

## Controlling of Façade Access Systems

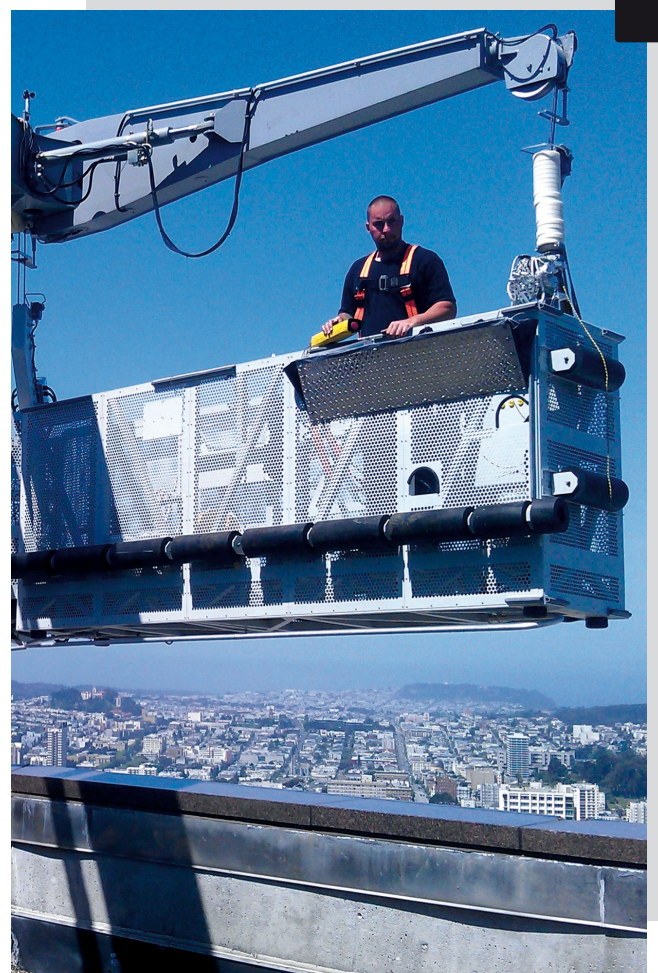
The construction of the Islamic Bank Tower in Qatar has been realized in 2012. This building involves an office tower, comprising 2 basement levels, a ground floor, a mezzanine floor, 4 podium levels and 41 additional floors. The height of this building is about 191 metres.

### Task Description

For cleaning, maintenance, installation and renovation purposes façade access systems are used, in order to bring the personnel safely right to the point at the building façades.

In general there is not much space in the cradle for controlling devices to drive the motor. In addition the wiring to transmit commands and states to move the cradles must be reduced to a minimum, because less wiring means lower weight and fewer problems of ageing and worn out cables. Multiplexing of signals is the appropriate means.

Handling the cradles requires large drives which produce a lot of noise on the transmission line. To carry out commands safely on the wires high immunity against disturbances is required for the telecontrol system.



### REQUIREMENTS

- Easy handling and installation
- Multiplexing of signals over large distances
- Expandable units with digital and analog signals
- High noise immunity and reliability
- Flexible use in various environments



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## Solution by EES

Applied was the two-wire transmission system ZS8A of EES, which was especially designed for cable-saving and immune to disturbance transmission of messages, commands and analog values over control lines with up to 15 km distance.

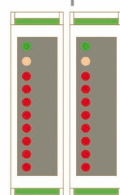
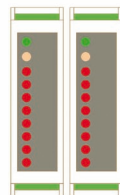
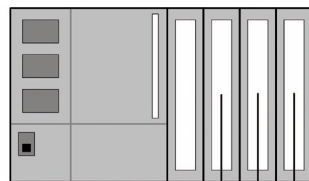
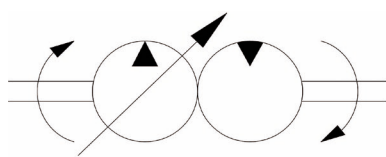
To adapt the very compact modules on the different application cases, depending on type of cable, distance of transmission and the speed requirements, the data transmission rate is adjustable by DIP-switches. The multiplexed transmission is carried out by digital telegrams coded with a checksum, ensuring the receiver module to safely recognize disturbed, faulty telegrams and reject them. On disturbance of the transmission the digital outputs are set to a defined state dependent on the configuration of the receiver basic module, either "last known valid state" or "all outputs set to 0".

The system consists of a transmitter and a receiver module. This enables unidirectional transmission of 8 messages, including up to 2 counting values with the basic devices.

If required the basic modules can be extended by an expansion module of 8 additional digital signals or by one analog signal. In the module front plate LED's are monitoring the status of the messages and also indicating the operation state of the system.

### ADVANTAGES

- Easy configuration via DIP Switches
- Compact Design, Safe Transmission
- Can be used in various applications
- Operation monitoring and status indication by LED
- Easy upgrade via expansion modules



PLC+  
Drive

Receiver

Two-Wire  
Cable

Cradle  
Transmitter

