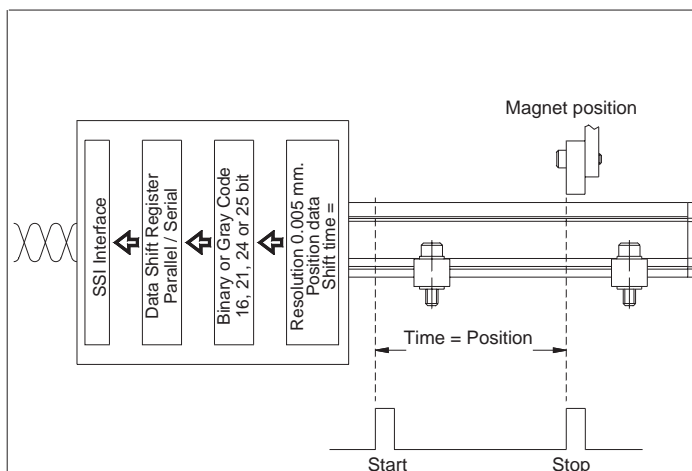


IK2 SSI SYNCHRONOUS SERIAL OUTPUT

The diagram illustrates the operation of an IK2 sensor with SSI (Synchronous Serial Interface). The position of the magnet on the sensor is defined with the magnetostrictive system. The shift signal is supplied in binary for or in Gray Code (16-21-24-25 bit) and transmitted to the controller by means of SSI. The refresh rate can be up to 2000 measurements/second (depending on length). The output is absolute, meaning that data on magnet position is immediately available when the system is turned on again.

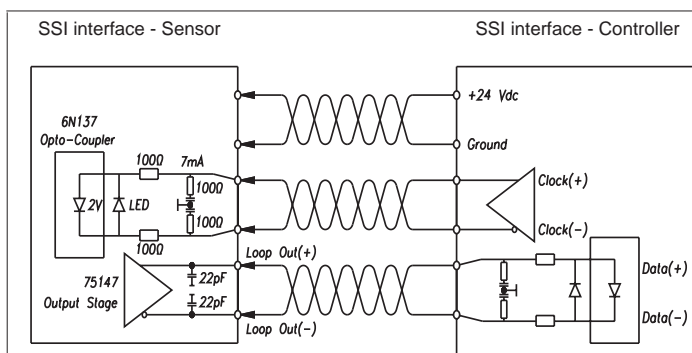
SSI BLOCK DIAGRAM



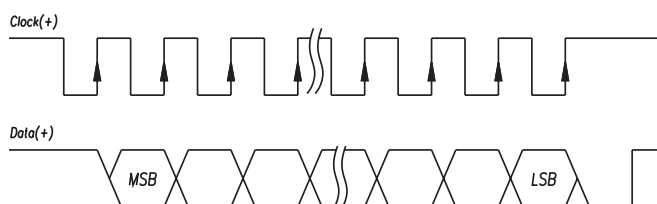
IK2 SSI SYNCHRONOUS SERIAL OUTPUT

The Synchronous Serial Interface (SSI) is commonly used as an interface between an absolute position sensor and a controller. The SSI uses a pulse train to initialize the sensor output. Position data are continuously refreshed and made available in the shift register. There is a minimum interval of 16 microseconds between each pulse train, during which the new data are transmitted to the register. Data are sent when the sensor receives a pulse train from the controller. When the least significant bit (LSB) goes HIGH and a minimum interval has lapsed, the new data are available (see the diagram for reading).

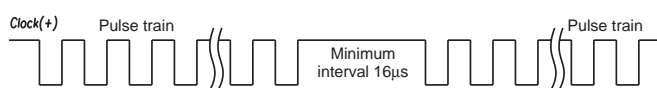
SSI BLOCK DIAGRAM



SSI- Block Diagram



SSI - Time Diagram



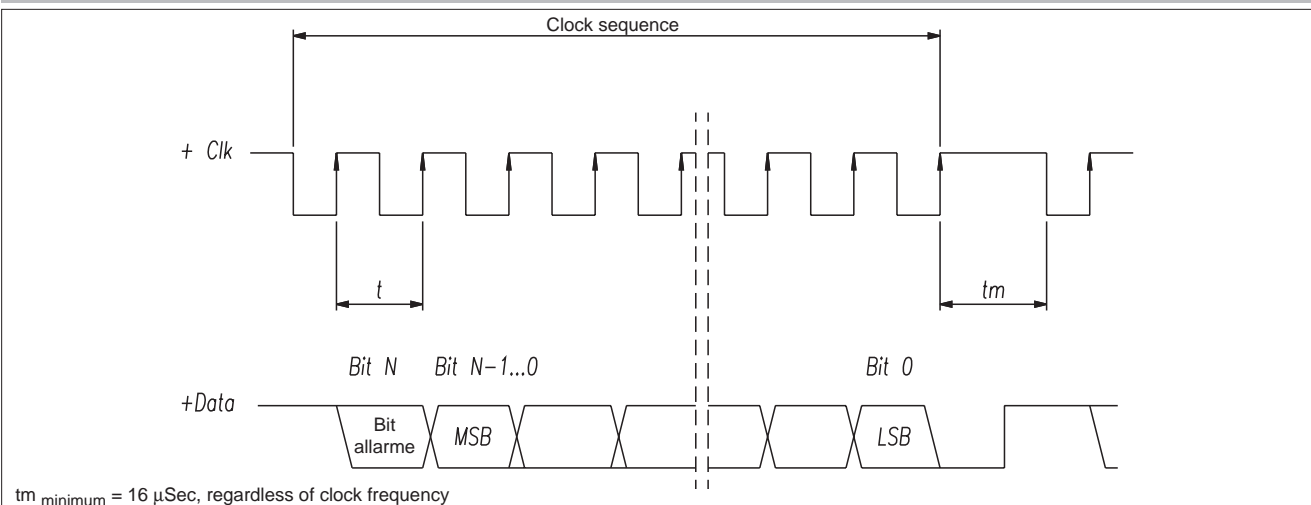
Baud rates for data per transmission (depending on length)

Cable length (meter)	<3	<50	<100	<200	<400
Baud Rate	1.5Mboud	<400kHz	<300kHz	<200kHz	<100kHz

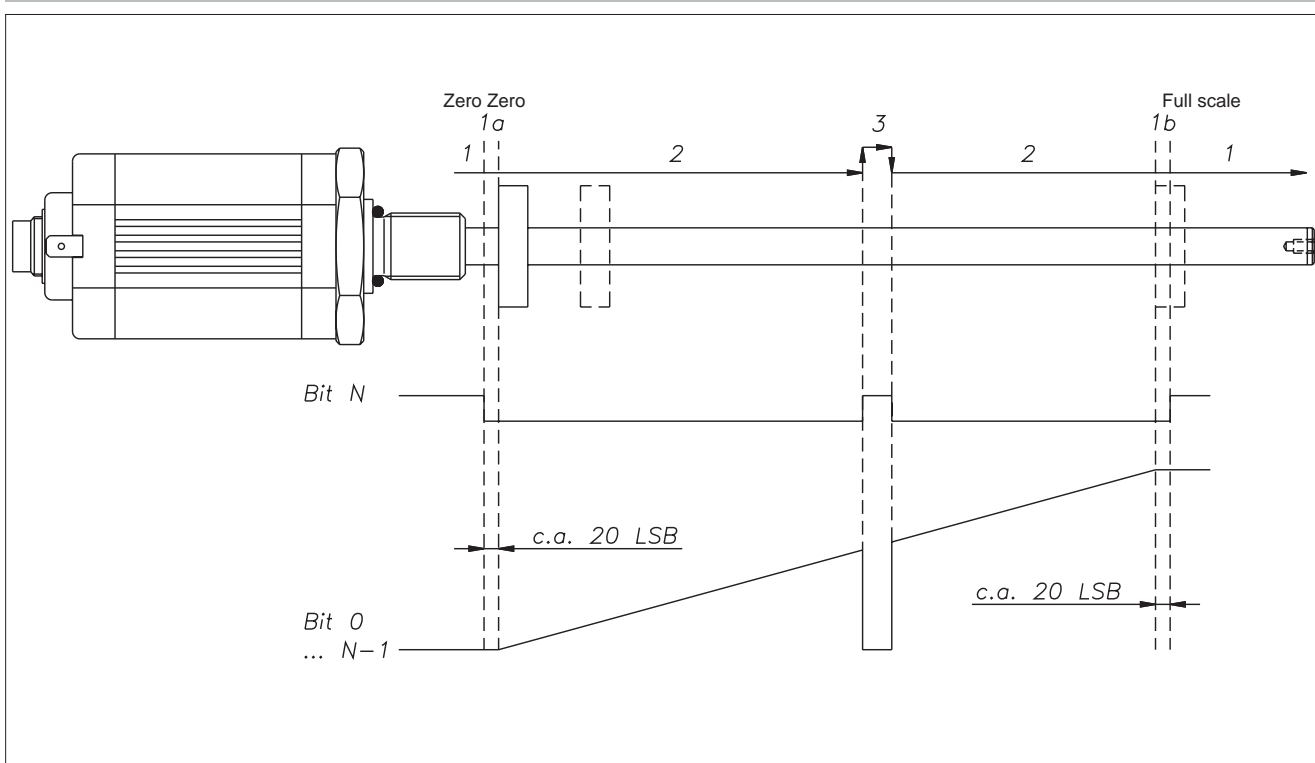
Max. frequency: 2Mhz

Min. frequency: 50Khz

DATA FORMAT



ERROR MESSAGES



Magnet position	Bit N	Bit N-1...0
1: Out of measurement range	1	0
1a: Out of measurement range	0	0
1b: Out of measurement range	0	Full scale
2: Within measurement range	0	Prop. to dist.
3: Magnet not present	1	0

GEFRAN spa reserves the right to make aesthetic or functional changes at any time and without notice.