





■ AS-Interface master

Type AS-i version	NP1L-AS2 V2.1  AF00-196	NP1L-AS1 V2.0  AF00-112	NJ-ASL V2.0  AF99-95
Series	MICREX-SX series	MICREX-SX series	FLEX-PC NJ series
No. of slots occupied	1	1	1
AS-i specification	Max. connectable slaves Max. No. of input/output points	A/B slave : 62 Standard slave : 31 A/B slave : 434 ^{*2} Standard slave : 248 ^{*1}	31 248 ^{*1}
Degree of protection (IEC 60529)	IP30	IP30	IP30 (excluding terminal section)
Mounting method	IEC rail/screw dual mounting Rail mounting only Screw mounting only	Yes (base unit required) — —	— — Yes (base unit required)
Mass	Approx. 180g	Approx. 180g	Approx. 230g
Approval	CE	CE	—
Refer to	Page 30	Page 32	Page 33

Notes: ^{*1} Max. 124 input points, max.124 output points

^{*2} Max. 248 input points, max.186 output points

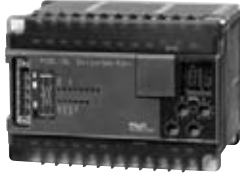
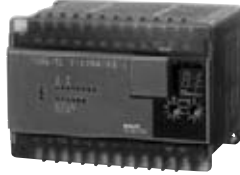
■ AS-i conformed PLC

Type AS-i version	NB6P26T-14 V2.0  AF99-92
Series	FLEX-PC NB6 series
Input/output specifications	Input: 24V DC, 16 points Output: Transistor, 10 points
AS-i specification	Max. connectable slaves Max. No. of input/output points
Degree of protection (IEC 60529)	IP20
Mounting method	IEC rail/screw dual mounting Rail mounting only Screw mounting only
Mass	Approx. 1kg
Approval	—
Refer to	Page 34

Notes: ^{*1} Max. 124 input points, max.124 output points

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■ Gateway

Type AS-i version		DeviceNet/AS-i gateway FC2LA-DL V2.1  AF00-14	T-link/AS-i gateway FC2L-TL V2.0  KK01-298A
Upper level network	Network name	DeviceNet	T-link
	Transmission speed/distance	125bps/500m, 250kbps/250m 500kbps/100m	500kbps/1000m
	Station number setting	64 stations with numbers from 01 to 63, but no overlaps of number	0 to 99
AS-Interface	Max. connectable slaves	A/B slave : 62 Standard : 31	31 per gateway
	Max. No. of input/output points	A/B slave : 434 ^{*2} Standard : 248 ^{*1}	248 ^{*1}
Input power specifications	Supply voltage	24V DC	24V DC
	Power consumption	Max. 3.3W	Max. 3.3W
Degree of protection (IEC 60529)		IP20	IP20
Mounting method	IEC rail/screw dual mounting	Yes	Yes
	Rail mounting only	—	—
	Screw mounting only	—	—
Mass		Approx. 320g	Approx. 320g
Approval		CE	—
Refer to		Page 36	Page 38





Notes: ^{*1} Max. 124 input points, max.124 output points





^{*2} Max. 248 input points, max.186 output points

■ AS-i power supply

Type		AS-i communication FP1AA-JNW072  KK01-242A
Input	Rated voltage	100 to 230V AC
	Allowable voltage range	85 to 253V AC
	Rated frequency	50/60Hz (47 to 63Hz)
Output	Type of output	Output 1 (for communications)
	Rated voltage	30V DC
	Output power	2W
	Output current (current range)	2.4A (0 to 2.4A)
Operating temperature		-10 to +55°C
Degree of protection (IEC 60529)		IP20
Mounting method	IEC rail/screw dual mounting	—
	Rail mounting only	Yes
	Screw mounting only	—
Mass		Approx. 700g
Approval		CE, UL, cUL
Refer to		Page 83

■ Slave




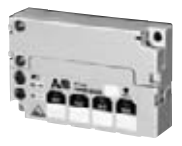
Kind of slave		Flat waterproof slave			
Slave type		Standard slave			A/B slave
Type		FM6D1-40XX □ ¹ FM6D1-40XX □ CM ¹	FM6D1-04T □ X ¹	FM6D1-22T □ □ ¹	FM6DB1-40XX □ ¹
		 KKD05-248	 KKD05-242	 AF01-75	 KKD05-246
Input/output		4I (NPN, PNP)	4O (NPN, PNP)	2I/2O (NPN, PNP)	4I (NPN, PNP)
Current consumption (including sensors)		245mA DC or less	45mA DC or less	245mA DC or less	245mA DC or less
Sensor power supply	Sensor voltage range	20 to 27V ($I \leq 160\text{mA}$) 18 to 27V ($I \leq 200\text{mA}$)	—	20 to 27V ($I \leq 160\text{mA}$) 18 to 27V ($I \leq 200\text{mA}$)	20 to 27V ($I \leq 160\text{mA}$) 18 to 27V ($I \leq 200\text{mA}$)
	Current carrying capacity	200mA ($T_a \leq 25^\circ\text{C}$) 160mA ($T_a = 45^\circ\text{C}$) 80mA ($T_a = 80^\circ\text{C}$)	—	200mA ($T_a \leq 25^\circ\text{C}$) 160mA ($T_a = 45^\circ\text{C}$) 80mA ($T_a = 80^\circ\text{C}$)	200mA ($T_a \leq 25^\circ\text{C}$) 160mA ($T_a = 45^\circ\text{C}$) 130mA ($T_a = 60^\circ\text{C}$)
Output (per point)	External power supply	—	24V DC	24V DC	—
	Type of output	—	NPN, PNP	NPN, PNP	—
	Current carrying capacity, typical	—	1A	1A	—
Applicable I/O connector		M12 connector (IEC 60947-5-2) See page 91			
Degree of protection (IEC 60529)		IP67 (with M12 connectors, mounting plate and cable)			
Mounting method	Rail	Yes	Yes	Yes	Yes
	Screw	Yes	Yes	Yes	Yes
Mass		Approx. 115g (mounting plate: Approx. 35g included)			
Approval		CE	CE	CE	CE
Refer to		Page 40	Page 40	Page 40	Page 40



Kind of slave		Flat waterproof slave		Slim waterproof slave		
Slave type		A/B slave		Standard slave		
Type		FM6DB1-03T □ X ¹		FM6D2-40XX □ ¹	FM6D2-04T □ X ¹	FM6D2-22T □ □ ¹
		 KKD05-246		 AF01-81	 AF01-80	 AF01-82
Input/output		3O (NPN, PNP)		4I (NPN, PNP)	4O (NPN, PNP)	2I/2O (NPN, PNP)
Current consumption (including sensors)		45mA DC or less		205mA DC or less	45mA DC or less	205mA DC or less
Sensor power supply	Sensor voltage range	—		20 to 27V ($I \leq 160\text{mA}$)	—	20 to 27V ($I \leq 160\text{mA}$)
	Current carrying capacity	—		160mA ($T_a \leq 25^\circ\text{C}$) 130mA ($T_a = 40^\circ\text{C}$) 70mA ($T_a = 70^\circ\text{C}$)	—	160mA ($T_a \leq 25^\circ\text{C}$) 130mA ($T_a = 40^\circ\text{C}$) 70mA ($T_a = 70^\circ\text{C}$)
Output (per point)	External power supply	24V DC		—	24V DC	24V DC
	Type of output	NPN, PNP		—	NPN	NPN
	Current carrying capacity, typical	1A		—	0.5A	0.5A
Applicable I/O connector		M12 connector (IEC 60947-5-2) See page 91		M8 connector (IEC 60947-5-2) See page 91		
Degree of protection (IEC 60529)		IP67 (with M12 connectors, mounting plate and cable)		IP67 (with M12, M8 connectors)		
Mounting method	Rail	Yes		—	—	—
	Screw	Yes		Yes	Yes	Yes
Mass		Approx. 115g (mounting plate: Approx. 35g included)		Approx. 70g		
Approval		CE		CE	CE	CE
Refer to		Page 40		Page 48	Page 48	Page 48

Note: ¹ □ : "N" for NPN model, "P" for PNP model

Quick reference guide



■ Slave




Kind of slave		Flat dustproof slave				
Slave type		Standard slave			A/B slave	
Type		FM4D-40XX □ ¹	FM4D-04TNX	FM4D-22T □ □ ¹	FM4DB-40XXN	FM4DB-03TNX
		 KK01-265A	 KK01-266A	 KK01-267A	 KK04-005	
Input/output		4I (NPN, PNP)	4O (NPN)	2I/2O (NPN, PNP)	4I (NPN)	3O (NPN)
Current consumption (including sensors)		245mA DC or less	45mA DC or less	245mA DC or less	245mA DC or less	45mA DC or less
Sensor power supply	Sensor voltage range	20 to 27V ($I \leq 160\text{mA}$) 18 to 27V ($I \leq 200\text{mA}$)	—	20 to 27V ($I \leq 160\text{mA}$) 18 to 27V ($I \leq 200\text{mA}$)	20 to 27V ($I \leq 160\text{mA}$) 18 to 27V ($I \leq 200\text{mA}$)	—
	Current carrying capacity	200mA ($T_a \leq 25^\circ\text{C}$) 160mA ($T_a = 45^\circ\text{C}$) 110mA ($T_a = 70^\circ\text{C}$)	—	200mA ($T_a \leq 25^\circ\text{C}$) 160mA ($T_a = 45^\circ\text{C}$) 110mA ($T_a = 70^\circ\text{C}$)	200mA ($T_a \leq 25^\circ\text{C}$) 160mA ($T_a = 45^\circ\text{C}$) 130mA ($T_a = 60^\circ\text{C}$)	—
Output (per point)	External power supply	—	24V DC	24V DC	—	24V DC
	Type of output	—	NPN	NPN, PNP	—	NPN
	Current carrying capacity, typical	—	0.2A	0.2A	—	0.2A
Applicable I/O connector		QZ-61-H4SFUT1 (for 0.08 to 0.2mm ²), QZ-61-H4SFUT2 (for 0.3mm ²) ²				
Degree of protection (IEC 60529)		IP40 (excluding terminal section)				
Mounting method	Rail	—	—	—	—	—
	Screw	Yes	Yes	Yes	Yes	Yes
Mass		Approx. 60g				
Approval		CE	CE	CE	CE	CE
Refer to		Page 58	Page 58	Page 58	Page 58	Page 58

Kind of slave		Slim dustproof slave			
Slave type		Standard slave		A/B slave	
Type		FM4D1-40XXN	FM4D1-04TNX	FM4DB1-40XXN	FM4DB1-03TNX
		 KK02-211A		 KK04-006	
Input/output		4I (NPN, PNP)	4O (NPN)	4I (NPN)	3O (NPN)
Current consumption (including sensors)		205mA DC or less	45mA DC or less	205mA DC or less	45mA DC or less
Sensor power supply	Sensor voltage range	20 to 27V ($I \leq 160\text{mA}$)	—	20 to 27V ($I \leq 160\text{mA}$)	—
	Current carrying capacity	160mA ($T_a \leq 25^\circ\text{C}$) 130mA ($T_a = 45^\circ\text{C}$) 107.5mA ($T_a = 60^\circ\text{C}$)	—	160mA ($T_a \leq 25^\circ\text{C}$) 130mA ($T_a = 45^\circ\text{C}$) 107.5mA ($T_a = 60^\circ\text{C}$)	—
Output (per point)	External power supply	—	24V DC	—	24V DC
	Type of output	—	NPN	—	NPN
	Current carrying capacity, typical	—	0.2A	—	0.2A
Applicable I/O connector		QZ-61-H4SFUT1 (for 0.08 to 0.2mm ²), QZ-61-H4SFUT2 (for 0.3mm ²) ²			
Degree of protection (IEC 60529)		IP40			
Mounting method	Rail	Yes			
	Screw	Yes			
Mass		Approx. 60g (including mounting plate)			
Approval		CE	CE	CE	CE
Refer to		Page 65	Page 65	Page 65	Page 65

Notes: ¹ □ : "N" for NPN model, "P" for PNP model
² For details, see page 91.

■ Slave

Kind of slave	Digital picking slave			
Slave type	Standard slave		A/B slave	
Type	FM4DP2-GR1□ ¹ , RR1□ ¹	FM4DP2-GR1□S ¹ , RR1□S ¹ NEW	FM4DP0-001□S ¹ NEW	FM4DP0-001□ ¹ NEW
	 KK04-009		 KK05-219	
Input/output	—		—	
Current consumption (including sensors)	75mA DC or less		65mA DC or less	
Degree of protection (IEC 60529)	IP40		IP40	
Mounting method	Rail	—		—
	Screw	Yes		Yes
Mass	Approx. 72g (including mounting plate)		Approx. 72g (including mounting plate)	
Approval	—		—	
Refer to	Page 79	Page 79	Page 79	Page 79


Kind of slave	Terminal block type slave			AS-i motor starter slave
Slave type	Standard slave			
Type	FM2D1-04RQX	FM1D-22TPP	FM1D-22RQP	FE16D-SJ13RGNE12 □□ ² FE16D-SJ13RGEE12 □□ ²
	 KK03-042	 AF99-102	 KK01-136A	
Input/output	4O (Relay)	2I/2O (PNP)	2I/2O (Relay)	4I/4O (PNP)
Current consumption (including sensors)	60mA DC or less	50mA DC or less	50mA DC or less	50mA DC or less
Sensor power supply	Sensor voltage range	—	20 to 30V (25mA or less)	20 to 30V (25mA or less)
	Current carrying capacity	—	25mA (Ta ≤ 70°C)	25mA (Ta ≤ 70°C)
Output (per point)	External power supply	200V AC/24V DC	24V DC	230V AC
	Type of output	Relay contact	PNP	Relay contact
	Current carrying capacity, typical	5A	2A	6A
Applicable I/O connector	Screw connection	Screw connection	Screw connection	—
Degree of protection (IEC 60529)	IP20	IP20	IP20	IP65
Mounting method	Rail	Yes	Yes	—
	Screw	Yes	—	Yes
Mass	Approx. 70g	Approx. 150g	Approx. 150g	Approx. 2.2kg (including mounting plate)
Approval	CE	CE	CE	CE
Refer to	Page 71	Page 73	Page 73	Page 75

Notes: ¹ □ : Illuminated pushbutton color "G" for green, "R" for red


² □□ : Motor capacity and thermal overload relay range


Quick reference guide



■ Slave

Kind of slave		Water proof slave (analog slave)				
Type		FM6A11-20	FM6A21-20	FM6A51-20	FM6A31-02	FM6A41-02
		 KK104-004				
Input/output		Current input 2-channel	Voltage input 2-channel	Resistance bulb input 2-channel	Current output 2-channel	Voltage output 2-channel
Current consumption		50mA DC or less			50mA DC or less	
External power	Operating voltage	24V DC			24V DC	
	Sensor voltage range	21.6 to 30V			21.6 to 30V	
	Current consumption	Max. 25mA + sensor supply current		Max. 25mA	Max. 40mA + output load current	Max. 35mA + output load current
Input/output range (changed by parameter)		4 to 20mA 0 to 20mA	0 to 10V 1 to 5V	Pt100:-200 to +850°C JPt100:-200 to +500°C	4 to 20mA 0 to 20mA	0 to 10V 1 to 5V
Current tolerance		Max. 40mA	—	—	—	—
Voltage tolerance		—	±25V	—	—	—
Supply to external sensor		500mA or less (total of 2-channel)			—	—
Output current		—	—	—	Max. 24mA	—
Output voltage		—	—	—	—	Max. 12V
Applicable I/O connector		M12 connector (IEC 947-5-2)			M12 connector (IEC 947-5-2)	
Degree of protection (IEC 60529)		IP67			IP67	
Mounting method	Rail	Yes			Yes	
	Screw	Yes			Yes	
Mass		Approx. 120g (mounting plate:Approx. 35g included)			Approx. 120g (mounting plate:Approx. 35g included)	
Approval		CE				
Refer to		Page 54				

■ AS-i Safety

Description		Safety monitor		Safety monitor with enhanced functionality	
Type		3RK1105-1AE04-0CA0	3RK1105-1BE04-0CA0	3RK1105-1AE04-2CA0	3RK1105-1BE04-2CA0
		 KK04-119			
Current consumption		150mA or less	200mA or less	150mA or less	200mA or less
No. of channels		1	2	1	2
Input	Start input	Photocoupler input (high active) Approx. 10mA (at 24V DC)			
	Protective control (EDM) input	Photocoupler input (high active) Approx. 10mA (at 24V DC)			
Output	Message output	PNP transistor output:200mA Short-circuit protection and polarity changeover protection			
	Safety output rated control current	Nonpotential NO contact Ie/AC-12: 2A at 250V AC max. Ie/AC-15: 2A at 115V AC, 2A at 230V AC Ie/DC-12: 2A at 24V DC max. Ie/DC-13: 1A at 24V DC, 0.1A 115V DC, 0.05A at 230V DC			
Degree of protection (IEC 60529)		IP20			
Mounting method	Rail	Yes			
	Screw	—			
Mass		Approx. 350g	Approx. 450g	Approx. 350g	Approx. 450g
Approval		UL, CSA, Marine			
Refer to		Page 22			

Description		K45F safe compact module	
Slave type		Standard slave	
Type		3RK1205-0BQ00-0AA3	
		 KK03-039	
Input/output		4I	
Current consumption		45mA or less	
Input type		PNP (sink)	
Input sensor		Mechanical contact	
Low signal range		Contact open	
High signal range		Contact closed Input current I _{peak} ≥ 5mA	
Applicable I/O connector		M12 connector (IEC 60947-5-2)	
Degree of protection (IEC 60529)		IP67	
Mounting method	Rail	Yes	
	Screw	Yes	
Mass		Approx. 135g (mounting plate: Approx.35g included)	
Approval		UL, CSA, Marine	
Refer to		Page 22	

Description		AS-Interface EMERGENCY STOP pushbuttons	
Slave type		Standard slave	
Type		3SF5811-0AA08	3SF5811-0AB08
		 KK05-001	 KK05-002
Current consumption		60mA or less	
Low signal range		Contact open (Emergency stop button OFF)	
High signal range		Contact closed (Emergency stop button ON) Input current I _{peak} ≥ 5mA	
Degree of protection (IEC 60529)		IP65	
Mounting method	Rail	—	
	Screw	Yes	
Mass		Approx. 250g	
Approval		UL, CSA, Marine	
Refer to		Page 22	