

High-efficiency Drinking Water Pump

Calio-Therm S

Type Series Booklet



Legal information/Copyright

Type Series Booklet Calio-Therm S

All rights reserved. The contents provided herein must neither be distributed, copied, reproduced, edited or processed for any other purpose, nor otherwise transmitted, published or made available to a third party without the manufacturer's express written consent.

Subject to technical modification without prior notice.

© KSB Aktiengesellschaft, Frankenthal 27.03.2015

Contents

Building Services: Heating	4
Drinking Water Circulator Pumps	4
Calio-Therm S	4
Main applications	4
Fluids handled	4
Operating data	4
Designation	4
Design details	4
Materials	4
Product benefits	4
Certifications	5
Selection information	5
Programme overview / selection tables	7
Technical data	7
Selection chart	8
Characteristic curves	9
Dimensions	11
Installation information	11
Scope of supply	11

Building Services: Heating

Drinking Water Circulator Pumps

Calio-Therm S



Main applications

- Drinking water circulation systems
- Similar systems in industry and building services applications (e.g. cooling water circulation)

Fluids handled

- Drinking water and water for the food and beverage industry, as per German 2001 drinking water regulations

Operating data

Operating properties

Characteristic		Value
Flow rate	Q [m³/h]	≤ 3,5
	Q [l/s]	≤ 1,0
Head	H [m]	≤ 6
Fluid temperature	T [°C]	2 - 95
Ambient temperature	T [°C]	0 - 40
Operating pressure	p [bar]	≤ 10
Sound pressure level	[dB (A)]	< 45
Piping connection		R 1

Designation

Example: Calio-Therm S 25-40

Designation key

Code	Description
Calio S	High-efficiency pump
Therm	Drinking water pump
25	Nominal diameter of pipe connection R 1
40	Head in m x 10 (example: 4 m = 40)

Design details

Design

- Highly efficient, maintenance-free wet rotor pump (glandless)
- Screw-ended

Drive

- High-efficiency electric motor with continuously variable differential pressure control
- Electronically commutated synchronous motor with permanent magnet rotor
- 230 V - 50/60 Hz
- IP42 enclosure
- Thermal class F
- Temperature class TF 95
- RFI emission EN 55014-1
- Interference immunity EN 55014-2

Bearings

- Product-lubricated special plain bearing

Operating modes

- Automatic mode with constant-pressure or proportional-pressure control
- Fixed-speed operation with manual setpoint input

Automatic functions

- Continuous output adjustment depending on the operating mode
- Soft start (limitation of starting current)
- Full motor protection with integrated trip electronics
- Setback operation

Manual functions

- Setting the operating mode
- Vent function
- Deblocking option
- Setting the differential pressure setpoint
- Setting the speed level

Signalling and display functions

- Alternating display of flow rate and electrical input power
- Error messages on the display

Materials

Overview of available materials

Component	Material
Volute casing	Stainless steel
Shaft	Ceramics
Impeller	Polyamide (PA - GF 35)
Bearing	Ceramics
Bearing plate	Stainless steel 1.4301
Can	Stainless steel 1.4301
Thermal insulation shell	Polypropylene

Product benefits

- Maximum savings of operating costs by high-efficiency technology combined with speed control

- Future-proof by maximum energy efficiency and 5-year spare parts availability as per the German "Handwerkermarke" trade seal ("Handwerkermarke" guarantee only applies to Germany)
- Easy to use with a combination of control keys, integrated display and symbols showing the operating status
- High availability by manual and integrated protective functions
- Compact dimensions and KSB plug make the pumps easy to install. Thermal insulation shell included in the scope of supply.

Certifications

Overview

Label	Effective in:	Note
 Von Profis. Für Qualität.	Germany	All sizes

Selection information

Minimum pressure

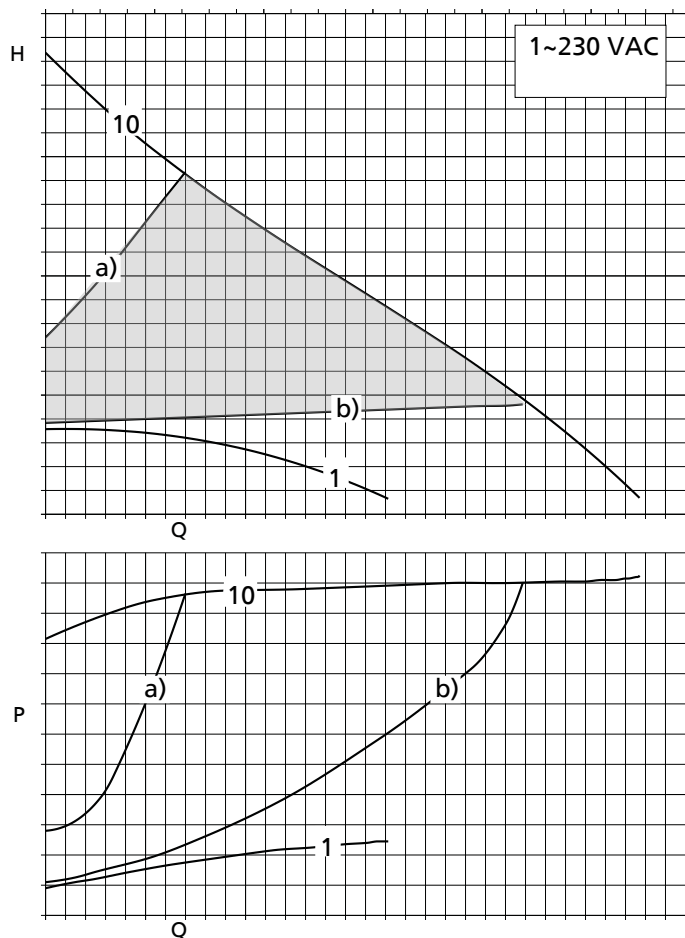
The minimum pressure $p_{\min}$ at the pump suction nozzle serves to avoid cavitation noises at an ambient temperature of +40 °C and the indicated fluid temperature $T_{\max}$.

The indicated values are applicable up to 300 m above sea level. For installation at altitudes > 300 m, an allowance of 0.01 bar / 100 m must be added.

Minimum pressure $p_{\min}$ [bar] specified for the fluid temperature [°C]

Size	Fluid temperature	Minimum pressure
	[°C]	[bar]
All	5 to 75	0,05
	76 to 95	0,28

Description of the characteristic curve



Selection example

1	Min.	Fixed speed operation
10	Max.	Fixed speed operation
	Control range, settings in 0.1 m increments	
a)	Control curve, maximum head	
b)	Control curve, minimum head	

 The characteristic curve can be adjusted between a) and b) by pressing the control keys.

Programme overview / selection tables

Features and functions

Features and functions

Functions	Feature
Operating modes	
Δp -v for variable differential pressure	X
Δp -c for constant differential pressure	X
Fixed speed operation (n = constant)	X
Manual functions	
Setting the operating mode	X
Setting the differential pressure setpoint	X
Setting of speed level	X
Vent plug	X
Deblocking option	X
Automatic functions	
Continuous output adjustment depending on the operating mode (Δp control)	X
Setback operation	X
Soft start	X
Signalling and display functions	
Error codes indicated on the display	X
Alternating display of flow rate and electrical input power	X

Technical data

Selection table Calio-Therm S

Calio-Therm S	Connection		PN	P ₁	Motor protection ¹⁾	Signalling contacts	Nominal current 1~230 VAC, 50/60 Hz [A]	Mat. No.	[kg]
	Piping	Pump	[bar]	[W]					
25-40	R 1	G 1 ½	10	4,0 - 23	X	-	0,06 - 0,23	29134764	2.8
25-60	R 1	G 1 ½	10	4,0 - 47	X	-	0,05 - 0,48	29134765	2.8

¹⁾ Integrated motor protection in the terminal box

Selection chart

Calio-Therm S

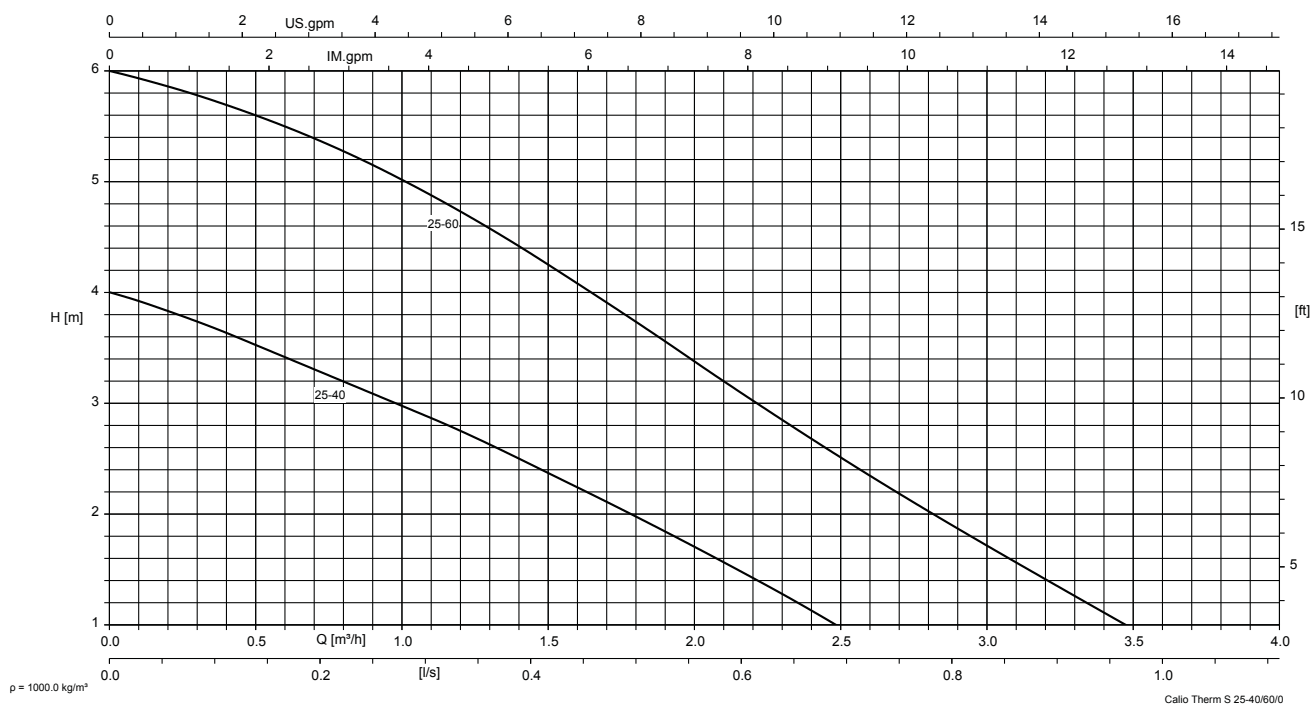
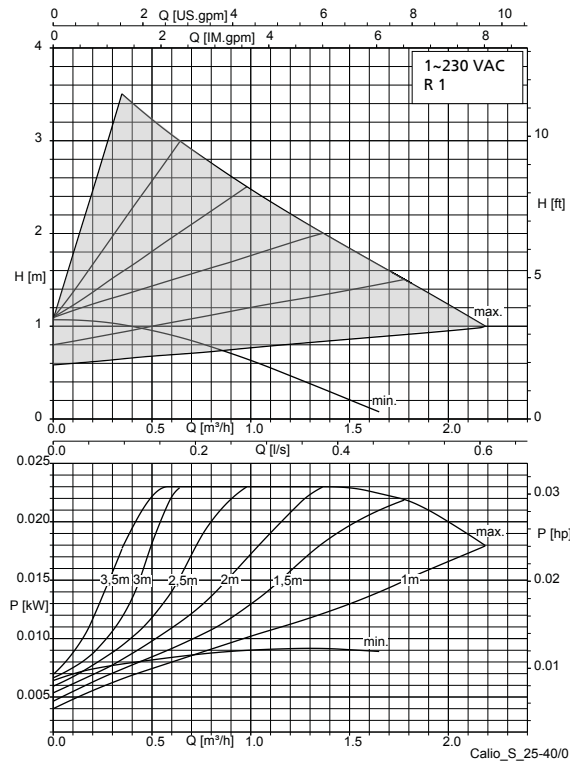


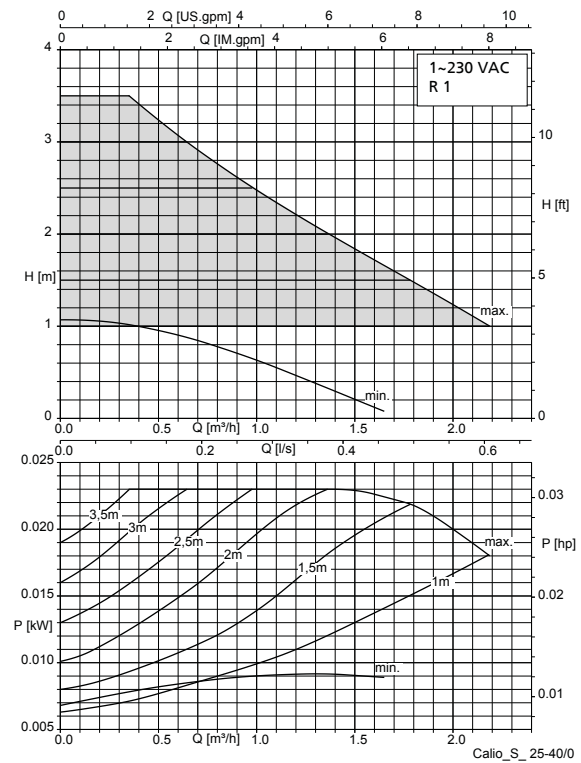
Illustration of maximum control range

Characteristic curves

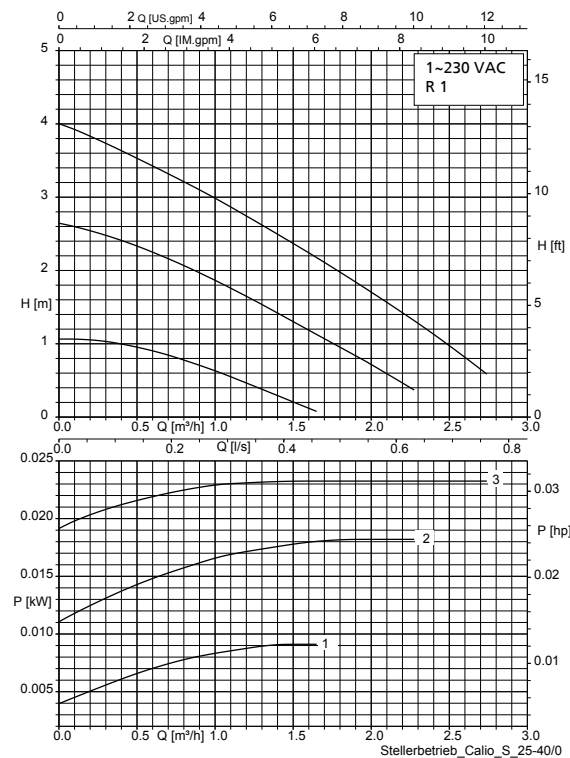
Calio-Therm S 25-40 Δpv



Calio-Therm S 25-40 Δpc

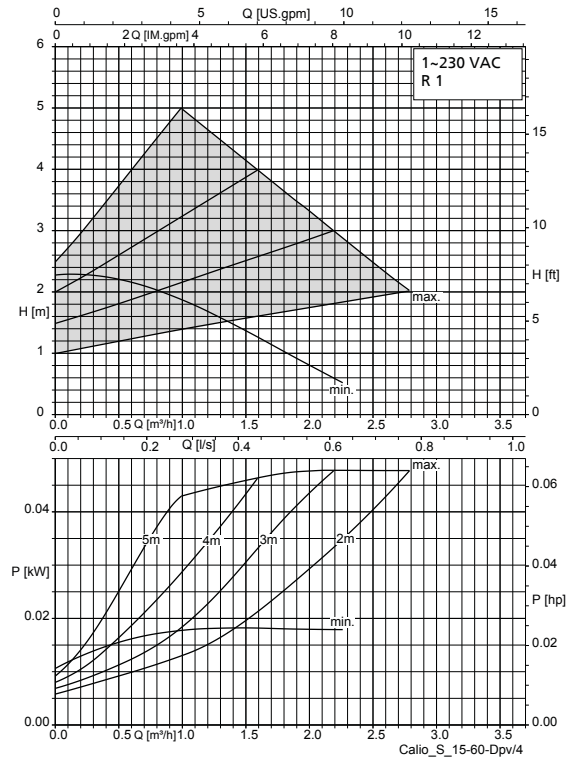


Calio-Therm S 25-40 fixed speed operation

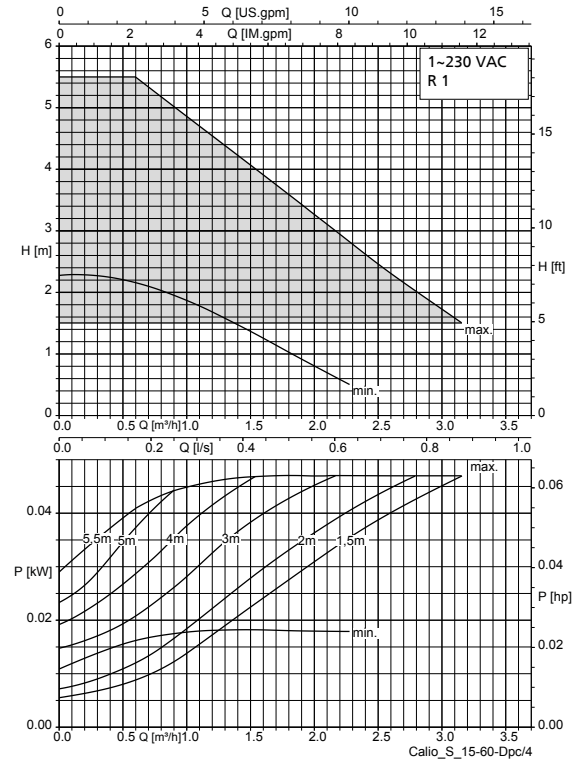


1, 2, 3 = speed level 1, 2, 3

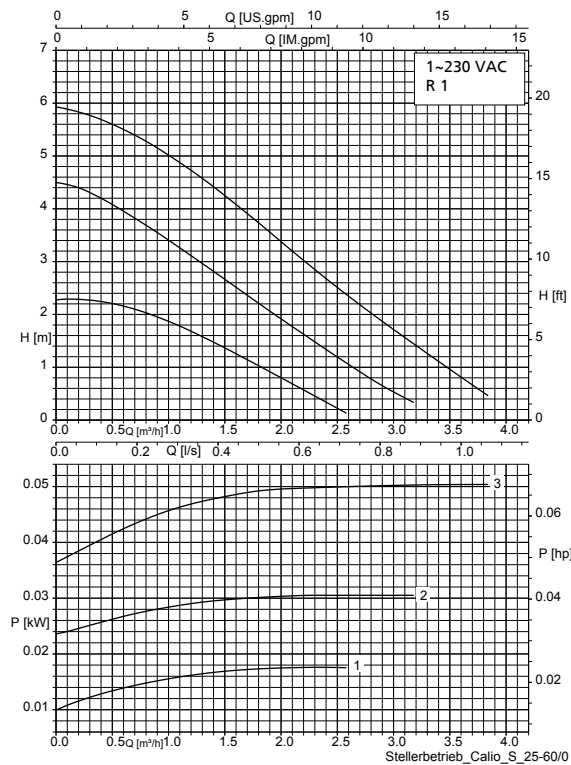
Calio-Therm S 25-60 Δpv



Calio-Therm S 25-60 Δpc



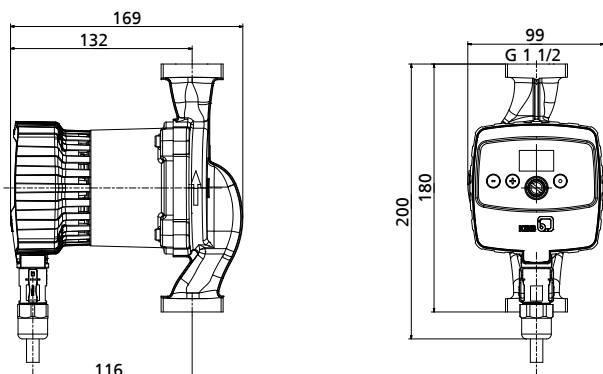
Calio-Therm S 25-60 fixed speed operation



1, 2, 3 = speed level 1, 2, 3

Dimensions

Calio-Therm S



Screw-ended pumps

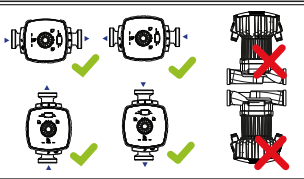
Dimensions [mm]

Size	R	G
25-40	1	1 1/2
25-60	1	1 1/2

Installation information

Calio-Therm S

Permissible installation positions

Sizes	
All	 The diagram illustrates permissible and non-permissible installation positions for the Calio-Therm S pump. Permissible positions (marked with green checkmarks) include horizontal and vertical installations with the pump head facing up or down. Non-permissible positions (marked with red X's) include horizontal installations with the pump head facing sideways and vertical installations with the pump head facing sideways.

Scope of supply

- Pump
- Sealing elements
- Installation and operating manual
- Thermal insulation shells



LENNTECH

info@lennotech.com Tel. +31-152-610-900
www.lennotech.com Fax. +31-152-616-289