TI01559C/07/EN/03.23-00
71626365
2023-08-25



# Technical Information
# **Flowfit CYA27**

## Modular flow assembly for multiparameter measurements



### Application

Flowfit CYA27 is a flow assembly for multiparameter measurements mainly in bypass installations for:
- Drinking water
- Process water
- Saltwater
- Swimming pool water

### Your benefits

- Maximum flexibility: The modular design of the assembly means that it can be adapted perfectly to the process requirements. Up to 6 parameters can be measured. Flexible installation options enable optimum sensor positioning for accurate measurements.
- Minimum water loss: Using the Flowfit CYA27, sensors require a sample flow of only 5 l/h (1.32 gal/h) for a precise measurement. This means that only a very small volume of water needs to be discarded.
- Reliable measurement: Integrated flow monitoring ensures that the measurement is always ready for operation. LEDs indicate whether the flow rate is correct and facilitate a quick response in the event of errors.
- Easy to maintain: The optional cleaning and dosing module enables automatic cleaning cycles.

Endress+Hauser
People for Process Automation

# Function and system design

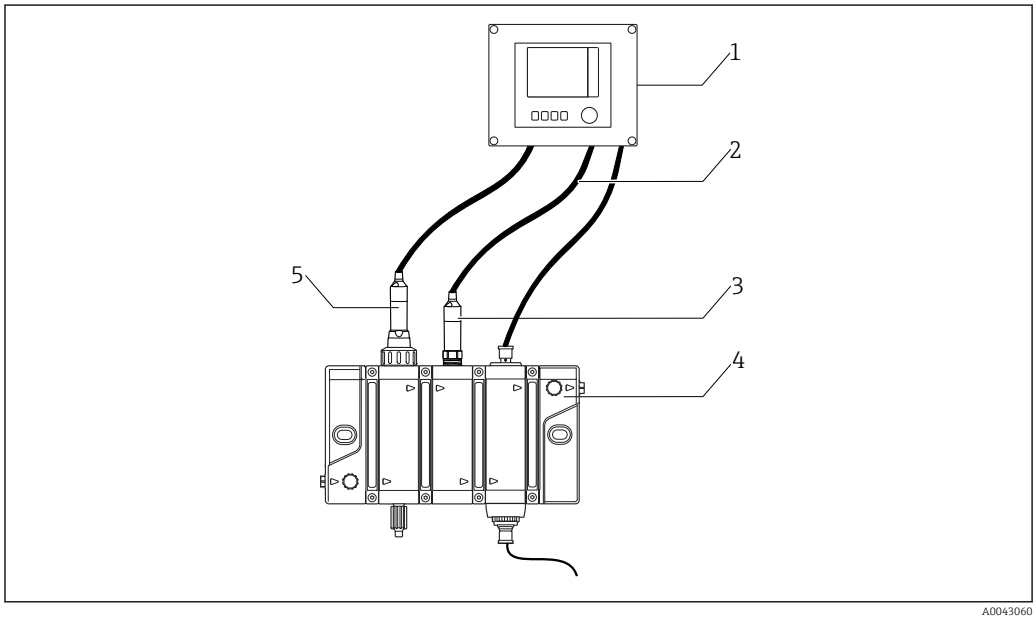
**Operating principle**

The CYA27 flow assembly can be used for reliable measurements for the purpose of liquid analysis. The measurement of different parameters, such as disinfection, pH, ORP, conductivity and oxygen is possible. An additional flow measurement enables safe and reliable operation of the measuring point.

**Measuring system**

A complete measuring system may contain up to six different sensors and consists, for example, of the following:

- Flow assembly Flowfit CYA27
- At least one sensor, e.g CCS51D for the measurement of free chlorine
- At least one measuring cable, e.g. CYK10
- Transmitter, e.g. Liquiline CM44x or CM44xR with latest software
- Optional:
  - pH sensors, e.g. Memosens CPS31E
  - ORP sensors, e.g. Memosens CPS16E
  - Conductivity sensor CLS82E
  - Oxygen sensors, e.g. COS22E
  - Transmitter, e.g. Liquiline Compact CM82
  - Multiparameter handheld device Liquiline Mobile CML18
  - Extension cable CYK11
  - Sampling valve on assembly if using modules for disinfection and conductivity
  - Flow switch or flowmeter
  - Status lighting




*1 Example of a measuring system*

1 *Transmitter Liquiline CM44x or CM44xR*
2 *Measuring cable CYK10*
3 *pH sensor, e.g. CPS31E*
4 *Flow assembly Flowfit CYA27*
5 *Disinfection sensor CCS5xD (membrane-covered, Ø25 mm (0.98 in)), e.g. CCS51D*

# Energy supply

**Cable specification**

Cable accessories 10 m (32.8 ft), M12 socket straight, 5-pin version

Cable accessories Ex (US) Cl.1 Div.2 cable, 10 m (32.8 ft), M12 socket straight, 4-pin version

# Performance characteristics

**Reference operating conditions**

20 °C (68 °F)

# Mounting

**Orientation**

The assembly is designed for mounting on panels, walls, level surfaces, masts or railings. The only permitted orientation of the assembly is horizontal, → 3.

The prescribed orientation of the assembly may limit the installation of certain sensors. e,g, upside-down installation.

**Installation instructions**

NOTICE

**Ambient conditions**

- The ambient conditions of the technical specification of the assembly and sensors must be observed at the installation site.
- Take technical precautions, such as installing in an additional enclosure, to protect the measuring point from ambient or environmental influences (e.g. temperature, pollution).

NOTICE

**Direct sunlight or UV light**

- Appropriate precautions should be taken at the installation site to protect the assembly from direct sunlight or other sources of UV radiation.

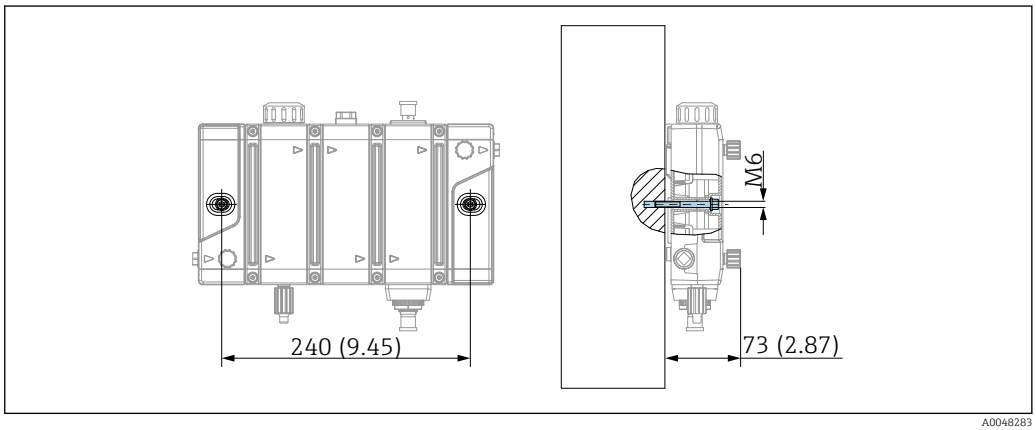
At ambient temperatures below 0 °C (32 °F), the medium can freeze particularly with low flow conditions. The medium temperature and the flow volume must be adjusted accordingly. It may be necessary to insulate the supply and return lines and install the assembly in an additional enclosure. This must be fitted with a separate heating system if necessary.

**Direct wall mounting**

The assembly can be screwed directly onto the wall using two holes provided in the inlet and outlet module.

Direct mounting on the wall is permitted for assemblies with one to a maximum of three modules.

| Number of modules | 1 | 2 | 3 |
|---|---|---|---|
| Spacing between drill holes<br>mm (in) | 120 (4.73) | 180 (7.09) | 240 (9.45) |



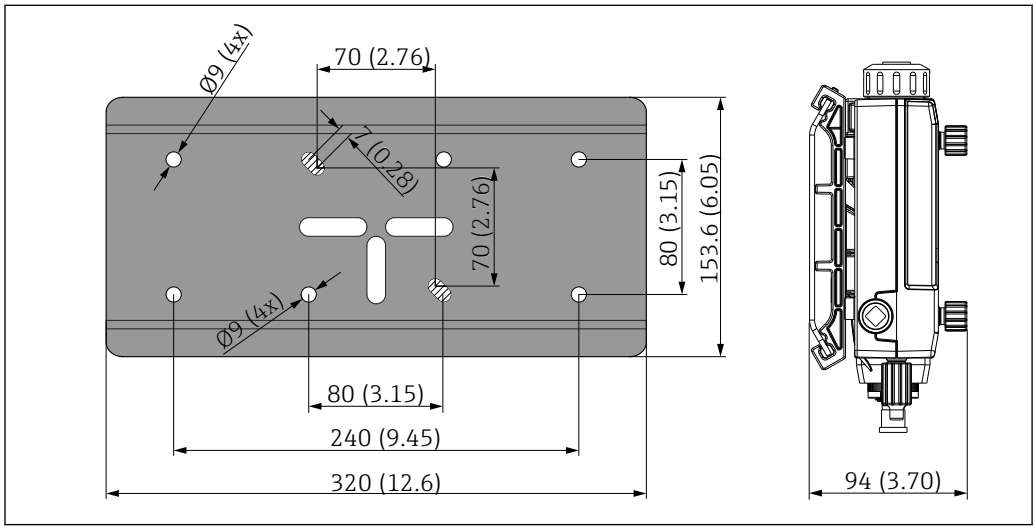

2 *Direct wall mounting. Engineering unit: mm (in)*

**Mounting the assembly with wall holder**

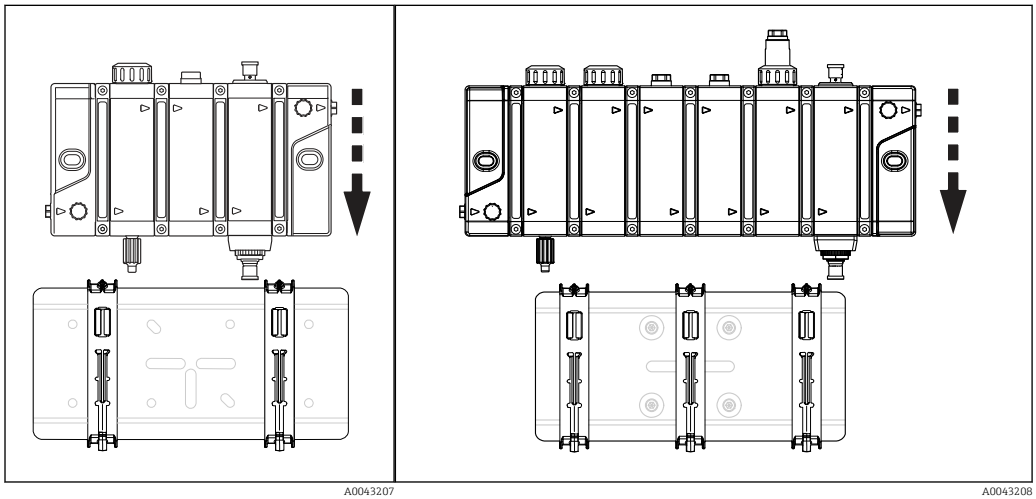
With the wall holder, it is possible to select up to six modules. It is then possible to remove individual modules while the rest of the assembly remains securely in the holder. Different drill holes allow, for example, the use of the Flowfit CCA250 hole pattern.

Optional accessories, consisting of a wall holder with securing clips for assemblies with 1 to 6 modules.

The drill holes (hatched in graphic) correspond to those of assembly CCA250, which can be reused.




*3 Dimensions of wall holder. Engineering unit: mm (in)*




*4 2 securing clips for 1 to 5 modules* *5 3 securing clips for 6 modules*

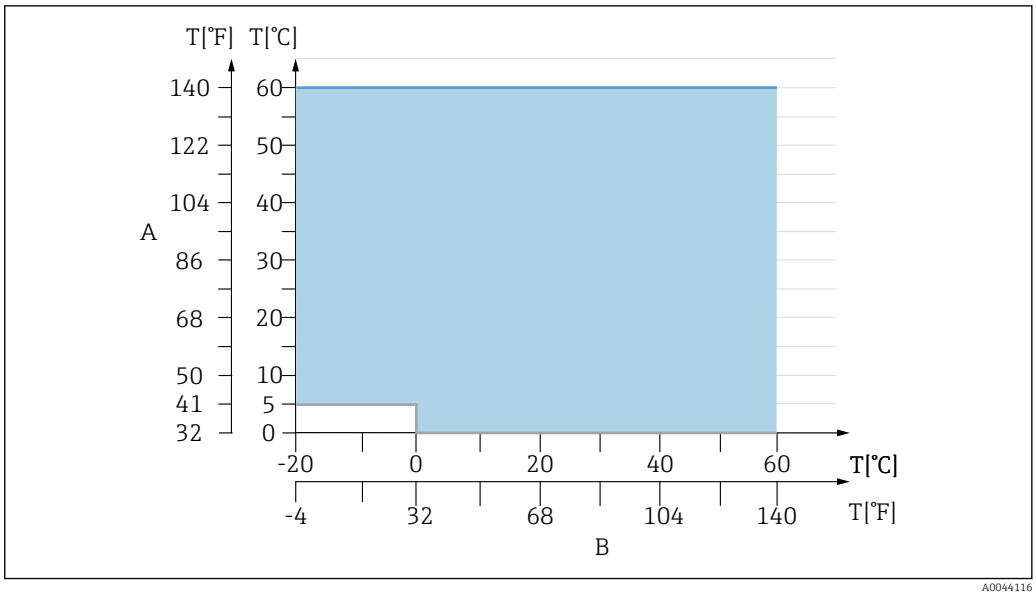
With six modules, three securing clips are required for increased stability.

# Environment

**Ambient temperature**

–20 to 60 °C (–4 to 140 °F)

At ambient temperatures below 0 °C (32 °F), the medium temperature must be at least 5 °C (41 °F) and the supply and return lines must be insulated.




*A Medium temperature*
*B Ambient temperature*

**Storage temperature**

−20 to 60 °C (−4 to 140 °F)

**Degree of protection**

- Flow switch: IP67
- Status indication light: IP66/67

# Process

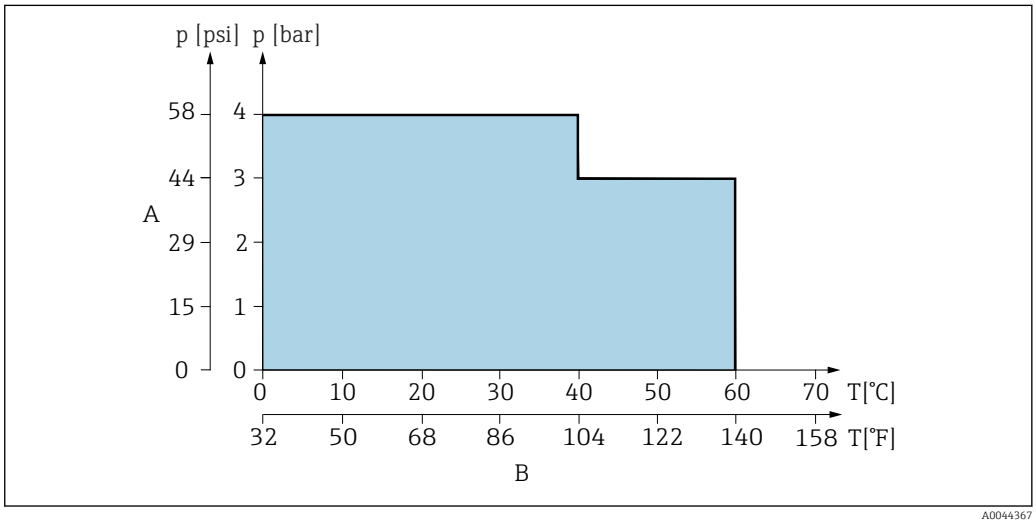
**Process temperature range**

0 to 60 °C (32 to 140 °F), non-freezing

**Process pressure range**

0 to 4 bar (0 to 58 psi) relative

**Pressure/temperature graph**




6 *Pressure/temperature ratings*

*A Process pressure*
*B Medium temperature*

**pH range**

pH1 to 12

**Process connections**

G 1/4" (ISO 228)

**Flow**

*Recommended flow range*

| | |
|---|---|
| 5 l version | 5 to 8 l/h (1.32 to 2.11 gal/h) |
| 30 l version | 30 to 40 l/h (7.92 to 10.46 gal/h) |

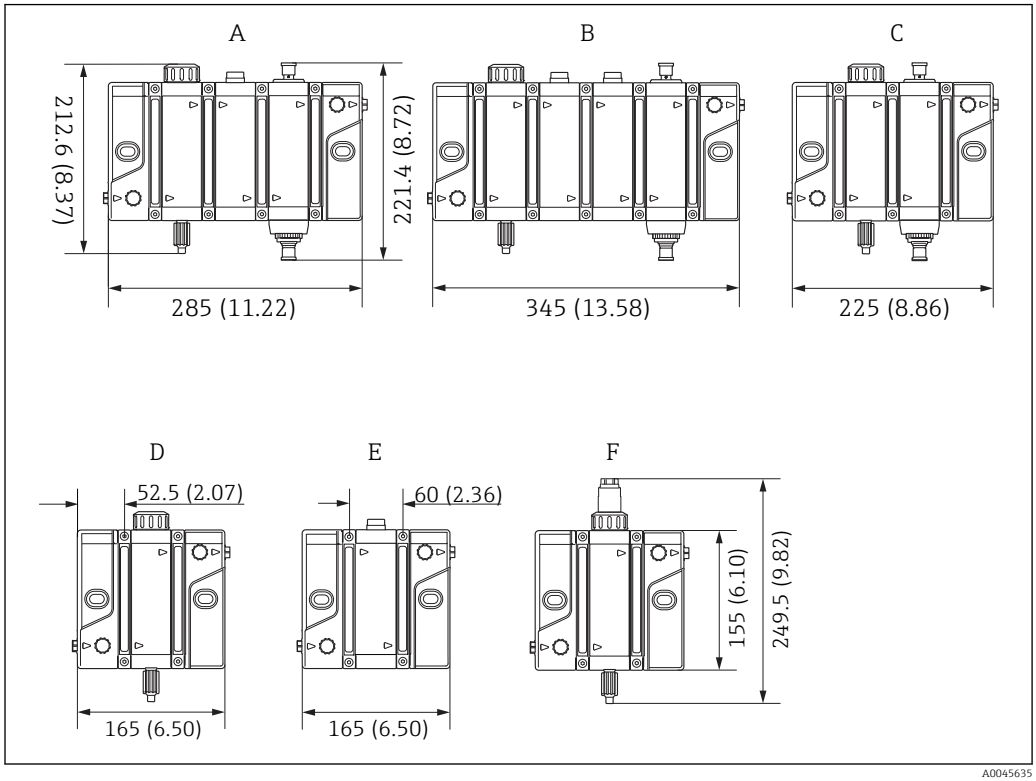
*Critical upper limits*

| | |
|---|---|
| 5 l version | 40 l/h (10.56 gal/h) |
| 30 l version | 80 l/h (21.13 gal/h) |

Above the specified flow rate, the pressure in the assembly may exceed the specification limits of the sensors.

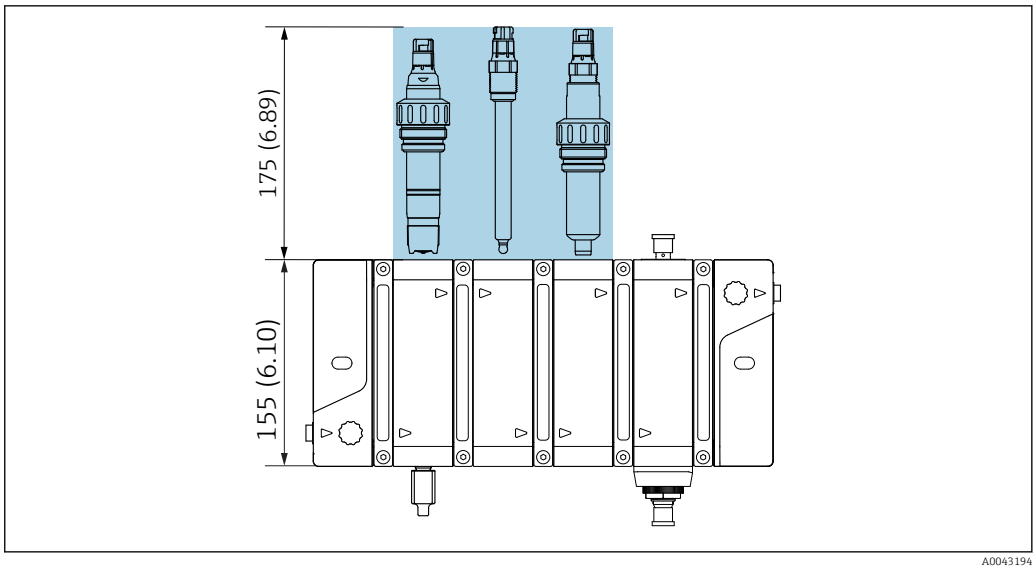
# Mechanical construction

**Dimensions**




7 *Dimensions. Engineering unit: mm (in)*

*A Disinfection, pH and flow display version with sampling valve, status lighting and flow switch or flow measurement*
*B Disinfection, pH, ORP and flow display version with sampling valve, status lighting and flow switch or flow measurement*
*C Disinfection and flow display version with sampling valve, status lighting and flow switch or flow measurement*
*D Disinfection version with sampling valve*
*E pH, ORP or oxygen version*
*F Conductivity version with sampling valve*




8 *Mounting distance. Engineering unit: mm (in)*

The minimum mounting distance required to remove the sensor(s) is 175 mm (6.9 in).

## Weight

| Number of modules | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Weight in kg (lb)<br>max. weight depending on version without sensors | 0.9 kg (1.98 lb) | 1.5 kg (3.31 lb) | 2.1 kg (4.63 lb) | 2.7 kg (5.95 lb) | 3.3 kg (7.28 lb) | 3.8 kg (8.38 lb) |

Wall mounting accessories: 1.3 kg (2.87 lb)

Pipe mounting accessories (incl. wall bracket): 2.2 kg (4.85 lb)

## Materials

| In contact with medium | |
|---|---|
| Assembly: | PMMA (modules)<br>PVDF for inlet and outlet module |
| Seals: | FPM (FKM)<br>Black compound in conjunction with PVDF<br>Green compound in conjunction with PVC |
| Plugs, adapters, valves: | PVC/POM or PVDF |
| Floats: | Titanium |
| Flowmeter: | PVDF |
| Equipotential bonding connection: | 1.4404/1.4571 (316L/316TI) (stainless Cr-Ni steel) |

| Not in contact with medium | |
|---|---|
| Clips, wall holder, inlet and outlet module | PBT-GF20/GF30 |

**Materials not in contact with the medium**

**Obligation to provide information in accordance with Art. 33 REACH regulation (EU no. 1907/2006):**

The PVC used (hard) contains more than 0.1% of the following substance: dioctyltin compounds (DOTE) CAS number: 15571-58-1. No special precautions are required when handling the item, since the substance is firmly embedded in the plastic and is not released if used as intended.

## Certificates and approvals

Current certificates and approvals for the product are available at www.endress.com on the relevant product page:

1. Select the product using the filters and search field.
2. Open the product page.
3. Select **Downloads**.

## Order information

**Product page**

www.endress.com/cya27

**Product Configurator**

1. **Configure**: Click this button on the product page.
2. Select **Extended selection**.
   ↳ The Configurator opens in a separate window.
3. Configure the device according to your requirements by selecting the desired option for each feature.
   ↳ In this way, you receive a valid and complete order code for the device.
4. **Accept**: Add the configured product to the shopping cart.

For many products, you also have the option of downloading CAD or 2D drawings of the selected product version.

5. **CAD**: Open this tab.
   ↳ The drawing window is displayed. You have a choice between different views. You can download these in selectable formats.

**Scope of delivery**

The scope of delivery comprises:
- Assembly including enclosed accessories in the version ordered
- Operating Instructions
- Manufacturer's Declaration

## Accessories

The following are the most important accessories available at the time this documentation was issued.

Listed accessories are technically compatible with the product in the instructions.

1. Application-specific restrictions of the product combination are possible.
   Ensure conformity of the measuring point to the application. This is the responsibility of the operator of the measuring point.
2. Pay attention to the information in the instructions for all products, particularly the technical data.
3. For accessories not listed here, please contact your Service or Sales Center.

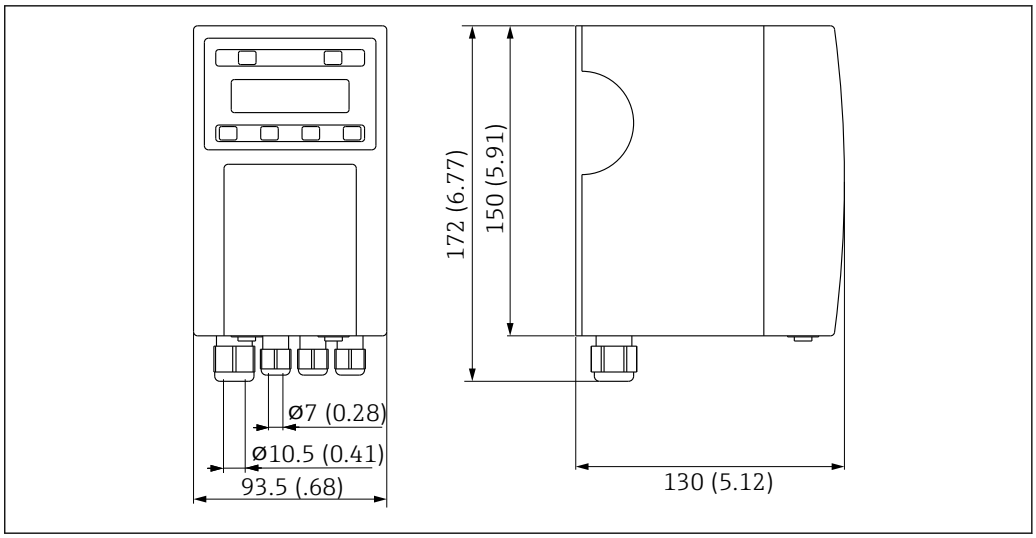
**Device-specific accessories**

**Peristaltic dosing pump**

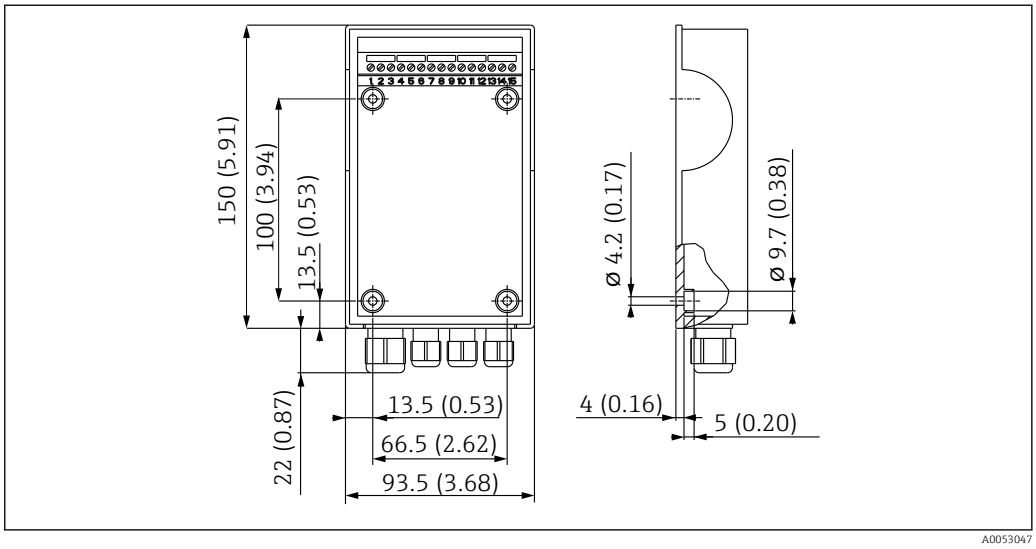
The dosing pump is a peristaltic dosing pump with stepper motor drive for dosing liquid media in commercial and industrial applications.

Volumes of 0.5 ml/h - 10000 ml/h can be dosed with the available pump hose dimensions. The pump has multiple operating modes as well as a 2x16 character display for indicating functions and parameters.

Thanks to ergonomic control, the parameters and functions can be adjusted clearly during operation.




*9 Pump dimensions. Unit of measurement mm (in)*




*10 Drill plate for wall holder, dimensions*

Kit CYA27 dosing pump 0.1-22 ml/min: order no. 71621627

Kit CYA27 pump maintenance 0.1-22 ml/min: order no. 71621629

Kit CYA27 dosing pump 1-200 ml/min: order no. 71610954

Kit CYA27 pump maintenance 1-200 ml/min: order no. 71610955

Kit CYA27 dosing pump suction lance: order no. 71610956

### Disinfection sensors

**Memosens CCS50E**
- Membrane-covered amperometric sensor for chlorine dioxide
- With Memosens technology
- Product Configurator on the product page: www.endress.com/ccs50e

Technical Information TI01353C

**Memosens CCS51**
- Sensor for measuring free available chlorine
- Product Configurator on the product page: www.endress.com/ccs51 or

Technical Information TI01424C (CCS51)

**Memosens CCS51E**
- Sensor for measuring free available chlorine
- Product Configurator on the product page: www.endress.com/ccs51e

Technical Information TI01423C

**Memosens CCS55E**
- Sensor for measuring free bromine
- With Memosens technology
- Product Configurator on the product page: www.endress.com/ccs55e

Technical Information TI01423C

**Memosens CCS58E**
- Sensor for determining ozone
- With Memosens technology
- Product Configurator on the product page: www.endress.com/ccs58e

Technical Information TI01583C

### pH sensors

**Memosens CPS31E**
- pH sensor for standard applications in drinking water and swimming pool water
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps31e

Technical Information TI01574C

**Memosens CPS11E**
- pH sensor for standard applications in process and environmental engineering
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps11e

Technical Information TI01493C

**Memosens CPS41E**
- pH sensor for process technology
- With ceramic junction and KCl liquid electrolyte
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps41e

Technical Information TI01495C

### ORP sensors

**Orbisint CPS12D / CPS12**
- ORP sensor for process technology
- Product Configurator on the product page: www.endress.com/cps12d or www.endress.com/cps12

Technical Information TI00367C

### pH and ORP combined sensors

**Memosens CPS16E**
- pH/ORP sensor for standard applications in process technology and environmental engineering
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps16e

Technical Information TI01600C

**Memosens CPS76E**
- pH/ORP sensor for process technology
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cps76e

Technical Information TI01601C

### Conductive sensor

**Memosens CLS82E**
- Hygienic conductivity sensor
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cls82e

Technical Information TI01529C

### Oxygen sensors

**Memosens COS22E**
- Hygienic amperometric oxygen sensor with maximum measurement stability over multiple sterilization cycles
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cos22e

Technical Information TI01619C

**Memosens COS81E**
- Hygienic optical oxygen sensor with maximum measurement stability over multiple sterilization cycles
- Digital with Memosens 2.0 technology
- Product Configurator on the product page: www.endress.com/cos81e

Technical Information TI01558C




www.addresses.endress.com

Endress+Hauser

People for Process Automation