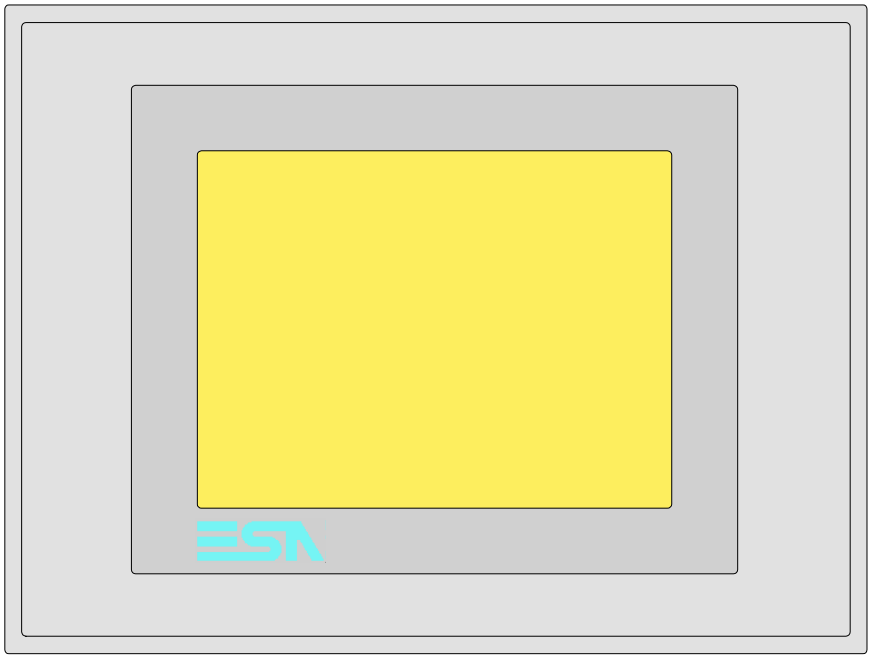
Chapter 21 Video terminal VT560W

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		
VT560W A0000			
VT560W A0M00			
Display		▼	▼
Type	LCD 8 tones of blue STN	●	
	LCD 16 Colors STN		●
	LCD 16 Colors TFT		
Touch screen	Matrix 20 x 16 (Cell:16x15 pixels)	●	●
Representational format	Graphic	●	●
Resolution [pixels]	320 x 240 (5,7")	●	●
Rows x characters	16 x 40 / 8 x 20 / 4 x 10	●	●
Display area size [mm]	115,6 x 87	●	●
Character matrix in text mode [pixels]	8 x15 / 16 x 30 / 32 x 60	●	●
Character size [mm] x 1 / x 2 / x 4	2,8 x 5,2 / 5,6 x 10,4 / 11,2 x 20,8	●	●
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]	15000	●	●

Code of terminal	Characteristics of the terminal		
VT560W A0000			
VT560W A0M00			
User memory		▼	▼
Project [Bytes]	192K + 832K (Text + Graphics)	●	●
Data memory [Bytes]	128K (With back-up battery)	●	●
Memory for Windows ® -based fonts [Byte]	128K	●	●
Memory Card for backup	4Mb	●	●
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	Connections for accessories		
Accessories			
Connectable accessories	See table ”Chapter 33”	●	●
Clock			
Clock	Hardware (With back-up battery)	●	●
Networks			
Integrated	Profibus-DP		
	CAN Open (Optoisolated interface)		
	Ethernet 10/100Mbit RJ45		
Universal Bus Connector	--		
Optional	See table ”Chapter 33”	●	●
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	1400gr		
Dimensions			
External W x H x D [mm]	210 x 158 x 54		
Cut-out W x H [mm]	198 x 148		
Certification			
Certifications and approvals	CE, cULus, NEMA12		

Functions

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

Table 21.1: Functions and objects realizable with this VT (Part 1 of 4)

Code of terminal		
VT560W *****		
Objects/Functions	**Quantity**	▼
Alarm field		●
Alarm help	1024	●
Alarm history buffer	256	●
Alarm statistics		
Alarms (Total/active simultaneously)	1024/256	●
Arc		●
Automatic operations	32	●
Backup/Restore		●
Bar data		●
Bit-wise password	8bits	●
Buttons	320 x page	●
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 21.1: Functions and objects realizable with this VT (Part 2 of 4)

Code of terminal		
VT560W ✳✳✳✳✳		
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)	128/128	●
Info-messages (Total/active simultaneously)	1024/256	●
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 21.1: Functions and objects realizable with this VT (Part 3 of 4)

Code of terminal		
VT560W *****		
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	1024	●
Multilanguage texts	8 Langs.	●
Object - Indicator	64	●
Object - Potentiometer knob	64	●
Object - Selector knob	64	●
Object - Sliding potentiometer	64	●
Object - Sliding selector	64	●
Page	1024	●
Page help	1024	●
Password	10	●
Pipelines (Number/Tot bytes)	64/512	●
Print		●
Print page (Total/Number of fields per page)	1024/128	●
Programmable fonts		●
Project images		●
Public variables of ESANET network (Number/Total bytes)	256/1024	●
Recipe field for recipe structure		●
Recipes (Number of variables per recipe)	1024/512	●
Rectangles		●
Redefinable characters		
Reports	128	●
Sequences - Random		
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		●

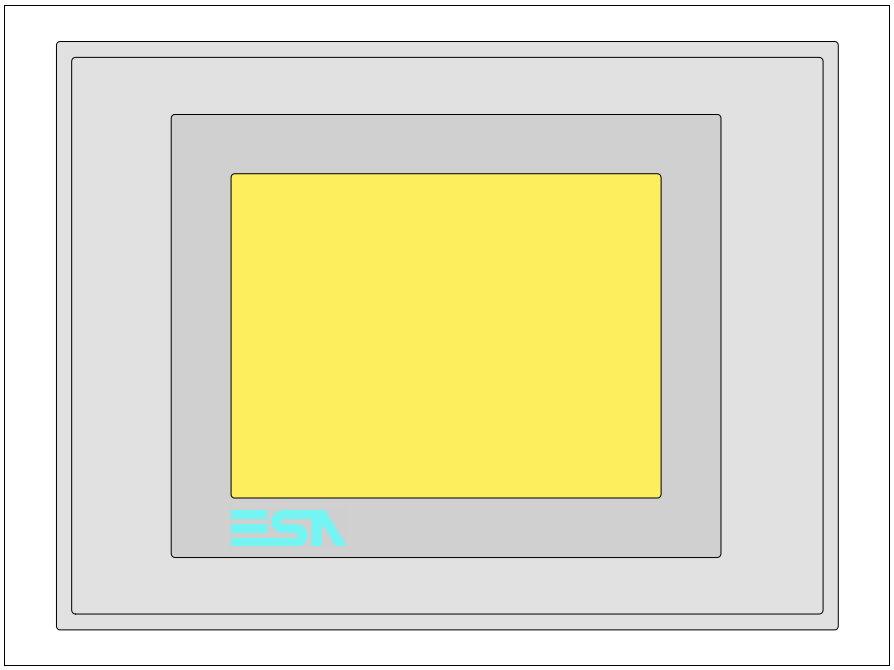
Unless otherwise stated, there is no limit to the number of includable elements, only the size of project memory sets a limit.
*) indicative value determined by the dimensions of the project, **) depends on memory available

Table 21.1: Functions and objects realizable with this VT (Part 4 of 4)

Code of terminal		
VT560W ✳✳✳✳✳		
Objects/Functions	**Quantity**	▼
Timer	32	●
Touch Area	64	●
Trend buffers	128	●
Trends (Trends x page/Channels x trend)	4/4	●
Trends sampled automatically (Memory/Trends/Readings)	4096bytes /**/320	●
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	112xpages	●
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)		●

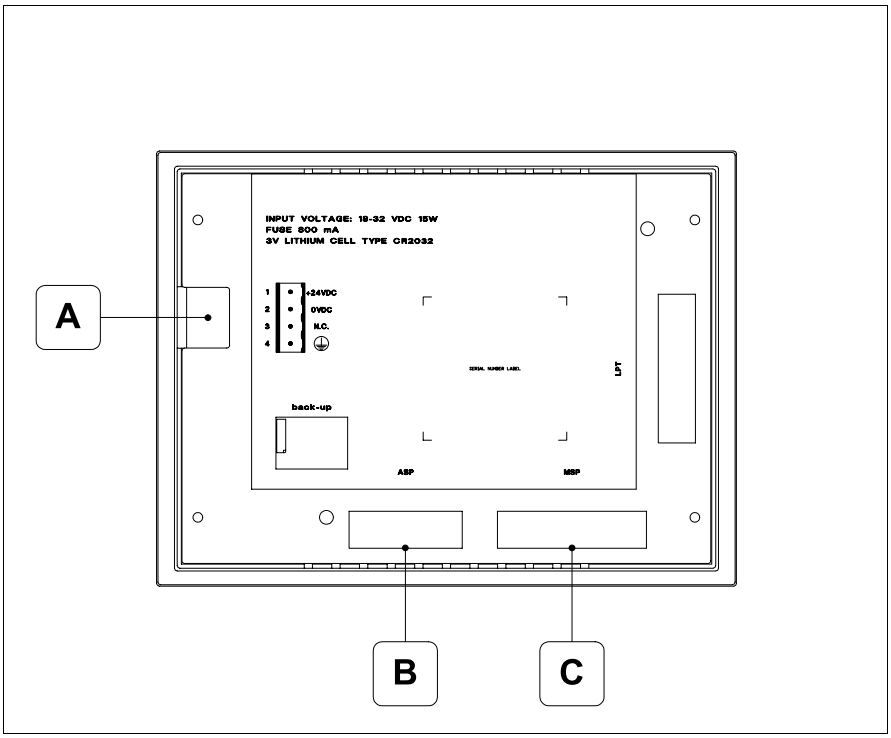
Unless otherwise stated, there is no limit to the number of includable elements, only the size of project memory sets a limit.
*) indicative value determined by the dimensions of the project, **) depends on memory available

Front view



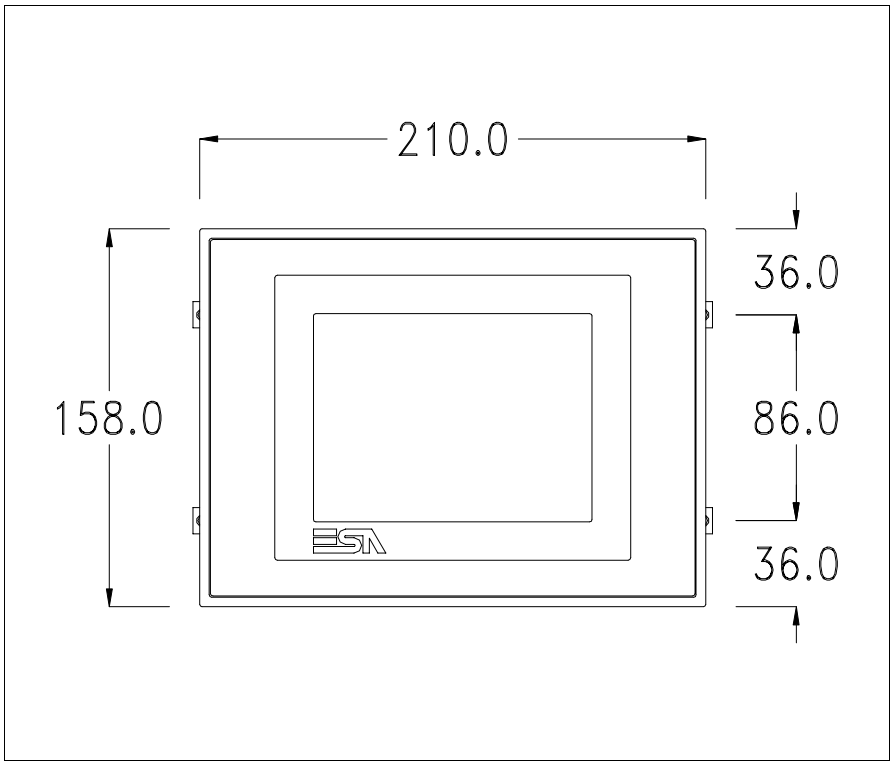
All buttons and signals are defined using the programming software (see Software Manual).

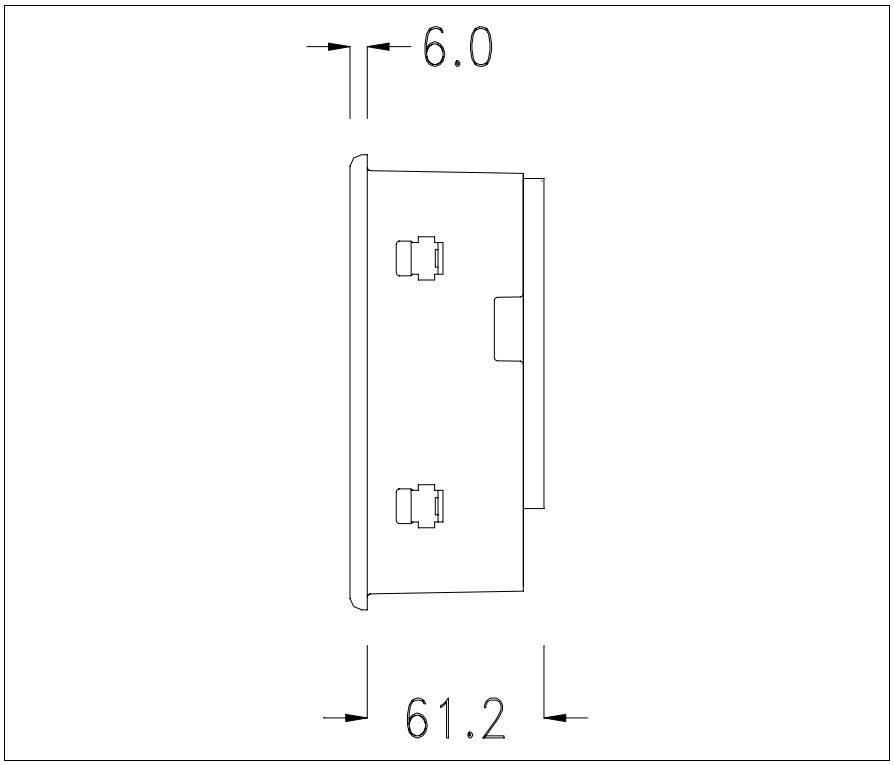
Rear view

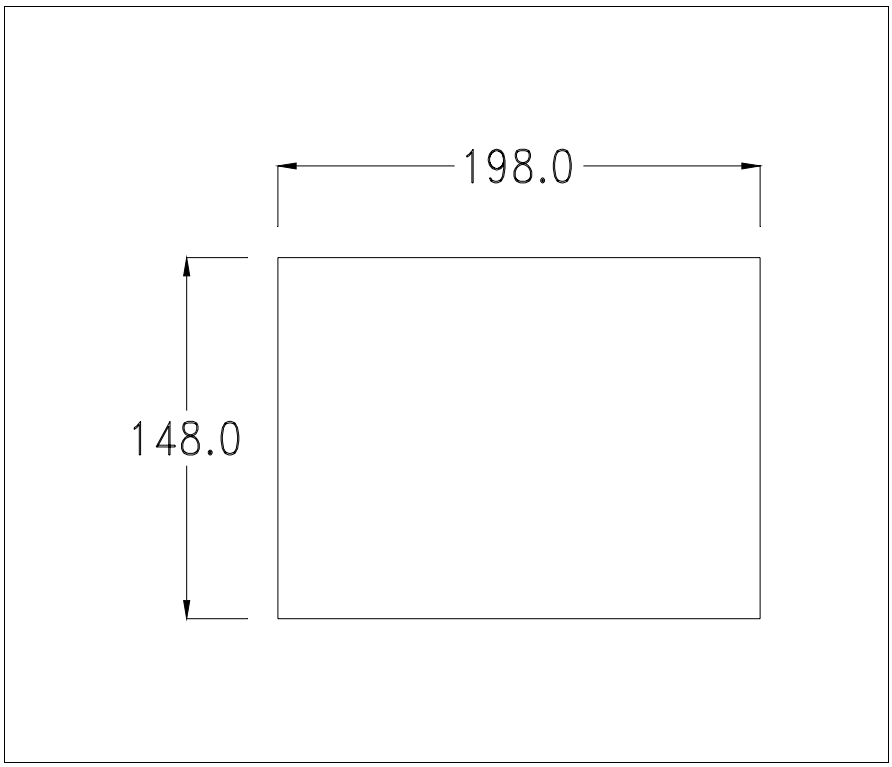


Position	Function
A	Power supply connector
B	ASP serial port for communicating with PC or other devices
C	MSP serial port for communicating with PLC/PC

Dimensions and Cut-out







To fix the sealing gasket and secure the VT to the container see “Chapter 29 -> 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 33 -> 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

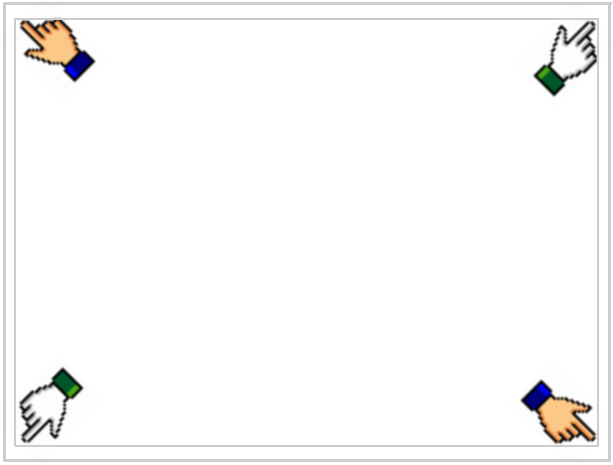
(Given that the transfer of the three files in practice occurs with a single operation, it will be defined as “Project transfer” for the sake of simplicity.)

For this it is essential that the VT be prepared to receive the transfer. (See also “Chapter 37 -> Command area“).

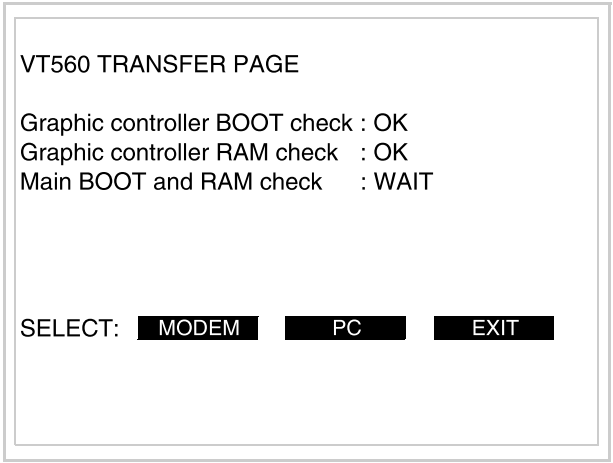
Preparation for reception

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 by pressing simultaneously on two diagonally opposed angles of the screen

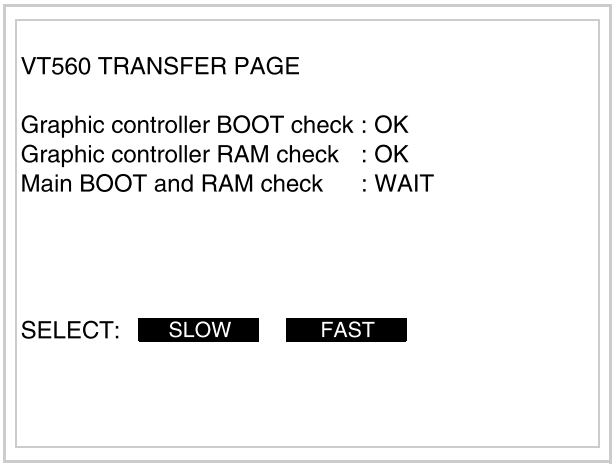


and wait a moment, or, using the appropriate button (see Page 21-16), till the VT displays the following mask



Choose the required transfer mode: MODEM if you intend to use a modem or PC if you intend to use a serial port; touch the relevant □ on the display

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), touch the relevant ▣ on the display. The VT is now ready to receive (see Software Manual for the transfer).

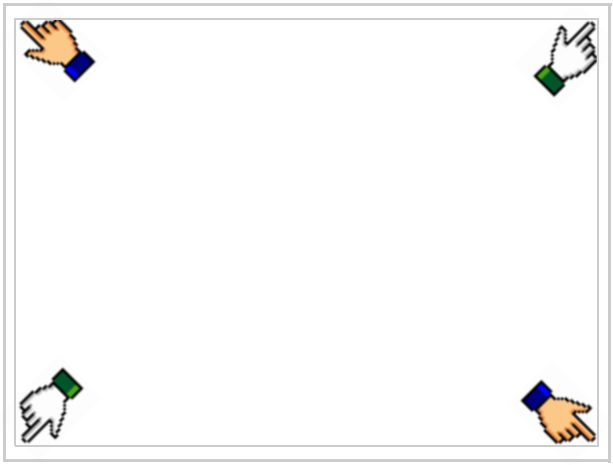
Information relating to driver

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

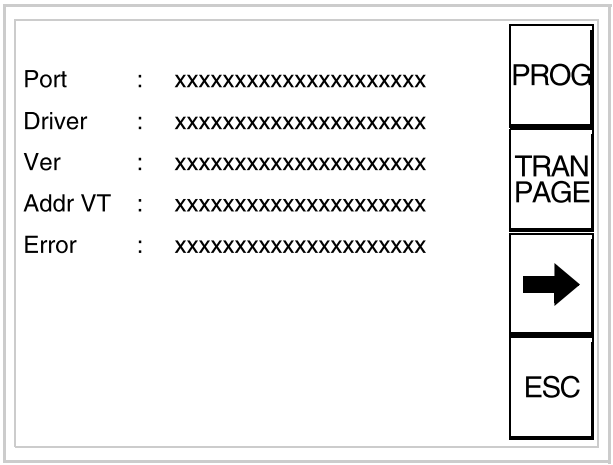
- Serial ports present
- The name of the driver loaded
- The version of the driver loaded
- Network address of the VT
- Last error to have occurred

To acquire this information carry out the following operations:

- Be situated in any page of the project
- Press two diagonally opposed angles that are free of any settable objects or buttons (at least one angle must be free)



and you will see



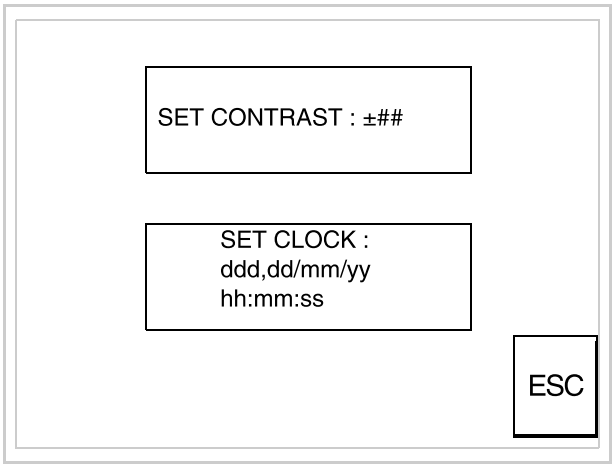
There is one of these pages for each communication port; movement between the various pages is effected by pressing [→].

From this page you can:

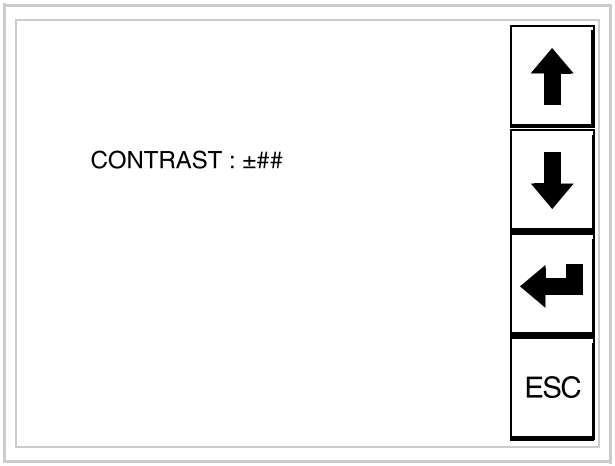
- Set the clock and the contrast
- Prepare the VT to receive the program
- Use the Memory Card

Setting the clock and the contrast:

To set the clock and the contrast, while displaying the above illustrated page, press PROG; the following mask appears



To set the contrast touch the words SET CONTRAST on the display; you will see the following mask

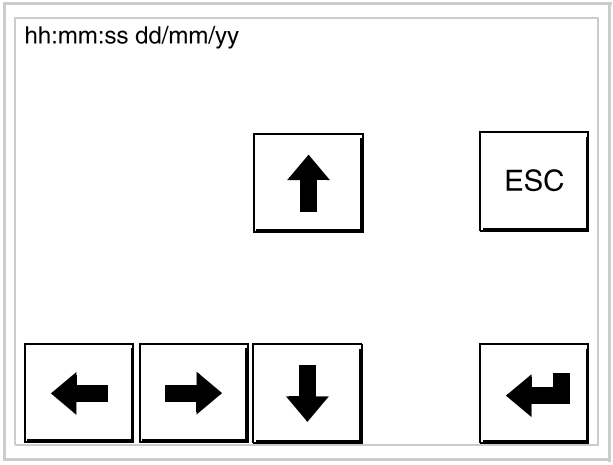


Use the arrow ⇦⇨ for any variation (see “Chapter 36 -> Operation of terminal with touch screen“).

To set the clock touch the words SET CLOCK on the display; the following mask appears

For the clock to be used properly, a special battery has to be inserted in the terminal (see “Chapter 33 -> Video terminal

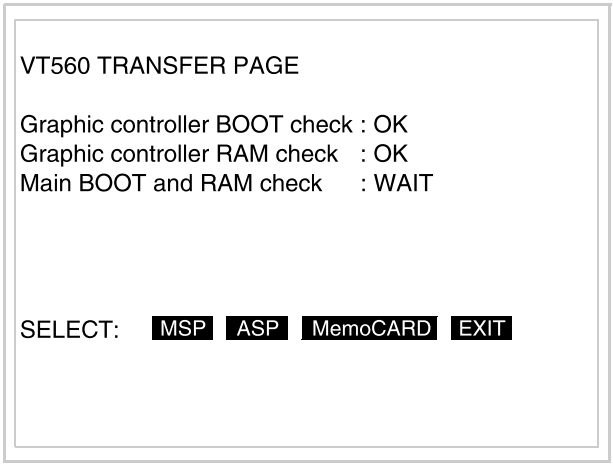
accessories“).



Use the arrow ⊡⊡ for any variation (see “Chapter 36 -> Operation of terminal with touch screen“).

Prepare the VT to receive the program:

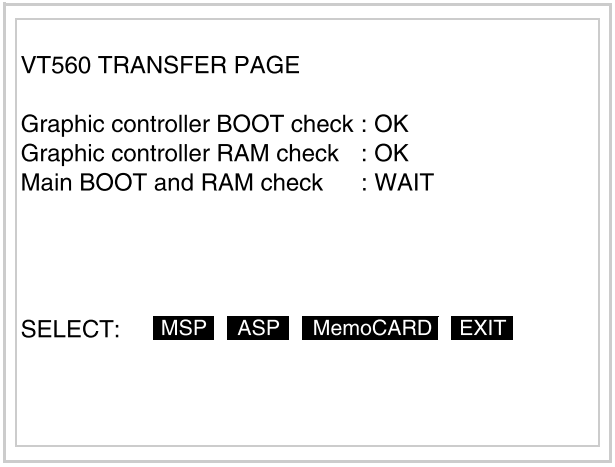
To prepare the VT to receive the program, while displaying the driver information page (see Page 21-13), press TRAN PAGE, and you will see the following mask



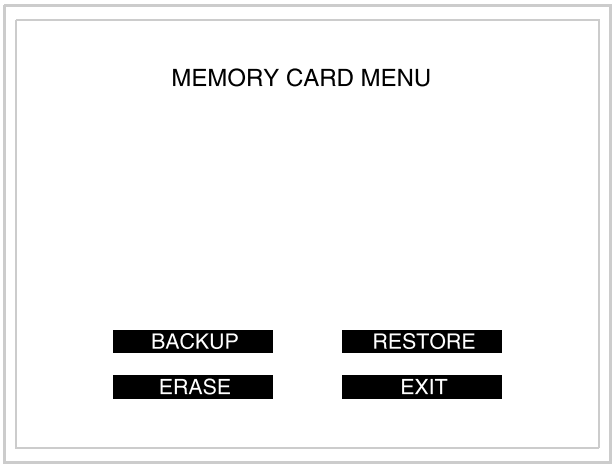
The on-screen ⊡ to press depends on the port you intend to use (MSP or ASP). The VT terminal is now ready to receive (consult Software Manual for information on the transmission procedure).

Using the Memory Card:

While displaying the driver information page, press TRAN PAGE and the following mask will appear:



Touch the ▣ MemoCARD on the screen (if the key is not on screen, see Page 21-12) and the following mask will appear:



For the meaning and the functions of the keys see “Chapter 33 -> Memory card“.

Possible error messages that may be encountered in the driver information page 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 ESC is pressed you quit the display of information regarding the driver.

Improving display color quality

To improve the color quality, adjust the contrast of the display: if the colors are too dark increase the contrast; if, on the other hand, the colors are too light, decrease the contrast.

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 21-15) and changing the value (from +63 to -64) 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).