

ECDI - ECDC - ECDIM - ECDCIM - EICD - EICDC - ECDHL



ECDI series



ECDC series



ECDIM series



ECDCIM series



EICDHPT series



EICDC series



ECDHL series

CONDUCTIVITY PROBES

EN

OPERATING MANUAL



This operating instructions contains safety information that if ignored can endanger life or result in serious injury.

Read these instructions **carefully** before use and keep them for future reference.

Information and specifications on this manual could be uncorrect or could have printing errors. Specifications are subject to change without notice.

GENERAL SAFETY GUIDELINES

Operating, installing, or maintaining the unit in any way that is not covered in this manual could cause death, serious personal injury, or damage to the equipment.

SIMBOLI

This manual use the following safety message icon:



Danger!

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Warning!

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Importante! - Indica una situazione potenzialmente pericolosa che, se non viene evitata, può determinare un risultato o uno stato indesiderato. Una pratica non correlata a lesioni personali.



Riferimento incrociato - Questo simbolo indica un riferimento verso una pagina specifica o un paragrafo del manuale.

PURPOSE OF USE AND SAFETY

EQUIPMENT INTENDED FOR THE MEASUREMENT OF CONDUCTIVITY IN WATER.

Do not use in explosive area (EX).
Do not use with flammable chemicals.
Do not use with radioactive chemicals.

Use the probe in accordance with the data and specifications printed on the label.

Do not modify or use in a manner inconsistent with the provisions of the operating manual.



When using this product with aggressive chemicals observe the regulations concerning the transport and storage of aggressive fluids.



When installing always observe national regulations.



Manufacturer is not liable for any unauthorized use or misuse of this product that may cause injury, damage to persons or materials.



Probes must be serviced and repaired by qualified and authorized personnel only.



Before any operation:

- always read chemical Material Safety Data Sheet (MSDS);
- always wear protective clothing;
- empty and rinse the liquid end before work on a the product which has been used with hazardous or unknown chemicals.



Avoid grinding / shock / falls / friction.

Environmental safety

Work area
Always keep the area clean to avoid and/or discover emissions.

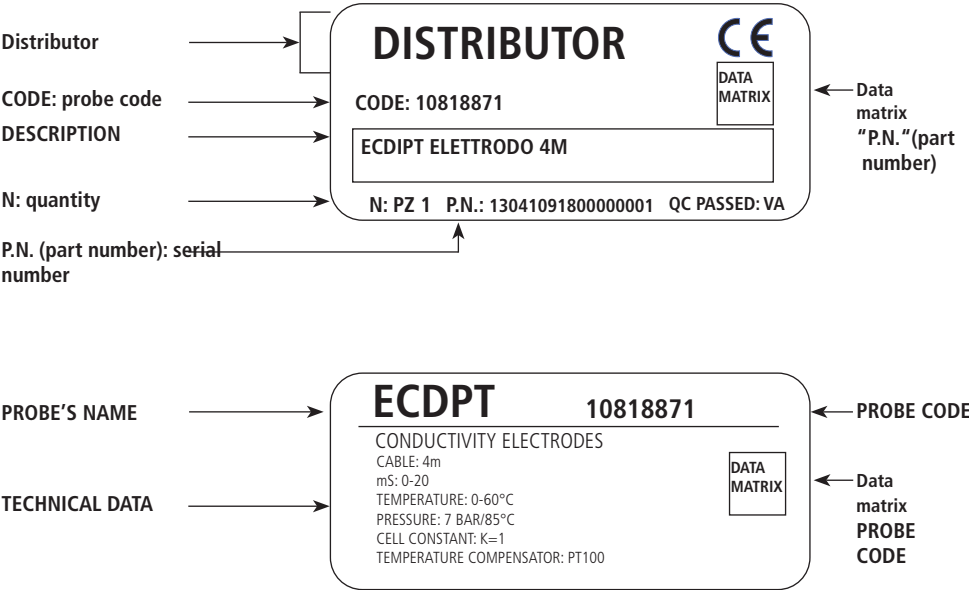
Recycling guidelines
Always recycle according to these guidelines:
1. If the unit or parts are accepted by an authorized recycling company, then follow local recycling laws and regulations.
2. If the unit or parts are not accepted by an authorized recycling company, then return them to the nearest representative.

Waste and emissions regulations
Observe these safety regulations regarding waste and emissions:

- Dispose appropriately of all waste.
- Handle and dispose of the dosed chemical in compliance with applicable environmental regulations.
- Clean up all spills in accordance with safety and environmental procedures.
- Report all environmental emissions to the appropriate authorities.

LABEL

Examples of labels.



Spare parts
For spare parts orders or any other communication, refer to the pump's label.
Code (CODE) and serial number (P / N) uniquely identify the probe.

 A not suitable transportation or storage can cause damages.

Use original box to pack the probe.

Observe storage conditions also for transportation.

Although packed, always protect the unit against humidity and the action of chemicals.

 Before return the probe to the manufacturer Repair service, clean and rinse it.

 DO NOT TRASH PACKAGING. USE IT TO RETURN THE PROBE.

Transportation and storage temperature 10 - 50°C (32 - 122°F)
Umidity..... 95% relative humidity (not condensed)

MODELS

EC DHL Conductivity probes with platinum electrodes.
High linearity

Fig. 1. ECDHL probe



Technical features

Range:
EC DHL/01 0-200 µS (K=0,1)
EC DHL/1 0,2-20 mS (K=1)
EC DHL/10 20-200 mS (K=10)

Temperature..... 0-70° C (32-158°F)
Transportation and storage temperature 10-50°C (32-122°F)
Max pressure 7 bar (101 PSI)
Cable lenght 5 m
Material Epoxy body; platinum electrode
Protection IP65

EC DHL not compensated
EC DHL C Temperature NTC 10K compensated
EC DHL CPT Temperature PT100 compensated

Connection cable

COMPENSATION	CABLE		WIRES SIZE
/	RED	ELECTRODES	2 x 0.50
	BLACK		
	GROUND	GROUND	
NTC 10K	RED	ELECTRODES	2 x 0.50
	BLACK		
	GROUND	GROUND	2 x 0.50
	WHITE-GREEN	NTC 10K	
PT 100	RED	ELECTRODES	2 x 0.50
	BLACK		
	GROUND	GROUND	2 x 0.50
	WHITE-GREEN	PT 100	

MODELS

ECDC Conductivity probes with graphite electrodes.

Fig. 2. ECDC probes



Technical features

Range:	
ECDC/1	0-20 mS (K=1) - not compensated
ECDC/1	0-20 mS (K=1) - Temperature NTC 10K compensated
ECDC/1	0-20 mS (K=1) - Temperature PT100 compensated
ECDC/10	0-200 mS (K=10) - not compensated
ECDC/10	0-200 mS (K=10) - Temperature NTC 10K compensated
ECDC/10	0-200 mS (K=10) - Temperature PT100 compensated
Immersion:	
ECDCIM/1	0-20 mS (K=1) - not compensated
ECDCIM/1	0-20 mS (K=1) - Temperature NTC 10K compensated
ECDCIM/1	0-20 mS (K=1) - Temperature PT100 compensated
ECDCIM/10	0-200 mS (K=10) - not compensated
ECDCIM/10	0-200 mS (K=10) - Temperature NTC 10K compensated
ECDCIM/10	0-200 mS (K=10) - Temperature PT100 compensated
Temperature	0-60° C (32-158°F)
Transportation and storage temperature	10-50°C (32-122°F)
Max pressure	7 bar (101 PSI)
Cable lenght	4 m
Material	PVDF body; graphite electrode
Fitting	R3/4" (G1/2" immersion version)
Protection	IP65

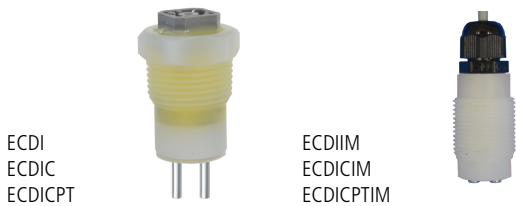
Connection cable

COMPENSATION		CABLE		WIRES SIZE	
N/A	RED	ELECTRODES		4 x 0.14	
	BLACK				
	GROUND	GROUND			
NTC 10K	RED	ELECTRODES		4 x 0.14	
	BLACK				
	WHITE	NTC 10K			
	GREEN				
PT 100	RED	ELECTRODES		2 x 0.50	
	BLACK				
	BLUE	GROUND		4 x 0.22	
	GREEN	PT 100			
	BROWN				
	YELLOW-WHITE				

MODELS

ECDI Conductivity probes with stainless steel electrodes.

Fig. 3. ECDI



Technical features

Range:	
ECDI/1	0-5 mS (K=1) - not compensated
ECDI/01	0-200 µS (K=0,1) - not compensated
ECDIC/1	0-5 mS (K=1) - Temperature NTC 10K compensated
ECDIC/01	0-200 µS (K=0,1) - Temperature NTC 10K compensated
dECDICPT/1	0-5 mS (K=1) - Temperature PT100 compensated
ECDICPT/01	0-200 µS (K=0,1) - Temperature PT100 compensated
Immersion:	
ECDI/1	0-5 mS (K=1)
ECDI/01	0-200 µS (K=0,1)
ECDIC/1	0-5 mS (K=1)
ECDIC/01	0-200 µS (K=0,1)
ECDICPT/1	0-5 mS (K=1)
ECDICPT/01	0-200 µS (K=0,1)
Temperature.....	0-60° C (32-158°F)
Transportation and storage temperature	10-50°C (32-122°F)
Max pressure	7 bar (101 PSI)
Cable lenght	4 m
Material	PVDF body; stainless steel electrode
Protection	IP65

Connection cable

COMPENSATION	CABLE		WIRES SIZE
N/A	Yellow	ELECTRODES	AWG20
	Blue		
NTC 10K	Yellow	ELECTRODES	AWG20
	Blue		
	WHITE	NTC 10K	
	GREEN		
PT 100	Yellow	ELECTRODES	2 x 0.50
	Blue		
			AWG20
	WHITE	PT 100	
	GREEN		

MODELS

EICDC Stainless steel probes for conductivity.

Fig. 4. EICDC



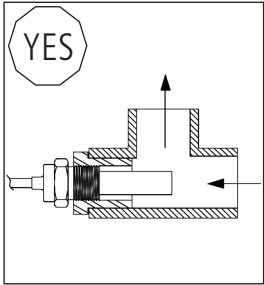
Technical features

Range:	
EICDC/1	0-20 mS (K=1) - Temperature NTC 10K compensated
EICDC/01	0-200 µS (K=0,1) - Temperature NTC 10K compensated
EICDC/001	0-20 µS (K=0,01) - Temperature NTC 10K compensated
EICDCPT/1	0-20 mS (K=1) - Temperature PT100 compensated
EICDCPT/01	0-200 µS (K=0,1) - Temperature PT100 compensated
EICDCPT/001	0-20 µS (K=0,01) - Temperature PT100 compensated
EICDHPT/1	0-20 mS (K=1) - Temperature PT100 compensated
EICDHPT/01	0-200 µS (K=0,1) - Temperature PT100 compensated
EICDHPT/001	0-20 µS (K=0,01) - Temperature PT100 compensated
Temperature..... 0-130° C (EICDHPT: 0-200°C)	
Transportation and storage temperature 10-50°C (32-122°F)	
Max pressure	15 bar (218 PSI)
Cable lenght	4 m
Material	stainless steel body; stainless steel electrode
Protection	IP65

Connection cable

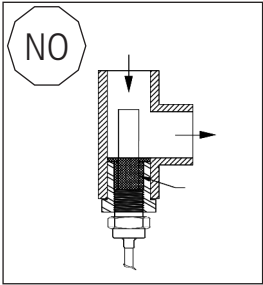
COMPENSATION	CABLE		WIRES SIZE
NTC 10K	RED	ELECTRODES	4 x 0.14
	BLACK		
	WHITE	NTC 10K	
	GREEN		
	BLUE	SCHERMO	
PT 100	RED	ELECTRODES	4 x 0.22
	BLACK		
	GREEN	PT 100	
	BROWN		
	YELLOW-WHITE		
	BLUE	SHIELD	

**PROPER
INSTALLATION**

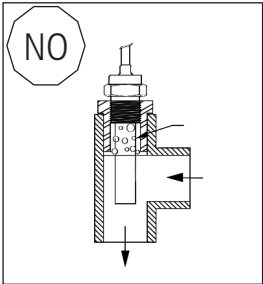


Sensor must be installed in such a way that flow is oriented towards the end of the probe.
This position avoids air bubbles and sediments on the probe that could alter readings.

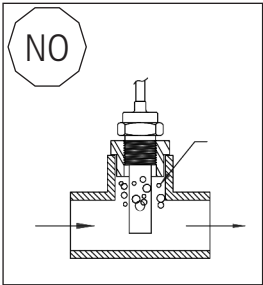
**INCORRECT
INSTALLATION**



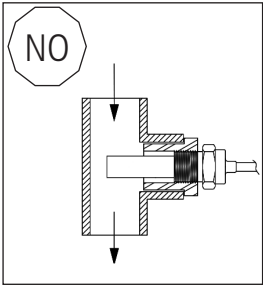
This installation could cause the deposit of impurities and solid parts.



This installation could cause air bubbles around the probe

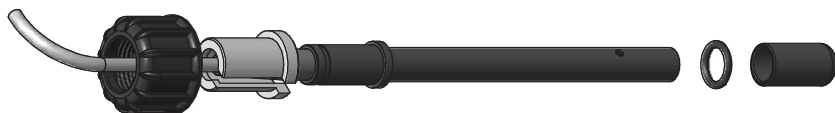


This installation could cause air bubbles around the probe



This installation could cause air bubbles around the probe or the deposit of impurities and solid parts.

ASSEMBLING ECDHL



INSTALLATION ECDHL

- Install the probe in the probe holder as shown in the figure.

ECDHL / PEA



ECDHL / NPED



CALIBRATION

Calibrate the probe monthly or more if the application need higher precision.

The sensor need to be calibrated to the instrument it is connected to.

Two points calibration: 0 and a value close to working point.

For better results:

- connect the probe to the instrument;
- calibrate at plant temperature.

0 Calibration

Wash and rinse the probe. Calibrate in air.

2nd point calibration

Use a buffer solution with a value close to working point. Completely dip the probe into the buffer solution.

CAUTION: Make sure that no bubbles are inside the cavity of the probe.

Perform calibration according to the procedure described in the instrument manual.

MAINTENANCE

Maintenance schedule

 In order to ensure the requirements of potable drinking water treated and the maintenance of the improvements as declared by the manufacturer, this equipment must be checked at least once a month.

OPERATOR PROTECTION

Use safety equipment according to the company regulations.

Use this safety equipment within the work area during installation, service and when handling chemicals:

- protective mask
- protective gloves
- safety goggles
- ear plugs or hear muffs
- further security device, if necessary.

POWER SUPPLY DISCONNECTION

Always disconnect power to the motor before you perform any installation or maintenance tasks. Failure to disconnect power will result in serious physical injury.

 Installation and maintenance tasks should be carried out by **AUTHORIZED AND QUALIFIED PERSONNEL** only in accordance with local regulations.

 Use original spare parts.

Maintenance inspection

A routine maintenance includes a three-month inspections:
Shorten the inspection intervals appropriately if the chemical is abrasive or corrosive.

Routine maintenance and inspections

Perform these tasks whenever you perform routine maintenance:

- Check probe integrity
- Check electrical wiring.
- Check for corrosion on parts of the probe
- Clean the probe.

Probe cleaning

Regularly clean the probe to ensure a stable and accurate reading.

- Gently wash the probe with a detergent.
- Rinse with running water.
- Allow to immersion in a 5% HCl solution. Rinse with water.

ATTENTION!

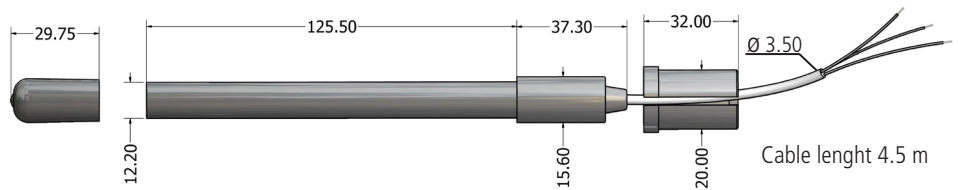
DO NOT RUB ELECTRODE: ABRASIONS DAMAGE THE SURFACE AND CAUSE INCORRECT READING.

ATTENTION!

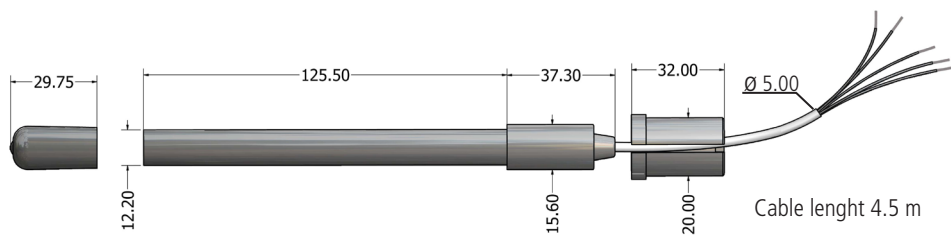
PLATINUM ELECTRODES **ECDHL SERIES**.
DO NOT TOUCH THE PLATINUM SURFACE.
PROBE COULD BE DAMAGED IRREPARABLY.

Fig. 5. Dimensions ECDHL (mm)

ECDHL/xx



ECDHLC/xx



Dimensions

Fig. 6. Dimensions ECDC (mm)

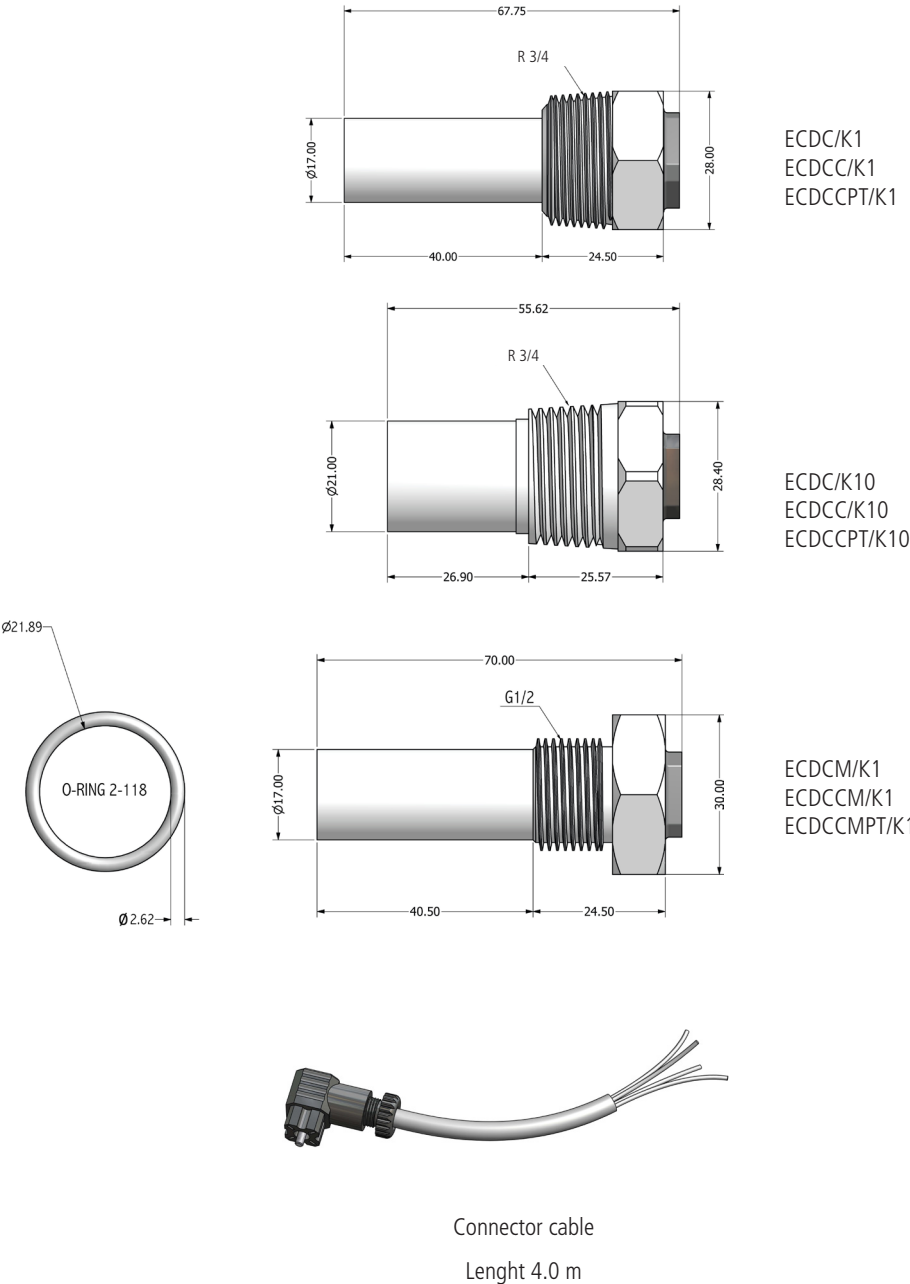
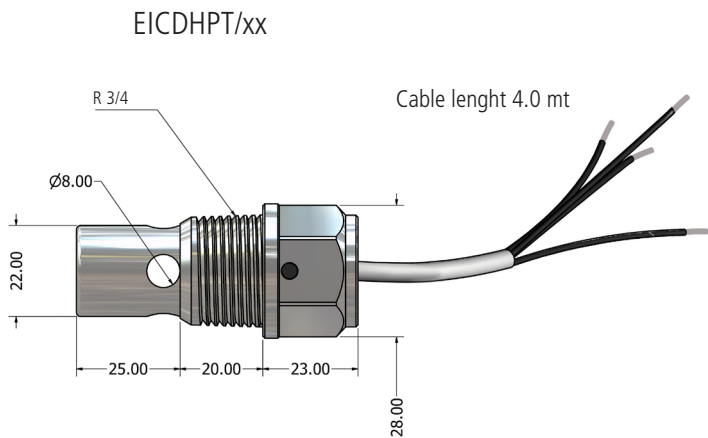
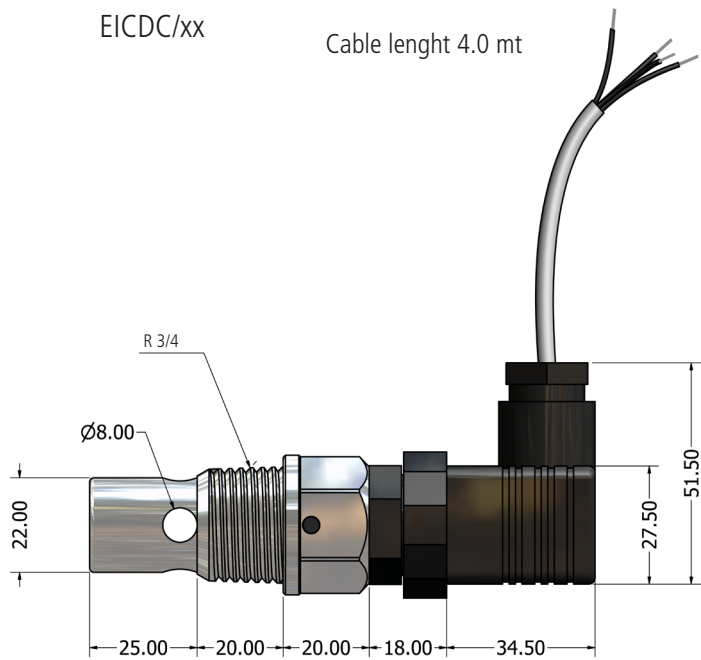


Fig. 7. Dimensions EICDC (mm)



Dimensions

Fig. 8. Dimensions ECDI - ECDIC . ECDICPT (mm)
3/4 K1 PVDF

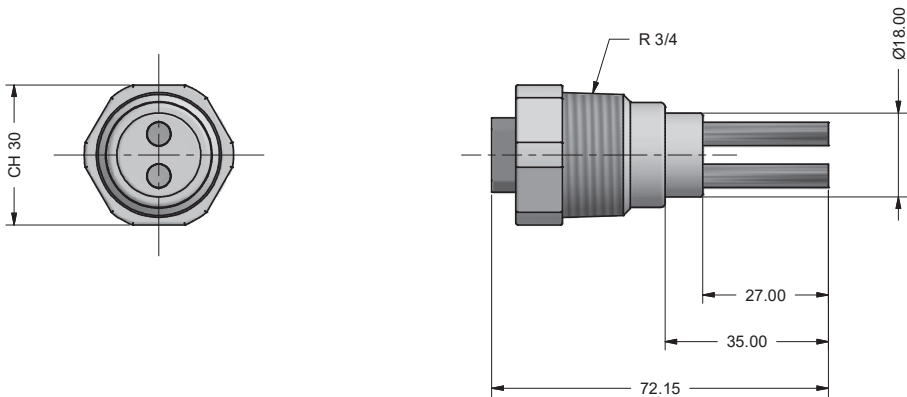
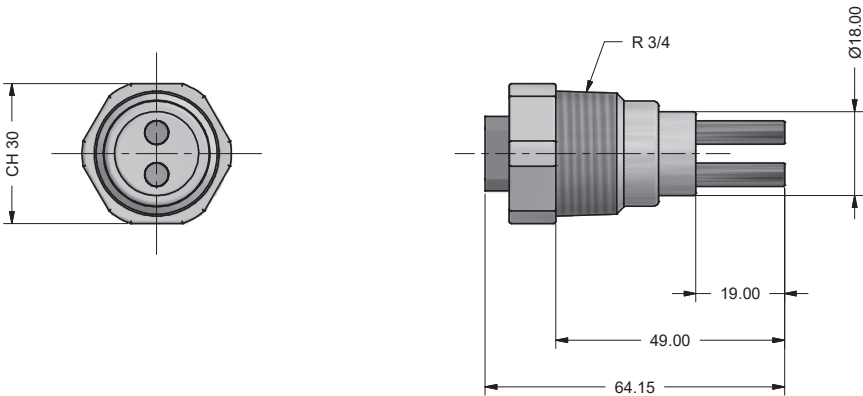
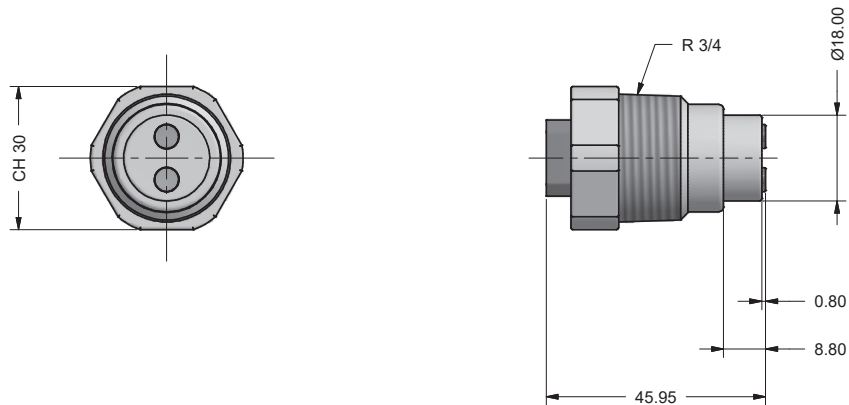
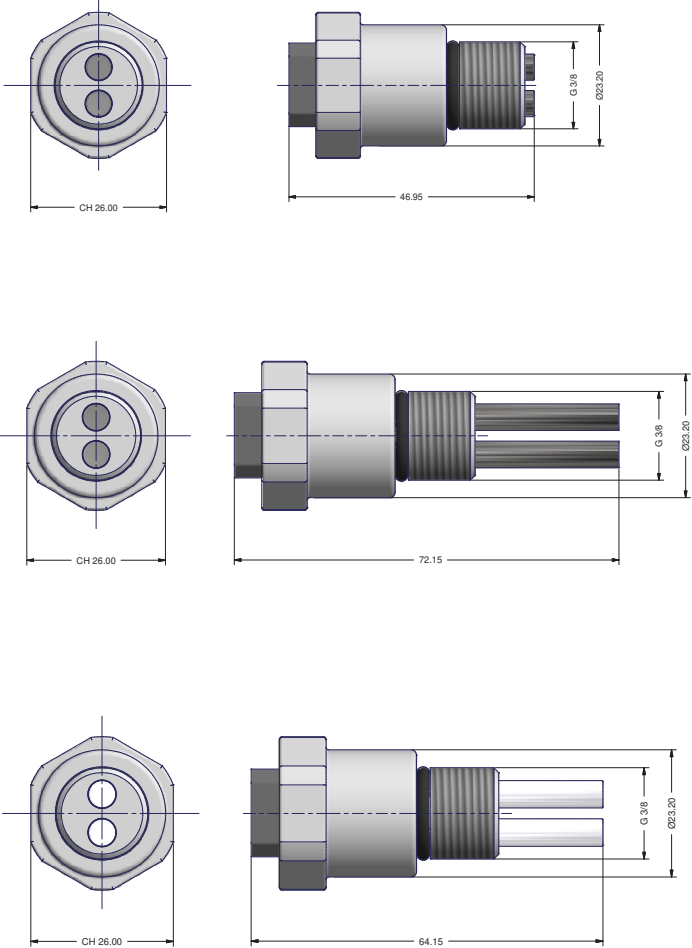
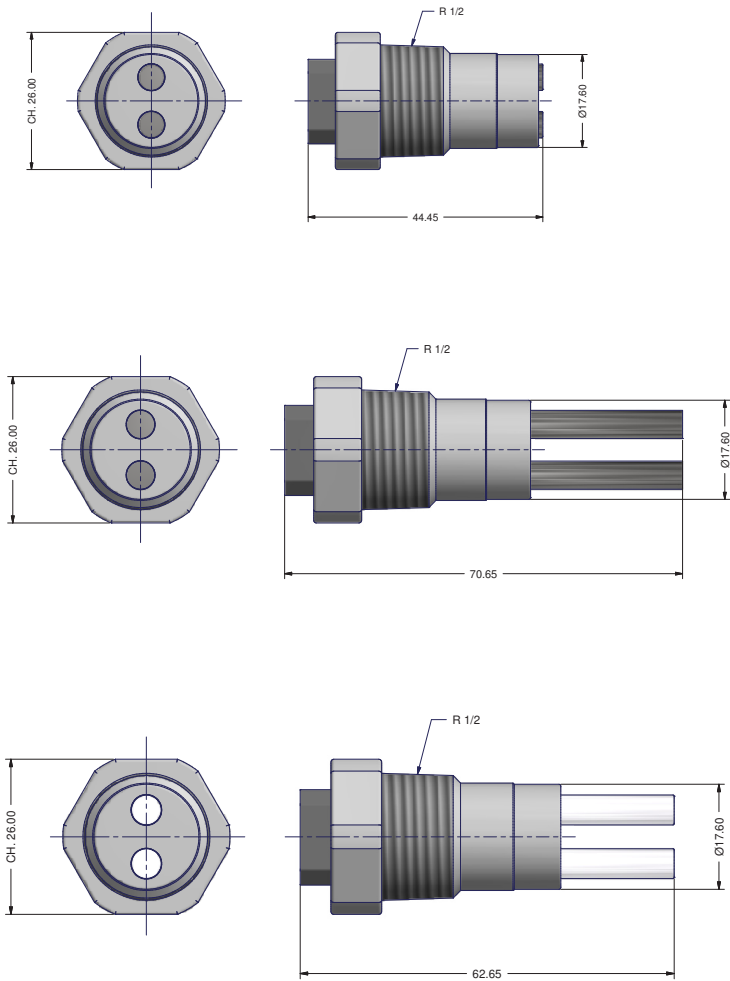


Fig. 9. Dimensions ECDI - ECDIC . ECDICPT (mm)
3/8 K1 PVDF

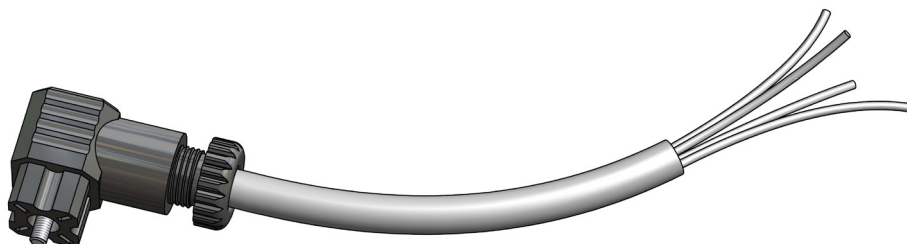


Dimensions

Fig. 10. Dimensions ECDI - ECDIC . ECDICPT (mm)
1/2 K1 PVDF



CONNECTOR
CABLE



Connector cable

Length 4.0 m

PRODUCT SERVICE REPAIR FORM

ENCLOSE THE PRESENT FORM TO THE DELIVERY NOTE

DATE

SENDER

Company name.....
Address,
Phone no.
Contact person.....

PRODUCT TYPE (see product label)

DEVICE CODE
S/N (serial number).....

OPERATING CONDITIONS

Location/installation description
.....
Chemical
Start-up (date) Running time (approx. hours).....

REMOVE ALL THE LIQUID AND DRY IT BEFORE PACKAGING IN ITS ORIGINAL BOX.

DESCRIPTION OF PROBLEM

- ☐ MECHANICAL
Wear parts.....
Brekage/other damages
Corrosion.....
Other
- ☐ ELECTRICAL
Connections, connector, cables
Other
- ☐ NOT OR INADEQUATE FUNCTION/OTHER
.....
.....
.....

I declare that the product is free of any hazardous chemical.

Signature of the compiler

Company stamp

INDEX

- GENERAL SAFETY GUIDELINES 2**
- PURPOSE OF USE AND SAFETY 3**
- ENVIRONMENTAL SAFETY.....4**
- LABEL.....4**
- SPARE PARTS.....4**
- MODELS.....6**
 - ECDHL 6
 - Technical features..... 6
 - Connection cable 6
- MODELS.....7**
 - ECDC 7
 - Technical features..... 7
 - Connection cable 8
- MODELS.....9**
 - ECDI 9
 - Technical features..... 9
 - Connection cable 10
- MODELS.....11**
 - EICDC 11
 - Technical features..... 11
 - Connection cable 12
- PROPER INSTALLATION.....13**
- INCORRECT INSTALLATION 14**
- ASSEMBLING ECDHL.....15**
- INSTALLATION ECDHL 15**
- CALIBRATION 16**
- MAINTENANCE 17**
 - Maintenance schedule..... 17
 - Maintenance inspection 17
 - Probe cleaning 17
 - Dimensions 18
 - Probe Service Form..... 26

PRECAUTIONS RELATING TO DIRECTIVES, REGULATIONS AND STANDARDS

§ CE/EU and UKCA marking

We guarantee that this product meets the essential requirements of the applicable Directives and Regulations based on the following specifications. Please carefully consider the following specifications for use of the product in European Union member countries and the United Kingdom.

• CE/EU harmonized directives and standards

Directives

DIRECTIVE 2014/30/EU

DIRECTIVE 2011/65/EU

DELEGATED DIRECTIVE (EU) 2015/863

Harmonized standards

EN ISO 12100

EN IEC 61326-1

EN IEC 63000

• UKCA harmonized regulations and standards

Regulations

2008 2016 No. 1091

2012 No. 3032

Harmonized standards

BS EN ISO 12100

BS EN IEC 61326-1

BS EN IEC 63000



Disposal of end-of-life equipment by users

This symbol warns you not to dispose of the product with normal waste. Respect human health and the environment by giving the discarded equipment to a designated collection center for the recycling of electronic and electrical equipment. For more information visit the online site.



When dismantling a pump please separate material types and send them according to local recycling disposal requirements. We appreciate your efforts in supporting your local Recycle Environmental Program. Working together we'll form an active union to assure the world's invaluable resources are conserved.