



AX100 • Embedded Blue®

LIDAR V1 Interface Box



Technical Features

General

- ▶ Mixed I/O interface box, for DIN rail mount or wall mount
- ▶ Cable & power management for LIDAR™ sensor heads
- ▶ Intended for use with most of Velodyne LIDAR™ sensors e.g. HDL-32E, VLP-16, VLP-32C
- ▶ Can replace the Velodyne LIDAR™ HDL-32E & VLP-16 interface box
- ▶ Dimensions: 30 x 130 x 46mm³ (height/width/depth, horizontal front view)
- ▶ Metal case
- ▶ Several mounting options
- ▶ Industrial type I/O connectors
- ▶ Galvanic isolation for GPS and side band signals via optocouplers

Front Panel I/O

- ▶ LIDAR - M12-A 8-pin male connector (Fast Ethernet, GPS, 12V), connects to LIDAR™ head
- ▶ Sensor - M12-A 5-position female connector, connects to optional Magnetic Field Sensor, allows to control LIDAR 12V power
- ▶ 100BASE-TX - RJ45 jack, connects the LIDAR™ head with the computer system
- ▶ Control/Link - Dual Micro-D 9-position connector (GPS time input and connection to a secondary AX100 expansion box for 3D mapping)
- ▶ +12V/GND/Shield - Anderson Powerpole® PP15-45 connectors as power input
- ▶ 4-Fold LED array for I/O signals, another two LEDs for power

Power Requirements

- ▶ DC Input, 12V
- ▶ Powerpole® PP15-45 connectors (DC input)
- ▶ Protected against reverse polarity and short circuit
- ▶ M12-A connector (DC output to LIDAR™ head, switched by power FET)
- ▶ Dedicated LEDs: +12V LIDAR™ power on & +5V AX100 internal power good

Applications

- ▶ Suitable for Velodyne LIDAR™ sensors
- ▶ Vehicle based surveillance and mapping
- ▶ Industrial & robotics
- ▶ Trucking
- ▶ Autonomous test vehicles & ADAS
- ▶ Customized design on request
- ▶ Embedded Blue® AX120 LIDAR™ V2 Interface for Gigabit Ethernet heads e.g. Alpha Prime on request

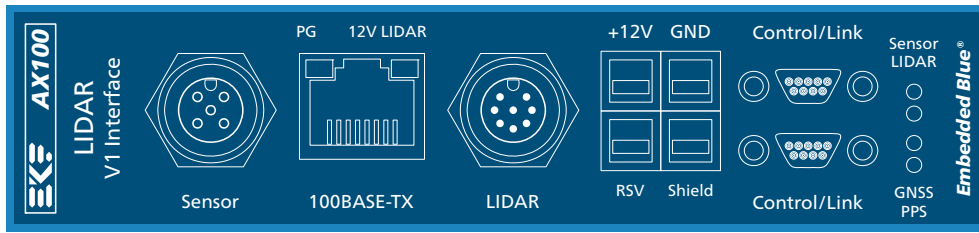
Technical Features

Environmental, Regulatory

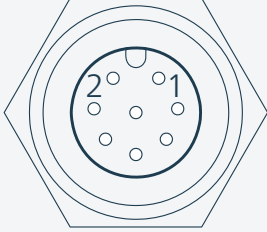
- ▶ Designed & manufactured in Germany
- ▶ ISO 9001 certified quality management
- ▶ Long term availability
- ▶ Rugged solution
- ▶ RoHS compliant
- ▶ Operating temperature -40°C to +85°C (industrial temperature range)
- ▶ Storage temperature -40°C to +85°C, max. gradient 5°C/min
- ▶ Humidity 5% ...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

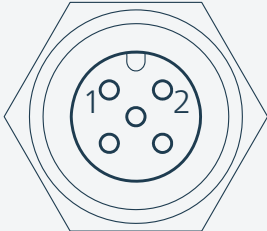
all items may be subject to technical changes w/o further notice

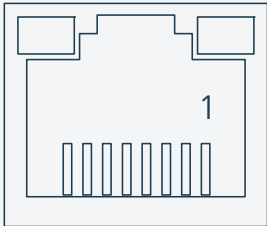
Front Panel



Front I/O Connectors

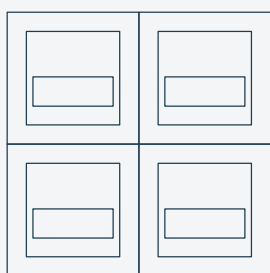
LIDAR		
M12-A Male 8-Pos 271.10.008.10		
 <p>M12-A-8 Male</p>	1	ETH_RXD- (High Speed Data Link)
	2	ETH_RXD+ (High Speed Data Link)
	3	ETH_TXD- (High Speed Data Link)
	4	ETH_TXD+ (High Speed Data Link)
	5	LIDAR_RXD (receiving GPS Command)
	6	LIDAR_PPS (receiving GPS Timing)
	7	+12V_LIDAR
	8	Ground

Sensor (Optional Locking Cap Detector / Hall Sensor)		
M12-A Female 5-Pos 271.10.005.20		
 <p>M12-A-5 Female</p>	1	+12V_SENSOR (fused)
	2	+5V_SENSOR (fused)
	3	Cable_detected_n (connected to Ground by Sensor Modul)
	4	MagneticField_detected_n (connected to Ground by Hall Sensor)
	5	Ground

Ethernet 100BASE-TX (to Controller Unit)		
270.00.08.6 RJ45 modular jack		
 <p>RJ45</p>	1	ETH_TXD+ (High Speed Data Link)
	2	ETH_TXD- (High Speed Data Link)
	3	ETH_RXD+ (High Speed Data Link)
	4	NC
	5	NC
	6	ETH_RXD- (High Speed Data Link)
	7	NC
	8	NC

PowerPole (Connect to Power Supply)

APP PowerPole 269.1.002.010

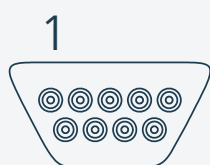


APP PowerPole

Red	+12V_Vin (12V+-10%/25W)
Black	Ground
Orange	NC
Green	Shield

Micro D-Sub (Connect to Controller Unit and 2nd AX100)

Micro-D High Density Male Connectors 259.022.0909.00



Micro D-Sub

1	Controller_Ground
2	Controller_+12V (12V+-10%/500mW)
3	Controller_PPS (sending GPS Timing)
4	Controller_TXD (sending GPS Command)
5	Shield
6	LidarPower_enable (Command Output of Controller Unit)
7	LidarPower_disabled_n (Feedback Input of Controller Unit)
8	RFU1 (Interconnect between 1st and 2nd AX100)
9	RFU2 (Interconnect between 1st and 2nd AX100)

Status LEDs

1	GPS Timing (PPS)
2	GPS Command (NMEA Record)
3	LidarPower_enable (Command Output of Controller Unit)
4	LidarPower_disabled_n (Feedback Input of Controller Unit) green: ok (no Problems detected) red: not ok (Locking Cap removed? / Hall Sensor attached?)

Mounting Options



DIN Rail Mounting Option (Similar Photo)



Wall Mount Plate Option (Similar Photo)

Ordering Information

For popular AX100 SKUs please contact sales@ekf.de

Embedded Blue[®]

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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