



## Data sheet

### Hydraulic data

Maximum operating pressure $p$	1.3 bar
Discharge port	DN 80
Free ball passage of the hydraulics	70 mm
Impeller type	Single-channel impeller
Max. immersion depth	20 m
Max. delivery head $H_{\max}$	12.2 m
Max. volume flow $Q_{\max}$	90.6 m³/h
Min. fluid temperature $T_{\min}$	3 °C
Max. fluid temperature $T_{\max}$	40 °C
Min. ambient temperature $T_{\min}$	3 °C
Max. ambient temperature $T_{\max}$	40 °C

### Motor data

Motor Identifier	T 13-4/12HEX 2,25kW
Mains connection	3~400 V, 50 Hz
Voltage tolerance	±10 %
Rated power $P_2$	2.25 kW
Power consumption $P_{1 \max}$	3.05 kW
Rated current $I_N$	5.3 A
Starting current $I$	20 A
Operating mode (immersed)	S1
Operating mode (non-immersed)	S2-15 min
Rated speed $n$	1410 1/min
Power factor $\cos \varphi_{100}$	0.82
Activation type	Direct On Line (DOL)
Number of poles	4
Max. switching frequency $t$	15 1/h
Insulation class	H
Protection class motor	IP68

### Cable

Connection cable length $L$	10 m
Cable type	H07RN-F
Cable cross-section	7G1,5 mm²
Type of connection cable	Non-detachable

### Equipment/function

Mains plug	no
Float switch	no
Macerator	no
Explosion protection type	ATEX
Motor protection	Bimetall
Motor, leakage detection	yes
Sealing chamber, leakage detection	optional
Leakage chamber, leakage detection	no

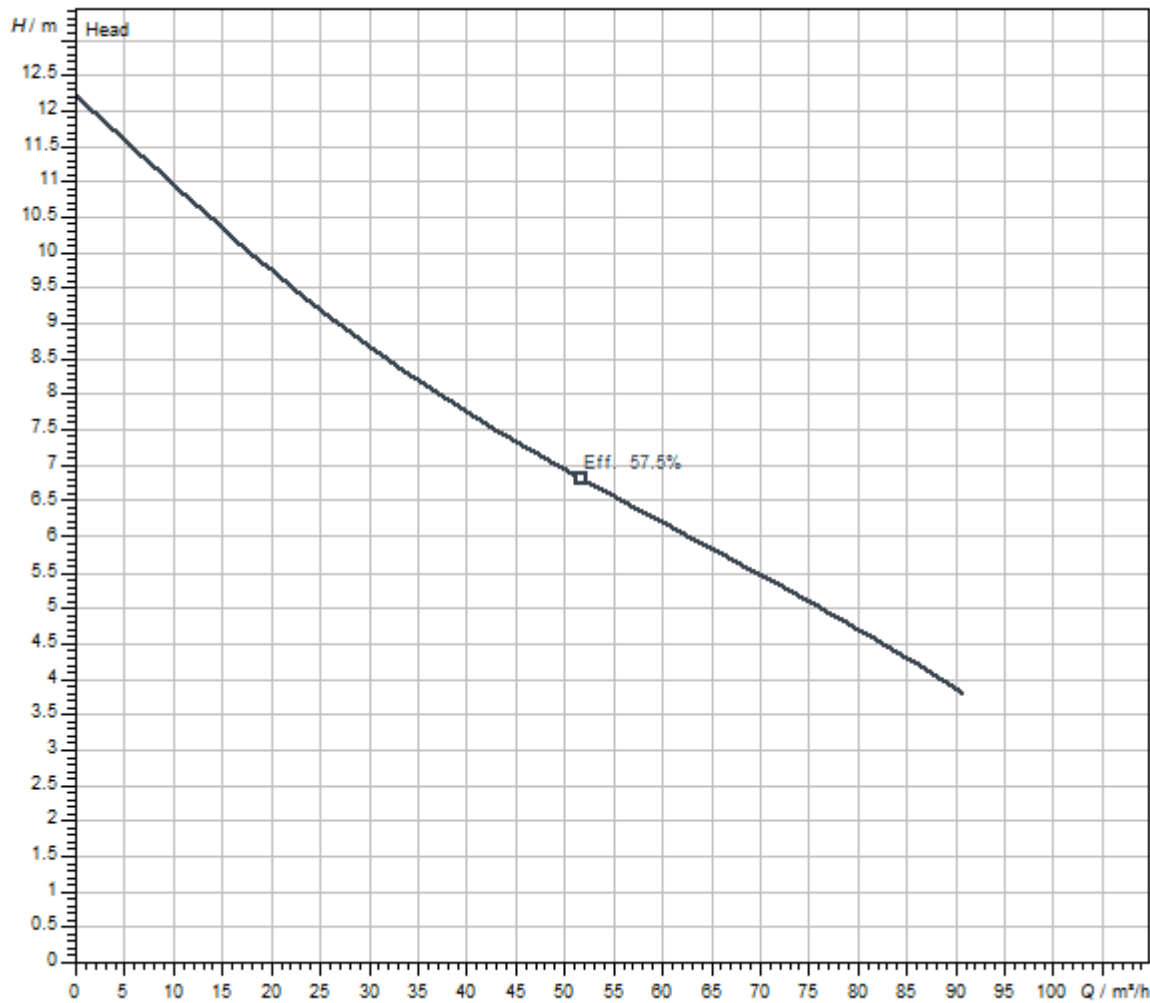
### Materials

Pump housing	Grey cast iron
Impeller	Ductile cast iron
Shaft	Stainless steel
Sealing on pump side	Silicon carbide
Gasket material	NBR
Motor housing	Grey cast iron

### Installation dimensions

Inlet connection	DN 80
Outlet connection	DN 80

Pump curves



Fluid media	Water 100 %
Fluid temperature <i>T</i>	20.00 °C
speed at duty point <i>n hydr. @ OP</i>	1,450 1/min
Impeller diameter <i>d imp.</i>	185 mm

## Tender text

Fully submersible sewage pump for vertical wet well installation, for pumping sewage containing faeces, as well as municipal and industrial sewage. Unit made entirely of cast iron; on pump-side seal made of SiC/SiC, seal on the motor side is a rotary shaft seal or mechanical seal. Pressure connection with horizontal

pressure port and flange connection. Surface-cooled motor in three-phase current version with thermal motor monitoring, sealing chamber and Ex rating. As an option, the sealing chamber can be monitored by an external pencil electrode. Longitudinally watertight connection cable with bare cable end.

## Operating Data

### Product data

Impeller type	Single-channel impeller
Free ball passage of the hydraulics	70 mm
Maximum operating pressure $P_N$	1 bar
Max. immersion depth	20 m
Fluid temperature $T$	3 °C

### Motor data

Motor design	Submersible motor – surface-cooled
Mains connection	3~400 V, 50 Hz
Voltage tolerance	±10 %
Power factor $\cos \varphi_{100}$	0.82
Rated power $P_2$	2.25 kW
Power consumption $P_{1 \max}$	3.05 kW
Rated current $I_N$	5.3 A
Starting current $I$	20 A
Activation type	Direct On Line (DOL)
Number of poles	4
Rated speed $n$	1410 1/min
Max. switching frequency $t$	15 1/h
Insulation class	H
Protection class	IP68
Operating mode (immersed)	S1
Operating mode (non-immersed)	S2-15 min

## Cable

Connection cable length $L$	10 m
Cable type	H07RN-F
Cable cross-section	7G1,5 mm <sup>2</sup>
Mains plug	no
Type of connection cable	Non-detachable

## Equipment/function

Float switch	no
Macerator	no
Explosion protection type	ATEX
Motor protection	Bimetall
Motor, leakage detection	yes
Sealing chamber, leakage detection	optional
Leakage chamber, leakage detection	no


## Materials

Pump housing	Grey cast iron
Impeller	Ductile cast iron
Shaft	Stainless steel
Sealing on pump side	QQPGG
Sealing on motor side	FKM
Gasket material	NBR
Motor housing	Grey cast iron

## Installation dimensions

Pipe connection on the suction side $DN_s$	DN 80
Pipe connection on the discharge side $DN_d$	DN 80

Ordering information

Brand	Wilo
Product description	EMU FA 08.53-185E + T 13-4/12HEx
Net weight, approx. <i>m</i>	68.5 kg
Article number	6047616 

## Installation type

### Level control with float switch

Level measurement using a level sensor with various measurement ranges, including high water alarm and dry-running protection.

#### Communication module GSM (SC)

Communication module GSM (SC)	2542216
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#### Battery 9V,200mA

NiMh rechargeable battery, 9 V/200 mAh	2522850
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#### Float switch MS1

Float switch MS1 with 10 m cable	2004593
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#### Ex-rated cut-off relay

Ex-rated cut-off relay (2-circuit)	2513059
Ex-rated cut-off relay (3-circuit)	2510698
Ex-rated cut-off relay (4-circuit)	2510699
Ex-rated cut-off relay (5-circuit)	2510674

#### Signal horn

Signal horn 1~230 V	501459398
Signal horn 12-24 VDC	2017208

#### Flash light

Flash light 1~230 VAC	2551613
Flash light 24 VDC	2551612

### Level control with level sensor

Level measurement using a level sensor with various measurement ranges, including high water alarm and dry-running protection. The breakdown barrier and the Ex cut-off relays are not required except for the connection of signal transmitters in potentially explosive areas! These can also be dispensed with when the SC-L..-Ex switchgear is used!

#### Communication module GSM (SC)

Communication module GSM (SC)	2542216
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#### Level sensor

Level sensor 0-1.0 mWS with 10 m cable	6088842
Level sensor 0-1.0 mWS with 30 m cable	6088841
Level sensor 0-1.0 mWS with 50 m cable	6088840
Level sensor 0-2.5 mWS with 10 m cable	6088839
Level sensor 0-2.5 mWS with 30 m cable	6088837

Level sensor 0-2.5 mWS with 50 m cable	6088836
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#### Cable clamp

Cable clamp	2519927
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#### Zener barrier

Zener barrier	2541372
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#### Signal horn

Signal horn 1~230 V	501459398
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#### Flash light

Flash light 1~230 VAC	2551613
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### Level control with dynamic pressure system

Level measurement via an open dynamic pressure system with the option of a separate dynamic pressure bell for the high water level.

#### Battery 9V,200mA

NiMh rechargeable battery, 9 V/200 mAh	2522850
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#### Dynamic pressure system

Bubbling-through system	2516977
Dynamic pressure bell with 10 m hose	2516976

#### Signal horn

Signal horn 1~230 V	501459398
Signal horn 12-24 VDC	2017208

#### Flash light

Flash light 1~230 VAC	2551613
Flash light 24 VDC	2551612

### Mains-independent alarm signal

Alarm signal for detection of flooding in rooms and buildings. The alarm signal is acoustic, optical or wireless. In addition, other consumers can be controlled directly.

#### Zener barrier

Zener barrier	2541372
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#### Float switch MS1

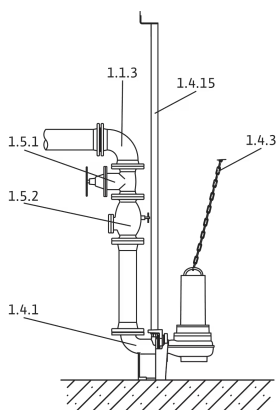
Float switch MS1 with 10 m cable	2004593
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#### Ex-rated cut-off relay

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Ex-rated cut-off relay (2-circuit)	2513059
<b>DrainAlarm</b>	
DrainAlarm	2545133
<b>Signal horn</b>	
Signal horn 1~230 V	501459398
<b>Flash light</b>	
Flash light 1~230 VAC	2551613

## Stationary wet well installation DN 80



Installation drawing

The pumps are immersed in the fluid. Connection to the discharge pipe is normally by a suspension unit. For maintenance purposes, the pumps can be removed from the top of the chamber. There is no need to loosen any screws or drain the water.

For a correct operation of the pumps, it is necessary to know the switching volume. The switching volume is calculated as the difference between the ON and OFF switching points. The OFF-switching point will define by the operating mode for submerged and non-submerged operation of the motor.

### Pipe elbow 90° flange/flange 1.1.3

90° pipe elbow DN 80	2012064
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### Y-piece 1.1.5

DN 80 Y-piece	2017179
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### Suspension unit 1.4.1

Suspension unit DN 80/2RK	6082333
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### Sling chain, galvanized steel 1.4.3

Sling chain kit PCS-CE, galvanised steel, 400 kg, 10 m	6063142
Sling chain kit PCS-CE, galvanised steel, 400 kg, 3 m	6063139
Sling chain kit PCS-CE, galvanised steel, 400 kg, 5 m	6063140

### Sling chain, stainless steel 1.4.3

Sling chain kit PCS-CE, stainless steel, 400 kg, 10 m	6063138
Sling chain kit PCS-CE, stainless steel, 400 kg, 3 m	6063135
Sling chain kit PCS-CE, stainless steel, 400 kg, 5 m	6063136



#### Guide tube 1.4.15

Guide pipe Ø42.4x2mm 6m 1.4301	6031565
Guide pipe Ø42.4x2mm 6m 1.4571	6031566

#### Shut-off device for wastewater and sewage 1.5.1

Gate valve DN 80, EN-GJL-250	2017162
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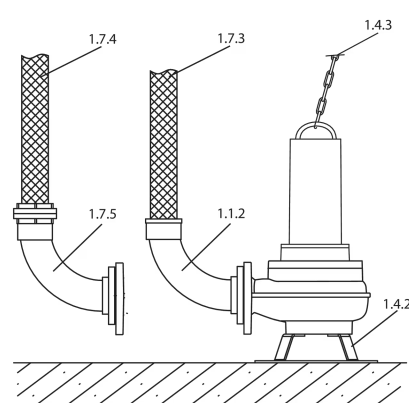
#### Non-return valve 1.5.2

Non-return valve DN 80	2017168
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### Portable wet well installation DN 80



Installation example



Installation drawing

The pump is equipped with a pump foot (integrated in the pump housing or separately as an accessory). With this pump foot, the pump can be easily and flexibly installed in any operating space. Hoses are used as discharge pipes. Connection is with a hose nipple or Storz coupling. For a level-dependent operation, it is recommended to use a pump with a float switch.

#### Pump foot 1.4.2

Floor supporting foot DN 80/100	6065953
Floor supporting foot DN 80/100	6065949

#### Sling chain, galvanized steel 1.4.3

Sling chain kit PCS-CE, galvanised steel, 400 kg, 10 m	6063142
Sling chain kit PCS-CE, galvanised steel, 400 kg, 5 m	6063140

#### Sling chain, stainless steel 1.4.3

Sling chain kit PCS-CE, stainless steel, 400 kg, 10 m	6063138
Sling chain kit PCS-CE, stainless steel, 400 kg, 5 m	6063136

#### Synthetic fibre hose with coupling 1.7.4

Synthetic fibre pressure hose 10 m, with Storz B	6003051
Synthetic fibre pressure hose 20 m, with Storz B	6003050
Synthetic fibre pressure hose 5 m, with Storz B	6003052

#### Storz-pipe coupling with 90° pipe elbow 1.7.5

Fixed coupling set Storz B/DN 80	6031385
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## Mechanical accessories

### Fittings

#### Non-return valve

Non-return valve DN 80	2017168
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#### Shut-off device for wastewater and sewage

Gate valve DN 80, EN-GJL-250	2017162
Gate valve DN 100, EN-GJL-250	2017163
Gate valve DN 150, EN-GJL-250	2017164

### Hoses / hose joints

#### Storz-pipe coupling with 90° pipe elbow

Fixed coupling set Storz B/DN 80	6031385
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#### Synthetic fibre hose with coupling

Synthetic fibre pressure hose 20 m, with Storz B	6003050
Synthetic fibre pressure hose 10 m, with Storz B	6003051
Synthetic fibre pressure hose 5 m, with Storz B	6003052
Synthetic fibre pressure hose 20 m, with Storz F	6003647
Synthetic fibre pressure hose 10 m, with Storz F	6003648
Synthetic fibre pressure hose 20 m, with Storz C	6003649
Synthetic fibre pressure hose 10 m, with Storz C	6003650
Synthetic fibre pressure hose 5 m, with Storz C	6003651
Synthetic fibre pressure hose 5 m, with Storz A	6022391
Synthetic fibre pressure hose 10 m, with Storz A	6022392
Synthetic fibre pressure hose 20 m, with Storz A	6022393

### Installation/setup

#### Guide tube

Guide pipe Ø42.4x2mm 6m 1.4301	6031565
Guide pipe Ø42.4x2mm 6m 1.4571	6031566

#### Pump foot

Floor supporting foot DN 80/100	6065949
Floor supporting foot DN 80/100	6065953

#### Sling chain, galvanized steel

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Sling chain kit PCS-CE, galvanised steel, 400 kg, 3 m	6063139
Sling chain kit PCS-CE, galvanised steel, 400 kg, 5 m	6063140
Sling chain kit PCS-CE, galvanised steel, 400 kg, 6 m	6063141
Sling chain kit PCS-CE, galvanised steel, 400 kg, 10 m	6063142
Sling chain kit PCS-CE, galvanised steel, 800 kg, 3 m	6063147
Sling chain kit PCS-CE, galvanised steel, 800 kg, 5 m	6063148
Sling chain kit PCS-CE, galvanised steel, 800 kg, 6 m	6063149
Sling chain kit PCS-CE, galvanised steel, 800 kg, 10 m	6063150
Sling chain kit PCS-CE, galvanised steel, 2000 kg, 10 m	6063152
Sling chain kit PCS-CE, galvanised steel, 5000 kg, 10 m	6063154
Sling chain kit PCS-CE, galvanised steel, 7000 kg, 10 m	6063156
Sling chain kit PCS-CE, galvanised steel, 9000 kg, 10 m	6063158

#### Sling chain, stainless steel

Sling chain kit PCS-CE, stainless steel, 400 kg, 3 m	6063135
Sling chain kit PCS-CE, stainless steel, 400 kg, 5 m	6063136
Sling chain kit PCS-CE, stainless steel, 400 kg, 6 m	6063137
Sling chain kit PCS-CE, stainless steel, 400 kg, 10 m	6063138
Sling chain kit PCS-CE, stainless steel, 800 kg, 3 m	6063143
Sling chain kit PCS-CE, stainless steel, 800 kg, 5 m	6063144
Sling chain kit PCS-CE, stainless steel, 800 kg, 6 m	6063145
Sling chain kit PCS-CE, stainless steel, 800 kg, 10 m	6063146
Sling chain kit PCS-CE, stainless steel, 2000 kg, 10 m	6063151
Sling chain kit PCS-CE, stainless steel, 5000 kg, 10 m	6063153
Sling chain kit PCS-CE, stainless steel, 7000 kg, 10 m	6063155

#### Suspension unit

Suspension unit DN 80/2RK	6082333
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#### Pipes/pipe joints

##### Pipe elbow 90° flange/flange

90° pipe elbow DN 80	2012064
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##### Y-piece

DN 80 Y-piece	2017179
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## Electrical accessories

### Pump control

#### Wilo-Control MS-Lift

MS-L-1x4kW-DOL-T4	2550527
MS-L-2x4kW-DOL-T4	2550528

#### Wilo-Control SC-Lift

SC-L-2x6.3A-T34-DOL-WM	2538921
SC-L-2x6.3A-T34-DOL-WM-FTS	2543243

### Pump control/accessories

#### Battery 9V,200mA

NiMH rechargeable battery, 9 V/200 mAh	2522850
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#### Communication module GSM

GSM module	2533861
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#### Communication module GSM (SC)

Communication module GSM (SC)	2542216
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#### Communication module LON (SC)

Communication module LON (SC)	2538243
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#### Electrode relay

Evaluation relay NIV 105/S	6003270
Evaluation relay NIV 101/A	6085388

#### Phase asymmetry relay

Phase asymmetry relay PS2DF	6067141
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#### SC communication module BACnet

SC-communication module BACnet MS/TP (slave)	2538242
BACnet IP SC communication module	2553366

### Alarm signal

#### DrainAlarm

DrainAlarm	2545133
DrainAlarm FIRST	2550526

## Flash light

Mounted Flash light 1~230 VAC	2510429
Flash light 24 VDC	2551612
Flash light 1~230 VAC	2551613

## Signal horn

Signal horn 12-24 VDC	2017208
Signal horn 1~230 V	501459398

## Cable

### Pencil electrode

Pencil electrode (210 mm) with 10 m cable	6042222
Pencil electrode (30 mm) with 10 m cable	6065216

## Cable distribution

### Cable distribution cabinet

UCHRSD cable distribution cabinet, size 00	2523672
UCHRSD cable distribution cabinet, size 0	2523673
UCHRSD cable distribution cabinet, size 1	2523674
UCHRSD cable distribution cabinet, size 2	2523675
FCHE cable distribution cabinet, size 00	2523791

## Level control

### Dynamic pressure system

Dynamic pressure bell with 10 m hose	2516976
Bubbling-through system	2516977

### Float switch MS1

Float switch MS1 with 10 m cable	2004593
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### Float switch WA

Float switch WA65 with 5 m cable	503211390
Float switch WA65 with 10 m cable	503211893
Float switch WA65 with 20 m cable	2004431
Float switch WA65 with 30 m cable	2004432
Float switch WA KR1 S with 5 m cable	6082806
Float switch WA KR1 S with 10 m cable	6082807
Float switch WA65 (PSN-X) with 20 m cable	6088843

Float switch WA65 (PSN-X) with 10 m cable	6088844
Float switch WA65 (PSN-X) with 5 m cable	6088845

#### Float switch WAO

Float switch WAO 65, 5 m cable	503211595
Float switch WAO 65, 10 m cable	2006027
Float switch WAO 65, 20 m cable	2004429
Float switch WAO 65, 30 m cable	2004430

#### Level sensor

Level sensor 0-10 mWS with 50 m cable	6088831
Level sensor 0-10 mWS with 30 m cable	6088832
Level sensor 0-10 mWS with 20 m cable	6088833
Level sensor 0-2.5 mWS with 50 m cable	6088836
Level sensor 0-2.5 mWS with 30 m cable	6088837
Level sensor 0-2.5 mWG, cable length: 20 m	6088838
Level sensor 0-2.5 mWS with 10 m cable	6088839
Level sensor 0-1.0 mWS with 50 m cable	6088840
Level sensor 0-1.0 mWS with 30 m cable	6088841
Level sensor 0-1.0 mWS with 10 m cable	6088842

#### Level control/accessories

##### Cable clamp

Cable clamp	2519927
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##### Dynamic pressure system

Bubbling-through system	2516977
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##### Ex-rated cut-off relay

Ex-rated cut-off relay (5-circuit)	2510674
Ex-rated cut-off relay (3-circuit)	2510698
Ex-rated cut-off relay (4-circuit)	2510699
Ex-rated cut-off relay (2-circuit)	2513059
Ex-rated cut-off relay XR-42x	6069164

##### Zener barrier

Zener barrier	2541372
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#### Motor protection

Motor protection plug

CEE motor protection plug 3,7...5,5 A	2017212
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Motor protection plug with thermal winding contact and DI

CEE motor protection plug incl. WSK/DI 3,7...5,5 A	2515561
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Pencil electrode

Pencil electrode (210 mm) with 10 m cable	6042222
Pencil electrode (30 mm) with 10 m cable	6065216



## Services

With Wilo as your partner, you can not only be sure of choosing high-quality product solutions, but also of benefiting from a comprehensive, worry-free package of well thought-out services. We collaborate to develop a service concept tailored to your individual needs; with our expertise and personal consultancy, we make sure that the operation of your systems is as energy-efficient, reliable and economical as possible. All the while our competent Wilo service technicians are ready to assist you with fast, reliable and on-time support.

### Recommended services

Commissioning Drainage pumps	2219491
Wilo-Live Assistant Service	2216415
Maintenance BASIC Drainage pumps	2219540
Maintenance COMFORT Drainage pumps	2219514
Maintenance PREMIUM Drainage pumps	2219567

### More suitable services

Service Package L Drainage pumps	2219719
Service Package M Drainage pumps	2219690
Extended Warranty Drainage pumps	2219465
Supervision Drainage pumps	2219348
Installation Drainage pumps	2219383
System Optimisation Drainage pumps	2219278
Energy Solutions Drainage pumps	2219313
Repair Drainage pumps	2219632