

AS

0530, 0630,0641, 0830, 0840,1030

50 Hz & 60 Hz

Installation and operating instructions

We reserve the right to make modifications in the interest of technical development

1	General	1
1.1	Application areas.....	1
1.1.1	Approvals for explosion-proof pumps	1
1.1.2	Particular comments on the use of explosion-proof pumps in explosive zones	1
1.1.3	Commentary on the regulations in DIN 1986 for the use of lifting stations of the pumping of effluent containing faecal matter	1
1.2	Technical data.....	2
1.2.1	Nameplate	2
1.2.2	Technical data	3
1.2.3	Dimensions.....	4
2	Safety	5
3	Transport	6
4	Product description	6
4.1	Accessories	7
5	Set up and installation	8
5.1	Installation example, concrete sump	8
5.2	Discharge line.....	9
5.3	Electrical connection	10
5.3.1	Checking direction of rotation.....	12
5.3.2	Changing direction of rotation	12
6	Commissioning	13
7	Maintenance	13
7.1	General maintenance hints	14
7.2	Commentary on maintenance of lifting stations in accordance with DIN 1986, part 31	14
7.3	Oil fill and oil change	15
7.4	Cleaning	15
7.5	Venting of the volute	15

AS

1 General

1.1 Application areas

ABS submersible pumps of the AS series have been designed for the economical and reliable pumping of effluent in commercial, industrial and municipal applications. The submersible pumps of the AS series are suitable for clear water, waste water and for sewage containing solid or fibrous particles and for effluent containing faecal matters and sludge. The AS series is suitable for modern sewage installation systems.

1.1.1 Explosion-proof Approvals

The motors of the AS series have explosion-proof certification in accordance with EEx d IIB T4

1.1.2 Particular comments on the use of explosion-proof pumps in explosive zones.

1. Explosion-proof submersible pumps may only be operated with the thermal sensing system connected.
2. If ball type float switches are used, these must be connected to an intrinsically safe electrical circuit "Protection type EX (i)" in accordance with VDE 0165.
3. Dismantling and repair of submersible explosion-proof motors may only be carried out by approved personnel in specially approved work shops.

1.1.3 Commentary on the regulations in DIN 1986 for the use of lifting stations of the pumping of effluent containing faecal matter.

Automatically operated lifting units are prescribed if:

- The water level in the odour-lock lies below the sewer backwash level.
- Rainwater gullies from areas below the sewer backwash level are present.

The sewer backwash level is the maximum possible water level in the public sewer network, and information on this can be obtained from your Local Authority. If the backwash level has not been fixed by the Local Authority, then the surface level of the roadway at the connection point is taken to be the level.

If the effluent does not give rise to foul odours, then a water-tight connection tank fitted with a lid is acceptable.

ATTENTION The Regulations of DIN 1986 as well as your own local by-laws should be observed.

AS

1.2 Technical Data

1.2.1 Nameplate

We recommend that you record the data from the original nameplate on the nameplate illustration below and maintain it, together with your purchase receipt, as a proof for subsequent use.

Always state the pump type and the item no. and serial no. in the field "Nr" in all Communications.

Fig. 1 Nameplate Standard Version

		ABS PUMPS Ltd. Clonard Road Wexford, Ireland			
Typ					
Nr.					
U_N	V	I_N	A	Hz	
P_{1N}	kW	P_{2N}	kW	n	min ⁻¹
Q_N	m ³ /h	H_N	m	∅Imp.	
Q_{max}	m ³ /h	H_{max}	m	DN	
Insul. CL.F			IP68	Z-Nr	

Fig. 2 Nameplate EX Version

		ABS PUMPS Ltd. Clonard Road Wexford, Ireland					
Typ							
Nr.							
U_N	V	I_N	A	∅LR		Hz	
P_{1N}	kW	P_{2N}	kW	n	min ⁻¹	DN	
Q_{max}	m ³ /h	H_{max}	m	Insul. CL.F	EEx d IIB T4	BASEEFA Cert No.	
Connection information for the temperature controller is in the installation instructions.				Anschlußhinweise für die Temperaturwächter in der Montage- u. Betriebsanleitung beachten.			
Do not open when an explosive gas atmosphere is present. Nicht in explosiver Atmosphäre öffnen.				IP68			

Legend

Type	Pump type	
Nr.	Item No./Serial No.	
U_N	Rated Voltage	V
I_N	Rated Current	A
	Frequency	Hz
P_{1N}	Rated Input Power	kW
P_{2N}	Rated Output Power	kW
n	Speed	min ⁻¹
Q_N	Rated discharge	m ³ /h
H_N	Rated Head	m
LR∅	Impeller diameter	mm
Q_{max}	Max. Flow	m ³ /h
H_{max}	Max. Head	m
DN	Discharge diameter	mm
	Water pressure tight	
IP 68	Protection type	
Z-Nr	Test No. of the Institute of Building Technology, Berlin.	

AS

1.2.2 Technical Data

AS 50 Hz

Pump Type		Imp Ø mm	Motor Power*		Speed at 50Hz min ⁻¹	Rated voltage V	Rated current A	Cable type**		Max head m	Max flow m ³ /h	Weight*** kg
			P ₁ kW	P ₂ kW				Stand	Ex			
AS 0530	S12/2 W	110	1.8	1.2	2900	230	8.2	(1)	(2)	12.2	25	34
AS 0530	S12/2 D	110	1.7	1.2	2900	400	3.3	(1)	(2)	12.2	25	34
AS 0530	S17/2 D	125	2.3	1.7	2900	400	4.0	(1)	(2)	16.0	36	34
AS 0530	S26/2 D	142	3.4	2.6	2900	400	5.6	(1)	(2)	21.0	34	40
AS 0630	S10/4 W	130	1.7	1.0	1450	230	7.5	(1)	(2)	5.5	36	37
AS 0630	S10/4 W	160	1.7	1.0	1450	230	7.5	(1)	(2)	5.5	47	37
AS 0630	S13/4 D	130	1.9	1.3	1450	400	3.6	(1)	(2)	5.5	35	37
AS 0630	S13/4 D	160	1.9	1.3	1450	400	3.6	(1)	(2)	5.3	54	37
AS 0630	S13/4 D	186	1.9	1.3	1450	400	3.6	(1)	(2)	9.0	46	37
AS 0630	S22/4 D	205	2.9	2.2	1450	400	5.2	(1)	(2)	10.6	70	42
AS 0641	S30/2 D	143	3.6	3.0	2900	400	6.2	(1)	(2)	28	70	42
AS 0830	S10/4 W	130	1.7	1.0	1450	230	7.5	(1)	(2)	5.5	36	40
AS 0830	S10/4 W	160	1.7	1.0	1450	230	7.5	(1)	(2)	7.0	47	40
AS 0830	S13/4 D	130	1.9	1.3	1450	400	3.6	(1)	(2)	4.7	35	40
AS 0830	S13/4 D	160	1.9	1.3	1450	400	3.6	(1)	(2)	7.0	54	40
AS 0830	S13/4 D	186	1.9	1.3	1450	400	3.6	(1)	(2)	9.0	46	40
AS 0830	S22/4 D	205	2.9	2.2	1450	400	5.2	(1)	(2)	10.6	69	42
AS 0840	S12/2 W	110	1.8	1.2	2900	230	8.2	(1)	(2)	6.7	34	35
AS 0840	S12/2 W	118	1.8	1.2	2900	230	8.2	(1)	(2)	11.2	51	35
AS 0840	S12/2 D	110	1.7	1.2	2900	400	3.3	(1)	(2)	6.7	34	35
AS 0840	S12/2 D	118	1.7	1.2	2900	400	3.3	(1)	(2)	11.2	51	35
AS 0840	S17/2 D	128	2.3	1.7	2900	400	4.0	(1)	(2)	14.6	55	35
AS 0840	S26/2 D	142	3.4	2.6	2900	400	5.6	(1)	(2)	19.8	67	40
AS 1030	S22/4 D	205	2.9	2.2	1450	400	5.2	(1)	(2)	10.6	70	42

*** Weight with 10m cable

W = Single phase; D = Three phase

* P₁ = Power taken from mains; P₂ = Power at motor shaft.

Cable type**

(1) Special rubber 4G1,5 (Ø 17.0 mm)

(2) Special rubber 7G1,5 (Ø 10.9 mm)

AS 60 Hz

Pump Type		Imp Ø mm	Motor Power*		Speed at 60Hz min ⁻¹	Rated voltage V	Rated current A	Cable type**		Max head m	Max flow m ³ /h	Weight*** kg
			P ₁ kW	P ₂ kW				Stand	Ex			
AS 0530	S16/2 W	98	2.1	1.6	3450	230	9.2	(1)	(2)	14.8	24.9	34
AS 0530	S16/2 D	98	2.2	1.6	3450	460	3.3	(1)	(2)	14.8	24.9	34
AS 0530	S18/2 W	108	2.5	1.8	3450	230	10.8	(1)	(2)	17.9	24.9	34
AS 0530	S18/2 D	108	2.4	1.8	3450	460	3.6	(1)	(2)	18.6	20	34
AS 0530	S30/2 D	125	3.9	3.0	3450	460	5.5	(1)	(2)	22.5	35.7	40
AS 0630	S10/4 W	130	1.5	1.0	1750	230	6.5	(1)	(2)	6.5	50.3	37
AS 0630	S16/4 D	160	2.2	1.6	1750	460	3.6	(1)	(2)	10.3	4.6	37
AS 0630	S25/4 D	175	3.2	2.5	1750	460	4.9	(1)	(2)	12.5	70.3	37
AS 0641	S35/2 D	134	3.5	4.3	3450	400	6.1	(1)	(2)	35.4	69.3	42
AS 0830	S10/4 W	130	1.5	1.0	1750	230	6.5	(1)	(2)	6.5	50.3	40
AS 0830	S10/4 D	130	1.5	1.0	1750	460	6.5	(1)	(2)	6.5	46	40
AS 0830	S16/4 D	160	2.2	1.6	1750	460	3.6	(1)	(2)	10.3	46	40
AS 0830	S25/4 D	175	3.2	2.5	1750	460	4.9	(1)	(2)	12.3	70.3	42
AS 0840	S16/2 W	110	2.1	1.6	3450	230	9.2	(1)	(2)	10.4	43.7	35
AS 0840	S16/2 D	110	2.2	1.6	3450	460	3.3	(1)	(2)	10.4	44	35
AS 0840	S18/2 W	118	2.5	1.8	3450	230	10.8	(1)	(2)	15	49.7	35
AS 0840	S18/2 D	118	2.4	1.8	3450	460	3.6	(1)	(2)	15	52	35
AS 0840	S30/2 D	128	3.9	3.0	3450	460	5.5	(1)	(2)	21.3	62.8	40
AS 1030	S25/4 D	175	3.2	2.5	1750	460	4.9	(1)	(2)	12.5	70.3	37

*** Weight with 10m cable

W = Single phase; D = Three phase

* P₁ = Power taken from mains; P₂ = Power at motor shaft.

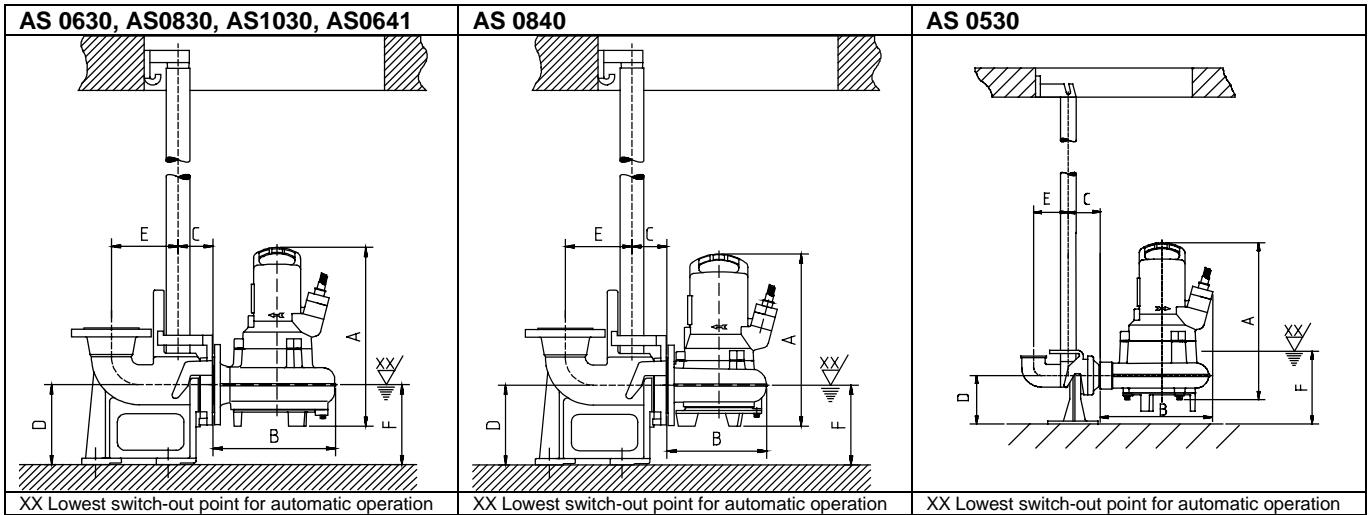
Cable type**

(1) Special rubber 4G1,5 (Ø 17.0 mm)

(2) Special rubber 7G1,5 (Ø 10.9 mm)

AS

1.2.3 Dimensions



Dimensional Table AS 50 Hz

Pump Type	A	B	C	D	E	F
AS 0530 S12/2	432	292	100	125	90	188
AS 0530 S17/2	432	292	100	125	90	188
AS 0530 S26/2	444	292	100	125	90	188
AS 0630 S10/4	437	307	57	140	132	140
AS 0630 S13/4	437	307	57	140	132	140
AS 0630 S22/4	450	307	57	140	132	140
AS 0641 S30/2	428	270	54	140	132	172
AS 0830 S10/4	437	307	88	200	167	200
AS 0830 S13/4	437	307	88	200	167	200
AS 0830 S22/4	450	307	88	200	167	200
AS 0840 S12/2	418	250	88	200	167	200
AS 0840 S17/2	418	250	88	200	167	200
AS 0840 S26/2	430	250	88	200	167	200
AS 1030 S22/4	450	307	92	225	180	225

Dimensional Table AS 60 Hz

Pump Type	A	B	C	D	E	F
AS 0530 S16/2	432	292	100	125	90	188
AS 0530 S18/2	432	292	100	125	90	188
AS 0530 S30/2	444	292	100	125	90	188
AS 0630 S10/4	437	307	57	140	132	140
AS 0630 S16/4	437	307	57	140	132	140
AS 0630 S25/4	450	307	57	140	132	140
AS 0641 S35/2	428	270	54	140	132	172
AS 0830 S10/4	437	307	88	200	167	200
AS 0830 S16/4	437	307	88	200	167	200
AS 0830 S25/4	450	307	88	200	167	200
AS 0840 S16/2	418	250	88	200	167	200
AS 0840 S18/2	418	250	88	200	167	200
AS 0840 S30/2	430	250	88	200	167	200
AS 1030 S25/4	450	307	92	225	180	225

Standard execution is with 10m cable with free cable ends.

ATTENTION Maximum medium temperature for continuous operation with fully submerged unit = 40°C, intermittent 60°C.

2. Safety

(extracted from VDMA-Standard Sheet 24292)

These operating instructions contain basic information on the erection, operating and maintenance and should be followed carefully. For this reason it is essential that these instructions are carefully read before erection or commissioning by both the installation crew as well as those responsible for operation or maintenance. The operating instructions should always be readily available at the location of the unit.

In addition to following the safety regulations of a general nature listed under these main headings, it is also essential that the special safety instructions given under other headings be observed.

2.1 Identification of Hints in the Operating obstructions



Safety instructions given in this Operating Manual, the non-observance of which could cause danger to life have been specifically high-lighted with the general danger symbol, safety signs in accordance with DIN 4844-W 9.



The presence of a dangerous voltage is identified with the safety symbol in accordance with DIN 4844-W 8.

ATTENTION Applies to safety instructions, the non-observance of which could damage the unit or affect its functioning.

Symbols directly on the unit itself, e.g.

— direction of rotation arrow

— nameplate

must be carefully observed and must be maintained in a legible condition.

2.2 Qualifications of Personnel

The personnel for maintenance, inspection and erection must possess the required qualifications for the work.

2.3 Dangers which could arise due to non-observance of the safety instructions

The non-observance of the safety instructions can lead to both danger to personnel and also to possible harm to the environment or the unit itself. Non-observance of the safety instructions can invalidate the rights of the user to any compensation or regress.

In detail, non-observance can **for example** result in the following dangers:

- Failure of important functions of the unit/installation
- Danger to personnel by electrical, mechanical or chemical influences
- Danger to the environment by leakage of dangerous substances.

2.4 Carrying out work in a safety conscious manner

The safety instructions listed in this Operating Manual, the existing National Regulations for Safety, as well as any internal operating or safety regulations which apply in the user's own premises must be observed.

2.5 Safety Regulations for the Owner/Operator

All dangers due to electricity must be avoided (for details consult the Regulations of your local Electricity Supply Company).

2.6 Safety Regulations for maintenance, inspection and installation work

The user of the unit should ensure that all maintenance, inspection or installation work is carried out by authorised and qualified skilled

personnel. The user must also make certain that they have carefully studied the operating instructions.

In principle all work on the unit should only be carried out while it is stationary.

Pumps or units, used for pumping of fluids which could be injurious to health must be decontaminated.

After completion of the work all safety and protective devices must be refitted and a check should be made that they are fully functional.

Before starting up again, the points listed under the section Commissioning should be complied with.

2.7 Unilateral modification and spare parts manufacturing

Modifications or changes to the unit/installation should only be carried out after consultations with the manufacturer. Original spare parts and accessories authorised by the manufacturer are essential for compliance with safety requirements. The use of other parts can invalidate any claims for warranty or compensation.

2.8 Unproved usage

The operating safety of the unit is only guaranteed provided that the unit is used in accordance with the conditions listed in Section 1. The limit values given in the data sheet should under no circumstances be exceeded.

These installation and operation instructions do not supersede or exclude the following of generally valid regulations and standards.

VDMA = Verband Deutscher Maschinen- und Anlagenbau e.V.
(German Machinery Manufacturers Association)

AS

3 Transport

During transport the submersible pump should not be dropped or thrown.



The submersible pump should never be raised or lowered by the Power cable.

The submersible pumps of the AS series are fixed with a lifting device to which a chain and shackle may be attached for transport or for suspension of the pump.



Any hoist used must be adequately dimensioned for the weight of the pump.

All relevant safety regulators as well as general good technical practice must be complied with.

4. Product description

The water tight fully flood-proof motor and the hydraulic section form a compact unit construction.

The rotor shaft of all AS submersible pumps is supported by means of lubricated-for-life ball bearings.

The shaft sealing on the medium side of all AS pumps is carried out by a high quality mechanical seal.

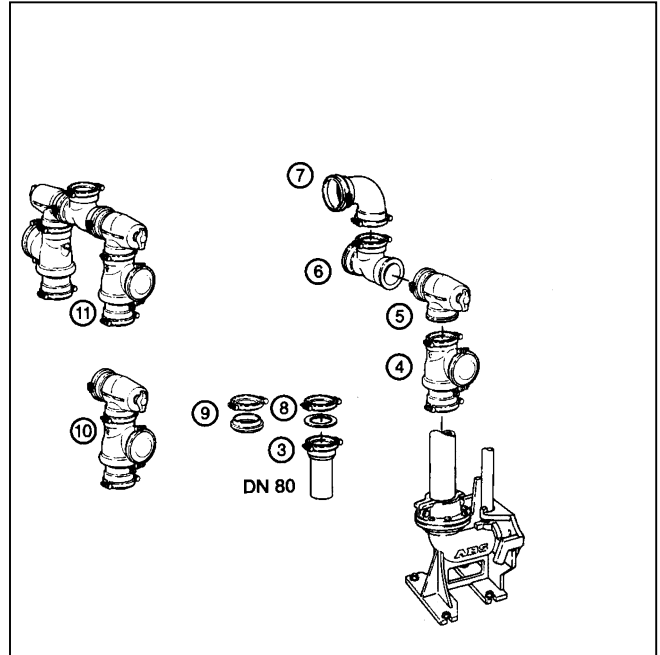
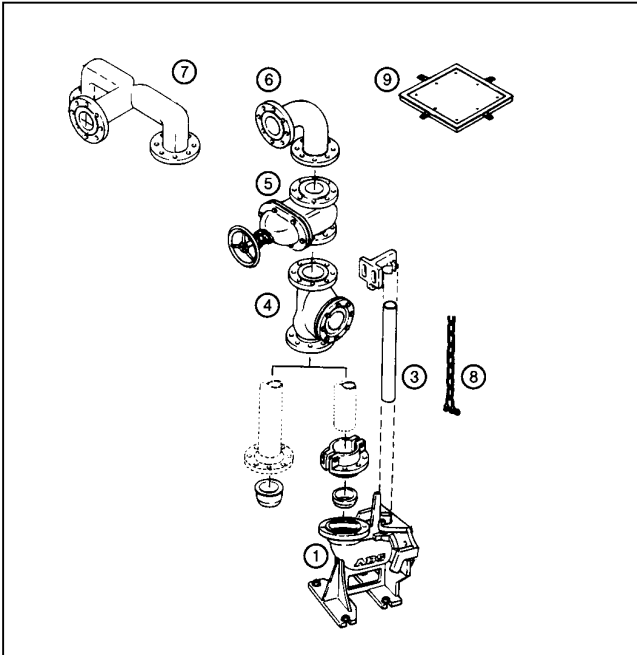
The motors have been designed, depending on type, for single-phase and three-phase, 2 and 4 -pole operation. The protection type is IP 68, the stator winding is Class F insulation (155°C).

ATTENTION Explosion-proof pumps may only be used in explosive zones with the thermal sensors fitted (Leads: FO, F1).



Depending on the layout in the control panel, the submersible pump may switch itself automatically back on after it has cooled down.

4.1 Accessories



Fixed Installation (wet) with ABS Automatic Coupling System

Description (Material)	Size	Part No.
(1) Pedestal with 90° Bend (GG-25 cast iron) for ABS Automatic Coupling System with DIN-flange fastening	2 ins. DN 65 DN 80	62320560 62320673 62320649
(3) Guide tube (steel galv.)	2" 1 m 2 m 3 m 4 m 5 m 6 m	31380001 31380002 31380003 31380004 31380005 31380006
O Discharge pipe on request, please give DN and L		
(4) Ball type non-return valve (GG-25) with inspection opening and venting mechanism including 1 set of bolts and 1 gasket, flanges to PN 16 with 2½" (DN 65) threaded ends	2 ins. DN 65 DN 80	61400513 61400543 61400534
(5) Gate valve (GG-25 cast iron) including hand wheel, 1 set of bolts and 1 gasket, flanges to PN 16	G 2 ins. DN 80	14040007 61420500
(6) 90° Bend, Q-piece , (SG iron to DIN 28637)	DN 80	62610302
(7) Junction piece (St. 37 steel) to join the two discharge lines in the case of a twin-pump station	DN 80/80/ 80 DN 80/100/ 80	62610001 62610002
(8) Chain (steel, galv.) including Shackle	m	14990002 + 14990008
(9) Sump cover (St. 37 steel) with frame and seal	500x 500 mm 700x 700 mm 700x1400 mm	14990051 14990052 14990053

Synthetic Valves

Description (Material)	Size	Part No.
(3) Transition piece SUF 80/100 (Synthetic) in connection with (2) for connection of synthetic valves to ABS duckfoot pedestal DN 80, including 1 Quick clamping device SSR with profile seal	Sleeve 4"	62540028
(4) Ball type non-return valves SKV 100 with Sleeve 4" (Synthetic) with venting mechanism, including 2 quick clamping devices SSR with profile seal	Sleeve 4"	61400553
(5) Shut-off bracket SAS 100 (Synthetic) including 1 quick clamping device SSR with profile seal and 1 flat gasket	Sleeve 4"	61420581
(6) Junction piece SV 100 (Synthetic) including 1 quick clamping device SSR with profile seal and 2 flat gaskets	Sleeve 4"	62610041
(7) Pipe bend SR 90°/100 (Synthetic) including 2 quick clamping devices SSR with profile seal and 1 flat gasket	Sleeve 4"	61090158
(8) Quick clamping device SSA 100 including flat gasket for connecting of 1 valve to another valve		61900020
(9) Quick clamping device SSR 100 including profile seal and clamping for connecting a valve to a pipe		61900015
(10) ABS Combination Valve System S 1 (Synthetic) for lifting stations with one pump consisting of: 1 Ball type non-return valve SKV 100, 1 Shut-off valve SAS 100, 2 Quick clamping devices SSR with 2 Profile seals, 1 Quick clamping device SSA, with 1 flat gasket	Sleeve 4"	61900017
(11) ABS Combination Valve System S 2 (Synthetic) for lifting stations with two pumps consisting of: 2 Ball type non-return valves SKV 100, 2 Shut-off valves SAS 100, 1 Junction piece SV 100, 3 quick clamping devices SSR with 3 Profile seals, 4 quick clamping devices SSA with 3 Flat gaskets	Sleeve 4"	61900018

5. Set up and Installation

ATTENTION All relevant regulations covering sewage pumping installations and, where applicable, explosion-proof installations must be complied with.

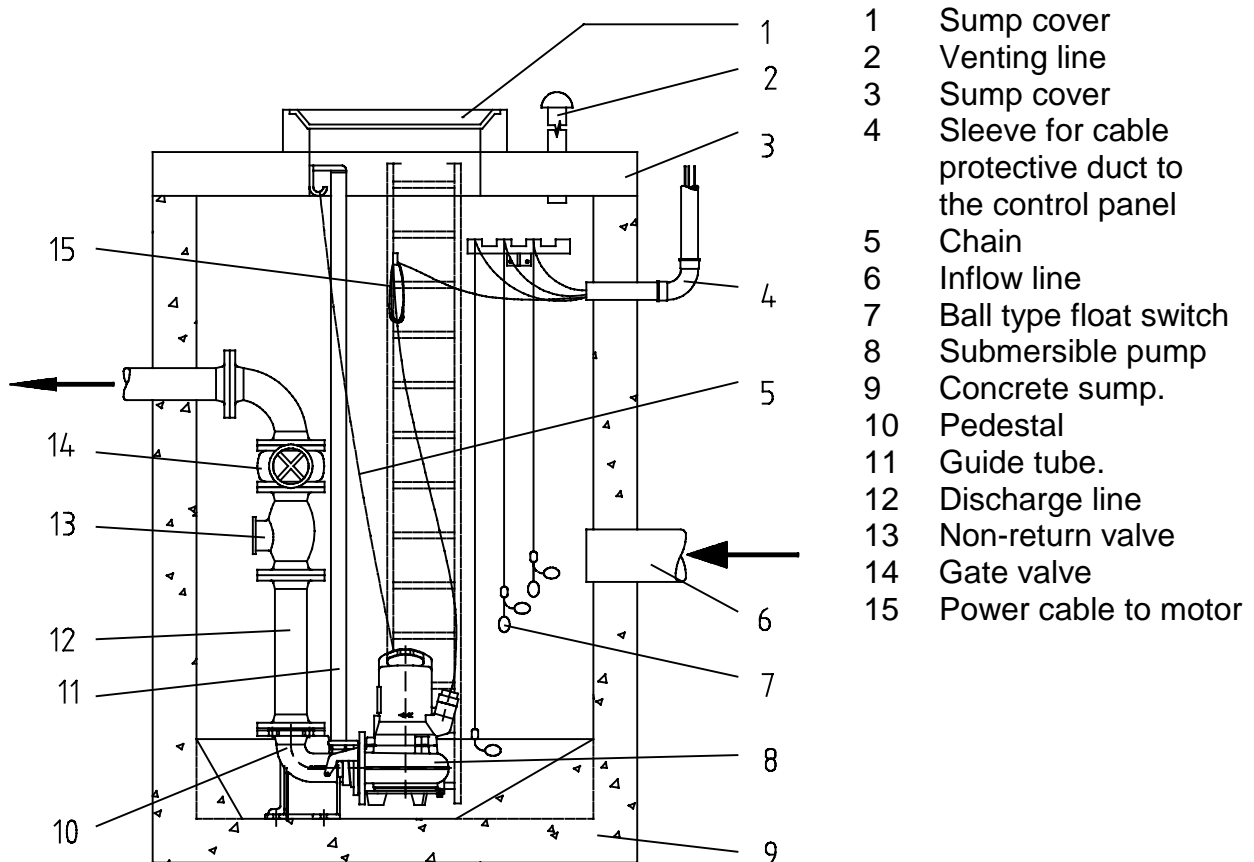


The cable duct to the control panel should be made gas-tight by filling with foam after the power supply and control circuit cables have been laid.



Particular attention must be paid to the safety regulations covering work in closed areas in sewage plants as well as good general technical practices.

5.1 Installation example, concrete sump



5.2 Discharge Line

The discharge line must be installed in compliance with the relevant regulations.

Din 1986 applies in particular to the following:

- The discharge line should be fitted with a backwash loop (180° bend) located above the backwash level and should then flow by gravity into the collection line or sewer.
- The discharge line should not be connected to a down pipe.
- No other inflows or discharge lines should be connected to this discharge line.

ATTENTION The discharge line should be installed so that it is not affected by frost.

.

5.3 Electrical Connection



Before starting operation, a qualified person should inspect the system to ensure that one of the required electrical protective measures has been provided. Earthing, Neutral line, earth leakage circuit breakers, etc., must comply with the regulations of the local power supply authority and their function should be checked by a qualified person. We recommend the use of a sensitive earth leakage circuit breaker (in accordance with VDE 0700, part 41 "safety of electrical appliances for domestic and other uses," issue June '91).

ATTENTION Cross section and voltage drop of the power supply cable must comply with VDE, and other local power supply regulations. The voltage specified on the pump nameplate must be the same as the supply voltage.

The system must be protected by a fuse of adequate rating (in accordance with the rated power of the pump).

Potential bonding must be carried out in a pump station in accordance with VDE 0190 (regulations for the installation of pipelines, protective devices in electrical plants).

In the case of pumps supplied as standard **with a plug**, an earthed socket must be installed above the possible flood level.

In the case of pumps **not** supplied with a **plug**, the following applies:



The power supply and pump cable must be connected to the terminals of the control panel in accordance with the designations provided by a qualified person in compliance with local regulations.
An overload switch must be fitted.

ATTENTION For use in the open air, the following VDE regulations apply:

Submersible pumps used outdoors must be fitted with a power cable of at least 10m length. Other regulations may apply in different countries.

Pumps for use in swimming pools, garden pumps and similar, must comply with European Standard 60335, Part 2, protection class I.

Please consult your electrician.

AS

Wiring Diagrams

Three Phase

AS 50 Hz:

S12/2 D, S13/4 D, S17/2 D, S22/4 D, S26/2 D, S30/2 D,

AS 60 Hz:

S10/4 D, S16/2 D, S13/4 D, S16/4 D, S17/2 D S18/2 D, , S22/4 D, S25/4 D, S26/2 D, S30/2 D, S35/2 D

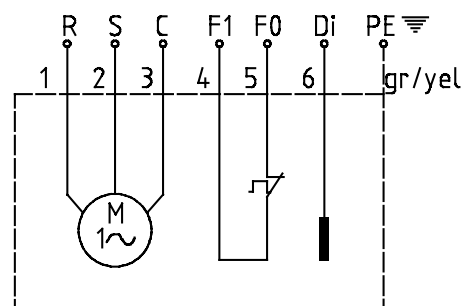
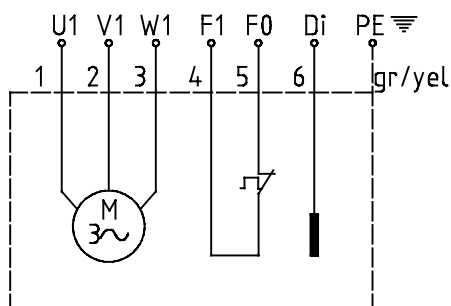
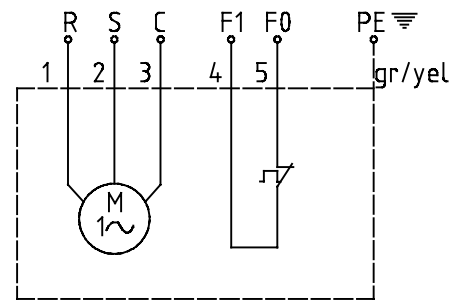
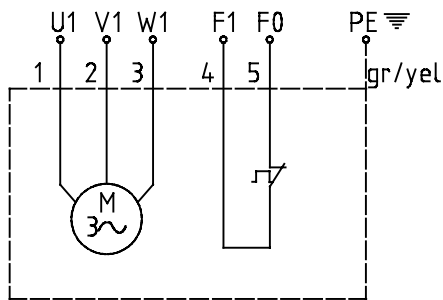
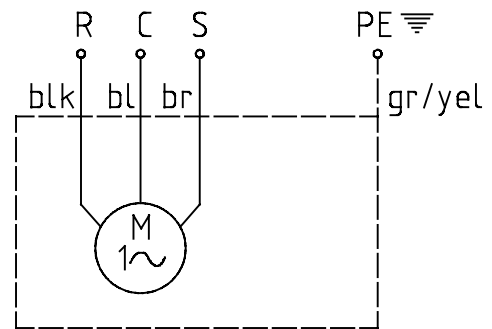
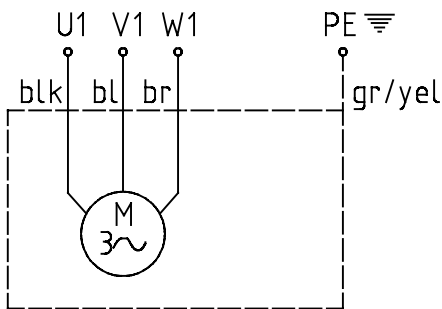
Single Phase

AS 50 Hz:

S10/4 W, M12/2 W

AS 60 Hz:

S10/4 W, M12/2 W, S16/2 W, S16/2 W



NOTE:

U1,V1,W1	= Live	Di	= Seal monitor
PE	= Earth	F1/FO	= Thermal sensor
gr/yel	= green/yellow	R	= Run
blk	= black	C	= Neutral (common)
bl	= blue	S	= Start
br	= brown		

ATTENTION Explosion-proof pumps may only be used in explosive zones with the thermal sensors fitted (Leads: FO, F1).

5.3.1 Checking direction of rotation

In the case of three phase, when the unit is being commissioned for the first time, and also when used on a new site, the direction of rotation must be checked. An incorrect direction of rotation will reduce the output and damage the pump.

The direction of rotation of the pump is checked before final installation by raising it on a suitable hoist and allowing it to run for a short period. The direction of rotation (rotor rotation) is correct if:

When the pump starts, it makes a jerk in the opposite direction to the arrow on the side of the pump.



Pump Rotation



When checking the direction of rotation, the submersible pump should be secured in such a manner that no danger to personnel is caused by the rotating impeller. Do not place your hand near the discharge or suction inlet of the volute.

If a number of pumps are connected to a single control panel, then each unit must be individually checked.

5.3.2. Changing direction of rotation



Changing the direction of rotation in the case of pumps not fitted with CEE round plug with phase change-over facility, should only be carried out by a qualified person.

If the direction of rotation is incorrect, then this is altered by changing over two phases of the power supply cable in the control panel.

In the case of submersible pumps with CEE round plug and phase change-over facility, the direction of rotation is altered by swivelling a pair of pins.

6. Commissioning

During commissioning the pump/pumping station should be checked and a functional test carried out. Particular attention should be paid to the following:

- Has the electrical connection been carried out in accordance with regulations?
- Have the thermal sensor / sensors been correctly connected?
- Is the seal monitoring device correctly installed?
- Is the current overload correctly set?
- Does the pump sit correctly on the pedestal?
- Is the direction of rotation correct?
- Are the switching On and switching Off levels set correctly?
- Are the level control switches functioning correctly?
- Is the gate valve open?
- Does the non-return valve open in the correct direction?

7. MAINTENANCE



Before commencing any maintenance work, the pump should be completely disconnected from the mains and care should be taken that it can not be inadvertently switched back on.



When carrying out any repair or maintenance work, the safety regulations covering work in enclosed areas of sewage installations as well as good general technical practices should be followed

NOTE: The maintenance hints given here have not been designed for "do-it-yourself" repairs, as special technical knowledge is required to repair these pumps.

A maintenance contract with our works service department will guarantee you the best technical service under all circumstances.

7.1 General maintenance hints

ABS submersible pumps are reliable quality products, each being subjected to careful final inspection. Lubricated-for-life ball-bearings in combination with our monitoring devices ensure optimum pump reliability provided that the pump has been connected and operated in accordance with the operating instructions.

Should, nevertheless, a malfunction occur, do not improvise but ask your ABS customer service for assistance.

This applies particularly if the pump is continually switched off by the current overload in the control panel or by the alarm.

Regular inspection and care is recommended to ensure a long service life.

The ABS service organisation would be pleased to advise you on any applications you may have and to assist you in solving your pumping problems.

NOTE: The ABS warranty conditions are only valid provided that any repair work has been carried out in ABS approved workshop and where original ABS spare parts have been used.

7.2 Commentary on maintenance of Pump Station and Lifting Stations in accordance with DIN 1986, Part 31.

- It is recommended that the pump station/lifting station be inspected monthly and its function checked.
- In accordance with DIN regulations, the pump station/lifting station should be maintained by a qualified person at the following intervals:
 - * in commercial premises - every three months.
 - * in apartment blocks - every six months.
 - * in a single family home - once a year.
- In addition we recommended that a maintenance contract be taken out with a qualified company.

AS

7.3 Oil filling and Oil changing

The oil chamber between the motor and the hydraulic section has been filled at the works with lubricating oil.

AS Oil Fill Quantity Oil Chamber					
AS 50 Hz			AS 60 Hz		
Pump Type		Litres	Pump Type		Litres
AS 0530	S12/2	0.48	AS 0530	S16/2	0.48
AS 0530	S17/2	0.48	AS 0530	S18/2	0.48
AS 0530	S26/2	0.48	AS 0530	S30/2	0.48
AS 0630	S10/4	0.56	AS 0630	S10/4	0.56
AS 0630	S13/4	0.56	AS 0630	S16/4	0.56
AS 0630	S22/4	0.56	AS 0630	S25/4	0.56
AS 0641	S30/2	0.48	AS 0641	S35/2	0.48
AS 0830	S10/4	0.56	AS 0830	S10/4	0.56
AS 0830	S13/4	0.56	AS 0830	S16/4	0.56
AS 0830	S22/4	0.56	AS 0830	S25/4	0.56
AS 0840	S12/2	0.48	AS 0840	S16/2	0.48
AS 0840	S17/2	0.48	AS 0840	S18/2	0.48
AS 0840	S26/2	0.48	AS 0840	S30/2	0.48
AS 1030	S22/4	0.56	AS 1030	S25/4	0.56

An oil change is only necessary if a fault occurs.



Repair work on explosion-proof submersible pumps may only be carried out by approved personnel in approved workshops.

When carrying out repairs only original spare parts, supplied by the manufacturer, should be used.

7.4 Cleaning

If the pump is used for transportable applications then it should be cleaned after each usage by pumping clear water in order to avoid deposits of dirt and encrustation. In the case of fixed installation, we recommend that the functioning of the automatic level control system be checked regularly. By switching the selection switch (switch setting "HAND") the sump will be emptied. If deposits of dirt are visible on the floats then these should be cleaned. After cleaning, the pump should be rinsed out with clear water and a number of automatic pumping cycles carried out.

7.5 Venting of the volute

After lowering the pump into a sump full of water, an air lock may occur in the volute and cause pumping problems. In this case, raise the pump in the medium and then lower it again. If necessary, repeat this venting procedure.

We reserve the right to make alterations in the furtherance of technical development.
