# Cooling/heating fitting (code MIE-CL)


The cooling/heating fitting consists of assembly rails and a housing front section for integration into the standard module (code EMM). The fitting is designed for:

- air heater water (code ELEV)
- air heater water, ThermoGuard type (code ELTV)
- air heater steam (code ELES)
- air cooler water (code ELBC)
- air cooler DX direct expansion (code ELBD)
- heat recovery coil supply air (code ELXT)
- heat recovery coil extract air (ELXF)

- Pipe connections up to and including 25 mm are made of copper, larger connections of steel. They have an outside thread connection and are fitted with outlets for bleeding and draining. ELEV also has an outlet for an immersion detector.
- ELBC, ELBD and ELXF have stainless drip trays with Ø32 mm drainage connection. Droplet eliminator is required at air speed >2.8 m/s.
- The ELTV air heater has ThermoGuard frost protection When installed in cold areas, the air heater must always be allowed to relieve the pressure to the heating system's return line. When a two-way valve is used for flow control, the valve must always be fitted to the intake pipe.
- Max. operating pressure:

| | |
|---|---|
| ELEV, ELBC, ELXT, ELXF | 1.6 MPa (16 atö) |
| ELBD | 2.2 MPa (22 atö) |
| ELES | 1.0 MPa (10 atö) |
| ELTV | 0.6 MPa (6 atö) |

- Max. operating temperature:

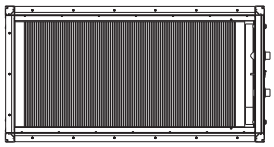
| | | | |
|---|---|---|---|
| ELEV | 100 ˚C | ELXT/ELXF | 100 ˚C |
| ELES | 185 ˚C | ELTV | 100 ˚C |

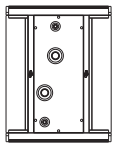
## Accessories

- Air valve (code MIET-CL-01)
- Drain valve (code MIET-CL-02)
- T-pipe for frost protection and bleeding/draining (code MIET-CL-03)
- Water trap (code MIET-CL-04)
- Lid for external pipe connections (code MIET-CL-05-a)

# Technical data

## Configuration





## Insert damping (dB)

| Octave band interme-diate frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---|---|---|---|---|---|---|---|---|
| ELES, ELEV, ELTV | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 |
| ELBC, ELBD, ELXT, ELXF | 4 | 2 | 2 | 3 | 3 | 6 | 6 | 9 |

## Water volume (approx. litres), size 600

| Output variant | ELEV, ELBC, ELXT, ELXF | ELTV |
|---|---|---|
| 00 | 10 | 9 |
| 01 | 10 | 15 |
| 02 | 18 | 23 |
| 03 | 28 | 35 |
| 04 | 37 | – |
| 06 | 55 | – |
| 08 | 74 | – |
| 10 | 81 | – |
| 12 | 88 | – |

# Operation and Maintenance Instructions

## Air heater, water heating

The heating coil consists of a number of copper tubes with aluminium fins pressed on them. The coil will have impaired capacity if dust forms a coating on the coil surfaces. Not only does this impair the heat transfer capacity of the coil, it also increases the pressure drop on the air side.

Even if the ventilation system is fitted with high quality filters, as time passes dust deposits will form on the front edges of the coil fins (at the inlet side). To utilise its full capacity, the coil must be well vented. The pipework should be vented by opening the bleeder screws in pipe connections and/or an air vessel.

### Inspection

- Check the coil fins to detect possible mechanical deformity.
- Check that the coil is not leaking.

### Cleaning

If the fins on the coils are dirty, vacuum them from the inlet side. As an alternative you can blow them clean with compressed air from the outlet side. If they are particularly dirty, clean them with hot water mixed with dishwashing detergent (of a type that will not corrode aluminium).

### Bleeding

Bleed the heating coil and the pipework if needed. Bleeder screws are on top of the coil or on the tube connections.

### Check function

Check that the heat circulation is working: This can be done by temporarily increasing the temperature setting (setpoint).

## Additional maintenance for ThermoGuard

The safety valve's function must be checked regularly (at least once a year). If you see that a valve is leaking, this is normally due to impurities from the pipe system that have accumulated on the actual valve seat.

In normal cases, it is sufficient to carefully turn the valve knob and in this way "flush" the valve seat clean. If the safety valve continues to leak, you will have to replace it with a new one of the same type and with the same opening pressure.

Any shut-off valves on the supply or return lines may not be closed if freezing temperatures are likely.

If a ThermoGuard coil has frozen, let it thaw completely before restarting operation. If the heat recovery unit is installed upstream of the coil, it is often sufficient to run heat recovery to thaw the coil. If this does not work, some other external heating source will have to be used for thawing the water coil.

## Air cooler, waterborne cooling

The cooling coil consists of a number of copper tubes with aluminium fins pressed onto them. The coil will have impaired capacity if dust forms a coating on the coil surfaces. Not only does this impair the heat transfer capacity of the coil, it also increases the pressure drop on the air side.

Even if the ventilation system is fitted with high quality filters, as time passes dust deposits will form on the front edges of the coil fins (at the inlet side). A drip tray with drain is located under the cooling coil for collecting and removing evaporation water, and in some cases there is a droplet eliminator downstream of the cooling coil which prevents drops of water accompanying the air stream.

### Inspection

- Check the coil fins to detect possible mechanical deformity.
- Check that the coil is not leaking.
- Check that cooling energy is uniformly distributed across the coil surfaces (in operation).
- Check the drip tray and drain with water trap (clean if necessary).
- Check that the water trap (without non-return valve) is filled with water.

### Cleaning

If the fins on the coil are dirty, vacuum clean from the inlet side. As an alternative, you can carefully blow them clean with compressed air from the outlet side. If they are severely fouled, you can clean them with warm water mixed with dishwashing detergent of a type that will not corrode aluminium.

### Bleeding

Bleed the water coil and the pipework if needed.
Bleeder screws are on top of the coil or on the tube connections.

### Check function

Check that the water circulation is working. This can be done by temporarily reducing the temperature setting (setpoint).

## Air cooler, direct expansion

The cooling coil consists of a number of copper tubes with aluminium fins pressed onto them. The coil's surfaces must be clean in order to achieve the maximum cooling power and good operating economy. Seriously fouled coils reduce the air flow and impair the heat transmission, which can compromise the cooling compressors' operation.

Even if the ventilation system is fitted with high quality filters, as time passes dust deposits will form on the front edges of the coil fins (at the inlet side). If the fins are fouled, they must be cleaned with a vacuum cleaner. As an alternative, you can carefully blow them clean from the outlet side or rinse them with warm water.

**NB: When using warm water to rinse the cooling coil for direct expansion, the cooling system must be drained (performed by cooling engineer). If this is not done, there is a major risk of explosion.**

A drip tray with drain is located under the cooling coil for removing evaporation water, and there is sometimes a droplet eliminator downstream of the cooling coil which prevents drops of water accompanying the air stream.

### Inspection

- Check the coil fins.
- The drip tray and drain with water trap should be checked carefully and cleaned if necessary.
- A water trap without a non-return value must be filled with water.

### Cleaning

If the fins on the coil are dirty, vacuum clean from the inlet side. As an alternative, you can carefully blow them clean with compressed air from the outlet side. If they are severely fouled, you can clean them with warm water mixed with dishwashing detergent of a type that will not corrode aluminium.

**NB: When using warm water to rinse the cooling coil for direct expansion, the cooling system must be drained (performed by cooling engineer). If this is not done, there is a major risk of explosion.**

Clean the drip tray and drain if required.