OMS Brake Control Circuits

The braking solenoid used by OMS is an OEM product manufactured exclusively for OMS. In order to monitor the function of the spring operated brake, each of the two braking levers function can be monitored indepentently by inductive proximity switches. Wear of the brake lining can be monitored, which is desirable in escalators with a start/stop configuration, which is often used in a public transportation environment.

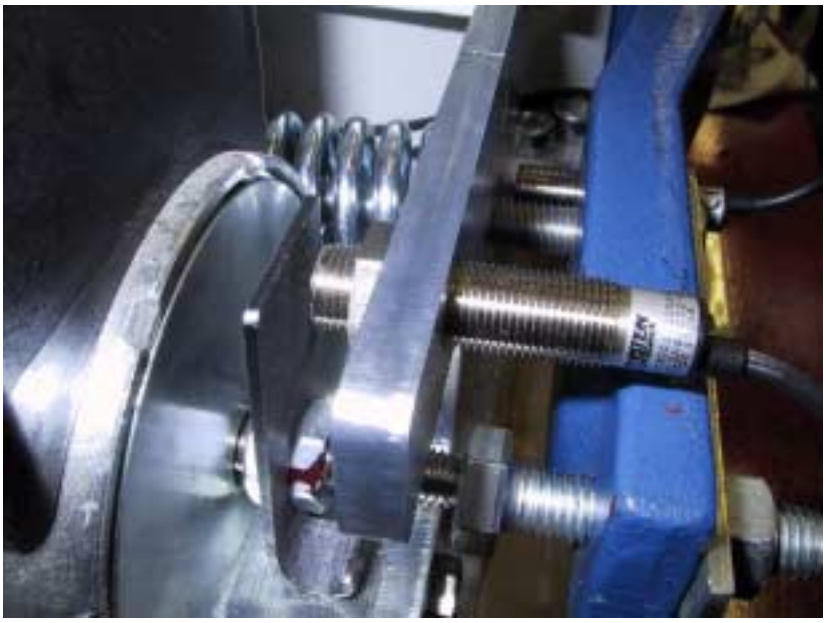
Brake Function Monitor:
For this purpose, a washer with a securing nut is fastened on each of the plungers of the braking solenoid. An inductive proximity switch detects the movement of each of the two plungers, which gives a feedback signal to the escalator main controller if the brake is open or closed (page 2, Pic. 1).

Brake Lining Wear Monitor:
Further, the position of the brake levers may be monitored in order to detect if the brake lining has reached it's minimum thickness due to wear (1mm) and should be replaced. For this purpose, an inductive proximity switch detects the "End of Life" position for each of the braking levers (page 2, Pic. 2).

Brake Lining Temperature Sensor:
In escalators for public transportation, the escalator most often is operated in a start/stop condition. In order to detect an over temperature condition of the brake lining, which may lead to brake fatigue, the temperature of the brake lining can be monitored by a PTC in the brake lining to give an early warning signal to the escalator controller.

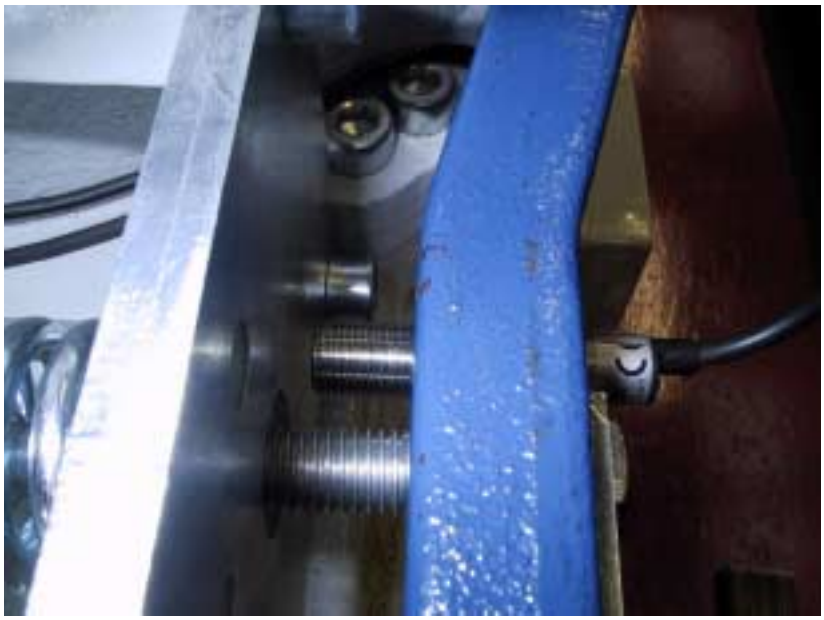
These Brake Control Circuits are available optionally from OMS at order time.

Brake Function Control



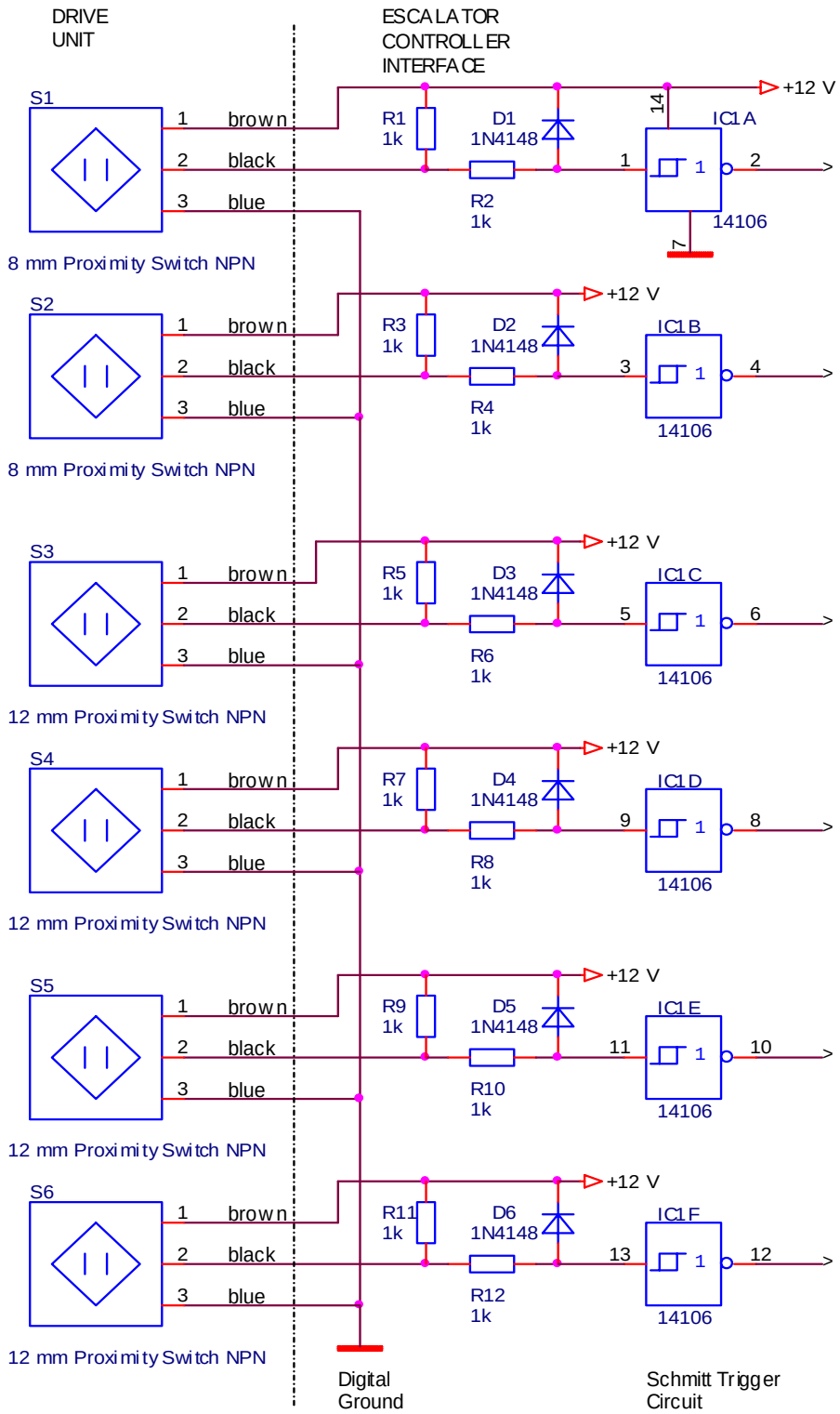
Pic. 1: showing one of the inductive proximity switches for the Brake Function Control

Brake Lining Wear Control



Pic. 2: showing the inductive proximity switch for the Brake Lining Wear control

Pic. 3: Schematic of sensors and suggested controller interface



S1, S2: Proximity Switches to detect speed (overspeed) and turning direction of drive unit with corresponding program on controller unit

OPTION

S3, S4: Proximity Switches for Brake Lining wear monitoring

OPTION

S5, S6: Proximity Switches for Brake Function monitoring