

**OPERATING MANUAL**

---

**CHEM<sub>FIT</sub>**  
PROCESS HOLDER

### **Status at time of printing**

Advanced technology and the high quality of our products are guaranteed by a continuous development. This may result in differences between this operating manual and your product. We cannot exclude mistakes. We are sure you understand that no legal claims can be derived from the information, illustrations and descriptions.

A potentially more recent version of this manual is available on our internet website at [www.XylemAnalytics.com](http://www.XylemAnalytics.com). The German version is the original version and binding in all specifications.

### **Guarantee**

We provide guarantee for our process holders of one year from the date of purchase. This guarantee covers manufacturing faults being discovered within the mentioned period of one year. Claim under guarantee covers only the sensor itself, not any further claim for damages or financial loss. Warranty claims shall not include minor deviation from the agreed quality, of only minor impairment of usefulness, of usual wear and any damage that occurs after the transfer of risk from faulty handling, excessive strain, unsuitable equipment or due to special external influences.

### **Copyright**

© 2021, Xylem Analytics Germany GmbH.

Reprinting - even as excerpts - is only allowed with the explicit written authorization.

Printed in Germany.

## TABLE OF CONTENTS

<b>1</b>	<b>Security and safety measures .....</b>	<b>5</b>
1.1	General safety instructions .....	5
1.2	Intended use.....	5
1.3	Danger zones and residual dangers .....	6
1.4	Equipment .....	6
1.5	Staff .....	6
1.6	Disposal.....	7
1.7	Symbols and pictographs .....	7
<b>2</b>	<b>Product description .....</b>	<b>8</b>
2.1	CHEMFIT holder .....	8
2.2	Process integration .....	8
<b>3</b>	<b>Delivery .....</b>	<b>10</b>
3.1	Scope of delivery .....	10
3.2	Inspection of delivery .....	10
<b>4</b>	<b>Installation .....</b>	<b>11</b>
4.1	Preparing the Holder .....	11
4.2	Installing the holder .....	11
4.3	Installing the sensor .....	11
<b>5</b>	<b>Maintenance .....</b>	<b>13</b>
5.1	Important maintenance instructions .....	13
5.2	Removing the sensor .....	13
5.3	Replacing the wetted sealings .....	14
5.4	Servicing plan .....	15
5.5	Disposal.....	15
<b>6</b>	<b>Technical specifications .....</b>	<b>16</b>
6.1	Standards .....	16
6.2	Material properties .....	16
6.3	Dimensions .....	17
6.4	Ambient conditions .....	18
6.5	Process conditions CHEMFIT 3XX.....	18
<b>7</b>	<b>Parts and accessories .....</b>	<b>19</b>



# 1 Security and safety measures

## 1.1 General safety instructions

The CHEM<sub>FIT</sub> holder is designed in a way that when the operation manual is observed the product does not present any hazards.

- ▶ Read the operation manual before use.
- ▶ Do only install and operate the holder after having read and understood all notes on the safe and proper use.
- ▶ Keep the operation manual for future reference.
- ▶ Do operate the holder only in trouble-free condition.
- ▶ In addition, observe laws, regulations, guidelines and standards applicable in the operator's country and at the site of use.

## 1.2 Intended use

The CHEM<sub>FIT</sub> holder is attached to tanks or tubing. A sensor is inserted in the process liquid in order to measure chemical or physical properties.

The choice of material properties of holder and equipment depends on the process properties.

The holder should be serviced on a regular basis.

- ▶ Establish a service plan adapted to your process.
- ▶ Do only perform the service works described in the operation manual!
- ▶ Modifications to the holder must be agreed with the manufacturer.



The manufacturer is not liable for damages arising from improper or unintended use.

### 1.3 Danger zones and residual dangers

Holders are connected to tanks and tubing that may be under pressure. Leaking of process liquid only occurs in case of negligence and improper operation.

- ▶ Prior to commissioning and after every servicing, ensure that all seals and connections are complete and in working order.
- ▶ Never remove the Sensor during operation of the process.
- ▶ Take applicable protection measures prior to touching the holder as parts of the holder may adopt the process temperature.

### 1.4 Equipment

Do only use certified and approved accessories and equipment.

- |               |  |
|---------------|--|
| <b>Seals</b>  | <ul style="list-style-type: none"><li>▶ Choose material properties of process seals and O rings according to process medium and cleaning liquid.</li><li>▶ Observe swelling ability and acid and alkaline resistance of seal material.</li></ul> |
| <b>Sensor</b> | <ul style="list-style-type: none"><li>▶ Choose a suitable sensor and observe information in chapter 6 "technical specifications".</li><li>▶</li></ul>  |

### 1.5 Staff

- |  |  |
|--|--|
| <b>Qualifications</b>                  | Leave installation and servicing of holder to trained staff!   |
| <b>Protective clothing</b>             | The operation staff must wear goggles and applicable protective clothing during commissioning and servicing works. |
| <b>Accident prevention regulations</b> | Observe work safety laws and regulations applicable in the operator's country and at the site of use!              |

## 1.6 Disposal



Please observe the applicable local or national regulations concerning the disposal of "waste electrical and electronic equipment"

## 1.7 Symbols and pictographs

In the operating manual, pictographs and symbols are used for better orientation.

### **DANGER!**



The **DANGER!** symbol refers to dangers to life and limb as well as substantial damages to property when the instructions given are ignored.

### **WARNING!**



The **WARNING!** symbol refers to damages to property when the instructions given are ignored.



Important notes are given!



This sign means performing procedures in the given order.

## 2 Product description

### 2.1 CHEMFIT holder

#### Components

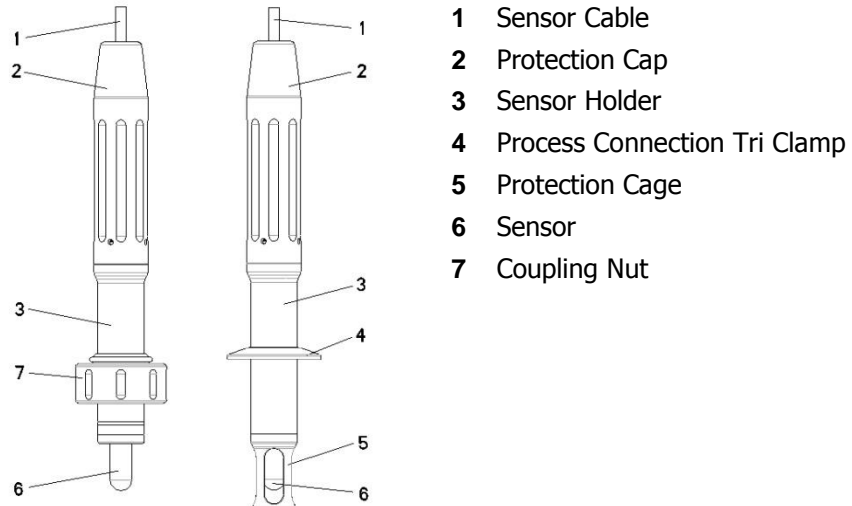


Fig. 1 dip holder

**Variations** Holders are attached to tanks or tubing by an applicable process connection. In order to comply with the various process properties the CHEMFIT holder is fabricated of stainless steel or plastic. You can further choose between different process ports, sealing materials and protection cage.

### 2.2 Process integration

**Holder** The CHEMFIT holder can be fixed on a Process tank or pipeline by the process connection. The protection cage (option) protect the sensor against damage.

**Transmitter** The holder inserts a sensor in the process liquid transmitting its measuring results to a transmitter.

**Process control** The transmitter can be connected to a process control. The measuring is then controlled automatically according to the measuring results.



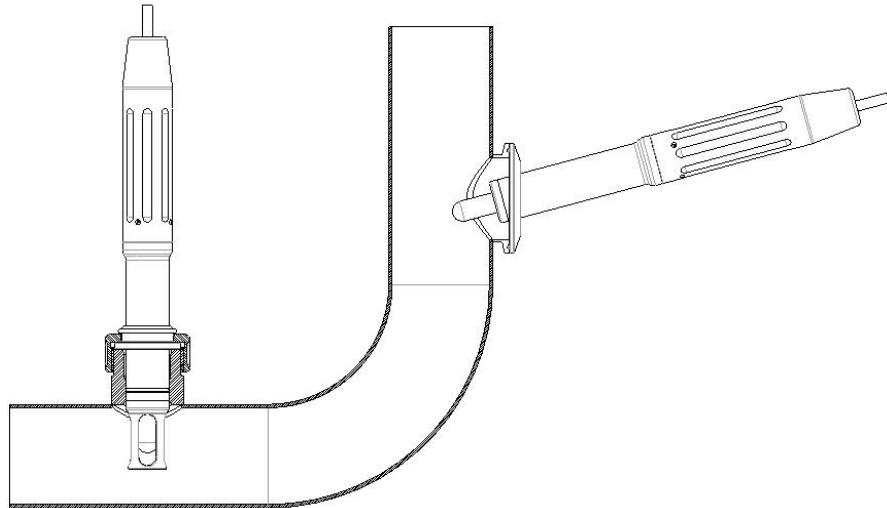


Fig. 2 process sequence

<b>Process connection</b>	The choice of the applicable holder is subject to the process and available connection, as well as pressure and temperature conditions. The holder of stainless steel can be used for a pressure of up to 10 bar and temperature between -10° and 140°C.
<b>Pressure</b>	
<b>Temperature</b>	



Observe the pressure and temperature diagram in the chapters 6.5!

<b>installation position</b>	The operation of the holder is generally possible in any position. The reliability of the measuring results depends on the properties of the selected sensor.
------------------------------	---

## 3 Delivery

### 3.1 Scope of delivery

The holder is inspected at the factory and delivered ready for installation in a packaging providing optimal protection for the holder.

Package contents:

- CHEMfit holder
- operation manual
- material certificate



Store the holder in the packaging. This ensures optimal protection until the installation.

### 3.2 Inspection of delivery



Before approving the holder for installation the following should be ensured:

- packaging and device are in apparent good order.
- the data plate of the holder corresponds to the specifications on the order.

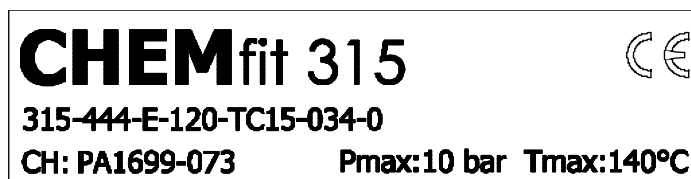


Fig. 3 name plate (example)

**In case of further inquiries please directly contact your dealer.**

## 4 Installation

### 4.1 Preparing the Holder



Ensure that

- Sufficient working space for operation of the holder is available.
- The process is shut off.
- Tank and tubing are pressure-free, empty and clean.
- Connection flange and process connection of the holder fit together.
- The process seal is positioned on the connection flange.
- Ensure that there is no potentially explosive atmosphere

### 4.2 Installing the holder



Prior to installation, ensure the following:

- The holder is prepared (chapter 4.1).

#### **How to install the holder:**

1. Position holder on process seal.
2. Tighten process connection.

### 4.3 Installing the sensor

Sensors with a diameter of 12mm, a length of 120mm and a connection thread PG 13.5 must be used in the CHEMFIT holder.



Observe information in chapter 6 “technical specifications”!

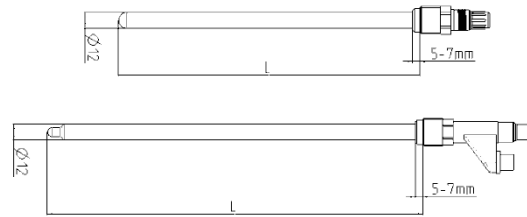


Fig. 4 gel-filled sensor (upper figure), liquid-filled sensor (bottom figure)

Sensor			
CHEMFIT	l [mm]	d [mm]	PG
3XX	120	12	13.5

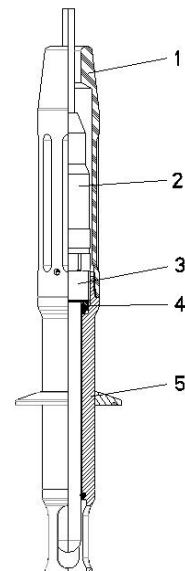


Ensure that

- all seals (4) connected to the sensor are available.

### How to install the sensor:

1. Insert and tighten the sensor (3)
2. Attach sensor cable (2)
3. Tighten protection cap (1)



**The holder is now ready for operation.**

## 5 Maintenance

### 5.1 Important maintenance instructions

- Establish a service plan adapted to your process!
- Leave servicing works to qualified staff.
- Always wear applicable protective clothes when performing servicing works.
- Do only perform the service works described in the operation manual!
- Constructional modifications must be agreed with the manufacturer!
- Tubing and tanks must be pressure-free, empty and clean before disconnecting the holder from the process
- Ensure that there is no potentially explosive atmosphere

### 5.2 Removing the sensor

**DANGER!****System is under pressure.**

Process liquid will leak when sensor is disconnected from process in an inappropriate way.

- ▶ Ensure that system is pressure-free before replacing the sensor.
- ▶ Drain and clean tubing or tanks.
- ▶ Ensure that there is no potentially explosive atmosphere

**How to remove the sensor:**

1. Process Tubing and tanks must be pressure-free, empty and clean before removing the sensor from the holder
2. Remove Protection cap
3. Remove sensor cable
4. Untighten sensor.
5. Remove sensor.

**DANGER!****Broken glass sensor!**

Broken glass may damage the wetted sealings.

- ▶ Check wetted sealings and replace if necessary.
- ▶ Observe instructions in chapter 5.3!

### 5.3 Replacing the wetted sealings

**DANGER!****System is under pressure.**

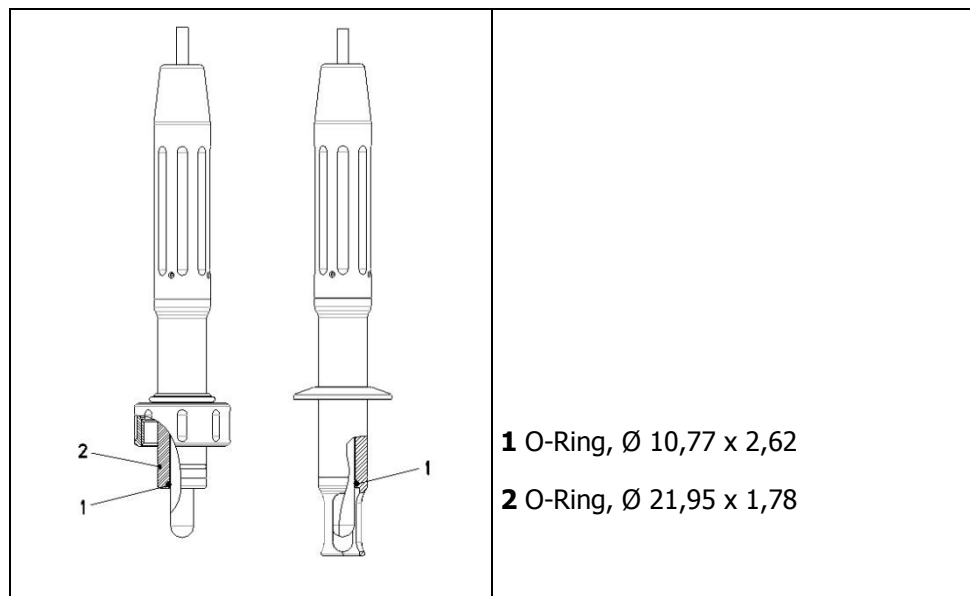
Process liquid will leak when holder is disconnected from process in an inappropriate way.

- ▶ Ensure that system is pressure-free before replacing the sealings.
- ▶ Drain and clean tubing or tanks.
- ▶ Ensure that there is no potentially explosive atmosphere



Install the seals chosen according to the holder and the process!

- Do only use original parts!

**How to replace the seals:**

1. Remove sensor from the holder (chap. 5.2).
2. Remove holder from the process connection
3. Remove and replace O-ring seals on the holder

## 5.4 Servicing plan

**Carry out the servicing works in the recommended intervals!**

- |                    |  |
|--------------------|--|
| <b>quarterly</b>   | ▶ Check process connection             |
| <b>once a year</b> | ▶ Replace wetted sealings (chap. 5.3). |

## 5.5 Disposal

**Holder** Ensure that the holder is free from hazardous and toxic substances. Depending on your material the individual components must be disposed off separately.

Observe regulations and rules for waste disposal applicable in the operator's country and at the site of use.

**Packaging** The packaging is made of card board and can be disposed off with the waste paper.

## 6 Technical specifications

### 6.1 Standards

Pressure equipment directive

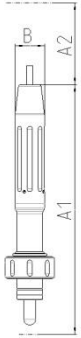
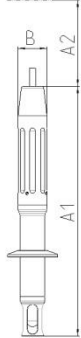
### 6.2 Material properties

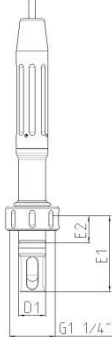
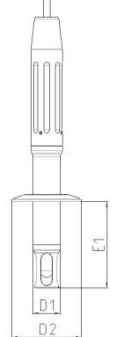
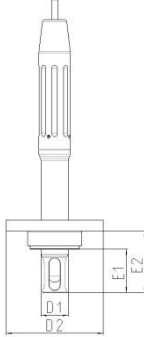
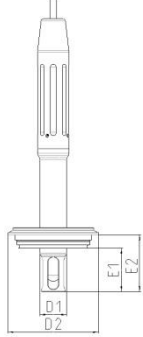
Wetted components		
Holder		
CHEMFIT	stainless steel	seals
310	1.4404/316L	EPDM FDA USP IV FPM
311	1.4404/316L	
312	1.4404/316L	
315	1.4404/316L	

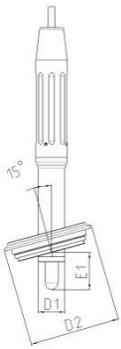
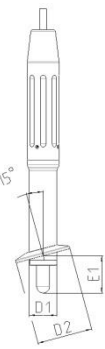
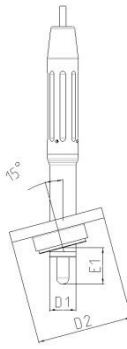
Not wetted components		
Protection Cap		
CHEMFIT	Material	
3XX	PA 6.6.GF30	



## 6.3 Dimensions

Holder	
	 
Dimensions	CHEMFIT
	310, 311, 313, 315
A <sub>1</sub> [mm]	252
A <sub>2</sub> [mm]	200
B [mm]	29

Process connections CHEMFIT				
	A	B	C	D
	G 1 1/4"	TRI-CLAMP	BIOCONTROL D50	VARIVENT
				
Dimensions	CHEMFIT	CHEMFIT	CHEMFIT	CHEMFIT
	310	311	312	312
E1 [mm]	70	45 / 80	40	40
E2 [mm]	25		57	52
D1 [mm]	25	25	25	25
D2 [mm]		50.5 / 64	90	84

Process connections CHEMFIT			
	A	B	C
	VARIVENT	TRICLAMP	BIOCONTROL D50
			
Dimensions	CHEMFIT	CHEMFIT	CHEMFIT
	315	315	315
	E1 [mm]	34	34
	D1 [mm]	25	25
	D2 [mm]	84	50.5 / 64

## 6.4 Ambient conditions

Ambient temperature	- 10 - 70 °C
Transport and storage temperature	- 20 - 80 °C

## 6.5 Process conditions CHEMFIT 3XX

max. allowed pressure PS:	10 bar
max. allowed temperature TS:	140 °C

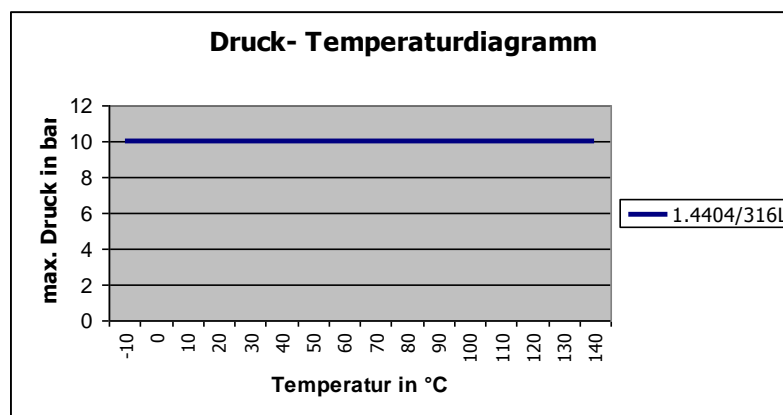


Fig. 5 CHEMFIT pressure-temperature diagram

## 7 Parts and accessories

Certificates		
CHEMFIT	Part	Item number
310 / 311 / 312 / 315	EN10204-2.2 for surface finishing (wetted parts)	285063620
310 / 311 / 312 / 315	EN10204-31B for material (wetted parts)	285063630

Weld in socket G 1 1/4 " connection		
CHEMFIT	Part	Item number
310	Safety weld in socket straight, 40mm, 1.4435/316L	285063720
310	Safety weld in socket inclined, 40mm, 1.4435/316L	285063730

Seals		
CHEMFIT	Part	Item number
310	Sealing Set EPDM / FDA USP IV	285063640
	Sealing Set FPM	285063650
311 / 312 / 315	Sealing EPDM / FDA USP IV	285063760
	Sealing FPM	285063770

Cap		
CHEMFIT	Part	Item number
310 / 311 / 312 / 315	Protection Cap CHEMfit	285063750



Please state serial number of your holder when ordering parts and accessories

# SI Analytics

a **xylem** brand

Hersteller  
(Manufacturer)

**Xylem Analytics Germany GmbH**

Am Achalaich 11  
82362 Weilheim  
Germany

SI Analytics  
Tel. +49(0)6131.66.5111  
Fax. +49(0)6131.66.5001  
E-Mail: [si-analytics@xylem.com](mailto:si-analytics@xylem.com)  
[www.XylemAnalytics.com](http://www.XylemAnalytics.com)

Service und Rücksendungen  
(Service and Returns)

**Xylem Analytics Germany Sales GmbH & Co.KG**

SI Analytics

Gebäude G12, Tor Rheinallee 145  
55122 Mainz  
Germany

Tel. +49(0)6131.66.5119  
Fax. +49(0)6131.66.5001  
E-Mail: [Service-Sensors.si-analytics@xylem.com](mailto:Service-Sensors.si-analytics@xylem.com)

SI Analytics is a trademark of Xylem Inc. or one of its subsidiaries.  
© 2021 Xylem, Inc. Version 211007 **US**

