

New Self-reclosing Explosion Vent



Modern explosion protection for the food industry

With a newly developed explosion protection door (type FSL/Food Super Light), Thorwesten Vent is launching a trend-setting alternative to conventional relief devices in food and feed production.

Transport, drying, separation and storage of organic dusts such as starch, gluten, etc. make the danger of an explosion seem omnipresent. Comprehensive explosion protection is therefore of significant importance for product and plant safety.



Figure 1: The new explosion vent from Thorwesten Vent, type FSL, shown here in a variant for dryer applications in the food and feed industry.

Constructional explosion protection measures limit the occurring explosion pressure to a calculable level without causing significant damage to the process vessel. Conventional protective systems, however, allow the ingress of atmospheric oxygen. The resulting stack effect often leads to the burning out of large parts of the production plant.

The inerting of the components as a fire fighting measure has not proven to be effective due to the open system. In order to solve this problem, Thorwesten Vent's product portfolio has been expanded with the pressure relief device FSL, a trend-setting technology for the food industry. In doing so, the know-how of the self-reclosing explosion valve for coal dust applications, which has been successfully used for decades, could be transferred to a new application.

The new flap also works according to a proven air cushion principle, which partially absorbs the kinetic energy of an explosion before a baffle plate equipped with springs ensures that the remaining energy is dissipated and returns the explosion flap to its initial position. The flap is then closed again by a pneumatic device. In order to avoid implosion damage after pressure relief at storage silos, the FSL can optionally be equipped with a time-controlled stopping mechanism that allows the flap lid to close only after a defined time. Thus, pressure differences can be balanced and implosion damages at the silo can be avoided.

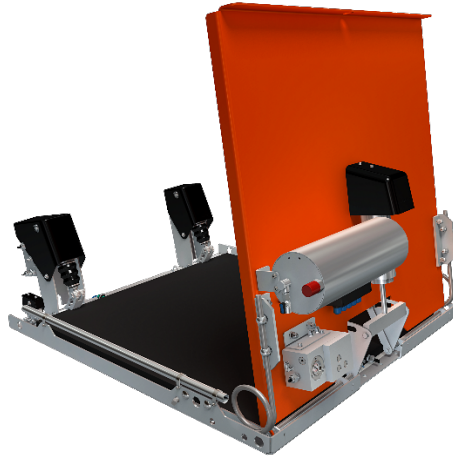


Bild 2: "The innovative explosion vent FSL in a further dryer variant. The compressed air supply for reclosing after pressure relief is clearly visible."

Additionally, the FSL has an accompanying heating system that serves to keep it snow and ice free. The construction of the flap lid was designed to achieve a particularly high insulation effect. The formation of condensate in the process is thus avoided.

This well thought-out system is used wherever an explosive dust-air mixture can be ignited by various influencing factors. It primarily protects dryers, cyclones, bag filters and storage silos, but ultimately it protects the entire production plant from burning out after an explosion.

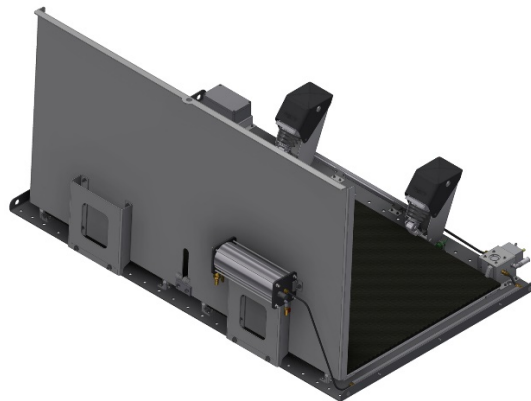


Bild 3: "Thorwesten Vent also provides the new Ex-flap in a special version for filter applications."

Further information can be obtained from our sales specialists:

Berthold Bussieweke, Head of Sales, Tel. 02521 939164, E-Mail: Berthold.bussieweke@thorwesten.com

Dirk Winterstein, Sales Manager, Tel. 02521 939120, E-Mail: Dirk.winterstein@thorwesten.com