

OPERATING MANUAL

Container heating jacket for IBCs and drums

Installation, operation, controller, care and troubleshooting

This manual applies to standard and custom heating jackets for IBC containers, drums and similar vessels (items DD-KHLM-11-9860, DD-KHLM-11-9858, DD-KHLM-11-9870 and custom-made versions), unless otherwise stated. Keep the manual available at the place of use.

Warning! Read and understand this manual before installing and operating the product. Failure to follow the instructions may result in injury, electric shock, fire or damage to the heating jacket or the heated material.

Important safety instructions

- For industrial use only. Must be operated by trained personnel familiar with heating equipment safety. Not for household use or for heating living beings.
- Do not use near flammable liquids or materials or in areas with explosion risk – ATEX-certified versions are available for such environments.
- Inspect for physical damage before every use.
- Only use on containers of the intended size.
- Never place the jacket over the label or the temperature controller.
- Never switch on without a filled container to absorb the heat.
- Use only with materials or liquids that allow heat transfer.
- Keep at least 50 cm clearance around the heated container.
- Wear heat-resistant gloves when handling a warm jacket.
- Monitor the jacket during use and disconnect when not in use.
- Never immerse in liquids. If liquid is spilled, disconnect, clean and dry before further use.
- Keep away from sharp objects, do not drive or walk on it and avoid sharp folds – they damage the heating wires.
- Do not repair or modify damaged or faulty jackets. Disconnect and contact your supplier.
- The operator is responsible for a suitable power supply (see next section).

Preparation and electrical connection

Unpacking and inspection

Unpack the jacket and check for transport damage. Do not use if damaged.

Standard plug

Jackets are supplied with a Schuko combi plug as standard; 120 V models with a US plug. Other plug types on request.

Changing the plug

When fitting a local standard, a 3-pin grounded plug must be used. Conductors: brown = line, blue = neutral, green/yellow = ground (US: black/white/green). Do not shorten the cable. Electrical work by qualified personnel only, in line with local regulations.

Power supply

The supply must be rated for the jacket's voltage and power, with suitable disconnection and protection devices. We recommend a residual-current device (RCD/GFCI).

Health and safety

Jackets become hot during use – wear heat-resistant gloves. Disconnect before handling if wet or damaged.

Operating the heating jacket

1. Check the jacket and power connection for visible damage.
2. Check that the container matches the jacket size.
3. Ensure the container and contents can withstand the set temperature.
4. Fit the jacket to the container and tighten the straps.
5. The jacket must not be folded or overlap itself or other jackets, and the controller must not be covered.
6. Connect the power cable and switch on.
7. Set the temperature on the controller (versions without controller have a fixed limit).
8. After about 10 minutes, check that the jacket is heating as expected.
9. Do not leave the jacket unattended during operation.

After use and storage

- Disconnect and let the jacket cool down before moving it. Pull the plug, not the cable.
- Do not roll or fold while hot and do not drag across the floor.
- Do not fold and stack – sharp bends can break the heating wires. Stack unfolded or roll loosely with label and controller inside and the cable stored inside the roll (do not wrap it around the jacket). Secure with straps if needed.



Using the digital controller

Heating indicator

A small dot in the lower right corner of the display lights up while the heating element is active.

Set point

Set the desired temperature with the arrow keys and confirm with OK.

Timer (A3)

Press menu, select A3, OK. Enter the runtime in hours and minutes [hh:mm]. When it expires the controller stops heating and shows 00:00 until restarted. 00:00 or a restart disables the timer.

Ramp-up (A4)

Press menu, select A4, OK. Set the maximum heating rate in °/min – the set point is approached slowly. The setting is kept after a restart; 0 disables the function.

°C or °F (A5)

Press menu, select A5, OK, choose the unit and confirm.

Standby

Controllers with a power symbol on the OK key: hold the key for 3 seconds to disable heating without disconnecting. "OFF" flashes in standby.

Hysteresis

The controller switches off at the set point and on again 3 °C below it. The hysteresis at the container is always larger, depending on sensor position and environment.

External digital controller

Works like the built-on controller. Connect the jacket to the controller before powering the controller to avoid damage to the connectors.



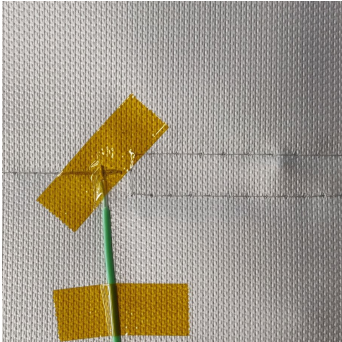
Testing and calibration

Test setup

Place the jacket on a filled container of the correct size. A low-viscosity, heat-conducting liquid such as water is ideal; the fill level must be above the sensor area. Set the temperature below the boiling point of the contents. Avoid testing on the floor or very large surfaces – risk of overheating inside the jacket.

Measuring the temperature

Ensure good contact of the whole jacket, especially the sensor area. Tape a small probe onto the jacket surface next to the internal sensor (sensor seam), not directly on top of it.



Influencing factors

Readings depend on the contact between jacket and container, the probe's distance to a heating wire, thermal conductivity and heat capacity of container and contents, viscosity, ambient temperature and draught or wind.

Calibration

Record the difference between set point and measured temperature at the desired point and, if needed, compensate with a manual offset of the set point. No fixed calibration interval is required.

Cleaning, maintenance and disposal

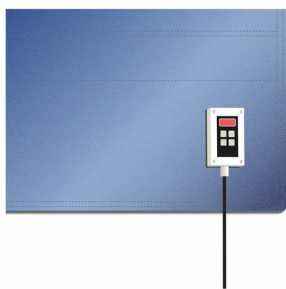
- Remove adhering residues, vacuum off dust and wipe with a damp cloth.
- Inspect fabric, cable and plug for damage.
- Let the jacket dry completely before rolling, stacking or using it.
- Dispose of as electronic waste in line with local regulations.

Product options and custom design

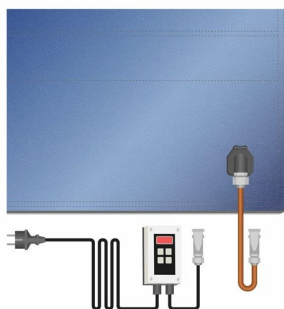
Standard drum jacket sizes

Drum size	fits Ø
25-30 l	328-380 mm
50-60 l	370-439 mm
105-120 l	471-525 mm
200-220 l	580-630 mm

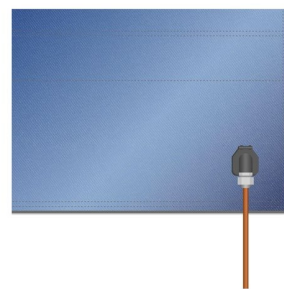
- Voltage 230 V or 110/120 V
- Standard up to 90 °C or high temperature up to 200 °C
- Custom versions in size, shape and features to your specification
- Controller options: built-on digital controller, external digital controller (PT100) or fixed bimetal thermostat – not every option suits every model



Built-on digital controller



External digital controller



Bimetal thermostat

Digital controller error codes

Code	Description	Solution
00	Relay faulty.	Contact your supplier for repair or replacement.
01 / T	Temperature inside the controller too high.	Disconnect the jacket and let it cool down, check for damage and the setup before restarting.
11, 12, 14, S1-S3	Temperature sensor error, no correct reading possible.	Check connections and restart the controller (external controller); otherwise contact your supplier.
L	Load not detected: connection fault to the external controller, broken heating wire or blown thermal fuse.	Check connections, restart or contact your supplier.

Technical data

Voltage	230 V 50 Hz or 120 V 60 Hz depending on model
Versions	Standard up to 90 °C; high temperature up to 200 °C; food/pharma (FDA material) up to 200 °C
Outer fabric	Standard: Cordura, nylon or silicone-coated glass fabric; HT: silicone-coated glass fabric
Heating side	Silicone-coated glass fabric (F&P;: FDA compliant)
Insulation	Standard: 8 mm polyester; HT and F&P;: 6 mm glass fibre
Temperature control	Digital controller with set point, timer and ramp (thermocouple type K); external digital controller (PT100); bimetal thermostat on custom versions
Thermal fuse	Standard 172 °C; HT and F&P;: 259 °C
Power cable	2.9 m unless otherwise stated
Protection	Class II, IP40 (controller optionally IP54)
Environment	–10 °C to 40 °C, ≤ 75 % RH, non-condensing
Fire fighting	Powder or CO ₂ – no water or foam

Repairs and service

Repairs and modifications must only be carried out by the manufacturer or in agreement with your supplier. For error messages, send photos of the display and installation with details of use and set point. Returns only after prior agreement: dry and clean the jacket, roll it loosely (controller inside, no folding), pack each jacket in a labelled bag and in sturdy packaging. Products with residues of hazardous substances or food cannot be accepted. The declaration of conformity (CE) and further documents are available on request.