FRED® easy

The art of gentle resuscitation
The heart can stand still at any time – at work, during shopping, during sport activities, or at home. In Europe, an average of ten persons die from sudden heart death every hour. This means that in places where many people are present – in companies, shopping centers, sports centers, hotels, railway stations, etc. – there is an increased risk that a potential cardiac arrest victim is among them. These lives can only be saved by a timely current impulse from a defibrillator. In case of cardiac arrest, seconds decide over life and death – every minute of delay exponentially decreases the survival chance. In most cases, death will occur within 10 minutes.

The new semi-automatic SCHILLER FRED® easy, makes resuscitation even simpler and more efficient. With the unique biphasic Multipulse Biowave® technology, a successful defibrillation only requires about 1/3 of the energy which would be needed using monophasic pulse. This new, gentle resuscitation method increases the chances of survival after pre-hospital cardiac arrest.

SCHILLER FRED® easy combines the following advantages and options with the classic functions of the semi-automatic FRED® (First Responder External Defibrillator):

Considerably lower defibrillation energy using Multipulse Biowave®, (biphasic pulsed defibrillation impulse)

- Easy operation in 3 steps:
  - START – ANALYSIS – SHOCK; automatic analysis configurable
  - Quick charging time; <10 seconds
  - User-friendly LCD screen (display of time, number of shocks, battery and memory capacity, electrode type, text instructions)

Efficient and secure analysis for fibrillation detection

- Standard energy settings:
  - Adults: 90-130-150 J
  - Paediatric (automatic switch when the paediatric electrodes are plugged in): 15-30-50 J
  - Further energy values in the range of 1 J to 150 J are freely configurable

- ECG and event recording
- High performance battery; 240 shocks at 150 J; 8 h operation (without shock); stand-by: 5 years
- Automatic self-tests
- Wireless communication: Optional via GSM, GPRS and UMTS

Technical specifications FRED® easy:

Dimensions and weight:
Dimensions: 230 mm x 220 mm x 70 mm (lxwxh)
Weight: Approx. 1.5 kg

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: 200 to 1060 hPa
- Shock resistance, drop height: MIL-STD-810 F; drop height 1 m on each corner, edge and surface; after which normal operation
- Vibration: MIL-STD-810 F
- Leakage test: IEC 0601-2-4, clause A4
- Electromagnetic compatibility: IEC 60601-1-2
- Electromagnetic radiation: IEC 60601-1-2
- Electromagnetic radiation: IEC 60601-1-2
- Righthoworthiness: RTCA/DO 160D; 1997 section 21

Defibrillator:
Type of defibrillation pulse:
- MULTIPULSE BIOWAVE® PLUS (patented):
  - Biphasic pulsed, modulated defibrillation impulse with a fixed physiological optimum phase duration of 4 ms
  - Stabilisation of the emitted current and energy in function with the patient resistance using pulse-pause modulation of both phases
  - Modulation of the second, negative phase, in order to neutralise the residual charge in the heart (granting highest efficiency)

Energy settings (standard values):
- Adults: 90-130-150 J
- Paediatric (automatic change-over when the paediatric electrodes are plugged in): 15-30-50 J
- Instead of the standard values, further energy values in the range of 1 J to 150 J are freely configurable

Exceeds ANSI/AAMI DF39/1993 and AHA recommendations

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 tachycardia (VT) of >180 beats/minute
- Analysis performance: (VF requires shock): Exceeds AHA recommendations
- Cycle time shock – shock: < 20 s
- Indication of shock stand-by: Flashing of shock button
- Control of shock discharge: By means of shock button
- Safety discharge: A charged defibrillator is internally discharged if:
  - the patient’s rhythm shows that shock is not required
  - no shock is triggered within 30 s of first signalling shock stand-by
  - the defibrillation electrodes have been removed from the patient or have become loose
  - the ‘ON/OFF’ button is pressed
- Shock release: Via anterior/anterolaterally placed electrodes (lead II)

Analysis performance (sinus rhythm, does not require shock): Exceeds ANSI/AAMI DF39/1993 and AHA recommendations

Analysis performance (asystole, does not require shock): Exceeds ANSI/AAMI DF39/1993 and AHA recommendations

Analysis performance (all other rhythms not requiring 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: 240 shocks at 150 J or 8 hours operation (without shock)
Shelf life: 5 years
Operating life (storage/stand-by): 5 years

Operating elements and displays:
- LCD screen: 100 mm x 37 mm, high resolution, with EL background lighting, text and optional 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
- Status indicator: Flashing LED light indicating the device’s stand-by status (including battery status)
- Operation elements: ‘ON/OFF’ button, if necessary ‘analysis’ button, and ‘shock’ button

Storage, programming, communication:
- Optional storage on SD card, programming, communication (2 possibilities):
  1. Saving ECGs and event: Duration, number of released shocks, date and time of shock release
  2. Saving ECG and event with additional audio: Data storage as above with additional 30-minute recording of ECG and ambient noise on SD card

Software update:
- Via interface from PC/laptop

Wireless communication:
- Optional via GSM, GPRS and UMTS

Defibrillation electrodes:
- Adult electrodes: 78 cm² of active surface per electrode
- Paediatric electrodes: 28 cm² of active surface per electrode

Easy operation in three steps:
START – ANALYSIS – SHOCK; automatic analysis can be configured on request.

Extensive education material (including a training device) available.

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

Technical data are subject to change without notice.