

LogicX0 Series of Compact Controller







LogicX0	6
IP20 distributed I/O	10
Digital Input Module	10
Digital Output Module	11
Relay Output Module	14
Analog Input/output Module	15
Temperature Measuring Module	17
Serial Communication Module	18
High Speed Counting Module	19
IO-Link Master Station Module	20
Pulse Output Module	21
Auxiliary Power Module	22
ELCO Integrated control system solutions	23

Logic Series of PLC

The LogicX0 series programmable controller is equipped with a rich variety of automation communication interfaces and flexible I/O configuration solutions. It can support RS232 and multiple RS485 interfaces, and multiple communication protocols such as ModBus TCP, ModBus RTU, CANopen, EtherCAT, Pro Net, etc. It also supports backplane and bus I/O expansion capabilities, and has high-speed pulse input and output functions on its body. The product is positioned for basic logic control needs and is aimed at comprehensive functions and broader industry demands.



This series of products meets various needs of users for small-size automation equipment:

- Multiple industrial communication methods
- Local back-plane extension IO, bus extended IO
- Information technology functions oriented towards the upper level
- Modular design scheme, seamlessly connects with FX20 series IO modules

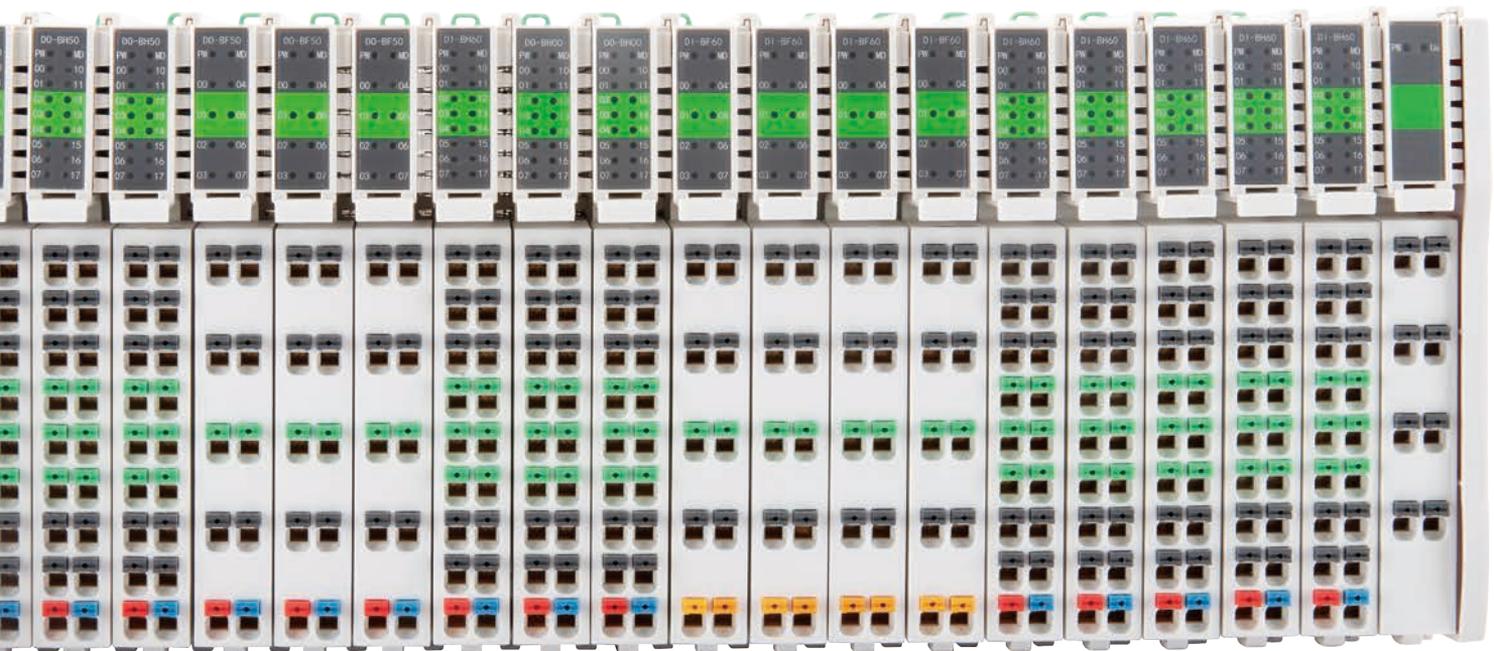


- Based on CODESYS platform with CODESYS realtime Runtime
- According to IEC 61131-3(ST/LD/FBD/SFC/CFC/IL)
- Program with CodeSys V3.5 SP19 and later version



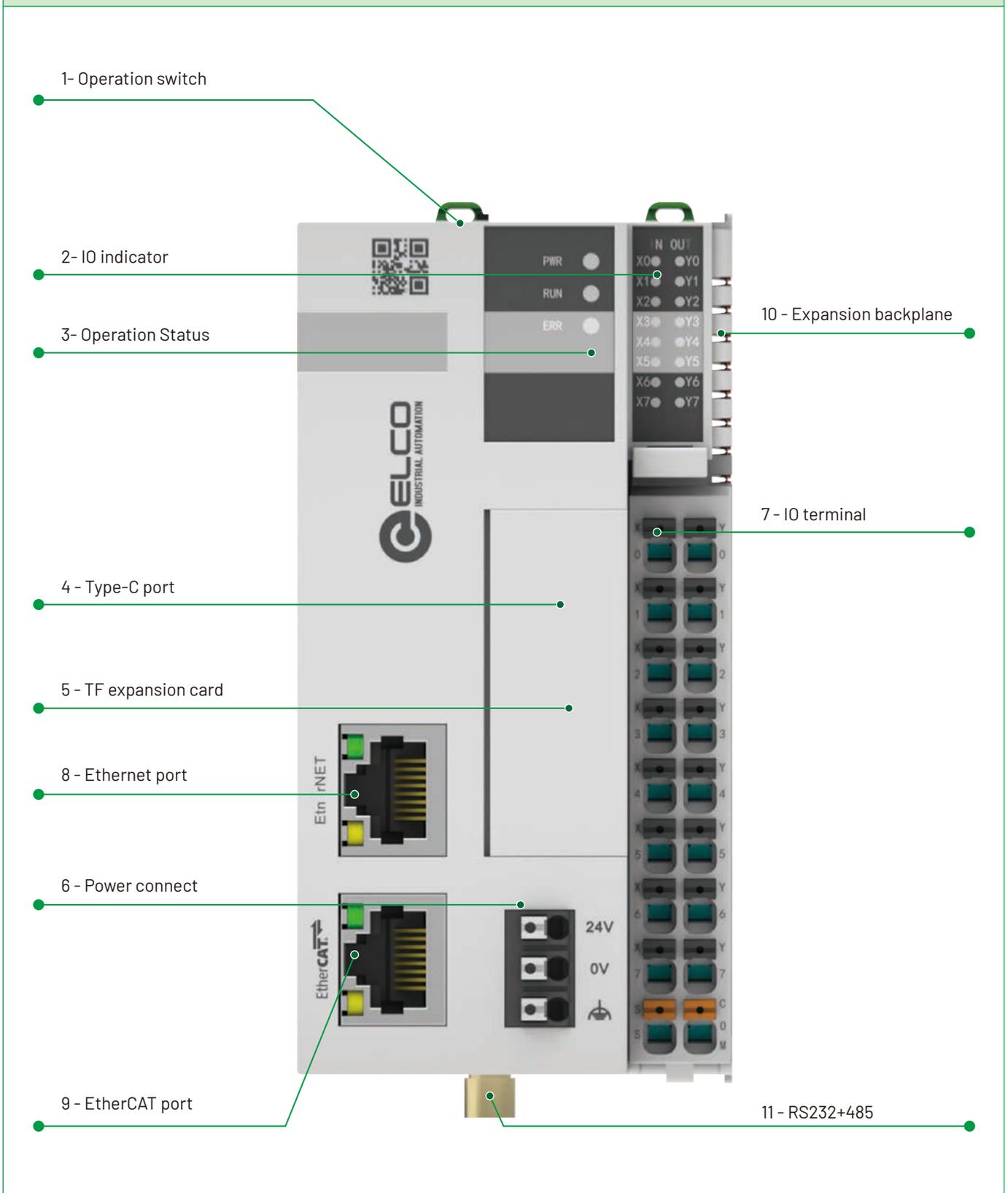
Logic Series of PLC

Type Code	
Logic	X0 - 0 A N - E
<p>ELCO Logic Series</p> <hr/> <p>Series Code</p> <p>X0: X0 series</p> <hr/> <p>Back-plane I/O extension</p> <p>0: Not support 1: Support</p> <hr/> <p>Standard configuration:</p> <ul style="list-style-type: none"> * ModbusTCP * 1xRS485 * TF card slot 	<p>Fieldbus Type</p> <p>E: EtherCAT P: ProfiNet C: CANopen</p> <hr/> <p>DO connection type</p> <p>N: NPN P: PNP</p> <hr/> <p>I/O config</p> <p>A: 8DI+8DO B: 12DI+4DO C: 8DI+4DO+2HDO(NPN) D: 6DI+2DO+4HDI(NPN) E: 6DI+2DO+4HDO(NPN) F: 6DI+2DO+2HDI+2HDO(NPN) G: 8DI+4DO+2AI(±5V,±10V,0-20mA,4-20mA) ... Please consult before order</p>



LogicX0 PLC

Product structure



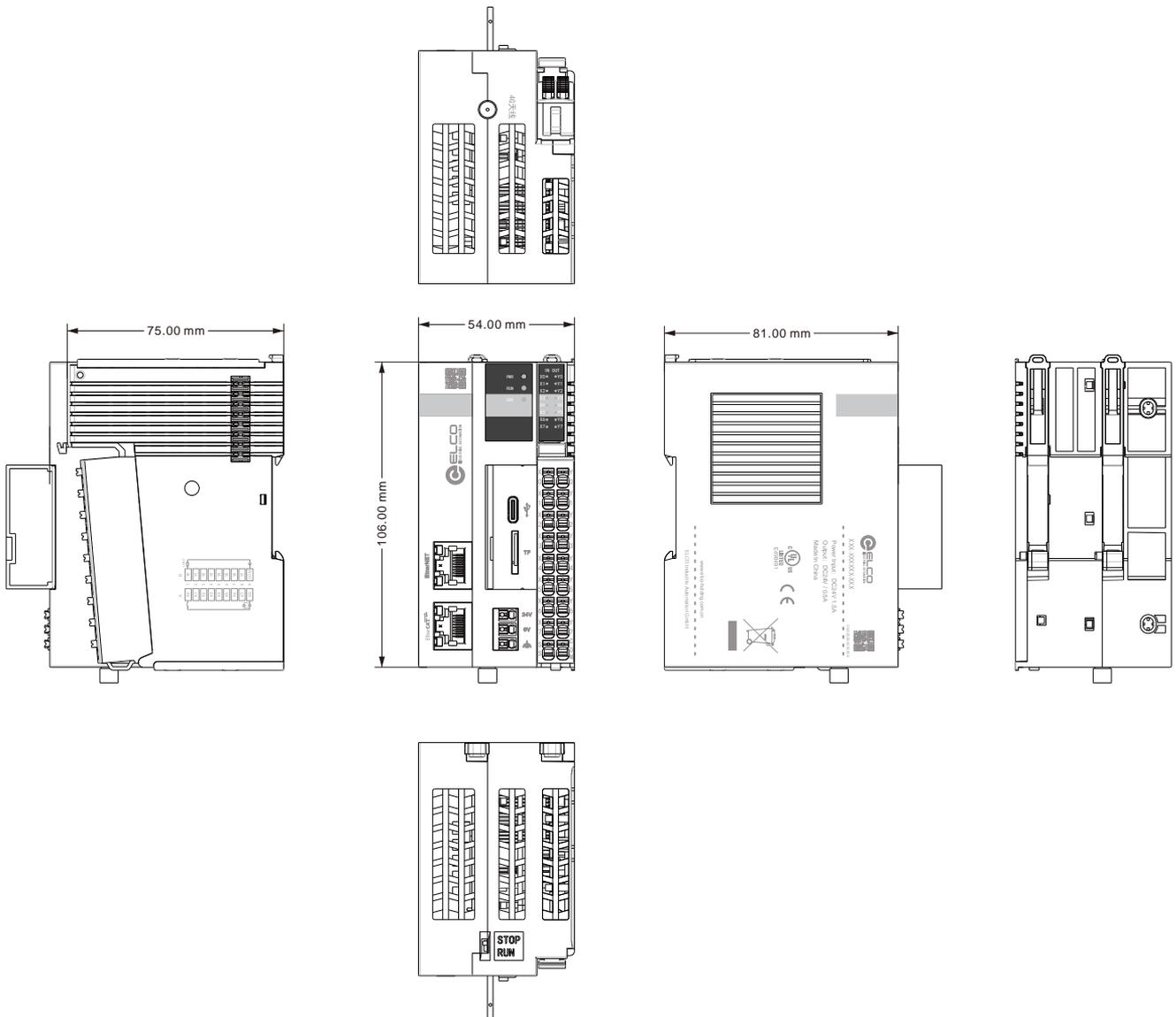
Item No	Port Type	Interface Identification	Define	Indicator Color	Instruction
1	RUN / STOP switch	RUN/STOP	Operation mode switching		
2	Lamp for I/O	IN/OUT	IO Status Display	Green	<ul style="list-style-type: none"> ● ON: Indicates that the input or output is valid. ● OFF: Indicates invalid inputs or outputs.
3	Lamp for system status	PWR	The power supply is normal	Green	<ul style="list-style-type: none"> ● ON: indicates normal power supply. ● OFF: Indicates abnormal power supply.
		RUN	running normally	Green	<ul style="list-style-type: none"> ● ON: Indicates that the user program is running. ● OFF: Indicates that the user program is stopped.
		ERR	Run-time error (in computing)	Red	<ul style="list-style-type: none"> ● OFF: Indicates no serious error. ● Flashing: Indicates a serious error has occurred.
		BUS	Bus state	Green	<ul style="list-style-type: none"> ● OFF: EC bus is running. ● Flashing: EC bus is stopped.
4	Type-C Port		Communication with PC	-	-
5	Plug for TF	TF	Firmware Upgrade	-	-
6	Power DC 24 V	+24V	DC 24V Power Positive	-	-
		0V	DC 24V Power Supply Negative	-	-
			PE	-	-
7	Terminals for I/O	-	8 inputs, 8 outputs	-	-
8	RJ45 for EtherNet	EtherNet	Ethernet communication RJ45 interface	-	-
9	RJ45 for EtherCAT	EtherCAT	For EtherCAT communication	-	-
10	Local I/O extension		Expansion Card Slot for Expanded Functionality	-	-
11	RS232+485	RS232+485		-	-

LogicX0 PLC

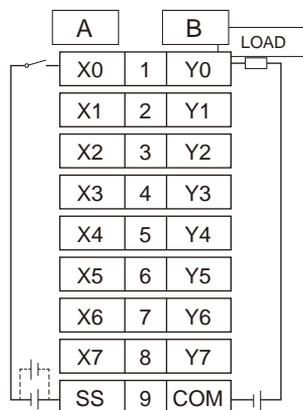


Hardware parameters	
Hardware platform	High precision real-time operating system
Memory	2 M for program, 512 k for data, 128 k for power-off persistence retain
Program operating speed	C = NOT (A&B) 20000 cycles: BOOL: 552 us BYTE: 591 us INT: 627 us DINT: 527 us REAL: (A=A*2+1) 1950 us
EtherNet	Support socket custom communication, program on the download and debugging
EtherCAT communication	Supports 1 EtherCAT master, up to 72 EtherCAT slaves
Motion axis	PDO mode on EtherCAT/4 channel PTO
Local ordinary input	8 points
Local ordinary output	8 points
Expansion module	Supports up to 16 local expansion modules
TF card	Supports up to 1 TF card, firmware upgradeable
Programming platform	CODESYS V3.5 SP19
Programming standards	IEC61131-3
Programming language	ST (Structured Text), LD (Ladder Logic Diagram), CFC (Continuous Function Chart), FBD (Function Block Diagram), SFC (Sequential Function Chart)
Motion control library	Single Axis, speed and position
Type-C	System commissioning, diagnostics, upgrades
Power supply specifications	
Terminal input power supply rated voltage	24 V DC \pm 10% (21.6 V DC~26.4 V DC)
Terminal input power supply rated current	1 A (max. at 24 V DC)
24 V input power protection	Support short circuit protection, support reverse connection protection
Module hot swap function	unsupported
General data	
Use environment	No corrosive, combustible gas, conductive dust (dust) is not serious occasions
Altitude	Up to 2000 m (80 kPa)
Pollution level	Level 2
Anti-interference degree	IEC 61000-6-2
EMC anti-interference level	Zone B, IEC61131-2
Overcurrent protection device	2.5 A fuse
Storage temperature and humidity	Storage temperature: -20 °C ... 70 °C Relative humidity: < 90%RH, no condensation
Transport temperature and humidity	Transport temperature: -40 °C ... 70 °C Relative humidity: < 90%RH, no condensation
Operating temperature and humidity	Operating temperature: -20 °C ... 55 °C Relative humidity: < 90%RH, no condensation Note: When the operating temperature is higher than the maximum temperature, install a forced fan or air conditioner in the direction of the heat dissipation hole.

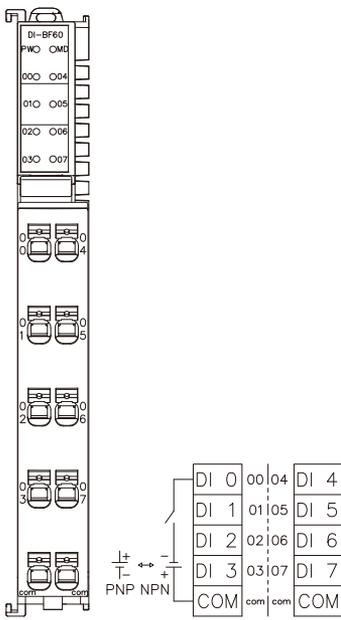
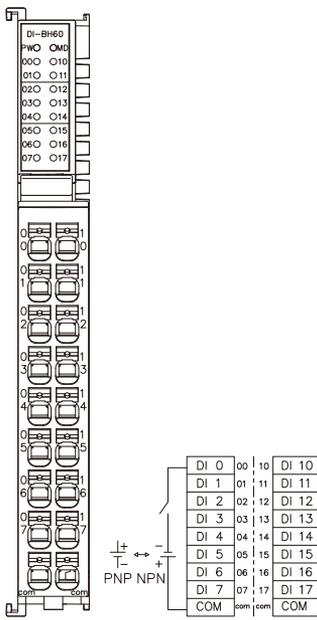
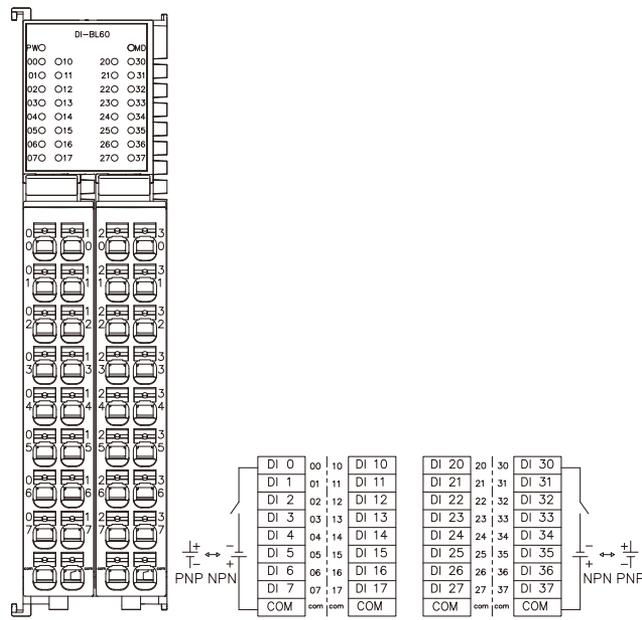
Product Dimension



Wiring diagram



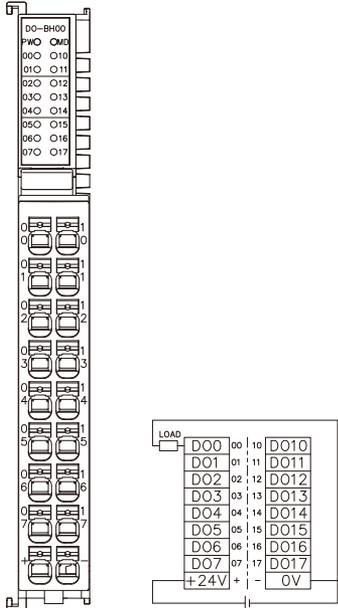
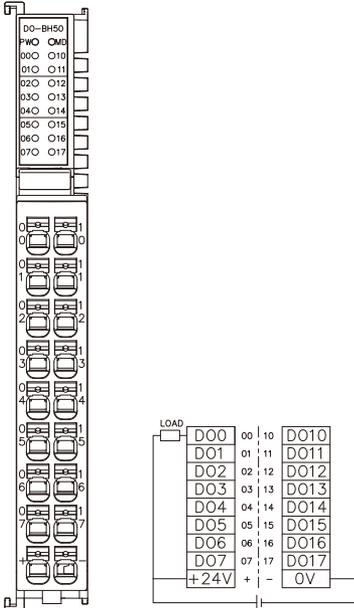
IP20 Modular I/O system - digital input module

			
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 (5 V)	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, for indoor use only		
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C		
Working altitude	0 ... 2000 m		
Relative humidity	15%-95%, non condensation		
Module weight	63 g	63 g	128 g
Module size (H x W x D)	79 mm x 15 mm x 110 mm	79 mm x 15 mm x 110 mm	79 mm x 28 mm x 110 mm
Wiring diagram			
FX20-DI-BF60	FX20-DI-BH60	FX20-DI-BL60	
			

IP20 Modular I/O system - digital output module

Ordering data		
Product model	FX20-D0-BF00	FX20-D0-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 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 (5 V)	60 mA	60 mA
Process data length	1 byte	1 byte
General data		
Protection grade	IP20	
Installation	Standard 35 mm DIN rail installation, for indoor use only	
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C	
Working altitude	0 ... 2000 m	
Relative humidity	15%-95%, non condensation	
Module weight	66 g	
Module size (H × W × D)	79 mm × 15 mm × 110 mm	
Wiring diagram		

IP20 Modular I/O system - digital output module

		
Ordering data		
Product model	FX20-D0-BH00	FX20-D0-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 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 (5 V)	65 mA	65 mA
Process data length	2 bytes	2 bytes
General data		
Protection grade	IP20	
Installation	Standard 35 mm DIN rail installation, for indoor use only	
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C	
Working altitude	0 ... 2000 m	
Relative humidity	15%-95%, non condensation	
Module weight	66 g	
Module size (H × W × D)	79 mm × 15 mm × 110 mm	
Wiring diagram		
		

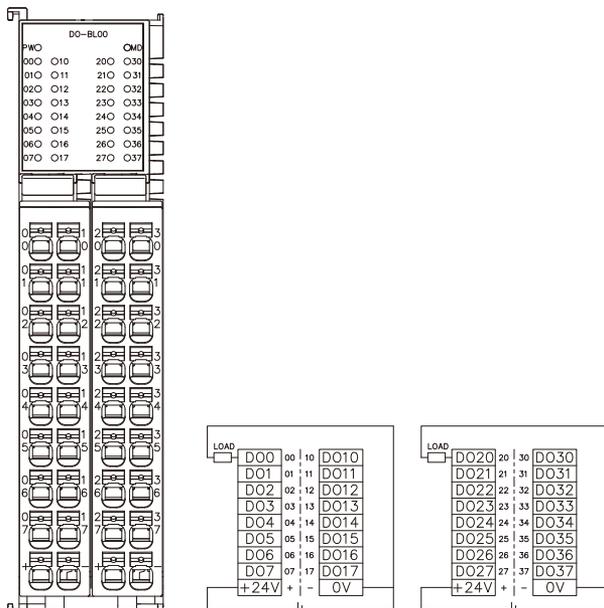
IP20 Modular I/O system - digital output module



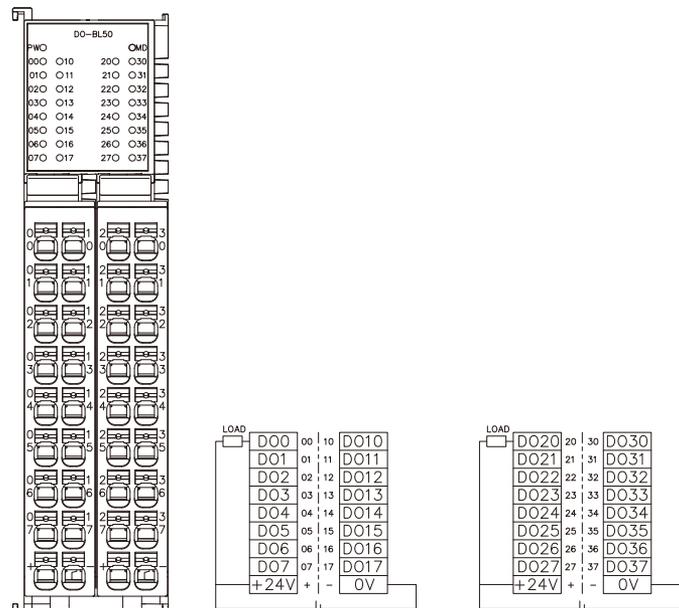
Ordering data		
Product model	FX20-D0-BL00	FX20-D0-BL50
Description	32-channel output module for PNP	32-channel output module for NPN
Electrical parameters		
Output channel	32	32
Output type	PNP	NPN
Output current per channel	Max. 0.5 A per channel, total 4 A	Max. 0.5 A per channel, total 4 A
Load type	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 (5 V)	65 mA	65 mA
Process data length	4 bytes	4 bytes
General data		
Protection grade	IP20	
Installation	Standard 35 mm DIN rail installation, for indoor use only	
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C	
Working altitude	0 ... 2000 m	
Relative humidity	15%-95%, non condensation	
Module weight	128 g	
Module size (H × W × D)	79 mm × 28 mm × 110 mm	

Wiring diagram

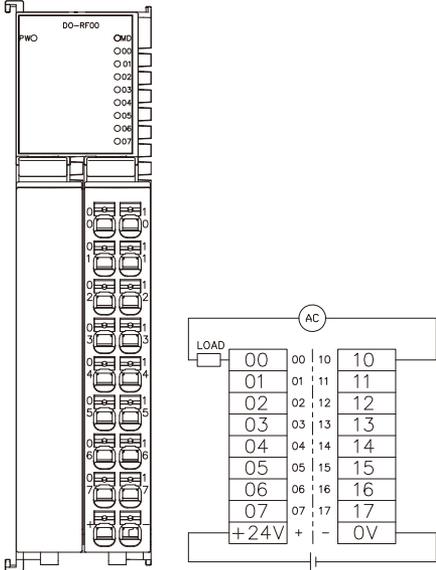
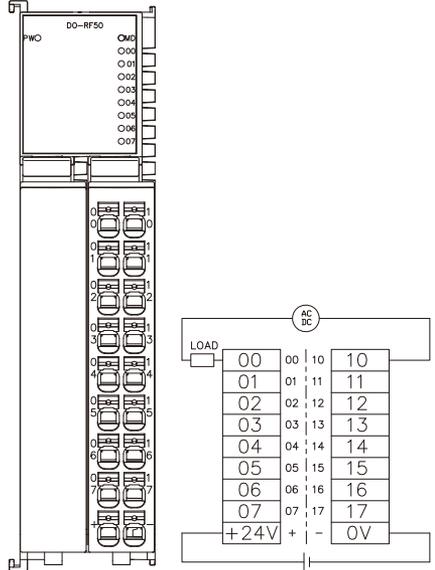
PNP



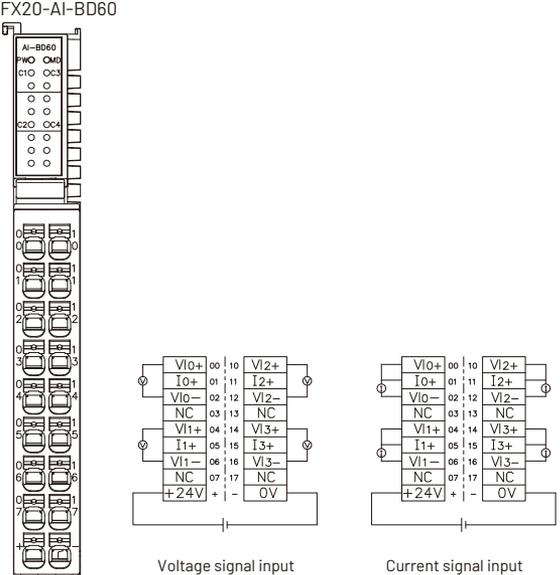
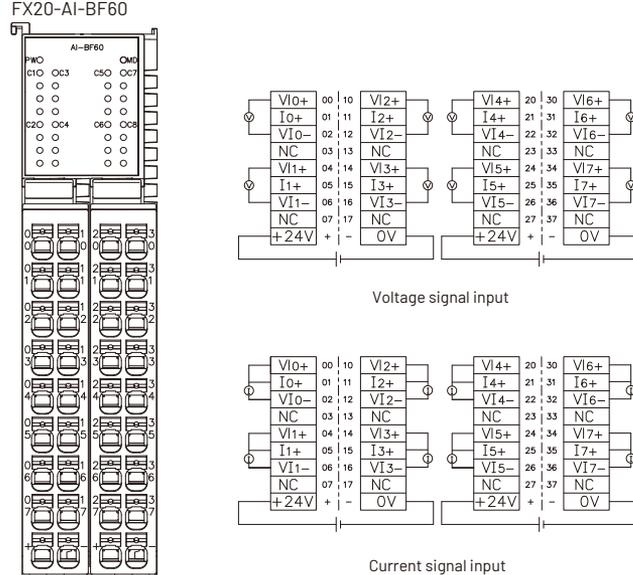
NPN



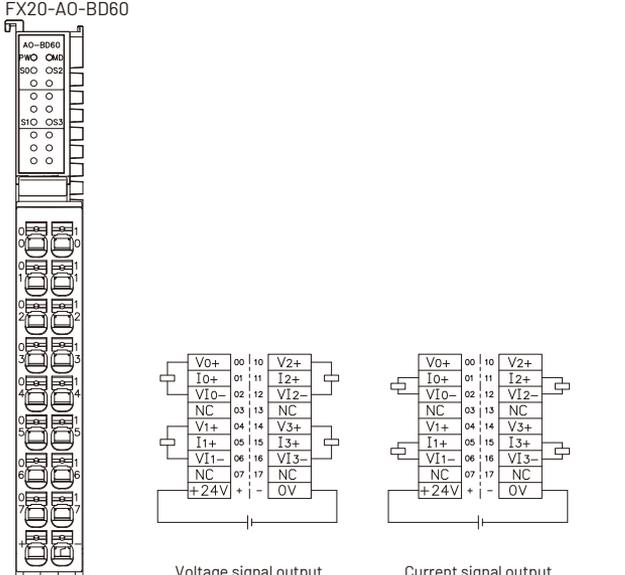
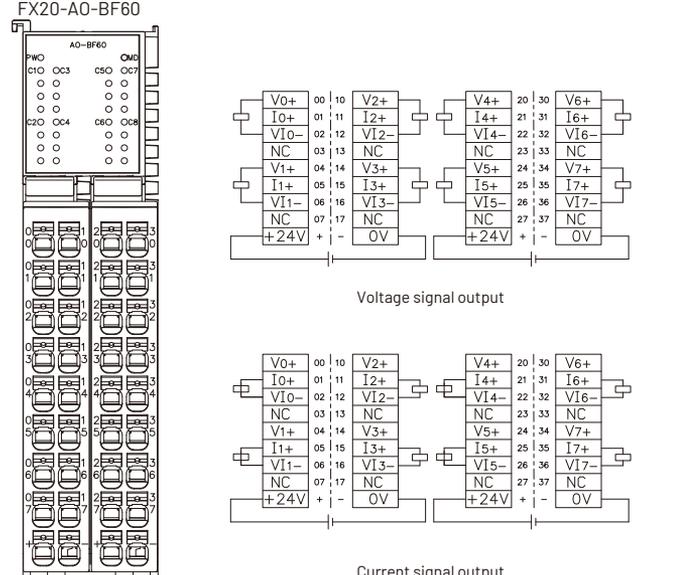
IP20 Modular I/O system - relay output module

		
Ordering data		
Product model	FX20-D0-RF00	FX20-D0-RF50
Description	8DO, SSR, floating ground, AC 230 V, 0.5 A	8DO, Relay, floating ground, AC 250 V/DC 30 V, 2 A
Electrical parameters		
Output channel	8	8
Output Type	AC solid state relay	Mechanical relay
Output voltage	220 V AC	250 V AC/30 V DC
Output load (Resistive load)	500 mA/point, 4 A/model	2 A/point, 8 A/model
Output load (Inductive load)	---	1 A/point, 4 A/model
Output load (Lamp load)	250 mA/point, 2 A/model	30 W/point, 120 W/model
Relay response time	3 ... 10 ms	about 15 ms
Switching frequency	Max. 0.5 Hz (Resistive load)	≤6 times/minute
Electrical life	20 million times	100,000 times
Current consumption (5 V)	80 mA	65 mA
Process data length	1 byte	1 byte
General data		
Protection grade	IP20	
Installation	Standard 35 mm DIN rail installation, for indoor use only	
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C	
Working altitude	0 ... 2000 m	
Relative humidity	15%-95%, non condensation	
Module weight	128 g	
Module size (H × W × D)	79 × 28 × 110 mm	
Wiring diagram		
		

IP20 Modular I/O system - 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: 1 MΩ	Current type: 250 Ω; Voltage type: 1 MΩ
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 ... +60 °C, storage temperature: -25 ... +70 °C	
Working altitude	0-2000 m	
Relative humidity	15%-95%, non condensation	
Module weight	70 g	130 g
Module size (H x W x D)	79 mm x 15 mm x 110 mm	79 mm x 28 mm x 110 mm
Wiring diagram	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>FX20-AI-BD60</p>  <p>Voltage signal input</p> <p>Current signal input</p> </div> <div style="width: 45%;"> <p>FX20-AI-BF60</p>  <p>Voltage signal input</p> <p>Current signal input</p> </div> </div>	

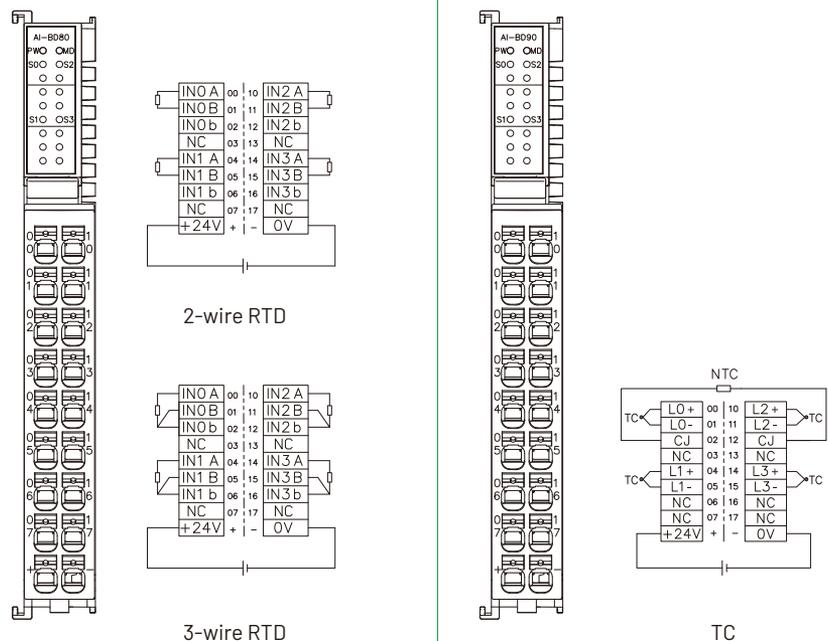
IP20 Modular I/O system - analog input/output module

		
Ordering data		
Product model	FX20-A0-BD60	FX20-A0-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 ... +60 °C, storage temperature: -25 ... +70 °C	
Working altitude	0-2000 m	
Relative humidity	15%-95%, non condensation	
Module weight	70 g	130 g
Module size (H x W x D)	79 mm x 15 mm x 110 mm	79 mm x 28 mm x 110 mm
Wiring diagram	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>FX20-A0-BD60</p>  <p>Voltage signal output</p> <p>Current signal output</p> </div> <div style="width: 45%;"> <p>FX20-A0-BF60</p>  <p>Voltage signal output</p> <p>Current signal output</p> </div> </div>	

IP20 Modular I/O system - 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, for indoor use only	
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C	
Working altitude	0 ... 2000 m	
Relative humidity	15%-95%, non condensation	
Module weight	70 g	
Module size (H × W × D)	79 mm × 15 mm × 110 mm	
Wiring diagram		

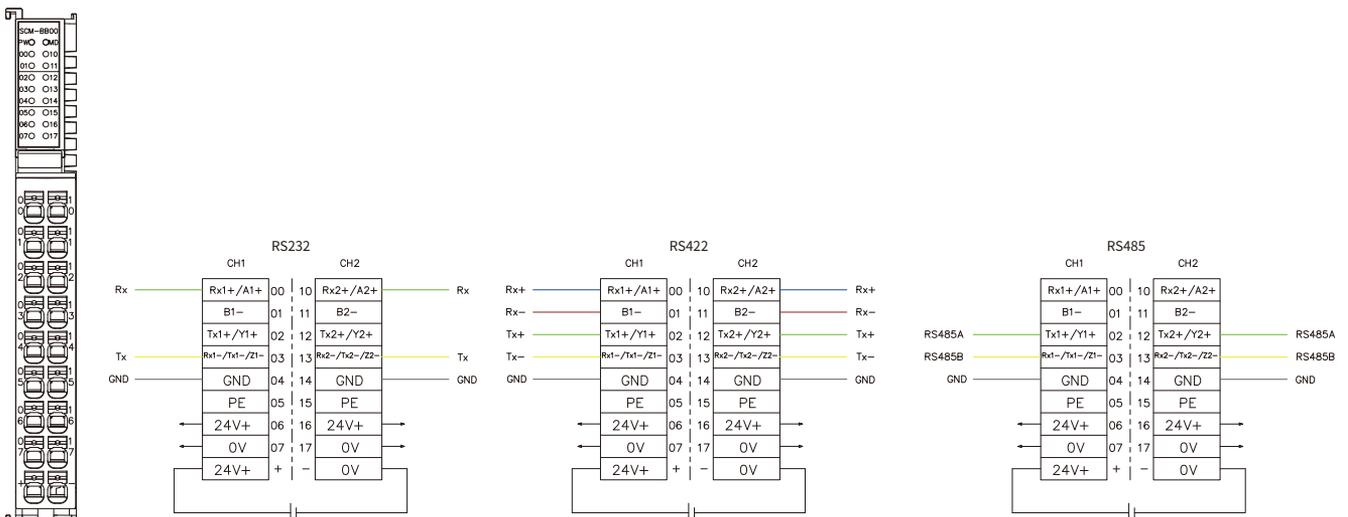


IP20 Modular I/O system - serial communication module



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, 2-65535 ms 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, for indoor use only
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C
Working altitude	0 ... 2000 m
Relative humidity	15%-95%, non condensation
Module weight	70 g
Module size (H x W x D)	79 mm x 15 mm x 110 mm

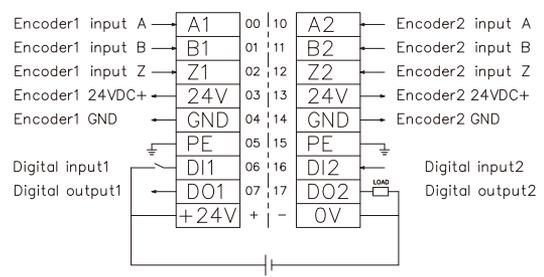
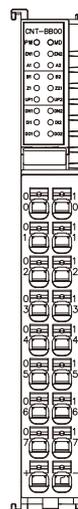
Wiring diagram



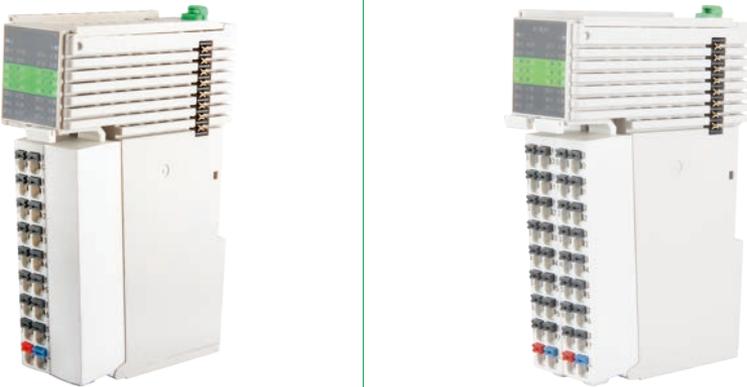
IP20 Modular I/O system - high speed counting module

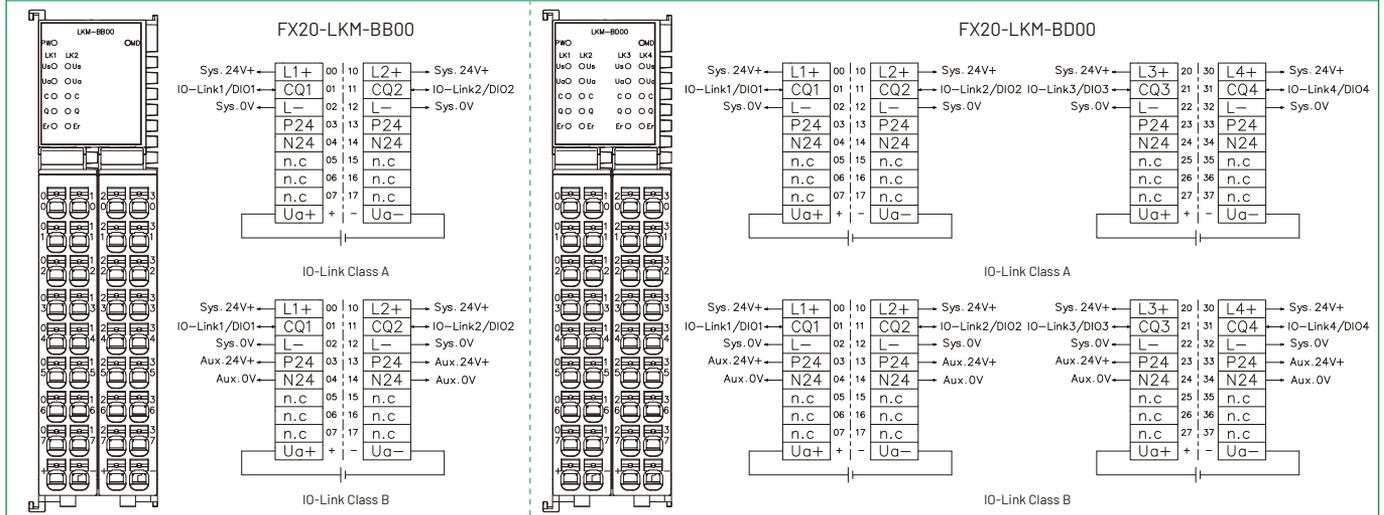


Ordering data	
Product model	FX20-CNT-BB00
Description	Dual channel ABZ three-phase high-speed counting module, 24 V
Electrical parameters	
Input channel	2
Interface type	Terminal type
Encoder power supply terminal	2 x 24 VDC
Encoder input	ABZ three-phase, 24 V
Input type	Source type, leakage type, and 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, for indoor use only
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C
Working altitude	0 ... 2000 m
Relative humidity	15%-95%, non condensation
Module weight	70 g
Module size (H x W x D)	79 mm x 15 mm x 110 mm
Wiring diagram	



IP20 Modular I/O system - IO Link master station module

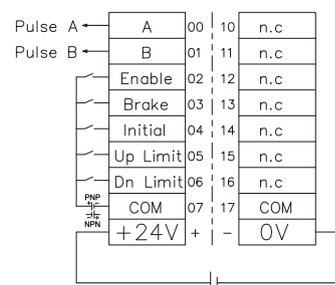
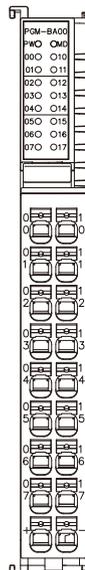
	
Ordering data	
Product model	FX20-LKM-BB00
Description	2-channel IO-Link master, ClassA/ClassB, 2*32 bytes
Electrical parameters	
Working voltage	24 V DC
System power supply Us current	4 A
Auxiliary power supply Ua current	4 A
IO Link Channel Count	2
IO Link type	IO-Link master ClassA/ClassB
IO Link version	IO-Link V 1.1.2
IO Link communication speed	COM1 (4.8 kbps), COM2 (38.4 kbps), COM3 (230.4 kbps)
Process data length	32 bytes per channel
Input channel	Max. 2
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. 2
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, for indoor use only
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C
Working altitude	0 ... 2000 m
Relative humidity	15%-95%, non condensation
Module weight	128 g
Module size (H x W x D)	79 x 28 x 110 mm



IP20 Modular I/O system - pulse output module



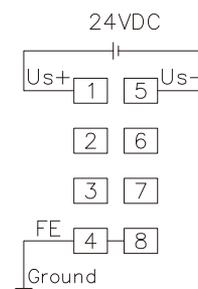
Ordering data	
Product model	FX20-PGM-BA00
Description	Single channel pulse output module, 24 V
Electrical parameters	
Supply voltage	24 V DC (±20%)
Output channel	1
Interface type	Terminal
Supply terminal	1 × 24 V DC
Output frequency range	1 ... 200 kHz
Pulse mode	Single pulse (pulse + direction), double pulse (CW/CCW)
Input channel	4-channel, PNP/NPN
Input channel function	Brake, origin switch, upper limit, lower limit
Process data length	Input: 12 bytes; output: 12 bytes
Configure channel-level parameters	Support
Return-to-zero mode	Support
Force on the brakes	Support
General data	
Protection grade	IP20
Installation	Standard 35 mm DIN rail installation, for indoor use only
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C
Working altitude	0 ... 2000 m
Relative humidity	15%-95%, non condensation
Module weight	70 g
Module size (H × W × D)	79 × 15 × 110 mm
Wiring diagram	



IP20 Modular I/O system - auxiliary power module



Ordering data	
Product model	FX20-PS-AB00
Description	Power auxiliary module, 5 V
Electrical parameters	
Input voltage	24 V DC
Input voltage range	DC 20.4 V-DC 28.8 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, for indoor use only
Temperature range	Working temperature: -5 ... +60 °C, storage temperature: -25 ... +70 °C
Working altitude	0 ... 2000 m
Relative humidity	15%-95%, non condensation
Module weight	66 g
Module size (H × W × D)	79 mm × 15 mm × 110 mm
Wiring diagram	



Integrated control system solutions EtherCAT[®]



Industrial Internet
edge gateway



CODESYS
programming platform



EEDS Slim
Data visualization
application components



LogicX1, LogicX3



IP20 distributed I/O-FX20



EMDS series servo drive products



IP20 Integrated I/O
BLOCK20



Slim67
Analog module



Slim67
Digital module



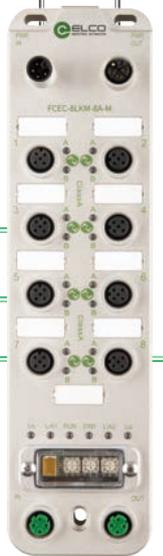
IO-LINK
IP67 hub



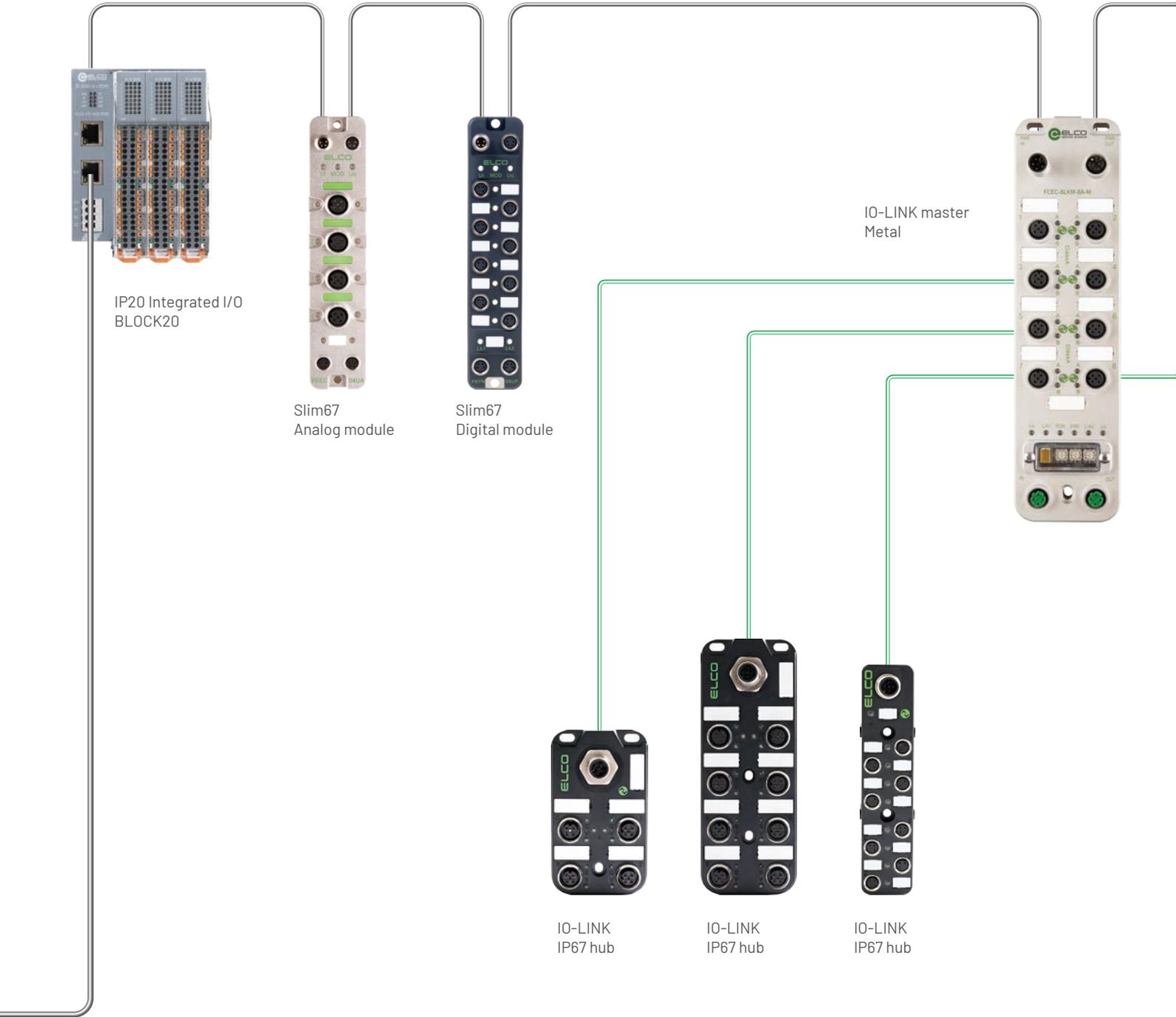
IO-LINK
IP67 hub

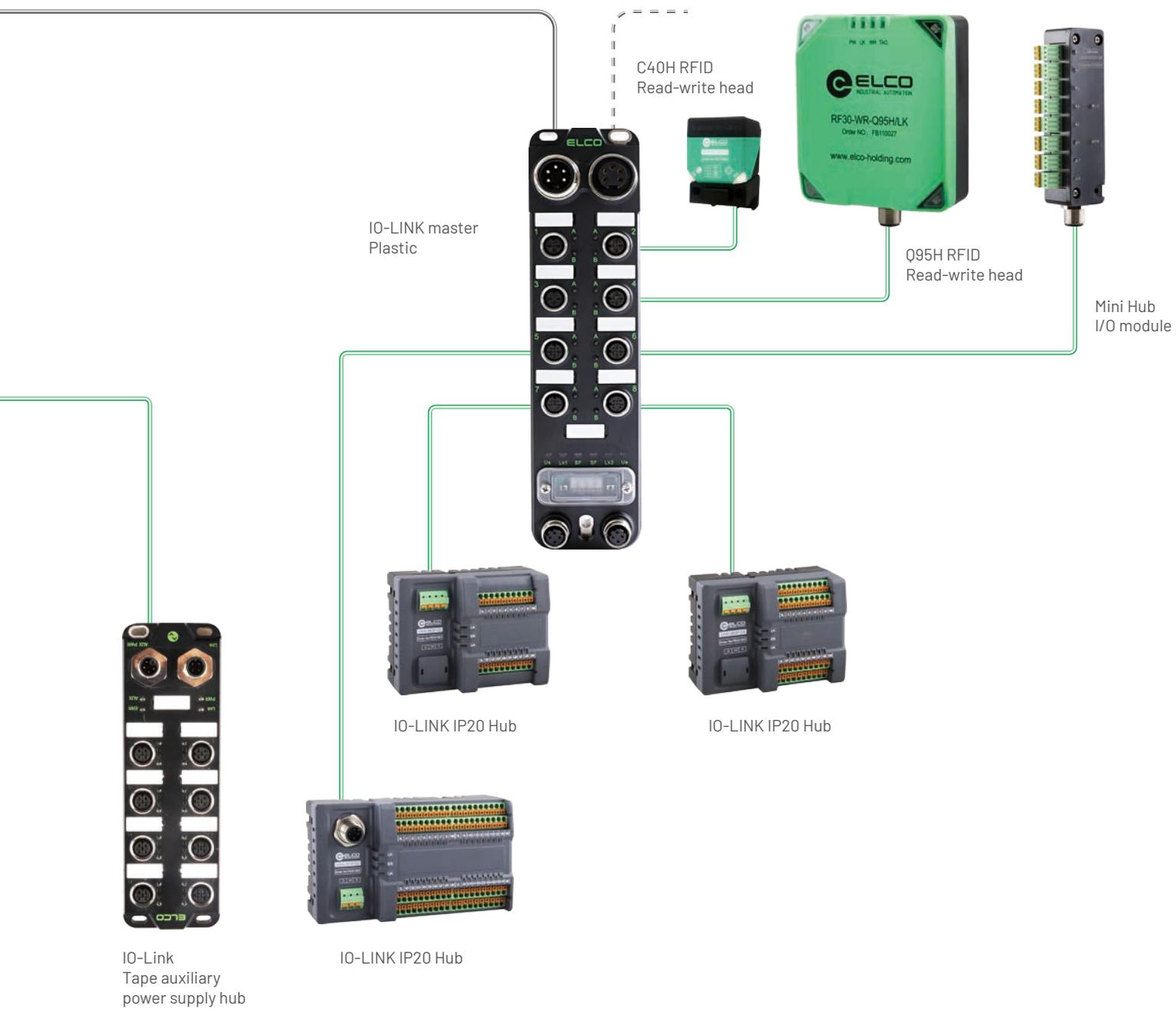


IO-LINK
IP67 hub



IO-LINK master
Metal





IO-LINK master Plastic

C40H RFID Read-write head



Q95H RFID Read-write head



Mini Hub I/O module



IO-LINK IP20 Hub



IO-LINK IP20 Hub



IO-LINK IP20 Hub



IO-Link Tape auxiliary power supply hub



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