

Automatic Control Unit

Controlmatic E.2

Type Series Booklet



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Type Series Booklet Controlmatic E.2

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Building Services: Water Supply

Automatic Control Units

Controlmatic E.2



Designation

Example: Controlmatic E.2

Key to the designation

Code	Description
Controlmatic	Type series
E	Single-phase AC
.2	Product version

Configuration and function



Main applications

- Pressure-controlled starting, stopping and monitoring of small pumps in water supply systems

Can be used with the following pumps (⇒ Page 6)

Type series	Size	Connection
Multi Eco	33 E, 34 E, 35 E, 36 E, 65 E	G 1
Ixo	45 E, 55 E, 65 E, 48 E, 58 E	G 1 1/4
S 100D	1/7, 1/9, 1/12, 1/14, 1/16, 2/7, 2/11, 2/15, 2/18, 4/4, 4/6, 4/9, 4/12, 7/5, 7/7, 7/9	G 1 1/4
UPA 100C	2/6, 2/8, 2/13, 2/17, 3/6, 3/9, 3/12, 3/15, 4/4, 4/7, 4/9, 4/14	G 1 1/4

Fluids handled

- Drinking water
- Service water
- Stormwater
- Fire-fighting water
- Cooling water

Operating data

Operating properties

Characteristic	Value
Flow rate	Q Up to 10 m ³ /h (2.77 l/s)
Minimum flow rate	Q _{min} 0.1 m ³ /h
Start-up pressure (non-adjustable)	p 1.5 bar

Design of Controlmatic E.2

1	Housing	5	Green signal lamp - Energised
2	Pressure gauge	6	Amber signal lamp - Pump running
3	Plug socket to IEC 60884-1 for connecting the pump	7	Red signal lamp - Fault or lack of water
4	Power cable with shockproof plug		

Function

The pump can be connected via the plug socket (3) of the automatic control unit. Once the power cable with shockproof plug (4) has been connected to the power supply, the automatic control unit is ready for operation. The green signal lamp (5) is lit. When a shut-off valve in the piping is opened, the system pressure decreases and the pump is started up. The system pressure is indicated at the pressure gauge (2). The pump starts to deliver fluid and the amber signal lamp (6) is lit. When the tap has been closed and the flow rate is zero, the pump is stopped after 10 seconds.

Protective functions

- The pump is protected against dry-running by simultaneous monitoring of pressure and flow rate. If there is a lack of water, the automatic control unit stops the pump and the red signal lamp (7) is lit.

Materials

Overview of materials used

Component	Material
Housing	Polyamide
Membrane	Elastomer

Product benefits

- Easily connected to power supply by shockproof plug
- The pump is started and stopped automatically by simultaneous monitoring of pressure and flow rate.
- Dry-running protection by stopping the motor
- User-friendly due to integrated pressure indication

Certifications

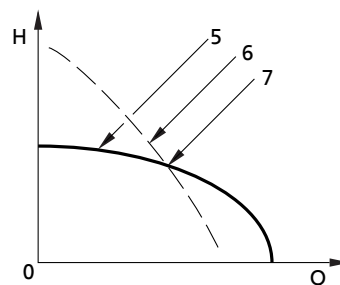
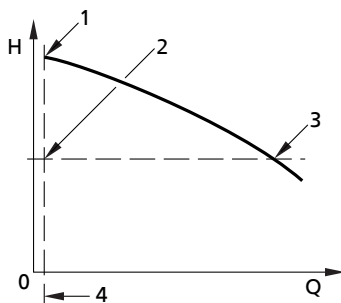
Designation	Valid in:	Note
ACS	France	French drinking water approval

Selection information

- System pressures ≥ 10 bar may damage the automatic control unit and must be avoided by all means.
- The start-up pressure of the automatic control unit must always be lower than the maximum pressure at zero flow.
- Minimum flow rate: 0.1 m³/h
- The start-up pressure has been set to 1.5 bar.

Maximum pressure capability:

- $\text{Pressure}_{\text{suction side}} + \text{pressure}_{\text{max. pump}} \text{ (at zero flow)} \leq 10 \text{ bar}$
- If in doubt about the suction side pressure:
 - **either** add a safety margin of 3 bar to the nominal pressure
($\text{Pressure}_{\text{suction side}} + 3 \text{ bar}$) + [$\text{Pressure}_{\text{max. pump}}$ (at zero flow)] $\leq 10 \text{ bar}$
 - **or** fit a pressure reducer (stabiliser) between the pump and the automatic control unit or on the pump's suction side, to prevent excessive pressure.
- If pressure surges are to be expected in the system as a result of quick-closing valves (e.g. solenoid valves) please contact KSB to check the unit's suitability for the specific application.

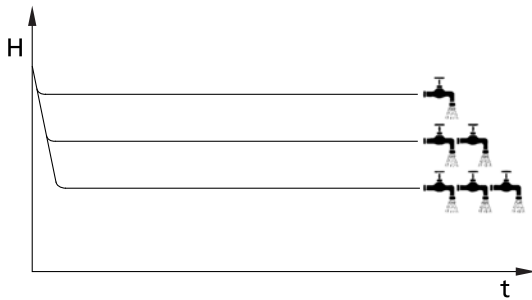


H/Q diagrams

1	Minimum flow rate	5	Curve to be selected
2	Minimum start-up pressure	6	Curve to be avoided
3	Pump start-up point	7	Maximum operating point
4	Pump stop point		

Pressure curve

Unlike domestic water supply systems with accumulators, pumps operated with automatic control units maintain a characteristically constant pressure at any flow rate.



Pressure curves

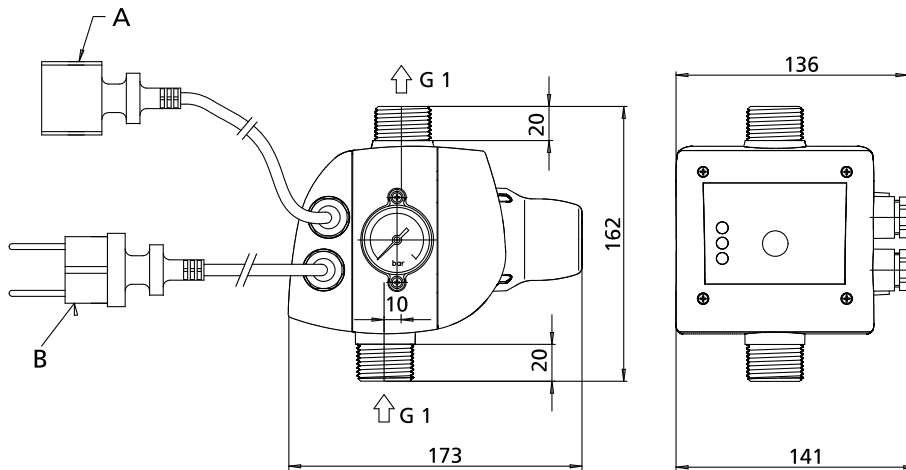
Technical data

Selection table

Description	Value
Maximum operating pressure	10 bar ¹⁾
Start-up pressure	1.5 bar
Flow rate	10 m ³ /h (2.77 l/s)
Enclosure	IP 65
Maximum ambient temperature	0 to 60 °C
Maximum fluid temperature	0 to 60 °C
Mains voltage	1 ~ 230 V, 50/60 Hz
Maximum pump current	10 A
Protection against lack of water	Yes
Restart after detected lack of water	Manual
Weight	1.3 kg
Mat. No.	39300031

¹⁾ The automatic control unit must be protected against any pressures exceeding the maximum operating pressure. Otherwise, the automatic control unit might be damaged!

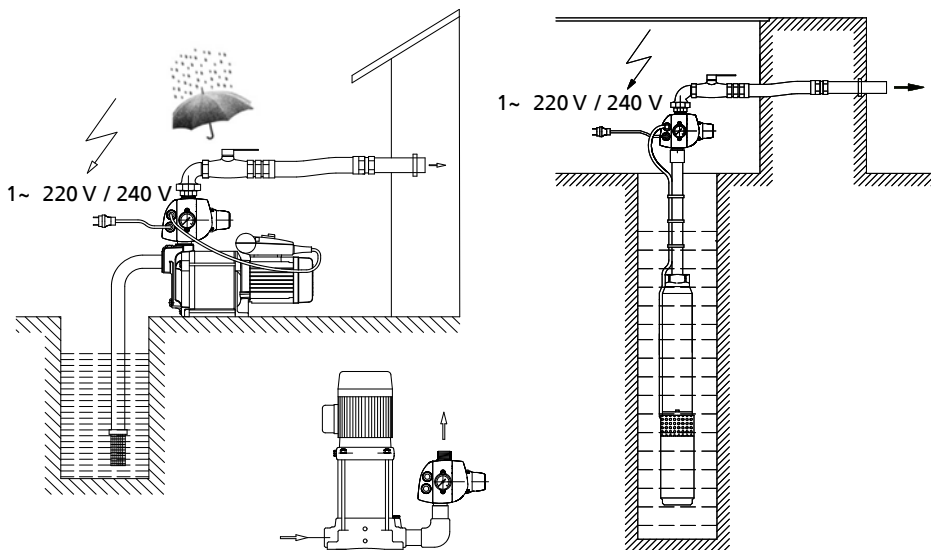
Dimensions



Dimensions [mm]

A	Pump connection: cable H07RN-F 0.5 m, with standard plug socket to IEC 60884-1
B	Mains connection: cable H07RN-F 1.5 m, with plug, 16 A, 250 V, twin earth terminals (to CEE 7/II)

Notes on installation



Typical installation positions

NOTE! The automatic control unit is not suitable for outdoor installation and must be protected from weather.

Accessories

Connection parts

Connection parts

Description		Connection	Mat. No.	[kg]
Connection part made of brass for Controlmatic	for Multi Eco type series (1 piece)	Rp 1 / G 1	39019415	0.2
	for Ixo, S 100D type series (1 piece)	Rp 1 ¼ / G 1	39019530	0.2



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