SPECIAL INFORMATION ABOUT SNAP-ACTION SWITCHES

SWITCHING RELIABILITY

Optimum switching reliability is achieved when the pretravel and overtravel are fully exploited so that these should be fully exploited in the concrete application. Another criterion is the contact force which depends in turn on the operating force. Switches with high contact forces should be chosen if possible.

BOUNCE TIME

The bounce time is the time between the first closing of the contacts (switch-on signal) and the last time the contact resistance drops below a given threshold value. The values are typically below 5 ms at typical actuation speeds of approximately 10 mm/s.

SWITCHING TIME / SWITCHING TRAVEL

Switching time/travel is the time or distance which the switching system requires to get from the first opening of the previously closed contacts to the first flow of current through the contacts closed after the snap-action. The respective operating position or release position must be exceeded reliably. Please ask about applications with very slow actuating speeds or applications in which the actuation of the switch is controlled by its switching process.

OPERATING FORCE-TRAVEL DIAGRAM
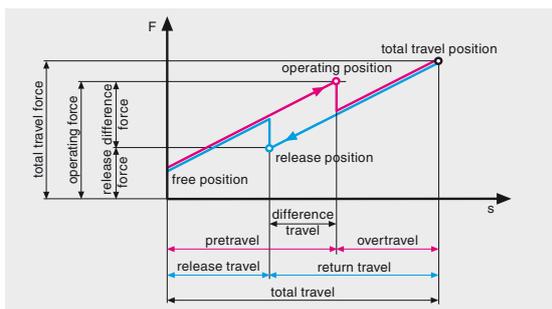
CONTACT FORCE-TRAVEL DIAGRAM
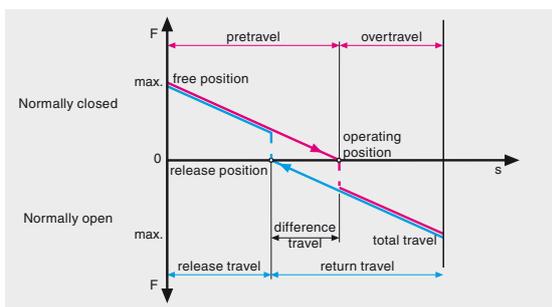
POSITIONS-FORCES-TRAVELS

Free position	Position of the actuator in which no external force is applied.
Operating position	Point on the actuator travel at which the snap mechanism is irreversibly set in operation.
Total travel position	Position of the actuator at the end of the permissible travel.
Release position	Point on the actuator travel at which the snap mechanism returns to its initial position.
Operating force	Force necessary on the actuator to move this from the free position over the operating position.
Release force	Force to which the operating force must be reduced for the snap mechanism to return to the initial position.
Difference force	Difference between operating force and release force.
Total travel force	Force necessary to keep the actuator in the permissible total travel position.
Pretravel	Distance between free position and operating position.
Overtravel	Distance between operating position and total travel position.
Return travel	Distance between total travel position and release position.
Release travel	Distance between release position and free position.
Difference travel	Distance between operating position and release position.
Total travel	Total of pretravel and overtravel or return and release travel.

The application conditions must be checked in advance for continuously actuated snap-action switches.