

Best practice

Minebea Intec's products support the creation of a vaccine against Corona



The Chinese biotech company CanSino was one of the first companies allowed to conduct clinical trials with a possible vaccine against the coronavirus. Minebea Intec supported this project with precise weighing equipment.

Key facts

For the research and development of vaccines, every detail has to be critically controlled to ensure the resulting products are exactly what is needed. For the accurate monitoring and controlling of the weight, CanSino chose Minebea Intec to provide the right solutions.

Application

Three load cells PR 6212 were installed under a bioreactor to monitor the weighing data of the vaccine raw-form in real time. An IF platform scale was used for the manual formulation of the final vaccine.

Products

- Load cells PR 6212/500 kg C1
- Cable junction box PR 6130/65S
- Transmitter PR 5211/10
- IFS4-300II-I-T16

Customer benefits

- Precise weighing results in real time
- Low profile of IF scale allows fast and efficient loading
- Maximum corrosion resistance of load cell
- Compact design for easy installation of load cell

Customer

Founded in Tianjin, China 2009, **CanSino Biologics Inc.** is an innovative biopharmaceutical company for human use vaccine R&D, manufacturing and commercialization. It has an R&D centre of approximately 120,000 square-feet as well as a 380,000 square-feet commercial manufacturing campus.



Project goal and implementation

The dedication of CanSino is to find the best solutions for the prevention of diseases, such as the coronavirus. To conduct their research, the company has been relying on weighing solutions from Minebea Intec for many projects. In 2017, when CanSino received the NDA approval to produce the ad5-EBOV vaccine as a solution against the ebola virus, they needed a weighing solution to formulate the final vaccine product and opted for an IF scale, which they also used in their search for a vaccine against corona. The creation of a vaccine, based on the adenovirus-based viral vaccine technology, is divided into the following steps:

First, the RNA fragments of Covid-19 virus were inserted into the adenovirus to form a recombinant protein vaccine. This combination product was put into a bioreactor, where three compact PR 6212 load cells are installed underneath. In this bioreactor, the combination products are scaled-up and purified under precisely controlled conditions to create the basis for the vaccine. The PR6212 load cell is used here to measure weight in real time so that adjustments can be made as quickly as possible, if required. The load cell results are highly accurate and have a failure class of only 0.04%, even though the bioreactor is constantly stirring the materials, making precise measurements more demanding.

“The accuracy of the Minebea Intec products is a huge asset for our research: The load cells, as well as the floor scales, provide us with highly accurate results, which help us in our fight against Covid-19.”

Ms. Xiaomei Tian, Production Manager

The load cells are connected to a PR 6130/65S junction box, which has an IP protection of up to IP 69, making it extremely resistant from outside forces. The data is then transmitted to the computer system by a PR 5211/10 transmitter.

After the scale-up process in the bioreactor, the resulting product is purified of all unwanted substances. However, the resulting pure vaccine cannot be tested directly on humans in this form. It must be supplemented with additives such as adjuvants and stabilizers. A mobile IF floor scale from Minebea Intec was used here, which provides a very high weighing resolution of up to 30,000 d and which further benefits the process due to

its high-quality materials, making it ideal for the use in tough surroundings. The purified raw material is placed in a container on the floor scale, the additional ingredients are then added using the recipe function of the scale. The low profile with a height of 35 mm, featuring an included ramp, made this process easier for the operator to push the

vessel on the scale. The included lifting mechanism enabled a single person to lift up the platform to execute the cleaning procedure without needing any help. Although the search for a vaccine still goes on, the company will continue to use products of Minebea Intec to reach their goals.



The IF floor scale is perfectly suited for the weighing of vessels due to its low profile.



Contact the expert
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The PR 6212 load cell provides highly accurate measurements in real time.



If you're interested, please email
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