TECH BRIEF:
IP69 / IP69K RATED SAFETY DEVICES

**Electronic
Solenoid Interlocks**

Safety Sensors

**Emergency
Cable Pull**

**Safety Light
Curtains, Grids, Barriers**

**Joysticks, Pushbuttons,
E-Stops & Enclosures**

Ingress Protection ratings are established in IEC 60529 (Degrees of protection provided by enclosures), rating electrical equipment for ingress of dust and water under various conditions. Subsequently, the German standard DIN 40050-9, which evaluates road vehicles that are exposed to regular and intensive cleaning, created a special IP rating class: IP69K. It established the requirements to withstand high pressure (to 1450 PSI) and high temperature (to 176° F / 80° C) wash downs. The rating became popular because it also met the cleaning requirements of hygienic applications in food processing, pharmaceutical, and medical industries, as well as in marine and other outdoor areas. Recently, IEC 60529 was updated to include an IP69 rating, meeting the same requirements as IP69K.

IP69 devices are characterized by fully enclosed housings, with special sealing at transition points, where parts move, or where wiring enters the device enclosure. Since IP69 devices are often found in hygienic applications, they are also typically designed to hygienic design standards. This includes smooth surface contours to limit possible places for food and other particles to aggregate that might promote bacterial growth.


Application in hygienic environments also means these devices are exposed to various cleaning agents. These devices tend to be constructed of materials which stand up to most caustic cleaning solutions without degradation, thereby ensuring that a daily cleaning with harsh cleaners cannot harm the devices. Stainless steel V4A is a popular material. In this aspect, many of the Schmersal IP69 / IP69K devices also carry ECOLAB approval, allowing them to be used where industry approved cleaning agents are used.

Schmersal offers a variety of IP69 / IP69K safety devices, including solenoid interlocks, non-contact sensors, Emergency cable pulls, E-Stop buttons, safety light curtains and grids, and machine controls such as pushbuttons, selector switches, joysticks, and indicator lights.
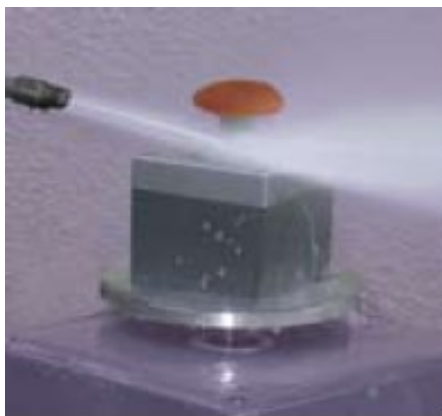
IP69K Test Measures

The IP69K test is designed to insure that the device is able to withstand high-pressure and steam cleaning: The test device sits on a turntable that rotates once every 12 seconds (5 rpm) while a nozzle mounted 10–15 cm away spays the device with water heated to 80°C (176°F) and pressurized to 80 – 100 bar with a flow rate of 14–16 Liters per min. The test is run with the nozzle at angles of 0° (horizontal), 30°, 60° and 90° (vertical) for 30 seconds each.
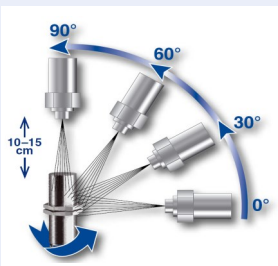
PRODUCTS

Electronic Solenoid Lock
AZM300 [E]
AZM40

Coded Magnet Safety Sensor
BNS16
BNS40S *

Electronic Safety Sensor
CSS30S *
RSS36 ST [E]

Emergency Cable pull
ZQ901 *

Emergency Stop button
HDRZ40-BL-RT-GB * [H] [E]

Safety Light Curtains, Grids, Barriers
SLB440-ER-1-LST-1047
SLB440-ER-1-LST-1049
SLC440COM + PH-COM4-ER-xx
SLG440COM + PH-COM4-ER-xx
SLC440 + PH-440-ER-xx
SLC440 + SH-440-ER-xx * [E]
SLG440 + PH-440-ER-xx
SLG440 + SH-440-ER-xx * [E]
SLC445 + SH-445-ER-xx * [E]
SLG445 + SH-445-ER-xx * [E]

Joysticks
RK [E]   NK [E]

Controls
N series pushbuttons [E]
H series pushbuttons * [H] [E]

Pushbutton enclosure
NBGLC *

Additional approvals/features
*   Stainless Steel
[E]   ECOLAB approved
[H]   DGUV certified hygienic

SCHMERSAL
THE DNA OF SAFETY