

Accurate and profitable!!

Introduction

Positioning of cranes, hoists, concrete skippers and similar mobile apparatus is most of the time achieved by means of pendants, end switches or similar.

The **AKAPP Positioning system**, however, enables for mechanical handling on rail tracks **completely automated** positioning. Moreover, this is enabled at the ultimate possible speed and just by making use of the conductor system for the mobile power feed. Especially the AKAPP Multiconductor, for reason of its on a kit system based shape, is suitable to achieve this combination of positioning and power feed.

Technical information

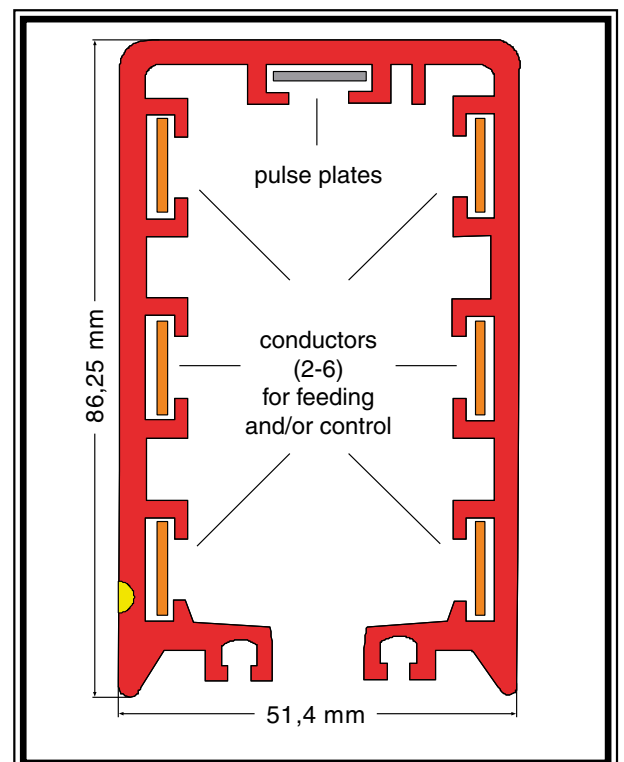
The top slot of the Multiconductor housing (having as standard 7 slots) is, instead of the usually at jobsite inserted continuous copper strip, foreseen with alternating little plastic and steel plates (each of 25 mm length), always at the same distance and thus forming a sort of encoder. The remaining 6 slots will at the mounting procedure be used for the required number and size of copper strips for the power feed and control of the vehicle.

Beside the mobile apparatus and inside the conductor housing, next to the required collector for power feed and signal transmission, a second trolley is foreseen. However, instead of carbons it is equipped with 2 sensors.

These sensors are during passage “counting” the pulse of each metal plate, thus realizing that the exact position of the vehicle is all the time spotted and signaled. The counting pulses are transferred to a two-direction-counter at the PLC for control of the moving apparatus.

In case this control unit is separated from the vehicle, the counting signals are sent via the normal collector trolley with carbons through 3 of the copper strips inside the Multiconductor system.

The counter can at the same time “see” whether the movement is forward or backward because of having 2 sensors and their position in relation to the metal plates. The commands concerning the required movement of the vehicle are effectuated by switching the power feed or by using a 2-wire data transmission system, a so-called multiplexer.

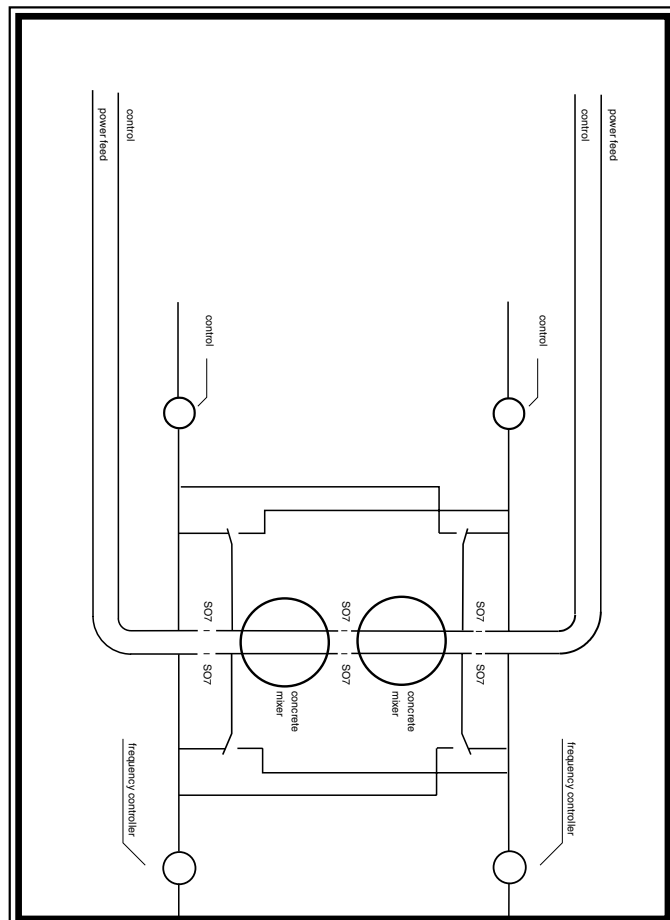


A very accurate positioning system indeed, enabling an optimum handling speed and at very reasonable cost.

Two production machines of concrete prefabrications are each progressively moving along their manufacturing track with a speed of 0,5 to 3 m per min.

For their production of the prefabricated sections, they need a continuous supply of liquid concrete. Each machine is served by one "skipper" container to take care of this continuous supply of concrete to the "master" production machine. The travel speed is up to **200 m/min**.

The skippers as well as the production machine are both independently moving at interchanging positions from and to each other.



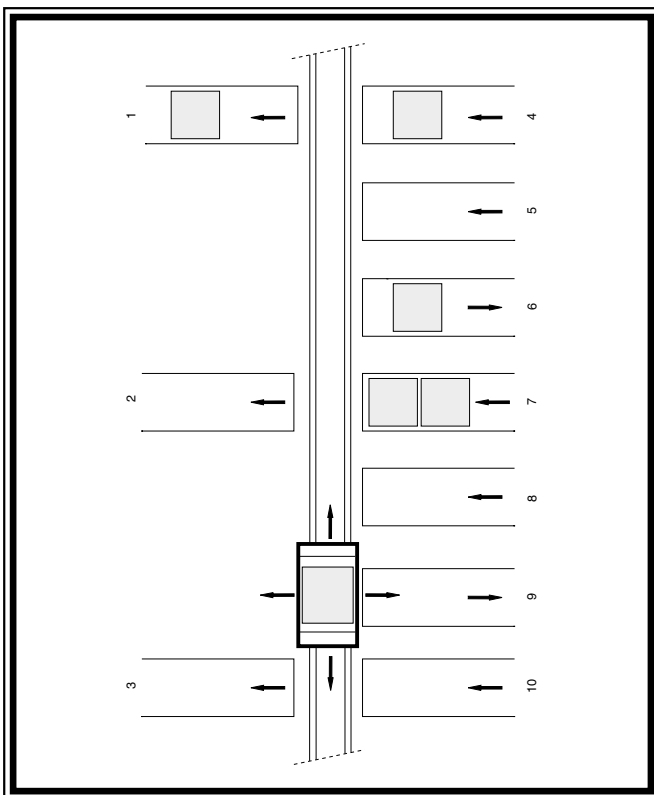
By means of the above explained kind of encoder inside the top of the conductor housing and the transmission of these pulse signals via the carbons of a collector trolley through the continuous conductor strips, the production machine and the skippers "know" exactly from each other where they are.

The continuous handling of the concrete from the central concrete production and filler to the production machine is perfectly automated and trouble free under control.

In this particular case the power feed rail is separated from the positioning rail (holding the internal encoder and data transmission) because of the number of required conductors.

In a production hall for cardboard boxes as many as 10 machines and 10 conveyors are leading to the transferbay. A transfer cart collects the pallets with plane boxes and transports them to one of the warehouses or forwarding department. All in a schedule of 16 hours per day.

The cart driver has a very boring but nevertheless accurate job to do. He looks for conveyors which carry a ready pallet, stops within a tolerance of 25 mm and transfers the pallet to his cart. He has to notice the sort of boxes and brings the cart to a predefined station for that particular kind of boxes. There he has to position again in order to unload the pallet. It is an all day long operation.



Mistakes, emergency stops a.s.o. cause loss of time and sometimes there is even damage to the newly produced boxes. To overcome those disadvantages Wabtec Netherlands installed a Multiconductor (replacing a festoon system) with the positioning encoder inside. The cart is equipped with a PLC, whereas every conveyor has a photo-electric sensor to indicate the arrival or presence of a pallet.

These sensors are wired to a central switch board with a multiplexer, which is giving the signals to the transfer cart. The cart is enabled to travel to the conveyor with appropriate speed and will be positioning without overshoot within the limits.

The pallet is transferred automatically and the cart moves to the preset destination where the pallet is to be unloaded.

This system saves 2 men on the payroll, but functions moreover in a much quicker and accurate way, whereas a lot of trouble and damage is prevented.

The powerfeed + pulse rail + the 2-wire datatransmission are all in one single AKAPP Multiconductor housing!

AKAPP - STEMMANN: Flexible with energy!



AKAPP-STEMMANN is a market leader with our made to order conductor bar systems. We offer you the best possible solution for almost any application in whatever the circumstances. We welcome your inquiries!



Our festoon systems offer the most flexible solutions for transporting flat or round cables and hoses. A wide variety of profiles and components guarantees reliable installations, adapted to the environment.



The AKAPP products are designed by the highest standards and are certified by UL, CCC and CE.

More information on our products can be found in our brochures, which we are happy to send you on request. Or visit our website www.akapp.com, where you can find more relevant information, download brochures and make online inquiries; fast and easy!