

ProcessMaster FEP300, FEP500  
HygienicMaster FEH300, FEH500  
Electromagnetic Flowmeter

Measurement made easy



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# 1 Safety instructions for repair work

ABB flowmeters are designed to be easy to repair thanks to uniform replacement parts and simple replacement of predefined parts.

However, if repair work is not carried out in accordance with the guidelines, this may result in malfunctioning of the device, causing serious injury to persons, and harm to the environment. This is especially true for safety-critical devices and those certified for use in explosion hazard environments.

Certifications will also lapse if the repairs were not carried out with the proper tool or by persons without adequate training. We therefore recommend all repair work on flowmeters be carried out by ABB service technicians.

As the manufacturer of the device, ABB cannot guarantee the necessary quality of the repair procedures if the work and/or parts exchange was not carried out by ABB.

The plant operator is responsible for all repairs carried out by the customer, plant operator, or third party. In this case, ABB will reject all responsibility for any improper device functionality, in particular all safety-related functions.

ABB does not assume any liability for the deterioration or loss of device performance, malfunctions, or damage arising from the above repair work or replacement. All liability for defects shall lapse when the replacement or repair work is not carried out by ABB.

If you are unsure about the repair process even if some or all replacement parts are available, please get in touch with ABB Service before beginning work.

Respect national and internal laws when carrying out repairs. In particular laws relating to certified flowmeters used in explosion hazard environments. Repair work which is carried out without following the legal requirements can result in the revocation of your operating permit.

For more information, go to <http://new.abb.com/service/repairs> or contact your local ABB Customer Service Center.

## 2 Name plate specifications for spare parts orders

The flowmeter version can be identified by referring to the name plate that is attached to the housing.

### 2.1 Name plate for model with integral mount design

When placing spare parts orders, always remember to state the order number as shown on the name plate.

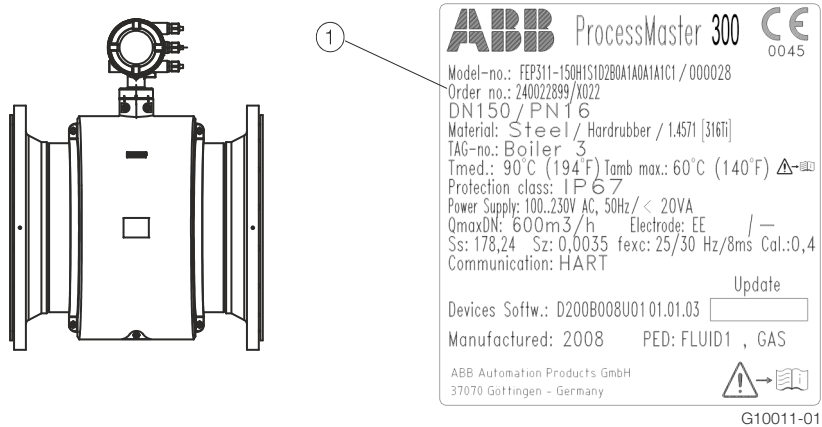


Fig. 1: Name plate for model with integral mount design

① Order number

### 2.2 Name plate for model with remote mount design

When placing spare parts orders, always remember to state the order number as shown on the name plate.

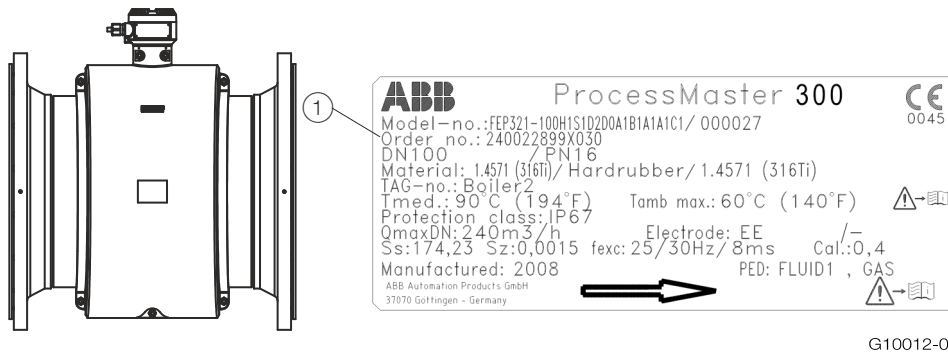


Fig. 2: Name plate for model with remote mount design

① Order number

### 2.3 Name plate, transmitter

When placing spare parts orders, always remember to state the order number as shown on the name plate.



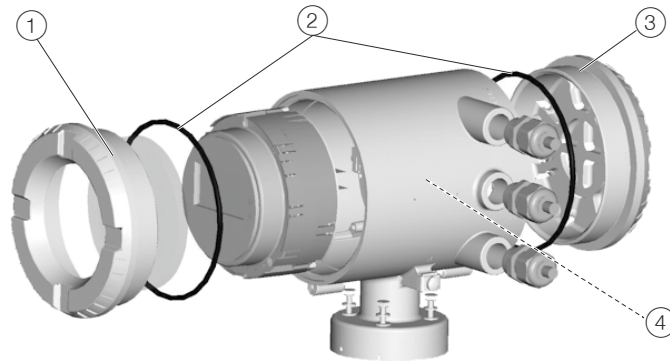
Fig. 3: Transmitter name plate

① Order number

### 3 Transmitter housing, models FEP311, FEP511 (integral mount design)

#### **i** NOTICE

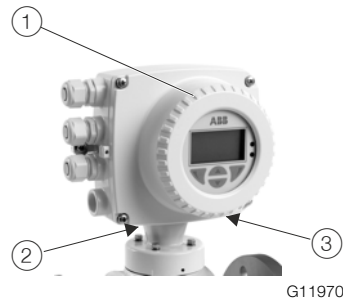
All prices on inquiry!



G10001-01

Fig. 4: Dual-compartment housing

Position	Name of part	FEP311 Ordering code	FEP511 Ordering code	Weight kg (lb)	Price (€)
1 - 4	Housing complete, preassembled, standard, M20x1.5	D800D515U01	D800D518U01		
	Housing complete, preassembled, standard, NPT 1/2"	D800D515U02	D800D518U02		
	Housing complete, preassembled, stainless steel, M20x1.5	D800D518U04	D800D518U04		
	Housing complete, preassembled, standard, NPT 1/2"	D800D518U05	D800D518U05		
1 - 3	Housing cover set	D800D517U01	D800D517U01		
4	Base plate, type 3, standard (covered)	D685A1156U01	D685A1156U01		
	Base plate, type 3, standard (covered) programmed	D685A1156U01A	D685A1156U01A		
1	Housing cover with window	D612A197U01	D612A197U01		
	Housing cover (stainless steel) with window	3KQZ407112U0100	3KQZ407112U0100		
3	Housing cover without window	D379D172U01	D379D172U01		
	Housing cover (stainless steel) without window	3KQZ407109U0100	3KQZ407109U0100		
2	O-ring 118 x 1.7	D101A034U05	D101A034U05		
-	Name plate (the order and serial numbers must both be stated)	D614L865U03	D614L865U03		



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Fig. 5: Single-compartment housing

Position	Name of part	FEP311 Ordering code	FEP511 Ordering code	Weight kg (lb)	Price (€)
2	Housing+Backpl.INT M 20 Type4 FEPSL	3KXF002296U0100	3KXF002296U0100		
	Housing+Backpl.INT NPT Type4 FEP	3KXF002296U0200	3KXF002296U0200		
	SL Backplane Type4 FET/FEP FEP (covered)	3KXF002058U0100	3KXF002058U0100		
	SL Backplane Type4 FET/FEP (covered) programmed	3KXF002058U0100A	3KXF002058U0100A		
1	Cover with window VKJ Type4 Integral	3KXF002365U0100	3KXF002365U0100		
	O-ring 5/32 X.070" (covered)	3KQP002016U0100	3KQP002016U0100		
-	Name plate (the order and serial numbers must both be stated)	3KXF002345U1100	3KXF002345U1100		

## 4 Terminal boxes FEP321, FEH321 (remote mount design)

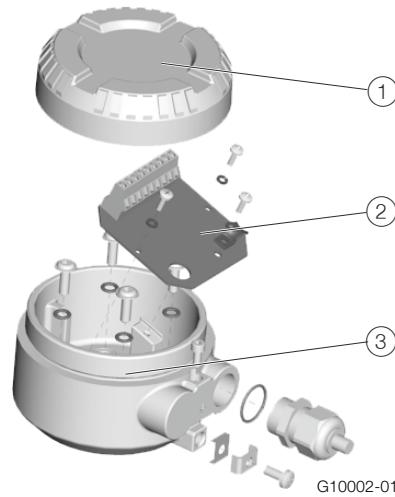


Fig. 6

Position	Name of part	Ordering code	Weight kg (lb)	Price (€)
1 - 3	Terminal box complete, preassembled, standard, M20x1.5 (for model FEP321 only)	D800D516U01		
	Terminal box complete, preassembled, standard, NPT 1/2" (for model FEP321 only)	D800D516U02		
	Terminal box complete, preassembled, stainless steel, M20x1.5 (for model FEH321 only)	D800D516U05		
1	Housing cover, standard (for model FEP321 only)	D379D174U01		
	Housing cover, stainless steel (for model FEH321 only)	D379D179U01		
2	Connection board, standard	D685A1090U02		
	Terminal board, standard programming	D685A1090U02A		
	Connection board with preamplifier	3KXF002601U0100		
	Terminal board with preamplifier, programmed	3KXF002601U0100A		
3	O-ring	D101A034U06		
-	Name plate (the order and serial numbers must both be stated)	D614L865U03		

## 5 Terminal boxes FEP521, FEH521 (remote mount design)

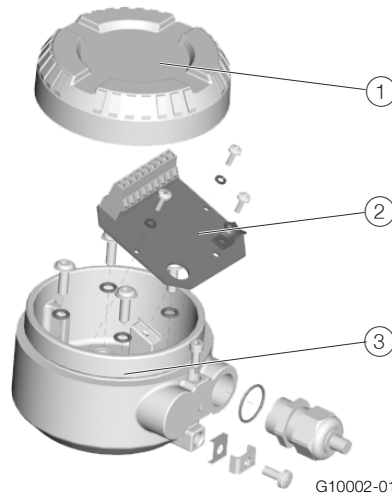


Fig. 7

Position	Name of part	Ordering code	Weight kg (lb)	Price (€)
1 - 3	Terminal box complete, preassembled, standard, M20x1.5 (for model FEP521 only)	D800D519U01		
	Terminal box complete, preassembled, standard, NPT 1/2" (for model FEP521 only)	D800D519U02		
	Terminal box complete, preassembled, stainless steel, M20x1.5 (for model FEH521 only)	D800D519U05		
1	Housing cover, standard (for model FEP321 only)	D379D174U01		
	Housing cover, stainless steel (for model FEH521 only)	D379D179U01		
2	Connection board, standard	D685A1090U02		
	Terminal board, standard programming	D685A1090U02A		
	Connection board with preamplifier	3KXF002601U0100		
	Terminal board with preamplifier, programmed	3KXF002601U0100A		
3	O-ring	D101A034U06		
-	Name plate (the order and serial numbers must both be stated)	D614L865U03		



## 6 Upgrade-Kids

### 6.1 Upgrade from FXE4000 / FXM2000 to FET300 / FET500

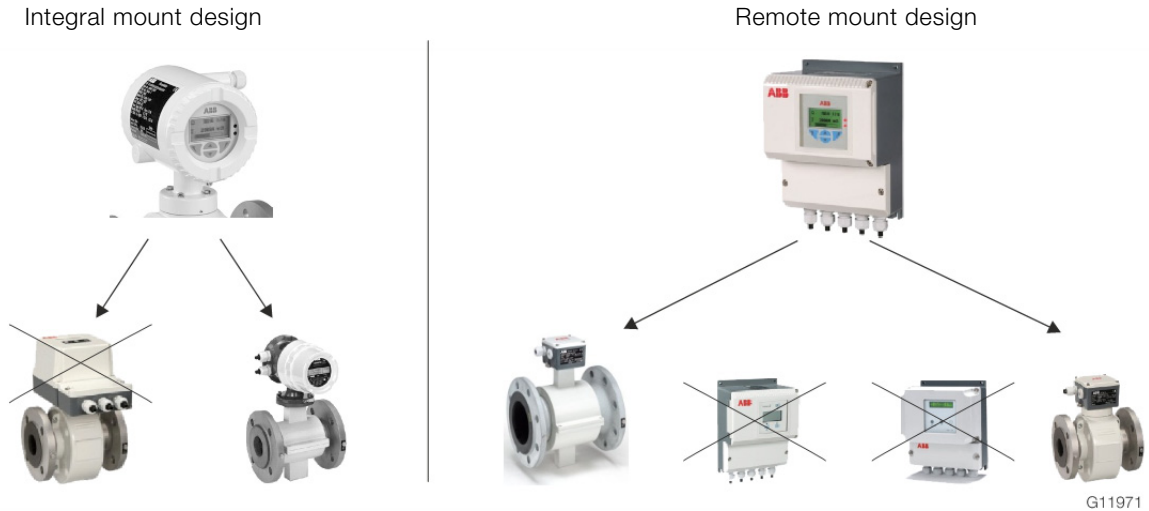


Fig. 8

#### Upgrade from FXE4000 to FET300

Position	Name of part	Ordering code	Weight kg (lb)	Price (€)
	Upgrade kit for FXE to FET300 Standard. 24 V	D800D311U01		
	Upgrade kit for FXE to FET300 PA 24 V	D800D311U02		
	Upgrade kit for FXE to FET300 FF 24 V	D800D311U03		
	Upgrade kit for FXE to FET300 Standard. 230 V	D800D311U04		
	Upgrade kit for FXE to FET300 PA 230 V	D800D311U05		
	Upgrade kit for FXE to FET300 FF 230 V	D800D311U06		
	Upgrade kit for remote FXE to FET300 Standard. 24 V	D800D321U01		
	Upgrade kit for remote FXE to FET300 PA 24 V	D800D321U02		
	Upgrade kit for remote FXE to FET300 FF 24 V	D800D321U03		
	Upgrade kit for remote FXE to FET300 Std. 230 V	D800D321U04		
	Upgrade kit for remote FXE to FET300 PA 230 V	D800D321U05		
	Upgrade kit for remote FXE to FET300 FF 230 V	D800D321U06		

#### Upgrade from FXM2000 to FET500

Position	Name of part	Ordering code	Weight kg (lb)	Price (€)
	Upgrade kit for FXM to FET500 Standard. 24 V	D800D511U01		
	Upgrade kit for FXM to FET500 PA 24 V	D800D511U02		
	Upgrade kit for FXM to FET500 FF 24 V	D800D511U03		
	Upgrade kit for FXM to FET500 Standard. 230 V	D800D511U04		
	Upgrade kit for FXM to FET500 PA 230 V	D800D511U05		
	Upgrade kit for FXM to FET500 FF 230 V	D800D511U06		
	Upgrade kit for remote FXM to FET500 Standard. 24 V	D800D521U01		
	Upgrade kit for remote FXM to FET500 PA 24 V	D800D521U02		
	Upgrade kit for remote FXM to FET500 FF 24 V	D800D521U03		
	Upgrade kit for remote FXM to FET500 Standard. 230 V	D800D521U04		
	Upgrade kit for remote FXM to FET500 PA 230 V	D800D521U05		
	Upgrade kit for remote FXM to FET500 FF 230 V	D800D521U06		

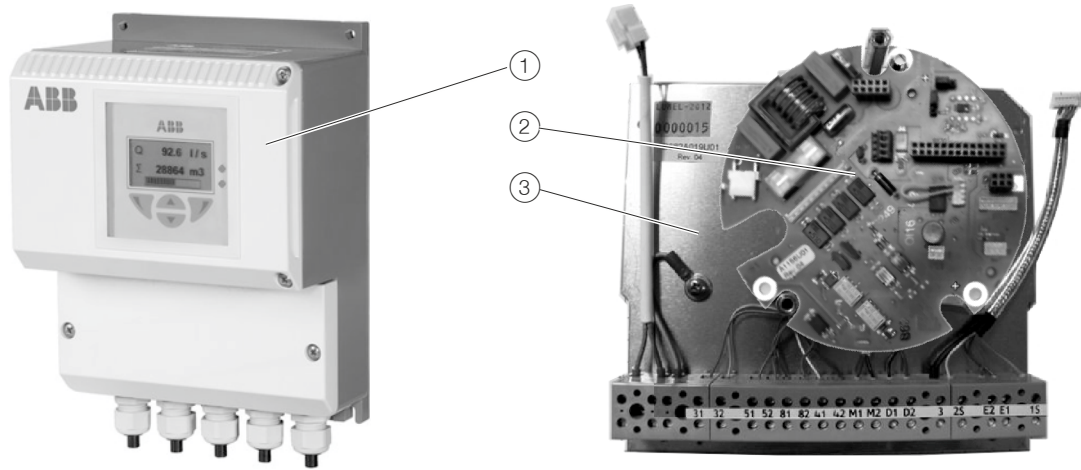
#### **i** NOTICE

Upgrades shall be at the user's own risk.

The upgrade kits contain the following components: terminal box, adapter plate, terminal board, and cartridge.

The upgrade can be performed by request on site or by the Göttingen service center.

## 7 External transmitters FET321, FET521



G10003-02

Fig. 9

Position	Name of part	Order number	Weight kg (lb)	Price (€)
1	Field-mount housing ABB EMF M20x1.5 incl. contact board (without transmitter plug-in module)	D694A005U01		
	Field-mount housing fieldbus M20x1.5 incl. contact board (without transmitter plug-in module)	D694A003U02		
	Field-mount housing fieldbus M20x1.5 without contact board (without transmitter plug-in module)	D641A033U06		
2	Universal backplane ABB EMF	D685A1156U01		
3	Contact board for universal backplane	D682A019U01		
	Contact board fieldbus	D682A016U02		
-	Name plate for field-mount housing (the order and serial numbers must both be stated)	D338C788U01		



G11981

Fig. 10

Position	Name of part	Ordering code	Weight kg (lb)	Price (€)
1	Single-compartment field mount housing ABB EMF M20x1.5 including contact board (excluding transmitter plug-in unit)	3KXF002295U0100		
	Type4 cover, painted, integral	MJBX9905		
2	Backplane Universal ABB EMF	3KXF002058U0100		
-	Name plate for field-mount housing (the order and serial numbers must both be stated)	D338C788U01		

## 8 Transmitter plug-in module FET301



G10004

Fig. 11

### 8.1 Order numbers up to hardware index 00.xx.xx

Position	Name of part	Order number	Weight kg (lb)	Price (€)
	24V plug-in module, HART standard ABB EMF	D674A905U01		
	24V plug-in module, HART standard (replaces D674A880U01)	D674A905U01		
	24V plug-in module, HART standard (replaces D674A880U01 and D674A899U01)	D674A905U01		
	230V plug-in module, HART standard ABB EMF	D674A906U01		
	230V plug-in module, HART standard (replaces D674A881U01)	D674A906U01		
	230V plug-in module, HART standard (replaces D674A881U01 and D674A900U01)	D674A906U01		
	24V replacement plug-in module, HART, standard	EXCD674A901U01		
	230V replacement plug-in module, HART, standard	EXCD674A902U01		
	24V replacement plug-in module, HART, standard	EXCD674A899U01		
	230V replacement plug-in module, HART, standard	EXCD674A906U01		

### 8.2 Order numbers as of hardware index 01.xx.xx

Position	Name of part	Order number	Weight kg (lb)	Price (€)
	24V plug-in module, HART, standard	D674A905U01		
	24V plug-in module, PROFIBUS PA, standard	D674A905U02		
	24V plug-in module, FOUNDATION Fieldbus, standard	D674A905U03		
	230V plug-in module, HART, standard	D674A906U01		
	230V plug-in module, PROFIBUS PA, standard	D674A906U02		
	230V plug-in module, FOUNDATION Fieldbus, standard	D674A906U03		
	24V replacement plug-in module, HART, standard	EXCD674A905U01		
	24V replacement plug-in module, PROFIBUS PA, standard	EXCD674A905U02		
	24V replacement plug-in module, FOUNDATION Fieldbus, standard	EXCD674A905U03		
	230V replacement plug-in module, HART, standard	EXCD674A906U01		
	230V replacement plug-in module, PROFIBUS PA, standard	EXCD674A906U02		
	230V replacement plug-in module, FOUNDATION Fieldbus, standard	EXCD674A906U03		

## 9 Transmitter plug-in module FET501



G10004

Fig. 12

### 9.1 Order numbers as of hardware index 01.xx.xx

Position	Name of part	Order number	Weight kg (lb)	Price (€)
	24V plug-in module, HART, diagnostics	D674A903U01		
	24V plug-in module, PROFIBUS PA, diagnostics	D674A903U02		
	24V plug-in module, FOUNDATION Fieldbus, diagnostics	D674A903U03		
	230V plug-in module, HART, diagnostics	D674A904U01		
	230V plug-in module, PROFIBUS PA, diagnostics	D674A904U02		
	230V plug-in module, FOUNDATION Fieldbus, diagnostics	D674A904U03		
	24V replacement plug-in module, HART, diagnostics	EXCD674A903U01		
	24V replacement plug-in module, PROFIBUS PA, diagnostics	EXCD674A903U02		
	24V replacement plug-in module, FOUNDATION Fieldbus, diagnostics	EXCD674A903U03		
	230V replacement plug-in module, HART, diagnostics	EXCD674A904U01		
	230V replacement plug-in module, PROFIBUS PA, diagnostics	EXCD674A904U02		
	230V replacement plug-in module, FOUNDATION Fieldbus, diagnostics	EXCD674A904U03		

## 10 Fuses for transmitter electronics

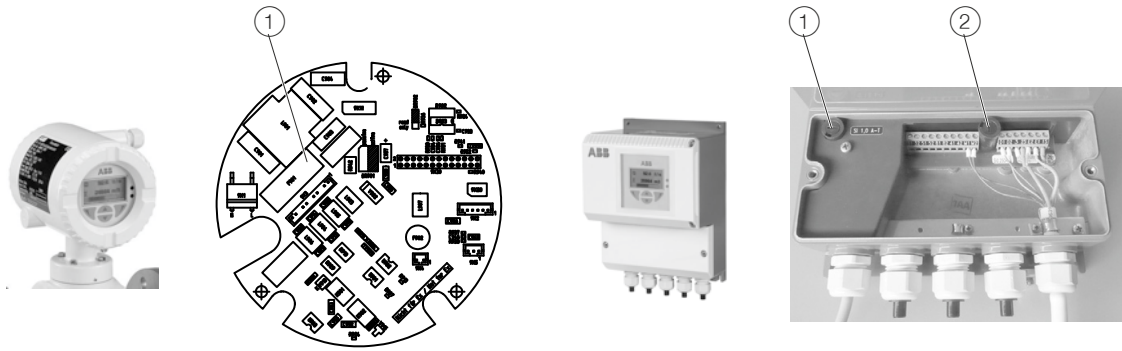


Fig. 13

G10005-01

Position	Name of part	Order number	Weight kg (lb)	Price (€)
1	Power supply fuse (1.0 A)	D151B003U05		-
2	Coil circuit fuse (0.25 A) (only with devices featuring remote mount design)	D151B003U02		-

## 11 Upgrade kit for FEP300 / FEP500 series

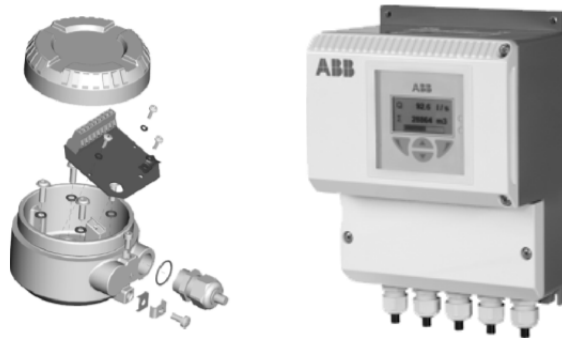


Fig. 14

G10006

Position	Name of part	Order number	Weight kg (lb)	Price (€)
	Upgrade kit with 10 m signal cable, integral mount design -> remote mount design, standard (for FEP300 only)	D800D514U02	-	
	Upgrade kit with 10 m signal cable, integral mount design -> remote mount design, with preamplifier (for FEP300 only)	D800D514U03	-	
	Upgrade kit with 10 m signal cable, integral mount design -> remote mount design, standard (for FEP500 only)	D800D514U04	-	
	Upgrade kit with 10 m signal cable, integral mount design -> remote mount design, with preamplifier (for FEP500 only)	D800D514U05	-	

## 12 Accessories

Position	Name of part	Ordering code	Weight kg (lb)	Price (€)
	Infrared service port adapter FZA100 (USB, including software on CD-ROM)  G10008	D674A897U01		
	Diagnostics and verification software – ScanMaster FZC500 (on CD-ROM)  G10009	FZC500		
	ScanMaster FZC500 enabling license – 1 license	3KXS071500L0001		
	ScanMaster FZC500 enabling license – 3 licenses	Graduated prices available upon request.		
	ScanMaster FZC500 enabling license – 5 licenses			
	ScanMaster FZC500 enabling license – 10 licenses			
	Adapter for flowmeter sensor simulator FXC4000  G10010	D674A898U01		
	Signal cable with braided shield (for IP68 degree of protection), EX Zone 1, up to DN15	D173D027U01		
	Signal cable with foil shield (for IP68 degree of protection)	D173D031U01		
	Display	D685A1129U01_K		
	PU potting compound	D141B038U01		

## 13 Seals for welded spuds series FEH300 / FEH500



G11488-01

Fig. 15: Gaskets

### 13.1 Flat gaskets (new in accordance with PED)

Position	Name of part	Nominal Diameter	Ordering code	Weight kg (lb)	Price (€)
1	Flat gasket EPDM FDA approval	DN 3 ... 10	D333B007U11		
	Flat gasket silicone	DN 3...10	D333B007U12		
	Flat gasket EPDM FDA 70 Shore-A	DN 15	D333B008U11		
	Flat gasket silicone	DN 15	D333B008U12		
	Flat gasket EPDM FDA 70 Shore-A	DN 20	D333B009U11		
	Flat gasket silicone	DN 20	D333B009U12		
	Flat gasket EPDM FDA 70 Shore-A	DN 25	D333B010U11		
	Flat gasket silicone	DN 25	D333B010U12		
	Flat gasket EPDM FDA 70 Shore-A	DN 32	D333B011U11		
	Flat gasket silicone	DN 32	D333B011U12		
	Flat gasket EPDM FDA 70 Shore-A	DN 40	D333B012U11		
	Flat gasket silicone	DN 40	D333B012U12		
	Flat gasket EPDM FDA 70 Shore-A	DN 50	D333B013U11		
	Flat gasket silicone	DN 50	D333B013U12		
	Flat gasket EPDM FDA 70 Shore-A	DN 65	D333B014U11		
	Flat gasket silicone	DN 65	D333B014U12		
	Flat gasket EPDM FDA 70 Shore-A	DN 80	D333B015U11		
	Flat gasket silicone	DN 80	D333B015U12		
	Flat gasket EPDM FDA 70 Shore-A	DN 100	D333B016U11		
	Flat gasket silicone	DN 100	D333B016U12		

### 13.2 O-ring gaskets (previous)

Position	Name of part	Nominal Diameter	Ordering code	Weight kg (lb)	Price (€)
2	O-ring 21 x 3 Aeth-Prop. Shore-A 70		D101F001U01		
	O-ring 29 x 3 Aeth-Prop. Shore-A 70		D101F002U01		
	O-ring 33 x 3 Aeth-Prop. Shore-A 70		D101F003U01		
	O-ring 10.77 x 2.62 EPDM (FDA approval)		D101F006U01		
	O-ring 11.25 x 4.05 EPDM (FDA approval) 70-Shore-A	DN 3 ... 10	D101F007U01		
	O-ring 14 x 4 EPDM (FDA approval) 70-Shore-A	DN 15	D101F008U01		
	O-ring 19 x 4 EPDM (FDA approval) 70-Shore-A	DN 20	D101F009U01		
	O-ring 25 x 5 EPDM (FDA approval) 70-Shore-A	DN 25	D101F010U01		
	O-ring 31 x 5 EPDM (FDA approval) 70-Shore-A	DN 32	D101F011U01		
	O-ring 37 x 5 EPDM (FDA approval) 70-Shore-A	DN 40	D101F012U01		
	O-ring 48 x 5 EPDM (FDA approval) 70-Shore-A	DN 50	D101F013U01		
	O-ring 63 x 5 EPDM (FDA approval) 70-Shore-A	DN 65	D101F014U01		
	O-ring 75 x 5 EPDM (FDA approval) 70-Shore-A	DN 80	D101F015U01		
	O-ring 97 x 5 EPDM (FDA approval) 70-Shore-A	DN 100	D101F016U01		
	O-ring 17.17 x 1.78 EPDM Shore A-70		D101F042U01		
	O-ring 28.24 x 2.62 EPDM Shore A-70		D101F043U01		
	O-ring 59.92 x 3.53 EPDM Shore A-70		D101F044U01		



G11988

Fig. 16

### 13.3 External gasket

Position	Name of part	Nominal Diameter	Ordering code	Weight kg (lb)	Price (€)
2	O-RING for DN 50		D101A035U01		
	O-RING for DN 65		D101A035U02		
	O-RING for DN 80		D101A035U03		
	O-RING for DN 100		D101A035U04		



G11989

Fig. 17

### 13.4 Weld-in connector for wafer type devices

Position	Name of part	Nominal Diameter	Ordering code	Weight kg (lb)	Price (€)
	FX / FE / FSM weld-in adapter	DN3 ... 10 (1/10 ... 3/8 in.)	D413C470U01		
	FX / FE / FSM weld-in adapter	DN 15 (1/2 in.)	D413C471U01		
	FX / FE / FSM weld-in adapter	DN 20 (3/4 in.)	D413C472U01		
	FX / FE / FSM weld-in adapter	DN 25 (1 in.)	D413C473U01		
	FX / FE / FSM weld-in adapter	DN 32 (1-1/4 in.)	D413C474U01		
	FX / FE / FSM weld-in adapter	DN 40 (1-1/2 in.)	D413C475U01		
	FX / FE / FSM weld-in adapter	DN 50 (2 in.)	D413C488U03		
	FX / FE / FSM weld-in adapter, previous installation length	DN 65 (2-1/2 in.)	D413C461U09		
	FX / FE / FSM weld-in adapter, new installation length	DN 65 (2-1/2 in.)	D413C461U11		
	FX / FE / FSM weld-in adapter, previous installation length	DN 80 (3 in.)	D413C496U03		
	FX / FE / FSM weld-in adapter, new installation length	DN 80 (3 in.)	D413C496U05		
	FX / FE / FSM weld-in adapter, previous installation length	DN 100 (4 in.)	D413C498U03		
	FX / FE / FSM weld-in adapter, new installation length	DN 100 (4 in.)	D413C498U05		



# Notes

# Notes

# Notes

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Additional product information is  
available at:  
[www.abb.com](http://www.abb.com)

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