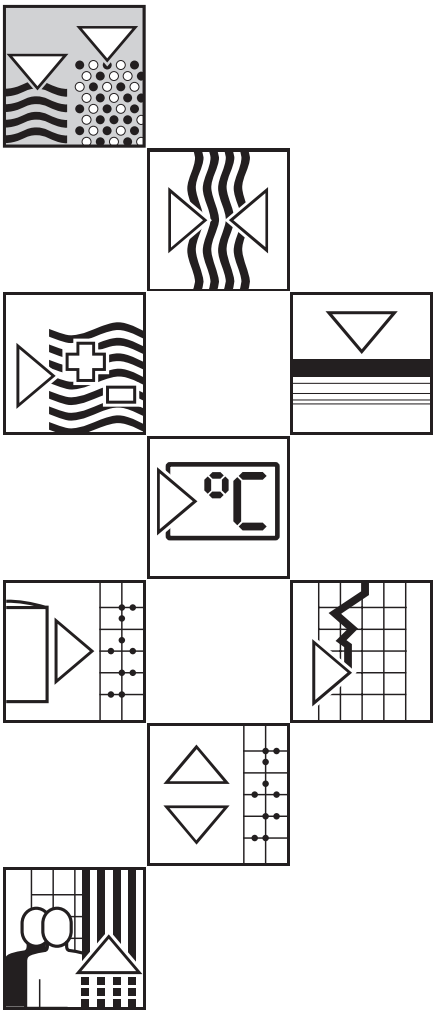
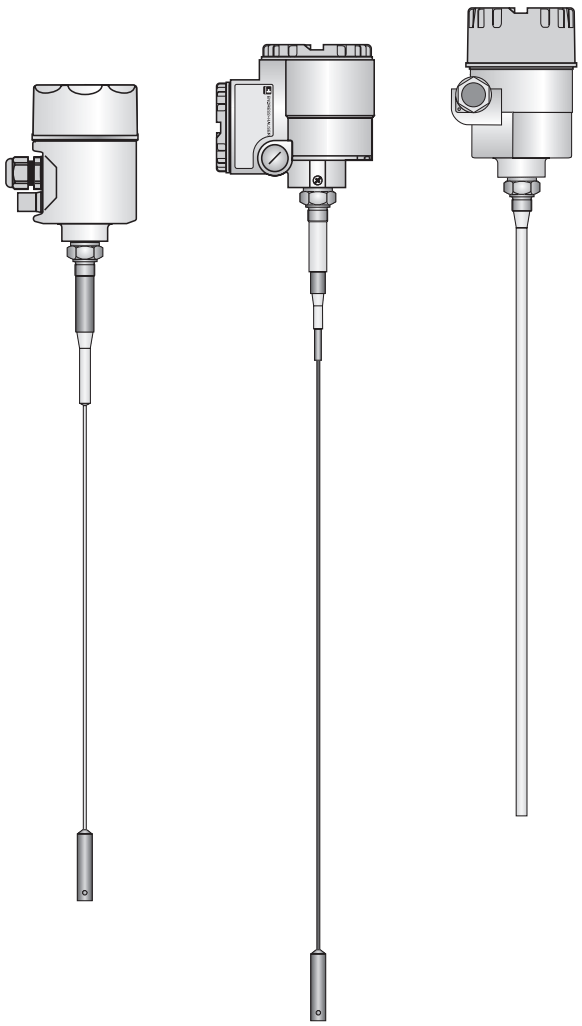
BA 157F/00/en/06.03
016738-1000

multicap T
DC 12 TA
DC 11/16/21/26 TAN
DC 11/16/21/26 TAS
Level Probes

Operating Instructions

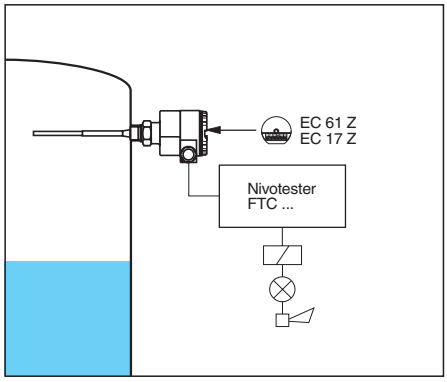


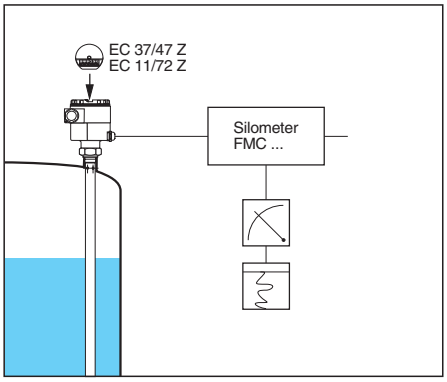


Endress+Hauser

The Power of Know How

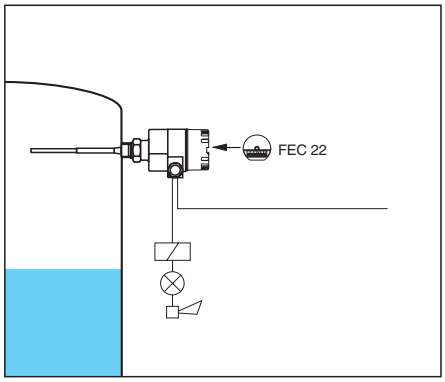
Measuring System

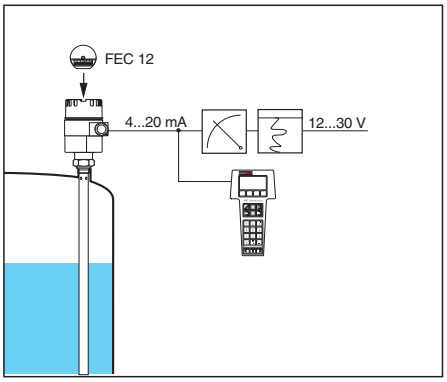




Left: Limit detection with separate Nivotester switching unit

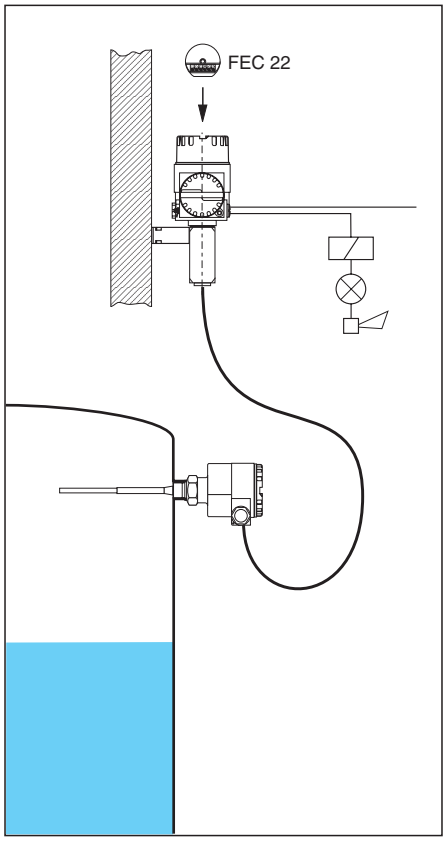
Right: Level measurement with separate Silometer transmitter

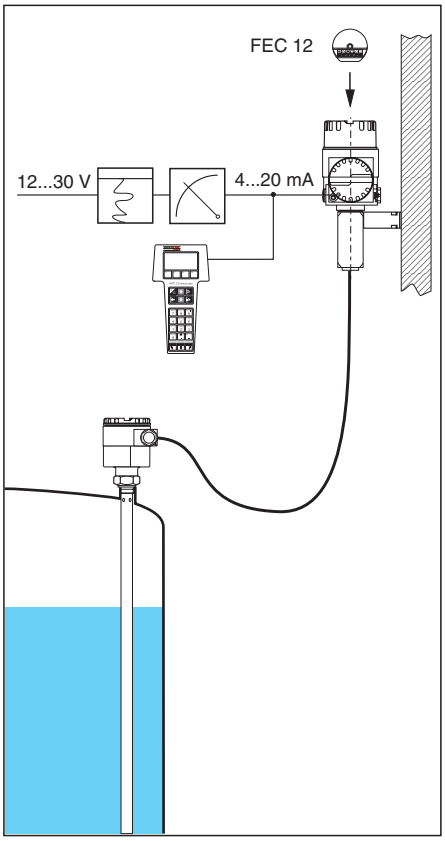




Left: Compact level switch with relay or transistor output (in preparation)

Right: Compact loop-powered level measurement system with standard 4.20 mA current output. The FEC 12 is a smart electronic insert which allows remote calibration over the 4.20 mA output (HART protocol)

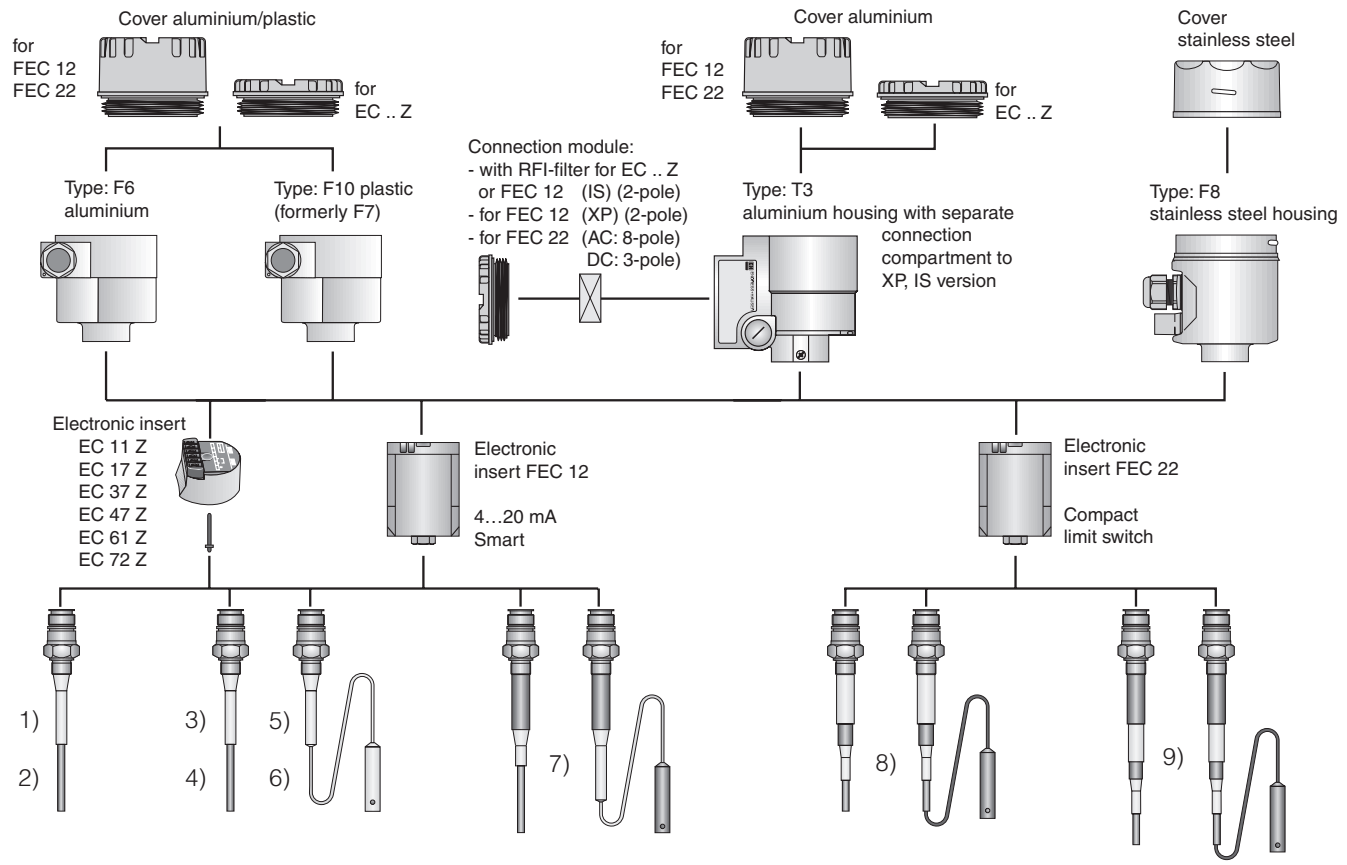




Left: Remote housing with electronic insert FEC 22

Right: Remote housing with electronic insert FEC 12

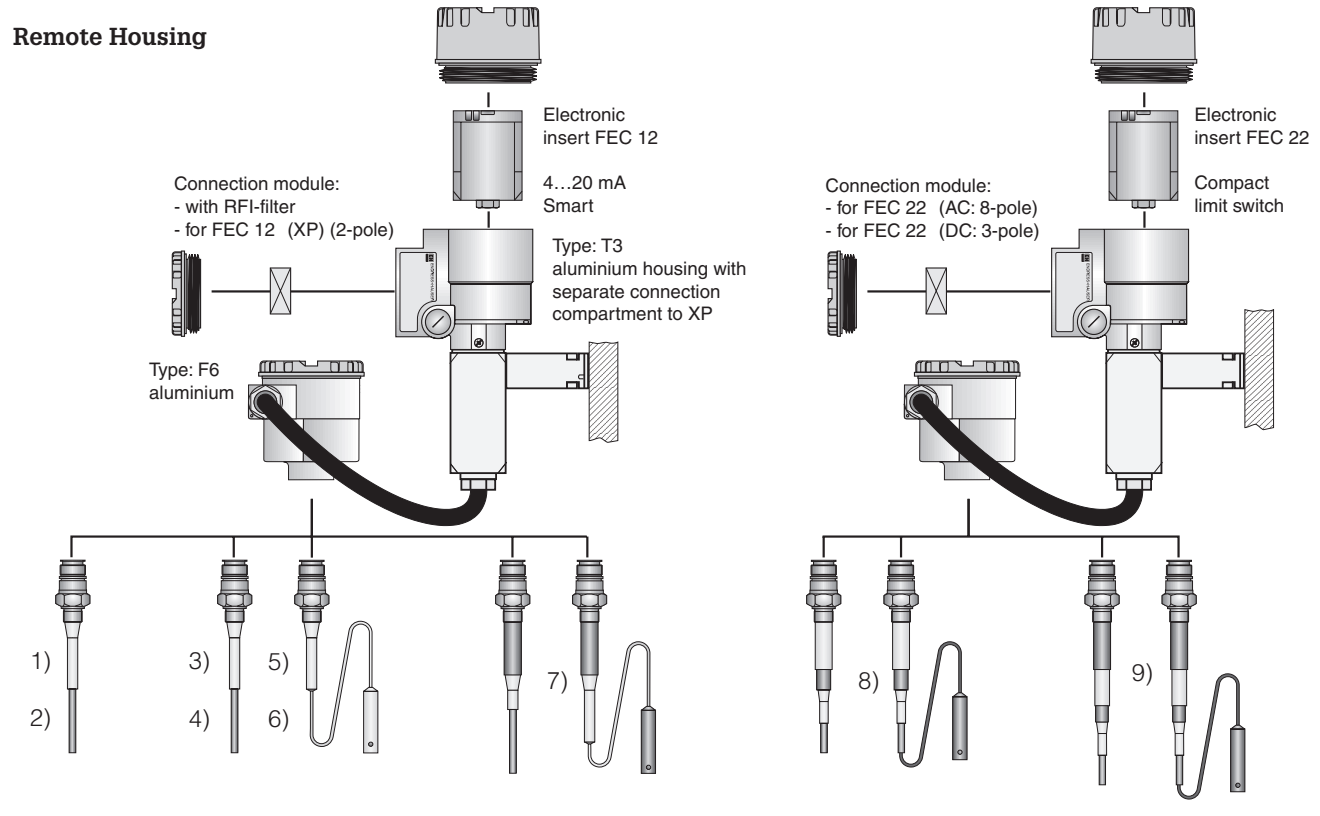
Probe Selection



1) DC 12 TA with reinforced rod, fully insulated
2) DC 12 TA with reinforced rod, partially insulated
3) DC 11 TAN with fully insulated rod
4) DC 16 TAN with partially insulated rod
5) DC 21 TAN with fully insulated rope
6) DC 26 TAN with partially insulated rope
7) DC 11, 16, 21, 26 TAS with screening against condensation and material build-up at the process connection
8) DC 11, 16, 21, 26 TAS with active compensation of conductive material build-up at the probe
9) DC 11, 16, 21, 26 TAS with screening and active build-up compensation

Not shown: rod probes DC 11, 16 TAN and TAS with ground tube; not for probes with active build-up compensation

Remote Housing



Notes on Installation

Approved Usage
Multicap T capacitance probes are designed for level measurement or limit detection in tanks containing liquids or small silos containing light bulk solids. They have been designed to operate safely in accordance with current technical and safety standards, and must be installed by qualified personnel in accordance with the instructions which follow.
The manufacturer accepts no responsibility for any damage arising from incorrect use, installation or operation of the equipment. Changes or modifications not expressly approved in the following instructions or by the bodies responsible for compliance may make the user's authority to operate the equipment null and void.

Personnel
The equipment may be installed, commissioned and maintained by authorised personnel only.
The instructions which follow must have been read and understood before the equipment is installed.

Explosion Hazardous Areas
When installing equipment in explosion hazardous areas the instructions included in the accompanying certification as well as any local standards must be observed.
Please note that where the quoted technical data differs from that in the certificate, the certificate applies.

Operating Conditions
Before installing the probe, check that it is suitable for the operating conditions to be encountered, in particular:
– the chemical resistance of all probe materials
– the permitted operating temperature and pressure
– the approvals for use in explosion hazardous areas.

Unpacking
To avoid damage to the probe, remove the packaging on-site just before mounting.
Compare the code on the nameplate of the probe with the product designation on Page 14 ...17 to ensure that the correct probe is mounted.
Check the probe length (for shortening see page 5).

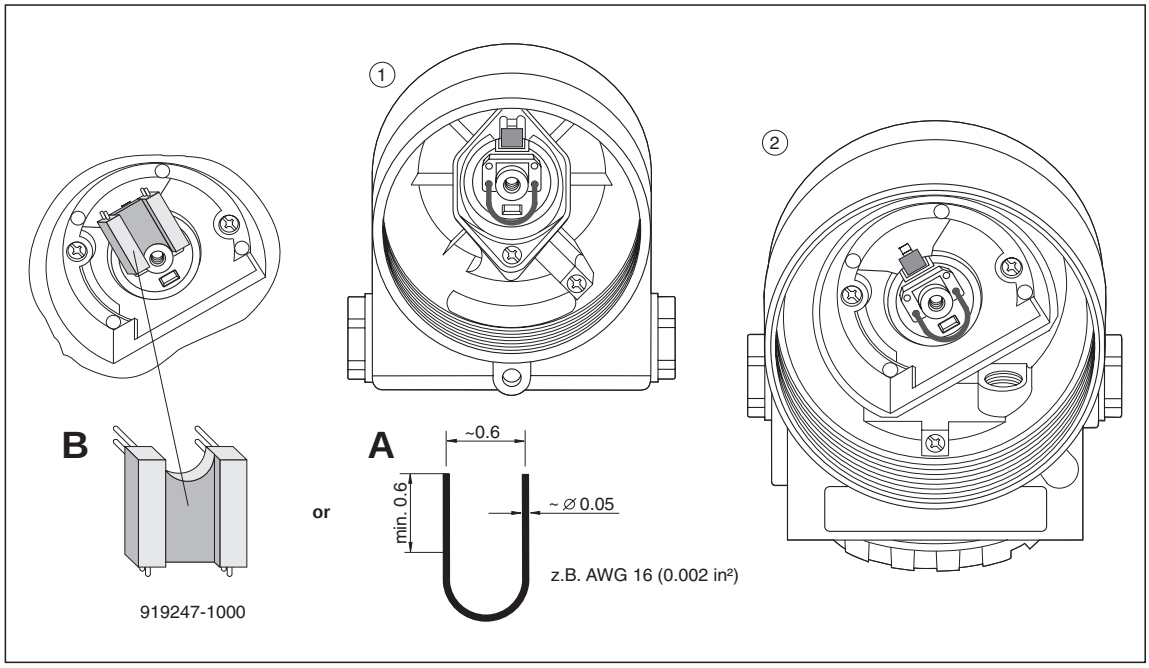
Preparation for Installation

When installing in explosion hazardous areas observe all national and local regulations as well as the specifications in the certificate.

When the electronic insert is not installed, connect the probe terminal in the housing to the ground terminal.

Possibilities for connection:
Insert plug or wire jumper in both sockets - to be found adjacent to the central thread.

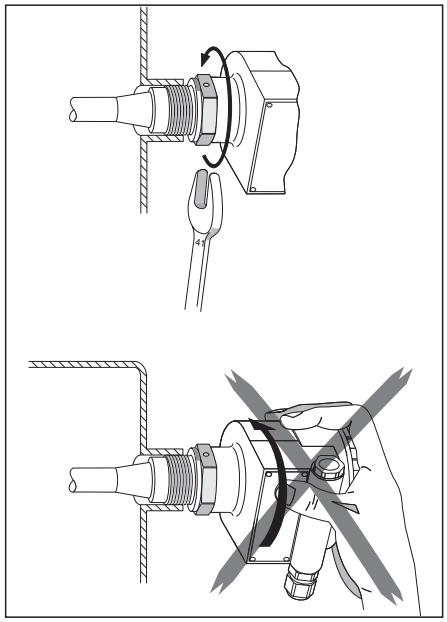
Before the electronic insert is installed, remove the plug or jumper.



Grounding the probe rod or rope in the housing:
1) type F6 / F8 / F10
2) type T3

A Jumper, e.g. made from bare wire, AWG 16 (0.002 in^2)
B Plug: supplied with probes without electronic insert

Mounting



Probe with thread ¾ -14 NPT and with sealing ring:
Tighten at the hexagonal nut

Do not tighten by rotating the housing!

Mounting the probe

Protect the insulation

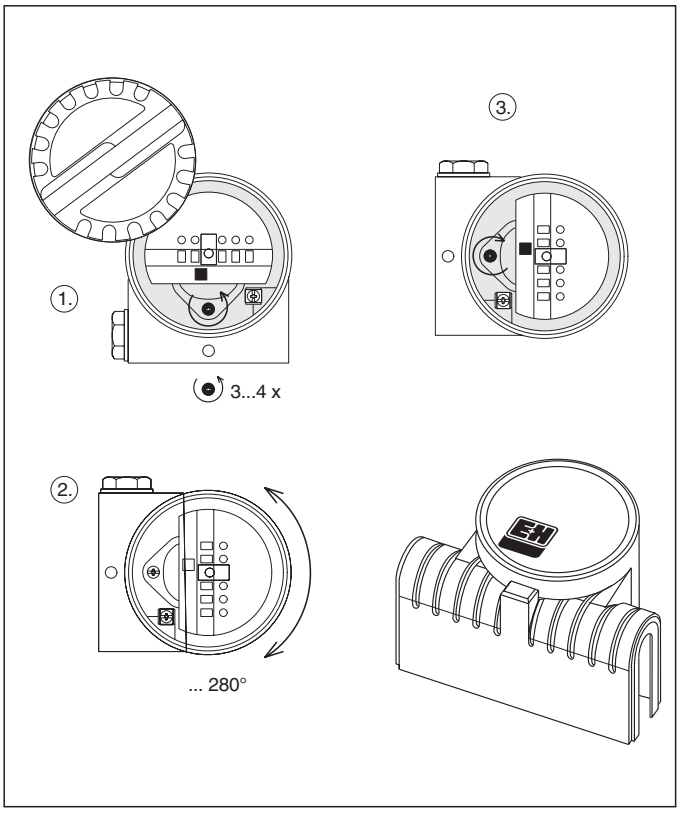
Ensure that the insulation of the probe is not damaged when inserting the probe through the process connection of the vessel.

Probe with Triclamp or flange

Use a sealing material suitable for the application.
If the flange is PTFE-cladded, then this is generally a suitable seal up to the permitted operating pressure.

Probe with thread ¾ - 14 NPT (tapered)

– Wrap suitable sealing material around the thread.
– When tightening, rotate the probe at the hexagonal nut only, not at the housing!



Rotating the small housing (type F6, F8, F10)
1. - 2. - 3.

Below right:
Protective cover for the small housing (type F6, F10).

Always to be used when the probe is mounted outdoors

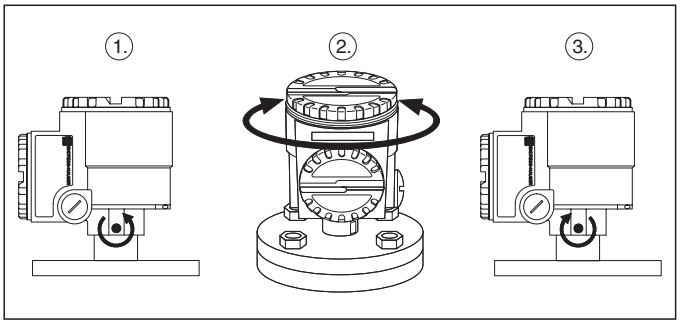
Rotating the Housing

The housing can be rotated to reposition the cable entry.
In order to provide optimal protection from the entry of moisture, particular when the probe is mounted outdoors, we strongly recommend:

– A probe mounted laterally in the tank with one cable entry, should have the cable entry pointing downwards
– A probe mounted laterally in the tank with two cable entries, should have both cable entries positioned horizontally
– When mounted with protective cover the cable entries should always be positioned horizontally

Small housing (type F6, F8, F10)

– Unscrew cover
– Loosen the Phillips screw in the base of the housing by 3 or 4 turns
– The housing can now be rotated through 280° from one stop to the other
– Retighten the Phillips screw in the base of the housing.



Rotating the large housing (type T3)
1. - 2. - 3.

Large housing (type T3)

– Loosen the Phillips screw on the housing collar
– The housing can now be rotated through 280° from one stop to the other
– Retighten the Phillips screw at the housing collar.

Sealing the Probe Housing
It is important that no moisture enters the probe housing when mounting the probe, connecting the electronic insert or when operating the probe.
The housing cover and the cable entries must, therefore, always be screwed tight.
The O-ring seal at the housing cover and the thread of the aluminium cover are both smeared with a lubricant when delivered.
If the lubricant has been removed, it must be replaced e.g. with silicone or graphite, so that the cover is an air-tight seal and the aluminium thread does not seize when screwed down.
Under no circumstances should an oil-based lubricant be used as this would destroy the O-ring.

Altering the Probe Length

A fully insulated rod probe cannot be shortened or lengthened.

Shortening a rope probe
See instructions supplied with the rope shortening kit.

Shortening a partly insulated rod probe
- Clamp the probe by the bare rod, not by the insulation and not by the process connection so that the rod connection is not under strain and cannot be damaged.
  Saw off the rod and deburr.
  If the uninsulated rod is less than 4 in, shorten the insulation accordingly
- Change the length specification stated on the nameplate.

Lengthening a partially insulated rod probe
- Remove the electronic insert from the probe housing
- Weld on a section of rod or tube (use AISI 316L stainless steel)
  Note:
  – Do not damage or overheat the insulation
  – The weld must be as rugged and corrosion-resistant as the probe rod itself
  – A longer or thicker probe rod is subjected to higher loads by the movement of material, the maximum lateral load will be reduced
  – Do not exceed the permitted probe length. See appropriate certificate
- Change the length specification stated on the nameplate
- Replace the electronic insert.

Connection

Refer to the appropriate Technical Information for connecting the electronic insert EC or FEC in the probe housing.

For T3 housing, the connection designations in the separate connection compartment are the same as those on the built-in electronic insert.

Insulated mounting of the probe in a metal container: Connect the ground terminal of the probe to the container with the aid of a short cable.
Mounting in a plastic container: Connect the ground terminal of the probe to the counterelectrode with the aid of a short cable.

Ensure that the probe housing is tightly sealed.

Calibration

Refer to the operating manual for the transmitter connected or the electronic insert FEC 12 or FEC 22 which is installed.

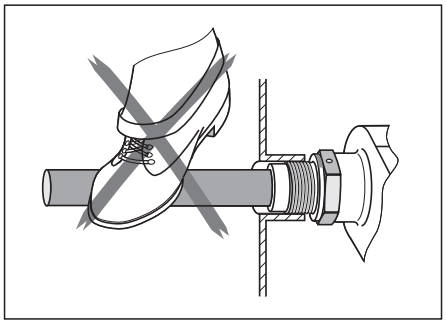
Replacing components

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.

Maintenance

Cleaning and inspecting the vessel:
– Check the probe insulation for damage
– Remove material build-up especially at the process connection
– Check the housing cover and the cable entry for tightness.

Caution!
The probe can be damaged if used as a grip or support when inspecting the container.



Return of Goods

If a probe is to be returned to Endress+Hauser for repair or disposal, then all residue must be removed from it. This is especially important if the product measured can impair health.

Please do not return goods if the last traces of dangerous products cannot be removed, e.g. product has penetrated into fissures or diffused into plastic parts.

Disposal

Packaging
All sales and transportation packaging from Endress+Hauser is produced in conformance to the regulations governing packaging for reuse and recycling.

Instruments
For a small charge, Endress+Hauser will accept and recycle any instruments manufactured in its own E+H production program. These will then be disposed of according to the German regulations covering the disposal of electronics. Delivery to Endress+Hauser, Hauptstraße 1, 79689 Maulburg, Germany.

Accessories

- ❑ Protective cover for the small probe housing (type F6, F10)
  see Technical Information "Probe accessories"
  The protective cover shields the probe from excessive heat and prevents condensation from forming in the housing when temperatures vary over a wide range.
- ❑ Slip-on plate for partially insulated probe DC 12 TA for increasing the switching safety for limit detection
- ❑ Rope shortening kit for fully insulated probes
- ❑ Rope shortening kit for partially insulated probes

Supplementary Documentation

Technical Information
- ❑ Probe accessories
  Technical Information TI 229F/00/en
- ❑ Electronic insert FEC 12
  Technical Information TI 250F/00/en
- ❑ Electronic insert FEC 22
  Technical Information TI 251F/00/en
- ❑ Electronic insert EC 17 Z
  Technical Information TI 268F/00/en
- ❑ Electronic insert EC 61
  Technical Information TI 267F/00/en
- ❑ Electronic insert EC 37 Z, EC 47 Z
  Technical Information TI 271F/00/en
- ❑ Electronic insert EC 11, EC 72
  Technical Information TI 270F/00/en
- ❑ Transmitters for limit detection and continuous level measurement on request

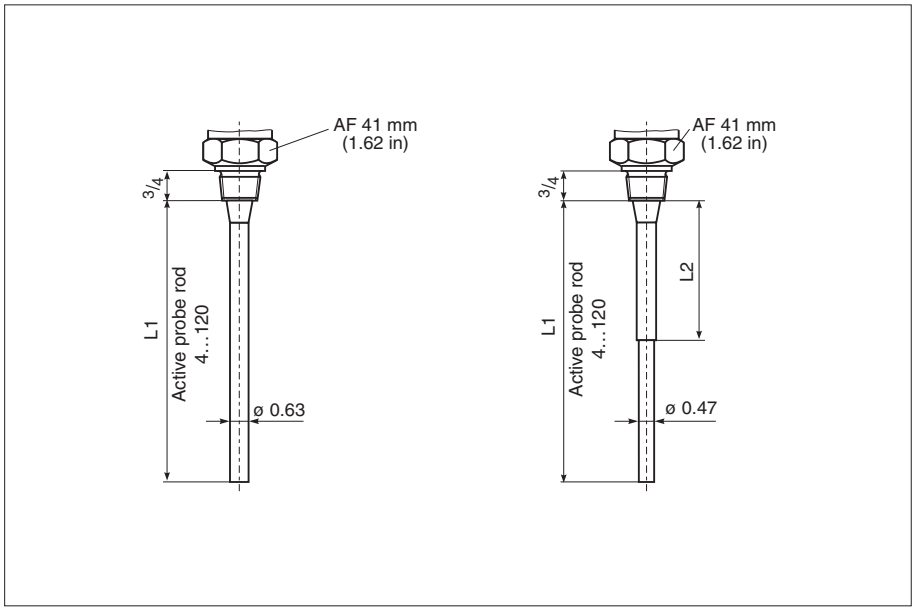
Certificates
See product structure on page 14/16.

Dimensions
DC 12 TA

All dimensions in inches

L1 = Length of active probe rod
L2 = Length of partial insulation
minimum: 3 in
maximum: length L1 minus 2 in

Thread: ¾ - 14 NPT



DC 12 TA
Rod probe with reinforced rod for high lateral load

Left: fully insulated

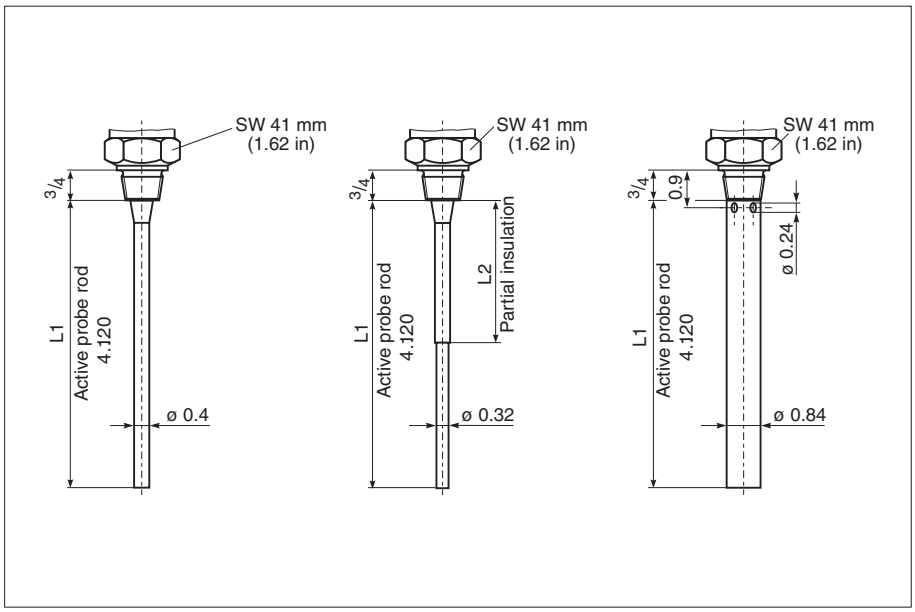
Right: partially insulated

Dimensions
DC 11/16/21/26 TAN

All dimensions in inches

L1 = Length of active probe rod or probe rope
L2 = Length of partial insulation
minimum: 3 in
maximum: length L1 minus 2 in

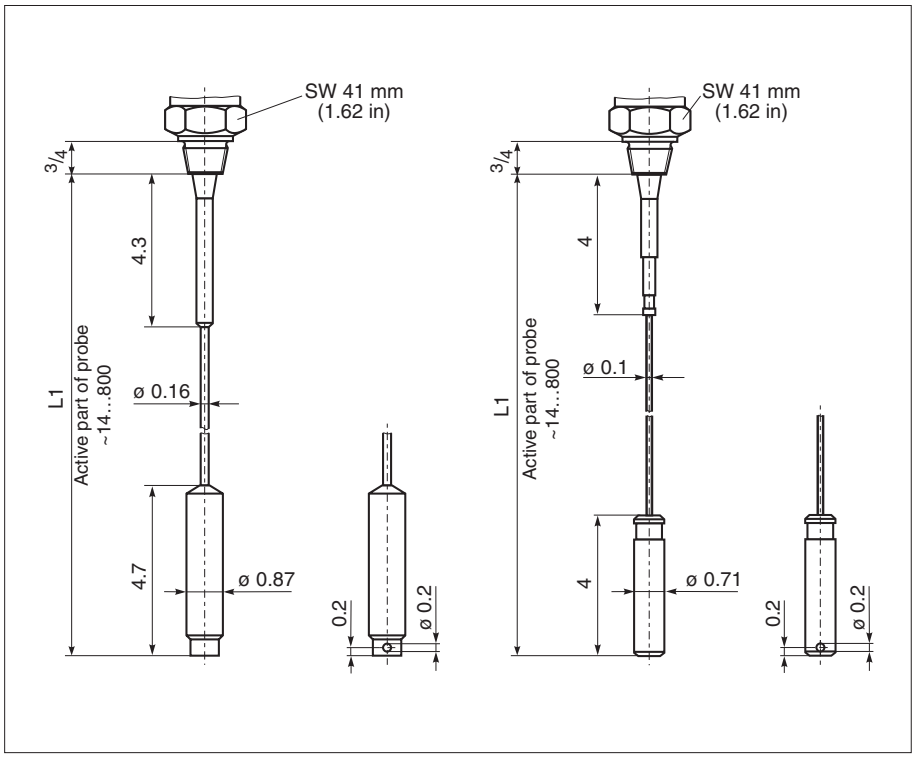
Thread: ¾ - 14 NPT



Left: DC 11 TAN
Fully insulated rod probe

Centre: DC 16 TAN
Partially insulated rod probe

Right: DC 11, 16 TAN
with ground tube
(fully or partially insulated probe rod)



Left: DC 21 TAN
Fully insulated rope probe

Right: DC 26 TAN
Partially insulated rope probe

Tensioning weight
with anchor hole

Dimensions
DC 11/16/21/26 TAS

All dimensions in inches.
All probes on this page are shown with partial insulation. All versions are available with full insulation

L1 = Length of active probe rod or probe rope
L2 = Length of partial insulation see page 3

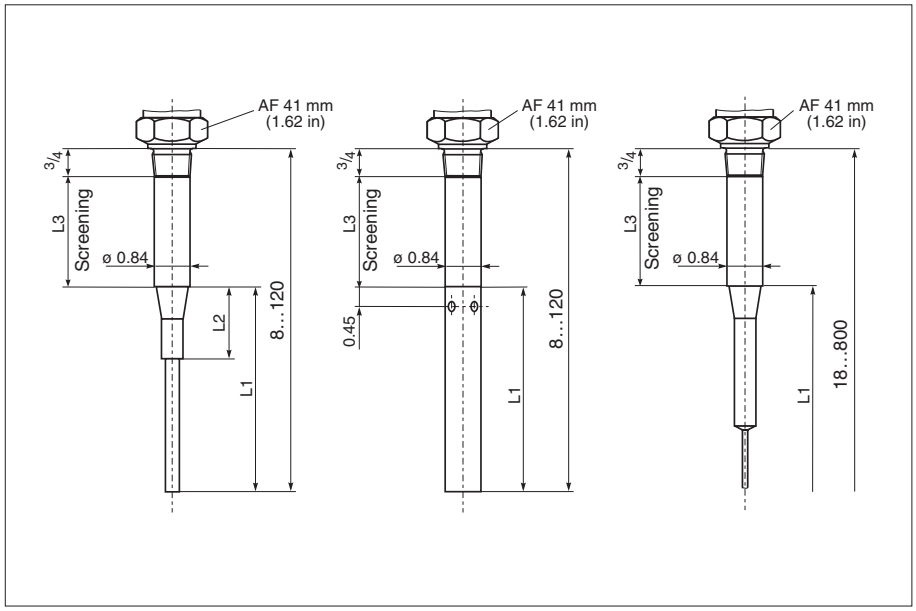
Thread: ¾ - 14 NPT

Probes with screening L3 against condensation and material build-up on the process connection

Left: Rod probe
DC 11 TAS or DC 16 TAS

Centre: Rod probe
DC 11 TAS or DC 16 TAS
with ground tube

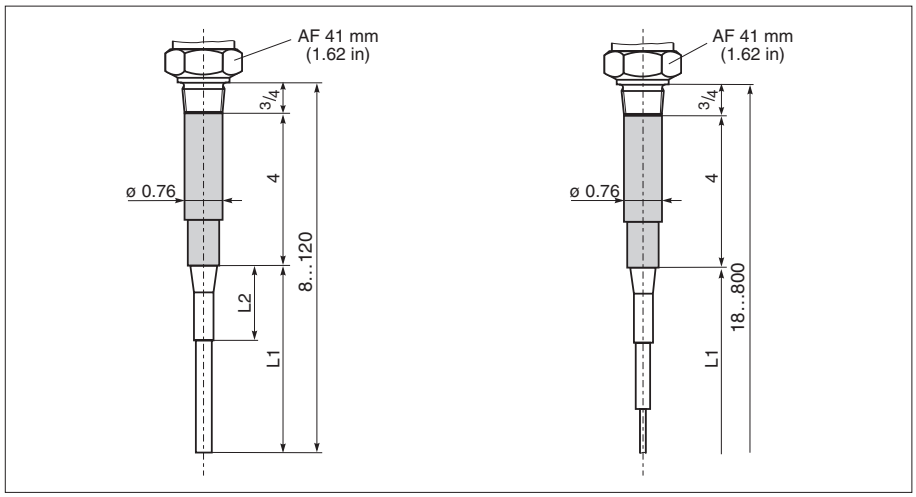
Right: Rope probe
DC 21 TAS or DC 26 TAS



Probes with **active build-up compensation** (always 4 in)

Left: Rod probe
DC 11 TAS or DC 16 TAS

Right: Rope probe
DC 21 TAS or DC 26 TAS

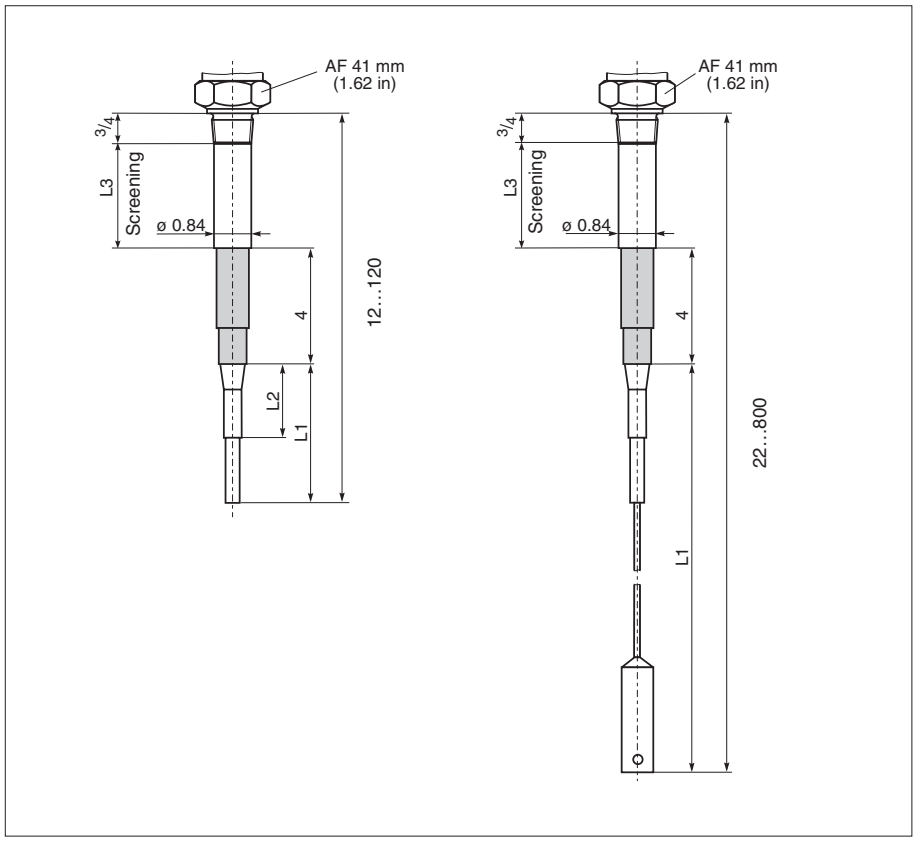


Probes with **screening L3** and with **active build-up compensation**

Left: Rod probe
DC 11 TAS or DC 16 TAS

Right: Rope probe
DC 21 TAS or DC 26 TAS

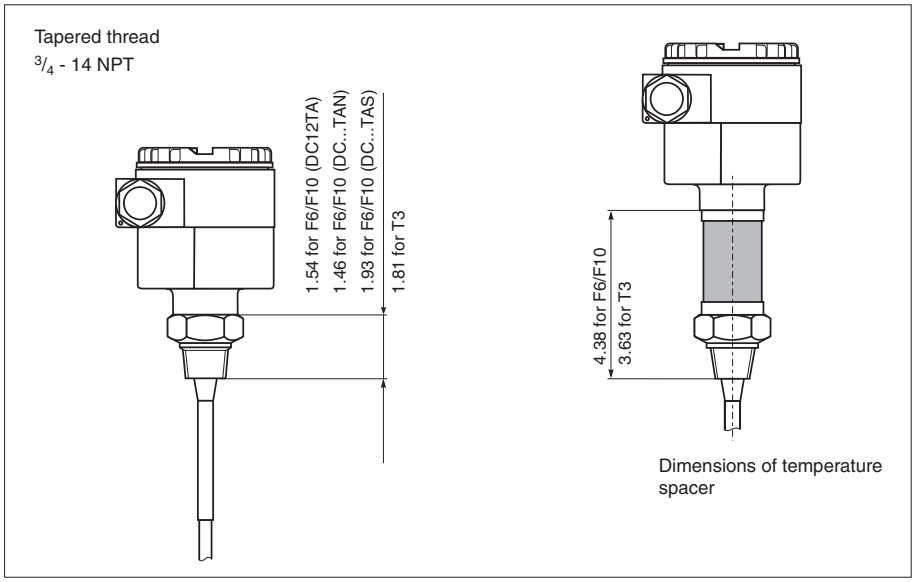
L3
The screening is available in three standard lengths:
L3 = 6 in,
L3 = 9 in,
L3 = 20 in
Special lengths on demand
L3 min. 4 in
L3 max. 60 in

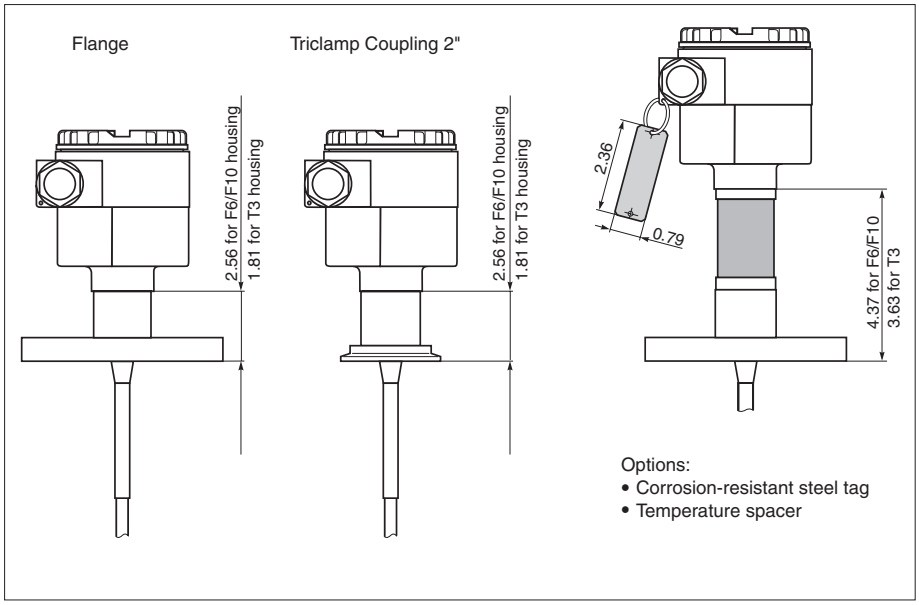


Dimensions Continued / Additional Process Connections

All dimensions in inches

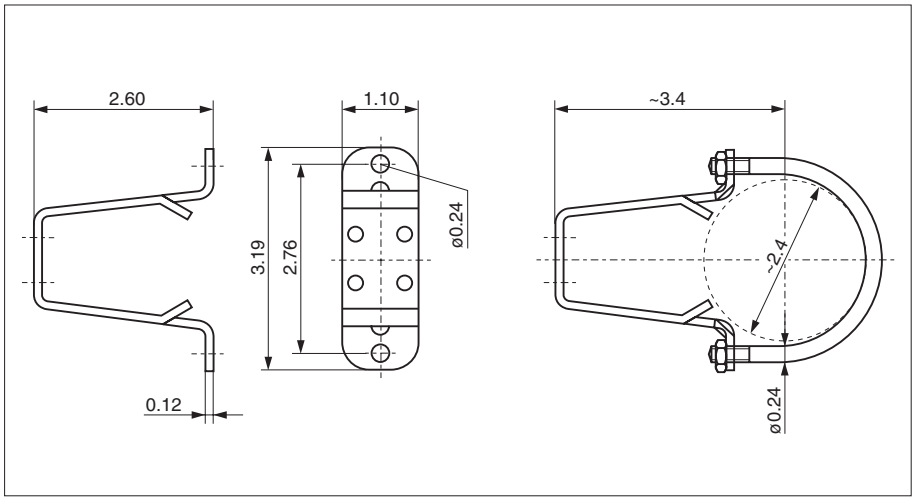
All probes shown with type F6/F10 housing
Dimensions for type T3 housing are also shown





Mounting Accessories

All dimensions in inches.
Mounting accessories for remote housing T3.



Left: Bracket for wall mounting

Right: Clamp for mounting on a 2" pipe

Housing Dimensions

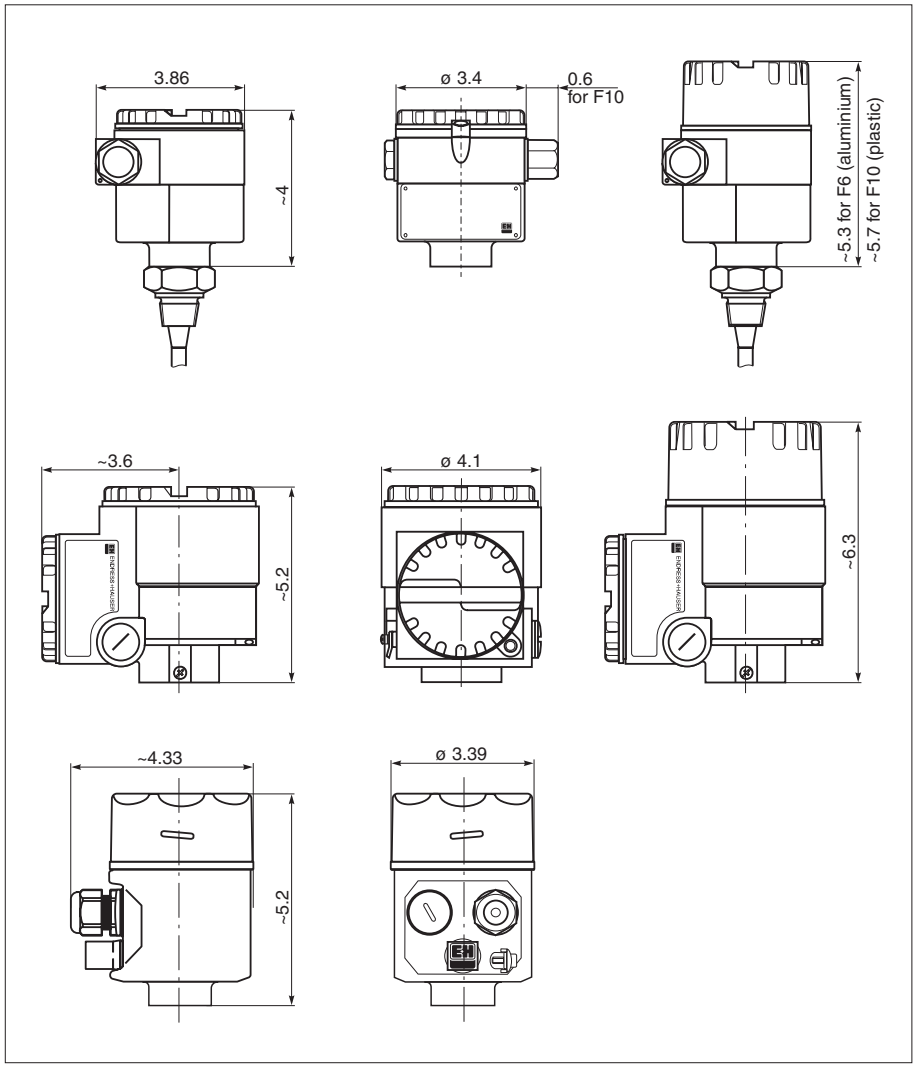
All dimensions in inches

Top row:
Housings in aluminium (type F6) or plastic (type F10, formerly F7)

Bottom row:
Housings in aluminium (type T3) with separate connection compartment:
- with RFI filter for small electronic inserts EC 17 Z, EC 61 Z, EC 37 Z, EC 47 Z, EC 11Z, EC 72 Z
- with RFI filter and terminal connection module for FEC 12 (IS)
- with RFI filter and safety barriers for FEC 12 (XP)
- terminal connection module for FEC 22

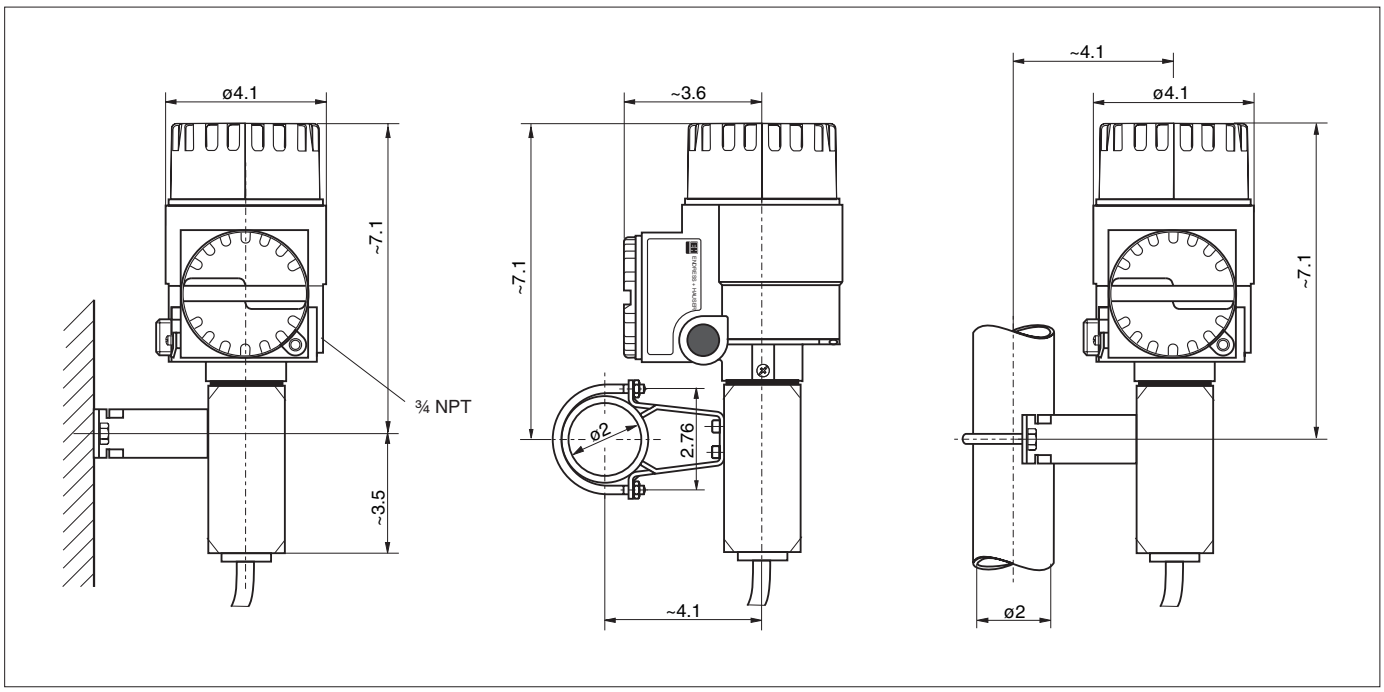
Both housings:
- with low cover for small electronic inserts EC .. Z,
- with raised cover for electronic inserts FEC 12, FEC 22; with two cable entries, one sealed with a blind plug

Stainless steel housing (type F8) for electronikc inserts EC…Z/FEC… with two cable entries, one sealed with a blind plug



Remoute Housing

All dimensions in inches



Remote housing T3 for electronic insert FEC 12 or FEC 22 (mounting accessories see Page 6).

Left: wall mounting

Right: pipe mounting

Technical Data

General Information

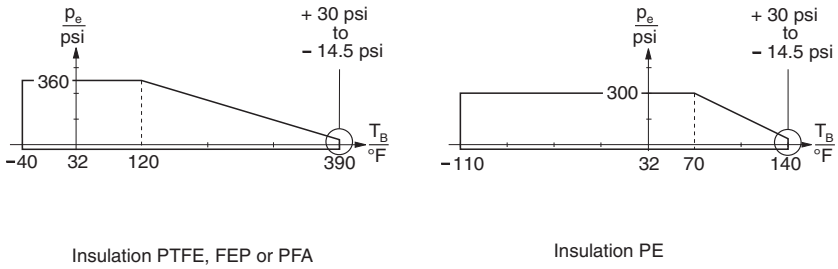
Manufacturer	Endress+Hauser GmbH+Co. D-79689 Maulburg, Germany
Instrument family	Multicap T
Instrument types	DC 12 TA, DC 11, 16, 21, 26 TAN / TAS
Function	Probes for capacitive level measurement and limit detection

Operating data

1 Nm = 0.74 tf lbs
1 N = 0.225 lbs

Operating pressure	max. 360 psi depending on material - see below
Operating temperature	max. 390 °F depending on material - see below
Lateral load on probe rod	DC 12 TA : 22.2 ft lbs at 70 °F, static DC 11, 16: 11.1 ft lbs at 70 °F, static
Max. tension on probe rope	45 lbs at 70 °F, static

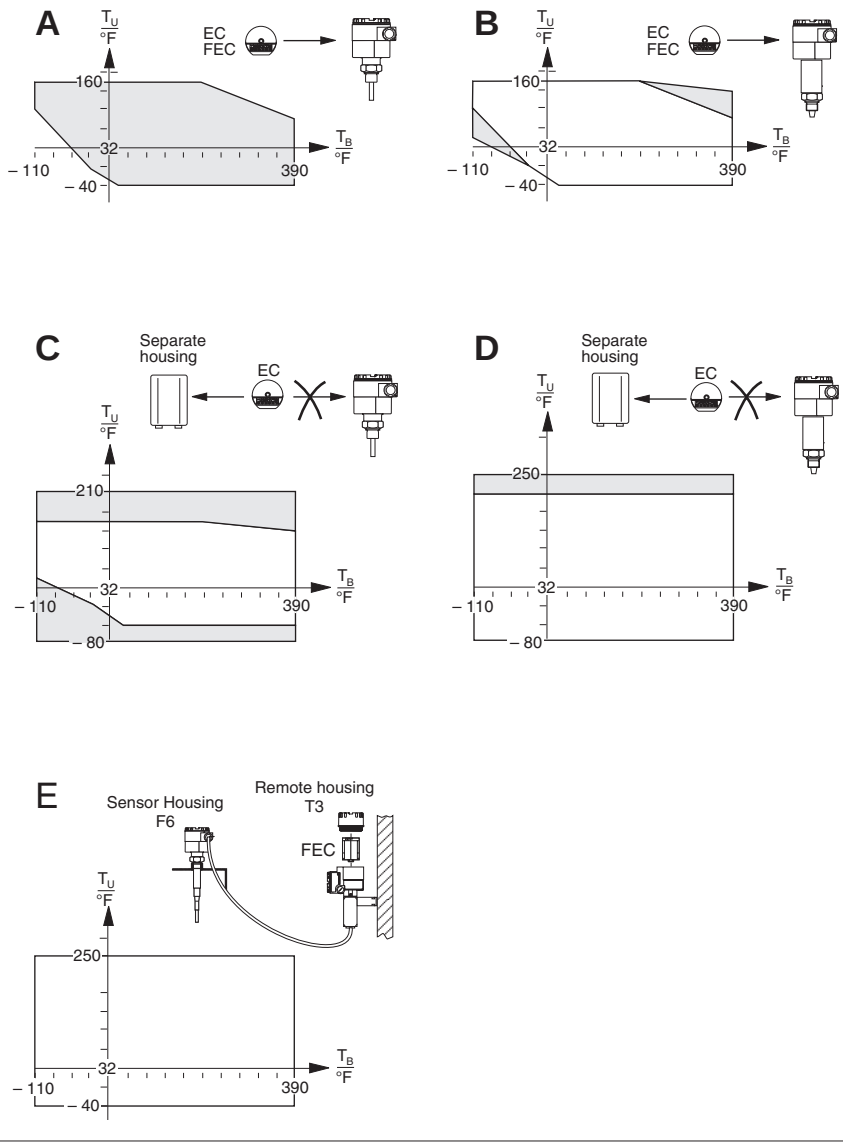
Permitted operating pressures p_e and operating temperatures T_B



Operating ranges of the various probe types as a function of operating temperature T_B and ambient temperature T_U:
A Basic probe
B Probe with temperature spacer
C Electronic insert in separate housing
D Probe with temperature spacer and electronic insert in separate housing
E Basic probe and electronic insert in remote housing

The graphs A and B apply to **all** electronic inserts

The graphs C and D apply to the small electronic inserts EC 17 Z, EC 61 Z, EC 37 Z, EC 47 Z, EC 11 Z, EC 72 Z



Operating data (continued)

Probe lengths

Total length of rod probe	min. 4 in, max. 120 in, see dimensions
Total length of rope probe	min. 14 in, max. 800 in, see dimensions

Capacitance values of the probe

Basic capacitance:	approx. 30 pF
Temperature spacer:	approx. 5 pF
Active build-up compensation:	< 10 pF

Additional capacitances

Probe 10 in from a conductive vessel wall	Probe rod : approx. 0.33 pF/in in air Probe rope: approx. 0.25 pF/in in air
Insulated probe rod in water	approx. 10 pF/in DC 12 TA approx. 13 pF/in DC 11 TA
Insulated probe rope in water:	approx. 5 pF/in
Rod probe with ground tube	insulated probe rod in air approx. 1.6 pF/in in water approx. 12.7 pF/in uninsulated probe rod in air approx. 1.4 pF/in

Probe lengths for continuous measurement in conducting liquids

EC with ΔC_{max} = 2000 pF (EC 47 Z, EC 72 Z, FEC 12)	Rope probe up to 300 in (up to 800 in in non conducting liquids) Rod probe up to 120 in
EC with ΔC_{max} = 4000 pF (EC 37 Z, EC 11 Z)	Rope probe up to 800 in Rod probe up to 120 in

Accuracy

Length tolerances	up to 40 in: +0 in, –0.2 in rod probe/ –0.4 in rope probe up to 120 in: +0 in, –0.4 in rod probe/ –0.8 in rope probe up to 240 in: +0 in, –1.2 in up to 800 in: +0 in, –1.6 in
The following specifications apply to **fully insulated** probes operating in **conducting** liquids	
Linearity error	<1 % for 40 in **
Temperature dependence of the probe rod	< 0.1 % per K DC 12 TA ** < 0.12 % per K DC 11 TA **
Pressure dependence of the probe rod	0.8…2.3 % per 100psi **
Temperature dependence of the probe rope	< 0.1 % per K **
Pressure dependence of the probe rope	< 0.7 % per 100psi **
**** Error in non-conducting materials insignificant**	

Process connections

Tapered thread $^3/_4$ - 14 NPT	ANSI B 1.20.1
ANSI flanges	ANSI B 16.5
Triclamp coupling	ISO 2852

Materials

Aluminium housing (F6, T3)	GD-Al Si 10 Mg, DIN 1725, plastic coated (blue / grey)
Plastic housing (type F10)	fibre-glass reinforced polyester (blue/grey)
Stainless steel housing (type F8)	stainless steel 1.4301 (AISI 304)
Seal for housing cover	type F6, T3 housings: O-ring in EPDM (elastomer) type F10 housing: O-ring in silicone rubber type F8 housing: profiled O-ring in silicone
Temperature spacer	Stainless steel AISI 316 or similar
Probe rod, ground tube process connection, screening, build-up compensation, tensioning weight for rope probe	AISI 316L
Probe rope	AISI 316
Further material specifications	see Product Structure on Page 14…17

Product Structure

1 lb = 0.45 kg 1 in = 25.4 mm
1 oz = 28.35 g

DC 12 TA **Multicap T DC 12 TA**
Rod probe for standard applications

Basic weight including ¾" process connection and F10 housing

Certificate

A	For non-hazardous areas		
J	FM IS	Class I, II, III;	Div.1; Groups A–G
K	FM XP	Class I;	Div.1; Groups A–D
Q	CSA IS	Class I, II, III;	Div.1; Groups A–G
R	CSA XP	Class I;	Div.1; Groups B–D
Y	Special version		

Type of insulation

		Additional weight
1	Fully insulated probe	
6	Partiall insulated probe	

Length of insulation L2

F	.....in (3 in...118 in), PTFE, partially insulated	0.09 oz/in
G	.....in (3 in...118 in), PFA, partially insulated	0.09 oz/in
H	.....in (3 in...118 in), PE, partially insulated	0.09 oz/in
Y	Special version	
1	Fully insulated probe	

Active length L1, Material

F	.....in (4 in...144 in), PTFE, fully insulated	0.09 oz/in
G	.....in (4 in...118 in), PFA, fully insulated	0.09 oz/in
H	.....in (4 in...118 in), PE, fully insulated	0.09 oz/in
Y	Special version	
2	.....in (4 in...118 in), partially insulated	0.08 oz/in

Process connection, Material

C	¾" NPT, Thread ANSI,	316L		
D	1" NPT, Thread ANSI,	316L		
F	DN 40-51 (2"),	316L,	ISO 2852, Tri-Clamp connection	1.1 lbs
G	DN 32 (1½"),	316L,	ISO 2852, Tri-Clamp connection	
H	DN 25 (1"),	316L,	ISO 2852, Tri-Clamp connection	
L	DN 38 (1½") removable,	316L, A3,	ISO 2852, Tri-Clamp connection	
Y	Special version			
5	Flanged process connection, 316L			

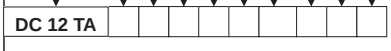
Flange type, Material

1B	without process flange connection				
5A	1"	150 psi, RF,	316L,	ANSI B16.5	1.5 lbs
5B	1"	300 psi, RF,	316L,	ANSI B16.5	2.6 lbs
5E	1½"	150 psi, RF,	316L,	ANSI B16.5	2.9 lbs
5F	1½"	300 psi, RF,	316L,	ANSI B16.5	5.5 lbs
5G	2"	150 psi, RF,	316L,	ANSI B16.5	4.8 lbs
5H	2"	300 psi, RF,	316L,	ANSI B16.5	6.6 lbs
5M	3"	150 psi, RF,	316L,	ANSI B16.5	
5N	3"	300 psi, RF,	316L,	ANSI B16.5	
5P	4"	150 psi, RF,	316L,	ANSI B16.5	
5Q	4"	300 psi, RF,	316L,	ANSI B16.5	
6A	1"	150 psi, RF,	PTFE, >316L,	ANSI B16.5	1.5 lbs
6B	1"	300 psi, RF,	PTFE, >316L,	ANSI B16.5	2.6 lbs
6E	1½"	150 psi, RF,	PTFE, >316L,	ANSI B16.5	2.9 lbs
6F	1½"	300 psi, RF,	PTFE, >316L,	ANSI B16.5	5.5 lbs
6G	2"	150 psi, RF,	PTFE, >316Ti,	ANSI B16.5	4.8 lbs
6H	2"	300 psi, RF,	PTFE, >316L,	ANSI B16.5	6.6 lbs
9Y	Special version				

Electronic insert

A	Prepared for ECxx electronic insert with low housing cover	
B	with EC 61 Z, 3-wire insert	0.44 lbs
C	with EC 11 Z, 3-wire Tx, 33 kHz	0.44 lbs
D	with EC 72 Z, 3-wire Tx, 1 MHz	0.44 lbs
E	with EC 17 Z, 2-wire PFM	0.44 lbs
G	with EC 37 Z, 2-wire PFM, 33 kHz	0.44 lbs
H	with EC 47 Z, 2-wire PFM, 1 MHz	0.44 lbs
K	with FEC 12, 2-wire 4-20 mA HART	0.66 lbs* + 0.66 lbs
M	with FEC 22, 90-253 V AC, DPDT relay	0.66 lbs* + 0.66 lbs
N	with FEC 22, 10-55 V DC, 3-wire PNP	0.66 lbs* + 0.66 lbs
P	with FEC 14, PROFIBUS PA	
V	with FEC 14, Local operation FHB 20 and PROFIBUS PA	
Y	Special version	
2	Prepared for FECxx electronic insert with raised housing cover	0.66 lbs*

Continued Page 15



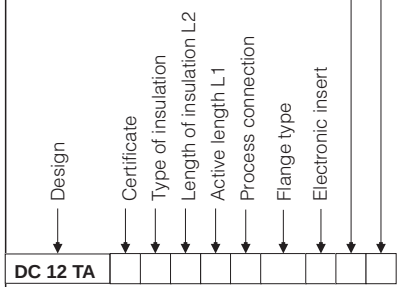
Product designation (first part)

Housing

N	Aluminium, T3 Housing,	IP66, PA-plug M12	
O	316L, F8 Housing,	IP66, PA-plug M12	
P	Polyester, F10 Housing,	Nema 4X, NPT ½"	
R	Aluminium, F6 Housing,	Nema 4X, NPT ½"	
S	Aluminium, T3 Housing,	Nema 4X, NPT ¾"	2.2 lbs
Y	Special version		
1	316L, F8 Housing,	IP66, gland Pg13,5	
2	316L, F8 Housing,	IP66, entry G ½"	
3	316L, F8 Housing,	IP66, gland M20x1,5	
4	316L, F8 Housing,	IP66, entry NPT ½"	
5	Polyester, Housing,	IP66, PA-plug, M12	
6	Aluminium, F6 Housing,	IP66, PA-plug M12	
7	80 inch cable, remote T3-electronic housing (NEMA4X), NPT ¾" F6-housing NEMA4x on probe		
8	80 inch conduit, remote T3-electronic housing (NEMA4X), NPT ¾" F6-housing NEMA4x on probe		

Option

1	Basic version	
2	TAG number	
3	Temperature spacer	0.44 lbs
4	Temperature spacer and TAG number	0.44 lbs
9	Special version	



Complete product designation for DC 12 TA

Please don't forget:

Length of

Partial insulation L2 ☐☐☐☐ in

Active probe length L1 ☐☐☐☐ in

Product Structure

1 lb = 0.45 kg	1 in = 25.4 mm
1 oz = 28.35 g	

DC 11 TAN-MULTICAP T DC 11 TAN
Fully insulated rod probe for standard applications — Basic weight including ¾" process connection and F10 housing for rope probes with tensioning weight: 2.6 lbs

DC 16 TAN-MULTICAP T DC 16 TAN
Partially insulated rod probe for standard applications — 2.6 lbs

DC 21 TAN-MULTICAP T DC 21 TAN
Fully insulated rope probe for standard applications — 3.1 lbs

DC 26 TAN-MULTICAP T DC 26 TAN
Partially insulated rope probe for standard applications — 3.1 lbs

DC 11 TAS- MULTICAP T DC 11 TAS
Fully insulated rod probe with protection features — 2.6 lbs

DC 16 TAS- MULTICAP T DC 16 TAS
Partially insulated rod probe with protection features — 2.6 lbs

DC 21 TAS- MULTICAP T DC 21 TAS
Fully insulated rope probe with protection feature — 3.1 lbs

DC 26 TAS- MULTICAP T DC 26 TAS
Partially insulated rope probe with protection features — 3.1 lbs

Certificate

A	For non-hazardous areas	
J	FM IS Class I, II, III; Div.1; Groups A–G	
K	FM XP Class I; Div.1; Groups A–D	
Q	CSA IS Class I, II, III; Div.1; Groups A–G	
Y	Special version	

Build-up protection

		Additional weight
	DC 11, 16, 21, 26 TAN	
A	Protection feature not selected	
	DC 11, 16, 21, 26 TAS	
B	4 inch active guard	0.44 lbs
M	6 inch L3 screening	0.44 lbs
N	9 inch L3 screening	0.66 lbs
P	20 inch L3 screening	1.3 lbs
R	.....in (4 in...59 in) L3 screening	1.1 oz/in
S	6 inch L3 screening and 4 inch active guard	0.88 lbs
T	9 inch L3 screening and 4 inch active guard	1.1 lbs
U	20 inch L3 screening and 4 inch active guard	2.0 lbs
V	.....in (4 in...59 in) L3 screening and 4 inch active guard	1.5 oz/in + 0.44 lbs
Y	Special version	

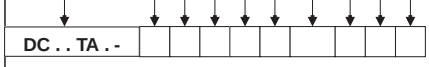
Probe insulation

	DC 11 TAN/TAS, DC 16 TAN/TAS		
1	Fully insulated probe		
	DC 16 TAN/TAS		
F	.....in (3 in...118 in), PTFE, partially insulated		0.06 oz/in
	DC 26 TAN/TAS		
C	Rope type 1/10 inch diameter		
9	Special version		

Active length L1

	DC 11 TAN/TAS		
3	.....in (4 in...118 in),	316L + PTFE	0.45 oz/in
4	.....in (4 in...118 in), with ground tube	316L + PTFE	1.1 oz/in
	DC 16 TAN/TAS		
3	.....in (4 in...118 in),	316L	0.4 oz/in
4	.....in (4 in...118 in), with ground tube	316L	1.0 oz/in
	DC 21 TAN/TAS		
3	.....in (4 in...800 in), tensioning weight with anchor hole	316 + FEP	0.04 oz/in
	DC 26 TAN/TAS		
3	.....in (4 in...800 in), tensioning weight with anchor hole	316	0.03 oz/in
9	Special version		

Continued Page 17



Product designation (first part)

Process connection, Material

C	¾" NPT, Thread ANSI,	316L		
F	DN 40-51 (2"),	316L,	ISO 2852, Tri-Clamp connection	1.1 lbs

only DC 11 TAN/TAS, DC 21 TAN/TAS

G	DN 38 (1½"),	316L,	ISO 2852, Tri-Clamp connection	
H	DN 25 (1"),	316L,	ISO 2852, Tri-Clamp connection	

Y Special version
5 Flanged process connection, 316L

Flange type, Material

1B	without process flange connection				
5A	1" 150 psi, RF,	316L,		ANSI B16.5	1.5 lbs
5B	1" 300 psi, RF,	316L,		ANSI B16.5	2.6 lbs
5E	1½" 150 psi, RF,	316L,		ANSI B16.5	2.9 lbs
5F	1½" 300 psi, RF,	316L,		ANSI B16.5	5.5 lbs
5G	2" 150 psi, RF,	316L,		ANSI B16.5	4.8 lbs
5H	2" 300 psi, RF,	316L,		ANSI B16.5	6.6 lbs
5M	3" 150 psi, RF,	316L,		ANSI B16.5	
5N	3" 300 psi, RF,	316L,		ANSI B16.5	
5P	4" 150 psi, RF,	316L,		ANSI B16.5	
5Q	4" 300 psi, RF,	316L,		ANSI B16.5	
6A	1" 150 psi, RF,	PTFE,	>316L,	ANSI B16.5	1.5 lbs
6B	1" 300 psi, RF,	PTFE,	>316L,	ANSI B16.5	2.6 lbs
6E	1½" 150 psi, RF,	PTFE,	>316L,	ANSI B16.5	2.9 lbs
6F	1½" 300 psi, RF,	PTFE,	>316L,	ANSI B16.5	5.5 lbs
6G	2" 150 psi, RF,	PTFE,	>316Ti,	ANSI B16.5	4.8 lbs
6H	2" 300 psi, RF,	PTFE,	>316L,	ANSI B16.5	6.6 lbs
9Y	Special version				

Electronic insert

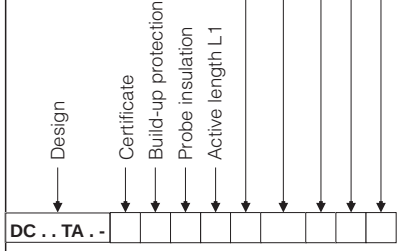
A	Prepared for ECxx electronic insert with low housing cover	
B	with EC 61 Z, 3-wire insert	0.44 lbs
C	with EC 11 Z, 3-wire Tx, 33 kHz	0.44 lbs
D	with EC 72 Z, 3-wire Tx, 1 MHz	0.44 lbs
E	with EC 17 Z, 2-wire PFM	0.44 lbs
G	with EC 37 Z, 2-wire PFM, 33 kHz	0.44 lbs
H	with EC 47 Z, 2-wire PFM, 1 MHz	0.44 lbs
K	with FEC 12, 2-wire 4-20 mA HART	0.66 lbs* + 0.66 lbs
M	with FEC 22, 90-253 V AC, DPDT relay	0.66 lbs* + 0.66 lbs
N	with FEC 22, 10-55 V DC, 3-wire PNP	0.66 lbs* + 0.66 lbs
P	with FEC 14, PROFIBUS PA	
V	with FEC 14, Local operation FHB 20 and PROFIBUS PA	
Y	Special version	
2	Prepared for FECxx electronic insert with raised housing cover	0.66 lbs*

Housing

N	Aluminium, T3 Housing,	IP66, PA-plug M12		
O	316L, F8 Housing,	IP66, PA-plug M12		
P	Polyester, F10 Housing,		Nema 4X, NPT ½"	
R	Aluminium, F6 Housing,		Nema 4X, NPT ½"	
S	Aluminium, T3 Housing,		Nema 4X, NPT ¾"	2.2 lbs
Y	Special version			
4	316L, F8 Housing,	IP66, entry NPT ½"		
5	Polyester, Housing,	IP66, PA-plug, M12		
6	Aluminium, F6 Housing,	IP66, PA-plug M12		
7	80 inch cable, remote T3-electronic housing (NEMA4X), NPT ¾" F6-housing NEMA4x on probe			
8	80 inch conduit, remote T3-electronic housing (NEMA4X), NPT ¾" F6-housing NEMA4x on probe			

Option

1	Basic version	
2	TAG number	
3	Temperature spacer	0.44 lbs
4	Temperature spacer and TAG number	0.44 lbs
9	Special version	



Complete product designation for DC . . TA .

Please don't forget:

Length of

Screening L3 ☐☐☐☐ in

Partial insulation L2 ☐☐☐☐ in

Active probe length L1 ☐☐☐☐ in

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Mustafa & Jawad Sience & Industry Co.
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