

## Technical Data Sheet

# Remote Display RD.10

for SONOTEC Flow Sensors



The Remote Display RD.10 enables real-time flow monitoring without a PC or PLC. The sensor accessory shows the current flow rate, the volume, the internal sensor temperature, the minimum or maximum flow as well as the measuring state. With plug-in connectors it can be easily connected to all SONOFLOW and SEMIFLOW CO.65 sensors.

The zero reset of sensors via display can be used to control dosing processes.

The display is suitable for applications in fields with strict hygienic standards e.g. the medical technology, biotechnology or pharmaceutical industry as well as chemical and semiconductor industry.

## Overview general data

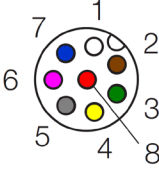
Designation	Dimensions (L x W x H)	Weight	Order No.
<b>Remote Display RD.10</b>	68 x 44 x 27 mm	85 g	200 08 0053
<b>Cable (optional)</b>		<b>Length</b>	<b>Order No.</b>
<b>SONOFLOW sensors — Remote Display RD.10:</b>		1.5 m	400 01 0168
<b>M12 8 pole (female)   M12 8 pin (male), PVC</b>		3 m	400 01 0169
<b>SEMIFLOW CO.65 sensors — Remote Display RD.10:</b>		5 m	400 01 0192
<b>Binder 720 8 pole (female)   M12 8 pin (male), PVC</b>			
<b>Remote Display RD.10 — PLC:</b>		2 m	400 01 0135
<b>M12 8 pin (female)   open end, PVC</b>			

## Technical data

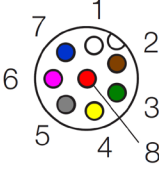
Parameter	Specifications
<b>Display materials</b>	Front foil: Polyester; Housing: PVC-C grey; Potting: PUR blue; Connector: Stainless steel; Pins: Brass
<b>Display format</b>	128 × 64 dots
<b>Numeric display of values</b>	Max. 5 numerals, dynamic decimal point (9 999.9   10 000   ...   99 999) Value > +99 999 = "+ over"   value < -99 999 = "- over"
<b>Display color</b>	White on black screen
<b>Measuring screen</b>	Flow   Volume   (Internal sensor) Temperature   Min. Flow   Max. Flow
<b>Settings</b>	Measurement units, sleep mode, display contrast, zero reset of sensors
<b>Display area (W × H)</b>	23.7 × 12.8 mm
<b>Operating voltage</b>	12 ... 30 V, maximum ripple 10 %, protection against reverse-polarity
<b>Current consumption</b>	Maximum 15 mA
<b>Electrical connection</b>	M12 8 pin / 8 pole connector to sensor, DIN EN 61076-2-101:2012 (see 'Electrical connections' and 'Technical drawings')
<b>Shielding</b>	Required (please refer to section 'Electrical connections')
<b>Interfaces</b>	<ul style="list-style-type: none"> <li>• Current output for flow rate: 0/4 ... 20 mA</li> <li>• Frequency output for flow rate: 0 ... 20 kHz, 5 V digital</li> <li>• RS-485 interface: bus-capable</li> <li>• Switching output: configurable as PNP / NPN / Push-Pull, 0 ... 30 V</li> <li>• Digital input</li> </ul>
<b>Ambient / Media temp.</b>	0 ... 50 °C
<b>Storage temperature</b>	-20 ... +70 °C
<b>Degree of protection</b>	IP65
<b>Directives, standards</b>	RoHS Directive 2011/65/EU, exception: III 7cl/ IV 15; RoHS 2015/863
<b>Maintenance</b>	Maintenance-free
<b>Supported sensors</b>	SONOFLOW CO.55 V2.0 and 3.0   SONOFLOW IL.52 V2.0   SEMIFLOW CO.65 V2.0
<b>Scope of supply</b>	<ul style="list-style-type: none"> <li>• Remote Display RD.10</li> <li>• Technical data sheet</li> <li>• Optional: Connecting cables (please refer to overview on page 1)</li> </ul>

## Electrical connections

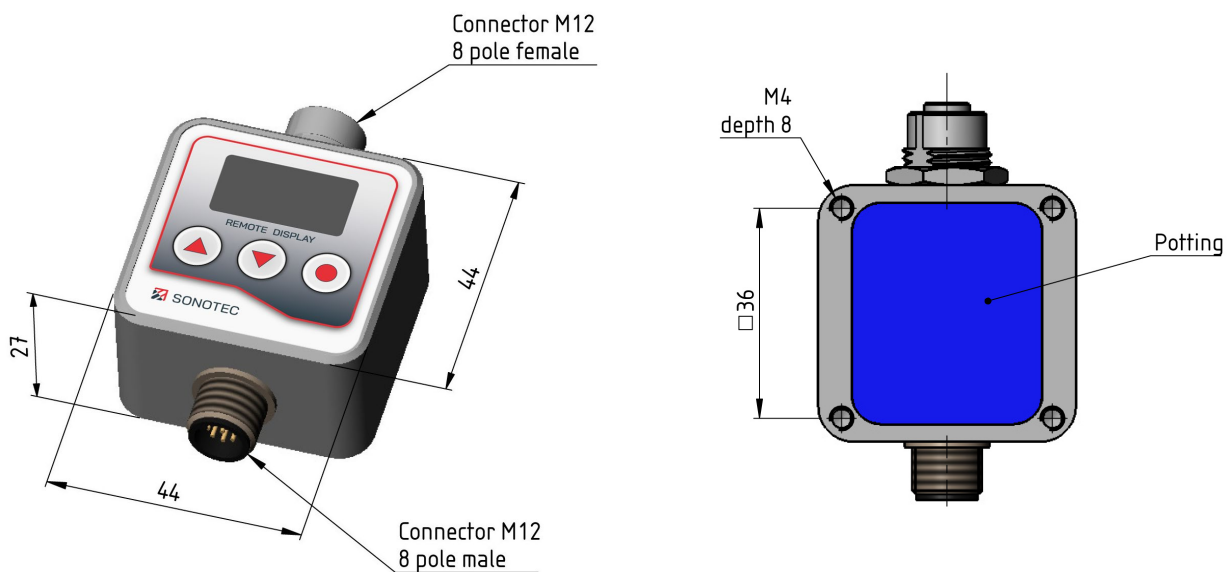
For Sensors of Version 2.0

Connection	Pin	Assignment	Color
 <p>Female connector (to the sensor, upper side RD.10)</p>	1	Ground	White
	2	Operating voltage	Brown
	3	Current output	Green
	4	RS-485 B	Yellow
	5	RS-485 A	Grey
	6	Frequency output	Pink
	7	Switching output	Blue
	8	Digital input	Red
Shielding		Cable shield must be connected to housing	

For Sensors of Version 3.0

Connection	Pin	Assignment	Color
 <p>Female connector (to the sensor, upper side RD.10)</p>	1	Ground	White
	2	Operating voltage	Brown
	3	Current output	Green
	4	RS-485 B	Yellow
	5	RS-485 A	Grey
	6	(not assigned)	Pink
	7	Switching output / frequency output	Blue
	8	Digital input	Red
Shielding		Cable shield must be connected to housing	

## Technical drawings

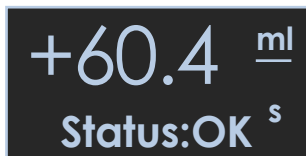


## Display status, navigation, settings and reset values



### Start screen:

- Displayed for 1 second.
- Shows information for identifying the display.



### Measuring screen 1: Flow (default)

- Shows the current flow rate in the selected unit and the measuring state of the connected sensor.

Default setting for flow unit: ml/s (for further options see next page).

▼ Jump to  
volume display



### Measuring screen 2: Volume:

- Shows the current volume in ml and the measuring state of the sensor.

To reset the volume (in the sensor):

- Press
- Confirm the question "Reset volume – are you sure?" with (or cancel the reset with or .

▼ Jump to  
temperature display

The display of "Reset" indicates that the value has been reset.

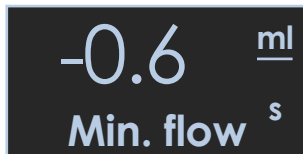


### Measuring screen 3: Temperature

- Shows the internal sensor temperature with the selected unit and the measuring state of the sensor.

Default unit for internal sensor temperature: °C (for further options see next page).

▼ Jump to  
min. flow display



### Measuring screen 4: Minimum Flow

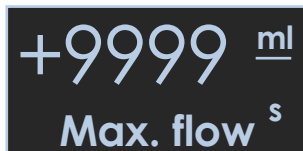
- Shows the minimum measured flow in the selected unit and indicates the type of value in the status line.

To reset the value:

- Press ●.
- Confirm the question "Clear min – are you sure?" with ● (or cancel the reset with ▲ or ▼).

The display of "Clear" indicates that the value has been reset.

▼ Jump to  
max. flow display



### Measuring screen 5: Maximum Flow

- Shows the maximum measured flow in the selected unit and indicates the type of value in the status line.

To reset the value:

- Press ●.
- Confirm the question "Clear max – are you sure?" with ● (or cancel the reset with ▲ or ▼).

The display of "Clear" indicates that the value has been reset.

▼ Jump to  
flow display



### Missing connection to sensor:

The RD.10 checks the connection to the sensor every 5 seconds. "Link?" is indicated in case of a missing connection.

- Ensure that the sensor is connected correctly.

The message "Link?" disappears after the connection has been found.

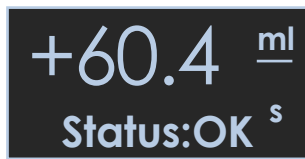


### Error screen:

- Shows error codes (for details and contact see last page).

In case of displayed errors, document the code and contact the manufacturer.

## Change settings and perform zero reset



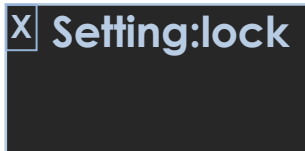
### Measuring screen 1 / 2 / 3 / 4 / 5

- Shows the current value with the selected unit and indicates the type of value or the measuring state of the sensor.

To change settings:

- Press longer than 5 seconds.

5 different settings and exit from settings are available.



### Adapt settings

The setting is locked and the default setting or the last selected value is shown.

- Press to unlock the setting → “Setting: free” is displayed.
- Use the button and to select a value.
- Confirm by pressing .

The setting is activated and locked.

- Jump to next setting
- Jump to previous

1

### Unit flow

Select values:

µl/s | **ml/s** (default) | ml/min | lt/s | lt/min | lt/hr | m<sup>3</sup>/min | m<sup>3</sup>/hr

2

### Unit (sensor) temperature

Select values:

°C (default) | K | °F

3

### Sleep

Select time interval for starting display sleep mode:

**off** (default) | 10 s | 20 s | ... | 2 400 s (in steps of 10 s)

To wake up the display: → Press any button.

4

### Contrast

Select values:

**50 %** (default) | 0 ... 100 % (in steps of 10 %)

5

### Zero reset

Perform zero reset of sensor:

- ① **NOTE:** A zero reset changes the sensor parameters.  
Ensure that the flow is 0 ml/s or in the range you want to set the zero point for your measurement.
- Press to perform zero reset.
- Confirm the question “Set zero flow – are you sure?” with (or cancel the procedure with or .

Display of “Zero” indicates that the value is written to sensor.

6

### Exit

Exit the setup menu:

- Press to turn back to measuring screen.

## Error codes

Error code 'F'	Error	Possible causes and recommended measures
<b>F 0×00</b>	No measuring error	
<b>F 0×01</b>	Signal value not plausible	Check if: <ul style="list-style-type: none"><li>• the tubing is firmly secured in the sensor and cannot move?</li><li>• the tubing is filled with a liquid, without large gas bubbles?</li><li>• the lid of the sensor is closed?</li></ul>
<b>F 0×10</b>	Signal value not plausible	
<b>F 0×81 or higher</b>	Signal value not plausible, no measurement possible	

Error code 'G'	Error	Possible causes and recommended measures
<b>G 0×00</b>	No device error	
<b>G 0×01</b>	Checksum error in parameters	Recheck parameters. (SONOTEC software can be used).
<b>G 0×02</b>	At least one invalid parameter	
<b>G 0×04</b>	Temperature sensor failed	Power OFF / power ON the sensor. If the error persists, return the sensor for repair.
<b>G 0×08</b>	DAC has failed	
<b>G 0×10</b>	Display failed	

Drawings are not to scale. Dimensions in mm, unless otherwise specified. Information is subject to change without notice. SONOTEC is a registered trademark.