

# Minebea Intec scales provide precise weighing solution for fully automated airport-cargo station



The New Chengdu Tianfu Airport was put into use in June 2021, featuring a supporting cargo station which was equipped with floor scales from Minebea Intec to weigh import and export goods. This is the first cargo station equipped with fully Automated Guided Vehicle (AGV) forklift handling system.

## Key facts

The original airport in Chengdu has a relatively small capacity. In order to meet the passenger and cargo throughput in the southwest China region, the construction of a new Tianfu Airport has begun. Its builder, Kunming Shipbuilding Group., chose Minebea Intec as the weighing solution provider for its cargo stations.

## Application

Tianfu Airport uses a total of 54 scales, from capacities of 10 to 30 tons to weigh imported and exported goods at various places like the cargo station, Customs supervision warehouse, transfer center and inspection center.

## Products

- Weighing Indicators X3 & Maxxis 5
- Digital Load Cell PR 6224
- Cable Junction Box PR 6024/68S

## Customer benefits

- Compression load cells for highly precise and reliable weighing results
- Digital load cell which facilitates installation and maintenance
- Customised weigh platform, which can be easily inspected in a limited space



## The customer

Chengdu Tianfu International Airport, the largest aviation hub in Southwest China, is located in Chengdu, Sichuan Province, China. The designed annual passenger throughput is 90 million passengers, and the annual cargo throughput is 2 million tons. The first phase after opening is planned for an annual passenger throughput of 40 million passengers and an annual cargo throughput of 700,000 tons. The airport is officially open on June 30, 2021.

## Project goal and implementation

Chengdu Tianfu Airport aims to use the world's most advanced technology in its cargo logistics system. Therefore, they started a cooperation with Kunming Shipbuilding Group as freight logistics contractor and chose Minebea Intec as provider for the matching weighing solution.

Unmanned AGV forklifts are used to complete the goods receipt, weighing, shelf /ground storage, and delivery in the standard parts area. For these tasks, Minebea Intec constructed weighing platforms with the digital load cell PR 6224– a weighing solution which is often used for vehicle weighing and reaches stability quickly, ensuring short weighing times. These load cells provide high accuracy with minimum load cell verification as high as 14,000. Combined with the mounting kit, the load cell always receives vertical force during operation, which makes it a better choice than shear-beam load cells, which are usually used in platform scales. The AGV forklift and its supporting system automatically decelerate before going onto the scale and determine whether the scale is zeroed. While waiting for being weighed, the scale automatically identifies the forklift information, and read the

*„We are very proud to provide a solution for such an advanced cargo logistics system. Our customized weighing platforms not only require less space for installation, but also provide highly precise weighing results and a high level of user-comfort due to the digital load cell being used.“*

*Zhou Mingxin, Project Manager Minebea Intec*

forklift and pallet tare after weighing to obtain the net weight value. The weighing data is uploaded afterwards to the customs supervision system via the Ethernet interface that supports the MODBUS TCP/IP protocol configured on the Maxxis 5 controller. The entire process works

without human supervision. The accurate and reliable weighing and data transmission guarantees a fully automated operation.

As the airport is busy with cargo in and out, efficiency and ease of use in case of maintenance are very important. The PR 6224 load cell features digital assistant technology which can easily query the status of each load cell after being connected to the Maxxis 5 controller. If any problems occur, the controller will trigger an alarm and prompt an error message. Maintenance personnel can thus arrive at the site in the shortest time and

quickly identify possible problems.

Another problem which was overcome, was the lack of space. Instead of building a foundation forklift pit manhole beside the weighing platform, Minebea Intec designed the manholes on the weighing platform itself. Due to this, a possible replacement process can be dealt with swiftly and easily.



Over 50 scales are used for weighing within the airport.



In combination with Minebea Intec's "DAT – Digital Assistance Technology", the PR 6224 enables the collection of valuable data on the weighing process.



Are you interested in finding out more?  
We will be more than happy to draw up a quote for you!  
All you have to do is send us an email:  
**[mkt.siwe@minebea-intec.com](mailto:mkt.siwe@minebea-intec.com)**



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