



Water preparation for dialysis



GS1000 and GTF102 as a unit



GS1000



GTF102

Lauer Membran Wassertechnik GmbH is a company of the B. Braun Avitum AG group, a system provider of extracorporeal blood treatment units (dialysis machines). With the technology from Lauer, the corporate group is a complete provider of dialysis water preparation systems. Our products have been successfully used by Lauer with continuous reliability for over 15 years.

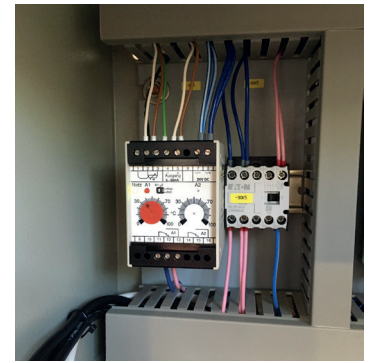
The challenge

Tap water must be prepared in order to be used as dialysis water. Bacteria, salts and other substances, such as calcium, which can partly improve the quality of drinking water, pose a danger to the dialysis patient. Therefore, the water must go through a special filtration process, a reverse osmosis. Beyond the preparation of water, there is another important parameter: temperature. If temperatures are too low, most dialysis units can reheat without any problems. However, if the permeate, the processed water, is too hot, the process must always be shut down in order to avoid risks for the dialysis patient.

For this reason, the company required a precise and reliable solution that is only barely prone to errors. The equipment and their safety circuits for electrical safety must conform to DIN EN 1010 for laboratory devices or DIN EN 60601 and DIN EN 60601-1-2 for electromagnetic compatibility (EMC) for medical products.

In addition, Lauer's preparation equipment is subject to risk class II b for medical products. Like all medical products, an initial error of an individual assembly or the overall system must never lead to a dangerous situation for users, patients or third parties.

An additional requirement on the equipment is internal monitoring of the measured temperatures, not only in case of a fault, but also during regular operation. In addition to our measuring and switching system consisting of GTF102 and GS1000, an additional independent temperature measurement recording is needed, which compares its results with ours. Therefore, along with the software safety circuit, a second safety circuit consisting of GTF102 and GS1000 is integrated. It constitutes a hardware chain that safely shuts down the system independently of the software system. The control function of this calibration prevents the patient from being put at risk due to measurement inaccuracies or errors in the control system.



GS1000 in the switch cabinet

Our solution

Our healthcare system provides medical supplies for the people. Our standards for medical instruments are thus very high and for good reason. Our GTF 102 temperature sensor measures temperature reliably with an accuracy of up to 0.03 %. If the temperature of the permeate is too high, the reliable sensor immediately indicates this to our GS 1000 safety switch, which immediately initiates a safe shut-down of the process after receiving the signal. The unit consisting of the two devices thus ensures the safety of the dialysis patient.



BENEFITS:

- o The independent measuring chain, consisting of GTF 102 and GS 1000, enables single-channel temperature measurement by means of the medical product software. If there is a fault in a measuring chain, the safety functions are guaranteed by the remaining independent measuring chain. That makes validation and development of additional systems more affordable.
- o Lauer Membran Wassertechnik GmbH reported almost no errors from our products during operation. This is thanks to the mature technology and expertise of GHM Messtechnik, which helps Lauer to save time and money.
- o With minimal downtimes for service, we help Lauer provide seamless medical supply for patients and users.

Focus on the customer

Since the introduction of our products 15 years ago, we have always met the expectations of Lauer Membran Wassertechnik GmbH. Our products work reliably, are long lasting and require only little maintenance. With introduction of our GTF 102 and GS 1000, the systems equipped with our products only have to be maintained once per year. As a result, there is hardly any expense or time spent for service for Lauer. Much more importantly, however, the patient is guaranteed higher availability of their vital dialysis unit.



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