

# Technical Information

## Cleanfit COA451

Manually operated retractable assembly for water, wastewater and process media



### Application

- Process measurement
- Water and wastewater treatment
- Drinking water
- Monitoring of surface water
- Fish farming

### Your benefits

- Safe and reliable process termination possible under nearly all conditions
- Process pressure up to 10 bar (145 psi), manually operated up to 2 bar (29 psi)
- Cleaning possible due to rinse water connection
- Rinse water connection can be used as sealing water inlet
- Sensor monitoring and cleaning without process interrupt

## Function and system design

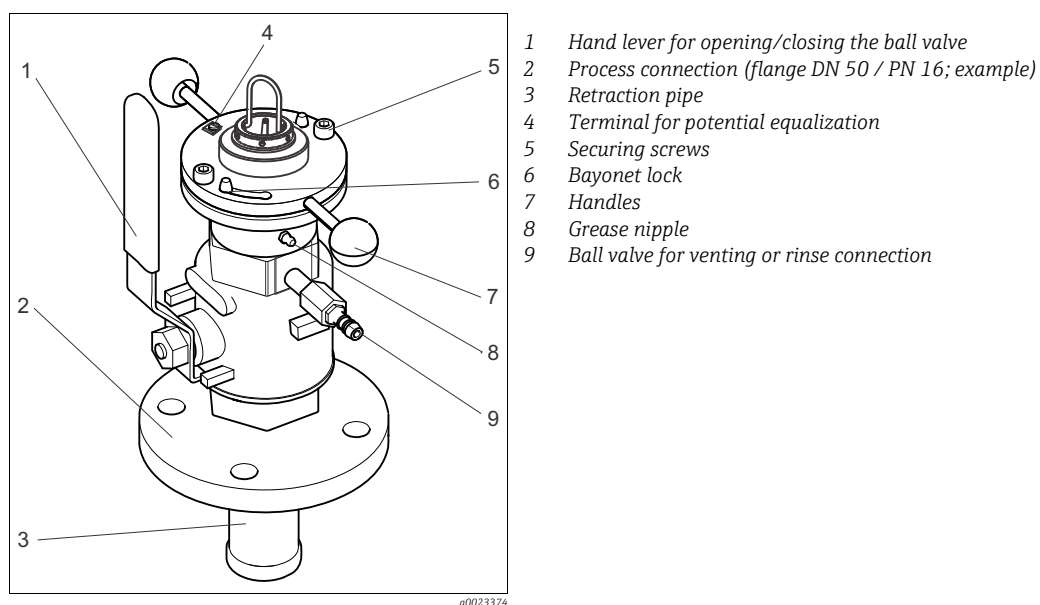
### Function

The assembly is manually operated.

**i** The vent cock or the rinse connections (if used) are in open contact with the medium in the measuring position and when the assembly is moving, and are therefore exposed to the process pressure. Make sure that the vent cock or the rinse connections (if used) are closed when moving the assembly!

In the "Service" state (sensor moved back into the assembly as far as possible and **ball valve closed**), the assembly is sealed off from the process by the ball valve. This means that cleaning and calibration can be performed, or the sensor can be replaced, without interrupting the process.

The assembly can be moved manually under process conditions up to a process pressure of approx. 2 bar (29 psi).

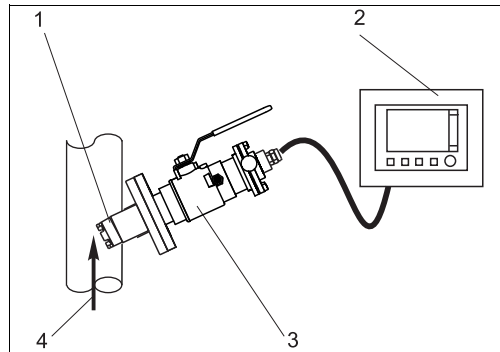


Assembly in operational state (ball valve open)

**Measuring system**

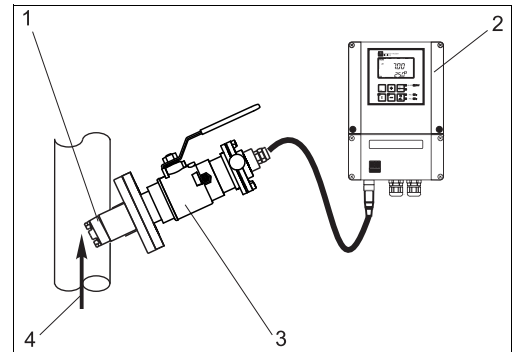
A complete measuring system comprises:

- Cleanfit COA451 assembly
- Oxymax COS41/COS51D/COS61 or COS61D oxygen sensor
- Liquiline CM44x or Liquisys M COM223/253 transmitter



Measuring system with COS51D or COS61D

- 1 Oxymax COS51D or COS61D oxygen sensor
- 2 Liquiline CM44x multichannel transmitter
- 3 Cleanfit COA451 retractable assembly
- 4 Flow direction of the medium



Measuring system with COS41 or COS61

- 1 Oxymax COS41 or COS61 oxygen sensor
- 2 Liquisys M COM253
- 3 Cleanfit COA451 retractable assembly
- 4 Flow direction of the medium

## Installation

**Installation instructions**

Install the assembly in places with uniform flow conditions. The minimum pipe diameter is DN 80.

- i** The installation instructions depend on the sensor used. Detailed installation instructions are provided in both the Technical Information and the Operating Instructions for the sensor in question.

## Environment

**Ambient temperature range** 0 to 50 °C (32 to 122 °F)

## Process

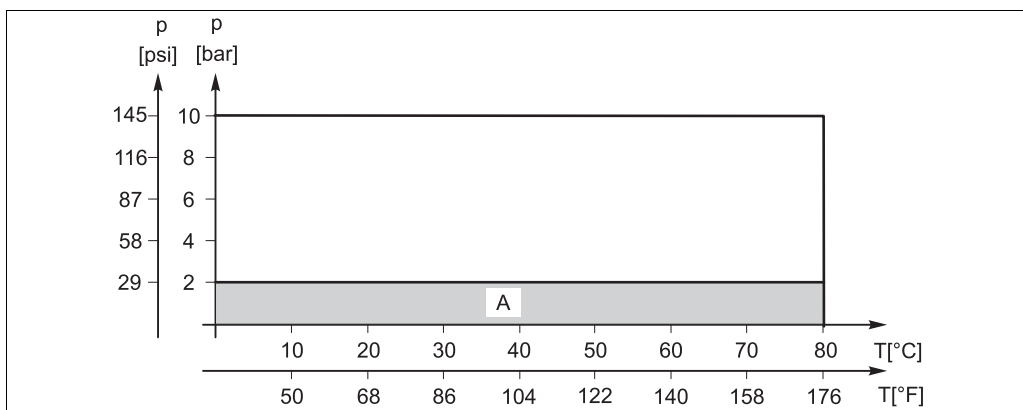
**Medium pressure** Max. 10 bar (145 psi)

- i** For manual insertion/retraction of the assembly the medium pressure may not exceed 2 bar (29 psi)!  
Also take the process conditions of the sensor used into consideration!

**Medium temperature** 0 to 80 °C (32 to 176 °F)

- i** Take the maximum medium temperature for the sensor into consideration!

### Pressure-temperature ratings



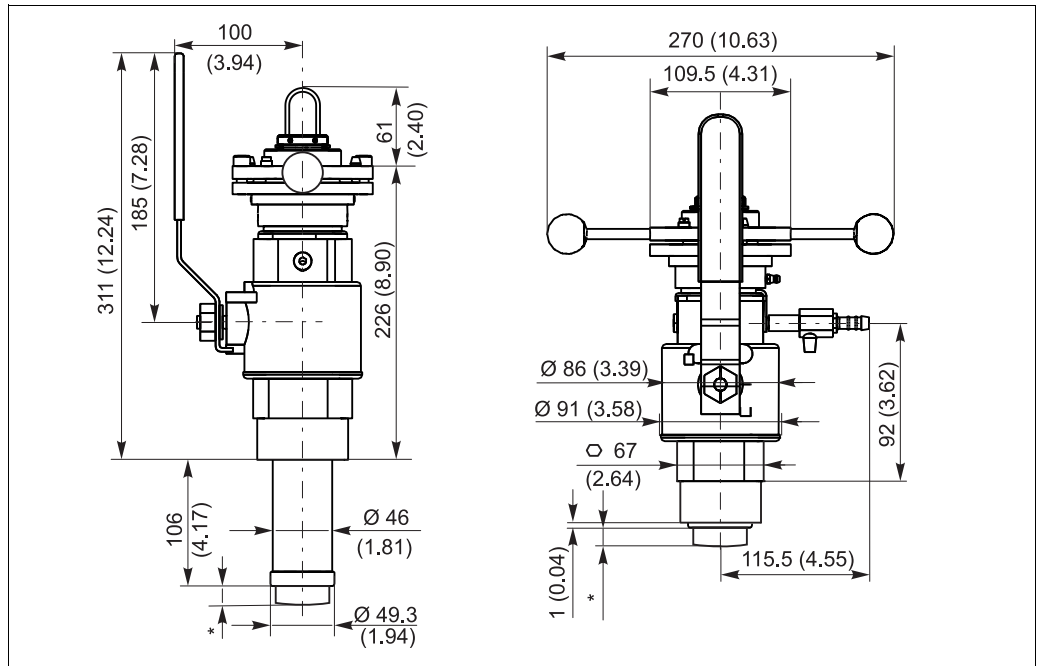
*Pressure-temperature ratings*

A Range in which the assembly can be operated manually

## Mechanical construction

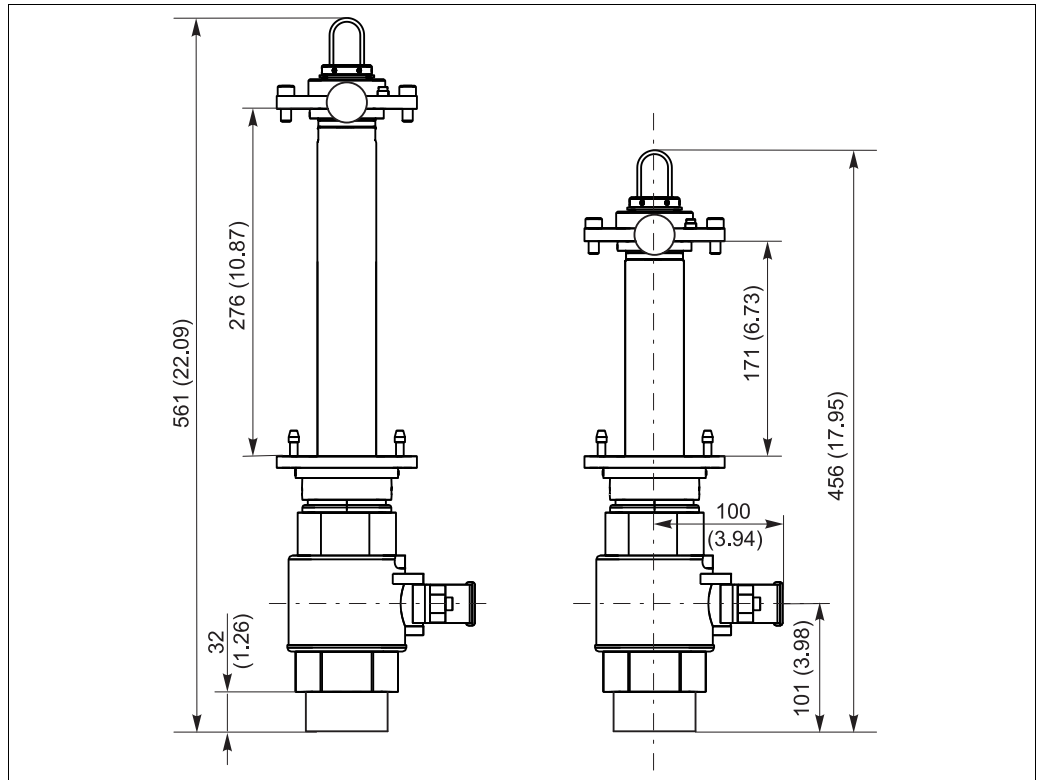
### Design, dimensions

Assembly with G2 thread and weld-in adapter in measuring position (long and short stroke)



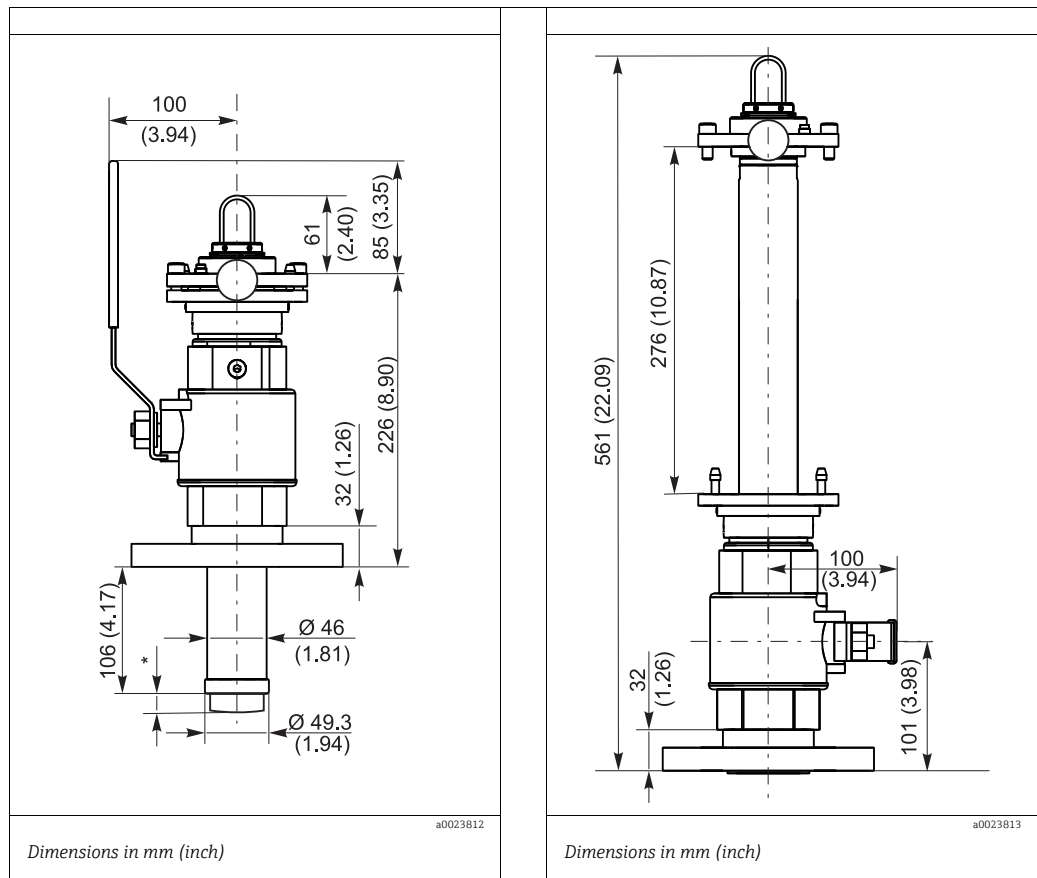
Dimensions in mm (inch)

Assembly with G2 thread and weld-in adapter in service position (long and short stroke)



Dimensions in mm (inch)

Assembly with flange connection (only for long stroke)



\* Dimensions depend on sensor:  
 COS41: 9 mm (0.35")  
 COS51D 9 mm (0.35")

COS61/61D: 8 mm (0.31")

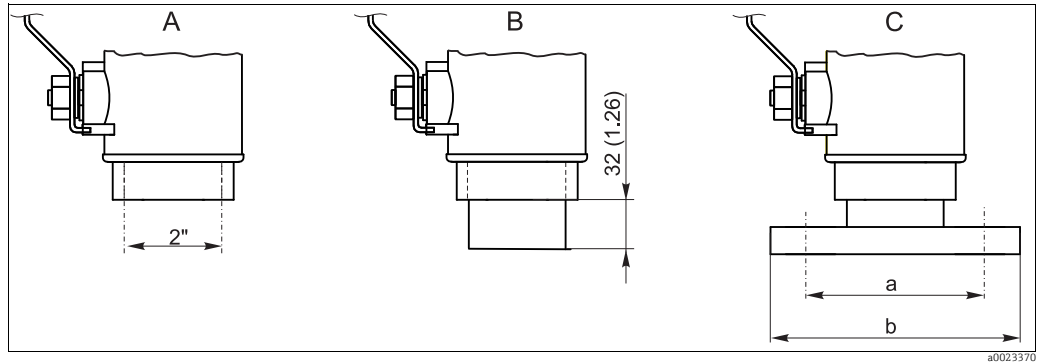
**Sensors** COS51D / COS61D / COS41 / COS61

**Weight** Depending on version: 8 to 11 kg (17.6 to 24.3 lbs)

**Materials**

Wetted:	Viton (seals) Stainless steel 1.4404 (AISI 316L) Nickel-plated brass (vent cock or rinse connection)
Not wetted:	Stainless steel 1.4404 (AISI 316L)

## Process connections



Process connections. Dimensions in mm (inch)

- A Internal thread G2  
 B Internal thread G2 with weld-in adapter  
 C Flange DN 50 / PN 16 (as per EN 1092-1) and flange ANSI 2" / 150 lbs  
 a: DN 50: Ø 125 (4.92), ANSI 2": Ø 120.7 (4.75)  
 b: DN 50: Ø 165 (6.50), ANSI 2": Ø 152.4 (6.00)

## Rinse connection nozzles

2 x G1/8 (internal)

Connection options:

- 2 x ball valve with hose connection OD 9 mm (see "Accessories")  
 (A ball valve is included in the delivery for the assembly. On its own it acts as a vent cock.)
- Customer's own rinse connections with G1/8 external thread

## Vent cock

Ball valve with hose connection OD 9 mm

## Ordering information

### Product page

You can create a valid and complete order code on the Internet using the Configurator.

Enter the following address in your browser to access the product page:  
[www.endress.com/coa451](http://www.endress.com/coa451)

### Product Configurator

You can find the navigation area on the right of the product page.

1. Under "Device support", click "Configure the selected product".  
 ↳ The Configurator opens in a new window.
2. Configure the device as per your requirements by selecting all the options.  
 ↳ In this way, you receive a valid and complete order code.
3. Export the order code as a PDF file or Excel file. To do so, click the appropriate button at the top of the window.

### Product structure



The product structures always reflect the situation at the time of publication. You can create a current and complete order code on the Internet using the Configurator.

Sensor stroke	
A	Short stroke, approx. 170 mm (only process connections A+B)
B	Long stroke, approx. 270 mm
Sensor type / connection	
1	For COS61/COS61D
2	For COS41/COS51D
Process connection	
A	G2 internal thread
B	G2 internal thread incl. weld-in adapter h = 50 mm
C	Flange DN 50 / PN 16 as per EN 1092-1
D	Flange ANSI 2" / 150 lbs

COA451-				complete order code
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## Accessories

### Assembly

Ball valve for rinse chamber

- As rinse connection complementing or replacing the venting ball cock supplied;
- Order No. 51512982

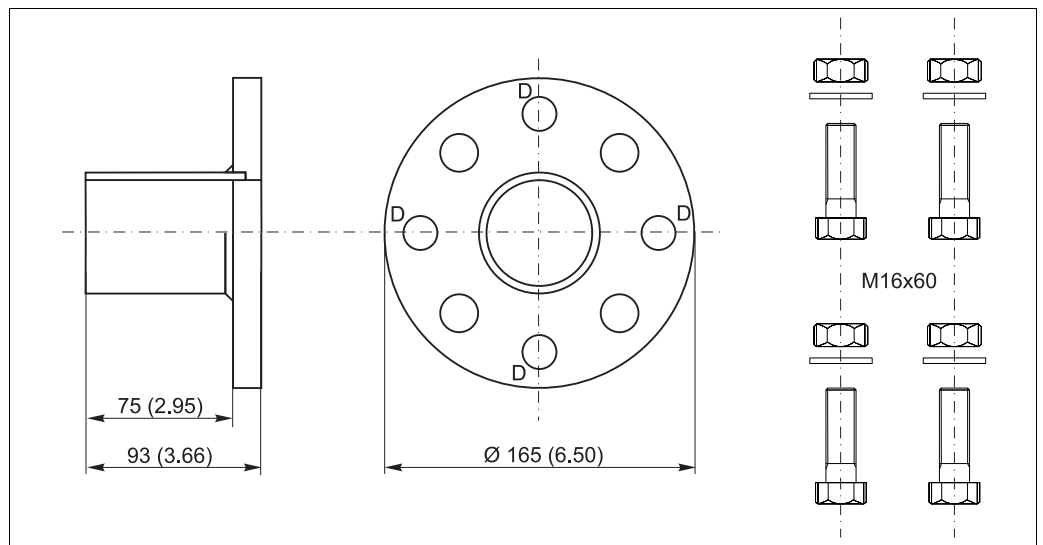
O-ring set

- Viton + FPM
- Order No. 51512981

### Process connection adapter

Welding socket

- Welding socket for pipe diameter from 80 mm, with combination flange DN 50 / ANSI 2":
  - Bores for flange DN 50: 4 x 90° Ø18 on bolt circle Ø125 (4.92)
  - Bores for flange ANSI 2": 4 x 90° Ø19 on bolt circle Ø121 (4.75)
- Flange seal, 4 screws M16x60, 4 nuts M16 incl. washers,
- Stainless steel 1.4571 (AISI 316 Ti)
- Order No. 50080249

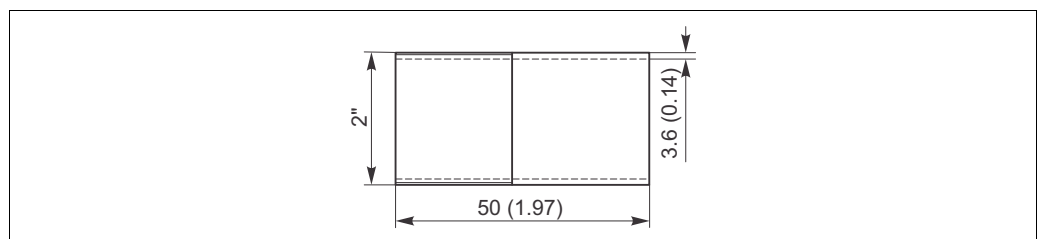


Welding socket, dimensions in mm (inch)

D: Markings for bores, flange DN 50

Welding nipple

- Welding nipple for 2" thread
- Stainless steel 1.4404 (AISI 316L)
- Order No. 71265347



Welding nipple, dimensions in mm (inch)

**Sensors**

## Oxymax COS41

- Oxygen sensor for drinking water and wastewater measurements, amperometric principle
- Material: POM
- Order as per product structure, [www.products.endress.com/cos41](http://www.products.endress.com/cos41)
- Technical Information TI00284C/07/EN

## Oxymax COS51D

- Amperometric sensor for dissolved oxygen, with Memosens technology
- Order as per product structure, [www.products.endress.com/cos51d](http://www.products.endress.com/cos51d)
- Technical Information TI00413C/07/EN

## Oxymax COS61 and COS61D

- Optical oxygen sensor for drinking water and wastewater measurements, fluorescence quenching principle
- With or without Memosens protocol
- Order as per product structure, [www.products.endress.com/cos61](http://www.products.endress.com/cos61) or [www.products.endress.com/cos61d](http://www.products.endress.com/cos61d)
- Technical Information TI00387C/07/EN

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[www.addresses.endress.com](http://www.addresses.endress.com)

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