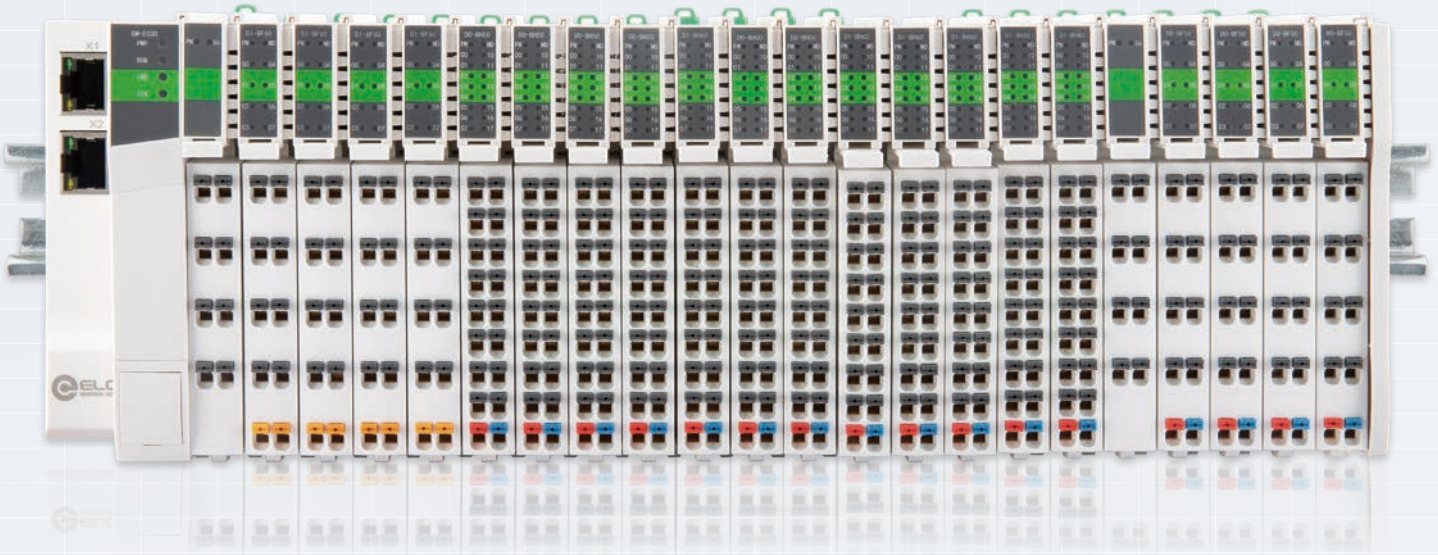


FX20 Series Distributed I/O





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 channe 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
-----	--------------	----------------------------



Bus adapter

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

EtherCAT

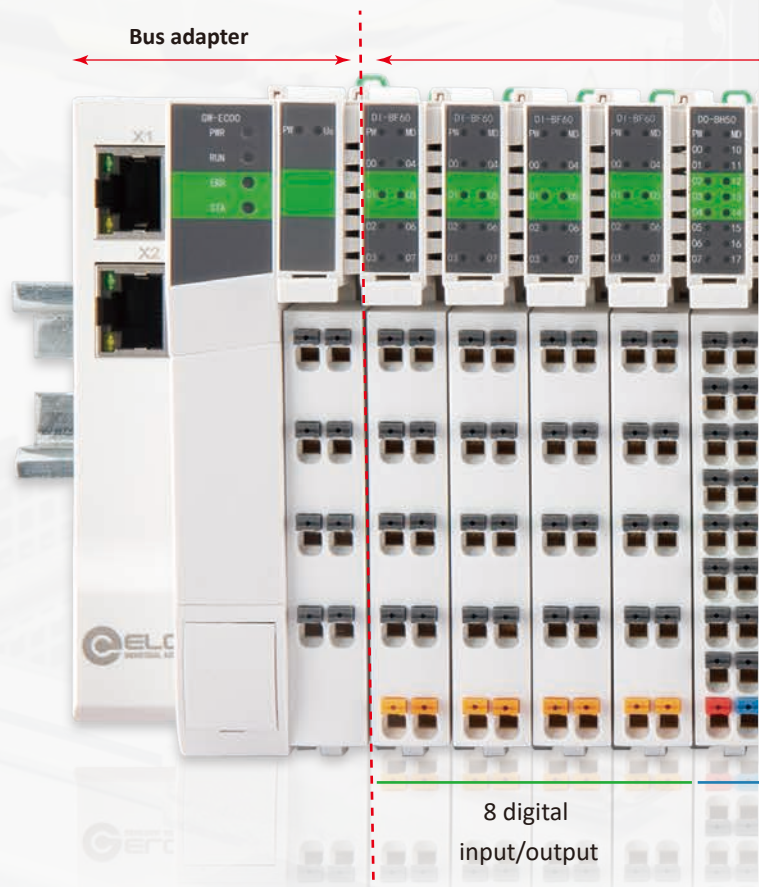
EtherNet/IP

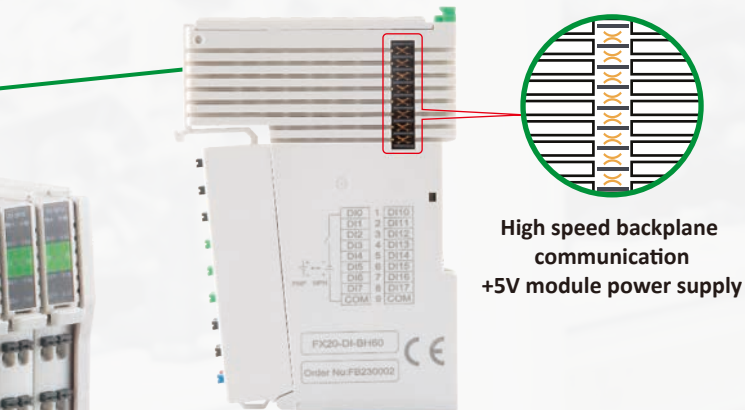
PROFIBUS

CC-Link IE Basic

Function modules

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





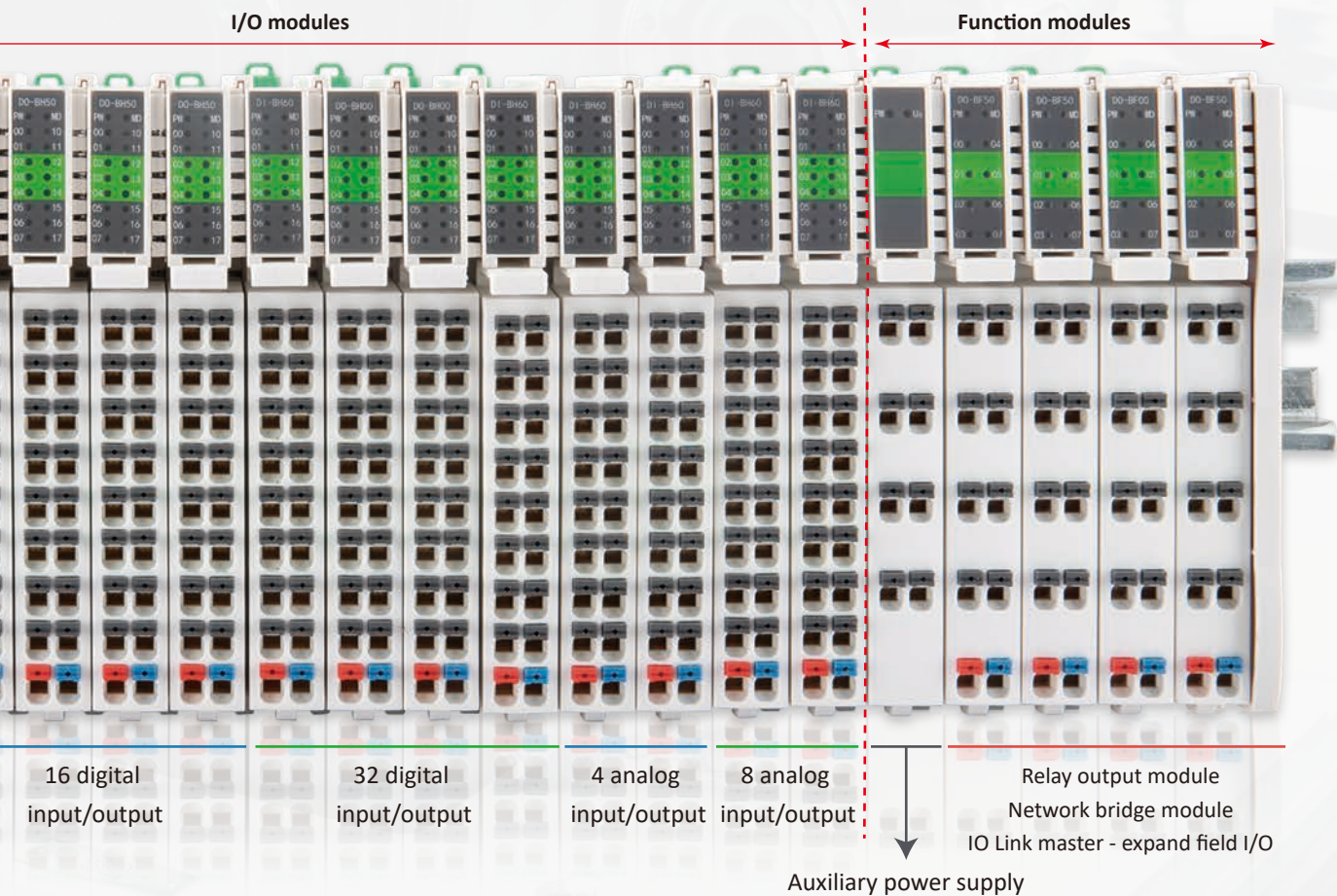
FX20 series distributed I/O

- Firm structure
- Diagnostic alarm
- Fast installation

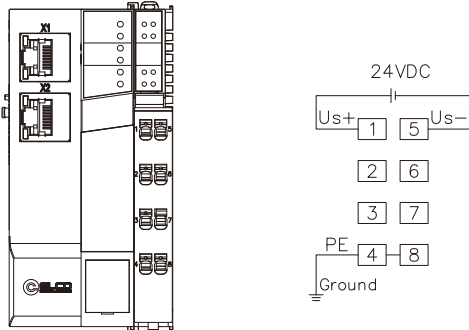
Terminals' color identification

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

Detachable terminal
Tool free wiring

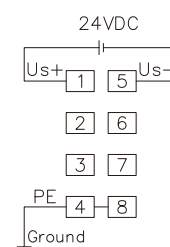
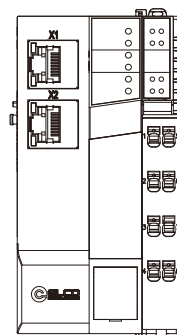


FX20 series IP20 distributed I/O - adapter

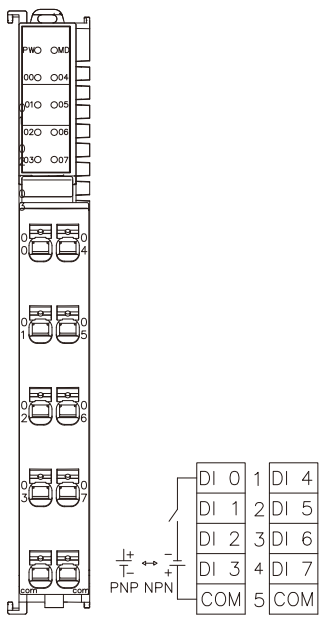
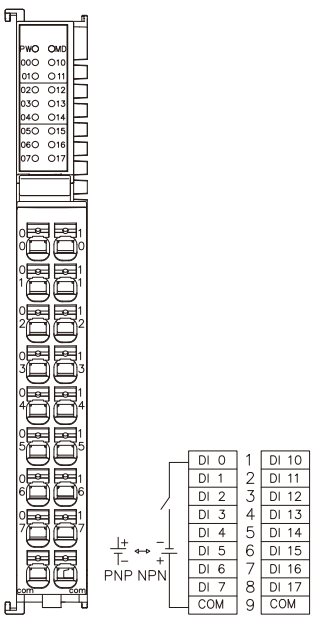
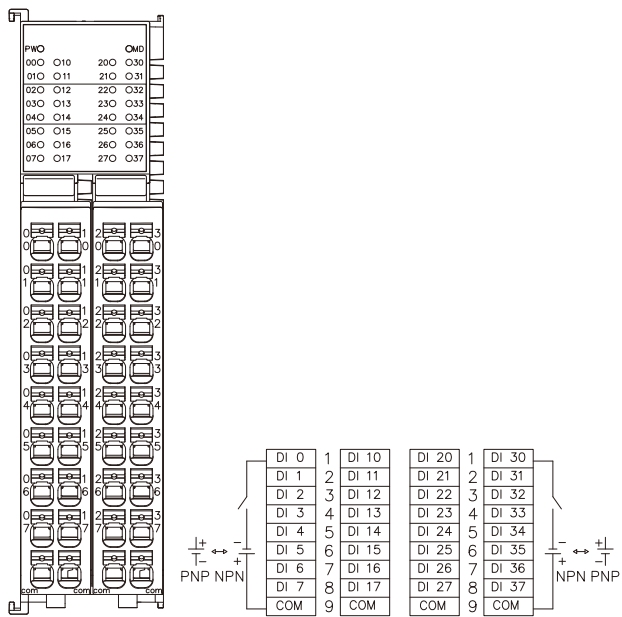
		
Ordering data		
Product model	FX20-GW-EC00	FX20-GW-PN00
Description	EtherCAT Adapte	ProfiNet Adapte
System parameters		
Communication protocol	EtherCAT	PROFINET
Bus transmission by	Cat.5 cable	Cat.5 cable
Communication rate	100 Mbit/s	100 Mbit/s
Max. communication distance	100 m (100BASE-TX)	100 m (100BASE-TX)
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 ($\pm 20\%$)	24 V DC ($\pm 20\%$)
Static working current	200 mA	200 mA
Backplane power voltage	5 VDC	5 VDC
Backplane power current	Max. 3 A	Max. 3 A
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 35 mm 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	230 g	
Module size (H x W x D)	79 mm x 57 mm x 110 mm	
Wiring diagram		

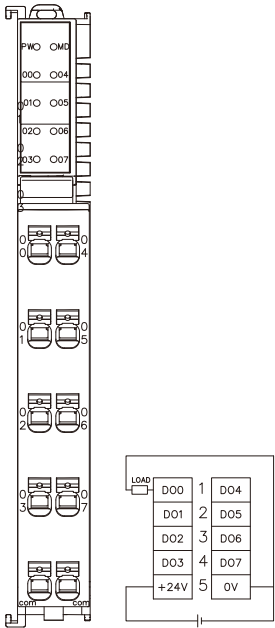
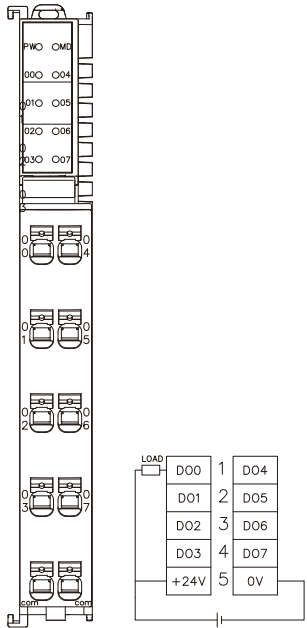


Ordering data		
Product model	FX20-GW-EP00	FX20-GW-CE00
Description	Ethernet/IP Adapte	CC-LINK IE Adapte
System parameters		
Communication protocol	Ethernet/IP	CC-Link IE Field Basic
Bus transmission by	Cat.5 cable	Cat.5 cable
Communication rate	100 Mbit/s	100 Mbit/s
Max. communication distance	100 m (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	200 mA	200 mA
Backplane power voltage	5 VDC	5 VDC
Backplane power current	Max. 3 A	Max. 3 A
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 35 mm 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	230 g	
Module size (H × W × D)	79 mm × 57 mm × 110 mm	
Wiring diagram		

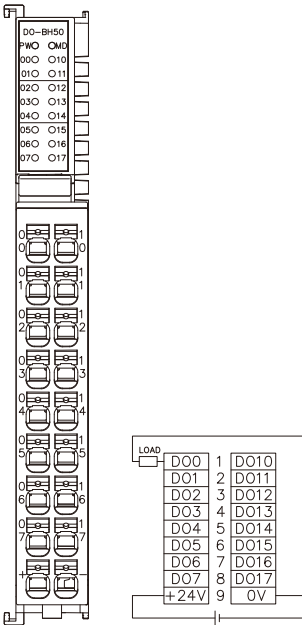
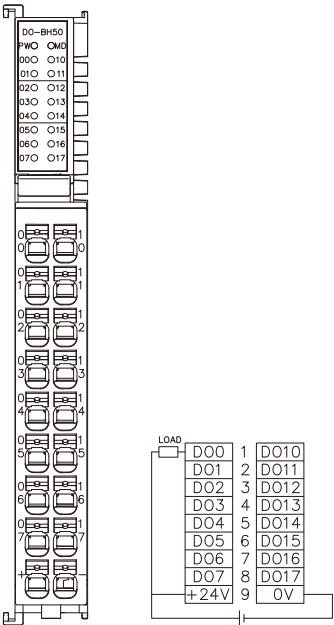


FX20 series IP20 distributed I/O - digital input module

			
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 0-5 V	DC 0-5 V	DC 0-5 V
Input signal '1'	DC 18-30 V	DC 18-30 V	DC 18-30 V
Input current	typ. 4 mA	typ. 4 mA	typ. 4 mA
Input filtering delay	0 ms, 1 ms, 3 ms, 10 ms	0 ms, 1 ms, 3 ms, 10 ms	0 ms, 1 ms, 3 ms, 10 ms
Current consumption (5V)	60 mA	60 mA	60 mA
Process data length	1 byte	2 bytes	4 bytes
General data			
Protection grade	IP20		
Installation	Standard 35 mm 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	63 g	63 g	128 g
Module size (H × W × D)	79 mm × 15 mm × 110 mm	79 mm × 15 mm × 110 mm	79 mm × 28 mm × 110 mm
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. 0.5 A per channel, total 2 A	Max. 0.5 A per channel, total 2 A
Load type	Resistive load / inductive load / lamp load	Resistive load / inductive load / lamp load
Switching frequency	Max 1 KHz / Max 1 Hz / Max 10 Hz	Max 1 KHz / Max 1 Hz / Max 10 Hz
Current consumption (5V)	60 mA	60 mA
Process data length	1 byte	1 byte
General data		
Protection grade	IP20	
Installation	Standard 35 mm 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	66 g	
Module size (H × W × D)	79 mm × 15 mm × 110 mm	
Wiring diagram		
		

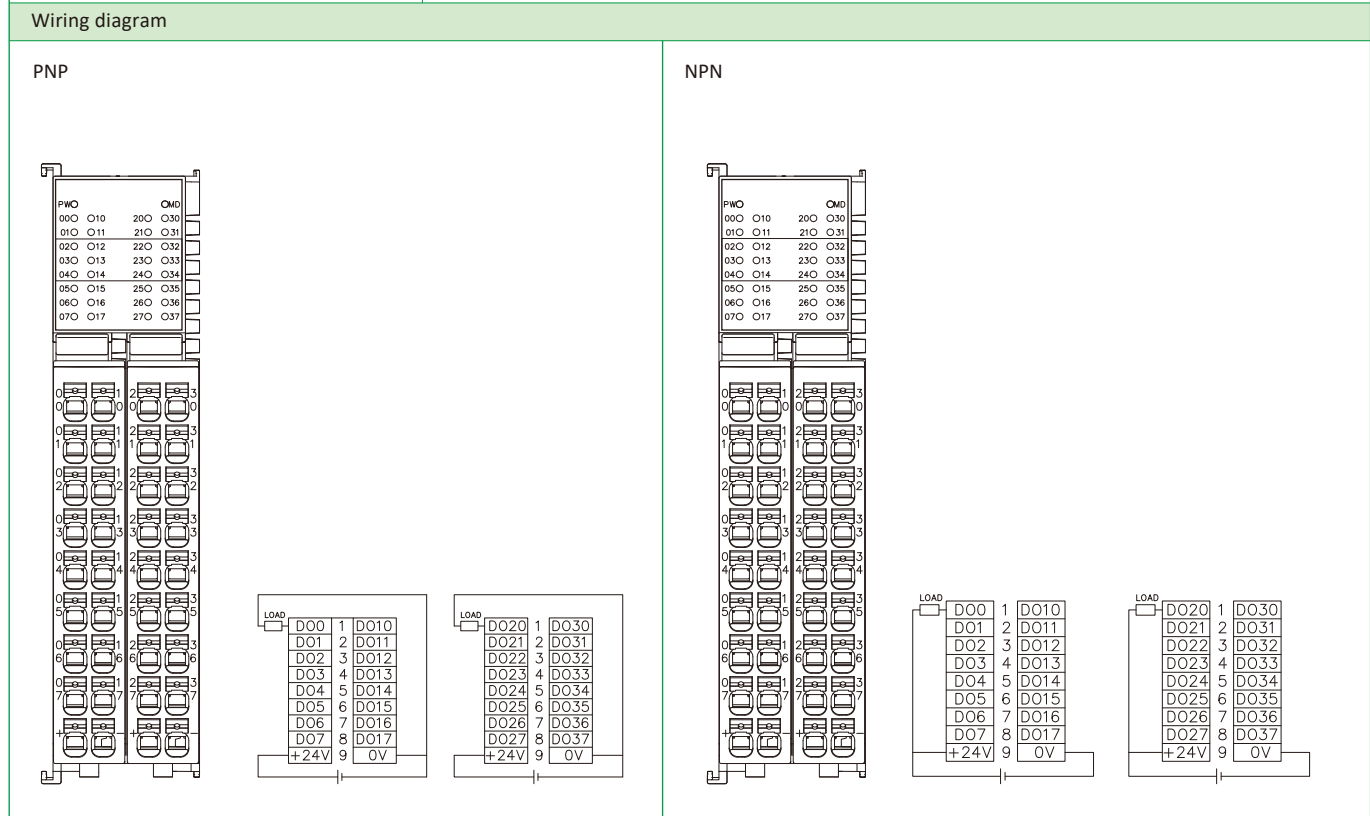
FX20 series IP20 distributed I/O - digital output module

		
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. 0.5 A per channel, total 2 A	Max. 0.5 A per channel, total 2 A
Load type	Resistive load / inductive load / lamp load	Resistive load / inductive load / lamp load
Switching frequency	Max 1 KHz / Max 1 Hz / Max 10 Hz	Max 1 KHz / Max1 Hz / Max 10 Hz
Current consumption (5V)	65 mA	65 mA
Process data length	2 bytes	2 bytes
General data		
Protection grade	IP20	
Installation	Standard 35 mm 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	66 g	
Module size (H × W × D)	79 mm × 15 mm × 110 mm	
Wiring diagram		
		

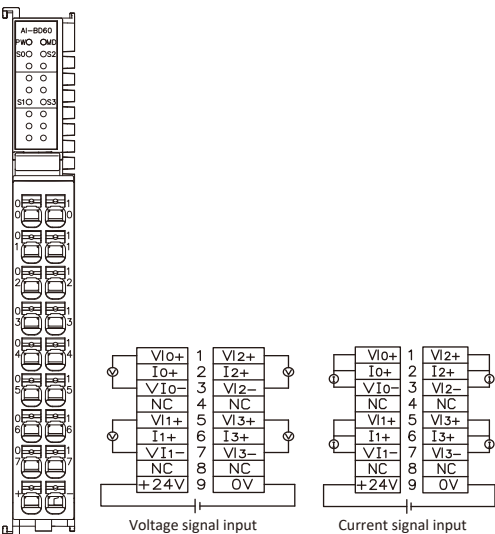
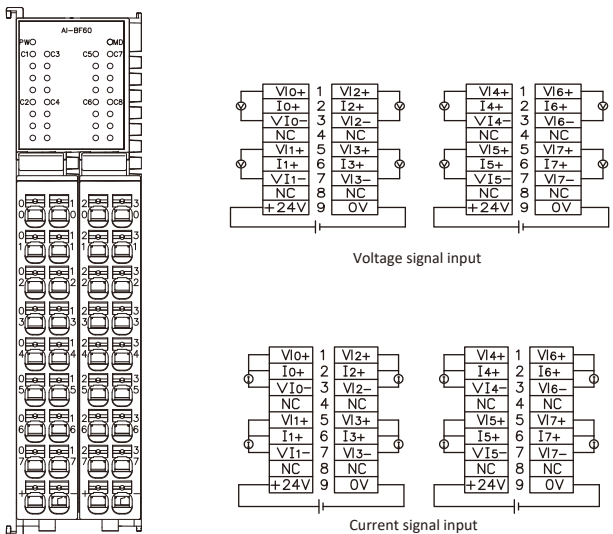
FX20 series IP20 distributed I/O - digital output module

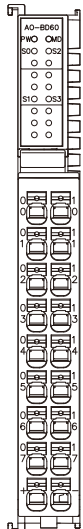
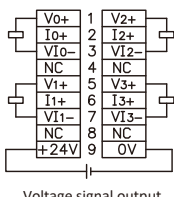
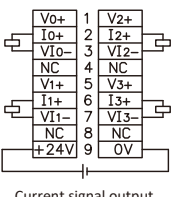
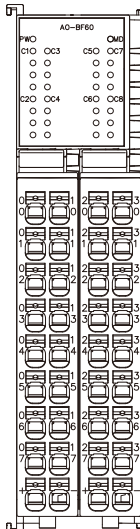
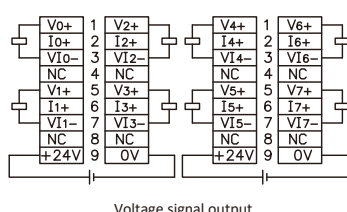
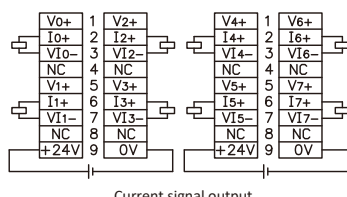


Ordering data		
Product model	FX20-DO-BL00	FX20-DO-BL50
Description	32-channel output module for PNP	32-channel output module for NPN
Electrical parameters		
Output channel	32	32
Output type	PNP	NPN
Output current per channel	Max. 0.5 A per channel, total 4 A	Max. 0.5 A per channel, total 4 A
Load type	Resistive load / inductive load / lamp load	Resistive load / inductive load / lamp load
Switching frequency	Max 1 KHz / Max 1 Hz / Max 10 Hz	Max 1 KHz / Max 1 Hz / Max 10 Hz
Current consumption (5V)	65 mA	65 mA
Process data length	4 bytes	4 bytes
General data		
Protection grade	IP20	
Installation	Standard 35 mm 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	128 g	
Module size (H × W × D)	79 mm × 28 mm × 110 mm	

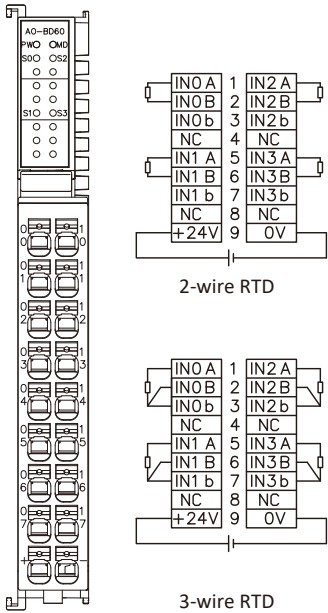
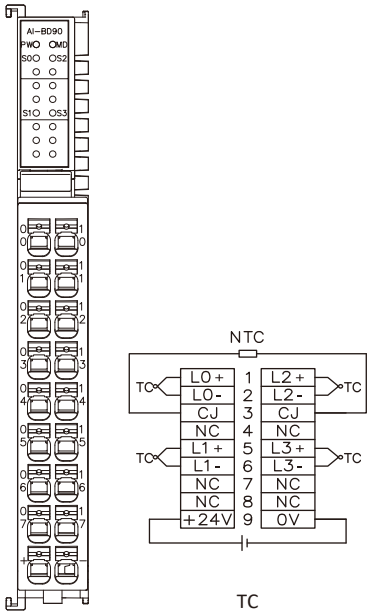


FX20 series IP20 distributed I/O - analog input/output module

		
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	0-10 V, +/-10 V, 1-5 V, 0/4-20 mA, +/-20 mA	0-10 V, +/-10 V, 1-5 V, 0/4-20 mA, +/-20 mA
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	3 ms	3 ms
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 35 mm 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	70 g	130 g
Module size (H × W × D)	79 mm × 15 mm × 110 mm	79 mm × 28 mm × 110 mm
Wiring diagram	FX20-AI-BD60  Voltage signal input Current signal input FX20-AI-BF60  Voltage signal input Current signal input	

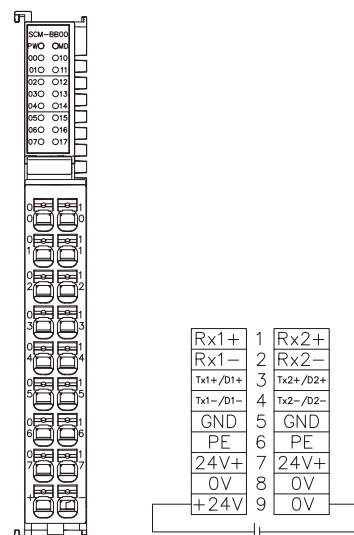
		
Ordering data		
Product model	FX20-AO-BD60	FX20-AO-BF60
Description	4-channel output module for voltage and current types	8-channel output module for voltage and current types
Electrical parameters		
Input channel	/	/
Input Type	/	/
Input impedance	/	/
Input resolution	/	/
Conversion time	/	/
Measurement accuracy	/	/
Output channel	4	8
Output type	1-5 V, 0-10 V, ± 10 V, 0/4-20 mA	1-5 V, 0-10 V, ± 10 V, 0/4-20 mA
Output resolution	16 Bits	16 Bits
Conversion time	2 ms	2 ms
Output accuracy	$\pm 0.2\%$	$\pm 0.2\%$
Process data length	8 bytes	16 bytes
General data		
Protection grade	IP20	
Installation	Standard 35 mm 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	70 g	130 g
Module size (H × W × D)	79 mm × 15 mm × 110 mm	79 mm × 28 mm × 110 mm
Wiring diagram		
FX20-AO-BD60	FX20-AO-BF60	
  	  	

FX20 series IP20 distributed I/O - temperature measuring module

		
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 35 mm 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	70 g	
Module size (H × W × D)	79 mm × 15 mm × 110 mm	
Wiring diagram	 	

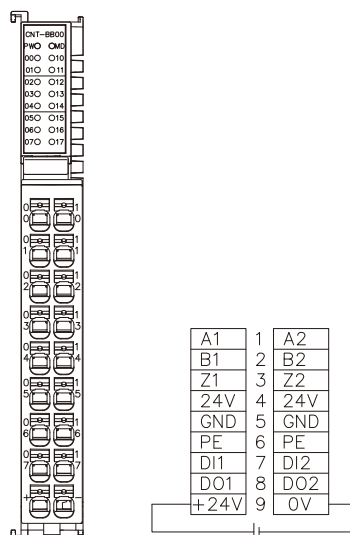


Ordering data	
Product model	FX20-SCM-BB00
Description	Dual channel, compatible with RS485 / RS422 / RS232
Electrical parameters	
Input channel	2
Interface type	Terminal type
Communication methods	RS485: 2-wire, half duplex; RS422: 4-wire, full duplex; RS232: 2-wire, half duplex;
Working mode	MODBUS master station, slave station, free transparent transmission
Communication protocol	MODBUS RTU, MODBUS ASCII, free port
Baud rate	Default 115200 bps, 300 bps-921600 bps 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. 30 m; RS232: Max. 10 m
Process data length	Received data: 21 bytes, sent data: 15 bytes
General data	
Protection level	IP20
Installation method	Standard 35 mm 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	70 g
Module size (H x W x D)	79 mm x 15 mm x 110 mm
Wiring diagram	



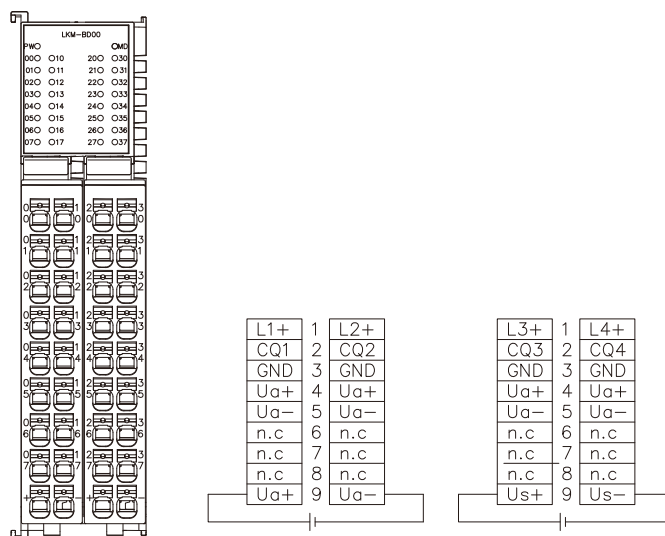


Ordering data	
Product model	FX20-CNT-BB00
Description	Dual channel ABZ three-phase high-speed counting module, 24 V
Electrical parameters	
Input channel	2
Interface type	Terminal type
Encoder power supply terminal	2x24 VDC
Encoder input	ABZ three-phase, 24 V
Input type	Source type, leakage type, and 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. 500 kHz
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 35 mm 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	70 g
Module size (H x W x D)	79 mm x 15 mm x 110 mm
Wiring diagram	

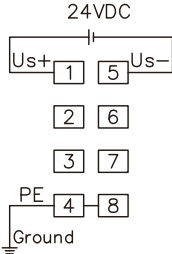
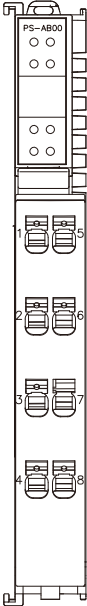


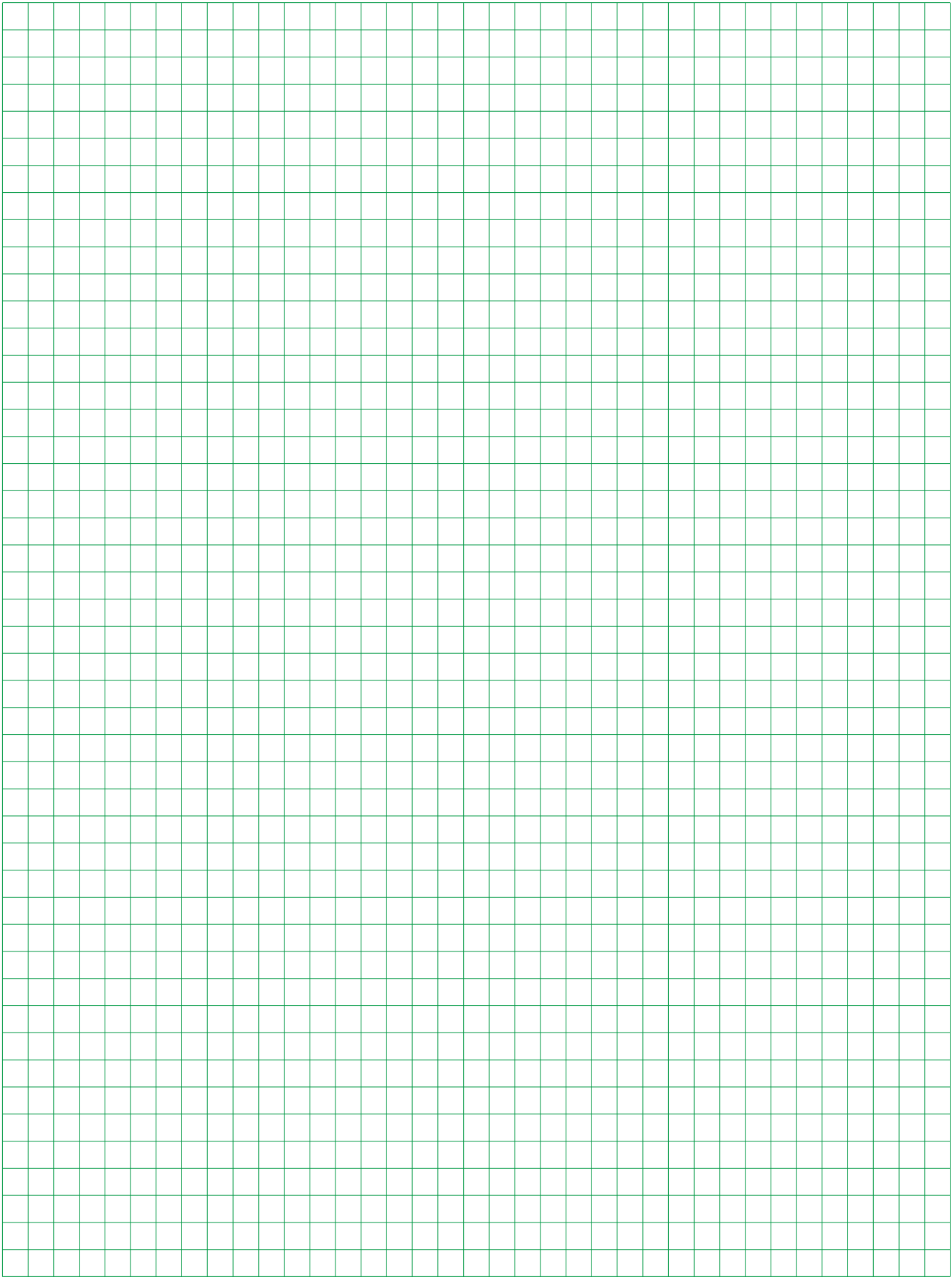


Ordering data	
Product model	FX20-LKM-BD00
Description	4-channel IO Link master station, compatible with ClassA and ClassB
Electrical parameters	
Working voltage	24 VDC
System power supply U_s current	4 A
Auxiliary power supply U_a current	4 A
IO Link Channel Count	4
IO Link type	IO Link Master ClassA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



FX20 series IP20 distributed I/O - auxiliary power module

	
Ordering data	
Product model	FX20-PS-AB00
Description	Power auxiliary module, 5 V
Electrical parameters	
Input voltage	24 VDC
Input voltage range	DC 20.4 V-DC28.8 V
Output voltage	5 V
Output current	Max 3 A
Power protection	Over current and reverse polarity protection
Efficiency	95 %
General data	
Protection grade	IP20
Installation	Standard 35 mm 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	66 g
Module size (H × W × D)	79 mm × 15 mm × 110 mm
Wiring diagram	
	



ELCO Industrie Automation GmbH
Benzstrasse 7
71720 Oberstenfeld
Deutschland
E-Mail: info@elco-automation.de



www.elco-automation.de

TIANJIN ELCO AUTOMATION CO., LTD
No.12, 4th XEDA Branch Road
Xiqing Economic-Technological Development Area
Tianjin 300385, P. R. China
E-Mail: info@elco.cn



www.elco-holding.com.cn