A shaft encoder is to be used with a 50 mm radius tracking wheel to monitor linear displacement. If the encoder produces 256 pulses per revolution, what will be the number of pulses produced by a linear displacement of 200 mm?

There are 162 pulses produced in all.

Explanation:

provide information

diameter of 50 mm.

256 pulses are generated by the encoder for each rotation.

a linear displacement of 200 mm

solution

First, we look at the roll shaft encoder on a level, non-slip surface.

In terms of circumference, we've arrived.

 circumference, 2 r.

Circumference = 2\*3.14\* 50

a 314.16 mm circumference.

We now have the total number of pulses generated.

Number of pulses produced is equal to the product of the linear displacement and the radius.

The quantity of pulses generated is equal to 200/314.16\*256.

There are 162 pulses produced in all.