# MEDIN MEDICAL INNOVATIONS GMBH

## Technology that saves lives

We make ideas flow.

bürkert
FLUID CONTROL SYSTEMS

# Reliable breathing assistance for premature infants

## COLLABORATION WITH MEDIN®

Medical Innovations GmbH – or medin® in short – is a Munich-based medical device manufacturer that develops and sells innovative CPAP systems for newborns and premature infants treated in intensive care units. The latest product development – medinCNT® – works without a compressor thanks to the built-in turbine. Since it only needs to be connected to an oxygen cylinder instead of a central gas supply, this independently-operating, compact device is transport friendly and thus ideal for mobile use. medin® has been working closely with Bürkert for many years. The result of this collaboration provides young patients with the best possible support for a good start in life.

### Innovation from medin® – with Bürkert at its heart

In some cases, the breathing of newborns needs to be supported through intensive medical provisions. If the young patient shows signs of natural spontaneous breathing, the application of CPAP is usually the therapy of choice. This abbreviation stands for Continuous Positive Airway Pressure, which maintains the functional residual capacity of premature and newborn babies without the need for intubation, while ensuring an optimum supply of oxygen and training the relevant muscles. Independently operating mobile systems are becoming increasingly popular in delivery rooms, ambulances and intensive care units. To address and tackle the considerable technical challenges, such as the precise recording and control of required gas volumes, medin® turned to the experts at Bürkert. The result of this joint development project is medinCNT®.

At the heart of these innovative ventilation devices is an electronic gas mixer which, thanks to ultra precise proportional valves, controls the oxygen concentration and the desired flow rate effectively and efficiently. The expert knowledge of the German medical device manufacturer in respiration technologies for intensive care scenarios was used by the engineers at Bürkert to create a compact system solution with a modular control block.

### A system design for more breathing space

A main challenge that needed to be addressed when developing the system solution for the new ventilation device was, for instance, the precise recording and control of the gas volumes, concentration and pressures required for the baby. Bürkert developed a modular system to meet all the requirements. The new gas mixer consists of a compact control block, the mixing and measuring equipment, fitted control electronics, valves and silencers. In addition, this system contains oxygen sensors, a pressure-relief valve and connecting threads for the air and oxygen inlet and for the outlet of the gas mixture.

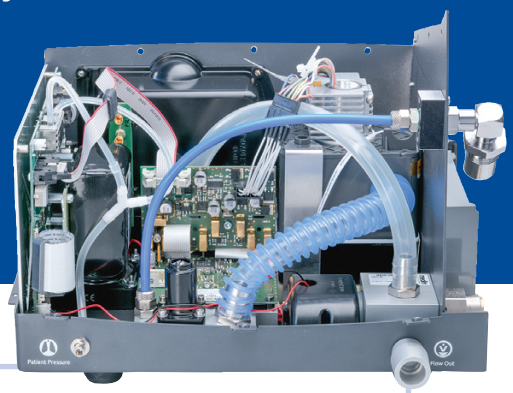
# Did you know?

**The latest generation of proportional valves from Bürkert works, in contrast to conventional valves, completely frictionless. This guarantees reliable operation of the gas mixer.**

## More precise than medical standards demand

The latest generation of Bürkert proportional valves offers frictionless operation, combined with fast response times, highly dynamic performance and high repeat accuracy of ± 0.25%. This ensures significantly less deviation from the set value in the gas mixture flow rate than the ΔQ ≤± 2% at 20 litres per minute currently demanded by law. The Bürkert solution therefore guarantees ideal therapy solutions delivered in the most efficient way to young patients, making sure their lungs receive the best possible support for a good start in life.

> “The well-balanced unit, consisting of Bürkert valves, sensors and electronics along with the corresponding software, controls the oxygen concentration and the desired flow rate effectively and efficiently.”
>
> Paul Schmitgen, technical and marketing manager at medin Medical Innovations GmbH



## How you benefit

### from our system competence ...

**Increased safety:**
The gas mixer meets the highest control accuracy demands of respiratory support for premature infants.

**Perfect interaction:**
Well-coordinated components guarantee reliable operation of the gas mixer.

**Precise gas control:**
The oxygen concentration and flow rate are controlled dynamically and extremely accurately.

**Modular design:**
The gas mixer can also be used in other respiratory solutions, for instance in emergency care.

**Bürkert Fluid Control Systems**
Christian-Bürkert-Straße 13–17
74653 Ingelfingen
Deutschland
Tel.: +49 7940 100
info@buerkert.de
www.buerkert.de

We make ideas flow.

bürkert
FLUID CONTROL SYSTEMS