external devices which cannot be handled by other general purpose communication modules (Type: NP1L-RS □ Series).

Item	Specification	
Type	NP1F-MU1	
No. of SX bus connectable modules	Max. 238/1 configuration (Class C)	
Port	RS-232C 1 channel	RS-485 1 channel
Transmission method	half-duplex serial communication method	
Synchronization method	Start-stop synchronous transmission	
Transmission speed	300/600/1200/2400/4800/9600/19200/38400/57600/115200/ 230400/460800bps Note) 230400/460800bps are RS-485 only	
Transmission distance	15m or less	1km or less (transmission speed: 19200bps or less)
No. of connectable modules	1 : 1 (One external device)	1 : 31 (Max.)
Connection method	D-sub, 9-pins connector (male)	6 poles connector
Transmission protocol	An any transmission protocol by user maked program	
Isolation method	Not isolated	Photocoupler
Dielectric strength (RS-485 port)	445V AC 1 minute (between RS-485 connector and frame ground)	
Insulation resistance (RS-485 port)	10MΩ or more with 500V DC megger (between RS-485 connector and frame ground)	
Occupied slot	1 slot	
Internal current consumption	24V DC, 80mA or less	
Mass	Approx. 175g	

* For more information about this module, refer to the "User's Manual Multiuse Communication Module" (FEH196).

<Names>