

Submersible Waste Water Pump

Ama-Drainer 80/100

Type Series Booklet



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Type Series Booklet Ama-Drainer 80/100

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Building Services: Drainage

Drainage Pumps/Waste Water Pumps

Ama-Drainer 80/100



Main applications

- Drainage
- Disposal
- Drainage systems
- Lowering groundwater levels
- Maintaining groundwater levels
- Building site drainage
- Construction pit drainage
- Emergency pump in the event of flooding

Fluids handled

- Slightly contaminated water
- Water containing salt

Operating data

Operating properties

Characteristic	Value
Flow rate	Q [m ³ /h] ≤ 130
	Q [l/s] ≤ 36
Head	H [m] ≤ 26
Fluid temperature	T [°C] ≤ 50 ¹⁾ (in continuous operation)
	≤ 90 (for 3 minutes maximum)
Immersion depth	ET [m] Standard design: ≤ 7
	Variant B/BH: ≤ 10

1) Variant B/BH ≤ 40 °C

2) Blank = standard design = design for waste water

Designation

Example: Ama-Drainer B 80-40 S

Key to the designation

Code	Description
Ama-Drainer	Type series
B	Material
	B = Wear-resistant variant
	BH = Wear-resistant variant with impeller made of Norihard white cast iron
-2)	= Design for waste water
80	Discharge nozzle DN
	80 = 80 mm
	100 = 100 mm
40	Motor rating [kW x 10]
	40 = 4.0 kW 75 = 7.5 kW
S	Float switch
	S = With float switch N = Without float switch

Design details

Design

- Fully floodable submersible motor pump
- To EN 12050-2
- Close-coupled design
- Vertical discharge nozzle
- Single-stage
- Vertical installation
- With or without level control
- All wetted parts made of materials with anti-corrosive coating

Installation types

- Stationary installation
- Transportable models

Drive

- Motor winding to IEC 60038
- Motor design to EN 60043 T1/IEC 34-1
- Thermal class B
- DOL or star-delta starting
- Enclosure: IP68 (permanently submerged) to EN 60529 / IEC 529

Standard design:

- 10-metre power cable

Variant B/BH:

- 20 m power cable

Ama-Drainer 80 N/S

- Surface-cooled three-phase motor
- Integrated temperature switch
- Power cable and CEE plug with phase inverter
- Direction of rotation indication

- Over-current trip

Ama-Drainer 100 N/S³⁾

- Surface-cooled three-phase motor
- Integrated temperature switch
- Power cable with free cable ends

Shaft seal

- Pump and drive-end mechanical seals
- A lubricant reservoir in-between the seal elements ensures cooling and lubrication.

Impeller type

- Open multi-vane impeller

Bearings

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

Electrical connection

- **Ama-Drainer (B/BH) 80 pump sets for DOL starting**
Ama-Drainer pump sets for 3~ 400 V are supplied ready to be plugged in. They come with power cable and CEE plug, phase inverter and phase sequence indicator, equipment-on and fault indicator lamp, three-position switch "manual-0-automatic" and motor protection relay. The pump set simply needs to be plugged into a suitable socket.
- **Ama-Drainer (B/BH) 100 pump sets for star-delta starting**
These Ama-Drainer pump sets are supplied with a 4-wire and a 7-wire motor cable. The cable ends are marked accordingly. Switchgear with star-delta combination, manual-0-automatic selector switch, motor protection switch and terminals can be supplied as accessories.

Materials

Pump section	Material variant Standard 80-40 100-75	Material variant B/BH B/BH 80-40 B/BH 100-75
Pump casing	Grey cast iron EN-GJL-250 (GG-25)	Grey cast iron EN-GJL-250 (GG-25) with rubber insert
Suction cover	Steel, CK 45 N	
Foot	Polystyrene	
Impeller	Grey cast iron EN-GJL-250 (GG-25)	B - Grey cast iron EN-GJL-250 (GG-25) BH - Norihard NH 15 3 (G-X250CrMo153)
Profile joint, O-ring	Nitrile butadiene rubber	
Mechanical seal	Tungsten carbide	
Stator case, motor housing	Aluminium, plastic-coated	
Rotor shaft	Chrome steel (1.4021)	
Motor connection cable	Polychloroprene rubber (CR)	
Float switch (float)	Polypropylene (PP)	-
Oil supply	Thin-bodied paraffin	


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
- Suitable for handling water containing sand (variant B/BH)

³⁾ Switchgear / control unit available separately

Certification

Overview

Label	Valid in:	Comment
	Europe	All pump 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

Fluid handled	Temperature	Percentage		Material variant	
				Standard	B/BH
Ammonium hydroxide	≤30 °C	10 %	NH ₄ OH	X	-
Calcium hydroxide (milk of lime)	≤30 °C		Ca(OH) ₂	-	X
▪ Impeller made of grey cast iron		10 %		-	X
▪ Impeller made of Norihard		25 %		-	X
Calcium nitrate (acid-free)		10 %	Ca (NO ₃) ₂	X	-
Potassium carbonate				X	-
Potassium hydroxide	≤30 °C	10 %	KOH	X	-
Potassium nitrate (acid-free)		10 %	KNO ₃	X	-
Magnesium sulphate (acid-free)		10 %	MgSO ₄	X	-
Sodium hydroxide	≤30 °C	10 %	NaOH	X	-
Sodium carbonate		10 %	Na ₂ CO ₃	X	-
Sodium nitrate (acid-free)				X	-
Sodium perborate				X	-
Sodium sulphate (acid-free)		10 %	Na ₂ SO ₄	X	-
Trisodium phosphate				X	-
Washing machine lye				X	-
Water					-
▪ Drainage water				X	X
▪ Fire-fighting water				X	X
▪ Heating water				X	-
▪ Boiler water				X	-
▪ Cooling water				X	-
▪ Stormwater				X	X
▪ Raw water				X	X
▪ Partly desalinated water				X	-
Waste water containing solids				-	X
Waste water containing abrasive sand				-	X
Sand content					
▪ Impeller made of grey cast iron ≤ 2 g/l				-	X
▪ Impeller made of Norihard ≤ 10 g/l				-	X
Building site drainage				-	X
Construction pit drainage				-	X
Wash water in sugar mills				-	X
Waste water containing dust/ash				-	X
Lime water				-	X
▪ Impeller made of Norihard ≤ 5 g/l				-	X
Emergency pumping (floods)				-	X

Special programme (upon request)

For improved fire protection in building services. Variant: power supply cables free from halogen and noxious substances

Technical data

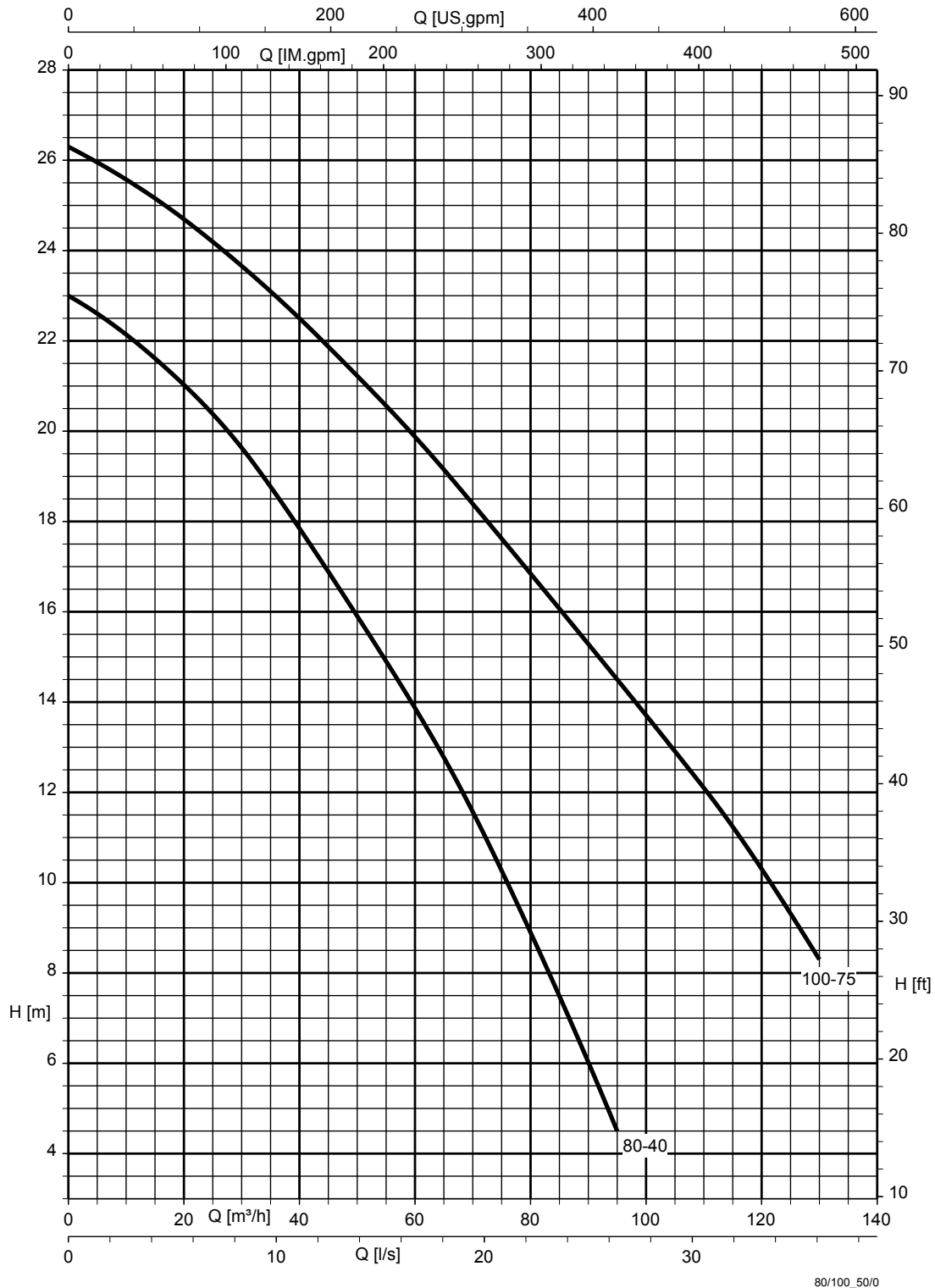
Material variants Standard/B/BH

Ama-Drainer	Free passage [mm]	P ₁	P ₂	I _N 3~400 V	Power cable H 07 RN-F.G.		Level control H 07 RN-F.G.		Mat. No.	[kg]
		[kW]	[kW]	[A]	[m]	[mm ²]	[m]	[mm ²]		
Standard design										
80-40 N	12	5,10	4,00	Y 8,5	10	7 × 1.5	-	-	29117702	59
80-40 S	12	5,10	4,00	Y 8,5	10	7 × 1.5	0,5	3 × 1.0	29117703	59.5
100-75 N	12	9,10	7,50	Y Δ 15,4	2 × 10	7 × 1.5 and	-	-	29117706	93
100-75 S	12	9,10	7,50	Y Δ 15,4	2 × 10	4 × 1.5	10	3 × 1.0	29117707	94.5
B - wear-resistant variant										
B 80-40 N	12	5,10	4,00	Y 8,5	20	7 × 1.5	-	-	29117722	65
B 80-40 S	12	5,10	4,00	Y 8,5	20	7 × 1.5	0,5	3 × 1.0	29117723	65.5
B 100-75 N	12	9,10	7,50	Y Δ 15,4	2 × 20	7 × 1.5 and	-	-	29117726	106
B 100-75 S	12	9,10	7,50	Y Δ 15,4	2 × 20	4 × 1.5	20	3 × 1.0	29117727	109
BH - wear-resistant variant with impeller made of Norihard white cast iron										
BH 80-40 N	12	5,10	4,00	Y 8.5	20	7 × 1.5	-	-	29127336	65
BH 80-40 S	12	5,10	4,00	Y 8.5	20	7 × 1.5	0,5	3 × 1.0	29127337	65.5
BH 100-75 N	12	9,10	7,50	Y Δ 15.4	1 × 20	7 × 1.5 and	-	-	29127338	106
BH 100-75 S	12	9,10	7,50	Y Δ 15.4	1 × 20	4 × 1.5	20	3 × 1.0	29127339	109

Special connection elbow see pump accessories (⇒ Page 12)

Characteristic curves

Ama-Drainer 80/100; n = 2800 rpm, multi-vane impeller



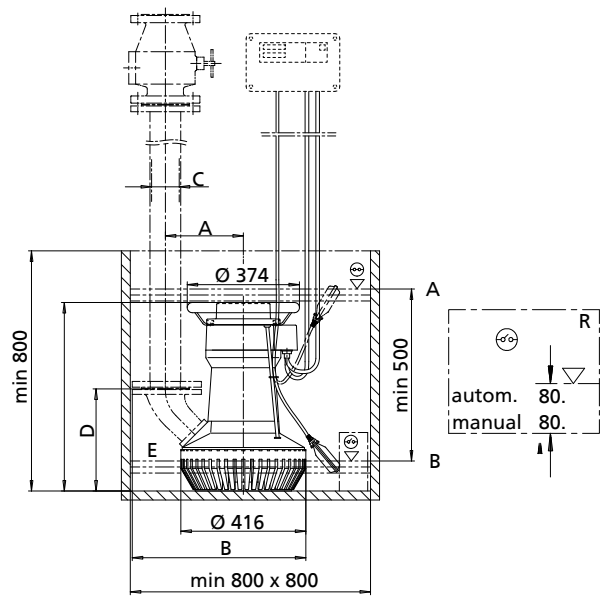
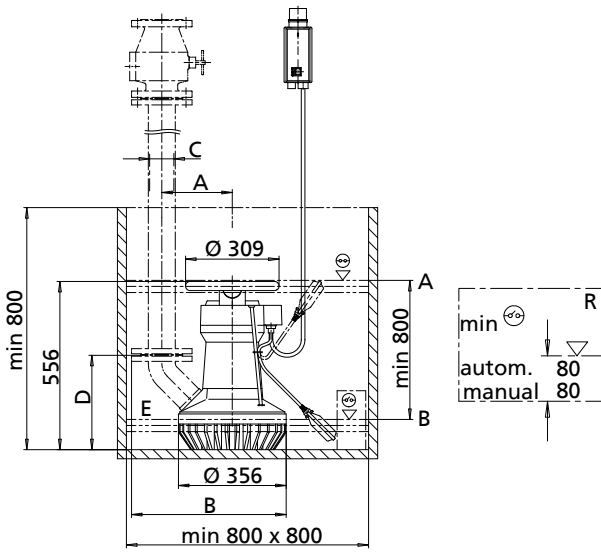
Free passage: Ama-Drainer 80/100 = 12 mm

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

Dimensions

80 SD

100 SD

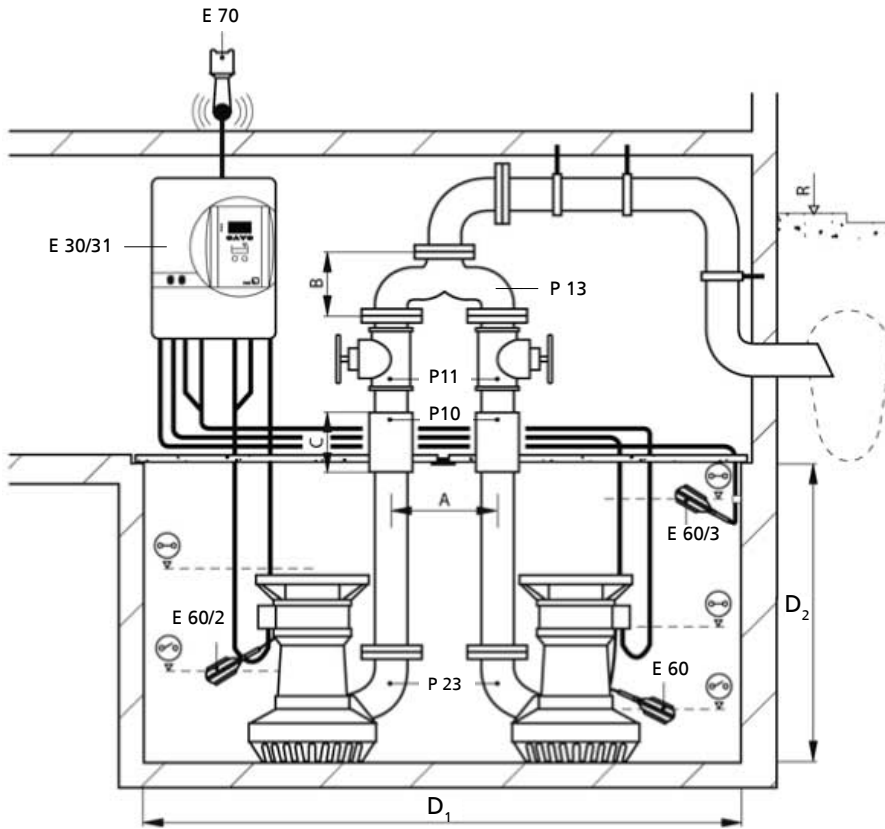


R	Residual water level	"A"	Cut-in level
a)	Automatic	"B"	Cut-out level
b)	Manual	E	Vent hole

Dimensions [mm]

Description	Connection	A		B		C		D	
		80	100	80	100	80	100	80	100
Connection elbow with internal thread	Rp 2 1/2	223	-	445	-	Rp 2 1/2	-	314	-
	Rp 4	-	275	-	546	-	Rp 4	-	383
Flanged connection elbow	DN 80, PN 16	233	-	511	-	80	-	312	-
	DN 100, PN 16	-	260	-	578	-	100	-	340

Installation example of a dual-pump station
80/100 ND



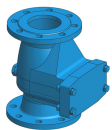











P 10	Check valve	E 60	Float switch "base load"
P 11	Gate valve	E 60/2	Float switch "peak load"
P 13	Y-pipe	E 60/3	Float switch "high water alert"
P 23	Connection elbow	E 70	Horn
E 30/31	Control unit	R	Flood level

Dimensions [mm]






Size	A	B	C	D ₁	D ₂
80	350	260	260	1690 (x 800)	1000
100	325	295	300	1690 (x 800)	1000

Accessories

Pump accessories

	Item	Description	Connection/ immersion depth	Ama-Drainer		Mat. No.	[kg]
				80	100		
	P10	KSB check valve, grey cast iron With full port, lifting device, flanges drilled to DIN 2501, PN 16	DN 65	X	-	48829253	16.2
			DN 80	X	-	48829254	21.5
			DN 100	-	X	48829255	29
		Swing check valve to KSB's choice Grey cast iron, with full port, lifting device, flanges drilled to DIN 2501, PN 16 (not for lifting units)	DN 65	X	-	01056711	16
			DN 80	X	-	01056712	21
			DN 100	-	X	01056713	29
	P11	KSB gate valve, grey cast iron, PN 10	DN 65	X	-	48829249	14
			DN 80	X	-	48829250	17
			DN 100	-	X	48829251	23
		Gate valve to KSB's choice, grey cast iron, PN 16	DN 65	X	-	01056707	17
			DN 80	X	-	01056708	18.9
			DN 100	-	X	01056709	22.5
	P12	Set of installation accessories for one flange connection, comprising: 4 or 8 hexagon head bolts with nuts and one sealing element	DN 65	X	-	18072643	0.67
			DN 80	X	X	18072644	1
			DN 100	-	X	18060163	1.4
	P13	Y-pipes for dual-pump stations, grey cast iron, with hexagon head bolts, nuts and gaskets; flanges drilled to DIN 2501	DN 65	X	-	40000690	18.3
			DN 80	X	-	48936065	25
			DN 100	-	X	40000692	31
	P23	Special connection elbow, grey cast iron, PN 16 (must be ordered separately)	I Rp 2 1/2	X	-	11150456	2.7
			DN 65	X	-	11150457	5.8
			DN 80	X	-	11150458	5.8
			I Rp 4	-	X	11150459	5
			DN 100	-	X	11150869	8
	P24	Storz rigid coupling with external thread to DIN ISO 228/1 Aluminium alloy	B 75 - G 2 1/2	X	-	00524371	0.4
			A - G 4	-	X	00522546	1
	P25	Storz rigid coupling with flange, to DIN 2501, drilled to PN 16 (to be used for flange connections item 25 / item 26), aluminium/steel	DN 65/B 75	X	-	18040148	3.5
			DN 80/B 75	X	-	18072642	3.5
			DN 100/A 110	-	X	18060162	5
	P26	Storz hose coupling, aluminium alloy	B 75 (DIN 14322)	X	-	00520454	0.7
			A 110 (DIN 14323)	-	X	00522313	1.5
	P27	Hose clip DIN 3017, chrome steel	AL 70-90 B (DIN 3017)	X	-	01063363	0.1
			AL 110 - 120 B	-	X	00520853	0.1
	P28	Plastic hose DN 75, with integrated B couplings, DIN 14811 Plastic hose DN 75, without couplings (max. 30 m), DIN 14811 Plastic hose DN 100, without couplings (max. 30 m), DIN 14811	B 75-20 m	X	-	00522265	10
			B 75 per m	X	-	00540104	0.3
			Per m	-	X	00523966	0.5

Control units / switchgear

	Item	Description	400 V	Type	Ama-Drainer		Mat. No.	[kg]
					80	100		
	E2	Motor protection switchgear MSD Float switch Dimensions (W x H x D) 100 x 170 x 112 mm	X	MSD 100.1	X	-	19070119	1
	E10	LevelControl Basic 2 control unit for single-pump station Requires float switch or 4...20 mA sensor, optional master switch, 400 x 278 x 120 mm DOL starting, with manual-0-automatic selector switch, indicator lamps and control panel, high water alert, integrated alarm buzzer 85 dB(A), optional mains-independent alarm via rechargeable battery, operating hours counter/start-stop cycles per pump, voltage measurement, phase monitoring, pneumatic level measurement, indication of water level, volt-free contact for general fault message. Motor temperature warning (TCB) – with automatic reset/re-start function, moisture and leakage monitoring of motor BC: 361 x 278 x 120 mm BS: 400 x 300 x 155 mm	X	BC1 400 ^{DFNO} 100	X	-	19073765	4.5
	E12		X	BS1 400 ^{SFNO} 180	-	X	19073795	20
	E31	LevelControl Basic 2 control unit for dual-pump station Requires float switch or 4...20 mA sensor, optional master switch, 400 x 278 x 120 mm DOL starting, with manual-0-automatic selector switch, indicator lamps and control panel, high water alert, integrated alarm buzzer 85 dB(A), optional mains-independent alarm via rechargeable battery, operating hours counter/start-stop cycles per pump, voltage measurement, phase monitoring, pneumatic level measurement, indication of water level, volt-free contact for general fault message. Motor temperature warning (thermal circuit breaker) – self-acknowledging motor leakage/moisture monitoring BC: 361 x 278 x 120 mm BS: 600 x 400 x 200 mm	X	BC2 400 ^{DFNO} 100	X	-	19073779	4.7
	E32		X	BS2 400 ^{SFNO} 180	-	X	19073837	30
Installation options for LevelControl⁴⁾								
	O1	Master switch for LevelControl Basic 2, installed for type BC... 3-pole, 20 A, lockable			X	-	01143084	0.2
	O2	Control cabinet heating, installed for type BS... with 20 W thermostat			-	X	19074269	0.3

LevelControl with float switches

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

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

⁴⁾ Installation options must be processed via KSB EasySelect, otherwise they will be supplied with the unit but not fitted.

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 MSD, each control unit features a volt-free contact for transmitting the general fault message to the control station.

Installation options are not EDI-compatible (configurable range)

LevelControl Basic 2 control units

Motor size	Single-pump station Float switches incl. 4...20 mA		Dual-pump station Float switches incl. 4...20 mA	
	BC1 400 _{DFNO} 100	-	BC2 400 _{DFNO} 100	-
400 V: 6 - 10 A	BC1 400 _{DFNO} 100	-	BC2 400 _{DFNO} 100	-
400 V: 13 - 18 A	-	BS1 400 _{SFNO} 180	-	BS2 400 _{SFNO} 180
Functions				
Tank drainage	X	X	X	X
Tank filling via float switch	X	X	X	X
Stand-by pump: 1 pump redundant	-	-	X	X
Automatic pump changeover after every start	-	-	X	X
Automatic pump changeover in the case of a pump fault	-	-	X	X
Peak load operation function	-	-	X	X
Runtime limitation	X	X	X	X
OFF via after-run time	X	X	X	X
OFF via level	X	X	X	X
Operation check run after idle period	X	X	X	X
Alert memory	-	-	-	-
Display and operation				
7-segment display	X	X	X	X
Indication of water level	Switching points	Switching points	Switching points	Switching points
For each pump: operation/fault/pump running	Multicolour LED	Multicolour LED	Multicolour LED	Multicolour LED
General fault (traffic light)	LED	LED	LED	LED
High water	LED	LED	LED	LED
Mains voltage	X	X	X	X
Mains frequency	-	-	-	-
Motor current per pump	-	-	-	-
Operating hours of each pump	X	X	X	X
Operating hours of the system	-	-	-	-
Start-ups per pump	X	X	X	X
Effective power per pump	-	-	-	-
Rotary field recognition of mains power supply	X	X	X	X
Phase monitoring	X	X	X	X
Change of switching level via control panel	-	-	-	-
Housing H x W x D, IP 54				
Plastic 361 x 278 x 120	X	-	X	-
Sheet steel 400 x 300 x 155	-	X	-	-
Sheet steel 600 x 400 x 200	-	-	-	X
Built-in components				
Master switch (lockable)	o	X	o	X
Manual-0-automatic selector switch per pump	X	X	X	X
DOL starting	X	-	X	-
Star-delta starting	-	X	-	X
Motor protection				
Motor protection switch per pump (overcurrent and short-circuit protection)	X	X	X	X
Motor temperature warning input - self-acknowledging	X	X	X	X



Motor size	Single-pump station Float switches incl. 4...20 mA		Dual-pump station Float switches incl. 4...20 mA	
Motor temperature alert input - manual acknowledgement	X	X	X	X
Pump				
Thermal circuit breaker (TCB) / bimetal switch per pump	X	X	X	X
Installation options				
Rechargeable battery for powering the electronics, sensors, alarm equipment	o	o	o	o
Control cabinet heating, type BS	-	o	-	o
Alarm equipment				
1 free alarm input	X	X	X	X
1 digital high water alert input (e.g. for float switch)	X	X	X	X
Volt-free contact (changeover contact) for general fault/operation message	X	X	X	X
Piezo buzzer 85 dB(A)	X	X	X	X
Horn 105 dB(A) / alarm combination / alarm strobe light 12 V DC	o	o	o	o
Inputs/outputs				
Inputs for float switches	4	4	4	4
4...20 mA analog input	X	X	X	X
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	X	X	X	X
12 V DC connection for horn, alarm combination, alarm strobe light	X	X	X	X
Sensors				
Float switch (NO contact)	o	o	o	o
F1 moisture sensor	o	o	o	o
Tools				
KSB Service Tool for Windows XP	o	o	o	o




Key to the symbols

Symbol	Description
o	Optional
X	Control unit feature
-	Not a control unit feature


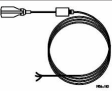






Alarm switchgears for pumps without ATEX

AS 0/AS 1/AS 2/AS 4/AS 5

	Item	Description	Mat. No.	[kg]
	E50	Alarm switchgear AS 0 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 IP20, 140 x 80 x 57 mm. Use float switch, F1 moisture sensor (item E64), M1 alarm contactor or signal relay of control unit as contactor.	29128401	0.5
	E51	Alarm switchgear AS 2 with circuit breaker, piezoceramic signal transmitter, 85 dB(A) at a distance of 1 m and 4.1 kHz, green equipment-on lamp, volt-free contact for hook-up to a control station. Plastic housing IP 20, 140 x 80 x 57 mm. Use float switch, F1 moisture sensor (item E 64) or signal relay of control unit as contactor.	29128422	0.5

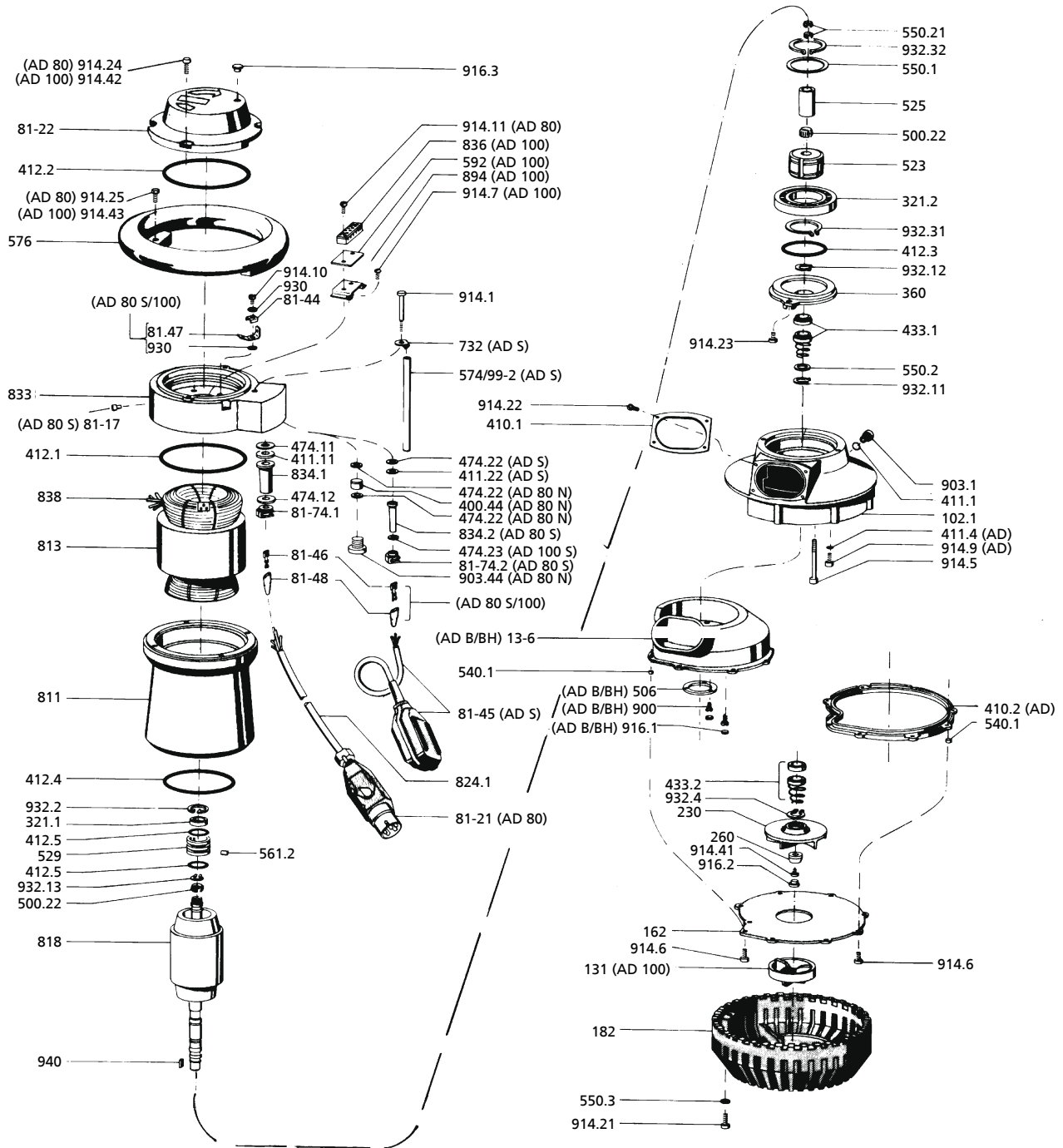
	Item	Description	Mat. No.	[kg]
	E52	<p>Alarm switchgear AS 4</p> <p>with circuit breaker, piezoceramic signal transmitter, 85 dB(A) at a distance of 1 m and 4.1 kHz, green equipment-on lamp, volt-free contact for hook-up to a control station, self-charging power supply unit for 5 hours' operation in the event of power failure</p> <p>Plastic housing IP20, 140 x 80 x 57 mm. Use float switch (E60), F1 moisture sensor (item E64) or signal relay of control unit as contactor.</p>	29128442	0.5
	E53	<p>Alarm switchgear AS 5</p> <p>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 connection cable and plug.</p> <p>ISO housing IP41, 190 x 165 x 75 mm. Use float switch (E60) or signal relay of control unit as contactor.</p>	00530561	1.7
	E55	<p>Alarm switchgear AS 1</p> <p>In ISO plug housing IP30, 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.</p> <ol style="list-style-type: none"> 1. High water alert by suspending the moisture sensor in a (pump) sump above the pump start-up point. 2. Water alarm signal at a water level of only 1 mm (!), by placing the contactor on the floor of rooms at risk of flooding, 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]	
			80	100			
	E60	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 (H07RN-F3G1) 230 V AC or 24 V AC/DC, 8 A max., 20 mA min. Circuit closed in upper float position Power cable (H 07 RN-F3G1)	3 m	X	X	11037742	0.5
			5 m	X	X	11037743	0.8
			10 m	X	X	11037744	1.3
			15 m	X	X	11037745	1.8
			20 m	X	X	11037746	2.4
			25 m	X	X	11037747	2.9
			30 m	X	X	11037748	3.4
	E61	Float switch with free cable end, oil-resistant (NO contact) Circuit closed in upper float position (PUR 3 x 1)	5 m	X	X	11037753	0.8
			10 m	X	X	11037754	1.2
			20 m	X	X	11037755	2
	E62	Float switch with free cable end (NC contact) ⁵⁾ circuit open in upper float position (H07RN-F 3G1)	5 m	X	X	11037756	0.8
			10 m	X	X	11037757	1.4
			20 m	X	X	11037758	2.6
	E64	Leakage 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 alarm signal at a water level of only 1 mm (!), by placing the contactor on the floor of rooms at risk of flooding, 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	X	X	19072366	0.2
	E70	Horn, 12 V DC, 105 dB, 150 mA, IP54, 2 strands of 0.45 m length For indoor and outdoor installation, to be mounted in a position where it is protected from direct rain		X	X	01086547	0.1
	E80	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		X	X	00534217	0.5
	E90	Rechargeable battery retrofit kit for LevelControl Basic 2, for powering the electronics, the float switches of the level sensors or the internal pressure sensor and the alarm equipment (buzzer, horn, alarm combination), for single-pump and dual-pump stations	For type BC, includes 2 rechargeable batteries 6 V, 1.3 Ah and charging unit	X	-	19074194	0.8
	E91	Rechargeable battery retrofit kit for powering the electronics, the float switches of the level sensors or the internal pressure sensor and the alarm equipment (buzzer, horn), for single-pump and dual-pump stations	For type BS, consisting of 1 rechargeable battery 12 V, 1.2 Ah and charging unit	-	X	19074199	1

⁵⁾ Not suitable for LevelControl

Exploded view and list of components



Exploded view

Part No.	Description
102.1	Volute casing
13-6	Casing insert
131	Inlet ring
162	Suction cover
182	Foot
230	Impeller
260	Impeller hub cap

Part No.	Description
321.1/2	Deep groove ball bearing
360	Bearing cover
400.44	Gasket
410.1/2 ⁶⁾	Profile seal
411.1/4 ⁶⁾	Joint ring
411.11/22	Joint ring
412.1-5	O-ring

⁶⁾ Not applicable for Ama-Drainer B/BH

Part No.	Description
433.1/.2	Mechanical seal
474.11/.12	Thrust ring
474.22/.23	Thrust ring
500.21/.22	Tolerance ring
506	Retaining ring
523	Shaft sleeve
525	Spacer sleeve
529	Bearing sleeve
540.1	Bush
550.1	Support disc
550.2	Adjusting washer
550.3	Disc
561.2	Grooved pin
574	Rod
576	Handle
592	Shim
732	Holder
81-17	End connector
81-21	CEE motor protection plug
81-22	Terminal box cover
81-44	Terminal clamp
81-45	Float switch
81-46	Plug-in sleeve
81-47	Flat connector
81-48	Coupling connector
81-74.1/.2	Pressure screw
811	Motor housing
813	Stator core pack
818	Rotor
824.1	Cable
833	Terminal box
834.1/.2	Cable gland
836	Terminal strip
838	Temperature switch
894	Mounting bracket
900	Countersunk head screw
903.1/.44	Screw plug
914.1/.5/.6/.7	Hexagon socket head cap screw
914.9 ⁶ /.10/.11	Hexagon socket head cap screw
914.21-.25	Hexagon socket head cap screw
914.41/.42	Hexagon socket head cap screw
914.43/.5	Hexagon socket head cap screw
916.1/.2/.3	Plug
930	Lock washer
932.11-.13/.2	Circlip
932.31/.32/.4	Circlip
940	Key
99-2	Holder