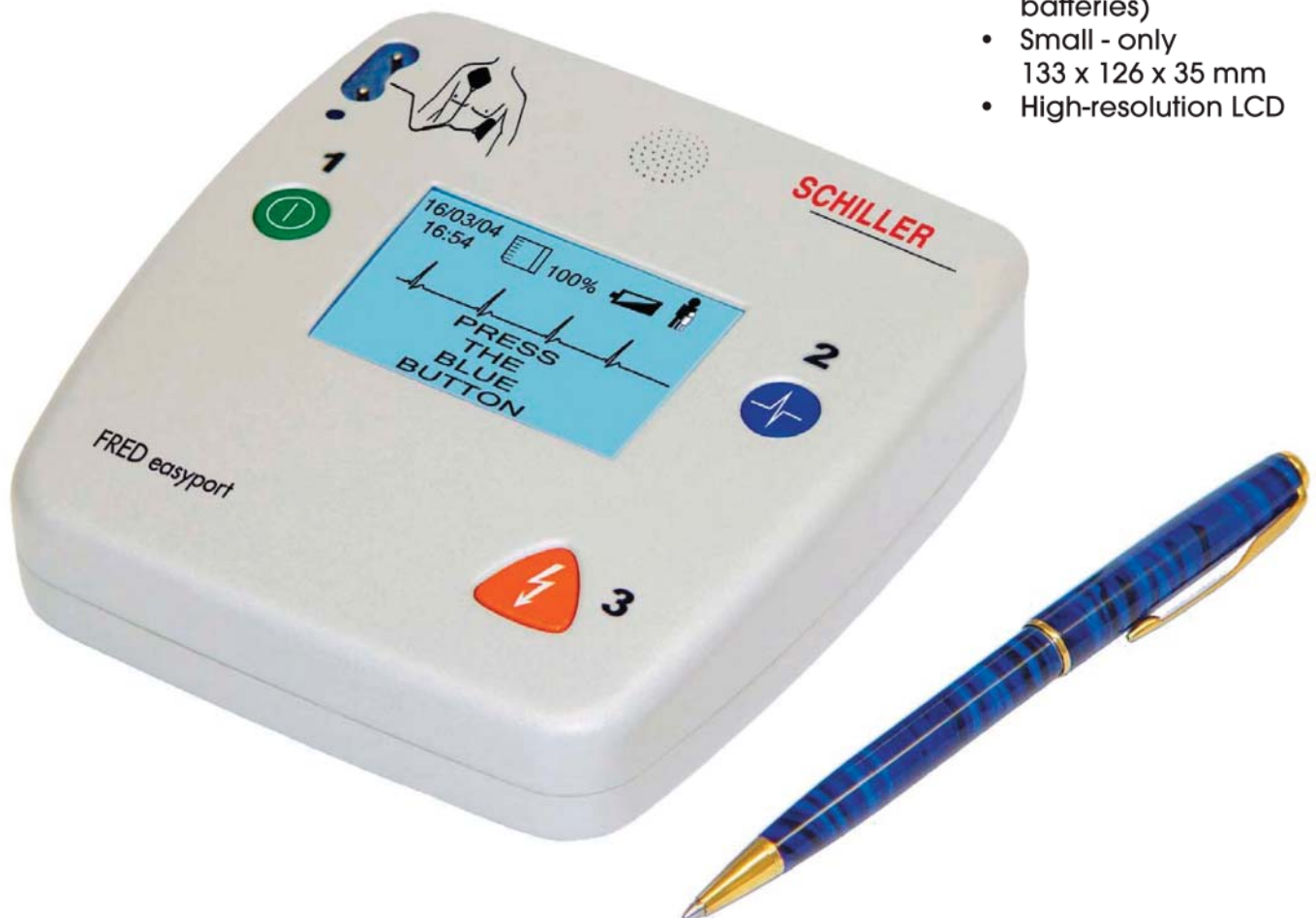


THE WORLD'S FIRST POCKET DEFIBRILLATOR:
SCHILLER'S FRED® EASYPORT®

A Swiss Precision
Masterpiece:

The new external defibrillator that is so small and light it fits in every coat pocket and every doctor's bag, and still meets all requirements of a modern AED (Automatic External Defibrillator).

- Light - only 490 grams (incl. batteries)
- Small - only 133 x 126 x 35 mm
- High-resolution LCD



With SCHILLER's FRED® easyport®, a new chapter in the history of early defibrillation begins. Its small size and light weight make the FRED® easyport® the ideal companion of physicians, paramedics, public service staff and other persons trained in early defibrillation. Risk patients carry their own rescue device after they and their families have been introduced by their doctor. This dramatically reduces the response time to treat ventricular fibrillation and tachycardias, granting the victims a much better chance of survival.

SCHILLER FRED® easyport®: The incredibly small pocket defibrillator with the effective and myocardium-saving energy emission called *MULTIPULSE BIOWAVE®* is an important milestone in the history of defibrillation. In four years of trials and clinical application, this biphasic pulsed defibrillation impulse (1) has proven to be extremely effective, at energies of only 90 and 120 joules (2,3). Independent studies have also shown that *MULTIPULSE BIOWAVE®* causes much fewer ST alterations in the ECG (4) and triggers significantly less CK and myoglobin in the blood (5). This reduced myocardium damage increases the chance of survival especially for ischemic hearts (6). The excellent defibrillation effectivity is reflected by the extremely short post shock phase, as picture 1 clearly shows.

Technical Specifications FRED® easyport®

Dimensions and Weight

Dimensions: 133 x 126 x 35 mm (l x w x h)

Weight: 490 g

Environmental Conditions

Temperature (operating and standby):

0°C to 50°C

Humidity (operating and storage):

0% to 95%, non-condensing

Storage and transport temperature:

-20°C to +50°C

Pressure: 700 to 1600 hPa

Shock resistance, drop height: MIL-STD-810 F;

drop height 1m on each corner, edge and surface; after which normal operation

Vibration: MIL-STD-810 F

Leak test: IEC 60601-2-4, clause 44, IEC 60 529

Electrostatic compatibility: IEC 60601-1-2

Electromagnetic radiation:

IEC 60601-1-2 (CISPR 11, class B)

Electromagnetic irradiation:

IEC 60601-1-2

Flightworthiness: RTCA/DO 160D;

1997 section 21

Defibrillator

Type of defibrillation pulse:

MULTIPULSE BIOWAVE® (patented):

Biphasic pulsed (interrupted) defibrillation impulse with fixed duration of the first phase of 5 ms, active for the defibrillation.

Constant emitted energy independent of the patient resistance.

Influence on the electrical charge of the second, negative phase so the residual charge in the heart resulting from the first phase is neutralised (giving highest efficiency).

Energy settings (standard values):

- Adults: 120 - 120 - 120 J

- Paediatric (automatic change-over when the paediatric electrodes are plugged in):
15 - 30 - 50 J

- List of configurable energy values:

15 - 30 - 50 - 70 - 90 - 120 J (adults) and
15 - 30 - 50 - 70 J (paediatric)

Charge control:

Automatic if shock is recommended based on the analysis

Charging time from shock recommended to shock stand-by: < 10 s

Cycle time shock - shock: < 20 s

Indication of shock stand-by:

Flashing of shock button

Control of shock discharge:

Rhythm analysis and protocols

Electrode contact:

Check by means of impedance measurement

Rhythm analysis: Analysis of the heart rhythm in the ECG signal to determine if a rhythm requires a shock

Rhythms requiring a shock:

Ventricular fibrillation (VF), ventricular tachycardias (VT) of > 180 beats / minute

Analysis performance (sensitivity, specificity etc. for rhythms requiring a shock): Exceeds ANSI/AAMI DF39/1993 and AHA recommendations

Protocols: Ex works with ERC or AHA protocol;

Option: Customer-specific protocols on request

Battery

Type: Li-MnO₂

Capacity: 60 shocks at 120 J or 2 hours operation (without shock)

Shelf life: 5 years

Operating life (storage/stand-by): 5 years

Operating Elements and Displays

LCD screen: 60 x 40 mm, high resolution, with LED background lighting, text and ECG display

LED lights: Electrode connection indicator at electrode cable socket; stand-by indicator

Speaker: Spoken instructions (volume control via set-up)

Alert:

Beep in the case of faulty device status

Operation elements: ‚ON/OFF‘ button, ‚analysis‘ button and shock button

Storage, Programming, Communication

Optional storage on SD card, programming, communication:

Saving ECG and event: Duration, number of released shocks, date and time of shock release

Software update: Via interface from PC/laptop

Wireless communication: Optional via GSM, GPRS, UMTS

Defibrillation electrodes

Adult electrodes: 50 cm² active surface per electrode

Paediatric electrodes: 28 cm² active surface per electrode

Electrode cable: 1.2 m

All specifications are based on an environmental temperature of 25° C (if not separately indicated).

Technical data are subject to change without notice.



Picture 1: *Multipulse Biowave®*-shock of 90 Joule (first shock)



(1) CANSSELL A. et al. Impulses or a series of impulses and device to generate them. US Patent 6,493,580. Priority date FR Jan. 27, 1999

(2) VALENCE A. La Défibrillation Semi-Automatique par les Sapeurs-Pompiers de Nancy. Thèse. Faculté Médecine de Nancy, France. 2002

(3) SCHLENK G. Early Defibrillation Programm. Deutsches Rotes Kreuz Leipzig. 2002

(4) TRENDAFILOVA et al. Clinical Study *Multipulse Biowave®* vs. Monophasic pulses. SCHILLER internal Report. 2003

(5) FUMAGALLI S. et al. External Cardioversion of Atrial Fibrillation in Young and Old Patients: Results of a Randomized Trial Comparing Biphasic and Monophasic Shock. American Heart Association. Scientific Sessions. Orlando, Florida. 2003

(6) CANSSELL A. Wirksamkeit und Sicherheit neuer Impulskurvenformen bei transthorakaler Defibrillation. Notfall & Rettungsmagazin 3: 458-474. 2000

implox Pty.
Ltd.
HEALTHCARE

Units 23 & 24

60-66 Richmond Road,

Keswick 5035, South Australia

Telephone: 8351 1455

Facsimile: 8293 7377

Email: CustomerService@implox.com

www.implox.com