Technical Information
TI 169F/00/en

Operating Instructions
017196-1000

Level Probe
multicap DC 11

Fully insulated rod probes









Applications

The Multicap DC 11 probe is primarily designed for continuous level measurement and limit detection in liquids.
The wide selection of corrosion-resistant materials used for the probe rod, insulation and process connection ensures that it can withstand extremely corrosive products.
The tried-and-tested, rugged construction is gas-tight for pressures from vacuum to 100 bar (1450 psi) gauge.
Seal and insulation materials enable it to be used with operating temperatures in the vessel of –80 °C to +200 °C (–110 °F to +390 °F).

Your Benefits

- Optimum adaptation to your application thanks to a wide range of process connections and practical variations
  = reliable function at a cost-effective price
- Protection against condensation in the nozzle
  = reliable function even with condensation
- Active build-up compensation for limit detection
  = constant and accurate switchpoint even with heavy build-up on the probe, no cleaning or recalibration required

Endress + Hauser
The Power of Know How

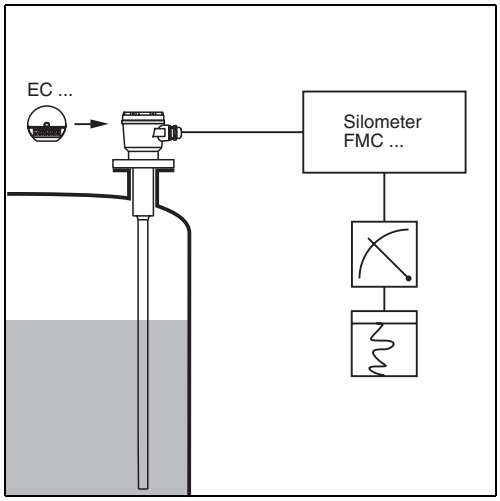
Measuring System

The measuring system consists of:

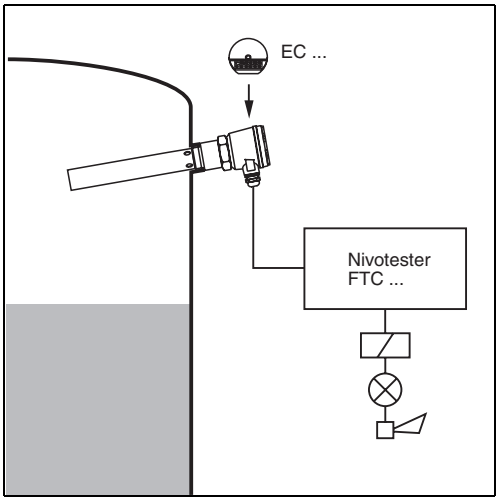
- Multicap DC 11 probe
- EC ... electronic insert in the probe housing
- Silometer FMC (Z) transmitter or Nivotester FTC (Z) level limit switch

For limit detection in liquids with heavy build-up or for detecting interface layers, the measuring system consists of:

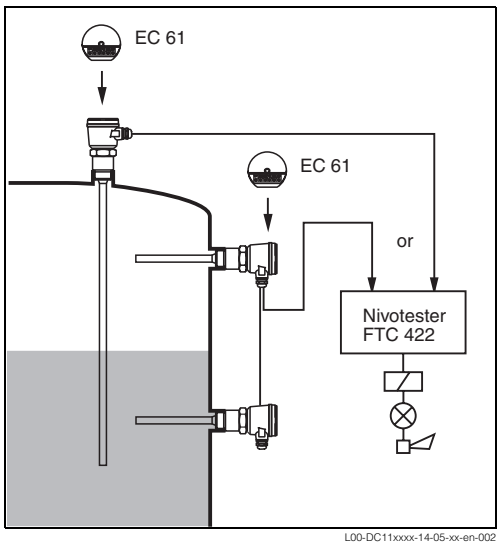
- Multicap DC 11 probe with active build-up compensation
- EC 16 Z electronic insert
- FTC 520/521 Z or FTC 470/471 Z level limit switch.
  The limit input of the Silometer FMC 671 Z can also be connected.



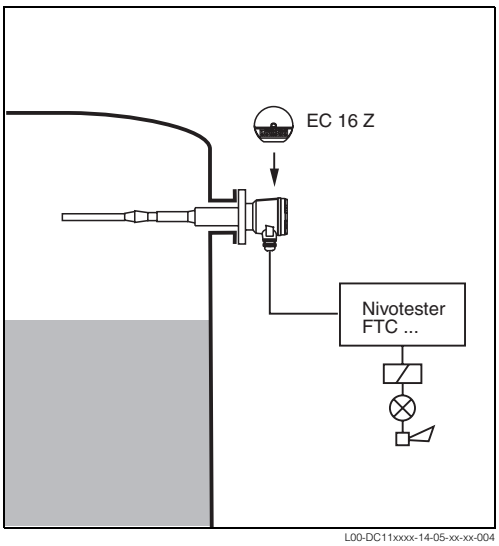
Continuous measurement;
shown here, e.g. probe with screening against condensation in the nozzle



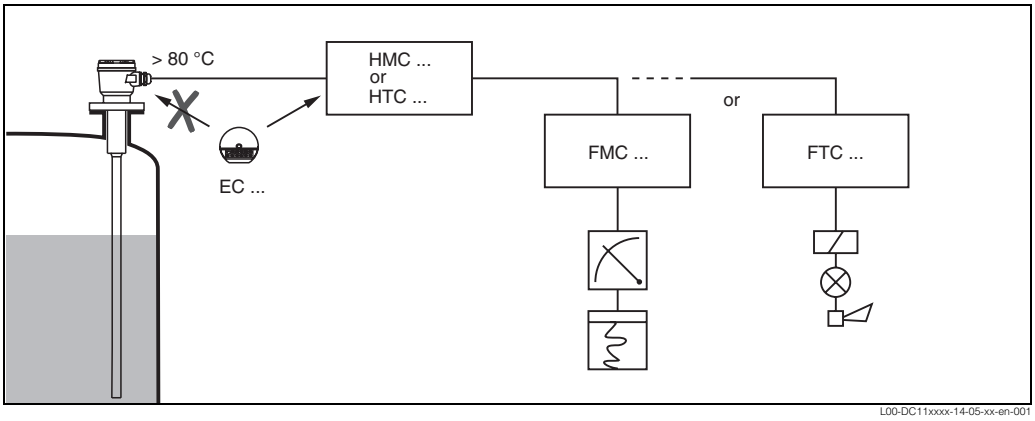
Limit detection;
shown here, e.g. probe with ground tube for use in plastic tanks



Two-point control
with one vertical or two laterally mounted fully insulated probes



Limit detection;
shown here, e.g. probe with screening and active build-up compensation for reliable limit detection even with extreme build-up



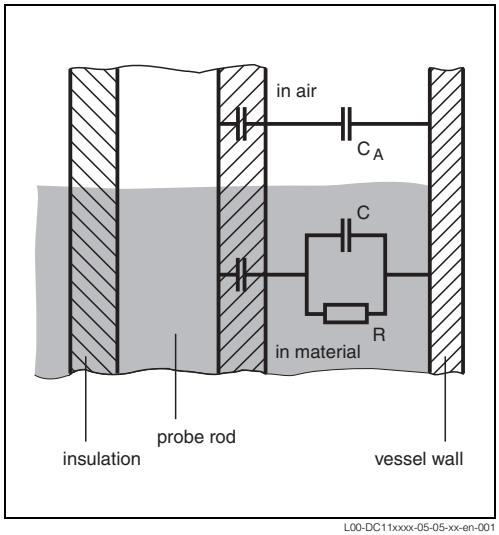
Separate mounting of the electronic insert with an excessively high ambient temperature for the probe head housing

Certified applications

Please note all specifications in the certificates and appropriate regulations as well as the instructions given in this Technical Information.

Operating Principle

The probe and vessel wall or counter electrode form a capacitor with a defined, low capacitance when the probe is in air.
As soon as material covers the probe a parallel circuit is formed consisting of a much larger capacitance and the resistance of the material – the impedance.
This means, that for materials with a conductivity which exceeds a specific, low threshold, any changes in dielectric constant and, therefore, in the capacitance no longer affect the measurement.
Screening on the probe prevents effects caused by build-up of material or condensation in the vicinity of the process connection. Probes with active build-up compensation for limit switching cancel out effects of build-up on the probe.



Simplified circuit diagram showing capacitance measurement with fully insulated probes

Probe Versions

Here are just a few notes on the various designs for the fully insulated Multicap DC 11 probe:

1. Probe without ground tube
- for conductive liquids
- for high viscosity liquids
- for bulk solids

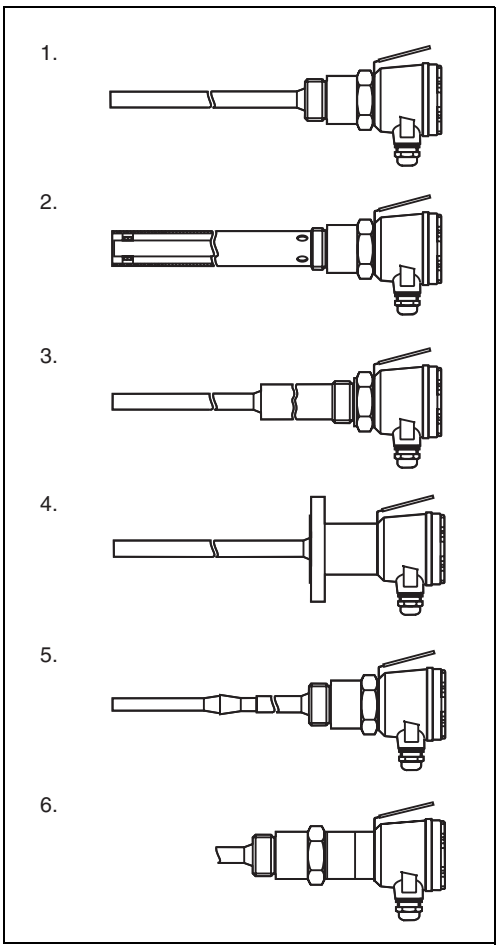
2. Probe with ground tube
- for non-conductive liquids
- for use in agitator vessels

3. Probe with screening
- for long nozzles
- for condensation on the roof of the vessel
- for build-up on the vessel wall

4. Probe with fully insulated screening
- as above but for especially corrosive materials

5. Probe with active build-up compensation for limit detection
- with heavy (conductive) build-up on the probe.
  The active build-up compensation of the Multicap DC 11 probe is always gas-tight due to the self-adjusting tapered gasket. A wide range of corrosion-resistant materials ensures that they can be used in metallic tanks containing aggressive liquids.

6. Probe with gas-tight gland
- for liquified gas tanks (required in Germany)
- to prevent condensation forming in the probe on extreme temperature variations. See also temperature graphs overleaf.



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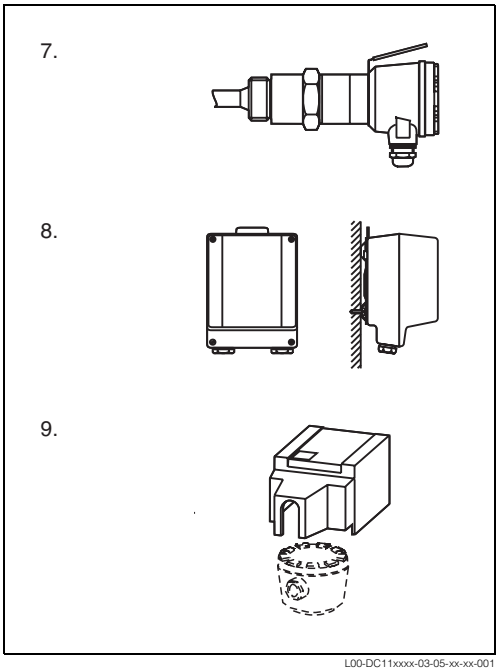
7. Probe with temperature spacer
- for an extended range of operating temperatures in the vessel.
  See also temperature graphs overleaf.

8. Probe without electronic insert
- for high temperatures in the probe housing: Use electronic insert in separate housing.
  See also temperature graphs overleaf.

9. Probe with protective cover (accessory)
- to prevent condensation forming in the aluminium standard housing.



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Further variations outside the product tank

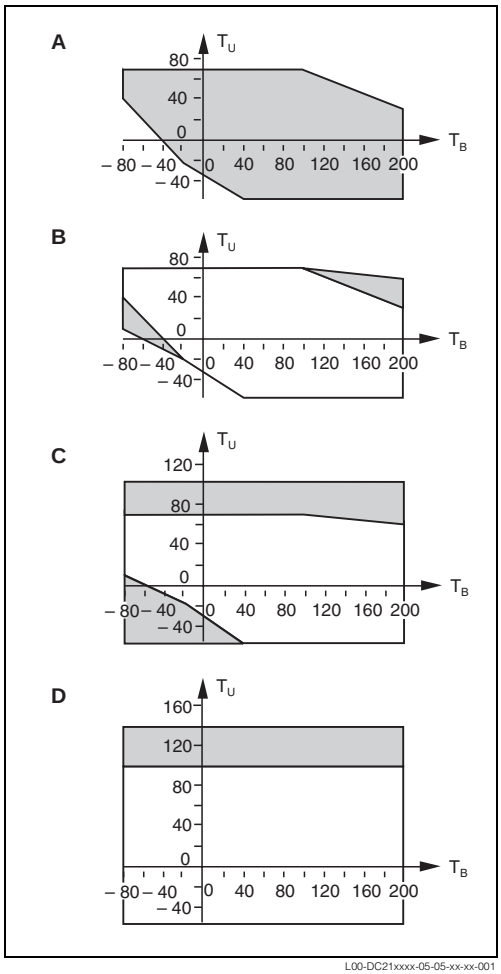
Electronic insert

Separate or integrated?

Information is provided by graphs on the right.
The horizontal axis is the operating temperature T_B in the vessel.
The vertical axis is the ambient temperature T_U of the probe housing (in °C).

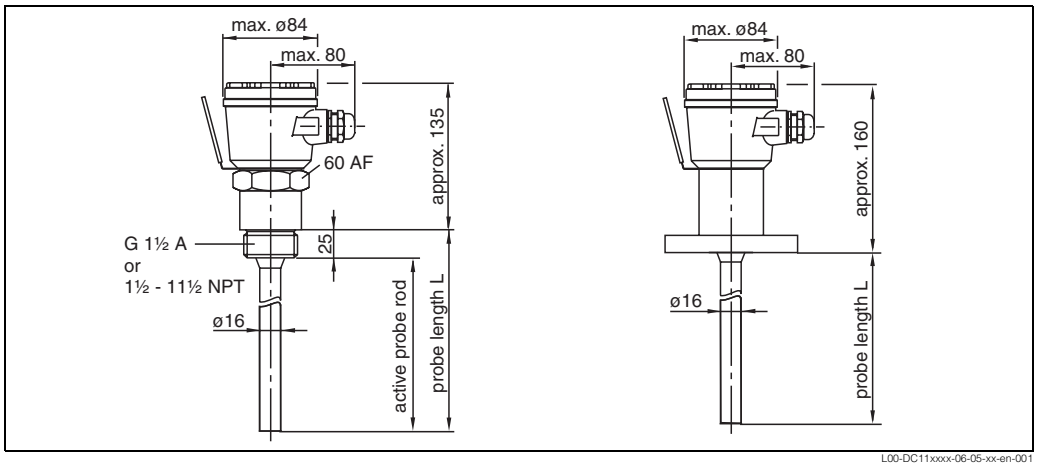
- Do the temperatures lie in the grey area of graph **A**?
  The electronic insert may be mounted in the housing of any probe.
- Do the temperatures lie in the grey areas of graph **B**?
  The electronic insert may be mounted in the housing of a probe with a temperature spacer or gas-tight gland; or it may be mounted in a separate housing.
- Do the temperatures lie in the grey areas of graph **C**?
  The electronic insert should be mounted in a separate housing.
- Do the temperatures lie in the grey area of graph **D**?
  Use a probe with a temperature spacer or a gas-tight gland and mount the electronic insert in a separate housing.

x °C = (x •1.8 + 32) °F

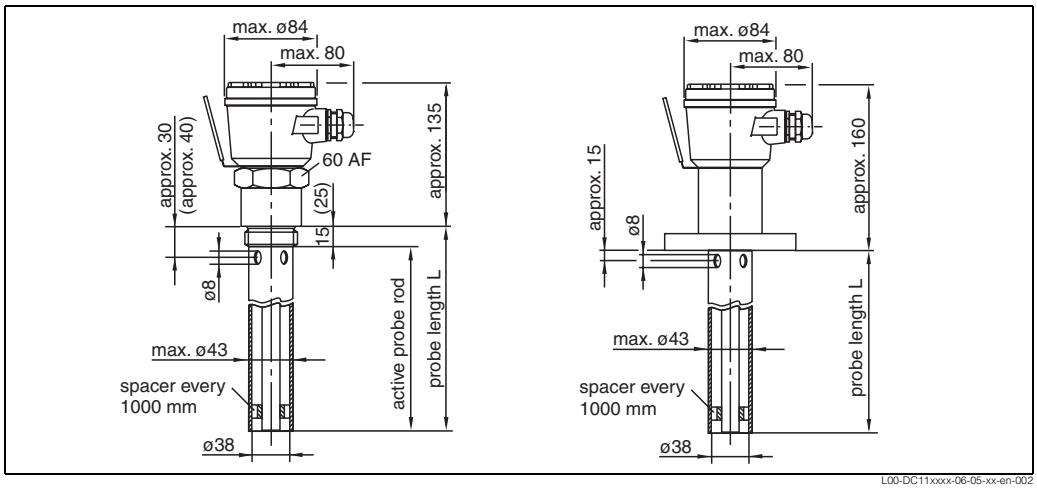


Application range of the various types as a function of operating and ambient temperature

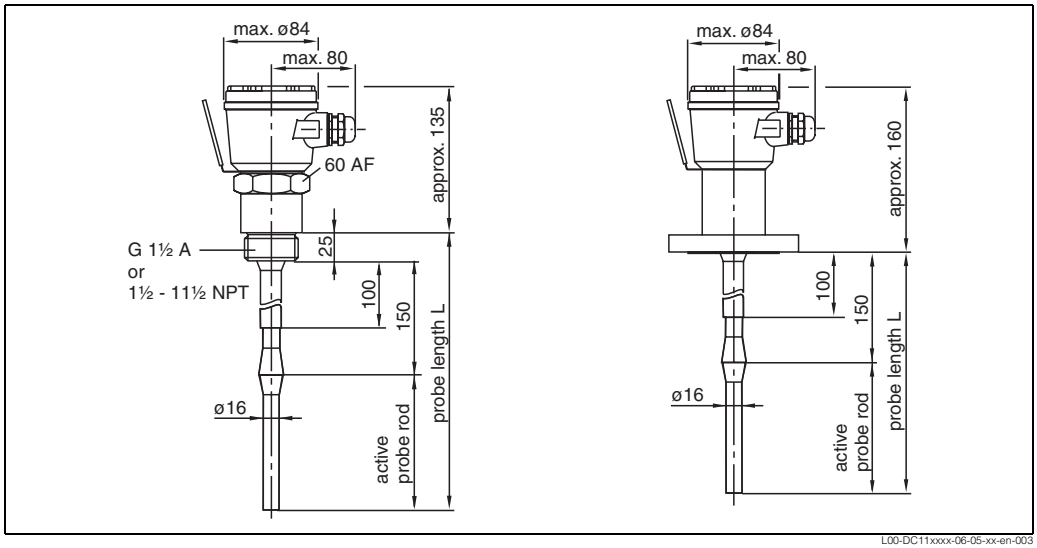
Dimensions in mm (100 mm = 3.94 in / 1 in = 25.4 mm)



left: Multicap DC 11 with threaded boss
right: Multicap DC 11 with flange

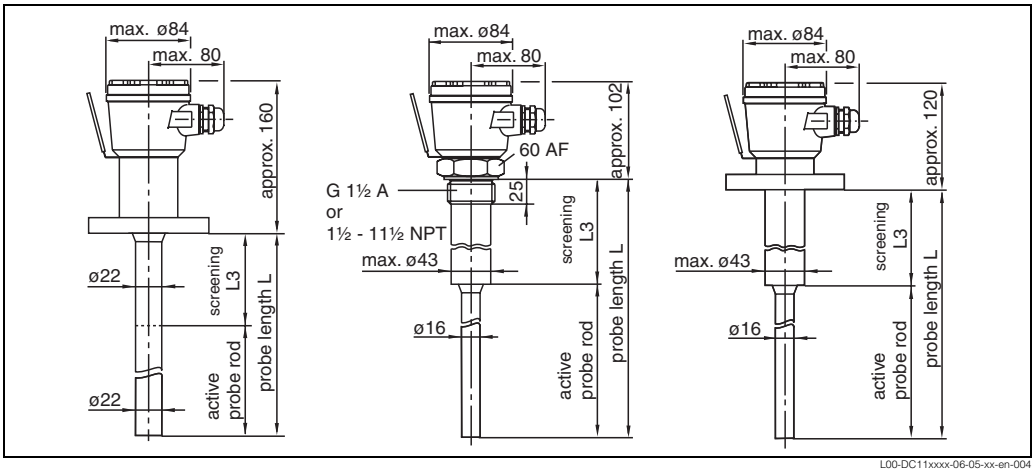


*left: Multicap DC 11 with threaded boss G 1 ½ A and **ground tube***
(Dimensions in brackets are for the threaded boss with 1 ½ -11 ½ NPT)
*right: Multicap DC 11 with flange and **ground tube***

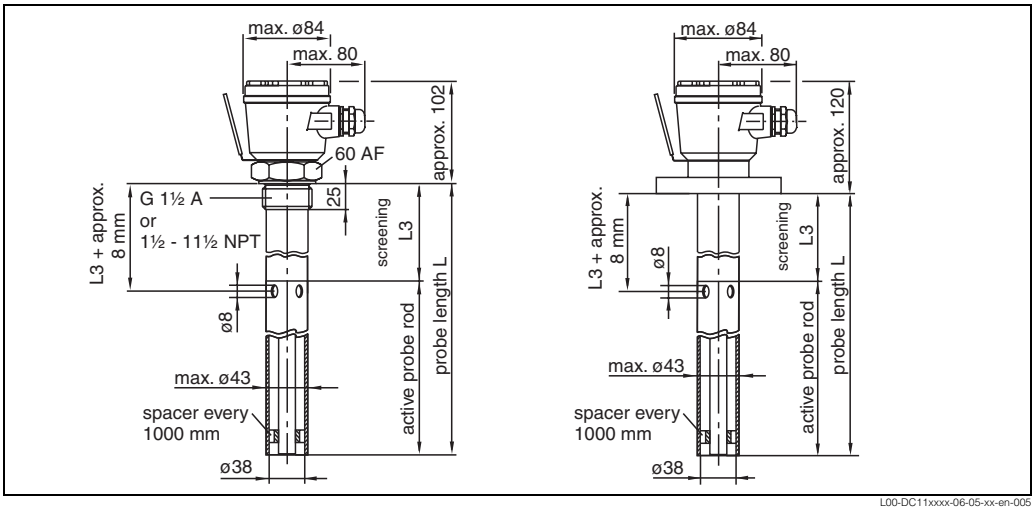


*left: Multicap DC 11 with threaded boss and **active build-up compensation***
*right: Multicap DC 11 with flange and **active build-up compensation***

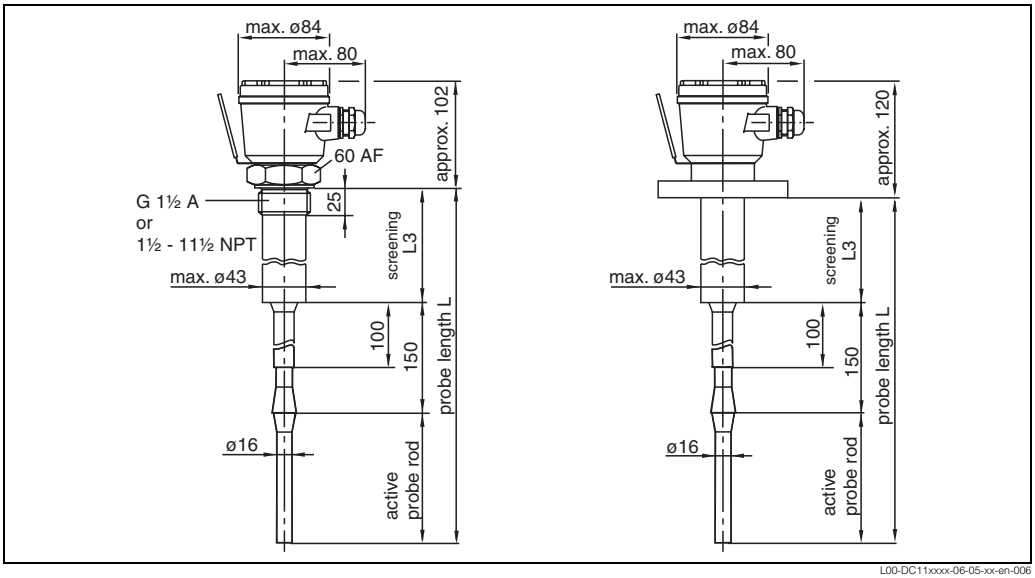
Dimensions for Probes with Screening



*left: Multicap DC 11 with PTFE covered flange and **fully insulated** screening*
middle: Multicap DC 11 with threaded boss and screening
right: Multicap DC 11 with flange and screening

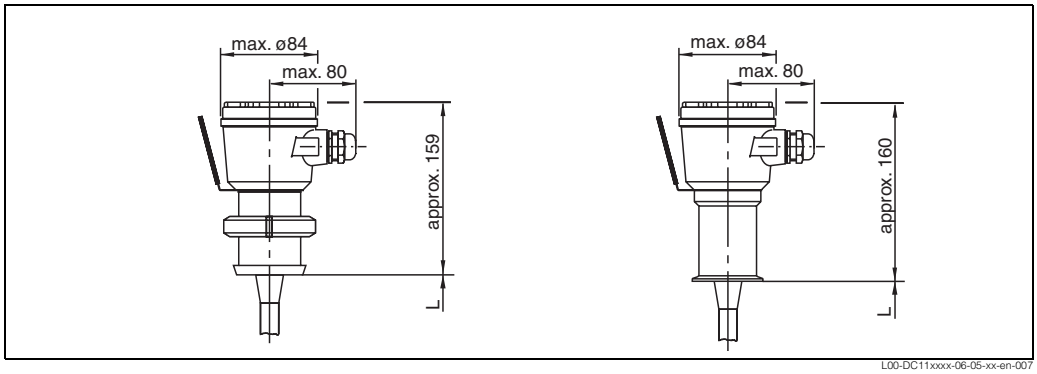


*left: Multicap DC 11 with threaded boss, screening and **ground tube***
*right: Multicap DC 11 with flange, screening and **ground tube***

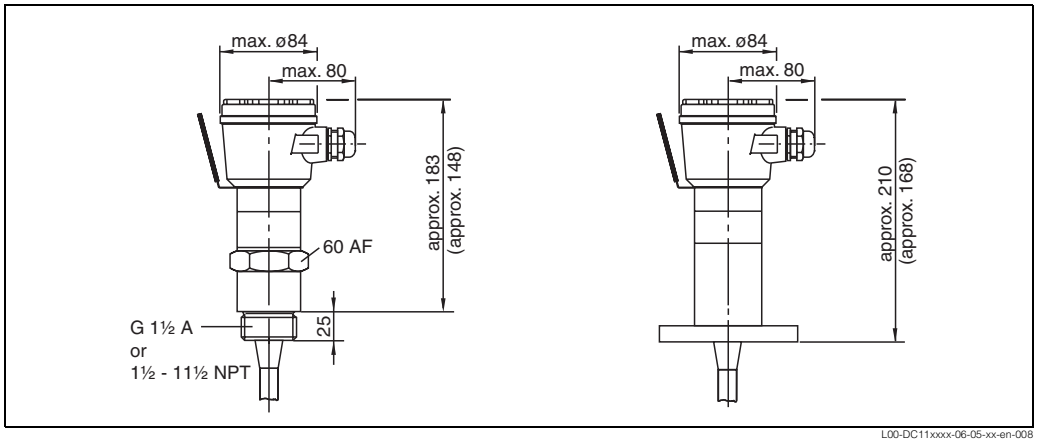


*left: Multicap DC 11 with threaded boss, screening and **active build-up compensation***
*right: Multicap DC 11 with flange, screening and **active build-up compensation***

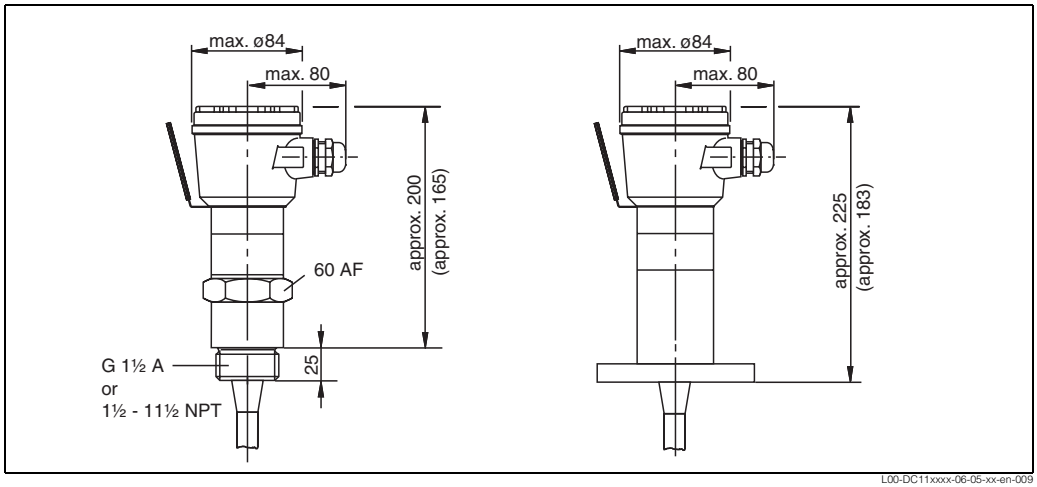
Dimensions of other Process Connections and Parts



left: Multicap DC 11 with sanitary thread DIN 11851-DN 50
right: Multicap DC 11 with 2" Triclamp coupling



left: Multicap DC 11 with threaded boss and gas-tight gland
right: Multicap DC 11 with flange and gas-tight gland



left: Multicap DC 11 with threaded boss and temperature spacer
right: Multicap DC 11 with flange and temperature spacer

(Dimensions for the DC11 with screening are shown in brackets)

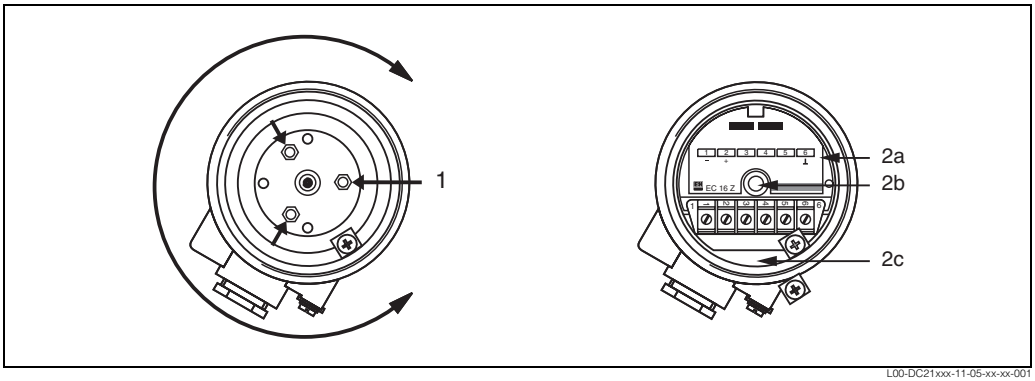
Transport, Unpacking

- To avoid damage to the probe, remove the packaging on-site just before mounting. The uninsulated section of probes with active build-up compensation is covered with plastic webbing. This protection should be removed prior to mounting.
- Compare the code on the nameplate of the probe with the product designation on Page 13 to ensure that the correct probe has been delivered.
- Check the probe length. It is not possible to change the length of the probe.

Installation

- Probe with parallel thread G 1 ½ A:
  Use the elastomer/fibre seal provided or any other chemically resistant seal which can withstand temperatures up to 300 °C (570 °F).
- Probe with tapered thread 1 ½ - 11 ½ NPT:
  If required, wrap suitable sealing material around the thread.
- Probe with flange connection:
  Use a sealing material suitable for the application.
  If the flange is PTFE-clad, then this is generally a suitable seal up to the permitted operating pressure.
- Make sure that the probe insulation is not damaged when sliding the probe through the threaded sleeve or nozzle with counter-flange.
- When tightening, turn the probe with threaded boss at the hex nut only; not at the housing!
- For probes with the G 1 ½ A thread and seal:
  – a torque of only 300 Nm is sufficient to seal tight against a pressure in the vessel of up to 50 bar (725 psi).
  – a torque of only 530 Nm is sufficient to seal tight against a pressure in the vessel of up to 100 bar (1450 psi).
  Maximum admissible torque: 600 Nm
- A polypropylene threaded boss with rubber seal may only be tightened using a max. torque of 7 Nm (1 Nm = 0.74 ft lbs).

Rotating the Housing



1) The housing can be rotated after the 3 nuts have been loosened
2) Tighten electronic insert (a) with the central slotted nut (b) leaving space (c) for the connecting cable

The housing can be rotated if the cable gland is pointing in the wrong direction after mounting.

To loosen:
– Unscrew the housing cover
– Unscrew the central nut (slotted nut) in the electronic housing
– Remove the electronic insert from the housing
– Slightly loosen the 3 nuts (7 AF), see Figure.

To rotate: – The housing can now be rotated in any direction.
When mounting the probe from the side, the cable entry should be facing downwards so that no moisture can enter.

To tighten: – Securely tighten the 3 nuts in the housing so that the housing is tight against the hex nut.
– Insert the electronic insert and securely tighten the central nut so that it does not become loose. Ensure that the cable gland remains free.

Connection

Refer to the appropriate Technical Information concerning the electronic insert EC ... used in the probe housing.
In the case of the heavy duty housing, the connection diagram corresponds to that of the built-in electronic insert. It is important that no moisture enters the probe housing during storage of the probe, connection of the electronic insert and during operation. Always tighten the housing cover and cable gland securely.

If the probe is installed in a plastic tank, connect the ground terminal of the probe to the counter-electrode using a short cable.

Replacing components

Mounting without electronic insert
Exchange of electronic inserts

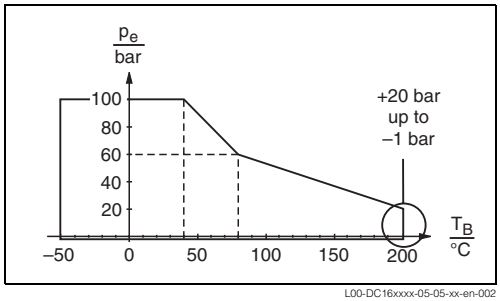
- After the defective electronic insert has been removed and the replacement properly installed, the instrument must be recalibrated and checked for correct function.
- If fully insulated multicap probes are mounted in explosion hazardous areas without the electronic insert, and there is a risk of dangerous electronic discharges, then the probe terminal in the housing must be short-circuited with the ground terminal.

Technical Data

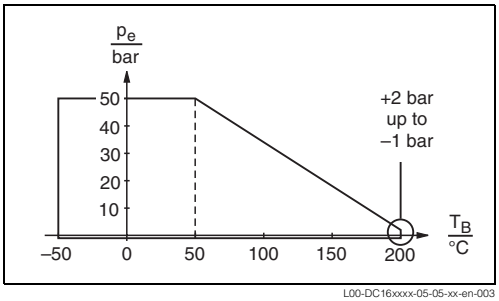
Operating data

Permitted operating pressures p_e and temperatures T_B.

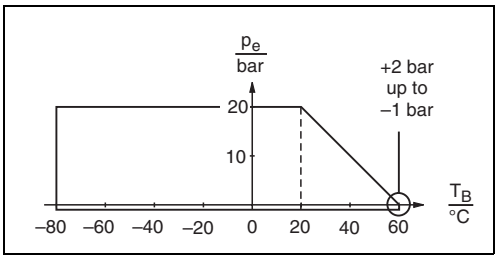
See graphs below for the relationship between operating pressure and temperature:



Insulation PTFE or PFA
Does not apply to:
– probes with active build-up compensation
– probes with fully insulated screening
– Monel



Insulation PTFE or PFA
Applies to:
– probes with active build-up compensation
– probes with fully insulated screening



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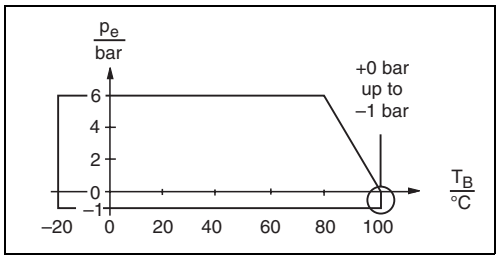
Insulation PE



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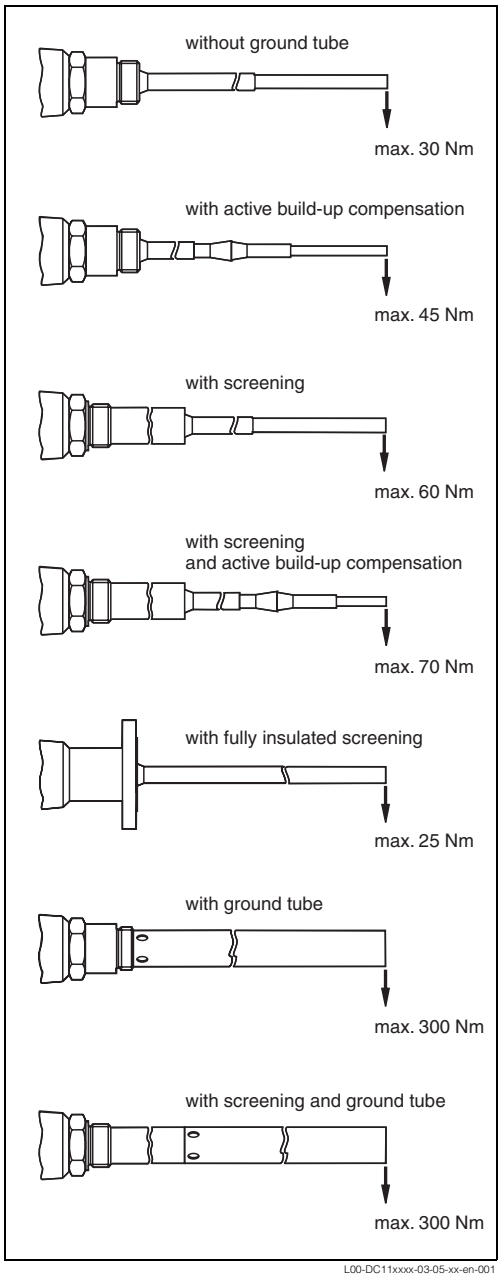
Probe with polypropylene threaded boss and rubber seal

- Capacitance values of the probe
  Ground capacitance: approx. 30 pF

  Other capacitance values
  Gas-tight gland: approx. 20 pF
  Temperature spacer: approx. 20 pF
  Active build-up compensation: approx. 10 pF
  Screening: approx. 3 pF/100 mm
  Fully insulated screening:
  approx. 6 pF/100 mm

  Probe 250 mm from a conductive vessel wall
  Insulated probe rod: approx. 1.3 pF/100 mm

  Probe in ground tube
  Insulated probe rod: approx. 5.5 pF/100 mm
- Lateral load bearing capacity of the probe see graphs on the right.



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Lateral load bearing capacity for the probe at 20 °C (70 °F) and static load

1 Nm = 0.74 ft lbs

Probe lengths (100 mm = 3.94 in)

- Total length of probe: L max. 6000 mm
- Total length of probe with fully insulated screening: L max. 4000 mm
- Length of screening: L3 min. 100 mm, max. 4000 mm
- Length of fully insulated screening: L3 min. 125 mm, max. 2000 mm
- Length of active probe rod: max. 4000 mm
- Length of active build-up compensation: always 150 mm from where the probe rod leaves the process connection or screening
- Length tolerances
  up to 1 m: +0 mm, – 5 mm
  up to 3 m: +0 mm, –10 mm
  up to 6 m: +0 mm, –20 mm

Process connection standards

- Parallel thread G 1 ½ A: DIN ISO 228/I, with sealing ring 48 x 55 to DIN 7603
- Tapered thread 1 ½ - 11 ½ NPT: ANSI B 1.20.1
- DIN flanges: see flange table
- ANSI flange: ANSI B 16.5
- Sanitary thread: DIN 11851
- Triclamp coupling: ISO 2852

Materials

Most material specifications are given in the order code on Page 13

- Aluminium housing: cast aluminium AlSi 12, resistant to sea water, EP-lacquered
- Aluminium housing, coated: in fluoropolymer
- Sealing between housing and process connection: EPDM
- Sealing for housing cover: O-ring in EPDM
- Temperature spacer: SS 304 H
- Gas-tight gland: SS 304 H
- Sealing ring for process connection G 1 ½ A: elastomer/fibre, non-asbestos, resistant to oil, solvents, steam, weak acids and alkalis; up to 300 °C and 100 bar (570 °F and 1450 psi)
- Cable glands: standard Pg in nickel-plated brass with NBR seal for cable diameter 7...10 mm; Protection IP55; ambient temperature up to 100 °C (210 °F)
- Water-tight Pg in polyamide with neoprene/CR seal for cable diameter 7...12 mm; Protection IP66; ambient temperature up to 80 °C (180 °F)

See product structure for housing variations.

Certificates

- EC-Type-examination certificate
  PTB 98 ATEX 2215 X
  CE ⟨Ex⟩ II 1/2 G, EEx ia IIC/B T6
  XA 024F/00/a3
- EC-Type-examination certificate
  PTB 98 ATEX 2215 X
  CE ⟨Ex⟩ II 1/2 G, EEx ia IIC/B T6
  XA 080F/00/a3
- DIBt test report to § 19 WHG,
  overspill protection with continuous level measurement (for Germany)
  ZE 210F/00/de
- DIBt test report to § 19 WHG,
  for overspill protection with level limit switch (for Germany)
  ZE 211F/00/de

Product Structure

Product Structure Multicap DC 11

Design									Basic weight
DC 11	Fully insulated rod probe								2,0 kg

10	Certificate			
	A	ATEX II 1/2 G	EEx ia IIC T6	
	D	For non-hazardous areas		Overspill protection to WHG
	F	ATEX II 1/2 G	EEx ia IIC T6	Overspill protection to WHG
	H	ATEX II 3 G	EEx nA II T6	Overspill protection to WHG
	R	For non-hazardous areas		
	Y	Special version		
	1	ATEX II 1/2 G	EEx ia IIB T6	
	2	ATEX II 1/2 G	EEx ia IIB T6	Overspill protection to WHG
	5	ATEX II 1/2 G	EEx ia IIC* T6	Overspill protection to WHG
	6	ATEX II 1/2 G	EEx ia IIC* T6	
	7	ATEX II 3 G	EEx nA II* T6	
		*) With note: "Avoid electrostatic charge"		

20		Electronic insert		Additional weight
	A	Electronic insert not selected		- -
	B	with EC 61 Z	3-wire insert	0,2 kg
	C	with EC 11 Z	3-wire Tx 33 kHz	0,2 kg
	D	with EC 72 Z	3-wire Tx 1 MHz	0,2 kg
	E	with EC 17 Z	2-wire PFM	0,2 kg
	F	with EC 16 Z	2-wire PFM	0,2 kg
	G	with EC 27 Z	2-wire PFM	0,2 kg
	H	with EC 37 Z	2-wire PFM Tx 33 kHz	0,2 kg
	I	with EC 47 Z	2-wire PFM Tx 1 MHz	0,2 kg
	Y	Special version		

30		Process connection, material						
	AE1	2"	150 lbs	RF	Flange ANSI B16.5	steel		1,6 kg
	AE2	2"	150 lbs	RF	Flange ANSI B16.5	316Ti		1,6 kg
	AE3	2"	150 lbs	RF	Flange ANSI B16.5	PTFE	>316Ti	1,6 kg
	AE4	2"	150 lbs	RF	Flange ANSI B16.5	Alloy B	>316Ti	1,8 kg
	AE5	2"	150 lbs	RF	Flange ANSI B16.5	Alloy C	>316Ti	1,8 kg
	AE6	2"	150 lbs	RF	Flange ANSI B16.5	Monel	>316Ti	1,8 kg
	AG2	2"	300 lbs	RF	Flange ANSI B16.5	316Ti		3,0 kg
	AL1	3"	150 lbs	RF	Flange ANSI B16.5	steel		3,2 kg
	AL2	3"	150 lbs	RF	Flange ANSI B16.5	316Ti		3,2 kg
	AL3	3"	150 lbs	RF	Flange ANSI B16.5	PTFE	>316Ti	3,2 kg
	AN2	3"	300 lbs	RF	Flange ANSI B16.5	316Ti		5,6 kg
	AP1	4"	150 lbs	RF	Flange ANSI B16.5	steel		5,4 kg
	AP2	4"	150 lbs	RF	Flange ANSI B16.5	316Ti		5,4 kg
	AP3	4"	150 lbs	RF	Flange ANSI B16.5	PTFE	>316Ti	5,4 kg
	AP4	4"	150 lbs	RF	Flange ANSI B16.5	Alloy B	>316Ti	5,8 kg
	AP5	4"	150 lbs	RF	Flange ANSI B16.5	Alloy C	>316Ti	5,8 kg
	AP6	4"	150 lbs	RF	Flange ANSI B16.5	Monel	>316Ti	5,8 kg
	AR2	4"	300 lbs	RF	Flange ANSI B16.5	316Ti		7,3 kg
	AU2	6"	150 lbs	RF	Flange ANSI B16.5	316Ti		
	AW2	6"	300 lbs	RF	Flange ANSI B16.5	316Ti		
	BG1	DN 50	PN 25/40 B		Flange DIN 2527	steel		3,0 kg
	BG2	DN 50	PN 25/40 B		Flange DIN 2527	316Ti		3,0 kg
	BG3	DN 50	PN 25/40		Flange DIN 2527	PTFE	>316Ti	3,0 kg
	BM1	DN 80	PN 10/16 B		Flange DIN 2527	steel		4,5 kg
	BM2	DN 80	PN 10/16 B		Flange DIN 2527	316Ti		4,5 kg
	BM3	DN 80	PN 10/16		Flange DIN 2527	PTFE	>316Ti	4,5 kg
	BQ1	DN 100	PN 10/16 B		Flange DIN 2527	steel		5,4 kg
	BQ2	DN 100	PN 10/16 B		Flange DIN 2527	316Ti		5,4 kg
	BQ3	DN 100	PN 10/16		Flange DIN 2527	PTFE	>316Ti	5,4 kg
	CG2	DN 50	PN 25/40 C		Flange DIN 2527	316Ti		3,0 kg
	CG4	DN 50	PN 25/40		Flange DIN 2527	Alloy B	>316Ti	3,2 kg
	CG5	DN 50	PN 25/40		Flange DIN 2527	Alloy C	>316Ti	3,2 kg
	CG6	DN 50	PN 25/40		Flange DIN 2527	Monel	>316Ti	3,2 kg
	CM2	DN 80	PN 10/16 C		Flange DIN 2527	316Ti		4,5 kg
	CM4	DN 80	PN 10/16		Flange DIN 2527	Alloy B	>316Ti	4,8 kg
	CM5	DN 80	PN 10/16		Flange DIN 2527	Alloy C	>316Ti	4,8 kg
	CM6	DN 80	PN 10/16		Flange DIN 2527	Monel	>316Ti	4,8 kg

30	Process connection, material							
	CQ2	DN 100	PN 10/16 C		Flange DIN 2527	316Ti		5,4 kg
	CQ4	DN 100	PN 10/16		Flange DIN 2527	Alloy B	>316Ti	5,8 kg
	CQ5	DN 100	PN 10/16		Flange DIN 2527	Alloy C	>316Ti	5,8 kg
	CQ6	DN 100	PN 10/16		Flange DIN 2527	Monel	>316Ti	5,8 kg
	FG2	DN 50	PN 40 F		Flange DIN 2512	316Ti		3,0 kg
	FM2	DN 80	PN 16 F		Flange DIN 2512	316Ti		4,5 kg
	FQ2	DN 100	PN 16 F		Flange DIN 2512	316Ti		5,4 kg
	GN1	1 ½" NPT			Thread ANSI	steel		- -
	GN2	1 ½" NPT			Thread ANSI	316Ti		- -
	GN4	1 ½" NPT			Thread ANSI	Alloy B		- -
	GN5	1 ½" NPT			Thread ANSI	Alloy C		- -
	GN6	1 ½" NPT			Thread ANSI	Monel		- -
	GRB	G 1 ½ A			Thread ISO 228	PP		- -
	GR1	G 1 ½ A			Thread ISO 228	steel		- -
	GR2	G 1 ½ A			Thread ISO 228	316Ti		- -
	GR4	G 1 ½ A			Thread ISO 228	Alloy B		- -
	GR5	G 1 ½ A			Thread ISO 228	Alloy C		- -
	GR6	G 1 ½ A			Thread ISO 228	Monel		- -
	KF1	20 K 50 A		RF	Flange JIS B2210	steel		2,6 kg
	KF2	20 K 50 A		RF	Flange JIS B2210	316Ti		2,6 kg
	KF4	20 K 50 A		RF	Flange JIS B2210	Alloy B	>316Ti	2,8 kg
	KF5	20 K 50 A		RF	Flange JIS B2210	Alloy C	>316Ti	2,8 kg
	KF6	20 K 50 A		RF	Flange JIS B2210	Monel	>316Ti	2,8 kg
	ME2	DN 50	PN 40		DIN 11851	304		0,5 kg
		Hygienic connection						
	NG2	DN 50	PN 40 N		Flange DIN 2512	316Ti		3,0 kg
	NM2	DN 80	PN 16 N		Flange DIN 2512	316Ti		4,5 kg
	NQ2	DN 100	PN 16 N		Flange DIN 2512	316Ti		5,4 kg
	TE2	DN 40-51 (2") Tri-Clamp connection				304		0,5 kg
	YY9	Special version						

40	Inactive length L3, material			
	A	Inactive section not selected		- -
	C	..... mm (100 mm ... 4000 mm)	316Ti	0,2 kg/100 mm
	D	..... mm (100 mm ... 4000 mm)	Alloy B	0,2 kg/100 mm
	E	..... mm (100 mm ... 4000 mm)	Alloy C	0,2 kg/100 mm
	F	..... mm (100 mm ... 4000 mm)	Monel	0,2 kg/100 mm
	J	..... mm (125 mm ... 2000 mm)	fully insulated	0,1 kg/100 mm
	Y	Special version		

50	Active guard build-up compensation			
	1	Active guard not selected		- -
	3	150 mm	316Ti	0,5 kg
	4	150 mm	Alloy B	0,6 kg
	5	150 mm	Alloy C	0,6 kg
	6	150 mm	Monel	0,6 kg
	9	Special v ersion		

60	Probe length L, material			
	A	..... mm (100 mm ... 6000 mm) PTFE insulated	steel	0,1 kg/100 mm
	B	..... mm (100 mm ... 6000 mm) PE insulated	steel	0,1 kg/100 mm
	C	..... mm (100 mm ... 6000 mm) PFA insulated	steel	0,1 kg/100 mm
	D	..... mm (100 mm ... 6000 mm) PTFE insulated	316Ti	0,1 kg/100 mm
	E	..... mm (100 mm ... 6000 mm) PE insulated	316Ti	0,1 kg/100 mm
	F	..... mm (100 mm ... 6000 mm) PFA insulated	316Ti	0,1 kg/100 mm
	G	..... mm (100 mm ... 6000 mm) PTFE insulated	Alloy B	0,1 kg/100 mm
	H	..... mm (100 mm ... 6000 mm) PE insulated	Alloy B	0,1 kg/100 mm
	J	..... mm (100 mm ... 6000 mm) PFA insulated	Alloy B	0,1 kg/100 mm
	K	..... mm (100 mm ... 6000 mm) PTFE insulated	Alloy C	0,1 kg/100 mm
	L	..... mm (100 mm ... 6000 mm) PE insulated	Alloy C	0,1 kg/100 mm

60	Probe length L, material		
M	..... mm (100 mm ... 6000 mm) PFA insulated	Alloy C	0,1 kg/100 mm
N	..... mm (100 mm ... 6000 mm) PTFE insulated	Monel	0,1 kg/100 mm
P	..... mm (100 mm ... 6000 mm) PE insulated	Monel	0,1 kg/100 mm
Q	..... mm (100 mm ... 6000 mm) PFA insulated	Monel	0,1 kg/100 mm
Y	Special version		
1	350 mm PTFE insulated	steel	
2	500 mm PTFE insulated	steel	
3	350 mm PTFE insulated	316Ti	
4	500 mm PTFE insulated	316Ti	

70	Ground tube and material		
1	Ground tube not selected		- -
2	..... mm (100 mm ... 6000 mm)	304	0,2 kg/100 mm
3	..... mm (100 mm ... 6000 mm)	316Ti	0,2 kg/100 mm
4	..... mm (100 mm ... 6000 mm)	Alloy B	0,2 kg/100 mm
5	..... mm (100 mm ... 6000 mm)	Alloy C	0,2 kg/100 mm
6	..... mm (100 mm ... 6000 mm)	Monel	0,2 kg/100 mm
9	Special version		

80	Option	
1	Basic version	- -
2	Temperature spacer	0,5 kg
3	Gas-tight probe seal	0,5 kg
9	Special version	

90	Housing, Cable Entry				
C	Aluminium	E-Housing	NPT ½"	IP66	- -
D	Aluminium	E-Housing	G ½ A	IP66	- -
E	Aluminium	E-Housing	M 20x1,5	IP66	- -
F	Aluminium	E-Housing	HNA 24x1,5	IP66	- -
J	316Ti	E-Housing	HNA 24x1,5	IP66	0,7 kg
L	Polyester	E-Housing	NPT ½"	IP66	- -
M	Polyester	E-Housing	G ½ A	IP66	- -
O	Polyester	E-Housing	M 20x1,5	IP66	- -
P	Polyester	E-Housing	HNA 24x1,5	IP66	- -
T	Ctd. aluminium	E-Housing	NPT ½"	IP66	- -
U	Ctd. aluminium	E-Housing	G ½ A	IP66	- -
V	Ctd. aluminium	E-Housing	M 20x1,5	IP66	- -
W	Ctd. aluminium	E-Housing	HNA 24x1,5	IP66	- -
Y	Special version				

DC 11 -										Complete product designation

Note!
Please state lengths for the probe when ordering.
See also dimensioned drawings on Pages 6 to 8.

Screening
L3
↓
☐☐☐☐

Total length of probe
L
↓
☐☐☐☐

from the sealing surface of the process connection

Accessories

See Technical Information TI 229F: "Probe accessories"

- Protective cover for the probe housing
  Order No: 917410-0000

Supplementary Documentation

Technical Information (TI)

- Electronic inserts EC 11 Z, EC 72 Z
  TI 270F/00/en
- Electronic insert EC 16 Z
  TI 170F/00/en
- Electronic insert EC 17 Z
  TI 268F/00/en
- Electronic inserts EC 37 Z, EC 47 Z
  TI 271F/00/en
- Electronic insert EC 61 Z
  TI 267F/00/en
- Probe accessories
  TI 229F/00/en
- Separate housing for electronic insert
  TI 228F/00/en

Transmitters for limit detection and continuous level measurement on request

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