



POSITIONING OF BRIDGE CRANE on both axis X & Y

CUSTOMER BENEFITS AND GAIN DECISIVE ADVANTAGES

Ø SAFETY

§ Increased safety for people, materials and equipments

Ø INCREASED PRODUCTIVITY

§ Shorter cycle times

§ Faster operations

Ø RELIABILITY

§ Specific design and ruggedness for severe environments

§ Easy installation

Ø AVAILABILITY

§ Lower maintenance cost and time as a result of less wear and tear on crane's structure

Ø EFFICIENCY / ACCURACY

§ Accurate positioning

§ Ambient light immunity

Ø HIGHER QUALITY

§ Guaranteed Quality Assurance

§ Reduced Customer non conformity and material damage

This note describes how to centre an OHBC trolley
on a fixed point for automatic coil picking-up.

Coils are stored in a range of berths aligned in lanes.

Two SPICA sensors detect reflective and coded targets on the OHBCs beams on both axis X and Y. These targets are installed on bridge beam and on trolley beam.

Targets are adhesive painted paper using a special bars code stencil set to identify each reflective target. Sensor has been developed to see reflective targets on 70% of its field of vision.

Targets are 200 mm long.

One SPICA sensor is fixed on the trolley looking the bridge crane beam and one other sensor is fixed on the bridge crane itself looking the travelling beam. SPICA reads the various codes and moreover it evaluates the centering of the target in its field. It thus ensures a precise positioning of the bridge compared to these targets.

Therefore, the bridge crane could stop exactly on the centre of berths dedicated to receive the coils if the targets were previously installed in each line and column of the storage area.

Data are interfaceable with a PLC and allow knowing the exact X & Y position of the bridge crane as soon as it arrives in front of the target.

This makes possible to check the absolute position, on contrary to the positioning with encoders which can be the subject of slip errors.

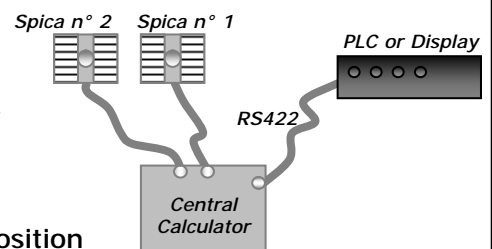
Positioning is done in full safety for operators working in the neighborhoods and without risk of bad positioning, thus avoiding any damaging hazards.

INSTALLATION

The first sensor is fixed on the trolley looking the trolley girder where targets are stuck.

The second sensor is fixed on the bridge crane looking the girder supporting the crane ; targets are stuck on this girder too.

A calculator centralizes the measures and generates information of position towards the bridge crane's PLC.



Connections

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ASSIGNMENT OF X AND Y MATRIX ON THE WAREHOUSE

Reflective targets are installed on assigned girder of the crane. Each position has a different code.

Central calculator verifies permanently the codes received from the sensors and checks the crane position on both axis X and Y.

TECHNICAL DATA

Target sizes : 200 mm * 200 mm

Number of target for positioning : 99 on each side.

Distance between sensor and targets : 900 mm to 1 200 mm

Bridge crane max. speed : 120 m/min.

Cycle 1 2 3 4 5 6 7 8 9 10



Example of coded target

Bit	Start	1	2	3	4	5	6	P1P2	Stop
Value		2 ⁰	2 ¹	2 ²	2 ³	2 ⁴	2 ⁵		

SENSOR WIRING

SPICA calculator is interfaced with the bridge crane's PLC to stop the bridge crane automatically on the right position through a RS422 serial cable.

RS422 protocol has been developed by Arck Sensor to have an easy codification and a fast transfer.

SERVICES

- On site Installation.
- Definition of targets with the users.
- Maintenance training.
- After-sales service.

REQUIRED MATERIAL

Two sensors SPICA : Ref. SOS38-XY

One calculator : Ref. SPC60-XY



SPICA sensor



Calculator

