ProTERM –
**Thermal Energy-Recovery Module**

Take advantage of heat energy from process exhaust air and save on heating costs

ProTERM reduces the heat requirement by up to 95% compared to systems without heat recovery.

The heat energy produced by the process exhaust air is directly transferred to the incoming outside air. A separate supply-air unit is no longer required.
Ideally, the cleaned process exhaust air is returned into the workplace. However, air recirculation is often not feasible and the heated exhaust air from the machine has to be vented outdoors. A supply-air unit then provides supply air for optimal air balance.

ProTERM combines filtration technology with air conditioning technology in industrial plants and takes advantage of heat energy from the process exhaust air to heat the outside air. A specially developed control system ensures optimal interface among components.

ProTERM can be applied in combination with wet, dry and aerosol separators.

Process exhaust air and cool outside air are directed past each other in the cross-flow heat exchanger. Because of its two separate air currents in separate channels, the fresh air supply cannot become contaminant. The exhaust air is then released through the roof. Heat transfer is highly efficient.

The heated process exhaust air and the cool outside air are directed past each other in the cross-flow plate heat exchanger and the heat energy is transferred.
Flexible use

Normal operation or dual operation with air recirculation

During normal operation, exhaust air is heated by process exhaust air. In dual operation, the circulating air from the plant can be heated additionally, if required.

Cooling effect in the summer, heating in the winter

The outside air is directed past the heat exchanger via a bypass in the summer to avoid additional heat. Air can be cooled as well with an additional cooling battery for plant air-conditioning. The outside air can be heated by a heating battery for very cold days.

Clean air recirculation operation

To heat up the plant at the start of the work shift, it can be switched to air recirculation. In this mode, only the air from the plant is extracted, heated up by the heating battery and then distributed into the area.

Air distribution options in the plant

1. Via supply air channels, connection on the left or back.
2. Via air outlet around the system. For this energy-saving concept according to VDI, adequate space for optimal air distribution around the system should be available.

Cross-flow plate heat exchanger is active in normal and in dual operation mode.

Outside air is directed past the heat exchange unit by means of a bypass.
The heat exchanger is produced as oil-proof to avoid a material exchange between discharged and fed air. The corrosion-protected aluminum construction ensures high heat conductivity and therefore optimal head transfer.

### Technical data

| ProTERM |  
| --- | --- |
| Airflow | 8 000 – 12 500 m³/h |
| Cooling efficiency | max. 124 kW |
| Heating efficiency | max. 191 kW |
| Length | 2 000 mm |
| Width | 2 005 mm |
| Height | 4 339 mm |
| Weight | 2 100 kg |

### Environmental protection that pays off

The sizable savings become apparent in a comparison of the annual heated air requirement.

### Process-proof and oil proof construction

Government Aid

Under certain circumstances, government aid in terms of non-refundable subsidies are possible.

### Reference:

- Room exhaust air temperature: 20 °C
- Process exhaust air temperature: 26 °C
- Ambient room temperature: 18 °C
- Airflow: 10 000 m³/h
- Location: Germany
- Operating time: 12 hours per day

Do you desire an individual amortization calculation? Please get in touch with us!