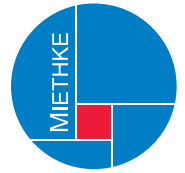


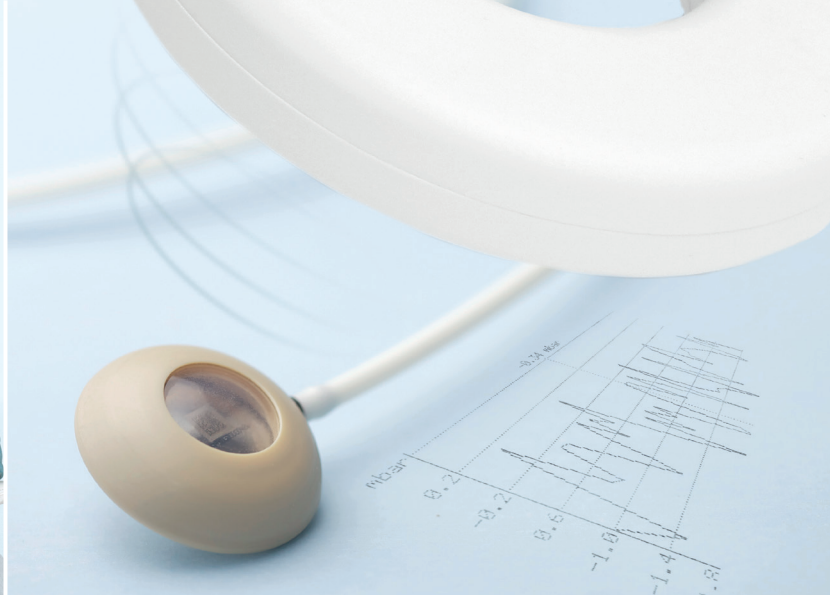
SENSOR RESERVOIR®

Telemetric Shunt Control – Reading Inner Values.



We understand the gravity of the situation.

Gravitational valves by Miethke



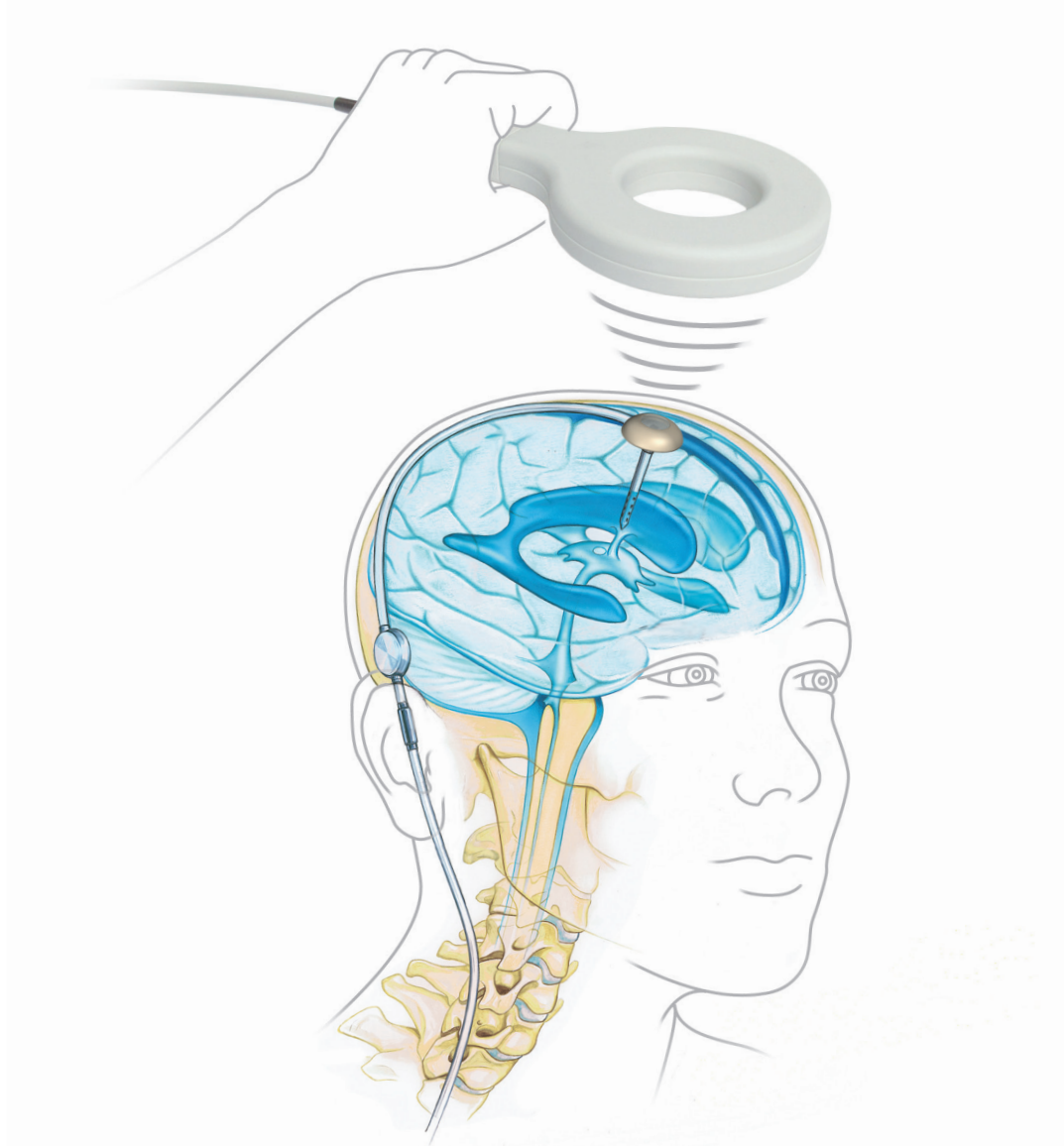
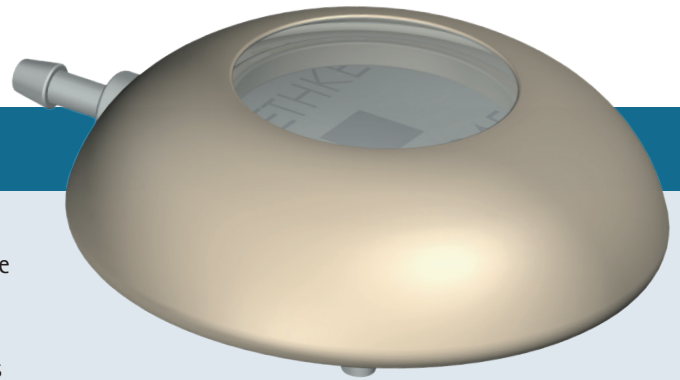
Aesculap Neurosurgery

SENSOR RESERVOIR®

Mode of operation

The Miethke *SENSOR RESERVOIR* is the first long-term implantable measuring cell for the measurement of pressures within a shunt system. It is integrated into a reservoir for a ventricular drainage system and transmits pressure values using telemetric methods, thus non-invasively, via a reader unit.

The *SENSOR RESERVOIR* allows, for the first time, the pressure in a shunt system to be measured and evaluated, and integrated into treatment options.



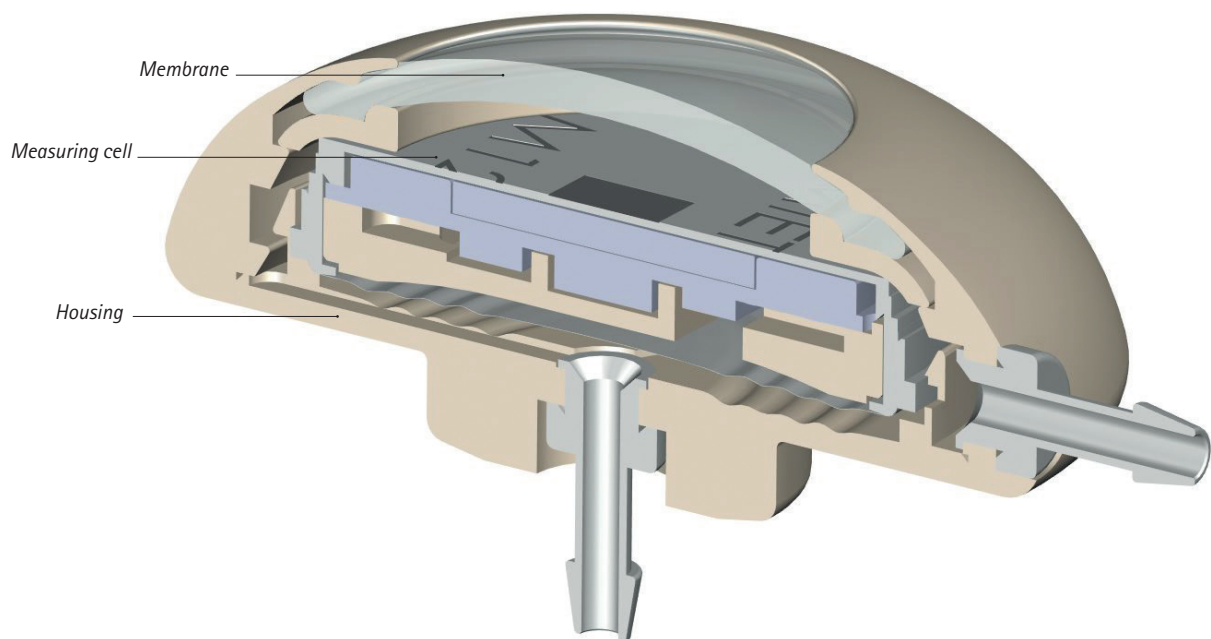
In addition to pressure measurement, the *SENSOR RESERVOIR* offers the same advantages as any other Aesculap-Miethke reservoir.

The reservoir membrane permits:

- the pressure measurement in the shuntsystem
- the injection of medication
- fluid removal
- valve inspections.

The measuring cell is protected from possible penetration by a titanium membrane.

Every *SENSOR RESERVOIR* is calibrated. The calibration data are stored on an associated SD card that is included with the reservoir.



SENSOR RESERVOIR® Reader

Mode of operation

The *SENSOR RESERVOIR Reader* is used to read and display the pressure in the reservoir using telemetric methods. The readings are automatically stored on an SD card and can be evaluated later.

The relative behavior of the CSF pressure in the shunt system can provide information about its function.

This permits the non-invasive detection, localization, and evaluation of occlusion in the shunt as well as mechanical loss of function of the shunt values.

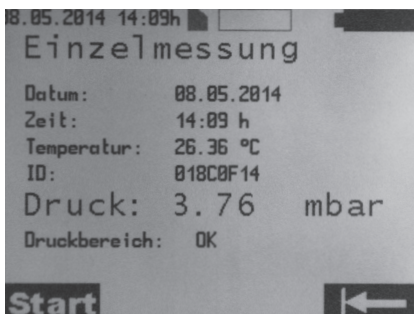
The measured pressure values can also be used to improve the configured opening pressure of adjustable shunt valves.



There are three measurement types that can be selected in the reader: Individual measurement, continuous measurement and quick measurement.

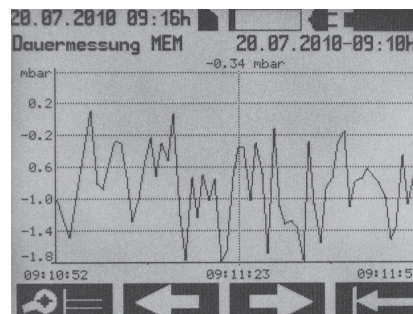
The data are stored by date and time on the SD card and can be evaluated on the reader or on a computer using Excel. The pressure curve is shown in a diagram both on the reader and in the Excel file.

Individual measurement



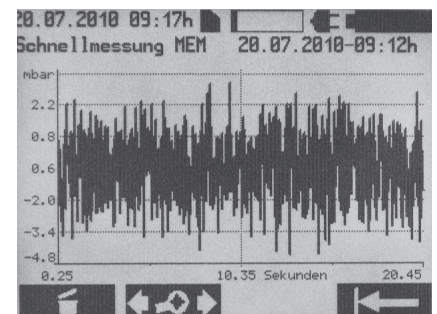
The individual measurement is a static measurement of the current pressure value and is displayed as a digital value averaged from 8 to 10 measurements. The unit of measurement can be selected in the settings.

Continuous measurement



In continuous measurement, the measured values are displayed sequentially as individual measurements in a curve over a configured measurement interval.

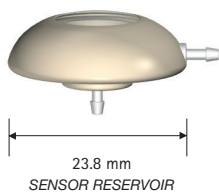
Quick measurement



The quick measurement is a sequence of non-averaged individual measured values at the maximum measurement rate available (about 40 measurements per second*) that can be shown sequentially as a curve.

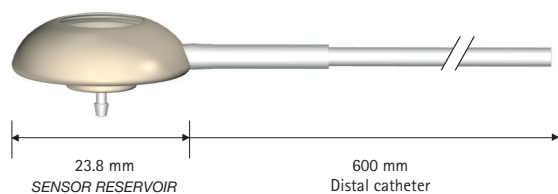
SENSOR RESERVOIR®

SENSOR RESERVOIR®



Art. no.	Product
FV911X	SENSOR RESERVOIR with SD card

SENSOR RESERVOIR® with distal catheter



SD card

Art. no.	Product
FV912X	<i>SENSOR RESERVOIR</i> with 600mm distal catheter and its SD card

SENSOR RESERVOIR® Reader

SENSOR RESERVOIR® Reader










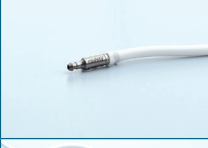

Art. no.	Product
FV905X	Reader for the <i>SENSOR RESERVOIR</i>

SD card for the SENSOR RESERVOIR®



Art. no.	Product
FV906X	SD memory card for telemetric shunt sensor, memory for calibration data, patient data and readings

Our shunt systems – your choice

Shunt system	Image	Description	Indication				Patient		Property		
			Adult HC	Pediatric HC	NPH	LP	active	lying	Gravitational unit	Feedback Mechanism	3-Tesla MR Conditional
<i>proSA</i> ®		Adjustable gravitational unit with differential pressure valve	✓	✓	✓		✓	✓	✓		✓
<i>proGAV</i> ®		Adjustable differential pressure valve with gravitational unit	✓	✓	✓		✓	✓	✓		✓
<i>proGAV 2.0</i> ®		Adjustable differential pressure valve with gravitational unit	✓	✓	✓		✓	✓	✓	✓	✓
<i>GAV</i> ®		Gravitational valve for the treatment of adult hydrocephalus	✓	✓	✓		✓		✓		✓
<i>paediGAV</i> ®		Gravitational valve for the treatment of pediatric hydrocephalus		✓			✓		✓		✓
<i>SHUNTASSISTANT</i> ®		Gravitational unit for integration into shunt systems to avoid over-drainage	✓	✓	✓		✓		✓		✓
<i>DUALSWITCH VALVE</i> ®		Gravitational valve with high flow volume for CSF	✓		✓	✓	✓		✓		✓
<i>miniNAV</i> ®		Differential pressure valve specifically for premature infants and newborns or non-mobile patients who are confined to bed	✓	✓			*	✓			✓
<i>Accessories</i>											

* in combination with *SHUNTASSISTANT*® or *proSA*®



We understand the
gravity of the situation.

Miethke Gravitational Valves

B | BRAUN
SHARING EXPERTISE

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