

ABB MEASUREMENT & ANALYTICS | PARTS LIST | PL/FMT430/450-EN REV. A

# SensyMaster FMT430, FMT450

## Thermal mass flowmeter



Measurement made easy

SensyMaster FMT430 / 450

### Additional Information

Additional documentation on SensyMaster FMT430, FMT450 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.abb.com/flow](http://www.abb.com/flow) 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.

### Name plate of flowmeter sensor in integral mount design (example)

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



① Serial number

Figure 1: Name plate of flowmeter sensor in integral mount design (example)

#### Note

Prices available upon request!

### 3 Spare parts list

#### Thermal mass flowmeter FMT430, FMT450 in remote mount design

##### Transmitter in dual-compartment housing – remote mount design

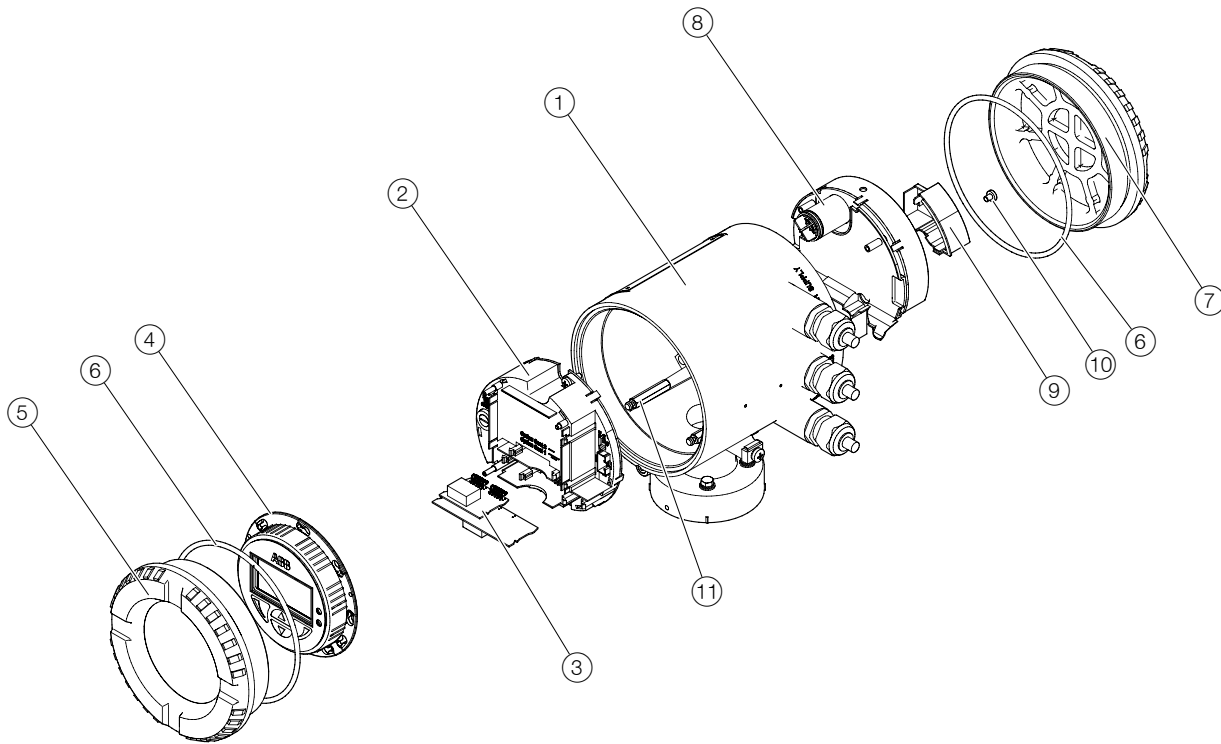


Figure 2: Transmitter in dual-compartment housing – remote mount design

Position	Designation	Variant	Ordering number	Recommended spare part
①+②+ ⑧+⑪	Dual-chamber housing incl. motherboard and EMC board	100...230 V AC / M20 GP, Zone 2	3KQZ407133U1100	
	Dual-chamber housing incl. motherboard and EMC board	11...30 V DC / M20 GP, Zone 2	3KQZ407133U1300	
	Dual-chamber housing incl. motherboard and EMC board	100...230 V AC / NPT GP, Division 2	3KQZ407133U1500	
	Dual-chamber housing incl. motherboard and EMC board	11...30 V DC / NPT GP, Division 2	3KQZ407133U1700	
①	Dual-chamber housing	M20	3KQZ407020U0100	
	Dual-chamber housing	NPT	3KQZ407020U0300	
②	Motherboard T3	100 ... 230V AC includes 3KQZ402013U0200	D800D520U19	X
	Motherboard T3	11 ... 30 V DC includes 3KQZ402013U0100	D800D520U20	X
③	Plug-in cards	Refer to page 16	—	
④	LCD indicator (HMI)	—	3KQZ407125U0100	X
⑤	Cover with glass pre-assembled	GP, Division 2	D612A197U01	
	Cover with glass pre-assembled (EX)	Zone 2	D612A197U02	
⑥	O-ring cover 118 x 3.70 NBR	—	D101A034U05	
⑦	Cover without glass pre-assembled	GP, Zone 2, Division 2	D612A226U01	
	Cover without glass pre-assembled (EX)	Zone 1, Division 1	D612A226U02	

## ... 3 Spare parts list

### ... Thermal mass flowmeter FMT430, FMT450 in remote mount design

Position	Designation	Variant	Ordering number	Recommended spare part
⑧	Connection board (EMC) / Old variant	For EX 1:1 exchange only GP, zone 2, division 2, division 1 Replaces 3KQZ402003U0100	D800D520U21	
	Connection board (EMC) (EX) / Old variant	For EX 1:1 exchange only zone 1 Replaces 3KQZ402003U0200	D800D520U22	
	Connection board (EMC)	GP, zone 2, division 2, division 1 Replaces 3KQZ402003U0300	D800D520U23	X
	Connection board (EMC) (EX)	zone 1 Replaces 3KQZ402003U0400	D800D520U24	X
⑨	T3 power supply plastic cover	—	3KQZ407005U0100	
⑩	Screw for mains connection cap M 4 x 6 DIN7985	For Pos. ⑨	D004G106AU20	
⑪	Spacer bolt HMI T3	—	3KQZ407017U0100	
⑫	Fuse 5 x 20 mm 1.25 A 1500 A @ 250 V AC	11...30 V DC	3KQR000757U0100	X
	Fuse 5 x 20 mm 0.8 A 500 A @ 250 V AC	100...230 V AC	3KQR000757U0200	X
⑬	Cable gland M20x1.5	—	3KQP000046U0100	
⑭	Hexagon head screw THRD.B.HEAD M5 X 22 DIN933 A2-70	—	D022H115AU20	

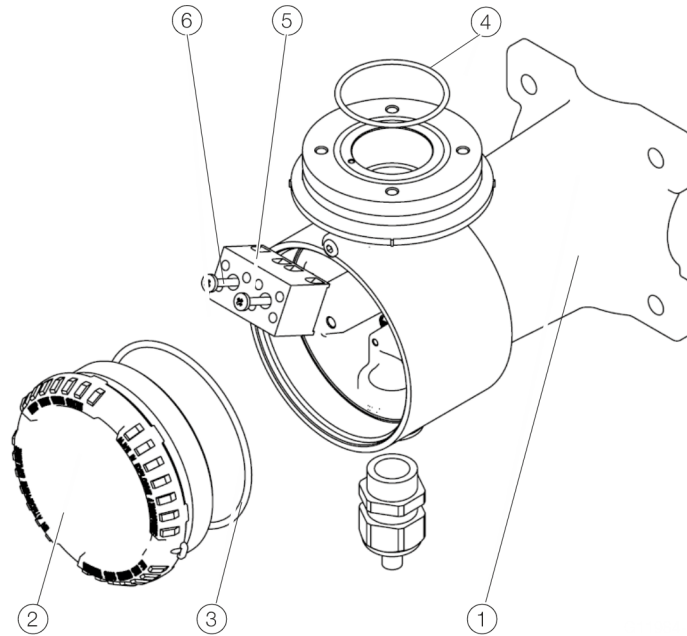


Figure 3: Wallmount

Position	Designation	Variant	Ordering number	Recommended spare part
①	T3 wall bracket, pre-assembled	M20	3KQZ407114U0100	
	T3 wall bracket, pre-assembled	NPT	3KQZ407114U0300	
②	T3 wall bracket cover	—	3KQZ207035U0100	
③	O-ring cover wall bracket 118 x 3.70 NBR	—	D101A034U05	
④	O-ring 41 x 1.78 NBR	—	D101A040U01	
⑤	Terminal block 4-pole	—	3KQR002621U0100	
⑥	Pan-head screw for terminal block M3 x 20 A2-70	—	3KQP000063U0100	
—	Accessory bag Cable clamps	—	3KXF002015U0100	
—	T3 connection cable Wall bracket for housing	—	3KQZ407087U0100	
—	Signal cable	See page 17	—	

## ... 3 Spare parts list

### ... Thermal mass flowmeter FMT430, FMT450 in remote mount design

#### Transmitter in single-compartment housing – remote mount design

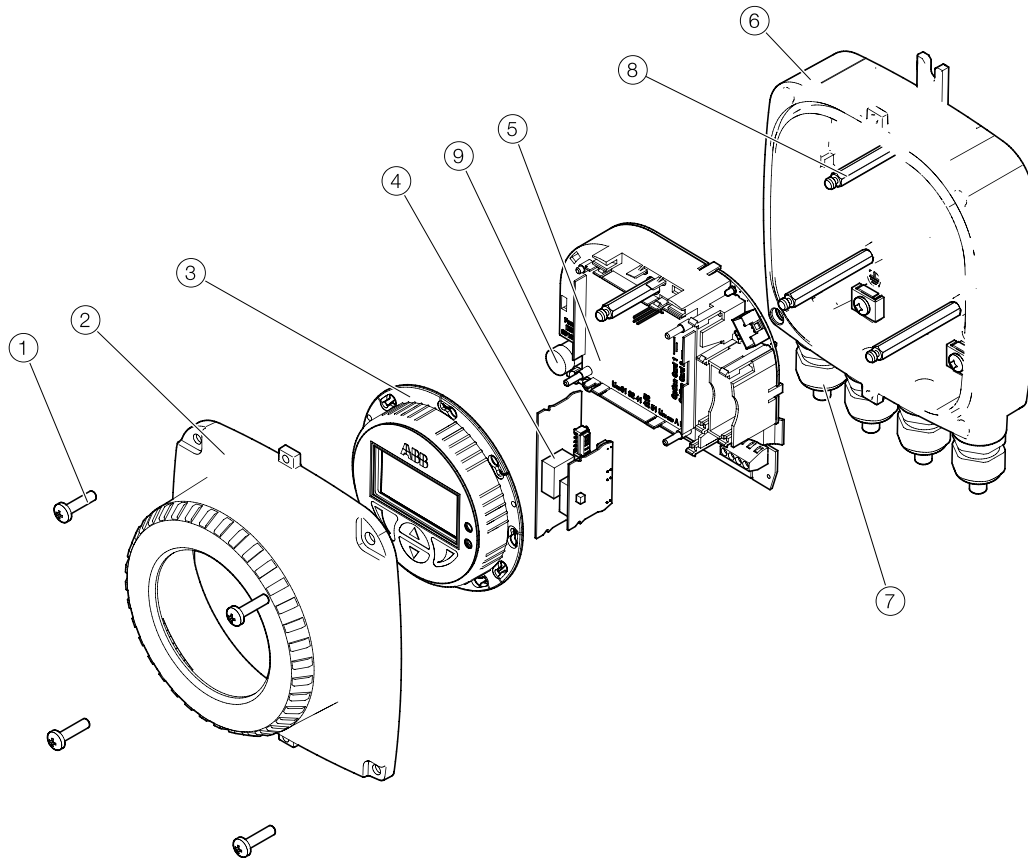


Figure 4: Transmitter in single-compartment housing – remote mount design

Position	Designation	Variant	Ordering number	Recommended spare part
⑤+⑥+⑦	Single-chamber housing incl. Motherboard (Remote)	100...230 V AC / M20 GP, Zone 2	3KQZ407117U0500	
	Single-chamber housing incl. Motherboard (Remote)	11...30 V DC / M20 GP, Zone 2	3KQZ407117U0600	
	Single-chamber housing incl. Motherboard (Remote)	100...230 V AC / NPT GP, Division 2	3KQZ407117U0700	
	Single-chamber housing incl. Motherboard (Remote)	11...30 V DC / NPT GP, Division 2	3KQZ407117U0800	
①	Screw 6KT M5 x 20	—	3KQP000087U0300	
	Washer A 5.3 DIN 125 CrNi-Stahl	—	D085A024AU20	
②	T4 cover with glass pre-assembled	GP, Division 2	3KXF004000U2400	
	T4 cover with glass pre-assembled	GP, Zone 2	3KXF004000U1400	
③	LCD indicator (HMI)	—	3KQZ407125U0100	X
④	Plug-in cards	Refer to page 16	—	
⑤	Motherboard T4 / Old variant	100...230 V AC For EX 1:1 exchange only	3KQZ402011U0100	
	Motherboard T4 / Old variant	11...30 V DC For EX 1:1 exchange only	3KQZ402011U0200	
	Motherboard T4	100...230 V AC	3KQZ402011U0300	X
	Motherboard T4	11...30 V DC	3KQZ402011U0400	X

Position	Designation	Variant	Ordering number	Recommended spare part
⑥	Single chamber housing	M20	3KXF002614U0300	
	Single chamber housing	NPT	3KXF002614U0400	
⑦	Cable gland M20x1.5	—	3KQP000046U0100	
⑧	Spacer bolt for LCD indicator (HMI T4)	—	3KQZ407047U0100	
—	Gasket Type4 Silicone IRM950-8 sw	—	MJAG9902	
⑨	Fuse 5 x 20 mm 1.25 A 1500 A @ 250 V AC	—	3KQR000757U0100	X
	Fuse 5 x 20 mm 0.8 A 500 A @ 250 V AC	—	3KQR000757U0200	X

## ... 3 Spare parts list

### ... Thermal mass flowmeter FMT430, FMT450 in remote mount design

#### Flowmeter sensor FMT430, FMT450 – remote mount design

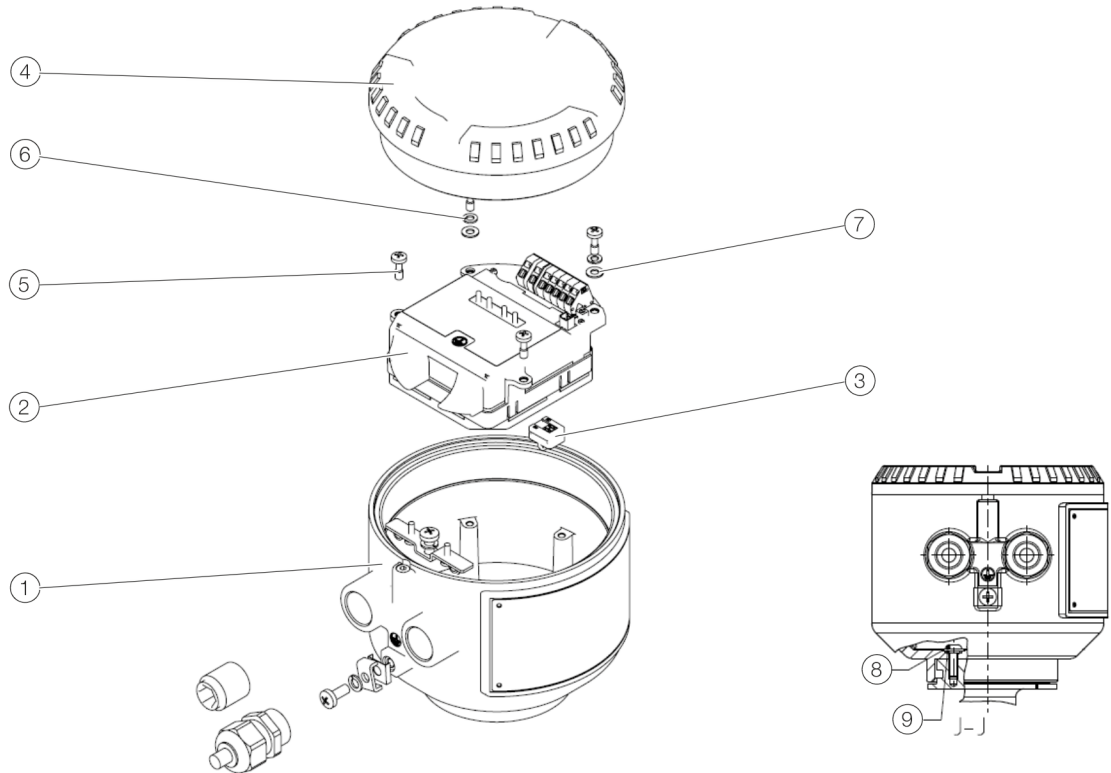


Figure 5: Terminal box

Position	Designation	Variant	Ordering number	Recommended spare part
①	Terminal box aluminum M20	—	3KXF002568U0100	
	Terminal box aluminum NPT	—	3KXF002568U0200	
	Terminal box stainless steel M20	—	3KXF002567U0100	
	Terminal box stainless steel NPT	—	3KXF002567U0200	
②	SlideIn Remote	GP, Zone 2, Division 2	3KXF002812U1100	X
	Slide In Remote	Zone 1	3KXF002812U1200	X
	Slide In Remote	Division 1	3KXF002812U1300	X
③	Sensor memory, pre-programmed	Serial number is required (available for devices from 12/2023)	3KXF002906U0100A	
	Sensormemory Retain clip		3KQZ400047U0100	
④	Cover without glass pre-assembled	GP, Zone 2, Division 2, Division 1	D612A226U01	
	Cover without glass pre-assembled (EX)	Zone 1	D612A226U02	
	Cover without glass pre-assembled	Stainless steel	3KQZ407109U0100	
⑤	Pan-head screw with cross recess M4 x 12	—	D396A014U02	
	Spacer bolt for Ex M4 x 8 SW7	Accessories for pos. ⑤ for zone 1	3KXF002616U0100	
⑥	Spring washer B 4.0 DIN 127 stainless	—	D085C020BU20	
⑦	Washer A 4.3 DIN 125 without chamfer stainless	—	D085A021AU20	
⑧	Pan head screw ISO7380 M5 x 16 A2	—	3KQP000043U0100	
⑨	O-ring 4.76 x 1.78 NBR	—	D101A034U07	

## Thermal mass flowmeter FMT430, FMT450 in integral mount design

### Transmitter in dual-compartment housing – integral mount design

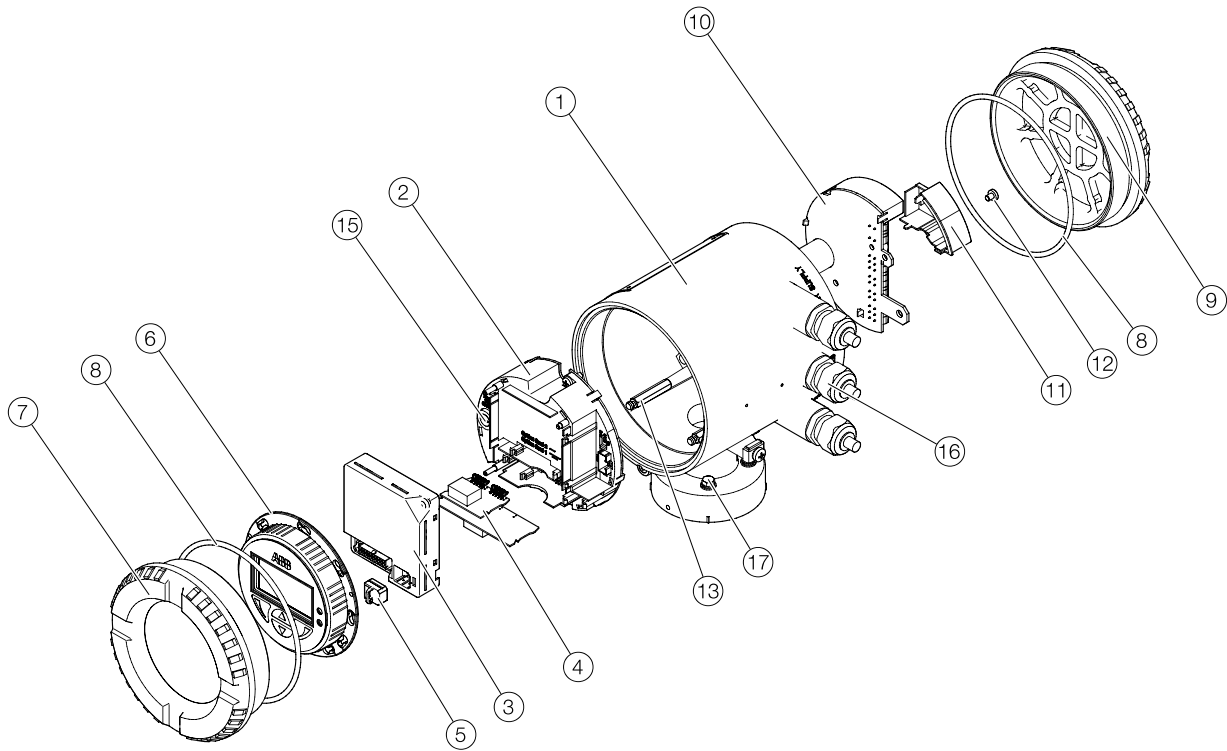


Figure 6: Transmitter in dual-compartment housing – integral mount design

Position	Designation	Variant	Ordering number	Recommended spare part
①+②+ ⑧+⑪	Dual-chamber housing incl. motherboard and EMC board	100...230 V AC / M20 GP, Zone 2	3KQZ407133U1100	
	Dual-chamber housing incl. motherboard and EMC board	11...30 V DC / M20 GP, Zone 2	3KQZ407133U1300	
	Dual-chamber housing incl. motherboard and EMC board	100...230 V AC / NPT GP, Division 2	3KQZ407133U1500	
	Dual-chamber housing incl. motherboard and EMC board	11...30 V DC / NPT GP, Division 2	3KQZ407133U1700	
①	Dual chamber housing	M20	3KQZ407020U0100	
	Dual chamber housing	NPT	3KQZ407020U0300	
②	Motherboard T3	100...230V AC including 3KQZ402013U0200	D800D520U19	X
	Motherboard T3	11...30 V DC including 3KQZ402013U0100	D800D520U20	X
③	Front End Board	GP, Zone 2, Division 2	3KXF002810U1100	X
	Front End Board	Zone 1, Division 1	3KXF002810U1200	X
④	Plug-in cards	Refer to page 16	—	
⑤	Sensor memory, pre-programmed	Serial number is required (available for devices from 12/2023)	3KXF002906U0100A	
—	Sensormemory Retain clip	—	3KQZ400047U0100	

## ... 3 Spare parts list

### ... Thermal mass flowmeter FMT430, FMT450 in integral mount design

Position	Designation	Variant	Ordering number	Recommended spare part
⑥	LCD indicator (HMI)	—	3KQZ407125U0100	X
⑦	Cover with glass pre-assembled	GP, zone 2, division 2	D612A197U01	
	Cover with glass pre-assembled (EX)	zone 1, division 1	D612A197U02	
⑧	O-ring cover 118 x 3.70 NBR	—	D101A034U05	
⑨	Cover without glass pre-assembled	GP, Zone 2, Division 2	D612A226U01	
	Cover without glass pre-assembled (EX)	Zone 1, Division 1	D612A226U02	
⑩	Connection board (EMC) / Old variant	For EX 1:1 exchange only GP, zone 2, division 2, division 1	D800D520U21	
	Connection board (EMC) (EX) / Old variant	For EX 1:1 exchange only zone 1	D800D520U22	
	Connection board (EMC)	GP, zone 2, division 2, division 1	D800D520U23	X
	Connection board (EMC) (EX)	Zone 1	D800D520U24	X
⑪	T3 power supply plastic cover	—	3KQZ407005U0100	
⑫	Screw for mains connection cap M 4 x 6 DIN7985	For Pos. ⑪	D004G106AU20	
⑬	Spacer bolt HMI T3	—	3KQZ407017U0100	
⑮	Fuse 5 x 20 mm 1.25 A 1500 A @ 250 V AC	11...30 V DC	3KQR000757U0100	X
	Fuse 5 x 20 mm 0.8 A 500 A @ 250 V AC	100...230 V AC	3KQR000757U0200	X
⑯	Cable gland M20x1.5	—	3KQP000046U0100	
⑰	Hexagon head screw THRD.B.HEAD M5 X 22 DIN933 A2-70	—	D022H115AU20	

### Transmitter in single-compartment housing – integral mount design

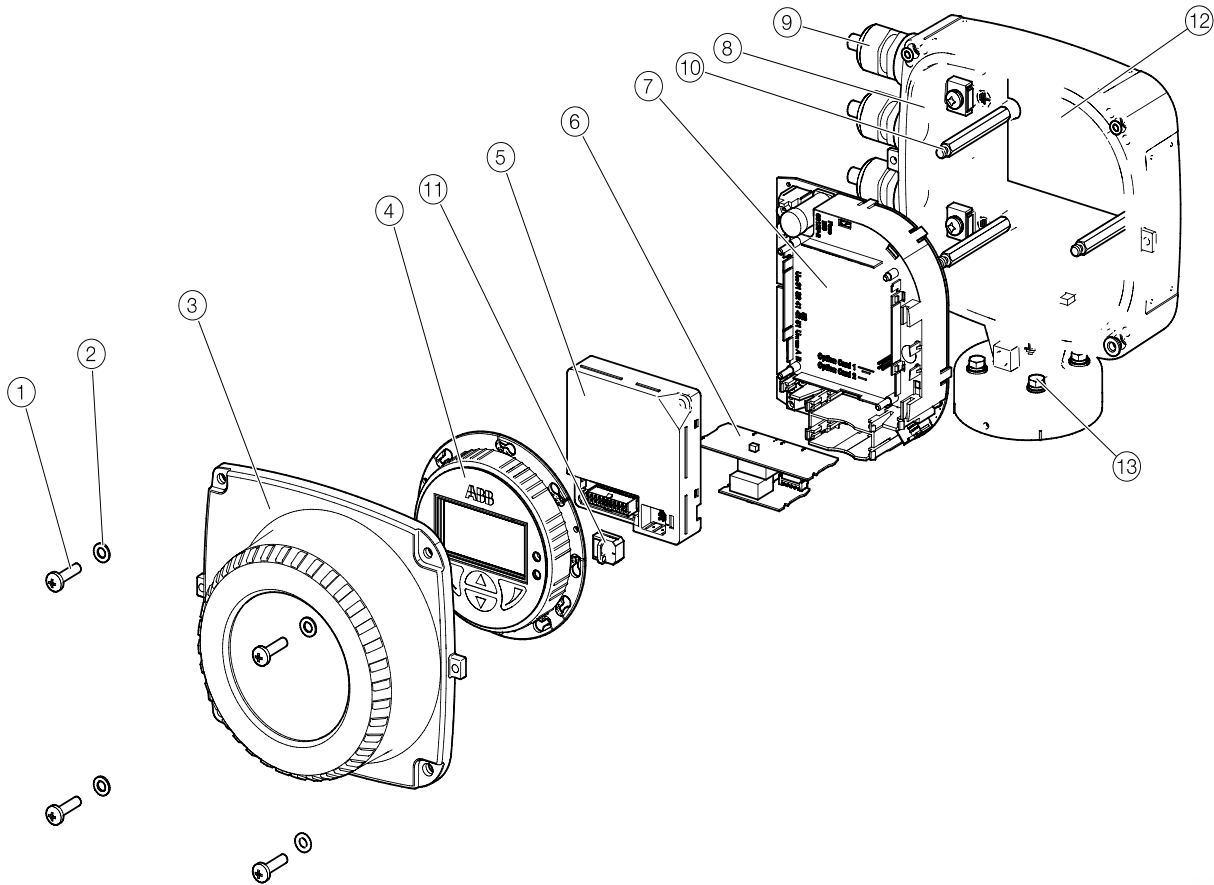


Figure 7: Transmitter in single-compartment housing – integral mount design

Position	Designation	Variant	Ordering number	Recommended spare part
⑤+⑥+⑦	Single-chamber housing incl. motherboard (integral)	100...230 V AC / M20 GP, zone 2	3KQZ407116U0500	
	Single-chamber housing incl. motherboard (integral)	11...30 V DC / M20 GP, zone 2	3KQZ407116U0600	
	Single-chamber housing incl. motherboard (integral)	100...230 V AC / NPT GP, division 2	3KQZ407116U0700	
	Single-chamber housing incl. motherboard (integral)	11...30 V DC / NPT GP, division 2	3KQZ407116U0800	
①	Screw 6KT M5 x 20	—	3KQP000087U0300	
②	Washer A 5.3 DIN 125 stainless steel	—	D085A024AU20	
③	T4 cover with glass pre-assembled	GP, division 2	3KXF004000U2400	
	T4 cover with glass pre-assembled	zone 2	3KXF004000U1400	
④	LCD indicator (HMI)	—	3KQZ407125U0100	X
⑤	Front End Board	GP, zone 2, division 2	3KXF002810U1100	X
	Front End Board	zone 1, division 1	3KXF002810U1200	
⑥	Plug-in cards	Refer to page 16	—	

## ... 3 Spare parts list

### ... Thermal mass flowmeter FMT430, FMT450 in integral mount design

Position	Designation	Variant	Ordering number	Recommended spare part
⑦	Motherboard T4 / Old variant	100...230 V AC For EX 1:1 exchange only	3KQZ402011U0100	
	Motherboard T4 / Old variant	11...30 V DC For EX 1:1 exchange only	3KQZ402011U0200	
	Motherboard T4	100...230 V AC	3KQZ402011U0300	X
	Motherboard T4	11...30 V DC	3KQZ402011U0400	X
⑧	Single-chamber housing (integral)	M20	3KXF002615U0300	
	Single-chamber housing (integral)	NPT	3KXF002615U0400	
⑨	Cable gland M20x1.5	—	3KQP000046U0100	
⑩	Spacer bolt LCD indicator (HMI T4)	—	3KQZ407047U0100	
⑪	Sensor memory, pre-programmed	Serial number is required (available for devices from 12/2023)	3KXF002906U0100A	
⑫	Insulation plate FRA 0.3 mm	—	3KXF002320U0100	
⑬	Hexagon head screw M5 X 22 DIN933 A2-70	—	D022H115AU20	
—	Gasket Type4 Silicone IRM950-8 sw	Für Pos. ⑧	MJAG9902	
—	Sensormemory Retain clip	—	3KQZ400047U0100	

## 4 Activation codes

Position	Designation	Variant	Ordering number	Recommended spare part
	Release code FillMass	Nur FMT450	3KXS360060L0002	
	Release Code VeriMass	—	3KXS360060L0003	
	Release Code Extended Range	—	3KXS360060L0005	

## 5 Plug-in cards for transmitter

The transmitter has two slots (OC1, OC2) into which plug-in cards can be inserted to provide additional inputs and outputs.

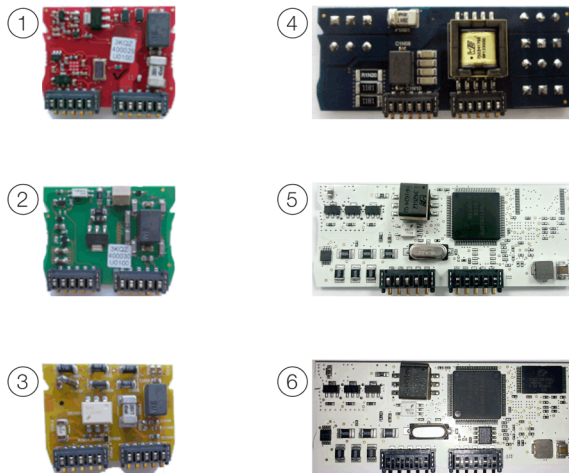


Figure 8: Plug-in cards for Transmitter

Number	Designation	Note	Ordering number	Recommended spare part
①	Current output, 4 to 20 mA passive (red)	Max. 2	3KQZ400035U0100	
②	Passive digital output (green)	Max. 1 <sup>1)</sup>	3KQZ400030U0100	
③	Passive digital input (yellow)	Max. 2	3KQZ400032U0100	
④	Loop power supply 24 V DC (blue)	Max. 1	3KQZ400031U0100	
⑤	Modbus RTU RS485 (white)	Max. 1 <sup>2)</sup>	3KQZ400028U0100	
⑥	PROFIBUS DP (white)	Max. 1 <sup>2)</sup>	3KQZ400027U0100	

1) Only one plug-in card of the active digital output type or passive digital output type can be inserted

2) A compatibility check is required for retrofitting

## 6 Signal cables

Number	Designation	Note	Ordering number	Recommended spare part
	Signalcabel 4WCTW 4 x 0,75mm 5 m (16ft)		3KQZ407123U0500	
	Signalkabel 4WCTW 4 x 0,75mm 10 m (33ft)		3KQZ407123U1000	
	Signalkabel 4WCTW 4 x 0,75mm 15 m (49ft)		3KQZ407123U1500	
	Signalkabel 4WCTW 4 x 0,75mm 20 m (65ft)		3KQZ407123U2000	
	Signalkabel 4WCTW 4 x 0,75mm 25 m (82ft)		3KQZ407123U2500	
	Signalkabel 4WCTW 4 x 0,75mm 30 m (98ft)		3KQZ407123U3000	
	Signalkabel 4WCTW 4 x 0,75mm 35 m (114ft)		3KQZ407123U3500	
	Signalkabel 4WCTW 4 x 0,75mm 40 m (131ft)		3KQZ407123U4000	
	Signalkabel 4WCTW 4 x 0,75mm 50 m (164ft)		3KQZ407123U5000	
	Signalkabel 4WCTW 4 x 0,75mm 80 m (262ft)		3KQZ407123U8000	

## 7 Accessories

Position	Designation	Note	Ordering number	Recommended spare part
	Set for 2" pipe mounting FCB/FCT/ FEP/FET		D614L875U01	
	Pipe fitting Type4 Remote		3KQZ407135U1100	
	FronEndBoard disassembly tool		3KXS360004L0004	
	Infrared Adapter FZA100		FZA100	
	Local Operating Interface for 4-WCT		3KXS360040L0003	
	NHA121-NO HART/USB Modem		3KDE636710L0002	
	NHA121-NX HART-Ex/USB Modem		3KDE636710L0001	
	Hexagon head screw M12x50 DIN 931		210206	
	Hexagon nut M12 DIN 934		210207	
	O-ring DVGW HNBR 55x3		3KQP002127U0300	
	O-ring Kalrez Spectrum 6375 55,2x3		3KQP002129U0100	
	O-ring FKM 70 682 55x3		3KQP002133U0100	
	Sealing ring G DN25 58-01-199/93 EPDM		3KQP002130U0100	
	Blind flange with hole		210230CH	
	Blind threaded connection DIN 11851		3KXF003016U0100	
	Weld-on adapter 1.4571		210136	
	Weld-on adapter with ball valve 1.4571	DN 50 to 1200	210716	
	Weld-on adapter 1.0037		211623	
	Weld-on adapter DIN 11851 with union nut		214186	
	Weld-on adapter for compression fitting		3KXF002759U0100	
	Stainless steel compression fitting		3KQP002144U0100	

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## Notes

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For more product information, visit:  
**[www.abb.com/flow](http://www.abb.com/flow)**

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