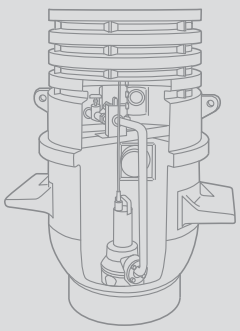
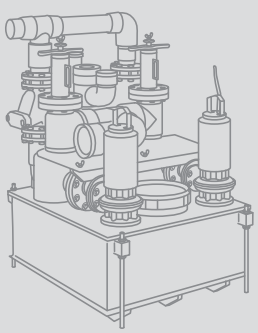
WILO
Pumpen Intelligenz.

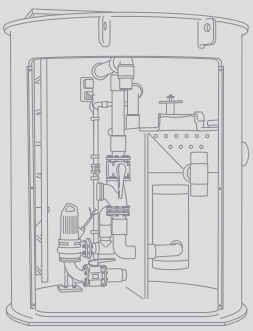
Sewage catalogue

Pumps stations and solids separation systems

Pumps stations
Submersible sewage pumps with macerators
Solids separation systems
Accessories







Catalogue C 3.1 – 50 Hz – 2010

C3.1

Programme overview and fields of applications

Pumps stations/sewage pumps

	Pumps station	Version		Main field of application				
		Floor-mounted installation	Concealed floor installation					Page
Pumps stations								
	Wilo-DrainLift WS 625	–	•	S/M/C	S/M/C	S/M/C	C	19
	Wilo-DrainLift WS 830	–	•	S/M/C	S/M/C	S/M/C	C	26
	Wilo-DrainLift WS 900/1100	–	•	S/M/C	S/M/C	S/M/C	C	32
Solids separation systems								
☞	**Wilo-EMUport MS**	–	•	–	M/C	M/C	C	83
☞	**Wilo-EMUport MG**	•	–	–	M/C	M/C	C	87
☞	**Wilo-EMUport FS**	–	•	–	M/C	M/C	C	91
☞	**Wilo-EMUport FG**	•	–	–	M/C	M/C	C	95

	Pump type	Version		Main field of application				
		Macerator	Dry well installation					Page
Submersible pumps with macerator – standard range								
	Wilo-Drain MTC 32, 40	•	–	–	S/M/C	S/M/C	C	42
	Wilo-Drain MTS 40	•	–	–	S/M/C	S/M/C	C	58

Key:

☞ **New in the programme or series extension or modification**
• Can be used / applicable
– Cannot be used / not applicable
S Single- and two-family houses
M Multi-family house
C Commercial

Wastewater/drainage

Wastewater/coarse contaminants

Sewage/faeces

Production sewage

Contents

General notes and abbreviations

Abbreviation	Meaning
1~	1-phase alternating current
3~	3-phase current
-A	Float switch attached
D	Direct activation
DI	Leakage detection
Di	Inside diameter
Di min.	Minimum inside diameter
DM	Three-phase motor, 3~
DN	Nominal diameter of the flange connection
EBM	Individual run signal
EM	Single-phase motor, 1~
ESM	Individual fault signal
GRD/GLRD	Mechanical seal
F	Thrust in newtons (N) (for submersible mixers)
H	Delivery head
H_A	Suction head; inlet floor to ground level
H_B	Installation depth to inlet floor
H_N	Site altitude above MSL (mean sea level)
H_G	Groundwater level to MSL (mean sea level)
I_A	Starting current
I_N	Nominal current; current at P_2
Inst.	Installation: H = horizontal, V = vertical
LB	Supply availability (L = stock article, C = available in 2 weeks, K = available in 4 weeks, A = available on request)
P_1	Power consumption (power supplied from the network)
$P_{1.1}$	Power consumption at the duty point
$P_N = P_2$	Nominal motor power
PN	Pressure class in bar (e.g. PN10 = suitable up to 10 bar)
PTC	Positive temperature coefficient (PTC thermistor sensor)
PT 100	Platinum temperature sensor with a resistance value of 100 Ω at 0 °C
Q (= $\dot{V}$)	Volume flow
-S	Float switch attached
SBM	Run signal or collective run signal
SSM	Fault signal or collective fault signal
WSK	Thermal winding contacts (in motor for monitoring the winding temperature, full motor protection through additional tripping unit)
Y/Δ	Star-delta switching
⏏	Operating mode of double pumps: Individual operation of the respective duty pump
⏏+⏏	Operating mode of double pumps: Parallel operation of both pumps
⓶	Number of poles of electric motors: 2-pole motor = approx. 2900 rpm at 50 Hz
⓸	Number of poles of electric motors: 4-pole motor = approx. 1450 rpm at 50 Hz
⓺	Number of poles of electric motors: 6-pole motor = approx. 950 rpm at 50 Hz

Material	Meaning	AISI
1.0570	Steel S355J2G3	A106
1.4021	Chromium steel X20Cr13	420
1.4057	Chromium steel X17CrNi16-2	431
1.4112	Chromium steel X90CrMoV18	440B
1.4122	Chromium steel X39CrMo17-1	–
1.4301	Chromium-nickel steel X5CrNi18-10	304
1.4305	Chromium-nickel steel X8CrNiS18-9	303
1.4306	Chromium-nickel steel X2CrNi19-11	304L
1.4308	Chromium-nickel steel GX5CrNi19-10	304 CF8
1.4401	Chromium-nickel-molybdenum steel X5CrNiMo17-12-2	316
1.4404	Chromium-nickel-molybdenum steel X2CrNiMo17-12-2	316L
1.4408	Chromium-nickel-molybdenum steel GX5CrNiMo19-11-2	316
1.4460	Chromium-nickel-molybdenum steel X3CrNiMo 27-5-2	329
1.4462	Chromium-nickel-molybdenum steel X2CrNiMoN22-5-3	329 (2205)
1.4470	Chromium-nickel-molybdenum steel GX2CrNiMoN22-5-3	329
1.4517	Chromium-nickel-molybdenum steel with copper addition GX2CrNiMoCuN25-6-3-3	329
1.4528	Blade steel X105CrCoMo182	440B+Co
1.4541	Chromium-nickel steel with titanium addition X6CrNiTi18-10	321
1.4542	Chromium-nickel steel with copper and niobium additions X5CrNiCuNb16-4	630
1.4571	Chromium-nickel steel with titanium addition X6CrNiMoTi17-12-2	316Ti
1.4581	Chromium-nickel-molybdenum steel with niobium addition GX5CrNiMoNb19-11-2	316 / 316Nb
Abrasite	Chilled cast iron material for use in strongly abrasive fluids	–
ABS	Acrylic butadiene styrene	–
Al	Light metal material (aluminium)	–
Al-oxide	Aluminium oxide	–
C	Carbon	–
Ceram	Coating with very high adhesive strength for long-lasting corrosion protection	–
Composite	High-strength plastic material	–
EN-GJL	Grey cast iron (cast iron with lamellar graphite): the use of grey cast iron (EN-GJL-... and EN-GJS-...) in domestic water systems is governed by the Drinking Water Directive 98/83/EC and applicable recognised technical rules and standards.	–
EN-GJL 200	Grey cast iron GG20	–
EN-GJL 250	Grey cast iron GG25	–

Material	Meaning	AISI
EN-GJS	Grey cast iron (cast iron with spheroidal graphite, also called spheroidal cast iron): the use of grey cast iron (EN-GJL-... and EN-GJS-...) in domestic water systems is governed by the Drinking Water Directive 98/83/EC and applicable recognised technical rules and standards.	–
EN-GJS-500-7	Grey cast iron GGG50	–
G-Al Si12	Die-cast aluminium	–
GfK	Fibreglass plastic	–
GG	See EN-GJL	–
GGG	See EN-GJS	–
Inox	Stainless steel	–
PA 30GF	See Composite	–
PE-HD	High-density polyethylene	–
PP-GF30	Polypropylene, reinforced with 30% fibreglass	–
PUR	Polyurethane	–
SiC	Silicon carbide	–
St	Steel	–
St.vz.	Galvanised steel	–
V2A	Material group, e.g. 1.4301, 1.4306	–
V4A	Material group, e.g. 1.4404, 1.4571	–

Wear and tear

Pumps or parts of pumps are subject to wear in accordance with state-of-the-art technology (DIN 31051/DIN-EN 13306). This wear may vary depending on operating parameters (temperature, pressure, speed, water conditions) and the installation/usage situation and may result in the malfunction or failure at different times of the aforementioned products/components, including their electrical/electronic circuitry.
Wearing parts are all components subject to rotary or dynamic stress, including electronic components under tension, in particular:

- Seals (including mechanical seals), seal rings
- Stuffing boxes
- Bearings and shafts
- Impellers and pump components
- Wear rings and counter rings
- Stationary wear rings / wear plates
- Macerator
- Capacitors
- Relays / contactors / switches
- Electronic circuits, semiconductor components, etc.

Pumps and continuous-flow machines (like submersible mixers and recirculation pumps), as well as their components with coatings (cataphoresis coating, 2K- or Ceram-coating) are subject to constant wear due to the abrasive fluid contents. For this reason the coating is also among the wearing parts of these units.

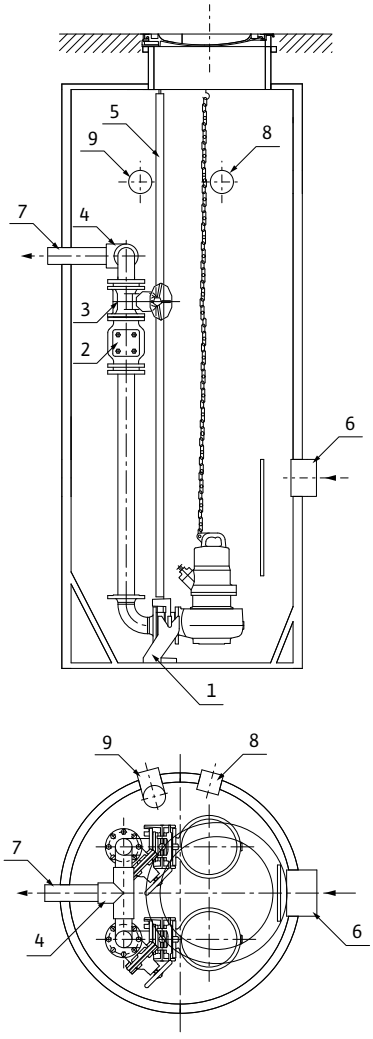
We do not accept any liability for faults or defects arising from natural wear and tear.

Wilo – General Terms of Delivery and Service

The latest version of our General Terms of Delivery and Service can be found on the Internet at
www.wilo.com

General information:

- Backflow fittings and slide valves are to be generally placed high up in the sump in the pressure pipe since deposits are avoided this way and the fittings are easily accessible for maintenance, cleaning and inspection.
- Check valves are to be generally provided for maintenance and repair work. These are sometimes required by the standards.
- Pressure pipes are to be dimensioned according to the parameters specified in the relevant standards, e.g. flow rates and pressure stage.
- The pump sump is to be designed as small as possible around the pump.



- At the inlet of the sump, strong surge currents on the pump and components of the level sensors are to be avoided.
- During the building phase, a foundation or earthing strip is to be provided for potential equalisation.
- If the outlet of the pressure pipe lies underneath the suction port of the pump, a ventilator, e.g. vacuum interrupter (accessory) is to be installed in the common pressure pipe to avoid the pump sump being sucked out up to underneath the suction port.

Double-pump pumps station

1 Foot elbow
2 Non-return valve
3 Gate valve
4 Y-piece (Y-pipe)
5 Guide pipe
6 Inlet
7 Pressure outlet
8 Cable conduit
9 Ventilation pipe

Determining the volume flow

The accumulated domestic sewage volumes are calculated roughly according to the water consumption of the community in question. They depend on the number of residents "E" as well as the wastewater outflow "a" in litres [l] per resident and day (l/ET, according to experience approx. 120 l/ET).Under the condition that the maximum hourly outflow Q_{max} is one fourteenth of the average daily outflow, the following results:

Q_{max} in [l/s]= (E x a)/(14x60x60)

When dimensioning the pressure pipe, make sure that the minimum flow rate of 0.7 m/s is maintained. To take the rainwater and ground water into account, which accumulates on the sewage side even when the drainage system is separated, the calculated value is to be increased by 50 – 130 %Further information about this can be found in the planning guide "Sewage technology" (can be ordered).

Determining the size of the usable suction space of sewage pumping stations

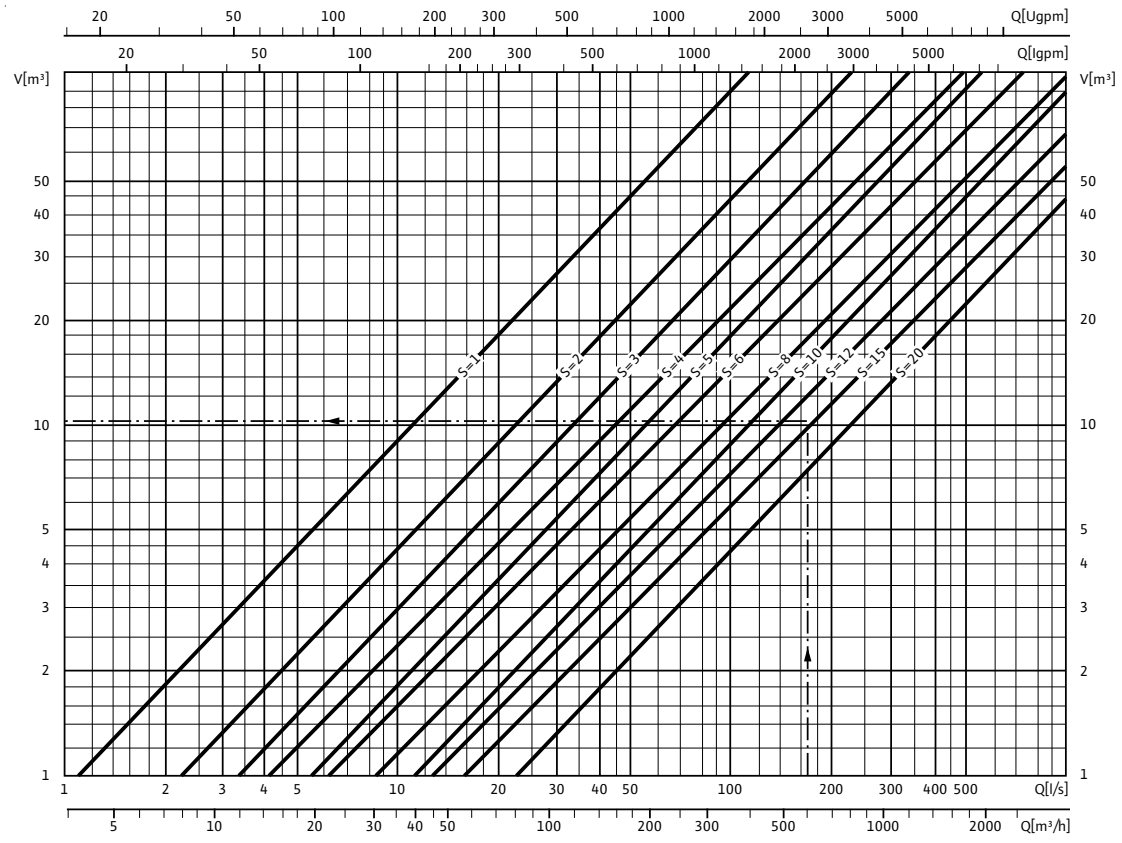
The usable impoundment volume of the suction space depends on the permissible switching frequency and the volume flow of the largest pump installed. With two identical pumps and automatically alternating activation, the volume can be cut in half.

The permissible switching frequency "S" for each pump is not to be exceeded (depends on the selected pump type. See "Equipment/ function").
For higher motor power ratings or switching frequencies, please consult Wilo.
The volumes indicated in the diagram are minimum values required to ensure smooth pumping operation under unfavourable conditions. This is the case when the inflow for a pump is half of the volume flow. This results in a maximum number of activation operations per hour.

For Wilo synthetic sumps WS 40–50, 625, 900, 1100 the useable impoundment volume is defined as follows, depending on the selected pump type:

WS 40–50	55	–	160 L
WS 625	95	–	150 L
WS 900	110	–	150 L
WS 1100	200	–	280 L

Volume flow



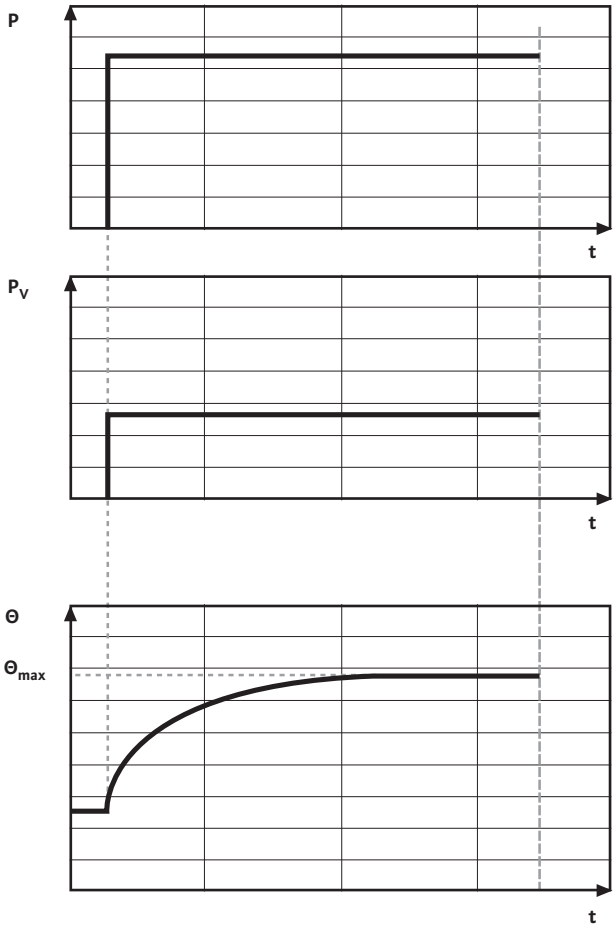
Operating modes

The operating mode determines the permissible duty cycle of motors. One should always make sure that the built-in temperature control of the motors is connected correctly. It ensures that the temperature classes of the windings are adhered to in the event of the operating time being exceeded or the wrong operating mode.

S1 Permanent operation

Definition:
Operation at a constant load until the machine can reach the thermal state of inertia.

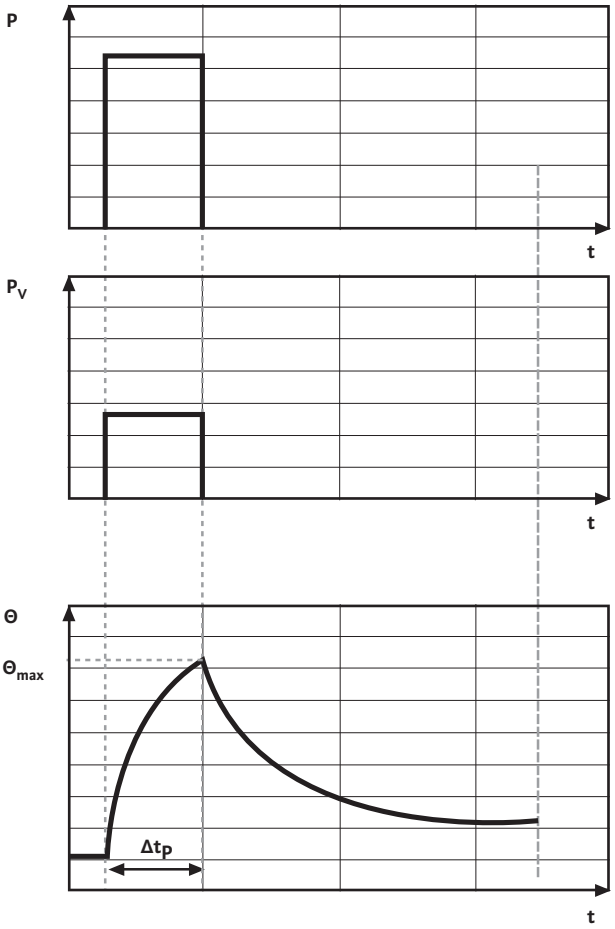
The machine is designed in such a way that cooling is sufficient at the specified conditions. The operating mode does not give any information as to whether the machine is to be operated dry or wet. If no operating mode is stated on the name plate of a machine, S1 permanent operation applies.



S2 Short-term operation

Definition:
Operation at constant load and with a duration that is not sufficient to reach the thermal state of inertia, and a following standstill time, during which the fallen machine temperatures only deviate from the temperature of the coolant by less than 2 K.

The power dissipation of the machine is higher than can be dissipated via the coolant. In S2, the permissible operating time is always also specified (e.g. S2 15 min). After this operating time, the machine must cool down again to the ambient temperature. This operating mode is mainly used for dry-installed machines.



P = load
P_V = electrical losses
Θ = temperature
$Θ_{max}$ = maximum temperature
t = time
T_C = cycle duration
$Δt_p$ = operating time with constant load
$Δt_R$ = downtime with dead windings, relative duty cycle = $Δt_P/T_C$

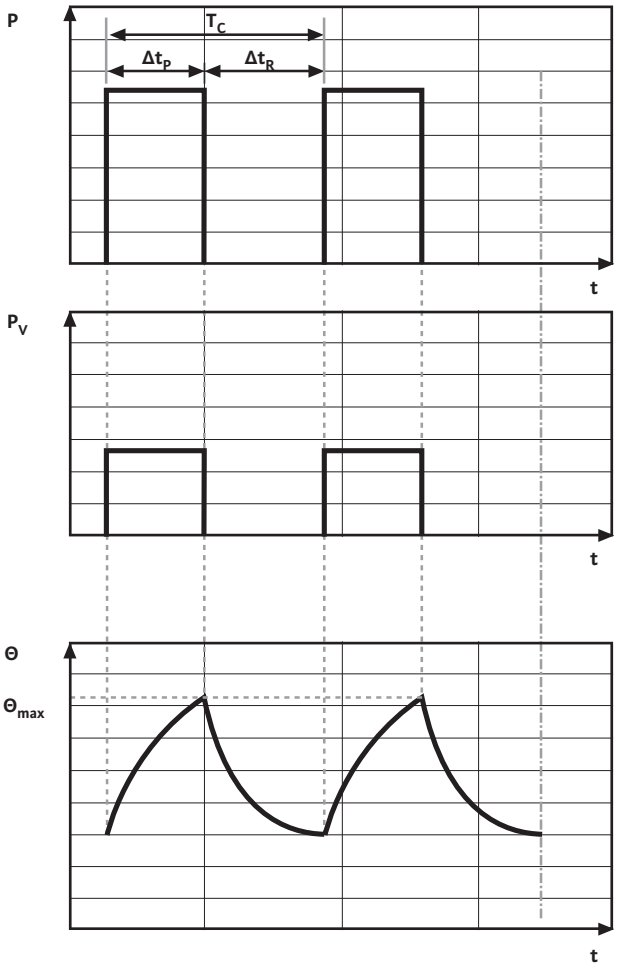
Operating modes

S3 Intermittent operation without affecting the starting current

Definition:
Operation that consists of a sequence of identical cycles, each one consisting of an operating time with constant load and a downtime, and the starting current does not have a significant effect on the excess temperature.

The power dissipation of the machine is higher than can be dissipated via the coolant. In S3 operating mode, the cycle duration is specified in percent and the cycle time is also specified.

Example for S3 25 % 10 min: The duty cycle is 2.5 min and the pause is 7.5 min. If no cycle duration is specified, the cycle duration of 10 min applies.



P = load
P_V = electrical losses
Θ = temperature
Θ_{max} = maximum temperature
t = time
T_C = cycle duration
Δt_p = operating time with constant load
Δt_R = downtime with dead windings, relative duty cycle = $\Delta t_P/T_C$

Explosion protection

Wilo units are approved for use in potentially explosive areas. For this, they are certified according to two different standards: The European ATEX standard as well as the American FM standard.

Atex standard

The units are designed in accordance with "EU Directive 94/09/EC" (ATEX 95) and the European standards DIN EN 60079-0 and EN 60079-1. They may be operated in potentially explosive atmospheres which require electrical devices of device group II, category 2.

It is therefore possible to use them in zone 1 and zone 2. These units may not be used in zone 0.

The Wilo units are labelled as follows: II 2 G Ex d IIB T4

II	Device group II Description: For potentially explosive locations, with the exception of mines
2	Category
G	Substance group Description: Gases
Ex	Ex-protected device in accordance with European standard
d	Ignition protection category for motor housing Description: Pressure-proof enclosure
IIB	Explosion group Description: For use in combination with gases of subdivision B, all gases with the exception of H_2, C_2H_2, CS_2
T4	Temperature class Description: Max. surface temperature of the device is 135 °C

FM standard

The units are certified and approved by the recognised testing and approval authority "FM Approvals" in accordance with the standards FM 3600, 3615, 3615.80 and ANSI/UL-1004. They may be operated in potentially explosive areas which require electrical devices with the protection class "Explosion-proof, Class 1, Division 1". Operation in areas with the required protection class "Explosion-proof, Class 1, Division 2" in accordance with the FM standard is also possible.

The Wilo units are labelled as follows:

Class 1	Division 1; Groups C, D Description: Gases, vapours, mists; explosive atmosphere present constantly or occasionally during normal conditions; Gas groups: Ethylene (C), propane (D)
Class 2	Division 1; Groups E, F, G Description: Dusts; explosive atmosphere present constantly or occasionally during normal conditions; Dust groups: Metal (E), carbon (F), grain (G)
Class 3	Description: Fibres and lint
T3C	Temperature class Description: Max. surface temperature of the machine 160 °C

Temperature monitoring

Standard explosion-certified motors are equipped with a temperature monitor. This includes:

- Motors of size T 12 and T 13
  Winding: 140 °C temperature limiter
- Motors of size T 17 and larger
  Winding: 130 °C temperature controller, 140 °C temperature limiter
- Motors of size FK 17.1
  Winding: 120 °C temperature limiter, oil: 100 ° C temperature limiter
- Motors of size T 20.1, HC 20.1 and FKT 27.1
  Winding: 160 °C temperature limiter, laminated core: 110 °C temperature limiter

The temperature monitor is to be connected so that automatic reactivation is possible when the "temperature controller" is triggered. When the "temperature limiter" is triggered, reactivation should only be possible when the "release button" has been pressed by hand.

Frequency converter operation

For operation with a frequency converter, the motors must be equipped with a PTC thermistor temperature sensor. Specify the intended use when making your order so that we can equip the motors accordingly.

Sealing chamber control

The units can be equipped with an external sealing chamber control. This can also be retrofitted. If the unit is equipped with an external sealing chamber control, this may only be connected to an intrinsically safe electric circuit.

Definition of the Ex zones

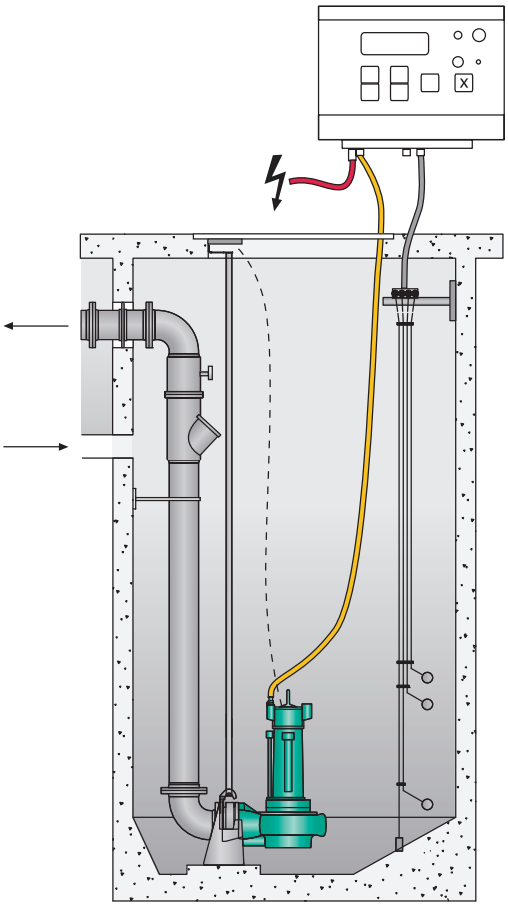
The Ex zones are defined in the respective standards. The operator must label the zones in the operating area of the units. When ordering, please state which Ex standard you are using as the basis and in which zone you want to operate the unit.

Level measuring systems

Level measuring systems are for measuring the water level in tanks. Depending on the application conditions, various systems are available.

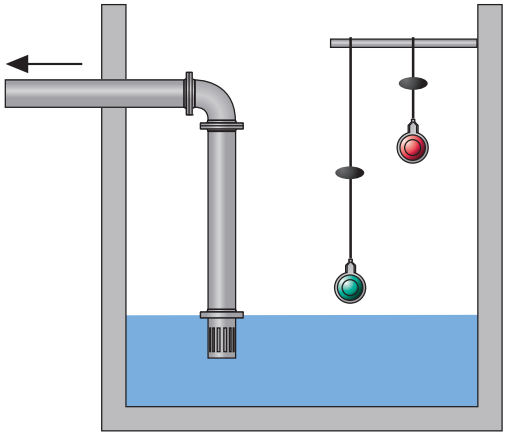
Float switch

With this method, switching contacts are closed or opened in a floating body according to the inclination angle. With float switches, one should always make sure that they can move freely in the sump. They can also be used in potentially explosive areas if they are operated via an ex-rated cut-off relay (Ex-i).

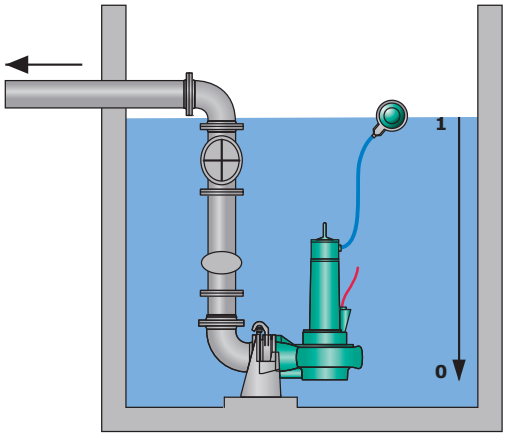


A basic distinction must be made between two different designs:

Single-point float switch:
These floaters have a short connection to the cable with a slight difference between the activation point and deactivation point. Some of these floaters are also available as heavy versions that tilt around their centre of gravity. To avoid the constant switching of the pump, at least two of these floaters must be used for level control. Due to their good floating properties, however, they are better suited for sewage applications.



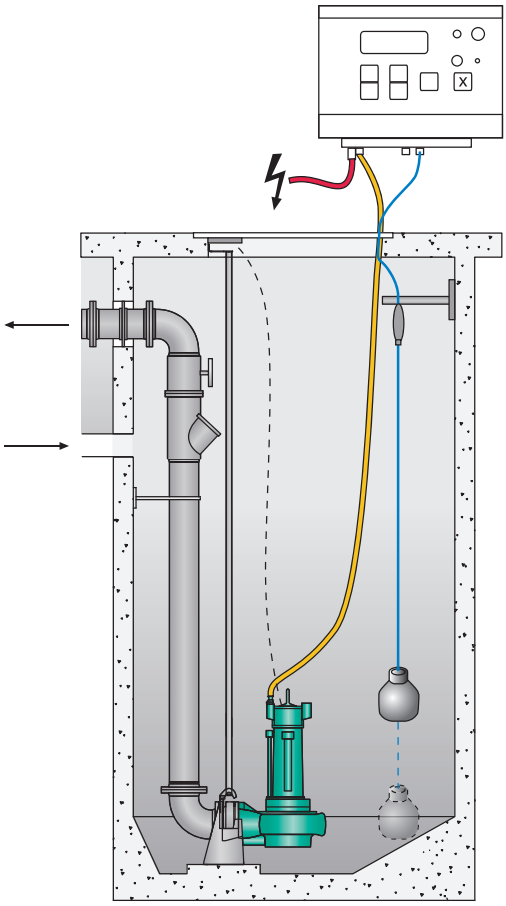
Two-point float switch:
These float switches have a larger angle between activation point and deactivation point. They are fastened to their pipe. That makes it possible to switch smaller differences with only one float switch according to the drawn-out pipe length.



Level measuring systems

Dynamic pressure system (measurement of the hydrostatic pressure)

With this method, a measuring bell / velocity head bell is used to measure the pressure at the point of installation. The filling height of the fluid generates a pressure that is forwarded to the evaluation unit via a hose. In the evaluation unit, the pressure is converted into an electrical signal. That enables the continuous measurement of the filling level, and the switching points can be freely defined.

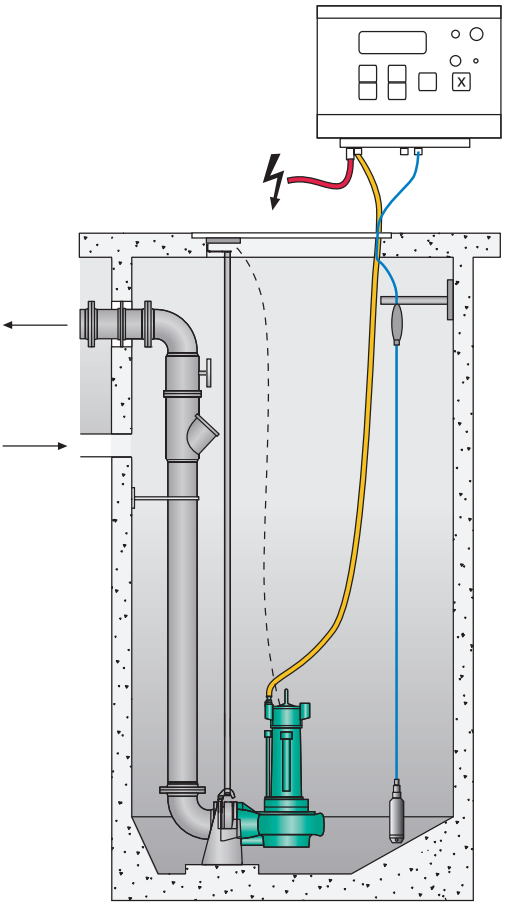


A distinction is made between open systems and closed systems. The selection depends on the field of application and the type of fluid. The application in potentially explosive areas is possible.

Open system:
With this version, the bell is open in the direction of the fluid. Every time the fluid is pumped out, the bell must surface to vent the system. It is switched "Off" after a certain time. Another way to vent the system is by connecting to a small compressor (bubbling-through system), that vents the system constantly or periodically. Its "Off" state depends on the water level.

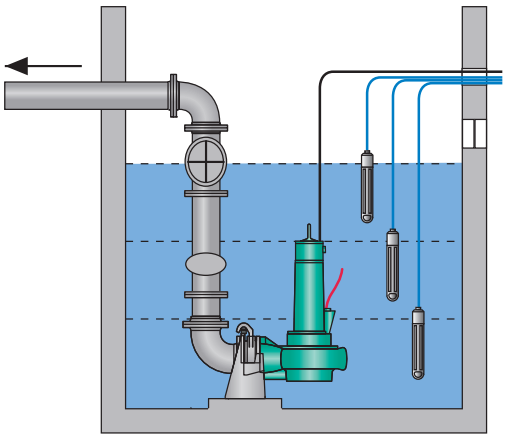
Closed system:
With this version, the air cushion in the bell is separated from the fluid by a diaphragm. The system is therefore suitable for heavily contaminated fluids. Leakages / air loss in the system result in measuring errors or a system malfunction.

Pressure probe (electronic pressure transducer)
Like the velocity head probes, the hydrostatic pressure is measured at the installation point here, too. However, a diaphragm is used here to convert the pressure in the pressure transducer directly into an electrical signal.



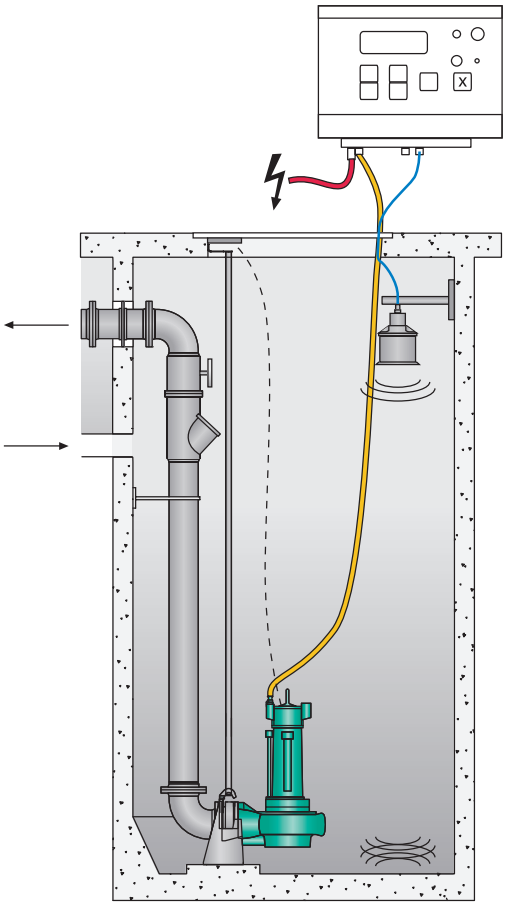
Level measuring systems

Conductivity (conductive measurement method)
In this case, submersible electrodes are connected to an evaluation relay. The relay detects whether fluid is present or not based on the resistance. The trigger resistance can be set on most relays. In this way, simple level controls for filling or draining can be implemented. The application as a dry-running protection system is also very frequent. Not suitable for sewage pumping stations.



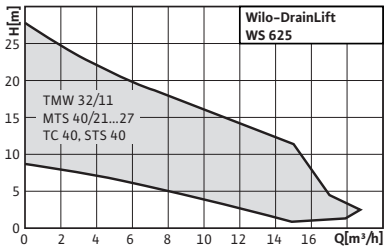
Ultrasound
Measurement with ultrasound is based on the measurement of the running time. The ultrasonic pulses emitted by a sensor are reflected by the surface of the fluid and detected by the sensor. The required running time is a measure for the distance covered in the empty tank. This value is deducted from the overall tank height, which results in the filling level.

The advantage of this method is that measurement of the filling level in the tank is possible without contact, regardless of the fluid. During installation, one should ensure that the measuring cone emitted by the sensor is free of installations. A minimum clearance to the wall of the tank must also be kept.



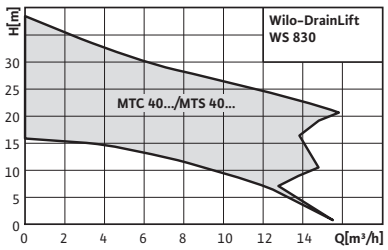
Series overview Wilo-DrainLift WS

Series: Wilo-DrainLift WS 625



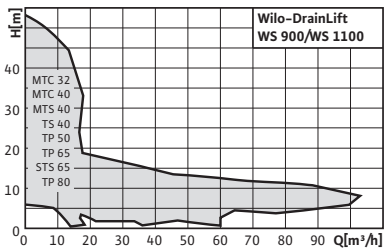
> Application
Wastewater and sewage pumping station for drainage and pressure drainage, outside the building as pumps station in accordance with EN 752.

Series: Wilo-DrainLift WS 830



> Application
Wastewater and sewage pumping station for drainage and pressurised drainage, outside the building as pumps station in accordance with EN 752.

Series: Wilo-DrainLift WS 900/1100



> Application
Wastewater and sewage pumping station for drainage and pressure drainage, outside the building as pumps station in accordance with EN 752.

Series overview Wilo-DrainLift WS

Series: Wilo-DrainLift WS 625

> Special features/product advantages
- Small sump diameter (625 mm)
- Flexible utilisation due to different installation heights
- Inlet connection is included with DN 100 as a standard
- Complete through integrated fittings and gaskets
- Can be walked over or driven over, depending on the covering (accessories)
- Also with macerator pumps Wilo-Drain MTS 40/21...27

> Additional information **Page**

Series: Wilo-DrainLift WS 830

> Special features/product advantages
- Removable angle non-return ball valve on pump discharge pipe
- Monolithic sump in 2 installation depths: 1800 mm and 2500 mm
- Upward pressure reliability with groundwater level up to ground surface level, without additional concrete
- Gate valve can be operated from above
- High installation guide for easier installing of the pump pipe in the case of high water levels in the sump

> Additional information **Page**

Series: Wilo-DrainLift WS 900/1100

> Special features/product advantages
- Deposit-free collection room
- Maximum stability through the use of hemispherical sump floor
- 2/4 inlets can be selected onsite
- Pumps station ready for connection (without pump and switchgear)
- V4A stainless steel pipework
- Also with macerator pumps Wilo-Drain MTS 40/21..39.

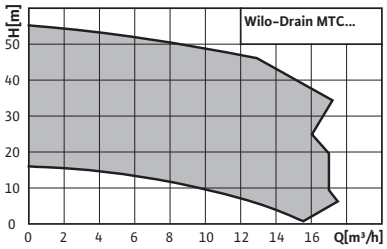
> Additional information **Page**

Pressure drainage

Submersible pumps with macerator

Series overview Wilo-Drain MTC, MTS

Series: Wilo-Drain MTC

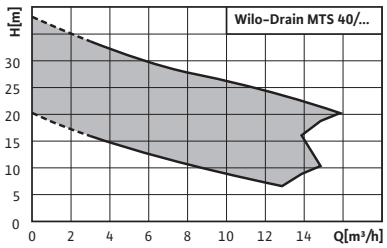


> Application

Pumping of sewage containing faeces as well as municipal and industrial sewage, including long-fibre constituents, for:

- Pressure drainage
- House and site drainage
- Sewage disposal
- Water management
- Environmental and water treatment technology

Series: Wilo-Drain MTS



> Application

Pumping of sewage containing faeces. The Wilo macerator breaks up the solid constituents into smaller pieces to produce an easily pumpable fluid.

Preferred use with pressure drainage. Pressure drainage is used in situations where the costs of a conventional sewage system with an open channel would be unacceptably high, e.g. for:

- High ground water levels
- Absence of downhill slope
- Occasional accumulation of sewage
- Leisure residence, camping site, etc.
- Installation costs are reduced significantly due to the small pipe diameter, e.g. DN 40.

Series overview Wilo-Drain MTC, MTS

Series: Wilo-Drain MTC

> Special features/product advantages
- Oil barrier chamber
- Mechanical seal on pump side made of solid silicon carbide material
- Hardened macerator
- Longitudinally watertight cable (for MTC 32)
- Version with explosion protection (optional for MTC 32)

> Additional information **Page**

Series: Wilo-Drain MTS

> Special features/product advantages
- Spherically formed macerator
- High degree of efficiency
- Low operating costs
- Resistant to clogging and blockage
- Oil barrier chamber
- High operational reliability
- Corrosion-resistant stainless steel motor in 1.4404 (316 L)
- Explosion protection as standard for all 3~400 V versions

> Additional information **Page**

Pressure drainage

Pumps stations

Equipment/function

	Wilo-DrainLift ...		
	WS 625	**WS 830**	**WS 900/1100**
Design			
Pump included in the scope of delivery	–	–	–
Single-pump system	•	•	•
Double-pump system	–	–	•
Application			
Floor-mounted installation	–	–	–
Concealed floor installation	•	•	•
Equipment/function			
Inlet position freely selectable	–	–	–
Level control: with float switch	Optional	Optional	Optional
Level control: with level sensor	Optional	Optional	Optional
Level control: with pneumatic pressure transducer	Optional	Optional	Optional
Ready-to-plug	–	–	–
Switchgear	Optional	Optional	Optional

• = available, – = not available

Overview of the pump series in pumps stations

Wilo-Drain...	**WS 40 Basic**	**WS 40-50**	**WS 625**	**WS 830**	**WS 900**	**WS 1100**
TMW 32	–	–	•	–	–	–
TS 40	–	–	–	–	•	–
TC 40	incl.	–	•	–	–	–
STS 40	–	–	•	–	–	–
TP 50	–	•	–	–	•	•
TP 65	–	•	–	–	•	•
STS 65	–	–	–	–	•	•
TP 80 E	–	–	–	–	–	•
MTS 40/21...27	–	•	•	•	•	•
MTS 40/31...39	–	–	–	–	•	•
MTC 40	–	–	–	•	•	•
MTC 32 F22...33	–	–	–	–	•	•
MTC 32 F39...55	–	–	–	–	•	•

• = can be used, – = can not be used

Series description Wilo-DrainLift WS 625

Synthetic pumps stations

Type key

Example:	**Wilo-DrainLift WS 625 E / 1800 MTS 40**
WS	Synthetic pumping station
625	Inside diameter of sump [mm]
E	Single pump sump
1800	Sump height [mm]
MTS 40/...	Selected pump type MTS 40/21...27

Application

Wilo-DrainLift WS 625 is a single pump sump for pumping wastewater and sewage in building services out of rooms and from areas underneath the backflow level (EN 752). It is suitable as a pumps station for pressurised drainage and as a pumping station for pressurised drainage. The WS 625 is installed in the ground outside of the building. A time-saving, easy-to-install, low-cost solution for all planners and developers.

Applicable pump types

TMW 32/11
Slightly contaminated fluids (free of faeces), 10 mm free ball passage.

STS 40 and TC 40
For severely contaminated fluids (free of faeces);

STS 40:	Free ball passage 40 mm
TC 40:	Free ball passage 40 mm

MTS 40/21...27
For severely contaminated fluids and faeces. Standard-equipped explosion protection (only 3~400 V), detachable connection cable. With a spherical macerator non-susceptible to plugging that contains an internal rotating blade.

Special features/product advantages

- Small sump diameter (625 mm)
- Flexible utilisation due to different installation heights
- Inlet connection is included with DN 100 as a standard
- Complete through integrated fittings and gaskets
- Can be walked over or driven over, depending on the covering (accessories)
- Also with macerator pumps Wilo-Drain MTS 40/21...27

Description/design

Wilo-DrainLift WS 625 is available in 4 lengths: 1200, 1500, 1800 and 2100 mm. The sump can be equipped with a standard cover that can be walked on as well as Class A (can be walked on) or Class B/D (can be driven over) covers.

- Maximum pressure in the pressure pipe 6 bar in conjunction with MTS 40, other pumps 4 bar
- Synthetic pumps station made of recyclable PE
- Highest degree of upward pressure reliability and inherent stability by means of finning up to a ground water level above the entire sump height (upper edge of site)

Scope of delivery

- PE sump with internal pipework including coupling sleeve slider 1 ¼" and non-return valve (integrated in pump with TMW 32/11)
- Gasket mounted for inlet DN 100
- Gasket mounted for ventilation/electrical connection (DN 100).
- Gasket mounted for pressure pipeline (DN 40 / Ø50).
- Pump (including floor supporting foot with MTS 40) with matching discharge pipe
- Installation and operating instructions.

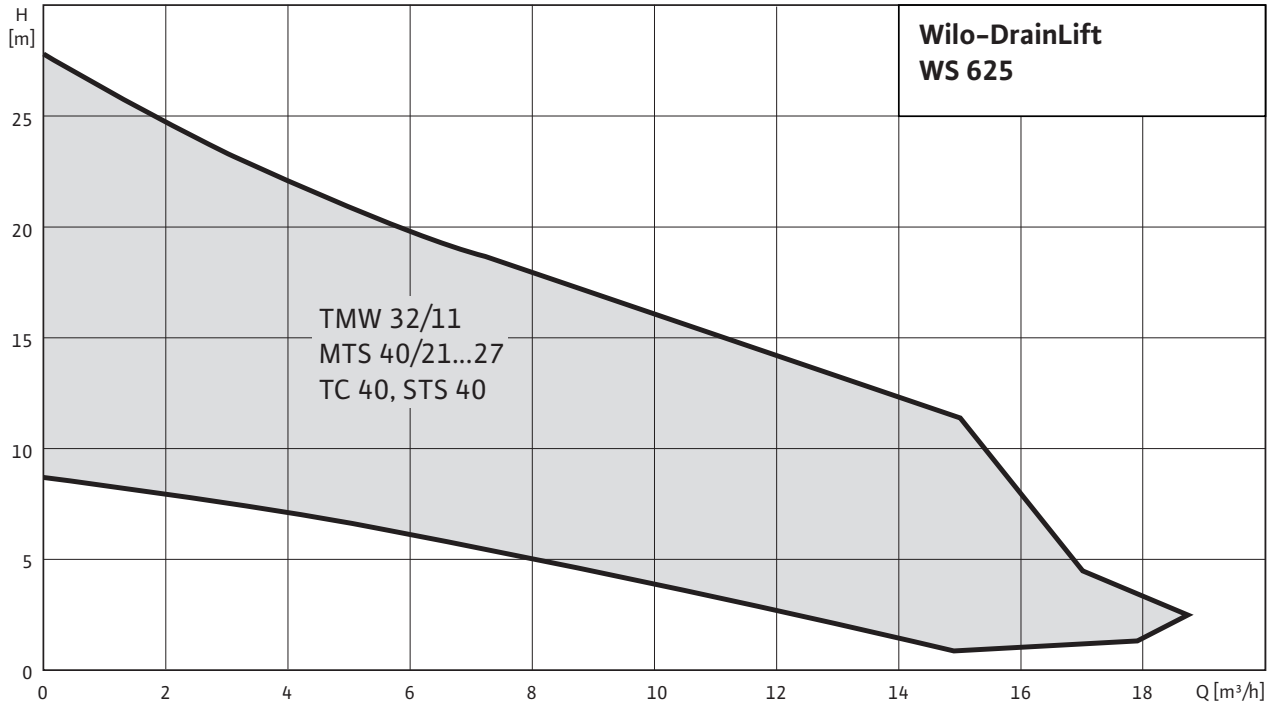
Choice of switchgear and level probe as accessories.

Recommendations for electrical accessories are described in the "Wilo Drain electrical accessories" chapter.

Pump curves, ordering information Wilo-DrainLift WS 625

Pump curves Wilo-DrainLift WS 625

Duty chart of usable pump types, Wilo-Drain (50 Hz)



For individual pump curves, see the technical data for the selected pump.

According to EN 12056-4 a flow rate (in the pressure pipe) between 0.7 and 2.3 m/s is to be maintained.

Information for order placements

Wilo-DrainLift ...	For utilisation of pump(s)	🚚	Art no.
		–	
		–	
WS 625 E/1200	TMW 32/11	K	2097141
WS 625 E/1200	TC 40/STS 40	K	2097145
WS 625 E/1200	MTS 40/21...27	K	2097149
WS 625 E/1500	TMW 32/11	K	2097142
WS 625 E/1500	TC 40/STS 40	K	2097146
WS 625 E/1500	MTS 40/21...27	K	2097150
WS 625 E/1800	TMW 32/11	K	2097143
WS 625 E/1800	TC 40/STS 40	K	2097147
WS 625 E/1800	MTS 40/21...27	K	2097151
WS 625 E/2100	TMW 32/11	K	2097144
WS 625 E/2100	TC 40/STS 40	K	2097148
WS 625 E/2100	MTS 40/21...27	K	2097152

🚚 = supply availability, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

Technical data, dimensions Wilo-DrainLift WS 625

	WS 625 E/1200			WS 625 E/1500		
	TMW 32/11	TC 40/STS 40	MTS 40/ 21...27	TMW 32/11	TC 40/STS 40	MTS 40/ 21...27
Gross volume [l]	368	368	368	460	460	460
Impoundment volume (floor to top of inlet)	167	167	167	167	167	167
Effective volume [l]	61	116	103	61	116	103
Remaining water reserves [l]	15	12	64	15	12	64
Max. permissible pressure in pressure pipe [bar]	4	4	6	4	4	6
Pressure connection	DN 40	DN 40	DN 40	DN 40	DN 40	DN 40
Air vent valve	DN 100	DN 100	DN 100	DN 100	DN 100	DN 100
Free ball passage [mm]	10	40	10	10	40	10
Weight approx. [kg]	32	33	35	39	40	42

Technical data

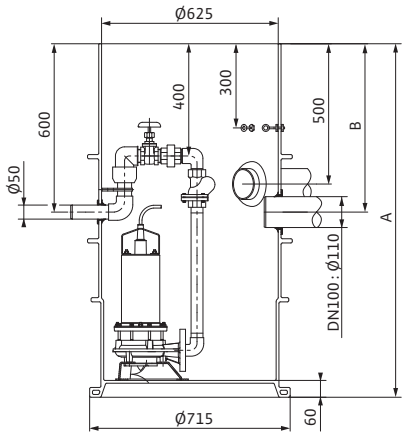
	WS 625 E/1800			WS 625 E/2100		
	TMW 32/11	TC 40/STS 40	MTS 40/ 21...27	TMW 32/11	TC 40/STS 40	MTS 40/ 21...27
Gross volume [l]	552	552	552	644	644	644
Impoundment volume (floor to top of inlet)	167	167	167	167	167	167
Effective volume [l]	61	116	103	61	116	103
Remaining water reserves [l]	15	12	64	15	12	64
Max. permissible pressure in pressure pipe [bar]	4	4	6	4	4	6
Pressure connection	DN 40	DN 40	DN 40	DN 40	DN 40	DN 40
Air vent valve	DN 100	DN 100	DN 100	DN 100	DN 100	DN 100
Free ball passage [mm]	10	40	10	10	40	10
Weight approx. [kg]	47	48	49	55	56	57

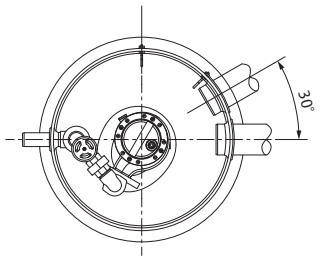
Dimensions

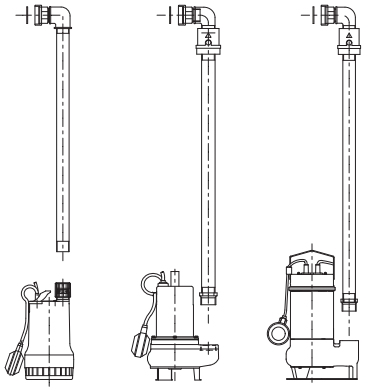
Wilo-DrainLift ...	Installation depth below ground surface level up to inlet floor		Dimensions	
	without extension	with extension	A	B
	[mm]			
WS 625 E/1200	655	-	1260	600
WS 625 E/1500	955	-	1560	900
WS 625 E/1800	1255	-	1860	1200
WS 625 E/2100	1555	-	2160	1500

Dimension drawing Wilo-DrainLift WS 625

Dimension drawing Wilo-DrainLift WS 625 E/1200

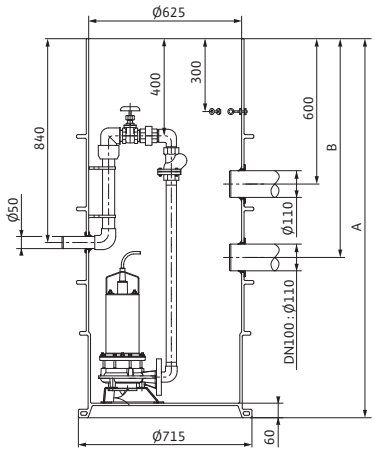


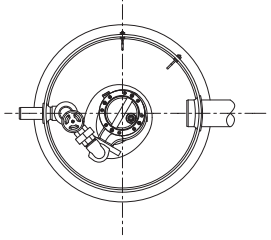


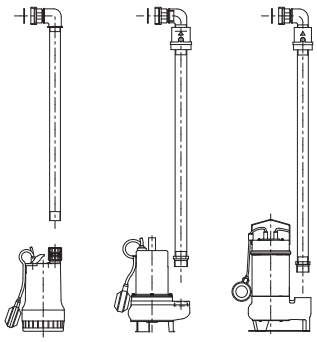


TMW 32/11 TC 40 STS 40

Dimension drawing Wilo-DrainLift WS 625 E/1500...2100





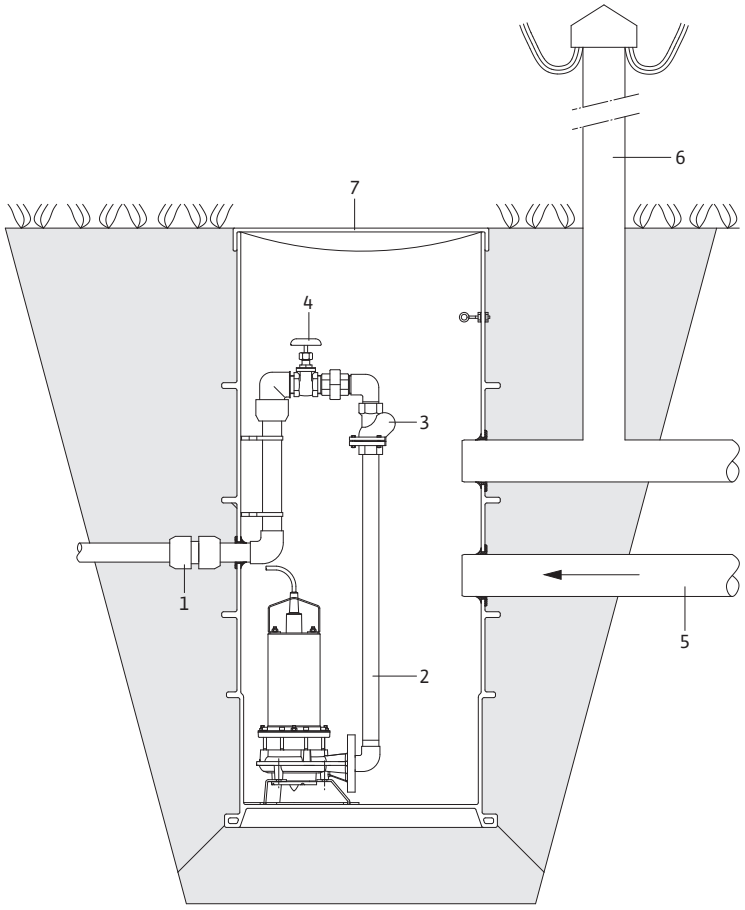


TMW 32/11 TC 40 STS 40

Installation example Wilo-DrainLift WS 625

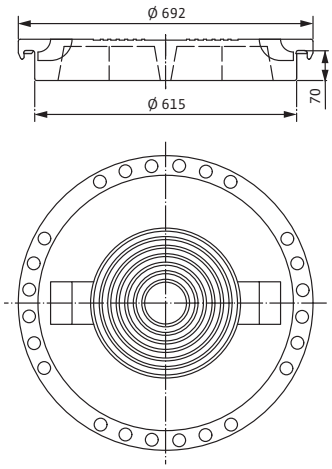
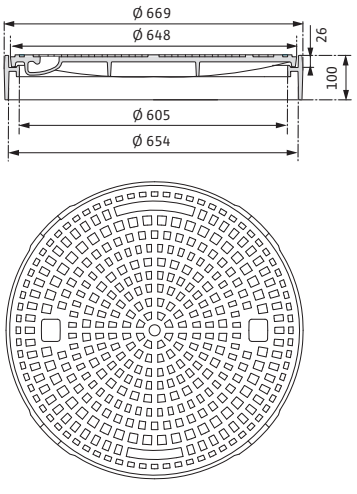
Installation drawing Wilo-DrainLift WS 625

Concealed floor installation



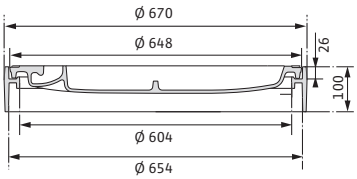
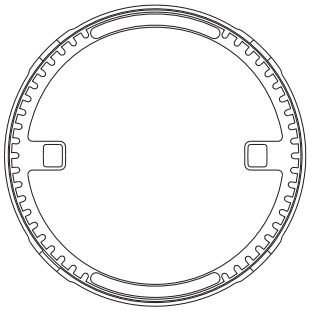
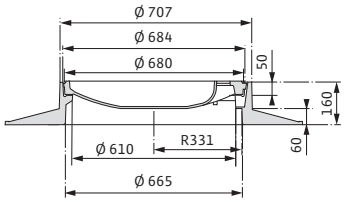
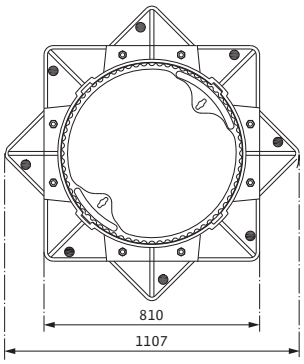
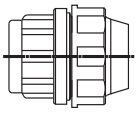
1 Clamp bolting (accessory)
2 Pressure pipe (including non-return valve, item 3 (integrated in pump with TMW 32/11))
3 Non-return valve R 1¼
4 Gate valve 1¼" (scope of delivery)
5 Inlet (DN 100)
6 Ventilation DN 100
7 Sump cover (accessory)

Mechanical accessories Wilo-DrainLift WS 625

Mechanical accessories			
	–	Description	Art no.
	–		
	–		
Pump cover WS 625 Standard		Made of PE, Ø 692 x 30 mm, slip-resistant surface of the upper side of the cover, with two internal screwlocking devices, can be walked on	2525207
Pump cover WS 625 Class A		Made of cast iron, cover with overlay for PE sumps with internal Ø 625, class A (can be walked on), EN 124	2525318

Mechanical accessories Wilo-DrainLift WS 625

Mechanical accessories

	–	Description	Art no.
		–	
		–	
Pump cover WS 625 Class B	 	Made of cast iron with concrete (BEGU), cover with overlay for PE sumps with inside Ø 625, Class B (can be driven over), EN 124	2525319
Pump cover WS 625 Class D	 	Made of cast iron with concrete (BEGU), cover with self-supporting overlay for PE sumps with inside Ø 625, Class D (can be driven over), EN 124	2525320
Clamp bolting		Made of PP, for the connection of a PE pressure pipe outside the sump with 50 x 50 mm pipe diameter	2525183
Clamp bolting		Made of PP, for the connection of a PE pressure pipe outside the sump with 50 x 63 mm pipe diameter	2525184

Series description Wilo-DrainLift WS 830

Synthetic pumps station

Type key

Example:	**Wilo-DrainLift WS 830 E/1800 MTS...**
WS	Synthetic pumps station
830	Sump diameter in mm
E	Single pump sump
1800	Installation depth of the sump in mm
MTS ...	Selected pump type z. B. MTS 40/21...39

Application

The Wilo-DrainLift WS 830 is a single pump sump for pumping wastewater and sewage in building services out of rooms and from areas underneath the backflow level (EN 752). Suitable as a connection-ready pumps station for pressurised drainage. The WS 830 is installed in the ground outside the building. A time-saving, easy-to-install, low-cost solution for all planners and building contractors.

Applicable pump types

MTS 40/21...39

For severely contaminated fluids and faeces. Standard-equipped explosion protection (only 3~400 V), detachable connecting cable. With patented macerator:

- Internal rotating blade
- Spherically formed macerator
- Absolutely reliable

MTC 40

Sewage pump with macerator, for delivery heads up to max. 14 mWs, in three-phase or single-phase current, without explosion protection. Single-phase version with attached float switch and capacitor box.

Special features/product advantages

- Removable angle non-return ball valve on pump discharge pipe
- Monolithic sump in 2 installation depths: 1800 mm and 2500 mm
- Upward pressure reliability with groundwater level up to ground surface level, without additional concrete
- Gate valve can be operated from above
- High installation guide for easier installation of the pump pipe in the case of high water levels in the sump

Equipment/function

- Pumps station with corrosion-resistant pipework in 1.4571
- With PP surface coupling, non-return valve, check valve in 1.4571 and a mount for a level sensor

Description/design

- Angle non-return ball valve which can be removed with the pump discharge pipe
- Monolithic sump in two installation depths: 1800 and 2500 mm
- Maximum pressure in the pressure pipe: 6 bar
- Synthetic pumps station made of recyclable PE
- Upward pressure reliability with groundwater level up to ground surface level, without additional concrete
- Maximum stability due to moulded hemispherical shape of the sump floor
- Wilo surface coupling
- Premounted inlet with gasket in DN 150
- 2 DN 100 connection pieces for ventilation and connecting cable
- Deposit-free collecting space due to moulded hemispherical shape of the pump sump
- Mount in the cross member for attaching the dynamic pressure system or level probe
- Gate valve can be operated from above using an operating rod
- Low remaining volume in the pump sump

Scope of delivery

- Surface coupling system including gaskets
- Angle non-return ball valve and check valve completely assembled
- Stainless steel chain including fastening hook
- Concrete cover, can be walked on, with frame, for class A15
- Mounted inlet seal DN 150
- Installation and operating instructions

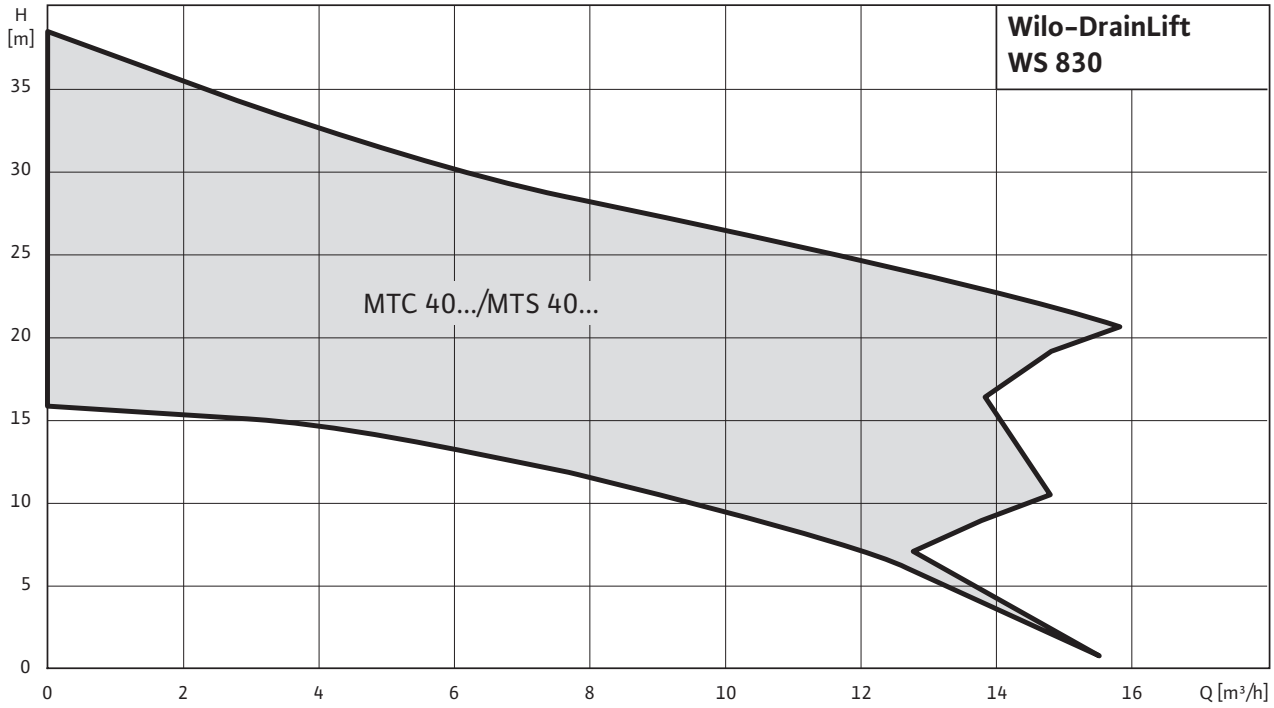
Accessories

- Connection set for pumps MTS 40/21...39 and MTC 40
- Choice of pump and switchgear as accessories.

Pump curves, ordering information Wilo-DrainLift WS 830

Pump curves Wilo-DrainLift WS 830

Duty chart of usable pump types, Wilo-Drain (50 Hz)



For individual pump curves, see the technical data for the selected pump.

According to EN 12056-4 a flow rate (in the pressure pipe) between 0.7 and 2.3 m/s is to be maintained.

Information for order placements

Wilo-DrainLift ...	🚚	Art no.
	–	
	–	
WS 830 E/1800 MTS 40	K	2101161
WS 830 E/2500 MTS 40	K	2101162

🚚 = supply availability, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

Technical data, dimensions Wilo-DrainLift WS 830

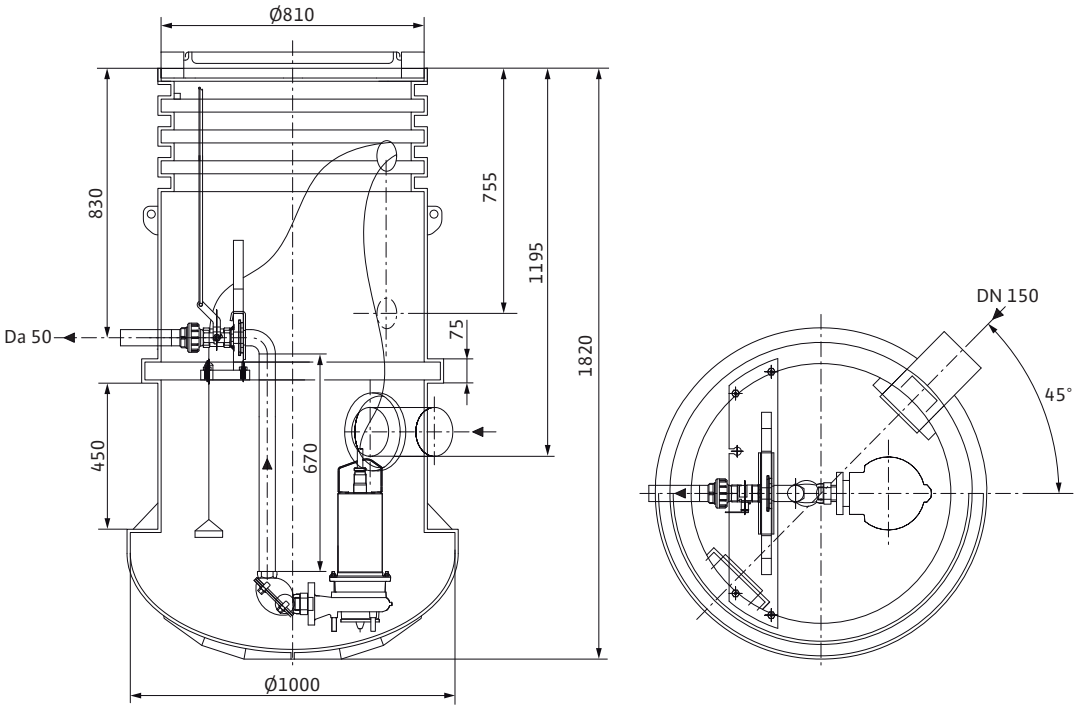
	WS 830 E/1800 MTS 40	WS 830 E/2500 MTS 40
	MTS 40/21...27	MTS 40/21...27
Gross volume [l]	929	1261
Impoundment volume (floor to top of inlet)	326	326
Effective volume [l]	291	291
Remaining water reserves [l]	35	35
Max. permissible pressure in pressure pipe [bar]	6	6
Pressure connection	DN 40	DN 40
Air vent valve	DN 100	DN 100
Free ball passage [mm]	10	10
Weight approx. [kg]	90	119

Dimensions

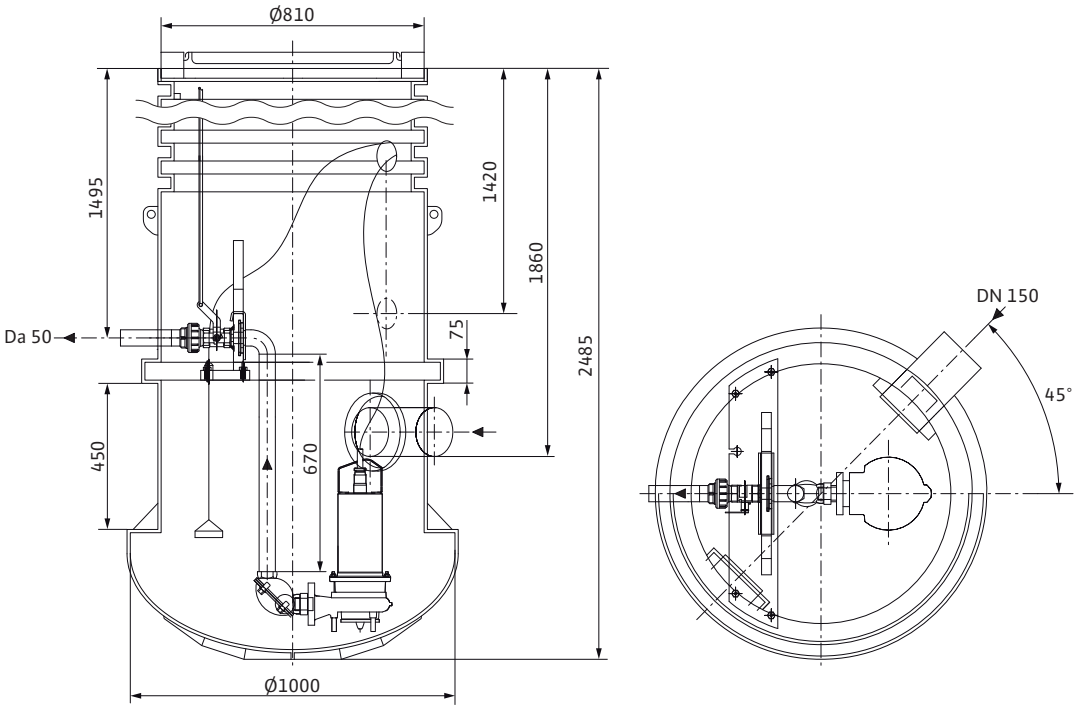
Wilo-DrainLift ...	Installation depth below ground surface level up to inlet floor	
	without extension	with extension
	[mm]	
WS 830 E/1800 MTS 40	1195	-
WS 830 E/2500 MTS 40	1860	-

Dimension drawing Wilo-DrainLift WS 830

Dimension drawing Wilo-DrainLift WS 830 E/1800



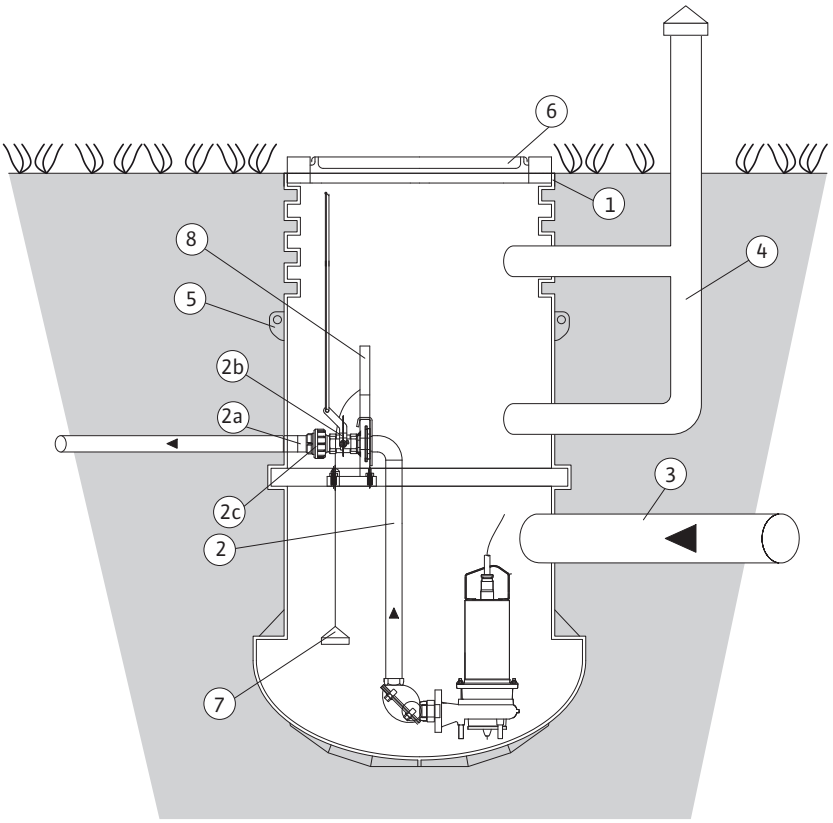
Dimension drawing Wilo-DrainLift WS 830 E/2500



Installation example Wilo-DrainLift WS 830

Installation drawing Wilo-DrainLift WS 830

Concealed floor installation



1 = PE-HD sump
2 = internal pipework with non-return ball valve
2a = pressure outlet, PE-HD, Da = 50 mm
2b = ball valve
2c = pipe union
3 = inlet connection with gasket
4 = connection for bleed pipe/cable duct with gasket
5 = lifting eyes
6 = pump cover
7 = sensor
8 = cross member

Installation example Wilo-DrainLift WS 830

Series description Wilo-DrainLift WS 900/1100

Synthetic pumps stations

Type key

Example:	**Wilo-DrainLift WS 900 E/ MTS 40**
WS	Synthetic pumps station
900	Sump diameter
	900 = 900 mm
	1100 = 1100 mm
E	E = single pump
	D = double pump
MTS 40	Selected pump type

Application

Wilo-DrainLift WS 900/1100 is a single/double pump sump for pumping wastewater and sewage in building services out of rooms and from areas underneath the backflow level (EN 752). Suitable as a pumping station ready for connection for pressure drainage and as a pumping station for pressurised drainage. WS 900/1100 is installed in the ground outside of the building. A time-saving, easy-to-install, low-cost solution for all planners and developers.

Applicable pump types

TS 40
Slightly contaminated fluids (free of faeces), 10 mm free ball passage, detachable connection cable.

TP 50
For severely contaminated fluids (free of faeces); 44 mm free ball passage, detachable connection cable.

TP 65
For severely contaminated fluids (free of faeces); 44 mm free ball passage, detachable connection cable.

STS 65
For severely contaminated fluids (containing faeces or free of faeces); 65 mm free ball passage, detachable connecting cable, vortex hydraulics non-susceptible to plugging.
In conformity with **DIN** EN 12050-2 and EN 12050-1 for connection to a DN 65 pressure pipe
In conformity with **DIN** EN 12050-1 and **DIN** EN 12050-2 for connection to a DN 80 pressure pipe

TP 80
For severely contaminated fluids and faeces; 80 mm free ball passage. Standard-equipped explosion protection, detachable connection cable (only when used as a single-pump station).

MTC 32
Sewage pump with macerator, in three-phase version, available with and without explosion protection. For large delivery heads of up to 50 m.

MTC 40
Sewage pump with macerator, for low delivery heads, in single-phase and three-phase version, without explosion protection. Three-phase versio with attached float switch and capacitor box.

MTS 40
For severely contaminated fluids and faeces. Standard-equipped explosion protection (only 3~400 V), detachable connection cable. With patented macerator:
- Internal rotating blade
- Spherically formed macerator
- Absolutely reliable

Special features/product advantages

- Deposit-free collection room
- Maximum stability through the use of hemispherical sump floor
- 2/4 inlets can be selected onsite
- Pumps station ready for connection (without pump and switchgear)
- V4A stainless steel pipework
- Also with macerator pumps Wilo-Drain MTS 40/21..39.

Description/design

- Maximum traffic load 5 kN/m2 (in accordance with DIN EN 124, Group 1)
- Maximum pressure in the pressure pipe 6 bar
- Synthetic pumps station made of recyclable PE
- Maximum upward pressure reliability through the use of 2/4 (WS 900 = 2 pcs., WS 1100 = 4 pcs.) standard-equipped lateral fins (no concrete rings necessary)
- 2/4 inlets can be selected onsite
- Maximum stability through the use of moulded hemispherical shape of the sump floor, up to an immersion depth of 1.20 m into the ground water.
- Wilo surface coupling
- 2 DN 100 connection pieces for ventilation and connection cable
- Deposit-free collector room due to moulded hemispherical form of the pump sump
- Ready accessibility of the level sensor, due to installation with hinged supporting bar

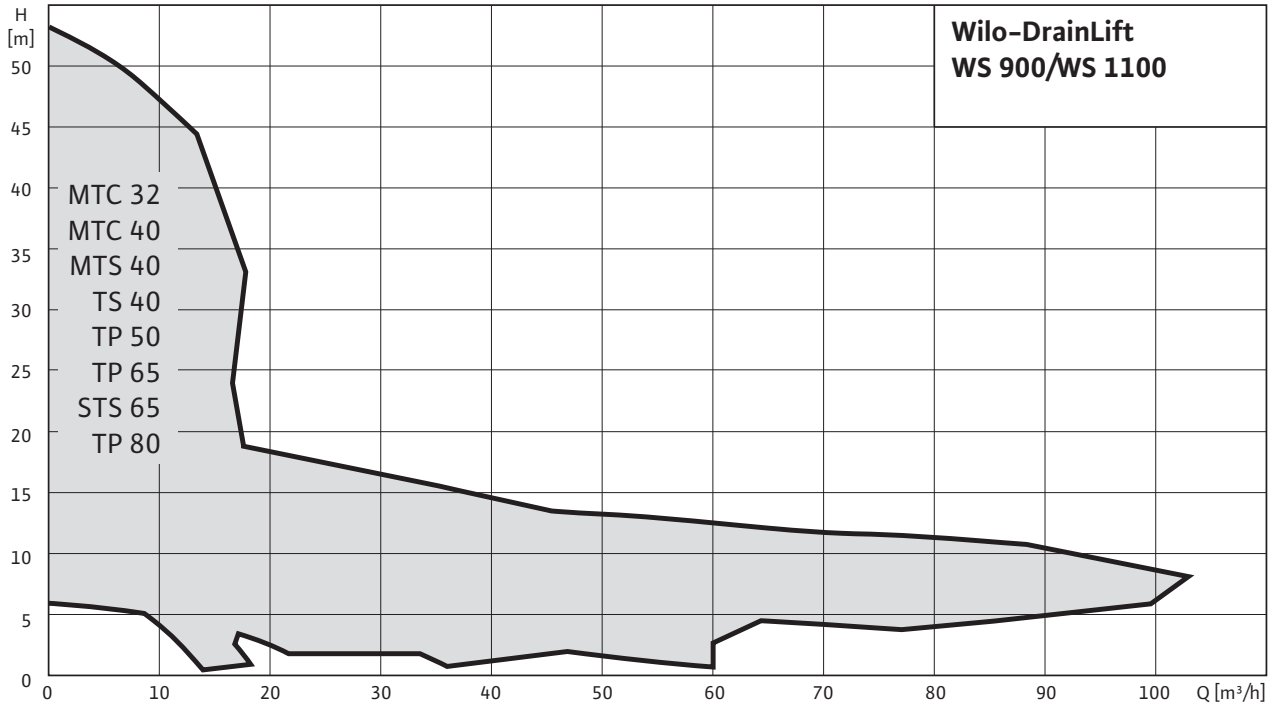
Scope of delivery

- Pipework made of stainless steel, from the pump pressure joints to approximately 10 cm outside of the sump
- Above-water coupling system including gaskets
- Non-return valve, gate valve completely mounted
- Flush connection G 1½
- Stainless steel chain including fixing hook
- Supporting bar for level monitoring (level sensor, float switch) including mounting accessories
  - Double pump units are supplied with respectively double quantities of above-water couplings and fittings.
- Coupling material for two DN 150 KG inlet pipes
- Installation and operating instructions

Pump curves, ordering information Wilo-DrainLift WS 900/1100

Pump curves Wilo-DrainLift WS 900/WS 1100

Duty chart of usable pump types, Wilo-Drain (50 Hz)



For individual pump curves, see the technical data for the selected pump.

According to EN 12056-4 a flow rate (in the pressure pipe) between 0.7 and 2.3 m/s is to be maintained.

Information for order placements

Wilo-DrainLift ...	🚚	Art no.
	–	
	–	
WS 900 E/TS 40	K	2507739
WS 900 D/TS 40	K	2507740
WS 900 E/TP 50	K	2506435
WS 900 E/TP 65-STS 65	K	2506436
WS 900 E/MTS 40-MTC	K	2531440
WS 1100 E/TP 50	K	2506432
WS 1100 D/TP 50	K	2506441
WS 1100 E/TP 65-STS 65	K	2506433
WS 1100 D/TP 65-STS 65	K	2506442
WS 1100 E/TP 80-STS 65	K	2506434
WS 1100 E/MTS 40-MTC	K	2531441
WS 1100 D/MTS 40-MTC	K	2531442

🚚= supply availability, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

Technical data Wilo-DrainLift WS 900/1100

	Wilo-DrainLift ...					
	WS 900 E/ TS 40	**WS 900 D/ TS 40**	**WS 900 E/ TP 50**	**WS 900 E/ TP 65-STS 65**	**WS 900 E/ MTS 40-MTC**	**WS 1100 E/ TP 50**
Gross volume [l]	890	880	890	890	880	1230
Impoundment volume (floor to top of inlet)	300	290	300	300	290	540
Effective volume [l]	150	110	140	130	150	200
Remaining water reserves [l]	82.5	196.5	94	143	82.5	101
Max. permissible pressure in pressure pipe [bar]	6	6	6	6	6	6
Pressure connection	Rp 1½	Rp 1½	Rp 2	Rp 2½	Rp 1½	Rp 2
Air vent valve	DN 100	DN 100	DN 100	DN 100	DN 100	DN 100
Free ball passage [mm]	10	10	44	44	10	44
Weight approx. [kg]	70	95	73	75	72	95

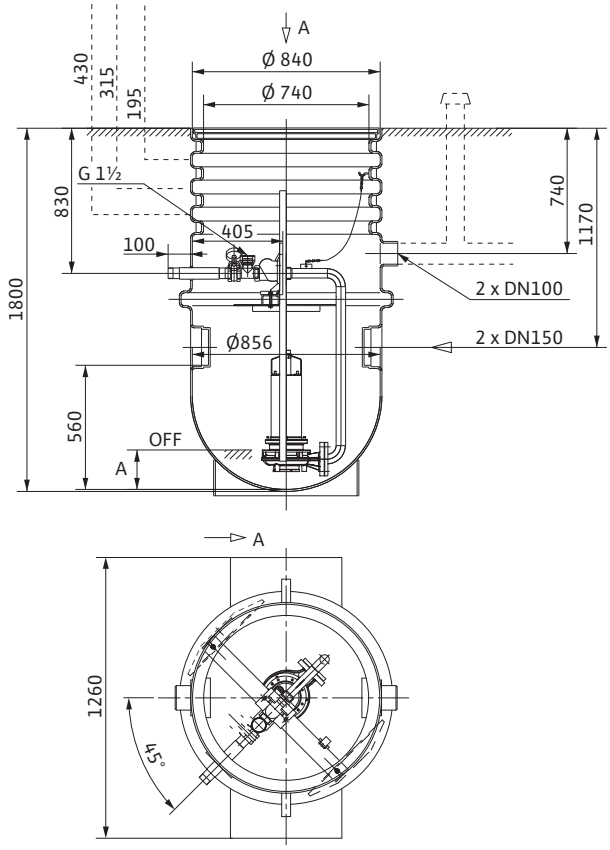
Technical data Wilo-DrainLift WS 900/1100

	Wilo-DrainLift ...					
	WS 1100 D/ TP 50	**WS 1100 E/ TP 65-STS 65**	**WS 1100 D/ TP 65-STS 65**	**WS 1100E/ TP 80-STS 65**	**WS 1100 E/ MTS 40-MTC**	**WS 1100 D/ MTS 40-MTC**
Gross volume [l]	1230	1220	1230	1220	1215	1220
Impoundment volume (floor to top of inlet)	550	540	550	520	535	510
Effective volume [l]	270	200	250	200	280	250
Remaining water reserves [l]	164	136	203	178	94	126
Max. permissible pressure in pressure pipe [bar]	6	6	6	6	6	6
Pressure connection	Rp 2	Rp 2½	Rp 2½	DN 80	Rp 1½	Rp 1½
Air vent valve	DN 100	DN 100	DN 100	DN 100	DN 100	DN 100
Free ball passage [mm]	44	44	44	80	10	10
Weight approx. [kg]	113	97	115	125	94	110

Dimension drawing Wilo-DrainLift WS 900/1100

Dimension drawing

Wilo-DrainLift WS 900

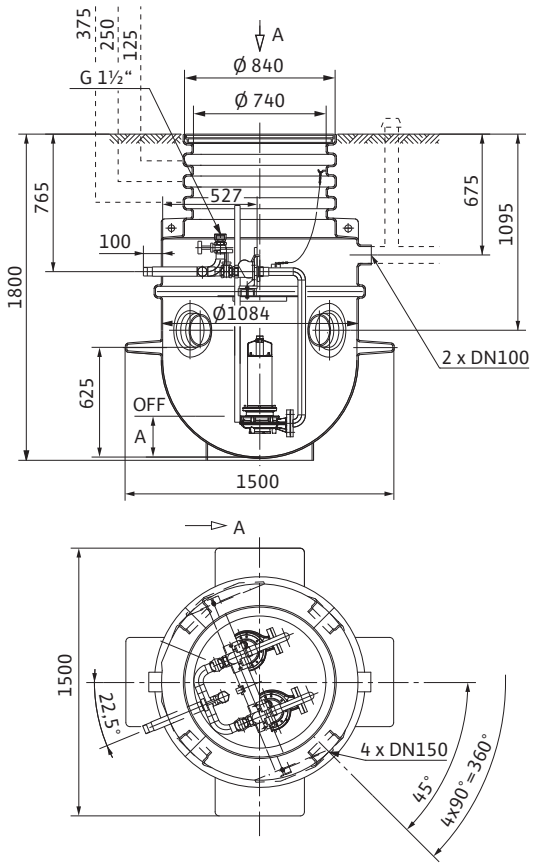


Dimensions			
Wilo-DrainLift ...	**Installation depth below ground surface level up to inlet floor**		**Dimensions**
	without extension	**with extension**	**A**
		[mm]	
WS 900 E/TS 40	1245	1345...1945	200
WS 900 D/TS 40	1245	1345...1945	354
WS 900 E/TP 50	1245	1345...1945	220
WS 900 E/TP 65-STS 65	1245	1345...1945	285
WS 900 E/MTS 40-MTC	1245	1345...1945	200

Dimension drawing Wilo-DrainLift WS 900/1100

Dimension drawing

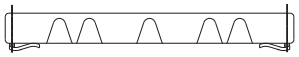
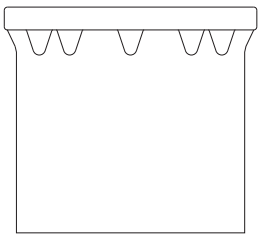
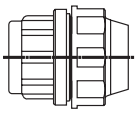
Wilo-DrainLift WS 1100



Dimensions

Wilo-DrainLift ...	Installation depth below ground surface level up to inlet floor		Dimensions
	without extension	with extension	A
	[mm]		
WS 1100 E/TP 50	1170	1270...1870	230
WS 1100 D/TP 50	1170	1270...1870	310
WS 1100 E/TP 65-STS 65	1170	1270...1870	260
WS 1100 D/TP 65-STS 65	1170	1270...1870	360
WS 1100 E/TP 80-STS 65	1170	1270...1870	330
WS 1100 E/MTS 40-MTC	1170	1270...1870	220
WS 1100 D/MTS 40-MTC	1170	1270...1870	260

Mechanical accessories Wilo-DrainLift WS 900/1100

Mechanical accessories			
	-	Description	Art no.
	–		
	–		
Pump cover WS900/1100 Standard		Made of PE, ∅ 830 x 52 mm, slip-resistant surface of the upper side of the cover, with two internal locking devices, can be walked on	2506477
Pump cover WS 900/1100 "overflow-proof"		Made of PE, ∅ 960 x 100 mm, secure against flooding thanks to integrated gasket, slip-resistant surface of the upper side of the cover, with six stainless steel lockings with effect to the outside, can be walked on	2506478
Sump length extension WS900/1100		Made of PE, ∅ 730 x 800, for WS900/1100 sumps, including gasket, mounting accessories and supporting bar extension for level sensor Only 1 extension per sump is possible. Other extensions are not permitted.	2506431
Clamp bolting		Made of PE, with female thread (IG), for the connection to a PE-pressure pipe outside the sump 1½" (IG) with 50 mm pipe diameter	2505044
Clamp bolting		Made of PE, with female thread (IG), for the connection to a PE-pressure pipe outside the sump 1½" (IG) with 63 mm pipe diameter	2505045
Clamp bolting		Made of PE, with female thread (IG), for the connection to a PE-pressure pipe outside the sump 2" (IG) with 63 mm pipe diameter	2505046

Mechanical accessories Wilo-DrainLift WS 900/1100

Pressure drainage

Submersible pumps with macerator

Equipment/function

	Wilo-Drain MTC	Wilo-Drain MTS
Design		
Submersible	•	•
Single-channel impeller	–	•
Vortex impeller	–	–
Multi-channel impeller	–	–
Open multi-channel impeller	•	–
Macerator	•	•
Turbulator	–	–
Sealing chamber	•	•
Leakage chamber	-	-
Sealing for mechanical seal on motor side	•	–
Sealing for rotary shaft seal on motor side	•	•
Sealing for mechanical seal on fluid side	•	•
Single-phase motor	•	•
Three-phase motor	•	•
Direct activation	•	•
Star-delta activation	•	–
FC operation	–	–
Dry motor	•	•
Motor with oil cooling	-	-
Dry motor with closed-circuit cooling	-	-
Application		
Wet well installation, stationary	•	•
Wet well installation, portable	•	•
Dry well installation, stationary	–	–
Dry well installation, portable	–	–
Equipment/function		
Motor leakage monitoring	–	–
Sealing chamber monitoring	optional	–
Leakage chamber monitoring	-	-
Motor temperature monitoring, bimetal	•	•
Motor temperature monitoring, PTC	–	–

• = can be pumped, - = cannot be pumped, o = can be pumped to a limited extent

Equipment/function

	Wilo-Drain MTC	Wilo-Drain MTS
Equipment/function		
Explosion protection	•	•
Float switch	• 1~	–
Capacitor box for 1~230 V	•	•
Ready-to-plug	• 1~	• 1~
Materials		
Pump housing	Cast iron	Cast iron
Impeller	Cast iron	Cast iron
Motor housing	Cast iron	Stainless steel

• = can be pumped, – = cannot be pumped, o = can be pumped to a limited extent

Pressure drainage

Submersible pumps with macerator

Series description Wilo-Drain MTC

Design
Submersible sewage pump with macerator

Type key

Example: **Wilo-Drain MTC 32 F 55.13/66 Ex**

MT	Macerator technology
C	Cast iron version
32	Nominal diameter [mm]
F	Impeller shape
55	Max. delivery head [m]
13	Max. volume flow [m^3/h]
66	Power P_2 [kW] (= value/10 = 6.6 kW)
Ex	ATEX-certified
A	With float switch

Application
Pumping of sewage containing faeces as well as municipal and industrial sewage, including long-fibre constituents, for:
- Pressurised drainage
- House and site drainage
- Sewage disposal
- Water management
- Environmental and water treatment technology

Special features/product advantages
- Oil barrier chamber
- Mechanical seal on pump side made of solid silicon carbide material
- Hardened macerator
- Longitudinally watertight cable (for MTC 32)
- Version with explosion protection (optional for MTC 32)

Technical data
- Mains connection: 3~400 V, 50 Hz (MTC 40 F also 1~230 V, 50 Hz)
- Immersed operating mode: S1 or S3 25% (depending on type)
- Protection class: IP 68
- Insulation class: F
- Thermal winding monitoring
- Max. fluid temperature: 3 – 40 °C (MTC 40 only 3 – 35 °C)
- Cable length: 10 m

Equipment/function
- Heavy-duty version made of cast iron
- External macerator
- Unimpeded flow to the impeller
- Maceration of substances being pumped
- Simple installation via suspension unit or pump base
- Attached float switch (only MTC 40, 1~230 V, version A)

Materials
- Housing: EN-GJL-200 or EN-GJL-250 (depending on type)
- Impeller: EN-GJL-HB175, EN-GJS-700 or EN-GJL-250 (depending on type)
- Shaft: stainless steel 1.0503, 1.7225 or 1.4021 (depending on type)
- Static gasket: NBR
- Mechanical seal on pump side: SiC/SiC
- Mechanical seal on motor side: carbon/ceramic (MTC 32 F 49.17 and MTC 32 F 55.13)
- Mechanical seal on motor side: Al-oxide/SiC (MTC 40 F...)
- Mechanical seal on motor side: SiC/SiC (MTC 32 F 22.17 and MTC 32 F 26.17)
- Rotary shaft seal on motor side: NBR (MTC 32 F 33.17, MTC 32 F 39.16)
- Macerator: stainless steel 1.4112, Abrasite/1.4034 or X102CrMo17K4 (depending on type)

Description/design
Submersible sewage pump with external macerator as submersible monobloc unit for stationary and portable wet well installation.

Hydraulics
The outlet on the pressure side is designed as horizontal flange connection. Open multi-channel impellers are used as the impeller shape.

Motor
Dry motors give off their heat directly to the surrounding fluid via the housing parts and can be used in immersed state for permanent operation and, in some cases, for intermittent operation. Depending on the size, they can also be used in surfaced state for short-term operation.

A sealing chamber protects the motor from fluid ingress. Depending on the size, it can be accessed from the outside and can be monitored with an optional sealing chamber electrode.

All filling fluids used are biodegradable and environmentally safe.

The cable lead-in of the MTC 32 is longitudinally watertight, the cable length is 10 m. The three-phase motors have a bare cable end, single-phase motors are equipped with capacitor box and shock-proof plug.

Sealing
Fluid-side and motor-side sealing is available in different versions depending on the motor type: MTC 32 F...
- ...33.17 and ...39.16: Mechanical seal on the fluid side, two rotary shaft seals on the motor side
- ...22.17, ...26.17, ...49.17, ...55.13 and MTC 40...: Two independently operating mechanical seals

Options
- Power cable in 20 m, 30 m, 40 m and 50 m lengths (with MTC 32 F 22 to MTC 32 F 33).

Series description Wilo-Drain MTC

Scope of delivery

- Pump ready for connection with 10 m connection cable
  - For 3~400 V with bare cable end
  - For 1~230 V with shock-proof plug
- A-model version with attached float switch
- Installation and operating instructions

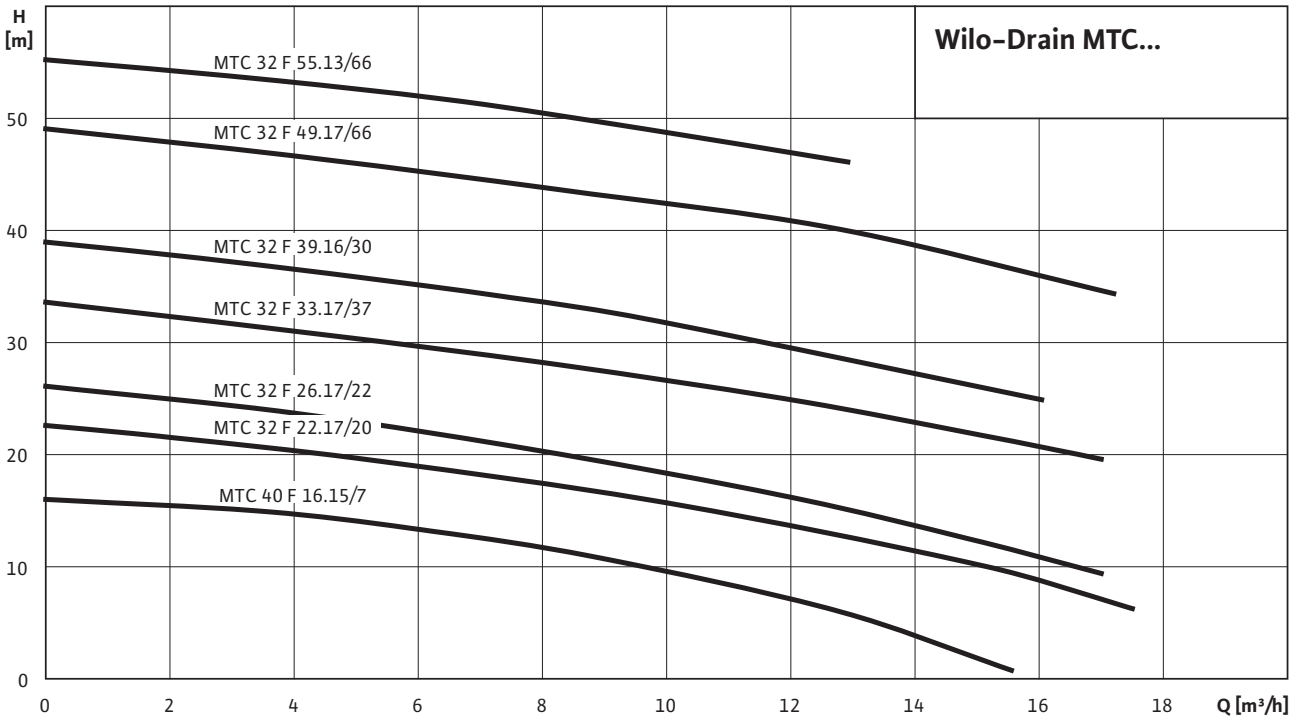
Commissioning

S1 operating mode with non-immersed motor:
Dry motors can be non-immersed only if there is an operating mode for non-immersed operation.

Dry-running protection system:
The hydraulic housing must always be immersed to prevent air from being drawn in. In the case of fluctuating fluid levels, the system should shut down automatically once the minimum water submersion is reached.

Accessories

- Suspension unit and pump base
- Chains
- Switchgears, relays and plugs



Pressure drainage

Submersible pumps with macerator

Technical data Wilo-Drain MTC

	MTC 40 F 16.15/7-A	MTC 40 F 16.15/7	MTC 32 F 22.17/20 Ex	MTC 32 F 26.17/22 Ex	MTC 32 F 33.17/37 Ex	MTC 32 F 39.16/30
	1~230 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
Unit						
Pressure connection	Rp 1½/DN 40	Rp 1½/DN 40	DN 36/G 1¼/ G 2	DN 36/G 1¼/ G 2	DN 36/G 1¼/ G 2	DN 32
Max. volume flow [m^3/h]	15	15	17	17	17	16
Max. delivery head [m]	16	16	22	26	33	39
Operating mode (immersed)	S1 S3-25%	S1 S3-25%	S1	S1	S1	S1 S3-25%
Operating mode (non-immersed)	-	-	S2-15 min.	-	S2-15 min.	-
Max. immersion depth [m]	20	20	12.5	12.5	12.5	10
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature	+3 °C ... +35 °C	+3 °C ... +35 °C	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C
Weight approx. [kg]	20	20	33	33	49	43
Motor data						
Nominal current [A]	5.6	2.5	4.45	4.8	7.6	7.3
Starting current [A]	-	-	26	25	37	43
Nominal motor power [kW]	0.7	0.7	2	2.25	3.75	3.42
Power consumption [kW]	1.2	1.2	2.6	3	4.7	4.2
Power factor	-	-	0.85	0.87	0.9	0.84
Activation type	direct	direct	direct	direct	direct	direct
Nominal speed [rpm]	2900	2900	2900	2900	2900	2900
Insulation class	F	F	F	F	F	F
Recommended switching frequency [1/h]	25	25	20	20	20	20
Max. switching frequency [1/h]	50	50	50	50	50	50
Permitted voltage tolerance [%]	+/- 10	+/- 10	+/- 10	+/- 10	+/- 10	+/- 10
Cable						
Length of connection cable [m]	10	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section [mm^2]	4G1	4G1	7G1.5	7G1.5	7G1.5	6G1.5
Type of connection cable	non-detachable	non-detachable	non-detachable	non-detachable	non-detachable	non-detachable
Mains plug	Schuko	-	-	-	-	-

Technical data Wilo-Drain MTC

	MTC 32 F 39.16/ 30 Ex	MTC 32 F 49.17/ 66	MTC 32 F 49.17/ 66 Ex	MTC 32 F 55.13/ 66	MTC 32 F 55.13/ 66 Ex
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
Unit					
Pressure connection	DN 32	DN 32	DN 32	DN 32	DN 32
Max. volume flow [m^3/h]	16	17	17	13	13
Max. delivery head [m]	39	49	49	55	55
Operating mode (immersed)	S1 S3-25%	S1 S3-25%	S1 S3-25%	S1 S3-25%	S1 S3-25%
Operating mode (non-immersed)	-	-	-	-	-
Max. immersion depth [m]	10	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C
Weight approx. [kg]	43	90	90	90	90
Motor data					
Nominal current [A]	7.3	13.2	13.2	13.2	13.2
Starting current [A]	43	58	58	58	58
Nominal motor power [kW]	3.42	6.6	6.6	6.6	6.6
Power consumption [kW]	4.2	7.7	7.7	7.7	7.7
Power factor	0.84	0.86	0.86	0.86	0.86
Activation type	direct	star-delta	star-delta	star-delta	star-delta
Nominal speed [rpm]	2900	2900	2900	2900	2900
Insulation class	F	F	F	F	F
Recommended switching frequency [1/h]	20	20	20	20	20
Max. switching frequency [1/h]	50	50	50	50	50
Permitted voltage tolerance [%]	+/- 10	+/- 10	+/- 10	+/- 10	+/- 10
Cable					
Length of connection cable [m]	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section [mm^2]	6G1.5	10G2.5	10G2.5	10G2.5	10G2.5
Type of connection cable	non-detachable	non-detachable	non-detachable	non-detachable	non-detachable
Mains plug	-	-	-	-	-

Pressure drainage

Submersible pumps with macerator

Technical data Wilo-Drain MTC

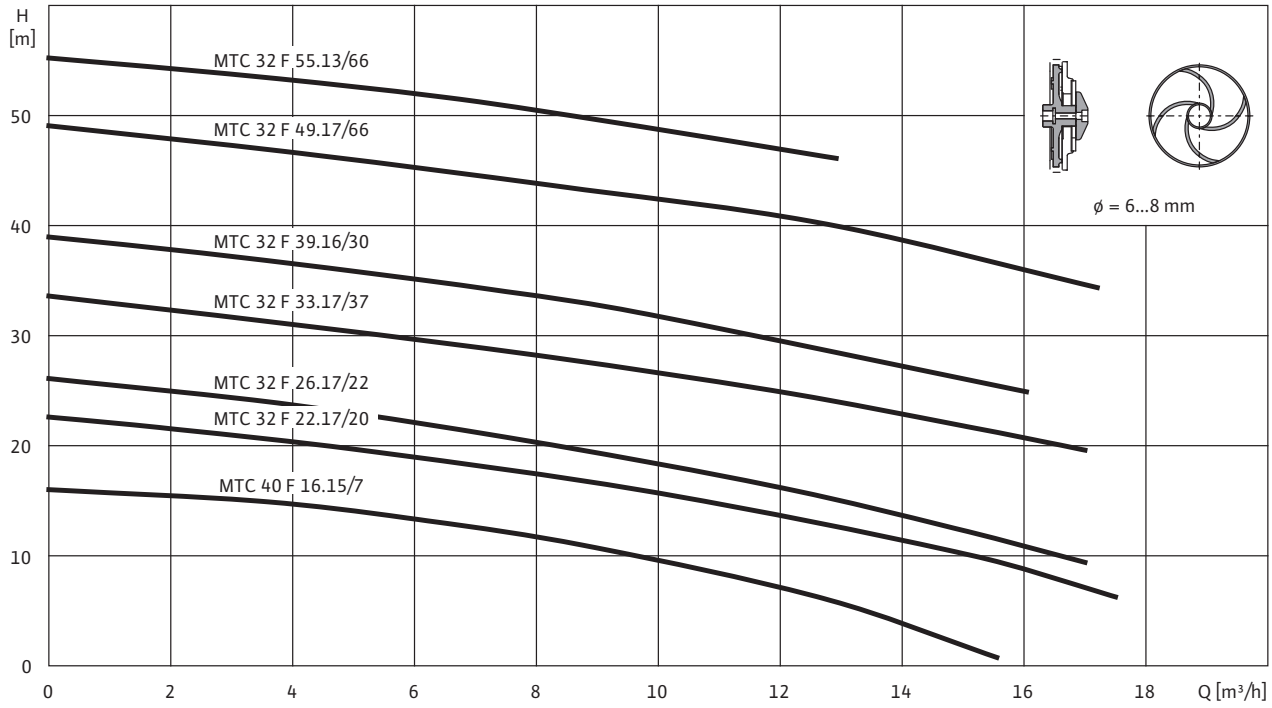
	MTC 40 F 16.15/7-A	MTC 40 F 16.15/7	MTC 32 F 22.17/20 Ex	MTC 32 F 26.17/22 Ex	MTC 32 F 33.17/37 Ex	MTC 32 F 39.16/30
	1~230 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
Equipment/function						
Floater	•	–	–	–	–	–
Motor leakage detection	–	–	–	–	–	–
Sealing chamber leakage detection	–	–	–	–	–	–
Leakage chamber leakage detection	–	–	–	–	–	–
Motor protection	WSK	WSK	WSK	WSK	WSK	WSK
Explosion protection	–	–	ATEX	ATEX	ATEX	–
Materials						
Static gasket	NBR	NBR	NBR	NBR	NBR	NBR
Impeller (standard)	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-200	EN-GJL-HB175
Macerator	X102CrMo17 K4/Sint C4 DIN 30910-4	X102CrMo17 K4/Sint C4 DIN 30910-4	Abrasit/ 1.4034	Abrasit/ 1.4034	Abrasit/ 1.4034	1.4112
Sealing on motor side	Al/SiC	Al/SiC	SiC/SiC	SiC/SiC	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021	1.0503

Technical data Wilo-Drain MTC

	MTC 32 F 39.16/ 30 Ex	MTC 32 F 49.17/ 66	MTC 32 F 49.17/ 66 Ex	MTC 32 F 55.13/ 66	MTC 32 F 55.13/ 66 Ex
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
Equipment/function					
Floater	–	–	–	–	–
Motor leakage detection	–	–	–	–	–
Sealing chamber leakage detection	–	–	–	–	–
Leakage chamber leakage detection	–	–	–	–	–
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	–	ATEX	–	ATEX
Materials					
Static gasket	NBR	NBR	NBR	NBR	NBR
Impeller (standard)	EN-GJL-HB175	EN-GJS-700-2	EN-GJS-700-2	EN-GJS-700-2	EN-GJS-700-2
Macerator	1.4112	1.4112	1.4112	1.4112	1.4112
Sealing on motor side	NBR	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.0503	1.7225	1.7225	1.7225	1.7225

Pump curves, ordering information Wilo-Drain MTC 40, MTC 32

Pump curves Wilo-Drain MTC 40, MTC 32



All of the data applies to 1~230 V / 3~400 V, 50 Hz and a density of 1 kg/dm^3.

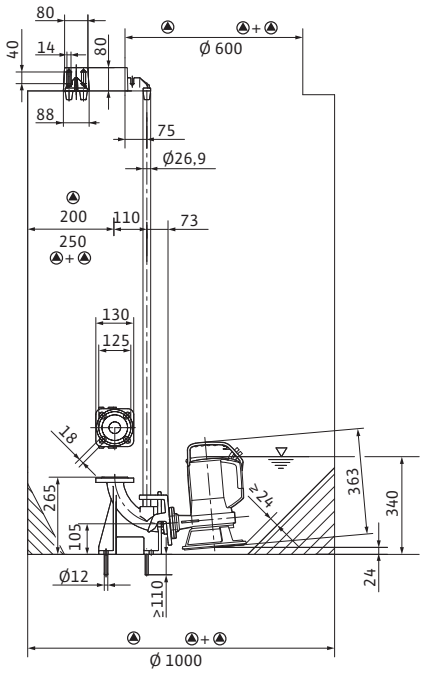
Information for order placements

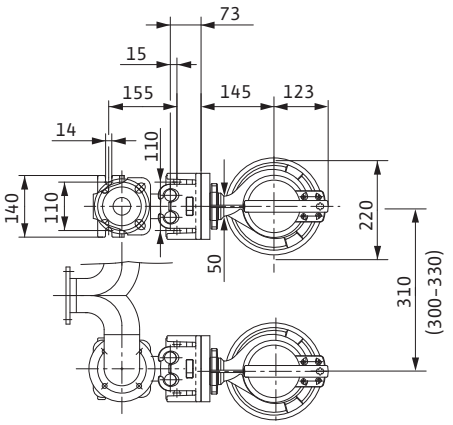
Wilo-Drain...	Mains connection	🚚	Art no.
		–	
		–	
MTC 40 F 16.15/7-A	1~230 V, 50 Hz	L	2081260
MTC 40 F 16.15/7	3~400 V, 50 Hz	L	2081261
MTC 32 F 22.17/20 Ex	3~400 V, 50 Hz	L	6046395
MTC 32 F 26.17/22 Ex	3~400 V, 50 Hz	L	6046396
MTC 32 F 33.17/37 Ex	3~400 V, 50 Hz	L	6046397
MTC 32 F 39.16/30	3~400 V, 50 Hz	L	2081263
MTC 32 F 39.16/30 Ex	3~400 V, 50 Hz	L	2081262
MTC 32 F 49.17/66	3~400 V, 50 Hz	L	2081265
MTC 32 F 49.17/66 Ex	3~400 V, 50 Hz	L	2081264
MTC 32 F 55.13/66	3~400 V, 50 Hz	L	2081267
MTC 32 F 55.13/66 Ex	3~400 V, 50 Hz	L	2081266

🚚 = supply availability, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

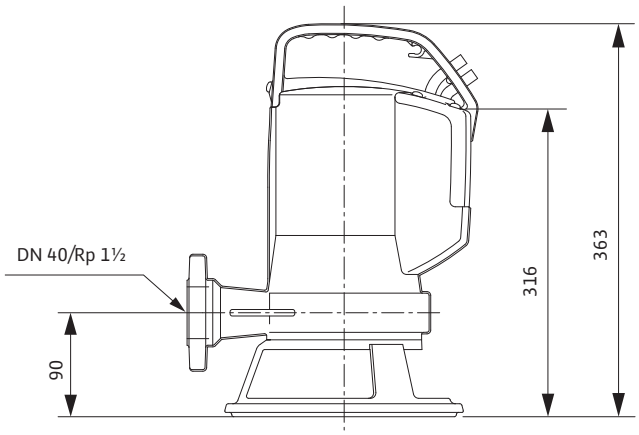
Dimensions Wilo-Drain MTC 40, MTC 32

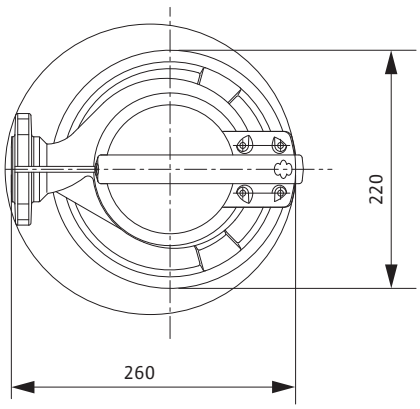
Dimension drawing – stationary wet well installation Wilo-Drain MTC 40





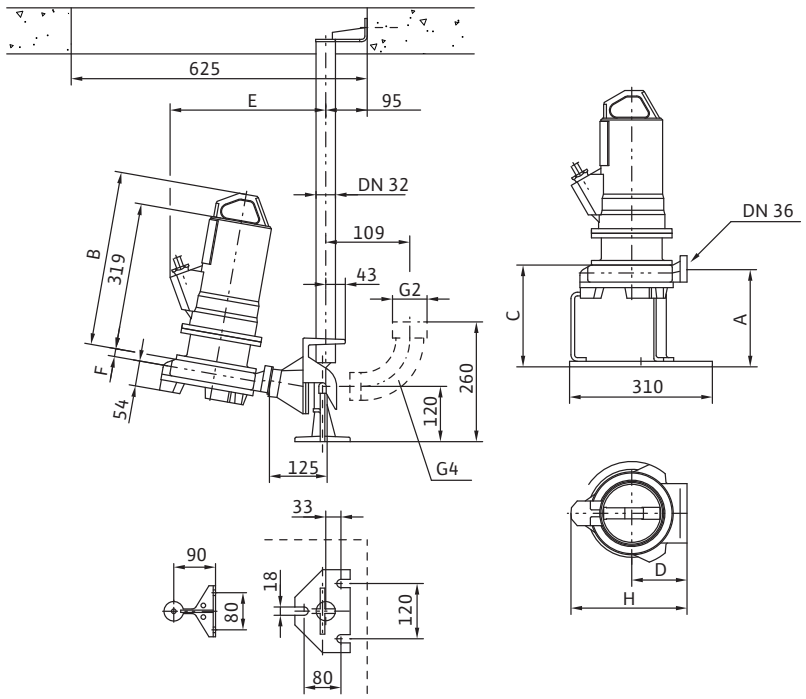
Dimension drawing – portable wet well installation Wilo-Drain MTC 40





Dimensions Wilo-Drain MTC 40, MTC 32

Dimension drawing Wilo-Drain MTC 32 F22 – F33

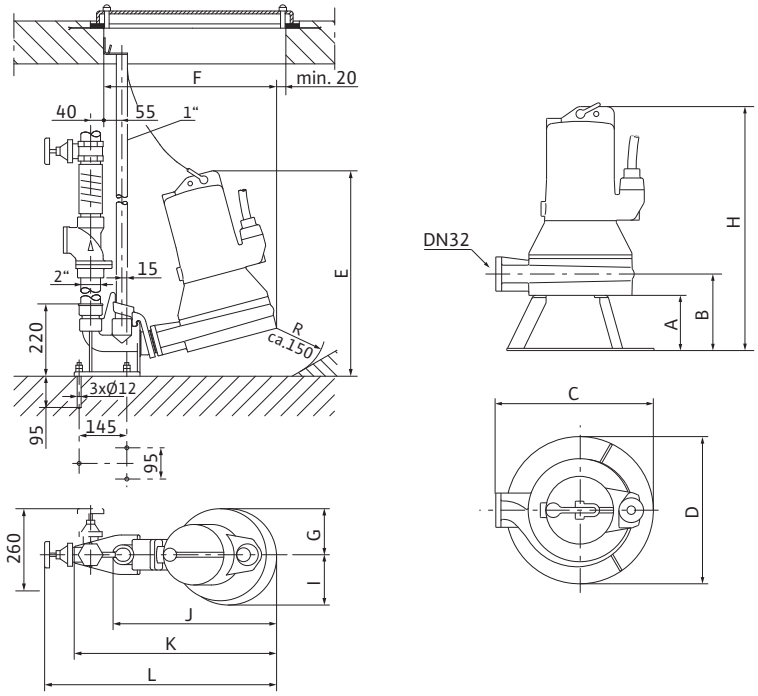


Dimensions

Wilo-Drain...	Dimensions						
	A	B	C	D	E	F	H
	[mm]						
MTC 32 F 22.17/20 Ex	211	379	221	120	338	17	252
MTC 32 F 26.17/22 Ex	211	379	221	120	338	17	252
MTC 32 F 33.17/37 Ex	197	394	224	140	378	20	279

Dimensions Wilo-Drain MTC 40, MTC 32

Dimension drawing Wilo-Drain MTC 32 F39 – F55



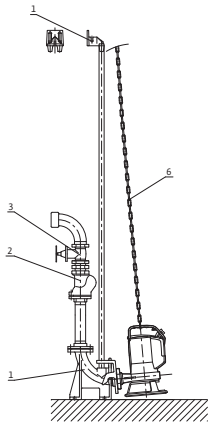
Dimensions

Wilo-Drain...	Dimensions											
	A	B	C	D	E	F	G	H	I	J	K	L
	[mm]											
MTC 32 F 39.16/30	140	180	330	350	490	450	125	520	125	420	540	635
MTC 32 F 39.16/30 Ex	140	180	330	350	490	450	125	520	125	420	540	635
MTC 32 F 49.17/66	150	210	430	400	625	525	140	665	155	500	615	705
MTC 32 F 49.17/66 Ex	150	210	430	400	625	525	140	665	155	500	615	705
MTC 32 F 55.13/66	150	210	430	400	625	525	140	665	155	500	615	705
MTC 32 F 55.13/66 Ex	150	210	430	400	625	525	140	665	155	500	615	705

Pressure drainage

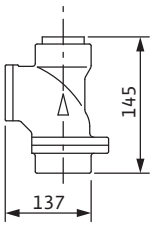
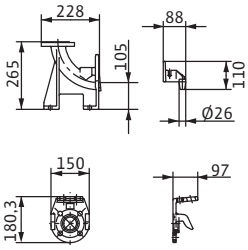
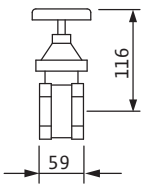
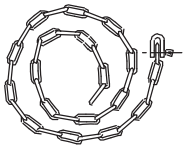
Submersible pumps with macerator

Mechanical accessories Wilo-Drain MTC 40, MTC 32

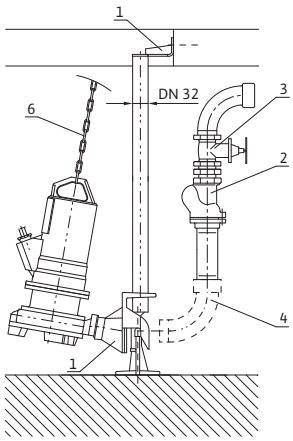


1 Suspension unit
2 Non-return valve
3 Gate valve
6 Chain

Stationary wet well installation DN 40

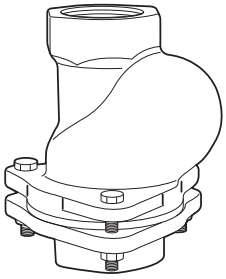
Wilo-Drain...	–	Description	Art no.
		–	
		–	
Non-return ball valve		Made of EN-GJL-250, with Rp 1½ female thread for DN 40 connection	4027330
Suspension unit DN 40		Made of EN-GJL-250, painted, with free passage in DN 40, foot elbow incl. pump bracket, profile joint, installation and floor fixation accessories and guide pipe bracket Ø ¾" without guide pipes. Connection on pressure side DN 40/50. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø ¾" is to be provided by the customer.	2057179
Gate valve		Made of red brass, coupling sleeve slider with female thread Rp 1½ for DN 40 connection	2525301
Chain		Made of steel, galvanized, incl. shackle made of stainless steel, in accordance with DIN 763-3, 5x35 mm, bearing capacity 250 kg, length 5 m	4027340

Mechanical accessories Wilo-Drain MTC 40, MTC 32

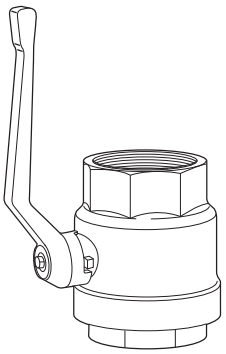
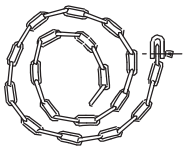


1 Suspension unit
2 Non-return valve
3 Gate valve
4 Pipe bend
6 Chain

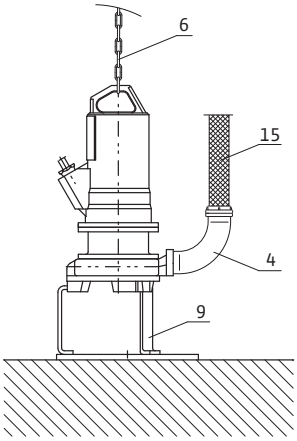
Stationary wet well installation Wilo-Drain MTC 32 F 22...33

Wilo-Drain...	–	Description	Art no.
		–	
		–	
Suspension unit DN 50		Made of EN-GJL-250, with free passage in DN 50, coupling connection and foot without 90° pipe bend, including profile joint, installation and floor fixation accessories and guide pipe bracket Ø 1¼" without guide pipe. Connection on pressure side via 90° pipe elbow with male thread R 2 for DN 50 connection. The single pipe feed Ø 1¼" is to be provided by the customer.	6031599
Pipe bend 90° MTC 32 F 22...33		Made of steel, galvanized, with female/male thread G 2 / R 2 for suspension unit DN 50	6003089
Non-return ball valve		Made of EN-GJL-250, with Rp 2 female thread for DN 50 connection	4027331

Mechanical accessories Wilo-Drain MTC 40, MTC 32

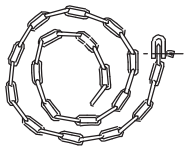
Stationary wet well installation Wilo-Drain MTC 32 F 22...33			
Wilo-Drain...	**–**	**Description**	**Art no.**
		–	
		–	
Shut-off ball cock		Made of brass, nickel-plated, with Rp 2 female thread for DN 50 connection	4027338
Chain		Made of steel, galvanized, incl. shackle made of stainless steel, in accordance with DIN 763-3, 5x35 mm, bearing capacity 250 kg, length 5 m	4027340

Mechanical accessories Wilo-Drain MTC 40, MTC 32

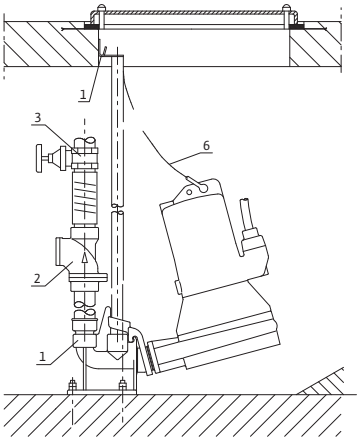


4 Pipe bend
6 Chain
9 Floor supporting foot
15 Pressure hose

Portable wet well installation Wilo-Drain MTC 32 F 22...33

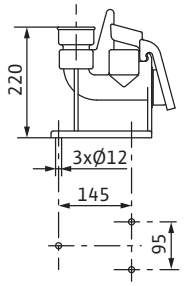
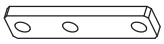
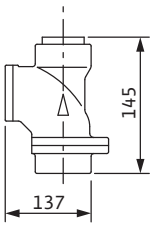
Wilo-Drain...	–	Description	Art no.
		–	
		–	
Floor supporting foot MTC 32F22...33		Made of steel (S235JR), painted, comprising 3 support feet, 1 baseplate and fixation material	6040150
Pipe bend 90° / Storz C MTC 32F22...33		Made of EN-GJL-250, with G 2 / R 2 female/male thread, incl. Storz C fixed coupling G 2 male thread, transition flange on pump side, G 2 female thread, incl. 1 set of mounting accessories for DN 50 connection	6045171
Pressure hose / Storz C		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 52 mm, length 10 m incl. Storz C coupling, 12/40 bar	6003650
Chain		Made of steel, galvanized, incl. steel shackle, galvanized, in accordance with DIN 766, 6x18.5 mm, bearing capacity 400 kg, length 5 m	6022588
Chain		Made of steel, galvanized, incl. steel shackle, galvanized, in accordance with DIN 766, 6x18.5 mm, bearing capacity 400 kg, length 10 m	6022589

Mechanical accessories Wilo-Drain MTC 40, MTC 32



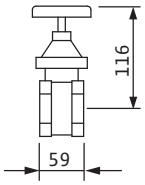
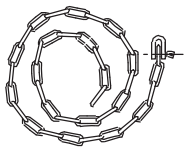
1 Suspension unit
2 Non-return valve
3 Gate valve
6 Chain

Stationary wet well installation Wilo-Drain MTC 32 F 39...55

Wilo-Drain...	–	Description	Art no.
		–	
		–	
Suspension unit Rp 1½		Made of EN-GJL-250, painted, with free passage in DN 40, foot elbow including pump holder, profile joint, installation and floor fixation accessories and guide pipe bracket Ø 1" without guide pipes. Connection on pressure side DN 40. Flanges PN 10/16 in accordance with DIN 2501. The single pipe feed Ø 1" is to be provided by the customer.	2082630
Centre of gravity extension		Shackle adapter with fixation accessories for **MTC 32 F 49 and MTC 32 F 55** pumps	6042181
Non-return ball valve		Made of EN-GJL-250, with Rp 1½ female thread for DN 40 connection	4027330

Mechanical accessories Wilo-Drain MTC 40, MTC 32

Stationary wet well installation Wilo-Drain MTC 32 F 39...55

Wilo-Drain...	–	Description	Art no.
		–	
		–	
Gate valve		Made of red brass, coupling sleeve slider with female thread Rp 1½ for DN 40 connection	2525301
Chain		Made of steel, galvanized, incl. shackle made of stainless steel, in accordance with DIN 763-3, 5x35 mm, bearing capacity 250 kg, length 5 m	4027340

Pressure drainage

Submersible pumps with macerator

Series description Wilo-Drain MTS

Design
Submersible sewage pump with macerator

Type key

Example: **Wilo-Drain MTS 40/27-1-230-50-2**

MT	Macerator technology
S	Stainless steel motor
40	Nominal diameter of pressure port [mm]
27	Max. delivery head [m]
1	Phase specification
230	Rated voltage
50	Frequency
2	Number of poles

Application
Pumping of sewage containing faeces. The Wilo macerator breaks up the solid constituents into smaller pieces to produce an easily pumpable fluid.

Preferred use with pressurised drainage. Pressurised drainage is used in situations where the costs of a conventional sewage system with an open channel would be unacceptably high, e.g. for:
- High ground water levels
- Absence of downhill slope
- Occasional accumulation of sewage
- Leisure residence, camping site, etc.
- Installation costs are reduced significantly due to the small pipe diameter, e.g. DN 40.

Special features/product advantages
- Spherically formed macerator
- High degree of efficiency
- Low operating costs
- Resistant to clogging and blockage
- Oil barrier chamber
- High operational reliability
- Corrosion-resistant stainless steel motor in 1.4404 (316 L)
- Explosion protection as standard for all 3~400 V versions

Technical data
- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Immersed operating mode: S1 or S3 25%
- Protection class: IP 68
- Insulation class: F
- Thermal winding monitoring
- Max. fluid temperature: 3 – 35 °C
- Cable length: 10 m

Equipment/function
- Innovative patented macerator
- Unimpeded flow to the impeller
- Internal rotating blade
- Spherically formed macerator
- Maceration of substances being pumped
- Pulling cut (shearing cut)

Materials
- Pump housing: EN-GJL-250
- Impeller: EN-GJL-200
- Shaft: Stainless steel 1.4021
- Mechanical seal on pump side: SiC/SiC
- Shaft seal on motor side: NBR
- Static gasket: NBR
- Motor housing: Stainless steel 1.4404
- Macerator: Stainless steel 1.4528

Description/design
Submersible sewage pump with internal patented macerator as submersible monobloc unit for stationary and portable wet well installation.

Hydraulics
The outlet on the pressure side is designed as horizontal threaded connection (Rp 1¼" for MTS 40/21...27) or flange connection. Single-channel impellers are used as the impeller shapes.

Motor
Glanded motors give off their heat directly to the surrounding fluid via the housing components and can be used in immersed state for permanent and intermittent operation.

A sealing chamber protects the motor from fluid ingress. The filling fluid used is biodegradable and environmentally safe.

The cable lead-in can be plugged in. Cable lengths are available in length increments of 10 m.

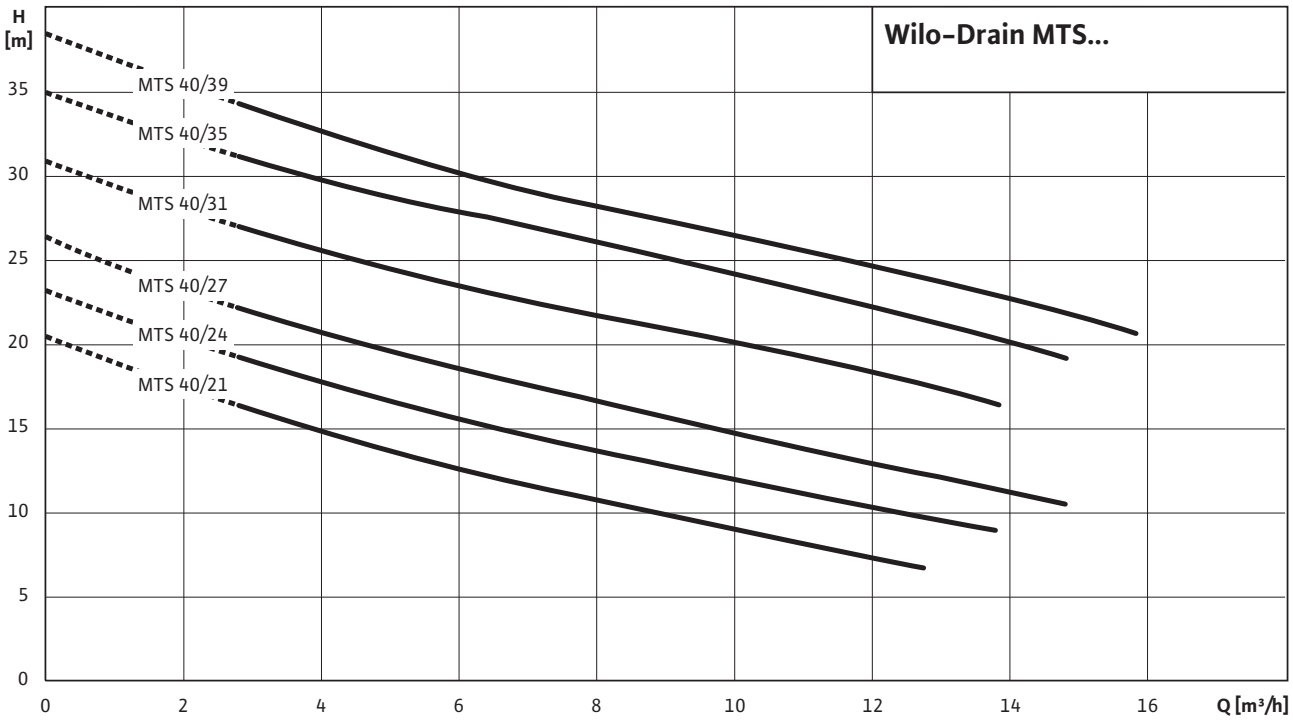
Sealing
Sealing on the fluid side is achieved by a bidirectional mechanical seal, while sealing on the motor side is achieved by a rotary shaft seal.

Scope of delivery
- Pump ready for connection with 10 m connection cable
  - For 3~400 V with bare cable end
  - For 1~230 V with shock-proof plug
- Installation and operating instructions

Series description Wilo-Drain MTS

Commissioning
Dry-running protection system:
The hydraulic housing must always be immersed to prevent air from being drawn in. In the case of fluctuating fluid levels, the system should shut down automatically once the minimum water submersion is reached.

Accessories
- Suspension unit and pump base
- Chains
- Switchgears, relays and plugs



Pressure drainage

Submersible pumps with macerator

Technical data Wilo-Drain MTS

	MTS 40/21	MTS 40/21	MTS 40/24	MTS 40/24	MTS 40/27
	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz
Unit					
Pressure connection	Rp 1¼/DN 40	Rp 1¼/DN 40	Rp 1¼/DN 40	Rp 1¼/DN 40	Rp 1¼/DN 40
Max. volume flow [m^3/h]	13	13	14	14	15
Max. delivery head [m]	21	21	24	24	27
Operating mode (immersed)	S1 S3-25%	S1 S3-25%	S1 S3-25%	S1 S3-25%	S1 S3-25%
Operating mode (non-immersed)	-	-	-	-	-
Max. immersion depth [m]	10	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C
Weight approx. [kg]	30	30	30	30	30
Motor data					
Nominal current [A]	8	2.5	8.7	2.8	9.5
Starting current [A]	-	-	-	-	-
Nominal motor power [kW]	1	1	1.2	1.2	1.5
Power consumption [kW]	1.3	1.2	1.6	1.45	1.9
Power factor	0.85	0.82	0.9	0.82	0.95
Activation type	direct	direct	direct	direct	direct
Nominal speed [rpm]	2900	2900	2900	2900	2900
Insulation class	F	F	F	F	F
Recommended switching frequency [1/h]	20	20	20	20	20
Max. switching frequency [1/h]	50	50	50	50	50
Permitted voltage tolerance [%]	+/- 10	+/- 10	+/- 10	+/- 10	+/- 10
Cable					
Length of connection cable [m]	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section [mm^2]	4G1.5	6G1	4G1.5	6G1	4G1.5
Type of connection cable	detachable	detachable	detachable	detachable	detachable
Mains plug	-	-	-	-	-

Technical data Wilo-Drain MTS

	MTS 40/27	MTS 40/31	MTS 40/35	MTS 40/39
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
Unit				
Pressure connection	Rp 1¼/DN 40	DN 40	DN 40	DN 40
Max. volume flow [m^3/h]	15	14	15	16
Max. delivery head [m]	27	31	35	39
Operating mode (immersed)	S1 S3-25%	S1 S3-25%	S1 S3-25%	S1 S3-25%
Operating mode (non-immersed)	-	-	-	-
Max. immersion depth [m]	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C	+3 °C ... +40 °C
Weight approx. [kg]	30	30	30	30
Motor data				
Nominal current [A]	3.2	5.3	5.8	6
Starting current [A]	-	-	-	-
Nominal motor power [kW]	1.5	2.1	2.3	2.5
Power consumption [kW]	1.7	2.6	2.8	3
Power factor	0.82	0.77	0.78	0.8
Activation type	direct	direct	direct	direct
Nominal speed [rpm]	2900	2900	2900	2900
Insulation class	F	F	F	F
Recommended switching frequency [1/h]	20	20	20	20
Max. switching frequency [1/h]	50	50	50	50
Permitted voltage tolerance [%]	+/- 10	+/- 10	+/- 10	+/- 10
Cable				
Length of connection cable [m]	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section [mm^2]	6G1	6G1	6G1	6G1
Type of connection cable	detachable	detachable	detachable	detachable
Mains plug	-	-	-	-

Pressure drainage

Submersible pumps with macerator

Technical data Wilo-Drain MTS

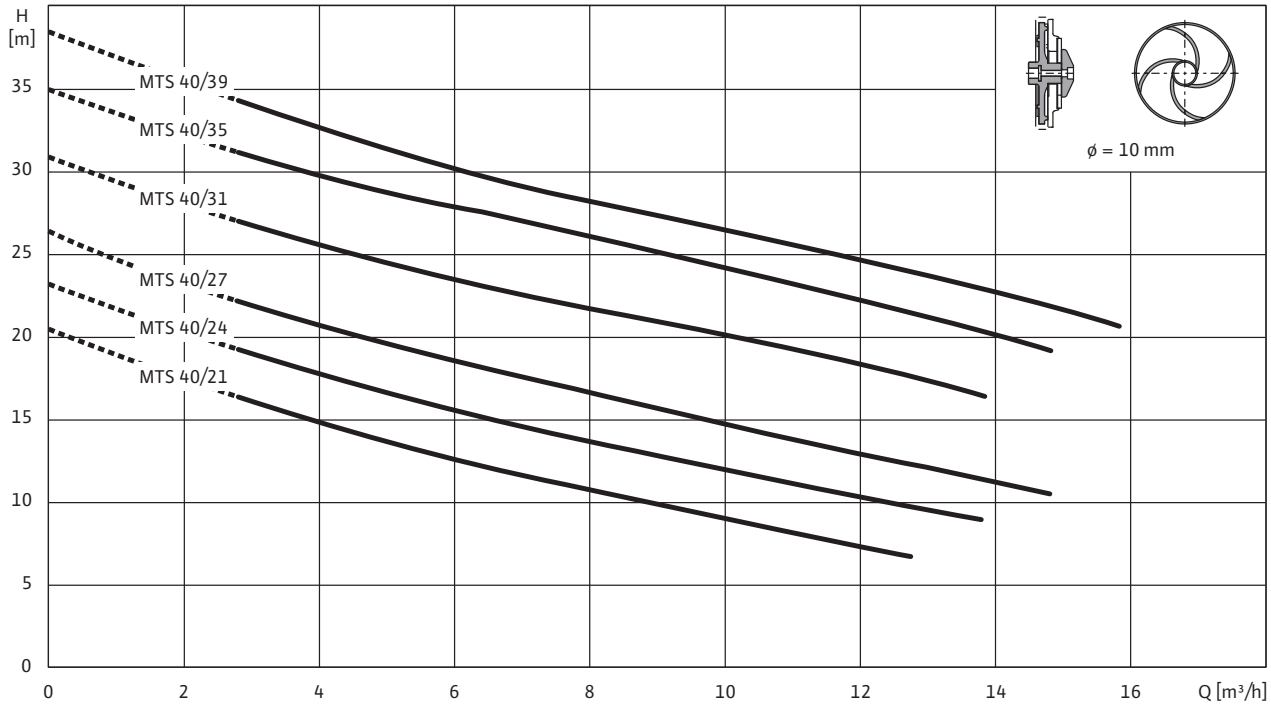
	MTS 40/21	MTS 40/21	MTS 40/24	MTS 40/24	MTS 40/27
	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz
Equipment/function					
Floater	–	–	–	–	–
Motor leakage detection	–	–	–	–	–
Sealing chamber leakage detection	–	–	–	–	–
Leakage chamber leakage detection	–	–	–	–	–
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	–	ATEX	–	ATEX	–
Materials					
Static gasket	NBR	NBR	NBR	NBR	NBR
Impeller (standard)	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Macerator	1.4528	1.4528	1.4528	1.4528	1.4528
Sealing on motor side	NBR	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4404	1.4404	1.4404	1.4404	1.4404
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021

Technical data Wilo-Drain MTS

	MTS 40/27	MTS 40/31	MTS 40/35	MTS 40/39
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
Equipment/function				
Floater	–	–	–	–
Motor leakage detection	–	–	–	–
Sealing chamber leakage detection	–	–	–	–
Leakage chamber leakage detection	–	–	–	–
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
Materials				
Static gasket	NBR	NBR	NBR	NBR
Impeller (standard)	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Macerator	1.4528	1.4528	1.4528	1.4528
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4404	1.4404	1.4404	1.4404
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

Pump curves, ordering information Wilo-Drain MTS 40

Pump curves Wilo-Drain MTS 40



All of the data applies to 1~230 V / 3~400 V, 50 Hz and a density of 1 kg/dm^3.

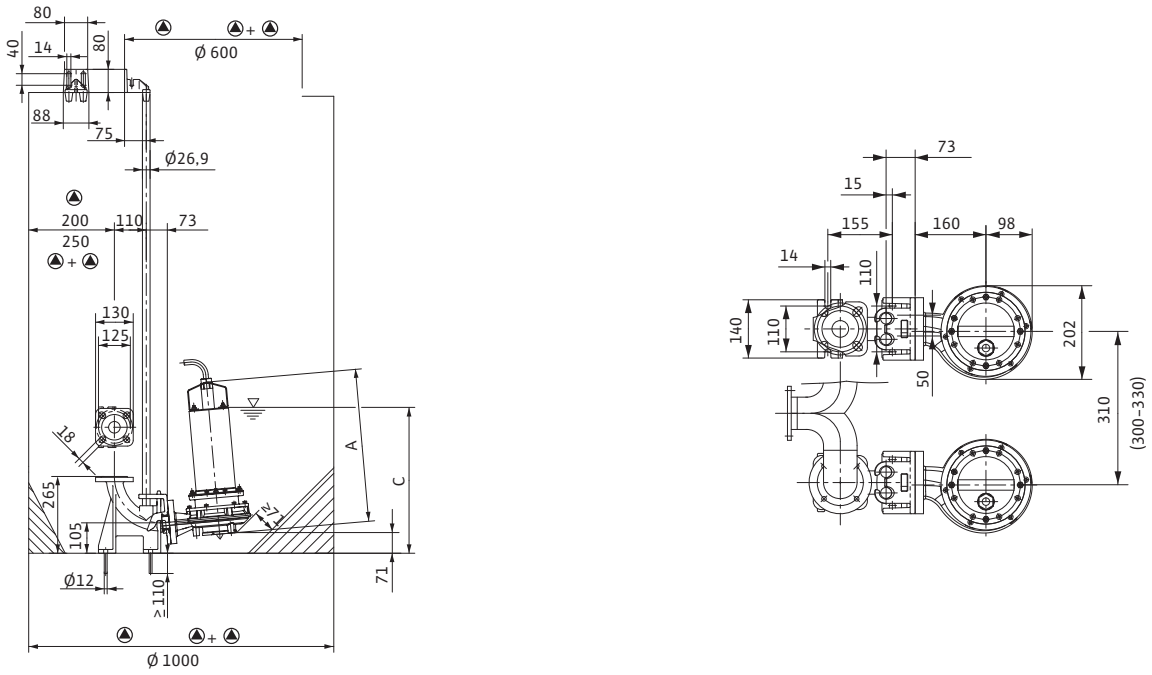
Information for order placements

Wilo-Drain...	Mains connection	🚚	Art no.
		–	
		–	
MTS 40/21	1~230 V, 50 Hz	L	2060174
MTS 40/21	3~400 V, 50 Hz	L	2060176
MTS 40/24	1~230 V, 50 Hz	L	2060170
MTS 40/24	3~400 V, 50 Hz	L	2060175
MTS 40/27	1~230 V, 50 Hz	L	2053831
MTS 40/27	3~400 V, 50 Hz	L	2056253
MTS 40/31	3~400 V, 50 Hz	L	6046761
MTS 40/35	3~400 V, 50 Hz	L	6046760
MTS 40/39	3~400 V, 50 Hz	L	6045558

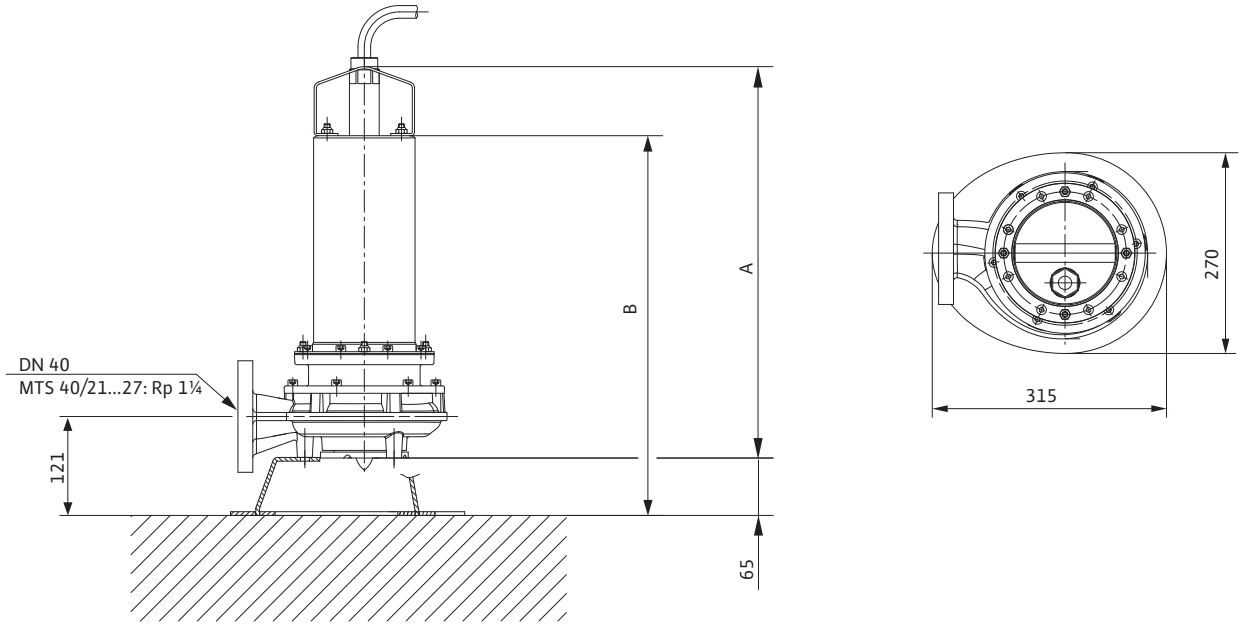
🚚 = supply availability, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

Dimensions Wilo-Drain MTS 40

Dimension drawing – stationary wet well installation Wilo-Drain MTS 40



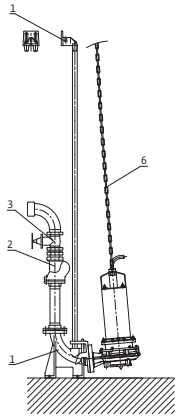
Dimension drawing – portable wet well installation Wilo-Drain MTS 40



Dimensions Wilo-Drain MTS 40

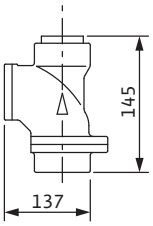
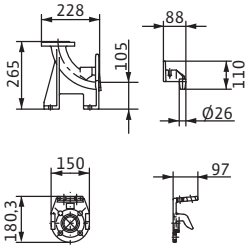
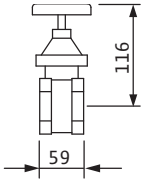
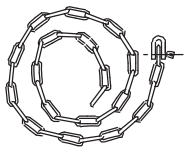
Dimensions				
Wilo-Drain...	**Mains connection**	**Dimensions**		
	–	**A**	**B**	**C**
	–	**[mm]**		
MTS 40/21	1~230 V, 50 Hz	498.5	463.5	469.5
MTS 40/21	3~400 V, 50 Hz	498.5	463.5	469.5
MTS 40/24	1~230 V, 50 Hz	498.5	463.5	469.5
MTS 40/24	3~400 V, 50 Hz	498.5	463.5	469.5
MTS 40/27	1~230 V, 50 Hz	498.5	463.5	469.5
MTS 40/27	3~400 V, 50 Hz	498.5	463.5	469.5
MTS 40/31	3~400 V, 50 Hz	518.5	483.5	489.5
MTS 40/35	3~400 V, 50 Hz	518.5	483.5	489.5
MTS 40/39	3~400 V, 50 Hz	518.5	483.5	489.5

Mechanical accessories Wilo-Drain MTS 40

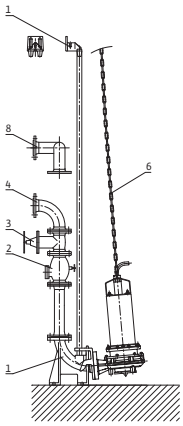


1 Suspension unit
2 Non-return valve
3 Gate valve
6 Chain

Stationary wet well installation DN 40

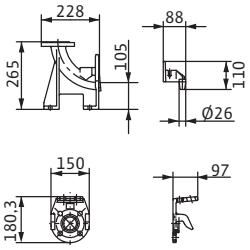
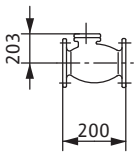
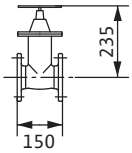
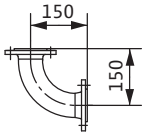
Wilo-Drain...	–	Description	Art no.
		–	
		–	
Non-return ball valve		Made of EN-GJL-250, with Rp 1½ female thread for DN 40 connection	4027330
Suspension unit DN 40		Made of EN-GJL-250, painted, with free passage in DN 40, foot elbow incl. pump bracket, profile joint, installation and floor fixation accessories and guide pipe bracket Ø ¾" without guide pipes. Connection on pressure side DN 40/50. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø ¾" is to be provided by the customer.	2057179
Gate valve		Made of red brass, coupling sleeve slider with female thread Rp 1½ for DN 40 connection	2525301
Chain		Made of steel, galvanized, incl. shackle made of stainless steel, in accordance with DIN 763-3, 5x35 mm, bearing capacity 250 kg, length 5 m	4027340

Mechanical accessories Wilo-Drain MTS 40



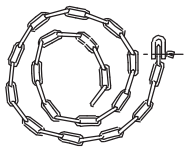
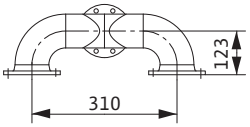
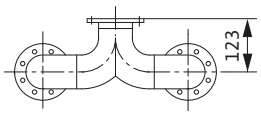
1 Suspension unit
2 Non-return valve
3 Gate valve
4 Pipe bend
6 Chain
8 Y-piece

Stationary wet well installation DN 50

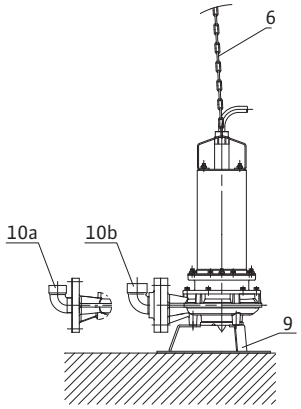
Wilo-Drain...	–	Description	Art no.
		–	
		–	
Suspension unit DN 40		Made of EN-GJL-250, painted, with free passage in DN 40, foot elbow incl. pump bracket, profile joint, installation and floor fixation accessories and guide pipe bracket Ø ¾" without guide pipes. Connection on pressure side DN 40/50. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø ¾" is to be provided by the customer.	2057179
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 50 connection	2017166
Gate valve		Made of EN-GJL-250, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, DN 50	2017160
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 50 connection	2018053

Mechanical accessories Wilo-Drain MTS 40

Stationary wet well installation DN 50

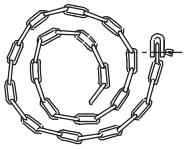
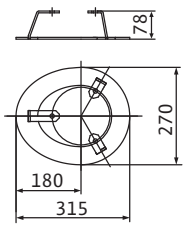
Wilo-Drain...	–	Description	Art no.
		–	
		–	
Chain		Made of steel, galvanized, incl. shackle made of stainless steel, in accordance with DIN 763-3, 5x35 mm, bearing capacity 250 kg, length 5 m	4027340
Y-piece DN 50	 	For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 50/50/50 connection	2019042

Mechanical accessories Wilo-Drain MTS 40



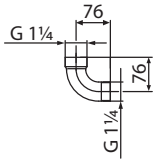
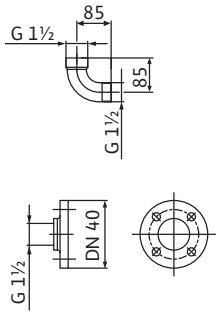
6 Chain
9 Floor supporting foot MTS
10a Pipe bend MTS 40/21...27
10b Pipe bend MTS 40/31...39

Portable wet well installation

Wilo-Drain...	–	Description	Art no.
		–	
		–	
Chain		Made of stainless steel, incl. shackle made of stainless steel, in accordance with DIN 763-3, 7 x 49 mm, bearing capacity 450 kg, length 5 m	2004671
Chain		Made of stainless steel, incl. shackle made of stainless steel, in accordance with DIN 763-3, 7x49 mm, bearing capacity 450 kg, length 10 m	2004670
Floor supporting foot MTS 40		Made of steel (S235JR), painted, comprising 3 support feet, 1 baseplate and fixation material	2058721

Mechanical accessories Wilo-Drain MTS 40

Portable wet well installation

Wilo-Drain...	–	Description	Art no.
		–	
		–	
Pipe angle 90° MTS 40/21...27		Only for MTS 40/21...27, made of EN-GJMW-400-5, with female/male thread G 1¼ / R 1¼ for DN 32 connection	2057400
Pipe angle 90° MTS 40/31...39		Only for MTS 40/31...39, made of EN-GJMW-400-5, with female/male thread G 1½ / R 1½ incl. threaded flange (DN 40 / PN 16 in acc. with EN 1092), galvanised steel, with female thread R 1½ and 1 set of mounting accessories for DN 40 connection	2057401

Solids separation systems

Planning guide

Wilo-EMUport solids separation systems

Requirement

The amount of solids in domestic sewage is continuously increasing due to current water savings. This means that the pumps in pumping stations need even larger free ball passages, which also means an increase in pump power consumption.

Function

With the solids separation system, the inflowing sewage flows into the distribution tank and from there into the open solids separation tank. The solids are kept back here. Only prepurified sewage is now able to pass through the pump into the large, combined collection reservoir.

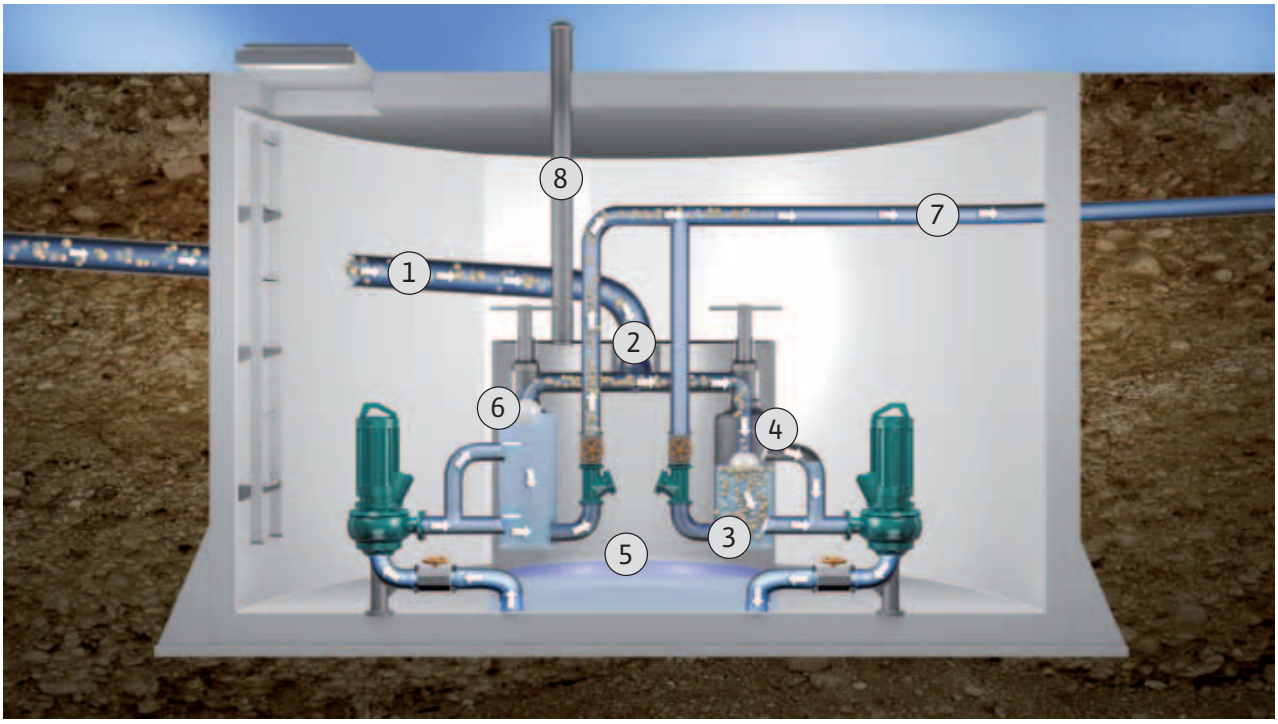
While the collection reservoir is filled, the water level in the solids separation tank rises. The shut-off ball automatically closes the inlet.

Now, pumping starts when the correct level has been reached. The pump pumps in the reverse direction. The sewage flows through the solids separation reservoir and thus conveys the "filtered-out" solids into the outgoing pressure pipe.

Then, the entire solids separation system is flushed and cleaned. Pumping is stopped again, when the correct level has been reached. The shut-off ball drops, leaving the path free for a new filling sequence. During this pumping sequence, the sewage is pumped into the other solids separation reservoir.

Advantages of the solids separation system

- Uses pumps with free ball passage < 80 mm, thus reducing fuel requirements and operating costs while increasing efficiency
- Hygienic conditions for maintenance and assembly work
- Pump room is clean, dry, and odourless
- Less wear, since the solids are not pumped by the hydraulic unit
- Submersible sewage pump with adjusted impeller and protection class IP 68 (submersible)
- No corrosion problems, no effect from the formation of hydrogen sulphide



1 = inlet pipe, 2 = manifold, 3 = solids collection reservoir, 4 = solids separation flap, 5 = collection reservoir with filtered sewage, 6 = shut-off ball, 7 = discharge pipeline, 8 = ventilation and exhaust

Agreements

The customer is responsible for the following upon completion of a sales agreement:

- Submission of signed and approved working drawing
- Provision of paved vehicle access with unloading and manoeuvring space
- Completion of all earth and concrete work
- Compacting of earth/soil
  Caution: To prevent sump deformation, the backfilled ground should be compacted uniformly in layers every 30 cm to D(PR) = 98 %.
- Acceptance and unloading of the product supplied as per the scope of delivery
- Concrete buoyancy safeguards should be arranged around the pumping station
- Storage and safekeeping of the material
- Delivery, laying and connection of the ventilation and exhaust pipes, cable ducts and buried pipes to the pumping station.
- Provision of a class B/D cover
  When using a class B/D pump cover, the onsite creation of a concrete slab with a compressed layer is necessary. The concrete slab will transfer the forces to the compacted ground.
- Application for a supply connection to be sent to the local power supply network by a licensed electrician
- Laying the power connection as far as the switching system
- Positioning of the switching cabinet pedestal

Assumption of risk

The assumption of risk is governed by the VOB (Vergabe- und Vertragsordnung für Bauleistungen - German Construction Contract Procedures). Meaning that the risk is transferred to the purchaser upon delivery of the pumping station. The purchaser should in particular ensure that the collection reservoirs are filled in good time, prevent the ingress of water and dirt in the dry room and to prevent the buoyancy of the pumping station.

End cleaning

The pumping station is supplied in a clean condition. If it is again necessary to clean the pumping station prior to acceptance, the operator must carry this out or this can be done at his cost.

Tolerances

Subject to the tolerances of commercially available plastic.

Solids separation systems

Planning guide

Enquiry data sheet for Wilo-EMUport FTS products

Customer data

Company: _____

Name: _____

Project name: _____

Deadline: _____

General information

Type of construction: o Newbuild

o Reconstruction

Pumping station: o Wet well installation

o Dry well installation

o Solids separation system

Solids separation system: o in building or structure

o in PE-HD sump

Type of fluid: o Rainwater

o Sewage

Basic data

Inlet amount: _____l/s

Flow rate per pump*: _____l/s

Delivery head per pump: _____m

Number of pumps: _____

Number of pumps on standby: _____

Inlet pipe:

Diameter (DN): _____

With gate valve: o Yes/ o No

Pressure pipe

Inside diameter (Di): _____

Drawing available: o Yes/ o No

Data for installation in a building or structure

Suction head (H_A): _____m

Existing installation space: _____mm

Sump base area: _____m

PE-HD pumping station data

Site altitude above MSL (H_N) or Ξ 0,00: _____m

Desired diameter: _____mm

Installation depth to inlet floor (H_B): _____m

Ground water level above MSL (H_G): _____m

Traffic load in accordance with DIN EN 124:

o Class A / o Class B / o Class C

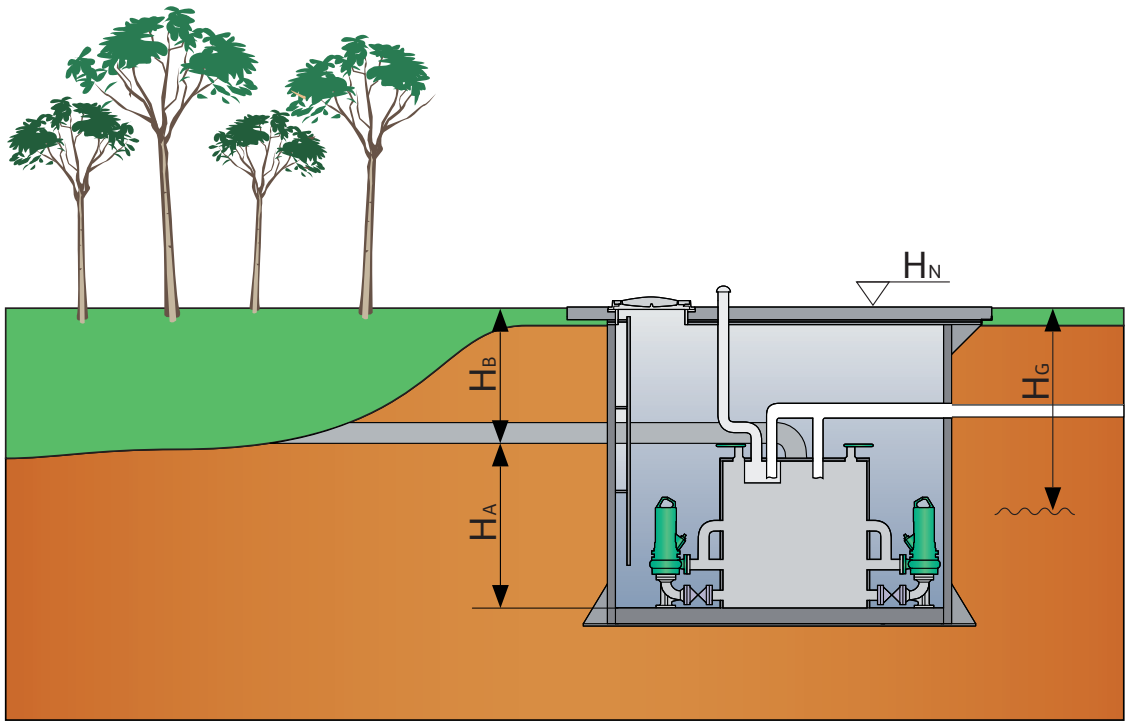
Equipment

o Switchgear	o Residual-current-operated protection switch
o Frequency converter	o Soft starter
o Display for	o Pump(s) operation
	o Operating hours
	o Tank filling level
	o Pump(s) fault(s)
	o Fault, flooding
o Data transmission	o Cable
	o GSM / UMTS module
o Level control device	o Pneumatic
	o Hydrostatic/capacitive
o Sump lighting	o Fan
o Volume flow rate meter	o Compact
	o With external display
o Outdoor cabinet for switchgear	
o Prepared for electricity meter	
o Emergency power connection	

* = in relation to the minimum flow velocity > 0.7 m/s (e.g. DIN 100: min. 4.95 l/s)

Enquiry data sheet for Wilo-EMUport FTS products

Installation drawing Wilo-EMUport FTS...



Key:

H_A = specification for solids separation system in version for building installation (Wilo-EMUport FTS MG.../FG...)
H_B = specification for solids separation system with PE-HD sump (Wilo-EMUport FTS MS.../FS...)
H_G = groundwater level over MSL
H_G = site altitude over MSL

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Languages: German

Solids separation systems

Wilo-EMUport FTS

Series overview Wilo-EMUport FTS MS..., MG..., FS..., FG...

Series: Wilo-EMUport FTS MS...

> Application

- Complete system fully assembled in PE-HD sump
- Compact sewage pumping station with solids separation system for the drainage of small residential estates and commercial buildings and complexes (e.g. hotels, department stores, etc.).

Series: Wilo-EMUport FTS MG...

> Application

- System for installation in an existing structure (building or concrete sump).
- Sewage lifting unit with compact solids separation system for drainage of commercial buildings and complexes (e.g. hotels, department stores, etc.), small residential estates or as a replacement system for the refurbishment of existing large concrete sumps.

Series overview Wilo-EMUport FTS MS..., MG..., FS..., FG...

Series: Wilo-EMUport FTS MS...

> Special features/product advantages

- Energy saving due to pumps with narrow ball passage, which produces better efficiency than with conventional sewage pumping stations
- Considerably less susceptible to plugging as the pumps do not come into contact with the solids in the wastewater
- Uninterrupted operation during maintenance or repair work due to the station's double-pump design and individual shut-off of the solids separation reservoirs
- All parts are accessible from outside, so very easy to maintain and hygienic
- Resistance to corrosion and long life due to construction from PE-HD material
- Can be used in drinking water protection areas (protected water catchment zones), being uniformly fuse-welded and absolutely watertight
- Defined interface, being a fully-assembled pumping station
- Quick and cost-effective installation and commissioning on site, being delivered fully assembled in sump
- Acceptance inspection and testing can be done at the factory

> Additional information **Page**

Series: Wilo-EMUport FTS MG...

> Special features/product advantages

- Energy saving due to pumps with narrow ball passage, which produces better efficiency than with conventional sewage pumping stations
- Considerably less susceptible to plugging as the pumps do not come into contact with the solids in the wastewater
- Uninterrupted operation during maintenance or repair work due to the station's double-pump design and individual shut-off of the solids separation reservoirs
- All parts are accessible from outside, so very easy to maintain and hygienic
- Resistance to corrosion and long life due to construction from PE-HD material

> Additional information **Page**

Solids separation systems

Wilo-EMUport FTS

Series overview Wilo-EMUport FTS MS..., MG..., FS..., FG...

Series: Wilo-EMUport FTS FS...

> Application

- Complete system fully assembled in PE-HD sump
- Sewage pumping station with solids separation system for drainage of larger residential estates and boroughs.

Series: Wilo-EMUport FTS FG...

> Application

- System for installation in an existing structure (building or concrete sump).
- Sewage lifting unit with solids separation system for drainage of large residential estates and boroughs or as a replacement system for the refurbishment of existing large concrete sumps.

Series overview Wilo-EMUport FTS MS..., MG..., FS..., FG...

Series: Wilo-EMUport FTS FS...

> Special features/product advantages

- Energy saving due to pumps with narrow ball passage, which produces better efficiency than with conventional sewage pumping stations
- Considerably less susceptible to plugging as the pumps do not come into contact with the solids in the wastewater
- Uninterrupted operation during maintenance or repair work due to the station's double-pump design and individual shut-off of the solids separation reservoirs
- All parts are accessible from outside, so very easy to maintain and hygienic
- Resistance to corrosion and long life due to construction from PE-HD material
- Can be used in drinking water protection areas (protected water catchment zones), being uniformly fuse-welded and absolutely watertight
- Defined interface, being a fully-assembled pumping station
- Quick and cost-effective installation and commissioning on site, being delivered fully assembled in the sump
- Acceptance inspection and testing can be done at the factory

> Additional information **Page**

Series: Wilo-EMUport FTS FG...

> Special features/product advantages

- Energy saving due to pumps with narrow ball passage, which produces better efficiency than with conventional sewage pumping stations
- Considerably less susceptible to plugging as the pumps do not come into contact with the solids in the wastewater
- Uninterrupted operation during maintenance or repair work due to the station's double-pump design and individual shut-off of the solids separation reservoirs
- All parts are accessible from outside, so very easy to maintain and hygienic
- Resistance to corrosion and long life due to construction from PE-HD material

> Additional information **Page**

Solids separation systems

Wilo-EMUport FTS

Equipment/function

	Wilo-EMUport FTS MS...	Wilo-EMUport FTS MG...	Wilo-EMUport FTS FS...	Wilo-EMUport FTS FG...
Design				
Pump included in the scope of delivery	•	•	•	•
Single-pump system	-	-	-	-
Double-pump system	•	•	•	•
In PE-HD sump	•	–	•	–
Application				
Floor-mounted installation	–	•	–	•
Concealed floor installation	•	•	•	•
Equipment/function				
Switchgear	Optional	Optional	Optional	Optional
Soft starter	Optional	Optional	Optional	Optional
Frequency converter	Optional	Optional	Optional	Optional
Residual-current-operated protection switches	Optional	Optional	Optional	Optional
Level control: with pneumatic pressure transducer	Optional	Optional	Optional	Optional
Level control: with level sensor	Optional	Optional	Optional	Optional
Data transmission: by cable	Optional	Optional	Optional	Optional
Data transmission: via GSM/UMTS module	Optional	Optional	Optional	Optional
Emergency power connection	Optional	Optional	Optional	Optional
Inlet position freely selectable	•	•	•	•
Ready-to-plug	–	–	–	–
Switch cabinet for outdoor installation	Optional	–	Optional	–

• = available, - = not available

Technical data

Systems with PE-HD sump

Wilo-EMUport FTS...	System output	Volume of collection reservoir	Installation depth below ground surface level up to inlet floor	Max. delivery head	Minimum installation opening	Sump diameter
	Q	V	Hb	H	–	Di
	[m³/h]	[l]	[mm]	[m]	[mm]	
MS 590-1500	6	260	590	25	-	1500
MS 740-1500	10	320	740	25	-	1500
MS 940-1500	15	580	940	25	-	1500
MS 590-2000	10	460	590	25	-	2000
MS 740-2000	15	570	740	25	-	2000
MS 940-2000	15	1040	940	25	-	2000
MS 1200-2000	25	1070	1200	50	-	2000
MS 1500-2000	35	1070	1500	50	-	2000
FS 2000	65...90	2090	1460...1660	70	-	2000
FS 2500	130...190	2970	1660...2160	70	-	2500
FS 3000	230...310	4500	2160...2560	80	-	3000
FS 3500	310...410	5350	2160...2560	80	-	3500

Larger inlets and intermediate sizes available on request.

Systems without sump for the installation inside buildings

Wilo-EMUport FTS...	System output	Volume of collection reservoir	Installation depth below inlet floor	Max. delivery head	Minimum installation opening	Min. concrete sump diameter
	Q	V	Ha	H	–	Di min.
	[m³/h]	[l]	[mm]	[m]	[mm]	
MG 400-1500	1	40	400	25	1000 x 1150	1500
MG 550-1500	6	140	550	25	1000 x 1150	1500
MG 750-1500	10	320	750	25	1000 x 1150	1500
MG 750-2500	15	640	750	25	1800 x 1800	2500
MG 1200-2500	25	950	1200	50	1800 x 1800	2500
MG 1500-2500	30	950	1500	50	1800 x 1800	2500
FG 1500	75...100	2170	1200...1400	80	1800 x 2500	–
FG 2000	130...200	3860	1400...1900	85	2300 x 3000	–
FG 2500	260...380	7020	1900...2300	80	2800 x 3500	–
FG 3000	450	13640	2300	75	3300 x 4000	–
FG 3500	600	18570	2300	65	3800 x 4500	–

Larger inlets and intermediate sizes available on request.

Technical data

Series description Wilo-EMUport FTS MS...

Design
Compact sewage pumping station with solids separation system in PE-HD sump

Type key

Example:	**Wilo-EMUport FTS MS 740-1500**
FTS	Solids separation system
M	Version (M = compact version, F = large version)
S	Type of installation (G = in building, S = with PE-HD sump)
740	Installation depth below inlet floor in mm
1500	Sump diameter in mm

Application
- Complete system fully assembled in PE-HD sump
- Compact sewage pumping station with solids separation system for the drainage of small residential estates and commercial buildings and complexes (e.g. hotels, department stores, etc.).

Special features/product advantages
- Energy saving due to pumps with narrow ball passage, which produces better efficiency than with conventional sewage pumping stations
- Considerably less susceptible to plugging as the pumps do not come into contact with the solids in the wastewater
- Uninterrupted operation during maintenance or repair work due to the station's double-pump design and individual shut-off of the solids separation reservoirs
- All parts are accessible from outside, so very easy to maintain and hygienic
- Resistance to corrosion and long life due to construction from PE-HD material
- Can be used in drinking water protection areas (protected water catchment zones), being uniformly fuse-welded and absolutely watertight
- Defined interface, being a fully-assembled pumping station
- Quick and cost-effective installation and commissioning on site, being delivered fully assembled in sump
- Acceptance inspection and testing can be done at the factory

Technical data
- Max. inlet: 35 m^3/h
- Max. useable tank volume: 800 l
- Max. delivery head: 60 m
- Max. installation depth below inlet floor: 1500 mm
- Mains connection: 3~400 V, 50 Hz

Equipment/function
- Solids separation system with solids separation reservoir and collection reservoir
- Two dry-well installed submersible sewage pumps for alternating mode
- Switching system and level measurement according to customer request
- Individual shut-off of the solids collection reservoirs

Materials
- Solids separation system: PE-HD
- Pipework: PE-HD
- Pumps and non-return ball valves: grey cast iron, coated

Description/design
Connection-ready fully submersible sewage pumping station with solids separation system and a gas- and watertight collection tank. Equipped as a double-pump system with submersible sewage pumps, running in alternating mode. Easy handling and optimum tank drainage by means of depth suction.

Due to the use of solids separation tanks, the pumps do not come into contact with the solids in the fluid. In this way, pumps with narrow ball passages and optimised efficiency can be used for pumping sewage.

The dry well installation of the pumps and their configuration as a redundant double-pump system ensures maximum hygiene, ease of maintenance, and operational reliability. The complete system, apart from the pumps and non-return valve, is made of corrosion-resistant PE-HD.

Attention: The accompanying switchgear is not submersible and must for that reason be arranged in such a way that it is secure against flooding.

Options
- Other reservoir sizes and suction heads can be produced as requested by the customer, e.g. due to existing installation openings or door dimensions.
- Inductive flow rate gauge
- Slide valve for inlet
- Slide valve for discharge pipeline
- Flange outlet for discharge pipeline
- Flush connection

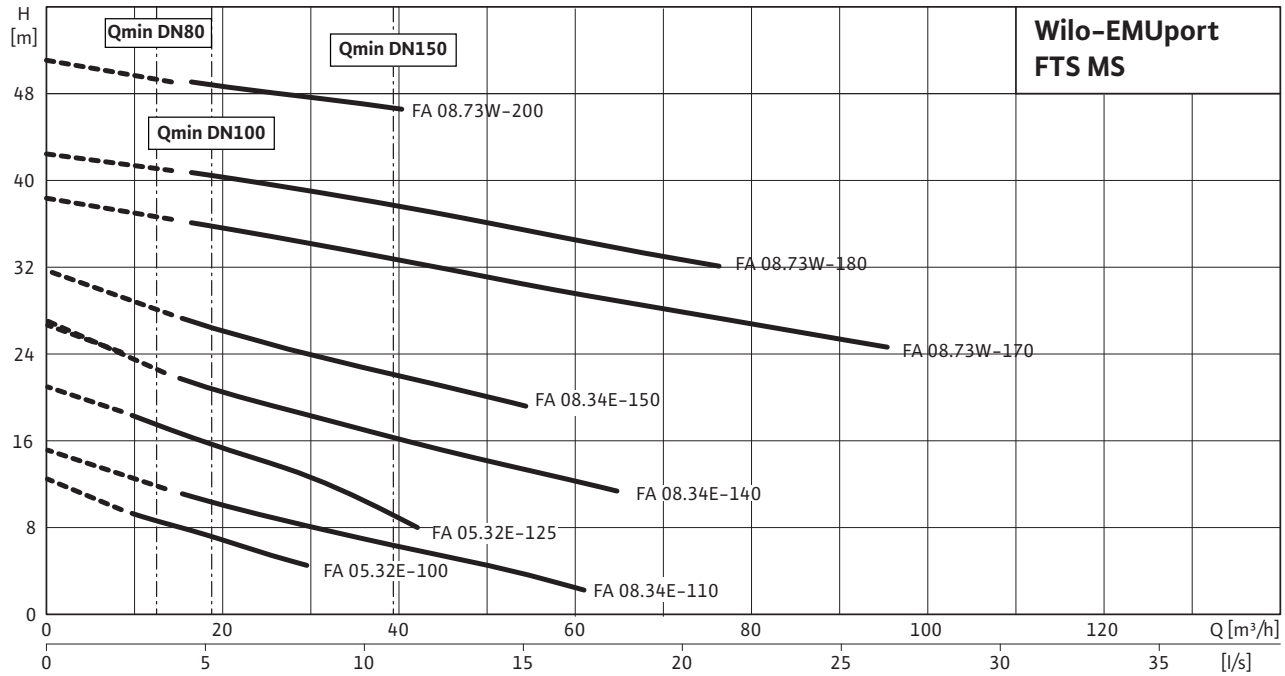
Scope of delivery
- Ready-to-install solids separation system
- Two sewage pumps with 10 m cable
- Individual shut-off of the solids separation reservoirs
- Switchgear with level measurement
- Discharge pipe junction with smooth pipe end
- Non-return valve

Dimensioning
The installation must be configured for the maximum wastewater flow occurring, including a possible additional peak flow. The pumps must be configured for a minimum flow velocity of 0.7 m/s in the discharge pipeline (e.g. min. 21.6 m^3/h with DN 100 pipe).

The manometric delivery head is calculated as the maximum static head + pipeline friction losses + pumping station losses of 1.0 mWS.

Wilo-EMUport FTS MS...

Pump curves Wilo-EMUport FTS MS



Other hydraulic systems available on request.

Technical data

Wilo-EMUport FTS...	System output	Volume of collection reservoir	Installation depth below ground surface level up to inlet floor	Max. delivery head	Sump diameter
	Q	V	Hb	H	Di
	[m³/h]	[l]	[mm]	[m]	[mm]
MS 590-1500	6	260	590	25	1500
MS 590-2000	10	460	590	25	2000
MS 740-1500	10	320	740	25	1500
MS 740-2000	15	570	740	25	2000
MS 940-1500	15	580	940	25	1500
MS 940-2000	15	1040	940	25	2000
MS 1200-2000	25	1070	1200	50	2000
MS 1500-2000	35	1070	1500	50	2000

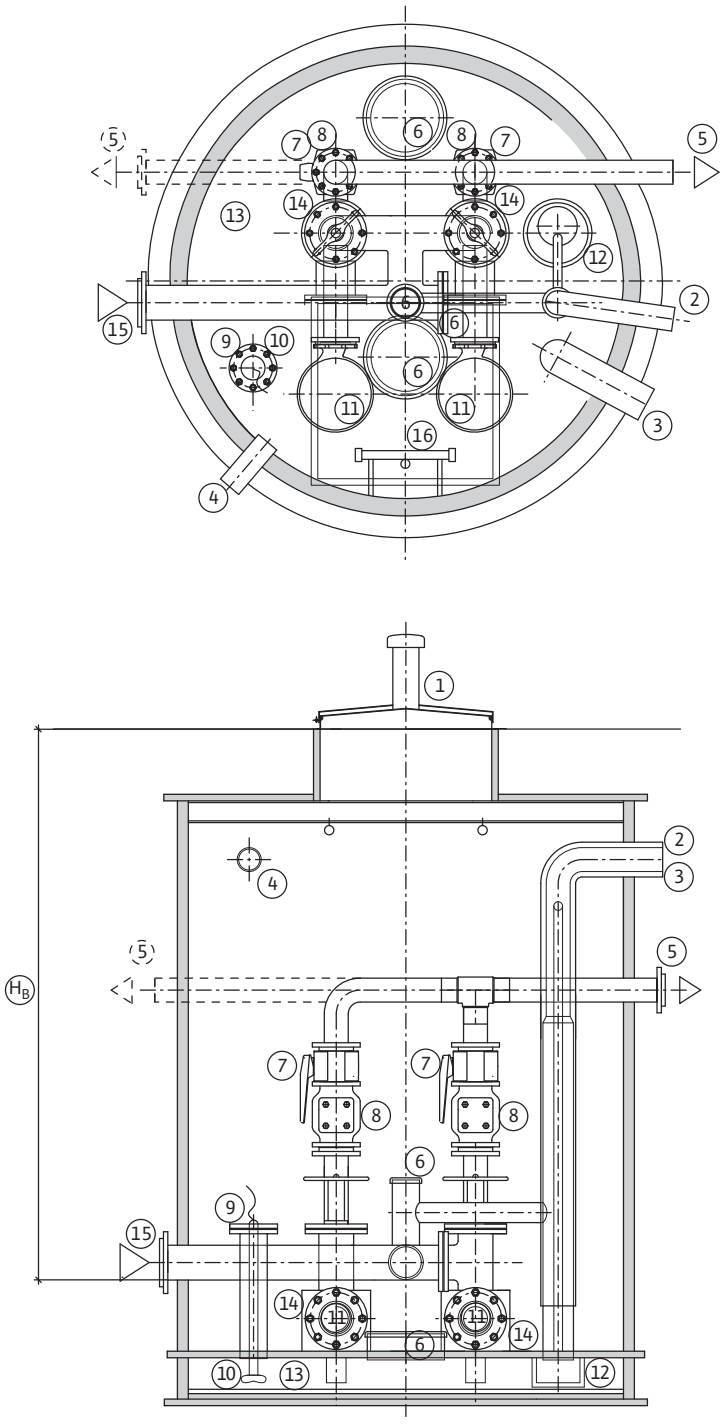
Pump recommendations

Wilo-EMU...	Type of motor	Nominal current	Starting current - direct	Starting current - star-delta	Nominal motor power	Power consumption	Operating mode (non-immersed)	Free ball passage
	–	I_N	I_A		P_2	P_1	–	L
	–	[A]			[kW]		–	[mm]
FA 05.32E	T 12-2/11	4.8	25	9	2	2.6	S2-15 min.	45
FA 08.34E	T 13-2/16	9.7	64	22	5	5.9	S2-15 min.	45
FA 08.73W	FK 202-2/22	34.5	160	53	17	21	S1	80
FA 08.73W	T 20.1-2/30	45.5	325	52	23	28	S2-15 min.	80

The specification regarding the operating mode only applies to nominal motor power P_2. Other motors available on request.

Wilo-EMUport FTS MS...

Installation drawing Wilo-EMUport FTS MS



1 = pump cover; 2 = reservoir ventilation; 3 = sump ventilation; 4 = cable conduit; 5 = discharge pipeline, either to left or right; 6 = cleaning opening; 7 = ball valve; 8 = non-return ball valve; 9 = sensor flange; 10 = water level sensor; 11 = pump; 12 = pump sump with drain pump; 13 = collection reservoir; 14 = solids reservoir; 15 = inlet; 16 = ladder with easy-access aid
H_B = installation depth up to inlet floor
All dimensions for inlet, discharge pipeline etc. can be made to order.

Wilo-EMUport FTS MS...

Series description Wilo-EMUport FTS MG...

Design
Sewage lifting unit with compact solids separation system for installation in a building or concrete sump

Type key

Example:	**Wilo-EMUport FTS MG 750-1500**
FTS	Solids separation system
M	Version (M = compact version, F = large version)
G	Type of installation (G = in building, S = with PE-HD sump)
750	Installation depth below inlet floor in mm
1500	Min. sump diameter in mm

Application
- System for installation in an existing structure (building or concrete sump).
- Sewage lifting unit with compact solids separation system for drainage of commercial buildings and complexes (e.g. hotels, department stores, etc.), small residential estates or as a replacement system for the refurbishment of existing large concrete sumps.

Special features/product advantages
- Energy saving due to pumps with narrow ball passage, which produces better efficiency than with conventional sewage pumping stations
- Considerably less susceptible to plugging as the pumps do not come into contact with the solids in the wastewater
- Uninterrupted operation during maintenance or repair work due to the station's double-pump design and individual shut-off of the solids separation reservoirs
- All parts are accessible from outside, so very easy to maintain and hygienic
- Resistance to corrosion and long life due to construction from PE-HD material

Technical data
- Max. inlet: 45 m^3/h
- Max. useable tank volume: 500 l
- Max. delivery head: 65 m
- Suction head: 400 – 1200 mm
- Mains connection: 3~400 V, 50 Hz

Equipment/function
- Solids separation system with solids separation reservoir and collection reservoir
- Two dry-well installed submersible sewage pumps for alternating mode
- Switching system and level measurement according to customer request
- Individual shut-off of the solids collection reservoirs

Materials
- Solids separation system: PE-HD
- Pipework: PE-HD
- Pumps and non-return ball valves: grey cast iron, coated

Description/design
Connection-ready fully submersible sewage pumping station with solids separation system and a gas- and watertight collection tank. Equipped as a double-pump system with submersible sewage pumps, running in alternating mode. Easy handling and optimum tank drainage by means of depth suction.

Due to the use of solids separation tanks, the pumps do not come into contact with the solids in the fluid. In this way, pumps with narrow ball passages and optimised efficiency can be used for pumping sewage.

The dry well installation of the pumps and their configuration as a redundant double-pump system ensures maximum hygiene, ease of maintenance, and operational reliability. The complete system, apart from the pumps and non-return valve, is made of corrosion-resistant PE-HD.

Attention: The accompanying switchgear is not submersible and must for that reason be arranged in such a way that it is secure against flooding.

Options
- Other reservoir sizes and suction heads can be produced as requested by the customer, e.g. due to existing installation openings or door dimensions.
- Inductive flow rate gauge
- Slide valve for inlet
- Slide valve for discharge pipeline
- Flange outlet for discharge pipeline
- Flush connection

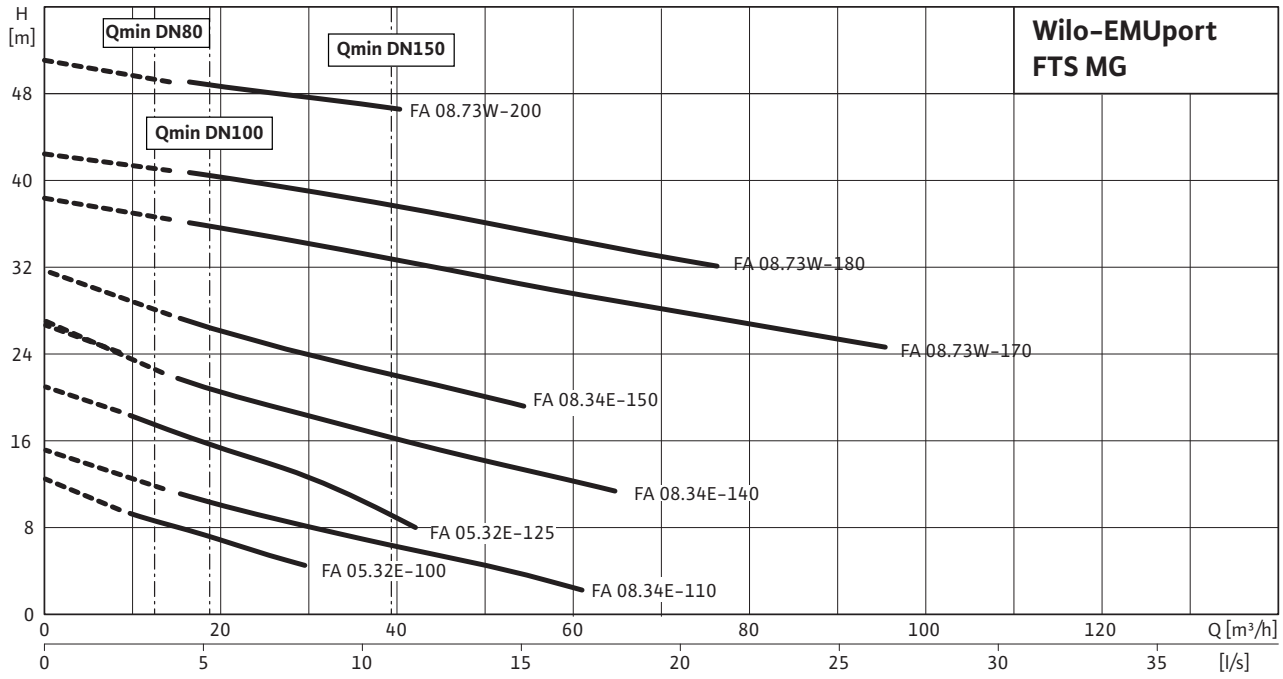
Scope of delivery
- Ready-to-install solids separation system
- Two sewage pumps with 10 m cable
- Individual shut-off of the solids separation reservoirs
- Switchgear with level measurement
- Discharge pipe junction with smooth pipe end
- Non-return valve

Dimensioning
The installation must be configured for the maximum wastewater flow occurring, including a possible additional peak flow. The pumps must be configured for a minimum flow velocity of 0.7 m/s in the discharge pipeline (e.g. min. 21.6 m^3/h with DN 100 pipe).

The manometric delivery head is calculated as the maximum static head + pipeline friction losses + pumping station losses of 1.0 mWS.

Wilo-EMUport FTS MG...

Pump curves Wilo-EMUport FTS MG



Other hydraulic systems available on request.

Technical data

Wilo-EMUport FTS...	System output	Volume of collection reservoir	Installation depth below inlet floor	Max. delivery head	Minimum installation opening	Min. concrete sump diameter
	Q	V	Ha	H	–	Di min.
	[m³/h]	[l]	[mm]	[m]	[mm]	
MG 400-1500	1	40	400	25	1000 x 1150	1500
MG 550-1500	6	140	550	25	1000 x 1150	1500
MG 750-1500	10	320	750	25	1000 x 1150	1500
MG 750-2500	15	640	750	25	1800 x 1800	2500
MG 1200-2500	25	950	1200	50	1800 x 1800	2500
MG 1500-2500	30	950	1500	50	1800 x 1800	2500

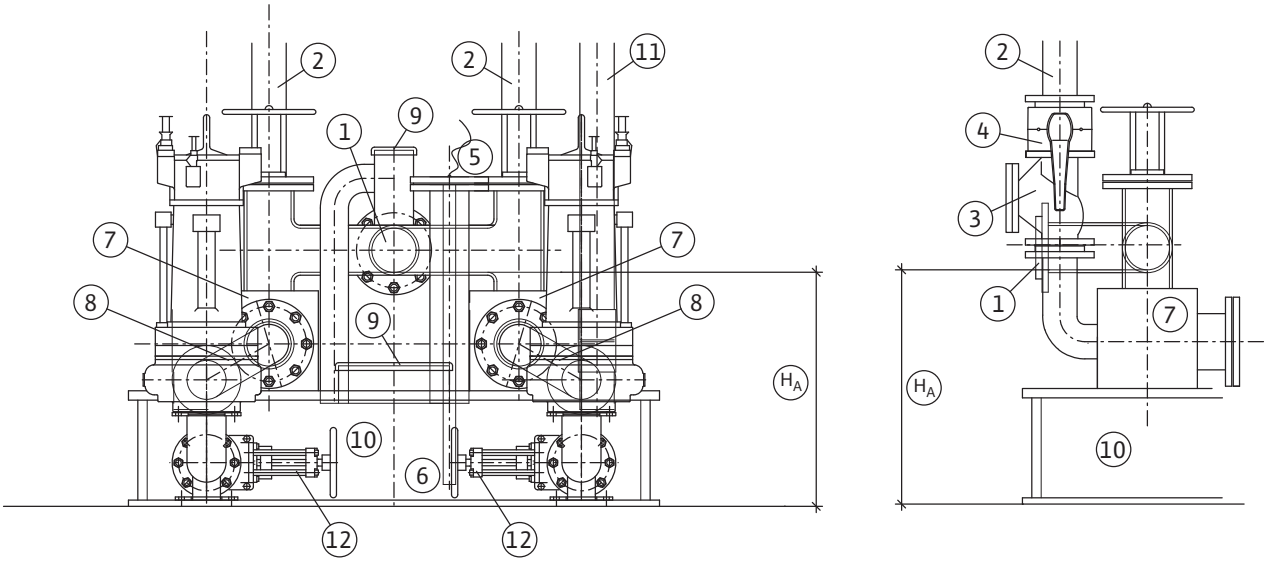
Pump recommendations

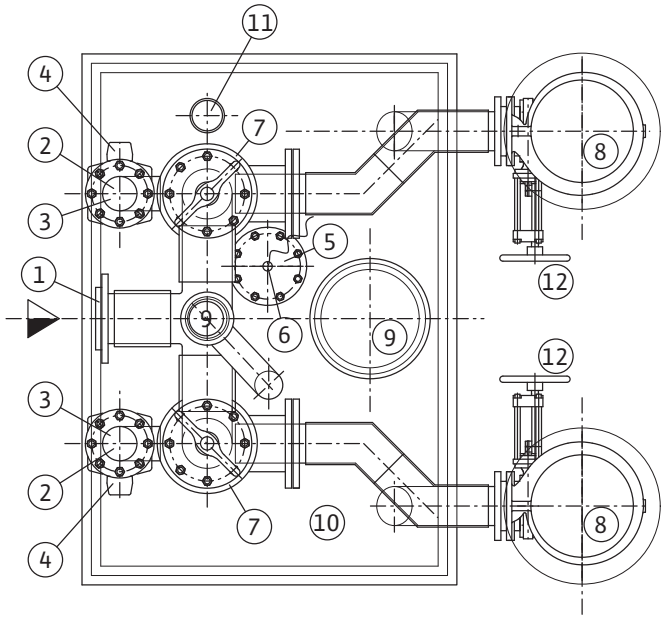
Wilo-EMU...	Type of motor	Nominal current	Starting current - direct	Starting current - star-delta	Nominal motor power	Power consumption	Operating mode (non-immersed)	Free ball passage
	–	I_N	I_A		P_2	P_1	–	L
	–	[A]			[kW]		–	[mm]
FA 05.32E	T 12-2/11	4.8	25	9	2	2.6	S2-15 min.	45
FA 08.34E	T 13-2/16	9.7	64	22	5	5.9	S2-15 min.	45
FA 08.73W	T 20.1-2/30	45.5	325	52	23	28	S2-15 min.	80
FA 08.73W	FK 202-2/22	34.5	160	53	17	21	S1	80

The specification regarding the operating mode only applies to nominal motor power P_2. Other motors available on request.

Wilo-EMUport FTS MG...

Installation drawing Wilo-EMUport FTS MG





1 = inlet; 2 = discharge pipeline; 3 = non-return ball valve; 4 = ball valve; 5 = sensor flange; 6 = water level sensor; 7 = solids reservoir; 8 = pump; 9 = cleaning opening;10 = collection reservoir; 11 = reservoir ventilation; 12 = check valve
H_A = suction head; inlet floor to ground level
All dimensions for inlet, discharge pipeline etc. can be made to order.

Wilo-EMUport FTS MG...

Series description Wilo-EMUport FTS FS...

Design
Sewage pumping station with solids separation system in PE-HD sump

Type key

Example:	**Wilo-EMUport FTS FS 2000**
FTS	Solids separation system
F	Version (M = compact version, F = large version)
S	Type of installation (G = in building, S = with PE-HD sump)
2000	Sump diameter in mm

Application
- Complete system fully assembled in PE-HD sump
- Sewage pumping station with solids separation system for drainage of larger residential estates and boroughs.

Special features/product advantages
- Energy saving due to pumps with narrow ball passage, which produces better efficiency than with conventional sewage pumping stations
- Considerably less susceptible to plugging as the pumps do not come into contact with the solids in the wastewater
- Uninterrupted operation during maintenance or repair work due to the station's double-pump design and individual shut-off of the solids separation reservoirs
- All parts are accessible from outside, so very easy to maintain and hygienic
- Resistance to corrosion and long life due to construction from PE-HD material
- Can be used in drinking water protection areas (protected water catchment zones), being uniformly fuse-welded and absolutely watertight
- Defined interface, being a fully-assembled pumping station
- Quick and cost-effective installation and commissioning on site, being delivered fully assembled in the sump
- Acceptance inspection and testing can be done at the factory

Technical data
- Max. inlet: 400 m^3/h
- Max. useable tank volume: 8000 l
- Max. delivery head: 60 m
- Max. installation depth below inlet floor: 2300 mm
- Mains connection: 3~400 V, 50 Hz

Equipment/function
- Solids separation system with solids separation reservoir and collection reservoir
- Two dry-well installed submersible sewage pumps for alternating mode
- Switching system and level measurement according to customer request
- Individual shut-off of the solids collection reservoirs

Materials
- Solids separation system: PE-HD
- Pipework: PE-HD
- Pumps and non-return ball valves: grey cast iron, coated

Description/design
Connection-ready fully submersible sewage pumping station with solids separation system and a gas- and watertight collection tank. Equipped as a double-pump system with submersible sewage pumps, running in alternating mode. Easy handling and optimum tank drainage by means of depth suction.

Due to the use of solids separation tanks, the pumps do not come into contact with the solids in the fluid. In this way, pumps with narrow ball passages and optimised efficiency can be used for pumping sewage.

The dry well installation of the pumps and their configuration as a redundant double-pump system ensures maximum hygiene, ease of maintenance, and operational reliability. The complete system, apart from the pumps and non-return valve, is made of corrosion-resistant PE-HD.

Attention: The accompanying switchgear is not submersible and must for that reason be arranged in such a way that it is secure against flooding.

Options
- Other reservoir sizes and suction heads can be produced as requested by the customer, e.g. due to existing installation openings or door dimensions.
- Inductive flow rate gauge
- Slide valve for inlet
- Slide valve for discharge pipeline
- Flange outlet for discharge pipeline
- Flush connection

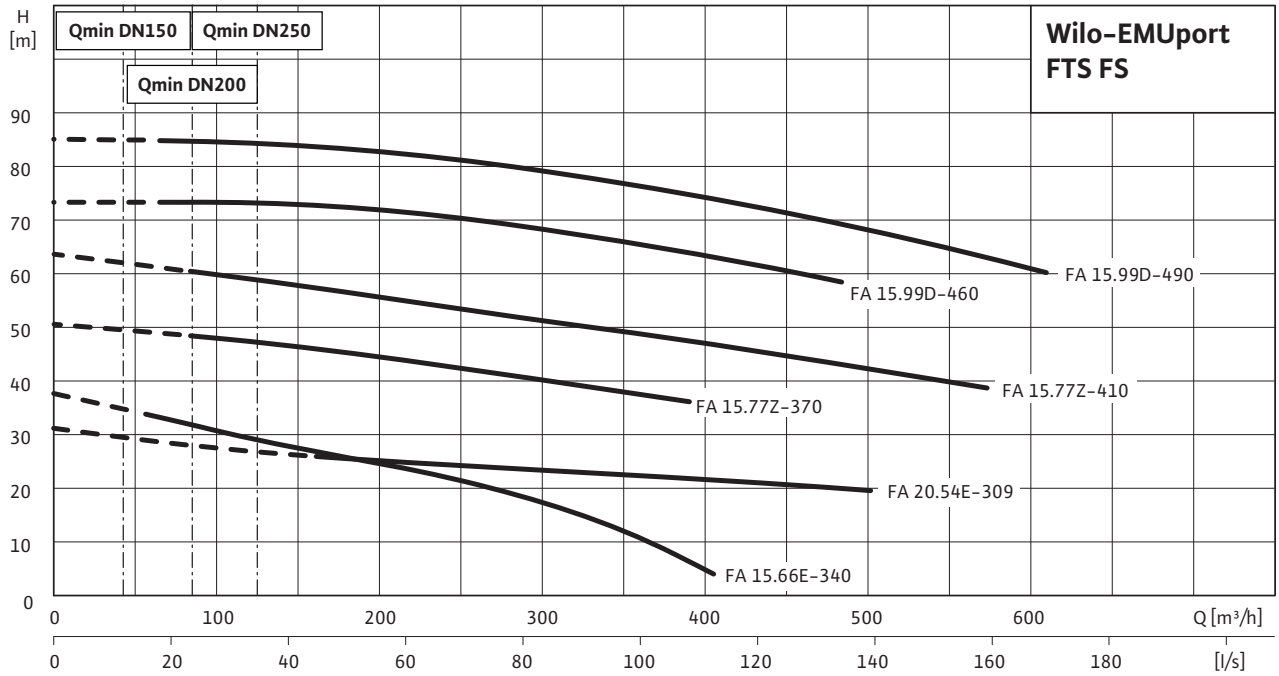
Scope of delivery
- Ready-to-install solids separation system
- Two sewage pumps with 10 m cable
- Individual shut-off of the solids separation reservoirs
- Switchgear with level measurement
- Discharge pipe junction with smooth pipe end
- Non-return valve

Dimensioning
The installation must be configured for the maximum wastewater flow occurring, including a possible additional peak flow. The pumps must be configured for a minimum flow velocity of 0.7 m/s in the discharge pipeline (e.g. min. 21.6 m^3/h with DN 100 pipe).

The manometric delivery head is calculated as the maximum static head + pipeline friction losses + pumping station losses of 1.0 mWS.

Wilo-EMUport FTS FS...

Pump curves Wilo-EMUport FTS FS



Other hydraulic systems available on request.

Technical data

Wilo-EMUport FTS...	System output	Volume of collection reservoir	Installation depth below ground surface level up to inlet floor	Max. delivery head	Sump diameter
	Q	V	Hb	H	Di
	[m³/h]	[l]	[mm]	[m]	[mm]
FS 2000	65...90	2090	1460...1660	70	2000
FS 2500	130...190	2970	1660...2160	70	2500
FS 3000	230...310	4500	2160...2560	80	3000
FS 3500	310...410	5350	2160...2560	80	3500

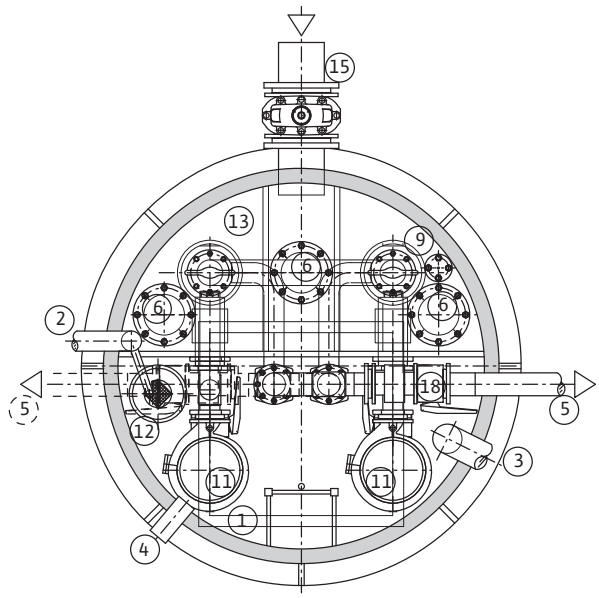
Pump recommendations

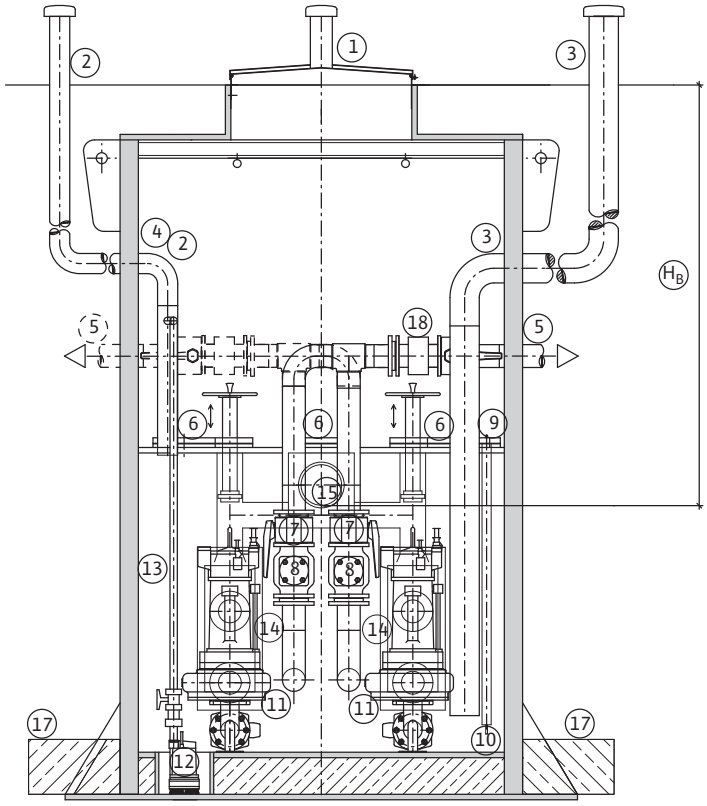
Wilo-EMU...	Type of motor	Nominal current	Starting current – direct	Starting current – star-delta	Nominal motor power	Power consumption	Operating mode (non-immersed)	Free ball passage
	–	I_N	I_A		P_2	P_1	–	L
	–	[A]			[kW]		–	[mm]
FA 15.66E	FK 27.1-4/32	72	375	124	35	41.5	S1	80
FA 15.77Z	FK 34.1-4/29	108	580	190	55	64	S1	80
FA 15.77Z	FK 34.1-4/42	160	840	280	80	92	S1	80
FA 15.99D	FK 42.1-4/36	235	1410	470	110	131	S1	50
FA 15.99D	FKT 49-4/36	265	1840	610	140	152	S1	50
FA 20.54E	FK 27.1-4/32	72	375	124	35	41.5	S1	125

The specification regarding the operating mode only applies to nominal motor power P_2. Other motors available on request.

Wilo-EMUport FTS FS...

Installation drawing Wilo-EMUport FTS FS





1 = pump cover; 2 = reservoir ventilation;3 = sump ventilation; 4 = cable conduit; 5 = discharge pipeline, either to left or right; 6 = cleaning opening;7 = ball valve; 8 = non-return ball valve; 9 = sensor flange; 10 = water level sensor; 11 = pump; 12 = pump sump with drain pump; 13 = collection reservoir; 14 = solids reservoir; 15 = inlet; 16 = ladder with easy-access aid 17 = concrete bedding (to be provided by customer);18 = MID with check valve
H_B = installation depth up to inlet floor
All dimensions for inlet, discharge pipeline etc. can be made to order.

Wilo-EMUport FTS FS...

Series description Wilo-EMUport FTS FG...

Design
Sewage lifting unit with solids separation system for installation in a building or concrete sump

Type key

Example:	**Wilo-EMUport FTS FG 1500**
FTS	Solids separation system
F	Version (M = compact version, F = large version)
G	Type of installation (G = in building, S = with PE-HD sump)
1500	Outer diameter of the collection reservoir in mm

Application
- System for installation in an existing structure (building or concrete sump).
- Sewage lifting unit with solids separation system for drainage of large residential estates and boroughs or as a replacement system for the refurbishment of existing large concrete sumps.

Special features/product advantages
- Energy saving due to pumps with narrow ball passage, which produces better efficiency than with conventional sewage pumping stations
- Considerably less susceptible to plugging as the pumps do not come into contact with the solids in the wastewater
- Uninterrupted operation during maintenance or repair work due to the station's double-pump design and individual shut-off of the solids separation reservoirs
- All parts are accessible from outside, so very easy to maintain and hygienic
- Resistance to corrosion and long life due to construction from PE-HD material

Technical data
- Max. inlet: 600 m^3/h
- Max. useable tank volume: 12000 l
- Max. delivery head: 80 m
- Installation depth below inlet floor: 1200 - 2300 mm
- Mains connection: 3~400 V, 50 Hz

Equipment/function
- Solids separation system with solids separation reservoir and collection reservoir
- Two dry-well installed submersible sewage pumps for alternating mode
- Switching system and level measurement according to customer request
- Individual shut-off of the solids collection reservoirs

Materials
- Solids separation system: PE-HD
- Pipework: PE-HD
- Pumps and non-return ball valves: grey cast iron, coated

Description/design
Connection-ready fully submersible sewage pumping station with solids separation system and a gas- and watertight collection tank. Equipped as a double-pump system with submersible sewage pumps, running in alternating mode. Easy handling and optimum tank drainage by means of depth suction.

Due to the use of solids separation tanks, the pumps do not come into contact with the solids in the fluid. In this way, pumps with narrow ball passages and optimised efficiency can be used for pumping sewage.

The dry well installation of the pumps and their configuration as a redundant double-pump system ensures maximum hygiene, ease of maintenance, and operational reliability. The complete system, apart from the pumps and non-return valve, is made of corrosion-resistant PE-HD.

Attention: The accompanying switchgear is not submersible and must for that reason be arranged in such a way that it is secure against flooding.

Options
- Other reservoir sizes and suction heads can be produced as requested by the customer, e.g. due to existing installation openings or door dimensions.
- Inductive flow rate gauge
- Slide valve for inlet
- Slide valve for discharge pipeline
- Flange outlet for discharge pipeline
- Flush connection

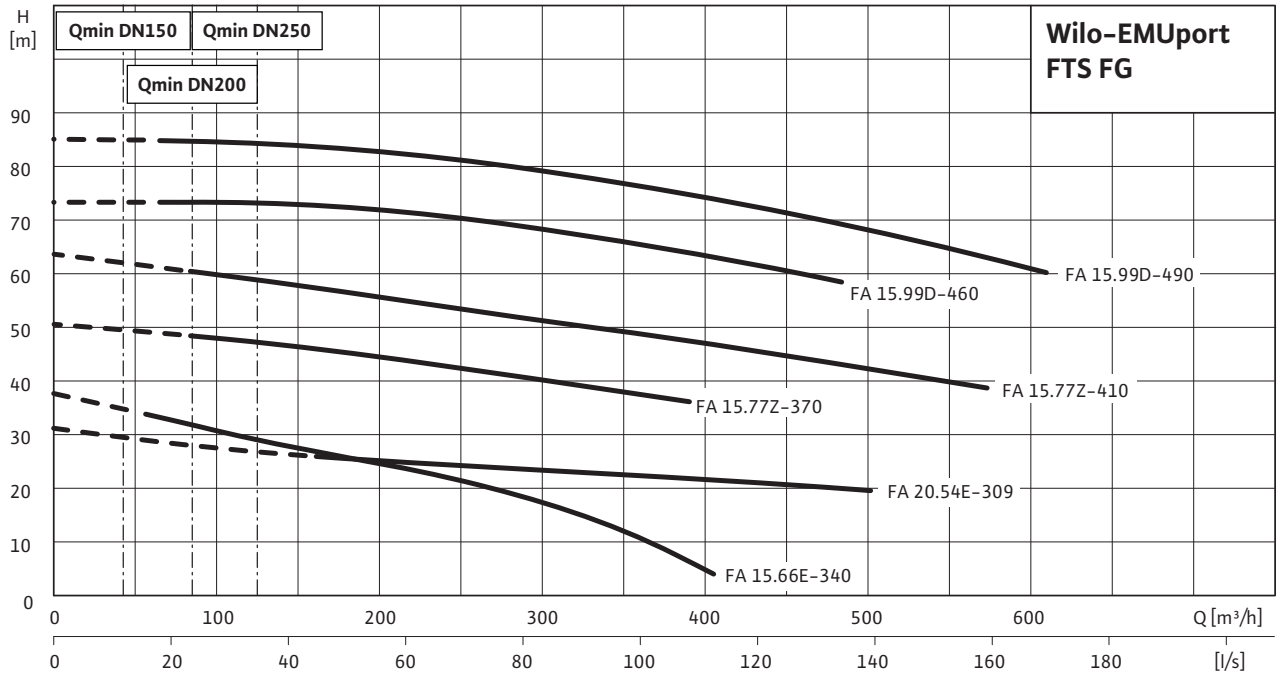
Scope of delivery
- Ready-to-install solids separation system
- Two sewage pumps with 10 m cable
- Individual shut-off of the solids separation reservoirs
- Switchgear with level measurement
- Discharge pipe junction with smooth pipe end
- Non-return valve

Dimensioning
The installation must be configured for the maximum wastewater flow occurring, including a possible additional peak flow. The pumps must be configured for a minimum flow velocity of 0.7 m/s in the discharge pipeline (e.g. min. 21.6 m^3/h with DN 100 pipe).

The manometric delivery head is calculated as the maximum static head + pipeline friction losses + pumping station losses of 1.0 mWS.

Wilo-EMUport FTS FG...

Pump curves Wilo-EMUport FTS FG



Other hydraulic systems available on request.

Technical data

Wilo-EMUport FTS...	System output	Volume of collection reservoir	Installation depth below inlet floor	Max. delivery head	Minimum installation opening
	Q	V	Ha	H	–
	[m³/h]	[l]	[mm]	[m]	[mm]
FG 1500	75...100	2170	1200...1400	80	1800 x 2500
FG 2000	130...200	3860	1400...1900	85	2300 x 3000
FG 2500	260...380	7020	1900...2300	80	2800 x 3500
FG 3000	450	13640	2300	75	3300 x 4000
FG 3500	600	18570	2300	65	3800 x 4500

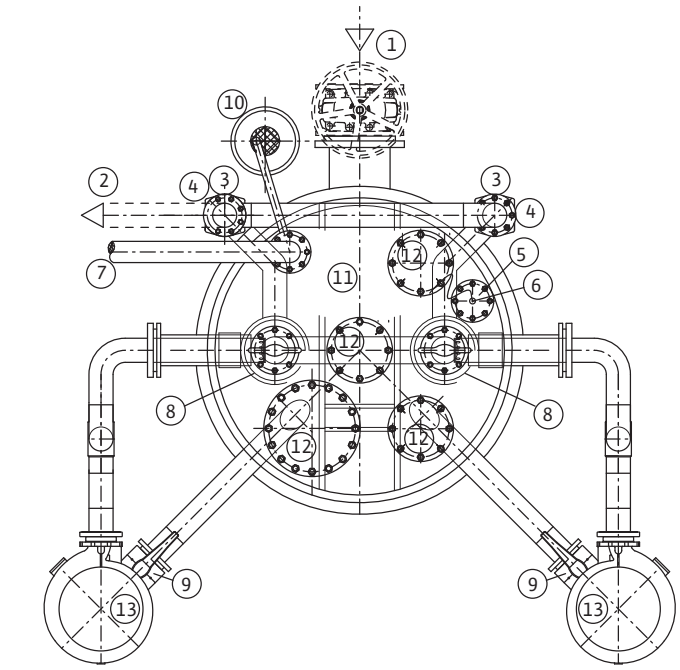
Pump recommendations

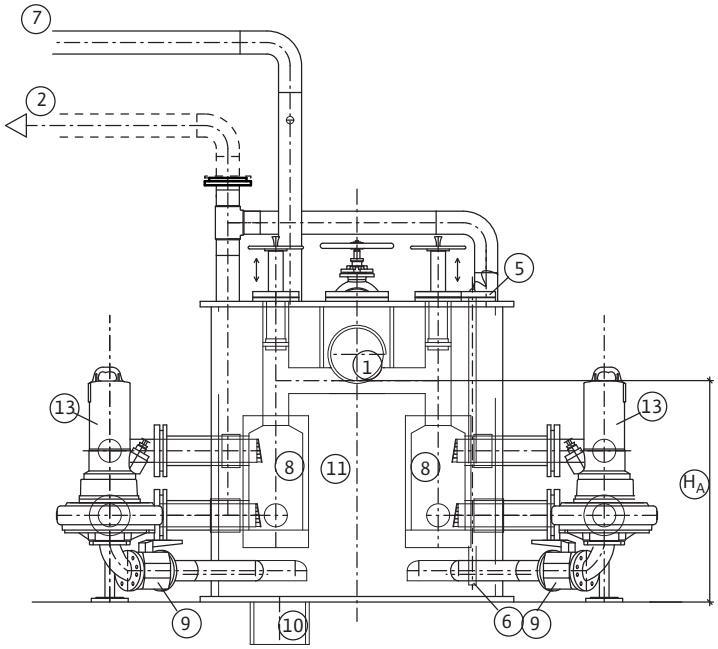
Wilo-EMU...	Type of motor	Nominal current	Starting current – direct	Starting current – star-delta	Nominal motor power	Power consumption	Operating mode (non-immersed)	Free ball passage
	–	I_N	I_A		P_2	P_1	–	L
	–	[A]			[kW]		–	[mm]
FA 15.66E	FK 27.1-4/32	72	375	124	35	41.5	S1	80
FA 15.77Z	FK 34.1-4/29	108	580	190	55	64	S1	80
FA 15.77Z	FK 34.1-4/42	160	840	280	80	92	S1	80
FA 15.99D	FK 42.1-4/36	235	1410	470	110	131	S1	50
FA 15.99D	FKT 49-4/36	265	1840	610	140	152	S1	50
FA 20.54E	FK 27.1-4/32	72	375	124	35	41.5	S1	125

The specification regarding the operating mode only applies to nominal motor power P_2. Other motors available on request.

Wilo-EMUport FTS FG...

Installation drawing Wilo-EMUport FTS FG





1 = inlet with gate valve; 2 = discharge pipeline, possible in all directions; 3 = check valve; 4 = non-return ball valve; 5 = sensor flange; 6 = water level sensor; 7 = reservoir exhaust; 8 = solids reservoir; 9 = check valve; 10 = pump sump with drain pump; 11 = collection reservoir; 12 = cleaning opening;13 = pump; H_A = suction head; inlet floor to ground level
All dimensions for inlet, discharge pipeline etc. can be made to order.

Accessories

Electrical accessories

Recommended accessories

	Wilo EC-Drain 1x4.0 [1]	Wilo-Drain-Control PL1 [1]	Wilo-Drain-Control PL1 WS [1]	Wilo-Drain-Control PL2 [2]	Wilo-Drain-Control PL2 WS [2]	Wilo-Drain-Control 1 [1]	Wilo-Drain-Control 2 [2]
Pumps stations							
Wilo-DrainLift WS 625	–	o	•	o	•	–	–
Wilo-DrainLift WS 830	–	o	•	o	•	–	–
Wilo-DrainLift WS 900/1100	–	o	•	o	•	o	o
Solids separation systems							
Wilo-EMUport FTS MS	–	–	–	o	o	–	–
Wilo-EMUport FTS MG	–	–	–	o	o	–	–
Wilo-EMUport FTS FS	–	–	–	–	–	–	o
Wilo-EMUport FTS FG	–	–	–	–	–	–	o

• = recommended, o = optional, o* = optional (up to 4 kW motor power), – = not required
[1]= switchgear for 1 pump, [2]= switchgear for 2 pumps

Recommended accessories

	Wilo-KAS	Wilo-Drain-Alarm 2	Wilo-Alarm-Control 1	Wilo-Alarm-Control 2	Motor protection plug CEE	Level sensor	Float switch MS1	Float switch WA
Pumps stations								
Wilo-DrainLift WS 625	o	o	o	o	–	•	o	o
Wilo-DrainLift WS 830	o	o	o	o	–	•	o	o
Wilo-DrainLift WS 900/1100	o	o	o	o	–	•	o	o
Solids separation systems								
Wilo-EMUport FTS MS	–	o	–	–	–	o	–	–
Wilo-EMUport FTS MG	–	o	–	–	–	o	–	–
Wilo-EMUport FTS FS	–	o	–	–	–	o	–	–
Wilo-EMUport FTS FG	–	o	–	–	–	o	–	–

• = recommended, o = optional, o* = optional (up to 4 kW motor power), – = not required

Accessories

Electrical accessories

Recommended accessories

	Dynamic pressure system	Bubbling-through system	Ex-rated cut-off relay	Zener barrier	Switch cabinet	Flash light	Signal horn
Pumps stations							
Wilo-DrainLift WS 625	o	o	o	o	o	o	o
Wilo-DrainLift WS 830	o	o	o	o	o	o	o
Wilo-DrainLift WS 900/1100	o	o	o	o	o	o	o
Solids separation systems							
Wilo-EMUport FTS MS	–	–	–	–	o	o	o
Wilo-EMUport FTS MG	–	–	–	–	–	–	–
Wilo-EMUport FTS FS	–	–	–	–	o	o	o
Wilo-EMUport FTS FG	–	–	–	–	–	–	–

• = recommended, o = optional, – = not necessary

Equipment/function

		Wilo EC-Drain 1x4.0	Wilo Drain-Control PL 1 / PL 1 WS	Wilo Drain-Control PL 2 / PL 2 WS	Wilo Drain-Control 1	Wilo Drain-Control 2	Wilo KAS
Application							
Switchgear for controlling pumps		•	•	•	•	•	–
Alarm switchgear		–	–	–	–	–	•
Number of pumps to be controlled		1	1	2	1	2	–
Electrical connection							
Direct start-up [A]		max. 12	max. 12	max. 2 x 12	max. 10	max. 2 x 10	–
Star-delta switching		–	–	–	> 10 A	> 10 A	–
Design							
Microprocessor-controlled		–	•	•	•	•	–
Electronic		•	–	–	–	–	•
Housing material							
Plastic		•	•	•	•	•	•
Metal		–	–	–	–	–	–
Equipment							
Test run		–	•	•	–	–	–
Pump starts counter/pulse counter		–	•	•	–	–	–
LC display		–	•	•	•	•	–
LED / control lamp		•	•	•	•	•	–
Main switch		•	• (only for PL 1 WS)	• (only for PL 2 WS)	•	•	–
Ampere indicator		–	•	•	•[2]	•[2]	–
Voltmeter		–	–	–	–	–	–
Adjustable follow-up time		–	•	•	•	•	–
Operating hours counter		–	•	•	•	•	–
Level measurement	Float switch	•[3]	•[3]	•[3]	•[3]	•[3]	–
	Pneumatic pressure transducer	–	•	•	–	–	–
	Level sensor (4-20 mA)	–	•[4]	•[4]	•[4]	•[4]	–
	Electrodes	–	–	–	–	–	•
Alarm	Mains-dependent	•	•	•	•	•	–
	Integrated (buzzer)	•	•	•	–	–	•
Pump cycling		–	–	•	–	•	–

• = available; - = not available;
[1] For other motor powers on request
[2] Only for direct-activation devices (up to 4 kW)
[3] In potentially explosive areas, only with ex-rated cut-off relay
[4] In potentially explosive areas, only with Zener barrier

Accessories

Electrical accessories

Equipment/function	Wilo EC-Drain 1x4.0	Wilo Drain-Control PL 1 / PL 1 WS	Wilo Drain-Control PL 2 / PL 2 WS	Wilo Drain-Control 1	Wilo Drain-Control 2	Wilo KAS
Signalling/display function						
Collective run signal (SBM)	•	–	–	–	–	–
Collective fault signal (SSM)	•	•	•	•	•	–
Individual run signal (EBM)	–	–	–	•	•	–
Individual fault signal (ESM)	–	–	•	–	–	–
Control functions (motor monitoring)						
WSK	•	•	•	•	•	–
PTC	–	–	–	•	•	–
Impermeability (DI)	–	–	–	•	•	–
Electronic	•	•	•	• (up to 10 A)	• (up to 10 A)	–
Motor protection switch	–	Optional	Optional	• (from 10 A)	• (from 10 A)	–
Scope of delivery						
Float switch	–	–	–	–	–	–
Horn	–	–	–	–	–	–

• = available, – = not available
[1] For other motor powers on request
[2] Only for direct-activation devices (up to 4 kW)
[3] In potentially explosive areas, only with ex-rated cut-off relay
[4] In potentially explosive areas, only with Zener barrier

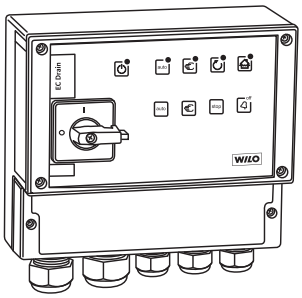
Equipment/function

		Wilo Drain-Alarm 2	Wilo Alarm-Control 1	Wilo Alarm-Control 2	Motor protection plug CEE	Ex-rated cut-off relay	Zener barrier	Flash light	Signal horn	Wilo SK 545
Application										
Switchgear for controlling pumps		–	–	–	•	–	–	–	–	–
Alarm switchgear		•	•	•	–	–	–	–	–	–
Number of pumps to be controlled		–	–	–	1	–	–	–	–	2
Electrical connection										
Direct start-up [A]		–	–	–	•	–	–	–	–	– External power section
Star-delta switching		–	–	–	–	–	–	–	–	– External power section
Design										
Electronic		•	•	•	–	•	•	•	–	•
Electromechanical		–	–	–	•	–	–	–	•	–
Housing material										
Plastic		•	•	•	•	•	•	•	•	•
Equipment										
LED / control lamp		•	–	–	•	•	–	–	–	•
Level measurement	Float switch	•	•	•	•	•	–	–	–	–
	Pneumatic pressure transducer	–	–	–	–	–	–	–		
	Level sensor (4-20 mA)	–	–	–	–	–	•	–	–	–
	Electrodes	–	–	–	–	–	–	–	–	–
Alarm	Independent of mains	•	•	•	–	–	–	–	–	–
	Mains-dependent	•	•	•	–	–	–	–	–	–
	Integrated (buzzer)	•	•	•	–	–	–	–	–	–
Socket 1~230 V		–	–	•	–	–	–	–	–	–
Signalling/display function										
Individual fault signal (ESM)		•	•	–	–	–	–	–	–	–
Control functions (motor monitoring)										
WSK		–	–	–	•	–	–	–	–	•
Impermeability (DI)		–	–	–	–	–	–	–	–	•
Motor protection switch		–	–	–	•	–	–	–	–	–

• = available, – = not available

Electrical accessories

Switchgear Wilo EC-Drain 1x4.0

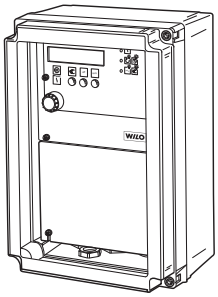


Electronically controlled switchgear for automatic, transmitter-dependent control of 1 submersible wastewater/sewage pump of the Wilo Drain or Wilo EMU series
- Motor protection by integrated motor monitoring and WSK evaluation
- Lockable main switch
- Transmitter connection for float switch types WA 65, WA 95
- Button for manual operation of the pump
- High water alarm
- Forced activation with high water
- Potential-free fault signal (changeover contact) and potential-free run signal (changeover contact)
- Integrated mains-dependent alarm buzzer
- Operation, high water and malfunction display via LEDs on the front panel

Technical data:
- Operating voltage: 1~230 V, 3~400 V, 3~230 V
- Connected load P_2: 4.0 kW
- Maximum current: 12 A
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 215 x 220 x 125 mm

Attention: Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. Ex-rated cut-off relays are to be provided for controlling pumps in potentially explosive areas.

Switchgear Wilo DrainControl PL 1



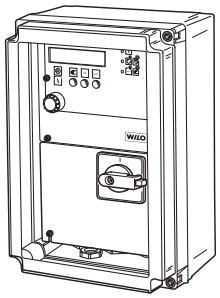
Switchgear for controlling the level of 1 submersible pump. Level measurement can be carried out using either the bubbling-through system or the dynamic pressure system, with float switches or electronic level sensors.
- LCD display
- LED for alarm, operation/run-on time, manual/automatic mode
- Input terminals for connecting float switches (WA 65, WA 95 or MS1) or for connecting a level sensor (factory setting: level sensor 0-1 mWS (4-20 mA)). Level sensors from 0-1 mWS to 0-5 mWS can be connected as an option. They are set using the switchgear menu.
- Potential-free contact for collective fault signal and high water alarm
- Forced activation of the pump
- Pump deactivation with run-on time
- Integrated buzzer
- Operating hours counter, pump starts

Technical data:
- Operating voltage: 1~230 V, 3~400 V
- Connected power P_2: 4.0 kW
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 180 x 255 x 180 mm

Attention: Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with Zener barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

Electrical accessories

Switchgear Wilo DrainControl PL 1-WS



Switchgear for controlling the level of 1 submersible pump. Level measurement can be carried out using either the bubbling-through system or the dynamic pressure system, with float switches or electronic level sensors.

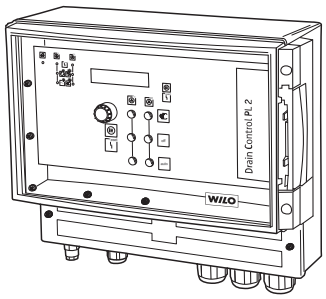
- LCD display
- LED for alarm, operation/run-on time, manual/automatic mode
- Input terminals for connecting float switches (WA 65, WA 95 or MS1) or for connecting a level sensor (factory setting: level sensor 0-1 mWS (4-20 mA)). Level sensors from 0-1 mWS to 0-5 mWS can be connected as an option. They are set using the switchgear menu.
- Potential-free contact for collective fault signal and high water alarm
- Forced activation of the pump
- Pump deactivation with run-on time
- Integrated buzzer
- Operating hours counter, pump starts
- Lockable main switch
- 3~ mains, no neutral conductor required

Technical data:

- Operating voltage: 1~230 V, 3~400 V
- Connected power P_2: 4.0 kW
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 180 x 255 x 180 mm

Attention: Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with Zener barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

Switchgear Wilo DrainControl PL 2



Switchgear for controlling the levels of 2 submersible pumps. Level measurement can be carried out using either the bubbling-through system or the dynamic pressure system, with float switches or electronic level sensors.

- LCD display, multi-language switching
- LED for alarm, operation/run-on time, manual/automatic mode
- Input terminals for connecting float switches (WA 65, WA 95 or MS1) or for connecting a level sensor (factory setting: level sensor 0-2.5 mWS (4-20 mA)). Level sensors from 0-1 mWS to 0-5 mWS can be connected as an option. They are set using the switchgear menu.
- Potential-free contacts for collective fault signal and high water alarm, malfunction pump 1, malfunction pump 2
- Forced activation of the pump
- Pump deactivation with run-on time
- Automatic fault-actuated switchover
- Integrated buzzer
- Operating hours counter, pump starts

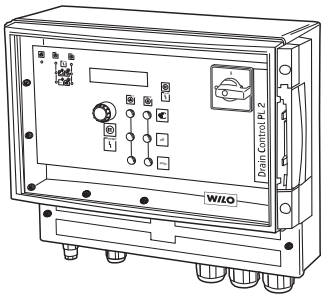
Technical data:

- Operating voltage: 1~230 V, 3~400 V
- Connected power P_2: 2x 4.0 kW
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 320 x 300 x 120 mm

Attention: Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with Zener barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

Electrical accessories

Switchgear Wilo DrainControl PL 2-WS



Switchgear for controlling the levels of 2 submersible pumps. Level measurement can be carried out using either the bubbling-through system or the dynamic pressure system, with float switches or electronic level sensors.

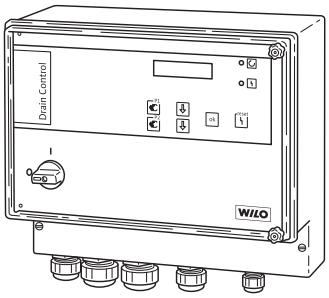
- LCD display, multi-language switching
- LED for alarm, operation/run-on time, manual/automatic mode
- Input terminals for connecting float switches (WA 65, WA 95 or MS1) or for connecting a level sensor (factory setting: level sensor 0-1 mWS (4-20 mA)). Level sensors from 0-1 mWS to 0-5 mWS can be connected as an option. They are set using the switchgear menu.
- Potential-free contacts for collective fault signal and high water alarm, malfunction pump 1, malfunction pump 2
- Forced activation of the pump
- Pump deactivation with run-on time
- Automatic fault-actuated switchover
- Integrated buzzer
- Operating hours counter, pump starts
- Lockable main switch
- 3~ mains, no neutral conductor required

Technical data:

- Operating voltage: 1~230 V, 3~400 V
- Connected power P_2: 2x 4.0 kW
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 320 x 300 x 120 mm

Attention: Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with Zener barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

Switchgear Wilo DrainControl 1/2



Microprocessor-controlled switchgear for fully automatic control of 1 or 2 submersible wastewater/sewage pumps from the Wilo-Drain and Wilo-EMU series.

- Manual-0-Automatic switch via keypad
- Two-line LCD display with 2 x 16 characters, multilingual, switchable, menu-driven operating option via keypad
- Input terminals for connecting a level sensor:
  - Standard: 0-2.5 mWs (4-20 mA)
  - Optional: 0-1 mWs (4-20 mA) or 0- 5 mWs (4-20 mA)
- Input terminals for connecting float switches WA 65, WA 95 or MS 1
- Automatic phase failure and rotating field control
- Operating hours counter
- Pump cycling (Control 2) after each pumping operation
- Potential-free contacts for:
  - Collective fault signal
  - Horn (NO contact)
  - Operation of pump 1 (NO contact)
  - Operation of pump 2 (NO contact) only Control 2
- Main switch
- Integrated electronic motor current monitoring
- Max. ambient temperature 40 °C
- Housing: plastic for wall-mounted installation
- Starting mode: Direct or star-delta

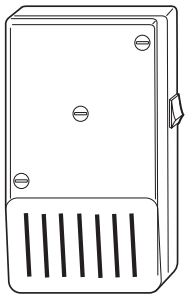
Technical data:

- Operating voltage: 1~230 V, 3~400 V, 3~230 V
- Frequency: 50 Hz
- Protection class: IP 54
- Dimensions (W x H x D): depending on the model

Attention: Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with Zener barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

Electrical accessories

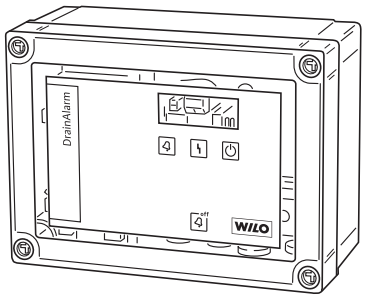
Small alarm switchgear Wilo KAS



Small alarm switchgear with signalling tone, signal transmitter (electrode) and 3 m cable

Technical data:
- Self-charging power supply unit (battery backup approx. 5 hrs)
- ISO plug housing (shock-proof)
- Protection class: IP 30
- Signal intensity: 70 dBA
- 230 V~ / 9 V=; 1.5 VA

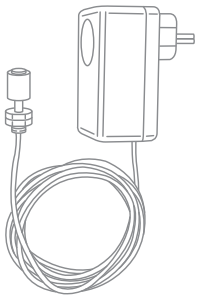
Wilo Drain Alarm alarm switchgear



Alarm switchgear for wall-mounted installation with optical and acoustic alarm signal (buzzer); a WA float switch is required as the transmitter.

Technical data:
- Self-charging power supply unit
- Potential-free contact
- ISO housing
- Alarm signal: 85 dBA
- Protection class: IP 54
- 1~ 230 V

Wilo-AlarmControl alarm switchgear



> Wilo-AlarmControl 1
Mains-independent alarm system with shock-proof plug, rechargeable battery, acoustic alarm signal (buzzer) and potential-free contact. Mini-float switch with 3 m cable mounted on the device.

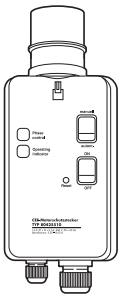
> Wilo-AlarmControl 2
Mains-independent alarm system with shock-proof adapter plug for connecting an appliance, e.g. a washing machine. With rechargeable battery and acoustic alarm signal (buzzer). Mini-float switch with 3 m cable mounted on the device.

Technical data:
- Operating voltage: 1~230 V, 50 Hz
- Control voltage: 12 VDC (unstabilised)
- Alarm contact for AlarmControl 1: Potential-free NO contact, max. contact load 1 A (230 VAC)
- Contact socket for AlarmControl 2: Max. contact load 16 A (250 VAC)
- Protection class: IP 20
- Housing: ABS
- Cable length, mini-float switch: 3 m (2 x 0.75 mm^2)
- Maximum ambient temperature: + 60 °C
- Dimensions (W x H x D): 68 x 112 x 53 mm

Attention: Switchgears are not protected against explosions and may only be used outside of potentially explosive areas.

Electrical accessories

Motor switchgear

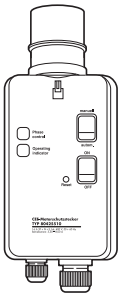


Motor protection plug (only up to a nominal motor power of P_2 < 4 kW) without thermal overcurrent protection of the motor.
- Phase inverter
- Rotating field monitoring
- On/Off switch
- Operation display

Technical data:
- Connection: 3~400 V/50 Hz, 5-pole
- Max. current: 16 A
- Protection class: IP 54

Attention: Switchgears are not protected against explosions and may only be used outside of potentially explosive areas.

Motor protection plug



Motor protection plug for connection to motors without/with thermal motor monitoring and leakage detection.
- Full motor protection by thermal relay.
- Phase inverter
- Rotating field monitoring
- On/Off switch
- Operation display
- Thermal winding contact (WSK) evaluation (depending on type)
- Leakage detection (depending on type)

Technical data:
- Connection: 3~400 V/50 Hz, 5-pole
- Max. current: 16 A, adjustment range depends on the plug
- Protection class: IP 54 or IP 65

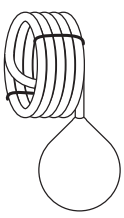
Attention: Switchgears are not protected against explosions and may only be used outside of potentially explosive areas.

Level sensor

For level measurement.

Technical data:
- Protection class: IP 68
- Measurement range: 0-1 mWS; 0-2.5 mWS
- Cable lengths: 10, 30 or 50 m
- Output signal: 4-20 mA
- Certified explosion approval in accordance with ATEX

Float switch MS 1

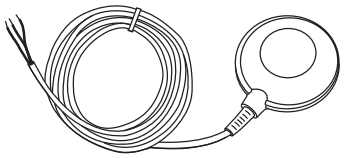


For level control of aggressive sewage and sewage containing faeces.

Technical data:
- For connection to a Wilo-DrainControl or EC-Drain switchgear
- Cable length: 10 m

Electrical accessories

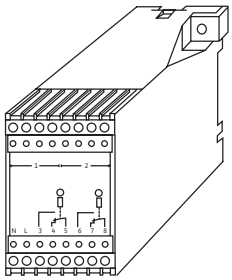
Float switch WA



For level control of sewage free of faeces.

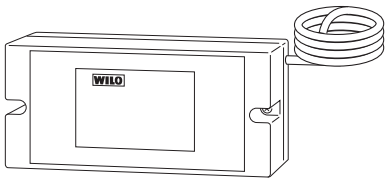
Technical data:
- Cable lengths: 5 m, 10 m, 20 m, 30 m
- Switching up ON / down OFF.
- WA 65 for fluids up to 60 °C
- WA 95 for fluids up to 90 °C

Ex-rated cut-off relay



For the installation of float switches in potentially explosive areas.
- Suitable for connecting 2 to 5 float switches
  - 2-circuit (connection of 2 float switches possible)
  - 3-circuit (connection of 3 float switches possible)
  - 4-circuit (connection of 4 float switches possible)
  - 5-circuit (connection of 5 float switches possible)
- Installed in an ISO housing, with transparent cover
- Protection class IP 54
- For wall-mounted installation
- Dimensions (W x H x D): 182 x 180 x 165 mm

Zener barrier



For the installation of a level sensor in potentially explosive areas.
- Suitable for the connection of a level sensor.
- Protection class IP 40, housing for installation in non-explosive areas.
- Dimensions (W x H x D): 75 x 150 x 106 mm
- 1 m cable premounted.

Switch cabinet for Wilo DrainControl for outdoor installation

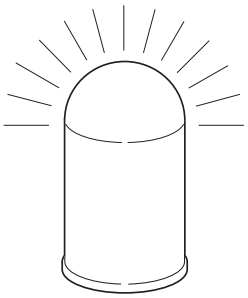
Empty switch cabinet housing for outdoor installation, for pedestal installation
- Made of fibreglass-reinforced polyester
- With lock
- Provided with ventilation and exhaust

Additional options such as ammeter, voltmeter, heating, etc. are available on request and can be immediately installed in the switch cabinet in conjunction with a Wilo-DrainControl if desired (additional charge).

Accessories

Electrical accessories

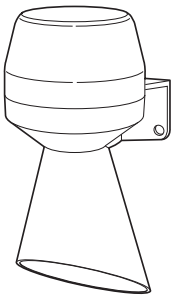
Flash light



Signal light for outdoor installation on the switch cabinet.

Technical data:
- Connection: 1~230 V, 50 Hz

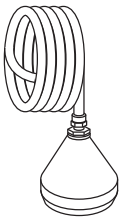
Signal horn



For connection to Wilo-DrainControl switchgear

Technical data:
- 1~230 V, 50 Hz
- Noise pressure level: 92 dBA

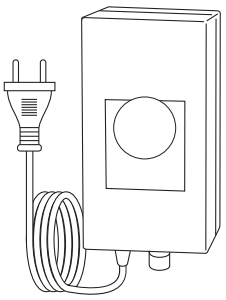
Dynamic pressure system



The pressure transducer (immersion bell) detects changes in the fluid level in the sump. The change in the pressure value in the immersion bell are transmitted via a leak-proof hose to the Wilo DrainControl PL switchgear and evaluated by measuring elements in the switchbox.

Scope of delivery:
- Immersion bell with 10 m hose

Bubbling-through system

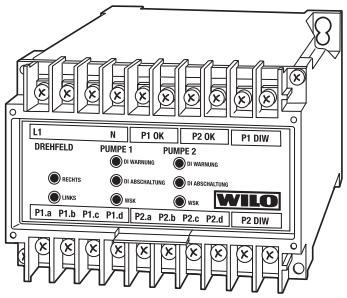


Dynamic pressure system with compressed air permanently introduced by small compressor. The immersion bell (dynamic pressure system) is to be ordered separately.

Scope of delivery:
- Mini-compressor
- 3 m hose with T-iron and non-return valve

Electrical accessories

Tripping unit Wilo SK 545



Tripping unit for controlling a maximum of 2 Wilo submersible pumps, TP 80 or TP 100
- Installation in existing switchgears or as a module for switchgears of conventional design, installation on a top-hat rail, 35 mm
- Monitoring of the rotating field
- Leakage detection
- Thermal monitoring (WSK)
- Operating voltage: 3~ 400 V
- Max. fuse protection: 6 A
- Potential-free output contacts; max. load: 250 V, 1 A
- Dimensions (W x H x D): 100 x 72 x 113 mm

Wilo Catalogue Edition 2009

Heating, air-conditioning, cooling
Circulation pumps
Glandless pumps and accessories, package heat exchanger assembly

Catalogue A1

Heating, air-conditioning, cooling
Glanded pumps
Pumps with in-line design and accessories

Catalogue A2

Heating, air-conditioning, cooling, water supply
Monobloc and norm pumps, axial split case pumps
Pumps and accessories

Catalogue A3

Water supply
Domestic water supply, rainwater utilisation
Pumps, systems and accessories

Catalogue B1

Water supply
Borehole pumps, 3" to 24"
Pumps and systems for building services, domestic, municipal and industrial water supply

EMU Technologie

Catalogue B2

Water supply
High-pressure multistage centrifugal pumps
Pumps and accessories

Catalogue B3

Water supply
Pressure boosting systems
Single-pump and multi-pump systems in dry well installations

Catalogue B4

Water supply
Sprinkler pumps with VdS approval
Borehole pumps and accessories

EMU Technologie

Catalogue B5

Drainage and sewage
Drainage pumps
Submersible pumps, self-priming pumps and accessories

EMU Technologie

Catalogue C1

Drainage and sewage
Sewage pumps, DN 32 to DN 600
Submersible pumps and accessories for building services, municipal and industrial applications

EMU Technologie

Catalogue C2

Drainage and sewage
Wastewater and sewage lifting units, pumps stations
Pump systems and accessories

Catalogue C3

Drainage and sewage
Submersible mixers
Mixers, re-circulation pumps, jet cleaners, grit collector pumps and accessories for municipal application in water treatment systems

EMU Technologie

Catalogue C4

Heating, air-conditioning, cooling

Water supply

Drainage and sewage

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