ariste health

Restoring Quality of Life Through Innovative Product Solutions

Advanced Neuromonitoring Solutions

raumedic

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Measuring Catheters

Important parameters measured with high-precision microchip catheters

- ICP(intracranial pressure)
- ICT(intracranial temperature)
- $P_{ti}O_2$(oxygen partial pressure in the brain tissue)

The multi-modal neuromonitoring performed with the measuring catheter in the field of neurosurgery enables early recognition of potential cerebral injury.

ICP is measured using semiconductor pressure sensors.

The quenching process of fluorescence is used to measure $P_{ti}O_2$.

Consequently, the level and changes in the parameters are measured safely, quickly and accurately.

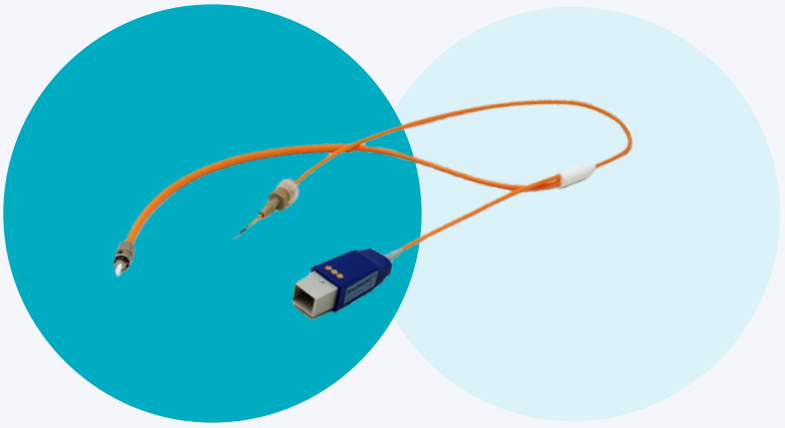
Parenchymal Catheters

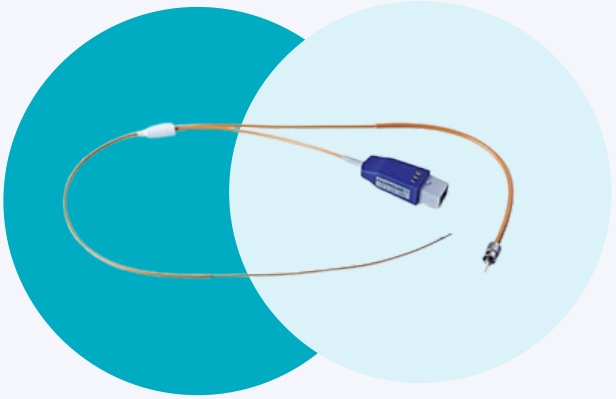
NEUROVENT precision pressure catheters are used in neurosurgical procedures for the reliable measurement of:

- ICP (Intracranial Pressure)
- ICT (Intracranial Temperature)
- $P_{ti}O_2$ (Partial Pressure of Oxygen in the brain tissue)

NEUROVENT-PTO

Bolting



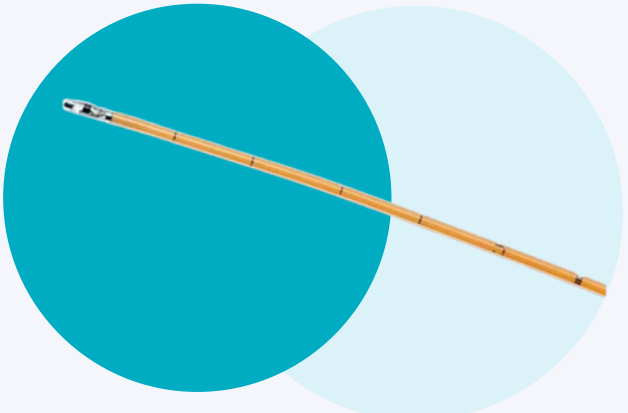


NEUROVENT-PTO 2L

Craniotomies/Tunneling

NEUROVENT-P/PX

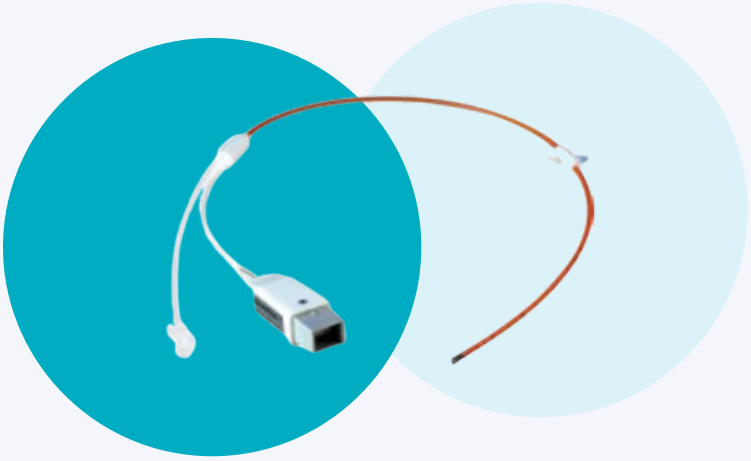
Parenchymal placement for ICP monitoring only
Diameter: 5F
Length: 55 cm

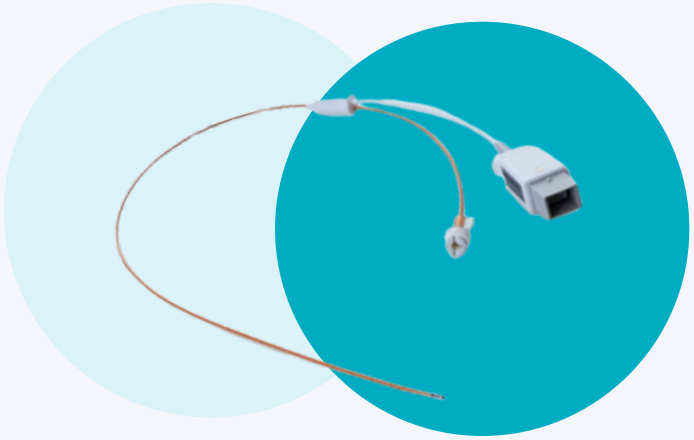


Ventricular Catheters

NEUROVENT

Diameter: 9F
Length: 38 cm



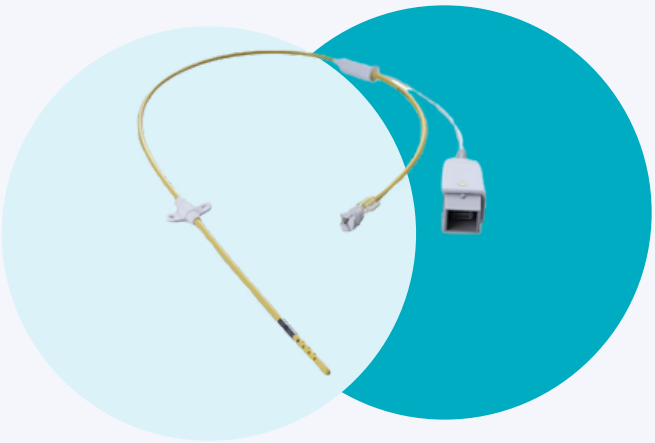


NEUROVENT-6F

Diameter: 6F
Length: 38 cm

NEUROVENT-Sleeve Housing

Unique catheter offering CSF drainage in the ventricles and ICP monitoring in the parenchyma

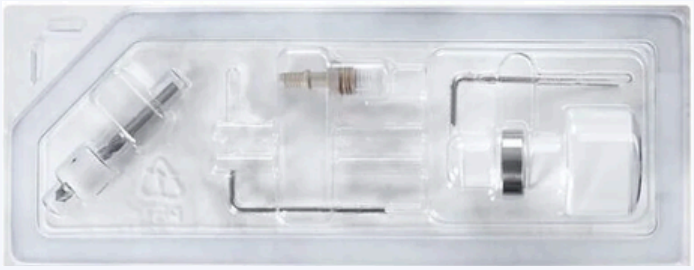


Accessories

A range of accessories is provided for the application of the NEUROVENT catheters and monitors.

Application and positioning of catheters

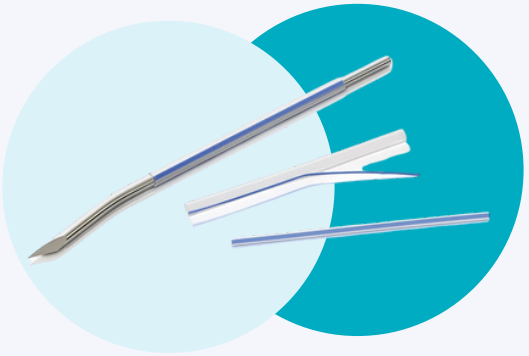
BOLT-DRILL KIT



The BOLT-DRILL KIT is a set of single-use sterile items designed to create access and provide secure fixation for NEUROVENT catheters on the skull of a patient. It consists of a Bolt and a Drill.

SPLICEABLE TUNNELING SLEEVE

The Spliceable Tunneling Sleeve is an alternative for the secure positioning of the catheters. It allows for a tunnel to be created below the scalp, assisting in pulling the catheter through. The sleeve is then spliced and removed, leaving the catheter in place.



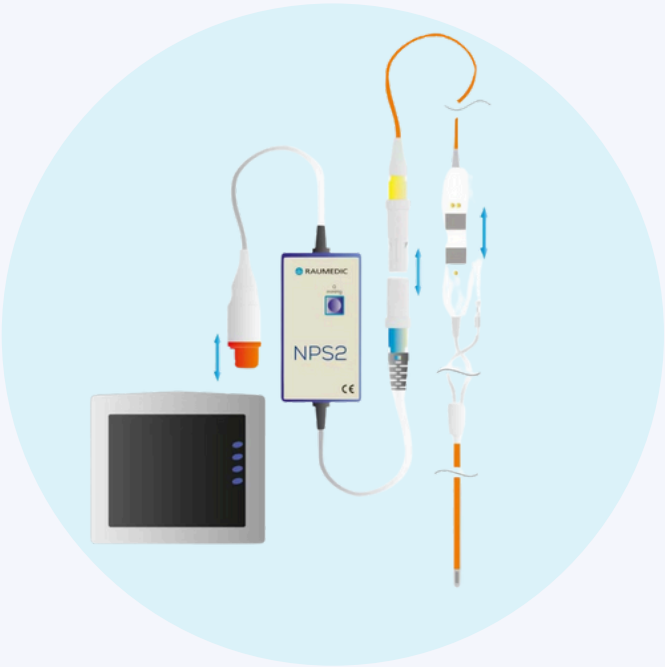
Tunneling Sleeve is available in two versions:
CH8 for parenchymal catheters and
CH12 for ventricular catheters and the NEUROVENT-PTO 2L.

RALK-Hand Drill

The RALK-Hand Drill is used for preparing the drill hole. It is autoclavable and can therefore be used multiple times. The drill bit size is selected to match the diameter of the catheters.

Monitoring Accessories - ICP

NPS2



The Zero-Point Simulator NPS2 is attached directly to the invasive blood pressure (IBP) port of the patient monitor. All RAUMEDIC catheters are calibrated in the manufacturing process and therefore are ready to use.
The Zero-Point Simulator NPS2 is used to transfer the ‘zero‘ to the patient monitor.

Advantages:

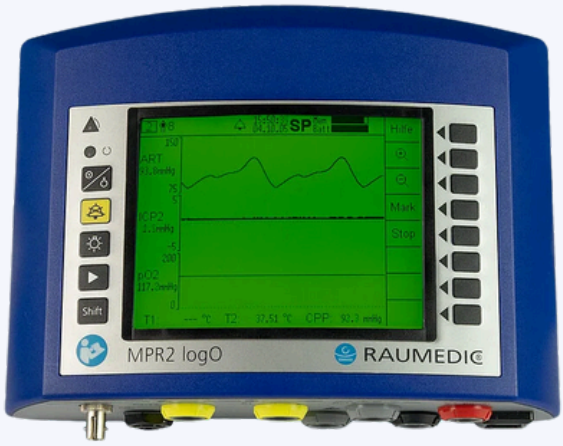
- Adapters available for all common patient monitors
- Direct connection to the patient monitor
- Plug-and-Play system - no catheter calibration required

NPS3

Transportation of critically ill patients with severe brain disease is linked to a considerable rate of complications. Therefore, monitoring of ICP during transport can often be crucial for positive patient outcomes. The NPS3 is a battery-operated device for continued portable pressure measurement during patient transports. The ICP-TEMP-Cable can quickly and easily be disconnected from the NPS2 and connected to NPS3.

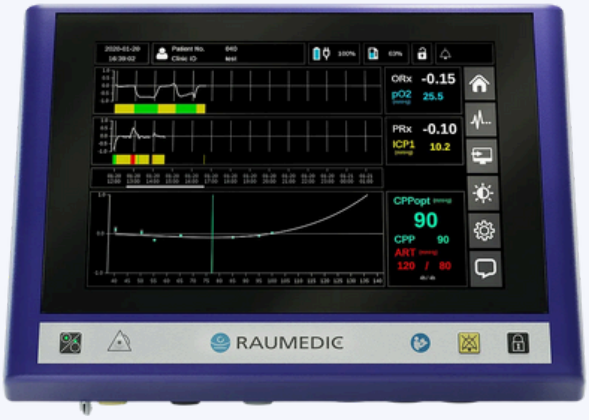
Devices for PTO Catheters

MPR2 LogO DATALOGGER



The MPR2 logO DATALOGGER can display, record and store the measured intracranial pressure (ICP), intracranial temperature (ICT), and oxygen partial pressure ($p_{ti}O_2$) data. The measured values can be transferred to the patient monitor via two analog outputs.

NEUROSMART



The RAUMEDIC NeuroSmart enables visualisation and storage of all three parameters. It is also ideal for calculating the pressure reactivity index (PRx), oxygen reactivity index (ORx), and optimal cerebral perfusion pressure (CPPopt).

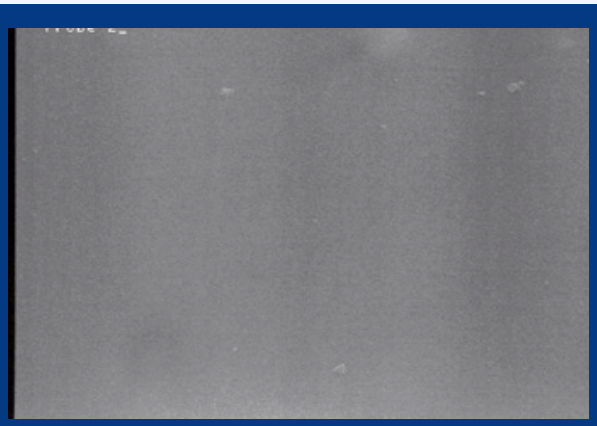
- Battery or mains operation
- Mobile use possible
- Can be connected to patient monitor

Clinical Advantages

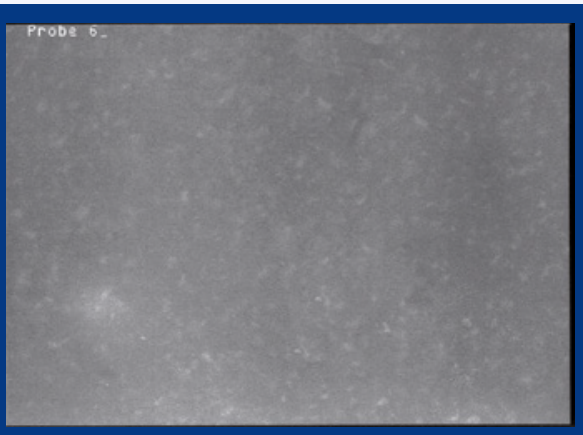
- Plug & Play system – no catheter calibration required
- Compatible with all standard patient monitors
- Excellent measurement stability and linearity
- MR conditional at 1,5 T and 3,0 T – no surgical intervention and disposition of the catheter required
- Monitor change without measurement loss of ICP is possible using zero point simulator (NPS2)
- Continuous monitoring of ICP during transportation with the NPS3
- No refrigeration of catheters

Comparison of Material Surfaces

RAUMEDIC ventricular catheters are made from polyurethane (PU) – compared to standard ventricular catheters that are typically made from silicone. The difference of the distinct catheters' surface structures becomes clear under a scanning electron microscope (SEM).



Surface of RAUMEDIC ventricular catheter, made from polyurethane (PU) (SEM image)



Surface of standard ventricular catheter, typically made from silicone (SEM image)