



AL220 • *Embedded Blue*®

PoE+ Gigabit Ethernet Switch

Preliminary



Technical Features

General

- ▶ 1000BASE-T Ethernet Switch box, for DIN rail mount or wall mount
- ▶ 8 x RJ45 Gigabit Ethernet connectors, 802.3at PoE+ (up to 30W/port)
- ▶ PoE+ support up to 120W in total
- ▶ Intended for industrial use
- ▶ Self-managed operation
- ▶ Dimensions: 30mm (W) x 140mm (H) x 90mm (D) w/o DIN rail brackets
- ▶ Option 45mm (W) with ARM® V8 mezzanine CPU board (AL230)
- ▶ Metal case, DIN rail bracket or wall mount plate
- ▶ Terminal block power connector
- ▶ Option desktop power adapter connector
- ▶ Nominal 48VDC/54VDC power input operation

Front Panel I/O

- ▶ RJ45 Ethernet connectors, with integrated PoE+ magnetics, CMC, TVS, fuses
- ▶ 1000BASE-T, 100BASE-TX, 10BASE-T compliant data transfer rate front ports
- ▶ Terminal Block 3.5mm pitch 4-position screw lock (bottom of box) power input

Power Requirements

- ▶ DC Input, 44V-57V (48VDC, 54VDC)
- ▶ Power consumption 125W max. (@120W external load)
- ▶ Fast acting chip fuse (PCB soldered type - no replacement on-site)
- ▶ Protected against reverse polarity
- ▶ ESD protection (TVS)
- ▶ Common mode input filter
- ▶ 4-Position terminal block 3.50mm pitch screw locked for DC power input (+, GND, FE)
- ▶ Option rear power connector (desktop supply 4-pos. circular connector)

Technical Features

Gigabit Ethernet Switch

- ▶ Marvell® 88E6390 (Peridot) Gigabit Ethernet switch
- ▶ IMP - integrated management processor (for customer usage)
- ▶ Front ports GbE MAC/PHY 1000BASE-T
- ▶ 8 x RJ45 connector(s) w. integrated PoE+ magnetics
- ▶ High performance, non-blocking, Gigabit Ethernet
- ▶ Support for up to 16K MAC addresses, 10KByte Jumbo Frames
- ▶ Supports 802.1 Audio Video Bridging (AVB) Gen 2*
- ▶ Time Sensitive Networking (TSN) Standards*, IEEE 1588v2 one-step PTP Synchronous Ethernet*
- ▶ Quality of Service (QoS) support with 8 traffic classes
- ▶ Supports 4096 802.1Q VLANs, three levels of 802.1Q security
- ▶ Unmanaged solution (managed solution with additional mezzanine CPU card)
- ▶ 2.5Gbps SERDES & SMI mezzanine connectors for additional mezzanine CPU card

Power over Ethernet

- ▶ PSE PoE+ according to IEEE 802.3at
- ▶ Maximum power delivered per port 30W
- ▶ Maximum power delivered in total 120W
- ▶ Type 2 endpoint PSE (power over RJ45 pins 1/2 & 3/6, 600mA)

Applications

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

Technical Features

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 Regulations EN55022, EN55024, EN60950-1 (UL60950-1/IEC60950-1)
- ▶ MTBF tbd years

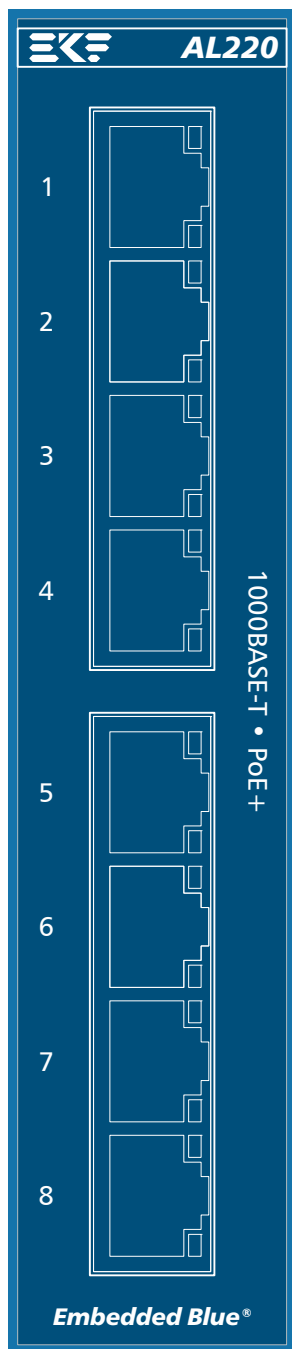
* AVB/TSN protocols require additional mezzanine CPU card support (AL230)
please refer to AL230 and AC370 product information

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



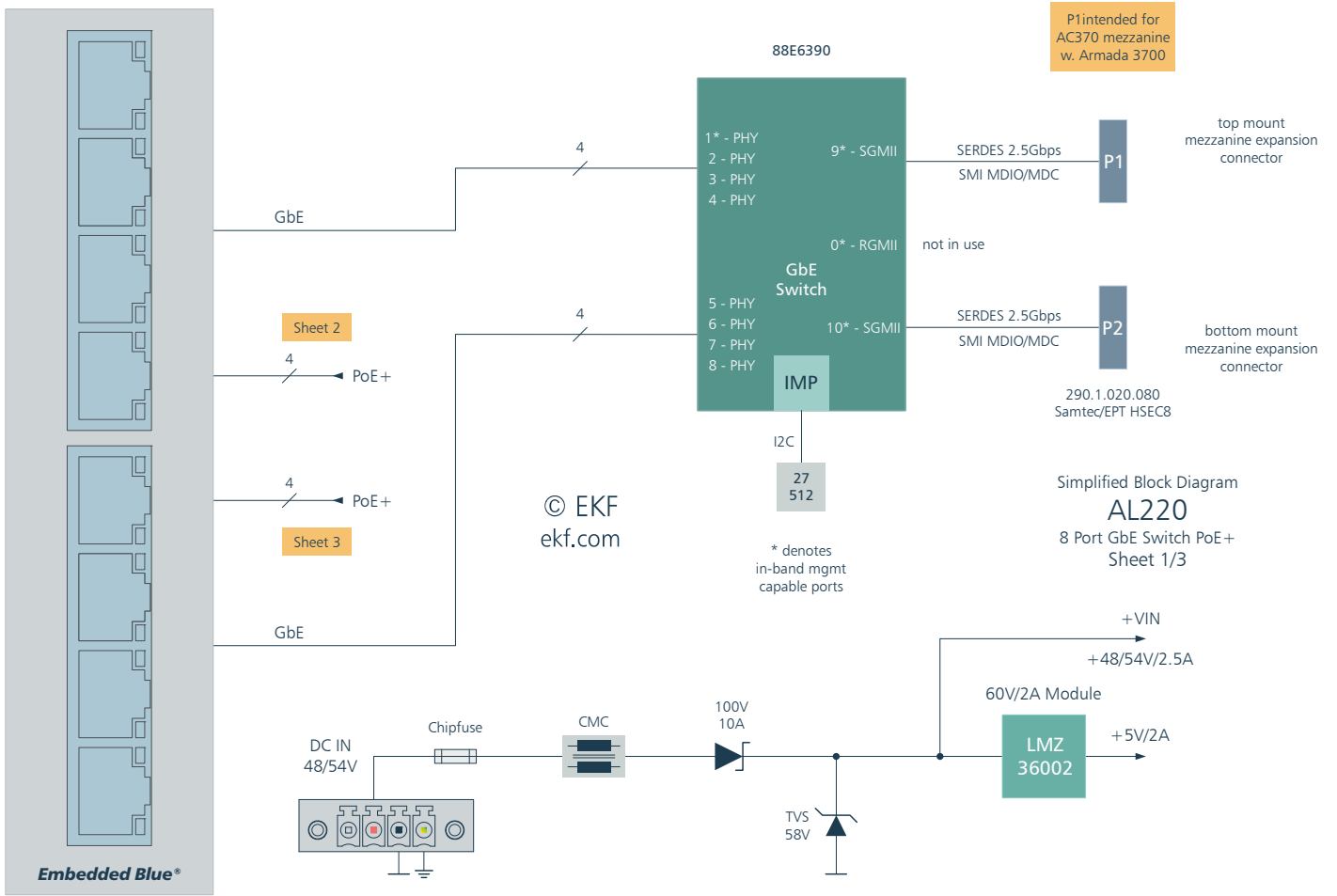


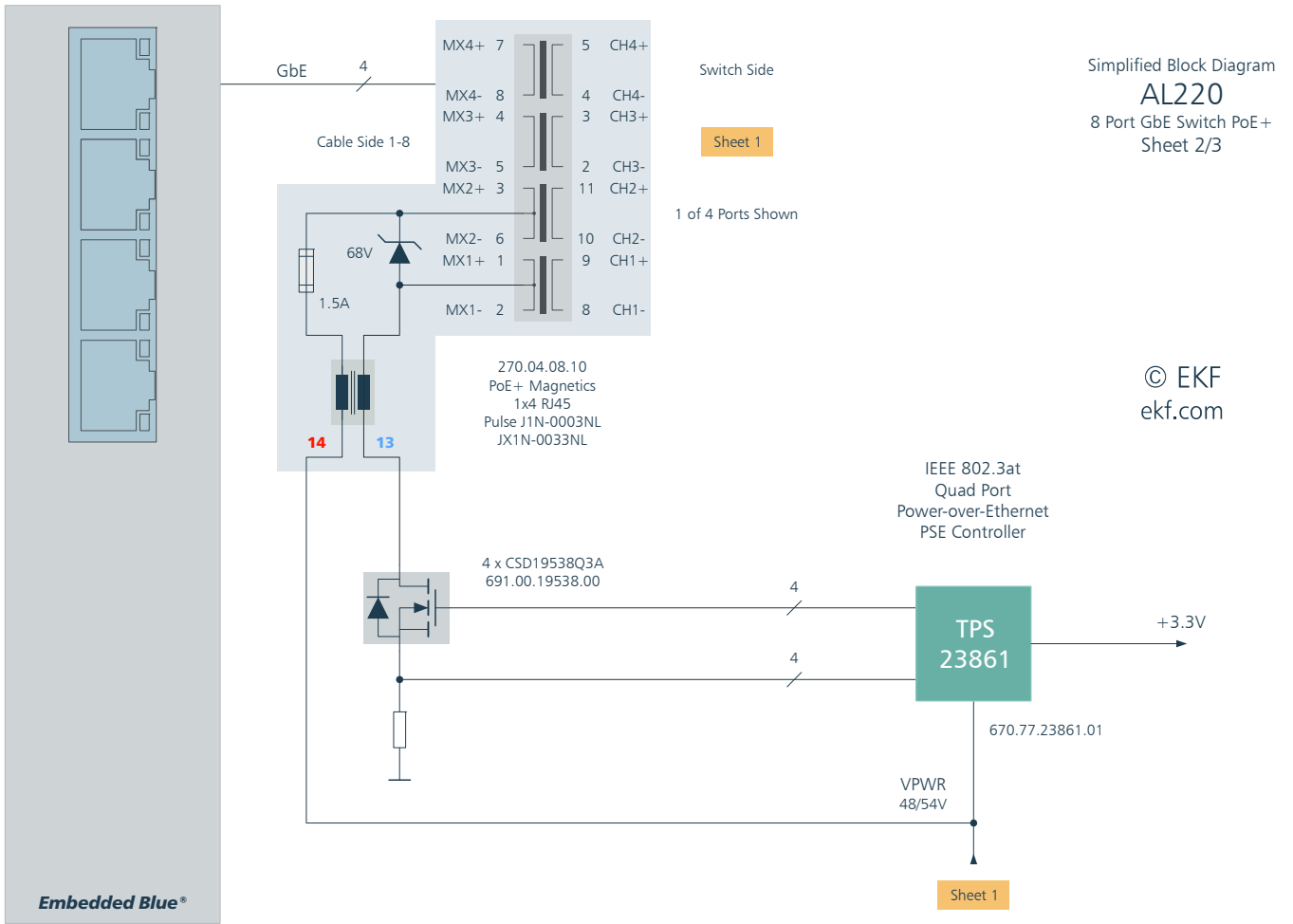
Front View

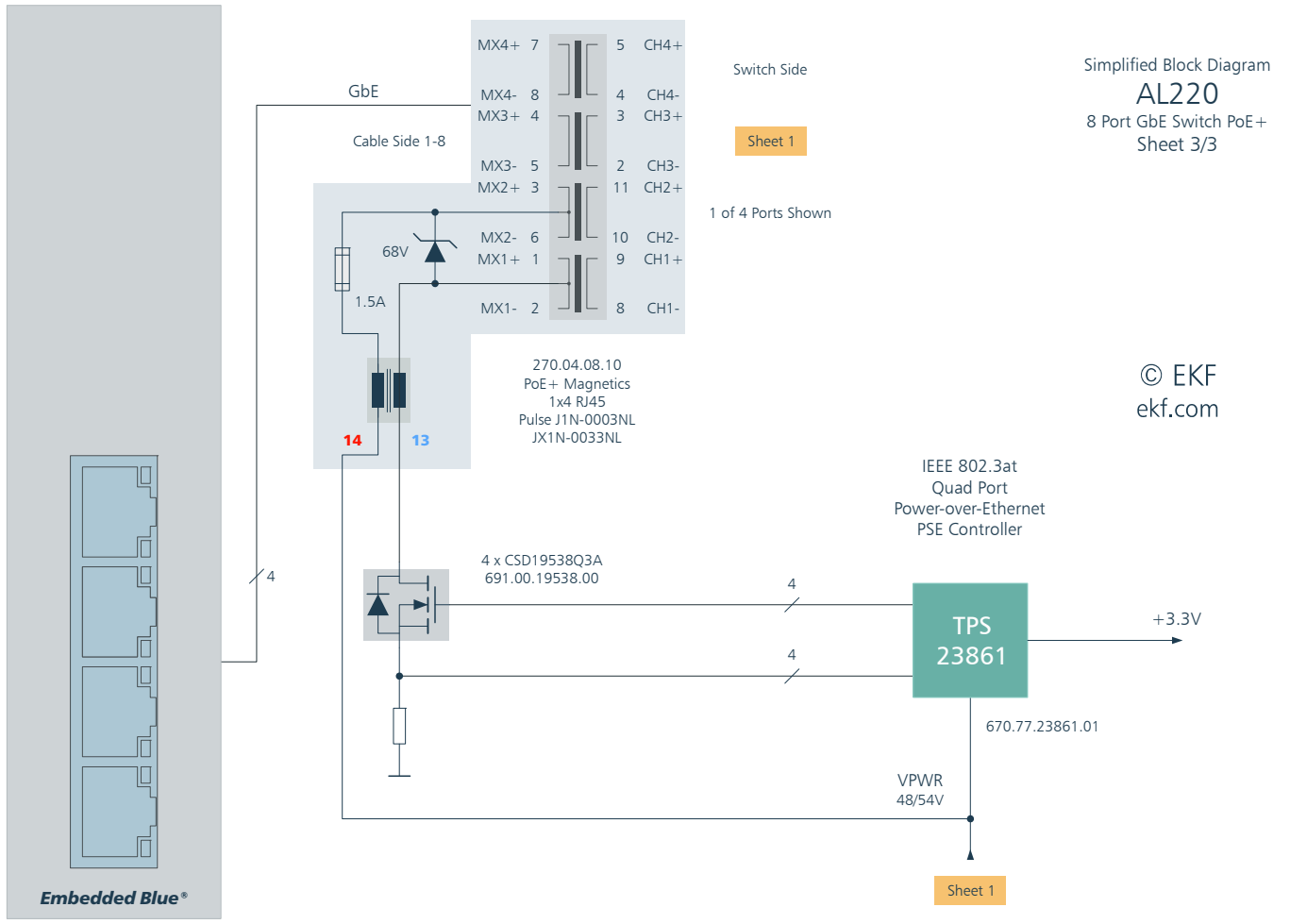


AL220 (Front)

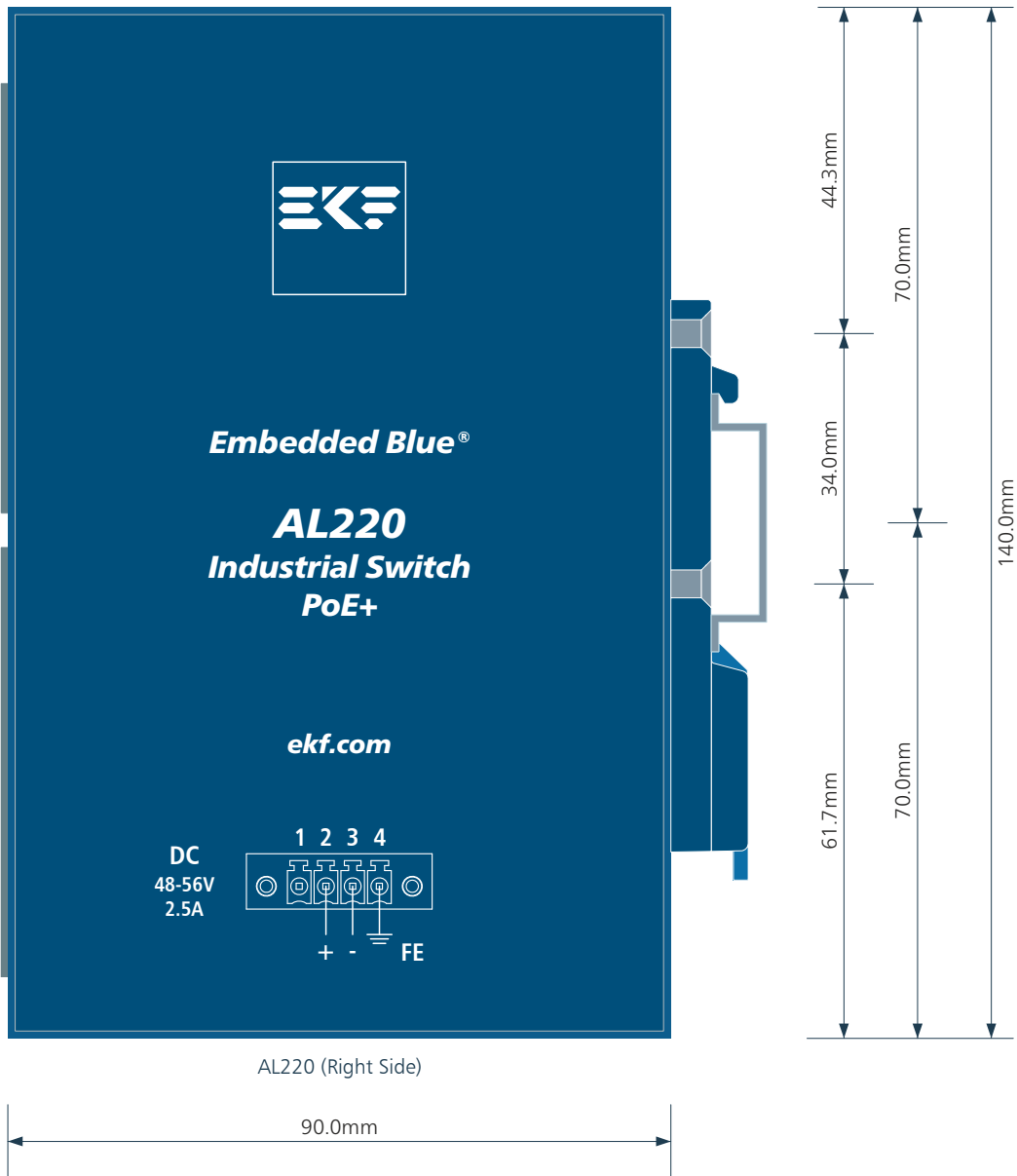
Block Diagram



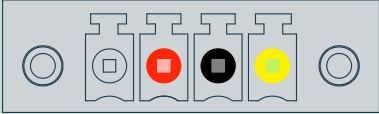




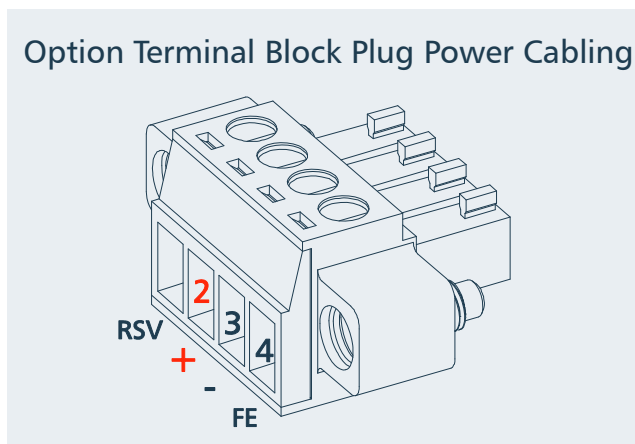
Dimensions



Terminal Block Power Connector

3.5mm 4-Position Terminal Block			
 <p>245.35.04.20</p>	+V=48/54VDC	1	Reserved
		2	+V
		3	-(GND)
		4	FE (Shield)

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



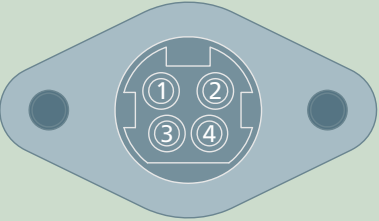
Warning:

Do not apply over-voltage e.g. 115/230VAC to the power connector, since this will cause a PCB soldered chip fuse to break, which cannot be replaced on-site.



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

Option Rear Power Connector

Circular 4-Position Power Receptacle			
 <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

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

Ordering Information

For popular AL220 SKUs please contact sales@ekf.de



Related Products

AC370	ARM® V8 Industrial Microcontroller
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

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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
E-Mail sales@ekf.com