Ama-Drainer® N 358

Submersible Waste Water Pumps

50 Hz

Ama-Drainer® N 358

Applications

- Automatic drainage of pits, shafts, yards and cellars subject to a flooding risk
- Disposal of highly contaminated, fibre-containing water, e.g. from
  - Laundries
  - Common washing facilities
  - Washing machines and dish washers (also hot water cycle)
  - Industrial businesses

Fluid handled

Waste water containing fibrous, long stringy material, also solid particles with a particle size of up to 35 mm.

Operating data

Q up to 16.5 m^3/h, 4.6 l/s
H up to 8.3 m
t up to 35 °C in continuous operation [1])

[1]) Up to 3 minutes for waste water from the hot water cycle of washing machines and dishwashers for non-industrial use.

Pumps for flow rates up to 50 m^3/h and/or heads up to 21 m: see Type Series Booklet 2331.53.

Designation

Ama-Drainer® N 35 8 S N E

Type series
Free passage in mm
Rated motor power in kW x 10
S = with float switch
N = without float switch
E = single-phase a.c. current

Design

Close-coupled submersible motor pump with horizontal discharge nozzle, IP 68, single-stage, level control with float switch. 90degree pipe bend with hose nozzle (DN 40) available as an accessory.
Can be controlled externally.
Max. immersion depth 2 m.

Bearings

Grease-packed deep-groove ball bearings, sealed for life

Shaft seal

Ama-Drainer® N	Impeller end	Motor end
358	2 shaft seal rings	1 shaft seal ring

An oil chamber is fitted in-between the two seals.

Drive

Jacket-cooled single-phase a.c. motor, with integrated temperature switch, cable and shockproof plug.

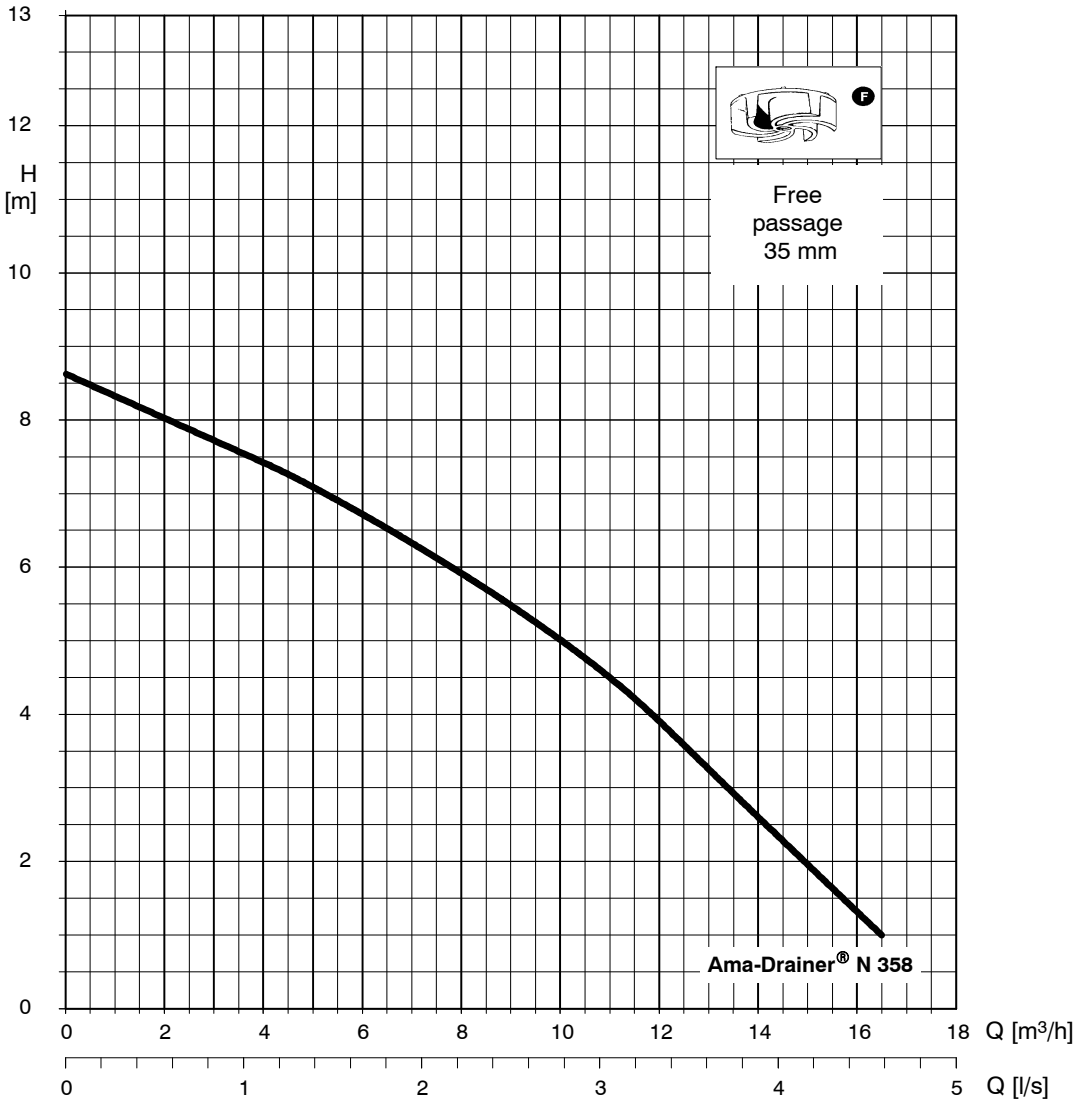
Materials

Pump casing	Polypropylene, glass fibre reinforced (30 %)
Discharge casing	Polypropylene, glass fibre reinforced (30 %)
Casing cover	Noryl GNF3
Impeller	Polyamide
Motor housing	1.4301
Shaft	1.4028
Float switch (float)	Polypropylene

CE - EN 12 050-2

- LGA certificate Nº 7391066a

Ama-Drainer® N 358
n = 2800 1/min



Performance tolerance to ISO 9906, Annex A
(water under standard conditions)

Ama-Drainer N®	ISO 7/1 Rp	Particle size max.	P_1	P_2	50 Hz 1~230 V	Mains connection H 07 RN-F.G.			Weight gross/net
		mm	kW	kW	A	m	mm^2	Ident. No.	kg
358 SE/NE [1])	$1\ ^1/_2$	35	0.85	0.43	4	10	3 x 1.0	39 300 083	7.5 /6.8

[1]) **Caution!** For external control systems or dual-pump stations, fit the supplied locking disc instead of the float switch.

Fluids (examples)

Fluid handled	Ama-Drainer® N	
	Standard design	Design C
Antifreeze agent	x	
Antifrogen-water mixture	x	
Beer	x	
Buttermilk	x	
Calcium acetate	x	
Calcium hydroxide	x	
Castor oil	x	
Cider	x	
Coconut oil	x	
Corn oil	x	
Deionised water	x	
Edible vinegar		x
Edible oil	x	
Ethylene glycol	x	
Evaporated milk	x	
Glycol	x	
Glycerine	x	
Grisiron®	x	
Lemonades	x	
Liquid fertiliser	x	
Milk	x	
Peanut oil	x	
Polyglycols	x	
Potassium hydroxide	x	
Potassium carbonate	x	
Rapeseed oil	x	
Silicon oil	x	
Silo leachate		x
Sodium carbonate	x	
Sodium chloride up to 3 % concentration		x
Sodium hydrogen phosphate	x	

Fluid handled	Ama-Drainer® N	
	Standard design	Design C
Sodium nitrate	x	
Sodium perborate	x	
Sodium sulphate	x	
Soy-bean oil	x	
Spirits	x	
Trisodium phosphate	x	
Uric acid	x	
Vaseline	x	
Vinegar		x
Washing machine lye	x	
Whey	x	
Water:		
Boiler water	x	
Condensate	x	
Cooling water	x	
Drainage water	x	
Fire-fighting water	x	
Fully desalinated water		x
Heating water	x	
Lime water		x
Partly desalinated water	x	
Pure water	x	
Raw water	x	
Salt water		x
Sea water		x
Swimming pool water		x

Product features – to our customers' benefit
Ama®-Drainer N 358 SE

High-quality plastic casing with stable handle

Your benefits:
- Low weight
- Corrosion-resistant
- Impact-resistant
- Abrasion-resistant
- Noise-absorbing

Cable with plug-type connector

Your benefit:
- Easy and fast replacement

Magnetic float switch

Your benefits:
- Wear-resistant and reliable
- No passage through the casing, therefore absolutely tight
- With level switch for level control and maximum travel stop
- Straightforward adaptation to external control system with locking disc

Possibility of flushing at vertical nozzle

Your benefit:
- Possibility of cleaning when sticky fluids are handled

Integrated motor protection

Your benefit:
- Prevents motor overloads

Frame-cooled enclosed motor

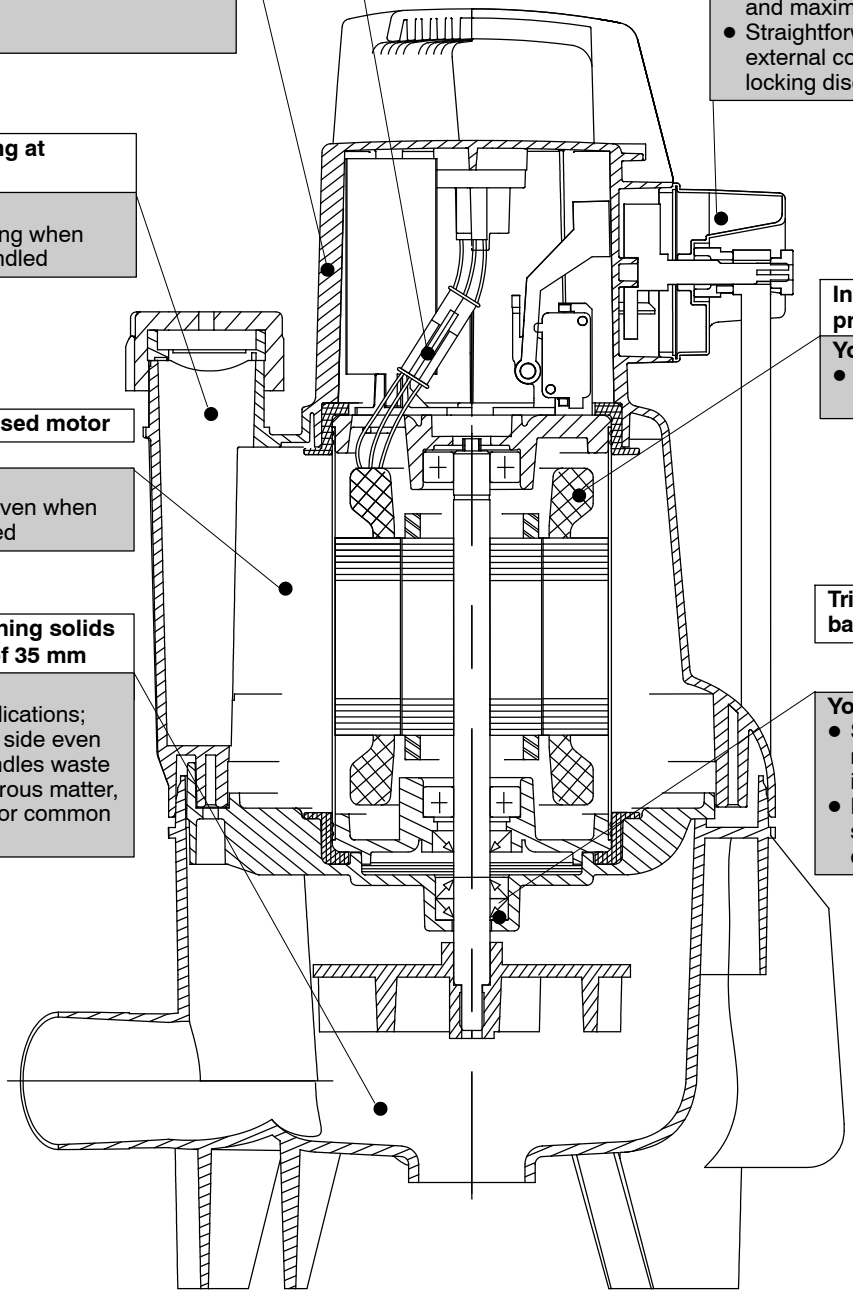
Your benefit:
- Permits operation even when partly not submerged

Triple shaft seal with barrier fluid lubrication

Pumps water containing solids with a particle size of 35 mm

Your benefit:
- Broad range of applications; you are on the safe side even when the pump handles waste water containing fibrous matter, e.g. from laundries or common washing facilities.

Your benefits:
- Safely protects the motor from any water ingress
- Lubricates the sealing surfaces in the event of dry running



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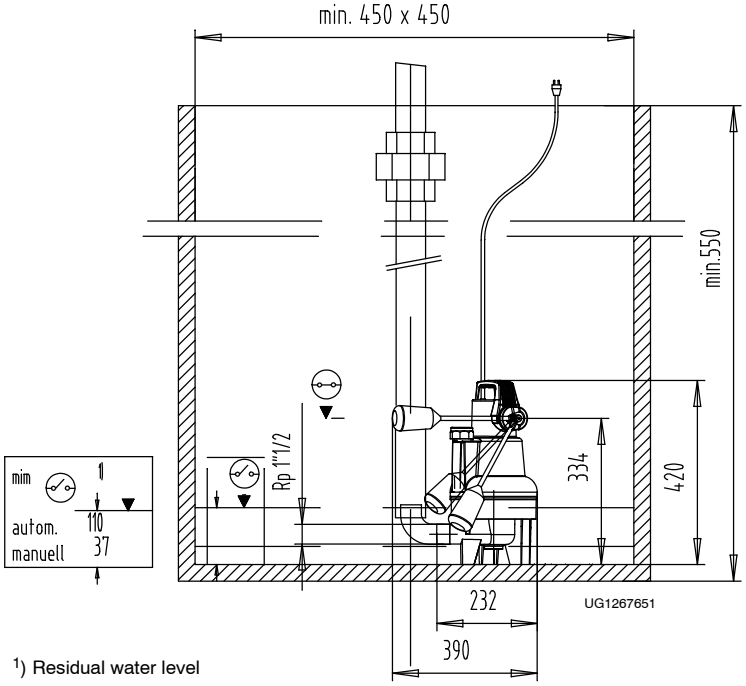
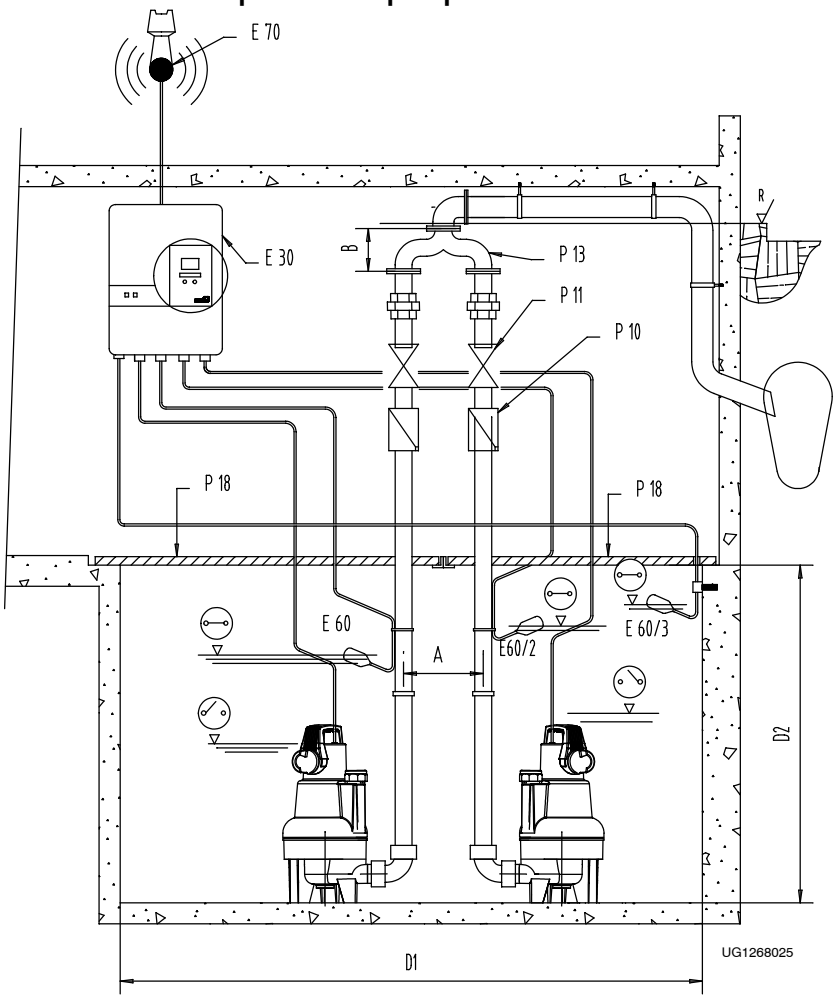
Dimensions/Suggested installation layouts

Ama-Drainer® N 358



[1]) Residual water level

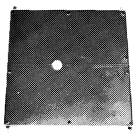
Installation example of dual-pump station with Ama-Drainer® N 358 NE



P 10	Swing check valve
P 11	Gate valve
P 13	Y-pipe
P 18	Cover plate
E 30	Switchgear
E 60	”Base load” float switch
E 60/2	”Peak load” float switch
E 60/3	”High water alert” float switch
E 70	Horn
R	Flood level

Ama-Drainer® N	A	B	D_1	D_2
358	275	180	1060 (x500)	550

Pump accessories

				Ama-Drainer® N 358	Ident. No.	≈ kg
P 10		**RK swing check valve** Plastic, PN 4, with internal/internal thread ISO 7/1 with full port and drain plug	Rp 1 $^1/_2$ / Rp 1 $^1/_2$	X	01 009 772	2.5
P 11		**Socket gate valve, CuZn** with internal/internal thread with full port, PN 16	Rp 1 $^1/_2$ / Rp 1 $^1/_2$	X	00 411 502	0.6
P 13		**Y-pipe** for dual pump sets, made of cast iron, with 8 hexagon head bolts, nuts and 2 gaskets, flanges drilled to DIN 2501, PN 16	DN 40	X	40 000 688	10.0
P 18		**Cover plate,** tread-proof, split, made of steel, with profile joint and angle iron mounting frame Form 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.)	R 1 $1/_4$	X	18 075 627	13.0
P 21		**Drain hose C 42** consisting of: 6 m synthetic hose DN 40, DIN 14811, hose clip made of chrome steel	DN 40	X	42 209 411	2.7
P 29		**Screwed flange** for Y-pipe P 13, internal thread DN 40 Rp 1 $^1/_2$		X	00 260 478	1,8
P 30		**Ama®-Drainer-Box,** automatic waste water lifting unit with plastic collecting tank and submersible motor pump See type series booklet 2331.55				
		Pipe bend with hose nozzle for hose C42 (P 21)	DN 40 Rp 1 $^1/_2$	X	42 208 023	0.07
P31		**Bellmouth** for draining residual water up to 5 mm		X	39 300 101	0.2

Electrical accessories

		Amperage min-maxA	Ama-Drainer® N 358	Ident. No.	≈kg
E 1 	**MSE motor protection switchgear, IP 54** 230 V~ for one pump Max. back-up fusing with integrated motor protection relay, 10 A **MSE 60.1** 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	3.7 A - 5.5 A	**X**	19 070 138	1.0
E 10 	**Control unit for single-pump station, IP 54** 230 V~ **LevelControl Basic 2** **BC1 230** DFNO **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/start-stop cycles per pump Voltage measurement, phase monitoring Volt-free contact for general fault message With external socket Optional mains-independent alarm via rechargeable battery Optional master switch 361 x 278 x 120 mm **Float switch** or sensor 4…20 mA	up to 10 A	**X**	19 073 760	3.0
E 30 	**Control unit for dual-pump station, IP 54** 230 V~ **LevelControl Basic 2** **BC2 230** DFNO **100** Peak load operation 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 With external socket Optional mains-independent alarm via rechargeable battery Optional master switch 361 x 278 x 120 mm **Float switch** or sensor 4…20 mA	up to 10 A	**X**	19 073 774	3.0

[1]) Installation options must be processed via EasySelect, otherwise they will be supplied with the unit but not fitted. They are not EDI compatible. The “Master switch” option must be selected manually in EasySelect if compliance with the NFC 15-100 standard is required.

Operation with mini control systems

- For Ama® -Drainer 358 SE/NE with 10 m power supply cable, the supplied locking disc must be mounted instead of the float switch (see operating instructions). Separate float switches are required for operation with mini control systems.

LevelControl with float switches:

Singel 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

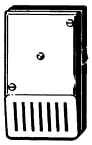
Dual pump operation with two level switches at different levels:

- 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. An external alarm switchgear will not be required, as LevelControl features an integrated alarm function.

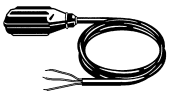
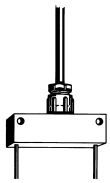
Connection to the control station

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

Alarm switchgears

			Ama-Drainer® N 358	Ident. No.	≈kg
	 **Alarm switchgear AS 0, AS 2, AS 4** 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 (item E 60) or moisture sensor F 1 (E 64) as contactor.	230 V~/ 12 VA= 1.2 VA			
E 50	**mains-dependent**	**AS 0**	**X**	29 128 401	0.5
E 51	**mains-dependent** with volt-free signalling contact	**AS 2**	**X**	29 128 422	0.5
E 52	**mains-independent** with volt-free signalling contact, self-charging power supply unit for 5 hours' operation in case of a mains failure	**AS 4**	**X**	29 128 442	1.2
E 53	 **Alarm switchgear AS 5,** **mains-independent,** with self-charging power supply unit for 10 hours' operation in case of a mains failure, mains pilot LED, fault indicator lamp, horn-off push button, volt free contact for hook-up to a control station, ready to be plugged in, with 1.8 m cable and plug. ISO housing IP 41, 190 x 165 x 75 mm Use float switch (E 60) as contactor. **Horn** see accessories	230 V~/ 12 V = 5 VA	**X**	00 530 561	1.7
E 55	 **Alarm switchgear AS 1,** 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. 2 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 only 1 mm (!), by placing the transmitter on the floor of rooms at risk of flooding, e.g. the cellar or next to the washing machine in the kitchen or bathroom.**	230 V~/ 9 V = 1.5 VA	**X**	00 533 740	0.9

Accessories

				Ama-Drainer® N 358	Ident. No.	≈kg
E 60 	**Float switch,** Switch housing made of polypropylene (Max. fluid temperature 70 °C) **with free cable end,** **(NO contact)** circuit closed in upper float position Connection cable (H 07 RN-F3G1)	230 V AC or 24 V AC/24 V DC max. 8 A min. 20 mA	3 m 5 m 10 m 15 m 20 m 25 m 30 m	X X X X X X X	11 037 742 11 037 743 11 037 744 11 037 745 11 037 746 11 037 747 11 037 748	0.5 0.8 1.4 1.8 2.6 2.9 3.4
E 62	**with free cable end,** **(NC contact)** [1]) circuit open in upper float position 20 m (H 07 RN-F3G1)		5 m 10 m	X X X	11 037 756 11 037 757 11 037 758	0.8 1.4 2.6
E 64 	**Moisture sensor F 1** as contactor for alarm switchgears AS 0, AS 2 or AS 4, with 3-metre connection cable, max. 40 °C, 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 only 1 mm (!) by placing the transmitter on the floor of rooms at risk of flooding,** **e.g. the cellar or next to the washing machine in the kitchen or bathroom.** 52 x 21 x 20 mm			X	19 072 366	0.9
E 70 	**Horn** suitable for indoor and outdoor installation, mount in a position where it is protected against direct rain, IP 33 enclosure		12 V= 105 dB(A) 1.2 W	X	01 086 547	0.1
E 80 	**STECKMAT safety switch** 230 V~/ Fast trip response in approx. 0.03 seconds even in the event of slight, harmless leakage currents from approx 0.03 A		10 A	X	00 534 217	0.4
E 90	**Rechargeable battery retrofit kit for type BC,** 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 (consisting of 2 rechargeable batteries 6 V, 1.3 Ah)			X	19 074 194	0.5

[1]) Only for dry running protection (LevelControl in "Tank filling" operating mode)

LevelControl Basic 2

Features o Optional x Control unit features	**Single-pump station** **Float** **or input 4…20 mA**	**Dual-pump station** **Float** **or input 4…20 mA**
230 V: 6.0 – 10 A	BC1 230 DFNO 100	BC2 230 DFNO 100
Functions		
Drain tank	**X**	**X**
Tank filling via float switches	**X**	**X**
Stand-by pump: 1 pump redundant	**-**	**X**
Automatic pump changeover after every start	**-**	**X**
Automatic pump changeover in the case of a pump fault	**-**	**X**
Peak load operation	**-**	**X**
Runtime limitation	**X**	**X**
OFF via after-run time	**X**	**X**
OFF via level	**X**	**X**
Functional check run after idle period	**X**	**X**
Alert history	**X**	**X**
Display and operation		
7-segment display	**X**	**X**
Indication of water level	**Switching levels**	**Switching levels**
For each pump: operation/fault/pump running	**Multicolour LED**	**Multicolour LED**
General fault (traffic light)	**LED**	**LED**
Level High Water	**LED**	**LED**
Mains voltage	**X**	**X**
Mains frequency	**-**	**-**
Motor current per pump	**-**	**-**
Operating hours of each pump	**X**	**X**
Operating hours of the system	**-**	**-**
Starts per pump	**X**	**X**
Effective power per pump	**-**	**-**
Phase monitoring	**X**	**X**
Change of switching levels via control panel	**X**	**X**
Housing H x W x D, IP 54		
Plastic 361 x 278 x 120	**X**	**X**
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 for each pump	**X**	**X**
DOL starting	**X**	**X**
Star-delta starting	**-**	**-**
Shockproof socket 230 V	**X**	**X**
Motor protection		
Fuse per pump	**X**	**X**
Motor protection switch per pump (over-current and short-circuit protection)	**-**	**-**
Motor temperature warning input - self-acknowledging	**X**	**X**
Motor temperature alert input - manual acknowledgement	**X**	**X**
Pump		
Thermal circuit breaker (TCB) / bimetal switch per pump	Bimetal switch in the motor	Bimetal switch in the motor
Installation options		
Rechargeable battery for powering the electronics, sensors, alarm equipment	**O**	**O**
Alarm equipment		
1 free alarm input	**X**	**X**
1 digital high water alert input (e.g. for float switch)	**X**	**X**
Volt-free contact (changeover contact) for general fault/operation message	**X**	**X**
Piezo buzzer 85 dB(A)	**X**	**X**
Horn/alarm combination/flashlight 12 V DC	**O**	**O**
Inputs/Outputs		
Inputs for float switches/level switches	**4**	**4**
4…20 mA analog input	**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**
12 V DC connection for horn, alarm combination, flashlight	**X**	**X**
Sensors		
Float switch (NO contact)	**O**	**O**
F1 moisture sensor	**O**	**O**
Tools		
KSB ServiceTool for Windows XP	**O**	**O**

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