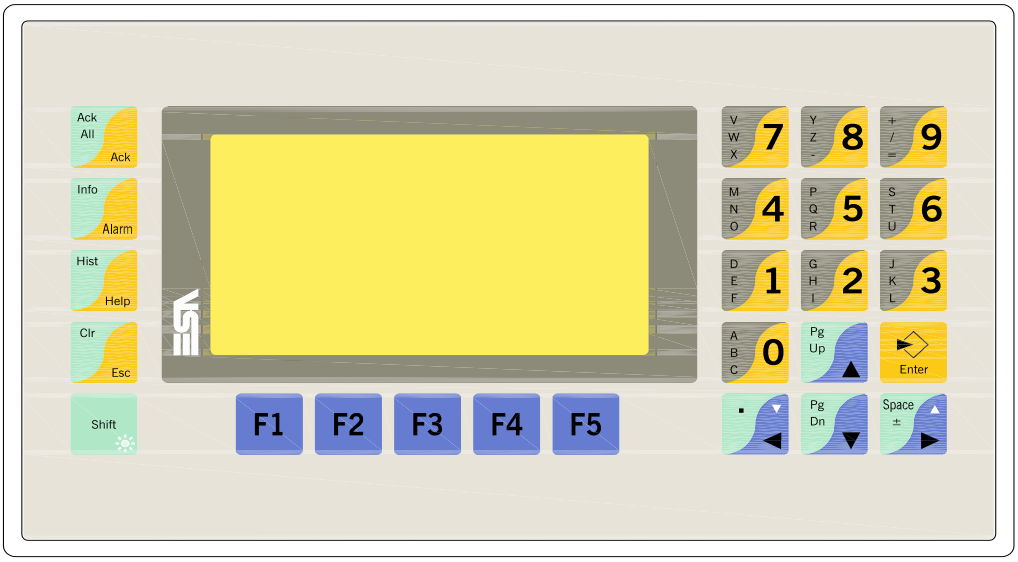
Chapter 5 Video terminal VT130W

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		
VT130W 00000			
VT130W 000DP			
Display		▼	▼
Type	LCD 4 tones of blue STN	●	●
	LCD 16 Colors STN		
	LCD 16 Colors TFT		
Representational format	Graphic	●	●
Resolution [pixels]	130 x 80 (3")	●	●
Rows by characters	10 x 26 / 5 x 13 / 2 x 6	●	●
Display area size [mm]	67 x 37	●	●
Character matrix in text mode [pixels]	6 x 8 / 12 x 16 / 24 x 32	●	●
Character size [mm] x 1 / x 2 / x 4	2,5 x 3,3 / 5 x 6,7 / 10 x 13,4	●	●
Contrast adjustment	Software	●	●
	Automatic compensation with temperature	●	●
Character sets	Programmable fonts/TTF Windows ®	●	●
Backlighting			
Type	LED	●	●
	CCFL lamp		
Minimum lamp-life at 25°C [hours]	50000	●	●
Keyboard			
Non-customizable function keys	5	●	●
Customizable function keys	--		
Function key LEDs	--		
Alphanumeric keys	10	●	●
Operational keys	10	●	●
Operational key LEDs	--		
Diagnostic LEDs	--		

Code of terminal	Characteristics of the terminal		
VT130W 00000			
VT130W 000DP		▼	▼
User memory			
Project [Bytes]	640K (Text + Graphics)	●	●
Data memory [Bytes]	16K (Flash EPROM)	●	●
Memory for Windows ® -based fonts [Byte]	256K	●	●
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 accessories		
Accessories			
Connectable accessories	See table ”Chapter 34”	●	●
Clock			
Clock	Hardware (with Supercapacitor - Min.72h Typically130h)	●	●
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	10W		
Protection fuse	Self-resetting		
Protection level	IP66 (front-end)		
Operating temperature	0..50°C		
Storage and transportation temperature	-20..+60°C		
Humidity (non-condensing)	<85%		
Weight	500gr		
Dimensions			
External W x H x D [mm]	166 x 100 x 39,6		
Cut-out W x H [mm]	157 x 91		
Certification			
Certifications and approvals	CE, cULus		

Functions

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

Table 5.1: Functions and objects realizable with this VT (Part 1 of 4)

Code of terminal		
VT130W *****		
Objects/Functions	**Quantity**	▼
Alarm field		●
Alarm help	256	●
Alarm history buffer	220	●
Alarm statistics		
Alarms (Total/active simultaneously)	256/256	●
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, **) depends on memory available

Table 5.1: Functions and objects realizable with this VT (Part 2 of 4)

Code of terminal		
VT130W ✳✳✳✳✳		
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	1024*	●
Dynamic texts: Single-bit dynamic texts		●
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)	64/128	●
Info-messages (Total/active simultaneously)	256/256	●
Internal registers	4096bytes	●
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, **) depends on memory available

Table 5.1: Functions and objects realizable with this VT (Part 3 of 4)

Code of terminal		
VT130W *****		
Objects/Functions	**Quantity**	▼
Lines		●
Lists of bitmap images		●
Lists of texts		●
Local configuration of E-keys		●
Local configuration of F-keys		●
Macro field		
Macros (Total/Commands x macro)	1024/16	●
Message field		●
Message help	256	●
Multilanguage texts	4 Langs.	●
Object - Indicator		
Object - Potentiometer knob		
Object - Selector knob		
Object - Sliding potentiometer		
Object - Sliding selector		
Page	64	●
Page help	64	●
Password	10	●
Pipelines (Numero/Tot bytes)		
Print		●
Print page (Total/Number of fields per page)	64/128	●
Programmable fonts		●
Project images		●
Public variables of ESANET network (Number/Tolat bytes)		
Recipe field for recipe structure		
Recipes (Number of variables per recipe)	128/256	●
Rectangles		●
Redefinable characters		
Reports	32	●
Sequences - Random	128	●
Sequences - Start/stop		●
Static bitmaps		●
Symbolic field: Bit-group-structured dynamic bitmaps	1024*	●
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		●

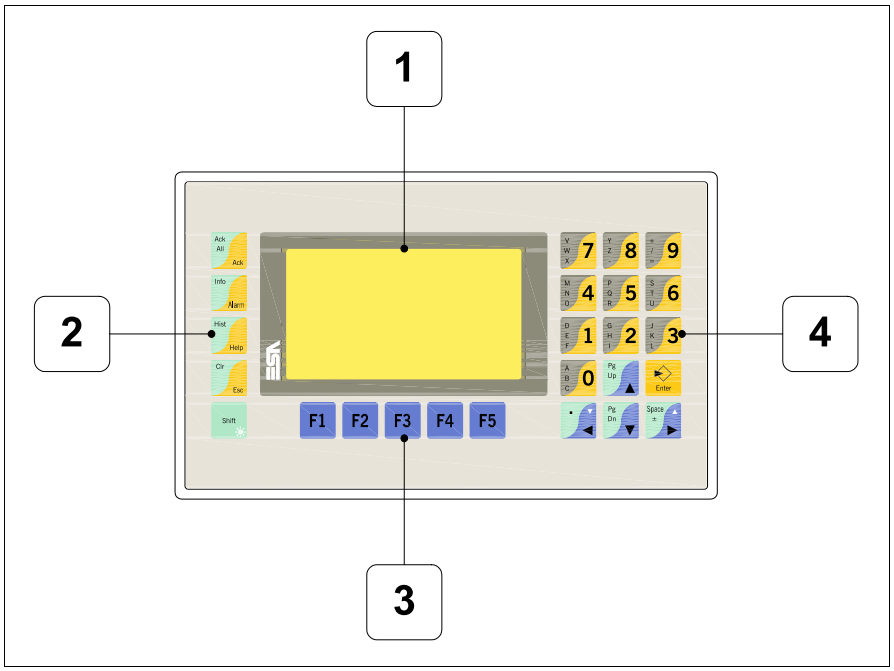
Unless otherwise stated, there is no limit to the number of includable elements, only the size of project memory sets a limit.
*) indicative value determined by the dimensions of the project, **) depends on memory available

Table 5.1: Functions and objects realizable with this VT (Part 4 of 4)

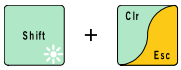
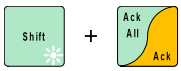
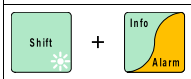
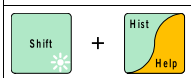
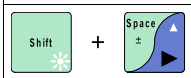
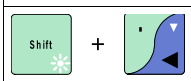
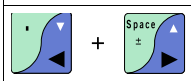
Code of terminal		
VT130W ✳✳✳✳✳		
Objects/Functions	**Quantity**	▼
Timer	32	●
Touch Area		
Trend buffers		
Trends (Trends x page/Channels x trend)		
Trends sampled automatically (Memory/Trends/Readings)		
Trends sampled on command (Memory/Trends/Readings)		
Value direct command: ADD		●
Value direct command: 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, **) depends on memory available

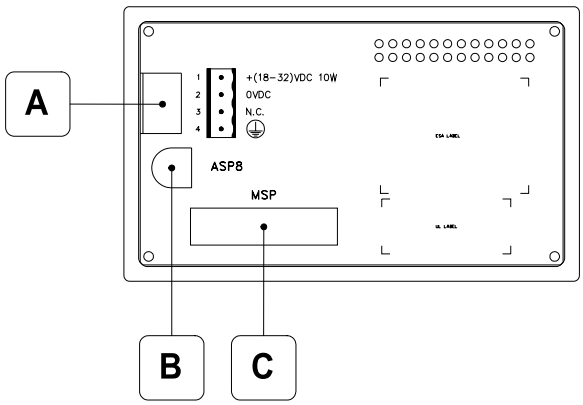
Front view



Key	Function
1	Display
2	Operative keys
3	F-keys
4	Alphanumeric + operative keys
	Opens and confirms input
	Page up When in setting phase, edits dynamic text
	Page down When in setting phase, edits dynamic text
	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
	Quits: setting of data, info-messages, sequence directory, communication driver

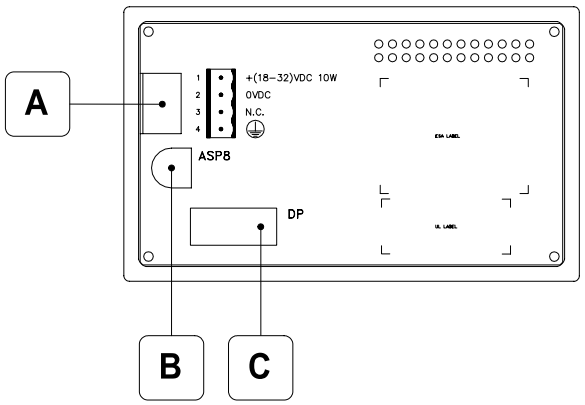
Key	Function
	Acknowledgment of ISA alarms on display
	Displays ISA alarms
	Displays according to context: information message help, alarm help or page help
	In setting phase restores the initial value of the field
	Acknowledges all ISA alarms
	Displays info-messages
	Displays History alarms
	Increase the display brightness
	Decrease the display brightness
	Normalise the display brightness

Standard series rear view



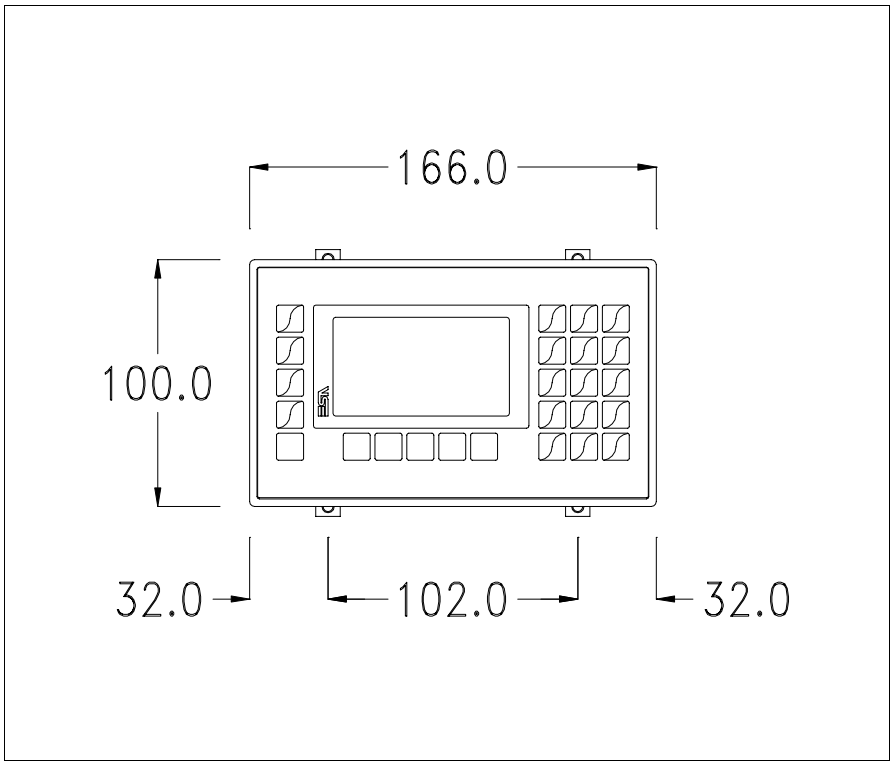
Position	Function
A	Power supply connector
B	ASP serial port for communicating with PC or other devices
C	MSP serial port for communicating with PLC/PC

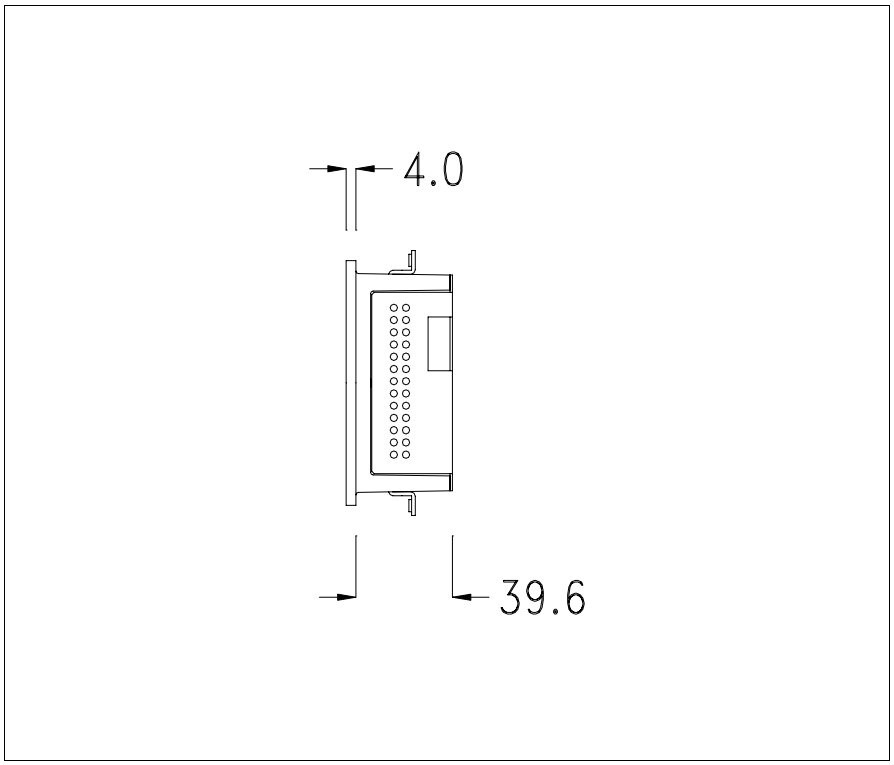
Profibus-DP series rear view

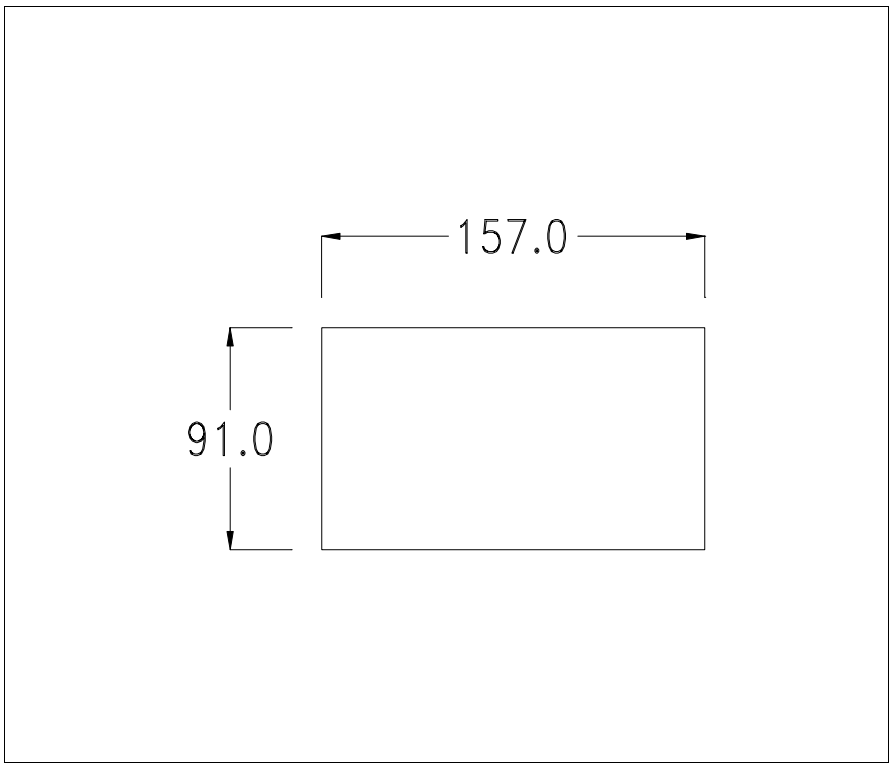


Position	Function
A	Power supply connector
B	ASP serial port for communicating with PC or other devices
C	Serial port for network communication

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“).

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; when the message [WAIT FOR BOOT FORCED] is displayed, press Enter, or with the VT on press together Shift + Enter; in either case wait a moment

```
VT130W TRANSFER PAGE

BOOT/RAM    check:   OK
FIRMWARE    check:   OK

        --- DOWNLOADER MENU ---

         F1:ASP      F2:MSP
         F3:MPI      F4:EXIT
```

- The function ▣ to press depends on which port you intend to use (MSP, ASP or MPI).

Transfer using MPI protocol:

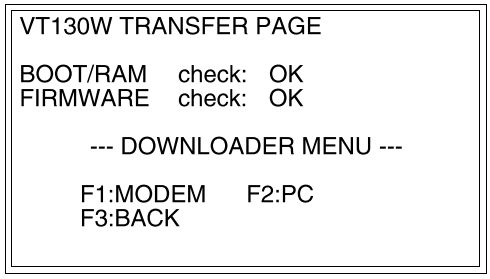
- Proceed from the preceding mask; the following mask appears

```
VT130W TRANSFER PAGE

BOOT/RAM    check:   OK
FIRMWARE    check:   OK

        --- DOWNLOADER MENU ---

       F1:TRANSF     F2:CONFIG
       F3:BACK
```

Press F2 function ▣ to set MPI address, press F3 function ▣ to return to previous mask. Press F1 function ▣ if you intend to start the transfer.

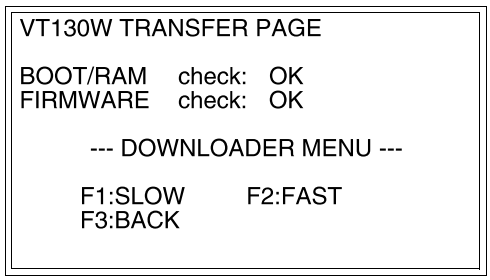
Trasfer using ASP or MSP port:

- Proceed from the preceding mask; the following mask appears



- Choose the required transfer mode: MODEM if you intend to use a modem, PC if you intend to use a serial port or BACK if you intend return to previous mask; 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



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

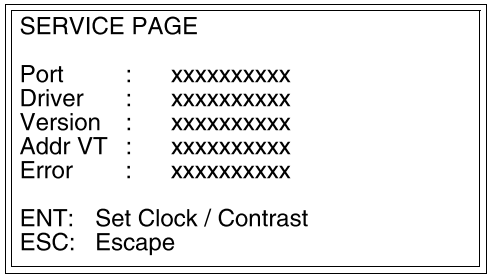
After the project has been transferred, the VT can make available information relating to what has been loaded. The information regards:

- Serial ports present
- 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:

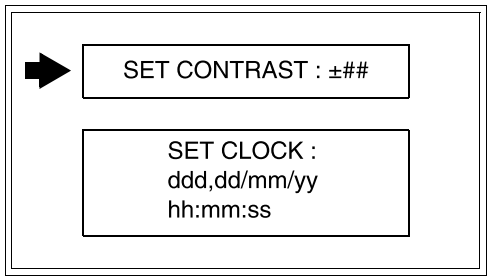
- Be situated in any page of the project
- Press 

twice; you will see

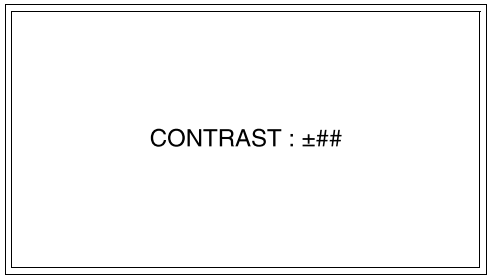


There is one of these pages for each communication port; you can move between the various pages by pressing Space ±.

If you press Enter while displaying this page you can access the page for setting the clock and the contrast.

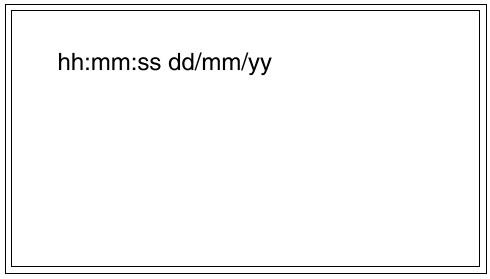


In order to access the contrast setting, use Pg Up or Pg Dn to select the SET CONTRAST option that is displayed in reverse colors and press Enter; the following mask will appear:



Use Pg Up and/or Pg Dn to effect any variation and Enter for the confirmation.

To be able to set the clock use Pg Up or Pg Dn to select the SET CLOCK option that is displayed in reverse colors and press Enter; the following mask will appear:



Use  and/or  to select the field and  and/or  to effect any variation; use  to confirm.

Possible error messages are:

- PR ERR

  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*

When  is pressed you quit the display of information regarding the driver.

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 going to the page proposed (see Page 5-16) and changing the value (from +31 to -31) in evidence at that moment. Increase the value to darken the display; to lighten it decrease the value.

We advise this to be done at typical room temperature and with the terminal at operating temperature (about 30 minutes after switching on and with the screen saver disabled - see Software Manual).

Adjusting the brightness on the display

To improve the quality of the representation on the display it may be necessary to adjust its brightness. This can be done by using 

and  or 

and 

. Press together  + 

to normalize the brightness.

To adjusting the brightnes you don’t have to be in a context of setting data