

Operating instructions

ECOLINE  STAREDITION

Calibration thermostat
RE 212 J, RE 312 J
Annex to manual RE 212, RE 312
(YACE 0060, YACE 0065)

Translation of the original operating instructions

release 06/2018 c
replaces release 11/2016 V02, 08/20156 b1, 07/04
YACE0068

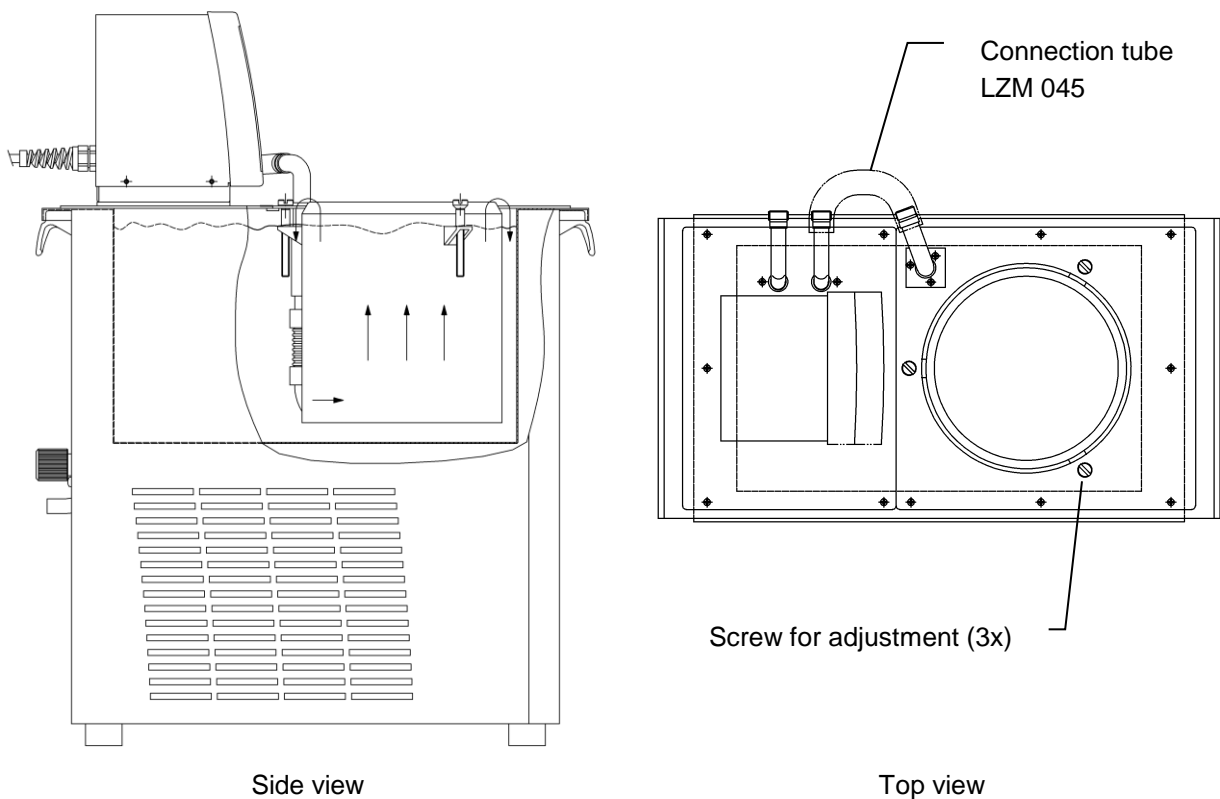
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Peculiarities of the types RE 212 J, RE 312 J:

1 Description

The thermostats are especially equipped to calibrate glass thermometers or electric thermometers. The cylindrical (working) chamber can be adjusted in its height up to 20 mm approximately and therefore it is possible to adjust the surface of the liquid bath within the working chamber higher than the (bath) cover.

Therefore, the total immersing thermometers can be read right at the point of immersion. Additionally the separate working chamber provides a constant immersion depth, independent from the volume extension of the bath liquid, an extremely good temperature accuracy and distribution of temperature. There are pump connectors to connect other external closed circuits, but won't be available if the thermostat is used for calibrating.



EU conformity The device complies with the basic health and safety requirements outline in the Directives listed below.



- Machinery Directive 2006/42/EC
- EMC Directive 2014/30/EU

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The device does not fall under Pressure Equipment Directive 2014/68/EU because the device is only classified as high as Category 1 and is covered by the Machinery Directive.

2 Starting up



Note for electric installation on site:

The devices must be protected with a 16 ampere circuit breaker fitted during installation.

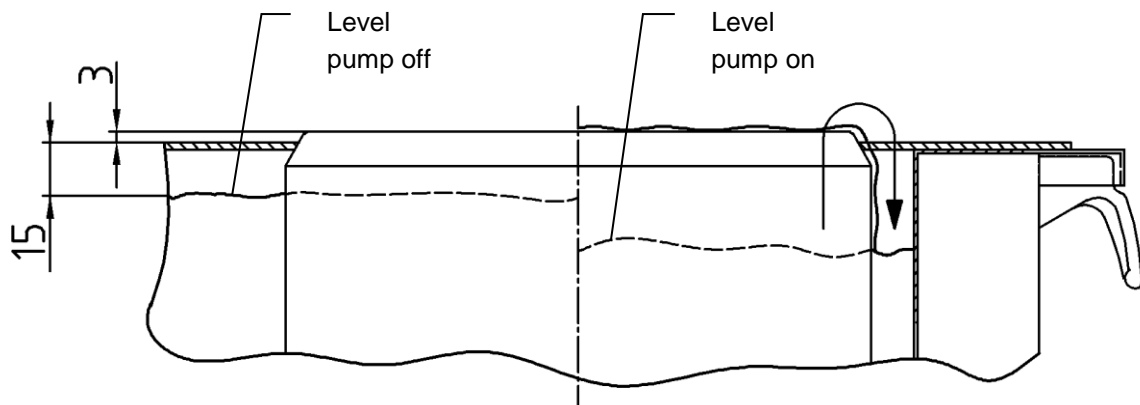
Exception: Devices with 13 ampere UK plugs.

Firstly, assemble the connecting tube LZM 045 as per diagram (see page 3).

Attention! Do not bend the tube!

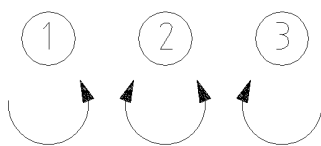
Hold up with open-end wrench SW 14mm.

Please move the connecting screws for adjustment of the cylindrical chamber always gradually (about 2 rotations). Adjust the working chamber as per diagram, and fix it that way it rises 3 mm above the bath opening. Refill the bath liquid only up to 15 mm underneath the bath opening and only at working temperature and switched-off pump.

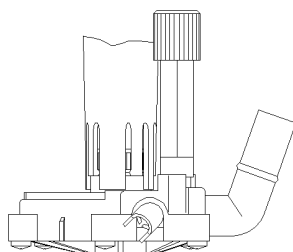


Recommendation for the adjustment of the cylindrical working chamber

Switch the button for the distribution of the pump flow to "ext." (see diagram Pos. 1).



- Position ① → maximum flow rate in the external circuit (working chamber).
The button will be moved anticlockwise. This corresponds also to the factory-set up.



3 Maintenance

For cleaning purposes and check-up of the bath liquid, we recommend lifting the front cover with the chamber as follows: Remove the connecting flange and release the screws M4. This structural component can now be taken out.

4 Technical Data

The figures have been determined according to DIN 12876.

Calibration thermostat			RE 212 J	RE 312 J
Working temperature range	°C		- 30 – 200	
Ambient temperature range	°C		5 – 40	
Setpoint resolution	°C		0.1 / 0.01	
Display resolution	°C		0.05	0.1 / 0.05 / 0.01
Display			±0.2 K with additive calibration	
Temperature stability	K		±0.01	
Safety feature ①			FL	
Miscellaneous functions			2-line LCD-display	2-line LCD-display, program compilation, external control, analog inputs/outputs
			Automatic compressor, Cooling capacity adjustment	
Heating capacity				
230 V; 50 Hz		kW	2.25	2.25
230 V; 60 Hz		kW	2.25	2.25
115 V; 60 Hz		kW	1.3	1.3
Eff. Cooling capacity @ with Ethanol at ambient temperature 20 °C	20 °C	kW	0.30	0,30
	0 °C	kW	0.23	0,23
	-20 °C	kW	0.13	0,13
	-30 °C	kW	0.04	0,04
Pump type			Pressure pump with selection of 5 power stages	
Pump output max.②		bar	0.4 ④	
Discharge pressure max. ②		L/min	17 ④	
Pump connections (for tubing)		mm	Nipples dia 13 mm (M16 x 1)	
Bath filling capacity max.		L	9 – 12	
Bath opening (B x T)		mm	Ø 150	
Bath depth		mm	200	
Working depth		mm	180	
Height upper surface of bath		mm	441	
Overall dimensions (B x T x H)		mm	250 x 400 x 602	
Weight		kg	30	
Power consumption				
230 V; 50 Hz		kW	2.3	2.3
230 V; 60 Hz		kW	2.3	2.3
115 V; 60 Hz		kW	1.4	1.4

① FL compatible for flammable and non-flammable liquids.

② at pumping capacity stage 5

④ → not valid when used for calibrating, because the pressure connection is used for a connecting tube

The equipment is not rated for use under medical conditions according to DIN EN 60601-1 or IEC 601-1.

Classification according to EMC requirements			
Equipment	Immunity	Emission class	Network connection customer
Calibration thermostat Ecoline	Type 1 according to DIN EN 61326-1	Emission class B according to CISPR 11	worldwide no restriction

Instructions for Class A digital device, USA:

“**Note:** This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 of the FCC (Federal Communication Commission) Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense”.

Instructions for Class A digital device, Canada:

“This Class A digital apparatus complies with Canadian ICES-003” (ICES = Interference Causing Equipment Standards).

« Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada ».

Refrigerant and filling quantity

The cooling thermostat contains fluorinated greenhouse gases.

	Units	RE 212 J	RE 312 J
Refrigerant	---	R-404A	R-404A
maximum filling quantity	kg	0.22	0.22
GWP _(100a) *	---	3922	3922
CO ₂ equivalent	t	0.9	0.9



Global Warming Potential (GWP),
Comparison CO₂ = 1,0

* Time span 100 years - according to IPCC IV

Technical amendments reserved!