



AJ200

***Embedded Blue***®

DIN Rail PoE+ Injector • Three Port RJ45 Gigabit Ethernet



## Technical Features

### *General*

- ▶ PoE+ 1000BASE-T Ethernet midspan power injector box, for DIN rail mount or wall mount
- ▶ PSE power sourcing equipment configuration
- ▶ 6 x RJ45 Gigabit Ethernet connectors (3 x in, 3 x out)
- ▶ 802.3at PoE+ (up to 30W/port)
- ▶ Intended for industrial use
- ▶ Dimensions: 30mm (W) x 140mm (H) x 70mm (D) w/o DIN rail brackets
- ▶ Metal case, DIN rail bracket or wall mount plate
- ▶ Option M12-A 5-pin power connector
- ▶ Option terminal block power connector
- ▶ Option desktop power adapter connector
- ▶ Nominal 48VDC/54VDC power input operation

### *Front Panel I/O*

- ▶ Three groups of dual RJ45 modular jacks, shielded, Cat 5, input/output
- ▶ 1000Base-T magnetics 1:1, PoE+
- ▶ 1000BASE-T, 100BASE-TX, 10BASE-T compliant data transfer rate
  
- ▶ M12-A 5-pin front power connector
- ▶ Option terminal block 3.5mm pitch 4-position screw lock (bottom of box)

### *Power Requirements*

- ▶ DC Input, 44V-57V (48VDC, 54VDC)
- ▶ Power consumption 95W max. (@90W external load)
- ▶ Fast acting chip fuse (PCB soldered type - no replacement on-site)
- ▶ Protected against reverse polarity
- ▶ ESD protection (TVS)
- ▶ Common mode input filter
- ▶ M12-A 5-pin male power connector (optional)
- ▶ Option 4-position terminal block 3.50mm pitch screw locked
- ▶ Option rear power connector (desktop supply 4-pos. circular connector)

## Technical Features

### *Power over Ethernet*

- ▶ PSE PoE+ according to IEEE 802.3at-2009
- ▶ Maximum power delivered per port 30W (25.4W at powered device PD per specification)
- ▶ Maximum power delivered in total 90W
- ▶ IEEE 802.3at PSE Type 2 mode A (600mA/pair, RJ45 pins 1,2 & 3,6)
- ▶ TPS23861 PSE controller, automatic mode
- ▶ Auto detect & classification, auto turn-on & disconnect

### *Applications*

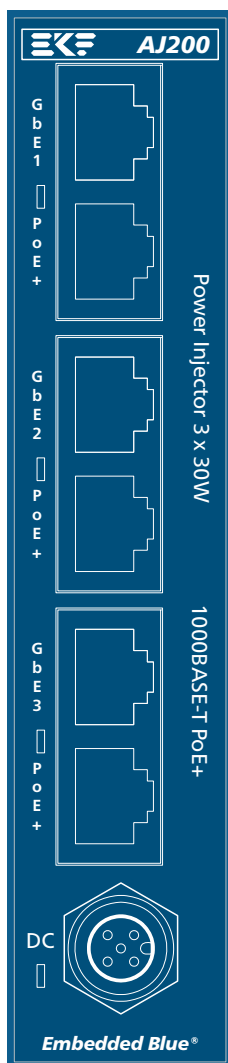
- ▶ Industrial networks - IIoT
- ▶ Rugged environments
- ▶ Edge computing
- ▶ Transportation

### *Environmental, Regulatory*

- ▶ Designed & manufactured in Germany
- ▶ ISO 9001 certified quality management
- ▶ Long term availability
- ▶ Rugged solution
- ▶ RoHS compliant
- ▶ Operating temperature -40°C to +85°C (industrial temperature range)
- ▶ Storage temperature -40°C to +85°C, max. gradient 5°C/min
- ▶ Humidity 5% ... 95% RH non condensing
- ▶ Altitude -300m ... +3000m
- ▶ Shock 15g 0.33ms, 6g 6ms
- ▶ Vibration 1g 5-2000Hz
- ▶ EC Regulatory EN55024, EN55032, EN62368-1
- ▶ International Protection EN60529 IP20
- ▶ MTBF 136.2 years

all items may be subject to technical changes w/o further notice

Front

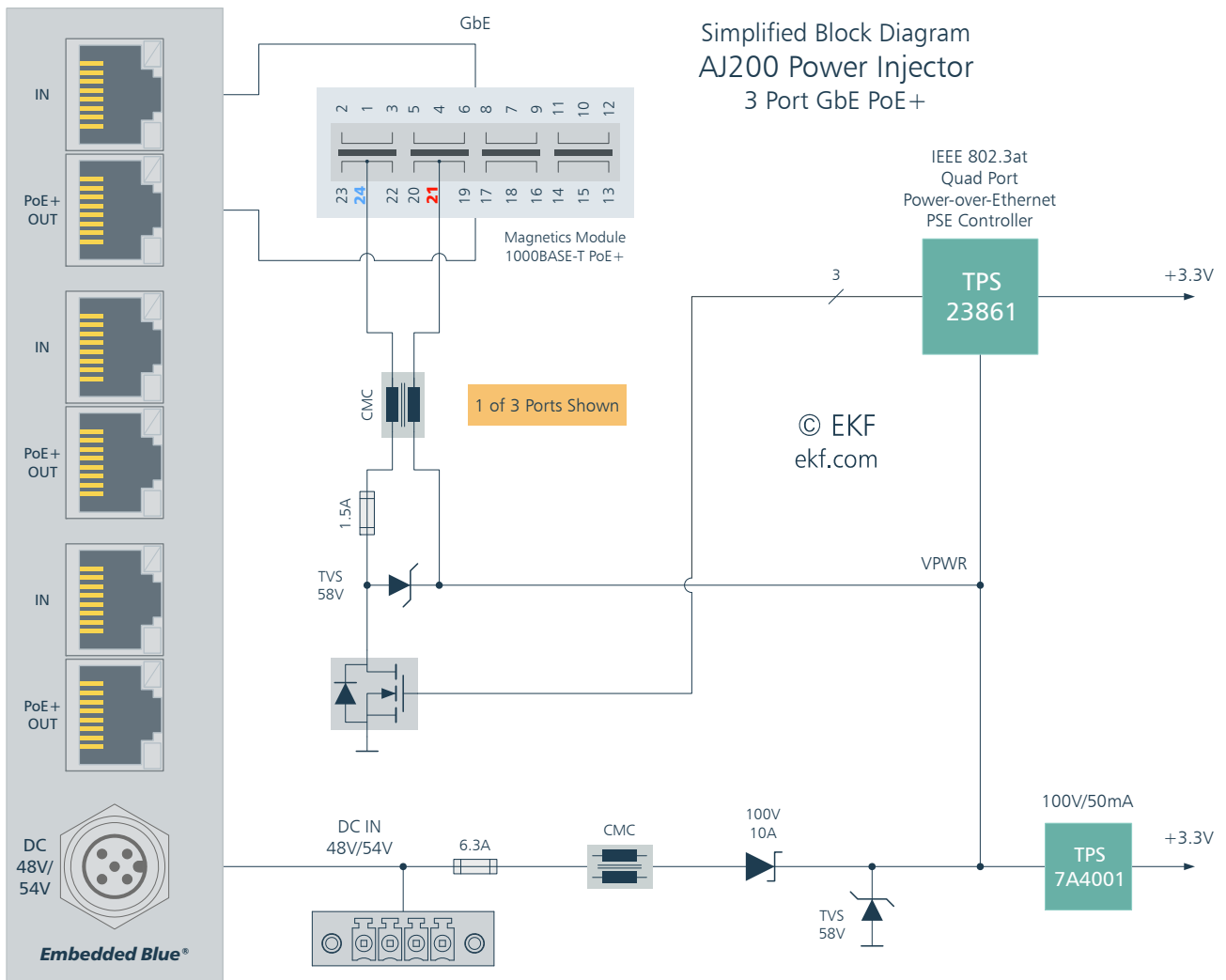


Ethernet Port 1-3 LEDs	
green (weak)	PoE+ ready
blue	PoE+ active, normal operation
red (blinking or permanent)	internal fault (port chip fuse must be replaced)

DC LED	
green	DC input power present
red	internal fault (main chip fuse must be replaced)

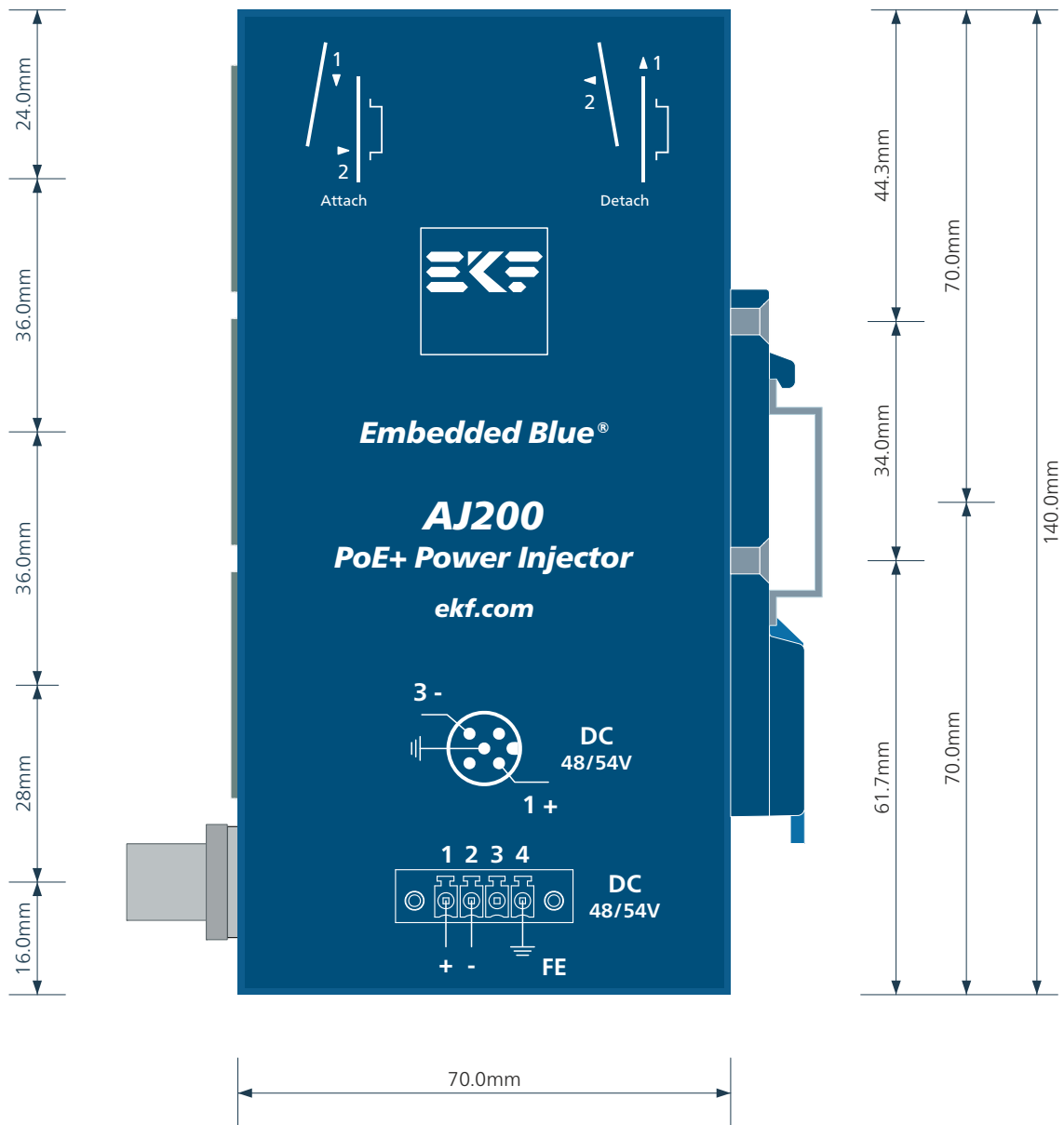


## Block Diagram



RJ45 input and output connectors of each particular port are 1500VRMS isolated between each other by means of magnetics modules. As a result, also any RJ45 input connector is isolated from the input connector of another port. The power source however is common to all PoE+ injector ports, which implies that all PoE+ RJ45 output connectors are DC coupled, in a common domain with the external DC power supply. This is usual practice and does not affect normal operation. It is noted here for better understanding only.

## Dimensions





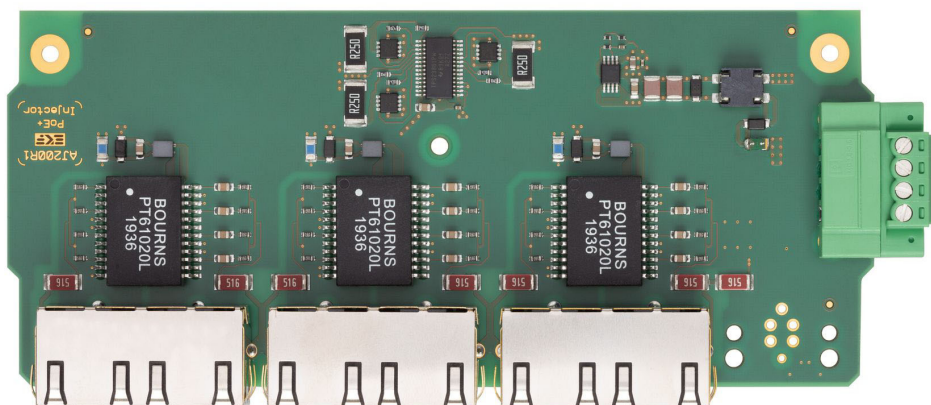
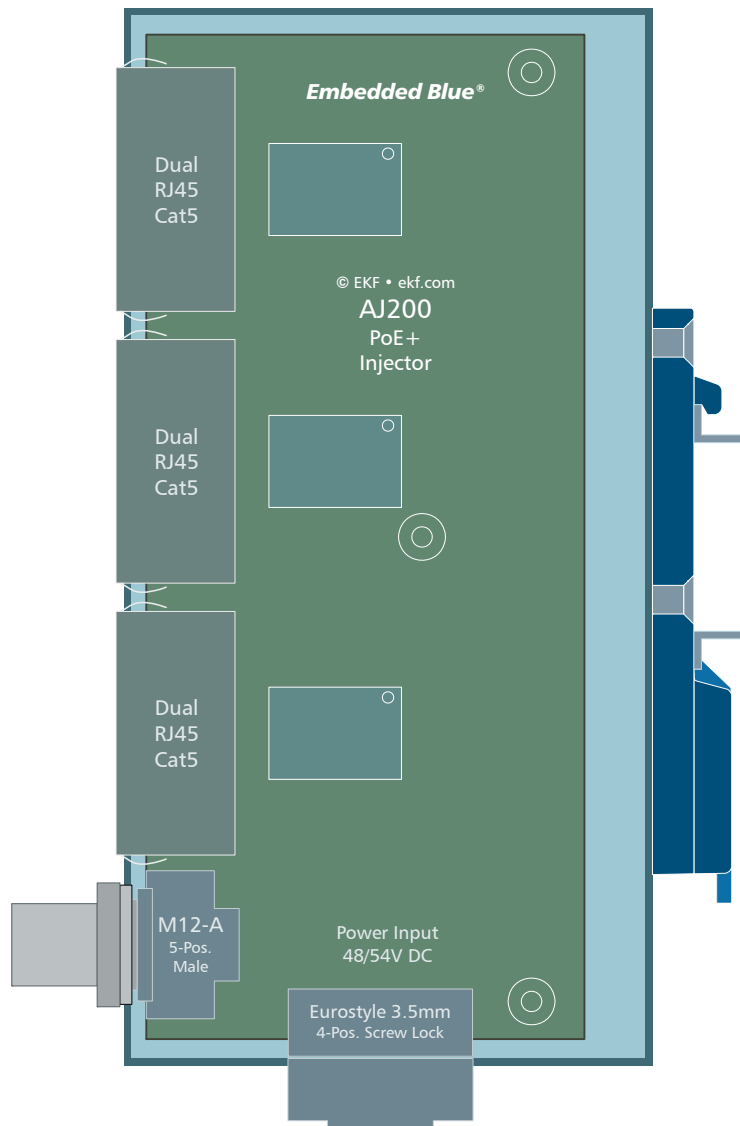
DIN Rail Mounting Option

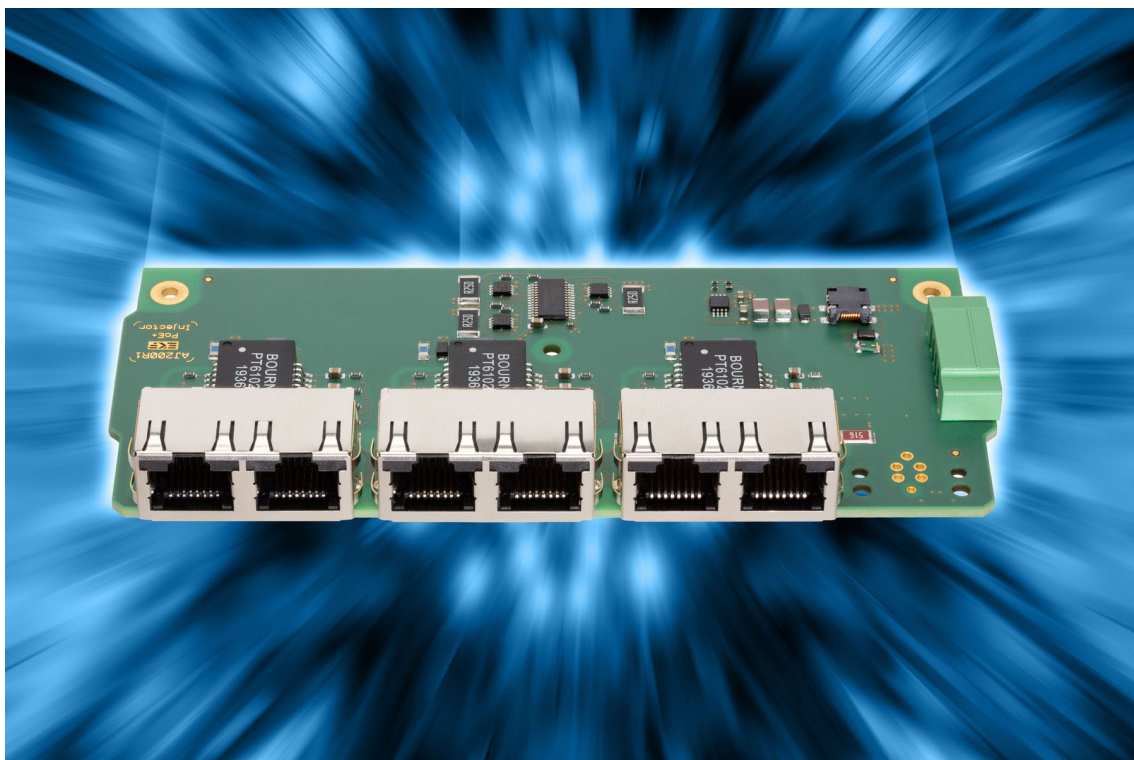


Wall Mount Plate Option

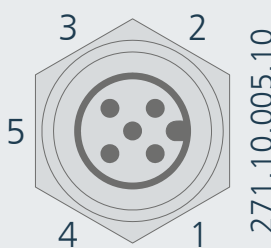


## Component Orientation



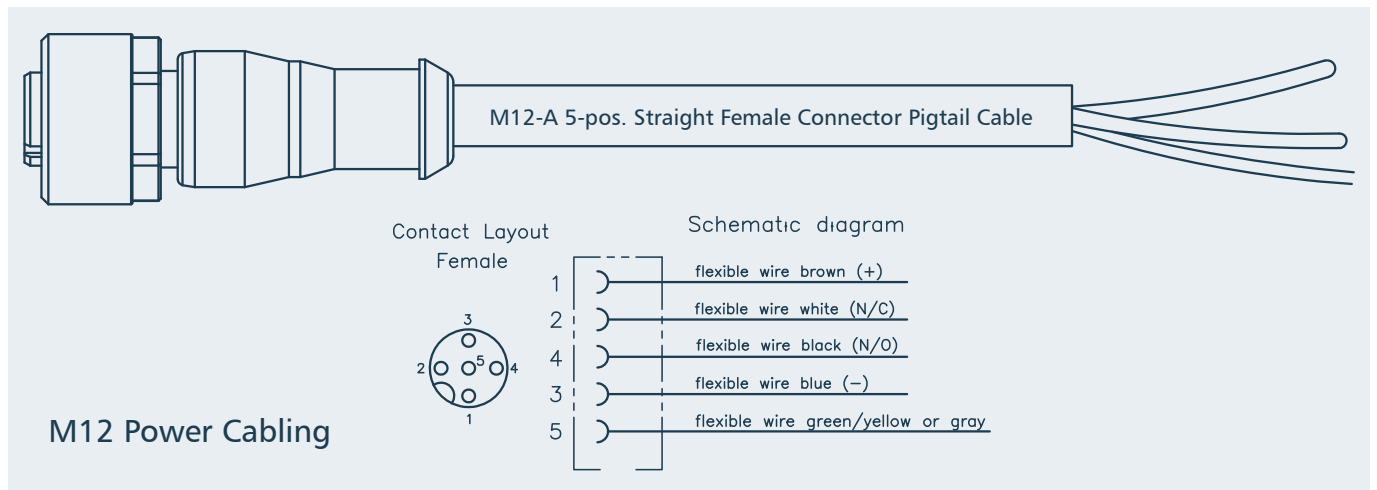


### Option M12-A Power Connector

M12-A 5-Position Male 4A/Pin			
 <p>271.10.005.10</p>	+V=48/54VDC	1	+V
		2	Reserved
		3	-V (GND)
		4	Reserved
		5	FE (Shield)

pin assignment valid from PCB Rev.2 off

Mating Pigtail Cable Assemblies 1.5m w. Female Straight Plug	
EKF	271.10.505.22.015
Phoenix Contact	1669822
Tyco	2273035-1



pre-assembled standard pigtail cables - wires #2 and #4 not in use (reserved)



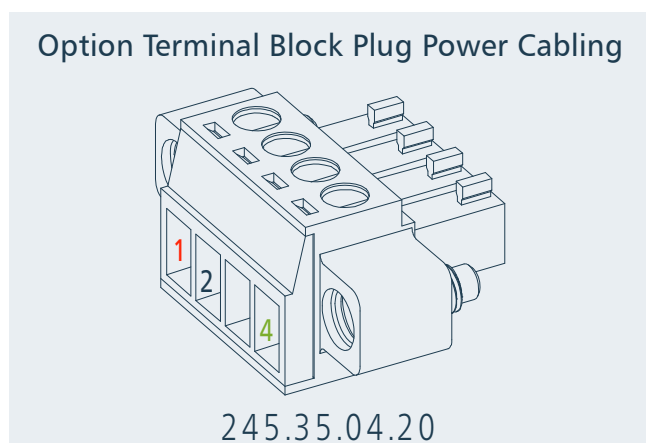
M12 Pigtail Cable

## Option Terminal Block Power Connector

3.50mm 4-Position Terminal Block 8A/Pin			
<p>245.35.04.00</p> <p>1 2 3 4</p>	<p>+V=48/54VDC</p>	1	+V
		2	-V (GND)
		3	Reserved
		4	FE (Shield)

pin assignment valid from PCB Rev.2 off

Mating Plugs w. Screw Lock	
EKF	245.35.04.20
FCI Amphenol	20020000-C041B01LF
Molex	39504-0004
Phoenix Contact	1847071
Tyco	284510-4

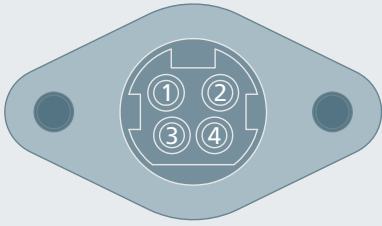


Mating DIN Rail Power Supply	
EKF	352.1.120.48.1
Meanwell	NDR-120-48, 120W 48VDC/2.5A



Option Terminal Block

### Option Rear Power Connector

Circular 4-Position Power Receptacle 7.5A/pin			
 <p>271.04.004.10</p>	<p>+V=48/54VDC</p>	1	+V
		2	+V
		3	-V (GND)
		4	-V (GND)
		Shell	FE (Shield)



Option Rear Connector (Similar Photo)

Mating Desktop Power Adapter w. Cable Assy	
EKF	353.1.120.54.1
FSP Technology	FSP120-AWAN3, 120W 54VDC/2.2A

## Ordering Information

Ordering key: AJ200-0xy0

x=1-3: number of PoE+ injector ports populated

y=0: terminal block DC power input

y=1: M12-A front connector DC power input

For popular AJ200 SKUs please contact sales@ekf.de

## Related Products

AL100	M12-X 5 to 15 port unmanaged GbE switch
AL110	M12-X 5 port GbE switch w. ARM® V8 CPU
AL200	RJ45 8 port unmanaged GbE switch
AL210	RJ45 8 port GbE switch w. ARM® V8 CPU
AL220	RJ45 8 port unmanaged PoE+ GbE switch
AL230	RJ45 8 port PoE+ GbE switch w. ARM® V8 CPU
AL600	Single Pair Ethernet 7 Port switch 100BASE-T1
AJ100	M12-X PoE+ power injector
AJ200	RJ45 PoE+ power injector



[https://www.ekf.com/a/DIN\\_Rail\\_on\\_off\\_500x280.mp4](https://www.ekf.com/a/DIN_Rail_on_off_500x280.mp4)



# ***Embedded Blue®***



Document No. 9423 • © EKF • 28 June 2022

EKF Elektronik GmbH  
Philipp-Reis-Str. 4 (Haus 1)  
Lilienthalstr. 2 (Haus 2)  
59065 HAMM  
Germany



Phone +49 (0)2381/6890-0  
Fax +49 (0)2381/6890-90  
Internet [www.ekf.com](http://www.ekf.com)  
E-Mail [sales@ekf.com](mailto:sales@ekf.com)