

## Software supporting infusion safety and precision

### MedimaNet

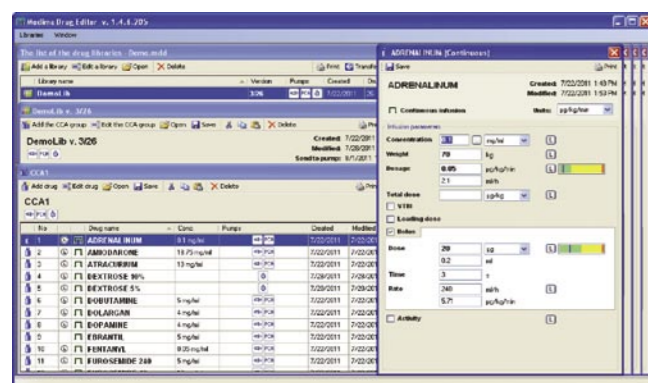
Central infusion monitoring system



Allows for infusion monitoring on any PC connected to LAN. Enables automatic transfer of drug libraries to pumps as well as for generating reports.

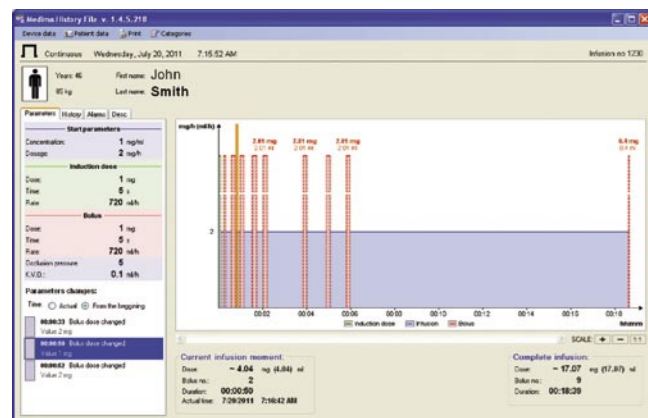
### Medima User ToolBox

Medima Drug Editor



Convenient and safe way of a drug library creation in Windows environment. Enables fast transfer of drug libraries directly to pumps or through the MedimaNet.

### Medima History File



Software to archive and review infusions. Graphic presentation of infusion progress, detailed event log, history of infusion parameters modifications.

### Medima Service ToolBox

Contains **Medima Loader** and **Medima Configurator**. Enables pumps upgrade as well as setting and uploading default configurations to pumps.

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# Safe and precise infusion

## Technical specification

## Family of volumetric infusion pumps

IV set	PCV with automatic free flow protection; DEHP-free
Infusion fluid	No restrictions, blood also acceptable
Flow rate	0.1 - 1200 ml/h, 0.1 ml/h increments up to 999.9 ml/h and above in 1 ml/h, priming the line: 1200 ml/h
Infusion volume	0.1 - 20 000 ml, 0.1 ml increments
Infusion time	1 min - 200 h, 1 minute increments
Bolus	Flow rate: up to 1200 ml/h, 0.1 ml/h increments up to 999.9 ml/h and above in 1 ml/h; Bolus volume: 1 - 500 ml/h Programmable volume (dose), time or flow rate; Automatic and manual bolus; Infusion accuracy with manual bolus: $\pm 5\%$ or 0.2 ml
Induction dose	Flow rate: up to 1200 ml/h, 0.1 ml/h increments; Programmable volume (dose), time or flow rate
Keep Vein Open (KVO)	0 - 20.0 ml/h
Flow rate accuracy	$\pm 5\%$ over 96h or 10 litres, according to EN 60601-2-24 (with Medima Line IV sets)
Occlusion pressure	Downstream: 11 levels: 0.1 - 1.2 bar (75 - 900 mmHg); Pressure measurement accuracy: $\pm 15\%$ but not lower than 0.1 bar Upstream: automatic reduction of occlusion bolus; Graphic presentation of infusion pressure and set level (pictograms)
Drop Detector	Standard equipment, detachable
Air Detector	Ultrasound, programmable sensitivity: - single bubble: 0.05 ÷ 0.3 ml - accumulated: 0.1 ÷ 1.5 ml / 15 min.
Modes of operation	Model P ml/h, ml/min, ml/24h, l/h, l/24h, volume over time - automatic flow rate calculation Model P1, P2 ml/h, ml/min, ml/24h, l/h, l/24h, volume over time - automatic flow rate calculation ml, ml+h, ng, µg, mg, g, µU, mU, U, kU, nmol, µmol, mmol, mol / kg / min, h, 24h intermittent infusion profile - up to 24 cycles soft and hard limits for all infusion parameters
Additional options	Automatic free flow protection Drug library up to 120 programmable drug dosing protocols (P1, P2 Models) Programmable infusion pause: 1 min - 24 h Delayed start: 1 min - 24 h Programmed parameters and chosen functions protected by password Drug library and configuration pump to pump transfer Alarm volume adjustment and choice of sound type Night mode: tuning the display's brightness and alarm loudness, programmable time of start/end Simple connection/disconnection to docking station (also during infusion) Advanced pump testing system Possibility to connect to the hospital information system directly or through docking station Open system: software update through RS232C
Alarms	No mains, battery low, battery empty, check IV set, check clamp, occlusion (upstream), occlusion (downstream), high pressure, line disconnected, flow too low, flow too high, mm:ss min to infusion end, infusion end, air in line, air in line (accumulated), no drop detector, pause, pause end, cycle end, drug not active, improper fixing, error xx, infusion broken, timer
Event log capacity	Min 2000 records with date and time of the event
Power supply	100 (- 15%) - 230 (+10%) V AC; 50/60 Hz, max 20 VA, 12-16 V DC, max 1 A
Battery	Ni-MH - 2000 mAh, battery work time: 10 h / 25 ml/h, recharging time to 100% max 5 h
Communication ports	RS232C and IR connection to the docking station
Alarm connection	24V, 1 A, NO / NC
Dimensions	355 x 115 x 166 mm (W x H x D) - excluding pole clamp
Weight	2.5 kg - without power supply / connecting cords
Operating conditions	+5 °C ÷ + 40°C, max humidity 90%
Classification	Class I, type CF, defibrillation resistance, IP22
Safety standards compliance	EN 60601-1, EN 60601-1-2, EN 60601-2-24, MDD 93/42/EEC - I Ib
Docking stations	DS4, DS4E, DS6, DS6E, DS8, DS8E, DSA (for ambulances)
Additional equipment and accessories	Medima Line IV Sets: S, B, L ST01 Medima Infusion Stand, Standard Infusion Stand, TP2 Duo Holder DC power supply cord; nurse call cord Medima User ToolBox, Medima Service ToolBox, MedimaNet software set.



In pursuit of quality improvement and due to changing standards the information in this leaflet may be subject to change. Contact Medima Sp. z o.o. to verify the information.

Medima® Volumetric pumps - ver. 15.10.2011/ENG

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# Safe infusion systems



### Large, Easy-to-Read Display

Shows infusion rate, a drug name, power supply status, infusion pressure and other information. Data are readable from a considerable distance.

### Intuitive User Interface

Identical for syringe and volumetric pumps, makes it easy to operate pumps even for beginners. Its numeric keyboard allows for fast and easy data input.

### Easy Mounting of IV Sets

Our unique system for automatic infusion IV set mounting ensures easy and reliable operation of the pump, shortening preparatory procedure. The pump displays messages which guide through the infusion starting procedure, facilitating pump operation even more.

### Medima Line IV Sets

Ensure high dosing accuracy, even for prolonged infusions (up to 96 hrs). All IV sets include a free flow protection clamp to protect the patient against uncontrollable infusion. The free flow protection clamp closes automatically before the IV set is removed from the pump.

### Infusion Safety

Infusion safety is the paramount feature of Medima pumps which are provided with numerous state-of-the-art solutions for the purpose. Intelligent air sensor incorporated in the Medima Line IV sets guarantees infusion safety and comfortable use of the pump by reducing the number of false alarms. Precise pressure sensors located up and down the pump allow to monitor progress of the infusion, alerting the medical personnel in case of any potential risk. The optional drop detector ensures extra safety of infusions.

### All Indispensable Functions

Infusion rate modification without stopping the infusion, automatic and manual bolus, advanced infusion modes, comprehensive alarm system, occlusion bolus reduction, detailed event log, user password, mounting on vertical and horizontal stands/rails, comprehensive configuration options, data transfer to PC or MedimaNet central infusion monitoring system.

### Drug Library

The library standardises drug dosing procedures, considerably reducing the risk of errors. The pump memory can store up to 120 drug dosing protocols with all indispensable infusion parameters, units as well as soft and hard limits, in order to reduce the risk of overdose. Soft limits warn about exceeding the recommended values. Hard limits prevent from entering values from outside the pre-defined range. Using a drug library also reduces preparatory procedures for the infusion, and the medical personnel is not required to calculate doses into ml/h. However, ml/h infusions are simple and easy with drug libraries too.

### Mounting in Docking Stations

Docking stations make it faster and easier to create sets combined of a number of pumps, tailored to meet the requirements of a particular therapy. Medima docking stations are suitable for all Medima pumps, volumetric and syringe alike. Mounting pumps in docking stations is very easy and does not require dismantling pumps. Pumps are just slipped into the stations while the mains and communication ports connect to automatically. After their removal from docking stations, pumps are ready for conventional mounting. Moreover, docking stations with Ethernet module allow to connect pumps to the MedimaNet central infusion monitoring system with the ward/hospital computer network.

## Available models:

### Medima P

The basic and very simple model for continuous infusion in ml / h, ml / min, l / 24h, l / h, l / 24h. Calculation of infusion rate basing on volume and time. The option to save up to 120 drug names.

### Medima P1

Apart from the capabilities of the P Model allows for infusion in all popular units. Advanced infusion modes such as intermittent infusion and infusion with profile (up to 24 cycles). The option to save a drug library up to 120 drug dosing protocols but without limits on parameters.

### Medima P2

Offers all capabilities of the P1 Model. Additionally allows to enter soft and hard limits for all infusion parameters saved in a drug library.



Free Flow Protection Clamp

Automatically cuts off the flow before the IV set removal.

### Syringe Pumps



Modern, easy to use and safe. A line of models offering a variety of options, from the simplest to the most advanced, including PCA. Together with volumetric pumps, they constitute a full range of products for drug and fluid infusion, offering uniform operating procedures.

### Docking Stations



Designed to save valuable space around the patient's bed and ensure fast and easy pumps mounting, with automatic connection to the mains, without using interconnecting cables. Available models accommodate 4, 6 or 8 pumps (DS4, DS6, DS8). Models with Ethernet module (DS4E, DS6E, DS8E) allow for communication with the MedimaNet central infusion monitoring system.

### Infusion Stands



Ensure reliable and safe fixing of our docking stations and pumps.