

EVK ABAS TL

smart metal scanner

- Detection of ferrous, non-ferrous metals, stainless steel
- Direct steering of the ejection unit
- GigE Vision interface
- Working widths from 600mm to 2000mm



Description

ABAS 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, 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 600mm to 2000mm
- ABAS TL can be combined with EVK proprietary I/O module for driving ejection units

Typical Applications

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

Customer 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

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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 6mm
Standard working widths	600mm, 1000mm, 1200mm, 1600mm, 2000mm
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	7kg (@ 1m 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
ABAS TL 600/RM25/24/SPI/Eth	AGX-19079	600mm	906mm
ABAS TL 1000/RM25/40/SPI/Eth	AGX-19090	1000mm	1306mm
ABAS TL 1200/RM25/48/SPI/Eth	AGX-19125	1200mm	1506mm
ABAS TL 1600/RM25/64/SPI/Eth	AGX-19114	1600mm	1906mm
ABAS TL 2000/RM25/80/SPI/Eth	AGX-20009	2000mm	2306mm

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

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Dimensions (mm)

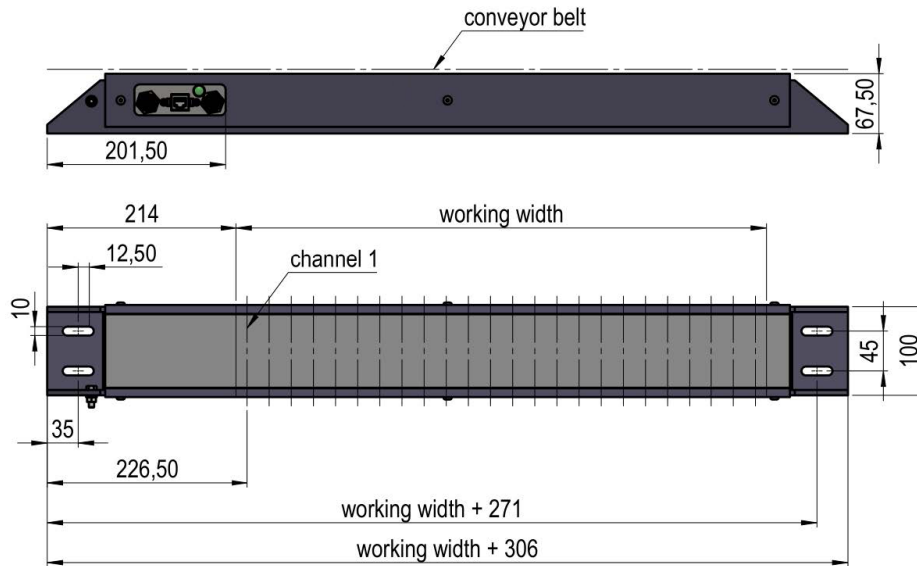


Figure 1: Mechanical dimensions

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

Product	Order Number	Product 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

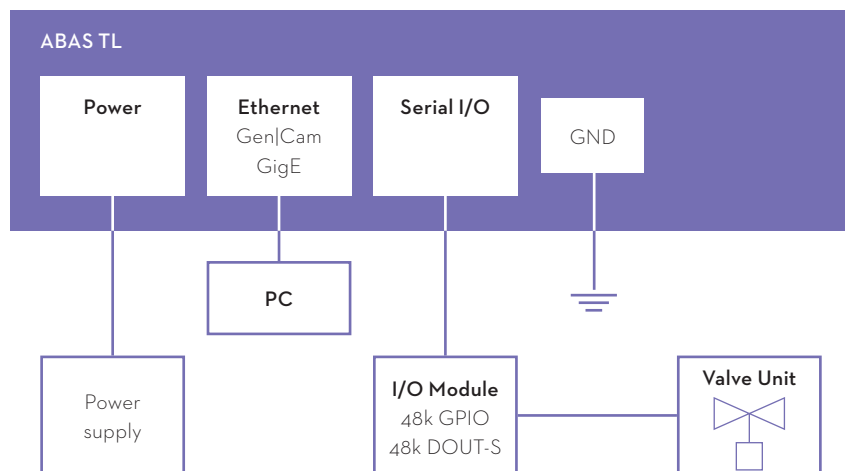


Figure 2: Block diagram of a complete system

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Sensitivity

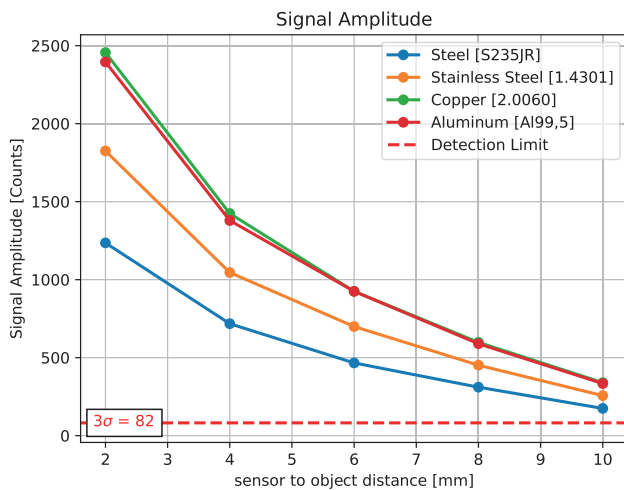
6mm distance between target and sensor surface

Sensitivity	ABAS TL		
Detection Diameter	Target - disc shaped		
	Material	Diameter	Thickness
Minimum detectable target size at constant distance of 6mm	Cu [2.0060]	4mm	0.5mm
	Aluminum [Al99,5]	4mm	0.5mm
	Stainless Steel [1.4301]	5mm	0.5mm
	Steel [S235JR]	6mm	0.5mm

Typical detection

of various materials @constant disc geometry 7,2mm x 0,5mm

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



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

