

# Technical Specifications

Flow rate	0.1 - 2000 ml/h for 50 ml syringe 0.1 - 1400 ml/h for 30 ml syringe 0.1 - 1000 ml/h for 20 ml syringe 0.1 - 600 ml/h for 10 ml syringe 0.1 - 400 ml/h for 5 ml syringe increments: 0.01 ml/h up to 99.99 ml/h, 0.1 ml/h from 100 ml/h to 999.9 ml/h, 1 ml/h above 1000 ml/h
Infusion volume	0.1 - 10000 ml, increments: 0.01 ml up to 999.99 ml, 1 ml above 1000 ml
Infusion time	1 min - 200 h
Bolus	Up to 2000 ml/h for 50 ml syringes Up to 400 ml/h for 5 ml syringes Increments: 0.01 ml/h up to 99.99 ml/h, 0.1 ml/h from 100 ml/h to 999.9 ml/h, 1 ml/h above 1000 ml/h Programmable volume (dose), time or flow rate. Automatic and manual bolus.
KVO	0 - 5 ml/h, 0.1 ml/h increments
Flow rate accuracy	±2% in accordance with EN 60601-2-24*
Syringes types	5 - 50/60 ml of all Iranian and international known brands**, automatic volume recognition
Occlusion pressure	11 levels, 50 - 1000 mmHg, automatic reduction of occlusion bolus
Operation modes	ml/min, ml/h, ml/24h, volume and time ng, µg, mg, µU, mU, U, kU, nmol, µmol, mmol, mol/kg, --/min, h, 24h intermittent infusion, Ramp On/Ramp Off, profile - 24 cycles
Additional functions	Automatic syringe fixation. Drug library with possibility to save up to 120 drugs dosing protocols with soft and hard limits for all infusion parameters Drug library and configuration transfer from pump to pump Programmed parameters and chosen functions protected by password Alarm volume adjustment and choice of sound type Night mode: tuning the display's brightness and alarm loudness, programmable time of start/end Simple fixing to Medima docking station without removing the fixing clamp and without interruption of infusion Embedded power supply Possibility to connect to hospital system through the MediNet system Open system: software update through RS232C
Alarms	No mains, battery low, battery empty, 1 - 30 min. to infusion end, infusion end, 1 - 30 min. to syringe empty, syringe empty, syringe, high pressure, occlusion, line disconnected, improper fixing, drug not active, error xx, infusion broken, autoinfusion block the flow, battery disconnected, timer
Event log capacity	Min. 2000 records of operational activities or alarms with date and time of the event
Power supply	100 (-15%) - 230 (+10%) VAC, 50/60 Hz, max 20 VA, 12 - 16 VDC, max 1 A
Battery	NiMH, working time: 20 h / 5 ml/h. Recharging time to 100% - max. 6 h
Interface	RS 232C and IR connection to the docking station
Nurse call connection	24V, 1A, NO / NC
Dimensions	355 x 115 x 166 mm (W x H x D) - excluding pole clamp
Weight	Below 2.5 kg
Operating conditions	Temperature: +5 ÷ +40°C, humidity max. 90%
Transport conditions	Temperature: -20 ÷ +50°C, humidity max. 95%
Classification	Class I, type CF, defibrillation proof, IP22
Safety standards compliance	EN 60601-1, EN 60601-1-2, EN 60601-2-24, MDD 93/42/EEC - II b
Docking stations	Designed to accommodate 2, 4, 6 or 8 infusion pumps and a docking station designed for ambulances
Accessories ***	RS232C cord, DC power supply cord, Nurse call cord

\* Technical accuracy is 1.0%. Flow rate accuracy depends on the syringe quality.

\*\* List of syringes available on request. There is a possibility to calibrate other syringes according to customer needs.

\*\*\* Accessories are not standard equipment of pumps

In pursuit of quality improvement and due to changing standards the information in this leaflet may be subject to change.

# Syringe Infusion Pumps



# mediject



# Safe infusion systems

## Large and Easy-to-Read Graphic Display

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

## Wide Range of Syringes

Syringes of all Iranian known brands from 5ml to 50/60ml. List of syringes available on request. There is a possibility to calibrate other syringes according to customer needs.

## Automatic Syringe Loading and Recognition

Facilitates and speeds up pump operation, reduces errors of initial infusion (very important in neonatology).

## Simple Programming and Easy Operation

Quick data input from the numeric keyboard. Parameters can be changed without infusion interruption.

## Infusion Programming in Different Units:

ml, ng, µg, mg, µU, mU, µmol, mmol, mol / kg, -- / min, hour, 24h ml/min, ml/h, ml/24h, volume and time, U, kU, nmol intermittent infusion, profile (24 cycles).

## Data Lock

Programmed parameters can be protected by password.

## Advanced Infusion Modes

The following infusion modes are available: continuous, intermittent infusion, Ramp On/Ramp Off, profile (24 cycles).

## Automatic Reduction of residual bolus after occlusion Bolus

When occlusion is detected, the pump withdraws the syringe plunger decreasing the pressure in the extension line and reducing the excess of drug to a minimum.

## Numerous 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's password, mounting on vertical and horizontal columns/rails, comprehensive configuration options, data transfer to PC or to other Pumps.

## Drug Library

The library standardises drug dosing procedures, considerably reducing the risk of errors. The memory can store up to 120 drug dosing protocols with all indispensable infusion parameters, units as well as limits (soft and hard), 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 reduces also preparatory procedures for the infusion, and the medical personnel is not required to calculate doses into ml/h. However the drug library does not limit and does not hinder possibilities for simple infusion in ml/h.

## Available Features:

- Infusion in ml/h, ml/min and ml/24h
- Calculation of infusion rate on volume and time
- The possibility to save up to 120 drug names and settings, allows for infusion in all popular, used in medicine units (e.g. mg/kg/h, kU/h)
- Advanced infusion modes such as infusion with profile and intermittent infusion
- The possibility to save up a drug library containing maximum 120 drug dosing protocols but without limits on parameters
- Additionally allows to save up a drug library with soft and hard limits for all infusion parameters

## Compatible with MEDIMA Docking Stations

Available models accommodate 2, 4, 6, 8 syringe and/or volumetric pumps. Possibility to expand smaller docking stations with additional modules.

Type DS10x - basic model

Type DS20x - model displaying the status of mounted pumps with light signals

Type DS30x - model displaying the status of mounted pumps with light signals; a possibility to connect pumps to the MedimaNet system through monitoring LAN/WLAN network

Allow fast and easy pumps fixing with automatic connection to the mains and communication ports without using additional interconnecting cables.

