

Intensive Care
Patient Monitor

MP1000NT Plus



Multi-parameter modules

ECG, SpO₂, NIBP, 2-IBP, 2-TEMP, RESP, EtCO₂

Arrhythmia analysis and ST segment analysis

72 hours tabular and graphical trends

Save up to 30 events management

High Resolution 10.4 inch TFT LCD screen

User configurable page layouts

Connection to MEKICS Central Monitoring System via cable network

As MEKICS's products are ceaselessly improved, the actual product may differ from the descriptions, specifications, and the pictures in this publications.



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Features and Short form Specifications

MP1000NT Plus is patient monitoring system with essential functions for general critical care in hospital including ICU. This System have 10.4" display and user interface by encoder with internal vital sign functions.

Display Monitor	10.4" Color TFT LCD Screen & Encoder, Up to 7waves
Functions	ECG, Resp, SpO ₂ , NIBP, 2IBP, 2Temp, EtCO ₂ 15 Kinds Arrhythmia, ST, Pace Maker Detect 30 Event with 30 sec wave recording / 72 hrs Trend Virtual Screen, Color Config, Drug Dose Calc, HL7 support
Optional	Functions : IBP cable, EtCO ₂ module Thermal Printer : 58 mm thermal 3wave Cart for MP1000NTP

Detail Specification

Display Data

Parameters	Setting parameters/Patient status parameters/Alarm status
Graphic waveform	ECG (I, II, III, aVR, aVL, aVF, V), SpO ₂ , IBP, RESP, EtCO ₂
Trend	72 hrs Graphic trend of Vital signs
Event Data	Max. 30-arrhythmia event datas (30 sec recording Wave)

Special Functions

Event Managing	Reviewing Functions for wave data of each Event. Max 30 Events.
Auto Printing	Auto Printing in Alarm status
Drug Dose Calc.	
HL7 Support	

Vital Sign Functions (Setting / performance)

► ECG

Leads	I, II, III, aVR, aVL, aVF, V (7 Lead)
Input signal range	0.15 mV ~ 5.50 mV / Dynamic Range : 10 mV
Heart rate	0, 20 ~ 300 BPM ±2 %
Gain	2.5 / 5 / 10 / 15 / 20 mm/mV
Speed	6.3 / 12.5 / 25 / 50 mm/sec
QRS Detection	Auto / Manual (minimum 0.1 ~ 1.0 mV)
Filters	Monitoring / 0.5~40 / 0.5~80 / 0.05~40 / 0.05~80 Hz / HNR Filter
Defibrillator Protection	300 J @ 5 KV discharging time < 5 sec, recovery time < 8 sec Discharge Time < 5 sec, Defibrillation Artifact Recovery Time < 8 sec
Pacemaker Detection Mode	ON / OFF
ST segment	-0.99 ~ 0.99 mV, J + 0 / J + 30 / J + 40 / J + 50 / J + 60 / J + 80 ms
Arrhythmias	TAC, BRD, V-TAC, V-BRD, MIB, VENT, PVC, BGM, TGM, CPT, ROT, V-FIB, ASY, PNC, PNF

► Respiration

Method	Impedance Lead I or Lead II / 100 ~ 2 kΩ Bias Impedance
RR	0, 2 ~ 150 BPM ±1 BPM / 2 %
Filters	Monitoring/Diagnostic
Sensitivity	30 ~ 90 %
Gain	x1 / x2 / x3
Speed	3.1 / 6.3 / 12.5 / 25 mm/sec

► SpO₂

Range	0 ~ 100 %
Accuracy	±2 %p for readings 100 ~ 70 %, ±3 %p for readings 69 ~ 51 % / Unspecified : 50 ~ 0 %
Pulse Rate	Range : 0, 30 ~ 250 BPM ±2 BPM
Gain	x1 / x2 / x3
Speed	6.3 / 12.5 / 25 mm/sec
Sensitivity	Normal / Maximum
Perfusion Index	0.05 ~ 20 %
Color Tone beep	The color of Beep sound is changed according SpO ₂ range

► NIBP

Measurement technique	Oscillometric
Max Cuff Pressure	Adult : 320 mmHg / Neonate : 160 mmHg
Measurement range	Adult : 300 mmHg / Neonate : 150 mmHg
Pulse Rate	40 ~ 250 BPM ±2 BPM
Automatic measurement	OFF / 1 min ~ 8 hrs
STAT Mode	5-15 min of consecutive
Patient Type	Adult, Pediatric, Neonate
Sensitivity	Normal, Maximum
Init. Pressure	Auto, Adult : 100 ~ 250 mmHg / Pediatric : 100 ~ 180 / Neonate : 100 ~ 140 mmHg

► Temperature

Sensor	YSI 400 series compatible
Measurement range	0 ~ 50 °C
Accuracy	±0.1 °C (15 ~ 45 °C) / ±0.2 °C (0 ~ 14.9 °C, 45.1 ~ 50 °C)

► IBP

Number of channel	2-channels
Measurement range	-50 ~ 300 mmHg ±2 mmHg
Mode(Label)	ART, FEM, PA, CVP, LA, RA, ICP, SP
Sensor	5 uV/mmHg
Zero Balance	±150 mmHg
Gain	x1 / x2 / x3
Speed	6.3 / 12.5 / 25 mm/sec

► EtCO₂ : Optional

Measurement range	0 ~ 99 mmHg (0 ~ 19.7 %)
Respiration range	0 ~ 150 BPM
Accuracy	0 ~ 38 mmHg ±2 mmHg / 39 ~ 150 mmHg / ±5 mmHg
Respiration rate range	0 ~ 150 BPM
Unit	% or mmHg
Gain	5 % (50 mmHg) / 7.5 % (75 mmHg) / 10 % (100 mmHg)
Speed	3.1 / 6.3 / 12.5 / 25 mm/sec

Alarm

Individual Alarm ON / OFF and Save 30 Event with 30 sec wave recording.

► ECG

Heart Rate High / Low	OFF / 30 ~ 300 BPM, OFF / 20 ~ 290 BPM
Arrhythmia Detection	OFF / User selectable
ST Level High	OFF / 0.01 ~ 0.99 mV
ST Level Low	OFF / -0.99 ~ -0.01 mV
System Alarm / Messages	Lead Fault

► Respiration

RESP High / Low	OFF / 10 ~ 150 BPM, OFF / 2 ~ 145 BPM
Apnea time	OFF / 10 ~ 120 sec
System Alarm Messages	RESP Lead Fail

► SpO₂

SpO ₂ High / Low	OFF / 52 ~ 100 %, OFF / 51 ~ 99 %
System Alarm / Messages	Check Probe, Standby, search

► NIBP

NBP SYS High / Low	OFF / 5 ~ 300 mmHg, 5mmHg interval
NBP DIAS High / Low	OFF / 5 ~ 300 mmHg, 5mmHg interval
NBP MEAN High / Low	OFF / 5 ~ 300 mmHg, 5mmHg interval
System Alarm / Messages	Cuff & Hose, Over Pressure

► Temperature

Temp High / Low	OFF / 20 ~ 50.0 °C, OFF / 10.0 ~ 40.0 °C
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► IBP

IBP SYS High	OFF / 0 ~ 300 mmHg (Art), OFF / -40 ~ 100 mmHg (Vein)
IBP SYS Low	< IBP SYS High
IBP DIAS High	OFF / 0 ~ 300 mmHg (Art), OFF / -40 ~ 100 mmHg (Vein)
IBP DIAS Low	< IBP DIAS High
IBP MEAN High	OFF / 0 ~ 300 mmHg (Art), OFF / -40 ~ 100 mmHg (Vein)
IBP MEAN Low	< IBP MEAN High
System Alarm / Messages	Fail Check Connector

► EtCO₂

EtCO ₂ High / Low	2 ~ 100 % / OFF, 1 ~ 99 % / OFF
FiCO ₂ High / Low	2 ~ 100 % / OFF, 1 ~ 99 % / OFF

Set Up

Alarm Volume Adjust	OFF / 10 ~ 100 %
QRS Volume Adjust	OFF / 10 ~ 100 %
Line Frequency selection	60 Hz / 50 Hz
BP Unit Selection	mmHg / Kpa / cmH ₂ O
Printer paper speed	Auto / 6.3 / 12.5 / 25 mm/sec
Printer paper length	60 ~ 360 mm
Trend Print Method	Brief / Full / OFF
Wave Printer Select	Max. 3-trace
Alarm Sync Print	ON / OFF
Parameter Color	User Selectable

Keys, Indicator

Hot Keys	Change screen, Alarm pause 2 min, NBP start / stop, Printing, Freeze
Indicator	3 Status Alarm LED, AC / Batt LED

Electrical

Power Source	100-240 VAC, 50-60 Hz
Power Consumption	Max 150 VA
External DC	+12 VDC, 4 A input (Car Cigar Jack)
Battery	Li-ion Battery 10.8 VDC, 2200 mAh Operation Time : 1 hrs (Std)

Communication / Output

RS232	COM1 : 115200 BPS for CMS
LAN	10 Mbps

Physical

Weight	5 Kg without Printer
Dimensions	W 282 x H 315 x D 165 mm

Environmental

Transport/Storage	Temperature : -20 ~ 70 °C Relative humidity : 0 ~ 95 %, non-condensing
Operating	Temperature : 10 ~ 40 °C Relative humidity : 10 ~ 90 %, non-condensing A. Pressure : 700 ~ 1060 hPa (~ 2000 m)

Language

English / Spanish / German / Italian / French / Chinese / Polski / Portuguese / Russian / Turkish / Czech

Warranty

Two years

Certifications

EN 60601-1:2006+A1:2013
EN 60601-1-2:2007
EN 60601-1-8:2007+Am.1:2013
EN 60601-2-27 :2014
EN 80601-2-30 :2010
EN 60601-2-34:2014
EN 60601-2-49:2011
EN ISO 80601-2-56:2012
EN ISO 80601-2-61:2011