



Application Report

# **Intelligent feeding system for elephants – with electronically controlled feed boxes**

**Partner** Zoo Zürich AG

**Area** Industrial and process technology

# Industrial and process technology

Availability

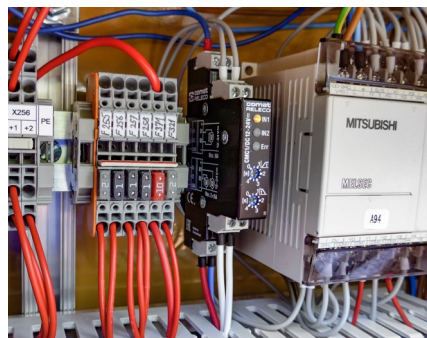
Low Noise

Safety

Elephants living in a zoo need something to keep them occupied. So what could be better than to make a game of obtaining food? One way of doing this is to use feed boxes. The feed is only available for a certain amount of time, so the elephants have to seek out the boxes and touch them to find out whether any feed is available. Not only does this keep these majestic animals occupied, it also ensures that they have to move around a lot.

## Yes to technology, but please make it quiet!

Zookeepers would normally have to top up the feed boxes several times a day, so this is now done electronically. The feed rack is suspended on wire ropes and moved around at height with a central electric cylinder. When the feed rack is in the lower position, the elephant can use its trunk to pick up food. But watch out: the required technology must only make a minimal amount of noise so as not to disturb the elephants.



## Intelligent feed rack thanks to a sophisticated system

The technology in the feed crate is kept to a minimum number of electrical components (linear actuator with position feedback, door safety switch). These are operated at extra-low voltage.

The start of feeding time is controlled by the GLS time switch program. The feed rack travels to the feed position

## Partner

Zoo Zurich is a cultural and educational institution in the city of Zurich, serving as an ambassador between people, animals and nature. It appeals to wide sections of the population and thus contributes to the sustainable preservation of biological diversity. All Zoo Zurich activities are based on innovative business management and future-oriented sustainable financing. The wide public interest in the zoo is utilised carefully, while intensive use is made of the close cooperation within the worldwide network of zoological gardens.



## ComatReleco products in use

- CMC1 Motor Controller
- IR Relay Socket

and stays there for a given amount of time. It returns to the parking position when feeding time is over. The GLS time switch program only specifies the time at which feeding will start. There is no feeding if the system is not in automatic mode (manual mode, open doors, fault). The duration of feeding can be set separately. The feed rack can also be operated manually if required.

## Protection against the cold

The protective function is activated if temperatures have dropped below  $-3\text{ }^{\circ}\text{C}$  in the previous 24 hours and caused the feed rack to freeze onto the guide rail (elephant breath, hay dust, frost). The system travels from the parking position to the highest feed position in order to loosen the feed rack, in case it has got stuck.



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