

APOS MAGNETIC TOUCHLESS

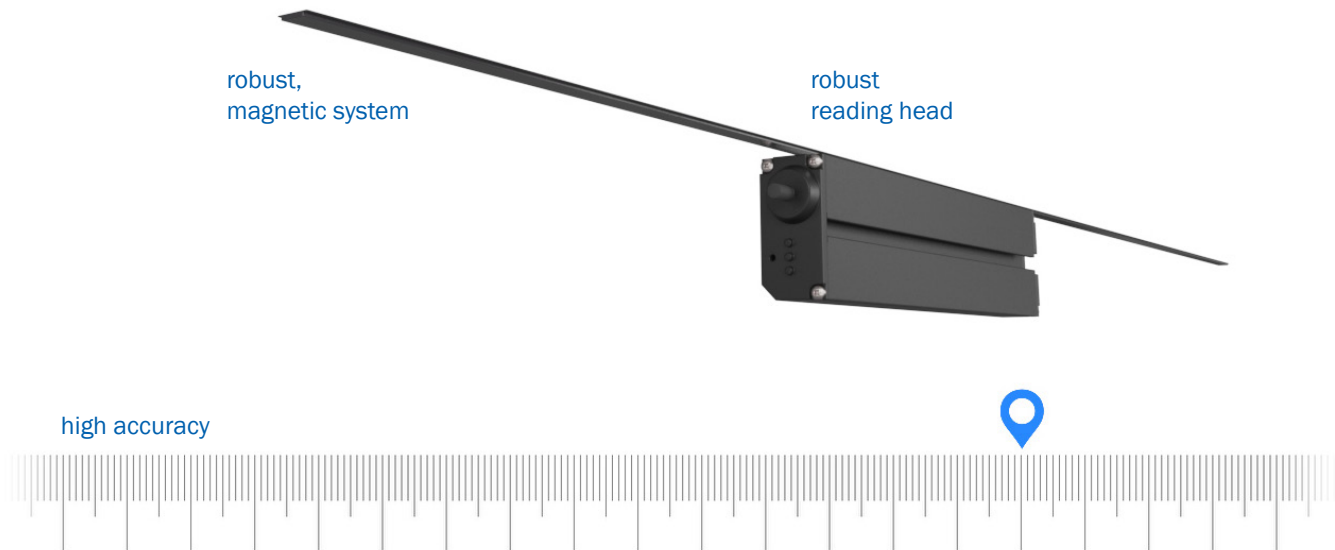
POSITIONING SYSTEM



APOS MAGNETIC TOUCHLESS – SYSTEM

Automated conveyor systems are on the rise in in-plant material flow. The automatic systems are cost-efficient, offer optimized space utilization and enable high speeds. In order to steer them to their place of use without gaps and with millimeter precision, exact positioning is required.

In contrast to its sister product, the APOS Magnetic Touchless ensures a contactless process. It is also based on a magnetic code tape, but the read head is guided along the code tape with the aid of a guide carriage in an absolutely contactless and thus wear-free manner.



ADVANTAGES

- Robust magnetic method
- Safe & reliable even in harsh environments
- Non-contact method (no wear on the read head)
- High accuracy of 1 mm
- Plug & Play (no configuration necessary)
- Compact reading head dimensions
- Different interfaces available
- Can also be used individually as empty housing with regard to support system
- Can be combined with VAHLE conductor systems as a system solution

APPLICATIONS

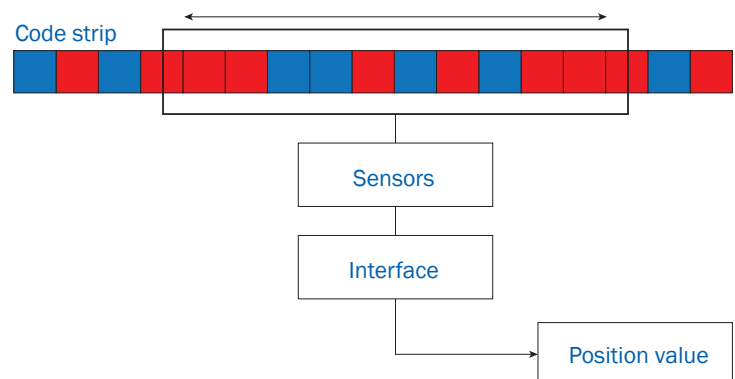
- Standard cranes
- Process cranes
- Gantry cranes
- Heavy-duty cranes
- Bucket conveyor systems

FUNCTIONAL DESCRIPTION

The 15-bit system can be used for system lengths of up to 262 m. The system length can be doubled by adding a second reading head with opposite reading direction and retraction direction of the code strip.

The electronics of the reading head scans the magnetized code tape without contact and decodes the absolute positions safely and reliably.

The current position value is output via the respective communication interface to the customer's downstream control system for further processing.



COMPONENTS ELECTRONICS

Reading heads

The heart of the system is the contactless reading head. The standard length of the connection cable is 5 m. The reading head

Mechanical data

Dimensions..... 245x55x26 mm
 Reading distance 4 mm \pm 1 mm
 Connection length..... 5 m

Electrical data

Protection class..... IP54
 (special version with IP67 available)
 Voltage 10...30VDC
 Interfaces..... RS485 und SSI
 Temperature -20 °C...+65 °C
 Accuracy..... \pm 1 mm



The reading head is available with the following interfaces from VAHLE:

Type	Description	Order No.
LK-LB15A-RS485-5000-54	RS485	10016941
LK-LB15A-SSI_BC-5000-54	SSI BINÄR	10016943
LK-LB15A-SSI_GC_PRE-5000-54	SSI GRAY PRE	10016945
LK-LB15A-SSI_GC_PST-54	SSI GRAY PST	10016946
LK-LB15A-SSI_BC-5000-67	SSI BINÄR – special IP67	10030445

Reading head carrier

The reading head carriers from VAHLE ensure transport and exact guidance of the reading head along the respective conductor line while precisely maintaining the tolerance for non-contact scanning of the code strip.



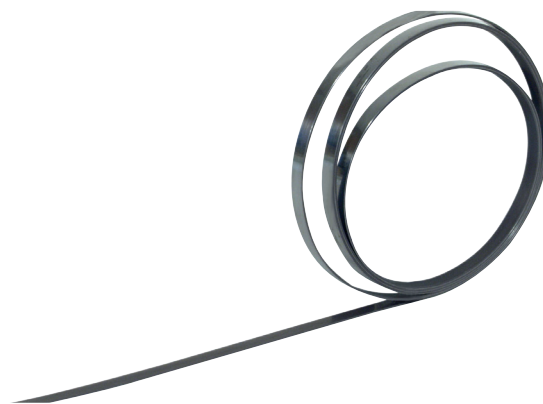
Type	Description	Order No.
LK-LWK	Carrier for KBH	2823445/02
LK-LWM	Carrier for MBH	2823261/02
LK-LWMX	Carrier for curved track for MKH	0262360

COMPONENTS MECHANICS

Code strip

The magnetic code strip contains the absolute position value, which is decoded by the electronics of the reading head.

Type	Description	Order No.
CB-75/15-262	Code strip 15 bit	2823254/01



The code strip has a pole separation of 8 mm and is coded with 15 bits. This results in a max. absolute position of 262 m. In addition, another code strip can be used. For plant lengths over 262 m, there are various technical options. Please do not hesitate to contact us.

Support profile

The support profile requires appropriate components, which are used for mounting the code strip in the respective conductor system.



Wave tape with code strip and feeding tool

The conductor bar empty housing may also be used as a support profile for the positioning system.

Type	Description	Order No.
ZB-ZAK	Assembly set for KBH	2823281
ZB-ZAM	Assembly set for MKH/MKL	2823282
FP75-25-KBH	Wave tape – KBH	2823257
FP75-20-MKH	Wave tape – MKH	2823280

SPARE PARTS / TOOLS / ACCESSORIES



Type	Description	Order No.
FESTPUNKT (FIXPOINT) APOS-KBH (Set)	Spare / single part KBH	2516981
FESTPUNKT (FIXPOINT) APOS-MKL-MKH (Set)	Spare / single part MKH/MKL	2516982
MZ-EZR9/10-MKL/H (see picture above)	Feeding tool	0234730

GATEWAY

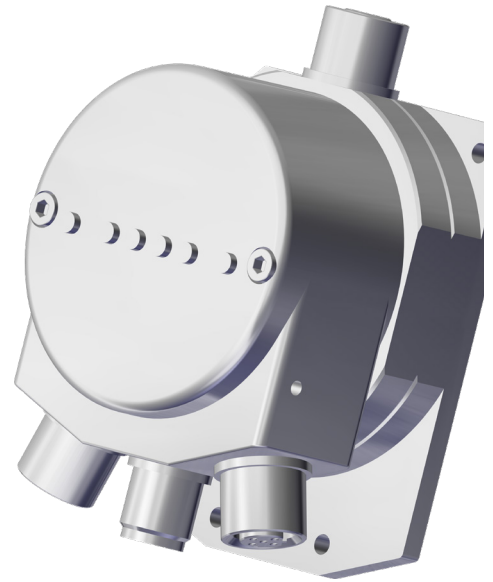
With the optional interface converter (so-called „gateway“) from VAHLE, the SSI interface of the reading head can be extended to other industrial applications. We currently offer the following interfaces:

- EtherNet/IP
- PROFINET
- EtherCAT

The gateway is only compatible with the SSI GRAY PST reading head.

An adapter cable is also required for the connection.

The reading head is supplied directly via the gateway.



Type	Description	Order No.
APOSM-ZH-SU-ET-SSI-Ethernet/IP+V	Interface Ethernet/IP	10032682
APOSM-ZH-SU-PT-SSI-Profinet+V	Interface PROFINET	10032596
APOSM-ZH-SU-EC-SSI-Ethercat+V	Interface EtherCAT	10032782
APOSM-ZH-SU-AL-1500+V	Adapter cable – 1,5 m	10032630

DISPLAY UNIT

With the optional display unit, it is possible to read out the position values of the reading head even without a controller. Particularly helpful during commissioning or in the event of errors.

The display unit is only compatible for reading heads with SSI interface.



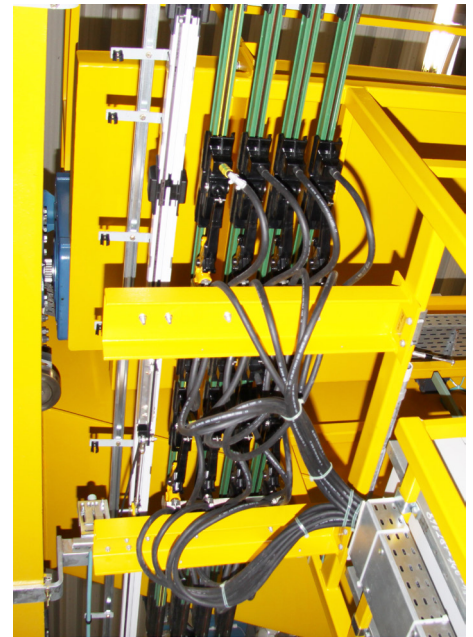
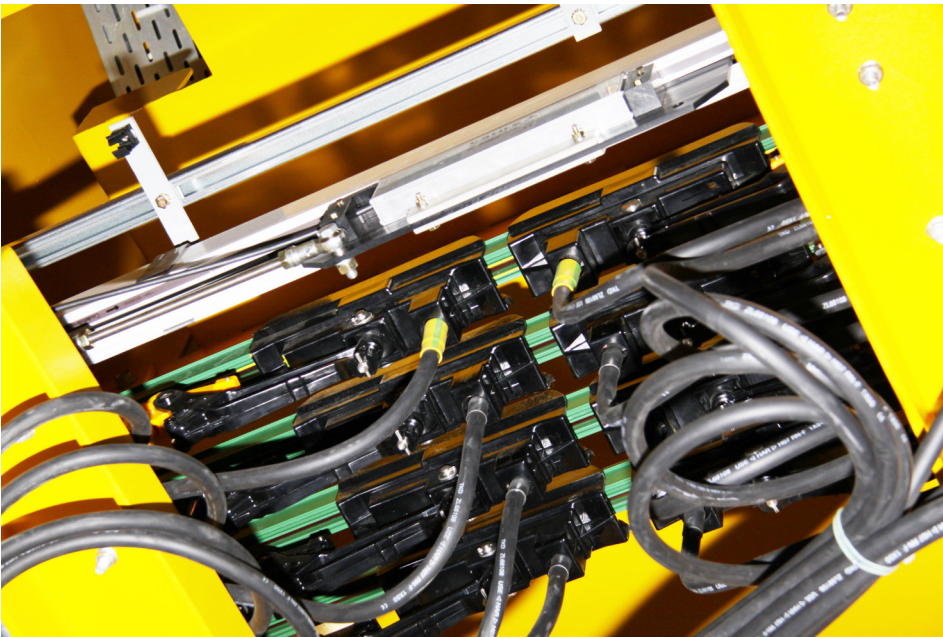
Type	Description	Order No.
APOSM-ZH-AG-01+V	Display unit for SSI reading heads	10030069
SAC-8P- 3,0-PUR/M12FS	Adapter cable – 3 m	10030856

Download operation manuals and more at
<https://www.vahle.com/en/download>



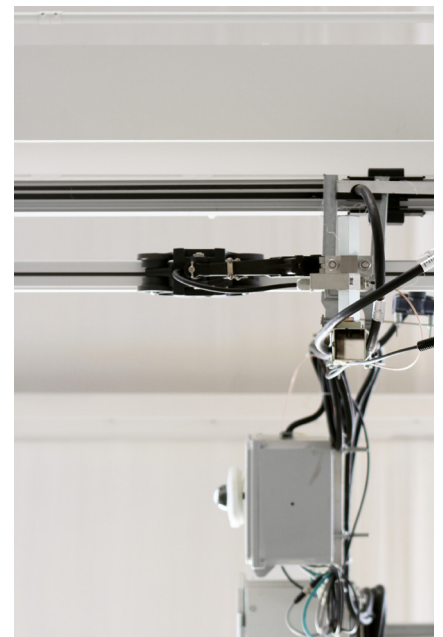
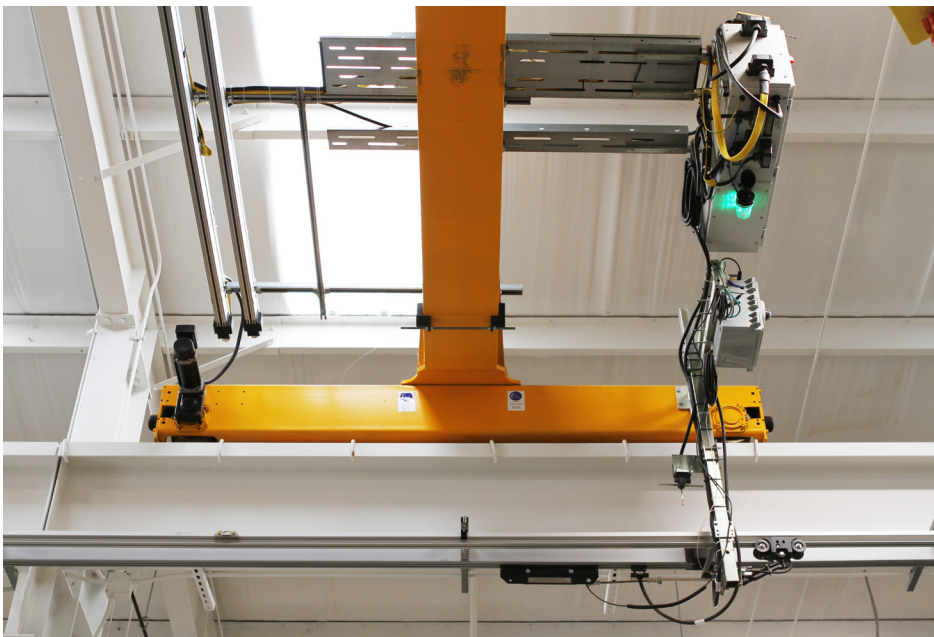
APPLICATION EXAMPLE - AUTOMATED CRANE

A heavy-duty process crane equipped with VAHLE U35 insulated conductor bars for main power supply and VAHLE KBH enclosed conductor bar system, which includes embedded APOS magnetic strip for precise positioning.



APPLICATION EXAMPLE - AUTOMATED CRANE

A festoonless overhead crane featuring the VAHLE KBH enclosed conductor system for main power, equipped with embedded APOS magnetic strips for positioning, and the VAHLE SMGX protected data communication system.





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