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**COMPARATIVE STUDY – HYGIENE ASSESSMENT OF
DANFOSS RAX RADIATOR THERMOSTATS**

Hygiene Nord GmbH, commissioned by Danfoss GmbH, Offenbach, conducted practice-related investigations into the suitability of Danfoss sensors for use in radiator installations in patient-related areas in healthcare institutions in the period from October 2005 to December 2005.

In a comparative study, the current RAX sensor in its 'Chrome' and 'White' versions was tested along with the RAW sensor and the old RAV and RAVL sensors. The purpose of the investigations was to establish whether the thermostat valves demonstrate different properties in respect of disinfectability.

Requirements and criteria

For the application in patient-related areas, the following special requirements were essentially examined:

- Physical accessibility of the thermostat for cleaning and disinfection procedures
- Predominantly smooth, coherently closed surfaces and structures
- Quality of disinfectability following defined contamination with test organisms
- Integrity of surfaces following the use of disinfectants in the test procedure

Summary evaluation

The sensors for use in radiator installations were investigated on the basis of the aforementioned criteria with respect to disinfectability following contamination with test organisms. Two different disinfectants commonly used in hospitals were used, as well as fully demineralised water.

The investigations showed that the RAV and RAVL sensors were not disinfectable with simple wipe disinfection, for which reason their replacement in patient-related, sensitive areas would be recommended. The RAW sensor showed marginal differences compared with the RAX sensor in regard to the effectiveness of the disinfectants applied, which are however likely to be of little significance in practical use.

The Danfoss RAX sensors for thermostatic radiator valves in their "Chrome" and "White" versions were judged as positive without reservations in respect to the aforementioned criteria. The disinfection of the sensors contaminated with test organisms led to an almost complete reduction of the test organisms of very high quality ($\geq 99.99\%$).

In respect of the anticipated microbial loads, the Danfoss RAX sensors therefore comply with the hygiene requirements set for installation in patient-related areas of healthcare institutions.

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