



**DR. A. KUNTZE**  
**PRODUCT CATALOGUE 2011**

**Conductivity**

valid from 01.01.2011  
subject to alterations



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# Conductivity

## Things to know

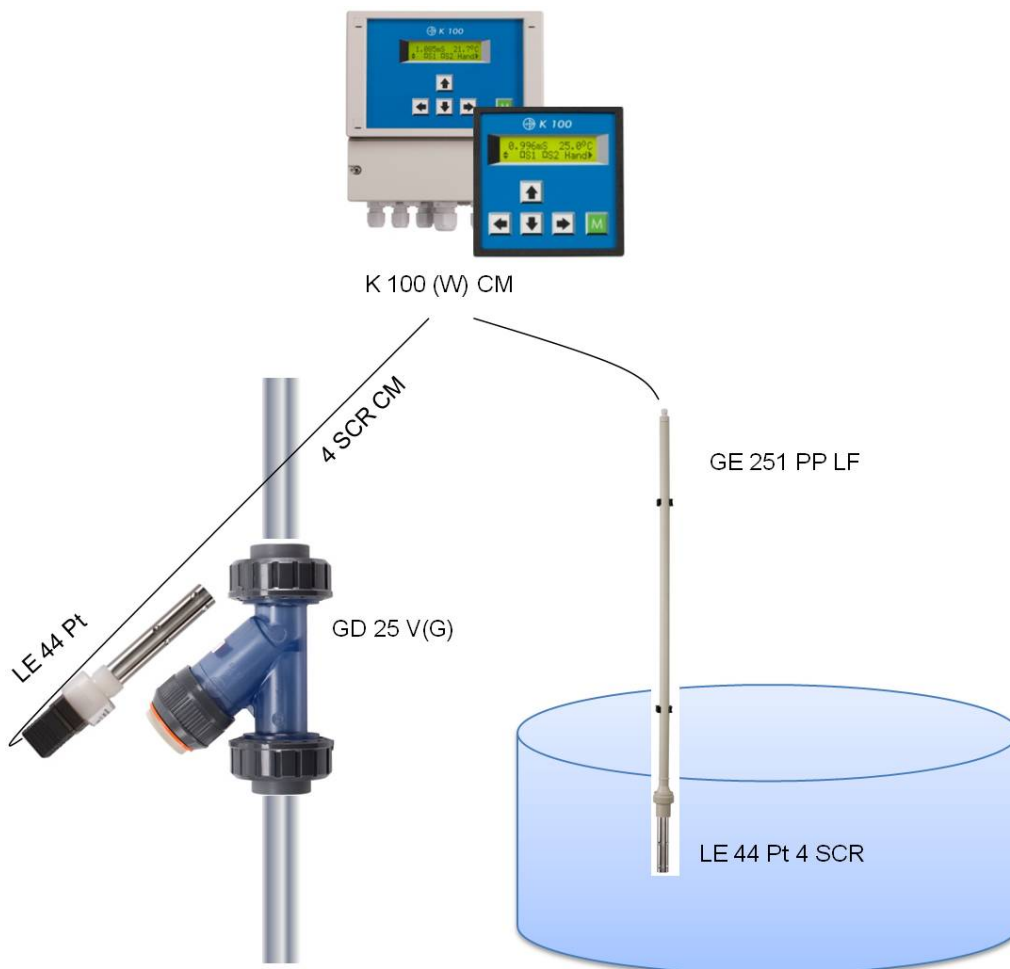
### Measuring point diagram

**For a complete measuring point you need at least:**

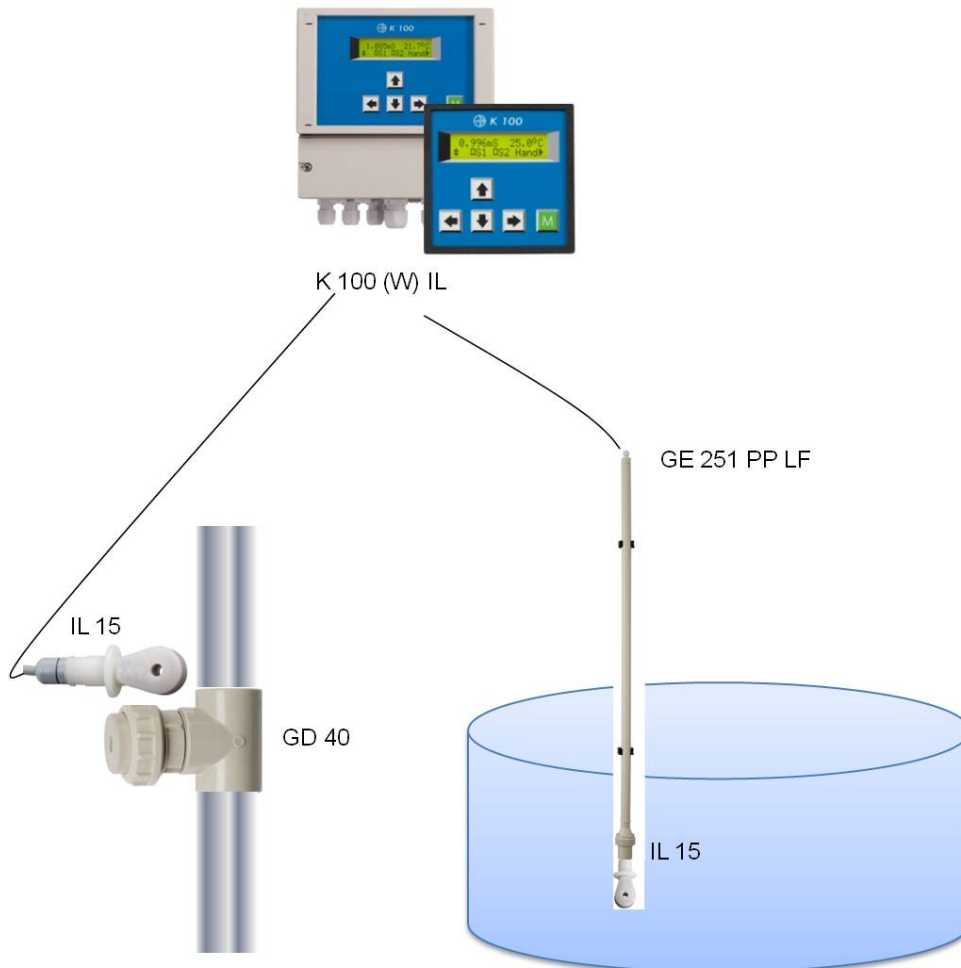
- + one measuring and control instrument
- + one assembly
- + one sensor
- + one cable

you can between conductive and inductive measurement. We advice to use the conductive measurement unless...  
... the conductivity is  $> 20 \text{ mS/cm}$   
... the hydrous medium is so aggressive that even highclass stainless steel is corroded  
...the hydrous medium contains laquer, adhesives or other polymer substances, which will sediment in or stick to the metal electrodes.

#### Conductive measuring point



### Inductive Measuring point





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## SoftCon

- Direct contact of the electrode to the measuring media, closed sensor design
- Low maintenance by ASR
- Installation in reactor outlet



### applications

-  Drinking Water / Beverages
-  Cooling And Boiler Feed Water

### description

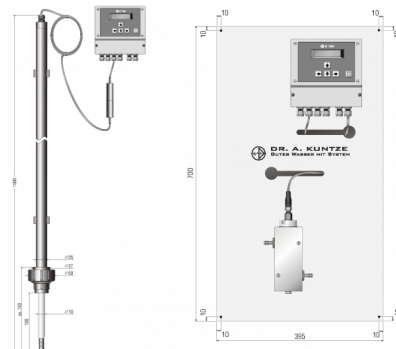
Measuring system for measurement of conductivity in the cold softening process. The complete system contains a measuring and control instrument, immersion or flow assembly, ASR (automatic sensor cleaning), sensor and cable



## technical data

<b>measuring parameter</b>		
Conductivity (conductive)	0.000 .. 1.000 mS/cm	
<b>input characteristics</b>		
accuracy	+/- 0.020 mS/cm	
temperature measuring range	-30 .. +140°C	
conditions	max. pressure	6 bar
	ambient temperature	0 .. 80°C
<b>output characteristics</b>		
output signal	0/4 .. 20 mA (scaleable, galvanically isolated)	
load	max. 500 Ohm	
registration range	Free scaleable within the measuring range	
serial interface	RS 485 - optional	
	baud rate	9600
	data format	8 bit
<b>power supply</b>		
line voltage	24/ 117/ 230 VAC, +6/-10%, 40 .. 60 Hz	
power consumption	10 VA	
<b>ambient conditions</b>		
ambient temperature	operation 0 .. +50°C, storage -20 .. +65°C	
relative humidity	max. 90 rH at 40°C (non-condensing)	
protection class	wall mounted housing	IP 65
<b>controller</b>		
control response	on/off controller (adjustable hysteresis) P/PI controller (pulse-pause, pulse-frequency or continuous output)	
relays	3 relays, each with a potential-free CO-contact, max 250 V, 6 A, 550VA	
onset delay	0 .. 200 sec till controller active	
digital input	controller stop via external contact	
<b>certificates and approvals</b>		
CE-symbol	Declaration of conformity: The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives.	

## dimensional drawing



## order information

name	description	article number
SoftCon DIP	K 100 W CM+ ASR, immersion assembly, Au-505-30-PG	70004210K
SoftCon FLOW	Complete measuring board with integrated ASR	70004220K

## order information accessories

name	description	article number
Au-505-30-PG	Conductivity sensor in 12 mm sensor design	24134210K






## K 100 (W) CM

- Easy and safe operation by plain text menu guidance
- Safety by password function
- Linear and non-linear special pure water temperature compensation



### applications

-  Cooling And Boiler Feed Water
-  Waste Water Treatment
-  Process Water

### description

The K 100 (W) CM is a sophisticated single-channel instrument for measuring and control of conductive conductivity. Temperature measurement of the measuring media is possible. The instrument is available in a panel mounted housing (K100 CM) and in a wall mounted housing (K 100 W CM).

### particular characteristics

- 2 limit values with delay, assigned to alarm relay
- 2 separate PI-controllers
- Dosage check
- Background illuminated two-line LC-Display for measured value and temperature
- Serial interface RS 485 optional
- Scaleable, galvanically isolated 0/4 .. 20 mA output
- Display of relay status and error messages
- Invertible alarm output, permanent or pulse contact

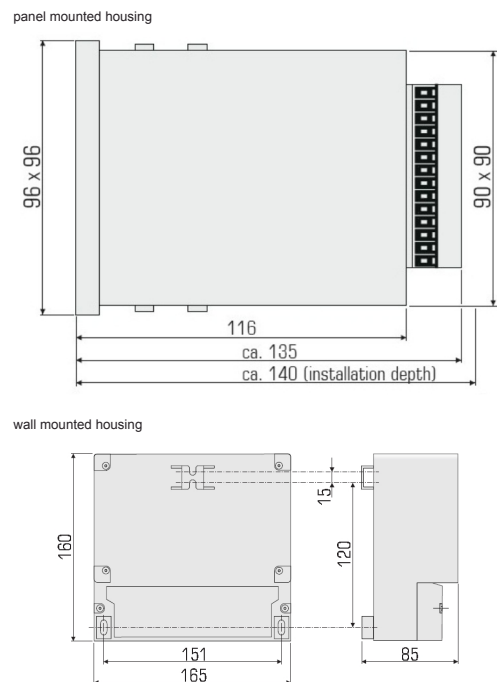




## technical data

measuring parameter	
Conductivity (conductive)	0 .. 2.000 µS/cm
	0 .. 20.00 µS/cm
	0 .. 200.0 µS/cm
	0 .. 2.000 mS/cm
	0 .. 20.00 mS/cm
	0 .. 200.0 mS/cm
input characteristics	
temperature measuring range	-30 .. +140 °C
temperature coefficient	adjustable 0 .. 8,0%/°C or non-linear
output characteristics	
output signal	0/4 .. 20 mA (scaleable, galvanically isolated)
load	max. 500 Ohm
registration range	free scaleable within the measuring range
serial interface	RS 485 (optional)
	Baud rate 9600
	data format 8 bit
power supply	
line voltage	24 / 117/ 230 VAC, +6/-10%, 40 .. 60 Hz
power consumption	10 VA
ambient conditions	
ambient temperature	Operation 0 .. +50 °C, storage -20 .. +65°C
relative humidity	max. 90% rH at 40°C (non-condensing)
protection class	panel mounted housing IP 54 (front), IP 30 (housing)
	wall mounted housing IP 65
controller	
control response	on/off controller (adjustable hysteresis) P/PI controller (pulse-pause, pulse-frequency or continuous output)
relays	2 relays, each with a potential-free NO contact, max. 250V, 6 A, 550 VA 1 alarmrelay with potential-free CO/NO contact, max. 250V, 6A, 550 VA
onset delay	0 .. 200 sec till controller active
digital input	Controller stop via external contact
certificates and approvals	
CE-symbol	Declaration of conformity: The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives.
mechanical construction - panel mounted housing	
material	Noryl
dimensions	90x90x116 mm
installation dimensions	92x92x140 mm
weight	0.75 kg
connection	push-screw terminals
mechanical construction - wall mounted housing	
material	ABS
dimensions	165x160x85 mm
weight	0.95 kg
connection	Spring-loaded terminals

## dimensional drawing



## order information

name	description	article number
K 100 CM	conductive, panel mounted housing, 230 VAC	100100K
K 100 W CM	conductive, wall mounted housing, 230 VAC	105100K

## order information accessories

name	description	article number
PKV-30-DPS	Converter for PROFIBUS-DP for max. 32 Kuntze instruments	66416000K
RS 485 Modul K 100 W	Serial interface module for series K 100	50105003K
S-341 data logger	bus data logger based on RS 485 with Kuntze protocol	42001000K

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## K 100 (W) IL

- Easy and safe operation by plain text menu guidance
- Safety by password function
- Automatic temperature compensation



### applications

-  Cooling And Boiler Feed Water
-  Waste Water Treatment
-  Drinking Water / Beverages

### description

The K 100 (W) IL is a sophisticated single-channel instrument for measuring and control of inductive conductivity. Additionally temperature measurement of the measuring media is possible. The instrument is available in a panel mounted housing (K100 IL) and in a wall mounted housing (K 100 W IL).

### particular characteristics

- 2 limit values with delay, assigned to alarm relay
- 2 separate PI-controllers
- Dosage check
- Background illuminated two-line LC-Display for measured value and temperature
- Serial interface RS 485 optional
- Scaleable, galvanically isolated 0/4 .. 20 mA output
- Display of relay status and error messages
- Invertible alarm output, permanent or pulse contact

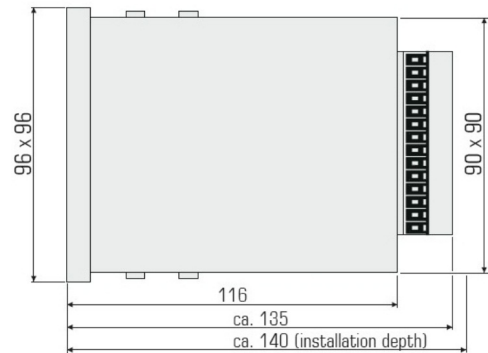


## technical data

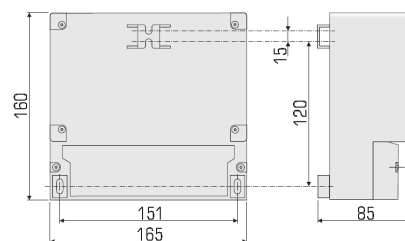
<b>measuring parameter</b>	
Conductivity (inductive)	0 .. 2.000 mS/cm 0 .. 20.00 mS/cm 0 .. 200.0 mS/cm 0 .. 2000 mS/cm
<b>input characteristics</b>	
temperature measuring range	-30 .. +140 °C
temperature coefficient	Adjustable 0 .. 8,0 %/°C or non-linear
<b>output characteristics</b>	
output signal	0/4 .. 20 mA (scaleable, galvanically isolated)
load	max. 500 Ohm
registration range	free scaleable within the measuring range
serial interface	RS 485 (optional)
	Baud rate 9600
	data format 8 bit
<b>power supply</b>	
line voltage	24 / 117/ 230 VAC, +6/-10%, 40 .. 60 Hz
power consumption	10 VA
<b>ambient conditions</b>	
ambient temperature	Operation 0 .. +50 °C, storage -20 .. +65°C
relative humidity	max. 90% rH at 40°C (non-condensing)
protection class	panel mounted housing IP 54 (front), IP 30 (housing) wall mounted housing IP 65
<b>controller</b>	
control response	on/off controller (adjustable hysteresis) P/PI controller (pulse-pause, pulse-frequency or continuous output)
relays	2 relays, each with a potential-free NO contact, max. 250V, 6 A, 550 VA 1 alarmrelay with potential-free CO/NO contact, max. 250V, 6A, 550 VA
onset delay	0 .. 200 sec till controller active
digital input	Controller stop via external contact
<b>certificates and approvals</b>	
CE-symbol	Declaration of conformity: The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives.
<b>mechanical construction - panel mounted housing</b>	
material	Noryl
dimensions	90x90x116 mm
installation dimensions	92x92x140 mm
weight	0.75 kg
connection	push-screw terminals
<b>mechanical construction - wall mounted housing</b>	
material	ABS
dimensions	165x160x85 mm
weight	0.95 kg
connection	Spring-loaded terminals

## dimensional drawing

panel mounted housing



wall mounted housing



## order information

name	description	article number
K 100 IL	inductive, panel mounted housing, 230 VAC	100190K
K 100 W IL	inductive, wall mounted housing, 230 VAC	105190K

## order information accessories

name	description	article number
PKV-30-DPS	Converter for PROFIBUS-DP for max. 32 Kuntze instruments	66416000K
RS 485 Modul K 100 W	Serial interface module for series K 100	50105003K
S-341 data logger	bus data logger based on RS 485 with Kuntze protocol	42001000K

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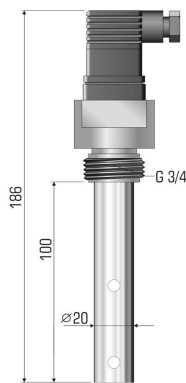
# Conductivity Sensors

## LE 44 Pt

- Integrated Pt 100 temperature sensor
- Little dirt-prone - easy to clean
- 3/4" male thread for installation in tanks or pipes or as immersion version with 6 m connected cable



LE 44 Pt



LE 44 Pt

### applications



Cooling And Boiler Feed Water



Drinking Water / Beverages



Process Water

### description

2-electrode conductivity sensor for electrolytic conductivity. Body material PVDF, electrodes material stainless steel (concentric electrodes, material number 1.4571). PVDF male thread 3/4" for mechanical installation and 4-pole angular plug connector for electrical connection. Integrated temperature sensor Pt 100.

### technical data

<b>measuring parameter</b>	
Conductivity (conductive)	0.000 .. 2.000 µS/cm C=0.05
	0.00 .. 20.00 µS/cm C=0.05
	0.0 .. 200.0 µS/cm C=0.05
	0.000 .. 2.000 mS/cm C=0.20
	0.00 .. 20.00 mS/cm C=1.00
<b>ambient conditions</b>	
max. pressure	16 bar (at 25°C)
temperature	0 .. 135 °C
<b>mechanical construction</b>	
shaft material	PVDF
electrode material	Stainless steel 1.4571
mechanical connection	3/4" male thread // 1/2" male thread -4SCR
electrical connection	4-pole angular plug 6 m connected cable
temperature sensor	Pt 100

### order information

name	description	article number
LE44 Pt, c=0,05	conductivity sensor (0 .. 2; 0 .. 20; 0 .. 200 µS/cm)	26125252K
LE44Pt, c=0,20	conductivity sensor (0 .. 2 mS/cm)	26125253K
LE44Pt, c=1,00	conductivity sensor (0 .. 20 mS/cm)	26125254K
LE44 Pt 4SCR, c=0,05	conductivity sensor (0 .. 2; 0 .. 20; 0 .. 200 µS/cm) with 6m connected cable	26125257K
LE44 Pt 4SCR, c=0,20	conductivity sensor (0 .. 2 mS/cm) with 6m connected cable	26125255K
LE44 Pt 4SCR, c=1,00	conductivity sensor (0 .. 20 mS/cm) with 6m connected cable	26125256K

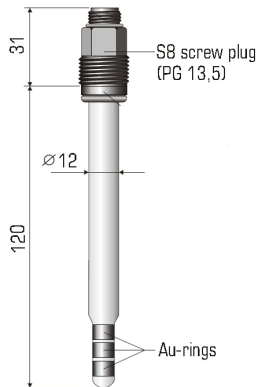


## Au-305-30-PG

- Integrated Pt 100 temperature sensor
- Flexible installation by 12 mm sensor design
- Chemical resistant by high quality materials gold and glass



Au-505-30-PG



Au-505-30-PG

### applications



Drinking Water / Beverages

### description

### technical data

measuring parameter	
Conductivity (conductive)	0 .. 1 mS/cm
ambient conditions	
max. pressure	0 .. 10 bar (at 20°C)
temperature	0 .. 90 °C
mechanical construction	
shaft material	glass
electrode material	gold
mechanical connection	S8 screw plug (PG 13,5)
electrical connection	M12 screw plug
temperature sensor	Pt 100

### order information

name	description	article number
Au-505-30-PG	Conductivity sensor in 12 mm sensor design	24134210K

### order information accessories

name	description	article number
dialog W 2CM R	wall mounted housing, 230 VAC	115140K
K 100 CM	conductive, panel mounted housing, 230 VAC	100100K
K 100 W CM	conductive, wall mounted housing, 230 VAC	105100K
4-SCR-CM	connection cable conductivity sensors, sold by meter	44136352K
12,88 mS/cm - test	test solution 0,1 mol/l KCl, 12,88 mS/cm, 1000 ml	95212030K
1,413 mS/cm - test	test solution 0,01 mol/l KCl, 1,413 mS/cm, 1000 ml	95212031K



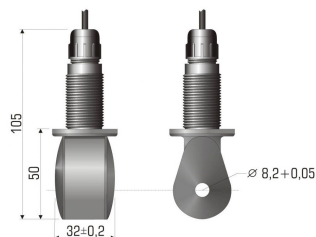
# Conductivity Sensors

## IL 15

- Corrosion resistant
- Low maintenance by dirt repulse
- Small robust construction






IL 15



IL 15

### applications

-  Cooling And Boiler Feed Water
-  Process Water
-  Waste Water Treatment

### description

Conductivity sensor for the inductive conductivity measurement in Polypropylene (PP) with two internal, circular measuring coils. The sensor is delivered with 6 m cable and internal temperature sensor.

### technical data

<b>measuring parameter</b>	
Conductivity (inductive)	0 .. 2 mS/cm 0 .. 20 mS/cm 0 .. 200 mS/cm 0 .. 2000 mS/cm
<b>ambient conditions</b>	
max. pressure	10 bar (at 20°C)
temperature	0 .. 90 °C
<b>mechanical construction</b>	
shaft material	PP
mechanical connection	1/2" male thread
temperature sensor	NTC

### order information

name	description	article number
IL 15	inductive conductivity sensor, incl. 6 m cable	26164025K

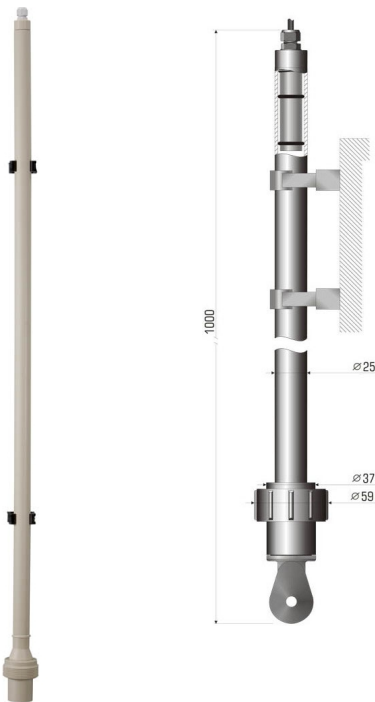
### order information accessories

name	description	article number
4-2SCR-IL-10	10 m Extension cable for sensor IL 15	44136353K



## GE 251 PP LF

- Fitting head with cable gland
- Easy access to sensor
- Fastening with pipe clamps



### technical data

<b>ambient conditions</b>	
temperature	max. 90 °C
<b>mechanical construction</b>	
material	PP
dimensions	see dimensional drawing

### description

Immersion assembly for installation of the conductivity sensor IL 15 or LE 44 Pt 4 SCR CM

### order information

name	description	article number
GE 251 PP LF	Immersion assembly for IL 15 und LE 44 Pt	36164025K



### GD 25 V(G) (PP)

- Easy to dismantle
- Easy mounting by bonding or 1" female thread



GD 25 VG

#### description

Flow assembly for installation of one conductive sensor LE 44 Pt in pipes with adhesive coupling or pipe coupling DN 25 with 1" female thread. Available in PVC and PP.

#### technical data

<b>measuring parameter</b>	
Conductivity (conductive)	0 .. 2 µS/cm 0 .. 20 µS/cm 0 .. 200 µS/cm 0 .. 2 mS/cm 0 .. 20 mS/cm
<b>ambient conditions</b>	
max. pressure	PVC: 16 bar (at 20°C) PP: 10 bar (at 20°C)
temperature	max. 40°C (PVC) max. 90°C (PP)
<b>mechanical construction</b>	
material	PVC, PP
dimensions	see dimension drawing
installation	GD 25 V: adhesive coupling GD 25 VG (PP): pipe coupling DN 25 with 1" female thread

#### order information

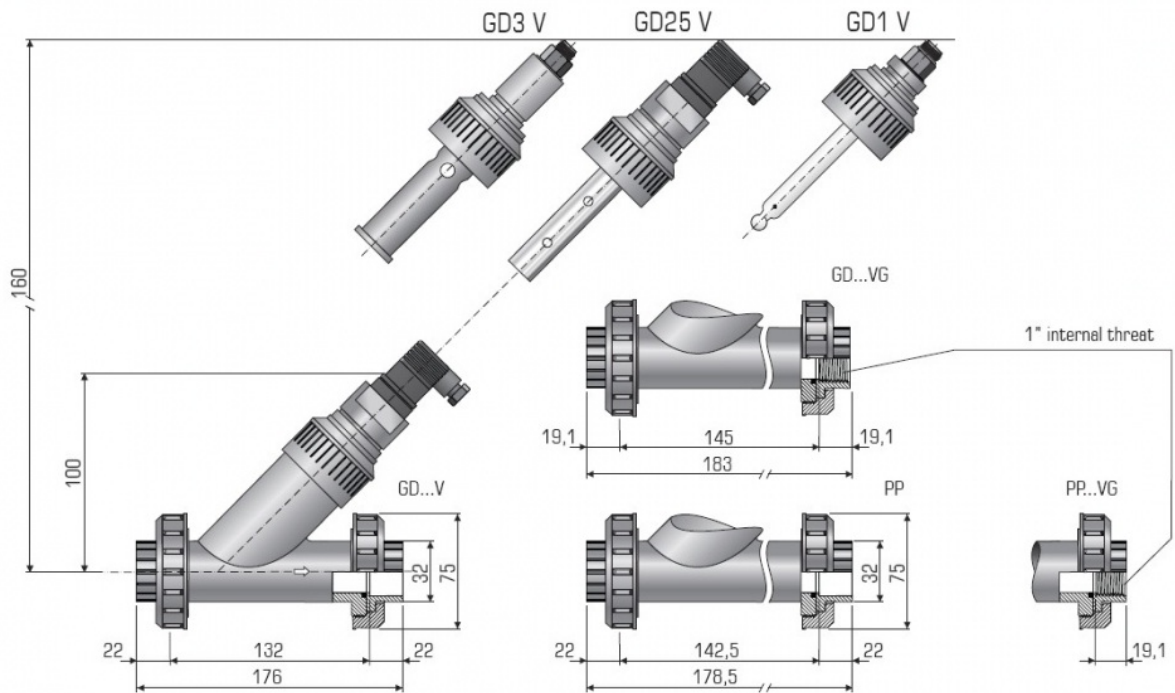
name	description	article number
GD 25 V	adhesive coupling (DN 25), PVC	36604230K
GD 25 VG	pipe coupling (DN 25) with 1" internal thread, PVC	36604231K
GD 25 VG PP	pipe coupling (DN 25) with 1" internal thread, PP	36604235K





## GD 25 V(G) (PP)

dimensional drawing



GD 25 V(G)

# Conductivity Assemblies

## GD 40 IL

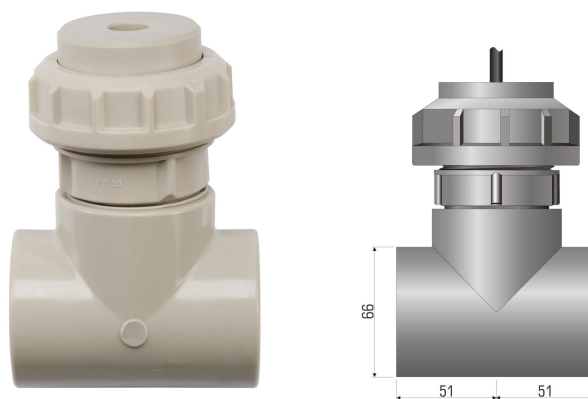
- Installation of the sensor by threaded connection
- For measuring in pipes

### description

PP or PVC Flow assembly for installation of one conductivity sensor IL 15.

### technical data

<b>measuring parameter</b>	
Conductivity (inductive)	0 .. 2 mS/cm 0 .. 20 mS/cm 0 .. 200 mS/cm 0 .. 2000 mS/cm
<b>ambient conditions</b>	
max. pressure	PVC: 16 bar (at 20°C) PP: 10 bar (at 20°C)
temperature	PVC: max.40°C PP: max. 90°C
<b>mechanical construction</b>	
material	PP, PVC
dimensions	see dimension drawing
installation	PVC: adhesive coupling DN 50 PP: Welded sleeve DN 50



### order information

name	description	article number
GD 40 IL PVC	adhesive coupling	36604026K
GD 40 IL PP	welded sleeve DN 50, PP	36604025K

### order information accessories

name	description	article number
IL 15	inductive conductivity sensor, incl. 6 m cable	26164025K



### LF 6

- Automatic or manual temperature compensation
- 4 measuring ranges with automatic changeover
- min/max value memory, hold function



LF 6 Set

#### particular characteristics

- Automatic measuring-value-stability identification
- Automatic power shut-off
- Double display for conductivity value and temperature
- Power supply by battery or rechargeable
- Easy and safe handling by soft keys
- Low battery indication
- With fold away support

#### description

All-purpose portable instrument for measurement of conductivity and temperature. Sensor with integrated temperature sensor is attached. Sensor, instrument and portable case are included in delivery.

#### technical data

<b>measuring parameter</b>	
Conductivity (conductive)	0 .. 200 $\mu\text{S/cm}$ 0 .. 2000 $\mu\text{S/cm}$ 0 .. 20 $\text{mS/cm}$ 0 .. 200 $\text{mS/cm}$
<b>power supply</b>	
line voltage	above 10-12 V (power unit not included in delivery)
power supply	9V battery
power consumption	ca. 3 mA
<b>ambient conditions</b>	
ambient temperature	operation 0 .. 50°C storage -20° .. 70°C
relative humidity	max. 90% rH at 40°C (non-condensing)
protection class	IP 65
<b>certificates and approvals</b>	
CE-symbol	Declaration of conformity: The product meets the requirements of the harmonized European standards. It thus complies with the legal requirements of the EC directives. The manufacturer confirms successful testing of the product by affixing the CE symbol.

#### order information

name	description	article number
LF 6	complete set measuring instrument with sensor including portable case	65522410K



### 4SCR-CM

Connecting cable for conductive conductivity sensors type LE 44 Pt or LD 10 K Pt

- Low cable capacitance
- Screened
- Sold by meter

#### technical data

measuring parameter	
Conductivity (conductive)	0 .. 2 µS/cm
	0 .. 20 µS/cm
	0 .. 200 µS/cm
	0 .. 2 mS/cm
	0 .. 20 mS/cm
ambient conditions	
ambient temperature	-20 .. +70°C
mechanical construction - panel mounted housing	
material	PVC

### 4-2SCR-IL-10

Extension cable - 10 meter - for the inductive conductivity sensor IL 15

- Screened

#### technical data

measuring parameter	
Conductivity (inductive)	0 .. 2 mS/cm
	0 .. 20 mS/cm
	0 .. 200 mS/cm
	0 .. 2000 mS/cm
ambient conditions	
ambient temperature	-20 .. +70°C
mechanical construction - panel mounted housing	
material	PVC

#### order information

name	description	article number
4-SCR-CM	connection cable conductivity sensors, sold by meter	44136352K
4-2SCR-IL-10	10 m Extension cable for sensor IL15	44136353K



# Conductivity Notes

The Dr. A. Kuntze GmbH "Terms and Conditions" will be applicable.

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# Conductivity

## Notes



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