

METHOD AND DEVICE FOR OPEN-LOOP/CLOSED-LOOP CONTROL OF AN ACTUATOR-DRIVEN ROBOT JOINT

ABSTRACT

The invention relates to a method and a device for the open-loop/closed-loop control of a robot joint that is driven by an electric motor, wherein said robot joint has a current sensor that comprises first sensor electronics for detecting a first operating current $i_{k,1}(t)$ of the electric motor, where $k = 1, 2, \dots$, a first position sensor for detecting a drive position $\theta_m(t)$ of a drive train of the robot joint, a second position sensor for detecting an output position $q(t)$ of an output train of the robot joint, and a first torque sensor for detecting a torque $\tau_{J,1}(t)$ in the output train, wherein the electric motor is controlled by open-loop/closed-loop control on the basis of a pre-determined target control variable $z_m(t)$. The proposed method comprises the following steps: Providing (101) the measured values $\theta_m(t), i_{k,1}(t), \tau_J(t), q(t)$; checking (102) for the presence of a fault by the first fault detector, which detects a fault when the measured values $\theta_m(t), i_{k,1}(t), \tau_J(t), q(t)$ and/or time derivatives thereof fail to satisfy first threshold values; and checking (103) for the presence of a fault with further fault detectors.

Fig 1.1