

The Schwarzer Cardiotek **evolution** represents the next generation of hemodynamic measuring systems.

The system comprises a **high-fidelity amplifier** for vital sign measurements that can be performed with ease through the **Smart Keyboard**, a dedicated element that facilitates the access to key functionalities, and a PC in uninterrupted operation (24/7).



Features Overview

'Zero footprint' design

As hospitals strive towards the most efficient and cost effective use models, many interventional lab spaces are expanding the range of procedures performed in the available lab spaces. This often requires new equipment, which may lead both the procedure and control rooms becoming cluttered working environments.

evolution is designed with the modern, modular cathlab in mind. The streamlined amplifier can be mounted at or under the patient table leaving the patient area uncluttered and unobstructed, while the PC is placed 'out of the way' in the server room, freeing up leg space in the control room, contributing to a more comfortable and efficient work environment.

Comprehensive Calculations

The evolution software can calculate pressure gradients, cardiac output, vascular resistance, valve opening areas, systemic and pulmonary flows with shunt calculation, body surface and more. Curve segments may be automatically or manually measured as desired. Pressure waveforms are reliably overlayed, even during an arrhythmia, enabling a smooth 'pullback' analysis.

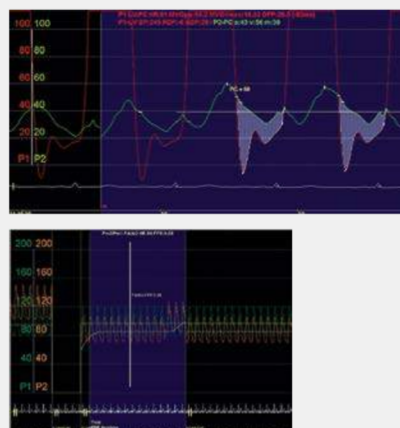
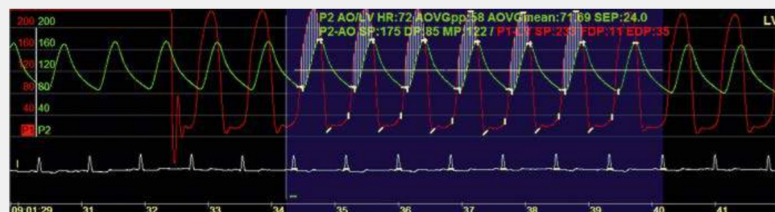
Intuitive Operation

- Combining the benefits of a digital display with the haptic feedback of a traditional keyboard, the Smart Keyboard offers an intuitive user interface to support a streamlined workflow.
- Commonly used functions, such as record, zero pressure, and measurement positions are all available via intuitive icons and a single key press.
- The Smart Keyboard enhances the systems intuitive software GUI and simple mouse controlled features, such as clicking and dragging for curve segment definition and automatic measurement.
- Additional digital layers enable expanded functionality and more measurement sites can be defined.

Standardized Interfaces

- Patient data to X-ray modality via DICOM WLM
- Transfer of dose information from X-ray via DICOM MPPS
- ASCII data transfer

Examples of signals



IT components



- 2 x 24" TFT monitors
- disinfectable keyboard
- disinfectable mouse
- 19" PC (64bit, Windows 10 IoT)

Smart Keyboard



- 4,3 inch LCD display
- 15 transparent keys with full haptic feedback
- coms via single cable
- configurable key assignment*

*Note: editing of the digital layers may only be performed by Schwarzer Cardiotek personnel or an approved affiliate.

Technical Data

Integrable Amplifier

Physical Specifications

Size	240 x 125 x 52 (mm)
Weight	920g

Surface ECGs

Number of Inputs	10
Sampling rate	500 Hz
Leads	I, II, III, aVL, aVR, aVF V1-V6
QRS amplitude	0.15 ... 10mV

Invasive blood pressure

Number of amplifiers	4 channels
Sampling rate	500 Hz
Display scales	10, 25, 50, 100, 200, 400 mmHg

Analog Outputs

Signal range	+/- 5 V
QRS trigger	1 - 25V; max delay 35 ms

Amplifier Options

Cardiac Output

Sampling rate	250 Hz
Resolution	0.01 l/min
Measurement method	Thermodilution and/or Fick

S_pO₂

Resolution	0 -100% measurement range 1%
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NiBP

SYS	25 to 290 mmHg
DIA	15 to 250 mmHg
Resolution	1 mmHg

Standards

EN 60601-1:2006 + A1:2013
EN IEC 60601-2-27:2014
EN IEC 60601-2-34:2014

Patient safety

Protection Class II, Applied Parts Type CF (according to IEC 60601-1)
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Certification

evolution natal is a combination of CE certified medical devices to form a medical system in accordance with Art. 22 MDR.

Note: Content may be subject to change