



The Service Company

Henkel-Ecolab GmbH & Co. OHG

P.O. Box 130406

D-40551 Düsseldorf

certifies that for

ifm electronic gmbh

Teichstraße 4

D-45127 Essen

material resistance tests

were performed with P3-topax 52, P3-clint KF and demineralized water as a zero valent factor. The material resistance of the tested sensors of the efector^m "T-series" as well as the cable materials of the M12 series for the food industry to the P3 products used in the test can be considered to be positive according to the cleaning procedure mentioned overleaf.

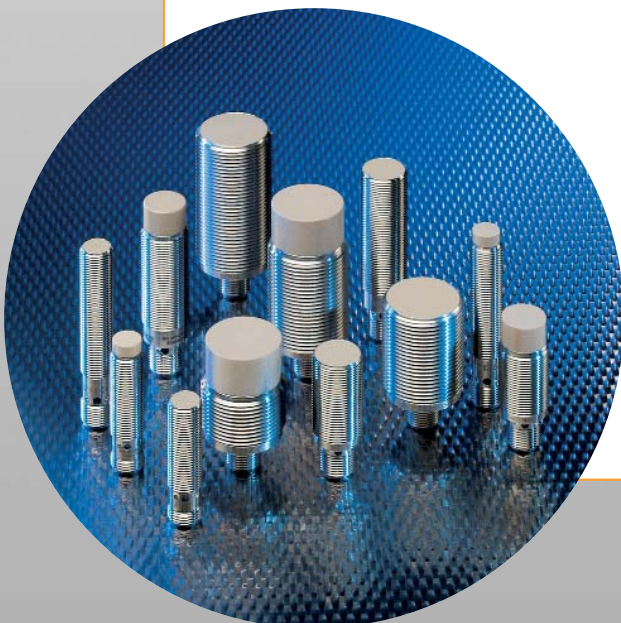
Düsseldorf, 11 August 2000

i.A. T. Tyborski

A handwritten signature in blue ink, appearing to read 'T. Tyborski'.

i.V. R. Laaff

A handwritten signature in blue ink, appearing to read 'Reinhold Laaff'.





The Service Company

This certificate is based on

- documented test procedures (test no.: F & E/ P3-E Nr. 40-1) according to material resistance
- defined product descriptions
- customized cleaning procedure

Product description

- P3-topax 52:** Acid detergent for foam cleaning in food & beverage industries
- P3-clint KF:** Alkaline detergent for surface cleaning in food & beverage industries

Test procedure

Henkel-Ecolab-test F&E Nr. 40-1

Dipping test:

complete immersion in solutions

Test period: 28 days

Temperatures:

10h -10°C; 10h +40°C; 4 h for heating/cooling down (per day)

Analysis:

Gravimetric: mass difference in % visual judgement like swelling, embrittlement, discolouring compared to zero-valent factor (demineralized water)

Test report to ifm electronic dated 11 August 2000

Cleaning plan



Rinsing with water 40-50 °C

Rinsing with low pressure. Rinsing from top to bottom in the direction of the drains. Cleaning of the drains.



Foaming

alkaline: **P3-clint KF** 2-4%
 acid: **P3-topax 52** 2%
 Temperature: cold up to 40 °C



Contact time

A contact time of 15 minutes is recommended.



Rinsing with water 40-50 °C

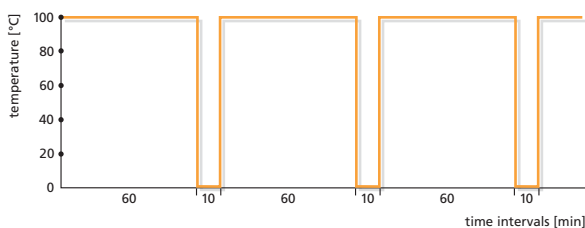
Rinsing from top to bottom with low pressure.



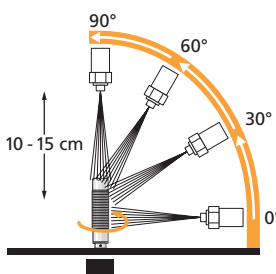
The partner in the food industry

Test procedures for efector_m "T-series" according to factory standards

Temperature shock test with water



IP 69 K test acc. DIN 40050 part 9
 30 seconds cycles
 14 - 16 liter per minute
 water 80 °C

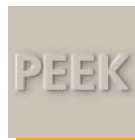


efector_m incorporates a zero-leak design. The efector_m washdown switches were tested in accordance with the IP 69K standard. The goal of this test is to duplicate pressure cleaning conditions on a plant floor. In the test fixture, the switches were exposed to a 80 - 100 bar spray of water at a temperature of 80 °C. The duration of each cleaning cycle was 30 seconds. The test was performed at specified angles for a spray nozzle located at a distance of 10 - 15 cm from the switch.

Product specification efector_m "T-series"



Sealed against aggressive cleaning agents.
 IP 68 (1m/7 days)
 IP 69 K



PEEK plastic, temperature resistant, food-grade, resistant to chemicals and specially suited for applications in the food industry.



Reinforced housing.
 316L
 Connector with gold contacts.



Shock test with water as test medium specially suited for hygienic applications in the pharmaceutical and food industries.
 60 minutes in 100 °C boiling water and then 10 minutes in 0 °C. Passed successfully in more than 50 cycles.



Shock resistant 500 g (5 shocks)
 Vibration resistant 40 g (10...2000 Hz)