

# ELCO IP20 Compact I/O System



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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.

## FB20 Series IP20 Wide Form Digital I/O Modules

- 1/ FB20 Series IP20 Wide Form Digital I/O Modules for EtherCAT
- 3/ FB20 Series IP20 Wide Form Digital I/O Modules for Profinet FB20
- 5/ Series IP20 Wide Form Digital I/O Modules for Ethernet/IP FB20
- 7/ Series IP20 Wide Form Digital I/O Modules for CC-LINK IE FB
- 9/ Drawings and terminal definitions

## FV20 Series IP20 Book Form Digital I/O Modules

- 11/ FV20 Series IP20 Book Form Digital I/O Modules for EtherCAT
- 13/ FV20 Series IP20 Book Form Digital I/O Modules for Profinet FV20
- 15/ Series IP20 Book Form Digital I/O Modules for Ethernet/IP FV20
- 17/ Series IP20 Book Form Digital I/O Modules for CC-LINK IE FB
- 19/ Drawings and terminal definitions



- EtherCAT bus interfaces
- Horizontal compact shape
- Standard 35mm DIN rail installation
- Pluggable I/O terminal blocks and auxiliary power supply terminal blocks



**Ordering Information**

Product Models	<a href="#">FBEC-3200P-TS</a>	<a href="#">FBEC-1616P-TS</a>	<a href="#">FBEC-0032P-TS</a>	<a href="#">FBEC-1616UP-TS</a>
Description	EtherCAT, 32DI, PNP	EtherCAT, 16DI/16DO, PNP	EtherCAT, 32DO, PNP	EtherCAT, 16DI/16DIO, PNP
Product Models	<a href="#">FBEC-3200N-TS</a>	<a href="#">FBEC-1616N-TS</a>	<a href="#">FBEC-0032N-TS</a>	<a href="#">FBEC-1616UN-TS</a>
Description	EtherCAT, 32DI, NPN	EtherCAT, 16DI/16DO, NPN	EtherCAT, 32DO, NPN	EtherCAT, 16DI/16DIO, NPN

**Interface Connections**

Bus interfaces	2×RJ45, 100BASE-TX			
Power interfaces	1×3-Pos power supply terminal block			
I/O interfaces	4×8-Pos Pluggable I/O terminal blocks+8×8-Pos Pluggable auxiliary power supply terminal blocks			

**Electrical Parameters**

Number of input channels	32	16	-	Max 32
Input power supply current	Max.125 mA/Channel, Total maximum 4 A	Max.125 mA/Channel, Total maximum 2 A	-	Max.125 mA/Channel, Total maximum 2 A
Input filtering delay	1.6 ms		-	1.6ms
Number of output channels	-	16	32	Max 16
Output current	-	Max.500 mA/Channel, Total maximum 4 A		
Output load type	-	Indicator lights, miniature solenoid valves, etc		
Output switch frequency	-	Resistive load 100 Hz, inductive load 5 Hz		

**Diagnosis**

Communication Status	LED indicators ,Communication message			
Power supply monitoring	LED indicators			
Short circuit and overload protection	LED indicators			

**General data**

Protection grade	IP20			
Temperature range	Operating temperature: -5 °C ... +60°C,Storage temperature:-25°C ... +70°C			
Module dimensions H × W × D	70 mm ×120 mm × 38 mm			

- Profinet bus interfaces
- Horizontal compact shape
- Standard 35mm DIN rail installation
- Pluggable I/O terminal blocks and auxiliary power supply terminal blocks



**Ordering Information**

Product Models	FBPN-3200P-TS	FBPN-1616P-TS	FBPN-0032P-TS	FBPN-1616UP-TS
Description	Profinet, 32DI, PNP	Profinet, 16DI/16DO, PNP	Profinet, 32DO, PNP	Profinet, 16DI/16DIO, PNP
Product Models	FBPN-3200N-TS	FBPN-1616N-TS	FBPN-0032N-TS	FBPN-1616UN-TS
Description	Profinet, 32DI, NPN	Profinet, 16DI/16DO, NPN	Profinet, 32DO, NPN	Profinet, 16DI/16DIO, NPN

**Interface Connections**

Bus interfaces	2×RJ45, 100BASE-TX			
Power interfaces	1×3-Pos power supply terminal block			
I/O interfaces	4×8-Pos Pluggable I/O terminal blocks+8×8-Pos Pluggable auxiliary power supply terminal blocks			

**Electrical Parameters**

Number of input channels	32	16	-	Max 32
Input power supply current	Max.125 mA/Channel, Total maximum 4 A	Max.125 mA/Channel, Total maximum 2 A	-	Max.125 mA/Channel, Total maximum 2 A
Input filtering delay	1.6 ms		-	1.6ms
Number of output channels	-	16	32	Max 16
Output current	-	Max.500 mA/Channel, Total maximum 4 A		
Output load type	-	Indicator lights, miniature solenoid valves, etc		
Output switch frequency	-	Resistive load 100 Hz, inductive load 5 Hz		

**Diagnosis**

Communication Status	LED indicators ,Communication message			
Power supply monitoring	LED indicators			
Short circuit and overload protection	LED indicators			

**General data**

Protection grade	IP20			
Temperature range	Operating temperature: -5 °C ... +60°C,Storage temperature:-25°C ... +70°C			
Module dimensions H × W × D	70 mm ×120 mm × 38 mm			

- Ethernet/IP bus interfaces
- Horizontal compact shape
- Standard 35mm DIN rail installation
- Pluggable I/O terminal blocks and auxiliary power supply terminal blocks



Ordering Information				
Product Models	FBEI-3200P-TS	FBEI-1616P-TS	FBEI-0032P-TS	FBEI-1616UP-TS
Description	Ethernet/IP, 32DI, PNP	Ethernet/IP, 16DI/16DO, PNP	Ethernet/IP, 32DO, PNP	Ethernet/IP, 16DI/16DIO, PNP
Product Models	FBEI-3200N-TS	FBEI-1616N-TS	FBEI-0032N-TS	FBEI-1616UN-TS
Description	Ethernet/IP, 32DI, NPN	Ethernet/IP, 16DI/16DO, NPN	Ethernet/IP, 32DO, NPN	Ethernet/IP, 16DI/16DIO, NPN
Interface Connections				
Bus interfaces	2×RJ45, 100BASE-TX			
Power interfaces	1×3-Pos power supply terminal block			
I/O interfaces	4×8-Pos Pluggable I/O terminal blocks+8×8-Pos Pluggable auxiliary power supply terminal blocks			
Electrical Parameters				
Number of input channels	32	16	-	Max 32
Input power supply current	Max.125 mA/Channel, Total maximum 4 A	Max.125 mA/Channel, Total maximum 2 A	-	Max.125 mA/Channel, Total maximum 2 A
Input filtering delay	1.6 ms		-	1.6ms
Number of output channels	-	16	32	Max 16
Output current	-	Max.500 mA/Channel, Total maximum 4 A		
Output load type	-	Indicator lights, miniature solenoid valves, etc		
Output switch frequency	-	Resistive load 100 Hz, inductive load 5 Hz		
Diagnosis				
Communication Status	LED indicators ,Communication message			
Power supply monitoring	LED indicators			
Short circuit and overload protection	LED indicators			
General data				
Protection grade	IP20			
Temperature range	Operating temperature: -5 °C ... +60°C,Storage temperature:-25°C ... +70°C			
Module dimensions H × W × D	70 mm ×120 mm × 38 mm			

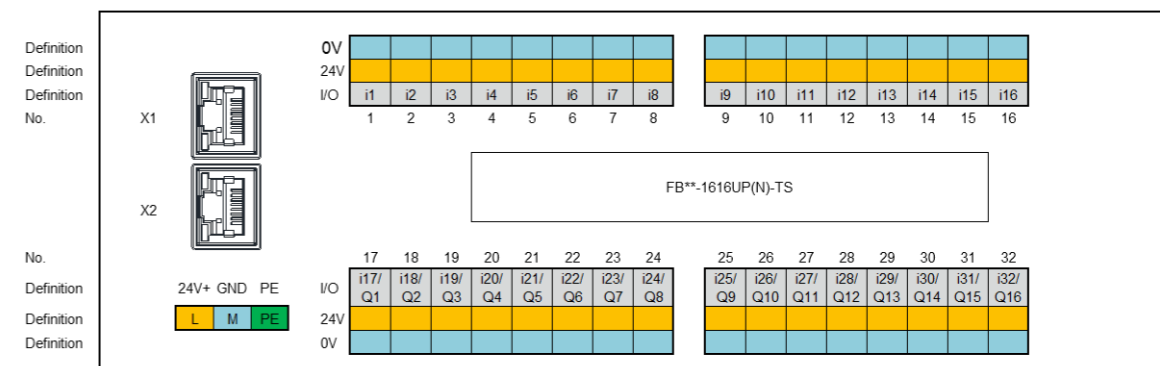
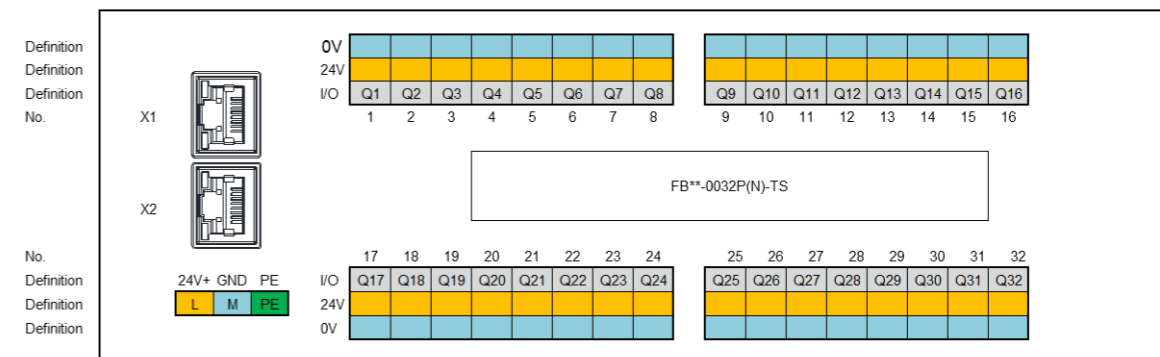
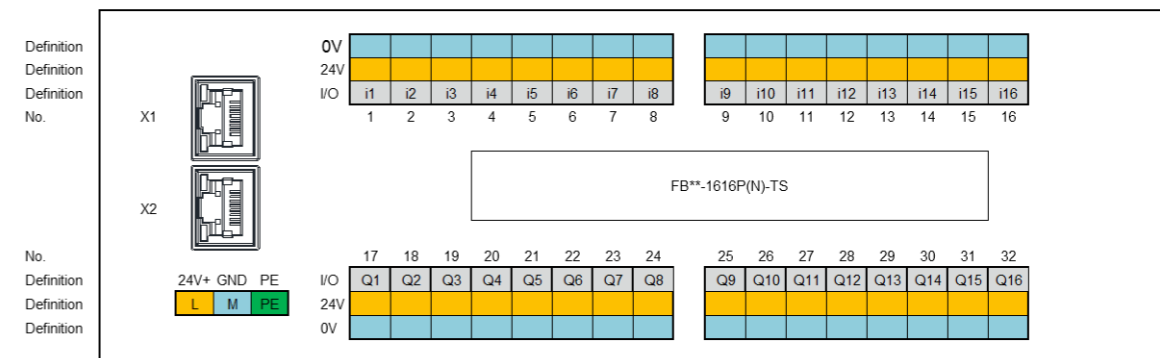
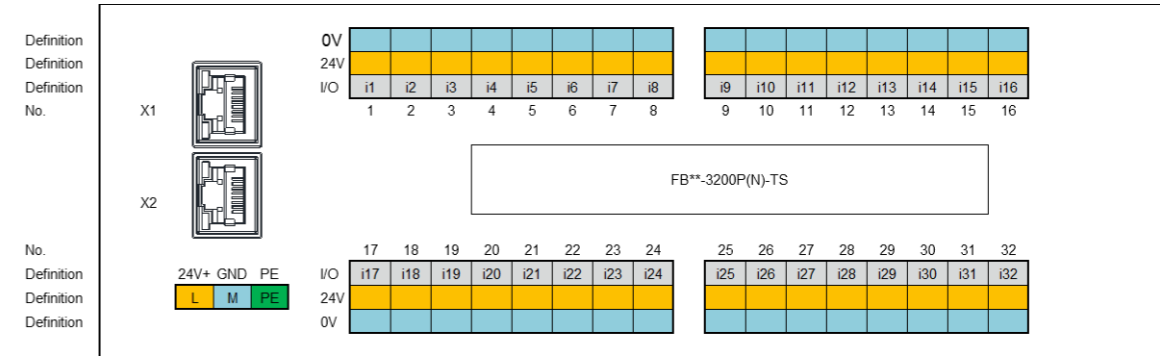
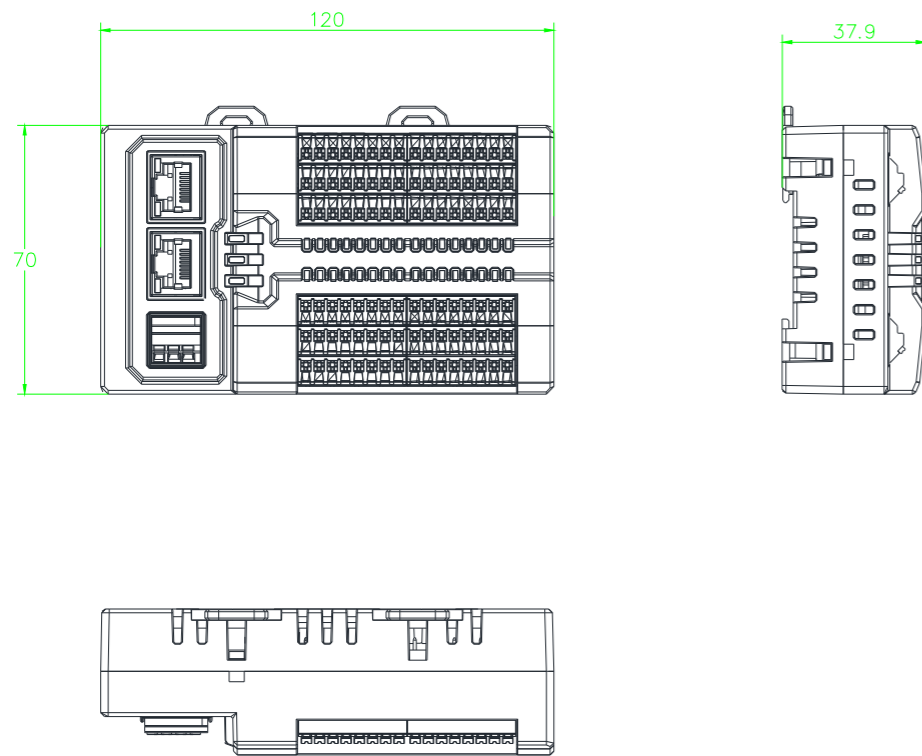
- CC-LINK IE Field Basic bus interfaces
- Horizontal compact shape
- Standard 35mm DIN rail installation
- Pluggable I/O terminal blocks and auxiliary power supply terminal blocks



**CC-Link IE Field Basic**

Ordering Information				
Product Models	FBCB-3200P-TS	FBCB-1616P-TS	FBCB-0032P-TS	FBCB-1616UP-TS
Description	CC-LINK IE Field Basic, 32DI, PNP	CC-LINK IE Field Basic, 16DI/16DO, PNP	CC-LINK IE Field Basic, 32DO, PNP	CC-LINK IE Field Basic, 16DI/16DIO, PNP
Product Models	FBCB-3200N-TS	FBCB-1616N-TS	FBCB-0032N-TS	FBCB-1616UN-TS
Description	CC-LINK IE Field Basic, 32DI, NPN	CC-LINK IE Field Basic, 16DI/16DO, NPN	CC-LINK IE Field Basic, 32DO, NPN	CC-LINK IE Field Basic, 16DI/16DIO, NPN
Interface Connections				
Bus interfaces	2×RJ45, 100BASE-TX			
Power interfaces	1×3-Pos power supply terminal block			
I/O interfaces	4×8-Pos Pluggable I/O terminal blocks+8×8-Pos Pluggable auxiliary power supply terminal blocks			
Electrical Parameters				
Number of input channels	32	16	-	Max 32
Input power supply current	Max.125 mA/Channel, Total maximum 4 A	Max.125 mA/Channel, Total maximum 2 A	-	Max.125 mA/Channel, Total maximum 2 A
Input filtering delay	1.6 ms		-	1.6ms
Number of output channels	-	16	32	Max 16
Output current	-	Max.500 mA/Channel, Total maximum 4 A		
Output load type	-	Indicator lights, miniature solenoid valves, etc		
Output switch frequency	-	Resistive load 100 Hz, inductive load 5 Hz		
Diagnosis				
Communication Status	LED indicators ,Communication message			
Power supply monitoring	LED indicators			
Short circuit and overload protection	LED indicators			
General data				
Protection grade	IP20			
Temperature range	Operating temperature: -5 °C ... +60°C,Storage temperature:-25°C ... +70°C			
Module dimensions H × W × D	70 mm ×120 mm × 38 mm			

Outline drawing and terminal definition



- EtherCAT bus interface
- Vertical design, saving space
- Metal Housing for better EMC performance
- Standard 35mm DIN rail installation
- Pluggable I/O terminal blocks and auxiliary power supply terminal blocks



**Ordering Information**

Product Models	FVEC-3200P	FVEC-1616P	FVEC-0032P	FVEC-1616UP
Description	EtherCAT, 32DI, PNP	EtherCAT, 16DI/16DO, PNP	EtherCAT, 32DO, PNP	EtherCAT, 16DI/16DIO, PNP
Product Models	FVEC-3200N	FVEC-1616N	FVEC-0032N	FVEC-1616UN
Description	EtherCAT, 32DI, NPN	EtherCAT, 16DI/16DO, NPN	EtherCAT, 32DO, NPN	EtherCAT, 16DI/16DIO, NPN

**Interface Connections**

Bus interfaces	2xRJ45, 100BASE-TX			
Power interfaces	Us:3-pos terminal blocks; Ua:Included in the I/O terminals, each group is independently powered			
I/O interfaces	2x20-pos Pluggable spring terminal blocks			

**Electrical Parameters**

Number of input channels	32	16	-	Max 32
Input power supply current	Max.125 mA/Channel, Total maximum 4 A	Max.125 mA/Channel, Total maximum 2 A	-	Max.125 mA/Channel, Total maximum 2 A
Input filtering delay	1.6 ms		-	1.6ms
Number of output channels	-	16	32	Max 16
Output current	-	Max.500 mA/Channel, Total maximum 4 A		
Output load type	-	Indicator lights, miniature solenoid valves, etc		
Output switch frequency	-	Resistive load 100 Hz, inductive load 5 Hz		

**Diagnosis**

Communication Status	LED indicators ,Communication message			
Power supply monitoring	LED indicators			
Short circuit and overload protection	LED indicators			

**General data**

Protection grade	IP20			
Temperature range	Operating temperature: -5 °C ... +60°C,Storage temperature:-25°C ... +70°C			
Module dimensions H × W × D	112 mm × 27 mm × 74.5mm			



- Profinet bus interface
- Vertical design, saving space
- Metal Housing for better EMC performance
- Standard 35mm DIN rail installation
- Pluggable I/O terminal blocks and auxiliary power supply terminal blocks



Ordering Information				
Product Models	FVPN-3200P	FVPN-1616P	FVPN-0032P	FVPN-1616UP
Description	Profinet, 32DI, PNP	Profinet, 16DI/16DO, PNP	Profinet, 32DO, PNP	Profinet, 16DI/16DIO, PNP
Product Models	FVPN-3200N	FVPN-1616N	FVPN-0032N	FVPN-1616UN
Description	Profinet, 32DI, NPN	Profinet, 16DI/16DO, NPN	Profinet, 32DO, NPN	Profinet, 16DI/16DIO, NPN
Interface Connections				
Bus interfaces	2xRJ45, 100BASE-TX			
Power interfaces	Us:3-pos terminal blocks; Ua:Included in the I/O terminals, each group is independently powered			
I/O interfaces	2x20-pos Pluggable spring terminal blocks			
Electrical Parameters				
Number of input channels	32	16	-	Max 32
Input power supply current	Max.125 mA/Channel, Total maximum 4 A	Max.125 mA/Channel, Total maximum 2 A	-	Max.125 mA/Channel, Total maximum 2 A
Input filtering delay	1.6 ms		-	1.6ms
Number of output channels	-	16	32	Max 16
Output current	-	Max.500 mA/Channel, Total maximum 4 A		
Output load type	-	Indicator lights, miniature solenoid valves, etc		
Output switch frequency	-	Resistive load 100 Hz, inductive load 5 Hz		
Diagnosis				
Communication Status	LED indicators ,Communication message			
Power supply monitoring	LED indicators			
Short circuit and overload protection	LED indicators			
General data				
Protection grade	IP20			
Temperature range	Operating temperature: -5 °C ... +60°C,Storage temperature:-25°C ... +70°C			
Module dimensions H × W × D	112 mm × 27 mm × 74.5mm			

- Ethernet/IP bus interface
- Vertical design, saving space
- Metal Housing for better EMC performance
- Standard 35mm DIN rail installation
- Pluggable I/O terminal blocks and auxiliary power supply terminal blocks



Ordering Information				
Product Models	FVEI-3200P	FVEI-1616P	FVEI-0032P	FVEI-1616UP
Description	Ethernet/IP, 32DI, PNP	Ethernet/IP, 16DI/16DO, PNP	Ethernet/IP, 32DO, PNP	Ethernet/IP, 16DI/16DIO, PNP
Product Models	FVEI-3200N	FVEI-1616N	FVEI-0032N	FVEI-1616UN
Description	Ethernet/IP, 32DI, NPN	Ethernet/IP, 16DI/16DO, NPN	Ethernet/IP, 32DO, NPN	Ethernet/IP, 16DI/16DIO, NPN
Interface Connections				
Bus interfaces	2xRJ45, 100BASE-TX			
Power interfaces	Us:3-pos terminal blocks; Ua:Included in the I/O terminals, each group is independently powered			
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Electrical Parameters				
Number of input channels	32	16	-	Max 32
Input power supply current	Max.125 mA/Channel, Total maximum 4 A	Max.125 mA/Channel, Total maximum 2 A	-	Max.125 mA/Channel, Total maximum 2 A
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Output switch frequency	-	Resistive load 100 Hz, inductive load 5 Hz		
Diagnosis				
Communication Status	LED indicators ,Communication message			
Power supply monitoring	LED indicators			
Short circuit and overload protection	LED indicators			
General data				
Protection grade	IP20			
Temperature range	Operating temperature: -5 °C ... +60°C,Storage temperature:-25°C ... +70°C			
Module dimensions H × W × D	112 mm × 27 mm × 74.5mm			

- CC-LINK IE Field Basic bus interface
- Vertical design, saving space
- Metal Housing for better EMC performance
- Standard 35mm DIN rail installation
- Pluggable I/O terminal blocks and auxiliary power supply terminal blocks



**CC-Link IE Field Basic**

**Ordering Information**

Product Models	FVCB-3200P	FVCB-1616P	FVCB-0032P	FVCB-1616UP
Description	CC-LINK IE Field Basic, 32DI, PNP	CC-LINK IE Field Basic, 16DI/6DO, PNP	CC-LINK IE Field Basic, 32DO, PNP	CC-LINK IE Field Basic, 16DI/16DIO, PNP
Product Models	FVCB-3200N	FVCB-1616N	FVCB-0032N	FVCB-1616UN
Description	CC-LINK IE Field Basic, 32DI, NPN	CC-LINK IE Field Basic, 16DI/16DO, NPN	CC-LINK IE Field Basic, 32DO, NPN	CC-LINK IE Field Basic, 16DI/16DIO, NPN

**Interface Connections**

Bus interfaces	2xRJ45, 100BASE-TX			
Power interfaces	Us:3-pos terminal blocks; Ua:Included in the I/O terminals, each group is independently powered			
I/O interfaces	2x20-pos Pluggable spring terminal blocks			

**Electrical Parameters**

Number of input channels	32	16	-	Max 32
Input power supply current	Max.125 mA/Channel, Total maximum 4 A	Max.125 mA/Channel, Total maximum 2 A	-	Max.125 mA/Channel, Total maximum 2 A
Input filtering delay	1.6 ms		-	1.6ms
Number of output channels	-	16	32	Max 16
Output current	-	Max.500 mA/Channel, Total maximum 4 A		
Output load type	-	Indicator lights, miniature solenoid valves, etc		
Output switch frequency	-	Resistive load 100 Hz, inductive load 5 Hz		

**Diagnosis**

Communication Status	LED indicators ,Communication message			
Power supply monitoring	LED indicators			
Short circuit and overload protection	LED indicators			

**General data**

Protection grade	IP20			
Temperature range	Operating temperature: -5 °C ... +60°C,Storage temperature:-25°C ... +70°C			
Module dimensions H × W × D	112 mm × 27 mm × 74.5mm			

Outline drawing and terminal definition

