

# Data sheet

# **EVK ABAS ThinLine**

Vo2-22-EN



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# EVK ABAS ThinLine

## Smart metal scanner

- Detection of ferrous, non-ferrous metals, stainless steel
- Direct steering of the ejection unit
- GigE Vision interface
- Working widths from 600 mm to 3000 mm

**Description** The EVK ABAS ThinLine (TL) is an inductive metal scanner for use in sensor-based sorting machines for detection and sorting of metals.

The sensor can be mounted under a conveyor belt and delivers spatially resolved information of conductive material in the material flow. The metal scanner produces binary information that drives a corresponding I/O module and subsequently ejection units.

In combination with an EVK proprietary I/O system, EVK ABAS TL offers a complete solution to machine builders for detection and sorting of metal particles.

**Key features**

- Real-time detection of ferrous and non-ferrous metal particles
- Available for working widths from 600 mm to 3000 mm
- EVK ABAS TL can be combined with EVK proprietary I/O module for driving ejection units

**Client benefits**

- In-line detection of metal objects in real-time
- Supports commonly used machine working dimensions
- Easy and fast integration
- Designed for use in harsh environments

**Typical applications**

- Recovery of metals in automotive scrap
- Recycling and recovery of metals in bulk material
- Recovery and elimination of metals in polymer sorting
- Recovery and elimination of metals in glass sorting
- Foreign body detection in wood
- Recycling of C&D waste

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## Technical Data

Maximum material flow speed	2.5 m/s (valid for smallest detectable particles)
Sensitivity	Detectable metal parts of 4mm grain size at operating distance of 6 mm
Standard working widths	600 mm, 1000 mm, 1200 mm, 1600 mm, 1800 mm, 2000 mm, 2400 mm, 3000 mm
Power supply	+24V DC + -10%
Power consumption	Up to 10W
Interfaces / connectors	3 connectors: Connector 1: Power Supply Connector 2: GigE Vision / GEN<I>CAM Connector 3: SPI (for EVK I/O modules)
Dimensions (L x W x H)	(Working width + 306) x 90 x 60 mm
Weight	7 kg (@ 1 m length)
Protection system	IP 65
Operating temperature	0 to +40 °C
Storage temperature	-25 to +75 °C
Humidity	10% to 80%

## Order Information

Product	Order Number	Working width	Sensor length
EVK ABAS TL 600/RM25/24/SPI/Eth	AGX-19079	600 mm	906 mm
EVK ABAS TL 1000/RM25/40/SPI/Eth	AGX-19090	1000 mm	1306 mm
EVK ABAS TL 1200/RM25/48/SPI/Eth	AGX-19125	1200 mm	1506 mm
EVK ABAS TL 1600/RM25/64/SPI/Eth	AGX-19114	1600 mm	1906 mm
EVK ABAS TL 1800/RM25/72/SPI/Eth	AGX-21003	1800 mm	2106 mm
EVK ABAS TL 2000/RM25/80/SPI/Eth	AGX-20009	2000 mm	2306 mm
EVK ABAS TL 2400/RM25/96/SPI/Eth	AGX-21004	2400 mm	2706 mm
EVK ABAS TL 3000/RM25/120/SPI/Eth	AGX-20010	3000 mm	3306 mm

Cables	Order Number	Cable length
EVK ABAS Power Supply external	BKE-18129_20.0	20 m
EVK ABAS SIO-Cabel external	BKE-18130_20.0	20 m
EVK ABAS Ethernet Cat5e external	BKE-18131_20.0	20 m

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Dimensions (mm)

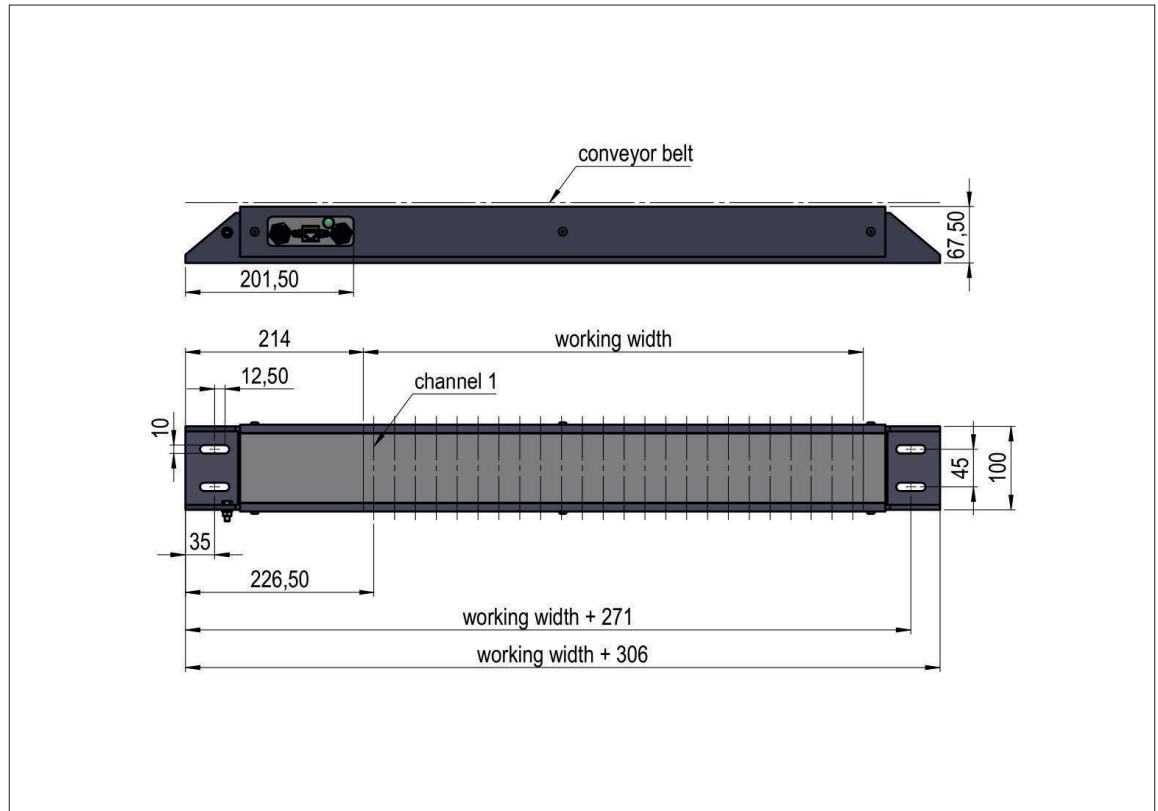


Figure 1: Mechanical dimensions

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I/O Module Products in connection with EVK ABAS TL sensor

Product	Order Number	Description
48k GPIO	BKE-00013	48k GPIO card receives binary data from ABAS TL and drives 48k DOUT-S module
48k DOUT-S	BKE-10001	48k DOUT-S Card is an extension to the 48k GPIO card and can directly drive up to 240 ejectors in cascading mode

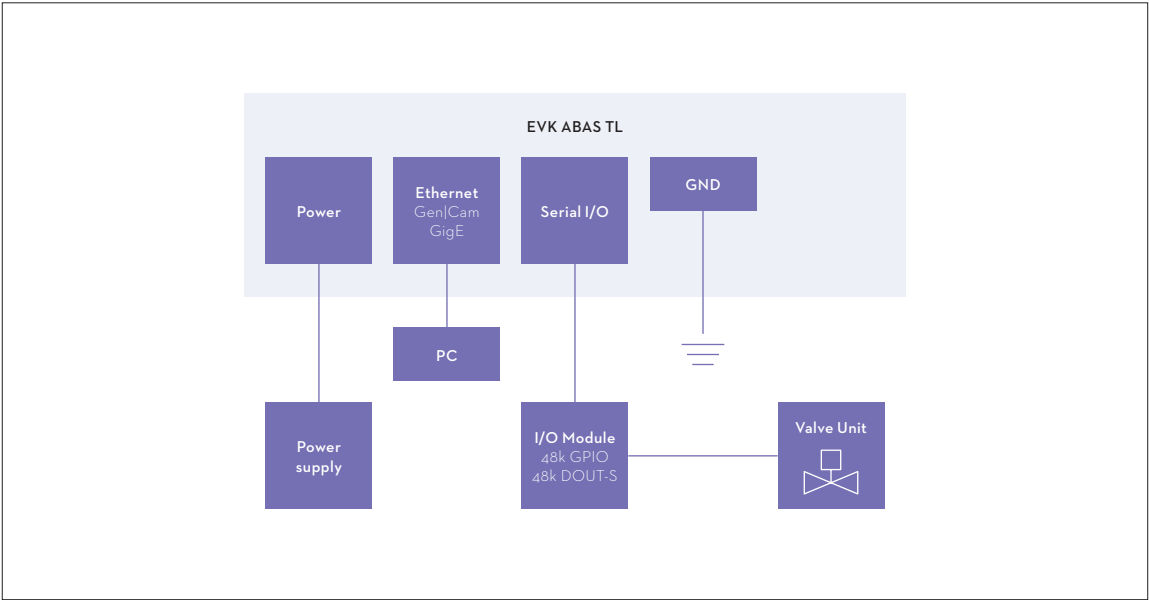


Figure 2: Block diagram of a complete system

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**Sensitivity**

6 mm distance between target and sensor surface

Sensitivity		EVK ABAS TL	
Detection Diameter	Target - disc shaped		
	Material	Diameter	Thickness
	Cu [2.0060]	4 mm	0.5 mm
	Aluminum [Al99,5]	4 mm	0.5 mm
	Stainless Steel [1.4301]	5 mm	0.5 mm
	Steel [S235JR]	6 mm	0.5 mm

Minimum detectable target size at constant distance of 6mm

**Sensitivity**

6 mm distance between target and sensor surface

The noise level of the sensor is specified by the standard deviation (sigma) of the signal amplitude. The detection limit is given at 3\*sigma, which results in a confidence level of 99,7%.

The signal to noise ratio (SNR) is calculated by the formula  $SNR\text{ dB} = 10 * \log(S/\sigma)$ .

