

InFit 761 e/764 e – The insertion housings for vessels, bioreactors and pipings

Technical data



InFit 761 e and InFit 764 e

Short description

The static insertion housing InFit™ 761 e allows quick and easy installation (vertically or laterally into vessels, bioreactors and pipings) of electrodes and sensors with Pg 13.5 thread and a diameter of 1.2 mm. This allows the use of a large range of pH/redox electrodes with solid or gel-type reference electrolyte as well as sensors for measuring conductivity, turbidity, dissolved oxygen and CO₂ in the chemical and pharmaceutical industry (even in hazardous areas) as well as in biotechnological and food & beverage applications.

The static insertion housing InFit 764 e provides quick and easy integration of pressurized pH/redox electrodes with liquid reference electrolyte into applications of the chemical and pharmaceutical industry, as well as into applications used in the biotechnological, food & beverage and industrial wastewater areas.

The housings feature the following highlights:

- vertical or lateral installation into vessels, bioreactors and pipings
- variable insertion lengths for installation in vessels, reactors and pipings
- wide range of process connections
- sealings made of material conforming with FDA and USP (MFQ and FFKM) standards
- all parts in contact with the medium (made of metal, without protective cage) meet the N5 requirements.
- large choice of materials for wetted parts, depending on process requirements
- optional protective cage for electrode protection in abrasive media
- conformity with EX and PED standards

Content

Operation and system	2	Technical specifications	13
General operation of the housing	2	Technical specifications InFit 761 e	13
Complete measuring system	2	Technical specifications InFit 764 e	15
Dimensional drawings	3	Suitable electrodes / sensors	17
Dimensional drawings InFit 761 e	3	Ordering information	19
Dimensional drawings InFit 764 e	6	Product key	19
Possible installations	8	Housing and spare parts	20
Process connections	10	Accessories	22

METTLER TOLEDO

General operation

The housings act as a support for electrodes and sensors used in various industries for measuring pH, redox, dissolved oxygen, CO₂, turbidity and conductivity.

The generic term InFit 76X e Series used in this document refers to:

- **InFit 761 e** – Insertion housing for pH/redox electrodes with gel-type or polymer electrolyte, O₂, CO₂, turbidity and conductivity sensors (with 12 mm diameter and Pg 13.5 thread).
- **InFit 764 e** – Insertion housing for pressurized pH/redox electrodes with liquid electrolyte (such as InPro™ 2000).

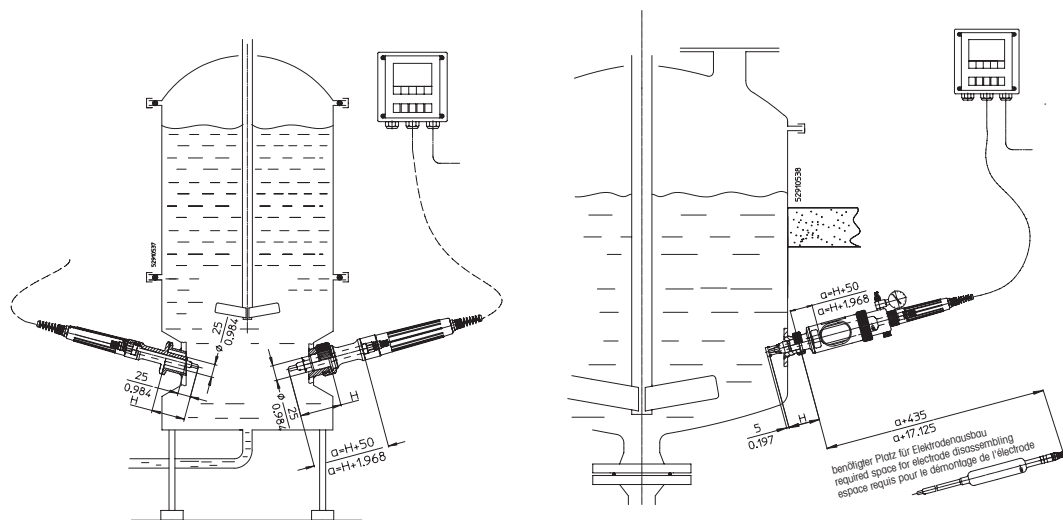
All housings made of steel are suitable for „in-situ“ sterilization and may be mounted diagonally or vertically into reactors and pipings. For sterility reasons the InFit 76X e with type «C» sensor holder employs an optimally positioned O-ring to minimize the gap between the wet part of the housing and the socket. These versions are especially designed for advanced hygienic requirements.

Only the InFit 76X e versions with type «C» sensor holder are suitable for autoclaving or CIP cleaning (see «Product key» on page 19). Insertion housings protect the electrodes/sensors from mechanical damage. The (black) antistatic protection sleeve protects the plug-type connector (allowing easy replacement of electrodes/sensors) from humidity and mechanical damage. The plug-type electrodes facilitate electrode interchange and the electrode cable can be used repeatedly. Furthermore, most versions (except the InFit 76X e with type «C» sensor holder always without protective cage) are available with or without protective cage for electrode/sensor tip. The housings with type «Y» sensor holder are designed for vertical installation.

Note: Housings suitable for operation in hazardous areas carry a respective symbol on their type plate. Housings that do not carry this additional marking are not admissible for use in hazardous areas.

All medium wetted parts of the housing are available in stainless steel according to DIN 1.4435/316L, DIN 2.4602/ Alloy C22 or titanium, or made of PVDF and PP plastics. The head (top piece) is made of antistatic PP and nickel-plated brass. The O-ring seals between the housing and the medium are made of fluororubber (FKM), perfluoro rubber (FFKM), silicone (MVQ) or EPDM.

Complete measuring system



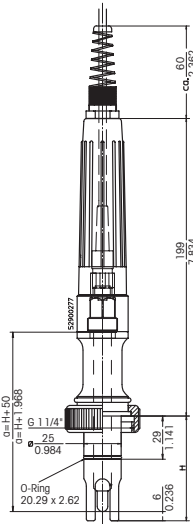
Complete measuring system InFit 761 e (left) and InFit 764 e (right)

Dimensional drawings InFit 761 e

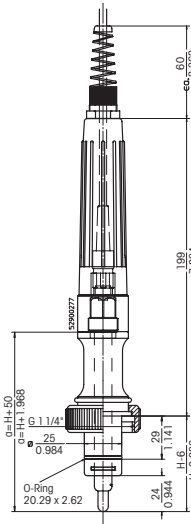
Dimensions mm
(approx.) inch

H = immersion length, a = sensor length

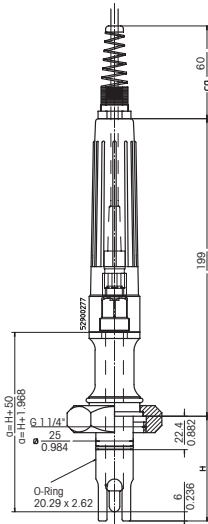
InFit 761/WS/*/*/D00/*9-
oder / or / ou
InFit 761/WS/*/*/D11/*9-



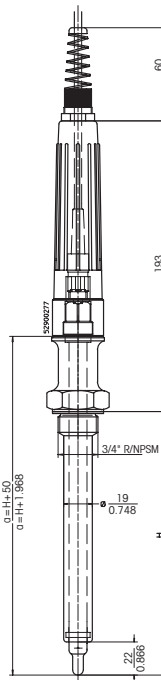
InFit 761/NS/*/*/D00/*9-
oder / or / ou
InFit 761/NS/*/*/D11/*9-



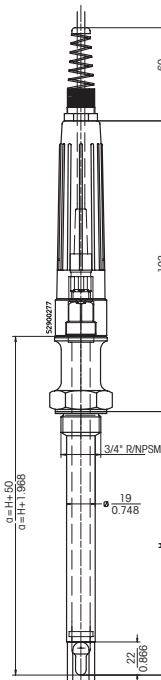
InFit 761/WS/*/*/D10/*2-



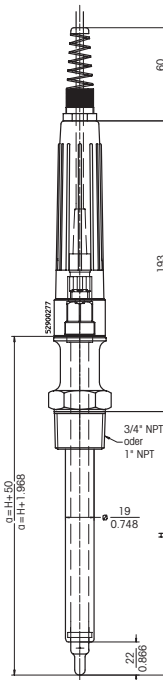
InFit 761/NY/*/*/P02/*--



InFit 761/WY/*/*/P02/*--



InFit 761/NY/*/*/N01/*--



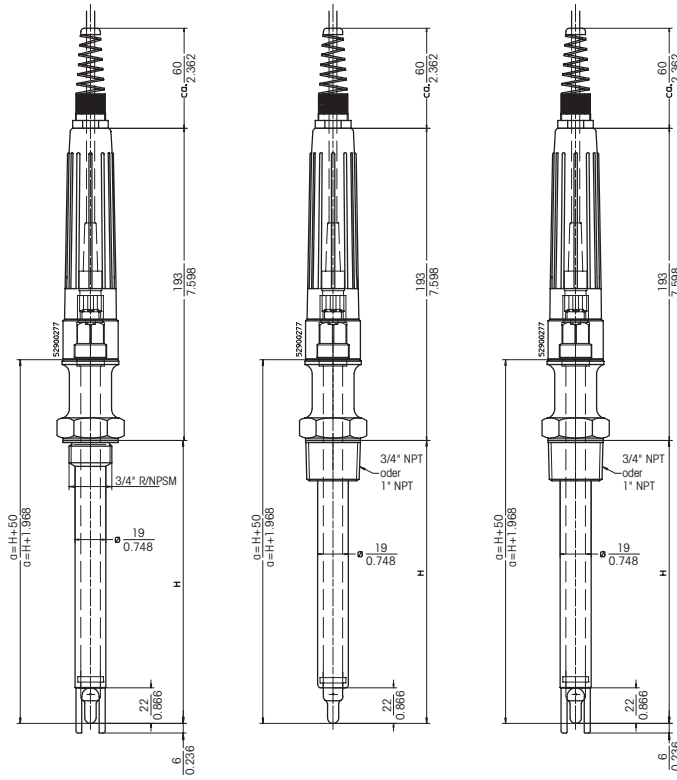
30 * For housings with immersion length H=70 and without protection cage
1.181

For immersion lengths (H) and appropriate sensor lengths please refer to the section «Suitable electrodes / sensors» page 17.

Dimensional drawings InFit 761 e

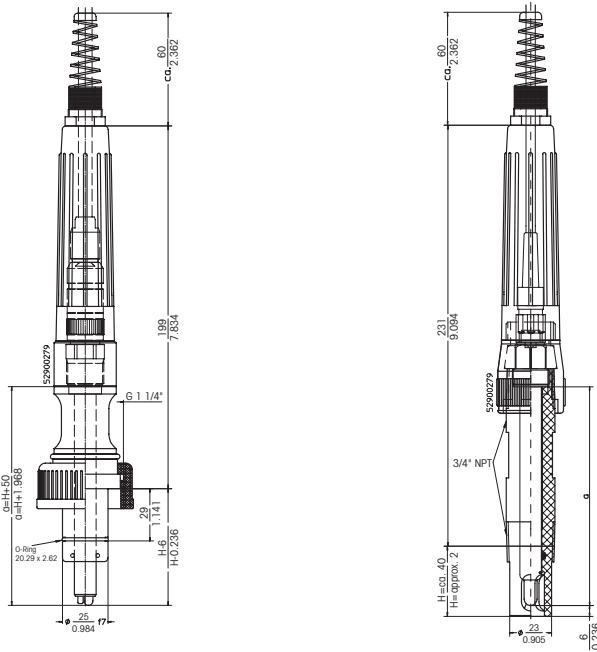
Dimensions mm	
(approx.)	inch

H = immersion length, a = sensor length



InFit761/NS/*PVDF/D00/*9-
oder / or / ou
InFit761/NS/*PP/D00/*9-

InFit761/WK/0040/*N04/*--



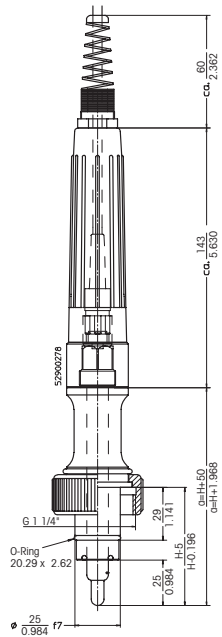
For immersion lengths (H) and appropriate sensor lengths please refer to the section «Suitable electrodes / sensors» page 17.

Dimensional drawings InFit 761 e

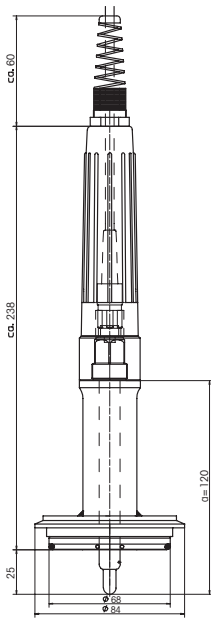
Dimensions mm	
(approx.)	inch

H = immersion length, a = sensor length

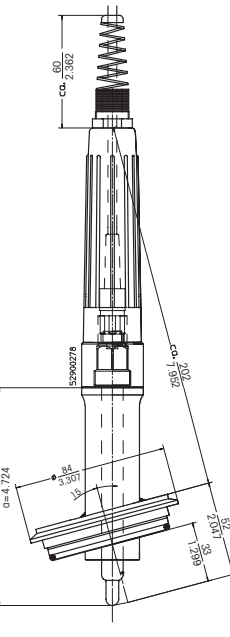
InFit 761/NC/*/*D00/*9-



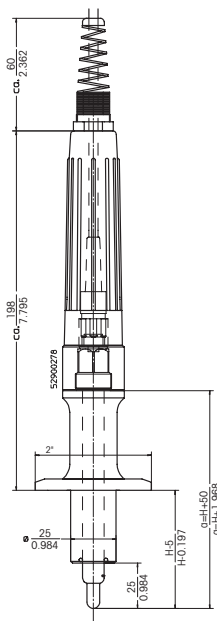
InFit 761/NC/0025/*/*V01/*--



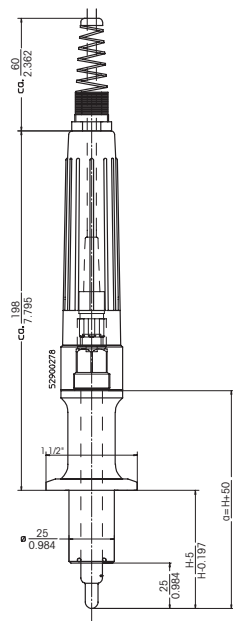
InFit 761/NC/0033/*/*V02/*--



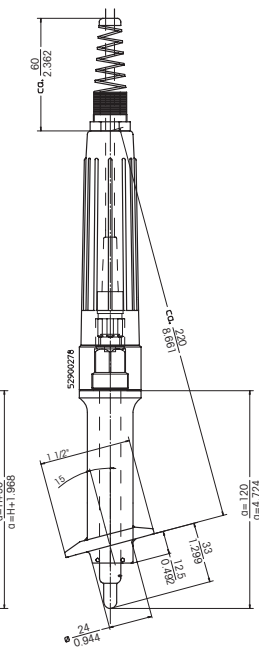
InFit 761/NC/*/*T02/*--



InFit 761/NC/*/*T01/*--



InFit 761/NC/0033/*/*T03/*--

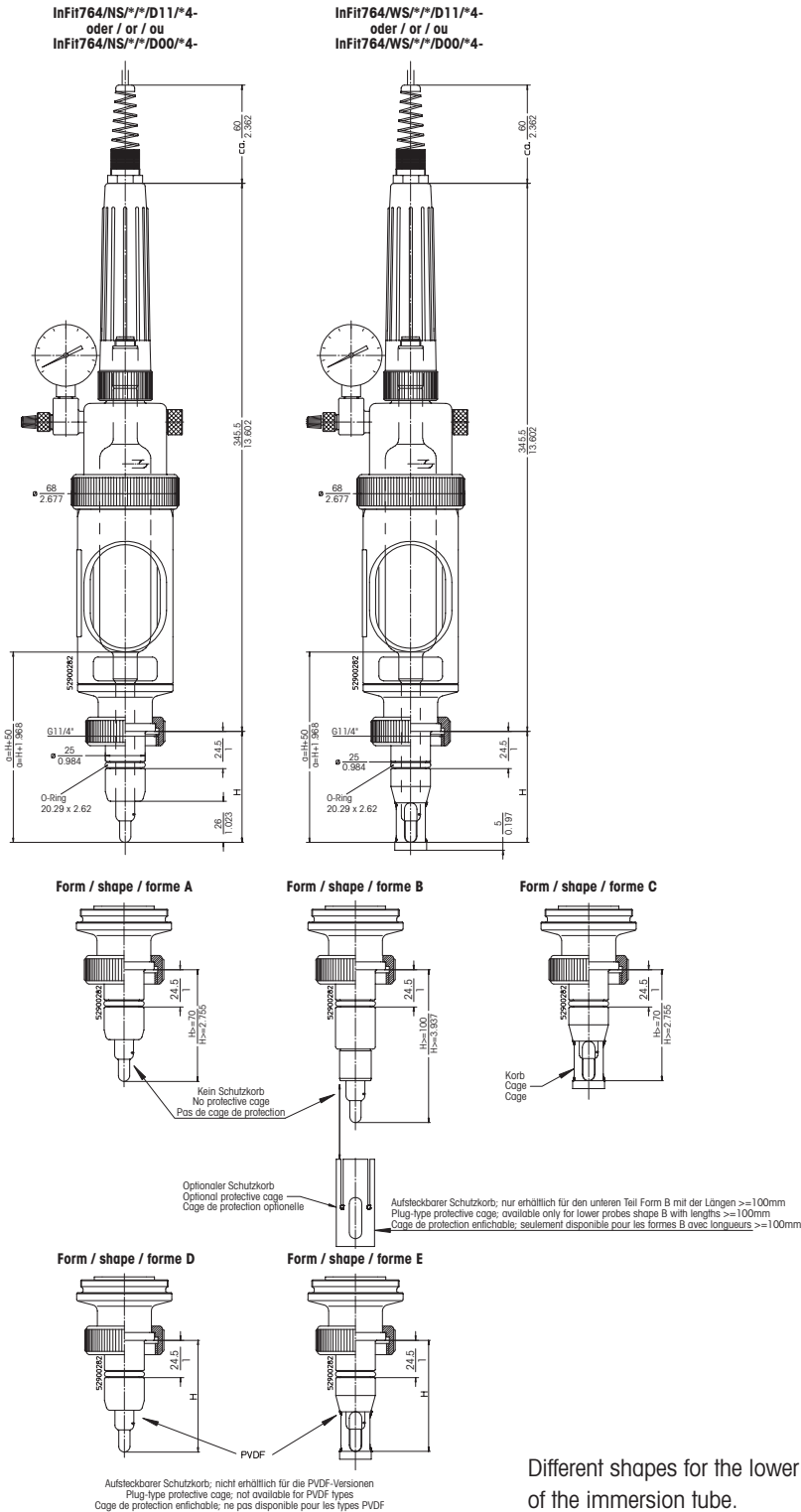


For immersion lengths (H) and appropriate sensor lengths please refer to the section «Suitable electrodes / sensors» page 17.

Dimensional drawings InFit 764 e

Dimensions mm
(approx.) inch

H = immersion length, a = sensor length



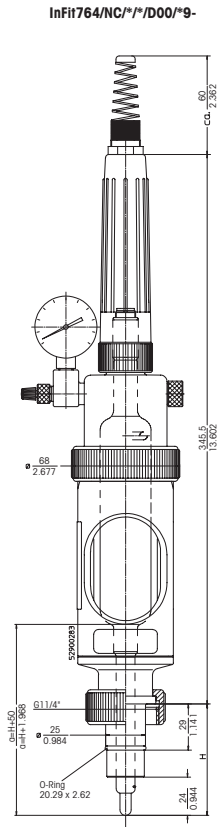
Different shapes for the lower part of the immersion tube.

For immersion lengths (H) and appropriate sensor lengths please refer to the section «Suitable electrodes / sensors» page 18.

Dimensional drawings InFit 764 e

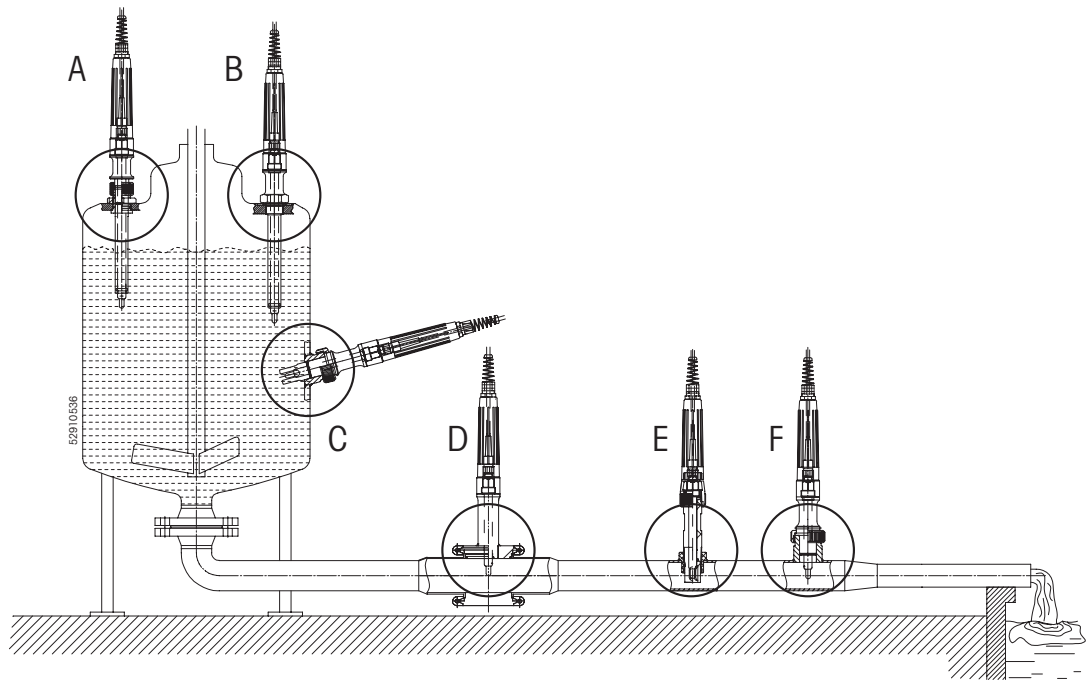
Dimensions mm	
(approx.)	inch

H = immersion length, a = sensor length



For immersion lengths (H) and appropriate sensor lengths please refer to the section «Suitable electrodes / sensors» page 18.

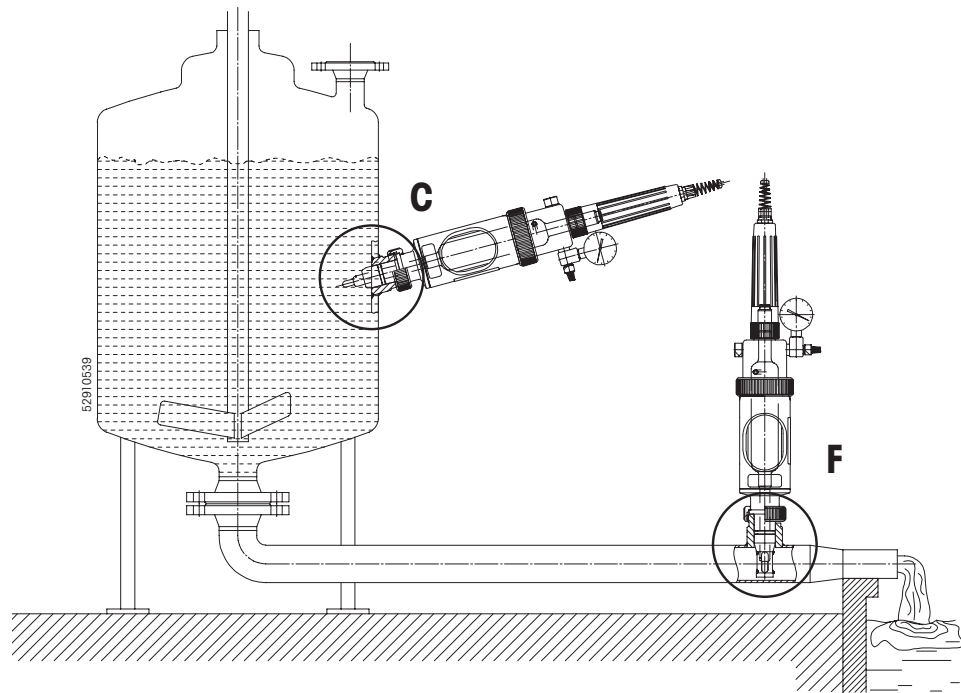
Possible installations



Admissible mounting positions InFit 761 e

- A** Vertical installation with cap nut
- B** Vertical installation with NPSM or NPT outside thread (only for sensor holders type «Y»)
- C** Lateral installation with cap nut
- D** Pipe installation with Tri-Clamp™- or Varivent adaption
- E** Pipe installation with NPT outside thread (only for sensor holders type «K»)
- F** Pipe installation with cap nut

Possible installations



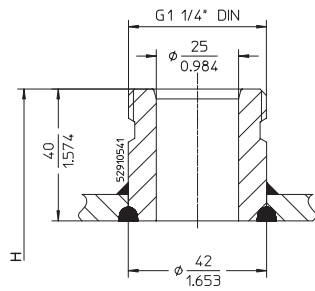
Admissible mounting positions InFit 764 e

- C** Lateral installation with cap nut
- F** Pipe installation with cap nut

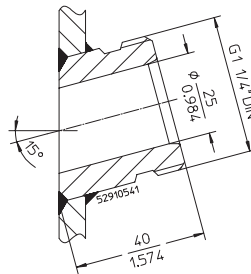
Process connections

- 1) Cap nut G 1 1/4" height = 18 mm for weld-in socket
L= 40/DN25/straight/1.4435 (page 9 – detail F)
- 2) Cap nut G 1 1/4" height = 18 mm for weld-in socket
L= 40/DN25/inclined/1.4435 (page 9 – detail C)
- 3) Cap nut G 1 1/4" height = 22 mm for safety weld-in socket
L= 47/DN25/straight/1.4435 (page 9 – detail F)
- 4) Cap nut G 1 1/4" height = 22 mm for safety weld-in socket
L= 40/DN25/inclined/1.4435 (page 9 – detail C)
- 5) Cap nut M26x1 for threaded socket L= 40/DN19/straight/1.4435 (page 9 – detail A)
- 6) 3/4" R/NPSM outside thread (sensor holder type «Y») (page 9 – detail B)
- 7) 3/4" NPT outside thread (sensor holder type «Y») (page 9 – detail B)
- 8) 3/4" NPT outside thread (sensor holder type «K») (page 9 – detail E)
- 9) 1" NPT outside thread (sensor holder type «Y») (page 9 – detail B)
- 10) Tri-Clamp adaption 1.5" and 2" straight, 1.5" or 2" inclined (page 9 – detail D)
- 11) Varivent flange straight DN50 (page 9 – detail D)
Varivent flange inclined DN50 (page 9 – detail D)

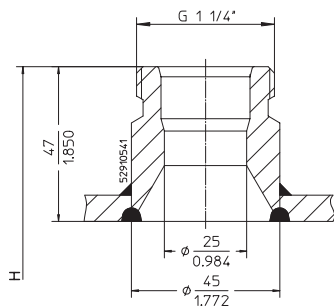
1) Weld-in socket
DN 25 straight



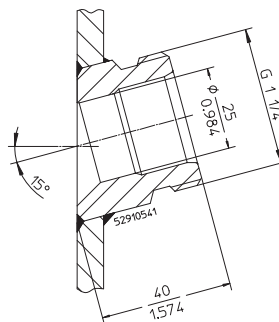
2) Weld-in socket
DN 25 inclined



3) Safety weld-in socket
DN 25 straight

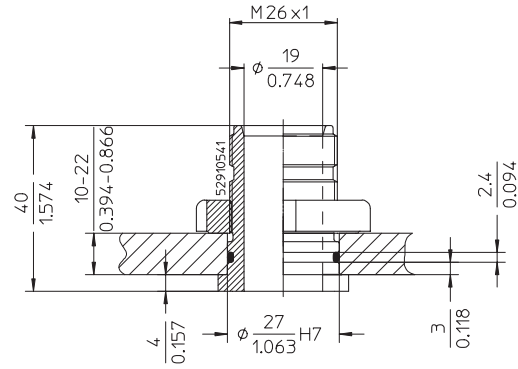


4) Safety weld-in socket
DN 25 inclined

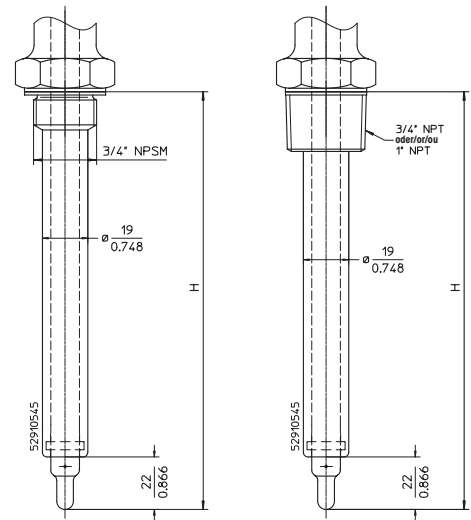


Process connections

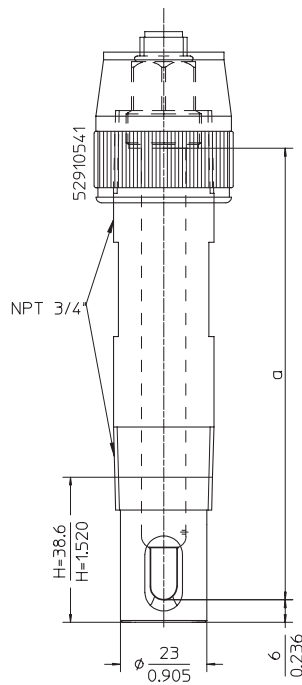
- 5) Threaded socket
DN 19 straight



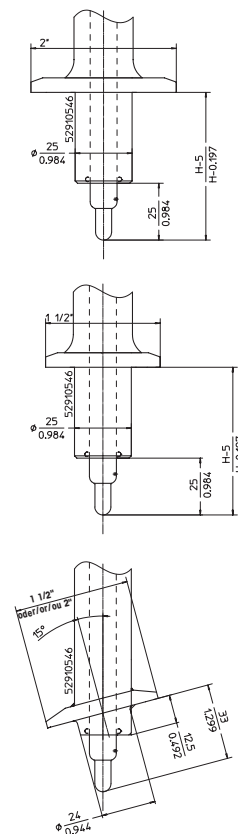
- 6, 7 Outside thread
and 9) 3/4" R/NPSM, 3/4" NPT or 1" NPT



- 8) Outside thread NPT 3/4"

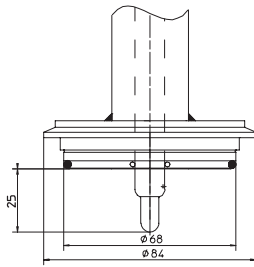


- 10) Tri-Clamp 1.5" straight (top)
Tri-Clamp 2" straight (middle)
Tri-Clamp 1.5" or 2" inclined (bottom)

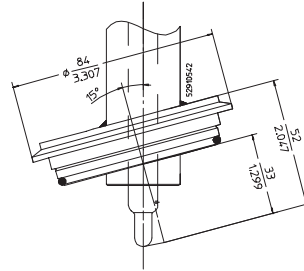


Process connections

11) Varivent flange
DN 50 straight



11) Varivent flange
DN 50 inclined



Technical specifications InFit 761 e

Note: the technical specifications of the installed sensor must be taken into consideration.

Ambient conditions

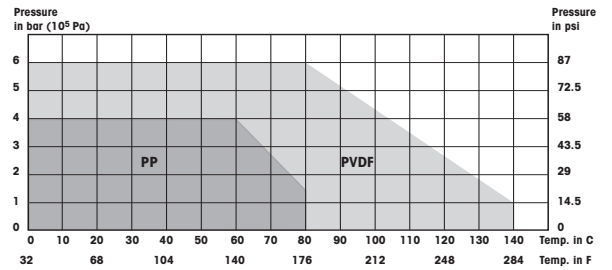
Temperature 0...70 °C

Process conditions

Housing **Material** **Max. admissible pressure [PS] / [TS]: (linear relation with plastic housings)**

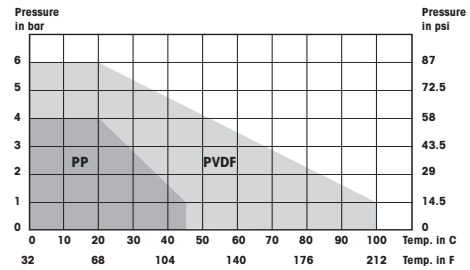
InFit 761/*S DIN 1.4435
 DIN 2.4602/AISI Alloy C22, Ti 16 bar / 140 °C

PP
 PVDF



InFit 761/WK

PP
 PVDF



InFit 761/NC DIN 1.4435
 DIN 2.4602/AISI Alloy C22, Ti 16 bar / 140 °C

InFit 761/*Y DIN 1.4435
 DIN 2.4602/AISI Alloy C22, Ti 6 bar / 140 °C

PVDF 6 bar / 20 °C
 1 bar / 100 °C

Immersion length Immersion lengths and appropriate sensor lengths see section «Suitable electrodes / sensors» page 17

Wetted materials DIN 1.4435,
 DIN 2.4602/Alloy C22, titanium
 PP, PVDF

Wetted seals Silicone (MVQ)-FDA USP Class VI
 FKM-FDA,
 EPDM-FDA,
 FFKM-FDA USP Class VI

Non-wetted materials	handle complete: Polypropylene (PP antistatic)
Weight	approx. 0.5 kg
Pressure information	According to PED 97/23/CE Article 1, Section 2.2: «Pressure» is referenced to atmospheric pressure, e.g. an overpressure. Accordingly, a pressure in the vacuum region will be expressed as a negative pressure.
Explosion protection (Applicable for all housings with wetted parts made of metal)	According to ATEX directives (94/9/EG): ⊕ II 1/2 G c IIC TX Ga/Gb ⊕ II 1/2 D c IIIC TX Da/Db SEV 13 ATEX 0161 X According to FM directives: IS CL I,II,III, Div 1, GR A,B,C,D,E,F,G Tamb. = 0 °C to +60 °C, indoor and outdoor environments. FM control drawing: 53800002; Original project ID 3021227; FM Certificate number: FM16US0034X
Certificates / approvals	<ul style="list-style-type: none"> • Depending on housing model, following certificates/approvals are included: • CE Declaration of Conformity • Pressure Equipment directive • Certificate of Conformity according to EN10204 2.1, material certificate according to 3.1B • ATEX directive • FM Class 3600, 3610, 3810 • MaxCert™
Appropriate types of electrodes	see section «Suitable electrodes / sensors» on page 17

For more detailed information regarding electrodes and sensors please refer to the corresponding data sheets or contact your METTLER TOLEDO representative.

Technical specifications InFit 764 e

Note: the technical specifications of the installed sensor must be taken into consideration.

Ambient conditions

Temperature	0...70 °C
-------------	-----------

Process conditions

Housing	Material	Max. admissible pressure [PS] / [TS]: (linear relation with plastic housings)
InFit 764	DIN 1.4435	6 bar / 130 °C
	DIN 2.4602/AISI Alloy C22, Ti	
	PVDF	6 bar / 20 °C 1 bar / 110 °C

Immersion length	Immersion lengths and appropriate sensor lengths see section «Suitable electrodes / sensors» page 18
-------------------------	--

Wetted materials	DIN 1.4435, DIN 2.4602/Alloy C22, titanium, PVDF
-------------------------	---

Wetted seals	Silicone (MVQ)-FDA USP Class VI FKM-FDA, EPDM-FDA, FFKM-FDA USP Class VI
---------------------	---

Non-wetted materials	Top piece: nickel-plated brass, Polypropylene (PP) antistatic Cylinder: glass Saddle: PTFE Handle complete: Polypropylene (PP) antistatic
-----------------------------	---

Weight	approx. 2 kg
---------------	--------------

Pressure information According to PED 97/23/CE Article 1, Section 2.2:
«Pressure» is referenced to atmospheric pressure, e.g. an overpressure.
Accordingly, a pressure in the vacuum region will be expressed as a negative pressure.

Explosion protection According to ATEX directives (94/9/EG):
(Applicable for all housings with wetted parts made of metal)
⊕ II 1/2 G c IIC TX Ga/Gb
⊕ II 1/2 D c IIIC TX Da/Db
SEV 13 ATEX 0161 X
According to FM directives:
IS CL I,II,III, Div 1, GR A,B,C,D,E,F,G
Tamb. = 0 °C to +60 °C,
indoor and outdoor environments.
FM control drawing: 53800002;
Original project ID 3021227;
FM Certificate number: FM16US0034X

Certificates / approvals

- Depending on housing model, following certificates/approvals are included:
- CE Declaration of Conformity
- Pressure Equipment directive
- Certificate of Conformity according to EN10204 2.1, material certificate according to 3.1B
- ATEX directive
- FM Class 3600, 3610, 3810
- MaxCert™

Appropriate types of electrodes see section «Suitable electrodes / sensors» on page 18

For more detailed information regarding electrodes and sensors please refer to the corresponding data sheets or contact your METTLER TOLEDO representative.

Suitable electrodes / sensors InFit 761 e

Concise overview of electrode and sensor length in relation to the length of the housing (immersion length = H).

InFit 761 e

H = Immersion length	a-Length of the electrodes / sensors
H = 25 mm, H = 33 mm, H = 40 mm, H = 70 mm	120 mm
pH	DPA / DPAS, DXK, InPro 3030, InPro 3100, InPro 3200, InPro 3250, InPro 3300, InPro 4010, InPro 4250, InPro 4800
Oxygen	InPro 6050, InPro 6800, InPro 6900
CO ₂	InPro 5000
Conductivity	InPro 7001-VP
Turbidity	InPro 8050, InPro 8100, InPro 8200
H = 100 mm	150 mm (pH)
pH	DPA / DPAS, DXK, InPro 3030, InPro 3100, InPro 3200, InPro 3250, InPro 3300, InPro 4010, InPro 4800
H = 175 mm	205 mm (turbidity), 220 mm (oxygen, CO ₂) or 225 mm (pH, conductivity)
pH	DPA / DPAS, DXK, InPro 3030, InPro 3100, InPro 3200, InPro 3250, InPro 3300, InPro 4800
Oxygen	InPro 6800, InPro 6900
CO ₂	InPro 5000
Conductivity	InPro 7001-VP
Turbidity	InPro 8100, InPro 8200
H = 275 mm	297 mm (turbidity), 320 mm (oxygen, CO ₂) or 325 mm (pH)
pH	DPA / DPAS, DXK, InPro 3030, InPro 3100, InPro 3200, InPro 3250, InPro 3300, InPro 4800
Oxygen	InPro 6800, InPro 6900
CO ₂	InPro 5000
Turbidity	InPro 8100, InPro 8200
H = 375 mm	407 mm (turbidity), 420 mm (CO ₂) or 425 mm (pH)
pH	DPA / DPAS, DXK, InPro 3030, InPro 3100, InPro 3200, InPro 3250, InPro 3300, InPro 4800
Oxygen	InPro 6800, InPro 6900
Turbidity	InPro 8100, InPro 8200

Note: for more information on the wide range of available METTLER TOLEDO electrodes and sensors please contact your METTLER TOLEDO representative.

Suitable electrodes / sensors InFit 764 e

InFit 764 e

H = Immersion length	a-Length of the electrodes / sensors
H = 70 mm	120 mm
pH	(HA, HF, LoT) 465-50, InPro 2000
Redox	Pt4865-50
H = 100 mm	150 mm
pH	(HA, HF, LoT) 465-50, InPro 2000
Redox	Pt4865-50
H = 150 mm	200 mm
pH	(HA, HF, LoT) 465-50, InPro 2000
Redox	Pt4865-50
H = 200 mm	250 mm
pH	(HA, HF, LoT) 465-50, InPro 2000
Redox	Pt4865-50

Ordering information

InFit 76X e Series

InFit 761 e	Designation	Order no.
	InFit 761/NC/0070/4435/D00/Si9-	52 400 491
	InFit 761/NC/0070/4435/T01/Si--	52 400 494
	InFit 761/NC/0070/4435/T02/Si--	52 400 495
	InFit 761/NC/0033/4435/V02/Si--	52 400 502
	InFit 761/NS/0070/4435/D00/Si9-	59 900 796
	InFit 761/NS/0175/4435/D00/Si9-	59 900 797
	InFit 761/WS/0070/4435/D00/Si9-	59 900 754
	InFit 761/WS/0070/4435/D00/EP9-	59 909 163
	InFit 761/WS/0100/4435/D00/Si9-	59 900 792
	InFit 761/WS/0175/4435/D00/Si9-	59 900 779
	InFit 761/WS/0070/4435/D10/Vi2-	59 900 753
	InFit 761/NS/0070/PP--/D00/Vi9-	52 400 316
	InFit 761/NS/0070/PVDF/D00/Vi9-	52 400 311
	InFit 761/WK/0040/PP--/N04/Vi--	52 403 478
	InFit 761/WK/0040/PVDF/N04/Vi--	52 401 520

InFit 764 e	Designation	Order no.
	InFit 764/NC/0070/4435/D00/Si9-	52 400 497
	InFit 764/NS/0070/4435/D11/Si4-	59 901 415
	InFit 764/NS/0100/4435/D11/Si4-	59 901 416
	InFit 764/NS/0150/4435/D11/Si4-	59 901 417
	InFit 764/NS/0200/4435/D11/Si4-	59 901 418
	InFit 764/WS/0070/4435/D11/Si4-	59 901 414
	InFit 764/WS/0070/4435/D11/Ka4-	59 901 495
	InFit 764/NS/0070/PVDF/D11/Vi4-	59 901 439
	InFit 764/WS/0070/PVDF/D11/Vi4-	59 901 443
	InFit 764/NS/0150/PVDF/D11/Vi4-	59 901 441

All other configurations can be ordered according to the product key found on page 19.

Spare parts	Designation	Order no.
	O-ring set Si USP 76X e	52 403 459
	O-ring set Ep FDA 76X e	52 403 460
	O-ring set Vi FDA 76X e	52 403 461
	O-ring set Ka USP 76X e (ø 25 mm shaft)	52 403 462
	O-ring set Ka USP 76X e (ø 19 mm shaft)	52 403 504
	Antiknack cable gland Pg 16	52 403 470
	Cable grommet set 5 mm / 7 mm	52 403 463
	Cap nut G 1 1/4" (NPSM), Ms D21, height = 18 mm	59 901 133
	Cap nut G 1 1/4" (NPSM), Ms for sensor holder type «C»	59 909 320
	Protective tube InFit 76X e	52 403 465
	Replacement set for InFit 761 e only:	
	Protective tube long 761 e	52 403 464
	Adapter InFit 761/WK	52 403 466
	Replacement set for InFit 764 e only:	
	Adapter cpl. with gasket 764 e	52 403 468
	PTFE bushing	59 901 136
	Glass cylinder	59 901 147
	Flat gasket set 764 e	52 403 523
	Top piece complete 7XX	52 403 524
	Manometer 0...6 bar complete	59 901 296
	Pressure connection set	59 905 552
	Valve insert	59 905 517

Accessories	Designation	Order no.
	Weld-in socket	
	Weld-in socket L=40/DN25/inclined/1.4435	59 901 124
	Weld-in socket L=48/DN25/inclined/1.4435	59 901 125
	Weld-in socket L=55/DN25/inclined/1.4435	59 901 126
	Weld-in socket L=40/DN25/straight/1.4435	59 901 127
	Weld-in socket L=50/DN25/straight/1.4435	59 901 128
	Weld-in socket L=60/DN25/straight/1.4435	59 901 129
	Threaded socket L=40/DN19/1.4435	59 901 290
	Safety weld-in socket L=47/DN25/straight/1.4435	52 400 518
	Safety weld-in socket L=40/DN25/inclined/1.4435	52 400 462
	Weld-in socket L=40/DN25/inclined/Alloy C22	59 901 245
	Weld-in socket L=40/DN25/straight/Alloy C22	59 901 242
	Weld-in socket L=40/DN25/straight/PVDF	59 901 206
	Weld-in socket L=40/DN25/inclined/PVDF	59 901 208
	Blind plug	
	Blind plug DN25 L=40/inclined/1.4435/Silicone USP	59 901 283
	Blind plug DN25 L=48/inclined/1.4435/Silicone USP	59 901 284
	Blind plug DN25 L=55/inclined/1.4435/Silicone USP	59 901 285
	Blind plug DN25 L=40/straight/1.4435/Silicone USP	59 901 287
	Blind plug DN25 L=50/straight/1.4435/Silicone USP	59 901 288
	Blind plug DN25 L=60/straight/1.4435/Silicone USP	59 901 289
	Blind plug DN19 L=42/straight/1.4435	59 901 294
	Safety blind plug DN25/L=30/1.4435/Silicone USP	52 400 464
	Blind plug DN25 L=40/straight/Alloy C22/FFKM USP	59 908 917
	Blind plug DN25 L=40/inclined/PVDF/FKM-FDA	59 901 318
	Protective cage	
	Protective cage for immersion length H \geq 100 mm/1.4435	59 901 132
	Protective cage for immersion length H \geq 100 mm/Alloy C22	52 402 858

Further accessories on request at your local METTLER TOLEDO representative.

InFit and InPro are registered trademarks of the METTLER TOLEDO Group in Switzerland and a further twelve countries. All other trademarks are the property of their respective holders.

For addresses of METTLER TOLEDO
Market Organizations please go to:
www.mt.com/contacts

www.mt.com/pro

For more information



Management System
certified according to
ISO 9001/ISO 14001

METTLER TOLEDO Group

Process Analytics

Local contact: www.mt.com/contacts

Subject to technical changes.

© 07/2023 METTLER TOLEDO. All rights reserved.

52 403 501 B

MarCom Urdorf, CH



* 5 2 4 0 3 5 0 1 B *