
Chapter 6 Video terminal VT150W

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This chapter consists of 18 pages.



Technical characteristics The following table lists the principal technical characteristics of the product in question.

Code of terminal		Characteristics of the terminal		
VT150W 00000				
VT150W 000DP				
VT150W A00CN				
Display			▼	▼
Type	LCD	●	●	●
Representational format	Text	●	●	●
Rows by characters	4 x 20	●	●	●
Display area size [mm]	70,4 x 20,8	●	●	●
Character matrix in text mode [pixels]	5 x 7	●	●	●
Character size [mm]	2,95 x 4,75	●	●	●
Contrast adjustment	Trimmer	●	●	●
	Automatic compensation with temperature			
Character sets	Ascii, Katakana	●	●	●
Backlighting				
Type	LED	●	●	●
	CCFL lamp			
Minimum lamp-life at 25°C [hours]	--			
Keyboard				
Non-customizable function keys	--			
Customizable function keys	5	●	●	●
Function key LEDs	5	●	●	●
Alphanumeric keys	11	●	●	●
Operational keys	9	●	●	●
Operational key LEDs	2	●	●	●
Diagnostic LEDs				

Code of terminal	Characteristics of the terminal		
VT150W 00000			
VT150W 000DP			
VT150W A00CN			
User memory			
Project [Bytes]	256K	●	●
Data memory [Bytes]	--		
Memory for Windows ® -based fonts [Byte]	--		
Memory Card for backup	--		
Memory Card for expansion	--		
Interfaces			
MSP (Multi-serial port)	RS232/RS422/RS485/TTY-20mA		● ●
ASP (Auxiliary serial port)	RS232/RS485		
ASP-15L (Auxiliary serial port)	RS232/RS485		
ASP-8 (Auxiliary serial port)	RS232	●	
ASP-9 (Auxiliary serial port)	RS232		
LPT parallel port	Centronics		
Auxiliary port	Connection for accessory devices		● ●
Accessories			
Connectable accessories	See table "Chapter 34"		● ●
Clock			
Clock			
Networks			
Integrated	Profibus-DP		●
	CAN Open (Optoisolated interface)	●	
	Ethernet 10/100Mbit RJ45		
Universal Bus Connector	--		
Optional	See table "Chapter 34"		● ●
Proprietary networks			
ESA-Net	Network server		
	Network client		● ●
Technical data			
Power supply	24Vdc (18..32Vdc)		
Power absorbed at 24Vdc	15W		
Protection fuse	Ø5x20mm - 800mA Quick Blow F		
Protection level	IP65 (front-end)		
Operating temperature	0..50°C		
Storage and transportation temperature	-20..+60°C		
Humidity (non-condensing)	<85%		
Weight	700gr		
Dimensions			
External W x H x D [mm]	148 x 188 x 41		
Cut-out W x H [mm]	123 x 175		
Certification			
Certifications and approvals	CE, cULus, NEMA12		

Functions

The following table lists in alphabetical order all the functions of the VT in question.

Table 6.1: Functions and objects realizable with this VT (Part 1 of 4)

Code of terminal		
VT150W *****		
Objects/Functions	Quantity	▼
Alarm field		
Alarm help		
Alarm history buffer		
Alarm statistics		
Alarms (Total/active simultaneously)		
Arc		
Automatic operations	32	●
Backup/Restore		●
Bar data		
Bit-wise password	8bits	●
Buttons		
Circles		
Command: Change language		●
Command: Clear trend buffer		
Command: Delete recipe		
Command: Hardcopy		
Command: Load recipe from data memory		
Command: Modify password		●
Command: Next page		
Command: Page help		
Command: Password login		●
Command: Password logout		●
Command: Previous page		
Command: Print alarm history		
Command: Printer form feed		
Command: Quit project		●
Command: Report		
Command: Restarts reading time-sampled trend		
Command: Run pipeline		
Command: Save alarms history and trend buffers in flash		
Command: Save recipe in data memory		
Command: Save recipe received from device in buffer		
Command: Save recipe received from device in data memory		
Command: Send recipe from video buffer to device		
Command: Send recipe to device		
Command: Service page		

Unless otherwise stated, there is no limit to the number of includable elements, only the size of project memory sets a limit.
*) indicative value determined by the dimensions of the project

Table 6.1: Functions and objects realizable with this VT (Part 2 of 4)

Code of terminal		
VT150W ****		
Objects/Functions	Quantity	▼
Command: Show alarms history		
Command: Show page directory		
Command: Show project information		●
Command: Show recipe directory		
Command: Show sequence directory		●
Command: Shows driver status page		
Command: Shows page help		
Command: Shows page with function: PG		
Command: Stops reading time sampled trend		
Command: Trend reading saved in device		
Command: Zero number of general pages		
Date field		
Day-of-the-week field		
Dynamic texts: Bit-group-structured dynamic texts		●
Dynamic texts: Single-bit dynamic texts	1024*	●
Dynamic texts: Value-structured dynamic texts		●
E-keys		●
Equations	32	●
F-keys		●
Free terminal		●
Function: Disables key		●
Function: Go to page		
Function: Internal command		●
Function: Invert bit value		●
Function: Macro		●
Function: None		●
Function: Reset bit permanently		●
Function: Reset real-time bit		●
Function: Sequences		●
Function: Sets bit permanently		●
Function: Sets real-time bit		●
Function: Value-structure direct command		●
Global configuration of E-keys		●
Global configuration of F-keys		●
Headers and footers (Total/Number of fields per H-F)		
Info-messages (Total/active simultaneously)	1024/128	●
Internal registers	2048bytes	●
Labels		●
LEDs assigned to sequence		●

Unless otherwise stated, there is no limit to the number of includable elements, only the size of project memory sets a limit.
 *) indicative value determined by the dimensions of the project

Table 6.1: Functions and objects realizable with this VT (Part 3 of 4)

Code of terminal		
VT150W *****		
Objects/Functions	Quantity	▼
Lines		
Lists of bitmap images		
Lists of texts		●
Local configuration of E-keys		●
Local configuration of F-keys		●
Macro field	8 x pages	
Macros (Total/Commands x macro)	1024/16	●
Message field		●
Message help	1024	●
Multilanguage texts	6 Langs.	●
Object - Indicator		
Object - Potentiometer knob		
Object - Selector knob		
Object - Sliding potentiometer		
Object - Sliding selector		
Page	1024	●
Page help	1024	●
Password	10	●
Pipelines (Number/Tot bytes)		
Print		
Print page (Total/Number of fields per page)		
Programmable fonts		
Project images		
Public variables of ESANET network (Number/Total bytes)	128/1024	●
Recipe field for recipe structure		
Recipes (Number of variables per recipe)		
Rectangles		
Redefinable characters	7	●
Reports		
Sequences - Random	64	●
Sequences - Start/stop		●
Static bitmaps		
Symbolic field: Bit-group-structured dynamic bitmaps		
Symbolic field: Single-bit-structured dynamic bitmaps		
Symbolic field: Value-structured dynamic bitmaps		
System messages		●
System variables assigned to recipe structure		
Time long field		
Time short field		

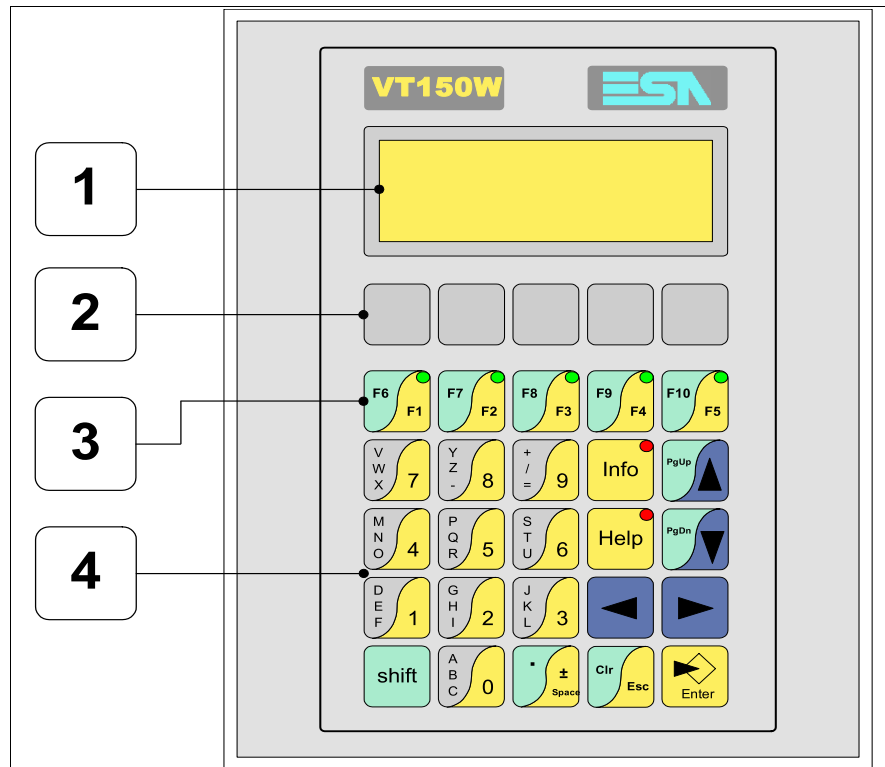
Unless otherwise stated, there is no limit to the number of includable elements, only the size of project memory sets a limit.
*) indicative value determined by the dimensions of the project






Table 6.1: Functions and objects realizable with this VT (Part 4 of 4)






Code of terminal		
VT150W *****		
Objects/Functions	Quantity	▼
Timer	32	●
Touch Area		
Trend buffers		
Trends (Trends x page/Channels x trend)		
Trends sampled automatically (Memory/Trends/Readings)		
Trends sampled on command (Memory/Trends/Readings)		
Value direct command: ADD		●
Value direct command: AND		●
Value direct command: OR		●
Value direct command: SET		●
Value direct command: SUBTRACT		●
Value direct command: XOR		●
Variables: Limit values and linear scaling variables	32 x pages	●
Variables: Movement variable (Mobile symbolic field)		
Variables: Threshold variables		
Variables: Floating Point numerical variables		●
Variables: Numerical variables (DEC, HEX, BIN, BCD)		●
Variables: String variables (ASCII)		●

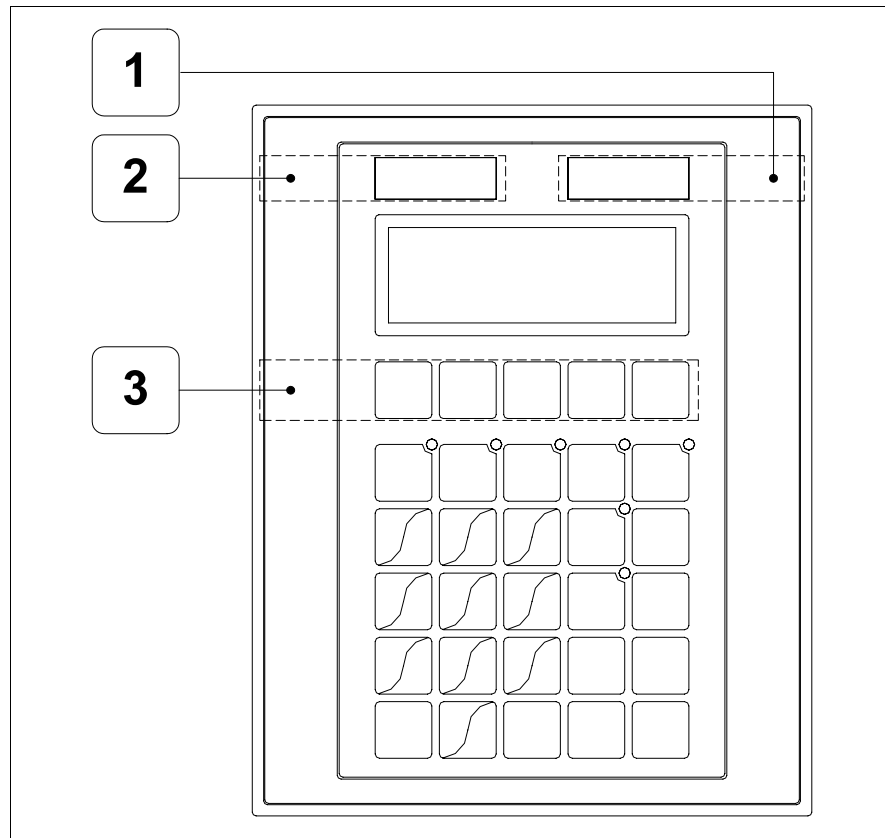
Unless otherwise stated, there is no limit to the number of includable elements, only the size of project memory sets a limit.
 *) indicative value determined by the dimensions of the project

Front view



Key	Function
1	Display
2	F-key customizing label
3	F-keys
4	Alphanumeric and operative keys
	Opens and confirms input
	Page up When in setting phase, edits dynamic text
	Page down When in setting phase, edits dynamic
	Moves the cursor between settable fields When in setting phase, moves cursor to the left of the field
	Moves the cursor between settable fields When in setting phase, moves cursor to the right of the field

Key	Function
	Quits: setting of data, info-messages, sequence directory, communication driver
	Displays info-messages
	Displays according to context: information message help or page help
 + 	In setting phase restores the initial value of the field

**Customizing
label**

Position	Function - Dimensions L x H (mm)
1	ESA Logo - 65 x 12
2	VT Model - 65 x 12
3	F-key customization F - 116 x 16

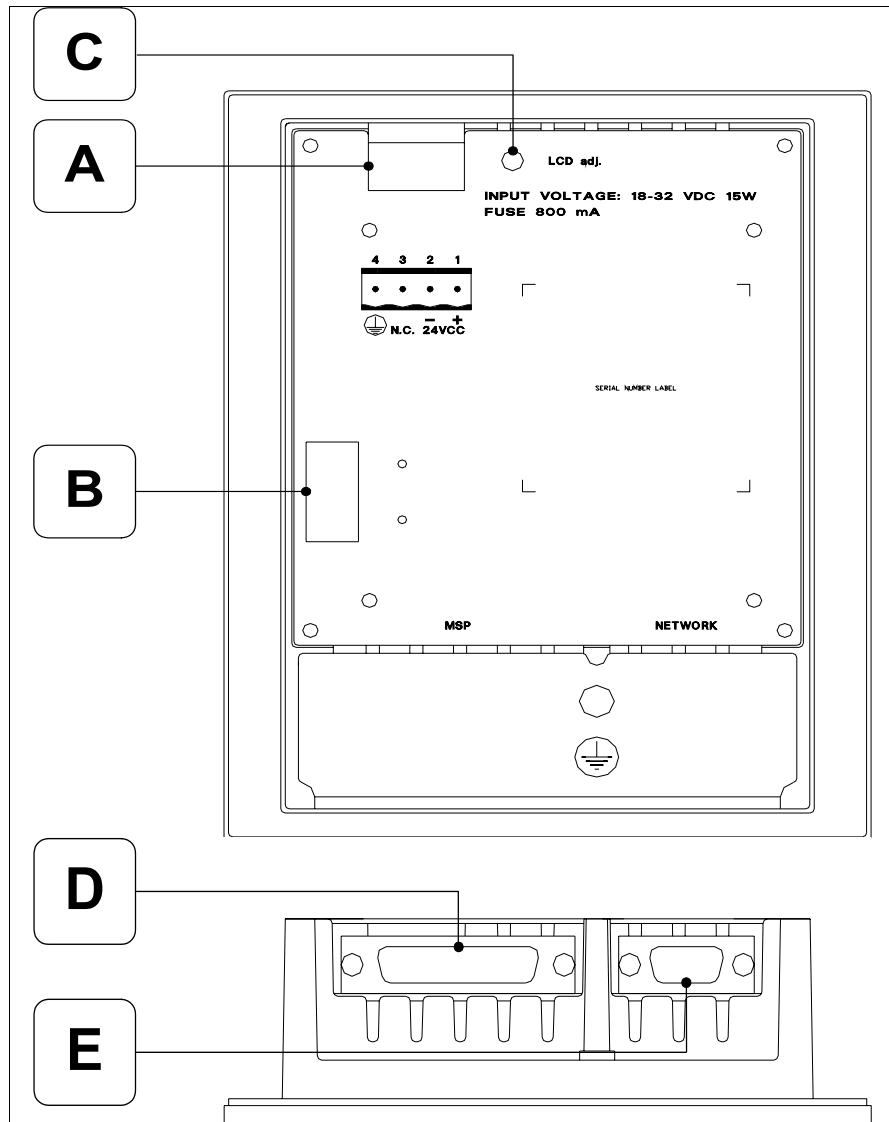


The total thickness of the label must not exceed 125µm (micrometers). Do not use either stiff materials or glues.

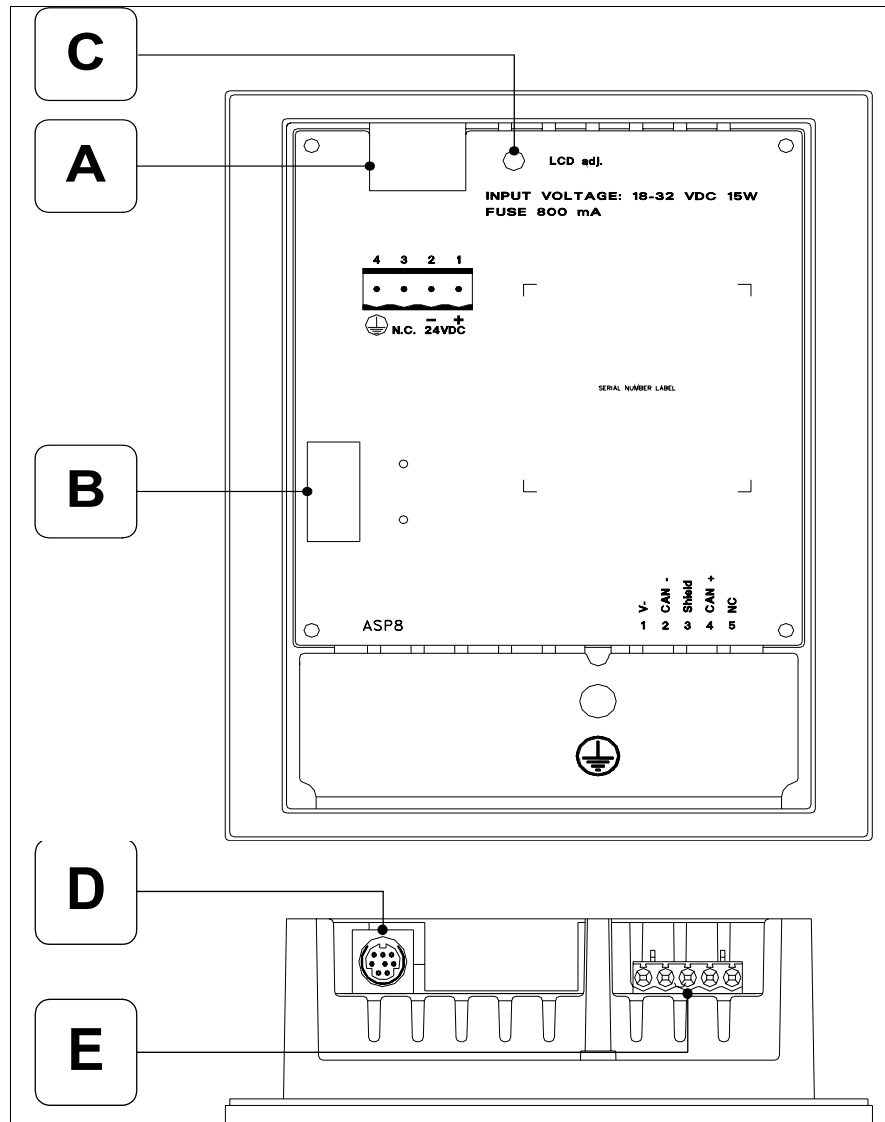


Before starting to insert the customized label, see “Chapter 29 -> Inserting customized labels”.

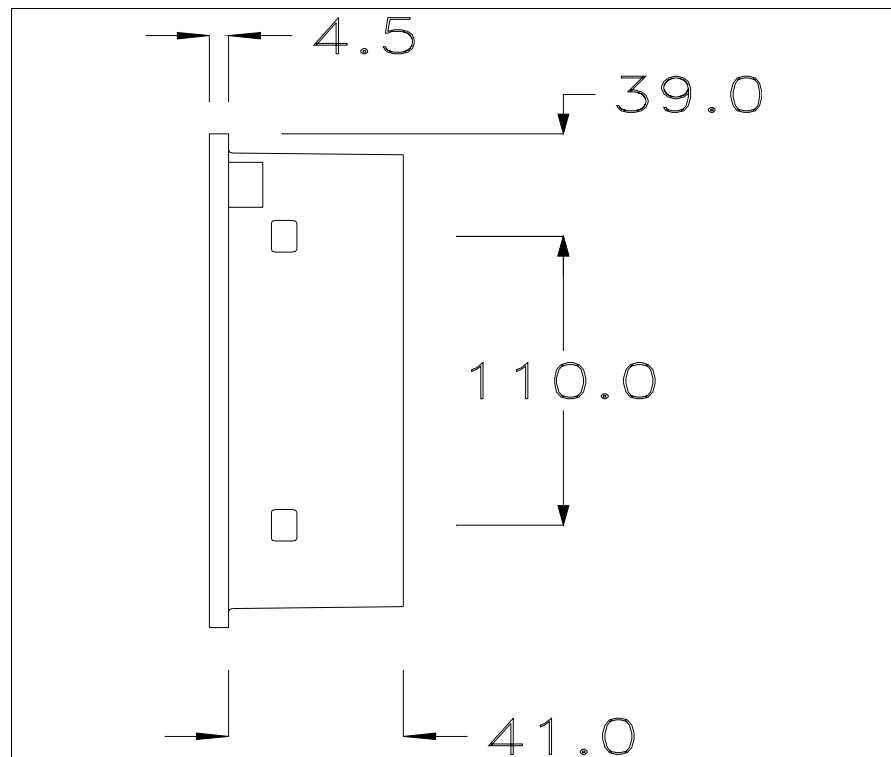
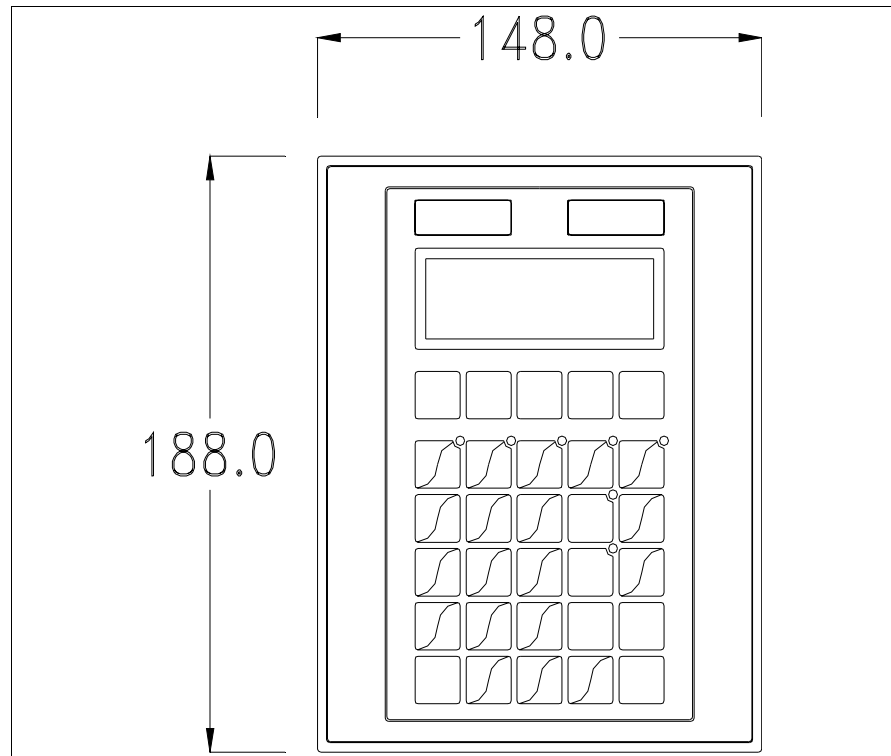
Standard
series rear
view

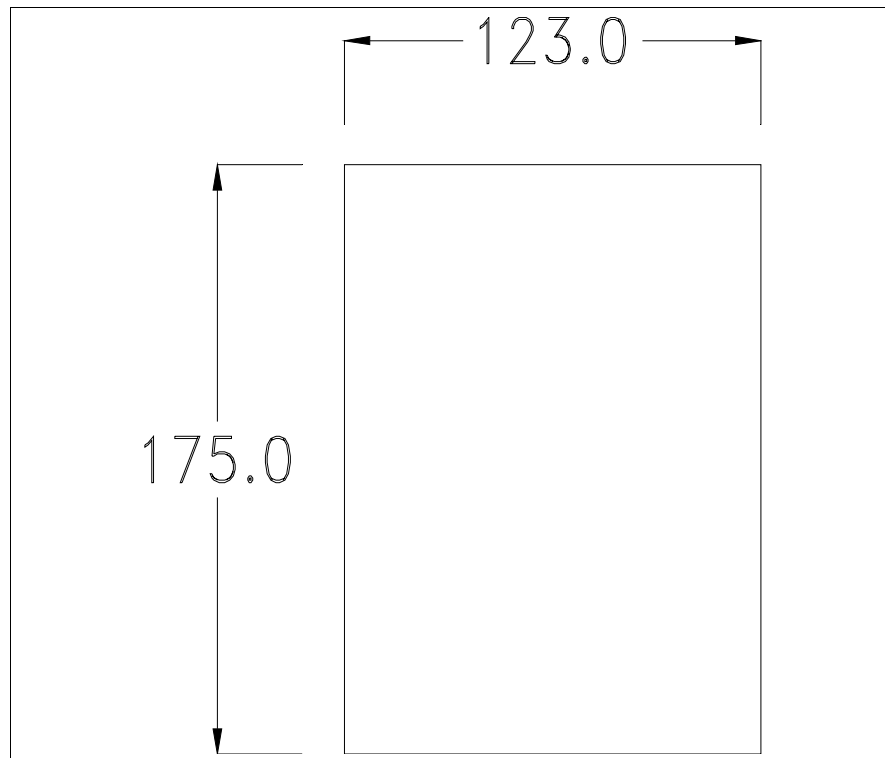


Position	Function
A	Power supply connector
B	Auxiliary port for connecting optional accessories
C	Trimmer for adjusting contrast of the display
D	MSP serial port
E	NETWORK serial port for network communication (Option)

CAN series
rear view

Position	Function
A	Power supply connector
B	Auxiliary port for connecting optional accessories
C	Trimmer for adjusting contrast of the display
D	ASP-8 serial port
E	CAN serial port

**Dimensions
and Cut-out**



To fix the sealing gasket and secure the VT to the container see “Chapter 30 -> Mounting the terminal within the container“.

⚠ Where accessories need to be fixed in or onto the VT terminal, you are advised to do this before securing the VT to its container.

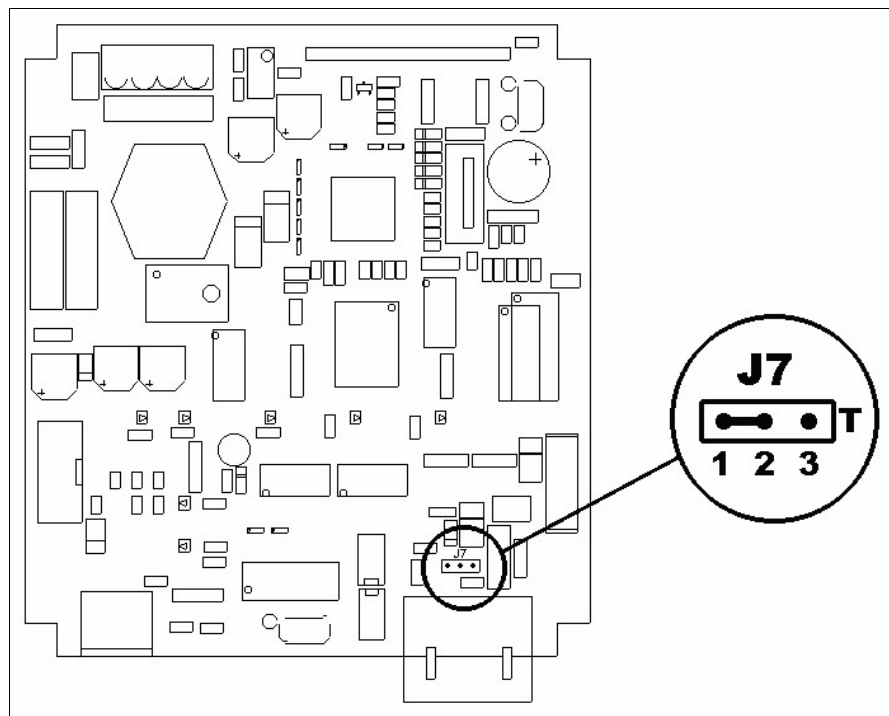
Accessories

Any accessories should be mounted in accordance with the instructions in the relevant chapter (see “Chapter 34 -> Video terminal accessories“).

Termination of CAN line

This paragraph applies only to the CAN series. The VT in question integrates the termination resistances of the serial line (typically 120 ohms) which can be inserted by means of a jumper (preset on 1-2, line not terminated). To activate the termination:

- Make sure the device is not connected to the power supply.
- Remove the cover.
- Identify the jumper unit J7.



- Position the jumper between pins 2 and 3 (line terminated).
- Replace the back cover.
- Reconnect the power supply.

Transfer PC -> VT

For everything to function properly, the first time the VT operator terminal is switched on it needs to be correctly loaded, that is it needs to have transferred to it:

- Firmware
- Communication driver
- Project




(Given that the transfer of the three files in practice occurs with a single operation, it will be defined as “Project transfer” for the sake of simplicity.)

For this it is essential that the VT be prepared to receive the transfer. (See also “Chapter 38 -> Command area”).

Preparation for reception

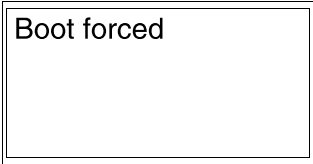
The program VTWIN (see Software Manual) must be used for the transfer, but the terminal must be set up to receive. This means carrying out the following steps:

- Check that the VT is off
- Check that there is a serial connection between the PC and the VT

- Switch on the VT with  pressed down or with the VT on press together  + ; in either case wait a moment

VT terminal with no Modem function:

- The following mask appears. The VT is now ready to receive (refer to Software Manual for transfer procedure)



Boot forced

VT terminal with Modem function:

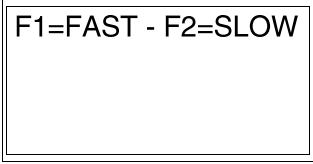
- The following mask appears



F1=MODEM - F2= PC

- Choose the required transfer mode: MODEM if you intend to use a modem or PC if you intend to use a serial port; press the corresponding function

If the choose made is PC, the VT is ready to receive (see Software Manual for transfer), if, on the other hand, you choose MODEM, the following mask will appear



F1=FAST - F2=SLOW


The choice should be according to the speed you intend to use for the transfer (Slow=9600bit/sec or Fast=38400bit/sec), press the corresponding function . The VT is now ready to receive (see Software Manual for the transfer).

Information relating to driver



After the project has been transferred, the VT can make available information relating to what has been loaded. The information regards:

- The name of the driver loaded
- The version of the driver loaded
- Network address of the VT
- Last error to have occurred

To acquire this information carry out the following operations:

- Be situated in any page of the project
- Press  twice; you will see

```
VT150W
Serial: xxxxxxxxxxxxxx
Driver: xxxxxxxxxxxxxx
Ver. : xxxxxxxxxxxxxx
```

- Press  or  to display

```
Addr. : xxxxxxxxxxxxxx
Error : xxxxxxxxxxxxxx
Up/Down: next page
```

Possible error messages are:

• PROT ERROR

Problem-> Errors have been detected in the data exchange between the VT and the Device.

Solution-> Check the cable; there may be disturbance.

• COM BROKEN

Problem-> Communication between VT and Device interrupted.

Solution-> Check the serial connection cable.

An error message followed by [*] indicates that the error is not currently present but was and has since disappeared.

Example: COM BROKEN*

Adjusting the contrast on the display

To improve the quality of the representation on the display it may be necessary to adjust its contrast. This can be done by rotating the trimmer (C) at the back of the VT (see Page 6-11 or Page 6-12); turn it (using a small screwdriver or a trimmer tool) in one direction and, if the display quality worsens, turn it the other way.