



# ES-DEF EXPRESS 8 and ES-DEF EXPRESS 9 AED defibrillators with ECG



INTENSIVE CARES



# ES-DEF EXPRESS 8 and 9

AED Defibrillators with ECG



Cod. **ES-DEF EXPRESS 8**  
ECG, PR, DEFIBRILLATOR



Cod. **ES-DEF EXPRESS 9**  
ECG, RESP, SPO2, TEMP,  
PR, NIBP, DEFIBRILLATOR

**ES-DEF EXPRESS 8 and 9** are compact, durable, light weighted defibrillators with integrated monitoring, manual defibrillation, AED and pacer (option). They are professional biphasic defibrillator-monitors suitable for hospitals and clinics.



### ● Recorder

<b>Auto REC</b>	Turn off auto recording or select the interval to do auto recording. The content of auto recording includes one ECG waveform, PLETH waveform, respiration waveform and all parameters measured
<b>REC</b>	Length Select the recording length of waveform in auto recording. The Options are 8s, 12s and 16s
<b>ALM REC</b>	Interval Select the interval of alarm recording when the alarm is occurring continuous. Alarm recording function will be disabled when <OFF> is selected
<b>Grid</b>	Select if the grid is recorded in the waveform recording area of the recording paper. Options are <OFF>, <ON>.



### ● Paddles

Composite paddles, an external paddle for adults, built-in paddles for children



### ● Battery

12V chargeable battery for DC  
 Battery capacity: +10 times reserve (360joule)  
 Working temperature: 5 ~ 40°C  
 Relative temperature: ≤80%  
 Atmospheric pressure: 86kpa~106kpa



### ● Packing

Dimensions (LxWxH): 32x205x410mm  
 Weight: 9.8Kg

## Technical Features

### DEFIBRILLATOR

Defibrillator type	Manual, Synchronized, A synchronized
Output waveform	Monophonic technology
	Biphasic technology (optional)
Energy accuracy	< ±1%
Energy selection	0,3,5,7,10,20,30,50,100,200,300,360 joule (nominal at a resistance of 50)
Charging time Maximum	8 seconds to 360 Joules
Standard Adult/Pediatric Paddles	Reusable external adult paddles (pediatric paddles integrated)
AC Power supply	110V, 60 Hz /220V, 50 Hz
Vehicle Voltage Internal	DC 12V

Battery Backup	Rechargeable lead-acid battery or lithium battery (optional)
Charging time	Time-Minimum of 4 hours for full charging
Battery charging	During AC Power Supply operation of the device
Battery Capacity	100% of the battery will provide 120 min of monitoring; and 30 discharges at 360 joules
Display	7" diagonal 155x88mm
Type	High resolution true-color graphic LED. Resolution: 480X234





ECG		
Lead Mode	5-leads ECG input 3-leads ECG input 12-leads ECG input (option)	
Lead selection	I, II, III, aVR, aVL, aVF, V-I, II, III I, II, III, aVR, aVL, aVF, V1~V6(option)	
Gain	AUTO, 0.25x, 0.5x, 1.0x, 2.0x, 4.0x	
Input impedance	≥5.0 MΩ	
CMRR	MON ≥105dB OPS ≥105dB	
Frequency response	5 or 3-leads 12-leads	MON 0.5~40Hz OPS 1~25Hz MON 0.5~25Hz OPS 1~15Hz
	5 or 3-leads 12-leads	±500mV d.c. ±300mV d.c.
Leakage Current	<10 uA	
ECG signal range	5 or 3-leads 12-leads	±6.0 mV ±3.0mV
	Baseline recovery	<5s after Defibrillation
Pacemaker pulses	No rejection of pulses with amplitudes of ±2mV ~ ±700 mV and durations of 0.5 ~ 2.0 ms	
Insulation	Breakdown Voltage4000VAC 50/60Hz	
Indication of electrode separation	Every electrode (exclusive of RL)	
Sweep speed	12.5mm/s, 25mm/s, 50mm/s	

HR		
Range	5 or 3-leads 12-leads	10~350 bpm 25~254bpm
	Refreshing time	Per 4 pulses
Resolution	1 bpm	
Accuracy	±1% or ±1bpm, whichever is greater	
Sensitivity	≥0.2mVpp	
Alarm range	0~350 bpm, continuously adjustable between upper limit and lower limit	
Alarm indication	Sound and light alarming	
Average	4s	
Tall T-Wave Rejection Capability	0-1 mV T-Wave amplitude	
Response Time of Heart Rate	HR change from 80 to 120 bpm: Range: 6 to 10s	
Meter to Change in Heart Rate	HR change from 80 to 40 bpm: Range: 6 to 10s	

TEMP	
Measurement Range	0.0~50.0°C
Accuracy	±0.1°C
Resolution	0.1°C
Unit	Celsius (°C), Fahrenheit (°F)
Refreshing time	1s
Self check	Every 10 minutes
Accuracy	At 45.1~50.0°C, ±0.2°C (probe)
	At 25.0~45.0°C, ±0.1°C (probe)
	At 0.0~24.9°C ±0.2°C (probe)
Connecting cable	Compatible with YSI-400
Range of alarm	0.0~50.0°C, continuously adjustable between upper limit and lower limit
Alarm indication	Sound and light alarming

SpO2	
Measurement Range	0~100%
Resolution	1%
Accuracy	At 70~100%, ±2%
	At 0~69%, unspecified
Data update period	<13s
Alarm	User-selectable upper and lower SpO2 limits

PR	
Measurement Range	25~250 bpm
Resolution	1 bpm
Accuracy	±1% or ±1 bpm, whichever is greater
Data update period	<13s
Alarm	User-selectable upper/lower pulse rate limits

ST segment	
Measurement range	-2.0mV~2.0mV -0.8mV~0.8mV: ±0.02mV or ±10% whichever is greater Over ±0.8mV: unspecified
Accuracy	0.01mV
Resolution	10s
Refreshing time	

NIBP			
Way of measurement	Automatic oscillometry		
Range of measurement	Adult	SYS	30~270 mmHg
		DIA	10~220 mmHg
		MEAN	20~235 mmHg
	Child	SYS	30~235 mmHg
		DIA	10~220 mmHg
		MEAN	20~225 mmHg
	Baby	SYS	30~135 mmHg
		DIA	10~110 mmHg
		MEAN	20~125 mmHg
Range of HYPER measurement	Adult	SYS	40~300mmHg
		DIA	10~250 mmHg
		MEAN	20~270 mmHg
Cuff pressure range	0~280mmHg (0~300mmHg at HYPER mode)		
Resolution	1 mmHg		
Pressure Accuracy	Static	±2% or ±3 mmHg, whichever is greater	
	Clinical	±5 mmHg average error 8 mmHg standard deviation	
Unit	mmHg, kPa		
Pulse rate range	40 ~ 240 bpm		
Inflation time for cuff	Less than 40s. (standard adult cuff)		
Total cycle time	20 to 45s typical (dependent on heart rate and motion artifact)		
Intervals for AUTO measurement time	1,2,3,4,5,10,15,20,30,45,60,90 min 2,4,8 hours		
Overpressure Protection Hardware and software	Adult	315~10 mmHg	
	Child	265~10 mmHg	
	Baby	155~10 mmHg	
	SYS	0~300 mmHg, continuous adjustable between upper limit and lower limit	
Range of alarm	DIA		
	MEAN		
	Alarm indication	Sound and light alarming	
Measurement Mode	Adult	Manual, Auto and STAT	
	Child	Manual, Auto and STAT	
	Baby	Manual and Auto	
	HYPER	Manual, Auto and STAT	

RESP	
Method	Impedance variation between RA-LL (R-F)
Measuring impedance	0.2 ~ 3Ω
Excitation frequency	64.8 kHz
Excitation current	≤300μA at 64.8 kHz
Base line impedance range	500~4000 Ω (50~120 kHz exciting frequency)
Measurement Range	0~150 rpm
Resolution	1 rpm
Accuracy	±2 rpm
Gain	x1, x2, x4
Sweep speed	6.25mm/s, 12.5mm/s, 25mm/s
Delay of Apnea Alarm	Off, 20s, 40s, 60s
Alarm indication	Sound and light indication



ESSE3 srl, Via Garibaldi 30  
14022 Castelnuovo D.B. (AT)  
Tel +39 011 99 27 706  
Fax +39 011 99 27 506  
e-mail: [esse3@chierinet.it](mailto:esse3@chierinet.it)  
web: [www.esse3-medical.com](http://www.esse3-medical.com)

