

## General Settings

Settings of RS485 serial interface:

- 19200 Baud
- 8 Bit
- no parity
- 1 stop bit

The factory setting for the slave address of the sensor is <1>.

## Definition of terms

<STX>	= \$2
<ETX>	= \$3
<ACK>	= \$6
<NAK>	= \$15
<PSL>	= check sum low byte
<PSH>	= check sum high byte

The check sum is the 16 bit addition of all instruction values.

E.g.:

<STX>+<ADR>+<\$80>+<\$00>+<\$00>+<ETX>=  
<PSL><PSH>

The check sum is always initialized with zero.

<MWL>	= measured value low byte
<MWH>	= measured value high byte

**Measuring value:** the range of distance is shown in steps from 0 to 1023.

Object distance	Distance value	<MWL><MWH>
Beginning of distance range	0	\$0
End of distance range	1023	\$3FF

**Counting steps:** the measured value set is shown in a range of figures which depends on the sensor construction. From the counting steps the sensor calculates the a/m measured values in consideration of the temperature and the linearisation.

<TMP> = temperature inside the sensor

Temperature: The temperature inside the sensor is shown as 8-bit value as follows:

Binary	Temperature
00000010	2 °C
00000001	1 °C
00000000	0 °C
11111111	-1 °C
11111110	-2 °C

## Instructions

### 1. Slave address setting (\$92)

<STX><ADR><\$92><NEW><\$00><ETX><PSL><PSH>

Valid values for <NEW> are: 0 to 31

### 2. Determination of distance values

#### 2.1 Determination of one distance value (\$80)

<STX><ADR><\$80><\$00><\$00><ETX><PSL><PSH>

After determination of the distance value the sensor remits:

<STX><ADR><MWL><MWH><TMP><ETX><PSL><PSH>

#### 2.2 Continuous determination of distance values (\$81) (factory setting)

<STX><ADR><\$81><\$00><\$00><ETX><PSL><PSH>

After each distance value determined the sensor remits:

<STX><ADR><MWL><MWH><TMP><ETX><PSL><PSH>

#### 2.3 Stopping continuous determination of distance values (\$82)

<STX><ADR><\$82><\$00><\$00><ETX><PSL><PSH>

Repeat this instruction until the sensor does not remit data any longer.

### 3. Distance range setting

#### 3.1 Store actual object distance as 0 % (\$95)

<STX><ADR><\$95><\$00><\$00><ETX><PSL><PSH>

#### 3.2 Store actual object distance as 100 % (\$96)

<STX><ADR><\$96><\$00><\$00><ETX><PSL><PSH>

#### 4. Store actual object distance as XX % in linearisation (\$90)

<STX><ADR><\$90><LIN><\$00><ETX><PSL><PSH>

<LIN>	Distance value	Distance range
\$0	0 %	Marks the beginning of the distance range
\$1	10 %	
\$2	20 %	
...		
\$10	100 %	Marks the end of the distance range

When setting the distance range and during linearisation the sensor returns the stored value after each instruction for confirmation purposes (see 2.2).

The value remitted however is a counting step (see definition of terms.)

#### 5. Set Delay (\$94)

Determine the time in µsec, which the sensor is waiting, until he sends data to the master.

(factory default is 10000)

<STX><ADR><\$94><TML><TMH><ETX><PSL><PSH>