

(54) Title of the invention : SENSING SYSTEMS

No of Pages : 12

No of Claims : 5

(57) Abstract :

A displacement sensing system for linear motion guide device comprising - an elongate track rail having (i) tracks formed along a lengthwise direction and an operative configuration of the system; (ii) a plurality of grooves formed in the track rail parallel to the tracks of the track rail; - a slider block slidably engaged and guided by means of bearings on the tracks rail, adapted to move freely relative to the tracks of the track rail; - a plurality of elongated linear magnetic scales, each of said linear magnetic scales being respectively arranged in each of the grooves and magnetized with alternate north (N) and south (S) magnetic poles in a in the lengthwise direction of the tracks of the track rail; - a plurality of magnetic position sensors provided on the slider block in a substantially fixed gap relationship with said magnetic scales, at least one of the magnetic position sensors being provided for each of the linear scales; an electronic processing circuit mounted on said slider block connected to the plurality of said magnetic position sensors and providing a slider displacement signal output wherein the slider displacement output signal, produced by said electronic signal processing circuit, is the arithmetic mean of the positions detected by said plurality of magnetic position sensors.