

FK31-SL Calibration Bath

The calibration baths are perfectly suitable for applications in calibration laboratories and conform to the requirements specified by DIN ISO 9001. The instruments provide highest temperature stability and temperature uniformity. An optional precision reference sensor with integrated measuring electronics and RS232 connection is available.

Your advantages

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behavior
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Highest temperature stability to $\pm 0.005\text{ }^{\circ}\text{C}$ ($\pm 0.02\text{ }^{\circ}\text{C}$ at $+200\text{ }^{\circ}\text{C}$)
- Temperature uniformity better than $\pm 0.01\text{ }^{\circ}\text{C}$
- Optional Pt100 sensor for reference temperature measurements
- Temperature chamber with overflow at maximum liquid level
- Active Cooling Control



Technical Data

Order No.	9352628		
Model series	HighTech		
Category	Calibration Baths		
Working temperature range (°C)	-30 ... +200		
Temperature stability (°C)	± 0.005		
Setting / display resolution	0.01		
Integrated programmer	6x60 steps		
Temperature Display	VFD, LCD		
Heating capacity (kW)	2		
Cooling capacity (Medium Ethanol)	°C	20	0 -20
	kW	0.46	0.34 0.15
Pump capacity flow rate (l/min)	22-26		
Pump capacity flow pressure (bar)	0.4-0.7		
Pump capacity flow suction (bar)	0.2-0.4		
Bath opening / bath depth (W x L / D cm)	Ø = 12 / 31 cm		
Filling volume liters	24		
Refrigerant stage 1	R134a		
Filling volume refrigerant stage 1 (g)	163		

Global Warming Potential for R134a	1430
Carbon dioxide equivalent stage 1 (t)	0.233
External Pt100 sensor connection	integrated
Digital interface	RS232 Optional: Profibus
Ambient temperature	5...40 °C
Dimensions W x L x H (cm)	32 x 45 x 91
Weight (kg)	51
Classification according to DIN12876-1	Classification III (FL)
Included with each unit	Including bath cover with 7 openings.
Bath cover	integrated
Cooling of compressor	Air
Available voltage versions	230V/50 Hz 115V/60 Hz

Characteristics

Display



A perfect view

Ample, easy to read VFD Comfort display for simultaneous display of 3 values, warning functions, high temperature cut-off, pump stages (resolution 0.01 °C)



Additional plain text information

Comfortable LCD dialog display for interactive operation with plain text display



Pump stage and liquid level

Backlit indicator for selected pump stages and filling volume on Presto® PLUS, Magnum 91 & Forte HT

Operation



Comfortable and detailed

Comfortable keypad with additional menu functions for pump stages, calibration, control parameters, programmer, warnings, etc.

Temperature Control



For perfect results

'Intelligent Cascade Control', automatic & self optimizing adjustment of PID control parameters, temperature stability ±0.005 °C internal, <±0.05 °C external



Full control

'Temperature Control Features' for individual optimization, access to all important control parameters, additional settings for band limit, limits, Co-Speedfactor etc.



Highest measuring accuracy

'Absolute Temperature Calibration' for manual compensation of a temperature difference, 3-point calibration



Refrigeration Technology

Consistent cooling capacity

Easily removable venting grid for quick and easy cleaning



100 % Cooling capacity

'Active Cooling Control' for cooling available throughout the entire working temperature range, fast cool-down even at higher temperatures



Condensation and ice protection

A heated cover plate prevents condensation or ice build-up in the bath

Technical Features



Clever pump system

Reliable and consistent pump capacity, electronically adjustable pump stages



Control from the external application

External Pt100 sensor connection for precise measurement and control directly in the external application



Connection compliant to standard

RS232/RS485 dual-interface for serial data transmission according to EIA-485 industry standard (2-wire bus technology), upgradable with Profibus DP



Optimal program control

For the execution of time and temperature dependant profiles, 6 temperature profiles with 60 steps max., with real time clock



Automatic control of operating time

Electronic countdown-timer function for timer-programmed unit shut-down, standby mode after programmed time expires

Warning & Safety Functions



Early warning system for low liquid level

Maximum safety for applications, optical and audible alarm, allows user to refill bath fluid before the unit shuts down

**Early warning system for high/low temperature limits**

Maximum safety for applications, optical and audible alarm, convertible to automated cut-off function

**Enhanced protective functions**

Maximum safety, adjustable high temperature cut-off or dry-running protection, additional display of setpoints permits easy and precise adjustments

**For flammable bath fluids**

Classification III (FL) according to DIN 12876-1