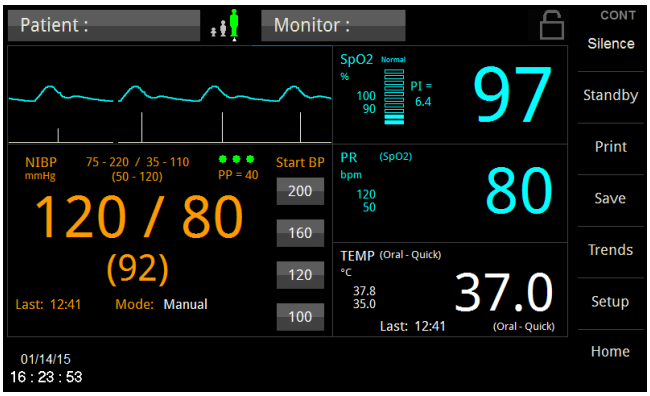
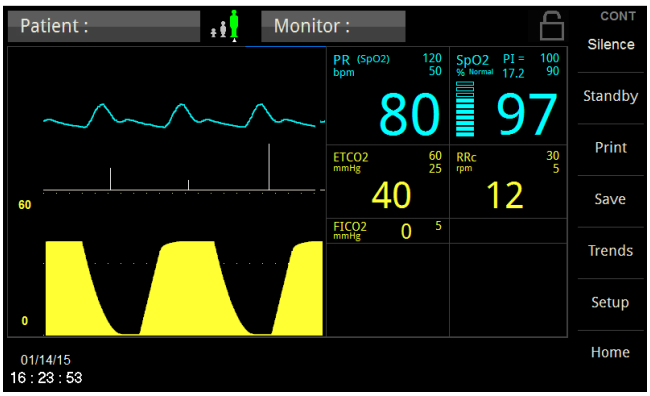
740 SELECT™

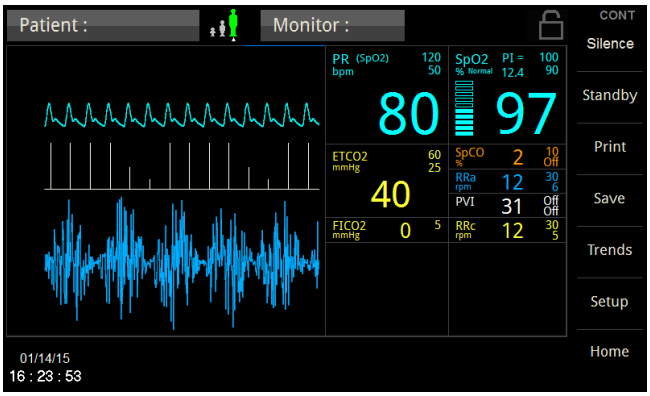
Basic Vital Signs



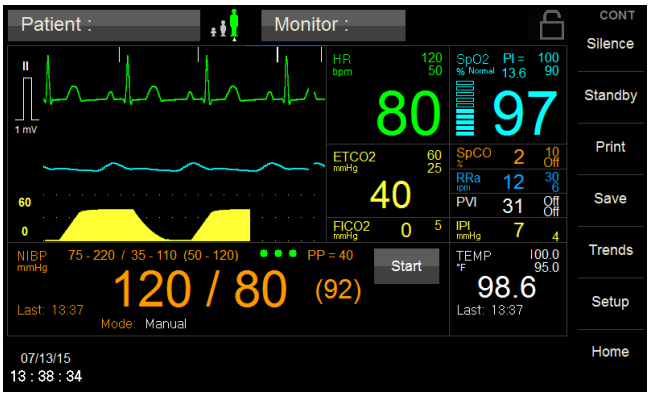
CO_2 Monitoring



Masimo Rainbow Parameters



Multi-Parameter ECG Monitoring



Multi-Parameter Monitor

User Manual

ZOE Medical

This User Manual describes the features and operations of the 740 SELECT Multi-Parameter monitor: Software Version 2.3 or above.

1. OVERVIEW

TRADEMARKS

Trademarked names appear throughout this document. Instead of inserting a trademark symbol with each mention of the trademarked name, the publisher states that it is using the names only for editorial purposes and to the benefit of the trademark owner with no intention of improperly using that trademark.

ZOE Medical	is a registered trademark of Zoe Medical, Inc.
740 SELECT ™	is a trademark of Zoe Medical, Inc.
MAXNIBP ®	is a registered trademark of CAS Medical Systems, Inc.
MAXIQ ™	is a trademark of CAS Medical Systems, Inc.
SoftCheck ®	is a registered trademark of STATCORP Medical Systems
UltraCheck ®	is a registered trademark of STATCORP Medical Systems
Masimo ®	is a registered trademark of Masimo, Inc.
SET ®	is a registered trademark of Masimo, Inc.
M-LNCS ®, LNCS ®	is a registered trademark of Masimo, Inc.
Rainbow ®	is a registered trademark of Masimo, Inc.
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OxiMax ™	is a trademark of a Covidien company registered in the U.S. and foreign countries
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Microstream ™	is a trademark of a Covidien company registered in the U.S. and foreign countries
MicroPod ™	is a trademark of a Covidien company registered in the U.S. and foreign countries
Integrated Pulmonary Index (IPI) ™	is a trademark of a Covidien company registered in the U.S. and foreign countries
SafeSAT ®	is a registered trademark of MedTor LLC

CONTACT ADDRESSES

Zoe Medical, Inc. 460 Boston Street Topsfield, MA 01983 U.S.A. Phone: (978) 887-4013 Fax: (978) 887-1406 E-Mail: customersupport@zoemedical.com Web: www.zoemedical.com	CE 0123 **EC REP** MedNet GmbH Borkstrasse 10 48163 Muenster Germany Telephone +49 251 32266-26 Fax +49 251 32266-22

Please contact the distributor in the country of purchase if product information or service should be required.

For product information and/or service in Malaysia, please contact:

TARAF SYNERGY SDN BHD
Unit B-2-3A, Block B, No.1, Jalan PJS 8/15, Dataran Mentari, 46150 Petaling Jaya,
Selangor Darul Ehsan, Malaysia
Phone: +60 3 5638 2080

Manufacturers Declaration of Conformity
Electronic Emissions and Immunity

Guidance and Manufacturer's Declaration – Electromagnetic Emissions

The 740 SELECT is intended for use in the electromagnetic environment specified below. The customer or the user of the 740 SELECT should assure it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment
RF emissions CISPR 11	Group 1	The 740 SELECT uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The 740 SELECT is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class B	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

Guidance and Manufacturer's Declaration – Electromagnetic Immunity

The 740 SELECT is intended for use in the electromagnetic environment specified below. The customer or the user of the 740 SELECT should assure it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage Dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (> 95% dip in U_T) for 5 s	% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (> 95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If user of the monitor requires continued operation during power mains interruptions, it is recommended that the monitor be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: U_T is the A.C. mains voltage prior to application of the test level.

Guidance and Manufacturer's Declaration – Electromagnetic Immunity

The 740 SELECT is intended for use in the electromagnetic environment specified below. The customer or the user of the 740 SELECT should insure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the 740 SELECT, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance:** $d = 3.5 / 3 \sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	20 V/m	$d = 3.5 / 20 \sqrt{P}$ 80 MHz to 800 MHz $d = 7.0 / 20 \sqrt{P}$ 800 MHz to 2.5 GHz
			Where *P* is the maximum output power rating of the transmitter in watts according to the transmitter manufacturer and *d* is the recommended separation distance in meters. Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey [a], should be less than the compliance level in each frequency range. [b] Interference may occur in the vicinity of equipment marked with the following symbol: 

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies. **NOTE 2** These guidelines may not apply in all situations. Electromagnetic propagation is effected by absorption and reflection from structures, objects and people.

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular / cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the 740 SELECT is used exceeds the applicable RF compliance level above, the 740 SELECT should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the 740 SELECT.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended Separation Distances Between Portable and Mobile RF Communications Equipment and the monitor

The 740 SELECT is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the 740 SELECT can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the 740 SELECT as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter (Watts)	Separation distance according to frequency of transmitter (Meters)		
	150 kHz to 80 MHz $d = 3.5 / 3 \sqrt{P}$	80 MHz to 800 MHz $d = 3.5 / 20 \sqrt{P}$	800 MHz to 2.5 GHz $d = 7.0 / 20 \sqrt{P}$
0.01	0.12	0.02	0.04
0.1	0.38	0.06	0.11
1	1.17	0.18	0.35
10	3.69	0.55	1.11
100	11.67	1.75	3.50

For transmitters operating at a maximum output power not listed above, the recommended separation distance *d* in meters can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. **NOTE 2** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

CE MARKING INFORMATION

Compliance The **740** SELECT monitor bears the CE mark CE-0123 indicating conformity with the provisions of the Council Directive 93/42/EEC concerning medical devices and fulfilling the essential requirements of Annex I of this directive.

Exceptions None

MALAYSIAN MARKING INFORMATION

Compliance The **740** SELECT monitor has been registered under the Malaysian Medical Device Act.

Exceptions None

CONVENTIONS USED IN THIS MANUAL

Warning: Directions that warn of conditions that put the patient or the caregiver at risk.

Caution: Directions that help to avoid damaging the **740** SELECT monitors or losing data.

Note: Directions that make it easier to use the **740** SELECT monitor.

MODEL NUMBER FORMAT

740-	X	M	F	0	0	740 SELECT Monitor Installed Options
						0 = None
						W = Wireless
						0 = None
						E = ECG
						0 = None
						F = FILAC 3000 Temp Predictive
						A = Exergen Temporal Artery Scanner (Non-Invasive)
						0 = None
						M = Masimo Rainbow SpO_2
						N = Nellcor OxiMax SpO_2
						S = SafeSAT SpO_2
						0 = None
						X = MAXIQ NIBP

Model Examples	Monitor Parameter Configuration
740-X0000	MAXNIBP Non-Invasive Blood Pressure
740-XM0E0	MAXNIBP Non-Invasive Blood Pressure and Masimo Pulse Oximetry and ECG
740-XNAE0	MAXNIBP Non-Invasive Blood Pressure, Nellcor Pulse Oximetry and Exergen Temporal Artery Scanner and ECG

Note: Models may also be configured for ECG & Resp Parameter. Refer to 740 SELECT User Manual Addendum - ECG & Resp, Zoe Medical PN 21-22-0335.

Note: Models may also be software enabled to interface with an EtCO2 module (Masimo or Covidien). Refer to 740 SELECT User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333.

Note: Models may also be software enabled to interface with Masimo Rainbow Parameters (SpCO, RRa & PVI). Refer to 740 SELECT User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332.

Note: Models may also be configured for Exergen Arterial Temporal Temperature Scanner. Refer to 740 SELECT User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334.

Refer to Table 13 on page 170 for additional details.

IMPORTANT:

This Manual and the User Manual Addendums listed below address all parameters of the 740 SELECT monitor. You may have purchased a model that does not have all the parameters referred to in these Manuals.

THIS MANUAL REMAINS SUITABLE FOR USE!

Please refer to sections of the Manual that are applicable for the model purchased.

SAVE THESE INSTRUCTIONS

ABOUT THIS MANUAL

This Manual describes the features and operation of the 740 SELECT Multi-Parameter Monitor.

MANUAL PURPOSE

This Manual contains the instructions necessary to operate the monitor safely and in accordance with its functions and intended use.

This Manual may illustrate optional parameters covered in specific 740 SELECT User Manual Addendums:

- Refer to 740 SELECT User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335
- Refer to 740 SELECT User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333
- Refer to 740 SELECT User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332
- Refer to 740 SELECT User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334

Note: All illustrations in this Manual are provided as examples only. They may not necessarily reflect your monitoring setup or data displayed on your monitor.

INTENDED AUDIENCE

This Manual is written for clinical professionals. Clinical professionals are expected to have working knowledge of medical procedures, practices, and terminology as required for monitoring of critically ill patients.

Warning: For continued safe use of this equipment, it is necessary that the listed instructions be followed. Nothing in this Manual is intended to override procedures and regulations imposed at the institutional level or above. Hospital's quality system, privacy rules, or other legal or policy requirements may govern whether and how to implement any specific procedure in this Manual.

TRAINING

Training on this monitor for the safe and effective use of the primary operating functions can be provided through Zoe Medical. Refer to the contact addresses on page 3 for email and phone number information.

Zoe Medical recommends in-service training on the **740 SELECT** monitor after the initial installation or whenever a new user intends to operate the monitor. No periodic retraining should be required. Training can also be provided when updates to the system are provided or whenever a user may be unfamiliar with the monitor

REVISION HISTORY

This Manual has a revision number located at the bottom of each page. It changes whenever the Manual is updated.

Rev 00	July, 2013
Rev 01	Oct, 2013
Rev 02	Mar, 2014
Rev 02	Jun, 2014
Rev 03	Aug, 2014
Rev 04	Jul, 2015
Rev 05	Oct, 2015
Rev 06	Oct, 2015
Rev A	Jan, 2016
Rev B	Oct, 2016
Rev C	Mar, 2019
Rev D	Draft

Read this Manual carefully before patient use of the monitor

Zoe Medical reserves the right to make changes to this Manual and improvements to the product it describes at any time without notice or obligation.

WARRANTY POLICY FOR ZOE MEDICAL MULTI-PARAMETER MONITOR

Zoe Medical warrants the monitor, when new, to be free from defects in material and workmanship and to perform in accordance with manufacturer's specifications for a period of two (2) years from the date of original purchase from Zoe Medical or its authorized distributors or agents except as noted below.

The same warranty conditions are made for a period of (1) year with respect to printer, battery and FILAC Temp Probe, and ninety (90) days on non-disposable accessories and certain components consisting of reusable SpO_2 sensors and other accessories provided by Zoe Medical as part of the original equipment purchase. Zoe Medical warrants disposable or single-patient-use products for out-of-box failure only. Where the accessory is not a Zoe Medical manufactured product, the manufacturer's own warranty conditions apply

Zoe Medical reserves the right to perform warranty service operations in its own factory, at an authorized repair facility, or at the customer's site. Zoe Medical's obligation under this warranty is limited to repairing or, at Zoe Medical's option, replacing any defective parts or equipment, without charge, if such defects occur in normal service and with prompt notification.

Damage to any part through misuse, neglect, or accident, or by affixing any accessories or attachments other than Zoe Medical, Exergen, Masimo, Nellcor or Covidien manufactured accessories or attachments, is not covered by this warranty.

It is the customer's responsibility to return the product to Zoe Medical; Zoe Medical is responsible for the return of the monitor.

THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THOSE EXPRESSLY DESCRIBED IN THIS AGREEMENT AND THE COMPANY MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Warranty Policy for Accessories and Certain Components:

In all cases, policy applies from date of purchase from Zoe Medical or its authorized distributors or agents.

Roll Stand:	Out-of-box failure only
Batteries:	1 year
FILAC Temp Probes:	1 year
SpO_2 Sensors:	90 days
Printer	1 year
Bar code reader	1 year
Other Accessories:	Out-of-box failure only

Non-Warranty (Billable) Service Returns Policy:

Customer must contact Zoe Medical for an RMA number to initiate a return. The customer will be required to provide a P.O. for the repair at a flat rate price. If an estimate is required, a P.O. will be required to initiate the process and a flat rate charge will be applied for the estimate. The customer is responsible for shipping charges to send the monitor to Zoe Medical and for the return shipping back to the customer.

If an estimate is required and the estimate of repairs is declined after the monitor has been evaluated at Zoe Medical, the customer is responsible for the evaluation fee ****** plus the shipping back to the customer.

Zoe Medical will honor rush repair requests. Please inform Customer Support at the time of the RMA request. A flat rate fee will be added to the cost of the repair / invoice.

**** Contact Zoe Medical Customer Support for current flat rate and estimate fees.**

RETURNING THE MONITOR FOR REPAIR:

Approval must be obtained from Zoe Medical prior to return of unopened merchandise. Unauthorized returns will be not accepted and will be returned to the sender at their expense. Returns must be prepaid and made at the sender's risk. Only items on the current price list will be considered for credit. All credit will be issued based on original net purchase price and all credits are subject to a 25% restocking charge.

Zoe Medical may evaluate issues reported by the user and available with the monitor's stored patient data. In accordance with HIPAA requirements, Zoe Medical will not use or disclose any stored patient data to individuals outside Zoe Medical, unless disclosure is required by law. Zoe Medical will erase all stored patient data prior to the return of the repaired unit.

Ordering Terms:

Ordering & Payment Address:	Zoe Medical, 460 Boston Street, Topsfield, MA 01983
Ordering Information:	All items are to be ordered using Zoe Medical product numbers. Ordering information may be obtained from Customer Support at 978.887.4013. Information may also be obtained via the internet at www.zoemedical.com or you may email us at customersupport@zoemedical.com. For rapid order entry, orders may also be faxed to 978.887.1406.
Minimum Order:	$100.00
Payment Terms:	NET 30 days on a pre-approved basis. A finance charge will be assessed on late payments at the rate of 1.5% per month (18% annum). Payment may also be made by the following methods: Transfer of funds in advance, Irrevocable Letter of Credit; Cash against documents; American Express; MasterCard & Visa
FOB Terms:	F.O.B. Ship Point All shipments subject to a handling fee Price does not include applicable state and local taxes

Refer to the appropriate User Manual Addendum for additional optional parameter Warranty information:

- Refer to **740 SELECT** User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335
- Refer to **740 SELECT** User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333
- Refer to **740 SELECT** User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332
- Refer to **740 SELECT** User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334

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FIGURES

TABLES

2. INTRODUCTION AND INTENDED USE

INTRODUCTION

The 740 SELECT is a multi-parameter monitor measuring Blood Pressure, Oxygen Saturation and Temperature. Non-invasive Blood Pressure is measured using the oscillometric step-deflation technique determining systolic, diastolic, mean arterial pressure (MAP) and pulse rate. The Pulse Oximeter function continuously monitors and displays values for functional arterial hemoglobin saturation and a pulse rate. Temperature may be obtained in the oral-quick mode (predictive) or via the non-invasive Temporal Artery Scanner in as little as three (3) seconds.

Refer to the appropriate User Manual Addendum for additional optional parameter information, details and operating instructions:

- Refer to 740 SELECT User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335
- Refer to 740 SELECT User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333
- Refer to 740 SELECT User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332
- Refer to 740 SELECT User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334

INDICATIONS FOR USE

The 740 SELECT series of patient monitors is indicated for use as a portable, multi-parameter, variable acuity device for use by health care professionals, clinicians and medically qualified personnel, in a variety of clinical environments and hospital departments, for non-invasive spot checking, and/or continuous monitoring, recording and alarming of multiple physiological parameters for use in adults, and pediatric patients.

The 740 SELECT series monitors come with multiple configurations and optional features. Standard and optional parameters include:

- Blood pressure and pulse rate;
- Functional oxygen saturation of arterial hemoglobin (SpO_2) and pulse rate;
- Carbon Dioxide concentration of the expired and inspired breath and respiration rate including, with the Covidien Microstream MicroPod option, an Integrated Pulmonary Index (IPI);
- Electronic predictive and temporal artery temperature;
- ECG and heart rate derived from ECG;
- Impedance respiration to detect the rate or absence of respiratory effort with the ECG option for adult, adolescent, child and infant;
- Non-invasive monitoring, with Masimo Rainbow SET technology, of carboxyhemoglobin saturation (SpCO) and/or respiration (RRa). Other information displayed includes: Signal IQ Waveform, Low Signal IQ (Low SIQ), Perfusion Index (PI), and/or Pleth Variability Index (PVI) for use during both no motion and motion conditions, and for patients who are well or poorly perfused.

CONTRAINDICATIONS

- Do not use on an arm ipsilateral to a mastectomy
- Do not use on an arm with a vascular shunt (e.g., hemodialysis shunt)
- Do not use in a hyperbaric chamber
- Do not use near an MRI machine
- Do not use near flammable anesthetics
- Do not place SpO_2 sensors or Temp Probe or scanner near electro-cauterization
- Do not use on patients connected to a cardiopulmonary bypass device
- Do not use on patients connected to intra-aortic balloon pump device
- Do not use on patients with peripheral convulsions, tremors or seizures
- Not intended for use with severe arrhythmia
- For contraindications of SpO_2 sensors or Temp Probes or scanner consult the manufacturer's directions for use
- Oral Temperature measurements are not intended for neonatal use
- No other contraindications are known at this time

Refer to the appropriate User Manual Addendum listed below for Contraindications specific to optional Exergen Temperature, End-Tidal CO2 or Masimo Rainbow parameters.

- Refer to **740** SELECT User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335
- Refer to **740** SELECT User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333
- Refer to **740** SELECT User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332
- Refer to **740** SELECT User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334

PATIENT PARAMETER USAGE

Mode	Adult	Pediatric		Neonate	
Parameter	Adult[1] > 21 yrs	Adolescent[1] 12 to 21 yrs	Child[1] 2 to 12 yrs	Infant[1] 1 mon to 2 yrs	Neonate[1] up to 1 mon
NIBP	Yes	Yes	Yes	Yes	Yes
SpO2	Yes	Yes	Yes	Yes	Yes
ETCO2	Yes	Yes	Yes	Yes	Yes
Temperature	Yes	Yes	Yes	Yes	Yes
HR (ECG)	Yes	Yes	Yes	Yes	Yes
Resp (ECG)	Yes	Yes	Yes	Yes	No
Rainbow RRa	Yes	Yes	Yes	No	No
Rainbow SpCO	Yes	Yes	Yes	Yes	Yes
Rainbow PVI	Yes	Yes	Yes	Yes	Yes

[1] **Reference**: Premarket Assessment of Pediatric Medical Devices Guidance for Industry and Food and Drug Administration Staff March 24, 2014

BRIEF DESCRIPTION

The 740 SELECT multi-parameter monitor is compact, lightweight and portable, allowing it to be easily carried and used in a variety of clinical settings. The monitor is powered by AC Line Power or by an internal Lithium Ion (Li-ion) rechargeable battery pack. The internal battery pack charges when the monitor is plugged into an AC Line power source. The monitor is equipped with a touchscreen interface. The touchscreen presents touch targets allowing the monitor to be configured for various type patients and clinical settings. The LCD screen displays various system alarm messages (physiologic and equipment). These messages direct the user to check conditions such as limit violations, sensor attachment, battery state, air leaks and measurement problems.

Using CASMED's proprietary motion tolerant MAXNIBP algorithm, the non-invasive blood pressure (NIBP) parameter automatically inflates an occluding cuff and, using the oscillometric measurement technique, determines systolic, diastolic and mean arterial pressure and pulse rate. Measurement results along with user prompts and error messages are displayed on the front panel. The frequency of NIBP determination can be selected by the user in varied times between one and ninety minutes. The Auto and Manual operating modes cover a variety of clinical uses. The Start BP Options feature provides the user with a selection of inflation pressures for use while in Spot-Check workflow mode or adaptive blood pressure typically used during continuous patient monitoring. The MAXIQ Signal Quality Status (SQS) indicator provides an assessment of signal quality and level of motion artifact present during the NIBP measurement.

ECG Monitoring works through the sensing the electrical signals generated by the electrical activity of the heart as it beats. These signals are acquired from chest electrodes, and the 740 SELECT monitor amplifies the signals so they can be displayed on the screen. The patient's heart rate (HR) is calculated and continuously updated based on running average of the R to R intervals between each QRS complex.

The ECG and HR monitoring capabilities of the 740 SELECT monitor include:

- 3-wire cable monitoring capabilities
- Calculating the average heart rate (HR) in beats per minute
- Detecting asystole and ventricular fibrillation
- Pacer pulse detection
- Generating an audible pulse tone for each detected beat

Respiration (Resp) monitoring works by measuring the impedance between the LL and RA electrodes (or the R and F electrodes for IEC lead designations). The impedance changes as the patient's chest expands and contracts during the breath cycle. To measure the changes in impedance, the 740 SELECT monitor passes a very small, high-frequency current between the electrodes. This current is too small to cause any harm to the patient or any interference with ECG monitoring.

The Respiration monitoring capabilities of the 740 SELECT monitor include:

- Calculating the average Respiration Rate (RR) in respirations per minute
- Displaying the Respiration waveform continuously

The same electrodes are used for both ECG and Respiration monitoring.

Note: A **740 SELECT** monitor configured with capnography module is also able to calculate RR from the CO_2 waveform. In this case the Resp/RR feature from ECG is disabled.

Refer to User Manual Addendum - $ETCO_2$ Parameter, Zoe Medical PN 21-22-0333 and User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335 for more information.

The **740 SELECT** monitor provides the option to select from either Masimo Rainbow SET or Covidien OxiMax pulse oximetry technology. The pulse oximeter parameter (%SpO_2) determines arterial oxyhemoglobin saturation by measuring the absorption of red and infrared light passing through the tissue. Changes in absorption caused by pulsations of blood in the vascular bed are used to determine arterial saturation and pulse rate. The oximeter requires no routine calibration or maintenance. In addition, monitors equipped with the Masimo Rainbow Pulse CO-Oximetry can monitor (option) Carboxyhemoglobin (SpCO), Acoustic Respiration Rate (RRa) and Pleth Variability Index (PVI).

Oxygen saturation and heart rate are displayed on the LCD screen. A bar graph gives the user a relative signal quality indication. An audio “beep” can be enabled that is generated each time the SpO_2 module detects a pulse. The display screen can be configured to display the SpO_2 Plethysmograph.

The FILAC 3000 temperature parameter has the capability of taking temperature in normal (predictive) mode. In the Oral-Quick mode, the thermometer’s microprocessor “predicts” (non-febrile) body temperature in about 3-5 seconds, 8-12 seconds for Axillary temperatures and in about 10-14 seconds for Rectal temperatures. The default setting used for temperature determinations is the Predictive Oral-Quick Mode.

The Exergen Temporal Scanner provide non-invasive temperature measurement for all age groups: newborns 0-3 months; infant, children and adults with a response time of approximately 3 seconds.

The **740 SELECT** monitor has (2) optional choices for CO_2 monitoring using an external module. The monitor software may configured with either the Masimo - PhaseIn Infrared Sidestream Gas Analyzer (ISA) or the Infrared Mainstream Gas Analyzer (IRMA). Alternately, the monitor software may be configured for use with the Covidien Microstream Sidestream MicroPod.

The **740 SELECT** monitor provides an optional handheld bar code reader for capturing the Patient and/or Clinical IDN and a 50mm external thermal printer for printing of trends, SpO_2 waveform, and Saved Snapshots. Printing capabilities include print on save and print on alarm.

The **740 SELECT** monitor provides the flexibility to easily configure the monitor for use in various clinical workflows. The monitor can be specifically configured to operate in either Spot-Check or Continuous Monitoring Mode.

The monitor configuration can be saved as user Defaults (institutional settings) and subsequently copied to a USB flash drive for cloning additional **740 SELECT** monitors to the same configuration.

Safety features include the ability for clinicians to lock (and un-lock) the main screen to prevent an unauthorized user from accessing and changing monitor settings. Higher level administration screens typically used to establish institutional and hospital settings are password protected.

Upper and lower alarm limits are provided for all parameters: NIBP, SpO_2, PR, Temperature, ETCO2, FICO2 (upper only), RRc & IPI (lower only), Masimo Rainbow (SpCO, RRa & PVI) and ECG HR & Resp RR.

Alarm features include the ability to utilize the rules based auto configure feature to match alarms to the patient and current clinical situation. Active alarms can be managed using Audio Silence and Alarm Pause features. Active alarms are easily distinguished on the display screen by the flashing parameter cell.

The 740 SELECT monitor provides an extensive list of high end features in a highly compact and portable design. Features specifically designed to enhance workflow, efficiency, and patient safety include:

- Standby Mode for enhanced patient workflow and alarm management
- Optional bar code reader for Patient and Clinical IDN
- Alarm Log for recall and display of patient and equipment alarms, alarm limit settings changes
- Screen Lock/Unlock to prevent unauthorized users from accessing the monitor
- Save Snapshots available in Spot-Check and Continuous Monitoring workflow modes

Note: If the monitor has been configured for use in Spot-Check workflow mode, selecting OK from the "Save snapshot? Screen" will automatically clear patient information, and restore the monitor to user established default settings.

- Auto Dim display screen for enhanced nighttime operation
- SpO_2 and CO_2 alarm acknowledgement for management of equipment alarms (e.g., SpO_2 check sensor placement)
- Start BP Options allow the Clinician to select the appropriate Initial Inflation Pressure from a list while operating in Spot-Check workflow mode
- Patient information screen allowing entry of names (First, Last, DOB, Height and Weight). Body Mass Index (BMI) is automatically calculated when patient height and weight are entered.
- Patient modifiers may be entered (from the Patient Information Screen). Modifiers include Respiration Rate (RESP), Fraction of Inspired Oxygen (FiO_2) from supplemental oxygen delivery devices, and Pain level.
- Automatic trend capture – 1 minute average of continuously monitored physiologic parameters as well as interval capture of non-continuously monitored parameters (i.e., Temperature and NIBP)
- Second speaker tone to inform the clinician an alarm has persisted for an extended period of time and provide back-up to the primary speaker
- Li-ion battery for extended operational use and transport
- Light weight for ease of use during transport
- Mounting solutions including: roll stand, IV pole, wall, table top and swivel mount (EMS)
- Rugged design: Rated for use during professional transport

Refer to the appropriate User Manual Addendum for additional optional parameter details:

- Refer to 740 SELECT User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335
- Refer to 740 SELECT User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333
- Refer to 740 SELECT User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332
- Refer to 740 SELECT User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334

PATIENT ENVIRONMENT

The 740 SELECT monitor has been tested with specific parts of the “system” used within the Patient Environment (refer to Figure 1).

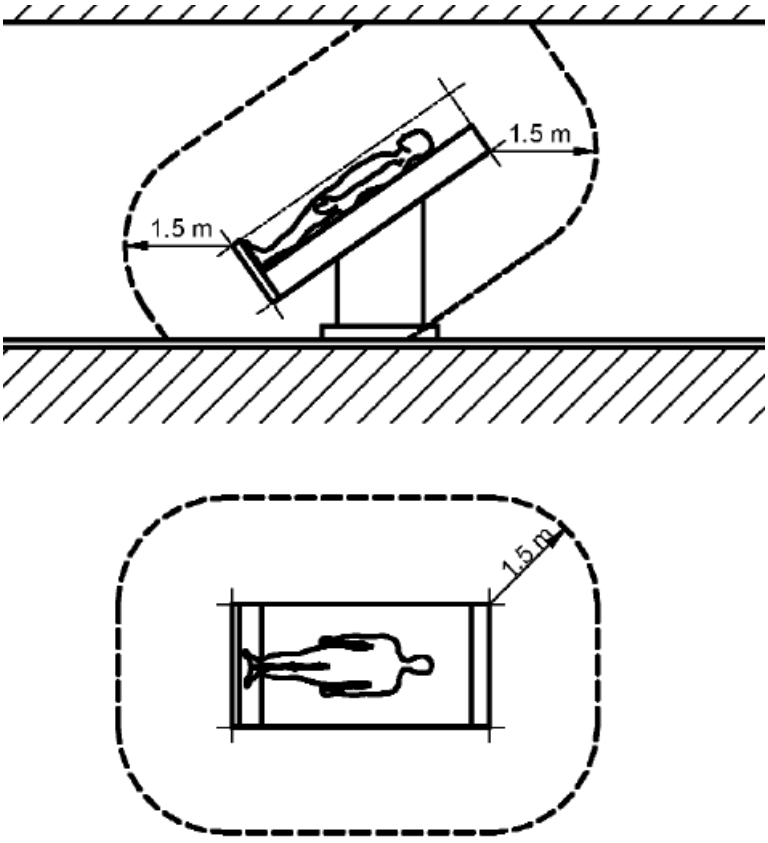


Figure 1: Patient Environment

The parts of the “system” that can be used in the Patient Environment are defined in Table 1 below:

Table 1: Parts of the System

740 SELECT multi-parameter monitor
Appropriate Accessories, Refer to Section 16, ACCESSORIES
Power Supply and AC Line Cord
External Printer with integrated cable to monitor (optional)
Handheld bar code reader with USB connector (optional)

3. UNPACKING THE MONITOR

INITIAL INSPECTION

Before unpacking the monitor, inspect the packaging for damage. If there are any signs of damage to the package, a claim should be filed immediately with the shipping agent. It is the receiver's responsibility to notify the carrier's local office to arrange for the pickup of the damaged items. Save the damaged shipping carton as evidence.

Contact your distributor, Zoe Medical sales representative, or call Zoe Medical to report external damage and to arrange for repair or replacement of damaged equipment.

The shipping carton should contain the items listed below. Unpack the monitor and account for each item. Inspect each item for signs of external damage, dents, cracks, scratches, etc. If an item is missing or damaged, contact your distributor, Zoe Medical sales representative, or Zoe Medical.

Record the monitor model, serial number and date of purchase at the back of this Manual.

MONITOR CHECKLIST

Note: Actual shipping carton contents will vary depending on monitor configuration, accessories and software options ordered.

Qty.	Description
1	740 SELECT monitor w/Lithium-ion battery (installed)
1	Power Supply
1	AC Power Cord (*)
1	740 SELECT User Manual CD
1	Adult Blood Pressure Start Up Kit Includes: Twelve (12) ft. (3.65m) and Adult Blood Pressure Cuff - Applied Part (**)
1	740 SELECT Quick Setup Guide
1	740 SELECT Quick Reference Guide(s) based on parameters installed
	For models with SpO_2 (Masimo Rainbow SET or Nellcor OxiMax) option installed
1	SpO_2 Interconnect Cable
1	Adult SpO_2 Finger Sensor - Applied Part
	For models with ECG option installed
1	ECG Patient Cable
1	ECG Lead Wires and package of electrodes
	For models with FILAC 3000 Temp option installed
1	Blue (Oral) Isolation Chamber (***)
1	Blue (Oral) Temp Probe - Applied Part (***)
1	Box of Temp Probe Covers - Applied Part

(*) The monitor is shipped with the appropriate line cord for the country and or voltage being used.

(**) The monitor may be shipped with optional six (6) ft (3 m) NIBP hose and Neonatal/Infant NIBP Cuffs, depending on the sales order.

(***) The monitor may be shipped with optional Red Rectal Temp Probe and Red Rectal Isolation Chamber, depending on the sales order.

Warning: Do not use any other power supply other than the one supplied by Zoe Medical. Refer to Section 16, OTHER ACCESSORIES for power supply part number information.

OPTIONAL MOUNTING ACCESSORIES

Several mounting configurations are available to fit your needs.

Refer to Section 16, ACCESSORIES for part number information.

Contact Zoe Medical Customer Service Department or your local distributor for more information. Refer to the Contact Addresses on page 3 for email and phone number information.

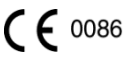
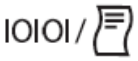
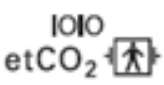
Refer to the appropriate User Manual Addendum for a listing of available optional parameter accessories:

- Refer to 740 SELECT User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335
- Refer to 740 SELECT User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333
- Refer to 740 SELECT User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332
- Refer to 740 SELECT User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334

4. SYMBOLS

The following is a summary of all symbols used on the monitor and accessories. Symbols may occur on the product or on its packaging.

SYMBOLS ON THE MONITOR

	Caution
	Input
	Symbol used on the rear panel of the **740** SELECT monitor to indicate the polarity of the DC power input
	Direct Current
	The CE Mark and Notified Body Registration Number signify the device has met all essential requirements of European Medical Device Directive 93/42/EEC
	Indicates this monitor is subject to the Waste Electrical and Electronic Equipment Directive in the European Union
	Keep dry
IPX1	Protected against dripping water (refer to IEC 60529)
	Connection for USB Memory stick and **740** SELECT monitor bar code reader
	Ethernet connection
	Nurse call Interface connection
	Two-way Communication or **740** SELECT Printer Port (configurable)
	Federal law restricts this device to sale by or on the order of a physician or licensed practitioner
	Follow instructions for use
	Serial Interface for End-Tidal CO_2 Device. Models may be software enabled to interface with an ETCO2 module (Masimo or Covidien). Refer to **740** SELECT User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333.
	Indicates protection against the effects of the discharge of a cardiac defibrillator. Patient connections are Type BF and protected against defibrillation

SYMBOLS NEAR PATIENT CONNECTION

Indicates protection against the effects of the discharge of a cardiac defibrillator. Patient connections are Type CF and protected against defibrillation

ECG 3 wire ECG connector

Indicates protection against the effects of the discharge of a cardiac defibrillator. Patient connections are Type BF and protected against defibrillation

MAXNIBP ® NIBP Hose and Blood Pressure Cuff Connector, CASMED MAXNIBP (**M**otion **A**rtifact e**X**traction Technology)

SpO_2 Pulse Oximeter Input Connector, accompanied by one of the following:

Nellcor Technology

Masimo Rainbow Set Technology

SafeSAT Technology

Temp Input Connector

SYMBOLS ON FRONT PANEL

ON/Off – Turns the monitor On or Off

SYMBOLS ON PACKAGING IN PLACE OF TEXT

Lot Number

Do Not Reuse

Symbol used to indicate the minimum and maximum storage and transport Temperatures. Refer to STORAGE/TRANSPORT ENVIRONMENT on page 178

Symbol used to indicate the minimum and maximum relative humidity for storage and transport. Refer to STORAGE/TRANSPORT ENVIRONMENT on page 178

Symbol used to indicate the minimum and maximum atmospheric pressure for storage and transport. Refer to STORAGE/TRANSPORT ENVIRONMENT on page 178

CE 0086 The CE Mark and Notified Body Registration Number signify the device has met all essential requirements of European Medical Device Directive 93/42/EEC

Fragile, handle with care

This end up

TOUCHSCREEN KEYS ON DISPLAY

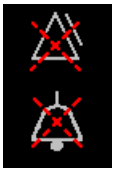
The monitor uses touchscreen keys to facilitate monitoring functions. Touch keys are located on the far right hand side of the display screen in a vertical fashion. The keys are fixed and cannot be changed or reconfigured.

Silence	Alarm Silence touch area - Pauses Audio for 1, 1.5, or 2 minutes
Standby	Standby touch area - Places the monitor into standby mode; touching the screen will return the monitor to full operation (NO alarms are generated while in Standby)
Print	Print touch area - Prints information to connected printer
Save	Save touch area - Saves snapshot of patient values to trend storage
Trends	Trends touch area - Display a record of trends and Saved Snapshots in tabular form
Setup	Setup touch area - Enter the Setup screens to configure the monitor
Home	Home touch area - Returns the monitor's display to the Main screen

Note: Standby is used to enhance clinical workflows:

- Allows attachment of patient interface cables to the monitor in advance of patient
- The monitor automatically reverts to active monitoring when patient data is detected
- Provides the user with the option to suspend all patient monitoring

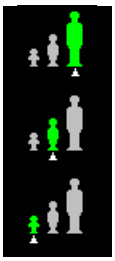
ALARMS/AUDIO STATE ICONS



Alarms Pause - Indicates the generation of all Alarms has been temporarily paused

Audio Pause - Indicates the audio associated with current Alarms has been temporarily paused

PATIENT MODE ICONS



Adult: Sets the **740** SELECT to monitor Adult patients - refer to Setup-Patient Information screen

Pediatric: Sets the **740** SELECT to monitor Pediatric patients - refer to Setup-Patient Information screen

Neonatal: Sets the to **740** SELECT to monitor Neonatal patients - refer to Setup-Patient Information screen

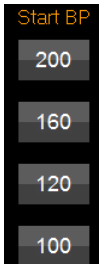
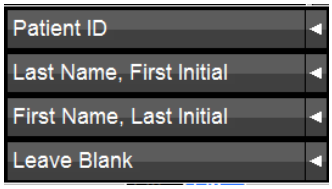
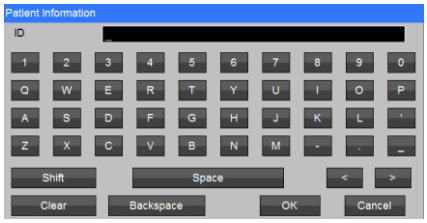
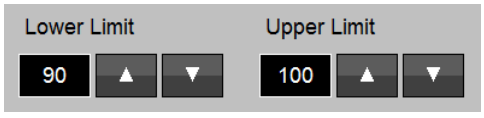
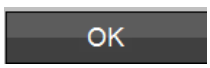
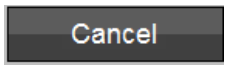
WORKFLOW ICONS

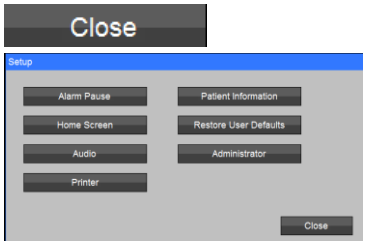
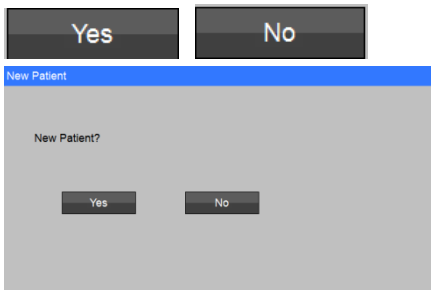
CONT - Continuous mode, refer to Workflow section on page 95

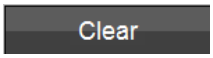
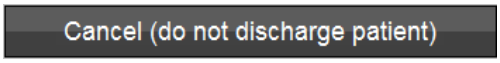
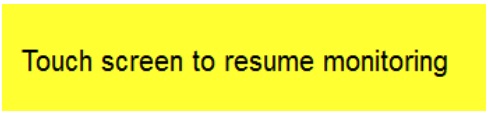
SPOT - Spot Check mode, refer to Workflow section on page 95

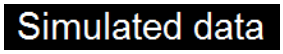
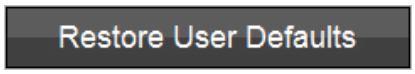
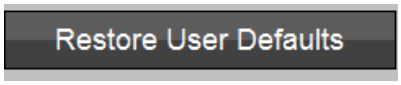
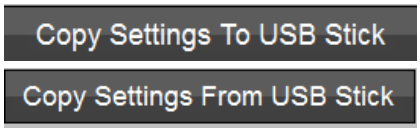
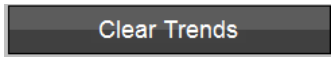
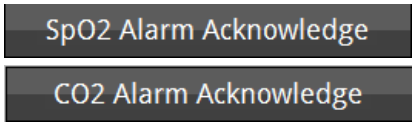
TOUCHSCREEN CONTROLS ON DISPLAY

Provides the user with interactive touchscreen monitor controls and activity buttons used to configure monitor settings, limits etc.

Touchscreen Controls	Example:	Description:
Start/ Stop NIBP **Start BP**	 Typically used during continuous monitoring  Typically used for Spot-Check workflow mode	Used to start or stop an NIBP measurement (Start changes to Stop when selected). Start BP Options provide workflow flexibility (Spot-Check, Continuous Monitoring workflow modes – adaptive measurements).
Drop-down		Selection keys typically appearing in the Setup menu.
Patient Identification		Used to enter the current patient ID. When selected opens a screen allowing patient specific information to be entered using an on screen QWERTY keyboard. Alternately the optional 740 SELECT bar code reader may be used to enter the patient's ID.
Setting Up/Down Arrows		Located in all menus and setup screens. When arrow is touched, allows individual settings to be changed or adjusted to desired setting.
OK		Located in all Setup screens. Used to confirm a setting and return to prior screen.
Cancel		Located in all Setup screens. Used to exit a screen without making a change.

Touchscreen Controls	Example:	Description:
Auto		When selected, automatically sets alarm limits to default settings.
Print		Located in the Main and Trends menu, allows user to print measured parameters displayed on the main screen. Allows user to print trends, saved snapshots, SpO_2, waveform, printer diagnostic.
Close		Select to exit the screen being viewed.
Yes / No		Yes - Used to express agreement with a posed question. (e.g., “New Patient?”). No - Used to express disagreement of a posed question. (e.g., “New Patient?”).
Screen Lock Screen Unlock		Used to limit access to menus by unauthorized users. When padlock icon is selected (upper right hand corner of display screen) the Enter password screen is opened. User is required to enter a password to lock access to menus or unlock access to menus. Password is the current date displayed on the main menu (MM/DD/YY). Example: Current date: 12/10/2015 Enter: 12102015

Touchscreen Controls	Example:	Description:
Numeric Keypad		Used to enter patient information (height, weight, DOB, etc.).
Clear		Used to remove current entry in a data field.
Backspace		User to move the cursor back one space or more.
FILAC Temp Measurement In-progress		Displayed when FILAC Temp Probe is removed from the isolation camber; indicates measurement is in-progress.
On/Off		Used to turn a feature or setting On or Off.
Enter Standby Mode		Presents user with the choice to place the monitor into a non-monitoring state; all alarms are silenced and patient monitoring is suspended.
Discharge Patient **Cancel (do not Discharge patient)** **Ok (discharge patient)**	  	Discharge Patient – Select to remove patient IDN, name and Patient Information from monitor. Cancel (do not discharge patient) - When selected cancels action and returns the monitor to the main screen. OK (discharge patient) – when selected completes removal of current patient IDN, name and Patient Information from monitor. Monitor returns to user's Default settings.
Touch screen to resume monitoring		When the monitor is in Standby Mode, allows user the option to initiate patient monitoring at any time by touching the monitor display screen.

Touchscreen Controls	Example:	Description:
Up and Down Arrow **Trends Screen and Alarm Log**		Allows user to browse through available records in the Trends or Alarm Log.
Alarms Log Review		Allows user to navigate to the beginning or end of the Alarm log.
Alarm Log **Align Alarm Log right or left**		Allows user to navigate to the right or left to view the entire table/log.
Demo Mode		Indicates the monitor has been placed into Demonstration Mode from a password protected screen. No active monitoring while in Demo Mode.
user Defaults		Located in the password protected Setup System menu. Allows the institution to establish and save settings and monitor features (profile) as user Defaults.
Restore user Defaults		Allows the user to re-set the monitor to the previously saved user Defaults.
Copy Settings to and from USB Flash Drive		Allows user to copy settings/defaults from one monitor to another or to retain a copy of the current monitor default settings for future reference.
Clear Trends		Located in the Setup/Administrator menu. Allows the user the ability to remove all current Trends stored on the monitor.
SpO_2 and CO_2 Alarm Acknowledge		Selecting this button silences the audible SpO_2 or CO_2 equipment alarm and clears the alarm messages (e.g., SpO_2 check sensor placement)

5. MONITOR SAFETY MEASURES

WARNINGS

Warning: The monitor needs special precautions regarding EMC and needs to be installed and put to service according to the EMC information provide in the Guidance and Manufacturer's Declaration – Electromagnetic Immunity Section.

Warning: Portable and mobile RF communications equipment may affect the monitor and should be used no closer to any part of the monitor, including cables, than the recommended separation distance calculated in Guidance and Manufacturer's Declaration – Electromagnetic Immunity Section.

Warning: The monitor is intended only as an adjunct in patient assessment. It must be used in conjunction with clinical signs and symptoms.

Warning: The monitor Alarm Volume should be verified suitable for the area in which they are used.

Warning: Do not use this instrument for any purpose other than specified in this Manual. Doing so will invalidate the monitor's warranty.

Warning: Do not connect more than one (1) patient to the monitor.

Warning: To remove all power from the monitor, the AC plug must be disconnected from the wall outlet or the power cord must be removed from the rear of the monitor and the battery pack must be removed.

Warning: Do not plug the monitor into an outlet controlled by a wall switch.

Warning: Before each use, verify that the alarm limits are appropriate for the patient being monitored.

Warning: Before each use, make sure that the monitor default alarm settings are appropriate for the specific patient being monitored.

Warning: The position of patient, physiological condition, and other factors affect the readings.

Warning: Occasionally, electrical signals at the heart do not produce a peripheral pulse. If a patient's beat-to-beat pulse amplitude varies significantly (for example, pulsus alternans, atrial fibrillation, rapid-cycling artificial ventilator), blood pressure and pulse rate readings can be erratic and an alternate measuring method should be used for confirmation.

Warning: Where the integrity of the external protective conductor in the installation or its arrangement is in doubt, EQUIPMENT shall be operated from its INTERNAL ELECTRICAL POWER SOURCE.

Warning: Do not, under any circumstances, perform any testing or maintenance on the monitor, power supply or power cords while the unit is being used to monitor a patient. Unplug the power cords before cleaning or servicing the monitor. The user should not perform any servicing except as specifically stated in this Manual.

Warning: Do not touch part of non-medical electrical equipment in the patient environment after removal of covers, connectors, etc. without the use of a tool which operate at voltages not exceeding 25 VAC or 60 VDC and the patient at the same time.

Warning: Do not use a frayed or damaged power cords, or any accessory if you notice any sign of damage. Contact Zoe Medical for assistance.

Warning: Equipment **is not** suitable for use in the presence of FLAMMABLE ANESTHETICS.

Warning: Equipment is not intended to be used in Oxygen Enriched Atmospheres.

Warning: Do not gas sterilize or autoclave the monitor.

Warning: The use of Accessory equipment not complying with the equivalent safety requirements of this equipment may lead to a reduced level of safety of the resulting system. Consideration relating to the choice shall include:

- Use of the accessory in the Patient Environment; and
- Evidence that the safety certification of the accessory has been performed in accordance with the appropriate IEC 60601-1 collateral and particular harmonized national standard.

Warning: Do not use the monitor in the presence of Magnetic Resonance Imaging (MRI) equipment.

Warning: Do not place liquids on top of the monitor. Do not immerse the monitor, power supply or power cords in water or any liquid. If unit is accidentally wetted it should be thoroughly dried. The rear cover can be removed by a qualified service technician to verify absence of water.

Warning: ELECTRICAL SHOCK – To reduce the risk of electrical shock, do not remove the back cover. Refer all servicing to qualified personnel.

Warning: ELECTROMAGNETIC COMPATIBILITY (EMC) – The equipment needs special precautions regarding EMC. Refer to “Manufacturers Declaration of Conformity on page 4 for additional information regarding EMC. Be aware that strong electromagnetic fields may interfere with monitor operation. Interference prevents the clear reception of signals by the monitor. If the hospital is close to a strong transmitter such as TV, AM, or FM radio, police or fire stations, a HAM radio, an airport, or cellular phone, their signals could be picked up as signals by the monitor.

Warning: ACCURACY – If the accuracy of any measurement does not seem reasonable, first check the patient’s vital signs by alternate means and then check the monitor for proper functioning.

Warning: CABLES - Route all cables away from patient’s throat to avoid possible strangulation.

Warning: ACCESSORIES – The use of accessories and cables other than those specified, with the exception of the accessories and cables sold by Zoe Medical as replacement parts, may result in increased emissions or decreased immunity of the monitor.

Warning: ACCESSORIES – It is the responsible organization and/or user to verify the compatibility of the monitor, probes, and cables before use, otherwise patient injury can result.

Warning: DEFIBRILLATION – Do not come in contact with patients during defibrillation. Serious injury or death could result.

Warning: DISPOSAL – Dispose of the packaging material, observing the applicable waste control regulations.

Warning: SITE REQUIREMENTS – For safety reasons, all connectors for patient cables and sensor leads are designed to prevent inadvertent disconnection, should someone pull on them. Do not route cables in a way that they may present a stumbling hazard. For devices installed above the patient, adequate precautions must be taken to prevent them from dropping on the patient.

Warning: STACKING – Where a monitor is used adjacent to or stacked with other equipment, the monitor should be observed to verify normal operation in the configuration in which it will be used.

Warning: A NIBP monitor does not operate effectively if a patient is having seizure activity, convulsions or tremors, or is connected to a heart/lung machine.

Warning: When a patient is experiencing arrhythmias during a NIBP measurement, the accuracy of the pulse determination may be affected or the time needed to complete a measurement may be extended. The monitor will not make a determination beyond 120 seconds.

Warning: For data accuracy and consistency, as well as patient comfort, follow the 10 Tips guidance found at the start of Section 8, BLOOD PRESSURE MONITORING.

Warning: Significant levels of dysfunctional hemoglobins such as carboxyhemoglobin or methemoglobin may affect the accuracy of the measurement.

Warning: Cardiogreen and other intravascular dyes, depending on the concentration, may affect the accuracy of the oximeter measurement.

Warning: Setting the Upper Alarm limit to the extreme high value can render the Upper Alarm Limit detection ineffective.

Warning: Setting the Lower Alarm limit to the extreme low value can render the Lower Alarm Limit detection ineffective.

CAUTIONS

Caution: Pressing the touchscreen with a sharp or pointed instrument may permanently damage the touchscreen. Press the touchscreen using only your finger.

Caution: Inspect the monitor, air hose, and sensors for any damage prior to operation. If any damage is noted, the monitor should not be used until it has been serviced. The monitor should be repaired only by personnel authorized to do so by Zoe Medical.

Caution: Use only Zoe Medical approved accessories and sensors to preserve the integrity, accuracy and the electromagnetic compatibility of the monitor.

Caution: The oximeter is factory calibrated to determine the percentage of arterial oxygen saturation of functional hemoglobin.

Caution: Some sensors may not be appropriate for a particular patient. If at least ten (10) seconds of adequate height pulse on the Plethysmograph waveform cannot be observed for a given sensor, change sensor location or sensor type until this condition is achieved.

Caution: If the monitor fails to respond (including the display and touchscreen), do not use it until the situation has been corrected by qualified personnel.

Caution: Biting the FILAC Temp Probe tip while taking a temperature may result in damage to the Temp Probe.

Caution: ACCIDENTAL SPILLS – In the event that fluids are accidentally spilled on the monitor, take the monitor out of operation and inspect for damage.

Caution: ELECTROSURGERY – Measurements may be affected in the presence of strong electromagnetic sources such as electro surgery equipment.

Caution: GROUNDING – Do not defeat the three-wire grounding feature of the AC power cord by means of adaptors, plug modifications, or other methods. Do not use extension cords of any type. Do not connect the monitor to an electrical outlet controlled by a wall switch or dimmer.

Caution: INTERFACING OTHER EQUIPMENT – Monitoring equipment must be interfaced with other types of medical equipment by qualified biomedical engineering personnel. Be certain to consult manufacturers' specifications to maintain safe operation.

Caution: The monitor may not meet performance specifications if stored or used outside temperature and humidity ranges. When moving a monitor from a storage location, wait at least one hour prior to use to allow it to adjust to room temperature.

Caution: Remove the battery if the monitor is not likely to be used for some time.

Caution: Under certain conditions, the monitor provides “DRIP-PROOF” level of protection from ingress to moisture. Do not expose the monitor to extreme moisture levels such as direct exposure to rain. Exposure to extreme moisture levels may cause incorrect or inaccurate performance or monitor failure during or after exposure.

NOTES

Note: There are no known risks with common disposal of equipment or accessories; however, the disposing of accessories should follow in accordance with local hospital policies. The Li-Ion battery should not be incinerated. The user should ensure these policies do not conflict with any local, state or federal guidelines.

Note: The monitor is suitable to be connected to public AC mains power.

Note: The monitor is not “Category AP or APG Equipment”.

Note: The monitor is for “Continuous Operation”.

Note: The 740 SELECT ECG applied parts are “Type CF Defibrillation Proof”.

Note: The 740 SELECT non-ECG applied parts are “Type BF Defibrillation Proof”.

INSTALLATION AND FUNCTIONAL VERIFICATION

The user should be positioned in front of the monitor, within arm's length to allow operation of the touchscreen as well as connection/disconnection of cables. The user should be positioned to allow hearing of audible alarm tones generated by the monitor.

Perform the following steps to set up the monitor.

Table Top

1) Position the monitor on a flat surface, away for the any edge.
2) Route the patient cables so that if pulled the monitor will not fall.

Mounted

1) Attach the VESA Adapter plate to the bottom of the monitor using the supplied hardware.
2) Affix the monitor via the attached plate to the desired mounting solution.
3) Verify the mounting of the monitor is secure.

Perform the following steps to power on the monitor and test the Alarm Operation:

1) Connect the supplied AC power cord to the power supply.
2) Connect the AC power cord plug to a wall outlet. The wall outlet should not be controlled by a switch.
3) Connect the power supply DC power cord into the DC Connection in the rear of the monitor (refer to Figure 3 on page 41).
4) Secure the DC power cord to the monitor with the provided attachment.
5) Power on the monitor (refer to TURNING THE MONITOR "ON" section on page 47).
6) Verify the monitor is configured for the proper type patient: Adult, Pediatric, or Neonate.

User-initiated Testing of Alarm Signal Generation

Once the monitor is on, verify the unit is functioning properly by performing the following functions:

1) Set The NIBPs Lower Alarm Limit to Off, and the NIBPs Upper Alarm Limit to 40 mmHg.
2) Attach the NIBP Cuff to a NIBP Simulator or your arm.
3) Start a NIBP Measurement and allow it to complete.
4) Verify a NIBPs Upper Alarm Limit violation is created; Visual and Audio annunciation.
5) Remove and Silence the NIBPs Upper Alarm Limit violation.

Caution: Testing of the Alarm operation should be done at least once every 6 months. The recommend functional verification may be completed by a bio-med.

6. MONITOR OPERATION

FRONT PANEL

Figure 2: Front Panel View

FRONT PANEL CONTROLS

Refer to Figure 2:

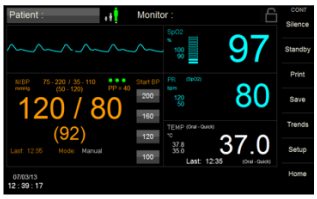
On/Off:

Press once, to turn “ON” (if it was Off).

To turn “Off”, press and hold for two (2) seconds.

POWER LED:

Indicates External Power is connected.



TOUCHSCREEN:

Provides Graphical user Interface (GUI) for controlling and configuring the monitor.

REAR PANEL

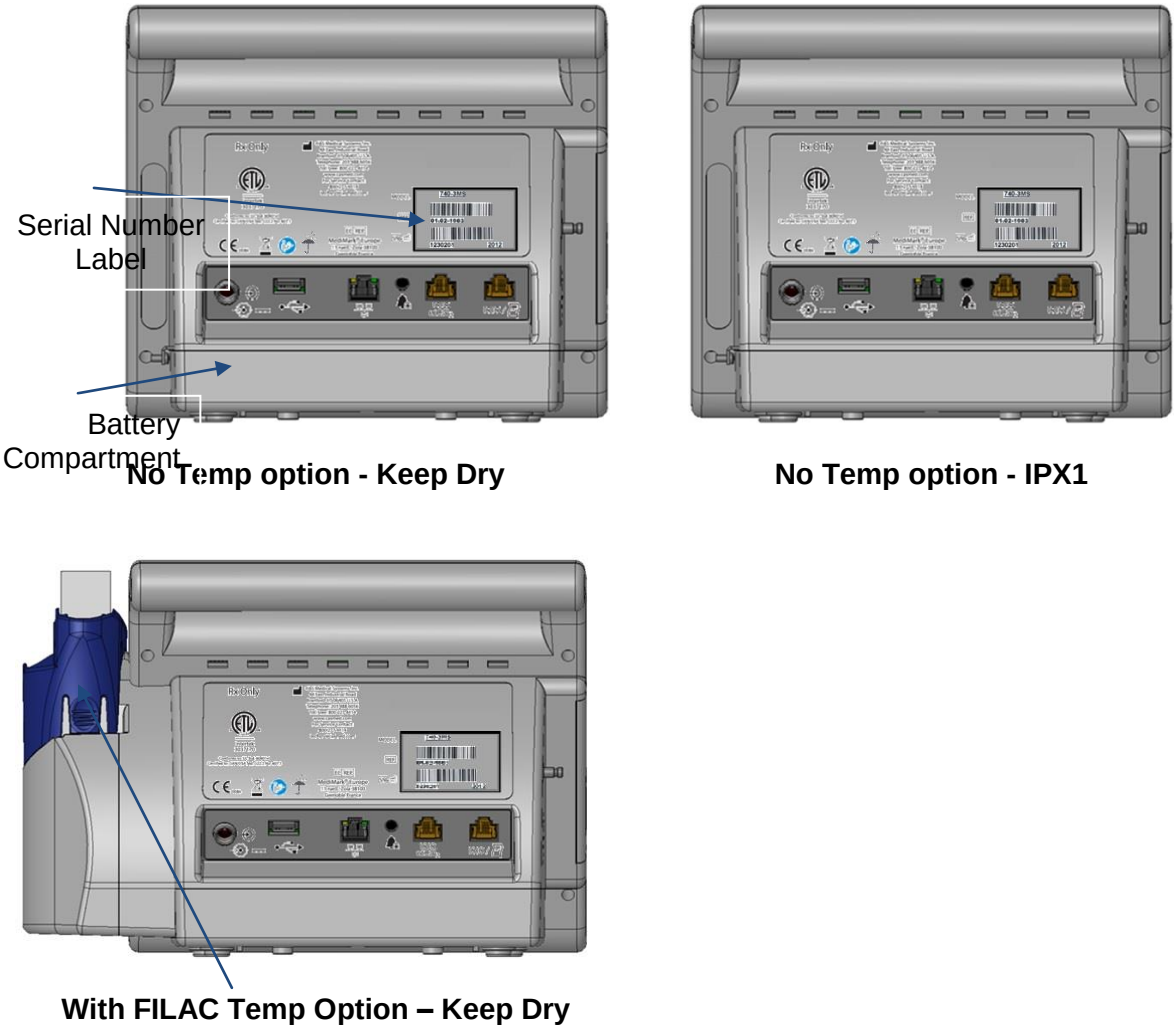
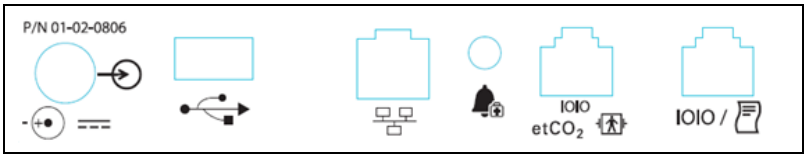


Figure 3: Rear Panel View

Note: The serial number label is located on the back side of the monitor.

Note: The monitor offers a choice of thermometry. The monitor can be configured for either FILAC 3000 or Exergen Non-Invasive Temporal Artery thermometry. Refer to **740 SELECT** User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334.

REAR PANEL PORTS & CONNECTIONS:



(1) (2) (3) (4) (5) (6)

(1) DC CONNECTION

Receptacle for the DC power supply is located on the rear panel. Use Only Zoe Medical PN
01-02-0806 Power Supply.

(2) USB CONNECTION

Note: Not all flash drives are supported. Use only Zoe Medical PN 01-02-0814 USB Flash Drive.

The USB connection allows for the following:

- Perform software upgrades via USB Flash Drive
- Copy monitor Settings to or from USB Flash Drive
- Copy monitor Logs to USB Flash Drive
- Connect monitor to optional bar code reader

(3) ETHERNET CONNECTION

Receptacle for Ethernet connectivity.

(4) NURSE CALL CONNECTION

Receptacle for Nurse Call Cable (Zoe Medical PN 01-02-1100). The Nurse Call connection is intended to allow for connection to existing health care facility Nurse Call systems. Alarm Out Relay must be Enabled in the Setup Service menu.

(5) ETCO2 DEVICE INTERFACE

The monitor is capable of interfacing to multiple standalone (external) capnography devices (Masimo ISA, Masimo IRMA and Covidien MicroPod). The optional ETCO2 feature are available either as factory installed or by a field software update.

The 740 SELECT monitor Open Technology Platform (OTP) allows CO_2 Monitoring Software to be installed at any time on any monitor as a CO_2 parameter upgrade.

Note: Models may also be software enabled to interface with an EtCO2 module (Masimo or Covidien). Refer to 740 SELECT User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333.

(6) EXTERNAL DEVICE INTERFACE

The monitor provides an RJ45 serial communications output. The port can be configured in the Setup System menu for use with the monitor optional external printer or for device communications (Zoe Medical ATE communications protocol).

Refer to Section 15, EXTERNAL DEVICE INTERFACING for more information. The 740 SELECT ATE Serial Interface Communications Protocol is readily available for device integration and EMR communications by 3rd party providers.

BATTERY COMPARTMENT

The monitor is equipped with a Li-ion (10.8 Volt, 7800 mAhr) battery pack that, when new

and fully charged, is capable of taking 150 NIBP readings when the monitor is set in the 5-minute Automatic Mode (continuous SpO_2 and 15 minute Temp measurements).

LEFT SIDE VIEW

Refer to Figure 4:

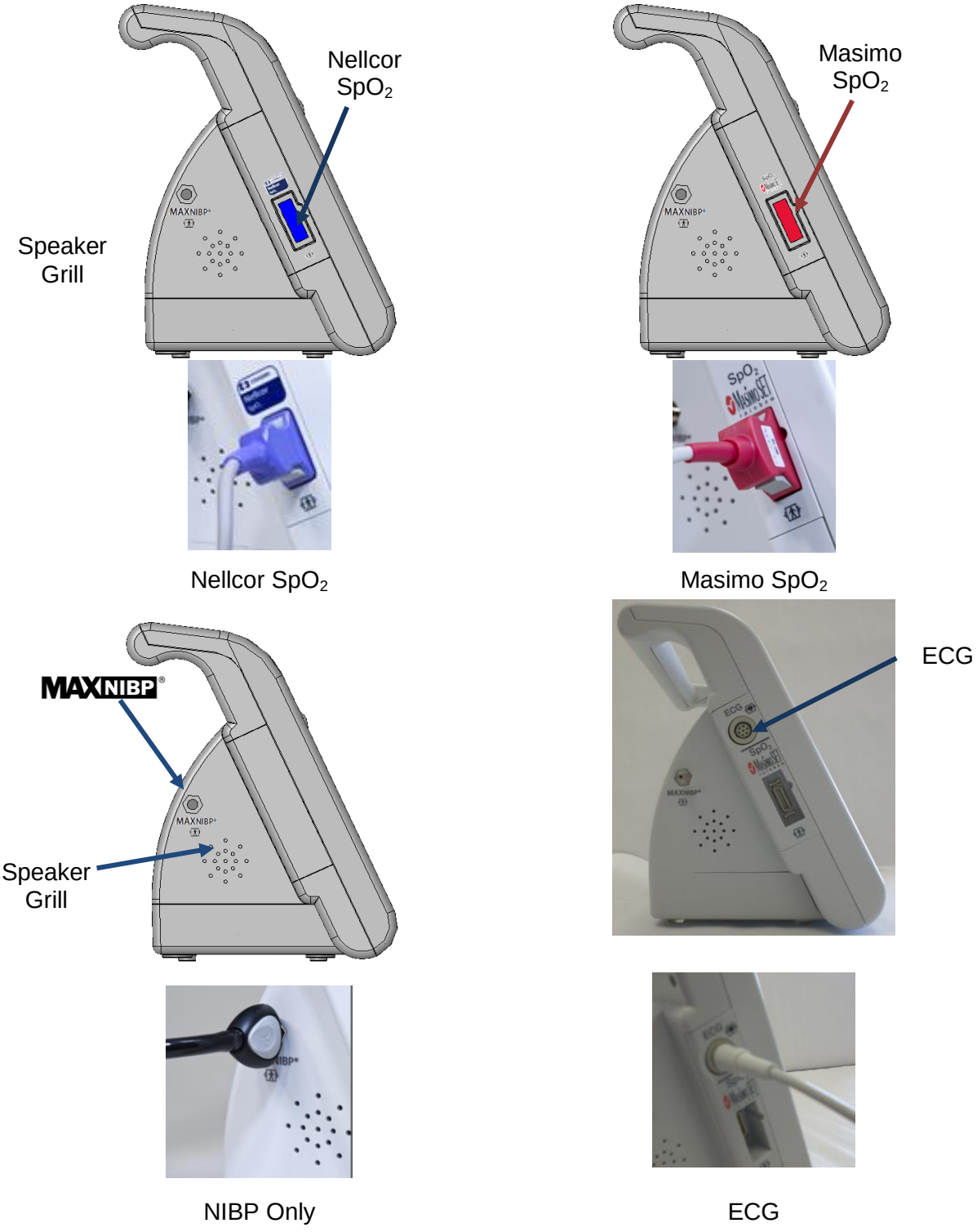


Figure 4: Left Side Panel View

PATIENT CONNECTIONS

NIBP CUFF HOSE CONNECTION

The NIBP inflation hose is connected to the monitor where the MAXNIBP logo is located (refer to

MAXNIBP ®

NIBP Only ECG

Figure 4). An appropriately sized cuff for the patient's arm must be connected to the hose prior to use. Press the button on hose end to release hose from monitor or cuff.

Note: An optional six (6) ft (2 m) inflation hose is available when monitoring in the NEO mode. Refer to Section 16, ACCESSORIES for part number information.

SpO_2 PATIENT CONNECTION (if equipped)

The SpO_2 Patient cable is connected to the monitor where the SpO_2 logo is located (refer to

NIBP Only

ECG

Figure 4). The SpO_2 Sensor is then connected to the SpO_2 Patient cable.

Note: The SpO_2 Patient cable is keyed and can only be inserted one way.

SPEAKER

The monitor equipped with an internal speaker to indicate the presence of alarm conditions.

Warning: Do not place the monitor left side speaker grill against a solid surface. This will cause the alarm tones to be muffled.

RIGHT SIDE VIEW

Refer to Figure 5:

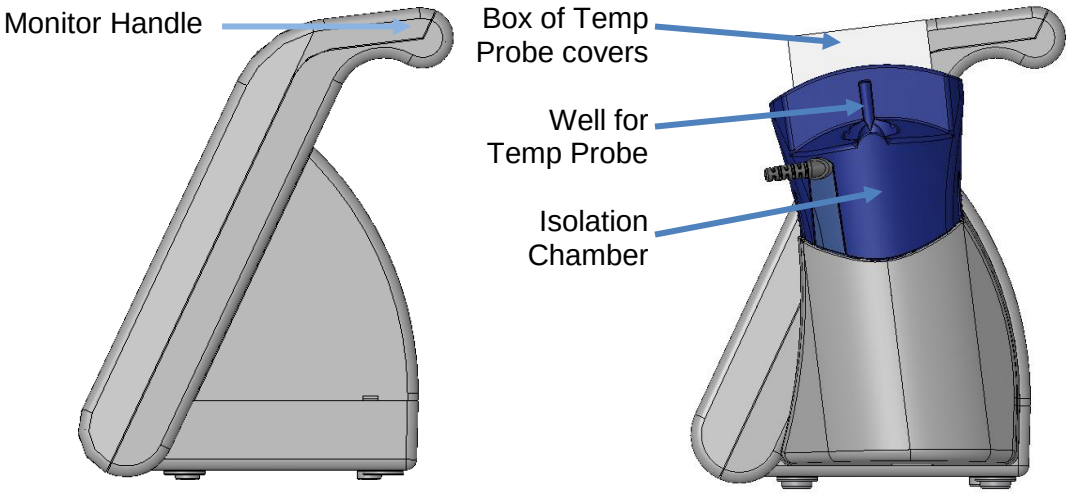


Figure 5: Right Side Panel View

FILAC TEMPERATURE HOLDER (if equipped)

Store the FILAC Temp Probe and Probe Covers in the designated Isolation Chamber locations when it is not in use.

Figure 6: Placing the FILAC Temp probe into Isolation Chamber

Note: Ensure that the FILAC Temp Probe is secured in its Isolation Chamber well. FILAC Temp Probes will slide in and out of the Isolation Chamber well without any restrictions, refer to Figure 6.

Note: The monitor offers a choice of thermometry. The monitor can be configured for either FILAC 3000 or Exergen Non-Invasive Temporal Artery thermometry. Refer to **740 SELECT** User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334.

MONITOR OPERATING INSTRUCTIONS

ADULT/PEDIATRIC/NEONATE OPERATING MODE

NIBP and Temperature functions are affected by changing between Adult, Pediatric and Neonate operating modes.

Caution: Prior to patient monitoring, ensure the monitor is configured to the appropriate patient mode – Adult, Pediatric or Neonate. Refer to page 90, for more information.

Once power has been applied, a visual indicator on the display shall indicate the current operating mode. The monitor will operate in the mode selected until it is changed.

TURNING THE MONITOR "ON"

- Press the ON/Off switch on the front panel to turn the monitor "ON" (refer to Figure 7).

  The ON/Off switch illuminates when the monitor is turned on.

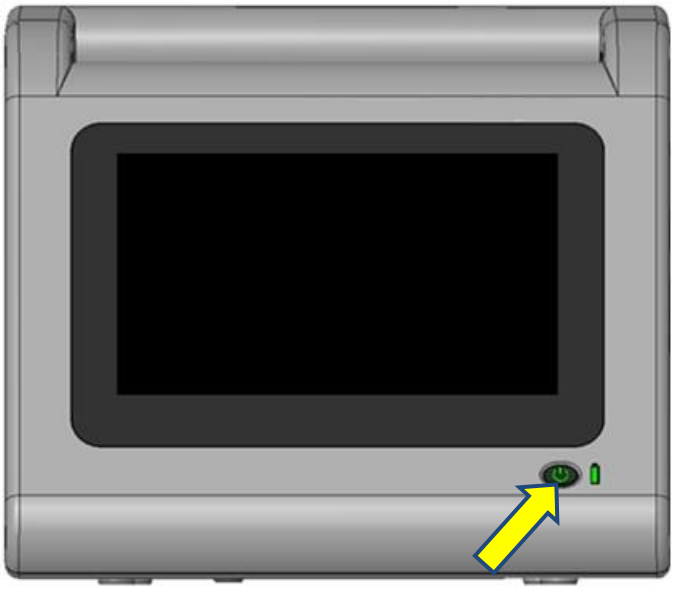


Figure 7: Turning the monitor On

Each time the monitor is turned "ON", a Configuration Setup Test and electronic Power On Self-Test (POST) is conducted to ensure that its internal circuits are functioning properly.

Note: The user should use the Power On Self-Test as a verification tool that all front panel visual indicators and the audio are functioning properly.

Completion of the Setup Test and POST is confirmed by a two beep audio alert. Once the Power On Self-Test is completed, the monitor is ready for use.

Boot-Up Sequence (approx. 25-30 seconds):

- Power On – switch illuminated green
- Zoe Medical splash screen appears
- Screen turns blank for approx. 5 seconds
- Audio beep to confirm POST completed
- **New Patient**? screen appears

TURNING THE MONITOR "Off"

- Press and hold the ON/Off switch on the front panel for two (2) seconds to turn the monitor "Off" (refer to Figure 7).
- The switch is not illuminated when the monitor is turned off.

POWER UP SCREEN

The New Patient Question may appear each time the monitor is power cycled. Refer to On Power Up Selection section on page 51.

Select **Yes** (New Patient) or **No** (Same Patient) as applicable:

- Selecting **Yes** (New Patient) will clear patient information and trend data and restore the monitor to institutional user default settings
- Selecting **No** (Same Patient) will maintain settings and limits established prior to turning the monitor Off.

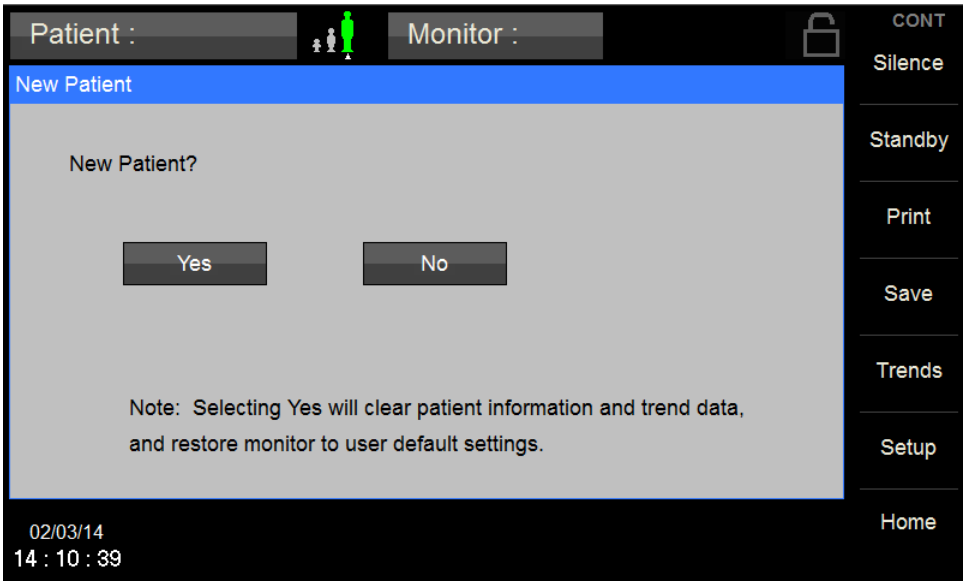


Figure 8: New Patient Question

Configure the monitor for the appropriate clinical workflow

Workflow Options:

- Spot-Check workflow mode
- Continuous Monitoring workflow mode

Perform the following to enable **Spot-Check** workflow mode:

- Press the **Setup** button
- Press the **Administrator** button
- Press the **System** button
- Enter the required password **986**
- Set **Workflow** selection to **Spot Check** (refer to Figure 9 below)

Note: If the monitor has been configured for use in **Spot-Check** workflow mode, selecting **OK** from the "**Save Snapshot?**" screen will automatically clear the patient information (including trend data stored as intervals) and restore the monitor to the user established default settings.

1. Individual patient information (ID and physiologic measurements) will be stored in Trends and can be viewed at any time by selecting "**Saved snapshot**" In the **Trend** screen

Perform the following to enable **Continuous Monitoring** workflow mode:

- Press the **Setup** button
- Press the **Administrator** button
- Press the **System** button
- Enter the required password **986**
- Set **Workflow** selection to **Continuous** (refer to Figure 10 below)

Note: If the monitor has been configured for use in **Continuous** Monitor workflow mode, selecting **OK** from the "**Save Snapshot?**" screen will retain all data stored in Trends (Save snapshots and Intervals).

1. The monitor retains current settings and alarm limits.
2. A New patient can be entered (via bar code reader or keyboard) at any time while in Continuous Monitor workflow mode. The previous patient information will be retained in the Trends with the unique Patient ID (if previously entered).

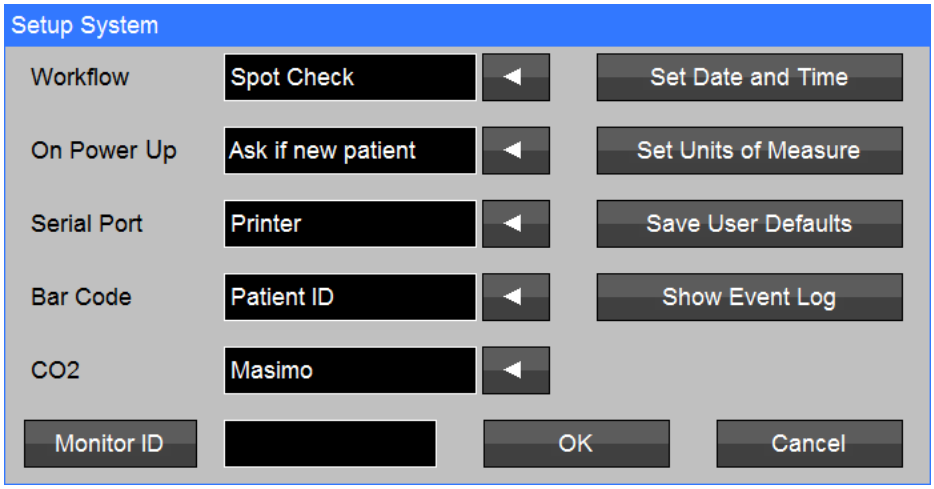


Figure 9: Setup System Menu: **Spot-Check Workflow** mode

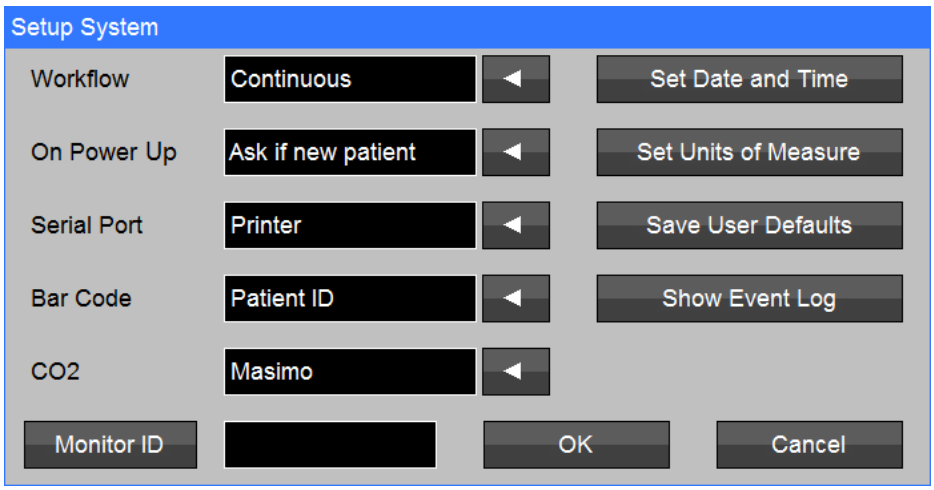


Figure 10: Setup System Menu: **Continuous** Monitoring **Workflow** mode

On Power Up Selection

This feature is designed to help manage the monitor boot up behavior based on the clinical setting (e.g., EMS, Dental Offices or General Hospital Operations).

The New Patient Question may appear each time the monitor is power cycled.

To ask the New Patient Question, resume monitoring the same patient or start monitoring a new patient may be selected via the Setup System menu On Power Up selection.

The On Power Up selection has the following choices:

- **Ask if new patient** - Upon power cycle, the user will be prompted with the question New Patient, Yes or No. Refer to the Power-Up Screen section – typically used in the hospital setting with Spot Check mode.
- **Assume new patient** - Upon power cycle, the user will **NOT** be prompted with the question New Patient, Yes or No. This will clear patient information and trend data and restore the monitor to institutional user default settings – Typically used in pre-hospital setting (e.g., EMS, para-medicine). Monitor opens to the main screen and is ready for patient monitoring as quickly as possible.
- **Assume same patient** - Upon power cycle, the user will **NOT** be prompted with the question New Patient, Yes or No. The previous patient case shall continue. Data and information regarding that patient data shall be retained and case shall continue – Typically used in the hospital / surgical setting when continuously monitoring the same patient.

Perform the following to select the **On Power up** choice:

- Press the **Setup** button
- Press the **Administrator** button
- Press the **System** button
- Enter the required password **986**
- Set **On Power up** selection to desired choice (refer to Figure 11 below)

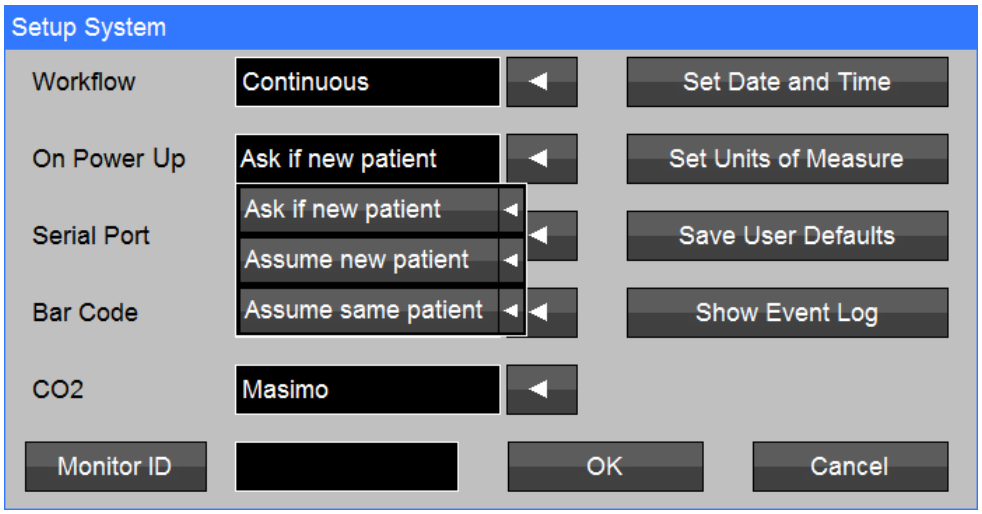


Figure 11: Setup System Menu: **On Power Up** selection

Serial Port Selection

This setting controls whether the **740** SELECT serial port is used for connecting to a strip chart printer, or for communicating to an EMR system.

Bar Code Selection

This setting controls how the monitor interprets data entered using the optional **740** SELECT bar code reader. The optional **740** SELECT bar code reader is a hand held, medical grade device and may be used to enter either the Patient ID or the Clinician ID. Refer to Section 16, ACCESSORIES for part number information. The Patient ID and the Clinician ID can also be entered using an on-screen keyboard.

The bar code reader is shipped from Zoe Medical Plug & Play; no user configuration or additional setup is required.

CO2 Selection

If more than one type of CO2 connection has been enabled, this selection controls which type is currently being used.

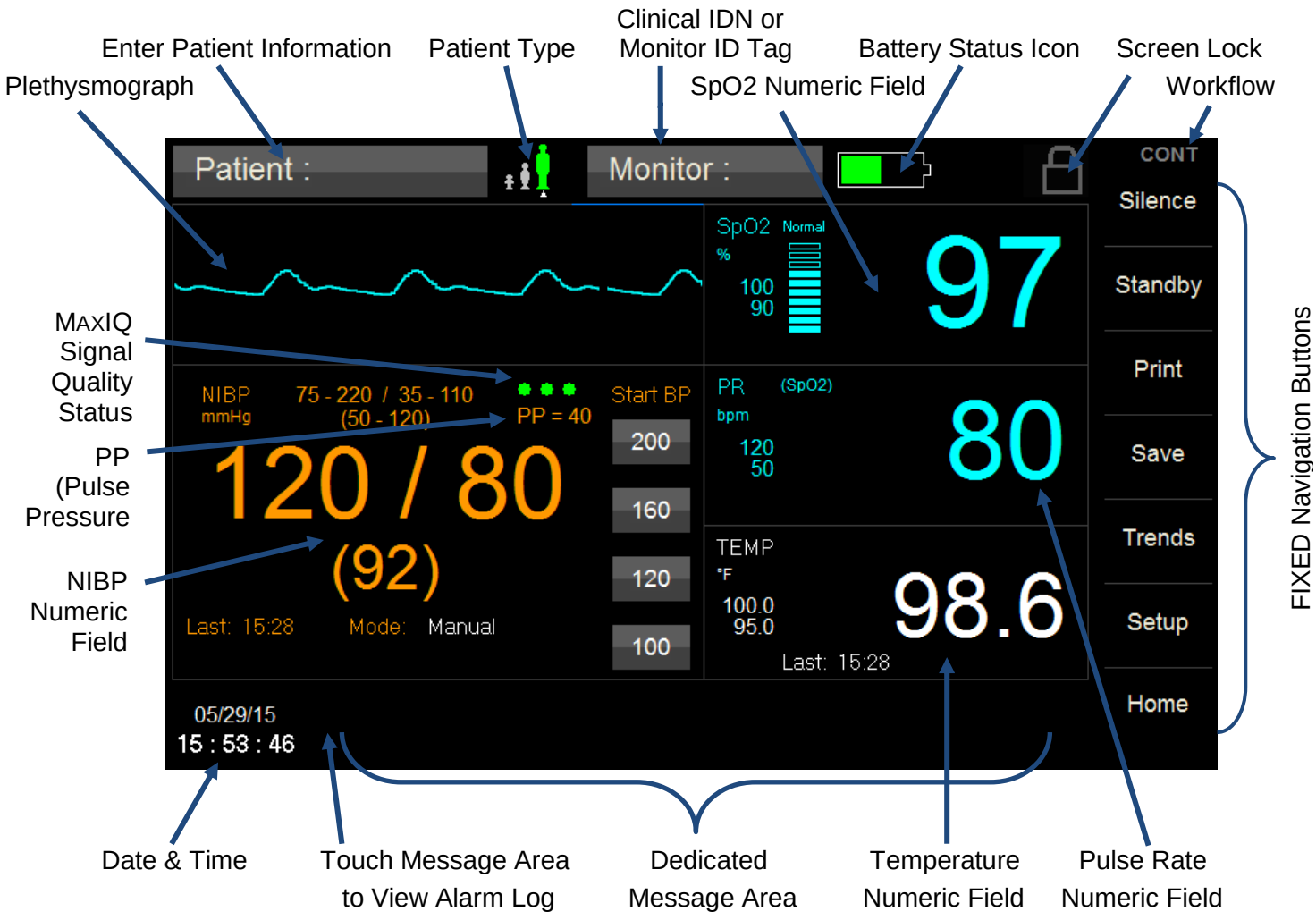
Monitor ID Selection

Text entered in this field is used to provide a unique and user friendly identifying tag for each monitor. This text can optionally be displayed in the area that is reserved for showing either the Clinician ID or the Monitor ID (see following section).

For a full description of other settings available through the Setup System menu, please refer to the Monitor Setup chapter.

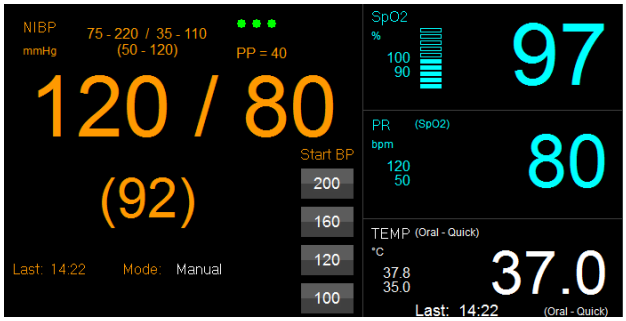
FRONT PANEL CONTROL – Main Screen Display

The monitor has a large and easy to read numerics, 7" color LCD touchscreen display, one-touch access to parameter alarms, settings and Setup menu, and dedicated parameter cells. The display is configurable with or without Plethysmograph (with SpO_2 option) (refer to Figure 12).



User Configurable Main Screen Options

(1) No Plethysmograph



(2) With Plethysmograph

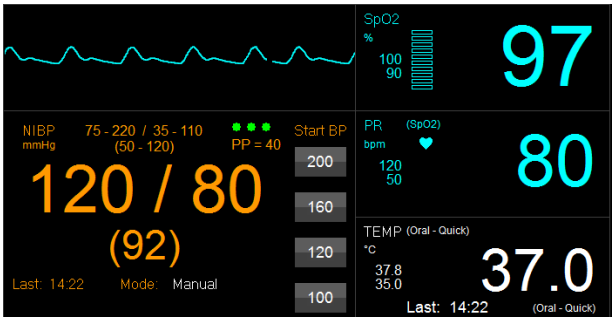


Figure 12: Main Screen Features

PATIENT INFORMATION BUTTON

Display of patient information is user configurable. User options may be selected from the Setup / Administrator / Display menu. Options available for the Patient Button Label are outlined in Figure 13.

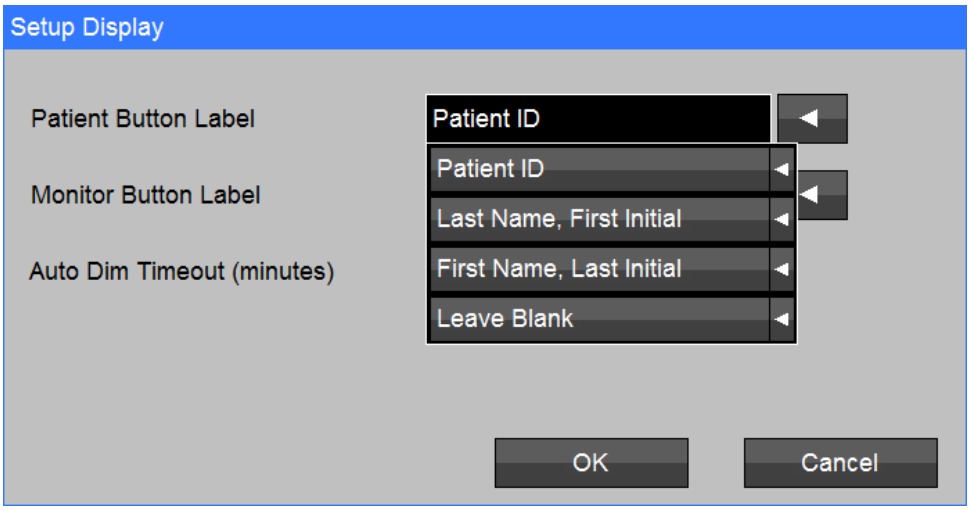


Figure 13: Patient Information Display Options

Note: Patient ID should be selected if using the optional Bar Code Reader.

CLINICIAN INFORMATION BUTTON

Display of clinician information is user configurable. User options may be selected from the Setup / Administrator / Display menu. Display options available for the Monitor Button Label are outlined in Figure 14.

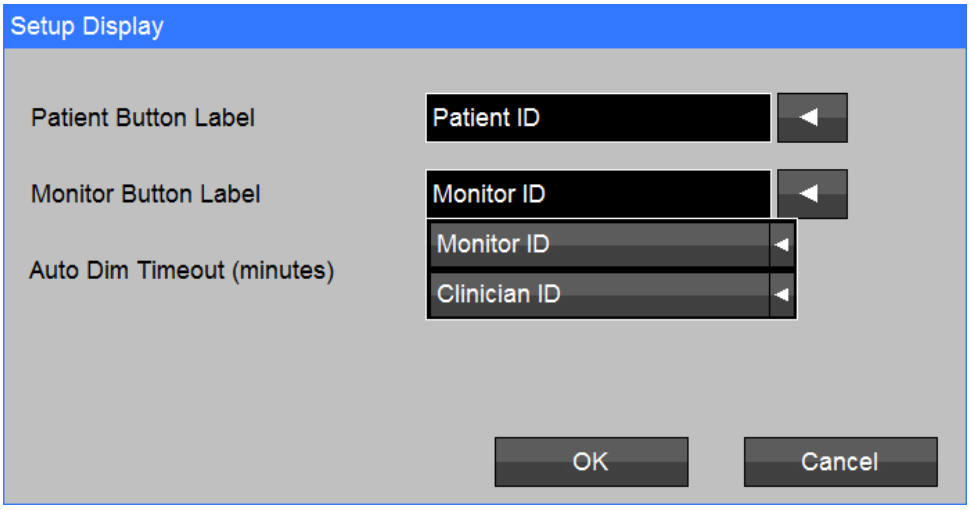


Figure 14: Clinical Information Display Options

PATIENT MODE (TYPE)

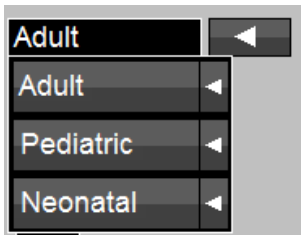
The monitor is capable of monitoring Adult, Pediatric, and Neonatal patients.

The current patient mode selection is noted on the main screen by the arrow located below the Patient Type image.

Arrow (Δ) below patient image points to current Patient Mode. In this example the mode is set to ADULT.

Patient mode selection/changes can be made from either the main screen by touching the Patient Type Icon (as depicted below) or from the Patient Information menu found under Setup [Setup/Patient Information].

With the Patient Information menu open, press the arrow adjacent to Patient Type to open the drop down menu.



To change the Patient Type select the appropriate patient from the drop down list provided (refer to **Error! Reference source not found.**). The selected patient type will appear in the dialog box.

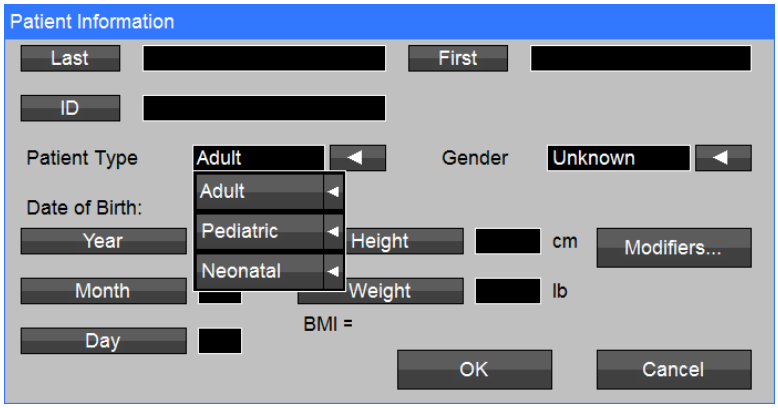


Figure 15: Patient Type Screen

- Select OK to confirm the selection and close the window. Select Cancel at any time to exit without making a change.
- When a different patient type is selected a Confirm Patient Mode Change window will automatically appear. Determine appropriate action to be taken from the list provided.
- **Error! Reference source not found.** prompts to return to the main menu.

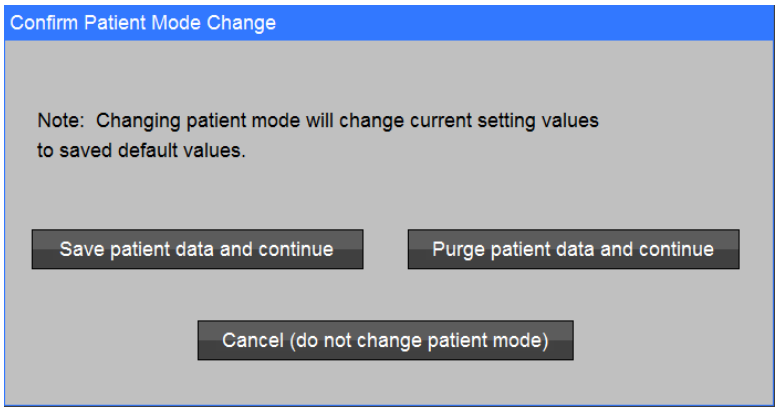


Figure 16: Confirm Patient Mode Change Screen

Caution: Switching modes from Adult, Pediatric or Neonate to any other patient mode, shall recall the last stored values for the patient alarm limits.

Note: Alarm limits are automatically set based on the patient mode selected.

SCREEN LOCK ICON

Touch the Screen Lock Icon to enable or disable the screen lock function.

Note: The Screen Lock password is the current date.
Example: 12102015 (December 10, 2015)

SpO_2 & ETCO2 WAVEFORMS (if so equipped)

Display of the Plethysmograph is user configurable and may be found under the Setup Home Screen (refer to Figure 17 and Figure 18). The SpO2 Waveform Select is dependent on if the ETCO2 option is enabled.

ETCO2 Not Enabled - Setup/Home Screen/SpO_2 Waveform On/Ok:

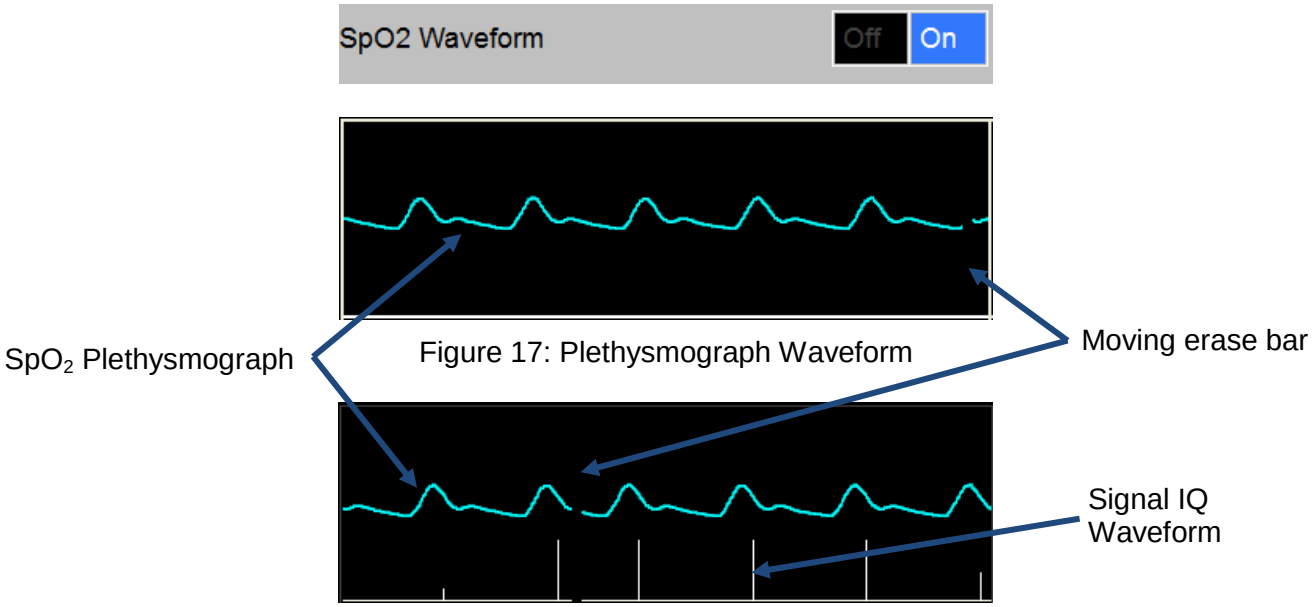


Figure 17: Plethysmograph Waveform

Figure 18: Plethysmograph with Masimo Signal IQ Waveform

ETCO2 Enabled - Waveforms are configured by touching the left side of Trace area:

Note: Touching the right side of the Trace area (under the blue line) will cause the waveforms to freeze. Refer to FREEZING WAVEFORMS on page 60.

Waveform 1, 2, 3 Selection and Size

To select the Waveform Set (allows user to select waveform 1, 2 or 3 and associated speed), touch anywhere within the waveform area (refer to Figure 19).

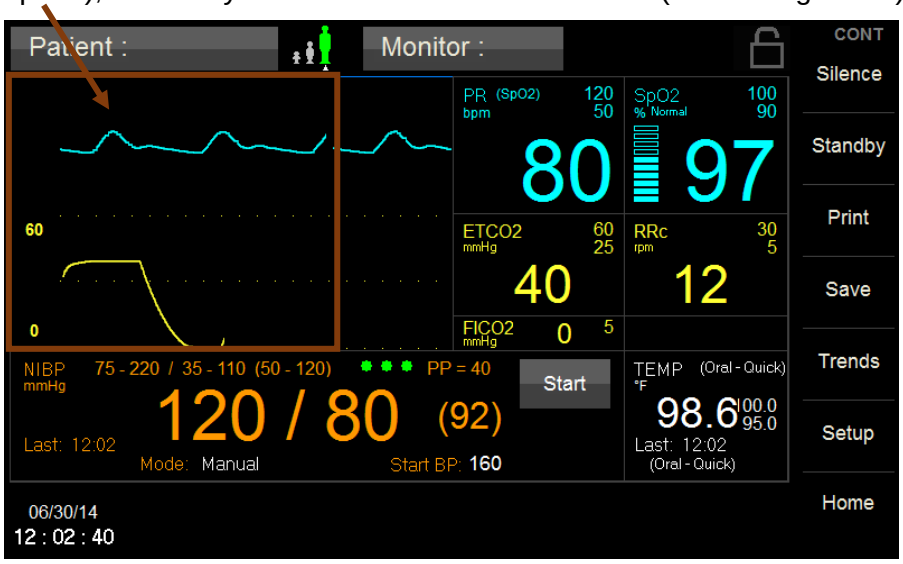


Figure 19: Waveform Setup Touch Area

Display of the SpO2 / Plethysmograph and ETCO2/ Capnography waveforms are user configurable and may be found under the Setup Waveform (refer to Figure 20).

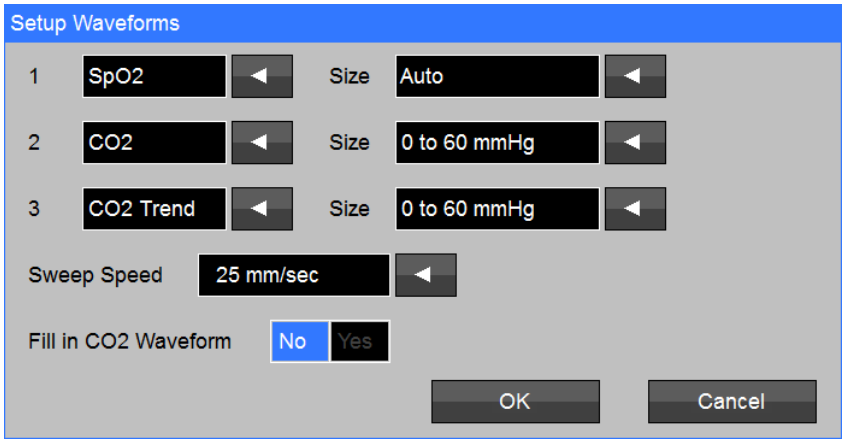
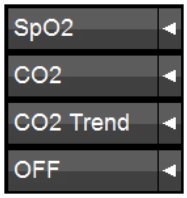


Figure 20: Setup Waveform screen

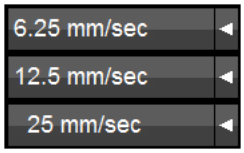
From the Waveform Setup screen you may set the following:

1, 2, 3 - Use the drop down menu to select the Waveform to be displayed on the main screen. The Waveform selections are:



Size - Use the drop down menu to select the size of Waveform to be displayed on the main screen. The Waveform size selections are dependent on waveform selected.

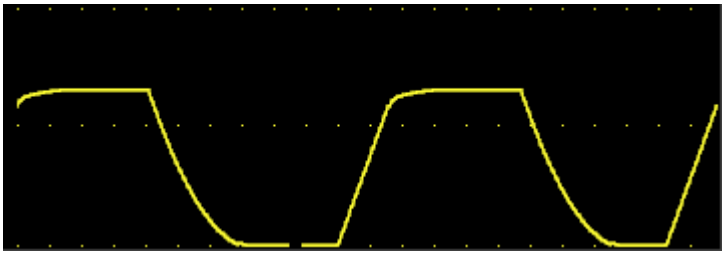
Sweep Speed - Use the drop down menu to select the Sweep Speed of Waveform to be displayed on the main screen. The Waveform Sweep Speed selections are:



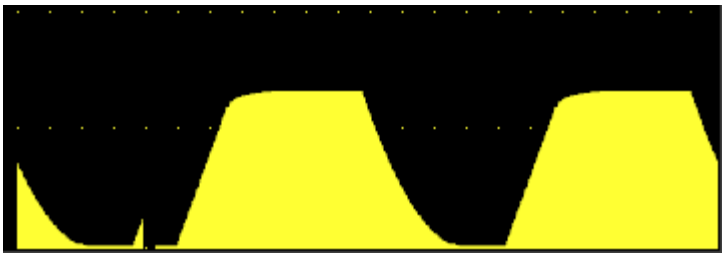
Note: The CO_2 waveform Sweep Speed is fixed at 6.25mm/sec

The Waveform Sweep Speed size selections are dependent on waveform selected.

Fill in CO_2 Waveform - Select **No** to not fill in CO_2 Waveform:



Select **Yes** to fill in CO_2 Waveform:



FREEZING WAVEFORMS

In some clinical environments the user may want to freeze the displayed waveforms.

Touching the right side of the waveform area (under the blue line) will cause all displayed waveforms to be frozen (refer to Figure 21 - SpO2 & ETCO2 waveforms frozen).

Only the waveforms are frozen. Numeric values will continue to be updated, and alarm conditions continue to be generated as they occur.

To unfreeze the displayed waveforms perform one of the following:

- Touch the right side of the waveform area again.

  OR

- Touch anywhere on the screen that will open a menu (e.g., most buttons, numerics, left side of waveform area)

Touching **Alarm Silence** or **Home** button **will not unfreeze** displayed waveforms

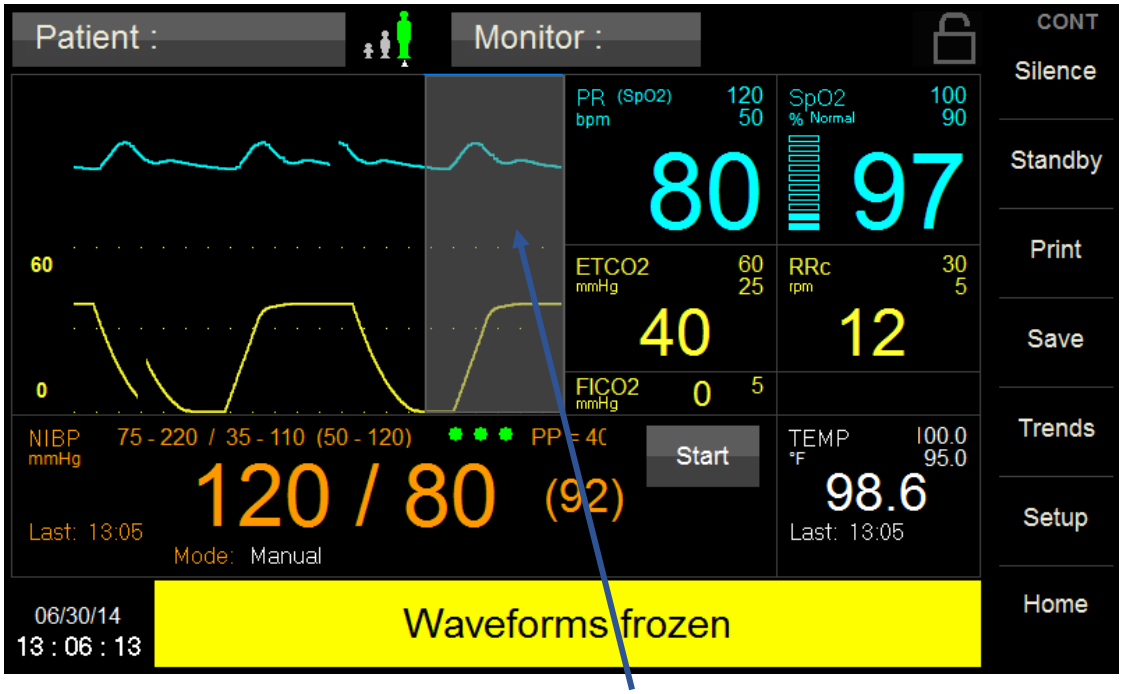


Figure 21: Waveform Frozen - Touch Area is under the blue line

DATE and TIME

Dedicated area for the display of the current time and date (refer to Figure 22).

Figure 22: Date & Time Example

MESSAGE AREA (Alarms)

Dedicated area for display of patient alarm and system messages (refer to Figure 23).

- **High Priority Alarms:**

  High Priority Alarm (“No breath detected” Example - ETCO2 parameter):

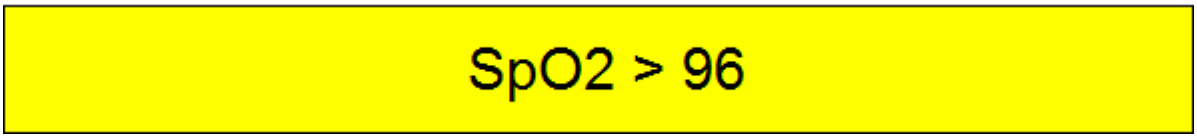
  “HR asystole” Example - ECG parameter:

  Refer to User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335

- **Medium Priority Alarm:**

  Medium Priority Alarm (“SpO2 > limit” Example - SpO2 parameter):

- **Low Priority Alarm**

  Low Priority Alarm (“Battery low” Example - Equipment):

Figure 23: Message Area Examples (Alarms)

Note: During the alarm condition for High and Medium Priority alarms, the background of the message areas shall alternate in the intensity of their colors: red with dark red (High Priority), or yellow with dark yellow (Medium Priority).

NUMERIC AREA (Alarms)

The Numeric area will change background colors for display of patient alarm (refer to Figure 24).

- **High Priority Alarms:**
  "No breath detected" Example - ETCO2 Numeric:

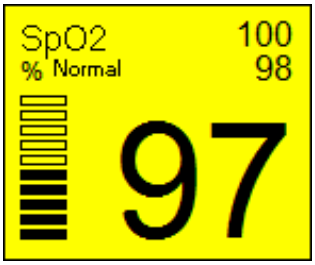
A value of "0" is displayed

"HR asystole" Example - ECG Numeric:

The text "ASY" will be displayed in place of a value

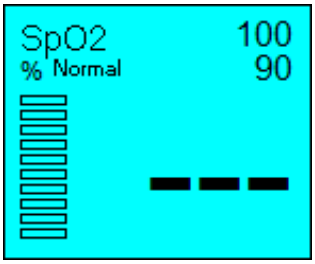
Refer to User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335

- **Medium Priority Alarm**
  "SpO2 < limit" Example - SpO2 Numeric:



The current value is displayed

- **Low Priority Alarm**
  "SpO2 check sensor placement" Example - SpO2 Numeric:



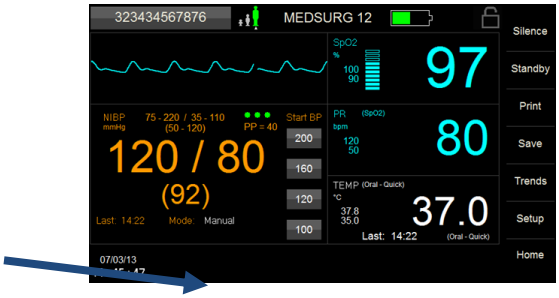
The text "---" (3 dashes) shall be displayed

Figure 24: Numeric Area Examples (Alarms)

Note: During the alarm condition for High and Medium Priority alarms, the background of the Numeric areas shall alternate in the intensity of their colors: red with dark red (High Priority), or yellow with dark yellow (Medium Priority).

ALARM LOG

The Alarm Log can be viewed at any time by touching the message area located at the bottom of the display screen.



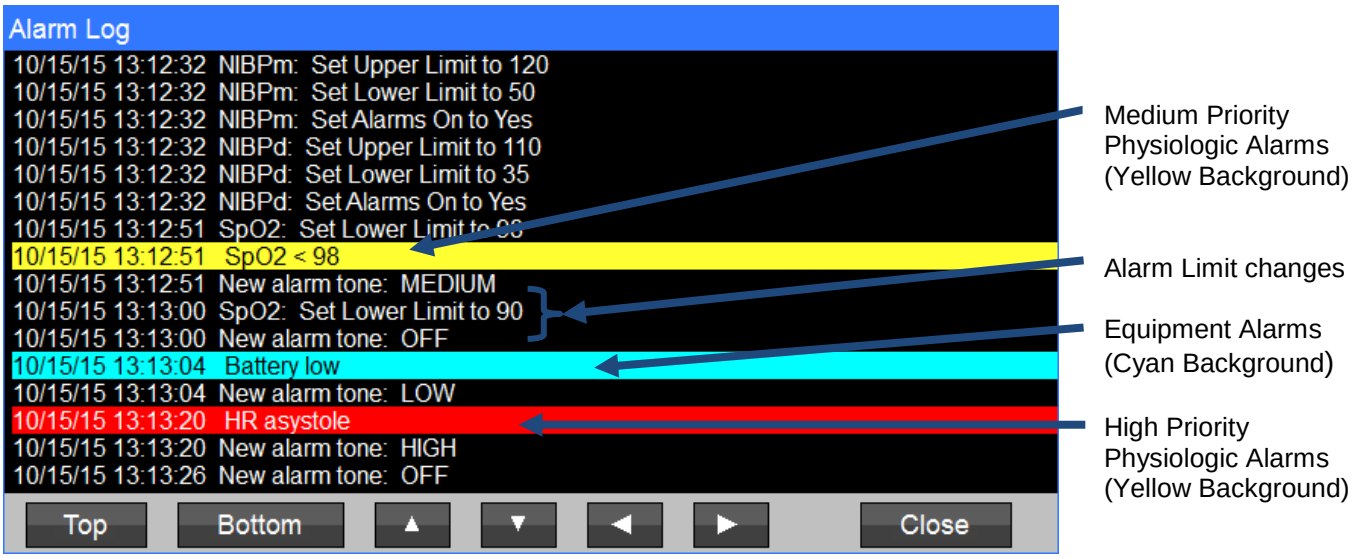


Figure 25: Alarm Log Examples

The Alarm Log records and displays alarm limit setting changes, High and Medium priority physiologic alarms, and equipment alarms (refer to Figure 25).

The contents of the Alarm Log are maintained when the device is powered down, including when the battery becomes depleted. The Alarm Log has a capacity of approximately 800 entries, and the most recent entries are retained when that capacity is exceeded.

MAXNIBP NIBP NUMERIC FIELD

Refer to Figure 26

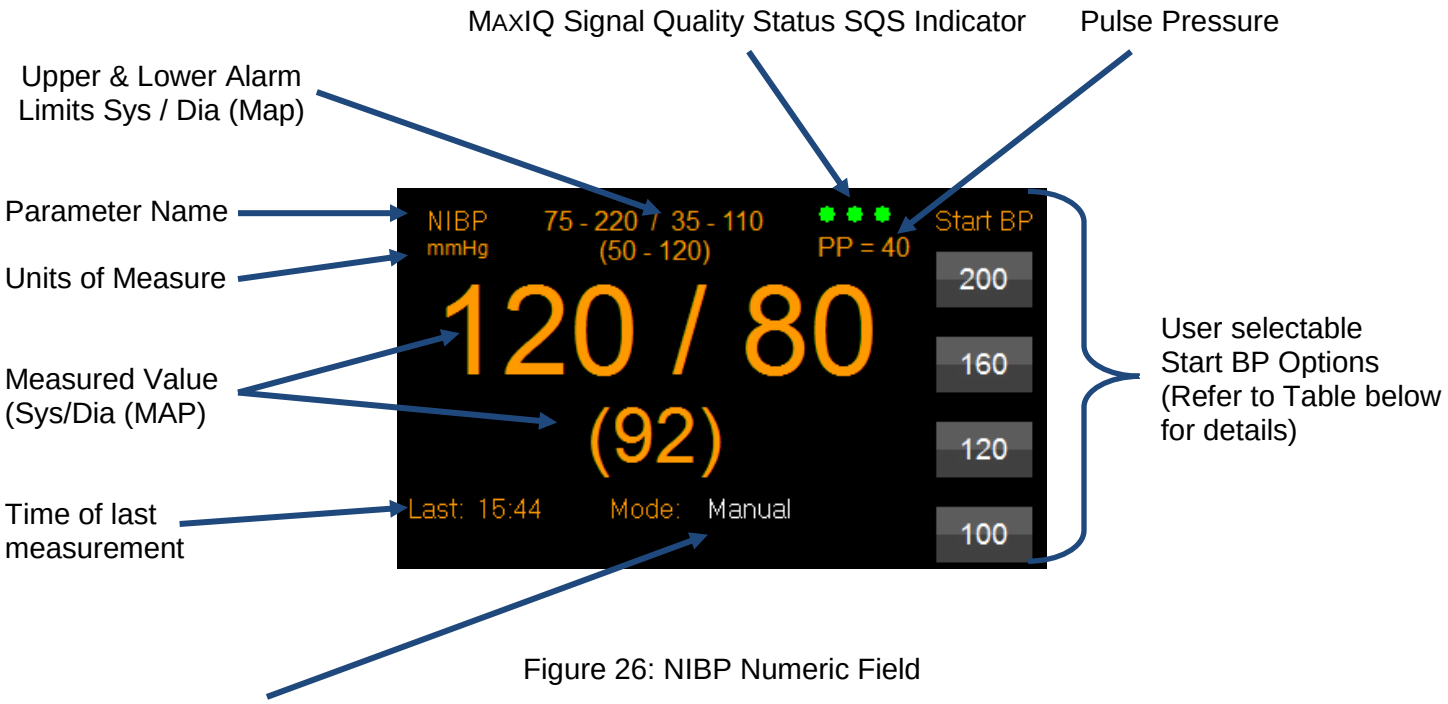
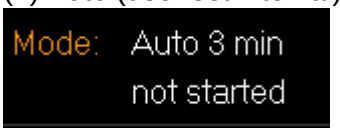


Figure 26: NIBP Numeric Field

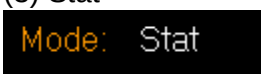
NIBP Modes Available:

(1) Manual

(2) Auto (user set interval)



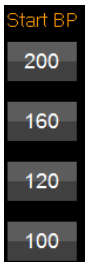
(3) Stat



Start BP Options

YES

Best for: Spot-Check



NO

Continuous Monitoring same patient

NIBP Mode	Inflate to selected inflation pressure	Adaptive BP Configurable
Manual	✓	✓
Auto		✓
Stat		✓

PLETHYSMOGRAPH, SpO_2 & SpO_2 PULSE NUMERICS (if SpO_2 equipped)

The appearance of the SpO_2 Numeric field will change depending upon the brand of SpO_2 installed (Masimo or Nellcor) and SpO_2 parameter features and options enabled (refer to Figure 27).

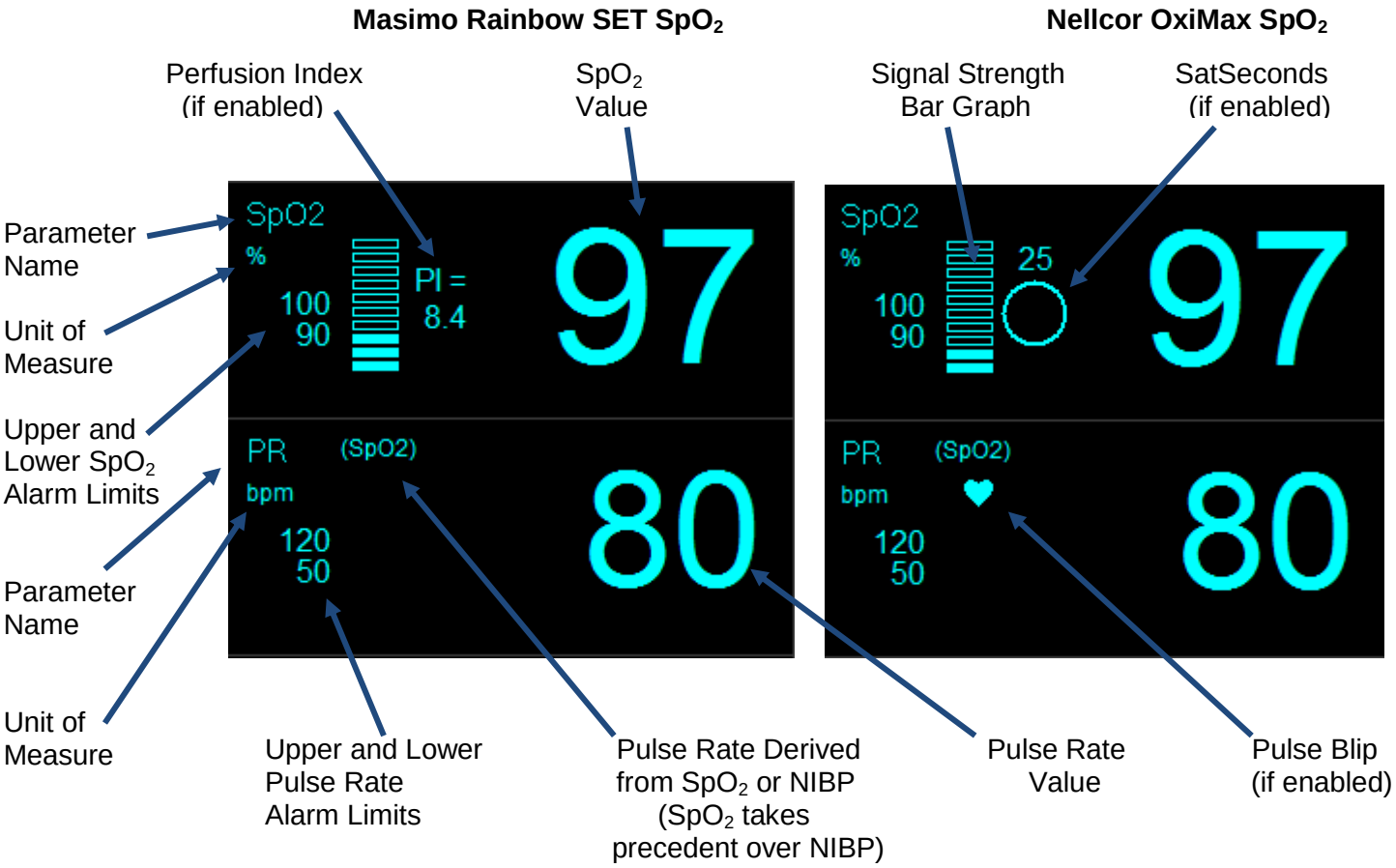


Figure 27: SpO_2 & Pulse Numeric Field

FILAC TEMPERATURE NUMERIC FIELD (if Temperature equipped)

Refer to Figure 28

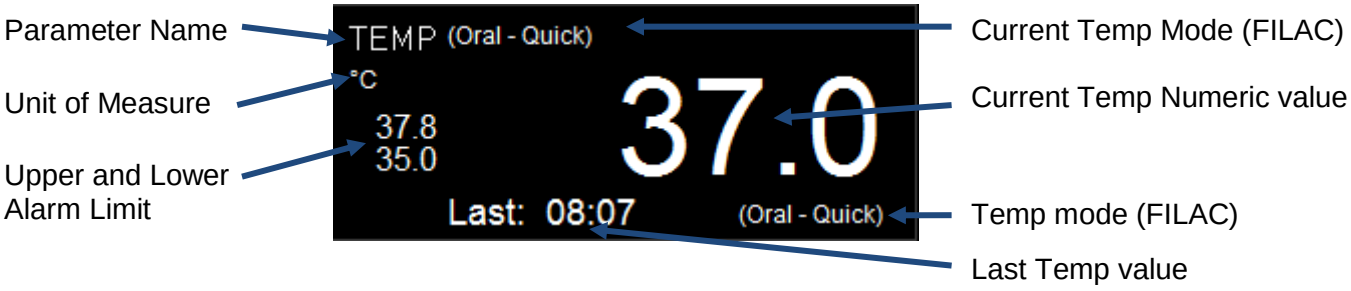


Figure 28: Temp Numeric Field

Note: The monitor offers a choice of thermometry. The monitor can be configured for either FILAC 3000 or Exergen Non-Invasive Temporal Artery thermometry. Refer to **740 SELECT** User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334.

ALARM LIMITS and SETTINGS

Touching an individual parameter cell will open a Setup screen to enable the setting of alarm limits or settings specific to that parameter. Setup screens are available for each installed parameter.

Setup NIBP

To access the Setup NIBP screen, touch anywhere within the NIBP numeric area to open the Setup NIBP window (refer to Figure 29).

From the NIBP Setup screen you may set the following:

- Lower and Upper Alarm Limits for Systolic, Diastolic and MAP
- Choose to select Auto set alarm limits (“Auto” set alarm limits are based on the current measured value displayed on screen)
- NIBP Mode (Manual, Auto, STAT)
- NIBP Interval (1, 2, 3, 4, 5, 10, 15, 30, 60, or 90 min)
- Start BP Options (No, Yes) determines the Initial Inflation Pressure(s) to start a blood pressure measurement (refer to Figure 29 for more details);
  - (STAT BP Options) = No, Initial Inflation Pressure, patient mode dependent, next NIBP adaptive, typically used for continuous monitoring
  - (Start BP Options) = Yes, Select from list of Inflation pressures, patient mode dependent, typically used for Spot-Check workflow mode

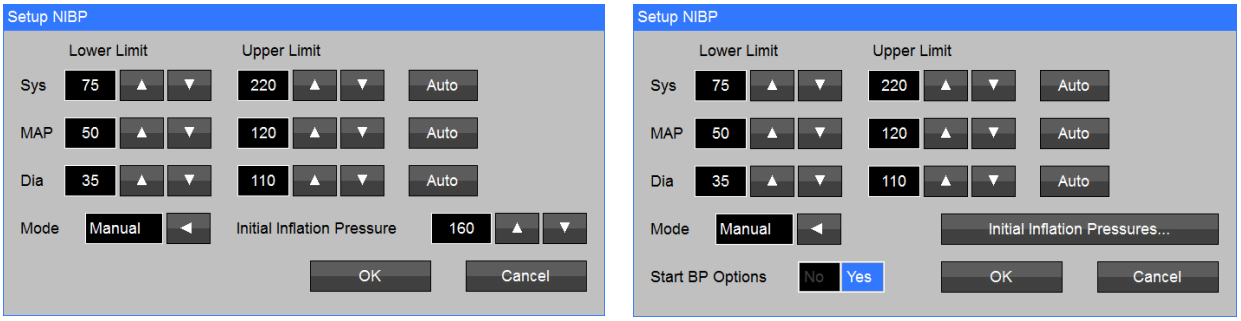


Figure 29: NIBP Setup Screens

To change NIBP alarm limits or the Initial Inflation Pressure, use the Up/Down arrows. The adjacent dialog box adjacent will note your current selection.

To change the NIBP Interval from the NIBP Interval drop down menu, select the NIBP Interval. The dialog box will note your current selection.

Select OK to confirm your selection(s) and close the Setup NIBP window and return to the main display screen. Current selections (as applicable) will now appear within the NIBP cell.

Select Cancel anytime to return to the main display without making any changes.

Setup SpO_2

To access the Setup SpO_2 screen, touch anywhere within the SpO_2 cell to open the Setup SpO_2 window (refer to Figure 30 – Nellcor, Figure 31 – Masimo, Figure 32 – SafeSAT).

From the SpO_2 Setup screen you may set the following:

- Lower and Upper SpO_2 alarm limits
- Choose to select Auto set alarm limits ("Auto" set alarm limits are based on the current measured value displayed on screen)
- Nellcor OxiMax - Response Mode, SatSeconds
- Masimo Rainbow SET – Signal IQ Waveform, Perfusion Index, Fast SAT, Average Time and Sensitivity

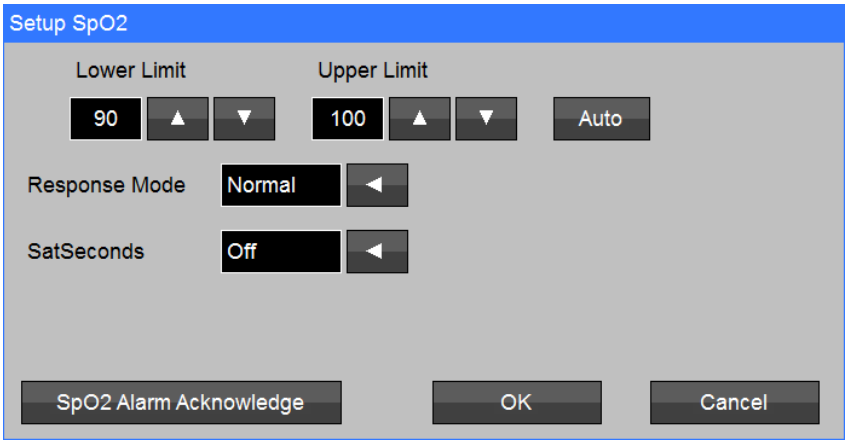


Figure 30: Nellcor SpO_2 Setup Screen

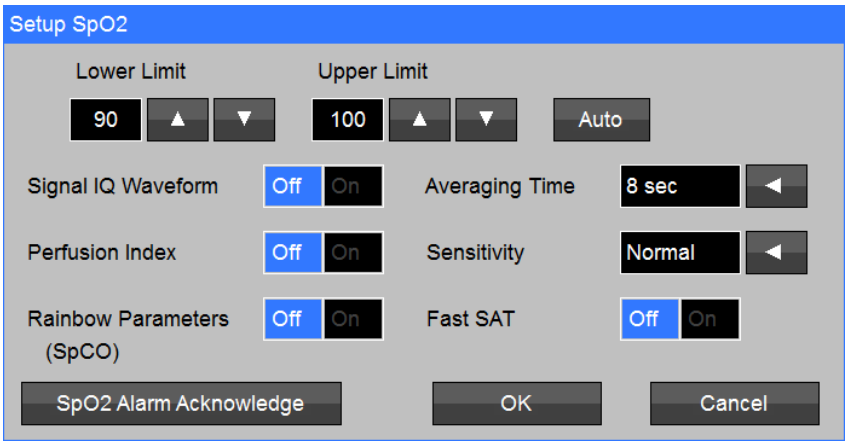


Figure 31: Masimo SpO_2 Setup Screen

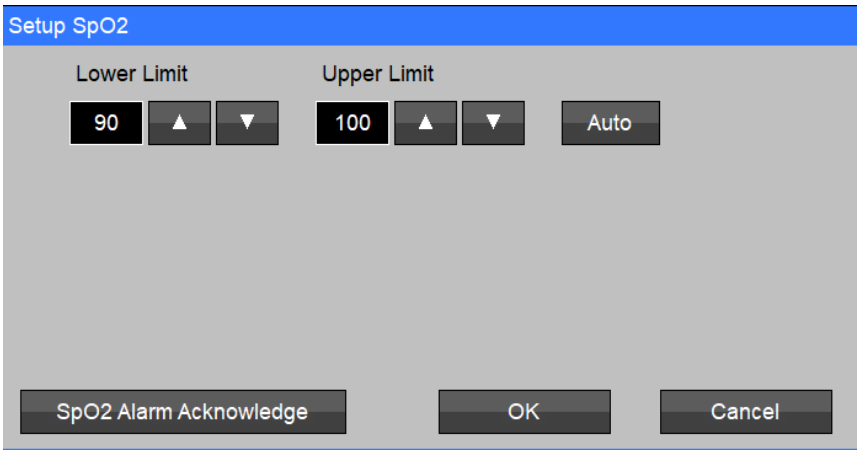


Figure 32: SafeSAT SpO_2 Setup Screen

Note: The Rainbow Parameters selection Off/On may appear grayed out if no Rainbow parameters are enabled. If Rainbow Parameters are enabled, they will appear under the Rainbow Parameters selection - (SpCO) in above example.

To change alarm limits, use the Up/Down arrows. The adjacent dialog box adjacent will note your current selection.

Select OK to confirm your selection(s) and close the Setup SpO_2 window and return to the main display screen. Current selections (as applicable) will appear within the SpO_2 cell.

Select Cancel anytime to return to the main display without making any changes.

Note: SpO2 Alarm Acknowledge Selecting this button silences the audible SpO_2 equipment alarm and clears the displayed message (e.g., SpO_2 check sensor placement)

Setup PR (Pulse Rate)

To access the Setup PR screen, touch anywhere within the PR cell to open the Setup PR window (refer to Figure 33).

From the PR Setup screen you may set the following:

- Lower and Upper PR alarm limits
- Select Pulse tone On or Off
- Choose to select Auto set alarm limits (“Auto” set alarm limits are based on the current measured value displayed on screen)

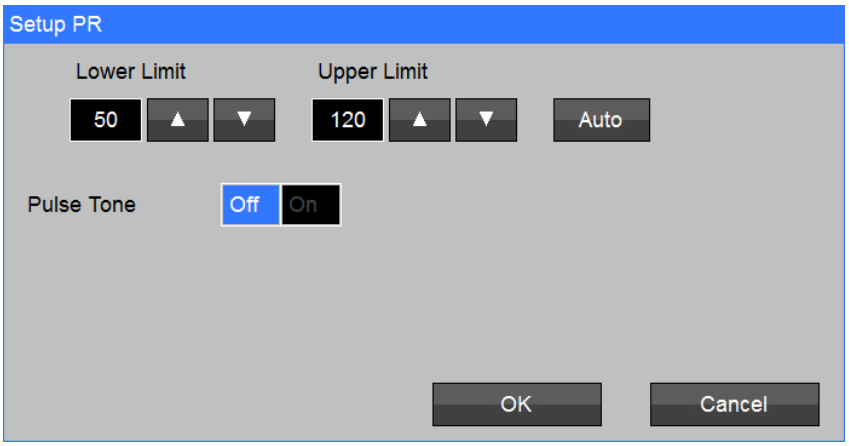


Figure 33: PR Setup Screen

To change alarm limits, use the Up/Down arrows. The adjacent dialog box adjacent will note your current selection.

Select OK to confirm your selection(s) and close the Setup PR window and return to the main display screen. Current selections (as applicable) will now appear within the PR cell.

Select Cancel anytime to return to the main display without making any changes.

Setup Temperature (Temp) FILAC

To access the Setup Temperature screen, touch anywhere within the Temperature cell to open the Setup Temperature window (refer to Figure 34).

From the Setup Temperature screen you may set the following:

- Lower and Upper temperature alarm limits
- Choose to select Auto set alarm limits ("Auto" set alarm limits are based on the current measured value displayed on screen)
- Temperature Site: Oral, Axillary, Rectal. Temperature site selection based on the current Patient Mode and the installed Isolation Chamber (blue or red)

Temperature Measurement Site	Oral (Blue Isolation Chamber)	Axillary (Blue Isolation Chamber)	Rectal (Red Isolation Chamber)
Available Modes	Quick	---	---
	Normal	Normal	Normal
	Direct	Direct	Direct
	Cold	Cold	Cold
	Monitor	Monitor	Monitor

- Temperature Mode: Normal, Quick, Direct, Cold, or Monitor

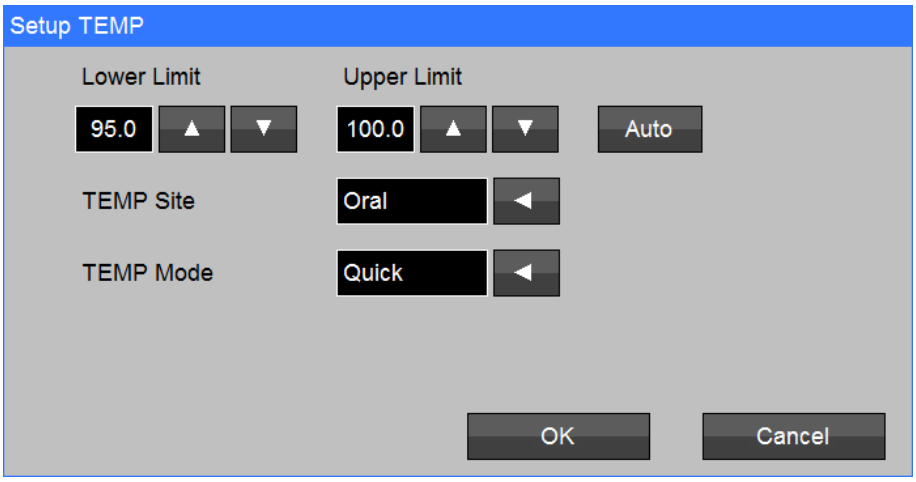


Figure 34: FILAC Temperature Setup Screen

To change alarm limits, use the Up/Down arrows. The adjacent dialog box adjacent will note your current selection.

Select OK to confirm your selection(s) and close the Setup Temperature window and return to the main display screen. Current selections (as applicable) will now appear within the Temperature cell.

Select Cancel anytime to return to the main display without making any changes.

AUDIBLE AND VISUAL INDICATORS

The monitor is capable of producing both an audible and a visual indicator for a variety of monitor conditions. Table 2 below provides a cross reference for audible and visual indications.

Alarm Tones

Audible Indication	Priority Level	Alarm Condition
Three then two, high-pitch, chime tones played twice separated by approx. 5 second intervals	High	No breath detected (if set to High Priority)
Three, high-pitch, chime tones separated by approx. 15 second intervals	Medium	Physiological parameter limit violation
A single tone, lower pitch, chime tone separated by approx. 20 second interval	Low	Technical condition that prevents monitoring (e.g., check sensor placement)
Continuous tone	Battery Nearly Depleted	

Visual Indicators

Table 2: Audible and Visual Indicators

Color	Priority Level	Description
Red Flashing background (physiologic parameter)	High	Alarm is active and has not been acknowledged
Red Solid Background (physiologic parameter)	High	Alarm is currently active and has been "Silenced"
Yellow Flashing background (physiologic parameter)	Medium	Alarm is active and has not been acknowledged
Yellow Solid Background (physiologic parameter)	Medium	Alarm is currently active and has been "Silenced"
Cyan Non-Flashing	Low	Alarm is currently active and has not been acknowledged
Black background (parameter cell and message window)	No Active Alarm	Normal - No alarm

Note: Refer to Table 4 on Page 81 for a listing of messages that may be displayed in the Numeric fields.

DISPLAYING ALARMS AND MESSAGES

Alarms are annunciated in the following manner (refer to Figure 35):

- The background of the parameter cell changes color and flashes from bright to dim.
- Alarm text is displayed in the dedicated message area.
- The background color of the message area changes and flashes from bright to dim co-incident with the parameter cell.
- Touching Silence will pause the audio associated with that alarm (refer to Figure 36).

Note: If during Alarm Pause condition, a High Priority alarm occurs, the Alarm Pause condition will be exited and the High Priority Alarm shall be annunciated immediately.

When a parameter alarm is active, the corresponding text message will be displayed in the monitors message area located at the bottom of the display screen.

If more than one alarm condition is active at a given time, the message for each condition alternates within the dedicated message area. Individual alarm messages will appear for approximately 2-3 seconds, before the next alarm message will appear.

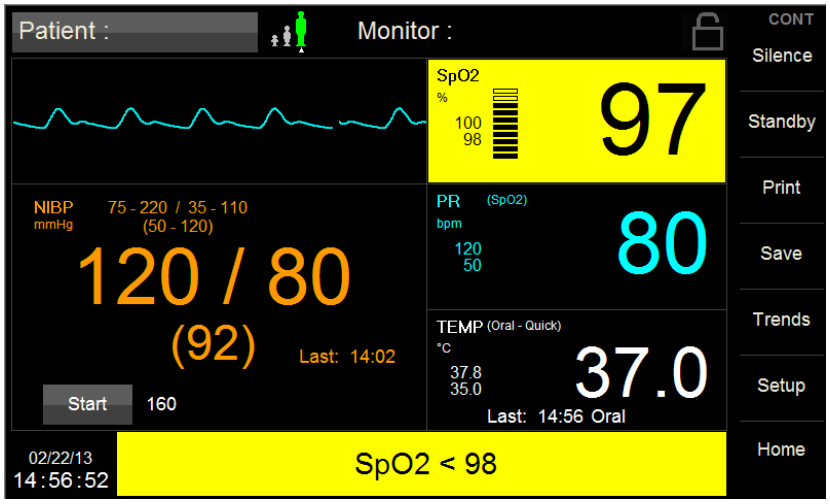


Figure 35: SpO_2 in Alarm

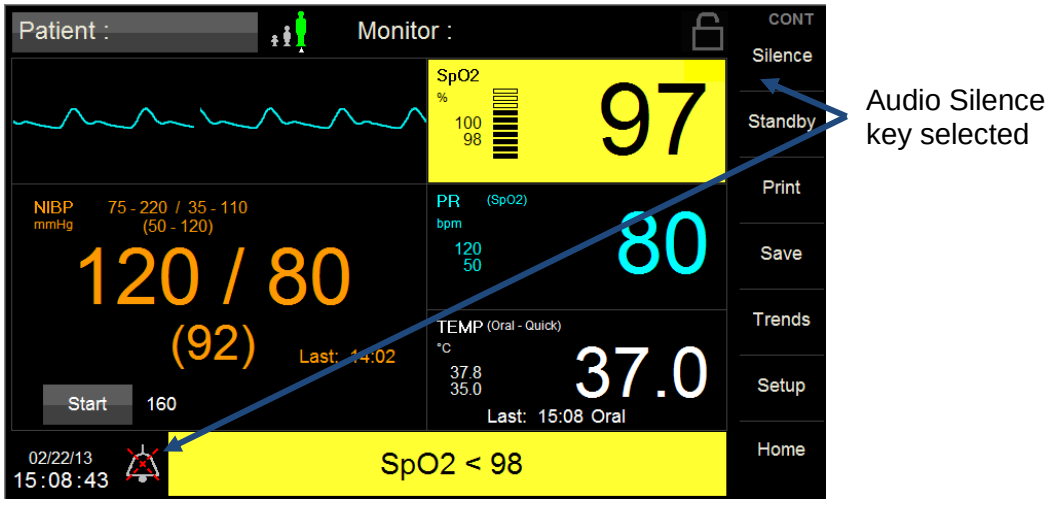


Figure 36: SpO_2 in Alarm, Audio paused

Audio Silence

When the Audio Silence key is selected, the system will pause the audio and visual alert associated with current alarms for the duration specified under Setup-Administrator-Alarms. Refer to the ALARMS section on page 93.

During this period, the background color for the alarming parameter(s) changes to a solid background (indicates Audio Silence has been selected). The audio silenced icon appears in the message area.

When the Audio Silence time period expires, both the audio alert and flashing background will resume if the alarm/condition persists.

Alarm Pause [Setup/Alarm Pause]

When the Audio Pause is enabled, all Medium and Low Priority alarms are silenced for the pre-determined time period. Refer to the ALARMS section on page 93. The display is cleared of any flashing parameter cells and the audio is silenced during this period.

Note: If during Alarm Pause condition, a High Priority alarm occurs, the Alarm Pause condition will be exited and the High Priority Alarm shall be annunciated immediately.

- Alarms can be resumed at any time by selecting Alarm Resume found in the Setup window
- When the Audio Paused time period expires, the audio and visual associated with the current alarm will resume

The Alarms Paused feature is typically used to configure the monitor for Spot-Check workflow mode when workflow and patient care does not require continuous alarm management.

Caution: Always follow hospital protocols when setting alarms

AUTO (set) Alarm Limits

Upper and lower alarm limits for each parameter can be set automatically using the Auto feature, which provides a structure to establish alarms limits based upon your patient's current measured value.

To enable Auto limits, open the applicable parameter Setup Window and touch the 'AUTO" key on the same line with the parameter (refer to

Table **3** below for percentages).

Table 3: Alarm Limit Adjustment

Parameter	Alarm Limit Adjustment (x% of the current measured value)	
	Lower	Upper
NIBP Systolic	80%	120%
NIBP Diastolic	80%	120%
NIBP Mean (MAP)	80%	120%
SpO_2	95%	100%
PR	80%	125%
Temperature	95%	105%

Note: When Auto Limits adjust the Lower Limit, the adjustment shall not be allowed to be set to anything less than that Parameter's Lower Limit, and when Auto Limits adjust the Upper Limit, the adjustment shall not be allowed to be set to anything greater than that Parameter's Upper Limit.

BATTERY POWER

Warning: Risk of fire, explosion, or burns. Do not short circuit, crush or expose battery to high temperature, incinerate or disassemble the battery.

Caution: This product contains a rechargeable Li-ion battery that is recyclable. Under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local authorities for instructions on recycling options in your area.

Note: Charge battery fully before initial use.

Note: Dispose of battery according to the manufacturer's instructions.

The monitor is equipped with an internal rechargeable battery. The battery is charging whenever the monitor is plugged into a power source. A green Battery Charging Visual Indicator (located to the right of the On/Off button) on the front panel is lit when the battery is charging.

Batteries will self-discharge when they are not used. It is recommended that the battery be maintained at full charge by leaving the monitor connected to a power source whenever possible.

The standard 10.8 Volt 7800 mAhr battery pack, when new, fully charged, is capable of taking 150 NIBP readings when the monitor is set in the 5-minute Automatic Mode.

The battery icon  appears when the monitor is disconnected from the mains power. The icon provides an indication of relative battery change level remaining.

When the message "Low Battery" message and 

icon appears on the main screen, approximately (30) minutes of battery operation remain. Three (3) audio "beeps" are heard every twenty-five (25) seconds.

Warning: Upon the detection of a Low Battery condition and if the battery is not charged by the user, the monitor may no longer function as intended. The monitor should be plugged into a power source as soon as possible and allow the battery to charge for eight (8) hours.

When the "Battery Nearly Depleted" message appears, the battery is no longer able to power a measurement. The message "Battery Nearly Depleted" is displayed on the main screen and a continuous audio tone is generated until the power is turned off.

Warning: Upon the detection of a Battery Nearly Depleted condition and if the monitor is not turned off by the user, the monitor shuts down and turns off within sixty (60) seconds of operations.

When either of these messages appears, it is necessary to recharge the battery. A depleted battery may be fully recharged in eight (8) hours. The monitor can be used to obtain measurements while the battery is charging.

Note: Using the monitor while charging may lengthen the time to restore battery charge.

Note: During charging of the battery, the case may feel warm to the touch.

If the monitor is in need of repair, it must be referred to the appropriate service personnel. Service performed by unauthorized personnel could be detrimental to the monitor and will void the warranty. For service, contact your dealer or Zoe Medical. Refer to the contact addresses on page 3 for email and phone number information.

ERROR MESSAGES ON THE DISPLAY

Table 4: Error Messages on the Display

Message	Parameter Value	Possible Cause	Suggested Action
System Messages			
Printer door open	N/A	• Printer door is open	• Close Printer door
Printer out of paper	N/A	• Printer is out of paper	• Refill paper
Serial port not setup for Printer	N/A	• A print has been requested, but the Printer option is not enabled	• Contact Zoe Medical technical support
Printer not connected	N/A	• A print has been requested, but the Printer option is not connected	• Check Printer cable connections • If message persists, contact Zoe Medical technical support
Battery Low	N/A	• Battery is running low (5 minutes left)	• Connect monitor to mains power
Battery Nearly Depleted	N/A	• Battery is nearly depleted and will shut down in 60 seconds if not connected to mains	• Connect monitor to mains power
Monitor problem detected	N/A	• Internal problem has been detected	• Turn the monitor off, then on. • If message persists, contact Zoe Medical technical support
NIBP Messages			
NIBP weak signal	---	• Poor limb perfusion • Improper cuff placement • Cuff size too large for the patient	• Check the patient and provide any necessary clinical care • Check to make sure the cuff is wrapped properly, with the “artery” mark lined up over the brachial artery • Check the limb circumference against the recommended range as printed on the cuff, to ensure the cuff is not too big
NIBP artifact	---	• Persistent patient movement or coughing • Hemodynamic interference (varying pulse amplitudes due to breathing or valvular problem) • Hose is clogged or leaking	• Check the patient and provide any necessary clinical care • Calm the patient • Move the cuff to another limb with less movement • If no obvious patient motion, switching to the other limb may still help in the case of hemodynamic interference • Check the cuff and hose for signs of damage
NIBP cuff leak	---	• Leaky cuff or hose • Cuff not applied to patient	• Check for leaks in the cuff or hose and replace if necessary • Check that cuff and hose are connected to the monitor • Check that cuff is applied to patient

Message	Parameter Value	Possible Cause	Suggested Action
NIBP blocked hose -- check patient	---	• Pinched Hose	• Check the patient and insure that the cuff is deflated • Check for kinks or obstructions in the hose • Replace hose if necessary
NIBP measurement time exceeded	---	• The measurement time limit was exceeded, usually due to motion artifact – 120 seconds in Adult or Pediatric Mode. 80 seconds in Neonatal Mode	• Refer or suggestions for “NIBP artifact” • Repeat the measurement
NIBP problem detected	---	• A hardware problem has been detected	• Check the patient and insure that the cuff is deflated • Turn the monitor off, then on • If message persists, contact Zoe Medical technical support
NIBP cannot measure	---	• Initial inflation pressure may not have been high enough (if patient’s systolic pressure is above 200 mmHg) • Patient movement	• Repeat the measurement (monitor will automatically adjust to using a higher initial inflation pressure if needed)
NIBPs < [lower limit]	[number]	• The patient's systolic pressure has fallen below the current lower alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
NIBPs > [upper limit]	[number]	• The patient's systolic pressure has risen above the current upper alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
NIBPd < [lower limit]	[number]	• The patient's diastolic pressure has fallen below the current lower alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
NIBPd > [upper limit]	[number]	• The patient's diastolic pressure has risen above the current upper alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
NIBPm < [lower limit]	[number]	• The patient's mean pressure has fallen below the current lower alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
NIBPm > [upper limit]	[number]	• The patient's mean pressure has risen above the current upper alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate

Message	Parameter Value	Possible Cause	Suggested Action
PR < [lower limit]	[number]	• The patient's pulse rate has fallen below the current lower alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
PR > [upper limit]	[number]	• The patient's pulse rate has risen above the current upper alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
SpO_2 Messages			
SpO_2 check sensor	---	• Bad SpO_2 sensor • Incorrect set-up	• Replace the SpO_2 sensor • Contact Zoe technical support
SpO_2 check sensor placement	---	• Sensor has become detached from patient • Sensor not fully inserted on patient's finger • Excessive ambient light • Bad sensor (no red light coming from sensor)	• Check to make sure the sensor is attached fully and securely to the patient • Cover the sensor with opaque material, such as a towel, to reduce ambient light • Reattach the sensor, possibly on a smaller or larger finger • Replace sensor if there is no red light coming from it
SpO_2 low perfusion	[number] or ---	• Poor perfusion • Large tissue mass • Nail polish • Bad SpO_2 sensor	• Check the patient and provide any necessary clinical care • Warm the patient's extremities if needed • Reattach the sensor on a smaller finger • Remove any nail polish that may be interfering with the red light • Replace the SpO_2 sensor
SpO_2 low signal IQ	[number] or ---	• Poor perfusion • Large tissue mass • Nail polish • Bad SpO_2 sensor	• Check the patient and provide any necessary clinical care • Warm the patient's extremities if needed • Reattach the sensor on a smaller finger • Remove any nail polish that may be interfering with the red light • Replace the SpO_2 sensor
SpO_2 unplugged	[blank]	• SpO_2 sensor not connected to SpO_2 cable	• Check to make sure the SpO_2 sensor is securely connected to the SpO_2 cable on the monitor
SpO_2 artifact	---	• Patient movement or coughing • Hemodynamic interference • Small tissue mass	• Calm the patient • Reattach the sensor on another finger with less movement • Reattach the sensor on a larger finger
SpO_2 problem detected	---	• A hardware problem has been detected	• Turn the monitor off, then on. • If message persists, contact Zoe Medical technical support
SpO_2 < [lower limit]	[number]	• The patient's oxygen saturation has fallen below the current lower alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate

Message	Parameter Value	Possible Cause	Suggested Action
SpO_2 > [upper limit]	[number]	• The patient's oxygen saturation has risen above the current upper alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
PR < [lower limit]	[number]	• The patient's pulse rate has fallen below the current lower alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
PR > [upper limit]	[number]	• The patient's pulse rate has risen above the current upper alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
Temp Messages			
Temp unplugged	[blank]	• Temp Probe disconnected	• Check to make sure the Temp Probe is connected to the temperature cable • Check to make sure the temperature cable is connected to the monitor
Temp out of range (too high)	---	• The patient's temperature has risen above the maximum value the monitor can accurately detect • There is a problem with the connections or with the hardware	• Check the patient and provide any necessary clinical care • Check the Temp Probe cable connections • Check that Temp Probe placement is stable • If message persists, contact Zoe Medical technical support
Temp cannot measure	---	• Patient movement • There is a problem with the connections or with the hardware	• Check the Temp Probe cable connections • Check that Temp Probe placement is stable • If message persists, contact Zoe Medical technical support
Temp problem detected[1]	---	• A hardware problem. been has detected	• Turn the monitor off, then on • If message persists, contact Zoe Medical technical support
Temp < [lower limit]	[number]	• The patient's temperature has fallen below the current lower alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate
Temp > [upper limit]	[number]	• The patient's temperature has risen above the current upper alarm limit	• Check the patient and provide any necessary clinical care • Change the alarm limit if it is no longer clinically appropriate

[1] "Temp problem detected" alarm has no audio associated with the message.

7. MONITOR SETUP

The Setup section allows you to review monitor information and configure it to your patient and institutional requirements.

ENTERING THE SETUP MENU

To enter the monitor's Setup Menu, press the **Setup** touch area located on the main screen (refer to Figure 37).

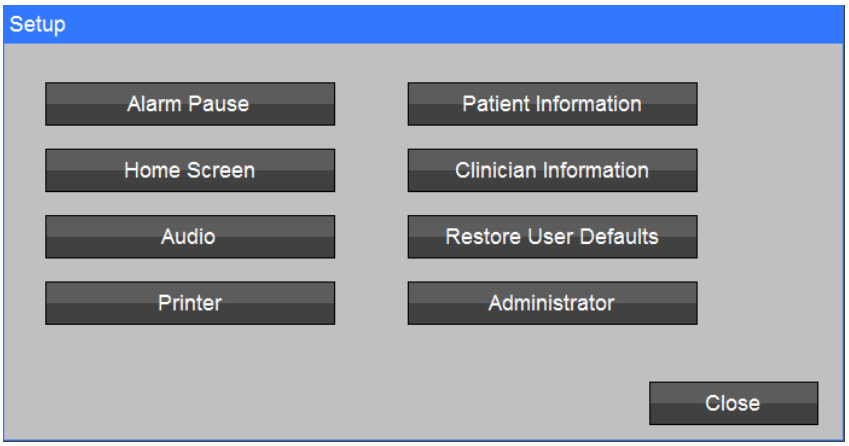


Figure 37: Setup Menu Screen

PAUSE PATIENT ALARMS

- Press the Alarm Pause key to pause all Alarms (Global) (refer to Figure 38).

  When Alarm Pause has been enabled, a countdown timer will be displayed along with the message Alarms Paused in a yellow background. The Alarms Paused Icon is adjacent to the monitor date/time.

- Press the Alarm Resume key at any time to quit and return to active monitoring.

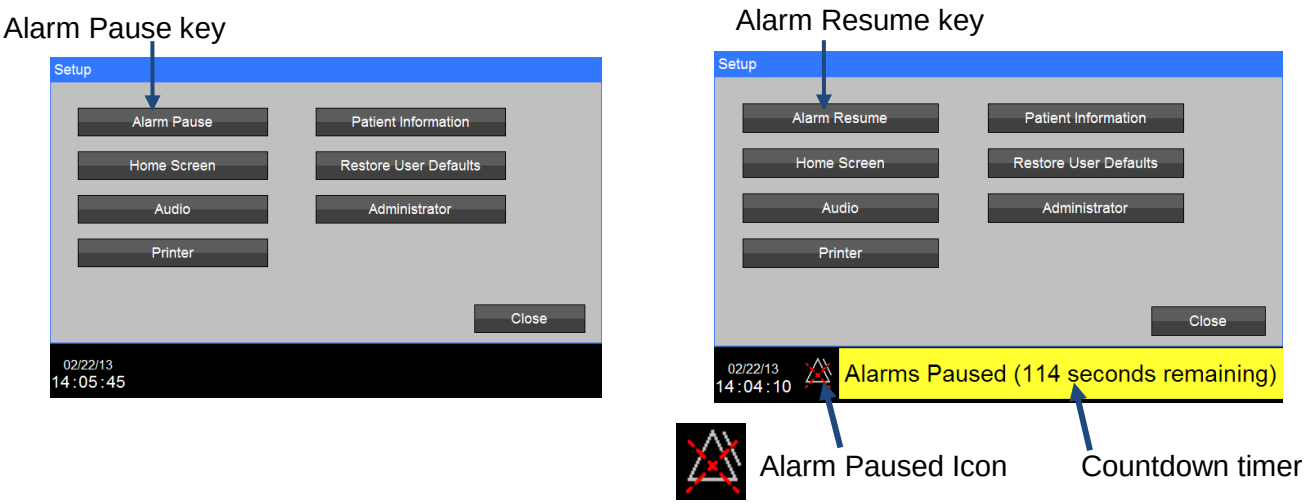


Figure 38: Alarm Pause / Alarm Resume Screens

Note: If during Alarm Pause condition, a High Priority alarm occurs, the Alarm Pause condition will be exited and the High Priority Alarm shall be annunciated immediately.

Note: The duration the Alarm Pause may be configured in Setup-Administrator-Alarms (refer to the ALARMS section on page 93).

When the Alarms Paused time period expires, all Alarm conditions will resume.

HOME SCREEN

Note: The **740** SELECT software automatically manages the features and settings displayed in the Setup Home Screen based on the parameters installed and enabled.

The Home Screen is used to configure the following display screen features (refer Figure 39):

- **ETCO2 Enabled**
  - Settings: No, Yes
  - User can select to display or not display the ETCO2 Capnography at any time (monitor configured with ETCO2)
- **Pulse Blip**
  - Settings: Off, On
  - User may choose to display/not display the heart icon (blip) within the Pulse Rate parameter cell
- **RRc Blip**
  - Settings: Off, On
  - User may choose to display/not display the respiration icon (blip) within the ETCO2 parameter cell
- **SpO_2 Waveform**
  - Settings: Off, On
  - User can select to display or not display the SpO_2 Plethysmograph at any time (monitor configured with SpO_2)
  - May not be available if ETCO2 feature is enabled

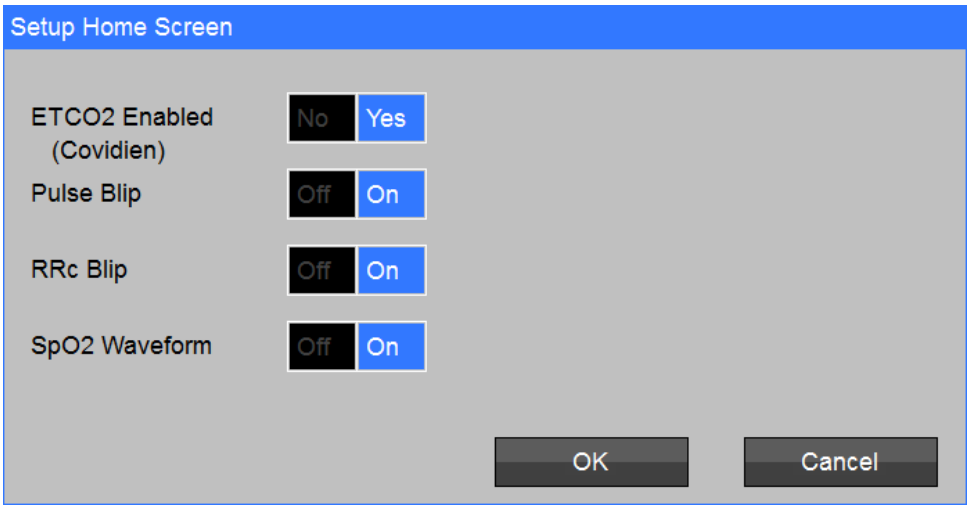


Figure 39: Setup Home Screen

To change settings:

- Touch the On or Off button to make your selection. The current selection has a blue background.
- Select OK to confirm your selection(s) and close the Audio Setup window.
- Select Cancel anytime to return to the main display without making any changes.

AUDIO

Provides the ability to manage loudness and touch screen navigation sounds (refer to Figure 40).

- **Alarm Volume**
  - Monitor alarm volume
  - Default 6, Range 1-10
- **Pulse Tone Volume**
  - SpO_2 pulse tone volume
  - Default 4, Range 1-10
- **Pulse Tone**
  - Enable or disable SpO_2 pulse tone
  - Settings: Off, On; Default Off
- **Touch Click**
  - Provides user with touch key audio feedback
  - When enabled, an audio response is generated when any active area, button, or key is selected on the monitor display
  - Settings: Off, On; Default Off

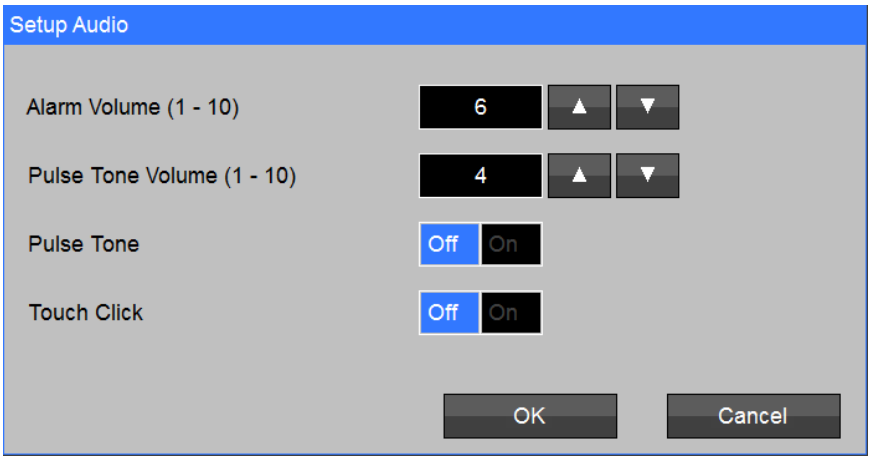


Figure 40: Setup Audio Screen

PRINTER

To configure the monitor for external printer perform the following:

- **Recording Time**
  - Total amount of time that will be represented on the strip chart
  - Drop down menu selections: 4, 10, and 16 seconds; Default 10
- **Recording Delay**
  - How much time prior to the alarm being detected will be represented on the strip chart
  - Drop down menu selections: 0, 6, and 10 seconds; Default 6

Example: If the Recording Time is set to 10 and the recording Delay is set to 6, and Print on Alarm is set to Yes, when an alarm occurs, the resulting strip chart printout will show 10 seconds worth of waveform, 6 seconds from before the alarm was detected, and 4 seconds (calculated as Recording Time - Recording Delay) after (refer to Figure 41).

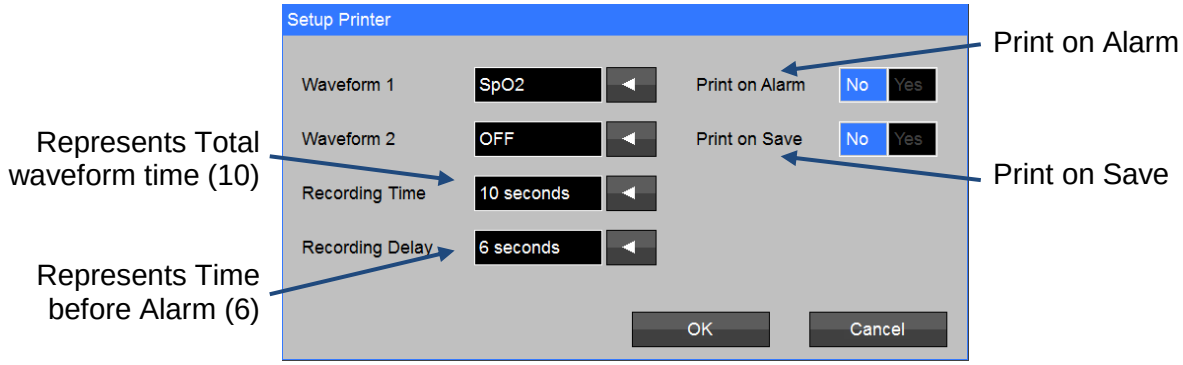


Figure 41: Setup Printer Screen

- **Print on Alarm**
  - Yes, printing is generated automatically when the monitor alarms
  - Settings: No, Yes; Default No
- **Print on Save**
  - Yes, to automatically print after selecting the “Save” button on the main screen
  - Settings: No, Yes; Default No

PATIENT INFORMATION

1) Press Patient Information key (refer to Figure 37) to enter Patient Information.
2) Use the drop down menus, and the Up/Down arrows to enter patient specific information (refer to Figure 42).
3) **Last**, **First** and **ID** buttons will present a keyboard for data entry
4) Use the keyboard (refer to Figure 43) to enter patient specific information.
5) Select OK to confirm and exit window.

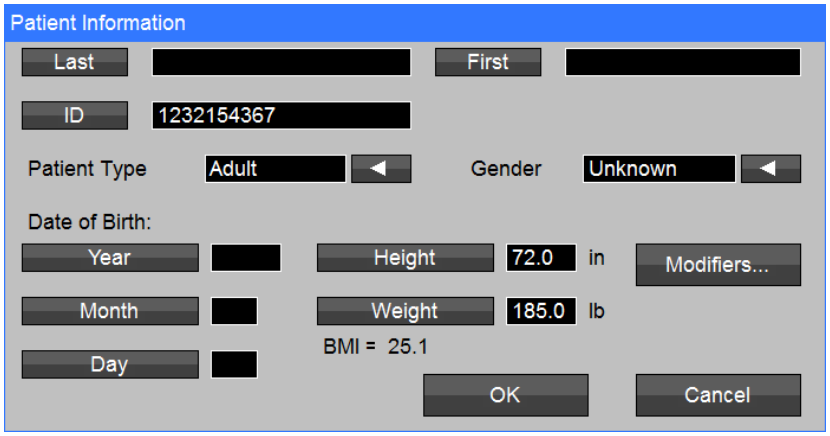


Figure 42: Patient Information Screen

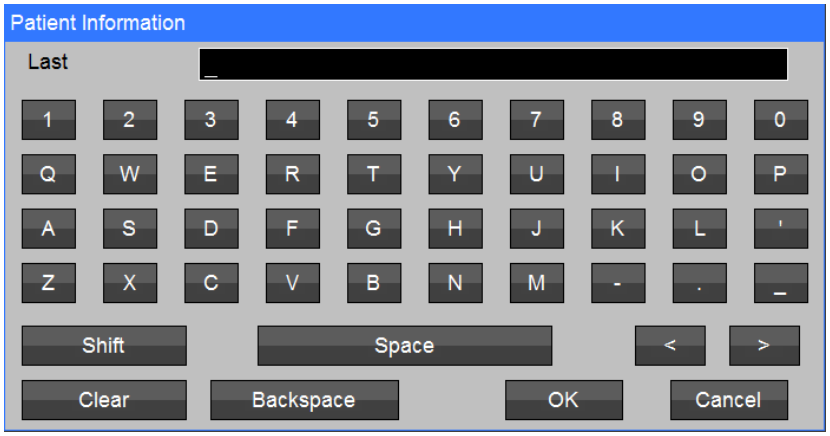


Figure 43: Last (name) keyboard

Patient ID may be entered using the optional **740 SELECT** bar code reader.

- The bar code reader is provided with a fourteen (14) foot coiled USB cable which is inserted into the USB connector located at the rear of the monitor (Reference Figure 3 for location of the USB connector).
- The bar code reader is specifically configured for Plug & Play with the monitor. No additional setup or configuration is required.

Body Mass Index (BMI) calculation

A BMI value is automatically computed when a valid Height and Weight are entered for a patient. The BMI calculation automatically compensates for Height (in or m) and Weight units (lb or kg).

Modifiers…

Patient modifiers, including Respiration Rate, FiO2 value and Pain level, may be entered by the user for each patient.

To enter the Patient Modifiers, complete one of the following methods:

Method 1

- Touch the Patient ID window displayed on the top left of the main screen to open the Patient Information screen
- Select Modifiers. Refer to Figure 42.

Method 2

- Select Setup
- Select Patient Information screen
- Select Modifiers. Refer to Figure 42.

The following modifies may be entered

a) RESP (Respiration Rate) - Press the RESP line to alter the RESP value. The valid range for RESP 1 to 150 rpm (refer to Figure 44).

b) FiCO2 - Press the FiCO2 line to alter the FiCO2 value. The valid FiCO2 range is 21 to 100 % (refer to Figure 44).

c) Pain - Press the Pain Line to alter the Pain value. The valid Pain range is 0 to 10 (refer to Figure 44).

Select OK to confirm the selection and close the window.

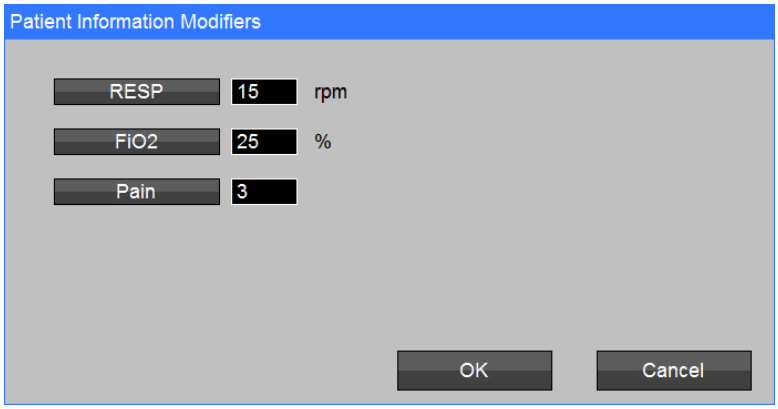


Figure 44: Patient Information Modifiers Screen

CLINICIAN INFORMATION

1) Press Clinician Information key (refer to Figure 37) to enter Clinician Information.
2) Use the keyboard (refer to Figure 45) to enter Clinician specific information.
3) Select OK to confirm and exit window.

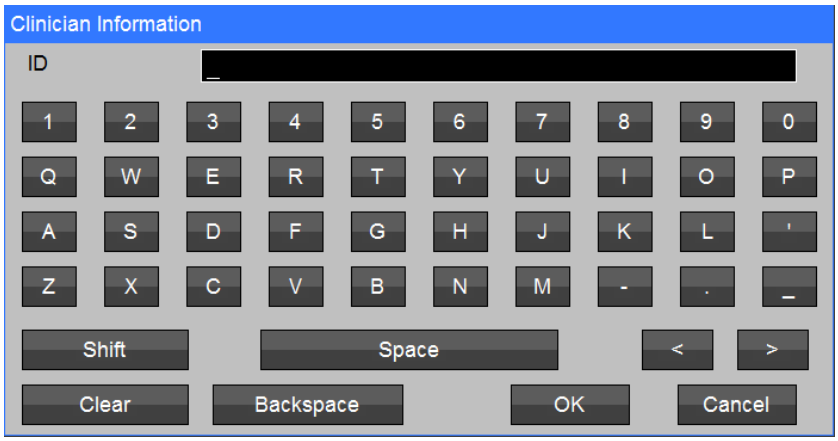


Figure 45: Enter Clinician Information Screen

The Clinician IDN may also be entered using the optional 740 SELECT bar code reader.

- The bar code reader is provide with a fourteen (14) foot coiled USB cable which is inserted into the USB connector located at the rear of the monitor. Refer to Figure 3 for location of USB connector.
- The bar code reader is specifically configured for Plug and Play with the monitor. No additional setup or configuration is required.

RESTORE USER DEFAULTS

During clinical practice the User Default may be changed to match patient monitoring needs; at any time the monitor may be reverted back (restored) to the previously Saved User Default.

Follow these steps to Restore User Defaults:

1) Select Setup/Restore User Defaults.
2) Press Restore User Defaults to restore the default values (refer to Figure 46).
3) Select OK to Restore User Default Setup.
4) "Setup Restored" will appear in the message area of the monitor confirming the Defaults have been restored. Select Cancel to exit without making a change.

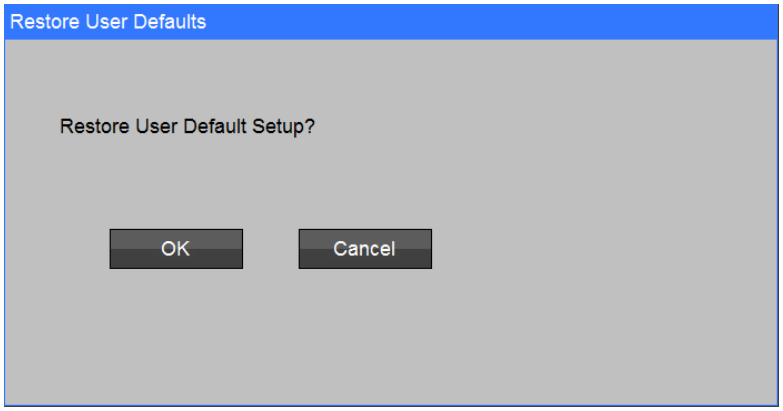


Figure 46: Restore User Defaults Screen

Caution: Restoring User Defaults does not automatically restore the default Alarm Volume. The Alarm Volume should be checked and set Manually after selecting Restore User Defaults.

ADMINISTRATOR

Select **Administrator** to enter Setup Administrator menu (refer to Figure 47) to access the following:

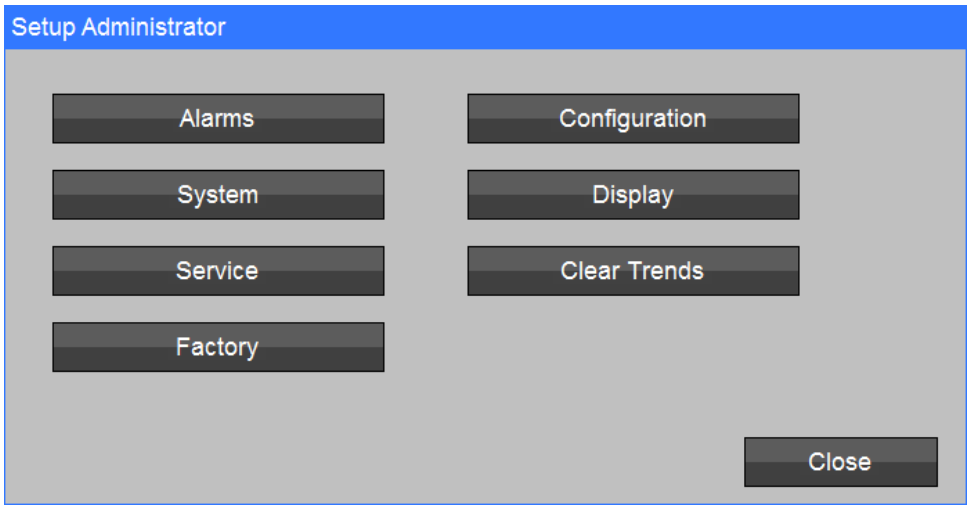


Figure 47: Setup Administrator Screen

ALARMS

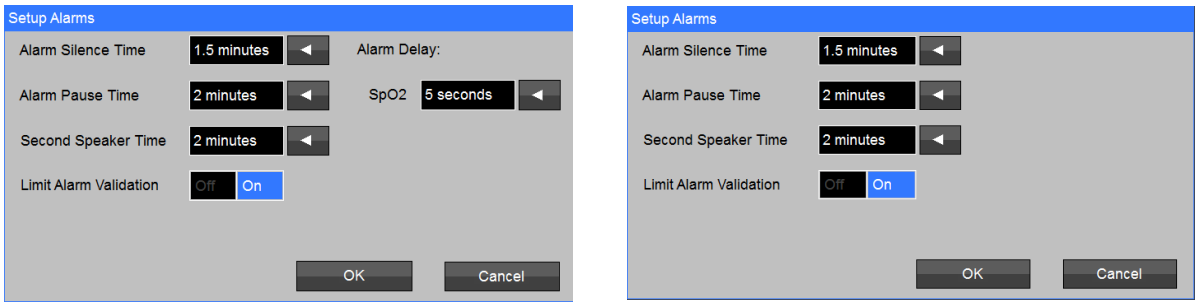
The Alarms menu is password protected.

This menu is typically accessed by the head nurse, nurse manager or hospital bio-med to establish global/ and institutional type alarm settings and monitor features.

To enter the Setup Alarms screen, touch [Setup/Administrator/Alarms]. Use the keyboard to enter the password 986.

- Enter the Setup Alarms window (refer to Figure 48) to configure the following global alarms:
  - Alarm Silence Time, Alarm Pause Time, Second Speaker Time
  - If SpO_2 Option installed: SpO_2 Alarm Delay (Masimo) PR Alarm Delay (3 sec.)

Use the Up/Down arrows and drop down menus to make selections. Selection(s) will appear in the dialog box. Select OK to confirm your selection and return to the prior screen.



With Masimo SpO_2 With Nellcor SpO_2

Figure 48: Setup Alarms Screens

- The Alarm (Audio) Silence Time is user selectable: 1, 1.5, and 2 minutes. The Factory Default Alarm Silence Time is 1.5 minutes.
- The Alarm Pause Time is user selectable: 1, 1.5, and 2 minutes. The Factory Default Alarm Suspend Time is 2 minutes.
- The Second Speaker Time is user selectable: 0, 1, 2, and 3 minutes. The Factory Default Second Speaker Time is 2 minutes.
- For the "Limit Alarm Validation" is user selectable: Off and On. The Factory default value is "On".
- Table 5 indicates the intervals for each listed parameter and Limit violation.
- The (Masimo) SpO_2 Alarm Delay is user selectable: Off, 5, 10, and 15 seconds. The Factory Default SpO_2 Alarm Delay is 5 seconds.

Table 5: Alarm Delay Intervals

Parameter	Lower Limit Violation	Upper Limit Violation
PR	3 seconds	3 seconds

SYSTEM

The Setup System menu is password protected.

This menu is typically accessed by the head nurse, nurse manager or hospital bio-med to establish global and institutional type alarm settings and monitor features.

To enter the Setup System screen, touch [Setup/Administrator/System]. Use the keyboard to enter the password 986.

Enter the Setup System window (refer to Figure 49) to configure monitor Workflow (Spot-Check or Continuous Monitoring), Powerup Behavior, (Ask if new patient, Assume new patient, or Assume same patient), Serial Port (Printer or Communications), Bar code (Patient or Clinician ID), CO_2 type (Masimo or Covidien), Set Monitor ID, Set Date and Time, Set Units of Measure, Save User Defaults, Save Trends, or Show Event Log.

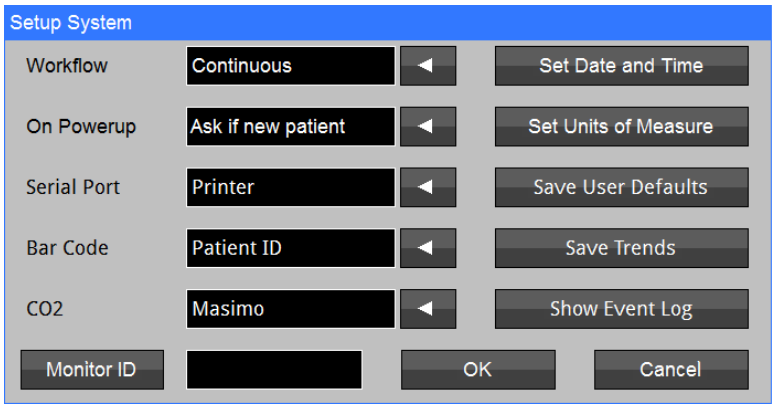


Figure 49: Setup System Screen

Note: CO_2 setting will be grayed out, one selection or may indicate the current CO_2 selection if both CO_2 options are enabled.

Workflow

Configure the monitor for the appropriate clinical workflow options:

- **Spot-Check**
  a. If the monitor has been configured for use in Spot-Check workflow mode, selecting **OK** from the "**Save snapshot?**" screen will:
     I. Automatically clear patient information (including trend data stored as Intervals), and restore the monitor to the user established default settings.
     II. Individual patient information (ID and physiologic measurements) will be stored in Trends and can be viewed at any time by selecting "Saved snapshots" in the Trend screen.
  b. Perform the following to enable Spot-Check workflow mode:
     I. Press the **Setup** button
     II. Press the **Administrator** button
     III. Press **System** button
     IV. Enter the required password **986**
     V. Set **Workflow** selection to **Spot Check**
- **Continuous Monitoring**
  a. If the monitor has been configured for use in the Continuous Monitoring workflow mode, selecting **OK** from the "**Save snapshot?**" screen retains all data stored in Trends (Saved snapshots and Intervals).
  b. The monitor retains the current settings and alarm limits.
  c. A new Patient can be entered (via bar code reader or keyboard) at any time during Continuous Monitoring. The Previous patient information will be retained in Trends with the unique patient ID (if previously entered).
  d. Perform the following to enable Continuous workflow mode:
     I. Press the **Setup** button
     II. Press the **Administrator** button
     III. Press **System** button
     IV. Enter the required password **986**
     V. Set **Workflow** selection to **Continuous**

On Power Up

The On Power Up selection may be configured to ask the New Patient question, Assume a new patient or Assume the same patient.

This feature is designed to help manage the monitor boot up behavior based on the clinical setting (e.g., EMS, Dental Offices or General Hospital operations).

To configure the On Power Up selection complete the following steps:

1) Select Setup followed by the Administrator and System menu.
2) Enter the required password 986.
3) From the On Power Up drop down menu select the desired action (Ask New Patient question, Assume new patient or Assume same patient). The selection will appear in the dialog box.
   - **Ask if new patient** is typically used in a hospital setting with Spot Check mode.
   - **Assume new patient** is typically used in pre-hospital setting (e.g. EMS, para-medicine). Monitor opens to the main screen and is ready for patient monitoring as quickly as possible.
   - **Assume same patient** is typically used in a hospital/surgical setting when continuously monitoring the same patient.
4) Select OK to confirm the selection and close the window.

Also refer to On Power Up Selection Section on page 51 for additional information regarding this feature.

Serial Port

The Serial Port may be configured to communicate with the 740 SELECT Printer or an external device (Electronic Medical Record).

To configure the Serial Port complete the following steps:

1) Select Setup followed by the Administrator and System menu.
2) Enter the required password 986.
3) From the Serial Port drop down menu select the desired Port Configuration (Printer or Communications). The selection will appear in the dialog box.

   If “Communications” is selected, the monitor must be restarted in order for the change to take effect.
4) Select OK to confirm the selection and close the window.

Bar Code

Select Patient or Clinician IDN as the primary bar code entry.

To configure the primary bar code entry, complete the following steps:

1. Select Setup, followed by Administrator and System Menu
2. Enter the required password 986
3. From the Bar Code drop-down menu, select the desired configuration (Patient or Clinician ID). The selection will appear in the dialog box.
4. Select OK to confirm the selection and close the window

CO2

If more than one CO2 connection option has been enabled, this option allows you to select which one is currently being used (Masimo or Covidien).

Monitor ID

Used to enter a unique monitor ID description.

To enter a description, complete the following steps:

1. Select Setup, followed by Administrator and System Menu
2. Enter the required password 986
3. Select the Monitor ID dialog box to open the Monitor ID keyboard.
4. Enter the Monitor ID using the keyboard and navigation keys.
5. Select OK to confirm the selection and close the window

Set Date and Time

The year, month, and day are displayed as well as the hour and minutes on the main display screen. The Date & Time value is set at the factory. Should it need to be changed, perform the following steps after selecting Setup.

1) Select Setup followed by the Administrator/System and then Set Date and Time.
2) Enter the required password 986.
3) From the Set Date and Time window use the Up/Down arrows to make changes to the date and time. The selection will appear in the dialog box.
4) Select OK to confirm the selection and close the window.

Caution: Before making a change to the date and time, clearing patient trends is recommended to avoid patient data appearing out of sequence. [Setup/Administrator/Clear Trends]

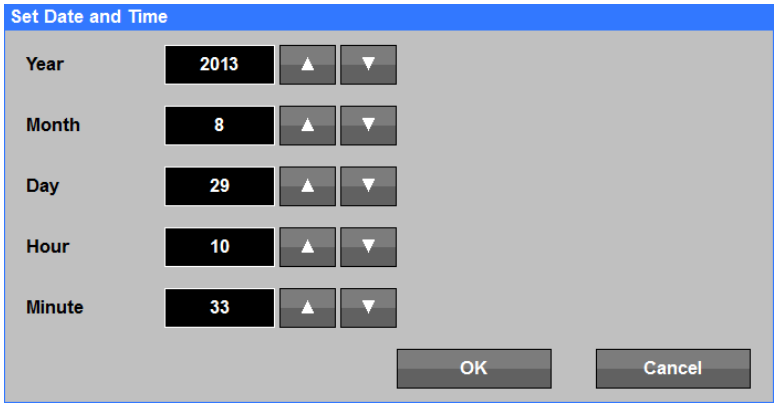


Figure 50: Set Date and Time Screen

Set Units of Measure / Height Units

The patient height can be displayed in either inches or centimeters.

To configure the patient height units complete the following steps:

1) Select Setup followed by the Administrator and System menu.
2) Enter the required password 986.
3) From the Height Units drop down menu select the desired height units. The selected units will appear in the dialog box.

Note: Altering the Height units will not adjust the Height value previously entered for the patient. The user should verify the patient's entered Height.

4) Select OK to confirm the selection and close the window.

Set Units of Measure / Weight Units

The patient weight can be displayed in either pounds or kilograms.

To configure the patient weight units complete the following steps:

1) Select Setup followed by the Administrator and System menu.
2) Enter the required password 986.
3) From the Weight Units drop down menu select the desired height units. The selected units will appear in the dialog box.

Note: Altering the Weight units will not adjust the Weight value previously entered for the patient. The user should verify the patient's entered Weight.

4) Select OK to confirm the selection and close the window.

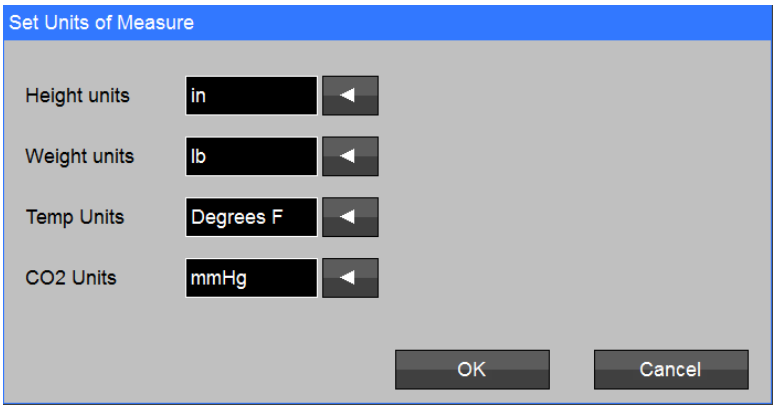


Figure 51: Set Units of Measure screen

Set Units of Measure / Temperature Units (if Temperature is installed)

The Temperature readings can be displayed in either the Celsius or Fahrenheit units.

To configure the monitor's temperature units complete the following steps:

1) Select Setup followed by the Administrator and System menu.
2) Enter the required password 986.
3) From the Units drop down menu select the desired temperature units. The selected units will appear in the dialog box.
4) Select OK to confirm the selection and close the window.

Set Units of Measure / CO2 Units (if CO2 connection is enabled)

The CO2 measurements can be displayed in either mmHg or kPa units.

To configure the monitor's CO2 units complete the following steps:

1) Select Setup followed by the Administrator and System menu.
2) Enter the required password 986.
3) From the Units drop down menu select the desired CO2 units. The selected units will appear in the dialog box.
4) Select OK to confirm the selection and close the window.

Save User Defaults

User set alarm limits, settings and monitor features may be saved as User Defaults.

To save user alarm limits, settings and monitor features complete the following steps:

1) Select Setup followed by the Administrator/System.
2) Enter the required password 986.
3) Select Save User Defaults to open the Save User Default window. Select OK.
4) Selecting OK generates an audio beep and a “Setup saved” confirmation message in the monitor message window. The screen automatically returns to the Setup System window.

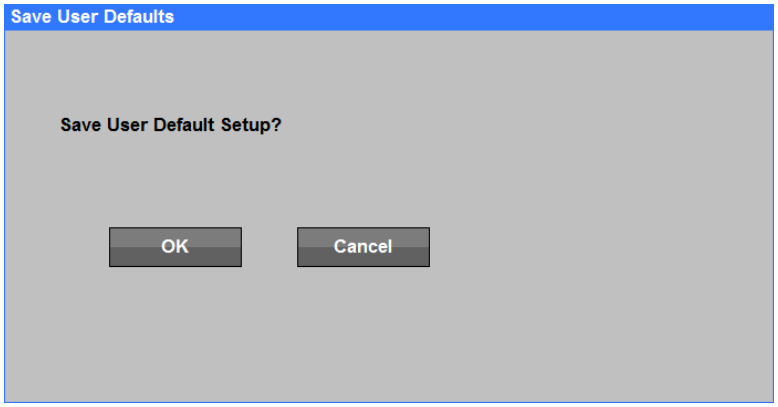


Figure 52: Save User Defaults Screen

Save Trends

If a USB stick is inserted at the time this button is pressed, the monitor creates a file on the USB stick with the name “740SELECTTrendRecords_YYYYMMDD_HHMMSS.csv” (where YYYYMMDD_HHMMSS represents the current date and time). You can then remove the USB stick and open the .csv file using Excel or a similar program.

Show Event Log

The Event Log is intended to be used by hospital bio-medical technician and or Zoe Medical technical support (refer to Figure 53).

The log provides NIBP, SpO_2 (if installed), and Temp (if installed) information, etc.

The user may access the Event Log by performing the following steps:

1) Select Setup followed by the Administrator/System.
2) Enter the required password 986.
3) Select Show Event Log.
4) Navigation buttons are provided to view the log from top/bottom and right/left.
5) Selecting Close to exit the Event Log.

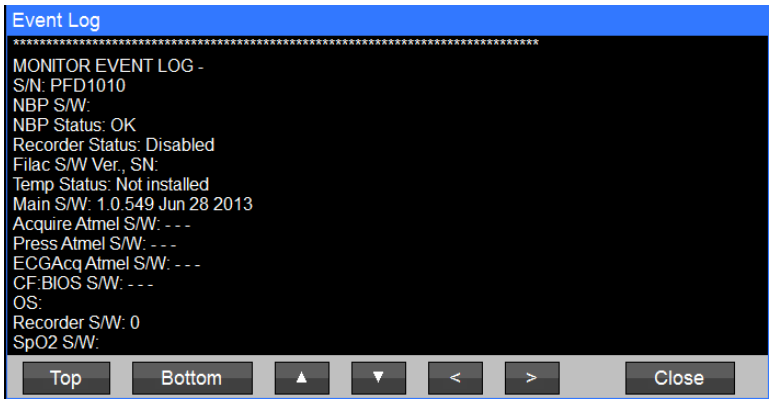


Figure 53: Show Event Log Screen

SERVICE

Service Screen is password protected and is typically accessed by hospital bio-med or Zoe Medical technical support.

Refer to **740 SELECT** Field Service Manual, Zoe Medical PN 21-22-0331, to access Service Screen.

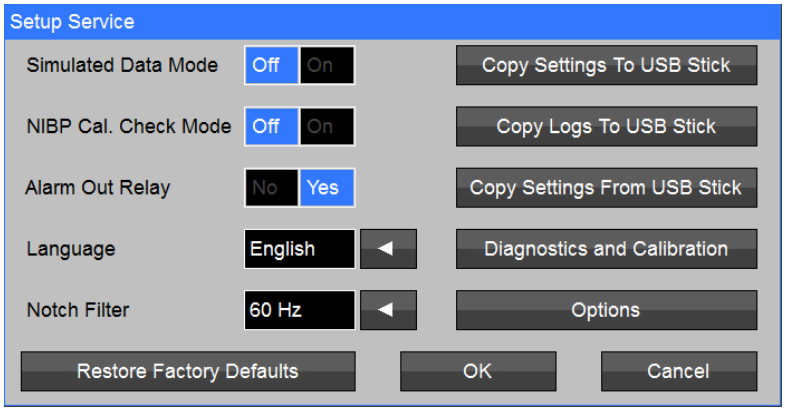


Figure 54: Setup Service Screen

FACTORY

Factory is reserved and not accessible, no user related or bio-med related functions. Inform Zoe Medical if you are able to enter this menu with or without a password.

CONFIGURATION

Select **Configuration** to enter the Setup Configuration window (refer to Figure 55) to review the Model Type, monitor serial number, and current monitor software version of its operating system and that of the internal modules as applicable (NIBP, SpO_2, Temperature, Masimo Rainbow and CO_2 parameters) and external printer if installed.

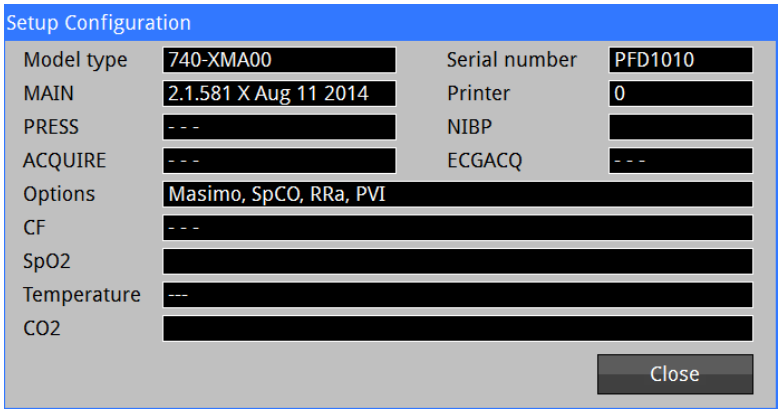
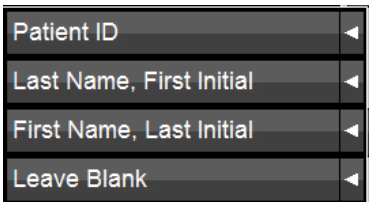


Figure 55: Setup Configuration Screen (Example only)

DISPLAY

The Setup Display Menu is used to configure the following features (refer to Figure 56):

- **Patient Button Label** – Use the drop down menu to select how patient information will be displayed on the main screen. user configurable selections are:



Patient ID is typically selected when the optional bar code reader is used or when the patients IDN is required before capturing patient vitals

- **Monitor Button Label** – Provides a method to uniquely identify the 740 SELECT monitor for institutional tracking purposes and enable the entry of a Clinician IDN as applicable. Use the on screen keyboard to enter the Monitor ID Tag (Example: MEDSURG 12) or Clinician IDN (Example: NURSE SMITH). The Clinician IDN may also be entered using the optional bar code reader.
- **Auto Dim Timeout (minutes)** – Allows the user to manage touch screen brightness automatically (night mode). Display screen will automatically dim after the set time has lapsed. The display screen automatically returns to full brightness if an alarm condition occurs or when the screen is touched by the user.
  - Settings are: Off, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 minutes
  - Use the Up/Down arrows to change setting

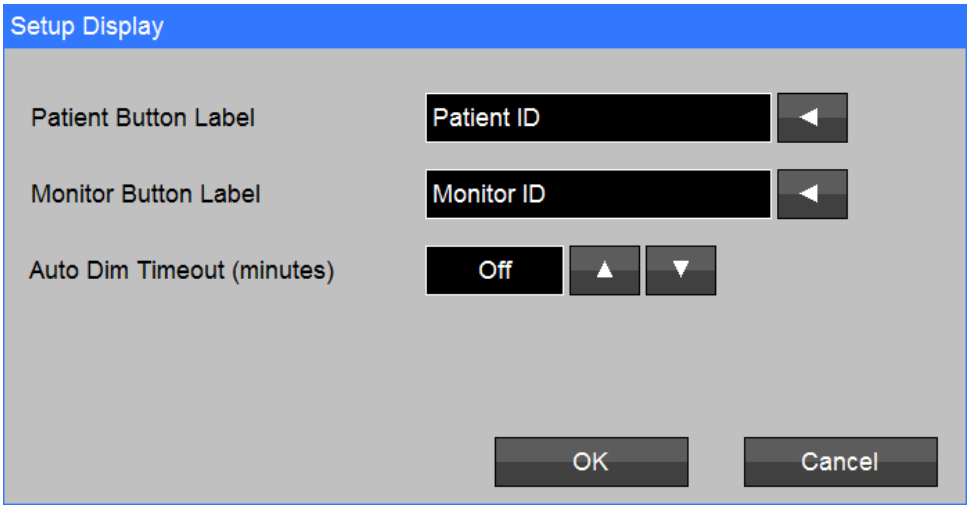


Figure 56: Setup Display Screen

CLEAR TRENDS

Select Clear Trends to clear all the trend data stored in the device. The monitor will prompt you to confirm this selection, to avoid doing it accidentally.

COMMUNICATIONS

Use this menu to set values that are used for network communications.

8. BLOOD PRESSURE MONITORING

Important - Be sure to read and understand all the Warnings and Cautions found in MONITOR SAFETY MEASURES, starting on page 35, before starting Blood Pressure Monitoring.

SAFETY MEASURES

Warning: Blood pressure and pulse can fluctuate greatly between measurements; the monitor cannot alert the user to changes in blood pressure occurring between measurement cycles.

Warning: The cuff should not be applied on a limb being used for intravascular access or therapy, or an arterio-venous (A-V) shunt.

Warning: Do not place the cuff on any extremity being used for SpO_2 monitoring.

Warning: When monitoring over an extended period of time, or at frequent intervals, periodically observe the patient's limb to make sure that the circulation is not impaired for a prolonged period of time.

Warning: Do not allow the inflation tube to be kinked that may allow continuous cuff pressure and blood flow interference resulting in injury.

Warning: Too frequent measurements can cause injury due to blood flow interference.

Warning: Do not apply a cuff over a wound, as this can cause further injury.

Warning: Remember that there may be a marked difference between readings taken from the left and the right arms. Do not apply cuff on the arm on the same side of a mastectomy.

Warning: Regardless of these safety features, always be sure to check that there are no signs of prolonged impairment of patient circulation and that the monitor is functioning properly.

Warning: As with any non-invasive oscillometric blood pressure monitor, the accuracy of the measurements obtained may be adversely affected by the presence of agents that alter the patient's cardiovascular system.

Caution: Consult a physician for interpretation of blood pressure measurements.

Caution: Do not operate the monitor unless it has been properly calibrated. Inaccurate blood pressure readings may result. A calibration check is recommended once every year. A pneumatic check is recommended once a year.

Caution: Do not alter the monitor's air hose. Zoe Medical cannot ensure proper monitor performance if the tubing is altered. Modification of the air hose will void the warranty. Avoid compression or restriction of pressure tubes.

Caution: In shock conditions, the low amplitude of the blood pressure waveform may make it difficult for the monitor to accurately determine the systolic and diastolic pressures.

Caution: If the cuff is applied on a limb being used for oxygen saturation monitoring $\%SpO_2$ results will be altered during each blood pressure measurement due to the occlusion of blood flow.

Note: The NIBP parameter has not been investigated for use on pregnant (including pre-eclamptic) patients, and the effectiveness of NIBP parameter has not been established in pregnant (including pre-eclamptic) patients.

- The monitor has been designed to promote patient safety. The maximum amount of time allowed to complete a blood pressure measurement is 120 seconds in Adult/Pediatric mode and 90 seconds in Neonate mode. If the measurement has not been completed within that time, the cuff is deflated automatically and a message is displayed indicating the problem.
- To prevent exposure of the extremity to an inordinately high pressure, the cuff is deflated automatically when the pressure in the system is greater than 290 mmHg in the Adult/Pediatric mode or 145 mmHg in the Neonatal mode.
- The cuffs used by the monitor are designed without transducers for patient safety. The transducers used for NIBP measurement are located inside the monitor on the NIBP board and are isolated from the patient.
- In the event of a microprocessor failure, the cuff will be deflated automatically within ten (10) seconds.
- All equipment parts are protected against the effects of the discharge of a defibrillator. No separate actions are required when using this equipment with a defibrillator.
- Should the power be interrupted coming into the monitor, the monitor automatically runs off battery power.

TIPS

Rationale to optimize performance and data accuracy of an automated NIBP system:

Tip	Rationale
Clear the prior patient's data and reset the initial inflation pressure to the default value for patient comfort (Refer to * NOTE below)	For patient comfort and avoids clinician loss of NIBP data
Cuff should be correctly sized, secured, positioned and placed on the same arm as done previously.	For data accuracy and consistency
Do not place the cuff on an arm that is not suitable for NIBP measurement (Refer to ** NOTE below).	In the event that only one arm can be used
Measurement environment should be quiet, not brightly lit and neither too cold nor hot.	For data accuracy
Use the correct monitor position (activation switch within reach of caregiver, tubing without kinks or touching itself, display readily visualized by caregiver).	For data accuracy and clinician visualization
Clinician should be attired to avoid "white-coat" hypertension (discuss and avoid caregiver appearance).	For data accuracy
Patient should be correctly positioned and rested before beginning: • WHILE SEATED: feet on floor, legs uncrossed, sitting straight with back supported, cuff on the arm to be measured at the level of the heart, with forearm supported. • WHILE IN BED: lying flat with legs uncrossed, cuff on the arm to be measured at the level of the heart, with forearm supported. Readings can be affected by the measurement site, position of the patient (sitting, standing), exercise, or the patient's physiological condition.	For data accuracy
Patient should not be moving immediately prior to or during a measurement. Patient should relax as much as possible and not talk during the measurement (Refer to *** NOTE below).	For data accuracy
Maintain a correct measurement sequence (discard the first measurement and wait at least 5 minutes before initiating the next measurement inflation). If unexpected readings are obtained wait 5 minutes and repeat the measurement.	For patient comfort and data accuracy
Printer data and power-off monitor or select New Patient before taking the first reading.	Avoids clinician loss of NIBP data, resets initial inflation pressure to default value for patient comfort

*** NOTE**: The default initial inflation pressure is 160mmHg for Adult/Pediatric (80 Neo). This may be adjusted if the patient's blood pressure range is known.

**** NOTE:** Do not place the Cuff on the arm not be suitable for NIBP measurement, e.g., an extremity with a deep vein thrombosis, grafts, ischemic changes, arteriovenous fistula or graft, vessel harvest or any trauma/incision. Cuff should not be applied over a peripherally inserted central catheter (PICC) or midline catheter site but may be placed distally to the insertion site. NIBP measurements should not be taken in extremities with peripheral IV while an infusion is running.

***** NOTE:** Environmental or operational factors can affect the performance of the measurement (e.g., common arrhythmias such as atrial or ventricular premature beats or atrial fibrillation, patient motion, trembling, shivering).

CUFF SELECTION AND APPLICATION

The use of properly designed and sized cuffs is essential for the accurate measurement of blood pressure (refer to Figure 57). SoftCheck single patient use cuffs or UltraCheck reusable cuffs are recommended for use with the monitor.

Note: Zoe Medical recommends the use of its reusable, disposable and neonatal cuffs.

Note: Zoe Medical recommends the use of the inflation hose supplied with the monitor or a replacement from Zoe Medical.

The widest cuff that can be placed around the upper arm or thigh should be used. A cuff that is too small for the arm will not supply sufficient pressure to the artery. This can cause an erroneously high blood pressure reading. Substitution of a cuff different from that supplied might result in a measurement error.

Note: Overlapping the cuff will not affect the measurement results.

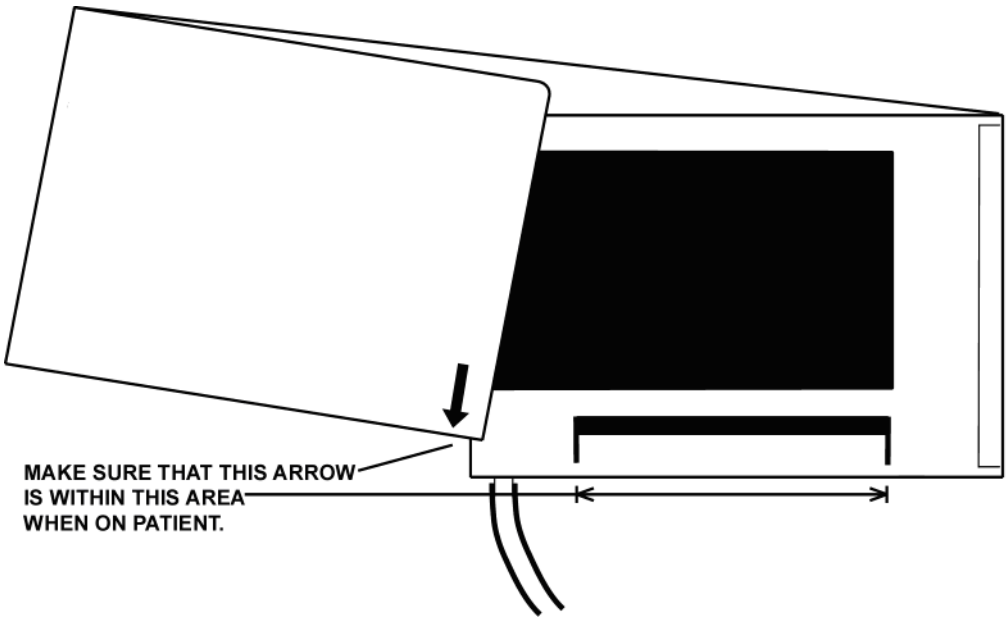


Figure 57: Cuff Application

As an example, the end of the cuff is marked with a white arrow. To insure that the proper cuff size has been selected, wrap the cuff around the patient's extremity, the marker should fall between the white markings on the cuff.

Measurements made above the level of the heart will give reduced blood pressure readings while measurements made below the heart level will give increased readings (refer to Figure 58). These errors are mainly due to the weight of the blood.

The following guidelines should be observed:

- When applying the cuff, make sure the cuff tubing is centered over the brachial artery
- Wrap the cuff for a snug fit to avoid prolonged pumping time. Do not wrap a cuff over the patient's clothing
- Verify the hook and loop sections of the cuff are fully engaged when it is wrapped around the limb
- The limb should be positioned to be at heart level
- Do not compress the cuff or the cuff hose; the hose must not be kinked or pinched

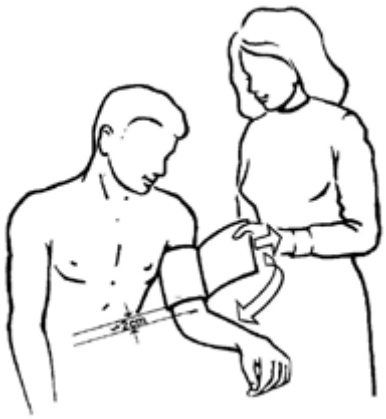


Figure 58: Cuff Positioning

NIBP HOSES

Zoe Medical offers two (2) NIBP Inflation Hoses.

- For Adult patient monitoring use the Adult mode and Cuffs, the coiled ten (10) ft (3 m) NIBP hose (Zoe Medical PN 01-01-0088) is recommended
- For Pediatric patient monitoring use the Pediatric mode and Cuffs, the coiled ten (10) ft (3 m) NIBP hose (Zoe Medical PN 01-01-0088) is recommended
- For Neonatal and Infant patient monitoring use the Neonatal mode and cuffs, the Neonatal six (6) ft (3 m) NIBP hose (Zoe Medical PN 01-03-0255) is recommended

Note: Avoid compression or restriction of NIBP hoses.

Refer to Section 16, ACCESSORIES for Zoe Medical part number information.

CONFIGURING THE MONITOR FOR NIBP

MANUAL MODE

Select and apply the appropriately sized cuff for the patient being monitored to the extremity.

Connect the cuff to the end of the monitor tubing. Connect the monitor tubing to the NIBP connector, located on the left side of the monitor.

To select one of the Initial Inflation Pressures shown in Table 6 below, touch the NIBP touch area. Adjust the Initial Inflation Pressure to the desired value and then touch OK to accept or Cancel to ignore the selection. Touch the Home touch area to return to the Main screen.

Warning: When measuring blood pressure on a Pediatric patient it is recommended that the Initial Inflation Pressure be set to a lower value of 120 mmHg.

Table 6: Selectable Initial Inflation Pressures

(Start BP Options set to No)		
ADULT MODE	**PEDIATRIC MODE**	**NEONATE MODE**
240 mmHg	240 mmHg	120 mmHg
220mmHg	220 mmHg	100 mmHg
200 mmHg	200 mmHg	80 mmHg
180 mmHg	180 mmHg	60 mmHg
160 mmHg	160 mmHg	
140 mmHg	140 mmHg	
120 mmHg	120 mmHg	
100 mmHg	100 mmHg	
80 mmHg	80 mmHg	

TAKING A NIBP MEASUREMENT

Warning: Excessive patient motion can contribute to inaccurate measurements. It is important that the patient be kept still during a measurement. Make every attempt to alleviate fear, anxiety and pain.

Press the Start Button (found in the NIBP Numeric field) to begin a measurement. For the first measurement the monitor will inflate to the default setting or the Initial Inflation Pressure selected per the Start BP Option setting.

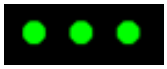
The monitor's NIBP display will display an increasing numeric value while the measurement is in progress and the NIBP displays the Inflation Pressure in the format "XXX", where "XXX" is the pressure value. For subsequent measurements (Start BP Options = No), the monitor will inflate approximately 30 mmHg higher than the previously determined Systolic pressure.

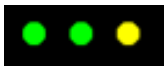
The measurement typically takes less than 30 seconds to complete. In no case will the cuff remain pressurized for more than 120 seconds for Adult/Pediatric patients and no more than 90 seconds for Neonates.

When the measurement is completed, the cuff will automatically deflate and the monitor will display the Systolic, Diastolic, MAP and Pulse Rate values on the front panel. The NIBP Numeric field displays a time stamp of the NIBP measurement in the format "HH:MM". Where "HH" is the hour and "MM" is the minute of the measurement taken.

Pulse Pressure (Sys-Dia) is displayed after each blood pressure measurement.

When the blood pressure measurement is completed, a MAXIQ Signal Quality Status Indicator will be displayed. The MAXIQ indicator provides user information related to the NIBP signal quality and degree of artifact present during the measurement. The MAXIQ state is represented by 1 of 4 icons:


Excellent signal quality, low artifact present


Good signal quality, moderate artifact present


Poor signal quality, excessive artifact present

Press Stop Button at any time to stop a measurement and deflate the cuff during the measurement process. The NIBP Systolic, Diastolic, MAP and Pulse Rate values will change to blank (no numeric will be displayed in the numeric field).

The Start/Stop BP button can be pressed twice very quickly to clear the current NIBP measurement.

Note: If any displayed NIBP measurement were to be left on the display for up to twenty-four (24) hours, the monitor will automatically blank the numeric display.

AUTOMATIC CYCLE FOR BLOOD PRESSURE DETERMINATION

Automatic blood pressure measurements can be taken at pre-selected time intervals.

To choose a NIBP Interval, touch the NIBP Numeric field. Select the desired NIBP Interval value and then touch OK to accept or Cancel to ignore the selection. Touch the Home touch area to return to the Main screen.

Once a NIBP Interval has been selected pressing the Start Button will begin the first measurement. The next NIBP measurement will start automatically from the start of the last measurement based on the NIBP Internal, e.g., 5 minutes NIBP Interval will take measurements every 5 minutes.

The measurement results are displayed in the NIBP numeric field until the end of the next measurement cycle.

Note: If a measurement is desired between measurement cycles, press Start Button. After this measurement, the monitor will re-enter the Automatic Cycle mode and countdown to the next measurement based on the Cycle time selected.

In the Automatic Mode while during a measurement, pressing the Stop Button will cause the measurement to stop and remain in Auto Cycle mode.

In the Automatic Mode while idle time between measurements, pressing Stop Button will cause the monitor to stop the measurement cycle and remain in Auto Cycle mode.

The NIBP numerics will indicate the reading of the previous measurement taken and the time stamp of that reading.

Note: The Automatic Cycle mode is not saved during a power cycle.

NIBP ALARM LIMITS

There are three sets of alarm limit parameters, one for Adult, Pediatric and Neonatal. Alarm Limits will operate on the parameters for the current user selectable monitor patient mode. NIBP alarm limits are disabled by default.

To set the NIBP Alarm limits:

1. Touch the NIBP Numeric field.
2. Adjust the desired NIBP Parameter (Sys, Map or Dia) Upper or Lower Alarm Limit value.
   - The Upper and Lower Alarm Limits can be adjusted independently.
   - Each NIBP Parameter Alarm Limit can be set to Off.

Warning: Setting the NIBP Parameters Upper or Lower Alarm Limit to “Off” will not generate any visual or audible indication of an alarm condition.

3. Touch OK to accept or Cancel to ignore the selection.
4. Touch the Home touch area to return to the Main screen.

Caution: Switching modes from Adult, Pediatric or Neonate to any other patient mode, shall recall the last stored values for the patient alarm limits.

Note: Alarms for Systolic, Diastolic and MAP values are produced at the time the measurement is taken.

STAT MODE

Warning: Readings obtained during STAT mode may not meet the stated accuracy of this monitor.

Warning: In some cases, rapid, prolonged cycling of an oscillometric, noninvasive blood pressure monitor cuff has been associated with any or all of the following: ischemia, purpura, or neuropathy. Apply the blood pressure cuff appropriately, according to instructions, and check the cuff site and cuffed extremity regularly when blood pressure is measured at frequent intervals or over extended periods of time.

An automatic series of blood pressure measurements can be taken for a five (5) minute interval with a brief (approx. (5) second) pause between determinations to allow venous blood return.

To choose a STAT mode, touch the NIBP Numeric field. Select the STAT Mode and then touch OK to accept or Cancel to ignore the selection. Touch the Home touch area to return to the Main screen.

After five (5) minutes of determinations the monitor will stop taking measurements and exit the STAT mode. The monitor remains in STAT mode once the measurement series in the last STAT mode is done.

Pressing the Stop button during a STAT measurement stops the current measurement and remains in STAT mode.

Clicking on "End STAT Mode" in-between STAT mode measurement is only avoiding any other measurement to take place until the user selects "Start".

To exit STAT mode, enter the NIBP SETUP Menu. From the Mode drop down menu select the appropriate NIBP mode then select OK.

Warning: When monitoring over an extended period of time, or at frequent intervals, periodically observe the patient’s limb to make sure that the circulation is not impaired for a prolonged period of time.

9. PULSE OXIMETRY MONITORING

Important - Be sure to read and understand all the Warnings and Cautions found in MONITOR SAFETY MEASURES, starting on page 35, before starting Pulse Oximetry Monitoring.

SAFETY MEASURES

Warning: A pulse oximeter should be considered an early warning device. As a trend toward patient deoxygenation is indicated, blood samples should be analyzed by a laboratory oximeter to completely understand the patient's condition.

Warning: Accurate oxygen saturation measurements cannot be obtained when the oximeter is not measuring the pulse properly. If the Plethysmograph waveform is erratic or the Pulse Rate display is erratic or inaccurate, first examine the patient for any sign of distress and only then re-examine sensor placement.

Warning: Explosion hazard - Do not use the monitor in the presence of flammable anesthetics or other flammable substance in combination with air, oxygen-enriched environments, or nitrous oxide.

Warning: Electric shock hazard - Do not open the monitor cover except to replace the batteries. Only qualified personnel may perform maintenance procedures specifically described in this Manual. Contact Zoe Medical for assistance.

Warning: Pulse rate measurement is based on the optical detection of a peripheral flow pulse and therefore may not detect certain arrhythmias. The monitor should not be used as a replacement or substitute for ECG based arrhythmia analysis.

Warning: A monitor should be considered an early warning device. As a trend towards patient hypoxemia is indicated, blood samples should be analyzed by laboratory instruments to completely understand the patient's condition.

Warning: SpO_2 is empirically calibrated to functional arterial oxygen saturation in healthy adult volunteers with normal levels of carboxyhemoglobin (COHb) and methemoglobin (MetHb). A pulse oximeter cannot measure elevated levels of COHb or MetHb. Increases in either COHb or MetHb will affect the accuracy of the SpO_2 measurement.

- For increased COHb: COHb levels above normal tend to increase the level of SpO_2. The level of increase is approximately equal to the amount of COHb that is present.

Note: High levels of COHb may occur with a seemingly normal SpO_2. When elevated levels of COHb are suspected, laboratory analysis (Oximetry) of a blood sample should be performed.

- For increased MetHb: the SpO_2 may be decreased by levels of MetHb of up to approximately 10% to 15%. At higher levels of MetHb, the SpO_2 may tend to read in the low to mid 80s. When elevated levels of MetHb are suspected, laboratory analysis (Oximetry) of a blood sample should be performed.

Warning: The monitor is to be operated by qualified personnel only. This Manual, accessory direction for use, all precautionary information, and specifications should be read before use.

Warning: The monitor is NOT intended for use as an apnea monitor.

Warning: As with all medical equipment, carefully route patient cabling to reduce the possibility of patient entanglement or strangulation.

Warning: Do not place the monitor or accessories in any position that might cause it to fall on the patient. Do not lift the monitor by the patient cable.

Warning: Interfering Substances: Carboxyhemoglobin may erroneously increase SpO_2 readings. The level of increase is approximately equal to the amount of carboxyhemoglobin present. Dyes, or any substance containing dyes, that change usual blood pigmentation may cause erroneous readings.

Warning: Severe anemia may cause erroneous SpO_2 readings.

Warning: Do not use the monitor or oximetry sensors during magnetic resonance imaging (MRI) scanning. Induced current could potentially cause burns. The monitor may affect the MRI image, and the MRI unit may affect the accuracy of the oximetry measurements.

Warning: If using pulse oximetry during full body irradiation, keep the sensor out of the irradiation field. If the sensor is exposed to the irradiation, the reading might be inaccurate or the unit might read zero for the duration of the active irradiation period.

Warning: Always remove the sensor from the patient and completely disconnect the patient from the monitor before bathing the patient.

Warning: Do not place the monitor where the controls can be changed by the patient.

Warning: Do not place the monitor speaker against a surface. This will cause the alarm to be muffled.

Warning: Do not place the monitor on electrical equipment that may affect the monitor, preventing it from working properly.

Warning: Do not expose the monitor to excessive moisture such as direct exposure to rain. Excessive moisture can cause the monitor to perform inaccurately or fail.

Warning: Do not place containers containing liquids on or near the monitor. Liquids spilled on the monitor may cause it to perform inaccurately or fail.

Warning: Patient Safety - If a sensor is damaged in any way, discontinue use immediately.

Warning: The monitor may be used during defibrillation, but the readings may be inaccurate for up to 20 seconds.

Warning: This equipment has been tested and found to comply with the limits for medical devices to the EN 60601-1-2, Medical Device Directive 93/42/EEC. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving device
- Increase the separation between the equipment
- Consult the manufacturer for help

Warning: The site must be checked at least every four (4) hours to ensure adequate adhesion, circulation, skin integrity and correct optical alignment.

Warning: If the sensor is wrapped too tightly or supplemental tape is used, venous congestion/pulsations may occur, causing erroneous readings.

Warning: Exercise caution when applying a SpO_2 sensor to a site with compromised skin integrity. Applying tape or pressure to such a site may reduce circulation and/or cause further skin deterioration.

Warning: With very low perfusion at the monitored site, the readings may read lower than core arterial oxygen saturation.

Warning: Sensors applied too tightly may cause erroneously low readings.

Warning: Misapplied sensors or sensors that become partially dislodged may cause either over or under reading of actual arterial oxygen saturation.

Warning: Do not use tape to secure the sensor to the site; this can restrict blood flow and cause inaccurate readings. Use of additional tape can cause skin damage or damage the sensor.

Warning: To prevent damage, do not soak or immerse the sensor in any liquid solution. Do not attempt to sterilize.

Warning: Intravascular dyes or externally applied coloring (such as nail polish) may lead to inaccurate SpO_2 measurements.

Warning: Elevated levels of Carboxyhemoglobin (COHb) may lead to inaccurate SpO_2 measurements.

Warning: Elevated levels of Methemoglobin (MetHb) will lead to inaccurate SpO_2 and SpCO measurements.

Warning: Elevated levels of Total Bilirubin may lead to inaccurate SpO_2, SpMet, SpCO, SpHb, and SpOC measurements.

Warning: Motion artifact may lead to inaccurate SpMet, SpCO, SpHb, and SpOC measurements.

Warning: Very low arterial Oxygen Saturation (SpO_2) levels may cause inaccurate SpCO and SpMet measurements.

Warning: Hemoglobin synthesis disorders may cause erroneous SpHb readings.

Warning: To protect against injury from electric shock, follow the directions below:

- Avoid placing the monitor on surfaces with visible liquid spills.
- Do not soak or immerse the in liquids monitor.
- Always turn off and disconnect the power cords from the power supply before cleaning the monitor.
- Use cleaning solutions sparingly.

Warning: To ensure patient electrical isolation, connect only to other equipment with electrically isolated circuits.

Warning: Do not use damaged sensors or patient cables. Do not use a sensor or patient cable with exposed optical or electrical components.

Warning: Do not immerse the sensor or patient cable in water or, solvents, or cleaning solutions (The sensors and connectors are not waterproof).

Warning: Unless otherwise specified, do not sterilize sensors or patient cables by irradiation, steam, autoclave, or ethylene oxide. Refer to cleaning instructions in the directions for use for the Masimo re-useable sensors.

Warning: Do not attempt to reprocess, recondition, or recycle any SpO_2 sensors or patient cables as these processes may damage the electrical components, potentially leading to harm.

Warning: To avoid cross contamination only use SpO_2 single use sensors on the same patient.

Warning: Loss of pulse signal can occur when:

- The sensor is too tight
- The patient has hypotension, severe vasoconstriction, severe anemia, or hypothermia
- There is arterial occlusion proximal to the sensor
- The patient is in cardiac arrest or is in shock

Warning: High intensity extreme lights (including pulsating strobe lights) directed on the sensor may not allow the monitor to obtain readings.

Warning: Failure to apply the sensor properly may cause incorrect measurements.

Warning: Avoid placing the sensor on any extremity with an arterial catheter or blood pressure cuff.

Warning: The pulsations from intra-aortic balloon support can be additive to the pulse rate on the oximeter pulse rate display. Verify patient's pulse rate against the ECG heart rate.

Warning: Do not modify or alter the sensor in any way. Alterations or modification may affect performance and/or accuracy.

Warning: Venous congestion may cause under reading of actual arterial oxygen saturation. Therefore, assure proper venous outflow from monitored site. Sensor should not be below heart level (e.g., sensor on hand of a patient in a bed with arm dangling to the floor).

Warning: Venous pulsations may cause erroneous low readings (e.g., tricuspid value regurgitation).

Warning: Circulation distal to the sensor site should be checked routinely.

The monitor features SpO_2 technology that is ideal for every application. The SpO_2 technology may be used on Adult, Pediatric, and Neonatal patients (refer to Section 17, SPECIFICATIONS for additional information on patient age, weight, and body locations for the various sensors).

Note: A functional tester cannot be utilized to assess the accuracy of the monitor or any sensors.

ALARM LIMIT VALUES

There are three sets of alarm limit parameters, one for Adult, Pediatric, and Neonatal. Alarm Limits will operate on the parameters for the current monitor patient mode. Table 7 Default SpO2 & SpO2 Pulse Alarm Limits below lists the SpO_2 Default Alarm Limits.

Table 7 Default SpO2 & SpO2 Pulse Alarm Limits

Adult	**SpO_2**	**SpO_2 Pulse Rate**
Upper	100	120
Lower	90	50

Pediatric	**SpO_2**	**SpO_2 Pulse Rate**
Upper	100	120
Lower	90	50

Neonatal	**SpO_2**	**SpO_2 Pulse Rate**
Upper	95	180
Lower	85	100

To set the SpO_2 Alarm limits:

1) Touch the SpO_2 Numeric field.
2) Adjust the desired SpO_2 High or Low Limit value.
   - The SpO_2 Upper and Lower Alarm Limits can be adjusted independently.
   - The SpO_2 Upper and Lower Alarm Limit can be set to “Off”.

Warning: Setting the SpO_2 Upper or Lower Alarm Limit to “Off” will not generate any visual or audible indication of an alarm condition.

3) Touch OK to accept or Cancel to ignore the selection.
4) Touch the Home touch area to return to the Main screen.

Refer to the Masimo Oximeter and Nellcor Oximeter sections for specific operating modes for the average or delay effects on the SpO_2 value. A SpO_2 Alarm limit condition may be programmed to have a 0 or 10 sec delay. The audio and visual Alarm signal generation delay within the system is less than 1 second.

To set the SpO_2 Pulse Rate Alarm limits:

1) Touch the SpO_2 Pulse Rate Numeric field.
2) Adjust the desired SpO_2 Pulse Rate Upper or Lower Alarm Limit value.
   - The SpO_2 Pulse Rate Upper and Lower Alarm Limits can be adjusted independently.
   - The SpO_2 Pulse Rate Upper and Lower Alarm Limit can be set to “Off”.

Warning: Setting the SpO_2 Pulse Rate Upper or Lower Alarm Limit to “Off” will not generate any visual or audible indication of an alarm condition.

3) Touch OK to accept or Cancel to ignore the selection.
4) Touch the Home touch area to return to the Main screen.

Refer to the Masimo Oximeter and Nellcor Oximeter sections for specific operating modes for the average or delay effects on the SpO_2 Pulse Rate value. A SpO_2 Pulse Rate Alarm limit condition may be programmed to have a 0 or 2 sec delay. The audio and visual Alarm signal generation delay within the system is less than 1 second.

Caution: Switching modes from Adult, Pediatric or Neonate to any other patient mode, shall recall the last stored values for the patient alarm limits.

Note: Alarms for SpO_2 & SpO_2 Pulse values are produced continuously.

PLETHYSMOGRAPH

The monitor has the capability to display the Plethysmograph waveform from the SpO_2 sensor.

To enable the SpO_2 waveform:

1) Touch Setup then Home Screen.
2) Select SpO_2 Waveform On.
3) Touch OK to accept or Cancel to ignore the selection.
4) Touch the Home touch area to return to the Main screen.

When initially placing a sensor on the patient, the message area will display the message "SpO_2 searching" until the signal is acquired or a SpO_2 alarm is generated.

Upon removing the SpO_2 sensor from the patient the user may address the "SpO_2 check sensor placement" alert by performing either of the following:

- From the Main Menu, Select (Audio) Silence to temporarily silence the alert for the pre-determined interval
- Enter the SpO_2 Setup screen and select the SpO2 Alarm Acknowledge button to permanently silence the SpO_2 equipment alarms.

  When selected, the SpO_2 alarm acknowledged message appears to confirm the selection.

TAKING A SpO_2 MEASUREMENT

Warning: Prior to patient monitoring, ensure the monitor is configured to the appropriate patient mode – Adult, Pediatric, or Neonate. The current patient mode is displayed on the main screen.

The following is a general procedure for taking a SpO_2 measurement:

1) Select a sensor based on the patient size and monitoring conditions and properly attach the sensor to the patient.

Note: Refer to Section 17, SPECIFICATIONS for information regarding SpO_2 wavelength range that can be especially useful to clinicians.

FINGER CLIP SENSORS

The finger clip sensor is designed for SpO_2 check monitoring of Adult and Pediatric patients or continuous monitoring where patient movement is not expected, and the patient's finger is large enough for the sensor to be attached securely (refer to Figure 59).

Note: If patient movement is occurring or the finger size is inappropriate, select a different sensor that is appropriate for the patient and the monitoring environment.

Figure 59: SpO_2 Finger Clip Sensor Application

Insert the finger (preferably left or right index finger) completely into the sensor. Place the sensor with the LEDs positioned on the nail side. The thumb is specifically not recommended for use with the finger clip sensor.

DISPOSABLE FLEX-TYPE SENSORS

These types of sensors are designed for patients as a single patient use sensor and are intended for use where moderate patient movement is expected or cross contamination is possible.

Figure 60: Flex Type Adult/Pediatric Application

Adult and Pediatric: The preferred application site is the index finger, however, other fingers or toes may be used where the tissue thickness is between 5 and 17 millimeters (refer to Figure 60).

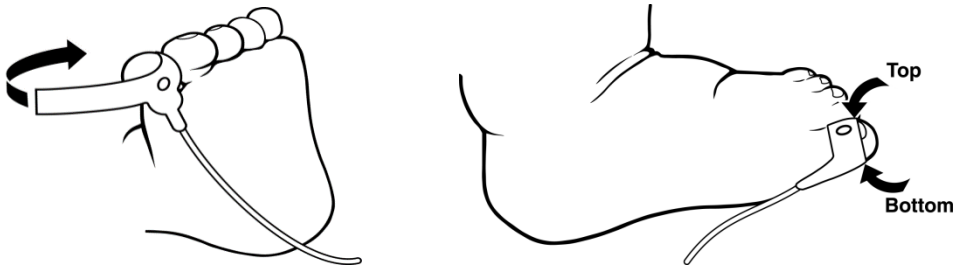


Figure 61: Flex Type Infant Application

Infant: The preferred application site is the large toe of infants greater than 2 kilograms in weight (refer to Figure 61).

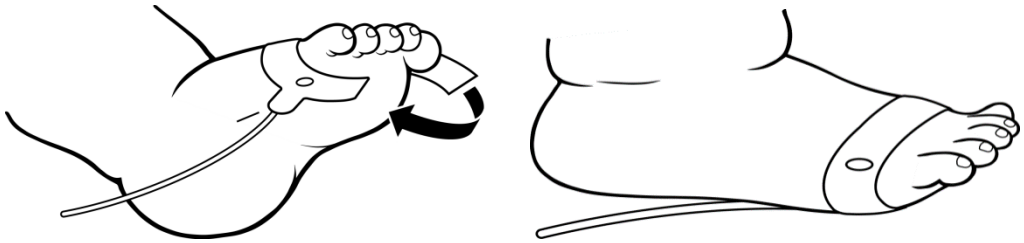


Figure 62: Flex Type Neonatal Application

Neonatal: The preferred application site is on the foot; close to the toes for infants less than 2 kilograms in weight (refer to Figure 62).

Note: There are no known risks with common disposal of SpO_2 flex type sensors; however, the disposing of sensors should follow in accordance with local hospital policies. The user should ensure these policies do not conflict with any local, state or federal guidelines.

Note: For best results, secure the sensor cable independently from the sensor, preferably around the base of the finger. Tape may be used to secure the cable to the patient. Make sure that the tape being used does not restrict the blood flow.

2) Once the sensor has been attached to the patient and to the monitor, wait for the monitor to determine the initial SpO_2 and SpO_2 Pulse values. When the values have been determined,

they will be displayed in their respective SpO_2 and SpO_2 Pulse numerics.

Warning: Inspect the pulse oximeter site every 2 to 4 hours or per hospital protocol. If there is any skin irritation caused by the sensor, remove the sensor and apply it to a different location.

3) When SpO_2 monitoring is completed, remove the sensor from the patient.

When the SpO_2 sensor is removed from the patient, the message "SpO_2 check sensor placement" appears in the monitor message area and an audible alarm sounds, indicating a connection has been lost.

Press the Silence Button. The monitor silences the audible alarm tone, but the message remains. The audible alarm will return once the Audio silence time has lapsed.

To clear this alarm, enter the Setup SpO_2 screen and select the SpO2 Alarm Acknowledge button to remove the alarm condition. Once selected an audio tone will be generated and the confirmation message SpO_2 alarm acknowledged will appear briefly in the message area.

Note: If either the Alarm Silence or Alarm Suspend is enabled, no audio will be heard but a visual message will appear in the SpO_2 Numeric field.

MASIMO OXIMETER (if so equipped)

The monitor is shipped with SpO_2 sensors manufactured by Masimo. No other manufacturer's sensors should be used.

Note: Models may also be software enabled to interface with Masimo Rainbow Parameters (SpCO, RRa & PVI). Refer to **740 SELECT** User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332.

Note: Monitors equipped with Masimo oximetry will have the Masimo SET logo next to the SpO_2 connector.

ATTACHING THE CABLES

1) Select and apply a sensor that is the appropriate size for the patient's digit or extremity, according to the instructions provided by Masimo.
2) Orient the connecting tab of the sensor so that the shiny contacts are pointed up. Mate the logo on the sensor to the logo on the patient cable.
3) Insert the tab of the sensor into the patient cable connector until there is a tactile or audible "click" connection. Verify a secure connection and gently tug on the patient cable connector.
4) Plug the Interface Cable into the SpO_2 connector located on the left hand side (patient input panel) of the monitor. Both the Masimo SpO_2 connector and side panel input connector are keyed to ensure proper orientation for this connection. Push the connector in until you hear an audible "click".
5) Press the On/Off button to turn "ON" the monitor.
6) Check the Alarm Limits and configure them appropriately for the patient.

REMOVING THE INTERFACE CABLE

When SpO_2 monitoring is not required, disconnect the Interface Cable by squeezing the grey tabs with your thumb and index finger while pulling the connector away from the monitor.

Note: To avoid damage to the Interface Cable, always hold it by the connector rather than the cable when connecting or disconnecting either end.

When the SpO_2 sensor is disconnected from the monitor, the message "SpO_2 unplugged" appears in the SpO_2 Numeric field and an audible alarm sounds indicating a connection has been broken. Press the Silence Button to silence the visual and audible alarm.

Note: If either the Alarm Silence or Alarms Suspend is enabled, no audio will be heard but a visual message will appear in the SpO_2 Numeric field.

Refer to Section 16, ACCESSORIES for Masimo SpO_2 sensor types and part number information. Consult instructions enclosed with each sensor for proper application.

MASIMO MESSAGES

When the message "SpO_2 low perfusion" or "SpO_2 low signal IQ" appear in the SpO_2 Numeric field, and the monitor is displaying valid %SpO_2 numerics, no audible alarm will be heard.

When the message "SpO_2 low perfusion" or "SpO_2 low signal IQ" appear in the SpO_2 Numeric field, and the monitor is not displaying valid %SpO_2 numerics, an audible alarm will be heard. Press the Silence Button. The monitor silences the audio alarm tone, but the message remains.

NELLCOR OXIMETER (if so equipped)

The monitor is shipped with Nellcor OxiMax sensors. No other manufacturer's sensors should be used.

Note: Monitors equipped with Nellcor oximetry will have the Nellcor OxiMax logo next to the SpO_2 connector.

ATTACHMENT PROCEDURE

1) Select and apply a sensor that is the appropriate size for the patient's digit or extremity, according to the instructions provided by Nellcor.
2) Connect the sensor assembly to the Interface Cable:
   a) Place the plastic hinged cover in the unlocked position (perpendicular to the connector).
   b) Connect the sensor assembly to the Interface Cable.
   c) Lock the plastic hinged cover to prevent accidental cable disconnection.
3) Plug the Interface Cable into the SpO_2 connector on the side panel of the monitor. The connector is shaped like a "D". Line up the "D" on the Interface Cable with the "D" on the receptacle. Push the cable in until you hear an audible "click".
4) Plug the Interface Cable into the SpO_2 connector located on the left hand side (patient input panel) of the monitor. Both the Nellcor SpO_2 connector and side panel input connector are keyed to ensure proper orientation for this connection. Push the connector in until you hear an audible "click".
5) Press the On/Off switch to turn "ON" the monitor.
6) Check the Alarm Limits and configure them appropriately for the patient.

REMOVING THE INTERFACE CABLE

When SpO_2 monitoring is not required, disconnect the Interface Cable by squeezing the grey tabs with your thumb and index finger while pulling the connector away from the monitor.

Note: To avoid damage to the Interface Cable, always hold it by the connector rather than the cable when connecting or disconnecting either end.

When the SpO_2 sensor is disconnected from the monitor, the message "SpO_2 unplugged" appears in the SpO_2 Numeric field and an audible alarm sounds indicating a connection has been broken. Press the Silence Button to silence the visual and audible alarm.

Note: If either the Alarm Silence or Alarms Suspend is enabled, no audio will be heard but a visual message will appear in the SpO_2 Numeric field.

Refer to Section 16, ACCESSORIES for Nellcor SpO_2 sensor types and part number information. Consult instructions enclosed with each sensor for proper application.

SpO_2 MESSAGES

Warning: If the accuracy of any measurement does not seem reasonable, first check the patient's vital signs by an alternate method.

Note: The SpO_2 sensor must be kept as motionless as possible to make a proper determination. Use the Plethysmograph waveform to determine if a strong rhythmic pulse signal is present.

When no SpO_2 sensor is attached to the monitor, the SpO_2 and SpO_2 Pulse numerics will be blank.

When the SpO_2 sensor is connected to the monitor, but is off of the patient, the SpO_2 and SpO_2 Pulse Rate numeric may be displayed as dashes or blank. The SpO_2 numeric field displays the message "SpO_2 check sensor placement".

Press Silence Button. The monitor silences the audible alarm tone, but the message remains.

If the message "SpO_2 check sensor" should appear in the SpO_2 numeric field, verify that the SpO_2 sensor being used is the correct one for the monitor's SpO_2 configuration (Masimo vs. Nellcor) or that the SpO_2 sensor is not defective.

Press Silence Button. The monitor silences the audio alarm tone, but the message remains. Remove the defective SpO_2 sensor and replace it with a working SpO_2 sensor.

Each sensor is designed for a specific clinical application.

Caution: Inaccurate measurements may be caused by:

- anemia or low hemoglobin concentrations
- electrosurgical interference
- excessive ambient light
- excessive patient movement
- incorrect sensor application or use
- intravascular dyes such as indocyanine green or methylene blue
- moisture in the sensor
- placement of a sensor on an extremity with a blood pressure cuff, arterial catheter, or intravascular line
- venous pulsations

Caution: The loss of a pulse signal can occur in any of the following situations:

- a blood pressure cuff is inflated on the same extremity as the one with the SpO_2 sensor attached
- excessive ambient light such as from a surgical lamp, a bilirubin lamp, or sunlight
- the patient has hypotension, severe vasoconstriction, severe anemia, or hypothermia
- the patient is in cardiac arrest or is in shock
- the sensor is too tight
- there is arterial occlusion proximal to the sensor

If the internal SpO_2 Module should fail, the message "SpO_2 problem detected" will appear in the monitor numeric field. Press Silence Button and the monitor will silences the audio alarm tone, and the message remains.

Should any of the above problems persist, contact your dealer or Zoe Medical.

SAFESAT OXIMETER (if so equipped)

The monitor is shipped with SafeSAT sensors. No other manufacturer's sensors should be used.

Note: Monitors equipped with SafeSAT oximetry will have the SafeSAT logo next to the SpO_2 connector.

ATTACHMENT PROCEDURE

1) Select and apply a sensor that is the appropriate size for the patient's digit or extremity, according to the instructions provided with the sensor.
2) Connect the sensor assembly to the Interface Cable:
   a) Place the plastic hinged cover in the unlocked position (perpendicular to the connector).
   b) Connect the sensor assembly to the Interface Cable.
   c) Lock the plastic hinged cover to prevent accidental cable disconnection.
3) Plug the Interface Cable into the SpO_2 connector on the side panel of the monitor.
4) Press the On/Off switch to turn "ON" the monitor.
5) Check the Alarm Limits and configure them appropriately for the patient.

REMOVING THE INTERFACE CABLE

When SpO_2 monitoring is not required, disconnect the Interface Cable by holding the cable connector with your thumb and index finger while pulling the connector away from the monitor.

Note: To avoid damage to the Interface Cable, always hold it by the connector rather than the cable when connecting or disconnecting either end.

When the SpO_2 sensor is disconnected from the monitor, the message "SpO_2 unplugged" appears in the SpO_2 Numeric field and an audible alarm sounds indicating a connection has been broken. Press the Silence Button to silence the visual and audible alarm.

Note: If either the Alarm Silence or Alarms Suspend is enabled, no audio will be heard but a visual message will appear in the SpO_2 Numeric field.

Refer to Section 16, ACCESSORIES for SafeSAT SpO_2 sensor types and part number information. Consult instructions enclosed with each sensor for proper application.

SpO_2 MESSAGES

Warning: If the accuracy of any measurement does not seem reasonable, first check the patient's vital signs by an alternate method.

Note: The SpO_2 sensor must be kept as motionless as possible to make a proper determination. Use the Plethysmograph waveform to determine if a strong rhythmic pulse signal is present.

When no SpO_2 sensor is attached to the monitor, the SpO_2 and SpO_2 Pulse numerics will be blank.

When the SpO_2 sensor is connected to the monitor, but is off of the patient, the SpO_2 and SpO_2 Pulse Rate numeric may be displayed as dashes or blank. The SpO_2 numeric field displays the message "SpO_2 check sensor placement".

Press Silence Button. The monitor silences the audible alarm tone, but the message remains.

If the message "SpO_2 check sensor" should appear in the SpO_2 numeric field, verify that the SpO_2 sensor being used is the correct one for the monitor's SpO_2 configuration (SafeSAT vs. Nellcor) or that the SpO_2 sensor is not defective.

Press Silence Button. The monitor silences the audio alarm tone, but the message remains. Remove the defective SpO_2 sensor and replace it with a working SpO_2 sensor.

Each sensor is designed for a specific clinical application.

Caution: Inaccurate measurements may be caused by:

- anemia or low hemoglobin concentrations
- electrosurgical interference
- excessive ambient light
- excessive patient movement
- incorrect sensor application or use
- intravascular dyes such as indocyanine green or methylene blue
- moisture in the sensor
- placement of a sensor on an extremity with a blood pressure cuff, arterial catheter, or intravascular line
- venous pulsations

Caution: The loss of a pulse signal can occur in any of the following situations:

- a blood pressure cuff is inflated on the same extremity as the one with the SpO_2 sensor attached
- excessive ambient light such as from a surgical lamp, a bilirubin lamp, or sunlight
- the patient has hypotension, severe vasoconstriction, severe anemia, or hypothermia
- the patient is in cardiac arrest or is in shock
- the sensor is too tight
- there is arterial occlusion proximal to the sensor

If the internal SpO_2 Module should fail, the message "SpO_2 problem detected" will appear in the monitor numeric field. Press Silence Button and the monitor will silences the audio alarm tone, and the message remains.

Should any of the above problems persist, contact your dealer or Zoe Medical.

10. TEMPERATURE (Temp) MONITORING

FILAC TEMPERATURE

Important - Be sure to read and understand all the Warnings and Cautions found in MONITOR SAFETY MEASURES, starting on page 35, before starting Temperature Monitoring.

WARNINGS

Warning: During use, single-use disposable FILAC Temp Probe covers supplied by Zoe Medical or Covidien will limit patient cross-contamination. The use of any other Temp Probe cover or the failure to use a Temp Probe cover may produce temperature errors and will invalidate the monitor's warranty. Temp Probe covers are required to ensure the safety of the patient and user.

Warning: During use and testing, single-use disposable FILAC Temp Probe covers will limit patient cross-contamination and ensure the safety of the patient, user and monitor. The use of any other Temp Probe covers or failure to use a Temp Probe cover may produce temperature errors and will invalidate the monitor's warranty.

Warning: When replacing a FILAC Temp Probe, it is recommended to replace the Isolation Chamber received with the Temp Probe. Failure to replace the Isolation Chamber could result in patient cross contamination.

Warning: To limit cross contamination, use FILAC Blue Probes and Isolation Chambers for Oral and Axillary temperature taking only.

CAUTIONS

Caution: Use only FILAC 3000 Temp Probe covers with monitor. Use of any other Temp Probe cover will result in erroneous temperature readings.

Caution: For proper operation, be sure to insert the FILAC Temp Probe back into the Isolation chamber when not in use. Be sure the Temp Probe is inserted fully into the Isolation Chamber.

Caution: The FILAC 3000 electronic Temp Probe and Temp Probe covers are Non-Sterile. Do not use on abraded tissue.

Caution: Use FILAC Red Probes and Isolation Chambers only for measuring RECTAL temperatures.

Caution: For re-calibration, service or integrity checks, refer to a qualified Biomedical Technician or return to manufacturer.

Caution: Disposal of used FILAC Temp Probe covers must be performed in accordance with current medical practices or local regulations regarding disposal of infectious, biological medical waste.

Caution: If the FILAC Temperature reading is < 30.0°C (86.0°F), the Temperature Numeric will flash. If the FILAC Temperature reading is > 43.0°C (109.4°F), the Temperature Numeric will flash. If the FILAC Temperature numerics flash for values between 30.0°C and 43.0°C (86.0°F and 109.4°F) this may be a sign of a questionable reading.

Refer to Section 16, ACCESSORIES for FILAC Temp Probe types and part number information. Consult instructions enclosed with each FILAC Temp Probe for proper application.

TEMPERATURE ALARM LIMITS

There are two sets of alarm limit parameters, one for Adult, Pediatric and Neonatal. Alarm Limits will operate on the parameters for the current monitor patient mode. Temperature alarm limits are disabled by default.

To set the Temp Alarm limits:

1) Touch the Temp Numeric field.
2) Adjust the desired Temp Upper or Lower Alarm Limit value.
   - The Temp Upper and Lower Alarm Limits can be adjusted independently.
   - The Temp Upper and Lower Alarm Limit can be set to “Off”.

Warning: Setting the Temp Upper or Lower Alarm Limit to “Off” will not generate any visual or audible indication of an alarm condition.

3) Touch OK to accept or Cancel to ignore the selection.
4) Touch the Home touch area to return to the Main screen without making a setting change.

Caution: Switching modes from Adult, Pediatric or Neonate to any other patient mode, shall recall the last stored values for the patient alarm limits.

Note: Alarms for Temp values are produced at the time the measurement is taken.

Note: To change the Temperature units, refer to

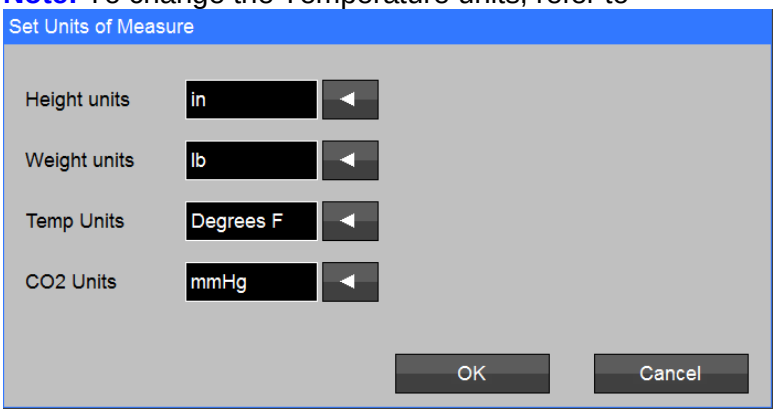


Figure 51: Set Units of **Measure screen**

Set Units of Measure **/ Temperature Units (if Temperature is** installed) on page 99.

FILAC TEMPERATURE MESSAGES

If FILAC Temp Probe and Isolation Chamber are removed from the Temperature module, the message (“No probe detected”) will appear in the Temperature numeric.

When the Isolation Chamber and Temp Probe are re-installed into the Temperature module, the message is cleared.

When the Temperature Probe is removed to take a temperature, a two tone audio alert is generated followed by the display of the Temperature in-process wheel. Completing a measurement clears the in-process wheel and provides a measured value and a tone alert.

FILAC Temperature in-process wheel

The Temperature numeric will automatically indicate the type of Isolation Chamber installed into the Temperature module (Oral or Rectal).

The Isolation Chamber type (Oral or Rectal) determines the available Temp Site and Temp Mode available in the Setup Temp window.

When the Temp Probe is properly returned to the Isolation Chamber well (fully seated) a two-tone alert will be generated to confirm.

The Temp Probe must be fully seated to initiate a new Temperature measurement.

If the Temp Probe remains out of the Isolation Chamber well for an extended period, an equipment alarm “Temp Probe out of well” will be generated.

Returning the Temp Probe and fully seating the Temp Probe into the Isolation Chamber well will clear the error message and resets for the next measurement.

Note: Press the SILENCE key to clear the Temp message.

If the Temperature circuitry located inside the monitor should fail, the message “Temp problem detected” will appear in the Message Area.

INSERTING A BOX OF FILAC TEMP PROBE COVERS

1) If required, remove the empty box of Temp Probe covers from the isolation chamber (Refer to Figure 63).
2) Open new box of Temp Probe covers by lifting the tab at marked corner (►) and pull to remove the top panel. Do not remove the entire top cover.
3) Insert the new box of Temp Probe covers into the isolation chamber with the opening in the top facing forward.

Figure 63: Box of Probe Covers in Isolation Chamber

4) Remove, discard, and replace Temp Probe cover box when empty.

APPLYING and REMOVING THE FILAC TEMP PROBE COVERS

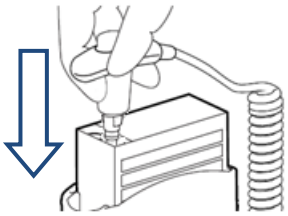
1) Insert a box of Temp Probe covers into the Isolation Chamber (Refer to Figure 63).

Warning: To aid infection control, never switch boxes between blue and red Isolation Chambers. Also never switch Temp Probes between blue and red Isolation Chambers - Keep like Temp Probe and isolation chambers colors together.

2) Remove Temp Probe from the Isolation Chamber well - This automatically turns on the thermometer.
3) Inset the Temp Probe end into a Probe Cover within the box (Refer to Figure 64).
4) Push the handle firmly until you feel the cover “snap” into place.
5) Take appropriate temperature measurement (Oral, Axillary, or Rectal).

Gray Eject button

Insert Probe into a Cover



Remove Prove w/Cover

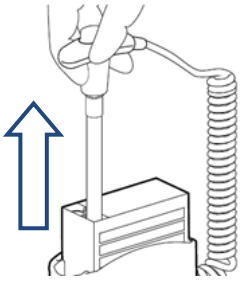


Figure 64: Applying Temp Probe Covers

7) Eject the used cover into bio-waste container by pressing the gray Eject button found on the top of the handle.

CHANGING THE FILAC TEMPERATURE ISOLATION CHAMBERS

Warning: When replacing FILAC Temp Probe, it is recommended to replace the Isolation Chamber received with the Temp Probe. Failure to replace the Isolation Chamber could result in patient cross contamination.

Caution: For aiding in infection control, use only the Blue Temp Probe and Blue Isolation Chamber for Oral and Axillary temperature taking. The Red Temp Probe and Red Isolation Chamber must only be used for Rectal temperature taking. Do not attach a Red Temp Probe to a Blue Isolation Chamber or vice-versa

1) To remove or replace any isolation temperature Isolation Chamber / Probe assembly, grasp the Isolation Chamber from each side (refer to Figure 65).
2) Squeeze inward releasing the snaps and slide the Isolation Chamber up to pull off.

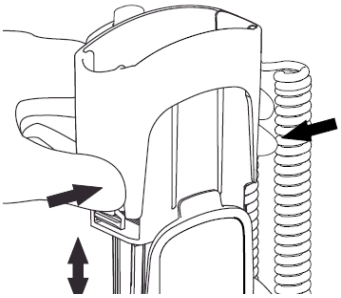


Figure 65: Removing Isolation Chamber

1) To replace, align Isolation Chamber fingers with opening in the top of the unit (refer to Figure 66).
2) Slide the Isolation Chamber down until the side snaps “click” into place.
3) The Temp Probe is connected to the thermometer automatically.

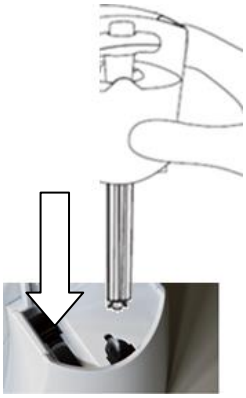


Figure 66: Replacing Isolation Chamber

CHANGING THE FILAC TEMPERATURE PROBE

1) To change Temp Probes, remove the Isolation Chamber as described previously (refer to Figure 65).
2) Grasp the sides of the L-shaped connector piece with one hand and then using the other hand pull backwards on the latch holding the end of the L-shaped connector.
3) Once free of the latch, slide the L-shaped connector out of the Isolation Chamber.
4) To replace, properly align the top of the L-shaped connector to the slot on the back of the Isolation Chamber.
5) Then slide the connector up into the slot pressing the bottom of the connector (refer to Figure 67).

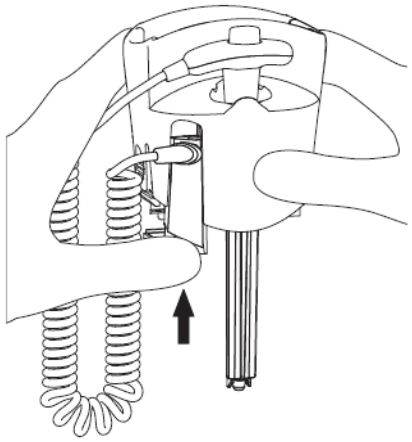


Figure 67: Changing Temp Probe

TAKING AN ORAL FILAC TEMPERATURE

Caution: Never use FILAC Temp Probe without a Temp Probe cover. Accurate Oral temperatures can only be obtained by using the *blue* Temp Probe. The use of the wrong Temp Probe will produce temperature errors.

Follow this procedure to take an Oral temperature (Predictive mode):

1) Make certain the Blue Oral Temp Isolation Chamber / Probe unit is attached.
2) Insure that the Oral Temp Probe is connected to the monitor and that the Temp Probe is secured into its Isolation Chamber well. The Temp Probes will slide in and out of the Isolation Chamber well without any restrictions. The Oral Temp Probe will be completely *blue* with a gray Temp Probe cover ejection button. The Isolation Chamber for the Oral Temp Probe should also be *blue* in color.
3) Fully seat the Temp Probe before removing from the Isolation Chamber well.
4) Withdraw the Temp Probe and load a Temp Probe cover onto the Temp Probe by holding the Temp Probe collar with the thumb and forefingers, being careful not to hold or press the gray ejection button. Insert the Temp Probe into a cover until you hear a click (Refer to Figure 64).
5) The thermometer turns on automatically (refer to Figure 68). This will be indicated by a Temp Measurement in-progress wheel indicator and an audio tone.

Temp Measurement in-process indicator

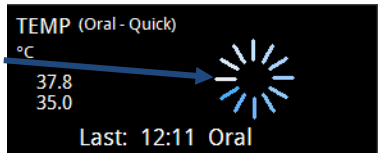


Figure 68: Temp Measurement in-Progress indicator

6) The Temp parameter cell will display the Temp Site and Temp Mode. The “ORAL” in the Temp Numeric field indicates that the Oral algorithm will be used to take a predictive temperature measurement.
7) Insert the Temp Probe tip deep into the sublingual pocket next to the frenulum linguae, (vertical fold of tissue in middle of tongue), on one side or the other, toward the back of the mouth (refer to Figure 69).

Sublingual Pockets

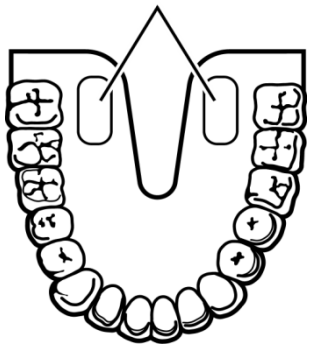


Figure 69: Location of Sublingual Pockets

Note: Accurate temperatures can only be obtained in this location. Temperatures in other mouth locations can vary by as much as 2°F or 1°C. Accurate body temperature readings can only be obtained in one of these two "heat pocket" locations as shown. Temperatures taken in other mouth locations will result in inaccurate body temperature readings.

8) Patient's mouth must be CLOSED during measurement.

9) Securely hold the Temp Probe in place until the temperature is displayed. The Temp Probe should be held by the clinician during the entire temperature measurement process to insure the Temp Probe tip maintains tissue contact.

10) When the final temperature has been reached, the temperature value will be displayed in the Temp Numeric field and an audible tone will be generated. The time of the measurement and the measured temperature will be displayed and also stored in the monitor's history memory.

11) After the temperature measurement is complete, remove the Temp Probe from the patient's mouth and eject the Temp Probe cover by firmly pressing the gray ejection button on the Temp Probe. Properly dispose of the used Temp Probe cover per protocol.

12) Insert the Temp Probe into the Isolation Chamber well before attempting to take another temperature measurement. The Temp Probes will slide in and out of the Isolation Chamber well without any restrictions. The monitor will validate the return of the Temp Probe into the Isolation Chamber well with a quick double tone.

13) Wash your hands.

Caution: Failure to correctly place FILAC Temp Probe back into its Isolation Chamber well may result in failure of the next predictive temperature measurement. The monitor reports a "Temp Probe out of well" if the Temp Probe is not returned into the Isolation Chamber well thirty (30) seconds after completing a measurement.

14) Following a completed temperature measurement, the current temperature measurement is displayed for two (2) hours after which time the value in the Temp Numeric field will go blank

TAKING A RECTAL FILAC TEMPERATURE

Caution: Never use FILAC Temp Probe without a Temp Probe cover. Accurate Rectal temperatures can only be obtained by using the *red* Temp Probe. The use of the wrong Temp Probe will produce temperature errors.

Follow this procedure to take a Rectal temperature:

1) Make certain that the RED Temp Isolation Chamber / Probe unit is attached.
2) Insure that the Rectal Temp Probe is connected to the monitor and that the Temp Probe is secured into its Isolation Chamber well. The Temp Probes will slide in and out of the Isolation Chamber well without any restrictions. The Rectal Temp Probe will be completely *red* with a gray Temp Probe cover ejection button. The Isolation Chamber for the Rectal Temp Probe should also be *red* in color.
3) Fully seat the Temp Probe before removing from the Isolation Chamber well.
4) Withdraw the Temp Probe and load a Temp Probe cover onto the Temp Probe by holding the Temp Probe collar with the thumb and forefingers, being careful not to hold or press the gray ejection button. Insert the Temp Probe into a cover until you hear a click (Refer to Figure 64).
5) The thermometer turns on automatically. This will be indicated by the Temp Measurement in-process indicator and an audio tone (refer to Figure 68).
6) The Temp parameter cell will display the Temp Site and Temp Mode. The “Rectal” in the Temp Numeric field indicates that the Rectal algorithm will be used to take a predictive temperature measurement.
7) Apply lubrication if desired.
8) To take a normal predictive temperature, insert the Temp Probe into the patient’s rectum. To ensure proper tissue contact, angle the Temp Probe slightly after insertion.
9) Depth of insertion is recommended at ½” to ¾” (12–19 mm) for adults and ¼” to ½” (6-13 mm) for children.

Warning: Extreme caution should be used to avoid risk of bowel perforation in children.

10) During the predictive temperature measurement cycle, a Temp Measurement in-progress wheel will appear in the Temp Numeric field indicating that a predictive measurement is in process.
11) When the final temperature has been reached, the temperature value will be displayed in the Temp Numeric field and an audible tone will be generated. The time of the measurement and the measured temperature will be displayed and also stored in the monitor’s history memory.
12) After the temperature measurement is complete, remove the Temp Probe from the patient’s rectum and eject the Temp Probe cover by firmly pressing the gray ejection button on the Temp Probe. Properly dispose of the used Temp Probe cover per protocol.
13) Insert the Temp Probe into the Isolation Chamber well before attempting to take another temperature measurement. The Temp Probes will slide in and out of the Isolation Chamber well without any restrictions. The monitor will validate return of the Temp Probe into the Isolation Chamber well with a quick double tone.
14) Wash your hands.

Caution: Failure to correctly place FILAC Temp Probe back into its Isolation Chamber well may result in failure of the next predictive temperature measurement. The monitor reports a “Temp Probe out of well” if the Temp Probe is not returned into the Isolation Chamber well thirty (30) seconds after completing a measurement.

15) Following a completed temperature measurement, the current temperature measurement is displayed for two (2) hours after which time the value in the Temp Numeric field will go blank.

TAKING AN AXILLARY FILAC TEMPERATURE

Caution: Never use FILAC Temp Probe without a Temp Probe cover. Accurate Axillary temperatures can only be obtained by using the *blue* Temp Probe. The use of the wrong Temp Probe will produce temperature errors.

Follow this procedure to take an Axillary temperature in Normal (Predictive) mode:

1) Make certain the Blue Temp Isolation Chamber / Probe unit is attached.
2) Insure that the Oral Temp Probe is connected to the monitor and that the Temp Probe is secured into its Isolation Chamber well. The Temp Probes will slide in and out of the Isolation Chamber well without any restrictions. The Axillary Temp Probe will be completely *blue* with a gray Temp Probe cover ejection button. The Isolation Chamber for the Axillary Temp Probe should also be *blue* in color.
3) Fully seat the Temp Probe before removing from the Isolation Chamber well.
4) Withdraw the Temp Probe and load a Temp Probe cover onto the Temp Probe by holding the Temp Probe collar with the thumb and forefingers, being careful not to hold or press the gray ejection button. Insert the Temp Probe into a cover until you hear a click (Refer to Figure 64).
5) The thermometer turns on automatically. This will be indicated by the Temp Measurement in-process indicator and an audio tone (refer to Figure 68).
6) The Temp Parameter cell will show “AXILLARY” indicating that the Axillary algorithm will be used to take a predictive temperature measurement.
7) To take a normal predictive temperature, raise the patients arm then place the Temp Probe tip as high as possible in the axilla. Press gently to assure good contact. For the most accurate temperature the Temp Probe tip should be placed directly against the patient’s skin. Do not allow the Temp Probe tip to come into contact with the patient until it is deliberately placed in the measurement site. Be sure that the Temp Probe tip is completely surrounded by Axillary tissue. Clothing or any other material touching the Temp Probe tip may cause inaccurate readings.
8) Lower the patients arm and remain as still as possible. Hold the Temp Probe parallel to the arm as shown (refer to Figure 70). Hold the arm in this position without movement of the arm or Temp Probe during the measurement cycle.

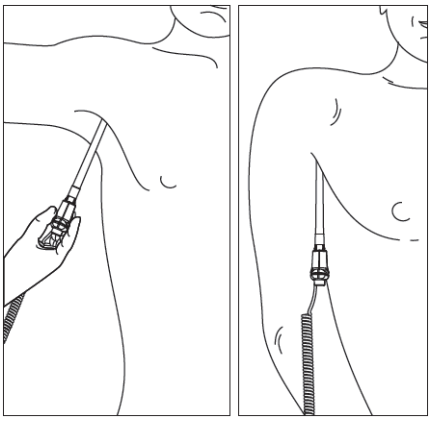


Figure 70: Axillary Temp Probe Position

9) During the predictive temperature measurement cycle, a Temp Measurement in-progress wheel will appear in the Temp Numeric field indicating that a predictive measurement is

in process.

10) When the final temperature has been reached, the temperature value will be displayed in the Temp Numeric field and an audible tone will be generated. The time of the measurement and the measured temperature will be displayed and also stored in the monitor's history memory.

Note: If FILAC Temp Probe tip did not maintain tissue contact during the entire predictive measurement, the final temperature displayed in the Temp Numeric field will flash. If this occurs it is recommended that a new temperature be taken. Press the Silence Button or after waiting for two (2) minutes the monitor will automatically blank the display.

11) After the temperature measurement is complete, remove the Temp Probe from the patient's axilla and eject the Temp Probe cover by firmly pressing the gray ejection button on the Temp Probe. Properly dispose of the used Temp Probe cover per protocol.

12) Insert the Temp Probe into the Isolation Chamber well before attempting to take another temperature measurement. The Temp Probes will slide in and out of the Isolation Chamber well without any restrictions. The monitor will validate return of the Temp Probe into the Isolation Chamber well with a quick double tone.

13) Wash your hands.

Caution: Failure to correctly place the Temp Probe back into its Isolation Chamber well may result in failure of the next predictive temperature measurement. The monitor reports a "Temp Probe out of well" if the Temp Probe is not returned into the Isolation Chamber well thirty (30) seconds after completing a measurement.

14) Following a completed temperature measurement, the current temperature measurement is displayed for two (2) hours after which time the value in the Temp Numeric field will go blank.

FILAC QUICK MODE (Oral Only)

- FILAC Quick mode may be selected via the Temp setup screen
- Quick mode is provided for more rapid, time consistent, Oral temperature predictions
- Rapidly ID patients with “normal” body temperature
- In this mode, a temperature measurement prediction is provided in approximately 3 -5 seconds (non-fever temps)
- Fever temperatures in approx. 8-10 seconds
- If outside of “normal” range, automatically switches into standard predictive mode to provide a more accurate reading

FILAC COLD MODE

- FILAC Cold mode may be selected via the Temp setup screen
- Provided a lower pre-heat and quicker accurate readings
- Cold Mode is provided for use in applications where body temperature may be lower than normal, such as for patients recently out of surgery (33°C, 91°F); use when body temperature may be lower than “normal”

FILAC DIRECT MODE

- Non-predictive FILAC temperature measurement mode, Thermometer Mode
- FILAC 3000 normally operates in Predictive Mode (fast and accurate); however, when no measurement site is detected or the temperature does not stabilize, the thermometer will automatically switch to DIRECT MODE and act as a temperature monitor

11. EXTERNAL PRINTER (Optional)

GENERAL

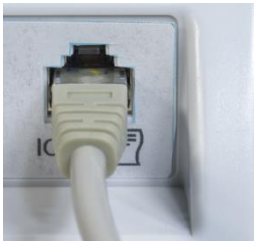
- Powered directly from the serial port; does not require separate battery or AC power
- 50 mm strip chart printer
- Prints: physiologic measurements, trend data, SpO_2 waveform (auto scaled, 25 mm/sec)
- Configure to: Print on alarm, Print on Save Snapshot
- Accessory bracket available for attachment to a roll stand

CONNECTION

To connect the external **740** SELECT printer to the monitor:

Refer to Figure 71:

1) Plug the printer cable into the connector located at the far right on the back of the monitor
   The cable provides power to the printer and communications with the monitor.
2) Load the printer with a roll of paper. (Replace paper when the roll displays a red line).
3) Configure the Serial Port for Printer: Setup/Admin/System/Serial Port/Printer/Ok



Serial Port

Figure 71: Connecting printer to monitor

12. TRENDS

DISPLAY

Trends allow the user to recall all trended physiologic patient measurement records and Saved Snapshots. Each trend value and Snapshot is date and time stamped and color coded to match the main display screen displayed values. Up/Down arrows allow the user to view trend information by latest or oldest date and time.

Pressing Trends reveals a record (refer to Figure 72) that can contain up to 1200 entries at user selectable intervals of 1, 5, 15, minutes, 1 or 4 hours (refer to Figure 73). Regardless of the user selected interval, all available measured values are saved every minute consisting of:

- A one (1) minute average of the %SpO_2 values (if installed)
- Data and Time Stamp of measurement
- NIBP measured value (Sys/Dia/MAP)
- SpO_2 values (if installed)
- Perfusion Index (PI) (if Masimo SpO_2 installed and PI enabled)
- PR values (if installed)
- Temperature values in °C of °F (if installed)
- $EtCO_2$, FICO, RRc and IPI (if installed)
- RRa, SpCO, and PVI (if installed)
- Patient ID (if available)

General Information:

- NIBP and Temperature values are saved at the time they were captured
- Turning the power “Off” does not clear the History memory
- A total of 1200 trends can be stored
- Automatically deletes the oldest record first (FIFO)

Press **Close** to return to “Main Display” screen menu or after thirty (30) seconds of inactivity the monitor will automatically return to Main Display.

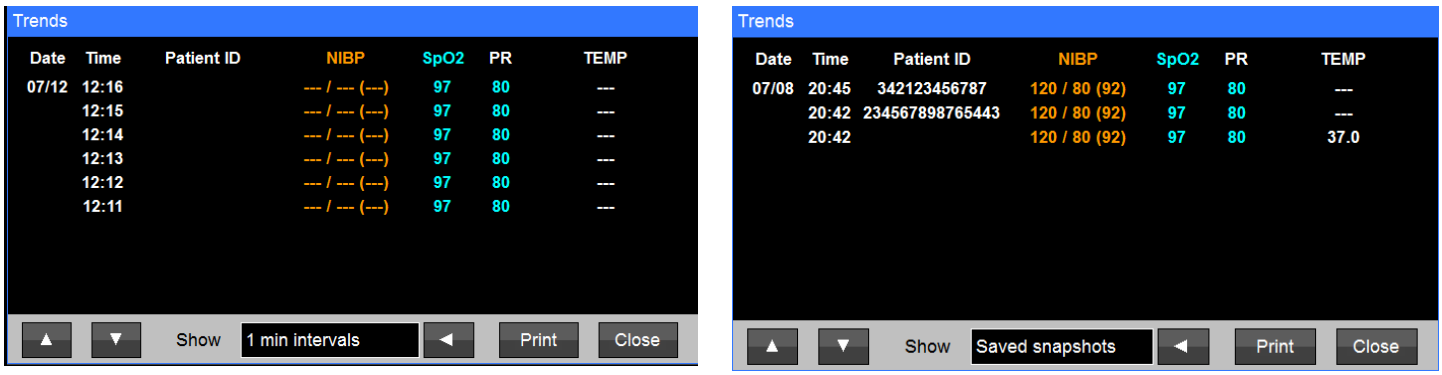


Figure 72: Trend Display

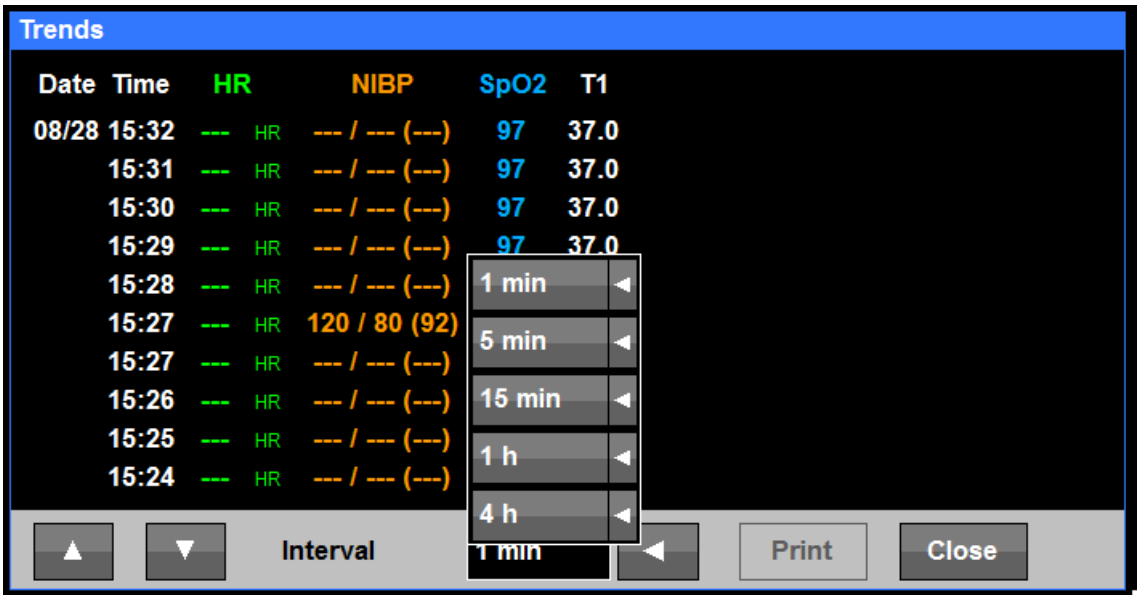


Figure 73: Trends - Time Scale selection

PRINTING

Select the PRINT button found in the TRENDS screens to print stored Trends and Saved Snapshots.

Note: Prior to attempting to print TRENDS, the external printer port should be enabled (Setup Menu), connected to the monitor and paper installed in the printer. Refer to page 146, EXTERNAL PRINTER for more information about the printer.

13. CLEANING

OVERVIEW

Warning: Do not, under any circumstances, perform any testing or maintenance on the monitor while the monitor is being used to monitor a patient. The monitor must be turned "Off". Unplug the monitor from the AC power source and remove the internal battery.

Caution: Do not open the monitor to clean or repair it. Contact Zoe Medical for service needs. Refer to the

CONTACT ADDRESSES on page 3 for email and phone number information.

Caution: Disconnect all accessories from the monitor before cleaning. Do not immerse any part of the electrical connector of the cable or accessories in the cleaning or disinfection solution at any time. Do not use an abrasive cloth or cleaner on the accessories.

THE MONITOR

On a daily basis, examine the monitor's case for any damages and check the AC cord, power supply and DC power cord for bent or broken prongs, cracks or fraying. Neither the monitor, the power supply nor power cords should be used if damaged. If any damage is noted, contact the appropriate service personnel.

Caution: Do not spray any water or cleaning solution directly onto the monitor.

As needed, clean the monitor using a soft cloth dampened with a mild dishwashing detergent solution and gently rub the soiled area until clean. Use a clean soft cloth to dry the monitor. Do not use abrasive cleaners on the monitor. Do not use either isopropyl alcohol or solvent to clean the monitor. Use of these cleaners can cause damage to the monitors' surface and touch screen display. Do not immerse the monitor, power supply or power cords in the cleaning solution.

When necessary, the monitor surfaces may be disinfected using a soft cloth saturated with a 10% (1:10) solution of chlorine bleach in tap water. When all of the surfaces have been disinfected, wipe the entire surface of the monitor using a soft cloth dampened with fresh water to remove any trace amounts of residue and/or fumes.

Note: Thoroughly wipe off any excess cleaning solutions. Care should be taken to prevent water or cleaning solution to run into connector openings or crevices.

THE DISPLAY

Caution: Use care when cleaning the display. Scratches may occur.

Occasionally, as needed, clean the display using a soft, lint-free cloth sprayed with an alcohol free glass cleaner. Do not use either isopropyl alcohol or solvent to clean the display. Use of these cleaners can cause damage to the display. The use of paper towels is not recommended as it may scratch the display surface.

BLOOD PRESSURE - CUFFS

Warning: If the cuff should become contaminated with blood or other bodily fluids, it should be discarded.

Prior to each patient use, inspect the blood pressure cuff and its hose for damage.

Note: Refer to the product packaging for additional Cleaning and Disinfecting Instructions were applicable.

Note: Zoe Medical does not recommend submersion of the cuff. Liquid should not be permitted to enter the cuff bladder because instrument damage may occur. The cuff should be allowed to thoroughly dry before use.

STATCORP SoftCheck Cuffs

These cuffs are designed for single patient use, and are not to be reprocessed.

STATCORP UltraCheck Cuffs

As necessary, for normal cleaning with mild detergents / dilute bleach solution (1-2%), wipe the cuff with the cleaning solution, rinse with water and dry.

BLOOD PRESSURE - PNEUMATIC TUBING

Warning: If the hose should become grossly contaminated with blood or other bodily fluids, it should be discarded.

Note: Zoe Medical does not recommend submersion of the hose. Liquid should not be permitted to enter the hose because instrument damage may occur. The hose should be allowed to thoroughly dry before use.

Prior to each patient use, inspect the NIBP Inflation Hose for proper connection, cracks and kinks.

As necessary, clean the pneumatic tubing using a soft cloth dampened with a germicidal solution.

SpO_2 INTERCONNECT CABLE

Prior to each patient use, inspect the SpO_2 Interconnect cable for damage. As necessary clean the cable using a soft cloth dampened with a germicidal solution.

SpO_2 SENSORS (Reusable)

As necessary, the sensor may be surface cleaned by wiping it with a 70% isopropyl alcohol pad. Allow the sensor to dry prior to placement on a patient.

Caution: Do not soak or immerse the sensor or its cable in any liquid solution. Do not attempt to sterilize.

Refer to the Directions For Use pamphlet enclosed with each sensor for more information.

FILAC TEMPERATURE PROBES

FILAC Temp Probe should periodically be cleaned. FILAC Temp Probe should be removed from the monitor and wiped clean. Follow the “Changing the Filac Temperature Isolation Chambers” instructions explained in this manual.

To clean FILAC Temp Probe Isolation Chamber, perform the following:

Caution: Do not soak or immerse the Temp Probe or its cable in any liquid solution. Do not attempt to sterilize.

Caution: Do not use hard or sharp objects to clean the Temp Probe. This could damage the Temp Probe and cause the unit to not function properly. Do not use steam, heat or gas sterilization on the Temp Probe. Do not autoclave the Temp Probe.

1. Water temperature should not exceed 130°F (55°C).
2. DO NOT submerge or soak underwater.
3. A mild detergent may be added to water.
4. Use 10:1 water and hypochlorite mixture or a damp isopropyl alcohol wipe occasionally, is acceptable. Prolonged and repeated use of these chemicals may result in damage to the Temp Probe.
5. Use of a cloth or sponge is recommended for cleaning. Abrasive pads may result in damage to the Temp Probe.
6. The Temp Probe is provided non-sterile. DO NOT use ethylene oxide gas, heat, autoclave, or any harsh methods to sterilize the Temp Probe.
7. After cleaning the Temp Probe, shake the handle to drain out any excess solution.

Note: Thoroughly dry all surfaces before re-assembling the monitor.

FILAC TEMPERATURE ISOLATION CHAMBER

FILAC Isolation Chamber should periodically be cleaned. FILAC Isolation Chamber should be removed from the monitor and wiped clean. Follow the “Changing the Filac Temperature Isolation Chambers” instructions.

To clean FILAC Isolation Chamber perform the following:

Caution: Do not soak or immerse the Isolation Chamber in any liquid solution. Do not attempt to sterilize.

Caution: Do not use hard or sharp objects to clean the Isolation Chamber. This could damage the Isolation Chamber and cause the unit to not function properly. Do not use steam, heat or gas sterilization on the Isolation Chamber. Do not autoclave the Isolation Chamber.

1. Water temperature should not exceed 130°F (55°C).
2. DO NOT submerge or soak underwater.
3. A mild detergent may be added to water.
4. Use 10:1 water and hypochlorite mixture or a damp isopropyl alcohol wipe occasionally, is acceptable. Prolonged and repeated use of these chemicals may result in damage to the case.
5. Use of a cloth or sponge is recommended for cleaning. Abrasive pads may result in damage to the Isolation Chamber.
6. The Isolation Chamber is provided non-sterile. DO NOT use ethylene oxide gas, heat, autoclave, or any harsh methods to sterilize this unit.
7. The Isolation Chamber may be replaced inexpensively instead of cleaning.
8. After cleaning the Isolation Chamber, shake it to drain out any excess solution.

Note: Thoroughly dry all surfaces before re-assembling the monitor.

14. MAINTENANCE

MAINTENANCE INTERVALS

Preventive maintenance of the monitor is an important function that should be performed routinely by the user to ensure safe and efficient monitor operation. Zoe Medical recommends that you do the following:

- Perform a NIBP pneumatic check once per year
- Perform a NIBP transducer check once per year or when there is doubt about the validity of the blood pressure readings

  Refer to the 740 SELECT Field Service Manual, Zoe Medical PN 21-22-0331, for NIBP pneumatic and transducer check procedures.
- Recommend replacing the battery pack every three (3) years

If the monitor is in need of repair, it must be referred to the appropriate service personnel. Service performed by unauthorized personnel could be detrimental to the monitor and may void the warranty. For service, contact your dealer or Zoe Medical. Refer to the Contact Addresses on page 3 for email and phone number information.

WEEE SELECTIVE TREATMENT AND RECYCLING INFORMATION

To facilitate the sound treatment of WEEE, information will be made available for current Zoe Medical products upon request. EU distributors and treatment facility personnel may contact customersupport@zoemedical.com to obtain relevant information.

OXIMETRY CALIBRATION CHECK

The oximetry modules are factory calibrated. No user calibration is required.

Refer to the 740 SELECT Field Service Manual, Zoe Medical PN 21-22-0331, for SpO_2 functional check procedure.

TEMP CALIBRATION CHECK

The FILAC Temperature module is factory calibrated. No user calibration is required.

Refer to the 740 SELECT Field Service Manual, Zoe Medical PN 21-22-0331, for FILAC Temperature check functional procedure.

REPLACING THE MONITOR BATTERY

When the battery fails to hold a charge it will need to be replaced.

Zoe Medical recommends the battery be changed every three (3) years.

Refer to the 740 SELECT Field Service Manual, Zoe Medical PN 21-22-0331, for replacing the Monitor Battery procedure.

15. EXTERNAL DEVICE INTERFACING

SERIAL COMMUNICATIONS / PRINTER

General: The monitor is capable of serially interfacing to an EMR System or Printer (refer to Figure 74).

Figure 74: Serial Communications / Printer port location

This port can be configured for use with a Zoe Medical Printer or for Communications (Zoe Medical ATE Serial protocol). The Zoe Medical ATE Communications Protocol is readily available for EMR connectivity by 3rd party providers.

The port must be properly configured for its intended use (Printer or Communications). Perform the following steps to configure the port:

- Advance to **Setup / Administer / System / Serial Port** menu;
- Use the **Serial Port** drop down menu to select either **Printer** or **Communications**, refer to Figure 75, below;

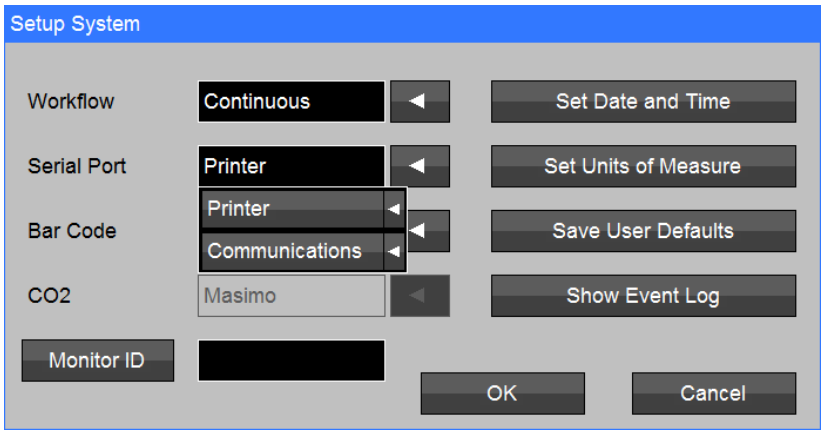
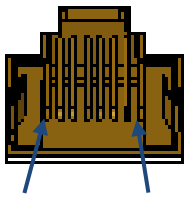


Figure 75: Serial port selections

- Select **Ok** to confirm your selection and close the window;

Printer: The RJ45 connector is used to interface to the Zoe Medical Printer using the cable supplied with the Printer (refer Figure 3 on page 41). The connection allows the user the ability to print the monitor's History data to the external Printer.

Serial Communications: A RJ45 to female DB9 Serial cable is available (PN 01-02-0822). Refer to Table 8 below for connector description.



Pin 8 Pin 1

Table 8: RJ45 Connector Pin Out

Pin Number	Signal Description	Pin Number	Signal Description
1	CTS - from device	5	RX - from device
2	DTR - to device	6	GND
3	GND (Ground)	7	NC [1]
4	TX - to device	8	+14V

Note: Electrical levels for the RJ45 connector port are CMOS levels. To properly interface to standard RS-232 devices (EMR Gateway, Hubs, etc.) these signals must be converted to RS-232 levels. A RJ45 to female DB9 Serial cable (Zoe Medical PN 01-02-0822) is available for this purpose. Refer to Figure 76 for additional information.

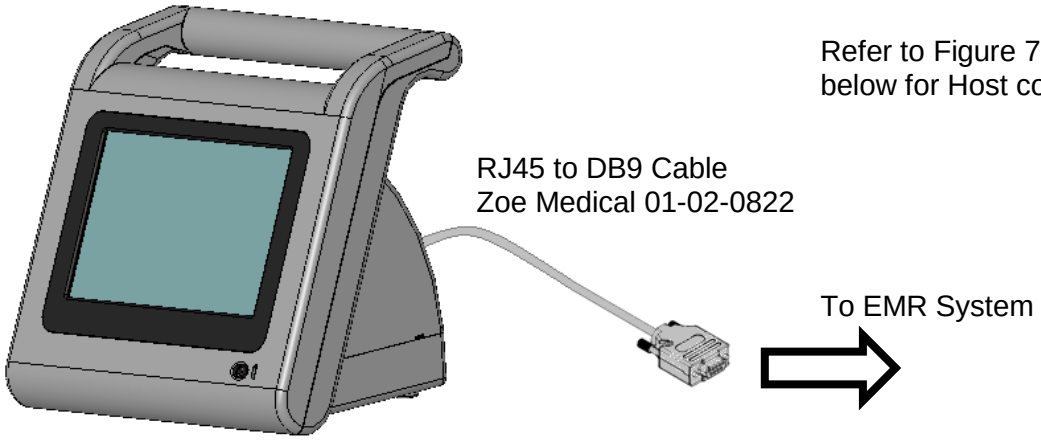


Figure 76: Unit configured with RJ45 to DB9 Cable

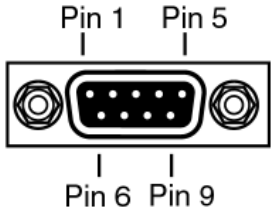


Figure 77: DB9 Female Connector Pin Layout

Table 9: DB9 Female RS232 Pin Out

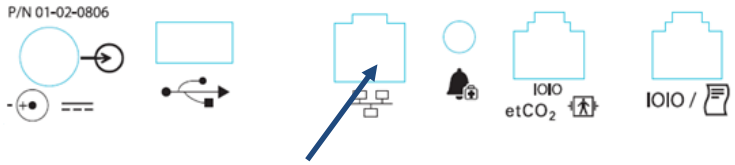
Pin Number	Signal Description	Pin Number	Signal Description
1	NC [1]	6	NC [1]
2	Tx (to Monitor)	7	NC [1]
3	Rx (from Monitor)	8	NC [1]
4	NC [1]	9	NC [1]
5	GND (Ground)		

1 NC – No Connection

NETWORK COMMUNICATIONS

General: The monitor is also capable of interfacing to an EMR System via hard-wired Ethernet or optional WiFi (IEEE 802.11 a/b/g/n). The Zoe Medical ATE Communications Protocol is readily available for EMR connectivity by 3rd party providers.

The figure below shows the location of the wired ethernet connector on the back of the monitor.



Wired Ethernet

Network Communications Setup

The Communications button in the Setup Administrator menu lets you access the Setup Communications menu. To access this menu you must enter the password 314.

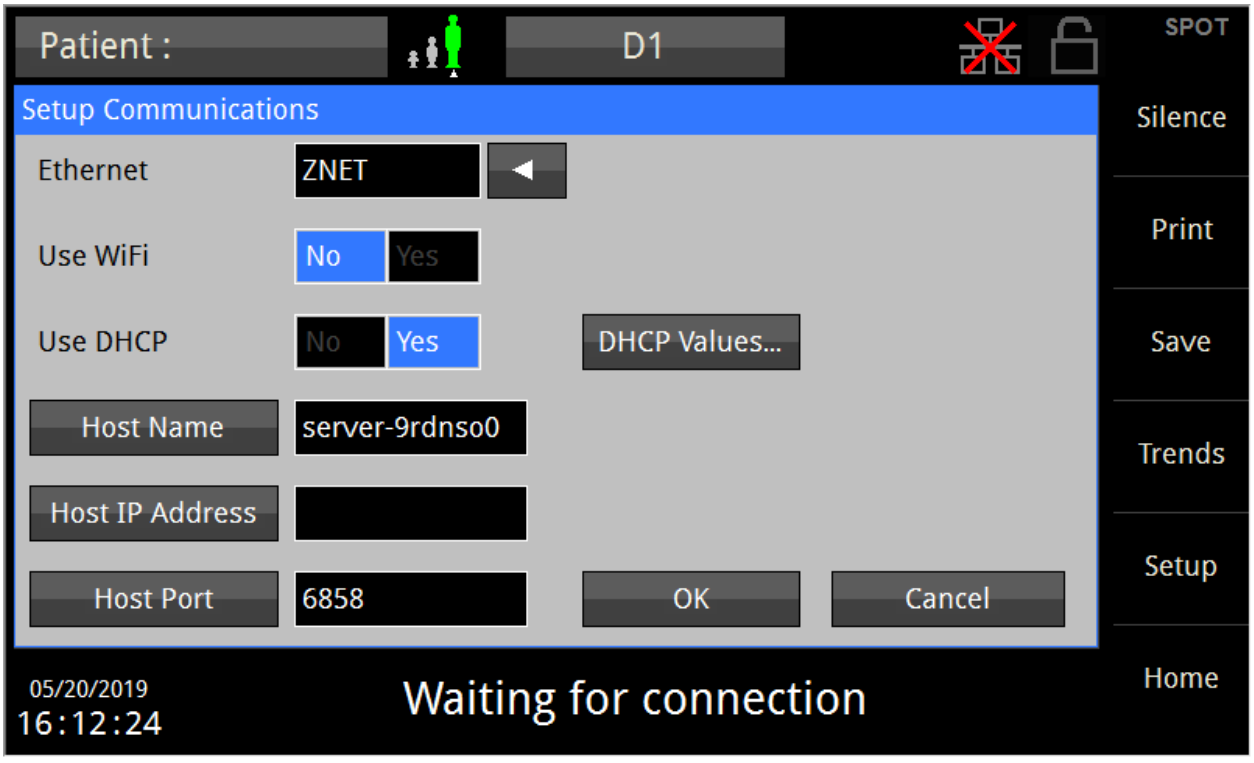


Figure 78: Setup Communications menu

To connect to a network host, you need to:

1. Set the Ethernet field to the desired communications protocol
2. Set Use WiFi to Yes (if you are connecting to a WiFi network)
3. Set Use DHCP to Yes or No (depending on whether the network uses DHCP)
4. Set the Host Name or Host IP Address fields to the appropriate values for the host to which you need to connect
5. Set the Host Port field to the appropriate value for the host to which you need to connect

When certain settings are changed, the monitor must be restarted for the settings to take effect. In this case, a note will appear instructing you to select OK, then restart the monitor.

When the Ethernet field is set to something other than None, the monitor will display an icon at the top right of the home screen indicating the current connect status, as shown in the table below.

Network Connection Icons

Blank: If Ethernet is set to None in Setup Communications menu

Crossed out network: If Ethernet is not set to None in Setup Communications menu but monitor is not connected to host

Normal network: If Ethernet is not set to None, and monitor is connected to host

WiFi with red X: If Ethernet is not set to None and Use WiFi is set to Yes in Setup Communications menu but monitor is not connected to host

(Note: White bars indicate WiFi signal strength, regardless of connect status)

WiFi with green dot: If Ethernet is not set to None and Use WiFi is set to Yes in Setup Communications menu and monitor is connected to host

(Note: White bars indicate WiFi signal strength, regardless of connect status)

NURSE CALL INTERFACE

The monitor has the ability to interface to a Nurse Call System (refer to Figure 79).

Figure 79: Nurse Call port location

Configure the Alarm Out Relay to Yes for use with hospital nurse call systems.

- Setup/Admin/Service/Alarm Out Relay/ Yes/Ok

The following **740 SELECT** Nurse Call cables are available for connection to the hospital system:

- **740 SELECT** Nurse Call cable, 12’ length, tinned ends - for hospital customization (Zoe Medical PN 01-02-1100)
- **740 SELECT** Nurse Call cable, 12’ length, Normally Closed (NC) configuration - 1/4" mono phone plug hospital connector (Zoe Medical PN 01-02-0931)
- **740 SELECT** Nurse Call cable, 12’ length, Normally Open (NO) configuration - 1/4” mono phone plug hospital connector (Zoe Medical PN 01-02-0932)

An isolated relay switch closure output connection is provided between three (3) of the pins on the stereo output connector. The output is compatible with most Nurse Call Systems in that there is no polarity to the connection.

When properly connected, the Nurse Call Interface activates the Nurse Call System each time an alarm is activated on the monitor. The delay time for the Nurse Call Interface to activate is less than 0.5 seconds.

The Nurse Call System’s relay contacts are rated at 0.5A at 120 VAC.

The Nurse Call Option is available as a normally open (closed on alarm) or normally closed (open on alarm) depending upon how it is wired.

For normally open (N.O.) applications, the Nurse Call system needs to be connected to pins 1 and 2 of the stereo output connector. For normally closed (N.C.) applications, the Nurse Call system needs to be connected to pins 1 and 3. Refer to Table 10 for connection information. Refer to Figure 80 for an illustration of actual connector Pins.

Warning: The connection to the Nurse Call Interface should only be installed by qualified service personnel.

Note: Even though the Nurse Call Interface allows remote alarm indication, it does not replace appropriate bedside surveillance by trained clinicians.

Table 10: Nurse Call Pin Out

Pin Number	Signal Description
2 (Tip)	Nurse Call (N.O.)
3 (Ring)	Nurse Call (N.C.)
1 (Sleeve)	Nurse Call (common)

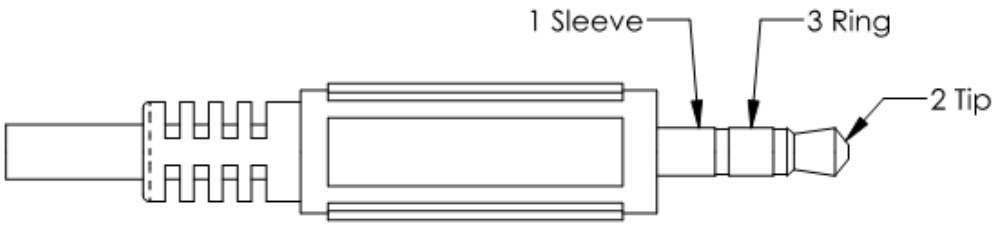


Figure 80: 3.5 mm Phone Plug

HANDHELD BAR CODE READER - CAPTURE PATIENT ID

- The bar code reader (Refer to Figure 81) is customized for out-of-the-box Plug & Play with the monitor. No additional setup or configuration is required
- The bar code reader is provide with a fourteen (14) foot coiled USB cable which is inserted into the USB connection on the back of the monitor (refer to Figure 3 on page 41) provides both power and communications
- The HS-1M bar code reader provides a high quality, high end performance bar code reader in a compact size
- Compatible with medical grade cleaning solvents, IP 54 sealed housing to allow thorough cleaning
- Capable of reading linear (1D) and matrix (2D) bar codes
- Provides clear, accurate, real-time feedback to the user
- Accessories Available: Holster for attachment to roll- stand or IV pole

Figure 81: Handheld bar code reader

16. ACCESSORIES

Contact our Customer Service Department or go to our website for the latest product information. Refer to the Contact Addresses on page 3 for email, website and phone number information.

NIBP START-UP KITS – Standard

(Single Patient Use BP cuff – Single Tube SoftCheck w/HP fitting)

Catalog No.	Description	
01-01-0606	Adult NIBP Start Up Kit:	Zoe Medical PN
	• 12' Coiled Hose w/Female Bayonet Fittings	01-01-0088
	• Regular Adult, Range 26 - 35 cm	ST2635HP
01-02-0934	Pediatric NIBP Start-Up Kit:	Zoe Medical PN
	• 12' Coiled Hose w/Female Bayonet Fittings	01-01-0088
	• Small Adult, Range 18 -26 cm	ST1826HP
01-02-0916	Neonatal NIBP Start-Up Kit:	Zoe Medical PN
	• 6' Straight BP Hose w/Female Bayonet Fittings	01-03-0255
	• #3 Single Tube, Range 6 - 11 cm	PNN3ST-HP
	• #4 Single Tube, Range 7 - 13 cm	PNN4ST-HP

INFLATION HOSES

Catalog No.	Description
01-01-0088	Twelve (12) ft (3 m) Coiled Hose, Adult and Pediatric, for Bayonet (HP) cuffs
01-03-0255	Six (6) ft (2 m) Straight Hose, Neonatal and Infant, for Bayonet (HP) cuffs

NIBP START-UP Kits – Special Order

(Reusable BP Cuff – Single Tube UltraCheck w/HP fitting)

Catalog No.	Description	
01-01-0607	Reusable NIBP Start-Up Kit #1 : • 12' Coiled Hose w/Female Bayonet Fittings • Infant, Range 8-14 cm • Child, Range 13-20 cm • Adult, Range 26-35cm	Zoe Medical PN 01-01-0088 US0814HP US1320HP US2635HP
01-02-0608	Reusable NIBP Start-Up Kit #2: • 12' Coiled Hose w/Female Bayonet Fittings • Child, Range 13-20 cm • Adult, Range 26-35cm • Large Adult, Range 32-42 cm • Large Adult Long, Range 35-44 cm	Zoe Medical PN 01-01-0088 US1320HP US2635HP US3242HP US3544HP
01-02-0944	Reusable NIBP Start-Up Kit #3: • 12' Coiled Hose w/Female Bayonet Fittings • Adult, Range 26-35cm	Zoe Medical PN 01-01-0088 US2635HP
01-01-0945	Reusable NIBP Start-Up Kit #4: • 12' Coiled Hose w/Female Bayonet Fittings • Child, Range 13-20 cm • Adult, Range 26-35cm	Zoe Medical PN 01-01-0088 US1320HP US2635HP
01-02-0946	Reusable NIBP Start-Up Kit #5: • 12' Coiled Hose w/Female Bayonet Fittings • Adult, Range 26-35cm • Large Adult, Range 32-42 cm • Large Adult Long, Range 35-44 cm	Zoe Medical PN 01-01-0088 US2635HP US3242HP US3544HP
01-02-0947	Reusable NIBP Start-Up Kit #6: • 12' Coiled Hose w/Female Bayonet Fittings • Infant, Range 8-14 cm • Child, Range 13-20 cm • Small Adult, Range 18-26 cm • Adult, Range 26-35cm • Large Adult, Range 32-42 cm • Curve Large Adult, Range 38-54 cm	Zoe Medical PN 01-01-0088 US0814HP US1320HP US1826HP US2635HP US3242HP BRUS3854HP

OXIMETRY

MASIMO RAINBOW SET OXIMETRY

Use Masimo Rainbow Set Sensors and Cables only with Masimo Pulse Oximeter

Catalog No.	Description	Reference
01-02-0826	M-LNCS DCI, Adult SpO_2 Reusable Sensor	2501
01-02-0827	RC-12, Rainbow Patient Cable, Rainbow 20-pin Patient Cable, 12 ft	2404
01-02-0940	Red LNC-10, LNCS 20-pin SpO_2 Patient Cable, 10 ft	2056
01-02-0905	LNCS DCI, Adult Reusable Sensor, 3 ft, 1/box, Latex free, Non-sterile, Weight > 30 kg	1863

NELLCOR OXIMETRY

Use Nellcor Sensors and Cables only with Nellcor Pulse Oximeter

Catalog No.	Description	
01-02-0941	740 SELECT Nellcor SpO_2 Kit DOC 10, Pulse Oximeter Interface Cable, 10 ft (3m)	Zoe Medical PN 18-02-0263

SAFESAT OXIMETRY

Use SafeSAT Sensors and Cables only with SafeSAT Pulse Oximeter

Catalog No.	Description	Reference
TBD	SafeSAT Finger Probe, 3 ft LG	5110
TBD	SafeSAT Disposable Probe. Adult, 3 ft LG	5120
TBD	SafeSAT Disposable Probe, Neonatal, 3 ft LG	5121
TBD	SafeSAT Soft Tip, Adult, 3 ft LG	5130
TBD	SafeSAT Soft Tip, Neonatal, 3 ft LG	5131
TBD	SafeSAT Extension Cable, 6.5 ft LG	5210

FILAC TEMPERATURE

Catalog No.	Description
02-04-0165	500026, FILAC 3000 Oral Probe – 4 FT, Blue
02-04-0166	500027, FILAC 3000 Oral Probe – 9 FT, Blue (standard with monitor packout)
02-04-0164	500028, FILAC 3000 Oral Isolation Chamber, Blue
02-04-0162	500036, FILAC 3000 Rectal Probe – 4 FT, Red
02-04-0167	500037, FILAC 3000 Rectal Probe – 9 FT, Red

02-04-0168	500038, FILAC 3000 Rectal Isolation Chamber
02-04-0163	502000, FILAC 3000 Probe Covers
01-02-2037	740 Covidien FasTemp Probe Covers, 500/Bx
01-02-2039	FILAC 3000 Temperature Calibration Key (Reference #500099)

OTHER ACCESSORIES

Catalog No.	Description	
01-02-0172G	Roll Stand with Basket and cable management.	
01-02-0821	740 SELECT Roll Stand Accessory Kit (required with Zoe Medical PN 01-02-0176G): Includes: Holster for power supply and power cable management (Zoe Medical PN 01-02-0917); 740 SELECT VESA Adapter Plate (Zoe Medical PN 1-02-0809)	
01-02-0809	740 SELECT VESA Adapter Plate: Used to attach monitor to roll stand Used to attach monitor to Swivel Mount (Zoe Medical PN 01-02-0173) Includes: 4 screws for attachment to monitor	
01-02-0917	740 SELECT Holster, Power Supply (attached to roll stand) Manages monitor power supply and power cords	
01-02-0807	740 SELECT External Printer, 50mm	
01-02-0820	740 SELECT Printer Mounting Kit (Roll Stand): Includes: Printer Mounting Bracket (Zoe Medical PN 01-02-0810) and Printer Bracket Mounting Clamp Block (Zoe Medical PN 01-02-0918)	
01-02-0810	740 SELECT Printer Mounting Bracket (Roll Stand) Requires Clamp Block (Zoe Medical PN 01-02-0918) to mount to roll stand	
01-02-0918	Printer Bracket Mounting Clamp Block (Donut) Used with (Zoe Medical PN 01-02-0810) to attach printer to the roll stand	
01-02-0811	Printer Thermal Paper, Pack of 12	
01-02-0396	US Power Cord w/Auto Lock and LED Plug	
01-02-0806	740 SELECT Power Supply	
01-02-1300	740 SELECT User Manual on CD, includes:	Zoe Medical PN
	• 740 SELECT User Manual	21-22-0316
	• 740 SELECT User Manual Addendum - ECG & Resp Parameter	21-22-0335
	• 740 SELECT User Manual Addendum - ETCO2 Parameter	21-22-0333
	• 740 SELECT User Manual Addendum - Masimo Rainbow Parameters	21-22-0332
	• 740 SELECT User Manual Addendum - Exergen Temperature	21-22-0334
	• 740 SELECT Field Service Manual	21-22-0331
01-02-0818	740 SELECT Rechargeable Li-Ion Battery Pack: 10.8V, 7800mAh	
01-02-0815	740 SELECT bar code reader, hand held, medical grade, HS-1M (Medical Grade), w/14 foot coiled USB cable	
01-02-0816	C-Clamp for IV Pole mounting of bar code reader (Zoe Medical PN 01-02-0815)	

01-02-0265	12” Wall Mount
21-03-0340	**740 SELECT** Quick Set-up Guide

Catalog No.	**Description**	
01-02-0819	**740 SELECT** Post Rail Attachment Kit, Includes:	Zoe Medical PN
	• Post Rail Clamp, PRC	01-02-0808
	• L- Bracket	01-02-0813
01-02-0813	L- Bracket for mounting the **740 SELECT** to the Post Rail Clamp (Zoe Medical PN 01-02-0808) Allows monitor to be attached to a bed rail or IV Pole.	
01-02-0173	Swivel Mount (provides fixed surface mounting solution, ambulance applications, etc.). Requires VESA Adapter Plate (Zoe Medical PN 01-02-0809) to attach monitor	
01-02-0814	**740 SELECT** USB Flash Drive (for Software updates, data transfer, download log files)	
01-01-0047	NIBP Test Kit (includes T - connector with tubing and male luer plug)	
01-02-0248	500 ml Fixed Volume Cylinder	
01-02-1100	**740 SELECT** Nurse Call Cable (3.5 mm Stereo plug, 12’ cable length, tinned ends for hospital customization)	
01-02-0931	**740 SELECT** Normally Closed (NC) Nurse Call cable (3.5 mm Stereo plug, 12’ length, 1/4" mono phone plug hospital connector)	
01-02-0932	**740 SELECT** Normally Open (NO) Nurse Call cable (3.5 mm Stereo plug, 12’ length, 1/4” mono phone plug hospital connector)	

ETCO2 ENABLE LICENSE

Table 11 indicates the Zoe Medical Part Number required to enable the ETCO2 Parameter in a 740 SELECT monitor:

FACTORY INSTALLATION

Catalog No.	Description
01-02-0852	740 SELECT Masimo CO_2 Software Factory Enable license
01-02-0853	740 SELECT Covidien CO_2 Software Factory Enable license
01-02-0856	740 SELECT Covidien IPI Software Factory Enable license Requires the 740 SELECT Covidien CO_2 Software Factory Enable license, Zoe Medical PN 01-02-0853

FIELD INSTALLATION

Table 11: ETCO2 Parameter Installation

Catalog No.	Description
01-02-0854	740 SELECT Masimo CO_2 Software Field Enable license
01-02-0855	740 SELECT Covidien CO_2 Software Field Enable license
01-02-0857	740 SELECT Covidien IPI Software Field Enable license Requires the 740 SELECT Covidien CO_2 Software Field Enable license, Zoe Medical PN 01-02-0855

CO_2/IPI Enable Licenses may requires one of the following packages:	Zoe Medical PN
• Covidien Microstream MicroPod Capnography Module	01-02-0841
• 740 SELECT - MicroPod Interface Cable, Qty. 1	01-02-0880
• Covidien MicroPod Start-Up Kit, Qty. 1, Kit	01-02-0861
• Masimo ISA ETCO2 Module	01-02-0256
• Masimo ETCO2 Module to 740 SELECT monitor Interface Cable	01-02-0494
• Masimo ISA CO_2 Start-Up Kit	01-02-0859
• Masimo IRMA ETCO2 Module	01-02-0843
• Masimo ETCO2 Module to 740 SELECT monitor Interface Cable	01-02-0494
• Masimo IRMA CO_2 Start-Up Kit	01-02-0860

Also refer to 740 SELECT User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333

MASIMO RAINBOW ENABLE LICENSE

Table 12 indicates the Zoe Medical Part Number required to enable the various Masimo Rainbow SET Parameters in a 740 SELECT monitor:

FACTORY INSTALLATION

Catalog No.	Description	
01-02-0835	Masimo Carboxyhemoglobin (SpCO) Factory Enable license (Ref 3879)	
	Requires the following:	Zoe Medical PN
	• 740 SELECT Rainbow Parameter Enable License	01-02-0885
01-02-0836	Masimo Pleth Variability Index (PVI) Factory Enable license (Ref 3883)	
	Requires the following:	Zoe Medical PN
	• 740 SELECT Rainbow Parameter Enable License	01-02-0885
01-02-0837	Masimo Acoustic Respiration Rate (RRa) Factory Enable license (Ref 3884)	
	Requires the following:	Zoe Medical PN
	• 740 SELECT Rainbow Parameter Enable License	01-02-0885

FIELD INSTALLATION

Table 12: Masimo Rainbow Parameter Installation

Catalog No.	Description	
01-02-0838	Masimo Carboxyhemoglobin (SpCO) Field Enable license (Ref 3887)	
	Requires the following:	Zoe Medical PN
	• 740 SELECT Rainbow Parameter Enable License	01-02-0885
	• Masimo Rainbow Remote Field Tool	01-02-0886
	• Masimo Rainbow USB Cable	01-02-0888
	• 740 SELECT SpCO Field Enable License Instruction	21-03-0364
01-02-0839	Masimo Pleth Variability Index (PVI) Field Enable license (Ref 3891)	
	Requires the following:	Zoe Medical PN
	• 740 SELECT Rainbow Parameter Enable License	01-02-0885
	• Masimo Rainbow Remote Field Tool	01-02-0886
	• Masimo Rainbow USB Cable	01-02-0888
	• 740 SELECT PVI Field Enable License Instruction	21-03-0365
01-02-0840	Masimo Acoustic Respiration Rate (RRa) Field Enable license (Ref 3892)	
	Requires the following:	Zoe Medical PN

	• 740 SELECT Rainbow Parameter Enable License	01-02-0885
	• Masimo Rainbow Remote Field Tool	01-02-0886
	• Masimo Rainbow USB Cable	01-02-0888
	• 740 SELECT RRa Field Enable License Instruction	21-03-0366

Refer to 740 SELECT User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332

MONITOR CONFIGURATION EXAMPLES

Table 13: Configurations

Catalog No.	740 SELECT	Model Description
01-02-1000	740-X0000	**MAXNIBP** Only
01-02-1001	740-XM000	**MAXNIBP** and Masimo Pulse Oximetry
01-02-1002	740-XN000	**MAXNIBP** and Nellcor Pulse Oximetry
01-02-1003	740-XMF00	**MAXNIBP**, Masimo Pulse Oximetry and FILAC 3000 Predictive Temp
01-02-1004	740-XNA00	**MAXNIBP**, Nellcor Pulse Oximetry and Exergen Temporal Artery Scanner
01-02-1020	740-XMFE0	**MAXNIBP**, Masimo Pulse Oximetry and FILAC 3000 Predictive Temp, ECG
01-02-1023	740-XNAE0	**MAXNIBP**, Nellcor Pulse Oximetry and Exergen Temporal Artery Scanner, ECG

Note: Models may also be configured for ECG & Resp Parameter. Refer to **740 SELECT** User Manual Addendum - ECG & Resp, Zoe Medical PN 21-22-0335.

Note: Models may also be software enabled to interface with an EtCO2 module (Masimo or Covidien). Refer to **740 SELECT** User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333.

Note: Models may also be software enabled to interface with Masimo Rainbow Parameters (SpCO, RRa & PVI). Refer to **740 SELECT** User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332.

Note: Models may also be configured for Exergen Temperature. Refer to **740 SELECT** User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334

17. SPECIFICATIONS

Refer to the appropriate User Manual Addendum for optional parameter specifications:

- Refer to **740 SELECT** User Manual Addendum - ECG & Resp Parameter, Zoe Medical PN 21-22-0335
- Refer to **740 SELECT** User Manual Addendum - ETCO2 Parameter, Zoe Medical PN 21-22-0333
- Refer to **740 SELECT** User Manual Addendum - Masimo Rainbow Parameters, Zoe Medical PN 21-22-0332
- Refer to **740 SELECT** User Manual Addendum - Exergen Temperature, Zoe Medical PN 21-22-0334

NIBP MEASUREMENT

Characteristic	Specification		
Technique:	Oscillometric, Microprocessor software eliminates most ambient noise and motion artifact		
Parameter Range	**Adult**	**Pediatric**	**Neonatal**
Systolic:	35 – 260 mmHg	35 – 260 mmHg	35 – 135 mmHg
Diastolic:	15 – 215 mmHg	15 – 215 mmHg	15 – 105 mmHg
MAP:	20 – 235 mmHg	20 – 235 mmHg	20 – 115 mmHg
Pulse Rate Range:	30 – 240 BPM	30 – 240 BPM	40 – 240 BPM
Accuracy:	±5 mmHg with a standard deviation no greater than 8 mmHg		
Pulse Rate Accuracy:	±2% or ±2 BPM, whichever is greater		
Self-Test:	System self-test is performed each time power is turned on.		
Auto Zero:	Zero pressure reference is automatically established after every reading.		
Inflation Pressure (mmHg):	Initial: • Adult 160 • Pediatric 120 • Neonatal 80 User Selectable: • Adult 80, 100, 120, 140, 150, 160, 180, 200 220, or 240 • Pediatric 80, 100, 120, 140, 150, 160, 180, 220 or 240 • Neonatal 60, 80, 85, 100 or 120		
Adaptive Pressure:	Subsequent inflation to approximately 30 mmHg greater than previous Systolic pressure		
Operating Modes:	Manual, STAT or Automatic (at preset intervals)		
Automatic Cuff Deflation:	If cuff pressure exceeds: • Adult 290 mmHg • Pediatric 290 mmHg • Neonate 145 mmHg		
	If measurement time exceeds: • Adult 120 seconds • Pediatric 120 seconds • Neonate 90 seconds		
	If safety timer detects microprocessor failure		
	Power loss – Cuff will deflate automatically		

OXIMETRY (OPTIONAL)

Characteristic	Specification
Masimo Rainbow SET	Use only with Masimo Pulse Oximeter
Type:	Functional Oxygen Saturation
Sensors:	**Type** — **Body Weight** M-LNCS DCI — > 30 kg LNCS — > 30 kg
Application Site:	Finger, toe
Display SpO_2% Range:	0 - 100%
SpO_2% Accuracy	**No Motion:** 60-80 ±3% for Adults/Pediatrics/Infants 70-100 ±2% for Adults/Pediatrics/Infants ±3% for Neonates **Motion:** 70-100 ±2% for Adults/Pediatrics/infants ±3% for Neonates **Low Perfusion:** 70-100 ±2% for Adults/Pediatrics/Infants/Neonates
Averaging times:	2-4, 4-6, 8, 10, 12, 14, 16 seconds
Measurement Wavelengths:	Red 653-660 Nanometers Infrared 880-905 Nanometers
Power:	Maximum radiant power at 50 mA pulsed is 0.79mW
Display Pulse Rate Range:	25 - 240 BPM
Pulse Rate Accuracy:	**No Motion:** 25-240 ±3 BPM for Adults/Pediatrics/Infants/Neonates **Motion:** 25-240 ±5 BPM for Adults/Pediatrics/Infants/Neonates
Numerics:	Updated every one (1) second.
Operating Mode:	Continuous Monitoring

Note: For further information on sensors and sensor accuracy, contact Masimo.

Note: A SpO_2 simulator cannot be used to assess the accuracy of a pulse oximeter sensor or monitor. It may be used to demonstrate proper functionality.

A SpO_2 simulator may be used to verify the operation of the pulse oximetry.
The following is a partial list of SpO_2 simulators that may be used:

SpO2 Simulator Description	Compatible		
	Masimo	Nellcor	SafeSAT
Masimo Tester	**Yes**	No	No
Nellcor SRC-MAX Pocket Tester	No	**Yes**	**Yes**
Fluke ProSim 8 Vital Signs	**Yes**	**Yes**	**Yes**
Fluke Index-2 SpO_2 simulator	**Yes**	**Yes**	**Yes**

Characteristic	Specification
Nellcor OxiMax	Use only with Nellcor Pulse Oximeter
Type:	Functional Oxygen Saturation
Sensors:	**Type** **Body Weight** Sensor: DS100A > 40 kg
Application Site:	Finger, toe
Display SpO_2 % Range:	1 - 100%
SpO_2% Accuracy	70 – 100%: ± 2 digits (No Motion) ± 2 digits (Low Perfusion) ± 3 digits (Motion)
Averaging time:	Normal mode: 4.5 - 6.5 sec
Measurement Wavelengths:	Red 660 Nanometers Infrared 890 Nanometers
Power:	Not exceeding 15 mW
Display Pulse Rate Range:	20 - 240 BPM
Pulse Rate Accuracy:	± 3 digits (No Motion) ± 3 digits (Low Perfusion) ± 5 digits (Motion)
Numerics:	Updated every one (1) second
Operating Mode:	Continuous Monitoring

Note: For further information on sensors and sensor accuracy, contact Nellcor.

Characteristic	Specification
SafeSAT	Use only with the SafeSAT Pulse Oximeter option
Type:	Functional Oxygen Saturation
Sensors:	**Type** — **Body Weight** 5110, 5120, 5130 — > 30 kg 5121, 5131 — < 3 kg
Application Site:	Finger, toe
Display SpO_2% Range:	0 - 100%
SpO_2% Accuracy	**No Motion:** 70-100%: ±2 digits **Motion:** 70-100%: ±3 digits **Low Perfusion:** 70-100%: ±2 digits
Measurement Wavelengths:	Red 660 Nanometers Infrared 880 Nanometers
Power:	Not exceeding 2 mW
Display Pulse Rate Range:	30 - 254 BPM
Pulse Rate Accuracy:	**No Motion:** 30-254 bpm: ±3 digits **Motion:** 30-254 bpm: ±3 digits **Low Perfusion:** 30-254 bpm: ±3 digits
Numerics:	Updated every one (1) second.
Operating Mode:	Continuous Monitoring

Note: For further information on sensors and sensor accuracy, including SpO2 performance in discrete SpO2 ranges and a graphical plot of clinical study data points, contact customer service.

Note: Low perfusion accuracy was validated with a Fluke Index-2 SpO2 simulator at a 0.3% modulation level.

Note: Pulse Rate accuracy with no motion was validated with a Fluke Index-2 SpO2 simulator. Pulse rate accuracy with motion was validated in a clinical study according to guidelines in ISO 80601-2-61.

FILAC 3000 TEMPERATURE (OPTIONAL)

Characteristic	Specification
Temperature Range:	30°C to 43°C (86°F to 109°F)
Accuracy	35.5 to 42°C: ±0.1°C (±0.2°F) < 35.5 or > 42°C: ±0.2°C (±0.5°F) Meets or exceeds ASTM Standards
Operating Mode:	Predictive Monitoring
Measurement Time:	Standard Mode: 6-10 second Oral, 10-15 second Axillary/Rectal Quick Mode: 3-4 second Oral, 10-15 second Axillary/Rectal Cold Mode: 12-15 second Oral, 15-20 second Axillary/Rectal
Cold Mode:	Lower pre-heat temperature option provides quicker, accurate readings post-OR patients
Water Bath Accuracy: (35.5 to 42 °C)	Standard Prediction Mode:** ±0.1°C Quick Prediction Mode (Oral Only):** ±0.3°C ** > 95% of prediction mode readings will be within the specified accuracy.
Average prediction times: (after insertion into site)	Quick mode: Less than 4 seconds Standard mode: Less than 6 seconds
Pulse Timer:	60 Second count with a “beep” at 15 seconds, 2 “beeps” at 30 seconds, 1 “beep” at 45 seconds and 2 “beeps” at 60 seconds.
Patient Accuracy:	< ±0.2°C (±0.4°F) on 98% of tested patients
Isolation Chamber:	Removable, replaceable, washable, Polycarbonate-Polyester blend
Materials:	Isolation Chamber: Flame retardant Polycarbonate/Polyester Blend Temp Probe handle: Flame retardant Polycarbonate/Polyester Blend Temp Probe shaft: Flame retardant Polyester Temp Probe cable: Polyurethane jacket with TPE overmold Temp Probe Tip: Aluminum

PATIENT ALARMS

Parameter	Units	Adult		Pediatric		Neonatal	
		Default	Range	Default	Range	Default	Range
NIBPs upper	mmHg	Off	32 - 260 Off	Off	32 - 260 Off	Off	27 - 120 Off
NIBPs lower	mmHg	Off	30 - 258 Off	Off	30 - 258 Off	Off	25 - 118 Off
NIBPm upper	mmHg	Off	22 - 255 Off	Off	22 - 255 Off	Off	17 - 110 Off
NIBPm lower	mmHg	Off	20 - 253 Off	Off	20 - 253 Off	Off	15 - 108 Off
NIBPd upper	mmHg	Off	22 - 235 Off	Off	22 - 235 Off	Off	17 - 105 Off
NIBPd lower	mmHg	Off	20 - 233 Off	Off	20 - 233 Off	Off	15 - 103 Off
PR upper	bpm	120	32 - 250 Off	120	32 - 250 Off	180	32 - 250 Off
PR lower	bpm	50	30 - 248 Off	50	30 - 248 Off	100	30 - 248 Off
SpO_2 upper	%	100	52 - 100 Off	100	52 - 100 Off	95	52 - 100 Off
SpO_2 lower	%	90	50 - 98 Off	90	50 - 98 Off	85	50 - 98 Off
Temp upper	°C	Off	15.1 - 45.0 Off	Off	15.1 - 45.0 Off	Off	15.1 - 45.0 Off
	°F	Off	59.2 - 113.0 Off	Off	59.2 - 113.0 Off	Off	59.2 - 113.0 Off
Temp lower	°C	Off	15.0 - 44.9 Off	Off	15.0 - 44.9 Off	Off	15.0 - 44.9 Off
	°F	Off	59.0 - 112.8 Off	Off	59.0 - 112.8 Off	Off	59.0 - 112.8 Off

Note: Each alarm limit may also be selected “Off” individually or as a whole.

Note: Lower Alarm Limit cannot be set above the associated Upper Alarm Limit.

Note: Upper Alarm Limit cannot be set lower than the associated Lower Alarm Limit.

CONTROL PANEL

Characteristic	Specification
Display:	Color LCD display of measurement results, instructions & troubleshooting messages
Parameters Displayed:	NIBP Systolic Pressure, Diastolic Pressure and Mean Arterial Pressure (MAP)
	NIBP Pulse Rate
	%SpO_2 and Pulse Rate
	Temperature (Fahrenheit or Celsius)
Patient Types:	Adult, Pediatric or Neonatal modes
Trends:	Review of previous measurements

POWER

Characteristic	Specification
Source:	External line or internal battery
AC Power:	100-240 VAC, 1.2A Max (1.2A to 0.5A) 50-60 Hz Class II device
Battery:	10.8 VDC, 7800 mAh, Lithium Ion (Li-ion) battery pack Charge Time: 8 hours (fully depleted battery) Operation on battery: minimum 150 NIBP readings set in 5-minute Automatic Mode
Leakage Current:	100 microamp (maximum)
Sound Pressure: (Alarm Tones)	45 to 85 db(A)

OPERATING ENVIRONMENT

Characteristic	Specification
Operating Temperature:	0°C to 40°C (32°F to 104°F)
Humidity:	15 to 90% RH, non-condensing
Altitude:	0 to 15,000 ft (101 to 57 kPa)

Warning: The monitor may not meet performance specifications if stored or used outside temperature and humidity ranges. When moving the monitor from a storage location, wait at least one-hour or more prior to use to allow the monitor to adjust to room temperature.

STORAGE/TRANSPORT ENVIRONMENT

Characteristic	Specification
Storage / Transport Temp:	-20°C to 60°C (-4°F to 140°F)
Humidity:	15 to 95% RH, non-condensing
Altitude:	0 to 40,000 ft (101 to 19 kPa)

PHYSICAL DIMENSIONS & WEIGHT

Characteristic	Specification
Height x Depth x Width:	7.63 x 5.75 x 11.00 (inches)
(with temperature option)	19.37 x 14.61 x 27.94 (cm)
Weight	4.3 lbs (1.95 kg)

WIFI (Optional)

Characteristic	Specification
Standard:	IEEE 802.11 a/b/g/n 2.4/5 GHz
FCC ID:	PV7 WIBEAR 11N-DF1

PARAMETERS/SETTINGS/ALARM LIMITS/DEFAULTS

INITIAL INFLATION PRESSURE

Start BP Options = No (Adaptive BP Enabled)

ADULT		PEDIATRIC		NEONATAL	
Default	**Range** (mmHg)	**Default**	**Range** (mmHg)	**Default**	**Range** (mmHg)
160	80-240 (Increments of 20)	120	80-240 (Increments of 20)	80	60-120 (Increments of 20)

Start BP Options = Yes (Adaptive BP Disabled)

ADULT		PEDIATRIC		NEONATAL	
Default	**Range** (mmHg)	**Default**	**Range** (mmHg)	**Default**	**Range** (mmHg)
200	High: 240-180	140	High: 240-140	120	High: 120
160	Medium High: 220-120	120	Medium High: 220-120	100	Medium High: 100
120	Medium: 200-100	100	Medium: 200-100	80	Medium: 80
100	Low: 180-80	80	Low: 180-80	60	Low: 60
	(Increments of 20)		(Increments of 20)		(Not adjustable)

NON-SPECIFIC SETTINGS

MAIN SCREEN

	Setting	Default	Range
NIBP	NIBP mode	Manual	Manual, Auto Interval, STAT
	NIBP Interval	3	1, 2, 3, 4, 5, 10, 15, 30, 60, 90 minutes
	Start BP Options	Yes	Yes , No
Masimo SpO_2	Averaging Time	8 sec	2-4 sec, 4-6 sec, 8 sec, 10 sec, 12 sec, 14 sec, 16 sec
	Sensitivity	Normal	Normal, APOD, Max
	SpO_2 Alarm Delay	5 sec	Off, 5 sec, 10 sec, 15 sec
	Signal IQ Waveform	Off	Off, On
	Perfusion Index	Off	Off, On
	Fast SAT	Off	Off, On
Nellcor SpO_2	SatSeconds	Off	Off, 10, 25, 50, 100
	Response Mode	Normal	Normal, Fast
Pulse Rate	Pulse Tone	Off	Off, On
Temp (FILAC)	Measurement Site	Oral	Oral, Axillary or Rectal (requires Rectal Isolation Chamber and Temp Probe)
	Mode	Quick	Normal, Quick (only if Temp Site is Oral), Direct, Cold, Monitor
Trends	Interval	Snapshot	Saved: 1 min, 5 min, 15 min, 1 h, 4 h
Screen	Lock	Unlocked	Un-locked, Locked
			Password: Current date in monitor (mmddyy)

Note: Settings associated with SpO_2 or Temp parameters will not be available for monitors without those options installed.

SETUP SCREEN

	Setting	Default	Range
Home Screen	SpO_2 Waveform	On	Off, On
	Pulse Blip	On	Off, On
Audio	Alarm Volume	6	1 – 10
	Pulse Tone Volume	4	1 – 10
	Pulse Tone	Off	Off, On
	Touch Click	Off	Off, On
Printer	Recording Time	10 sec	5, 10, 16 sec
	Recording Delay	6 sec	0, 6, 10 sec
	Print on Alarm	No	No, Yes
	Print On Save	No	No, Yes
Patient Information	Patient Type	Adult	Adult, Pediatric, Neonatal
	Patient ID	Blank	Up to 16 alphanumeric characters
	Patient last name	Blank	Up to 20 alphanumeric characters
	Patient first name	Blank	Up to 20 alphanumeric characters
	Patient gender	Unknown	Unknown, Male, Female
	Patient date of birth	Blank	Any valid date in range 1/1/1900 to 12/31/2100
	Patient Height	Blank	0 - 157 inches
			0 - 400 cm
	Patient Weight	Blank	0 - 1100 lbs
			0 - 500 kg
	BMI	Blank	Automatically calculated based on entered Height and Weight
	RESP (Respiration Rate)	Blank	1 - 150 rpm
	FiCO2	Blank	21 - 100 %
	Pain	Blank	0 - 10

Note: Settings associated with SpO_2 or Temp parameters will not be available for monitors without those options installed.

ADMINISTRATOR SCREEN

(Password Protected)

Refer to the 740 SELECT Field Service Manual, Zoe Medical PN 21-22-0331, to access Service.

	Setting	Default	Range
Setup Alarms	Alarm Silence Time	1.5 minutes	1, 1.5, 2 minutes
	Alarm Suspend Time	2 minutes	1, 1.5, 2 minutes
	Second Speaker Time	2 minutes	0, 1, 2, 3 minutes
	SpO_2 Alarm Delay (Masimo only)	5 seconds	Off, 5, 10 15 seconds
	Limit Alarm Validation	On	On, Off
Setup System	Workflow	CONT	CONT, SPOT
	On Power Up	Ask if new Patient	Ask if new patient, Assume new patient, Assume same patient
	Bar Code	Patient ID	Patient ID, Clinician ID
	Monitor ID	(Blank)	Alphanumeric entry via keyboard
	Serial Port	Printer	Printer, Communications
	Patient Height Units	Inches	Inches, cm
	Patient Weight Units	lbs	lbs, kg
	Temp Units	°C	°F, °C
	Set Date: Main Screen	MM:DD:YY	Month: 1-12, Day: 1-31 , Year: 00-99
	Set Time: Main Screen	HH:MM:SS	Hour: 0-23, Minute: 0-59
Setup Service	NIBP check mode	Off	Off, On
	Alarm Out Relay (Nurse Call)	Yes	No, Yes
	Language	English	English
	Notch Filter	60 Hz	60 Hz, 50Hz, Off
	Copy Settings to USB Stick	Bio-Med Selectable Functions	
	Copy Settings From USB Stick		
	Copy Logs to USB Stick		
	Diagnostics and calibration (Update Software, Printer diagnostics)		
	Options		
	Restore Factory Defaults		
Setup Display	Patient Button Label	Patient ID	Patient ID Last Name, First Initial First Name, Last Initial Leave Blank
	Monitor Button Label	Monitor ID	Monitor ID Clinician ID
	Backlight Brightness	7	1 - 7
	Auto Dim Timeout (minutes)	Off	Off, 1 - 10

Setup Communications	Ethernet	None	None, ZNET, ATE, ATE Host, JSON, HL7, ICS
	Use WiFi	No	No, Yes
	Use DHCP	No	No, Yes
	Host Name	(Blank)	Alphanumeric entry via keyboard
	Host IP Address	(Blank)	Alphanumeric entry via keyboard
	Host Port	(Blank)	Alphanumeric entry via keyboard

STANDARDS

Unit complies with the following requirements:

- IEC 60601-1
- ANSI/AAMI ES60601-1
- ANSI/AAMI/ISO 81060-2
- CSA C22.2 No. 60601-1
- ISO 9919
- IEC 60601-1-2
- IEC 60601-1-6
- IEC 60601-1-8
- IEC 60601-2-27
- IEC 80601-2-30
- IEC 80601-2-49
- ISO 80601-2-55
- ISO 80601-2-56
- ISO 80601-2-61
- IEC 60068-2-27
- IEC 60068-2-31
- IEC 60068-2-64
- IEC 60529

Possession or purchase of this device does not convey any express or implied license to use the device with replacement parts which would, alone, or in combination with this device, fall within the scope of one or more of the patents relating to this device.

All units covered by U.S. patents 4,796,184 and 5,022,403. Other patents pending.

Patents: www.masimo.com/patents.htm

The 740 SELECT monitor is CE marked.

The IEC 60601-1 and IEC 60601-1-2 standards require that the Essential Performance of a device be maintained during basic safety and electro-magnetic compatibility (EMC) testing, respectively. The primary performance characteristics that are needed to maintain the residual risk at post-mitigation levels are as follows:

- Any disturbance that is induced during testing shall not generate false physiological parameter results by the monitor's algorithms.
- Alarm annunciation shall remain functional during testing and the device shall not generate false alarms.
- Any waveform distortion shall be small enough to be distinguishable from physiologically-produced signals.
- In tests where momentary interference to the monitor is allowed, such interference shall be self-recoverable within 10 seconds and shall not change the device's operating mode or stored settings.
- The device shall retain its clinical utility during testing (e.g., operating mode, menu navigation).

18. PURCHASING RECORD

Installed Options:

MAXNIBP	☐

SpO_2	☐
Masimo	☐
Nellcor	☐
SafeSAT	☐

Temp	☐
FILAC	☐
Exergen	☐

ECG	☐

ETCO2	☐
Masimo	☐
Covidien	☐
IPI	☐

Masimo Rainbow	☐
SpCO	☐
RRa	☐
PVI	☐

Model Number:	
Serial Number:	
Service ID:	
The Model Number & Serial Number may be found on the rear label of the monitor Service ID may be found under Setup/Administrator/Service/Options menu	
Date of Purchase:	
Dealer Name:	
Representative:	
Phone Number:	
Fax Number:	
Email:	

NOTES: