

FX20 Series Distributed I/O



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COMPANY PROFILE

Tianjin Elco Automation Co., Ltd. is a leading enterprise in industrial automation in China. It was established in 2003 with a sales and service network covering the whole country. As a provider of domestic industrial automation products and intelligent manufacturing solutions, Elco holds a leading position in various fields such as automobiles, automotive parts, engineering machinery, new energy, logistics equipment, food & pharmaceuticals, printing & packaging, textile machinery, electronic manufacturing, etc.

From the system layer, control layer, network layer to execution layer, Elco provides a full range of services for intelligent manufacturing top to bottom. Our products and solutions include but are not limited to cloud platforms, MES manufacturing execution systems, industrial fieldbus, industrial Ethernet, industrial wireless communication, IoT gateways, automated production lines composed of robots and intelligent devices, integration of automated electrical control systems, intelligent logistics warehousing systems, IoT integrated solutions and services, industrial technology software based mobile solutions, Elco Cloud · Industrial Internet Platform, etc., comprehensively help enterprises achieve intelligent manufacturing.

From 2016, Elco won the bid for the National Ministry of Industry and Information Technology's major intelligent manufacturing project for two consecutive years. In 2018, Elco was honorably selected and became a nationally recommended and supported intelligent manufacturing system solution supplier. From 2019, Elco won the bid for the Ministry of Industry and Information Technology's high quality development project for two consecutive years. In 2020, Elco's application for the "Industrial Internet Platform for the Automobile Manufacturing Industry" was rated as a national level specialized industrial Internet platform. In 2021, Elco was honorably selected as the professional, refined, characteristic and innovative key "Little Giant" enterprise by the Ministry of Industry and Information Technology of China. In 2022, Elco was selected as the National Enterprise Technology Center.

Elco defines "automation+digital factory+industrial internet" as an important development strategy. In 2017, under the guidance of the Tianjin Municipal Science and Technology Commission, Elco initiated the establishment of the Tianjin Automation and Information Technology Innovation Strategic Alliance, and relied on the alliance's investment to establish the Elco · XEDA Industrial Internet Application Innovation Promotion Center.

Nowadays, with the coming of the industrial internet era, traditional industrial models have been impacted unprecedentedly, and the integration of the internet and manufacturing industry has gradually been elevated to a strategic level. Elco will promote the development of industrial Internet with unremitting innovation pursuit, accelerate the process of intelligent manufacturing, and build a new ecosystem of industrial Internet+intelligent manufacturing.



I/O adapter

6/	FX20-GW-EC00	EtherCAT adapte
6/	FX20-GW-PN00	ProfiNet adapte
7/	FX20-GW-EP00	Ethernet/IP adapte
7/	FX20-GW-CE00	CC-LINK IE adapte

Digital input module

8/	FX20-DI-BF60	8-channel input module PNP/NPN
8/	FX20-DI-BH60	16-channel input module PNP/NPN
8/	FX20-DI-BL60	32-channel input module PNP/NPN

Digital output module

9/	FX20-DO-BF00	8-channel output module PNP
9/	FX20-DO-BF50	8-channel output module NPN
10/	FX20-DO-BH00	16-channel output module PNP
10/	FX20-DO-BH50	16-channel output module NPN
11/	FX20-DO-BL00	32-channel output module PNP
11/	FX20-DO-BL50	32-channel output module NPN

Analog I/O module

12/	FX20-AI-BD60	4-channel voltage and current input module
12/	FX20-AI-BF60	8-channel voltage and current input module
13/	FX20-AO-BD60	4-channel voltage and current output module
13/	FX20-AO-BF60	8-channel voltage and current output module

Temperature measuring module

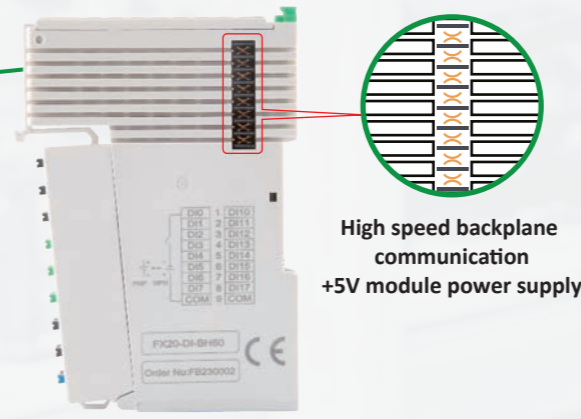
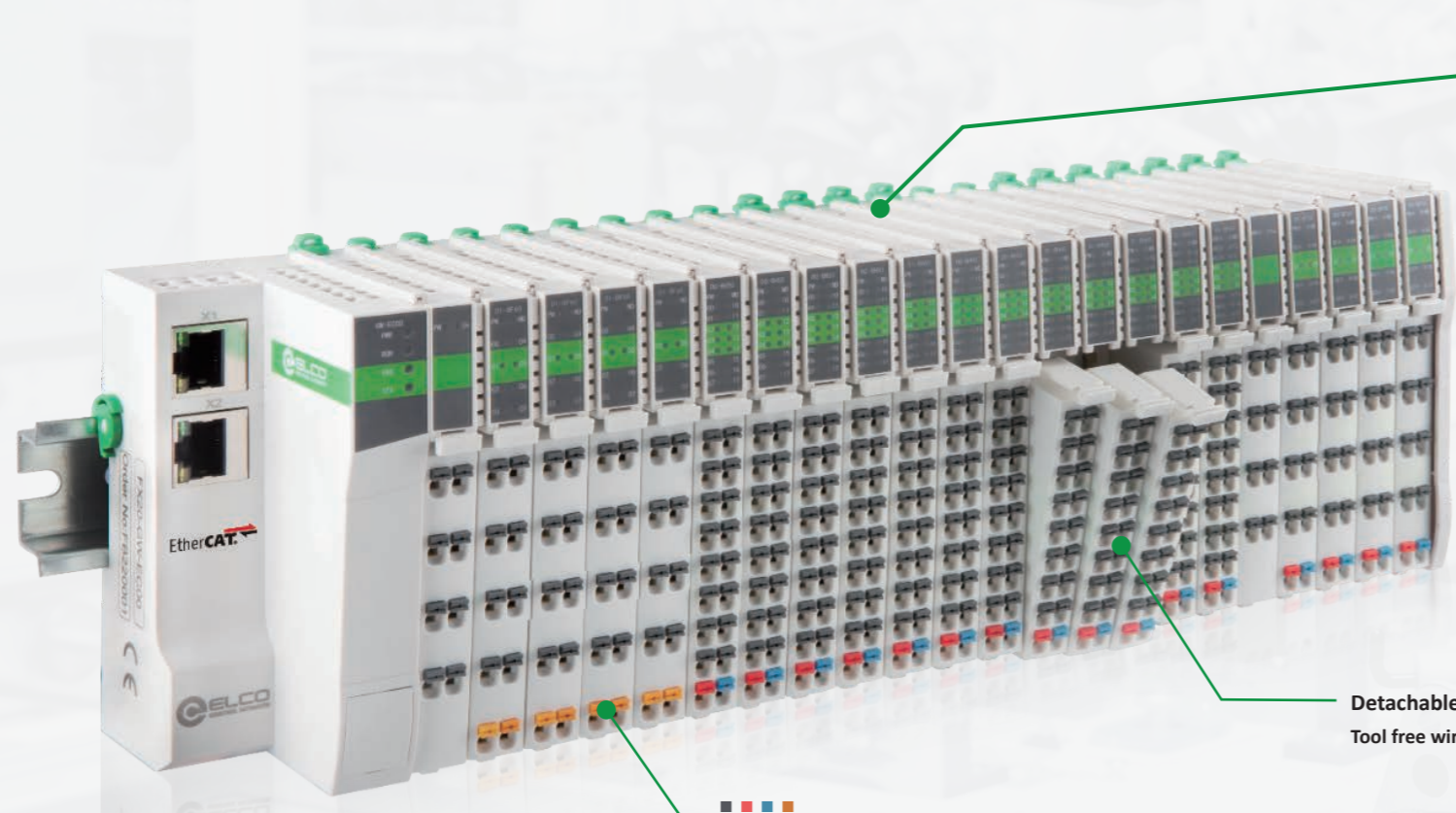
14/	FX20-AI-BD80	4-channel, RTD measurement module
14/	FX20-AI-BD90	4-channel, TC measurement module

Function modules

15/	FX20-SCM-BB00	Dual channel, compatible with RS485/RS422/RS232
16/	FX20-CNT-BB00	Dual channel ABZ three-phase high-speed counting module, 24V
17/	FX20-LKM-BD00	4-channel IO Link master station, compatible with ClassA and ClassB

Auxiliary power module

18/	FX20-PS-AB00	Auxiliary power module, 5V
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High speed backplane communication
+5V module power supply

FX20 series distributed I/O

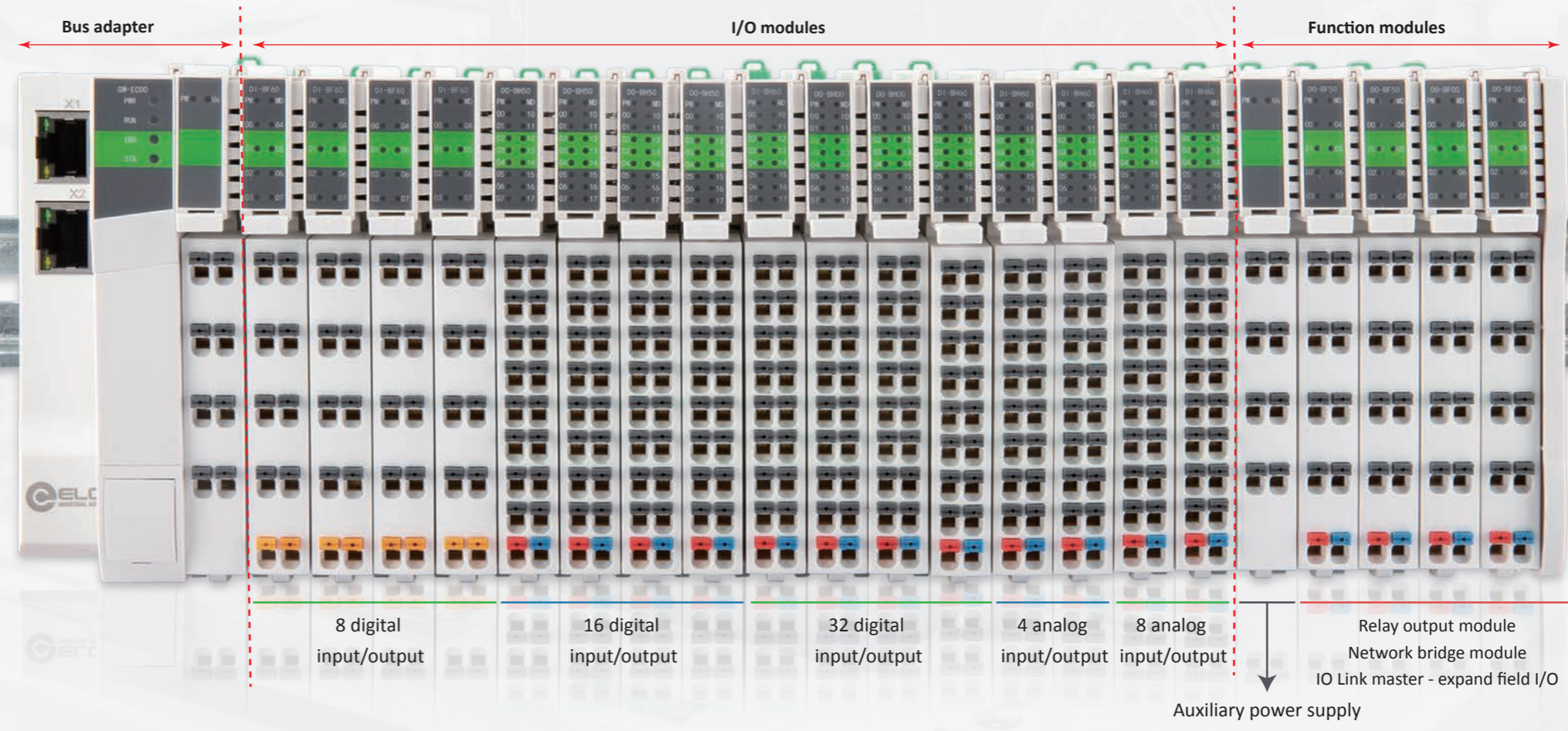
- ▶ Firm structure
- ▶ Diagnostic alarm
- ▶ Fast installation

Terminals' color identification

- IO
- 24V+
- 0V
- Common terminal

Detachable terminal
Tool free wiring

Terminals with color identification



Bus adapter
Note: 1 Bus adapter can connect up to 32 function modules.



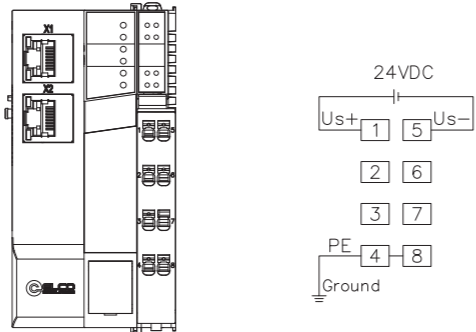


- Function modules**
- Digital input/output - point diagnosis, point protection
 - Analog input/output - mixed settings
 - High speed counting/pulse output - mainstream frequency



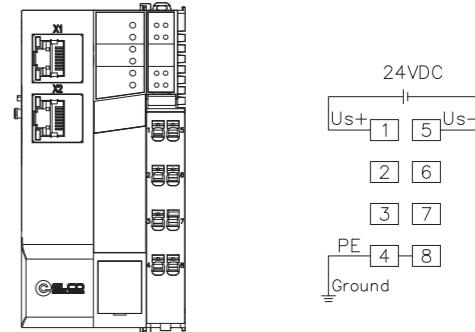
8 digital input/output 16 digital input/output 32 digital input/output 4 analog input/output 8 analog input/output

Relay output module
Network bridge module
IO Link master - expand field I/O
Auxiliary power supply

FX20 series IP20 distributed I/O-Couplers



		
Ordering data		
Product model	FX20-GW-EC00	FX20-GW-PN00
Description	EtherCAT Coupler	ProfiNet Coupler
System parameters		
Communication protocol	EtherCAT	PROFINET
Bus transmission by	Cat.5 cable	Cat.5 cable
Communication rate	100 Mbit/s	100 Mbit/s
Max. communication distance	100 m (100BASE-TX)	100 m (100BASE-TX)
Address range	1-63	0-254
Electrical parameters		
Max. extended I/O modules	32	32
Max. input/output Bytes	512 byte input and 512 byte output	1440 byte input and 1440 byte output
Bus interface	2 x RJ45	2 x RJ45
Working voltage	24 V DC (±20 %)	24 V DC (±20 %)
Static working current	200mA	200mA
Backplane power voltage	5VDC	5VDC
Backplane power current	Max. 3A	Max. 3A
Electrical isolation	500 V (power supply and bus)	500 V (power supply and bus)
Power protection	Overcurrent, reverse polarity, surge protection	Overcurrent, reverse polarity, surge protection
Diagnosis		
Power indication	LED	
Error indication	LED, communication message	
Communication status	LED, communication message	
General data		
Protection grade	IP20	
Installation	Standard 35mm DIN rail installation	
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C	
Relative humidity	95%, non condensation	
Module weight	230g	
Module size (H x W x D)	79mmx57mmx110mm	
Wiring diagram		

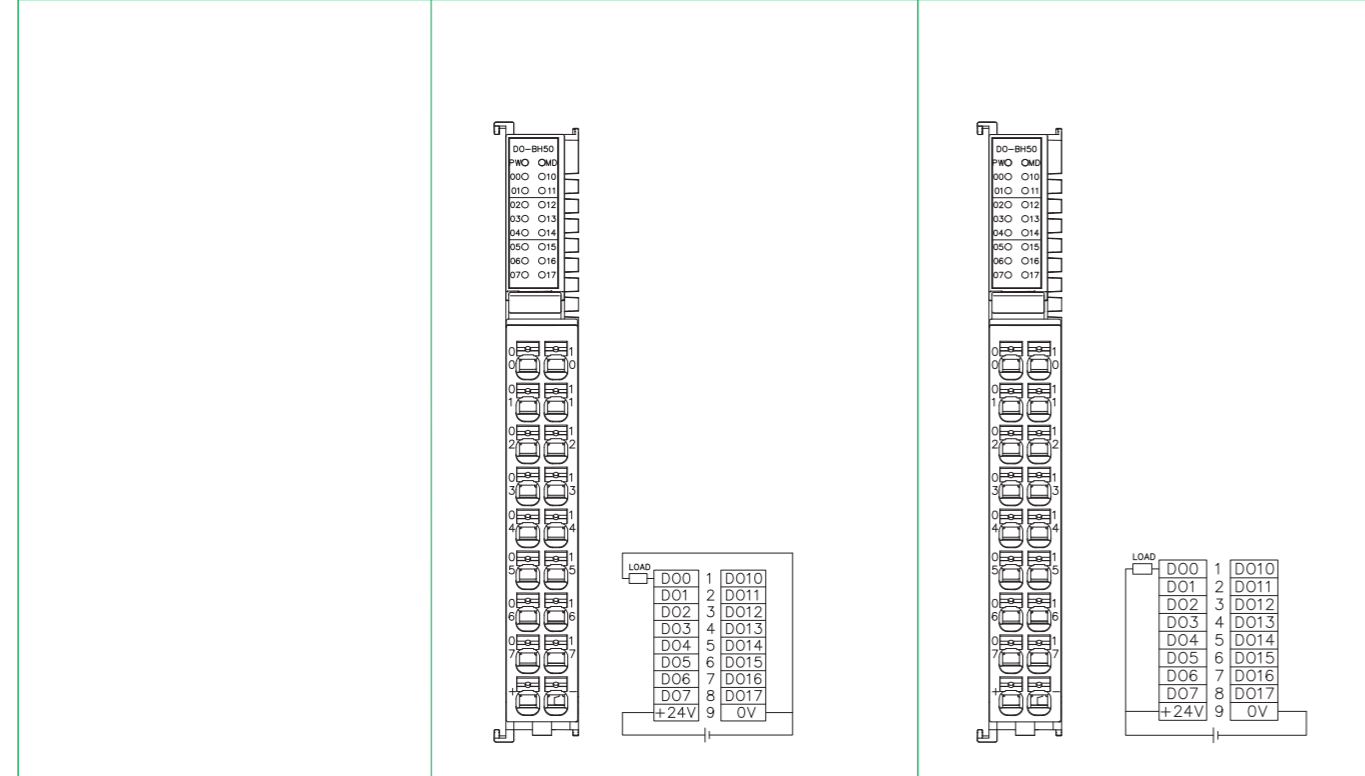
FX20 series IP20 distributed I/O-Couplers



		
Ordering data		
Product model	FX20-GW-EP00	FX20-GW-CE00
Description	Ethernet/IP Coupler	CC-LINK IE Coupler
System parameters		
Communication protocol	Ethernet/IP	CC-Link IE Field Basic
Bus transmission by	Cat.5 cable	Cat.5 cable
Communication rate	100 Mbit/s	100 Mbit/s
Max. communication distance	100 m (100BASE-TX)	100 m (100BASE-TX)
Address range	0-254	0-254
Electrical parameters		
Max. extended I/O modules	32	32
Max. input/output Bytes	504 byte input and 504 byte output	288 byte input and 288 byte output
Bus interface	2 x RJ45	2 x RJ45
Working voltage	24 V DC (±20 %)	24 V DC (±20 %)
Static working current	200mA	200mA
Backplane power voltage	5VDC	5VDC
Backplane power current	Max. 3A	Max. 3A
Electrical isolation	500 V (power supply and bus)	500 V (power supply and bus)
Power protection	Overcurrent, reverse polarity, surge protection	Overcurrent, reverse polarity, surge protection
Diagnosis		
Power indication	LED	
Error indication	LED, communication message	
Communication status	LED, communication message	
General data		
Protection grade	IP20	
Installation	Standard 35mm DIN rail installation	
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C	
Relative humidity	95%, non condensation	
Module weight	230g	
Module size (H x W x D)	79mmx57mmx110mm	
Wiring diagram		

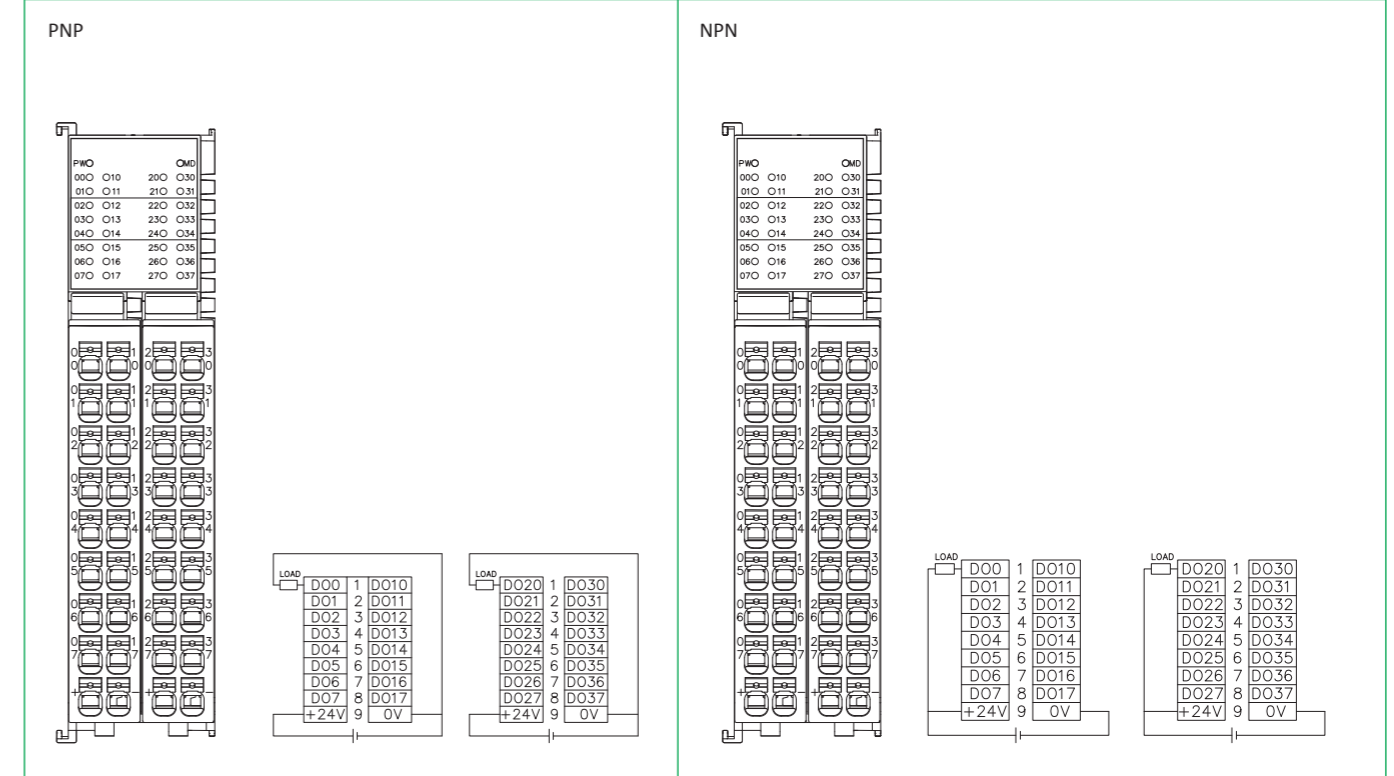
Ordering data			
Product model	FX20-DI-BF60	FX20-DI-BH60	FX20-DI-BL60
Description	8-channel input PNP/NPN universal module	16-channel input PNP/NPN universal module	32-channel input PNP/NPN universal module
Electrical parameters			
Input channel	8	16	32
Input type	Universal for PNP/NPN	Universal for PNP/NPN	Universal for PNP/NPN
Input signal '0'	DC 0-5V	DC 0-5V	DC 0-5V
Input signal '1'	DC 18-30V	DC 18-30V	DC 18-30V
Input current	typ. 4mA	typ. 4mA	typ. 4mA
Input filtering delay	0ms, 1ms, 3ms, 10ms	0ms, 1ms, 3ms, 10ms	0ms, 1ms, 3ms, 10ms
Current consumption (5V)	60mA	60mA	60mA
Process data length	1 byte	2 bytes	4 bytes
General data			
Protection grade	IP20		
Installation	Standard 35mm DIN rail installation		
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C		
Relative humidity	95%, non condensation		
Module weight	63g	63g	128g
Module size (H x W x D)	79mmx15mmx110mm	79mmx15mmx110mm	79mmx28mmx110mm
Wiring diagram			
8-channel input module	16-channel input module	32-channel input module	

Ordering data		
Product model	FX20-DO-BF00	FX20-DO-BF50
Description	8-channel output module for PNP	8-channel output module for NPN
Electrical parameters		
Output channel	8	8
Output type	PNP	NPN
Output current	Max. 0.5A per channel, Total 4A	Max. 0.5A per channel, Total 4A
Load type	Resistive load/inductive load/lamp load	Resistive load/inductive load/lamp load
Switching frequency	Max 1KHz/Max 1Hz/Max 10Hz	Max 1KHz/Max 1Hz/Max 10Hz
Current consumption (5V)	60mA	60mA
Process data length	1 byte	1 byte
General data		
Protection grade	IP20	
Installation	Standard 35mm DIN rail installation	
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C	
Relative humidity	95%, non condensation	
Module weight	66g	
Module size (H x W x D)	79mmx15mmx110mm	
Wiring diagram		

		
Ordering data		
Product model	FX20-DO-BH00	FX20-DO-BH50
Description	16-channel output module for PNP	16-channel output module for NPN
Electrical parameters		
Output channel	16	16
Output type	PNP	NPN
Output current	Max. 0.5A per channel, Total 4A	Max. 0.5A per channel, Total 4A
Load type	Resistive load/inductive load/lamp load	Resistive load/inductive load/lamp load
Switching frequency	Max 1KHz/Max 1Hz/Max 10Hz	Max 1KHz/Max 1Hz/Max 10Hz
Current consumption (5V)	65mA/	65mA
Process data length	2 bytes	2 bytes
General data		
Protection grade	IP20	
Installation	Standard 35mm DIN rail installation	
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C	
Relative humidity	95%, non condensation	
Module weight	66g	
Module size (H x W x D)	79mmx15mmx110mm	
Wiring diagram		

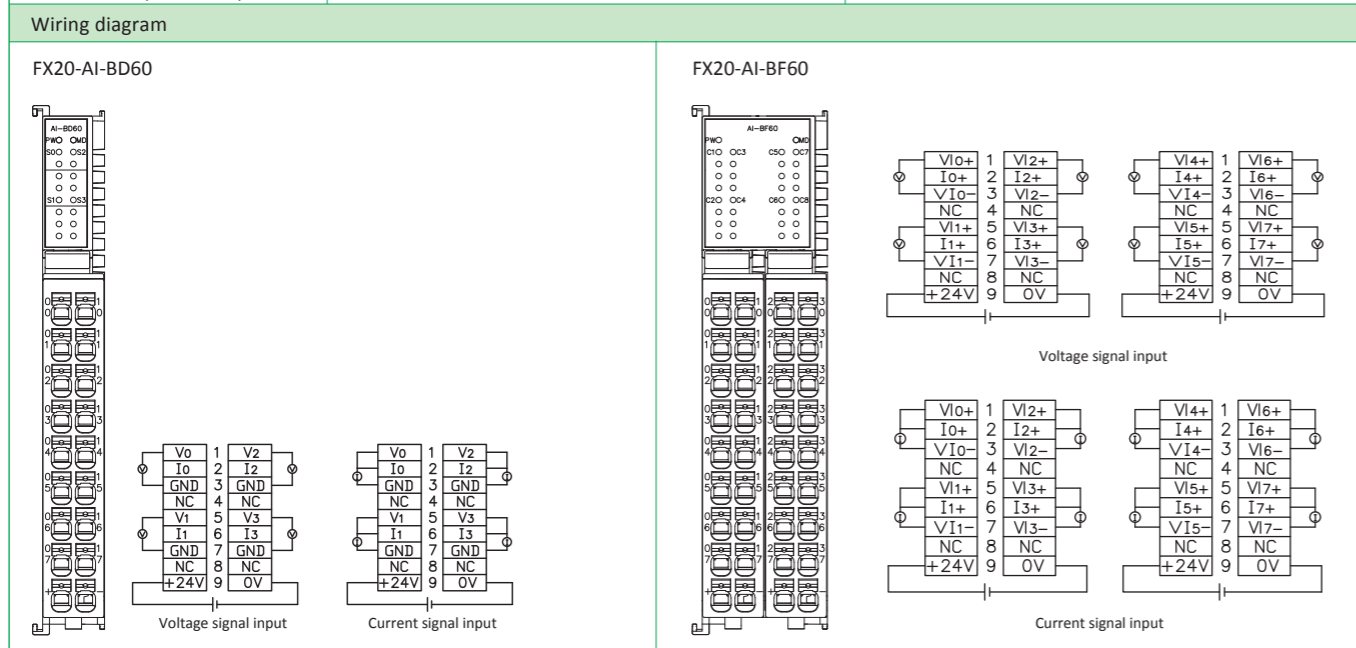


		
Ordering data		
Product model	FX20-DO-BL00	FX20-DO-BL50
Description	32-channel output module for PNP	32-channel output module for NPN
Electrical parameters		
Output channel	32	32
Output type	PNP	NPN
Output current per channel	Max. 0.5A per channel, Total 4A	Max. 0.5A per channel, Total 4A
Load type	Resistive load/inductive load/lamp load	Resistive load/inductive load/lamp load
Switching frequency	Max 1KHz/Max 1Hz/Max 10Hz	Max 1KHz/Max 1Hz/Max 10Hz
Current consumption (5V)	65mA	65mA
Process data length	4 bytes	4 bytes
General data		
Protection grade	IP20	
Installation	Standard 35mm DIN rail installation	
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C	
Relative humidity	95%, non condensation	
Module weight	128g	
Module size (H x W x D)	79mmx28mmx110mm	
Wiring diagram		

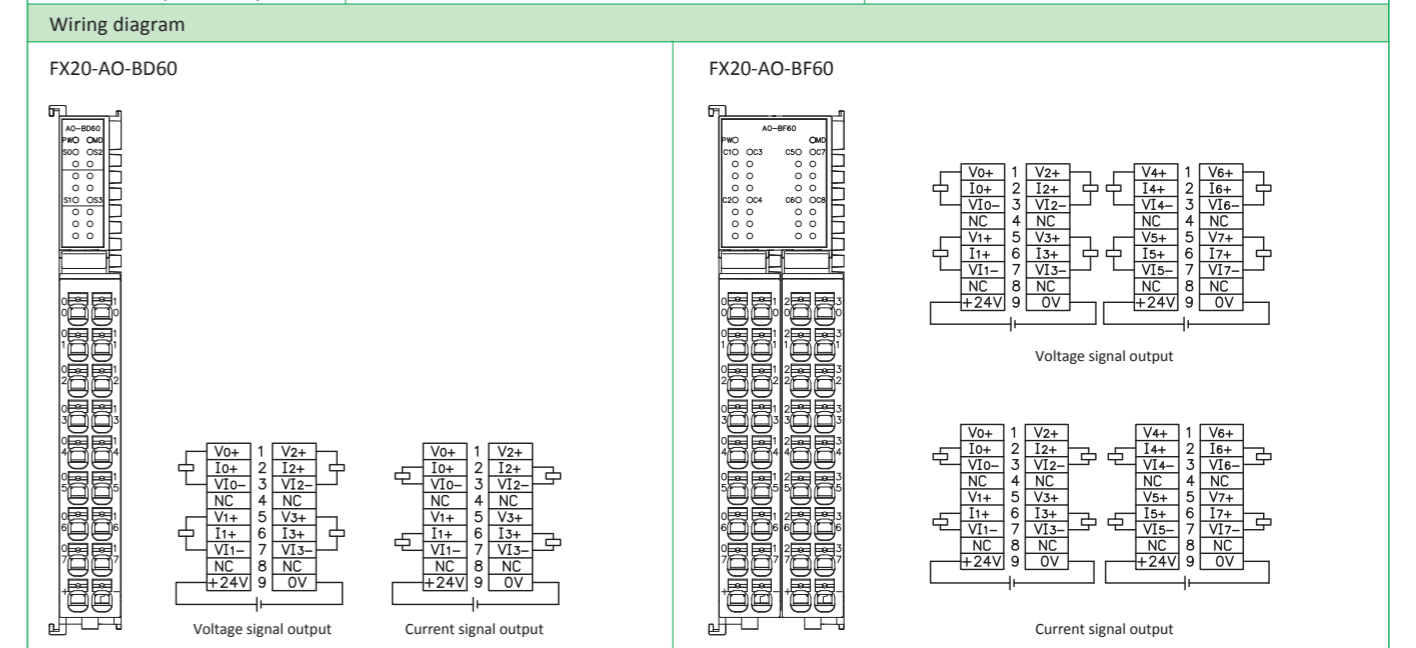






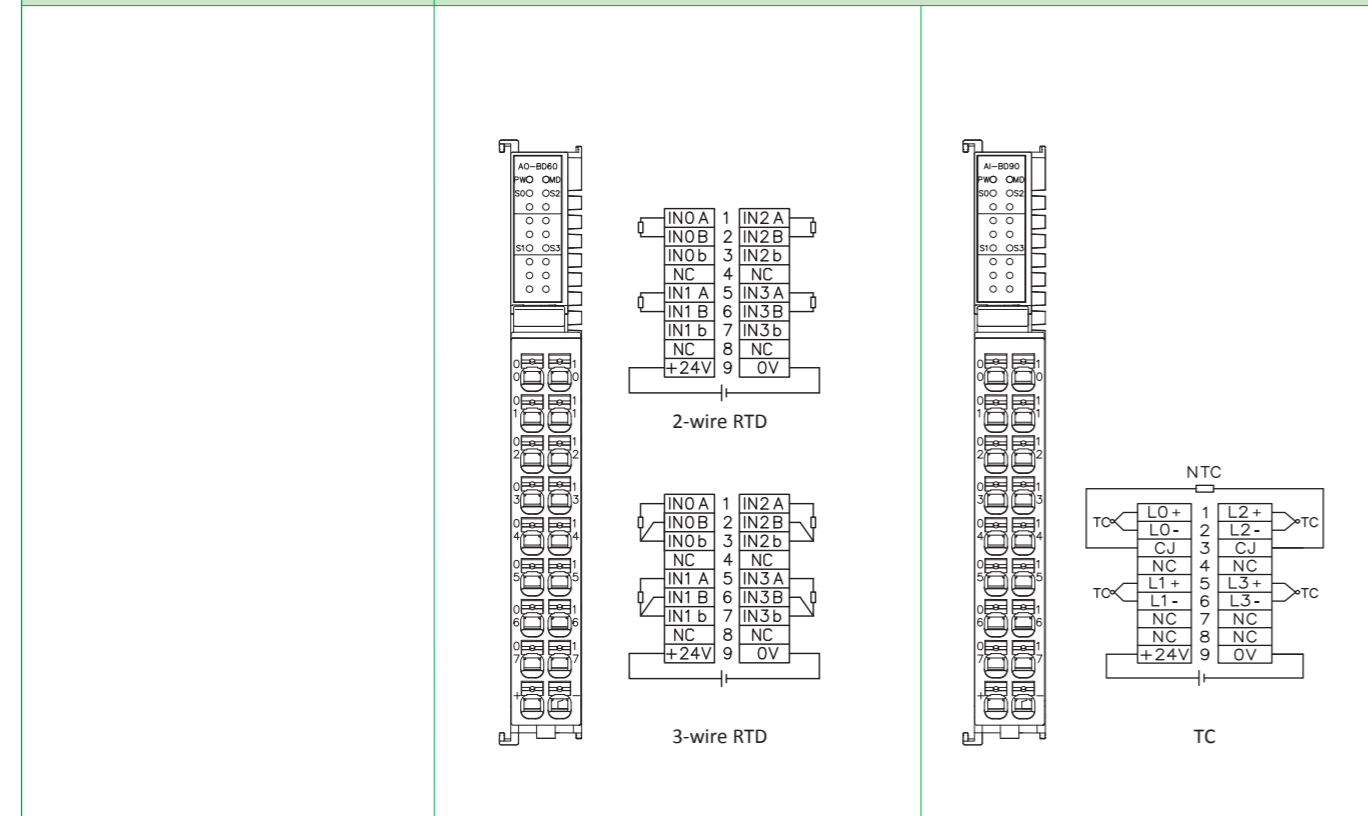
Ordering data		
Product model	FX20-AI-BD60	FX20-AI-BF60
Description	4-channel input module for voltage and current types	8-channel input module for voltage and current types
Electrical parameters		
Input channel	4	8
Input Type	0-10V, +/-10V, 1-5V, 0/4-20mA, +/-20mA	0-10V, +/-10V, 1-5V, 0/4-20mA, +/-20mA
Input impedance	Current type: 250 Ω; Voltage type: 1M Ω	Current type: 250 Ω; Voltage type: 1M Ω
Input resolution	16 Bits	16 Bits
Conversion time	3ms	3ms
Measurement accuracy	± 0.2%	± 0.2%
Output channel	/	/
Output type	/	/
Output resolution	/	/
Conversion time	/	/
Output accuracy	/	/
Process data length	8 bytes	16 bytes
General data		
Protection grade	IP20	
Installation	Standard 35mm DIN rail installation	
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C	
Relative humidity	95%, non condensation	
Module weight	70g	130g
Module size (H x W x D)	79mmx15mmx110mm	79mmx28mmx110mm




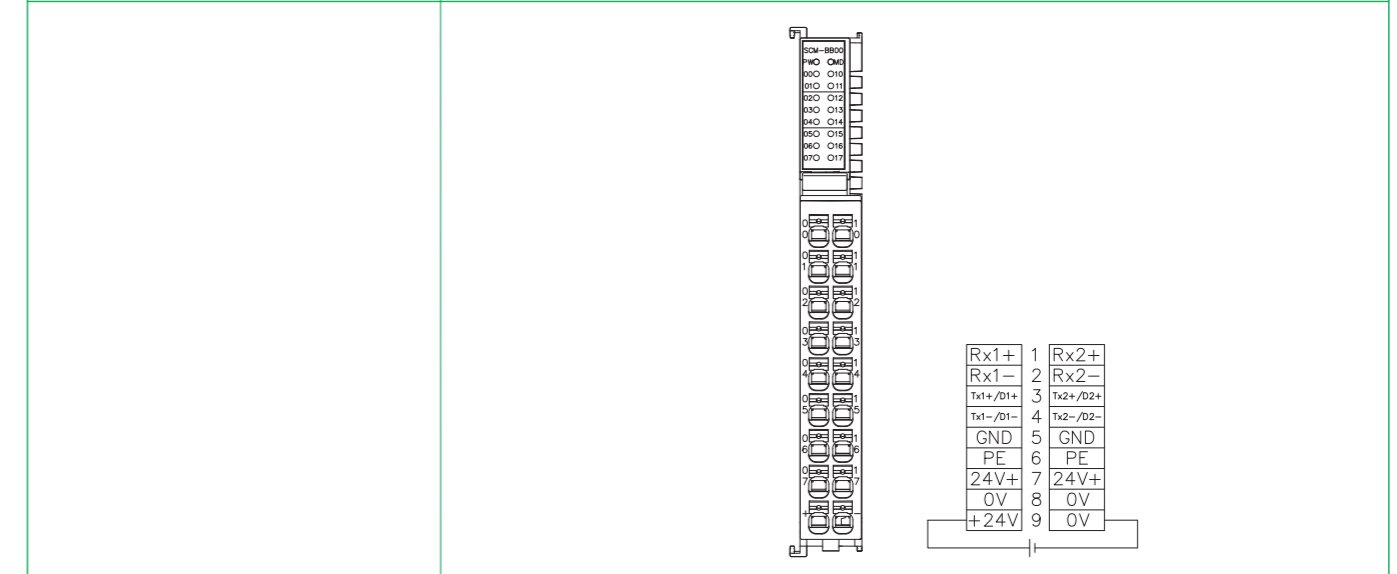
Ordering data		
Product model	FX20-AO-BD60	FX20-AO-BF60
Description	4-channel output module for voltage and current types	8-channel output module for voltage and current types
Electrical parameters		
Input channel	/	/
Input Type	/	/
Input impedance	/	/
Input resolution	/	/
Conversion time	/	/
Measurement accuracy	/	/
Output channel	4	8
Output type	1-5V, 0-10V, ±10V, 0/4-20mA	1-5V, 0-10V, ±10V, 0/4-20mA
Output resolution	16 Bits	16 Bits
Conversion time	2ms	2 ms
Output accuracy	± 0.2%	± 0.2%
Process data length	8 bytes	16 bytes
General data		
Protection grade	IP20	
Installation	Standard 35mm DIN rail installation	
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C	
Relative humidity	95%, non condensation	
Module weight	70g	130g
Module size (H x W x D)	79mmx15mmx110mm	79mmx28mmx110mm



		
Ordering data		
Product model	FX20-AI-BD80	FX20-AI-BD90
Description	4-channel, RTD measurement module	4-channel, TC measurement module
Electrical parameters		
Input channel	4	4
Input type	Thermal resistance, (2-wire, 3-wire):	Thermocouple: J, K, T, N, E type
Resolution	16 Bits	16 Bits
Sensitivity	0.1°C	0.1°C
Measurement accuracy	Within 2 °C	Within 2 °C
Process data length	8 bytes	8 bytes
General data		
Protection grade	IP20	
Installation	Standard 35mm DIN rail installation	
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C	
Relative humidity	95%, non condensation	
Module weight	70g	
Module size (H x W x D)	79mmx15mmx110mm	



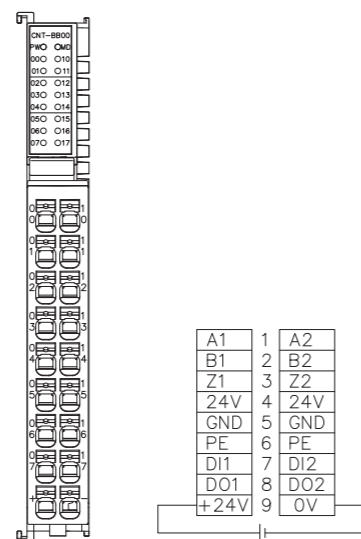
	
Ordering data	
Product model	FX20-SCM-BB00
Description	Dual channel, compatible with RS485/RS422/RS232
Electrical parameters	
Input channel	2
Interface type	Terminal type
Communication methods	RS485: 2-wire, half duplex; RS422: 4-wire, full duplex; RS232: 2-wire, half duplex;
Working mode	MODBUS master station, slave station, free transparent transmission
Communication protocol	MODBUS RTU, MODBUS ASCII, free port
Baud rate	Default 115200bps, 300bps-921600bps can be set
Data bits	7-bit or 8-bit
Stop bit	1 or 2 stop bits can be set
Check bit	No checksum, odd or even checksum can be set
Timeout time	Default 100ms, 2-65535ms can be set
Slave station number	1-247
Communication distance	RS485/RS422: Max.30m; RS232: Max.10m
Process data length	Received data: 21 bytes, sent data: 15 bytes
General data	
Protection level	IP20
Installation method	Standard 35mm DIN rail installation
temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C
relative humidity	95%, non condensing
Module weight	70g
Module size (H x W x D)	79mm x 15mm x 110mm



FX20 series IP20 distributed I/O - High speed counting module



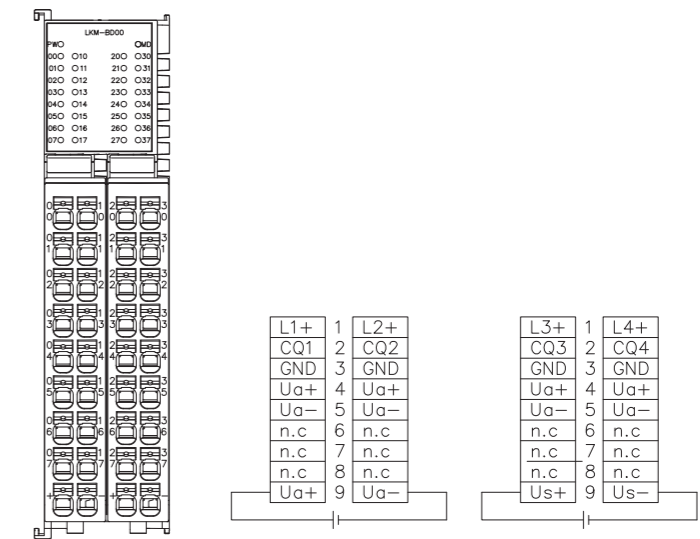
Ordering data	
Product model	FX20-CNT-BB00
Description	Dual channel ABZ three-phase high-speed counting module, 24V
Electrical parameters	
Input channel	2
Interface type	Terminal type
Encoder power supply terminal	2x24VDC
Encoder input	ABZ three-phase, 24V
Input type	Source type, leakage type, and push-pull type can be set
Counting mode	B pulse mode, B pulse+A direction mode, A+B mode, A+B+Z mode
Counting frequency	Max.500kHz
Encoder frequency doubling mode	x1/x2/x4
Count data length	32 bits
Counting range	-2147483648~2147483647
Count comparison function	support
Forward and reverse counting	support
Counting alarm function	support
Filtering function	0-10ms can be set
IO channel	Input: 2 PNP/NPN, Output: 2 PNP
General data	
Protection level	IP20
Installation method	Standard 35mm DIN rail installation
temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C
relative humidity	95%, non condensing
Module weight	70g
Module size (H x W x D)	79mm x 15mm x 110mm



FX20 series IP20 distributed I/O - IO Link Master Station Module



Ordering data	
Product model	FX20-LKM-BD00
Description	4-channel IO Link master station, compatible with ClassA and ClassB
Electrical parameters	
Working voltage	24VDC
System power supply Us current	4A
Auxiliary power supply Ua current	4A
IO Link Channel Count	4
IO Link type	IO Link Master ClassA/ClassB
IO Link version	IO Link V 1.1.2
IO Link communication speed	COM1 (4.8kbps), COM2 (38.4kbps), COM3 (230.4kbps)
Input channel	Max. 8
Input power supply current	Pin1:200mA per channel
Input signal type	PNP type sensors, travel switches, dry contacts, etc. (SIO mode)
Input filtering delay	1.6ms
Number of output channels	Max. 8
Output current	Pin2: Max. 2A; Pin4: Max. 100mA
Type of output	Indicator lights, micro solenoid valves, etc. (SIO mode)
General data	
Protection level	IP20
Installation method	Standard 35mm DIN rail installation
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C
Relative humidity	95%, non condensing
Module weight	128g
Module size (H x W x D)	79mm x 28mm x 110mm





Ordering data	
Product model	FX20-PS-AB00
Description	Power auxiliary module, 5V
Electrical parameters	
Input voltage	24VDC
Input voltage range	DC 20.4V-DC28.8V
Output voltage	5V
Output current	Max 3A
Power protection	Over current and reverse polarity protection
Efficiency	95%
General data	
Protection grade	IP20
Installation	Standard 35mm DIN rail installation
Temperature range	Working temperature: -5 °C to 60 °C, storage temperature: -25 °C to 70 °C
Relative humidity	95%, non condensation
Module weight	66g
Module size (H x W x D)	79mmx15mmx110mm
Wiring diagram	

