Execution Times Ident-I System S

The execution times of the R/W operations between IPH-.. read/writeheads and datacarriers IPC… are as follows:

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Reading Fixcode (IPC02, IPC11):	40ms
Reading Fixcode (IPC03):	130ms
Reading Data IPC03 (n blocks x 4 Byte):	100 + n * 30ms
Writing Data IPC03 (n blocks x 4 Byte):	100 + n * 100ms

Less data than 4 byte could not be transmitted.

For the IPC03 tags there is a possibility to accelerate the speed of data transmission, the so called Default Read Mode. Here the no. of desired data blocks has to be preconfigured in every tag.
The access to the desired data is than performed with a read command of '0' byte of data from the start address '00'. Now the execution time of that command is calculated:

Reading Data IPC03 (n blocks x 4 Byte):   n * 60ms

Velocity – Max. Speed of tags passing the readhead
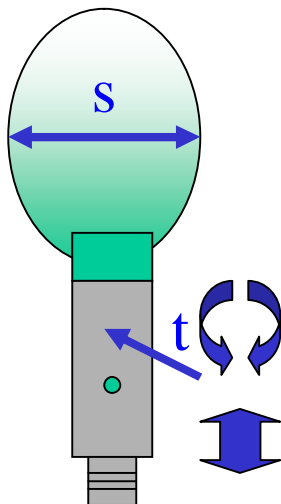
Regarding to the formula $v = s/t$ the possible maximum velocity is calculated out of the size of the reading field and the execution times of the operation (see above figures).

The reading field could be estimated as the size (diameter) of the readhead. The field has its widest range in about half of maximum reading distance.

Because in industrial environment the communication between readhead and tag may somewhen be distorted by EMC, there must be some time to repeat the operation. We recommend to consider that time into the calculation in order to have a reliable system.

So for a reliable field installation we have the following formular:

V_{max} = Diameter readhead / (2 x Execution times)

For writing operations we recommend to have the tag standing still.
If a tag travels out of the field during the writing operation, it may happen that some data blocks are already written with new data, while the remaining blocks still have the old data in the memory. Even if the IdentControl sends an error-message in that case, it may cause problems at the next location where the data is read.

Reading / Writing of large amount of data

Due to the fact, that the data telegrams of most field buses are limited, it is necessary to cut the desired data in several telegrams. E.g. the IdentControl from P+F has a maximum data size of 60 byte (user data, total size of telegram is 64 or 66 byte).

To read or write more memory, the max. no. of data blocks is 15, because the length of each block is 4 byte..

For the calculation of the velocity it has to be considered not only the execution times of the readhead, but also the cycle times of the PLC which it needs to receive the responses from the IdentControl and sending the next command.