



DIGISTAT® Infusion

DIGISTAT® Version 5.0

User Manual

DIG UD INF IU 0006 ENG V01

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ASCOM UMS srl unipersonale
Via Amilcare Ponchielli 29, 50018, Scandicci (FI), Italy
Tel. (+39) 055 0512161 – Fax (+39) 055 829030
www.ascom.com

DIGISTAT® version 5.0

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1. Infusion



For general and detailed information about the DIGISTAT® environment and the instruction for use of the Control Bar software see the document “DIG UD CBR IU 0006 ENG V01 - Digistat Control Bar User Manual”. Reading and understanding this document is necessary for a correct and safe use of the Infusion module.

1.1 Introduction

The INFUSION module acquires online data from the infusion systems. INFUSION makes it possible to document drug infusions in progress acquiring and displaying data as drug concentration, dosage, pressure in the drip and alarms.

1.2 Supported devices

For the updated list of supported devices please contact ASCOM UMS or its Distributor.

1.2.1 Information for the user

Please read carefully the following warnings.

WARNING: INFUSION is not designed to check correct pump function but rather to acquire and catalogue clinical data. Pump information is not provided in real time and must be used solely as documentation. Do not use INFUSION as a remote alarm repeater but refer directly, for this purpose, to the existing specific instruments.

WARNING: Disconnecting the pumps while they are running causes the interruption of data acquisition on “Infusion”. The pumps data that are lost during the disconnection period are not recovered by “Infusion” after reconnection.

WARNING: If the generic Alaris Driver is in use it is necessary to wait at least ten seconds after disconnecting a pump before connecting another.

WARNING: the user is advised that he/she must never change the infusion pumps serial number

WARNING: “INFUSION” is NOT a “Distributed alarm system”, as described in the EN 60601-1-8 regulation. Alarms are not visible in all conditions and they can lack sound. Also, they appear with a one minute delay.

WARNING: Alarms must be used for documentation only. “INFUSION” must neither be used as an alarm system nor should it influence the use of pumps.

WARNING: The update of data displayed on screen caused by pump connection, power off, disconnection and change of status depends on the time required by the AGW to communicate the changes. This time depends on various factors, among them are AGW type and infusion pump type. In some conditions the delay in communicating changes might be important. During the execution of tests the following times were observed:

- Communication of: new infusion pump connected – 10 to 120 seconds
- Communication of: infusion pump powered off – up to 120 seconds
- Communication of: infusion pump detached from AGW – up to 20 seconds
- Communication of: pump status (end of infusion, infusion start, alarm, warning, etc.) – 5 to 20 seconds

The time stated above must be considered just as an indication. They might change depending on devices configuration and operational conditions.

Therefore the data displayed on Infusion might temporarily be different from the actual situation of the devices.

1.2.2 Module selection

To select the INFUSION module click the corresponding icon on the side toolbar.

If no patient is selected the “Ward station” screen opens, displaying all the pumps connected to each patient in the ward (Fig 1).

If a patient is already selected the “Patient station” screen opens, displaying all the pumps connected to the selected patient (Fig 14).

1.2.3 Patient selection

There are two ways to select a patient:

1) Using the patient search and selection functionalities in use in your specific healthcare facility. I.e., if installed, the DIGISTAT® Patient Explorer module (described in the document DIG UD PXL IU 0005 ITA V01 - Digistat Patient Explorer User Manual).

2) Selecting a patient on the ward station, by clicking his/her bed area (see next paragraph, page 6). The selected patient becomes the current “Infusion” patient.

When INFUSION returns to ward station (either after user action or after time out), the patient can optionally be de-selected (no current patient) or remain selected, depending on configuration. See next paragraphs for the screens description.

1.2.4 Generic patient mode

The INFUSION module can acquire data without a selected patient. It is this way possible to monitor the infusion trends for a bed, without referring to a specific patient. The bed must be configured in the workstation domain, but if no patient is specified for the bed INFUSION displays the infusion trends as referred to the bed, and not to the patient.

1.2.5 Central and Bedside workstations

A workstation can either be central or bedside. A Central Workstation works on a set of beds, named “Domain”. The domain definition (i.e. the definition of the set of displayed beds) is defined by configuration. The INFUSION home page of a Central Workstation is the “Ward Station” screen (see Fig 1).

A Bedside Workstation works on a single bed, with or without patient. The Bed is determined by configuration. The INFUSION home page of a Bedside Workstation is the “Patient Station” screen (see Fig 14). A Bedside Workstation cannot display the “Ward station” screen.

1.2.6 Screen Timeout

From any screen, after a certain period of inactivity (defined by configuration), the system goes back to the Home Page (“Ward Station” screen for Central Workstations and “Patient Station” screen for Bedside Workstations).

1.2.7 Pharmacokinetic mode

The PK pumps can be set to “Pharmacokinetic” mode. I.e. a target value is set on the pump. The target value can be either “plasmatic” or “effect site”. When this mode is active the INFUSION module:

- a) displays specific icons and other graphic elements to indicate that the infusion is in “pharmacokinetic” mode;
- b) displays the “Target” value anywhere it is relevant.

1.3 Ward station

The “Ward station” screen displays all the pumps connected to each patient in the domain (Fig 1).

1 John, Doe R	2 Patient, 4973	3 Rick, John	4 Rose, Red PP
0h 20m to next end of infusion	0h 20m to next end of infusion	0h 20m to next end of infusion	0h 20m to next end of infusion
Amiodaron 20 mL/h	Amiodaron 20 mL/h	Amiodaron 20 mL/h	Amiodaron 20 mL/h
Noradrenaline 23 mL/h	Noradrenaline 23 mL/h	Noradrenaline 23 mL/h	Noradrenaline 23 mL/h
Alaris CC 45 mL/h	Alaris CC 45 mL/h	Alaris CC 45 mL/h	Alaris CC 45 mL/h
Frusemide 22 mL/h	Frusemide 22 mL/h	Frusemide 22 mL/h	Frusemide 22 mL/h
Midazolam 10 mL/h	Midazolam 10 mL/h	Midazolam 10 mL/h	Midazolam 10 mL/h
Alaris GW 30 mL/h	Alaris GW 30 mL/h	Alaris GW 30 mL/h	Alaris GW 30 mL/h
Vecuronium 30 mL/h	Vecuronium 30 mL/h	Vecuronium 30 mL/h	Vecuronium 30 mL/h
Alaris CC 22 mL/h	Alaris CC 22 mL/h	Alaris CC 22 mL/h	Alaris CC 22 mL/h
Alaris GH 10 mL/h	Alaris GH 10 mL/h	Alaris GH 10 mL/h	Alaris GH 10 mL/h
Eptifibatide 5 mL/h	Eptifibatide 5 mL/h	Eptifibatide 5 mL/h	Eptifibatide 5 mL/h

5 Patient, 4974	6 Smith, Mary MS	7 Red, Simon	8
0h 20m to next end of infusion	0h 20m to next end of infusion	0h 20m to next end of infusion	0h 20m to next end of infusion
Amiodaron 20 mL/h	Amiodaron 20 mL/h	Amiodaron 20 mL/h	Amiodaron 20 mL/h
Noradrenaline 23 mL/h	▲ P2: Near End of Inf... 23 mL/h	Noradrenaline 23 mL/h	Noradrenaline 23 mL/h
Alaris CC 45 mL/h	Alaris CC 45 mL/h	Alaris CC 45 mL/h	Alaris CC 45 mL/h
Frusemide 22 mL/h	Frusemide 22 mL/h	Frusemide 22 mL/h	Frusemide 22 mL/h
Midazolam 10 mL/h	Midazolam 10 mL/h	Midazolam 10 mL/h	Midazolam 10 mL/h
Alaris GW 30 mL/h	Alaris GW 30 mL/h	Alaris GW 30 mL/h	Alaris GW 30 mL/h
Vecuronium 30 mL/h	Vecuronium 30 mL/h	Vecuronium 30 mL/h	Vecuronium 30 mL/h
Alaris CC 22 mL/h	Alaris CC 22 mL/h	Alaris CC 22 mL/h	Alaris CC 22 mL/h
Alaris GH 10 mL/h	Alaris GH 10 mL/h	Alaris GH 10 mL/h	Alaris GH 10 mL/h
Eptifibatide 5 mL/h	Eptifibatide 5 mL/h	Eptifibatide 5 mL/h	Eptifibatide 5 mL/h

	DOSE	RATE	PRESSURE	VOLUME	TIME	WEIGHT	ROTATE

Fig 1

The screen is divided in rectangular areas (Fig 1 A). Every area, called “patient box”, refers to a bed and contains a schematic representation of all the pumps connected to a patient.

When an alarm/warning condition occurs a specific sound is provided. The sound is differentiated for alarms and warnings. The icon shown in Fig 2 is displayed in the background. Click the icon to make it disappear (meaning that the alarm condition has been taken in charge).

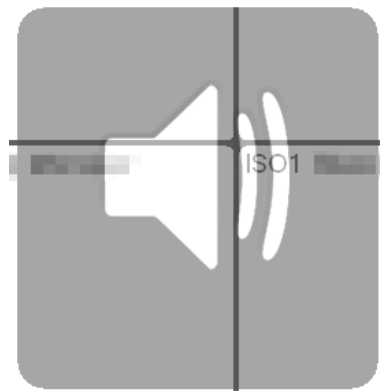
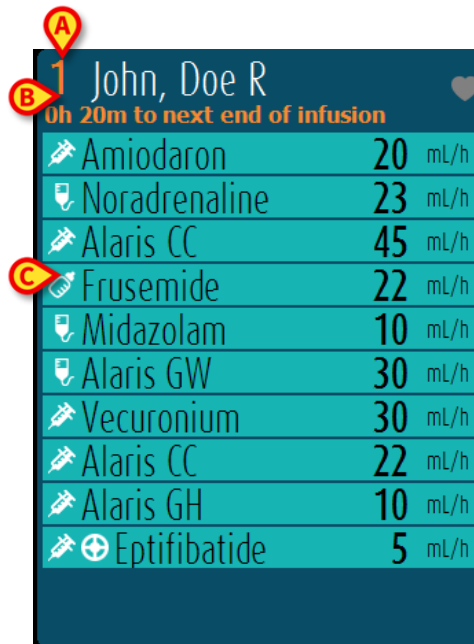


Fig 2

On top of each patient box the bed number and patient name are displayed (Fig 3 A). Below the patient name the time remaining until the next end of infusion is specified (Fig 3 B).



John, Doe R		
0h 20m to next end of infusion		
	Amiodaron	20 mL/h
	Noradrenaline	23 mL/h
	Alaris CC	45 mL/h
	Frusemide	22 mL/h
	Midazolam	10 mL/h
	Alaris GW	30 mL/h
	Vecuronium	30 mL/h
	Alaris CC	22 mL/h
	Alaris GH	10 mL/h
	Eptifibatide	5 mL/h

Fig 3

The rows indicated in Fig 3 C represent the connected pumps. Each row represents a pump. The rows can appear in four colors:

1) cyan if the pump is infusing (Fig 4). The icon displayed on the left depends on the type of pump/infusion;



Fig 4


2) grey if the pump is paused (Fig 5). The icon  on the left indicates this state;



Fig 5

3) yellow if there is a “Warning” on the pump (Fig 6); in this case a phrase describing the kind of warning currently occurring appears inside the box, alternating with the name of the


infused drug/pump name. This is the corresponding icon .



Fig 6

4) Red if there is an alarm on the pump (Fig 7); in this case a phrase describing the kind of alarm currently occurring appears inside the box, alternating with the name of the infused


drug/pump name. This is the corresponding icon .



Fig 7


If the connected pump sends the name of the infused drug, the drug name is displayed in the corresponding pump-box. If the connected pump does not send the name of the infused drug, the pump name is displayed in the corresponding pump-box.

NOTE: If the pump provides the drug name, then the corresponding pump-box displays the drug name. If the drug name is not available, then the corresponding pump-box displays the pump name. The rule that the Infusion system adopts is:
If the pump reports a DrugName then the DrugName is displayed.
If the pump reports a DrugName empty then the pump name is displayed.
If the pump reports as DrugName “Unknown” then Infusion displays Unknown.



Possible icons displayed in the pump box:

The following icons can be displayed in the pump box, on the left of the pump/drug name.

Volumetric pumps – The  icon indicates volumetric pumps

Enteral pumps – The  icon on the left of the box indicates enteral pumps.

Syringe pumps – The  icon on the left of the box indicates syringe pumps.

Pharmacokinetic mode - The  and  icons indicate that the pump is set to “Pharmacokinetic” mode. See Fig 8 and related text for more information.



WARNING: If the pump is set to “pharmacokinetic” mode, when the “Dose” button is selected the value displayed is not the “Dose rate” but the target value instead. This is highlighted either by the  icon or by the  icon, displayed in the pump box, alongside the status icon. The first icon is displayed when a “plasmatic concentration” target value is set, the second one is displayed when an “site effect” target is set. See Fig 8 for an instance.



Fig 8

Each pump-box provides - on the right - information on the current infusion (Fig 9 A).



Fig 9

The parameters that can be displayed are:

- dose rate (if the pump is working in “pharmacokinetic” mode, the target value is displayed)

- volume rate,
- totale infused volume,
- infusion circuit pressure,
- time remaining to the end of the infusion,
- patient weight set on the pump,
- rotate mode, displaying all the available values in rotation.

The displayed value depends on the button selected on the Command Bar (see page 10).

There are three display modalities for the patient boxes, depending on the available space for the boxes and the number of connected pumps for each patient. These are normal, compact (showing only part of pump data) and minimal (showing no pump data).

Zoom in- Zoom out functionalities

Click on the bed number or the Patient Name to zoom in the Patient Box. Any click inside this zoomed Patient Box or anywhere else outside of it will cause the Patient Box to return to normal size and position. The zoom-in action can be performed on a touch screen as a “two fingers tap”. Single tap to zoom out.

WARNING: Please remember that “Infusion” is not designed to check correct pump function but rather to acquire and catalogue clinical data. Pump information is not provided in real time and must be used solely as documentation. Do not use “Infusion” as a remote alarm repeater but refer directly, for this purpose, to the existing specific instruments.

1.3.1 “Ward station” command bar

The user decides which parameter is displayed within the pump boxes (indicated in Fig 9 A) selecting one of the buttons on the “Ward station” command bar.



Fig 10

The selected button appears dark grey.

When the **DOSE** button is selected, the doserate and doserate unit of measure are displayed. When working in “pharmacokinetic” mode the “target” value is displayed.

When the **RATE** button is selected the pump boxes display the volume rate.

When the **PRESSURE** button is selected the pump boxes display the infusion pressure.

When the **VOLUME** button is selected the pump boxes display the total infused volume.

When the **TIME** button is selected the pump boxes display the time remaining to the end of the infusion.

When the **WEIGHT** button is selected the pump boxes display the patient weight set on the pump.

NOTE: the patient weight is displayed only if:

- A pump is running in pharmacokinetic mode

- In a pump the dose rate is pro-kilo and the pump is set in “Doserate” mode

When the **ROTATE** button is selected all the different parameters are displayed in rotation. The currently displayed parameter is highlighted on the command bar (dark grey).

When the number of beds displayed on the screen is smaller than the number of beds configured in the system (i.e. when it is not possible to display all the beds on the same screen) two arrow-buttons are present on the command bar. The arrow-buttons make it possible to “scroll” the beds up and down.

If there is at least an alarmed pump on one of the non-displayed beds the arrow button turns red. If there is at least a pump in warning status (and no alarmed pumps) on one of the non-displayed beds the arrow button turns yellow. If there is a warning and an alarm at the same time the arrow button turns red. The highlighted button indicates the direction of the alarmed/warning pumps.

The **LOCATION** button (first on the left in Fig 10), only visible if the workstation is enabled by configuration to display beds belonging to different locations, makes it possible to select the location to be displayed.

NOTE: The number of beds that can be displayed on the INFUSION Ward Station screen (Fig 1) is configurable. I.e. the user decides how many beds are displayed on one screen. Please refer to your system administrator for more information.

1.4 Notification area

A notification area is displayed on the right of every Infusion screen, reporting various notifications, such as warnings, alarms and information sent by the connected pumps (Fig 11 A, Fig 12).

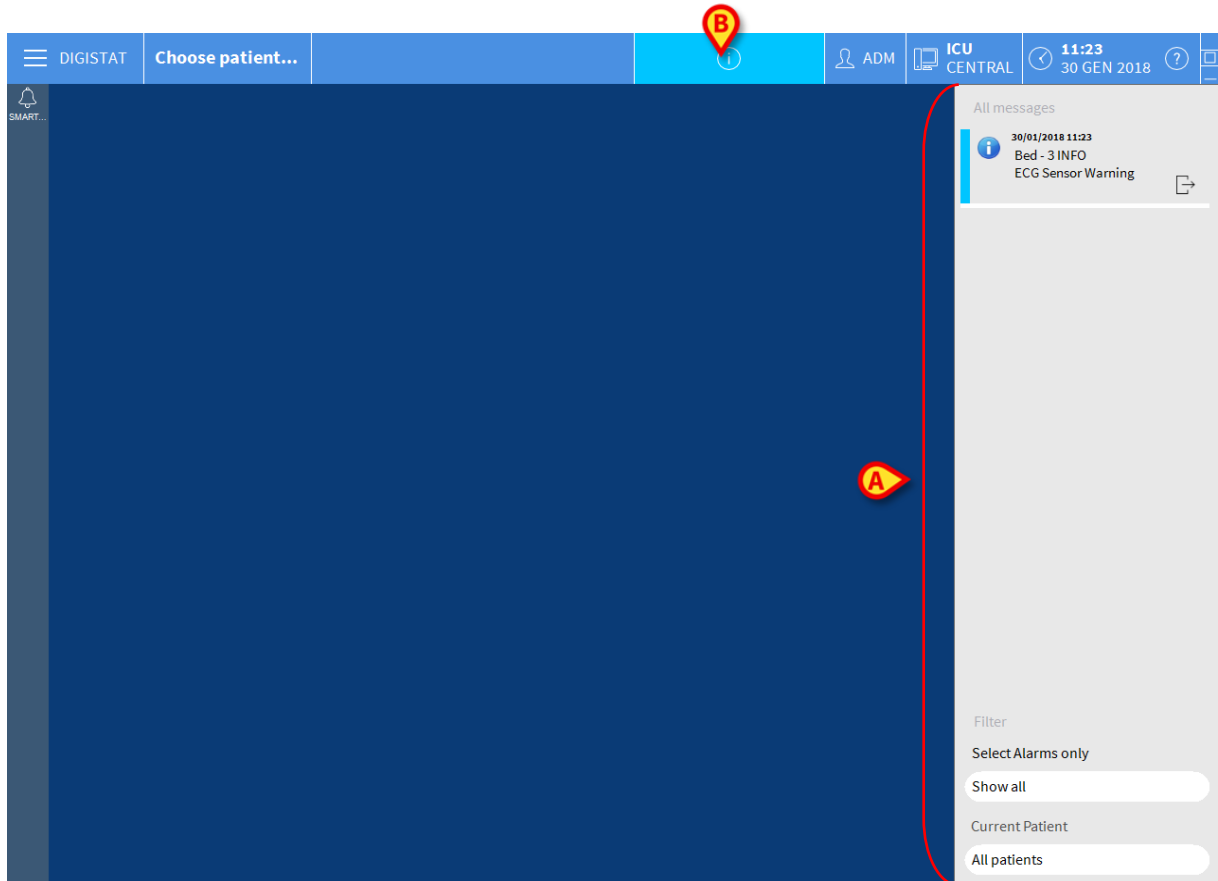


Fig 11

The notification area can be, by configuration:

- Always visible
- Automatically displayed when a new notification comes
- Only visible after user click on the DIGISTAT[®] button on Control Bar (Fig 11 B).

The different messages are displayed in chronological order, (most recent on top - Fig 12 A) and by criticality (alarms on top, then warnings, then info).

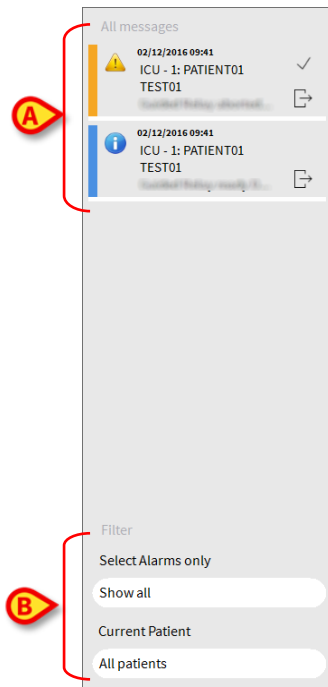


Fig 12

Each message is characterized by a colour (red for alarms, yellow for warning, blue for information).

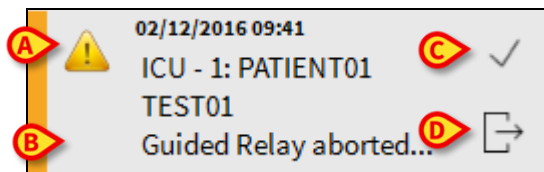


Fig 13

In the message box (Fig 13), the following information is displayed:

- Date-time of occurrence
- The number of the bed from which the message comes
- The actual message text
- An icon characterizing the message type (Warning, Alarm, Info - Fig 13 A)
- An “Ack” button. Click the button to acknowledge the corresponding notification (Fig 13 C)
- A “Callback” button. Click the button to access the patient station on which the notification occurred (Fig 13 D)

At the bottom of the area, four different filters are available, making it possible to choose the type of message to be displayed (Fig 12 B). The available filters are:

- Only alarms
- All messages
- Messages relating only to the selected patient
- Messages relating to all patients

1.5 Patient Station

Click on one of the “Patient boxes” to open the “Patient station” screen, shown in Fig 14.

The “Patient station” screen (Fig 14) offers a detailed view of all the data coming from the pumps connected to a patient. The corresponding patient is automatically selected.

On the left of the screen is a list of syringes and infusion pumps connected to the patient (Fig 14 A); in the middle a diagram displays drug infusion velocity changes in time and possible administered boluses (Fig 14 B).

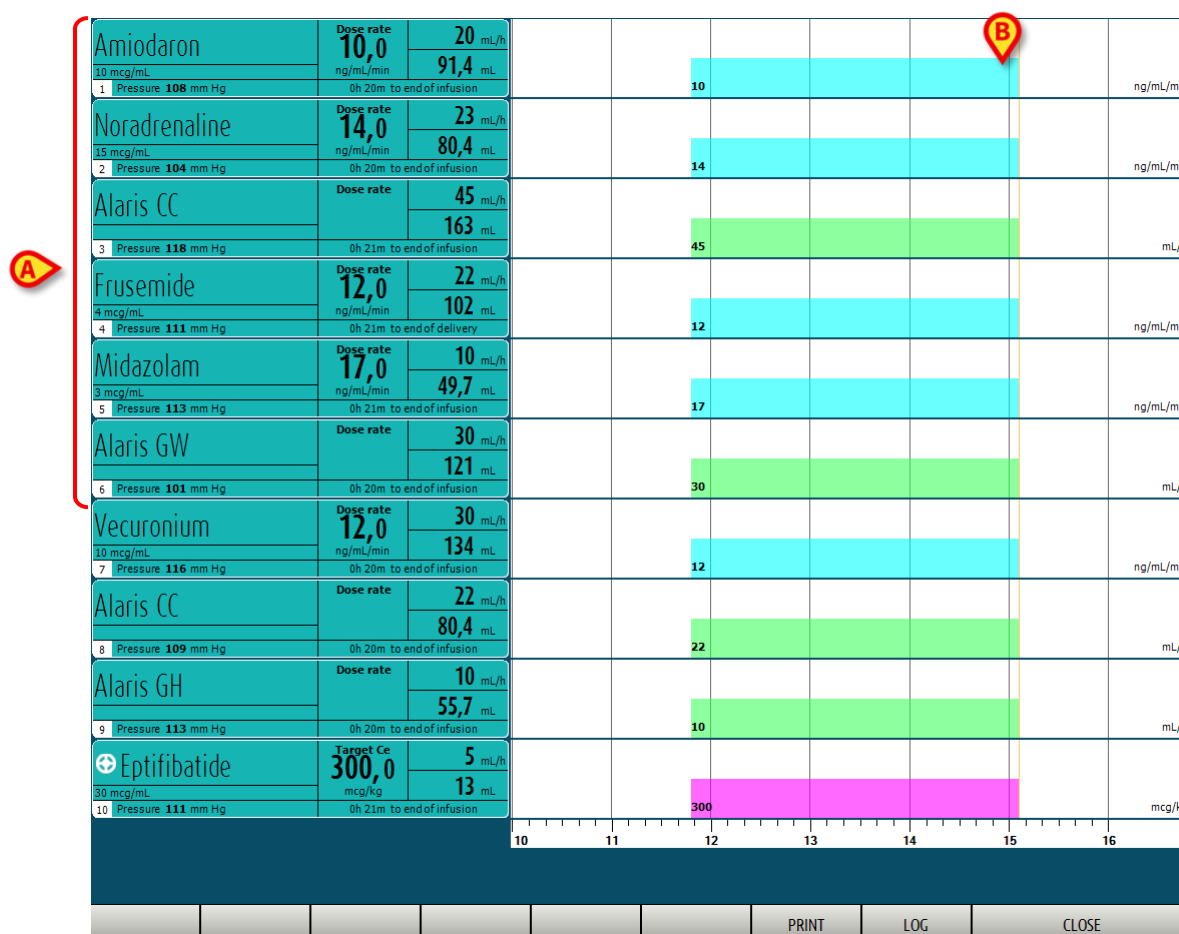


Fig 14

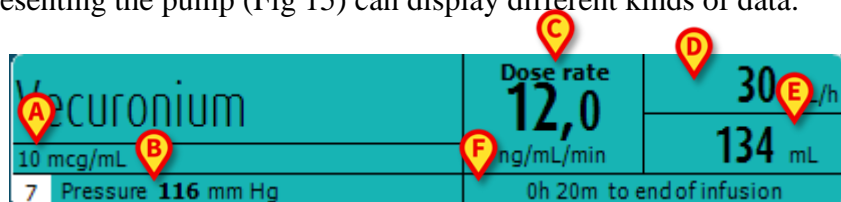
On the left, each box represents a pump. These boxes are named “Pump buttons”. The pump button displays the drug name when the pump provides this kind of information. When it doesn't, the pump name is displayed.

If the connected pump is alarmed the corresponding pump button is red. If the pump is sending a warning message the corresponding pump button is yellow. If a pump is paused the corresponding button is grey. If the pump button is cyan it means that the pump is infusing. Empty slots show no data.

The box representing the pump (Fig 15) can display different kinds of data.

Vecuronium		Dose rate	30 mL/h
10 mcg/mL	12,0	mg/mL/min	134 mL
7	Pressure 116 mm Hg	0h 20m to end of infusion	

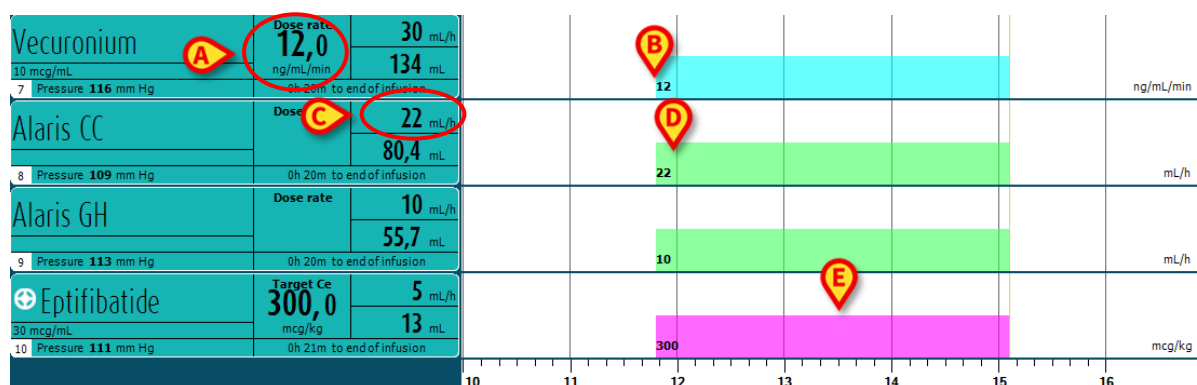
Fig 15



- drug concentration (Fig 15 **A**);
- circuit pressure (Fig 15 **B**) and the pressure value beyond which the pump is alarmed;
- the dose rate (Fig 15 **C**); or the target dose when working in pharmacokinetic mode. In this case the “target” icon shown in Fig 8 is displayed as well.
- the volume rate (Fig 15 **D**);
- the total infused volume (Fig 15 **E**);
- the time remaining to the end of the infusion (Fig 15 **F**).

EXERCISES

The infused quantities are represented by colored rectangular areas (Fig 16 **D, B, E**).



If the dose rate value is not provided the height of the chart is proportional to the infusion volume rate (this is the case indicated in Fig 16 C). The volume rate value is displayed (in numbers) on the chart every time it changes. (Fig 16 D).

A specific dose rate/volume rate value corresponds to each moment in time. Time is indicated by a time bar placed on the bottom of the chart area.

Click the chart area to display a vertical yellow bar indicating (in labels) the dose rate/volume rate values corresponding to the clicked chart point. A specific label on the bottom indicates the corresponding time.

Each time a warning/alarm message is provided or a bolus is administered a specific icon is displayed on the chart in the position corresponding to the time in which the event occurred (Fig 17 shows 2 boluses and two alarms). Click the icon to display information on the specific event.

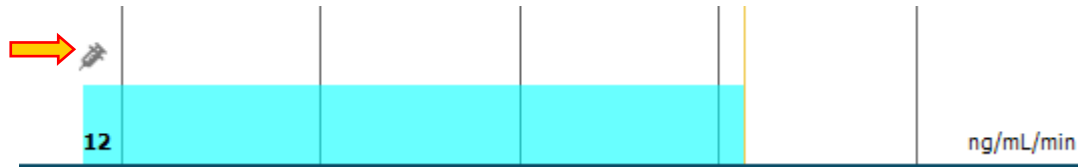


Fig 17

CAUTION: The infusions diagram is updated at one minute intervals; the connected syringe buttons are updated in real time.

1.5.2 The “Patient station” screen command bar

Two buttons are present in the Patient Station screen command bar (Fig 18).

The **Log** button opens the pump log history described on page 21.

The **Close** button closes the Patient Station Screen and returns to the Ward Station screen described on page 6 (if working on a “Central” workstation).



Fig 18

Two arrow buttons are displayed on the left when it is impossible to display all the connected pumps at the same time. These buttons make it possible to scroll up and down the information displayed on screen.

1.6 Infusion history

Click the **Log** button on the command bar of the “Patient station” screen to display a screen containing the history of all the infusions of the selected patient.

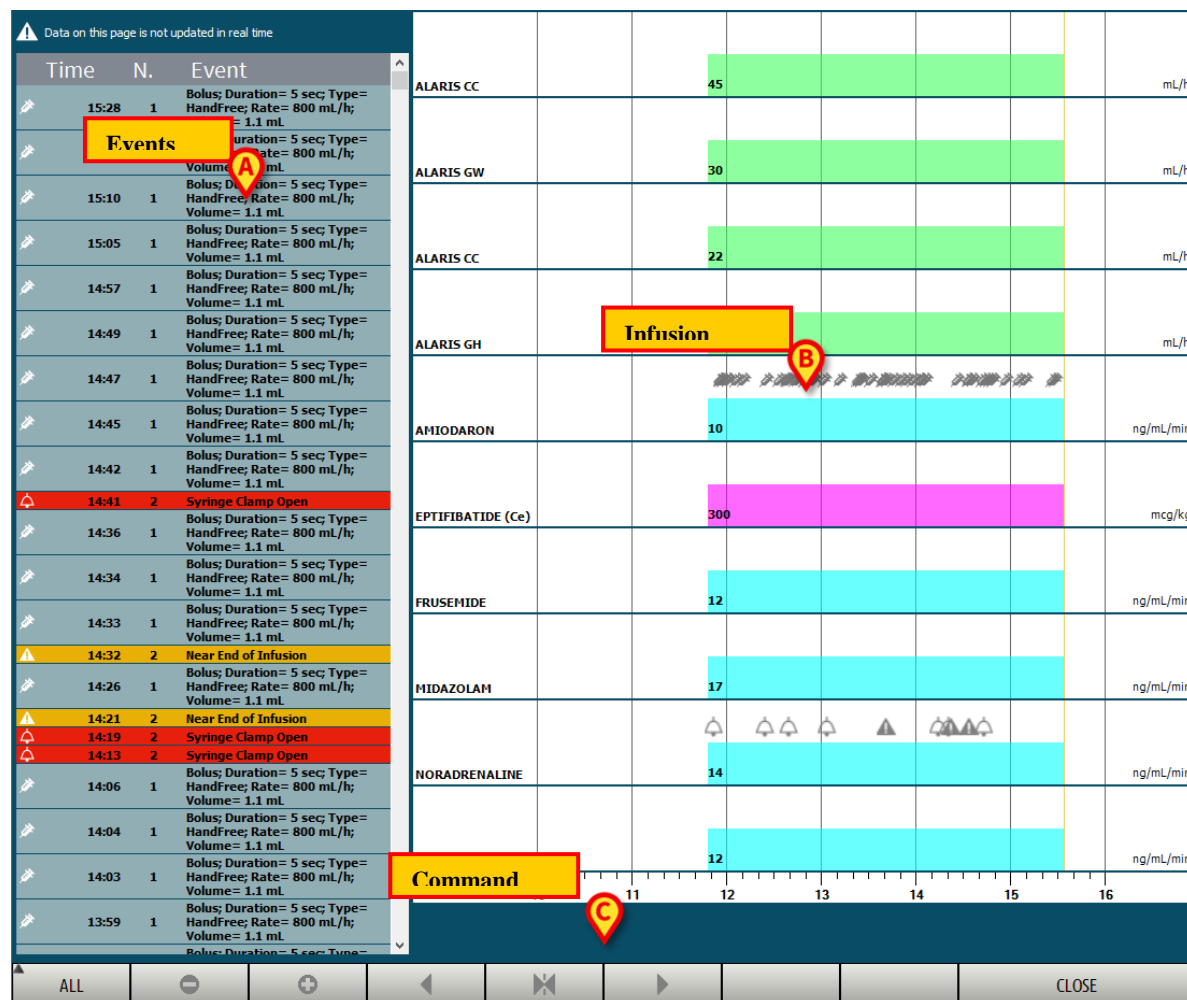


Fig 19

The screen is formed of three main parts. These are:

- a list of all the events occurred on all the pumps connected to the selected patient during his stay (Fig 19 A – see page 18);
- a chart representing all the patient’s infusions (Fig 19 B – see page 20);
- a command bar making it possible to manage the chart display mode (Fig 19 C – see page 19).

WARNING: The data displayed on this screen are not updated in real time; they are updated every time the screen is accessed.

1.6.1 Events list

The table shown in Fig 20 contains the list of all the events occurred on all the pumps connected to the selected patient during his/her stay.



	Time	N.	Event
	15:28	1	Bolus; Duration= 5 sec; Type= HandFree; Rate= 800 mL/h; Volume= 1.1 mL
	15:27	1	Bolus; Duration= 5 sec; Type= HandFree; Rate= 800 mL/h;

Fig 20

Every line on the list corresponds to an event. For every event the following information is provided:

- the time of occurrence,
- the number of the pump on which the event occurred,
- a short description of the event.

The events highlighted red refer to alarms. The events highlighted yellow refer to warning messages. The kind of events that can be displayed are:

- clinical events (i.e. boluses, for which the type, duration and quantities are specified);
- events referring to the pump status (i.e. alarms, warning messages, connection/disconnection notifications etc...);
- pump logs (the “Infusion” module can be configured to list, in this area, some selected pump logs).



1.6.2 The “Infusion history” command bar

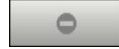
The buttons on the command bar on the “Infusion History” screen (Fig 21) can be used to perform different actions.





Fig 21


The buttons functions are described below:


The  and  buttons scroll up and down the charts area when the available charts are too many to be displayed all at the same time.





The  button decreases the chart scale and increases this way the time span displayed.

The  button increases the chart scale and decreases the time span displayed.

The  button displays a time preceding the time currently displayed (it makes it possible, namely, to move backwards on the time line).

The  button displays a time following the time currently displayed (it makes it possible, namely, to move forwards on the time line).

The  button makes it possible to display the current time back.

NOTE: When the display mode is changed using the  and  buttons the  /  button flashes.

The button indicated in Fig 21 **A** makes it possible to filter the kind of events displayed. Click this button to open the menu shown in Fig 22.

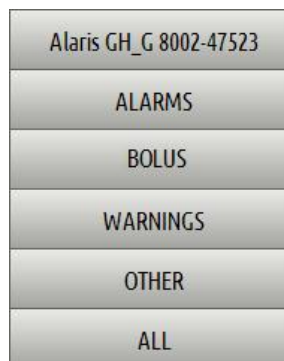


Fig 22

The first button on the menu displays the name of the pump currently selected. Click one of the events on the events list (Fig 20) to select a pump. The pump on which the last event occurred is selected by default. On the filters menu:

Click the button displaying the pump name to display only the events occurred on that pump.

Click the **BOLUS** button to display only the events relating to boluses administration.

Click **WARNINGS** to display only the warning messages.

Click **ALARMS** to display only the alarm messages.

Click **OTHER** to display other events not relating to the above mentioned categories.

Click **ALL** to display all the events.

1.6.3 The “Infusion history” charts

The charts on the “Infusion history” screen represent the trends of the infusions of the selected patient (or bed, if no patient is selected). The chart is analogous to the one of the “Patient Station” screen, described on page 14. See paragraph “Patient Station” for the chart explanation and the instructions on how to read it. Each row on this chart represents an infusion. On this screen a new row is created each time that:

- a pump is connected,
- the drug is changed on an existing pump,
- the infusion unit of measure is changed.

1.7 Pump Details

On the “Patient station” screen (Fig 14), click one of the pump buttons (see Fig 23 for an example),

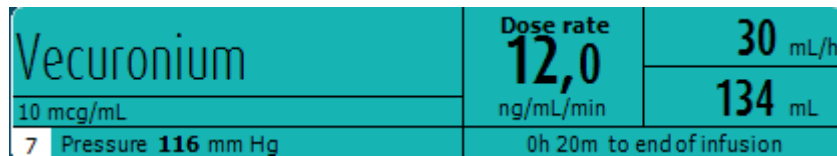


Fig 23

to display a screen containing detailed information on the pump (Fig 24).

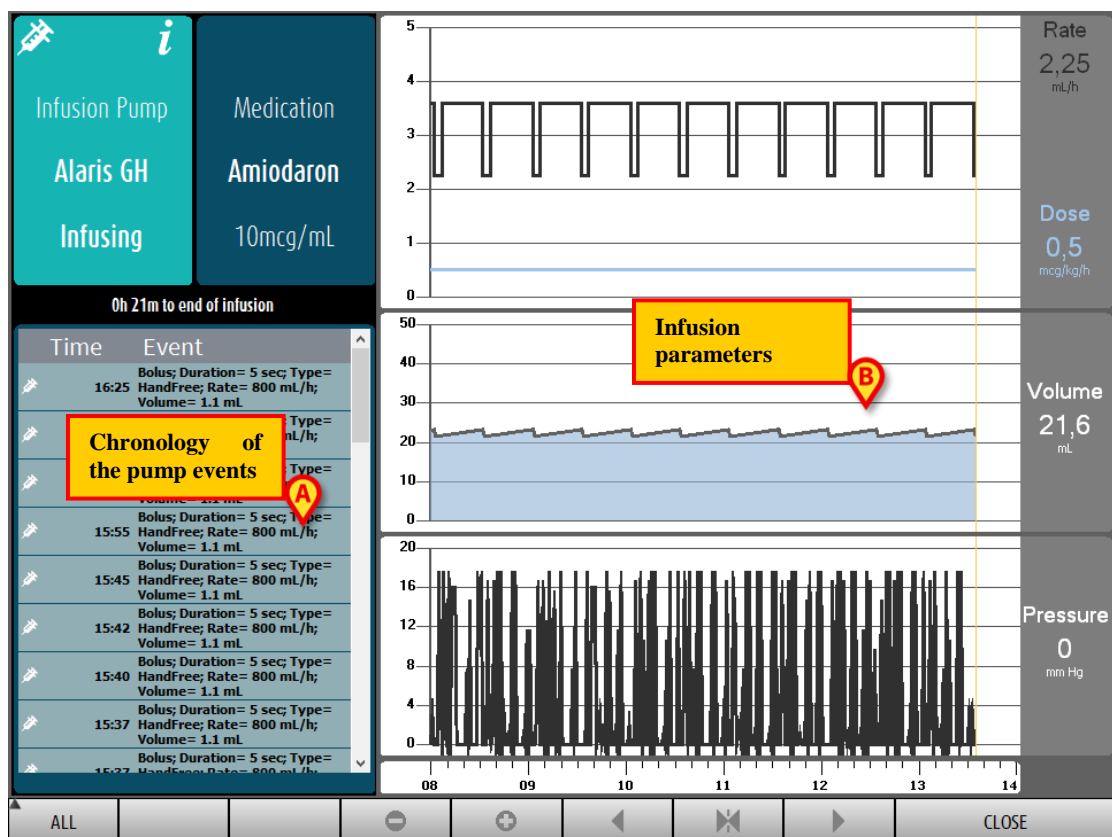


Fig 24

On the left, a list of all the events occurred on the selected pump is displayed (Fig 24 A). On the right three charts are displayed, representing some of the trends of the current infusion parameters (Fig 24 B).

WARNING: The events list (Fig 24 A) refers to the association of a given pump with a specific drug. Therefore, if a new drug is associated to a given pump, the event list starts all over again. The new combination is a new entity for INFUSION.

1.7.1 The charts on the “Pump detail” screen

The charts on the right of the screen (Fig 24 **B**) display the trends of some of the infusion parameters. The values of the different parameters are indicated along the vertical axis of the charts. The horizontal axis represents time. The represented parameters are:

- the volume rate and the dose rate of the infused drug (Fig 25);

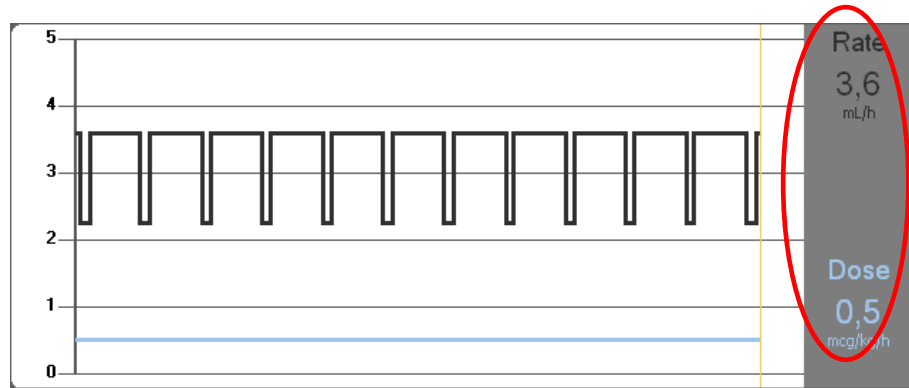


Fig 25

- if the pump is set to “Pharmacokinetic” mode, three lines are displayed on the chart, corresponding to: 1) the target value; 2) the plasmatic concentration; 3) the “effect site” concentration. The displays on the right show the three corresponding values (Fig 25);

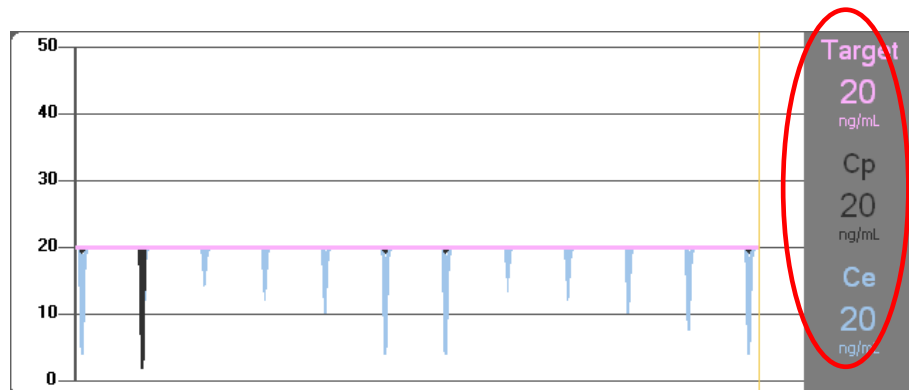


Fig 26

- the total infused volume (Fig 27);

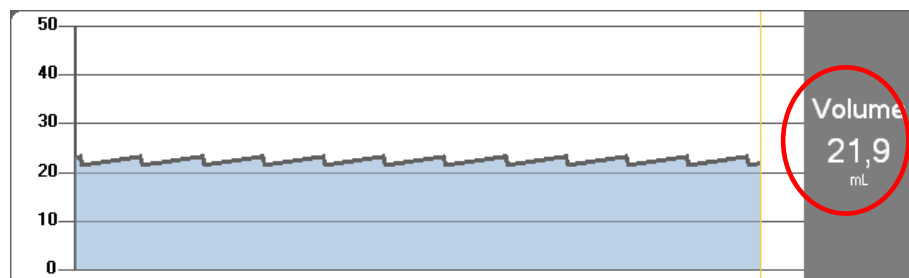


Fig 27

- the infusion circuit pressure (Fig 28).

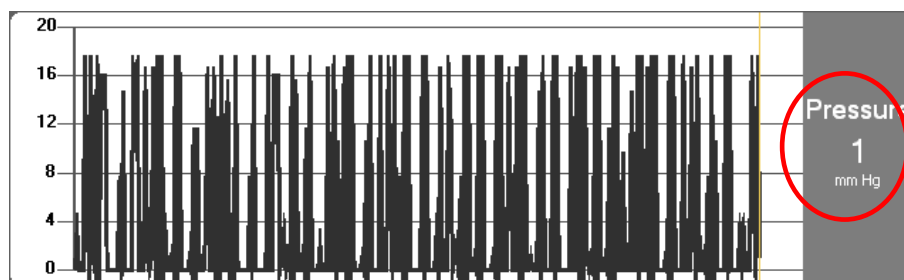


Fig 28

NOTE: For some pump models it is not possible to display the infusion circuit pressure values.

The current values of the four parameters are indicated on the right of each chart (they are red-circled in the figures).

CAUTION: Charts and displays are updated at one minute intervals.

Click on any of the charts to display a cursor. The corresponding time is displayed at the bottom, in a label. The corresponding values are displayed on the displays on the right.

1.7.2 The “Pump detail” screen command bar

Fig 29 shows the command bar of the “Pump detail” screen. This paragraph lists the functionalities triggered by the buttons on the command bar.

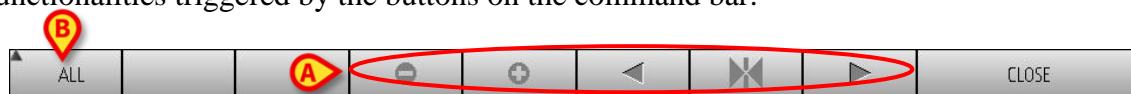



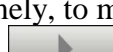
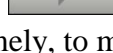






Fig 29

The **Close** button closes the “Pump detail” screen and displays again the “Patient station” screen (Fig 14).

Five buttons, circled in Fig 29 A, make it possible to change the chart display mode:

- the  button decreases the chart scale and increases this way the time span displayed;
- the  button increases the chart scale and decreases the time span displayed;
- the  button displays a time preceding the time currently displayed (it enables, namely, to move backwards on the time line);
- the  button displays a time following the time currently displayed (it enables, namely, to move forwards on the time line);
- the  button displays the current time again.

NOTE: When the chart display mode is changed with the  and  buttons, the  button flashes. The user is this way constantly warned ().

The button indicated in Fig 29 B makes it possible to filter the events list. See below for the events list description.

1.7.3 Event list of a selected pump

A table on the left of the “Pump detail” screen lists all the events occurred on the pump in chronological order (Fig 24 A).

The rows in the list refer to single events. The time of occurrence and a short description are provided for every event. The events highlighted red are alarms. The events highlighted yellow are warnings. The kind of events that can be displayed are:

- clinical events (i.e. boluses, for which the type, duration and quantities are specified);
- events referring to the pump status (i.e. alarms, warning messages, connection/disconnection notifications etc...);
- pump logs (the “Infusion” module can be configured to list, in this area, some selected pump logs).

WARNING: The events list refers to the association of a given pump with a specific drug. Therefore, if a new drug is associated to a given pump, the event list starts all over again. The new combination is a new entity for INFUSION.

Click the button indicated in Fig 29 B on the command bar to open a menu making it possible to filter the events list (Fig 30).

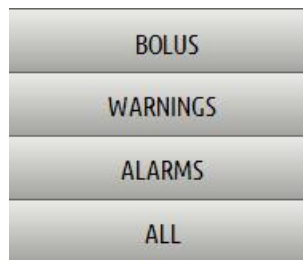


Fig 30

The **BOLUS** button displays only the events referring to boluses administration.

The **WARNINGS** button displays only the warning messages.

The **ALARMS** button displays only the alarm messages.

The **ALL** button displays all the events.

Click **OTHER** to display other events not relating to the above mentioned categories.

1.7.4 Pump and medication buttons

There are two buttons on the top left corner of the “Pump detail” screen, one referring to the pump, one referring to the medication (Fig 31).

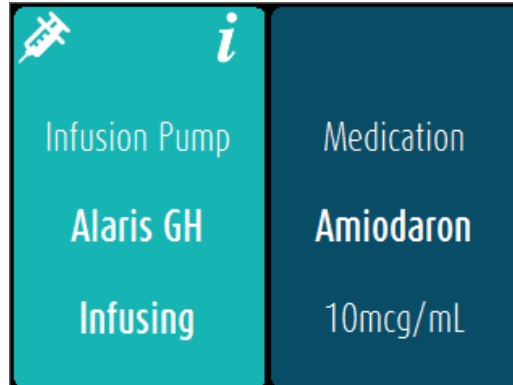





Fig 31

The information that can be displayed on the pump button is:

- A status icon indicating the pump status:  if the pump is infusing;  if the pump is in warning status;  if the pump is in alarm status.
- The pump name.
- A brief description of the possible alarm/warning.

The background colour depends on the pump status: cyan if the pump is infusing; yellow if the pump is in warning status; red if the pump is in alarm status.

- Click the pump button to access the available on-line pump documentation. The information displayed on the medication button is:
 - Medication name.
 - Medication dose/dilution (if available).
- Click the medication button to access the available on-line medication documentation.

1.8 Pump log print report

To print the connected pumps log,

- click the **MENU** button on the “Infusion” Control Bar (Fig 32).



Fig 32

The following menu is displayed (Fig 33).



Fig 33

- Click the **Patient Reports** button (Fig 33).

A menu is displayed showing the buttons “**Export Data**” and “**Events**”.

- Click the **Events** button.

A menu is displayed showing the following buttons:

- **Show Alarms**
- **Show Bolos**
- **Show Warnings**
- **Show Other**
- **Show All**
- **Print**
- **Cancel**

- Click the buttons to select the information to be printed.

The buttons corresponding to the chosen options appear as selected. Multiple selection is possible.

- Click the **PRINT** button. A print preview is displayed.

1.9 Alarms and warnings display on Control Bar

The occurrence of pump alarms and warnings is notified on the Control Bar (Fig 34).



Fig 34

The button circled in Fig 34 is an indicator of the possible alarms and warnings occurring on one or more infusion pumps. This notice is always visible, independently from the module currently selected. The User is this way informed on the status of the pumps at all times, also if the INFUSION module is not currently displayed.

If neither alarms nor warnings are activated, the button shows the “Infusion” name. This is the case shown in Fig 34.

If a pump alarm is activated, the button turns red and specifies the number of the alarmed bed.

In case of warning, the button turns yellow and specifies the number of the relevant bed.

In case of information message, the button turns blue and specifies the number of the relevant bed.

Priorities in the kind of information displayed on the button are set as follows:

- the button shows the latest alarm, until alarm conditions are removed;

- the button shows the latest warning, if there are no alarms;

- the button shows the latest information message, if there are neither alarms nor warnings;

- the button shows the “Infusion” name either if no notification is provided or all notifications have been taken into account.

If the system is not configured to always display the “Notification area” (Fig 12 A)

- Click the notification button on Control Bar to display the notification area.

See paragraph “Notification Area” for the description of this area (Fig 12).

1.10 Switching Standard Time – Daylight Saving Time

This paragraph explains the way information is displayed on the module’s charts when the time switches from standard time to daylight saving time and vice versa.

In both cases (Standard Time to Daylight Saving Time and Daylight Saving Time to Standard Time) a vertical bar is displayed on the chart at time of switch.

When switching from Standard Time to Daylight Saving Time (the clock “jumps” one hour forward) the time corresponding to 03:00 a.m. is not displayed. I.e.: the vertical bar is displayed at 02:00 a.m. and the next hour is 04:00 a.m.

When switching from Daylight Saving Time to Standard Time (the clock “jumps” one hour back) the time corresponding to 02:00 a.m. is repeated twice. I.e.: the vertical bar is displayed at 02:00 a.m. and the next hour is again 02:00 a.m.

2. Contacts

- **ASCOM UMS srl unipersonale**

Via Amilcare Ponchielli 29, 50018, Scandicci (FI), Italy
Tel. (+39) 055 0512161
Fax (+39) 055 8290392

- **Technical assistance**

support.it@ascom.com

800999715 (toll free, Italy only)

- **Sales and products information**

it.sales@ascom.com

- **General info**

it.info@ascom.com