Submersible Waste Water Pump

Ama-Drainer 4../5..

Type Series Booklet

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Type Series Booklet Ama-Drainer 4../5..

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Building Services: Drainage

Drainage Pumps/Waste Water Pumps

Ama-Drainer 4../5..

Main applications

- Drainage
- Disposal
- Drainage systems
- Lowering groundwater levels
- Maintaining groundwater levels
- Drainage

Fluids handled

- Slightly contaminated water
- Waste water containing long fibres and stringy material
- Seawater
- Swimming-pool water
- Brackish water
- Oil emulsions and cutting oils
- Waste water containing oil

Operating data

Operating properties

Characteristic		Value
Flow rate	Q	Up to 50 m^3/h [14.0 l/s]
Head	H	Up to 24 m
Fluid temperature	t	Max. 40°C in continuous operation Max. 90°C (for 3 minutes max.)
Immersion depth	m	7 m (max.)

Designation

Example: Ama-Drainer A 4 22 S D / 10 K

Key to the designation

Code	Description	
Ama-Drainer	Type series	
A	Material	
	A	= Variant for waste water
	C	= Variant for aggressive water
	R	= Variant for water containing oil and oil emulsions
4	Discharge nozzle DN	
	4	= ~4 cm (G 1 $^1/_2$)
	5	= ~5 cm (G 2)
22	Motor rating [kW x 10]	
	05	= 0.55 kW
	07	= 0.75 kW
	11	= 1.1 kW
	15	= 1.5 kW
	22	= 2.2 kW
S	Float switch	
	S	= With float switch
	N	= Without float switch
D	Motor	
	D	= Three-phase current motor
	E	= Single-phase AC motor
10	Free passage [mm]	
	10	= 10 mm
	11	= 11 mm
	35	= 35 mm
K	Cooling jacket	
	K	= With cooling jacket
	-[1)]	= Without cooling jacket

Design details

Design

- Fully floodable submersible motor pump
- Close-coupled design
- Vertical installation
- Single-stage
- To EN 12050-2
- Vertical discharge nozzle
- With or without level control

Types of installation

- Stationary installation
- Transportable models

1) Blank = without cooling jacket

Drive[2)]

- Motor winding to IEC 60038
- Motor design to EN 60043 T1/IEC 34-1
- Thermal class F
- DOL starting
- Enclosure: IP 68 (permanently submerged) to EN 60529 / IEC 529

Ama-Drainer /10 and /35 NE/SE

- Single-phase AC motor
- Integrated temperature switch
- 10-metre power cable
- Shock-proof plug

Ama-Drainer /10, /11 and /35 SD

- Three-phase motor
- Integrated temperature switch
- 10-metre power cable
- CEE plug (3L+PE+N) incl. motor contactor and phase inverter

Ama-Drainer /10, /11 and /35 ND

- Three-phase motor
- Integrated temperature switch
- 10-metre power cable with free cable end and protective cap

Shaft seal

- Pump end: 1 bi-directional mechanical seal
- Drive-end: 1 shaft seal ring
- A lubricant reservoir in-between the seal elements ensures cooling and lubrication.

Impeller type

- Open multi-vane impeller
- Free-flow impeller

Bearings

- Maintenance-free
- Grease-packed rolling element bearings sealed for life

Materials

Material variant A

Pump section	4.. ../10	4.. ../35	5.. ../10 K	522 ../11
Pump casing	Chrome nickel steel (1.4301)			Grey cast iron EN-GJL-250
Suction cover	Chrome nickel steel (1.4301)			Grey cast iron EN-GJL-250
Volute	Acrylonitrile butadiene styrene copolymer (ABS)			-
Impeller	Polyamide (PA)			
Foot	Polypropylene (PP)	Chrome nickel steel (1.4301)	Polypropylene (PP)	Polyethylene (PE)
O-rings	Acrylonitrile butadiene rubber (NBR)			
Mechanical seal	Silicon carbide (SiC/SiC)			
Stator case	Chrome nickel steel (1.4301)			
Rotor shaft	Chrome steel (1.4021)			
Motor power cable	Polychloroprene rubber (CR)			
Float	Polypropylene (PP)			
Cooling jacket	-	-	Polyoxymethylene (POM)	-
Oil supply	Liquid paraffin (environmentally friendly)			

Material variant C

Pump section	4.. ../35	5.. ../10 K	522 ../11
Pump casing	Chrome nickel molybdenum steel (1.4401)		Chrome nickel molybdenum cast steel (1.4408)
Suction cover	Chrome nickel molybdenum steel (1.4401)		Chrome nickel molybdenum cast steel (1.4408)
Volute	Acrylonitrile butadiene styrene copolymer (ABS)		-
Impeller	Polyamide (PA)		
Foot	Polypropylene (PP)		Polyethylene (PE)
O-rings	Acrylonitrile butadiene rubber (NBR)		
Mechanical seal	Silicon carbide (SiC/SiC)		
Stator case	Chrome nickel molybdenum steel (1.4401)		
Rotor shaft	Chrome nickel molybdenum steel (1.4571)		
Motor power cable	Polychloroprene rubber (CR)		

2) Other cable lengths, halogen-free cables, special voltages, other frequencies on request.

Pump section	4.. ../35	5.. ../10 K	522 ../11
Float	Polypropylene (PP)		
Cooling jacket	-	Polyoxymethylene (POM)	-
Oil supply	Liquid paraffin (environmentally friendly)		

Material variant R

Pump section	5.. ../10 K	522 ../11
Pump casing	Chrome nickel steel (1.4301)	Grey cast iron EN-GJL-250
Suction cover	Chrome nickel steel (1.4301)	Grey cast iron EN-GJL-250
Volute	Acrylonitrile butadiene styrene copolymer (ABS)	-
Impeller	Polyamide (PA)	
Foot	Polypropylene (PP)	
O-rings	Fluorocarbon rubber (FPM)	
Mechanical seal	Silicon carbide (SiC/SiC)	
Stator case	Chrome nickel steel (1.4301)	
Rotor shaft	Chrome steel (1.4021)	
Motor power cable	Polyurethane (PUR)	
Float	Polypropylene (PP)	
Cooling jacket	Polyoxymethylene (POM)	-
Oil supply	Liquid paraffin (environmentally friendly)	

Product benefits

- Ready-to-connect, easy installation and commissioning
- Reliable shaft sealing by SiC/SiC mechanical seal with good dry-running characteristics, with oil reservoir
- Maintenance-free bearings grease-packed for life

Certification

Certification	Effective in:	Comment
LGA Type-tested and monitored guaranteed with tested quality	Europe	All sizes

Selection table

The table listing fluids handled is a selection tool for drainage duties. It should be used for orientation and is based on KSB's many years of experience. The data are reference values and should not be considered to be generally binding recommendations. They shall not be the basis for warranty claims. Please contact your nearest KSB sales branch and/or our technical departments for in-depth advice.

Table of fluids handled

Fluids handled	Temperature [°C]	Percentage [%]	Material variant				
			A		C		R
			Free passage [mm]				
			10/11	35	10/11	35	10/11
Ammonium chloride NH_4Cl	-	10	-	-	✗	-	-
Ammonium hydroxide NH_4OH	≤ 30	10	✗	✗	-	-	-
Aluminium sulphate $Al_2(SO_4)_3$	≤ 40	10	-	-	✗	-	-
Antifrogen-water mixture	-	-	✗	✗	-	-	-
Ethylene glycol	-	-	✗	✗	-	-	-
Alkaline cleaning agents	-	-	-	-	3)	3)	-
Barium nitrate	-	-	✗	✗	-	-	-
Drilling emulsion	-	-	-	-	-	-	✗
Brackish water	-	-	-	-	✗	✗	-
Calcium hydroxide $Ca(OH)_2$	≤ 30	5	✗	✗	-	-	-
Calcium chloride $CaCl_2$	≤ 25	5	-	-	✗	✗	-
Calcium nitrate $Ca(NO_3)_2$	-	10	✗	✗	-	-	-
Deionised water	-	-	✗	✗	-	-	-
Landfill leachate	-	-	-	-	3)	3)	-
Disinfecting lye	-	-	-	-	3)	3)	-
Iron(II) nitrate $Fe(NO_3)_2$	-	5	-	-	✗	-	-
Iron(II) sulphate $Fe(SO_4)$	-	5	-	-	✗	-	-
Photographic developers	-	-	-	-	3)	-	-
Vinegar	-	-	-	-	✗	-	-
Degreaser	-	-	-	-	3)	3)	-
Liquid fertiliser	-	-	-	-	✗	✗	-
Antifreeze	-	-	✗	✗	-	-	-
Fibrous material	-	-	-	✗	-	✗	-
Fruit juice	-	-	-	-	✗	✗	-
Galvanic baths	-	-	-	-	3)	3)	-
Fermentation juice	-	-	-	-	-	✗	-
Glycol	-	-	✗	✗	-	-	-
Potassium carbonate	-	-	✗	✗	-	-	-
Potassium chloride KCl	≤ 20	3	-	-	✗	-	-
Potassium hydroxide KOH	≤ 30	10	✗	✗	-	-	-
Potassium nitrate KNO_3	-	10	✗	✗	-	-	-
Calcium hydroxide (lime water) $Ca(OH)_2$	≤ 30	5	✗	✗	-	✗	-
Condensate (from condensing boiler applications)	-	-	-	-	✗	-	-
Lab waste water	-	-	-	-	3)	3)	-
Lemonades	-	-	-	-	✗	-	-
Magnesium chloride $MgCl_2$	≤ 20	3	-	-	✗	-	-
Magnesium sulphate $MgSO_4$	-	10	✗	✗	-	-	-
Milk	-	10	✗	✗	-	-	-
Lactic acids	-	5	-	-	✗	-	-
Whey	-	-	-	-	✗	-	-
Sodium chloride NaCl	≤ 20	3	-	-	✗	-	-
Sodium hydroxide NaOH	≤ 30	10	✗	✗	-	-	-
Sodium carbonate Na_2CO_3	-	10	✗	✗	-	-	-
Sodium nitrate	-	-	✗	✗	-	-	-
Sodium perborate	-	-	✗	✗	-	-	-
Sodium sulphate Na_2SO_4	-	10	✗	✗	-	-	-

3) Please contact KSB and provide the relevant analysis as well as the data on temperature and mode of operation

Table of fluids handled

Fluids handled	Temperature [°C]	pH value	Material variant				
			A		C		R
			Free passage [mm]				
			10/11	35	10/11	35	10/11
Oil-water emulsion	-	-	-	-	-	-	✗
Osmosis	-	-	-	-	-	-	-
▪ Raw water (containing salt/chloride)	-	-	-	-	3)	3)	-
▪ Permeate (low salt content)	-	-	-	-	✗	✗	-
Paraffin oil	-	-	-	-	-	-	✗
Rapeseed oil	-	-	-	-	-	-	✗
Cleaning/washing lye	≤ 40	≤ 12	-	-	✗	✗	-
Acids, diluted	≤ 20	≤ 5	-	-	✗	✗	-
Silicone oil	-	-	-	-	-	-	✗
Silage leachate	-	-	-	-	✗	✗	-
Soy-bean oil	-	-	✗	✗	-	-	✗
Edible vinegar	-	-	-	-	✗	-	-
Edible oil	-	-	-	-	-	-	✗
Cutting oil	-	-	-	-	-	-	✗
Trisodium phosphate	-	-	✗	✗	-	-	-
Vaseline	-	-	✗	✗	-	-	-
Washing machine lye	-	-	✗	✗	✗	✗	-
Lye for metal cleaning	-	-	-	-	3)	3)	-
Water	-	-	-	-	-	-	-
▪ Drainage water	-	-	✗	✗	-	-	-
▪ Fire-fighting water	-	-	✗	✗	-	-	-
▪ Heating water	-	-	✗	✗	-	-	-
▪ Boiler water	-	-	✗	✗	-	-	-
▪ Cooling water	-	-	✗	✗	-	-	-
▪ Sea water	≤15	-	-	-	✗	✗	-
▪ Raw water	-	-	-	-	3)	3)	-
▪ Salt water	-	-	-	-	3)	3)	-
▪ Swimming-pool water (DIN 19643)	-	-	-	-	✗	✗	-
▪ Partly desalinated water	-	-	✗	✗	-	-	-
▪ Fully desalinated water	-	-	-	-	✗	✗	-
Waste water	-	-	-	-	-	-	-
▪ Electroplating shops	-	-	-	-	3)	3)	-
▪ Bottle/crate/keg washing	-	-	-	-	✗	✗	-
▪ Beverage industry, breweries	-	-	-	-	✗	✗	-
▪ Dairies, winegrowers' cooperatives	-	-	-	-	✗	✗	-
▪ Emergency pumping (floods)	-	-	-	✗	-	✗	-
▪ Containing salt (from fish-processing plants)	-	-	-	-	-	✗	-
▪ Sea and river water	-	-	-	✗	-	✗	-
▪ Car repair shops, car washes	-	-	-	-	-	-	✗
▪ Petrol stations	-	-	-	-	-	-	✗
▪ Pit drainage (raffinates)	-	-	-	-	-	-	✗
▪ Pit drainage (chemically aggressive substances)	-	-	-	-	✗	✗	-
▪ Wash water containing long fibres and stringy material	-	-	-	✗	-	✗	-
Citric acid	≤ 10	-	-	-	✗	-	-

Technical data

Material variant A

Designation	Nominal diameter	Free passage	P_1	P_2	1~ 220 - 240 V	3~ 380 - 415 V	Power cable 10 m		Level control	Mat. No.	[kg]
					$\sim I_N$	$\sim I_N$	H 07RN-F6G1	H 07RN-F3G1	H 07RN-F3G1		
		[mm]	[kW]	[kW]	[A]	[A]			[m]		
Ama-Drainer - variant A for waste water (standard variant), particle size 10 mm, without cooling jacket											
A 405 NE/10	G 1½	10	0.9	0.55	4.10	-	-	✗	-	29128651	12.2
A 405 SE/10	G 1½	10	0.9	0.55	4.10	-	-	✗	0.5	29128650	12.7
A 405 ND/10	G 1½	10	0.76	0.55	-	1.70	✗	-	-	29128652	13.8
A 405 SD/10	G 1½	10	0.76	0.55	-	1.70	✗	-	10	29128742	15.1
A 407 NE/10	G 1½	10	1.26	0.75	5.50	-	-	✗	-	29128654	12.2
A 407 SE/10	G 1½	10	1.26	0.75	5.50	-	-	✗	0.5	29128653	12.7
A 407 ND/10	G 1½	10	1.01	0.75	-	1.90	✗	-	-	29128655	13.8
A 407 SD/10	G 1½	10	1.01	0.75	-	1.90	✗	-	10	29128743	15.1
A 411 NE/10	G 1½	10	1.45	1.10	6.55	-	-	✗	-	29128657	14.5
A 411 SE/10	G 1½	10	1.45	1.10	6.55	-	-	✗	0.5	29128656	15
A 411 ND/10	G 1½	10	1.54	1.10	-	2.50	✗	-	-	29128658	13.8
A 411 SD/10	G 1½	10	1.54	1.10	-	2.50	✗	-	10	29128744	15.1
A 415 NE/10	G 1½	10	2.07	1.50	8.95	-	-	✗	-	29128660	14.5
A 415 SE/10	G 1½	10	2.07	1.50	8.95	-	-	✗	0.5	29128659	15
A 415 ND/10	G 1½	10	1.88	1.50	-	3.60	✗	-	-	29128661	15.6
A 415 SD/10	G 1½	10	1.88	1.50	-	3.60	✗	-	10	29128745	16.9
A 422 ND/10	G 1½	10	2.9	2.20	-	4.80	✗	-	-	29128662	15.6
A 422 SD/10	G 1½	10	2.9	2.20	-	4.80	✗	-	10	29128746	16.9
Ama-Drainer - variant A for waste water (standard variant), particle size 11 mm, without cooling jacket											
A 522 ND/11	G 2	11	2.9	2.20	-	4.80	✗	-	-	29128865	25
A 522 SD/11	G 2	11	2.9	2.20	-	4.80	✗	-	10	29128866	27
Ama-Drainer - variant A for waste water (standard variant), particle size 35 mm, without cooling jacket											
A 405 NE/35	G 1½	35	0.9	0.55	4.10	-	-	✗	-	29128677	13.2
A 405 SE/35	G 1½	35	0.9	0.55	4.10	-	-	✗	0.5	29128676	13.7
A 405 ND/35	G 1½	35	0.76	0.55	-	1.70	✗	-	-	29128678	14.8
A 405 SD/35	G 1½	35	0.76	0.55	-	1.70	✗	-	10	29128752	16.1
A 411 NE/35	G 1½	35	1.45	1.10	6.55	-	-	✗	-	29128680	15.5
A 411 SE//35	G 1½	35	1.45	1,10	6.55	-	-	✗	0.5	29128679	16
A 411 ND/35	G 1½	35	1.54	1.10	-	2.50	✗	-	-	29128681	14.8
A 411 SD/35	G 1½	35	1.54	1.10	-	2.50	✗	-	10	29128753	16.1
A 422 ND/35	G 1½	35	2.9	2.20	-	4.80	✗	-	-	29128682	16.6
A 422 SD/35	G 1½	35	2.9	2.20	-	4.80	✗	-	10	29128754	17.9
Ama-Drainer - variant A for waste water (standard variant), particle size 10 mm, with cooling jacket											
A 505 NE/10K	G 2	10	0.9	0.55	4.10	-	-	✗	-	29128664	14.2
A 505 SE/10K	G 2	10	0.9	0.55	4.10	-	-	✗	0.5	29128663	14.7
A 505 ND/10K	G 2	10	0.76	0.55	-	1.70	✗	-	-	29128665	15.8
A 505 SD/10K	G 2	10	0.76	0.55	-	1.70	✗	-	10	29128747	17.1
A 507 NE/10K	G 2	10	1.26	0.75	5.50	-	-	✗	-	29128667	14.2
A 507 SE/10K	G 2	10	1.26	0.75	5.50	-	-	✗	0,5	29128666	14.7
A 507 ND/10K	G 2	10	1.01	0.75	-	1.90	✗	-	-	29128668	15.8
A 507 SD/10K	G 2	10	1.01	0.75	-	1.90	✗	-	10	29128748	17.1
A 511 NE/10K	G 2	10	1.45	1.10	6.55	-	-	✗	-	29128670	16.5
A 511 SE/10K	G 2	10	1.45	1.10	6.55	-	-	✗	0.5	29128669	17
A 511 ND/10K	G 2	10	1.54	1.10	-	2.50	✗	-	-	29128671	15.8
A 511 SD/10K	G 2	10	1.54	1.10	-	2.50	✗	-	10	29128749	17.1
A 515 NE/10K	G 2	10	2.07	1.50	8.95	-	-	✗	-	29128673	16.5
A 515 SE/10K	G 2	10	2.07	1.50	8.95	-	-	✗	0.5	29128672	17
A 515 ND/10K	G 2	10	1.88	1.50	-	3.60	✗	-	-	29128674	17.6
A 515 SD/10K	G 2	10	1.88	1.50	-	3.60	✗	-	10	29128750	18.9
A 522 ND/10K	G 2	10	2.9	2.20	-	4.80	✗	-	-	29128675	17.6
A 522 SD/10K	G 2	10	2.9	2.20	-	4.80	✗	-	10	29128751	18.9

Material variant C

Designation	Nominal diameter	Free passage	P_1	P_2	1~ 220 - 240 V	3~ 380 - 415 V	Power cable 10 m		Level control	Mat. No.	[kg]
					$\sim I_N$	$\sim I_N$	H 07RN-F6G1	H 07RN-F3G1	H 07RN-F3G1		
		[mm]	[kW]	[kW]	[A]	[A]			[m]		
Ama-Drainer – variant C for aggressive water, particle size 10 mm, with cooling jacket											
C 505 NE/10K	G 2	10	0.90	0.55	4.10	-	-	✗	-	29128697	14.2
C 505 SE/10K	G 2	10	0.90	0.55	4.10	-	-	✗	0.5	29128696	14.7
C 505 ND/10K	G 2	10	0.76	0.55	-	1.70	✗	-	-	29128698	15.3
C 505 SD/10K	G 2	10	0.76	0.55	-	1.70	✗	-	10	29128755	17.1

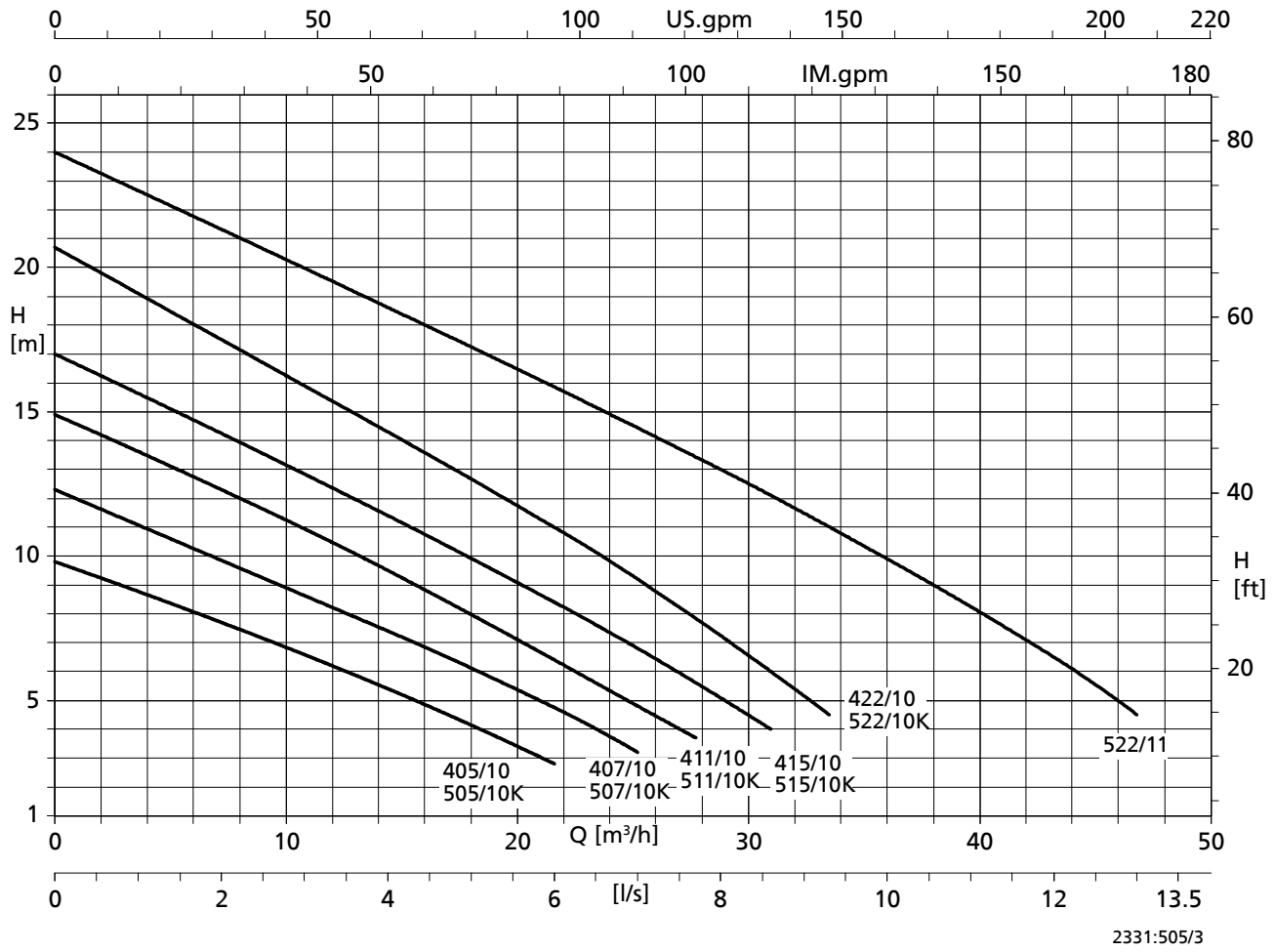
Designation	Nominal diameter	Free passage	P_1	P_2	1~ 220 - 240 V	3~ 380 - 415 V	Power cable 10 m		Level control	Mat. No.	[kg]
					$\sim I_N$	$\sim I_N$	H 07RN-F6G1	H 07RN-F3G1	H 07RN-F3G1		
		[mm]	[kW]	[kW]	[A]	[A]			[m]		
C 507 NE/10K	G 2	10	1.26	0.75	5.50	-	-	✗	-	29128700	14.2
C 507 SE/10K	G 2	10	1.26	0.75	5.50	-	-	✗	0.5	29128699	14.7
C 507 ND/10K	G 2	10	1.01	0.75	-	1.90	✗	-	-	29128701	15.3
C 507 SD/10K	G 2	10	1.01	0.75	-	1.90	✗	-	10	29128756	17.1
C 511 NE/10K	G 2	10	1.45	1.10	6.55	-	-	✗	-	29128703	16.5
C 511 SE/10K	G 2	10	1.45	1.10	6.55	-	-	✗	0.5	29128702	17
C 511 ND/10K	G 2	10	1.54	1.10	-	2.50	✗	-	-	29128704	15.3
C 511 SD/10K	G 2	10	1.54	1.10	-	2.50	✗	-	10	29128757	17.1
C 515 NE/10K	G 2	10	2.07	1.50	8.95	-	-	✗	-	29128706	16.5
C 515 SE/10K	G 2	10	2.07	1.50	8.95	-	-	✗	0.5	29128705	17
C 515 ND/10K	G 2	10	1.88	1.50	-	3.60	✗	-	-	29128707	17.6
C 515 SD/10K	G 2	10	1.88	1.50	-	3.60	✗	-	10	29128758	19.5
C 522 ND/10K	G 2	10	2.90	2.20	-	4.80	✗	-	-	29128708	17.7
C 522 SD/10K	G 2	10	2.90	2.20	-	4.80	✗	-	10	29128759	19.6
Ama-Drainer – variant C for aggressive water, particle size 11 mm, without cooling jacket											
C 522 ND/11	G 2	11	2.9	2.20	-	4.80	✗	-	-	29128693	23.5
C 522 SD/11	G 2	11	2.9	2.20	-	4.80	✗	-	10	29128694	25.5
Ama-Drainer – variant C for aggressive water, particle size 35 mm, without cooling jacket											
C 405 NE/35	G 1½	35	0.9	0,55	4.10	-	-	✗	-	29128683	15.3
C 405 SE/35	G 1½	35	0.9	0.55	4.10	-	-	✗	0.5	29128684	15.8
C 405 ND/35	G 1½	35	0.76	0.55	-	1.70	✗	-	-	29128685	16.5
C 405 SD/35	G 1½	35	0.76	0.55	-	1.70	✗	-	10	29128686	18.2
C 411 NE/35	G 1½	35	1.45	1.10	6.55	-	-	✗	-	29128687	17.6
C 411 SE/35	G 1½	35	1.45	1.10	6.55	-	-	✗	0.5	29128688	18.1
C 411 ND/35	G 1½	35	1.54	1.10	-	2.50	✗	-	-	29128689	16.5
C 411 SD/35	G 1½	35	1.54	1.10	-	2.50	✗	-	10	29128690	18.3
C 422 ND/35	G 1½	35	2.9	2.20	-	4.80	✗	-	-	29128691	19
C 422 SD/35	G 1½	35	2.9	2.20	-	4.80	✗	-	10	29128692	20.8

Material variant R

Designation	Nominal diameter	Free passage	P_1	P_2	1~ 220 - 240 V	3~ 380 - 415 V	Power cable 10 m		Level control	Mat. No.	[kg]
					$\sim I_N$	$\sim I_N$	PUR 6x1	PUR 3x1	PUR 3x1		
		[mm]	[kW]	[kW]	[A]	[A]			[m]		
Ama-Drainer – variant R for water containing oil / oil emulsions, particle size 10 mm, with cooling jacket											
R 505 NE/10K	G 2	10	0.90	0.55	4.10	-	-	✗	-	29128723	14.2
R 505 SE/10K	G 2	10	0.90	0,55	4.10	-	-	✗	0.5	29128722	14.7
R 505 ND/10K	G 2	10	0.76	0.55	-	1.70	✗	-	-	29128724	15.3
R 505 SD/10K	G 2	10	0.76	0.55	-	1.70	✗	-	10	29128760	17.1
R 507 NE/10K	G 2	10	1.26	0.75	5.50	-	-	✗	-	29128726	14.2
R 507 SE/10K	G 2	10	1.26	0.75	5.50	-	-	✗	0.5	29128725	14.7
R 507 ND/10K	G 2	10	1.01	0.75	-	1.90	✗	-	-	29128727	15.3
R 507 SD/10K	G 2	10	1.01	0.75	-	1.90	✗	-	10	29128761	17.1
R 511 NE/10K	G 2	10	1.45	1.10	6.55	-	-	✗	-	29128729	16.5
R 511 SE/10K	G 2	10	1.45	1.10	6.55	-	-	✗	0.5	29128728	17
R 511 ND/10K	G 2	10	1.54	1.10	-	2.50	✗	-	-	29128730	15.3
R 511 SD/10K	G 2	10	1.54	1.10	-	2.50	✗	-	10	29128762	17.1
R 515 NE/10K	G 2	10	2.07	1.50	8.95	-	-	✗	-	29128732	16.5
R 515 SE/10K	G 2	10	2.07	1.50	8.95	-	-	✗	0.5	29128731	17
R 515 ND/10K	G 2	10	1.88	1.50	-	3.60	✗	-	-	29128733	17.6
R 515 SD/10K	G 2	10	1.88	1.50	-	3.60	✗	-	10	29128763	19.5
R 522 ND/10K	G 2	10	2.90	2.20	-	4.80	✗	-	-	29128734	17.7
R 522 SD/10K	G 2	10	2.90	2.20	-	4.80	✗	-	10	29128764	19.6
Ama-Drainer – variant R for water containing oil / oil emulsions, particle size 11 mm, without cooling jacket											
R 522 ND/11	G 2	11	2.9	2.20	-	4.80	✗	-	-	29128867	23.5
R 522 SD/11	G 2	11	2.9	2.20	-	4.80	✗	-	10	29128868	25.5

Characteristic curves

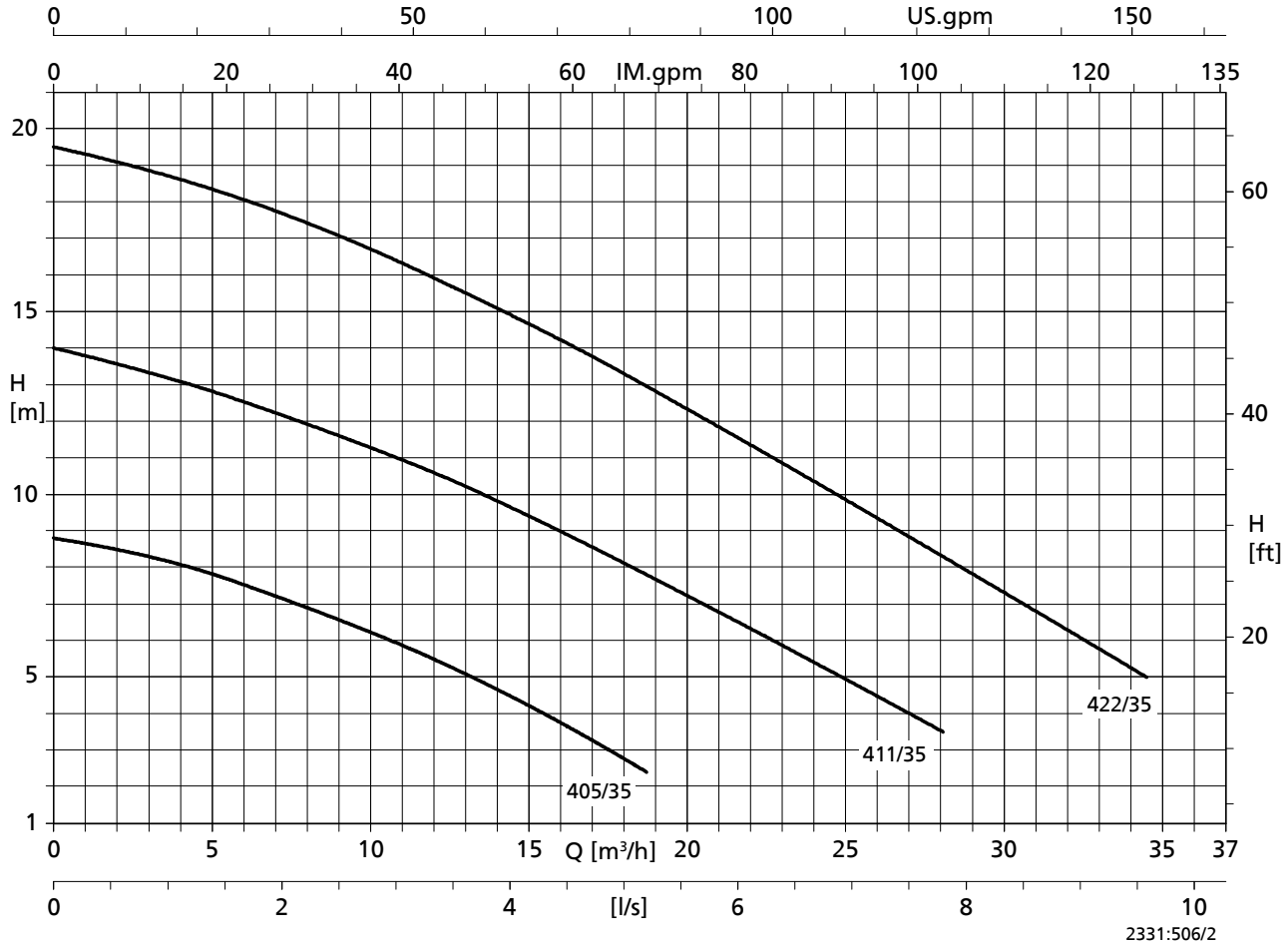
Ama-Drainer 405/407/411/415/422/505/507/511/515/522; multi-vane impeller; material variant A/C/R; n = 2800 rpm



Size	Free passage [mm]
405/407/411/415/422/505/507/511/515	10
522	11

Performance tolerance to ISO 2548 Class C (water under standard conditions)

Ama-Drainer 405/411/422; free-flow impeller; material variant A/C; n = 2800 rpm



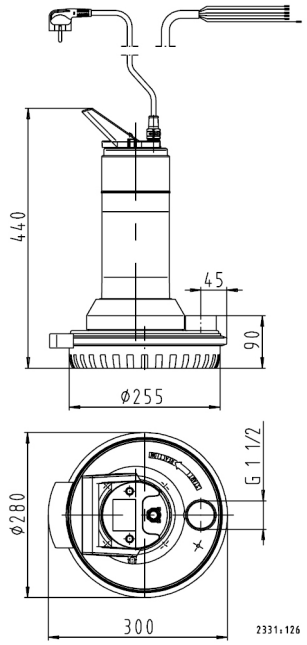
Size	Free passage [mm]
405/411/422	35

Performance tolerance to ISO 2548 Class C (water under standard conditions)

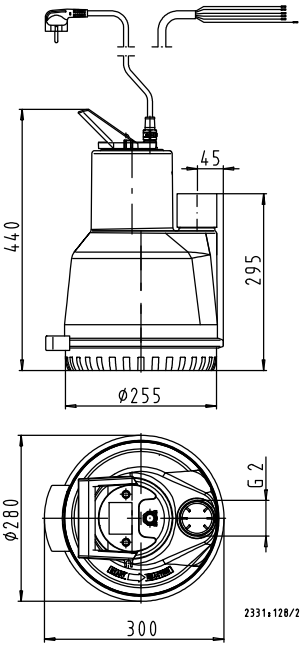
Dimensions

Outline drawings

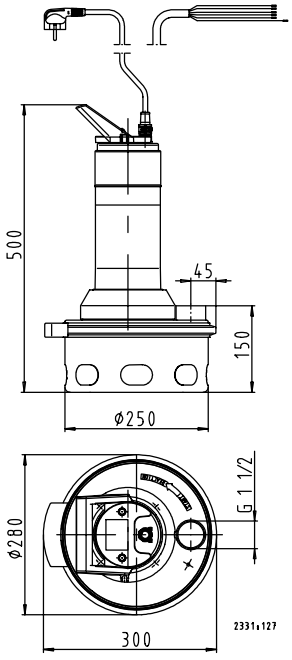
4../10 without cooling jacket



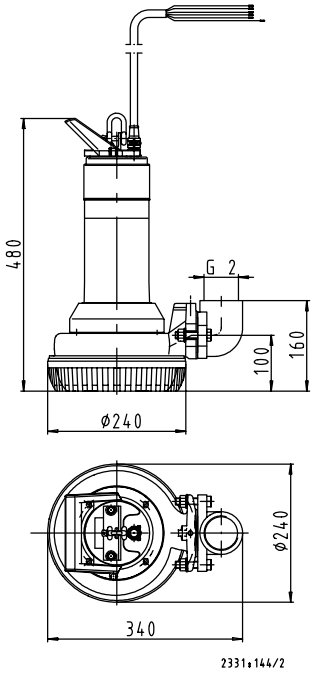
5../10K with cooling jacket



4../35 without cooling jacket

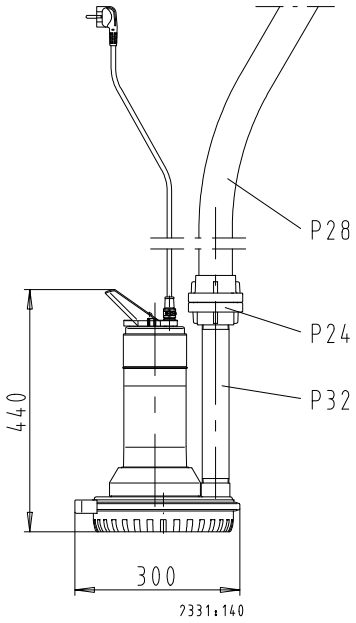


522/11 without cooling jacket

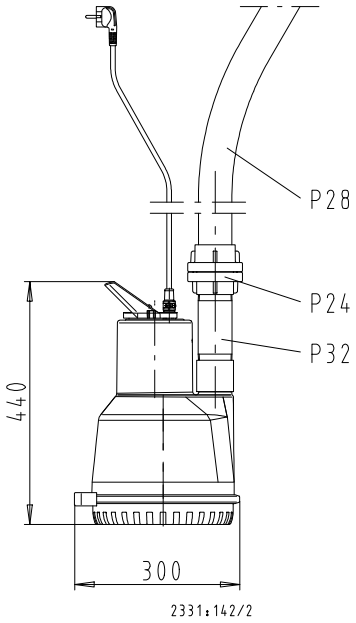


Examples of transportable models

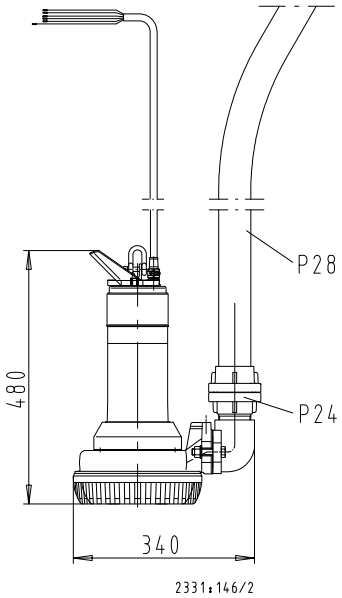
4.. NE/10 without cooling jacket



5.. NE/10 K with cooling jacket



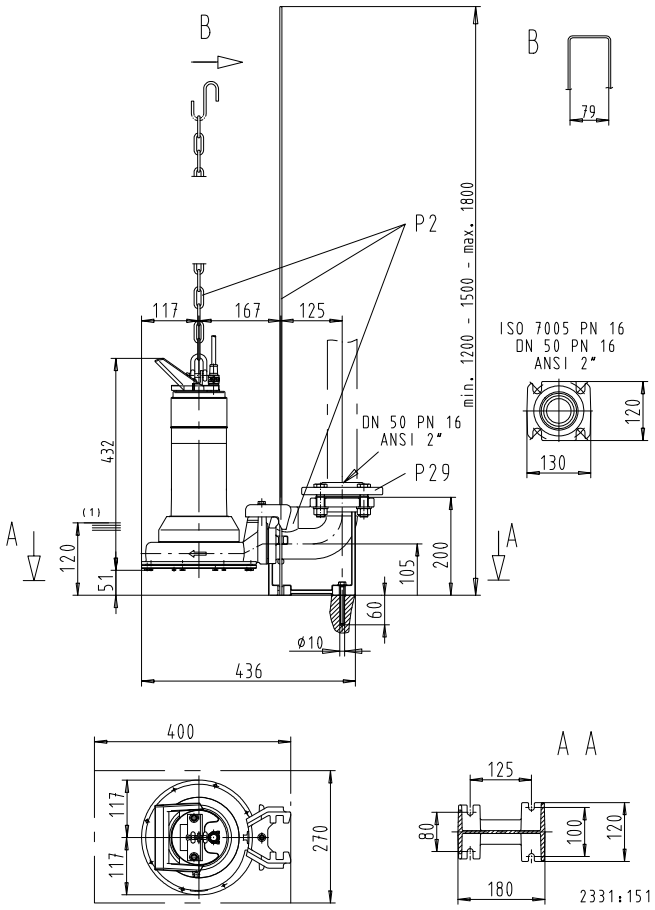
522 ND/11 without cooling jacket



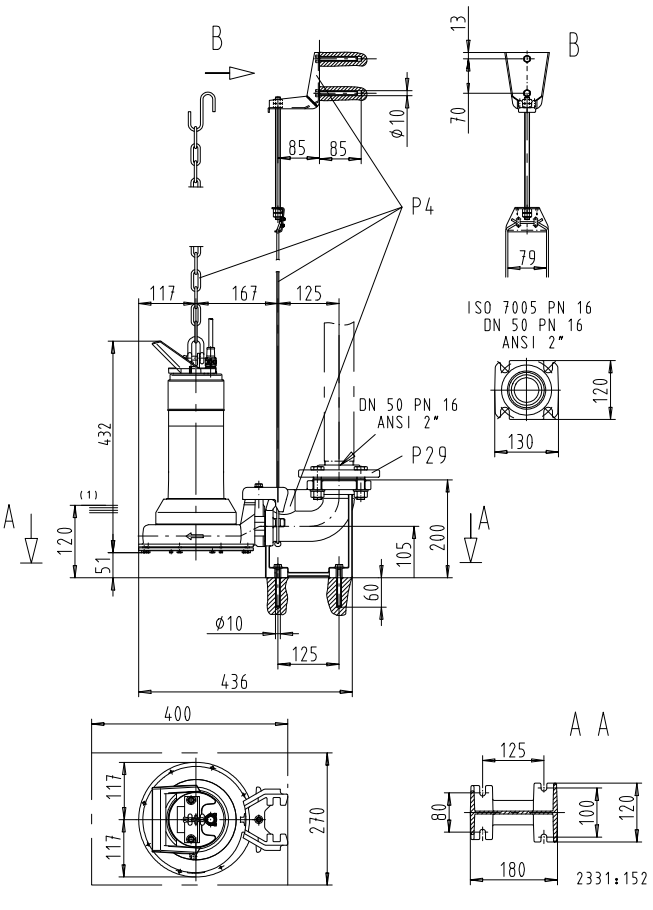
P 24	Storz rigid coupling
P 28	Plastic hose
P 32	Pipe extension

Examples of stationary installation

522 ND/11 with guide hoop



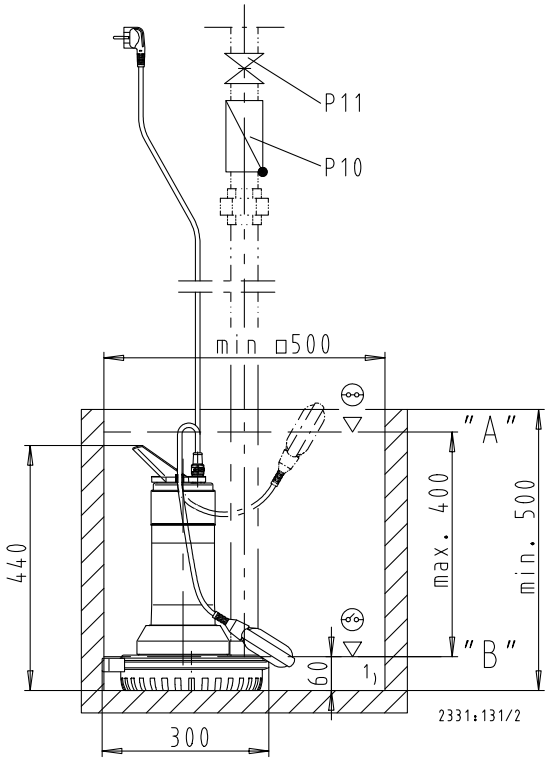
522 ND/11 with guide wire



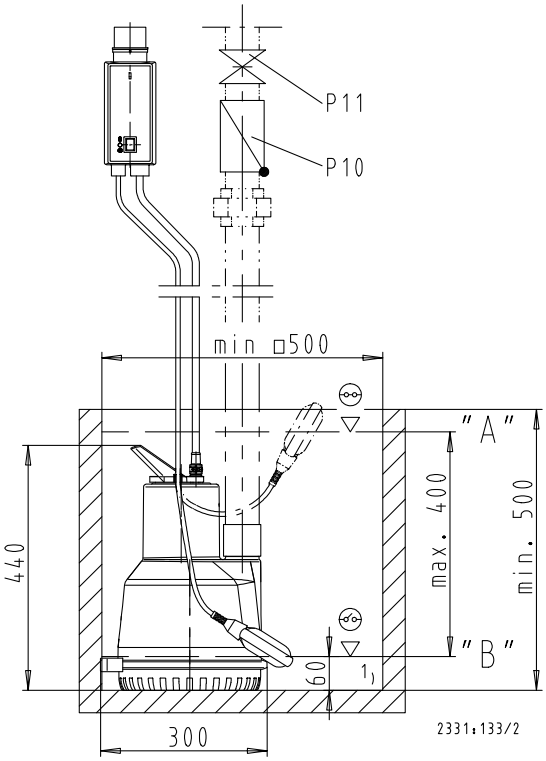
1)	Lowest switch-off point for automatic operation
P 2	Guide hoop arrangement
P 4	Guide wire arrangement
P 29	Threaded flange

Outline drawings of single pumps

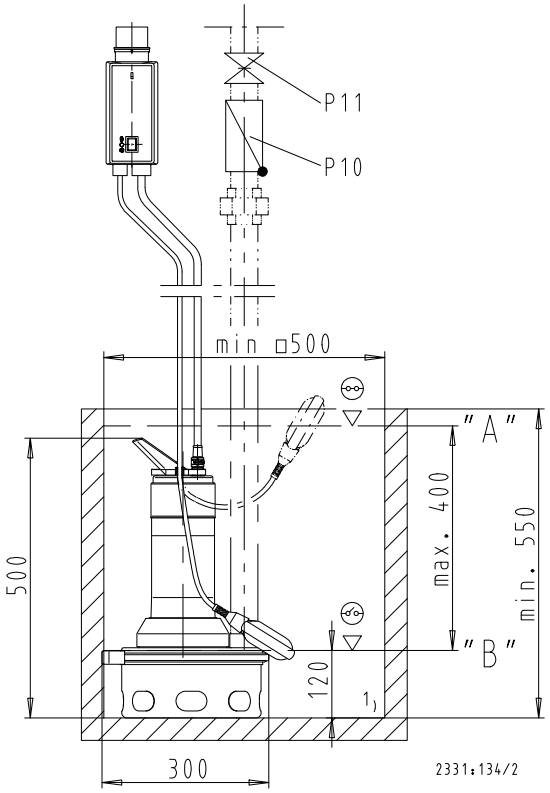
4..SE/10 without cooling jacket



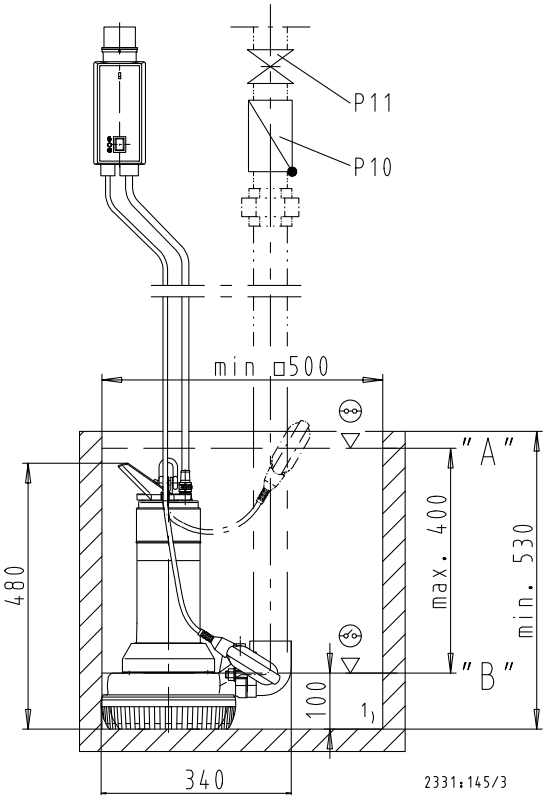
5..SD/10 K with cooling jacket



4..SD/35 without cooling jacket



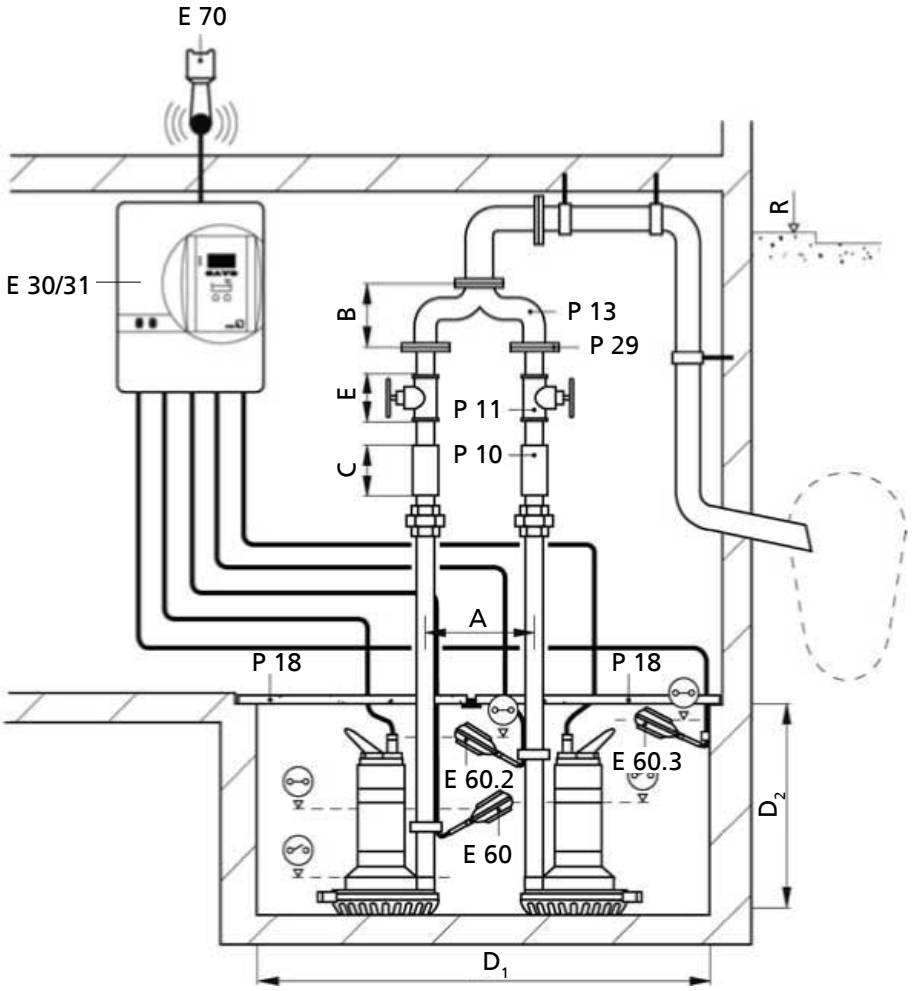
522 SD/11 without cooling jacket



1)	Residual water level
P 10	Swing check valve
P 11	Gate valve

Typical arrangement of dual-pump station

405 ... 422 NE/ND / 505 ... 522 NE/ND



P 10	Swing check valve
P 11	Gate valve
P 13	Y-pipe
P 18	Cover plate
P 29	Threaded flange
E 30/31	Control unit
E 60	Float switch, base load
E 60/2	Float switch, peak load
E 60/3	Float switch, high water alert
E 70	Horn
R	Flood level

Dimensions table [mm]

	A	B	C	D_1	D_2	E
4../10	275	190	130	1060 x 500	500	55
4../35	275	190	130	1060 x 500	550	60

	A	B	C	D_1	D_2	E
5../10 K	300	210	130	1060 x 500	500	55
522/11	300	210	130	1060 x 500	550	55

Accessories

Pump accessories

	Item	Description	Connection/ immersion depth	Ama-Drainer[4] 4../10	Ama-Drainer[4] 4../35	Ama-Drainer[4] 5../10K	Ama-Drainer[4] 522/11	Mat. No.	[kg]
	P2 + P5 + P7	Installation parts for stationary wet installation (guide hoop) with chain St, 2 m, shackle, grey cast iron Includes: flanged duckfoot bend DN 50, guide hoop, screws/bolts and anchor bolts, claw with stainless steel bolts, 2 m chain 1.0038+Z, St TZN, shackle 1.4401	Et 1,5 m	-	-	-	✗	39020769	11
			Et 1,8 m	-	-	-	✗	39020770	12
			Et 2,1 m	-	-	-	✗	39020771	13
		Flange adapter, grey cast iron (must be ordered separately)	DN 50	-	-	-	✗	19075508	4.2
	P4 + P5 + P7	Installation parts for stationary wet installation (guide wire installation), grey cast iron Includes: flanged duckfoot bend, suspension bracket, mounting bracket, 10 m guide wire, screws/bolts and anchor bolts, claw with stainless steel bolts, 5 m chain 1.0038+Z, shackle 1.4401	Et 4,5 m	-	-	-	✗	39021023	14.3
		Flange adapter, grey cast iron (must be ordered separately)		-	-	-	✗	19075508	4.2
		Installation parts for stationary pump sets, material variant C, stainless steel 1.4571/1.4571							
		Installation parts for stationary wet installation (guide wire installation) Includes: flanged duckfoot bend, suspension bracket, mounting bracket, 10 m guide wire, screws/bolts and anchor bolts	Et 4,5 m	-	-	-	✗	19552258	0
		Claw incl. flange adapter DN 50 (must be ordered separately)		-	-	-	✗	19075509	4.2
	P7	Chain 1.0038+Z, hook 1.4571 and shackle 1.4401	2 m, B5 x 35	-	-	-	✗	19141819	1.5
			5 m, B5 / 6	-	-	-	✗	19141820	2.8
		Stainless steel chain	2 m, DIN 766 - 4 x 16	-	-	-	✗	01236267	0.9
		Stainless steel chain	3 m, DIN 766 - 4 x 16	-	-	-	✗	01236268	1.089
		Stainless steel chain	5 m, DIN 766 - 4 x 16	-	-	-	✗	01236269	1.688
		Polypropylene lifting rope, material variant C	5 m	-	-	-	✗	11185207	2
	P8	Flange for pipe coupling PN 10, at the duckfoot bend flange, mating dimensions to PN 16	DN 50 / R2" pipe	-	-	-	✗	19551111	1.2
	P10	RK swing check valve Plastic, EN 12 050-4, with internal/internal thread ISO 7/1, full port and drain plug For additional parts see P32 and P33	Rp 1¼	(✗)	-	(✗)	-	01009771	0.1
			Rp 1½	✗	✗	(✗)	-	01009772	0.25
			Rp 2	(✗)	(✗)	✗	✗	01009773	0.5
		Non-return valve, stainless steel (1.4401) For additional parts see P32 and P33	Rp 1¼	(✗)	-	(✗)	-	01084936	2.1
			Rp 1½	✗	✗	(✗)	-	01084935	2.2
			Rp 2	(✗)	(✗)	✗	✗	01084937	0.444
	P11	Socket gate valve CuZn PN 16 with internal/internal thread and full port For additional parts see P32 and P33	Rp 1¼	(✗)	-	(✗)	-	01014219	0.602
			Rp 1½	✗	✗	(✗)	-	00411502	0.6
			Rp 2	(✗)	(✗)	✗	✗	00411503	1.1
	P13	Y-pipe for dual-pump sets, with external thread, galvanised steel For additional parts see P32 and P33	Rp 1¼	(✗)	-	-	-	18040311	4.1
		Y-pipes for dual-pump sets, grey cast iron, with hexagon head bolts, nuts and gaskets; flanges drilled to DIN 2501 Additional part see P29	DN 40	✗	✗	(✗)	-	40000688	10.6

4) (x) = increasing or reducing adapters are required for these nominal diameters

	Item	Description	Connection/ immersion depth	Ama-Drainer[4]				Mat. No.	[kg]
				4../10	4../35	5../10K	522/11		
			DN 50	(✗)	(✗)	✗	✗	40000689	13.5
	P18	Cover plate, steel tread-proof, split, with profile seals and angle iron mounting frame (type A 560) for 500 x 500 mm pits (Dual-pump stations with P13 Y-pipe are equipped with 2 cover plates next to each other.)	Rp 1¼	✗	✗	✗	✗	18075627	13
	P21	A 25 B drain hose set Includes: rigid coupling with external thread, 6 m plastic hose DN 25, rapid-action hose coupling Rp 1¼, (free passage 21 mm) Additional part see P32	Rp 1¼	(✗)	-	(✗)	-	18079719	3
			C 42	-	-	-	-	42209411	1.7
	P22	Hose connection set Includes: 1 hose barbs with external thread (PVC), 1 hose clip (CrNiMo steel) For additional parts see P32 and P33	C 52-G 1½	✗	✗	-	-	19072025	0.2
			C 52-G 2	-	-	✗	(✗)	18040259	0.2
			B 75-G 2	-	-	✗	(✗)	18040205	0.2
	P24	Storz rigid coupling with internal thread to ISO 228/1 Aluminium alloy, for required piping components see P32	C-G 1½	✗	✗	-	-	01002463	0.3
			C-G 2	-	-	✗	✗	00520120	0.3
			B-G 1½	✗	✗	-	-	01062591	0.1
			B-G 2	-	-	✗	✗	00133084	0.4
		Storz rigid coupling with external thread, DIN ISO 228/1 Aluminium alloy	C 52-G 2 A	-	-	-	✗	00524370	0.2
	P26	Storz hose coupling, aluminium alloy	C 52 DIN 14321	✗	✗	-	-	00524551	0.3
			B 75 (DIN 14322)	-	-	✗	✗	00520454	0.7
	P27	Hose clip DIN 3017, chrome steel	AL 40-60 C (DIN 3017)	✗	✗	-	-	00114522	0.01
			AL 70-90 B (DIN 3017)	-	-	✗	✗	01063363	0.1
	P28	Plastic hose DN 40, with integrated C couplings, DIN 14811	C 42-5 m	✗	✗	✗	✗	01062592	1.7
			C 42-10 m	✗	✗	✗	✗	01062593	2.8
			C 42-20 m	✗	✗	✗	✗	01062594	5
		Plastic hose DN 50, with integrated C couplings, DIN 14811	C 52-5 m	✗	✗	✗	✗	00522262	2.3
			C 52-10 m	✗	✗	✗	✗	00522263	4.2
			C 52-20 m	✗	✗	✗	✗	00522264	5.7
		Plastic hose DN 75, with integrated C couplings, DIN 14811	B 75-20 m	-	✗	✗	✗	00522265	10
			B 75 per m	-	✗	✗	✗	00540104	0.3
	P29	Threaded flange for Y-pipe (P13), internal thread	DN 40/Rp 1½	✗	✗	(✗)	(✗)	00260478	1.8
			DN 50/Rp 2	(✗)	(✗)	✗	✗	00260479	2.5
		Threaded flange for hoop arrangement (P2) and wire arrangement (P4) Includes: flange, 4 hexagon head bolts with nuts and washers, and 1 sealing element	DN 50/Rp 2	-	-	-	✗	19551353	2
	P32	Nominal diameter reduction, reducer DN 32 EN 10242, galvanised steel, external/internal thread for A 25 B drain hose set (P21)	AG R 1½ / IG Rp 1¼	(✗)	-	-	-	00240679	0.2
			AG R 2 / IG Rp 1¼	-	-	(✗)	-	00240680	0.4
		Nipple joint for Storz rigid coupling C (P24), EN 10242 Galvanised steel, external/external thread	R 1½	✗	✗	-	-	00240874	0.5
		Nipple joint for Storz rigid coupling C and B (P24) and for hose connection set (P22) Galvanised steel, external/external thread	R 2	-	-	-	✗	00240876	0.6
		Pipe extension for Storz rigid coupling B (P24) 1.4401, external/external thread	AG 1½ / AG R 1½ x 310	✗	✗	-	-	11037771	1
		Pipe extension for Storz rigid coupling C and B (P24) Galvanised steel, external/external thread	AG 2 / AG R 2 x 150	-	-	✗		00250494	0.6

4) (x) = increasing or reducing adapters are required for these nominal diameters

	Item	Description	Connection/ immersion depth	Ama-Drainer[4]				Mat. No.	[kg]
				4../10	4../35	5../10K	522/11		
	P33	Nominal diameter reduction, reducer DN 32	AG R 1½ / IG Rp 1¼	(✗)	-	-	-	00240679	0.2
			AG R 2 / IG Rp 1¼	-	-	(✗)	(✗)	00240680	0.4
		Nominal diameter reduction, reducer DN 40	AG R 2 / IG Rp 1½	-	-	(✗)	(✗)	00240686	0.5
		Nominal diameter increase, socket DN 50, EN 10242, galvanised steel For additional parts see P32 and P33	AG R 1½ / IG Rp 2	(✗)	(✗)	-	-	00241778	0.38
		Nominal diameter increase, socket DN 65, EN 10242, galvanised steel For additional parts see P32 and P33	IG Rp 2 / IG Rp 2½	-	-	(✗)	(✗)	40982361	1.3
	P35	Cooling jacket retrofit kit Includes: cooling jacket, connection socket with internal thread Rp2 and two O-rings, to retrofit Ama-Drainer 4../10 to the same design, Ama-Drainer 5../10 K Important: The piping of pumps already installed must be adjusted accordingly.		✗	-	-	-	18040775	0.5

4) (x) = increasing or reducing adapters are required for these nominal diameters

Control units and switchgear

Valid for all countries except France.

	Item	Description	230 V	400 V	Type	Current min - max [A]	Ama-Drainer 1~ .05 .E	.07 .E	.11 .E	.15 .E	Ama-Drainer 3~ .05 .D	.07 .D	.11 .D	.15 .D	.22 .D	522/11	Mat. No.	[kg]
	E 1	Motor protection switchgear MSE with integrated motor protection relay, manual-0-automatic selector switch and motor contactor, operation and fault indicator lamps Dimensions (W x H x D) 100 x 170 x 112 mm	✗	-	MSE 60.1	4,0 - 6,0	✗	✗	-	-	-	-	-	-	-	-	19070138	1
			✗	-	MSE 80.1	5,5 - 8,0	-	-	✗	-	-	-	-	-	-	-	19070139	1
			✗	-	MSE 100.1	8,0 - 11,5	-	-	-	✗	-	-	-	-	-	-	19070140	1
	E 2	Motor protection switchgear MSD Float switch With integrated motor protection relay, manual-0-automatic selector switch and motor contactor, operation and fault indicator lamps Dimensions (W x H x D) 100 x 170 x 112 mm	-	✗	MSD 16.1	1,2 - 1,8	-	-	-	-	✗	-	-	-	-	-	19070114	1
			-	✗	MSD 25.1	1,8 - 2,6	-	-	-	-	-	✗	✗	-	-	-	19070115	1
			-	✗	MSD 40.1	2,5 - 4,0	-	-	-	-	-	-	-	✗	-	-	19070116	1
			-	✗	MSD 60.1	3,7 - 5,5	-	-	-	-	-	-	-	-	✗	✗	19070117	1
	E 3	CEE motor protection plug, type Hyper[5)] 3/N/PE 16 A, IP X4 Phase inverter, contactor up to 4 kW, manual-0-automatic selector switch, thermal circuit breaker and float switch	-	✗	Hyper CEE		-	-	-	-	✗	✗	✗	✗	✗	✗	18040512	0.8
	E 4	Multi-functional plug, type Hyper, with motor protection relay 3/N/PE 16 A, IP X4, phase inverter, motor monitoring, contactor up to 4 kW, motor protection relay, manual-0-automatic selector switch, reset key, indicator lamps for direction of rotation, operation and fault, connections for three-phase motor, thermal circuit breaker and float switch	-	✗	Hyper 18.1	1,2 - 1,8	-	-	-	-	✗	-	-	-	-	-	19071490	1
			-	✗	Hyper 26.1	1,8 - 2,6	-	-	-	-	-	✗	✗	-	-	-	19071491	1
			-	✗	Hyper 37.1	2,6 - 3,7	-	-	-	-	-	-	-	✗	-	-	19071492	1
			-	✗	Hyper 55.1	3,7 - 5,5	-	-	-	-	-	-	-	-	✗	✗	19071493	1
	E 10	Control unit for single-pump stations LevelControl Basic 2 DOL starting, with manual-0-automatic selector switch, indicator lamps and control panel, high water alert, integrated alarm buzzer 85 dB(A), mains-independent alarm via rechargeable battery optional, operating hours counter/start-stop cycles per pump, voltage measurement, phase monitoring, pneumatic: indication of water level, volt-free contact for general fault message, motor temperature warning (thermal circuit breaker) – self-acknowledging, moisture monitor for motor leakage	✗	-	BC1 230 DFNO 100	Up to 10	✗	✗	✗	✗	-	-	-	-	-	-	19073760	4.5
			-	✗	BC1 400 DFNO 025	1,6 - 2,5	-	-	-	-	✗	✗	-	-	-	-	19073762	4.5
			-	✗	BC1 400 DFNO 040	2,5 - 4,0	-	-	-	-	-	-	✗	✗	-	-	19073763	4.5

5) Required for Ama-Drainer ND only

	Item	Description	230 V	400 V	Type	Current min - max [A]	Ama-Drainer										Mat. No.	[kg]
							1~				3~							
							.05 .E	.07 .E	.11 .E	.15 .E	.05 .D	.07 .D	.11 .D	.15 .D	.22 .D	522/11		
		For float switches or 4...20 mA sensor, optional master switch, 400 x 278 x 120 mm 400 V variant with motor protecting switch 230 V variant with external socket	-	✗	BC1 400 DFNO 063	4,0 - 6,3	-	-	-	-	-	-	-	-	✗	✗	19073764	4.5
	E 30 E 31	LevelControl Basic 2 control unit for dual-pump stations Peak load operation, stand-by pump, DOL starting, with manual-0-automatic selector switch, indicator lamps and control panel, high water alert, integrated alarm buzzer 85 dB(A), operating hours counter/start-stop cycles per pump: Voltage measurement, phase monitoring, volt-free contact for general fault message Optional mains-independent alarm via rechargeable battery For float switches or 4...20 mA sensor, optional master switch, 400 x 278 x 120 mm 400 V variant: with motor protection switch 230 V variant: with external socket	✗	-	BC2 230 DFNO 100	Up to 10	✗	✗	✗	✗	-	-	-	-	-	-	19073774	4.7
			-	✗	BC2 400 DFNO 025	1,6 - 2,5	-	-	-	-	✗	✗	-	-	-	-	19073776	4.7
			-	✗	BC2 400 DFNO 040	2,5 - 4,0	-	-	-	-	-	-	✗	✗	-	-	19073777	4.7
			-	✗	BC2 400 DFNO 063	4,0 - 6,3	-	-	-	-	-	-	-	-	✗	✗	19073778	4.7
	Installation options for LevelControl [6]																	
	O 1	Master switch for LevelControl Basic 2, installed for type BC... 3-pole, 20 A, lockable	-	-			✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	01143084	0.2

Installation options are not EDI-compatible (configurable range)

Operation with mini control system

For operation with mini control systems, separate float switches and appropriate cable lengths must be ordered with Ama-Drainer 405 NE to 415 NE or 505 NE to 515 NE since the float switch directly mounted on the S variant cannot be connected to the mini control system.

LevelControl with float switches:

Single pump:

- At least 1 float switch for pump On/Off
- At least 2 float switches for pump On/Off and high water alert

Dual pump:

- At least 2 float switches for pump On/Off
- At least 3 float switches for pump On/Off and high water alert

Dual-pump operation with two level switches at different levels

Two pumps installed in the same installation location should be operated via the LevelControl unit. This control unit enables automatic alternating, peak load and stand-by operation. External alarm switchgear will not be required as LevelControl features an integrated alarm function.

Connection to the control station

With the exception of MSE, MSD and Hyper, each control unit features a volt-free contact for transmitting the general fault message to the control station.

6) Installation options must be processed via EasySelect, otherwise they will be supplied with the unit but not fitted.

LevelControl Basic 2

Valid for all countries except France.

Feature	Single-pump station Float switch(es) incl. 4...20 mA	Dual-pump station Float switch(es) incl. 4...20 mA
230 V: 6.0 - 10 A	BC1 230 $_{DFNO}$ 100	BC2 230 $_{DFNO}$ 100
400 V: 1.6 - 2.5 A	BC1 400 $_{DFNO}$ 25	BC2 400 $_{DFNO}$ 25
400 V: 2.5 - 4.0 A	BC1 400 $_{DFNO}$ 40	BC2 400 $_{DFNO}$ 40
400 V: 4.0 - 6.3 A	BC1 400 $_{DFNO}$ 63	BC2 400 $_{DFNO}$ 63
Functions		
Tank drainage	✗	✗
Tank filling via float switch	✗	✗
Stand-by pump: 1 pump redundant	-	✗
Automatic pump changeover after every start	-	✗
Automatic pump changeover in the case of a pump fault	-	✗
Peak load operation function	-	✗
Runtime limitation	✗	✗
OFF via after-run time	✗	✗
OFF via level	✗	✗
Operation check run after idle period	✗	✗
Alert memory	-	-
Display and operation		
7-segment display	✗	✗
Indication of water level	Switching points	Switching points
For each pump: operation/fault/pump running	Multicolour LED	Multicolour LED
General fault (traffic light)	**LED**	**LED**
High water	**LED**	**LED**
Mains voltage	✗	✗
Mains frequency	-	-
Motor current per pump	-	-
Operating hours of each pump	✗	✗
Operating hours of the system	-	-
Starts per pump	✗	✗
Effective power per pump	-	-
Rotary field recognition of mains power supply	✗	✗
Phase monitoring	✗	✗
Change of switching level via control panel	-	-
Housing H x W x D, IP 54		
Plastic 361 x 278 x 120	✗	✗
Sheet steel 400 x 300 x 155	-	-
Sheet steel 600 x 400 x 200	-	-
Built-in components		
Master switch (lockable)	o	o
Manual-0-automatic selector switch per pump	✗	✗
DOL starting	✗	✗
Star-delta starting	-	-
Shockproof socket 230 V	**For 230 V**	**For 230 V**
Motor protection		
Fuse per pump	**For 230 V**	**FFFFor 230 V**
Motor protection switch per pump (overcurrent and short-circuit protection)	**For 400 VF**	**For 400 V**
Motor temperature warning input - self-acknowledging	✗	✗
Motor temperature alert input - manual acknowledgement	✗	✗
Pump		
Thermal circuit breaker (TCB) / bimetal switch per pump	400 V: brought out	400 V: brought out
Installation options		
Rechargeable battery for powering the electronics, sensors, alarm equipment	o	o
Alarm equipment		
1 free alarm input	✗	✗
1 digital high water alert input (e.g. for float switch)	✗	✗
Volt-free contact (changeover contact) for general fault/ operation message	✗	✗
Piezo buzzer 85 dB(A)	✗	✗
Horn 105 dB(A) / alarm combination / alarm strobe light 12 V DC	o	o

Feature	Single-pump station Float switch(es) incl. 4...20 mA	Dual-pump station Float switch(es) incl. 4...20 mA
Inputs/outputs		
Inputs for float switches	4	4
4...20 mA analog input	✗	✗
Integrated pneumatic pressure sensor up to 3 metres of water - up to 10 metres on request	-	-
Bubbler system with compressor up to 2 metres of water	-	-
Remote acknowledgement	✗	✗
12 V DC connection for horn, alarm combination, alarm strobe light	✗	✗
Sensors		
Float switch (NO contact)	o	o
F1 moisture sensor	o	o
Tools		
KSB ServiceTool for Windows XP	o	o

Key to the symbols

Symbol	Description
o	Optional
✗	Feature of the control unit
-	Not a feature of the control unit

Control units and switchgear

Only valid for France!

	Item	Description	230 V	400 V	Type	Current min - max [A]	Ama-Drainer 1~ .05 .E	.07 .E	.11 .E	.15 .E	Ama-Drainer 3~ .05 .D	.07 .D	.11 .D	.15 .D	.22 .D	522/11	Mat. No.	[kg]
	E 10	LevelControl Basic 2 control unit for single-pump station, IP 54 In compliance with NF C 15-100 DOL starting With manual-0-automatic selector switch, indicator lamps and control panel High water alert Integrated alarm buzzer, 85 dB(A) Operating hours counter / counter for start-stop cycles per pump Voltage measurement, phase monitoring Volt-free contact for general fault message Optional mains-independent alarm via rechargeable battery Master switch 361 x 278 x 120 mm Float switch or 4..20 mA sensor	✗	-	BC1 230 DFNM 040 02	2,5 - 4,0	✗	✗	-	-	-	-	-	-	-	-	19073873	4.5
			✗	-	BC1 230 DFNM 100 02	6,0 - 10,0	-	-	✗	✗	-	-	-	-	-	-	19073875	4.5
			-	✗	BC1 400 DFNO 025 02	1,6 - 2,5	-	-	-	-	✗	✗	-	-	-	-	19073877	4.5
			-	✗	BC1 400 DFNO 040 02	2,5 - 4,0	-	-	-	-	-	-	✗	✗	-	-	19073878	4.5
			-	✗	BC1 400 DFNO 063 02	4,0 - 6,3	-	-	-	-	-	-	-	-	✗	✗	19073879	4.5
	E30	LevelControl Basic 2 control unit for dual-pump station, IP 54 In compliance with NF C 15-100 Peak load operation function DOL starting With manual-0-automatic selector switch, indicator lamps and control panel High water alert Integrated alarm buzzer, 85 dB(A) Operating hours counter / counter for start-stop cycles per pump Voltage measurement, phase monitoring Volt-free contact for general fault message Optional mains-independent alarm via rechargeable battery Master switch 361 x 278 x 120 mm Float switch or 4..20 mA sensor	✗	-	BC2 230 DFNM 040 02	2,5 - 4,0	✗	✗	-	-	-	-	-	-	-	-	19073883	4.7
			✗	-	BC2 230 DFNM 100 02	6,0 - 10,0	-	-	✗	✗	-	-	-	-	-	-	19073885	4.7
			-	✗	BC2 400 DFNO 025 02	1,6 - 2,5	-	-	-	-	✗	✗	-	-	-	-	19073887	4.7
			-	✗	BC2 400 DFNO 040 02	2,5 - 4,0	-	-	-	-	-	-	✗	✗	-	-	19073888	4.7
			-	✗	BC2 400 DFNO 063 02	4,0 - 6,3	-	-	-	-	-	-	-	-	✗	✗	19073889	4.7
	E 3	CEE motor protection plug, type Hyper[7)] 3/N/PE 16 A, IP X4 Phase inverter, contactor up to 4 kW, manual-0-automatic selector switch, thermal circuit breaker and float switch	-	✗	Hyper CEE		-	-	-	-	✗	✗	✗	✗	✗	✗	18040512	0.8
	E 4	Multi-functional plug, type Hyper, with motor protection relay 3/N/PE 16 A, IP X4, phase inverter, motor monitoring, contactor up to 4 kW, motor protection relay, manual-0-automatic selector	-	✗	Hyper 18.1	1,2 - 1,8	-	-	-	-	✗	-	-	-	-	-	19071490	1
			-	✗	Hyper 26.1	1,8 - 2,6	-	-	-	-	-	✗	✗	-	-	-	19071491	1

7) Required for Ama-Drainer ND only

	Item	Description	230 V	400 V	Type	Current min - max [A]	Ama-Drainer										Mat. No.	[kg]
							1~				3~							
							.05 .E	.07 .E	.11 .E	.15 .E	.05 .D	.07 .D	.11 .D	.15 .D	.22 .D	522/11		
		switch, reset key, indicator lamps for direction of rotation, operation and fault, connections for three-phase motor, thermal circuit breaker and float switch	-	✗	Hyper 37.1	2,6 - 3,7	-	-	-	-	-	-	-	✗	-	-	19071492	1
			-	✗	Hyper 55.1	3,7 - 5,5	-	-	-	-	-	-	-	-	✗	✗	19071493	1

Installation options are not EDI-compatible (configurable range)

Operation with mini control system

For operation with mini control systems, separate float switches and appropriate cable lengths must be ordered with Ama-Drainer 405 NE to 415 NE or 505 NE to 515 NE since the float switch directly mounted on the S variant cannot be connected to the mini control system.

LevelControl with float switches:

Single pump:

- At least 1 float switch for pump On/Off
- At least 2 float switches for pump On/Off and high water alert

Dual pump:

- At least 2 float switches for pump On/Off
- At least 3 float switches for pump On/Off and high water alert

Dual-pump operation with two level switches at different levels

Two pumps installed in the same installation location should be operated via the LevelControl unit. This control unit enables automatic alternating, peak load and stand-by operation. External alarm switchgear will not be required as LevelControl features an integrated alarm function.

Connection to the control station

With the exception of MSE, MSD and Hyper, each control unit features a volt-free contact for transmitting the general fault message to the control station.

LevelControl Basic 2

Only valid for France!

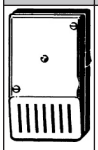
Feature	Single-pump station Float switch(es) incl. 4...20 mA	Dual-pump station Float switch(es) incl. 4...20 mA
230 V: 2.5 - 4.0 A	BC1 230 DFNM 040 02	BC2 230 DFNM 040 02
230 V: 6.0 - 10.0 A	BC1 230 DFNM 100 02	BC2 230 DFNM 100 02
400 V: 1.6 - 2.5 A	BC1 400 DFNO 025 02	BC2 400 DFNO 025 02
400 V: 2.5 - 4.0 A	BC1 400 DFNO 040 02	BC2 400 DFNO 040 02
400 V: 4.0 - 6.3 A	BC1 400 DFNO 063 02	BC2 400 DFNO 063 02
Functions		
Tank drainage	✗	✗
Tank filling via float switch	✗	✗
Stand-by pump: 1 pump redundant	-	✗
Automatic pump changeover after every start	-	✗
Automatic pump changeover in the case of a pump fault	-	✗
Peak load operation function	-	✗
Runtime limitation	✗	✗
OFF via after-run time	✗	✗
OFF via level	✗	✗
Operation check run after idle period	✗	✗
Alert memory	-	-
Display and operation		
7-segment display	✗	✗
Indication of water level	Switching points	Switching points
For each pump: operation/fault/pump running	Multicolour LED	Multicolour LED
General fault (traffic light)	LED	LED
High water	LED	LED
Mains voltage	✗	✗
Mains frequency	-	-
Motor current per pump	-	-
Operating hours of each pump	✗	✗
Operating hours of the system	-	-
Starts per pump	✗	✗

Feature	Single-pump station Float switch(es) incl. 4...20 mA	Dual-pump station Float switch(es) incl. 4...20 mA
Effective power per pump	-	-
Rotary field recognition of mains power supply	✗	✗
Phase monitoring	✗	✗
Change of switching level via control panel	-	-
Housing H x W x D, IP 54		
Plastic 361 x 278 x 120	✗	✗
Sheet steel 400 x 300 x 155	-	-
Sheet steel 600 x 400 x 200	-	-
Built-in components		
Master switch (lockable)	✗	✗
Manual-0-automatic selector switch per pump	✗	✗
DOL starting	✗	✗
Star-delta starting	-	-
Shockproof socket 230 V	For 230 V	For 230 V
Motor protection		
Fuse per pump	For 230 V	For 230 V
Motor protection switch per pump (overcurrent and short-circuit protection)	For 400 V	For 400 V
Motor temperature warning input - self-acknowledging	✗	✗
Motor temperature alert input - manual acknowledgement	✗	✗
Pump		
Thermal circuit breaker (TCB) / bimetal switch per pump	400 V: brought out	400 V: brought out
Installation options		
Rechargeable battery for powering the electronics, sensors, alarm equipment	o	o
Alarm equipment		
1 free alarm input	✗	✗
1 digital high water alert input (e.g. for float switch)	✗	✗
Volt-free contact (changeover contact) for general fault/ operation message	✗	✗
Piezo buzzer 85 dB(A)	✗	✗
Horn 105 dB(A) / alarm combination / alarm strobe light 12 V DC	o	o
Inputs/outputs		
Inputs for float switches	4	4
4...20 mA analog input	✗	✗
Integrated pneumatic pressure sensor up to 3 metres of water - up to 10 metres on request	-	-
Bubbler system with compressor up to 2 metres of water	-	-
Remote acknowledgement	✗	✗
12 V DC connection for horn, alarm combination, alarm strobe light	✗	✗
Sensors		
Float switch (NO contact)	o	o
F1 moisture sensor	o	o
Tools		
KSB ServiceTool for Windows XP	o	o

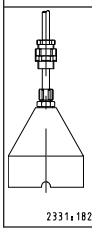
Key to the symbols

Symbol	Description
o	Optional
✗	Feature of the control unit
-	Not a feature of the control unit

Alarm switchgear

	Item	Description	Ama-Drainer										Mat. No.	[kg]
			1~				3~							
			.05 .E	.07 .E	.11 .E	.15 .E	.05 .D	.07 .D	.11 .D	.15 .D	.22 .D	522/11		
		Alarm switchgear with circuit breaker, piezoceramic signal transmitter, 85 dB(A) at a distance of 1 m and 4.1 kHz, green equipment-on lamp Plastic housing IP 20, 140 x 80 x 57 mm; use float switch, F 1 humidity sensor (item E 64) or signal relay of control unit as contactor.												
	E 50	AS 0 Buzzer/switching input mains-dependent	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	29128401	0.5
	E 51	AS 2 Buzzer/switching input, mains-dependent with volt-free signalling contact	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	29128422	0.5
	E 52	AS 4 Buzzer/switching input, mains-independent (battery-backed) with volt-free signalling contact and self-charging power supply unit (for 5 hours' operation in the event of power failure)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	29128442	0.5
	E 53	AS 5 Alarm equipment (e.g. horn), volt-free contact/battery-backed 230 V ~/ 12 V = 5 VA Mains-independent, with self-charging power supply unit for 10 hours' operation in the event of power failure, mains pilot LED, fault indicator light, horn-off push button, volt-free contact for hook-up to a control station, ready for connection with 1.8 m cable and plug. ISO housing IP 41, 190 x 165 x 75 mm, use float switch (E 60) or signal relay of control unit as contactor	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	00530561	1.7
	E 55	AS 1 Buzzer/moisture sensor 230 V ~/ 9 V = 1,5 VA in ISO plug housing IP 30, mains-independent, with self-charging power supply unit for 5 hours' operation in the event of a power failure, acoustic signal 70 dB(A) with circuit breaker and integrated signal transmitter with 3-metre connection cable, max. 60°C, not suitable for steam and condensate. Alarm transmission options: 1. High-water alert by suspending the moisture sensor in a (pump) sump above the pump start-up level. 2. Water alarm signal at a water level of only 1 mm (!), by placing the contactor on the floor of rooms subject to a flooding risk, e.g. the cellar or next to the washing machine in the kitchen or bathroom.	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	00533740	0.9

Control unit/switchgear accessories

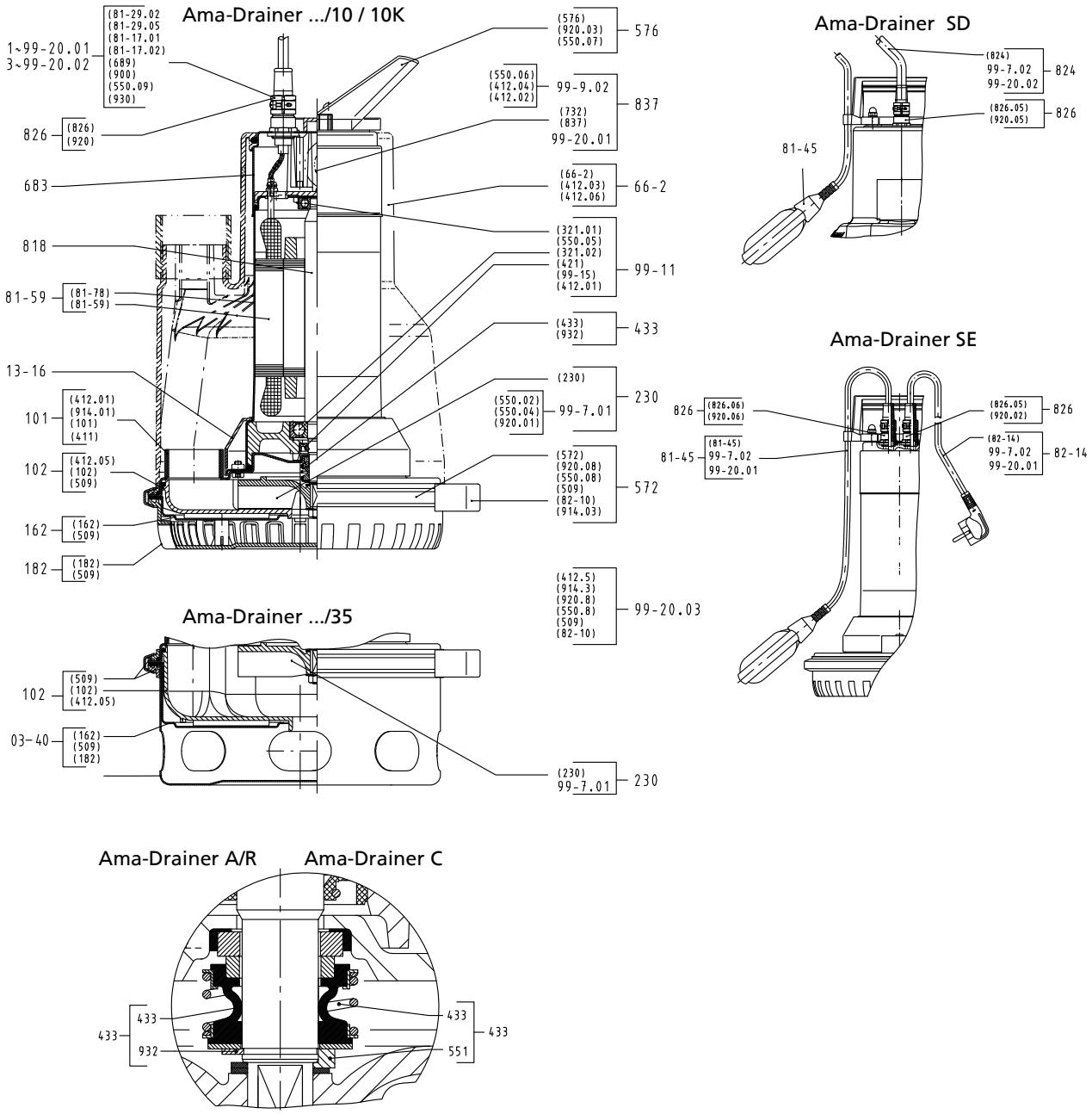
	Item	Description		Ama-Drainer										Mat. No.	[kg]
				1~				3~							
				.05 .E	.07 .E	.11 .E	.15 .E	.05 .D	.07 .D	.11 .D	.15 .D	.22 .D	522/11		
	E 60	Float switch with free cable end (NO contact) Switch housing made of polypropylene (max. fluid temperature 70 °C), circuit closed in upper float position, connection cable (H 07 RN-F3G1) 230 V AC or 21 V AC/24 V DC, max. 8 A, min. 20 mA Circuit closed in upper float position Connection cable (H 07 RN-F3G1)	3 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037742	0.5
			5 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037743	0.8
			10 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037744	1.3
			15 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037745	1.8
			20 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037746	2.4
			25 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037747	2.9
			30 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037748	3.4
	E 61	Float switch with free cable end, oil resistant (NO contact) Circuit closed in upper float position (PUR 3 x 1)	5 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037753	0.8
			10 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037754	1.2
			20 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037755	2
	E 62	Float switch with free cable end (NC contact) [8] circuit open in upper float position (H 07 RN-F3G1)	5 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037756	0.8
			10 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037757	1.4
			20 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	11037758	2.6
		Float switch for filling, with shockproof plug (NO contact), circuit closed in upper float position, 230 V AC, 50 Hz, max. 8 A (H 07 RN-F3G1)	3 m	✗	✗	✗	-	-	-	-	-	-	-	11037749	1.1
			5 m	✗	✗	✗	-	-	-	-	-	-	-	11037750	1.3
			10 m	✗	✗	✗	-	-	-	-	-	-	-	11037751	1.6
			20 m	✗	✗	✗	-	-	-	-	-	-	-	11037752	2.7
		Float switch for filling, with shockproof plug (NC contact), circuit open in upper float position, 230 V AC, 50 Hz, max. 8 A (H 07 RN-F3G1)	3 m	✗	✗	✗	-	-	-	-	-	-	-	11037759	0.6
			5 m	✗	✗	✗	-	-	-	-	-	-	-	11037760	0.9
			10 m	✗	✗	✗	-	-	-	-	-	-	-	11037761	1.5
			20 m	✗	✗	✗	-	-	-	-	-	-	-	11037762	2.7
	E 64	Moisture sensor F 1 As contactor for AS 0, AS 2 or AS 4 alarm switchgear, with 3-metre connection cable, 40 °C max., not suitable for steam and condensate. Possible applications for alarm transmission: 1. High-water alert by suspending the moisture sensor in a (pump) sump above the pump start-up level. 2. Water alert signal at a water level of just 1 mm (!), by placing the contactor on the floor of rooms subject to a flooding risk, e.g. the cellar or next to the washing machine in the kitchen or bathroom. Dimensions: (H mm x W mm x D mm) 52 x 21 x 20	3 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	19072366	0.2
	E 65	Open pressure bell set - pneumatic and bubbler control with polyamide tube 8 x 1	10 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	19071721	1.2
			20 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	19071837	2

8) Not suitable for LevelControl

	Item	Description		Ama-Drainer										Mat. No.	[kg]
				1~				3~							
				.05 .E	.07 .E	.11 .E	.15 .E	.05 .D	.07 .D	.11 .D	.15 .D	.22 .D	522/11		
	E 66	Closed pressure bell set - pneumatic with polyamide tube 8 x 3	10 m	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	19071722	3.5
	E70	Horn, 12 V DC, 105 dB(A), 1.2 W For indoor and outdoor installation, to be mounted in a position where it is protected from direct rain, IP 54 enclosure		✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	01086547	0.1
	E 80	Safety switch STECKMAT Tripping in approx. 0.03 s even in the event of minor and harmless leakage currents as low as approx. 0.03 A 230 V / 10 A		✗	✗	✗	✗	-	-	-	-	-	-	00534217	0.5
	E90	Rechargeable battery retrofit kit for LevelControl Basic 2, for powering the electronics, the float switches or internal pressure sensor and the alarm equipment (buzzer, horn, alarm combination), for single-pump and dual-pump stations	For type BC, consisting of 2 rechargeable batteries 6 V, 1,3 Ah and charging unit	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	19074194	0.8

General assembly drawings with list of components

General assembly drawing Ama-Drainer .../10, .../10K,.../35

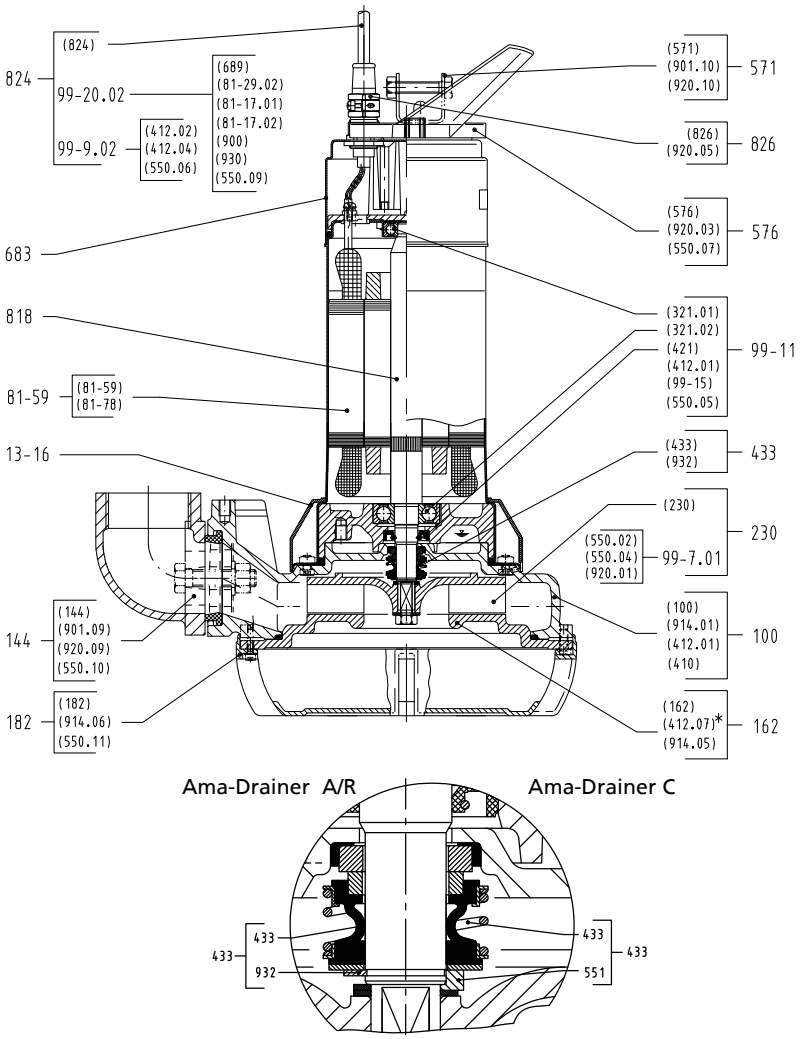


General assembly drawing of Ama-Drainer .../10, .../10K, .../35

Part No.	Description	Comprises:
03-40	Foot/suction cover assembly (for .../35)	Suction cover 162, foot 182, intermediate ring 509
101	Pump casing, complete	Pump casing 101, joint ring 411, O-ring 412.01, hexagon socket head cap screw 914.01
102	Volute casing	Volute casing 102, O-ring 412.05, intermediate ring 509
13-16	Protective casing	Protective casing 13-16
162	Suction cover	Suction cover 162, intermediate ring 509

Part No.	Description	Comprises:
182	Foot	Foot 182, intermediate ring 509
230	Impeller, complete	Impeller 230, impeller installation kit 99-7.01
433	Mechanical seal, complete	Mechanical seal 433, spacer disc 551 (only for variant C), circlip 932
572	Clamp, complete	Clamp 572, hexagon socket head cap screw 914.03, nut 920.08, disc 550.08, intermediate ring 509, cover strip 82-10
576	Handle, complete	Handle 576, cap nut 920.03, disc 550.07, plate 970
66-2	Cooling jacket, set of accessories	Cooling jacket 66-2, O-ring 412.03, O-ring 412.06
683	Hood	Hood 683
81-45	Float switch (single-phase units)	Float switch 6 A / 0.5 m, float switch 10 A / 0.5 m, installation kit for hood 99-7.02, repair kit for cable (single-phase) 99-20.01
81-45	Float switch (three-phase units)	Float switch 6 A / 10 m
81-59	Stator, complete	Stator 81-59; stator case 81-78
818	Rotor	Rotor 818
82-14	Cable with plug (single-phase units)	Cable with plug 3 x 1, 10m; installation kit for hood 99-7.02, repair kit for cable (single-phase) 99-20.01
824	Cable (for three-phase units)	Cable 6 x 1 10 m 824, installation kit for hood 99-7.02, repair kit 99-20.02
826	Cable gland	Cable gland 826, nut (M20 x 1.5) 920.05
837	Capacitor (single-phase units only)	Capacitor 837, capacitor holder 732, installation kit for hood 99-7.02, cable repair kit (single-phase) 99-20.01
99-7.01	Impeller installation kit	Adjusting washer 550.02, disc 550.04, nut 920.01
99-7.02	Installation kit for hood	O-ring 412.02, O-ring 412.04, disc 550.06
99-11	Bearings	Deep-groove ball bearing 321.01, deep-groove ball bearing 321.02, shaft seal ring 421, O-ring 412.01, lubricating oil 99-15, disc 550.05
99-20.01/.02	Cable repair kit	Insulation tube 689, terminal 81-29.02, end connector 81-17.01, end connector 81-17.02, screw 900, serrated lockwasher 930, disc 550.09
99-20.03	Hydraulic system repair kit	O-ring 412.05, hexagon socket head cap screw 914.03, nut 920.08, disc 550.08, intermediate ring 509, cover strip 82-10

General assembly drawing Ama-Drainer 522/11



General assembly drawing of Ama-Drainer 522/11

Part No.	Description	Comprises:
100	Casing, complete	Casing 100, hexagon socket head cap screw 914.01, O-ring 412.01, profile seal 410
144	Discharge elbow, complete	Discharge elbow, hexagon head bolt 901.09, nut 920.09, disc 550.10
13-16	Protective casing	Protective casing 13-16
162	Suction cover	Suction cover 162, hexagon socket head cap screw 914.05
182	Foot	Foot 182, hexagon socket head cap screw 914.06, disc 550.11
230	Impeller, complete	Impeller 230, impeller installation kit 99-7.01
433	Mechanical seal, complete	Mechanical seal 433, spacer disc 551 (for variant C only), circlip 932
571	Bracket, complete	Bracket 571, hexagon head bolt 901.10, hexagon nut 920.10
576	Handle, complete	Handle 576, cap nut 920.03, disc 550.07
683	Hood	Hood 683
81-45	Float switch (three-phase units)	Float switch 6 A / 10 m
81-59	Stator, complete	Stator 81-59; stator case 81-78
818	Rotor	Rotor 818
824	Cable (three-phase units)	Cable 6 x 1 10 m 824, installation kit for hood 99-7.02, repair kit 99-20.02
826	Cable gland	Cable gland 826, nut (M20 x 1.5) 920.05
99-7.01	Impeller installation kit	Adjusting washer 550.02, disc 550.04, nut 920.01
99-7.02	Installation kit for hood	O-ring 412.02, O-ring 412.04, disc 550.06
99-11	Bearings	Deep-groove ball bearing 321.01, deep-groove ball bearing 321.02, shaft seal ring 421, O-ring 412.01, lubricating oil 99-15, disc 550.05

Part No.	Description	Comprises:
99-20.02	Cable repair kit	Insulation tube 689, terminal 81-29.02, end connector 81-17.01, end connector 81-17.02, screw 900, serrated lockwasher 930, disc 550.09
99-20.03	Hydraulic system repair kit	O-ring 412.05, hexagon socket head cap screw 914.03, nut 920.08, disc 550.08, intermediate ring 509, cover strip 82-10

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