



Submersible Grey Water Pump

## **AmaDrainer 301/302/303/358**

For the UK

### **Type Series Booklet**



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Type Series Booklet AmaDrainer 301/302/303/358

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## Drainage

### Drainage Pumps / Grey Water Pumps

## AmaDrainer 301/302/303/358



#### Main applications

- Drainage
- Disposal
- Drainage systems
- Lowering groundwater levels
- Maintaining groundwater levels
- Draining of pits, shafts, etc.
- Surface drainage

#### Fluids handled

- Sizes 301/302/303:
  - Solid particles with a particle size of up to 10 mm
- Size 358:
  - Solid particles with a particle size of up to 35 mm

#### Material variant A (variant for grey water)

- Slightly contaminated grey water ( $\leq 50^\circ\text{C}$ )
- Wash water (up to  $\leq 90^\circ\text{C}$  max. for short periods  $t \leq 3$  minutes)
- Seepage water
- River water, lake water and groundwater
- Waste water without faeces

#### Material variant C (universal variant, also for aggressive fluids)

- Slightly contaminated grey water ( $\leq 50^\circ\text{C}$ )
- Wash water (up to  $\leq 90^\circ\text{C}$  max. for short periods  $t \leq 3$  minutes)
- Seepage water
- River water, lake water and groundwater
- Waste water without faeces

- Brackish water
- Seawater ( $\leq 20^\circ\text{C}$ )
- Water containing salt ( $\leq 20^\circ\text{C}$ )

#### Further information on fluids handled

Overview of fluids handled ( $\Rightarrow$  Page 6)

#### Operating data

**Table 1:** Operating properties

| Characteristic    |                       | Value                        |
|-------------------|-----------------------|------------------------------|
| Flow rate         | Q [m <sup>3</sup> /h] | $\leq 16,5$                  |
|                   | Q [l/s]               | $\leq 4,6$                   |
| Head              | H [m]                 | $\leq 12,5$                  |
| Fluid temperature | T [°C]                | $\leq +50$ (continuous duty) |
|                   |                       | $\leq +90$ (short-time duty) |

#### Design details

##### Design

- Fully floodable submersible motor pump
- Close-coupled design
- Single-stage
- Wetted parts made of materials coated with anti-corrosive
- External float switch
- Maximum immersion depth: 2 m
- Sizes 301/302/303:
  - Integrated swing check valve

##### Installation

- Vertical installation
- Wet-installed transportable model

##### Drive

- Jacket-cooled single-phase AC motor
- 230 V, 50 Hz
- Frequency of starts  $\leq 30$  starts/hour
- Integrated temperature switch
- Enclosure IP68 (permanently submerged) to EN 60529/ IEC 529
- Power cable incl. shockproof plug

##### Shaft seal

- Drive end, 1 shaft seal ring
- Pump end, 2 shaft seal rings
- Liquid reservoir between the seals for cooling and lubrication

##### Bearings

- Rolling element bearings
- Grease-packed for life
- Maintenance-free

### Automation

- Pump controlled via float switch
- Pump controlled by external control unit

### Designation

#### Example: AmaDrainer C 301

**Table 2:** Designation key

| Code       | Description      |                                               |
|------------|------------------|-----------------------------------------------|
| AmaDrainer | Type series      |                                               |
| C          | Material variant |                                               |
|            | A <sup>1)</sup>  | Variant for grey water                        |
|            | C <sup>2)</sup>  | Universal variant, also for aggressive fluids |
| 301        | Size             |                                               |

### Materials

**Table 3:** Overview of available materials

| Part No.<br>(⇒ Page 16) | Description          | Material variant A                         | Material variant C                         |
|-------------------------|----------------------|--------------------------------------------|--------------------------------------------|
|                         |                      | AmaDrainer 358                             | AmaDrainer 301/302/303                     |
| 79-1                    | Float switch (float) | Polypropylene                              |                                            |
| 101                     | Pump casing          | Polyamide, 30 % glass fibre reinforced     | Polypropylene, 20 % glass fibre reinforced |
| 107                     | Discharge casing     | Polypropylene, 30 % glass fibre reinforced |                                            |
| 161                     | Casing cover         | Polypropylene with 20 % talc (PP-TS 20)    |                                            |
| 210                     | Shaft                | 1.4057                                     | Chrome nickel molybdenum steel (1.4404)    |
| 230                     | Impeller             | Polyamide                                  | Noryl GNF2                                 |
| 811                     | Motor housing        | Chrome nickel steel (1.4301)               | Chrome nickel molybdenum steel (1.4404)    |

### Product benefits

- **Universal use**
  - Suitable for many different fluids, absolutely tight and reliable
- **Worry-free selection**
  - Shaft and motor housing made of 1.4404 as standard for handling aggressive fluids (sizes 301/302/303)
- **Maximum flexibility**
  - Variable adjustment of float switch
  - Easy to adapt for external control
- **Fast and straightforward**
  - Immediately ready to use with convenient connections
  - Integrated swing check valve (sizes 301/302/303)
- **Space-saving and clever**
  - Compact design also fits into narrow sumps.
- **Protected all round**
  - Thermal motor protection and triple shaft seal provide maximum operating reliability.
- **Robust and durable**
  - Resistant plastic casing: lightweight, corrosion-proof and impact-resistant
- **Efficient operation**
  - High pump output at low energy consumption
- **Always dependable**
  - Jacket cooling prevents overheating even when the motor is not submerged.

**1** Size 358 only

**2** Sizes 301/302/303 only

## Overview of product features / selection tables

### Overview of fluids handled

**Table 4:** Symbols key

| Symbol | Description                          |
|--------|--------------------------------------|
| X      | Standard                             |
| -      | Version not available / not feasible |

The table of fluids handled is a selection aid for different applications. It serves as guidance and is based on long-standing experience. The data are reference values and are not to be considered generally binding recommendations. They shall not be the basis for warranty claims. Please contact your nearest sales branch for in-depth advice.

**Table 5:** Table of fluids handled

| Fluids handled                           | Material variant A | Material variant C     |
|------------------------------------------|--------------------|------------------------|
|                                          | AmaDrainer 358     | AmaDrainer 301/302/303 |
| Antifrogen-water mixture                 | X                  | X                      |
| Cider                                    | X                  | X                      |
| Beer                                     | X                  | X                      |
| Spirits                                  | X                  | X                      |
| Buttermilk                               | X                  | X                      |
| Calcium acetate                          | X                  | X                      |
| Calcium hydroxide                        | X                  | X                      |
| Deionised water                          | X                  | X                      |
| Peanut oil                               | X                  | X                      |
| Vinegar                                  | -                  | X                      |
| Ethylene glycol                          | X                  | X                      |
| Liquid fertiliser                        | X                  | X                      |
| Anti-freeze                              | X                  | X                      |
| Glycerine                                | X                  | X                      |
| Grisiron                                 | X                  | X                      |
| Uric acid                                | X                  | X                      |
| Potassium hydroxide                      | X                  | X                      |
| Calcium carbonate                        | X                  | X                      |
| Coconut oil                              | X                  | X                      |
| Evaporated milk                          | X                  | X                      |
| Lemonades                                | X                  | X                      |
| Corn oil                                 | X                  | X                      |
| Milk                                     | X                  | X                      |
| Whey                                     | X                  | X                      |
| Sodium carbonate                         | X                  | X                      |
| Sodium chloride up to 15 % concentration | -                  | X <sup>3)</sup>        |
| Sodium hydrogen phosphate                | X                  | X                      |
| Sodium nitrate                           | X                  | X                      |
| Sodium perborate                         | X                  | X                      |
| Sodium sulphate                          | X                  | X                      |
| Polyglycols                              | X                  | X                      |
| Rapeseed oil                             | X                  | X                      |
| Castor oil                               | X                  | X                      |
| Silicone oil                             | X                  | X                      |
| Silo leachate                            | -                  | X                      |
| Soybean oil                              | X                  | X                      |
| Edible vinegar                           | -                  | X                      |
| Edible oil                               | X                  | X                      |
| Trisodium phosphate                      | X                  | X                      |
| Vaseline                                 | X                  | X                      |
| Washing machine lye                      | X                  | X                      |
| <b>Water</b>                             |                    |                        |

**3** Fluid temperature ≤ 25 °C

| Fluids handled                  | Material variant A | Material variant C     |
|---------------------------------|--------------------|------------------------|
|                                 | AmaDrainer 358     | AmaDrainer 301/302/303 |
| Drainage water                  | X                  | X                      |
| Fire-fighting water             | X                  | X                      |
| Heating water                   | X                  | X                      |
| Lime water                      | -                  | X                      |
| Boiler water                    | X                  | X                      |
| Condensate                      | -                  | X                      |
| Cooling water                   | X                  | X                      |
| Seawater                        | -                  | X <sup>4)</sup>        |
| Raw water                       | X                  | X                      |
| Swimming pool water (DIN 19643) | -                  | X                      |
| Salt water                      | -                  | X <sup>4)</sup>        |
| Partly desalinated water        | X                  | X                      |
| Fully desalinated water         | -                  | X                      |

## Technical data

### AmaDrainer 301/302/303/358

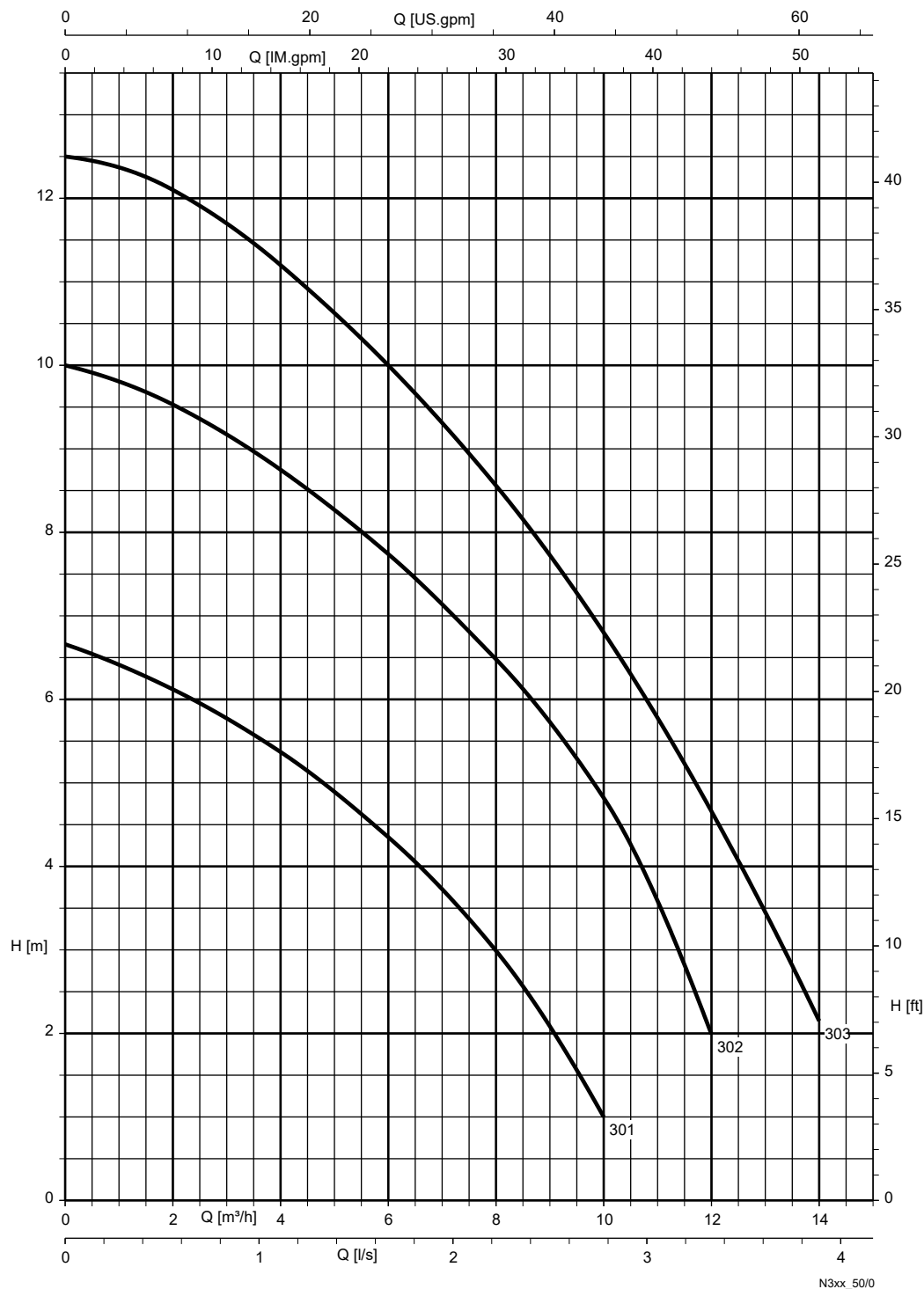
**Table 6:** Technical data, 230 V, 50 Hz

| Size                                                               | Discharge-side connection | Free passage | P <sub>1</sub> | P <sub>N</sub> | I <sub>N</sub><br>1~230 V | Power cable | Mat. No. | [kg] |
|--------------------------------------------------------------------|---------------------------|--------------|----------------|----------------|---------------------------|-------------|----------|------|
|                                                                    |                           |              |                |                |                           | H05RN8      |          |      |
|                                                                    |                           | [mm]         | [kW]           | [kW]           | [A]                       | [m]         |          |      |
| Material variant A (variant for grey water)                        |                           |              |                |                |                           |             |          |      |
| A 358                                                              | G 11/2                    | 35           | 0,85           | 0,43           | 4,00                      | 10          | 48034491 | 6.8  |
| Material variant C (universal variant, also for aggressive fluids) |                           |              |                |                |                           |             |          |      |
| C 301                                                              | Rp 11/4                   | 10           | 0,43           | 0,18           | 1,90                      | 10          | 48034488 | 5.2  |
| C 302                                                              | Rp 11/4                   | 10           | 0,75           | 0,36           | 4,00                      | 10          | 48034489 | 6.7  |
| C 303                                                              | Rp 11/4                   | 10           | 1,05           | 0,50           | 4,90                      | 10          | 48034490 | 6.9  |

**4** Fluid temperature ≤ 20 °C

# Characteristic curves

## AmaDrainer 301/302/303, n = 2800 rpm (multi-vane impeller)

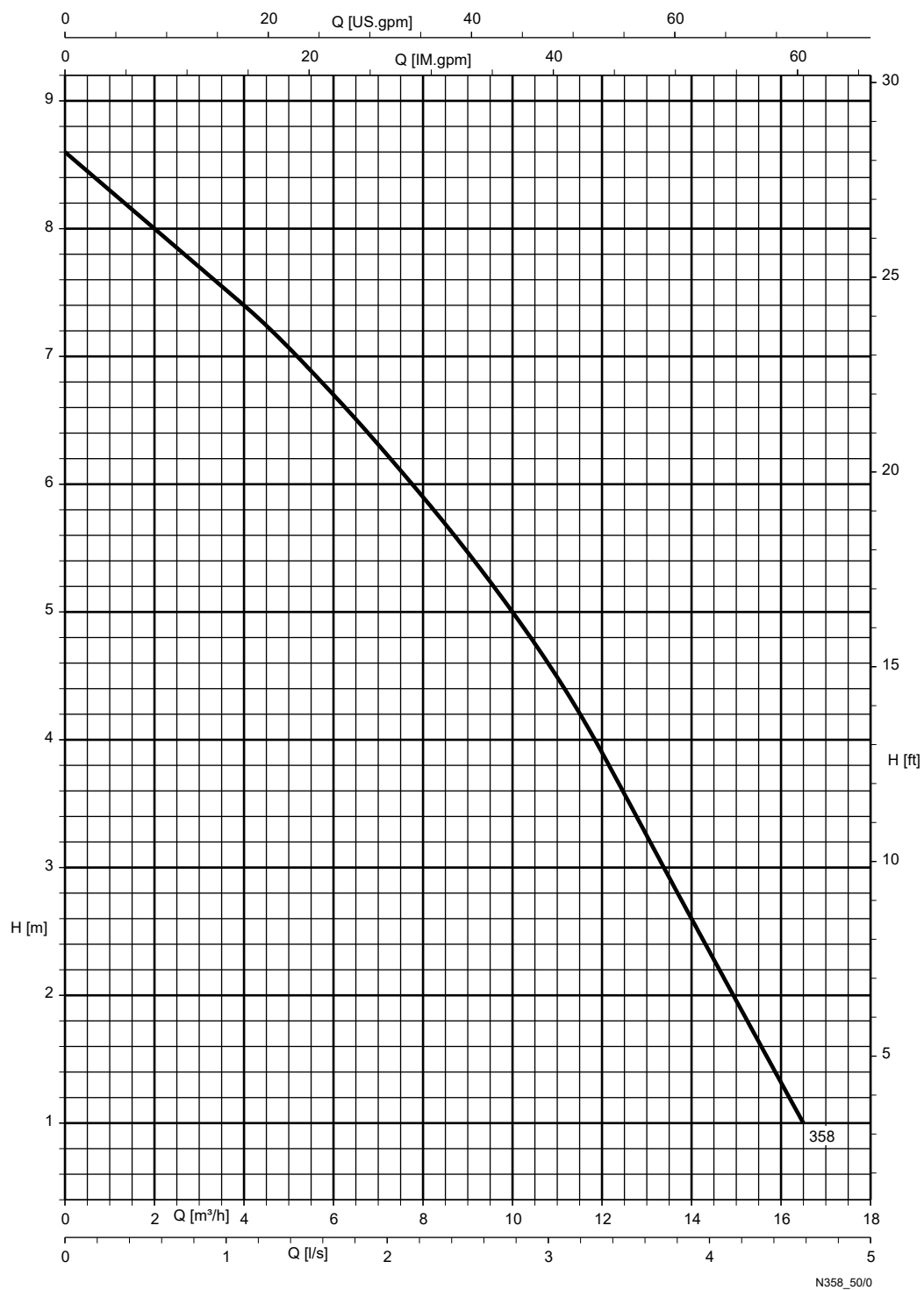


**Fig. 1:** Sizes 301/302/303: free passage = 10 mm

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



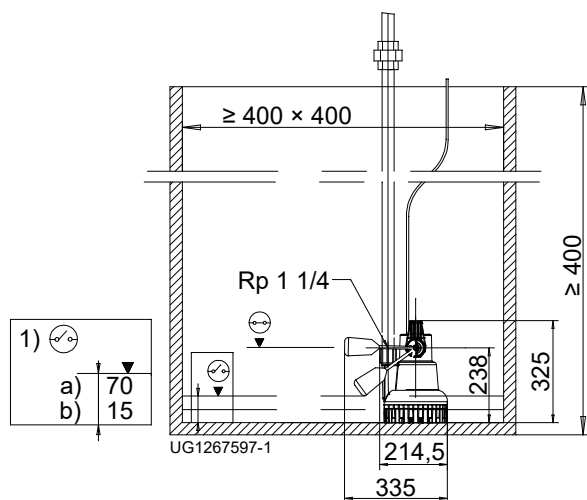
AmaDrainer 358, n = 2800 rpm (F impeller)



**Fig. 2:** Size 358: free passage = 35 mm  
Performance tolerance to ISO 9906, Annex A (water under standard conditions)

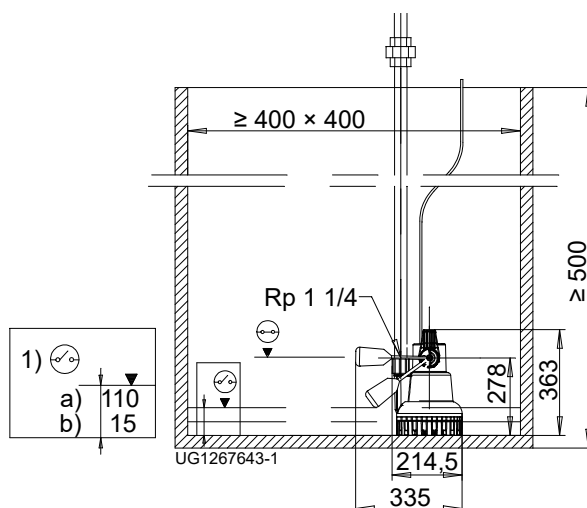
## Dimensions and connections

### AmaDrainer 301/302/303/358



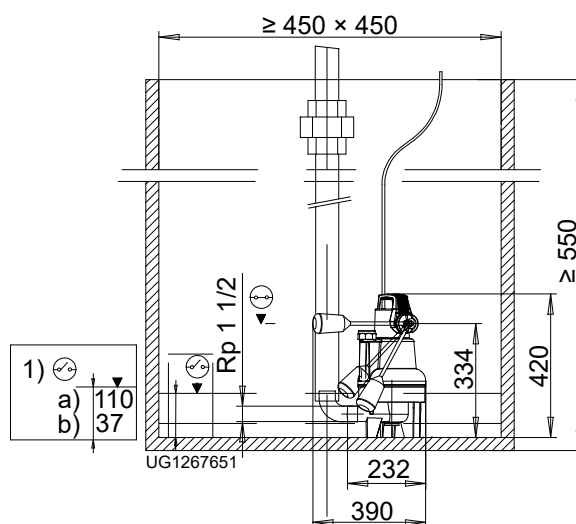
**Fig. 3:** Dimensions of AmaDrainer 301

|    |                      |
|----|----------------------|
| 1) | Residual water level |
| a) | Automatic            |
| b) | Manual               |



**Fig. 4:** Dimensions of AmaDrainer 302/303

|    |                      |
|----|----------------------|
| 1) | Residual water level |
| a) | Automatic            |
| b) | Manual               |



**Fig. 5:** Dimensions of AmaDrainer 358

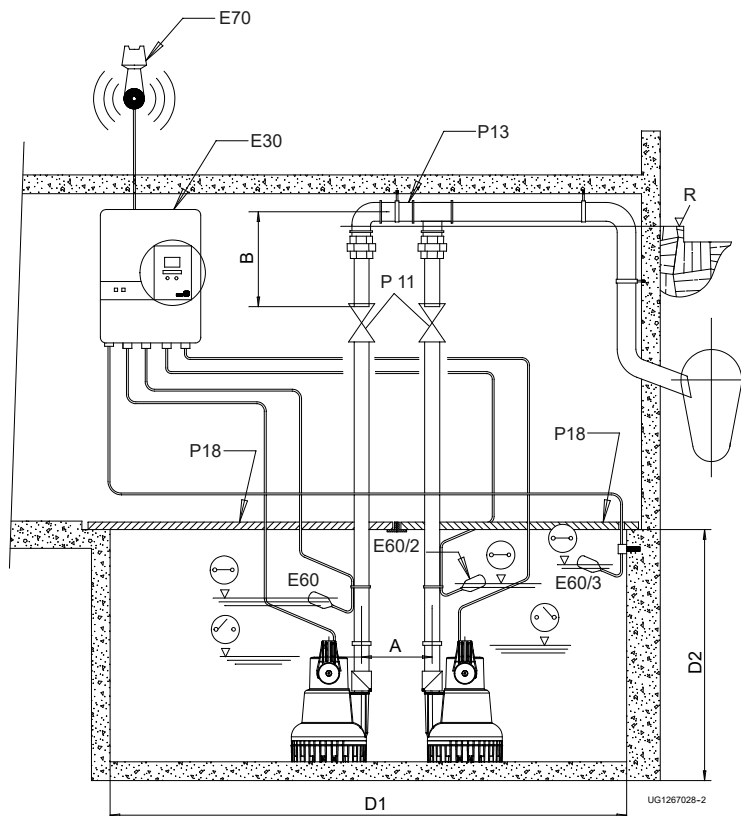
|    |                      |
|----|----------------------|
| 1) | Residual water level |
| a) | Automatic            |
| b) | Manual               |

## Installation information

### Installation example of a dual-pump station

**i** Dual-pump stations are operated via an external control system. For this purpose, the float switch suspension must be locked in place using the locking disc included in the scope of supply.

**i** The inlet is positioned above the highest float switch.

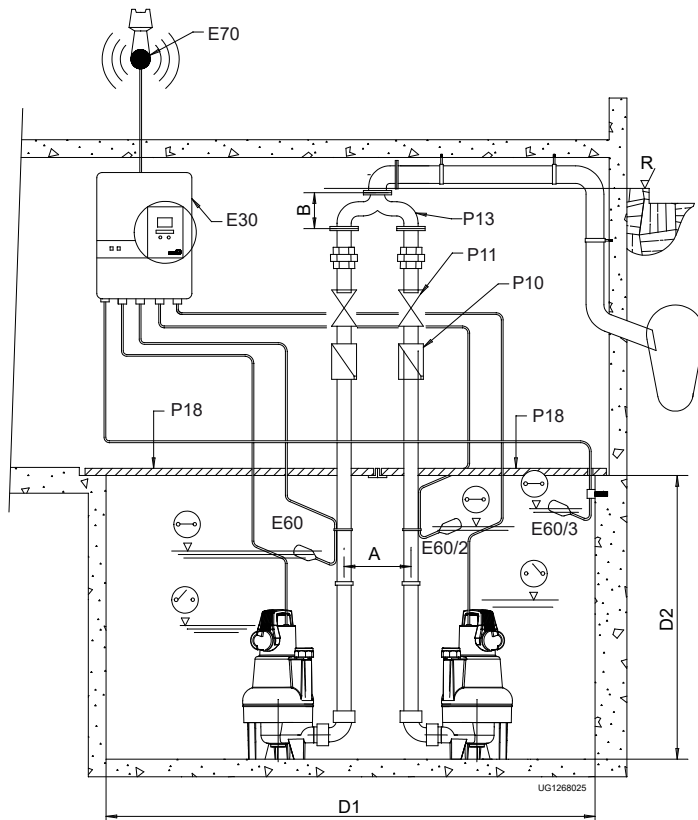


**Fig. 6:** Installation example of an AmaDrainer 301/302/303 dual-pump station

|       |                                |
|-------|--------------------------------|
| 1)    | Residual water level           |
| a)    | Automatic                      |
| b)    | Manual                         |
| E30   | Control unit                   |
| E60   | Float switch, base load        |
| E60/2 | Float switch, peak load        |
| E60/3 | Float switch, high water alert |
| E70   | Horn                           |
| P11   | Gate valves                    |
| P13   | Y-pipe                         |
| P18   | Cover plate                    |
| R     | Flood level                    |

**Table 7:** Dimensions of an AmaDrainer 301/302/303 dual-pump station

| Size | A    | B    | D1         | D2   |
|------|------|------|------------|------|
|      | [mm] | [mm] | [mm]       | [mm] |
| 301  | 275  | 320  | 1060 × 500 | 400  |
| 302  | 275  | 320  | 1060 × 500 | 500  |
| 303  | 275  | 320  | 1060 × 500 | 500  |



**Fig. 7:** Installation example of an AmaDrainer 358 dual-pump station

|       |                                |
|-------|--------------------------------|
| 1)    | Residual water level           |
| a)    | Automatic                      |
| b)    | Manual                         |
| E30   | Control unit                   |
| E60   | Float switch, base load        |
| E60/2 | Float switch, peak load        |
| E60/3 | Float switch, high water alert |
| E70   | Horn                           |
| P10   | Lift check valve               |
| P11   | Gate valves                    |
| P13   | Y-pipe                         |
| P18   | Cover plate                    |
| R     | Flood level                    |

**Table 8:** Dimensions of an AmaDrainer 358 dual-pump station

| Size | A    | B    | D1         | D2   |
|------|------|------|------------|------|
|      | [mm] | [mm] | [mm]       | [mm] |
| 358  | 275  | 180  | 1060 × 500 | 550  |

**Scope of supply**

Depending on the model, the following items are included in the scope of supply:

- Pump set
- Installation/operating manual
- Locking disc for continuous operation
- Sizes 301/302/303:
  - Integrated swing check valve
  - Connection socket with internal thread
- Size 358:
  - 90° bend (cross-section 1 1/2 inches) for discharge outlet to the top

**Accessories**
**Pump accessories**
**Table 9:** Pump accessories

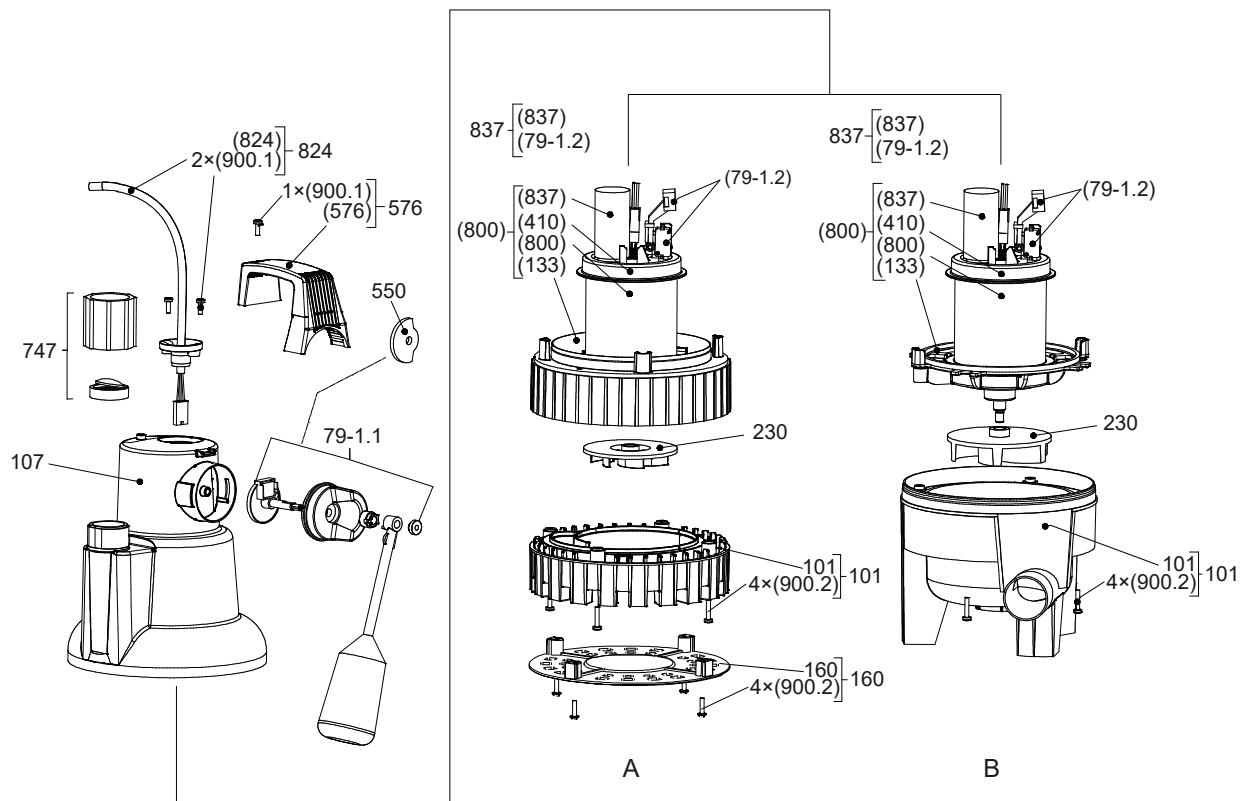
| Item                                                                                       | Description                                                                                                                                                                                                  | Connection                         | AmaDrainer |     |     |     | Mat. No. | [kg] |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------|-----|-----|-----|----------|------|
|                                                                                            |                                                                                                                                                                                                              |                                    | 301        | 302 | 303 | 358 |          |      |
| P5<br>    | Discharge-side adapter, graded<br>For connecting various discharge lines (connections Rp 1 1/4 to Rp 3/4, DN 25 or DN 32)                                                                                    | Rp 1 1/4 to Rp 3/4, DN 25 or DN 32 | X          | X   | X   | -   | 05086820 | 0.16 |
| P10<br>   | RK swing check valve<br>Plastic, EN 12050-4, with internal thread ISO 7/1, with full bore and drain plug                                                                                                     | Rp 1 1/4                           | X          | X   | X   | -   | 01009771 | 0.1  |
|                                                                                            |                                                                                                                                                                                                              | Rp 1 1/2                           | -          | -   | -   | X   | 01009772 | 0.52 |
| P10<br>   | Lift check valve, stainless steel (1.4401)                                                                                                                                                                   | Rp 1 1/4                           | X          | X   | X   | -   | 01084936 | 2.1  |
|                                                                                            |                                                                                                                                                                                                              | Rp 1 1/2                           | -          | -   | -   | X   | 01084935 | 2.2  |
| P11<br>   | Socket gate valve<br>Material: CuZn, PN 16, with internal thread, with full bore                                                                                                                             | Rp 1 1/4                           | X          | X   | X   | -   | 01014219 | 0.63 |
|                                                                                            |                                                                                                                                                                                                              | Rp 1 1/2                           | -          | -   | -   | X   | 00411502 | 0.78 |
| P13<br> | Y-pipe<br>For dual-pump sets, with external thread, galvanised steel                                                                                                                                         | Rp 1 1/4                           | X          | X   | X   | -   | 18040311 | 4.1  |
| P13<br> | Y-pipe<br>For dual-pump sets, grey cast iron, with hexagon head bolts, nuts and gaskets; flanges drilled to DIN 2501                                                                                         | DN 40                              | -          | -   | -   | X   | 40000688 | 10.6 |
| P18<br> | Cover plate<br>Tread-proof, split, with profile seals and angle iron mounting frame (type A 560) for 500 x 500 mm pits<br>(For dual-pump stations with Y-pipe 2 cover plates are fitted next to each other.) | Rp 1 1/4                           | X          | X   | X   | X   | 18075627 | 13   |
| P21<br> | A 25 B drain hose set (see P32)<br>Comprising: rigid coupling with external thread, 6 m plastic hose DN 25, rapid-action hose coupling Rp 1 1/4, (free passage 21 mm)                                        | Rp 1 1/4                           | X          | X   | X   | -   | 18079719 | 3    |
| P24<br> | Storz rigid coupling with internal thread to DIN ISO 228/1<br>Aluminium alloy, required pipe part see P32<br>Can be combined with P28                                                                        | C-G 1 1/2                          | X          | X   | X   | X   | 01002463 | 0.3  |
| P26<br> | Storz hose coupling<br>Required counterpart see P24                                                                                                                                                          | C 52 (DIN 14321)                   | X          | X   | X   | -   | 00524551 | 0.3  |
| P28<br> | Synthetic hose DN 40, with integrated C couplings, DIN 14811<br>Required pipe part see P32<br>Can be combined with P24                                                                                       | C 42-5 m                           | X          | X   | X   | X   | 01062592 | 1.7  |
|                                                                                            |                                                                                                                                                                                                              | C 42-10 m                          | X          | X   | X   | X   | 01062593 | 2.8  |
|                                                                                            |                                                                                                                                                                                                              | C 42-20 m                          | X          | X   | X   | X   | 01062594 | 5    |
|                                                                                            | Synthetic hose DN 50, DIN 14811, with integrated C couplings<br>Required pipe part see P32<br>Can be combined with P24                                                                                       | C 52-5 m                           | X          | X   | X   | X   | 00522262 | 2.3  |
|                                                                                            |                                                                                                                                                                                                              | C 52-10 m                          | X          | X   | X   | X   | 00522263 | 4.2  |
|                                                                                            |                                                                                                                                                                                                              | C 52-20 m                          | X          | X   | X   | X   | 00522264 | 5.7  |

| Item                                                                                     | Description                                                                                                                              | Connection                                               | AmaDrainer |     |     |     | Mat. No. | [kg] |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------|-----|-----|-----|----------|------|
|                                                                                          |                                                                                                                                          |                                                          | 301        | 302 | 303 | 358 |          |      |
| P29<br> | Threaded flange for Y-pipe (P13), internal thread                                                                                        | DN 40 / Rp 1 1/2                                         | -          | -   | -   | ✗   | 00260478 | 1.8  |
| P31<br> | Bellmouth for draining residual water                                                                                                    | -                                                        | ✗          | ✗   | ✗   | -   | 39300101 | 0.2  |
| P32<br> | Pipe extension for Storz rigid coupling C (P24)<br>PVC hard, internal/external thread<br>For use without swing check valve and union nut | Internal thread Rp 1 1/4 / external thread R 1 1/2 × 170 | ✗          | ✗   | ✗   | -   | 11035587 | 0.2  |

### Control units and switchgear

 Control units and switchgear on request

**Exploded view and list of components**



**Fig. 8:** Exploded view

|   |                        |
|---|------------------------|
| A | AmaDrainer 301/302/303 |
| B | AmaDrainer 358         |

**Table 10:** List of components

| Part No. | Description                           | Part No. | Description                    |
|----------|---------------------------------------|----------|--------------------------------|
| 101      | Pump casing                           | 747      | Swing check valve              |
| 107      | Discharge casing                      | 79-1.1   | Automatic switchgear, external |
| 133      | Clearance plate                       | 79-1.2   | Automatic switchgear, internal |
| 160      | Cover                                 | 800      | Motor                          |
| 230      | Impeller                              | 824      | Power cable                    |
| 410      | Profile seal                          | 837      | Capacitor                      |
| 550      | Locking disc for continuous operation | 900.1/2  | Screw                          |
| 576      | Handle                                |          |                                |







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