

HAS-Interface

Technical Information

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This manual was produced on a personal computer using MS-Word for Windows. The text was printed in *Arial* type.

Fonts

Italics and **bold** type are used for the title of a document or to emphasize text passages.

Passages written in *Courier* show text which is visible on the display as well as software menu selections.

"< >" refers to keys on your computer keyboard (e.g. <RETURN>).

Note

Text following the "NOTE" symbol describes important features of the respective product.

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Revision History

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Note:

The cover of this document shows the current revision status and the corresponding date. Since each individual page has its own revision status and date in the footer, there may be different revision statuses within the document.

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Revision	Date

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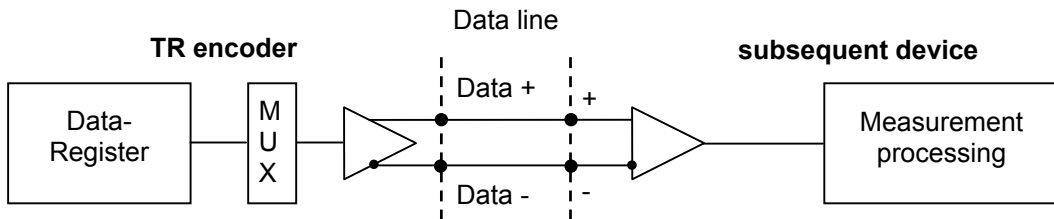
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1 HAS-Interface (Highspeed-Aynchronous-Serial)

1.1 Block diagram, standard HAS-encoder

1.2 Description

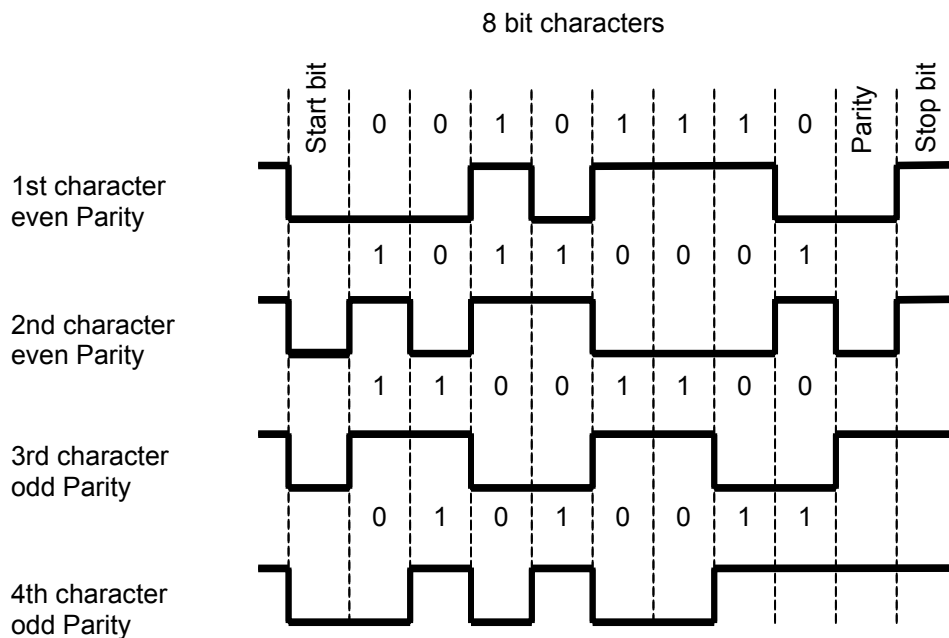


The **HAS** data communication is a **H**ighspeed-**A**ynchronous-**S**erial transmission for binary position data with 24 bits data length. The electric data correspond to the RS422 interface with two lines for the inverted and the not inverted signal.

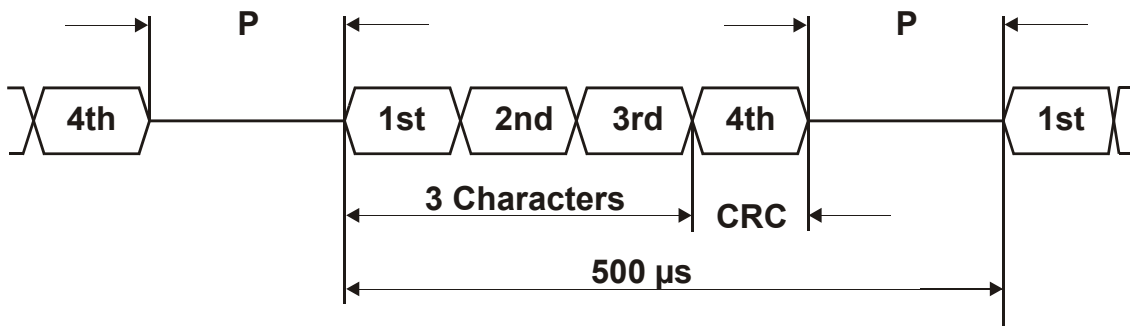
The baud rate used in the HAS protocol is 125 kBaud. In each case 8 data bit are transferred together with 1 parity, 1 start bit and 1 stop bit. At a position report altogether 4 characters each with 8 bits are transferred. The transmission of a complete position report with pause takes 500µs. Thus, the positions are transferred in 2 kHz rhythm.

To guarantee an error-free data transmission, twisted-pair lines must be used. Under ideal conditions the data transmitting length is max. 1000 m.

1.2.1 Telegram structure



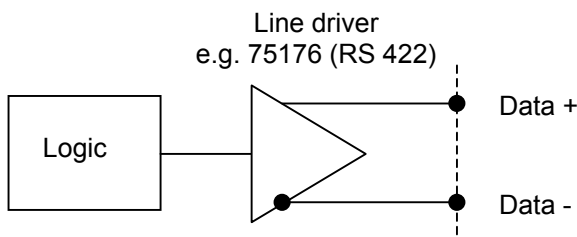
1 st Character	2 ¹⁶	to	2 ²³	Even Parity	
2 nd Character	2 ⁸	to	2 ¹⁵	Even Parity	
3 rd Character	2 ⁰	to	2 ⁷	Odd Parity	
4 th Character	CRC	2 ⁰	to	2 ⁷	Odd Parity



P: pause for synchronization
 Transmission time of one character: 88 µs (theoretical)

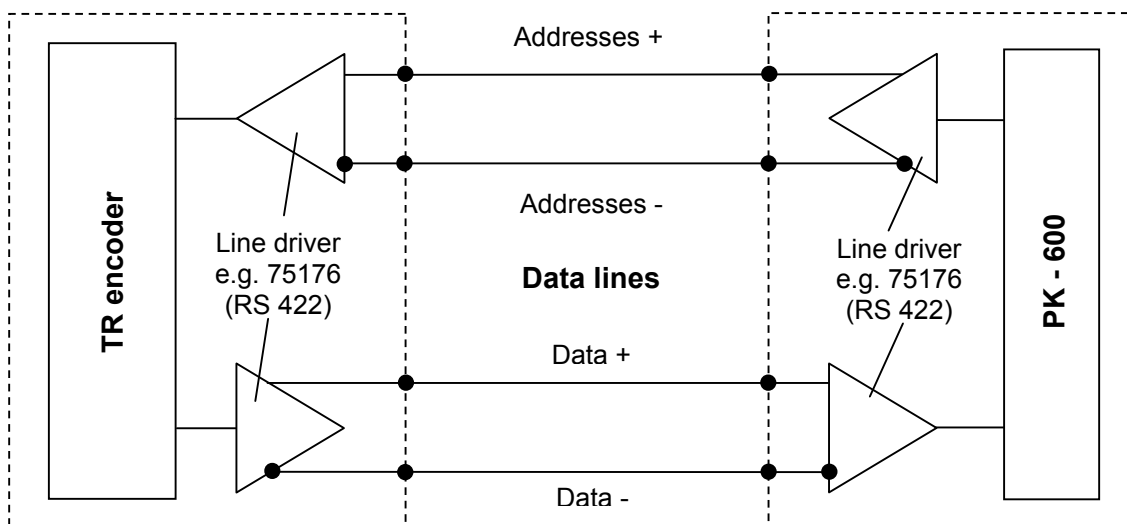
1.2.2 Interface – hardware without addressing (standard)

If the encoder is correctly wired and supplied with voltage, the encoder returns permanently and without request its current position data on the data lines.



1.2.3 Interface – hardware with addressing

If several axes must be managed, 2 further lines (Adr.+ / Adr. -) are used to switch the desired encoder active (connection example with PK-600 as control-system).



1.2.3.1 Connection example with PK-600 as control-system

