

ABB MEASUREMENT & ANALYTICS | PARTS LIST

# VortexMaster FSV430, FSV450

# SwirlMaster FSS430, FSS450

## Vortex and Swirl Flowmeter



Measurement made easy

—  
VortexMaster  
FSV430, FSV450

SwirlMaster  
FSS430, FSS450

### Additional Information

Additional documentation on VortexMaster FSV430, FSV450 and SwirlMaster FSS430, FSS450 is available for download free of charge at [www.abb.com/flow](http://www.abb.com/flow). Alternatively simply scan this code:



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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.

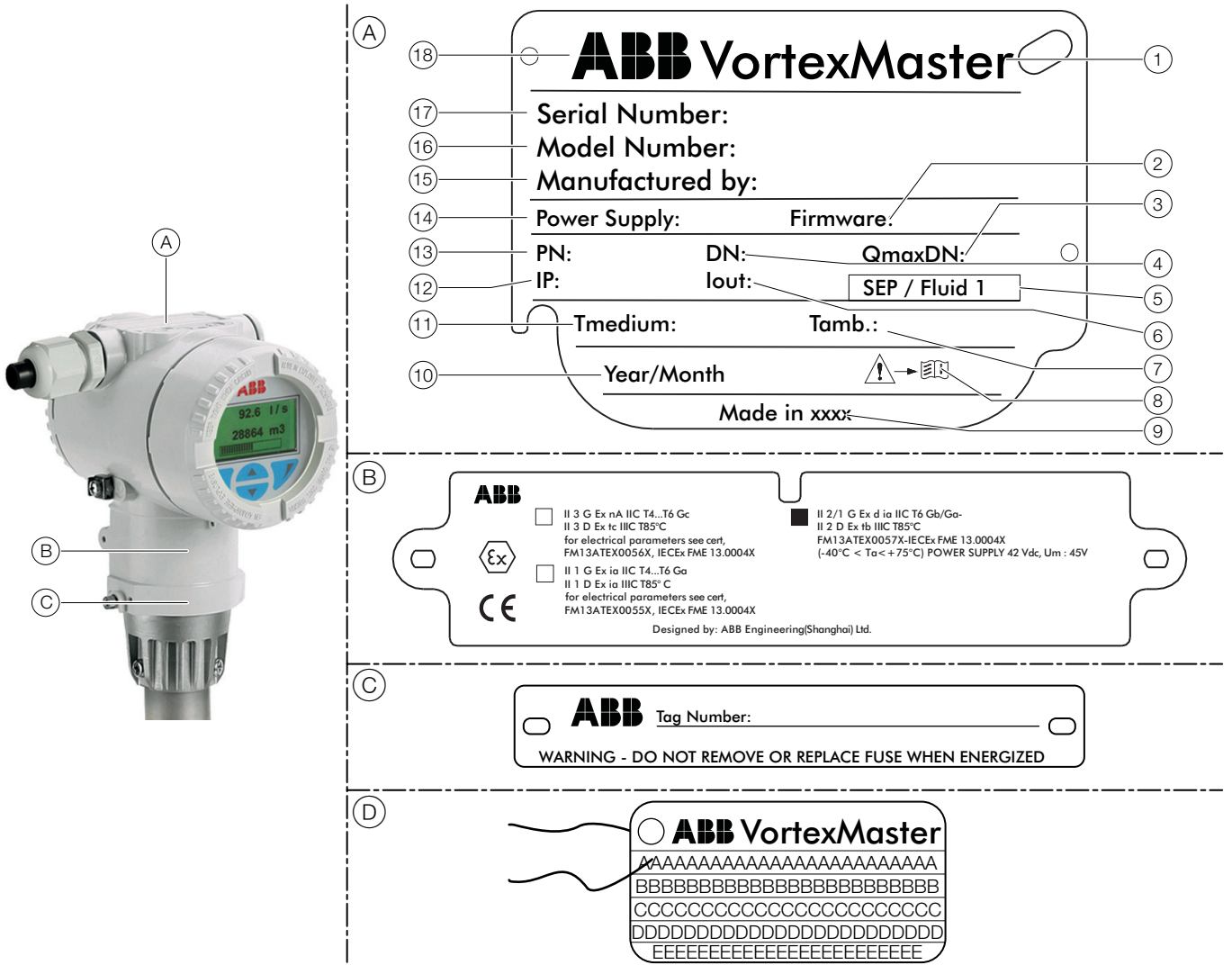
Respect national and internal laws when carrying out repairs. In particular laws relating to certified flowmeters used in explosion hazard environments. Repair work which is carried out without following the legal requirements can result in the revocation of your operating permit.

For more information, go to [www.new.abb.com/service/repairs](http://www.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.

When placing spare parts orders, always remember to state the serial number ⑩ as shown on the name plate.



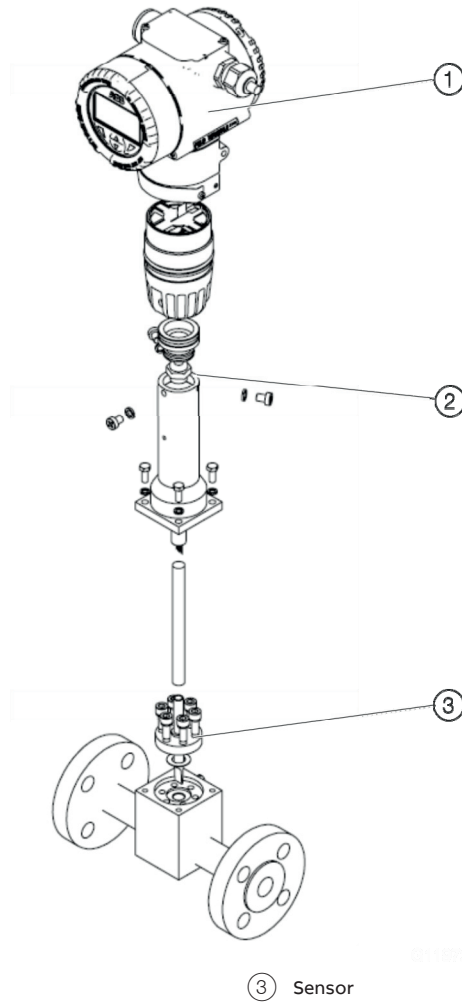
- ① Name plate
- ② Additional plate with Ex marking
- ③ Plate with measuring point tagging (TAG number)
- ④ Tag plate with customer data made from stainless steel (optional)
- ⑤ Country of manufacture
- ⑥ Manufacture date
- ⑦ Maximum measuring medium temperature
- ⑧ IP rating
- ⑨ Pressure rating
- ⑩ Power supply
- ⑪ Manufacturer's address
- ⑫ Model number
- ⑬ Serial number
- ⑭ Manufacturer logo

Figure 1: Name plate

### 3 Overview

**Note**

Prices available upon request!



- ① Transmitter housing
- ② Base

Figure 2: Overview

## 4 Spare parts list

### Transmitter housing – integral mount design including transmitter

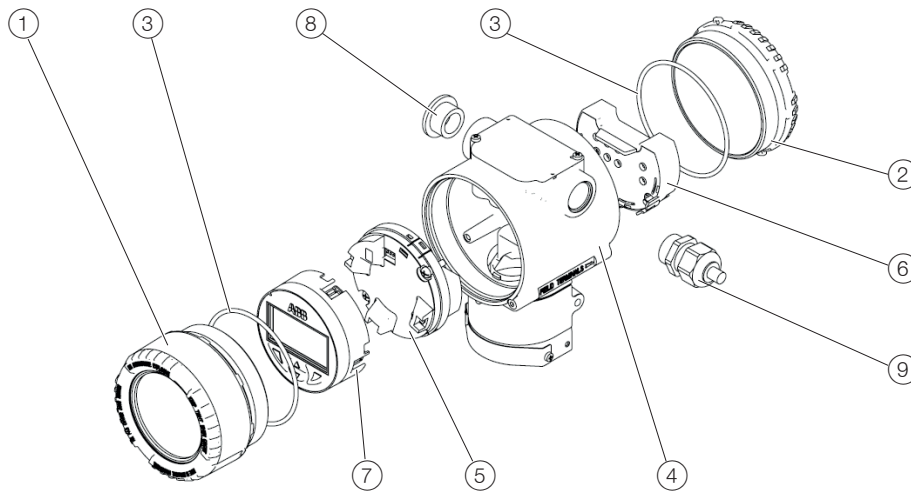


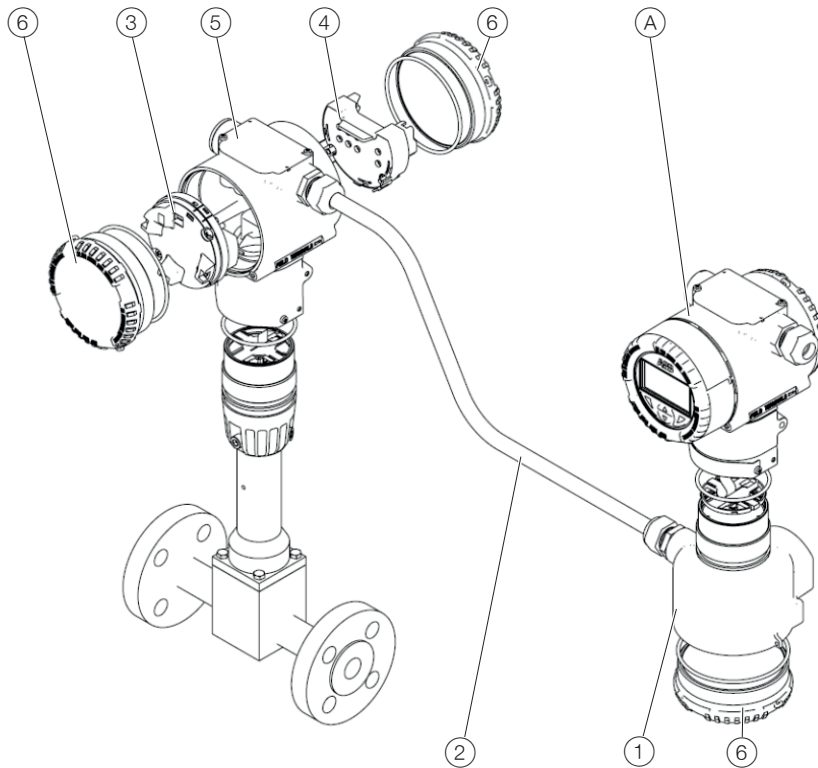
Figure 3: Transmitter housing, integral mount design

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
①	Cover with sight glass, aluminum		3KQZ207029U0100	X
	Cover with sight glass, stainless steel		3KQZ207030U0100	X
③	O-ring		3KQZ207039U0100	X
②	Blind cover, aluminum		3KQZ207036U0100	X
	Blind cover, stainless steel		3KQZ207037U0100	X
③	O-ring		3KQZ207039U0100	
④	Housing module aluminum 2pins NPT		3KQZ207004U0100	
	Housing module stainless steel 2pins NPT		3KQZ207008U0100	
	Housing module aluminum 2pins M20		3KQZ207004U0200	
	Housing module stainless steel 2pins M20		3KQZ207008U0200	
	Housing module aluminum 8pins NPT		3KQZ207006U0100	
	Housing module stainless steel 8pins NPT		3KQZ207010U0100	
	Housing module aluminum 8pins M20		3KQZ207006U0200	
	Housing module stainless steel 8pins M20		3KQZ207010U0200	
⑤	Communication board, 4 to 20 mA / HART / Digital I/O		3KXF065100U0100	X
	Communication board, 4 to 20 mA / HART		3KQZ207044U0200	X
	Communication board Modbus		3KXF065280U0100	X

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
⑥	Terminal block, 3 terminals, without overvoltage protection, HART		3KQZ207063U0100	
	Terminal block, 3 terminals, with overvoltage protection, HART		3KQZ207064U0100	
	Terminal block, 9 terminals, without overvoltage protection, HART		3KXF065090U0100	
	Terminal block, 9 terminals, with overvoltage protection, HART		3KXF065091U0100	
	Terminal block, 8 terminals, without overvoltage protection, Modbus		3KXF065282U0100	
⑦	LCD display with TTG operation		3KQZ204001U0000	X
	Connector – Indicator		ET3020	X
	HMI with push buttons		AU3048B	X
⑧	Sealing plugs Ex M20x1.5 SW. Plastic		D150Z007U09	
	Sealing plugs ½ in. NPT galvanized steel		D150Z007U11	
	Kapsto sealing plugs GPN300/F18 ½ in.		1D114A1002	
⑨	Screw connection M20 x 1.5 plastic gray		D150A004U14	
	Cable gland M20 x 1.5 plastic blue Ex-i		D150A008U13	

## ... 4 Spare parts list

### Transmitter housing – remote mount design



(A) See Transmitter

Figure 4: Transmitter housing, remote mount design

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
(1)	Housing module remote transmitter, M20 stainless steel, ExD		3KXF065026U0100	
	Housing module remote transmitter, NPT stainless steel, ExD		3KXF065026U0200	
	Housing module remote transmitter, M20 stainless steel, ExD painted		3KXF065026U0300	
	Housing module remote transmitter, NPT stainless steel, ExD painted		3KXF065026U0400	
	Housing module remote transmitter, M20 stainless steel, standard		3KXF065081U0100	
	Housing module remote transmitter, NPT stainless steel, standard		3KXF065081U0200	
	Housing module remote transmitter, M20 stainless steel, standard painted		3KXF065081U0300	
	Housing module remote transmitter, NPT stainless steel, standard painted		3KXF065081U0400	
	Piping kit 1.4571 for 200series		7957830	

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
②	Signal cable, standard, 5 m (16 ft)		3KXF065068U0200	X
	Signal cable, 10 m (33 ft)		3KXF065068U0300	X
	Signal cable, 20 m (66 ft)		3KXF065068U0400	X
	Signal cable, 30 m (98 ft)		3KXF065068U0500	X
③	Remote terminal board		3KXF065099U0100	X
④	Terminal block, 9 terminals, for remote terminal box		3KXF065097U0100	
⑤	Housing module aluminum 8pins NPT		3KQZ207006U0100	
	Housing module stainless steel 8pins NPT		3KQZ207010U0100	
	Housing module aluminum 8pins M20		3KQZ207006U0200	
	Housing module stainless steel 8pins M20		3KQZ207010U0200	
⑥	Blind cover, aluminum		3KQZ207036U0100	
	Blind cover, stainless steel		3KQZ207037U0100	
	O-ring		3KQZ207039U0100	X

## ... 4 Spare parts list

### Base complete

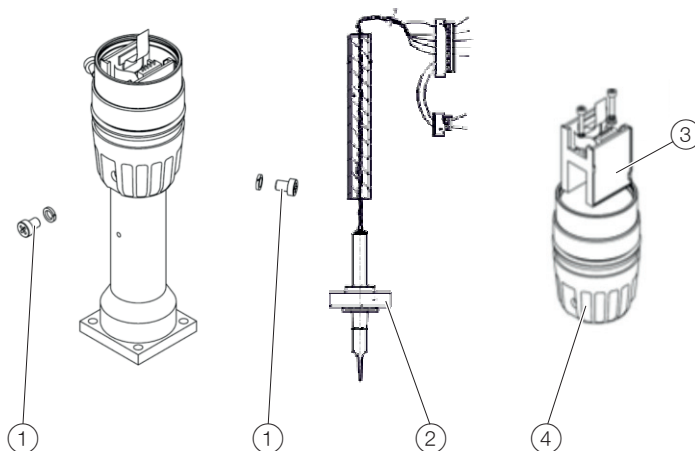


Figure 5: Complete base

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
①	Screw M6 x 8 stainless steel		3KXF065004U0100	
	Spring washer 6.0 stainless steel		D085L026ZU20	
②	Piezo sensor GES. / VG.1.4571-3.1B OR-NUT	Std. / Ex i / Ex d / FM / CS	D693B082U01	
	Piezo sensor GES. / VG.1.4571-3.1B OR-NUT optimized	Ex d / FM / CSA	D693B082U02	
	PT Sensor O-ring nut 2.4610 6 x M6	Std Ex-i	D693B082U03	
	Optical sensor flat D (PT100), 4571	Ex d / FM / CSA	D693B043U32L4	
	Optical 4-hole sensor nut (PT100) SPECIAL	Std. / Ex i / Ex d / FM / CS	D693B043U30L4	
	Piezo sensor 1.4571-3.1B 400 GC ExD	Ex d	D693B051U20	
	Piezo sensor 1.4571-3.1B 400 °C	Standard	D693B080U01	
	PT Sensor O-ring 1.4571 6xM6	Std Ex-d	3KXF065235U0100	
	PT Sensor flat D 1.4571 6xM6	Std Ex-d	3KXF065236U0100	
	PT Sensor O-ring nut 2.4610 6 x M6		3KXF065237U0100	
	PT Sensor flat D 2.4610 6 x M6		3KXF065239U0100	
	Piezo sensor 1.4571 complete 3-core 400°	ExD	3KXF065240U0100	
③	Front-end board PCBA	-	3KXF065007U0100	
④	Adapter housing module including front-end board PCBA		3KXF065094U0100	X
	FSV/FSS adapter housing std programmed		3KXS360005L0002	X

## Sensor accessories

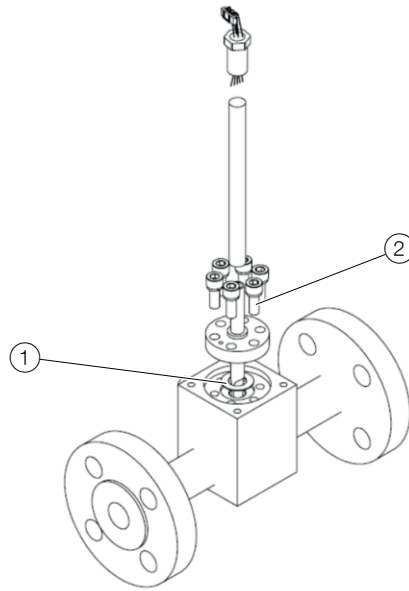


Figure 6: Sensor

Number	Designation	Variant	Ordering number	Recommended spare part Price (€)
①	O-ring 10.76 x 2.62 VITON	-	101V709	X
	O-ring 10.77 x 2.62 KALREZ 0° to 280°	-	D101K002U01	X
	O-Ring 10.77 x 2.62 KALREZ -20° to 275°	-	D101K004U01	X
	O-ring 10.77 x 2.62 PTFE	-	D101C001U01	X
	Washer NOVAPH.SSTC	-	D333C126U01	X
②	Cheese head screw M6	-	D009J112AU28	X
	Cheese head screw M6 -3.1B	-	D029J112AU26	X
	Spring washer 6.0	-	D085L026ZU20	X

## 5 Upgrade Kits

### Upgrade kit 1 – FST450 Transmitter with housing



Figure 7: Transmitter with housing

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
	Upgrade kit for FST450 M20 x 1.5 aluminum housing		D800D522U01	
	Upgrade kit for FST450 ½ in. NPT aluminum housing		D800D522U02	
	Upgrade kit for FST450 M20 x 1.5 stainless steel housing		D800D522U03	
	Upgrade kit for FST450 ½ in. NPT stainless steel housing		D800D522U04	

#### Note

Upgrades shall be at the user's own risk!

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

## Upgrade kit 2 – FSV/FSS 430/450 with integral mount design -> FSV/FSS 450 with remote mount design

Integral mount design



Upgrade kit



Remote mount design



Figure 8: Upgrade kit 2

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
	Upgrade kit for FST450 M20 x 1.5 aluminum housing with 10 m cable		D800D522U05	
	Upgrade kit for FST450 M20 x 1.5 aluminum housing with 20 m cable		D800D522U06	
	Upgrade kit for FST450 M20 x 1.5 aluminum housing with 30 m cable		D800D522U07	
	Upgrade kit for FST450 ½ in.NPT aluminum housing with 10 m cable		D800D522U08	
	Upgrade kit for FST450 ½ in.NPT aluminum housing with 20 m cable		D800D522U09	
	Upgrade kit for FST450 ½ in.NPT aluminum housing with 30 m cable		D800D522U10	
	Upgrade kit for FST450 M20 x 1.5 stainless steel housing with 10 m cable		D800D522U11	
	Upgrade kit for FST450 M20 x 1.5 stainless steel housing with 20 m cable		D800D522U12	
	Upgrade kit for FST450 M20 x 1.5 stainless steel housing with 30 m cable		D800D522U13	
	Upgrade kit for FST450 ½ in. stainless steel housing with 10 m cable		D800D522U14	
	Upgrade kit for FST450 ½ in. stainless steel housing with 20 m cable		D800D522U15	
	Upgrade kit for FST450 ½ in. stainless steel housing with 30 m cable		D800D522U16	

### Note

Upgrades shall be at the user's own risk!

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

## ... 5 Upgrade Kits

### Upgrade kit 3 – FV4000 VT4 / FS4000 ST4 -> FSV450 / FSS450



Figure 9: Upgrade kit 3

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
	Upgrade kit for VT4/ST4 M20 x 1.5 aluminum housing on FSx450		D800D522U17	
	Upgrade kit for VT4/ST4 ½ in. NPT aluminum housing on FSx450		D800D522U18	
	Upgrade kit for VT4/ST4 M20 x 1.5 stainless steel housing on FSx450		D800D522U19	
	Upgrade kit for VT4/ST4 ½ in. NPT aluminum housing on FSx450		D800D522U20	

#### Note

Upgrades shall be at the user's own risk!

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

## Upgrade kit 4 – FV4000 VR4 / FS4000 SR4 -> FSV450 / FSS450



Figure 10: Upgrade kit 4

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
	Upgrade kit for VT4/VR4/ST4/SR4 M20 x 1.5 aluminum housing on FSx450 with 10 m cable		D800D522U21	
	Upgrade kit for VT4/VR4/ST4/SR4 ½ in. NPT aluminum housing to FSx450 with 10 m cable		D800D522U22	
	Upgrade kit for VT4/VR4/ST4/SR4 M20 x 1.5 stainless steel housing to FSx450 with 10 m cable		D800D522U23	
	Upgrade kit for VT4/VR4/ST4/SR4 ½ in. NPT stainless steel housing to FSx450 with 10 m cable		D800D522U24	
	Upgrade kit for VT4/VR4/ST4/SR4 M20 x 1.5 aluminum housing to FSx450 with 20 m cable		D800D522U25	
	Upgrade kit for VT4/VR4/ST4/SR4 ½ in. NPT aluminum housing to FSx450 with 20 m cable		D800D522U26	
	Upgrade kit for VT4/VR4/ST4/SR4 M20 x 1.5 stainless steel housing on FSx450 with 20 m cable		D800D522U27	
	Upgrade kit for VT4/VR4/ST4/SR4 ½ in. NPT stainless steel housing to FSx450 with 20 m cable		D800D522U28	
	Upgrade kit for VT4/VR4/ST4/SR4 M20 x 1.5 aluminum housing to FSx450 with 30 m cable		D800D522U29	
	Upgrade kit for VT4/VR4/ST4/SR4 ½ in. NPT aluminum housing to FSx450 with 30 m cable		D800D522U30	
	Upgrade kit for VT4/VR4/ST4/SR4 M20 x 1.5 stainless steel housing to FSx450 with 30 m cable		D800D522U31	

### Note

Upgrades shall be at the user's own risk!

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

## 6 Activation codes to enable functions for FSV/FSS 430

Number	Designation	Variant	Ordering number	Recommended spare Price (€) part
	Activation code for internal temperature sensor		3KXS360050L0001	
	Activation code for analog input		3KXS360050L0002	
	Activation code for steam energy calculation		3KXS360050L0003	

## Trademarks

HART is a registered trademark of FieldComm Group, Austin, Texas, USA

Modbus is a registered trademark of the Modbus Organization

## Notes

## Notes



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