

# THE GATEKEEPER<sup>SM</sup>

MAN-MACHINE SAFEGARDING NEWS FROM **SCHMERSAL**  
Turning Workplaces into SafePlaces®

FALL 2009

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## REFERENCE



**GK-1 Catalog**  
9th Edition

424 pages

Our main catalog containing technical data sheets for all products. It contains a new section on Pulse-Echo switches as well as a safety tutorial handbook and reference section.

View the GK-1 catalog online:  
[www.schmersalusa.com](http://www.schmersalusa.com).



**GK-C Catalog**  
2nd Edition

12 pages

View the catalog online:  
[www.schmersalusa.com](http://www.schmersalusa.com)

## Ingress Protection Ratings: IP69K

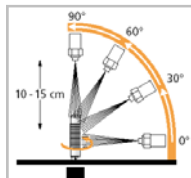
Environmental conditions such as dust and moisture dramatically affect switch performance and longevity. When switch manufacturers started to make claims that their electrical products were “waterproof”, the International Electrotechnical Commission, or IEC, took notice. This not-for-profit, non-governmental, international standards organization which prepares and publishes international standards for electrical, electronic and related technologies, set about to quantify a rating system for ingress protection and provide testing standards for electrical enclosures against the intrusion of elements from the outside environment.



The result is IEC 60529, which establishes IP Ratings. The rating is coded with the letters IP followed by two digits and occasionally a letter: The first digit represents the level of protection against solid objects, rated 1 (hands or fingers) through 6 (fine dust); The second digit represents the level of protection against liquids, rated 1 (falling water) through 8 (submersion).

### IP69K

It was found that the highest rating of IP68 was still not sufficient in applications that were regularly exposed to high-pressure or high-temperature wash downs which are common with the cleaning of food processing equipment and road vehicles. Therefore a special IP rating, IP69K, was created by the German standard DIN 40050-9 to test equipment that required this regular and intensive cleaning.



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 sprays 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.

## IP69K Rated Products

Schmersal offers an ever increasing range of products designed to be dust tight and withstand the harsh conditions of high-pressure and high temperature wash downs:

### Stainless Steel Coded-Magnet Safety Sensor

#### BNS33S



We now offer a version of our popular non-contact coded-magnet sensor with a stainless steel body and an IP69K rating. The sensor contains multiple reed switches that will only close in the presence of the matched magnetic field array of the coded-magnet actuator (BPS33S). This unit is ideal for use on movable machine guards in hostile environments. **More ▶**

### Stainless Steel Pulse-Echo Based Safety Sensor

#### CSS30S



This safety rated sensor uses Pulse-echo technology - the sensor evaluates its distance to the actuator by exciting the actuator at a predetermined resonant frequency and then reading back the actuator oscillation. The sensor also provides continuous internal function tests and monitors the safety outputs, thereby allowing a number of units to be wired in series while maintaining control category 4 and SIL 3 requirements. The 30mm diameter stainless steel body and IP69K rating make this unit ideal for food processing applications. **More ▶**

Continued next page...

## REFERENCE

NEW!



### Optoelectronic Safety Systems

48 pages

A supplement to our main catalog containing technical data sheets for Safety Light Barriers and our newly introduced SLC220, SLC420, and SLC430 Series of Safety Light Curtains and Grids.

View the catalog online:  
[www.schmersalusa.com](http://www.schmersalusa.com).



### A New Approach to Machine Safety: EN ISO 13849-1

52 Pages

View the guide online:  
[www.schmersalusa.com](http://www.schmersalusa.com).

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### Safety Light Curtains and Grids



#### SLC/G 220-69 & SLC/G420-69

Our new line of Safety Light Curtains and Grids feature round housing profiles. The IP69K versions have the emitters and receiver units sealed into 60mm diameter clear plastic tubes which offer the protection without diminishing the range or function of the curtain or grid. The Type 2 and Type 4 Light Curtains are available in a variety of protection heights and resolutions. The Type 2 and Type 4 Light Grids have 2-, 3- or 4-beams. **More ►**

### Pushbuttons and Joysticks from Singular Controls



#### N Series Pushbuttons

Not only do these pushbuttons provide IP69K protection, they were specifically designed for extreme wash down applications: They have smooth surfaces and transitions that limit residue accumulation and are made from materials that are resistant to chemical cleansing agents. The line includes opaque and illuminated pushbuttons, mushroom buttons, selector knobs, indicator lights, and other control devices. **More ►**



#### K Series Joysticks

Singular Controls offers a series of joysticks with IP69K rated 2mm thick silicone sealing bellows. The panel mounted joysticks are 1-, 2- or 4-direction with spring-returned or maintained actuation. **More ►**

*Singular Controls* is a subsidiary of Schmersal Inc, focusing on automation controls and heavy duty switchgear.

## Innovations: Safety Pressure Mats

Safety pressure mats are used as perimeter guards around machinery with hazardous movement, such as wood processing machines, scissor lifts or punch presses. They provide a slip free surface that is highly resistant to chemicals such as acids, caustic solutions, oil, and gasoline.

The safety pressure mat consists of two separate current-carrying steel plates held apart by insulating strips. Applying pressure to the mat surface creates an electrical cross-wire short between the steel plates. The connected safety controller evaluates this signal and stops the hazardous movement.

Two new safety pressure mat series are now available from Schmersal:



#### SMS4

The SMS 4 series is connected to the floor by means of an aluminum profile and special corner sections. As a result of the beveled form of the profile, tripping hazards are avoided. The aluminum profile additionally serves as edge protection, when fork-lift trucks or other floor conveyors drive over the safety mats. The aluminum trim extends each edge by 62mm beyond the active area of the mat.



#### SMS5

The SMS 5 series features a ramp profile directly molded to the active surface of the safety mat. The ramp profile helps avoid tripping hazards and eliminates the need for the aluminum trim. Each edge of the mat is extended by 35mm beyond the active area.

Both series of mats are available in 6 standard sizes, but can be customized to individual application requirements - color, dimensions, or special shapes. They meet the requirements of control category 3 (EN 954-1) when used with an SRB 301HC Safety Controller. View the SMS4/5 Catalog Online: [www.schmersalusa.com/catalog\\_pdfs/SMS.pdf](http://www.schmersalusa.com/catalog_pdfs/SMS.pdf)

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