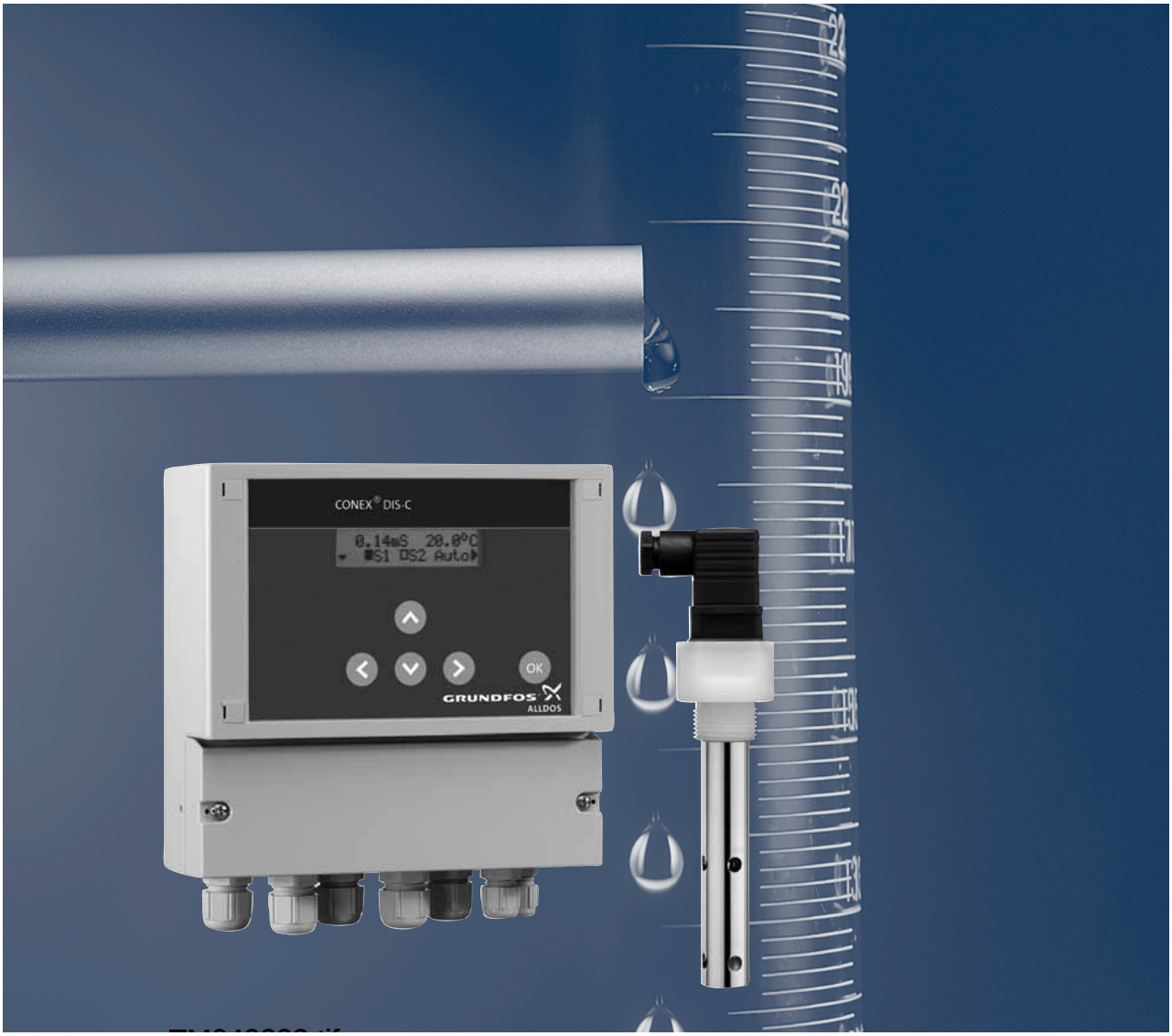
Conex® DIS-C

Measuring amplifiers and controllers for conductivity measurement (conductive, inductive)



Contents

Product features

Conex® DIS

Measuring amplifiers and controllers for instrumentation specialists

The Conex® DIS (**D**osing **I**nstrumentation **S**tandard) are simple, cost-efficient units for amplifying and control. Fitted with a powerful 16-bit microprocessor system and offering a choice of settings, the DIS models ensure high water quality while reducing the volumes of chemicals dosed. Simplicity and efficiency combined.

Conex® DIS-C

Measuring amplifier and controller for conductivity measurement

The Conex® DIS-C measures conductivity in a range of applications from bottle-washing to harsh desalination applications. This is because the DIS-C is available with a choice of conductive or inductive measuring cells.

When fitted with conductive measuring cells, the DIS-C is suitable for pressures of up to 16 bar at 25 °C. The maximum operating temperature is 135 °C.

Display languages: German, English and French.

DIS-C models with inductive measuring cells are ideal for aggressive media because the measuring coils do not come into contact with the sample water.

Monitoring and control parameters

- Conductivity (using either conductive or inductive measuring cells).

TM04 1818 1108

Fig. 1 Conex® DIS-C

In the following chapters, the Conex® DIS-C measuring amplifiers and controllers are simply referred to as "controllers".

Identification

Type key, Conex® DIS-C, controller

Example: DIS-C 1-CC W-G

Example:	DIS-C	1-CC	W	-G
Measuring amplifier and controller				
DIS-C Dosing Instrumentation Standard for conductivity measurement				
Input parameter 1				
CC Conductivity, conductive				
CI Conductivity, inductive				
Mounting				
W Wall-mounted				
P Panel-mounted				
Voltage				
G 1 x 230 V, 50/60 Hz				
H 1 x 120 V, 50/60 Hz				

Type key, Conex® DIS-C, prepacked

(with sensors and sensor equipment)

Example: DIS-C-P, CC-R1-F-PVC, P-G

Example:	DIS-C	-P	CC	-R1	-F	-PVC	P	-G
Model								
DIS-C Dosing Instrumentation Standard for conductivity measurement								
Mounting options								
P Prepacked								
Sensor								
CC Conductivity, conductive								
CI Conductivity, inductive								
Measuring range								
R1 0.05 - 200 µS/cm (conductive measurement only)								
R2 1 - 2000 µS/cm (conductive measurement only)								
R3 50 - 20000 µS/cm (conductive measurement only)								
Armature type								
F Flow								
I Immersion (inductive measurement only)								
X No armature								
Armature material								
PVC Polyvinyl chloride								
PP Polypropylene								
Controller mounting option								
W Wall-mounted								
P Panel-mounted								
Voltage								
G 1 x 230/240 V, 50/60 Hz								
H 1 x 115/120 V, 50/60 Hz								

Functions

Conex® DIS-C, controller

Functions	Conex® DIS-C, 1-CC	Conex® DIS-C, 1-CI
Input parameter 1		
Conductivity, conductive measurement	●	
Conductivity, inductive measurement		●
Mounting options		
Wall-mounted	●	●
Panel-mounted	●	
Voltage		
1 x 230 V, 50/60 Hz	●	●
1 x 120 V, 50/60 Hz	●	●

Conex® DIS-C, controller

General data

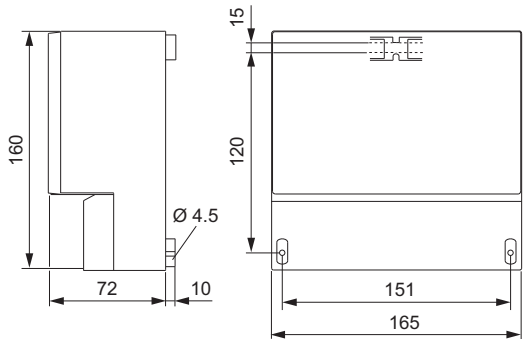
TM04 1818 1108

Electronics	Microcontroller-operated
Display	Two-line, alphanumeric LCD
Display mode	• measurement values as physical variables • temperature indication • operational and status messages.
Operation	• five membrane keys • plain-text menu control
Languages	English, German and French
Password	Operational protection with code
Compensation	Temperature compensation
Measuring range	Automatic internal selection of the following: • measuring range • measuring frequency • measuring tension.
Cell constant	Adjustable
Inputs/outputs	Galvanic separation
Analog output (0-20 mA or 4-20 mA)	Galvanic separation, can be used as measured value or continuous controller
Digital input	Controller stop input
Enclosure class	Wall-mounted: IP 65 Panel-mounted: IP 54
Permissible temperature range	Operation: 0 to +50°C Storage: –20 to +65°C
Permissible relative air humidity	Max. 90% (non-condensing)
Mains voltage	230 V –10 %/+6 % or 130 V –10 %/+6 %
Weight	Approx. 0.8 kg

Control functions

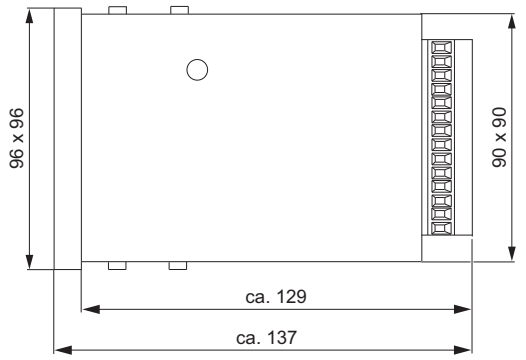
Operation modes	Manual or automatic
Relays	• Alarm relay • Control relays 1 + 2: Limit-value controller Pulse-pause controller Pulse-frequency controller Continuous controller (analog output: 4-20 mA)
Limit values	Adjustable to physical variable within the measuring range
Setpoint selection	0 to 100% of the measuring range
Proportional band, X_p	0.1 to 3000%
Reset time, T_N	1 to 3000 s, resolution 1 s
Control direction	Upward or downward control, with the corresponding controller types
Alarm relay delay	0 to 999 seconds

Dimensions



TM04 1407 4209

Fig. 2 Conex DIS-C, wall-mounted



TM04 1408 4209

Fig. 3 Conex DIS-C, panel-mounted

Conductive measuring cells for conductivity measurement

Description

- PVDF body with inserts made of PVDF and FKM
- Two coaxial stainless steel electrodes
- Integrated platinum resistance thermometer
- Screw-in, 3/4" thread
- High-quality product for a long service life.

Technical data

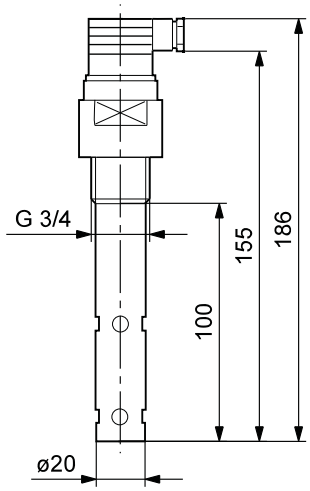
Temperature range	0 to 135 °C
Maximum operating pressure	16 bar (at 25° C)
Connecting cable	max. 50 metres
Material of sensor body	PVDF
Material of electrode	Stainless steel, DIN 1.4571
Temperature sensor	Pt100

Order data

Description	Measuring range	Cell constant	Product number
Conductive measuring cell	0.05-200 µS/cm	c = 0.05	96609150 (314-410-10001)
	1-2000 µS/cm	c = 0.20	96609151 (314-411-10001)
	50-20000 µS/cm	c = 1.00	96609152 (314-412-10001)

TM04 2233 2008

Fig. 4 Conductive measuring cell for conductivity measurement



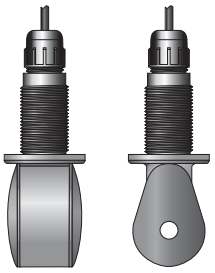
TM03 4076 1406

Fig. 5 Dimensions, conductive measuring cell for conductivity measurement

Inductive measuring cell for conductivity measurement

Description

- Material: PP
- Internal ring-shaped measuring coils
- Integrated temperature sensor
- 6 metres of permanently connected cable
- Particularly suitable for aggressive liquids
- High chemical resistance
- Dirt-proof
- Sensor not in contact with liquid
- Compact design.



TM03 1417 4409

Fig. 6 Inductive measuring cell for conductivity measurement

Technical data

Material	Polypropylene
Max. temperature	90 °C
Max. pressure at 20°C	10 bar
Max. pressure at 60°C	6 bar
Accuracy	± 2%
Integrated temperature sensor	NTC
Max. cable length between sensor and amplifier	16 metres (with extension cable)
Connection cable	6 metres
Measuring range	0 - 2000 mS/cm
	0 - 200 mS/cm
	0 - 20 mS/cm
	0 - 2 mS/cm

Order data

Description	Product number
Inductive measuring cell for conductivity measurement, including 6 metres of permanently connected cable	95720194 (314-420)

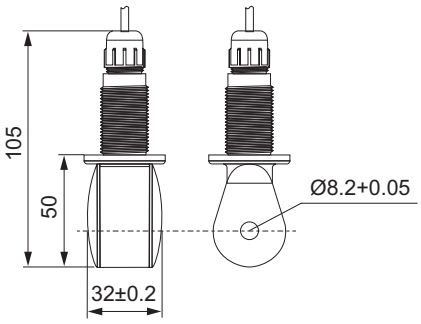


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Fig. 7 Dimensions, inductive measuring cell for conductivity measurement

Product selection

Conex® DIS-C, controller for conductive measurement

Controller	Voltage		Controller mounting		Enclosure material		Enclosure class		Input parameter 1		Type designation	Product number
	230/240 V	115/120 V	Panel-mounted	Wall-mounted	Polystyrene	Noryl	IP65	IP54	Conductivity. conductive measurement	Conductivity. inductive measurement		
Conex® DIS-C	●		●			●		●	●		DIS-C, 1-CC, P-G	96725756 (351-2005-10004)
	●			●	●		●		●		DIS-C, 1-CC, W-G	96725733 (351-2000-10006)
		●	●			●		●	●		DIS-C, 1-CC, P-H	96725757 (351-2005-10005)
		●		●	●		●		●		DIS-C, 1-CC, W-H	96725734 (351-2000-10007)

Conex® DIS-C, controller for inductive measurement

Controller	Voltage		Controller mounting		Enclosure material		Enclosure class		Input parameter 1		Type designation	Product number
	230/240 V	115/120 V	Panel-mounting	Wall-mounted	Polystyrene	Noryl	IP65	IP54	Conductivity. conductive measurement	Conductivity. inductive measurement		
Conex® DIS-C	●			●	●		●			●	DIS-C, 1-CI, W-G	96720199 (351-2300-01)
		●		●	●		●			●	DIS-C, 1-CI, W-H	96720200 (351-2300-02)

Conex® DIS-C, prepacked systems for conductive measurement

Voltage		Controller mounting options		Enclosure material		Enclosure class		Measuring principle		Cell included		Measuring range				Armature type			Armature material			Type designation	Product number
230/240V / 50/60Hz	115/120V 50/60Hz	Panel mounted	Wall mounted	ABS	Noryl (enclosure)	IP65	IP54 (enclosure)	Conductivity, conductive	Conductivity, inductive	Included	Not included	0,05 -200 µS/cm	1-2000 µS/cm	50-20000 µS/cm	0-2000mS/cm (in 4 ranges)	Flow	Immersion	No armature included	PP	PVC	Stainless steel		
●		●			●		●	●		●		●				●				●		DIS-C-P, CC-R1-F-PVC. P-G	96725760 (351-2005-10010)
●		●			●		●	●		●		●						●				DIS-C-P, CC-R1-X. P-G	96725758 (351-2005-10027)
●		●			●		●	●		●			●			●				●		DIS-C-P, CC-R2-F-PVC. P-G	96725766 (351-2005-10016)
●		●			●		●	●		●			●					●				DIS-C-P, CC-R2-X. P-G	96725764 (351-2005-10026)
●		●			●		●	●		●				●		●				●		DIS-C-P, CC-R3-F-PVC. P-G	96725772 (351-2005-10022)
●		●			●		●	●		●				●				●				DIS-C-P, CC-R3-X. P-G	96725770 (351-2005-10020)
●			●	●		●		●		●		●				●				●		DIS-C-P, CC-R1-F-PVC. W-G	96725737 (351-2000-10013)
●			●	●		●		●		●			●			●				●		DIS-C-P, CC-R2-F-PVC. W-G	96725743 (351-2000-10032)
●			●	●		●		●		●			●					●				DIS-C-P, CC-R2-X. W-G	96725741 (351-2000-10010)
●			●	●		●		●		●				●		●				●		DIS-C-P, CC-R3-F-PVC. W-G	96725749 (351-2000-10030)
	●	●			●		●	●		●		●				●				●		DIS-C-P, CC-R1-F-PVC. P-H	96725761 (351-2005-10011)
	●	●			●		●	●		●		●						●				DIS-C-P, CC-R1-X. P-H	96725759 (351-2005-10009)
	●	●			●		●	●		●			●			●				●		DIS-C-P, CC-R2-F-PVC. P-H	96725767 (351-2005-10017)
	●	●			●		●	●		●			●					●				DIS-C-P, CC-R2-X. P-H	96725765 (351-2005-10015)
	●	●			●		●	●		●				●		●				●		DIS-C-P, CC-R3-F-PVC. P-H	96725773 (351-2005-10023)
	●	●			●		●	●		●				●				●				DIS-C-P, CC-R3-X. P-H	96725771 (351-2005-10021)
	●		●	●		●		●		●		●				●				●		DIS-C-P, CC-R1-F-PVC. W-H	96725738 (351-2000-10014)
	●		●	●		●		●		●		●						●				DIS-C-P, CC-R1-X. W-H	96725736 (351-2000-10012)
	●		●	●		●		●		●			●			●				●		DIS-C-P, CC-R2-F-PVC. W-H	96725744 (351-2000-10020)
	●		●	●		●		●		●			●					●				DIS-C-P, CC-R2-X. W-H	96725742 (351-2000-10018)
	●		●	●		●		●		●				●		●				●		DIS-C-P, CC-R3-F-PVC. W-H	96725750 (351-2000-10026)
	●		●	●		●		●		●				●				●				DIS-C-P, CC-R3-X. W-H	96725748 (351-2000-10024)

Product selection

Conex® DIS-C, systems for inductive measurement

Easy product selection:

- choose a controller: 115 or 230 V, wall-mounted (not available for panel-mounting)
- there is only one sensor version
- choose a type of armature: immersion (PP) or flow (PP or PVC)
- if you need more than 6 metres of cable, choose the extension cable for additional 10 metres.

Electrode holders for conductivity measuring cells - conductive measurement

- Easy installation and commissioning
- Reliable measurement
- Quick dismantling of the electrode for cleaning or maintenance.

Order data

Description	Max. temperature [°C]	Max. pressure [bar]	Product number
Flow-type holder, PVC, DN 25	50	6	96627404 (322-002)

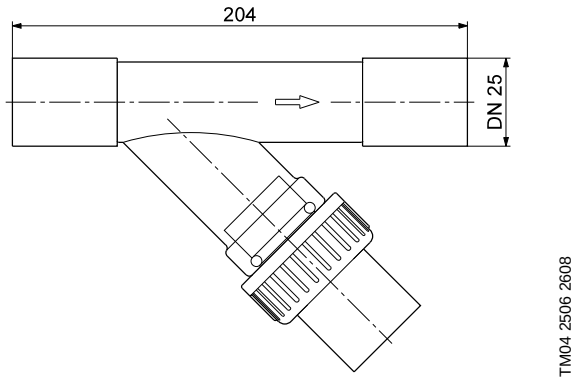


Fig. 8 Dimensions, electrode holder for conductive conductivity measuring cells, flow-type, PVC

Cable

Description	Length [m]	Product number
Cable for conductivity measuring cell - conductive measurement (maximum length 50 m)	5	96611925 (321-131/5)
	15	96611928 (321-131/15)
	25	96611929 (321-131/25)

Armatures for conductivity measuring cells - inductive measurement

- Easy installation and commissioning
- Reliable measurement
- Quick dismantling of the electrode for cleaning or maintenance.

Flow armature

Technical data

Material	PP or PVC
Max. temperature	90 °C (PP), 40 °C (PVC)
Nominal width	DN 50
Length	102 mm

Order data

Description	Product number
Flow armature, PP	95720197 (322-401)
Flow armature, PVC	95720198 (322-402)

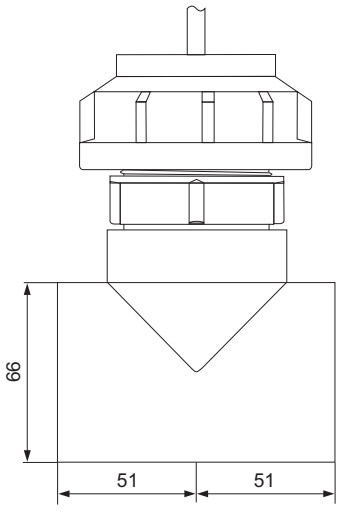


Fig. 9 Dimensions flow armature

Immersion armature

Technical data

Material	PP
Max. temperature	90 °C
Diameter	25 mm
Immersion depth	max. 900 mm
Length	1000 mm

Order data

Description	Product number
Immersion armature, PP	95720196 (322-400)

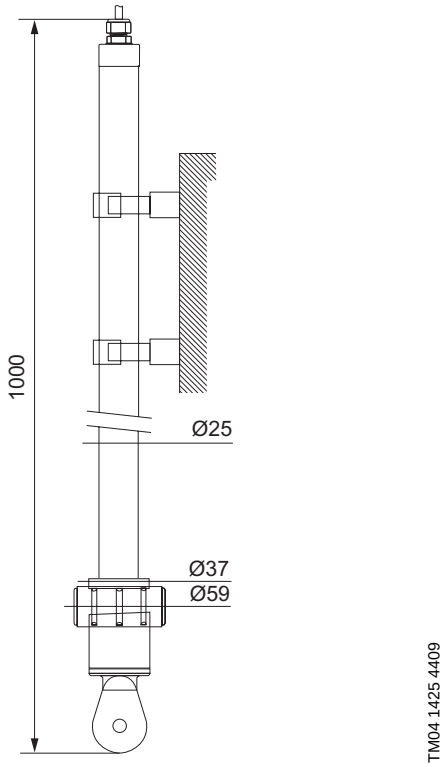


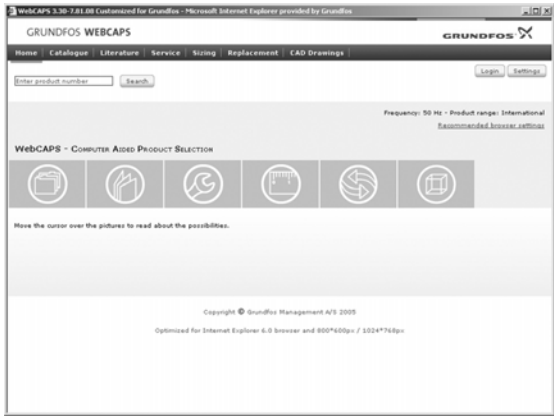
Fig. 10 Dimensions, inductive conductivity cell with immersion armature

Cable

Description	Product number
10 metres of extension cable: 4-wire, individually screened, type CAT B 23290, top line 8 8150-1 4P22	95720380 (321-329/10)

Further product documentation

WebCAPS



WebCAPS is a **Web**-based **C**omputer **A**ided **P**roduct **S**election program available on www.grundfos.com.

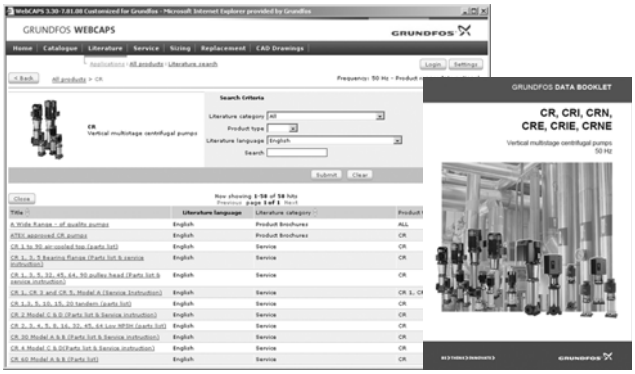
WebCAPS contains detailed information on more than 185,000 Grundfos products in more than 20 languages.

In WebCAPS, all information is divided into 6 sections:

- Catalogue
- Literature
- Service
- Sizing
- Replacement
- CAD drawings.

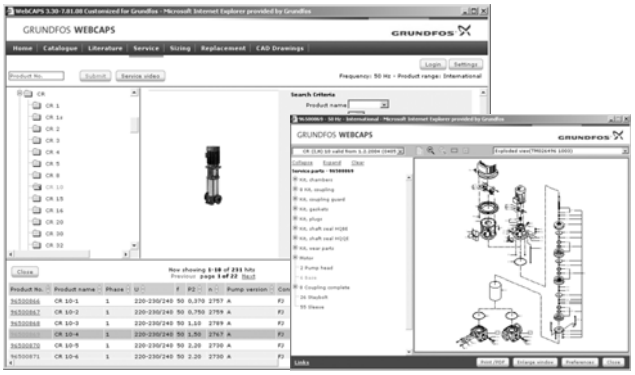
Catalogue

This section is based on fields of application and pump types, and contains
- technical data
- curves (QH, Eta, P1, P2, etc) which can be adapted to the density and viscosity of the pumped liquid and show the number of pumps in operation
- product photos
- dimensional drawings
- wiring diagrams
- quotation texts, etc.



Literature

In this section you can access all the latest documents of a given pump, such as
- data booklets
- installation and operating instructions
- service documentation, such as Service kit catalogue and Service kit instructions
- quick guides
- product brochures, etc.



Service

This section contains an easy-to-use interactive service catalogue. Here you can find and identify service parts of both existing and discontinued Grundfos pumps.
Furthermore, this section contains service videos showing you how to replace service parts.

Further product documentation

Sizing

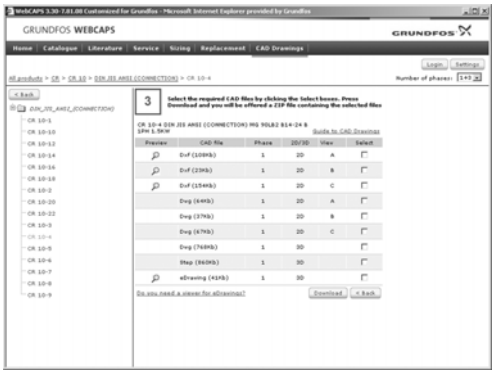
This section is based on different fields of application and installation examples, and gives easy step-by-step instructions in how to

- select the most suitable and efficient pump for your installation
- carry out advanced calculations based on energy consumption, payback periods, load profiles, life cycle costs, etc.
- analyse your selected pump via the built-in life cycle cost tool
- determine the flow velocity in wastewater applications, etc.

Replacement

In this section you find a guide to selecting and comparing replacement data of an installed pump in order to replace the pump with a more efficient Grundfos pump.
The section contains replacement data of a wide range of pumps produced by other manufacturers than Grundfos.

Based on an easy step-by-step guide, you can compare Grundfos pumps with the one you have installed on your site. When you have specified the installed pump, the guide will suggest a number of Grundfos pumps which can improve both comfort and efficiency.



CAD drawings

In this section it is possible to download 2-dimensional (2D) and 3-dimensional (3D) CAD drawings of most Grundfos pumps.

These formats are available in WebCAPS:

2-dimensional drawings:

- .dxf, wireframe drawings
- .dwg, wireframe drawings.

3-dimensional drawings:

- .dwg, wireframe drawings (without surfaces)
- .stp, solid drawings (with surfaces)
- .eprt, E-drawings.

WinCAPS

Fig. 11 WinCAPS CD-ROM

WinCAPS is a **Win**dows-based **C**omputer **A**ided **P**roduct **S**election program containing detailed information on more than 185.000 Grundfos products in more than 20 languages.

The program contains the same features and functions as WebCAPS, but is an ideal solution if no Internet connection is available.

WinCAPS is available on CD-ROM and updated once a year.

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Subject to alterations.

Grundfos Management A/S
Poul Due Jensens Vej 7
DK-8850 Bjerringbro

Telephone: +45 87 50 14 00
www.grundfosalldos.com

Grundfos Alldos Dosing & Disinfection
Alldos Eichler GmbH
Reetzstrasse 85
D-76327 Pfinztal (Söllingen)

Telephone: +49 72 40 61 0

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