

# Software Manual

## PolyDist V2.0.2

V 0.4

12.02.2019

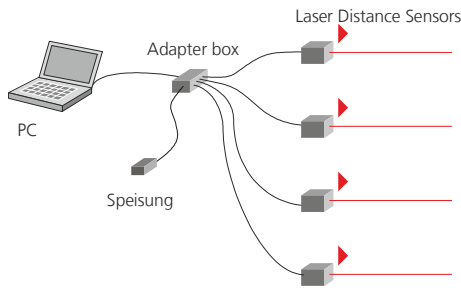


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# 1 Introduction



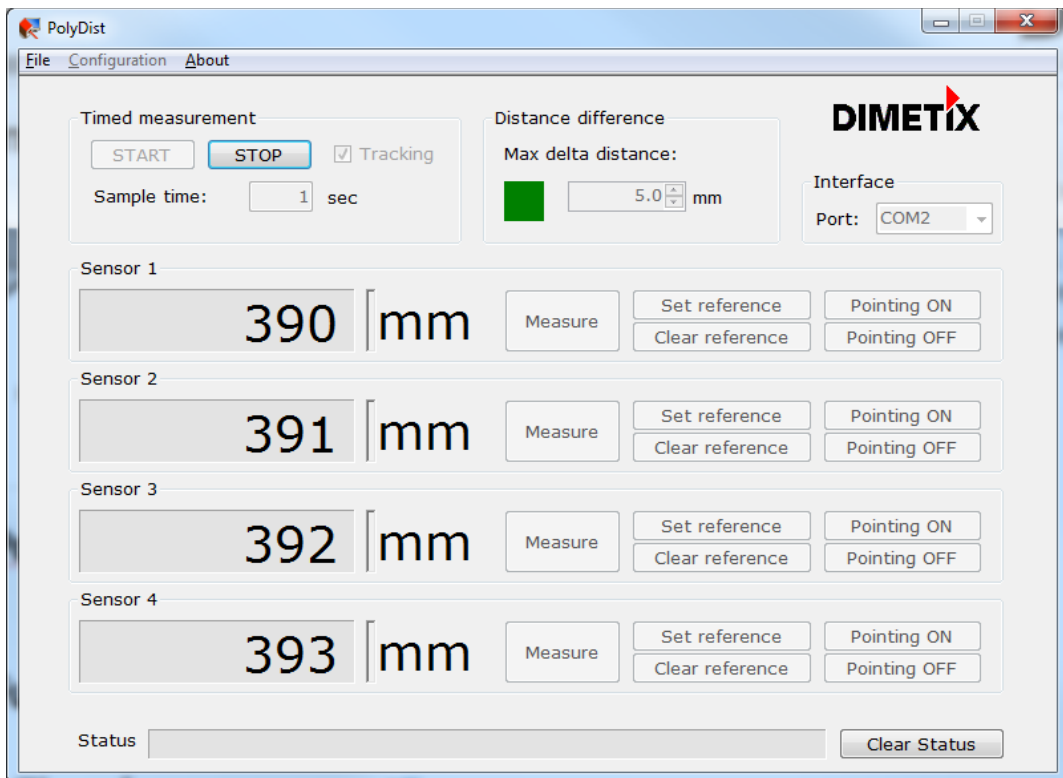
PolyDist is able to monitor up to four distances. The distances can be measured with Dimetix laser distance sensors (DLS-C, FLS-C or D-Series sensors) which are connected over the RS-422 interfaces.

An adapter box is used to connect the RS-422 interface and the power supply of the sensors together. With a RS-422 to RS-232 converter the adapter box can be connected to the serial port of the PC. Other converter can be used to e.g. RS-422 to USB / Ethernet. But it is necessary to have a serial COM port on your system.

The PolyDist software controls up to four sensors and shows the measurement results in the corresponding fields. All necessary functions for installation and operation of the system are provided.

# 2 PolyDist Software

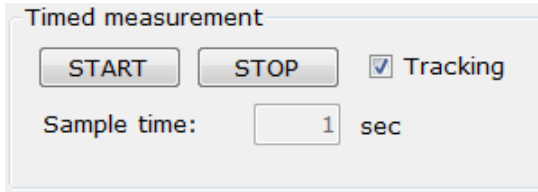
The following figure shows the user interface of the PolyDist software. The distance results are updated in the main display form and in the result file at 6 Hz.



This description is valid for software version V2.0.2.

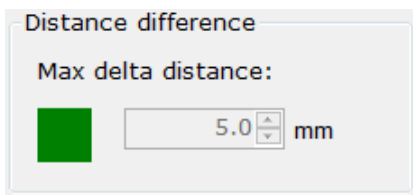
## 3 Functions

### 3.1 Timed measurement



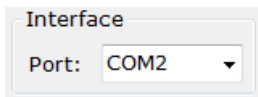
The timed measurement measures the distances of all active sensors sequentially. If *Tracking* is checked, the measurement is done with maximum speed. Otherwise, the measurement sequence is started after the time stated as sample time. The measurement sequence is repeated until the *STOP* button is pressed.

### 3.2 Distance delta supervision



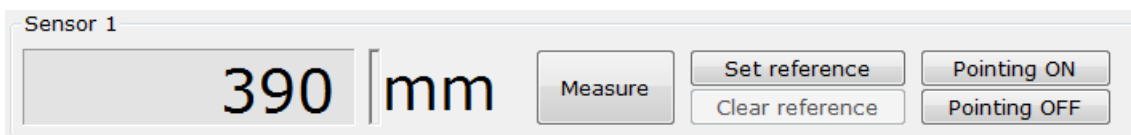
This feature allows the supervision of the max difference between the measured distances. If the difference between the smallest and the largest distance is more than the value set as *Max delta distance* the signal turns to red and the digital output 1 on Sensor 1 is turned on. If the max distance difference is below the set value, the signal turns to green and the digital output 1 on Sensor 1 is switched off. Since the digital output on Sensor 1 is also controlled by this supervision function, an external signal lamp may be connected to Sensor 1 (see chapter 7 External signal lamp on page 7).

### 3.3 Interface



Select the COM port where the Adapter box is connected.

### 3.4 Sensor



A control panel as shown on the left side exists for each Sensor.

#### 3.4.1 Measure

A click to this button triggers a distance measurement of the corresponding sensor. The measured distance minus the set reference distance is displayed as result.

#### 3.4.2 Set Reference

The Sensor measures the distance and this value is stored as the reference distance. After the reference is set, the displayed distance is the difference to the stored reference distance.

#### 3.4.3 Clear Reference

The stored reference distance is reset to zero.



### 3.4.4 Pointing ON

The laser of the corresponding sensor is switched on. Hence, easy alignment of the sensor is possible.

### 3.4.5 Pointing OFF

The laser is switched off.

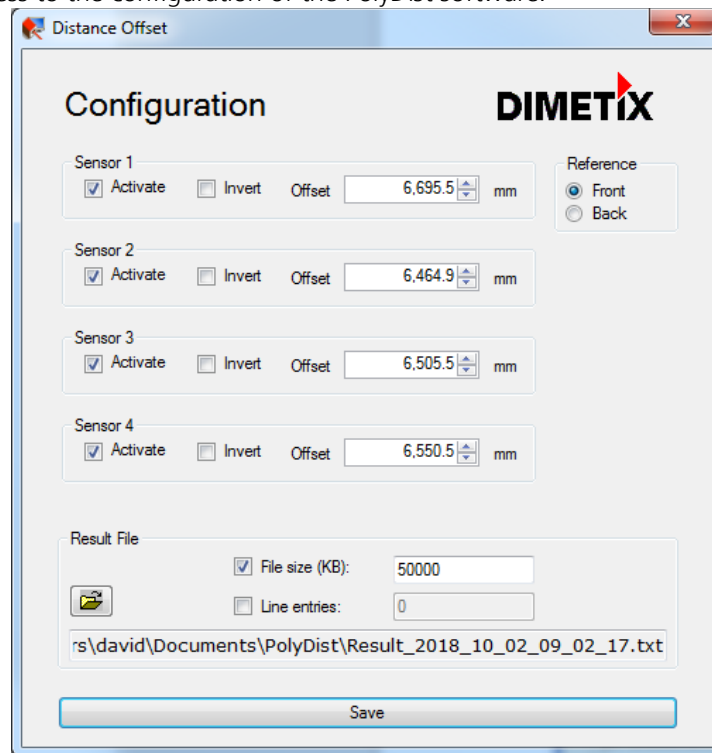
## 3.5 Status



A control panel as shown on the left side exists for each Sensor.

## 4 Configuration

This window provides access to the configuration of the PolyDist software.



### 4.1 Activating

If *Activated* is checked, the corresponding sensor is activated and will process distance measurement. Further, all functions related with the sensor are activated.

Note: Sensor 1 must be activated in order to use max distance supervision.

### 4.2 Offset

The offset field displays the reference distance. On this window manual setting of the reference distance is possible. The offset can be set automatically by pressing the button *Set Reference* on the main window.



### 4.3 Reference

This setting defines the zero reference for all distance measurements. If front is selected (default setting), the distance 0mm is on the front edge of the sensor. If back is selected, the 0mm distance is on the back edge of the sensor. If back is selected, all measurement data logged into the result file are marked with a small 'r' (Reference).

### 4.4 File size and line entries

If file size (KB) is checked, the maximum size of the log file can be set in the text window. When the log file reach the maximum file size it will automatically generate a new log file with the actually time stamp.

If line entries is checked, the maximum line entries of the log file can be set in the text window. When the log file reach the maximum line entries it will automatically generate a new log file with the actually time stamp. To save this settings click the *Set* button in the PolyDist configuration window.

### 4.5 Result file name

Shows the path and file name for the result logging file. To change this setting click the open file button, navigate to the desired path, type a file name in and click open. To save this settings click the *Set* button in the PolyDist configuration window.

## 5 Result File

All measurement results are logged into the result file. This log file is formatted as shown below.

Type	Date	Sensor1			Sensor2			Sensor3			Sensor4		
		Time	Dist	Ref	Time	Dist	Ref	Time	Dist	Ref	Time	Dist	Ref
T	02.10.2018	08:42:28	389.9	0.0	08:42:29	390.9	0.0	08:42:29	392.2	0.0	08:42:29	393.3	0.0
T	02.10.2018	08:42:29	389.8	0.0	08:42:29	390.9	0.0	08:42:29	392.0	0.0	08:42:29	393.3	0.0
T	02.10.2018	08:42:29	389.8	0.0	08:42:29	391.0	0.0	08:42:29	392.1	0.0	08:42:29	393.1	0.0
T	02.10.2018	08:42:29	389.9	0.0	08:42:29	391.0	0.0	08:42:29	391.9	0.0	08:42:29	393.3	0.0
T	02.10.2018	08:42:29	389.7	0.0	08:42:29	390.9	0.0	08:42:30	392.0	0.0	08:42:30	393.2	0.0
T	02.10.2018	08:42:30	389.9	0.0	08:42:30	391.1	0.0	08:42:30	392.1	0.0	08:42:30	393.2	0.0

If an error occurs, the corresponding error number is saved to the log file too.

Different measurement types are marked in the row type as follows:

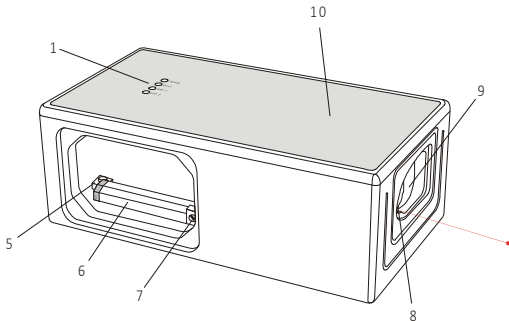
M	Meas	Single measurement
R	Reference	Reference measurement
C	Continuous	Continuous measurement
T	Tracking	fastest possible measurement

If a small r is logged into the file, the measurement reference is on the back of the sensors.



## 6 Sensors

### 6.1 DLS-C / FLS-C sensors



The DLS-C / FLS-C sensors are identified with an ID switch, which is inside the device (7). The DLS-C / FLS-C sensor with ID1 corresponds to sensor 1, the sensor with ID2 corresponds to sensor 2 and so on.

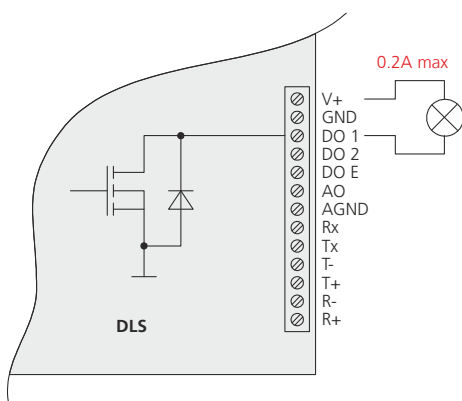
The ID switch is located behind the cover on the side of the DLS-C / FLS-C device.

### 6.2 D-Series sensor



The ID of the D-Series can be set with the LaserSensorUtility software or with the commands `sMid+x` and `sNs`. The D-Series sensor with ID1 corresponds to sensor 1, the sensor with ID2 corresponds to sensor 2 and so on.

## 7 External signal lamp



Connect an external signal lamp to signalize an event of too large differences in the measured distances. This signal lamp must be connected to the digital output 1 (DO1) of sensor 1. Connect the lamp between the DO1 output and the positive power supply V+. See the drawing on the left.

