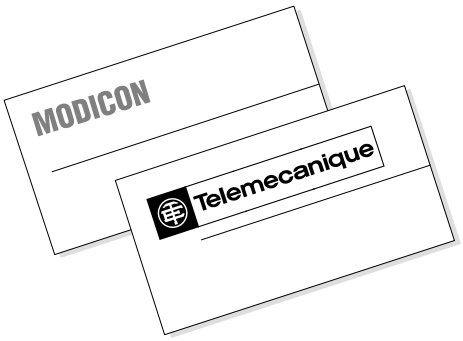
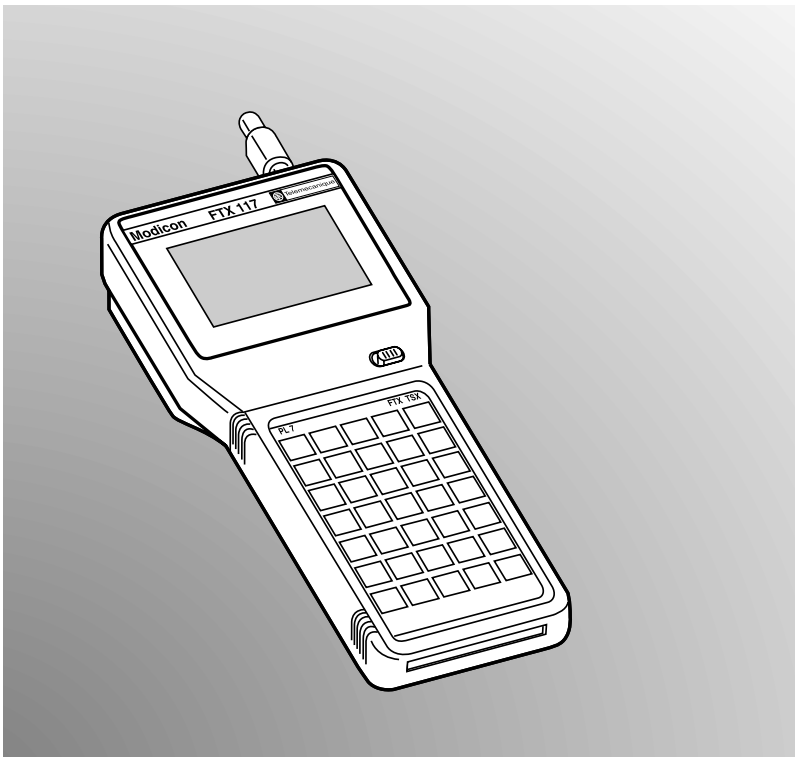
FTX 117 ADJUST

Adjustment Terminal

Instruction for use





GROUPE SCHNEIDER

■ Merlin Gerin ■ Modicon ■ Square D ■ Telemecanique

Description of FTX 117 ADJUST terminal

The FTX 117 ADJUST terminal is an adjustment tool for TSX Nano, TSX Micro and TSX Premium PLCs (TSX 07, TSX 37 and TSX 57).

The power supply of the FTX 117 ADJUST terminal is provided by the PLC via connection cable T FTX CB1 020 (length 2m) or cable T FTX CB1 050 (length 5m).

The FTX 117 ADJUST terminal can only be connected to the PLC terminal port.

WARNING:

It is not advisable to connect the FTX 117 ADJUST terminal to a TSX P ACC 01 junction box powered by a TSX Nano since this may cause the PLC to malfunction.

The following SRAM type PCMCIA memory cards should be used to back up object lists and for remote loading (programs and data) :

- T FTX RSM 3216
- T FTX RSM 12816
- TSX MRP 032
- TSX MRP 064
- TSX MRP 0128

WARNING: The space available on the PCMCIA memory cards is less than the capacity shown :

- 32k16 cards : 28K16 available
- 64k16 cards : 59K16 available
- 128k16 cards : 123K16 available

Communication

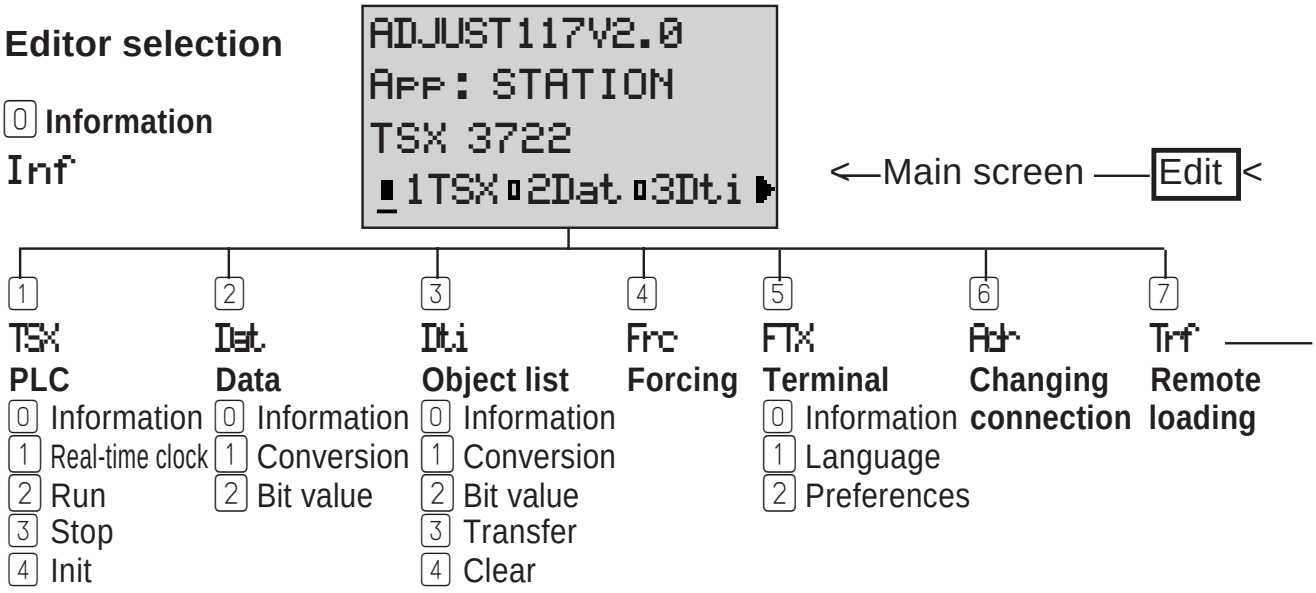
The FTX 117 ADJUST terminal is a UNI-TELWAY slave with address 1.

If another terminal is connected to the auxiliary terminal port, the configuration of this terminal must be modified by setting the BASE parameter to a value • 2 (if there is no other device at this address) so that the two terminals may communicate simultaneously.

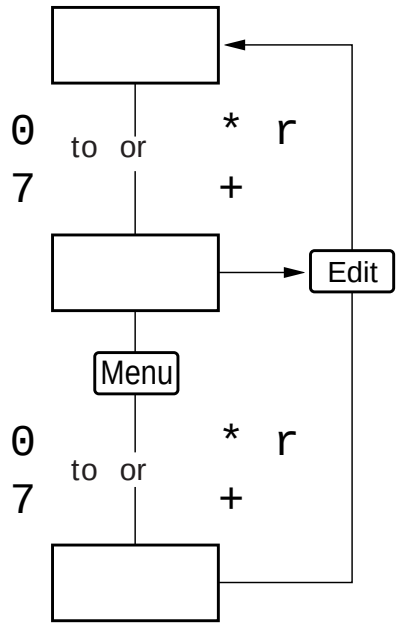
When the terminal is connected, the "Connection" screen appears. Refer to this section.

Operating modes of the FTX 117 ADJUST terminal

Editor selection



Selection principles



↑ ↓	Selects a line in a screen or field
→ ←	Selects an element in the line or the value of a parameter followed by the sign ▸ (multiple choice)
↵	Confirms the selection
Esc	Cancels the last modification Abandons an operation
Shift ↑	Goes to start of object list
Shift ↓	Goes to end of object list
Menu	Goes to menu. Warning: while the menu is displayed, screen animation is frozen.

Entering and modifying an object or list of objects

%M	Access type of variable mentioned on keyboard (eg: %M=Boolean)
Var ↵	Access all variables using a selection list or by directly entering the code of the variable
Shift	Select the upper part of the key
Ins	Insert a blank line above the object indicated by the cursor
Esc	Abandon entry or abandon insert mode
Del	Delete the last figure entered in numerical entry

Values are entered using alphanumeric keys 0 to F and confirm with ↵.

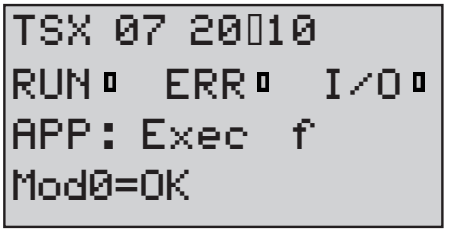
Information Editor [0] Inf

Displays information relating to the ADJUST software version of the FTX117 terminal.

PLC Editor [1] TSX

Displays the PLC type and status:

- type of PLC connected (example : TSX 07 20-10)
- RUN or STOP, ERR, default I/O
- name of application, presence of forced bits: f
- diagnostics module connected (TSX07 only)
- PLC version (TSX37, TSX 57 only)



Menu [0] **Inf**: displays information on PLC status

Menu [1] **Clk**: updates clock and date/time and cause of last stop (if PLC has realtime clock) (Context-specific selection)

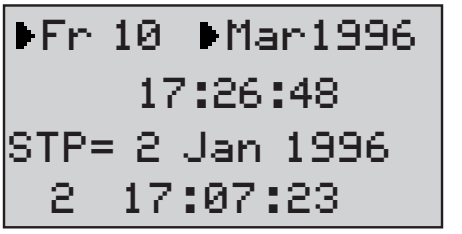
Menu [2] **Run**: sets PLC to RUN (Context-specific selection)

Menu [3] **Stp**: sets PLC to STOP (Context-specific selection)

Menu [4] **Ini**: initializes PLC application (Context-specific selection)

Modifying date and time in the PLC

[↑] [↓] Access selection of various elements to be adjusted:
- day of the week,
- day,
- month,
- year,
- time



[→] [←] Select value of element indicated by the cursor. The number of the day, year and time is entered using the numerical keyboard.

[↵] Confirm modifications

Meaning of the last stop code

The last two lines of the screen display the date and time of the last PLC stop. A code indicates the reason for the stop :

- 1= terminal changed from RUN to STOP,
- 2= stop due to software fault (PLC task overrun),
- 4= power failure,
- 5= stop due to hardware fault,
- 6= stop due to HALT instruction (TSX37 and TSX57 only).

Data Editor [2] Dat

Accesses all PLC variables in order to display, modify or force their value. Pressing the key corresponding to the type of object required displays the list of these objects starting from the position specified.

Eg: [%KW] key and [1] [0] ∅ displays %KW10 to %KWn (according to the number declared during configuration).

[Menu] [0] **Inf**: displays information on PLC status

[Menu] [1] **Cnv**: modifies the display base of non-Boolean variables: decimal, hexadecimal, binary, ASCII (contextual selection)

[Menu] [2] **Bit** or **S/R**: modifying the value of the Boolean variable indicated by the cursor: set, reset, force to 0, force to 1, unforce, unforce module (contextual selection)

G7 : when a GRAFCET step is indicated by the cursor, this menu :
- Activates/Deactivates the step indicated,
- Initializes the chart,
- Resets the steps of the chart,
- Freezes/Unfreezes the chart.

[Menu] [3] **Sts**: indicates the number of active steps and the number of active transitions (this menu is only available if the editor displays GRAFCET steps)

[Menu] [4] **Dgn**: displays the status of the chart (this menu is only available if the editor displays GRAFCET steps)

Displaying and modifying a Boolean object (eg: system bit and output bit)

[Edit] [2] Accesses data editor

[%S] [0] Selects Boolean %S0 (internal bit)

[↵] Confirms. Displays variable

[Menu] [2] **S/R**: changes bit %S0 to 1

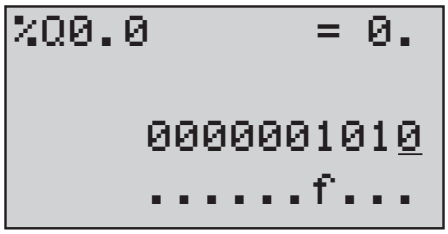
[Edit] [2] Accesses data editor

[%Q] [0] . [0] Selects output 0 of module 0

[↵] Confirms. Displays variable

[Menu] [2] **Bit**: modifies output:
- **Set** set to 1
- **Force 0** forcing to 0
- **Force 1** forcing to 1
- **Unforce module** global unforcing of I/O module

[Set] [↵]



f : forced state
! : channel faulty
s : channel not exchanged

For an object bit of a module, to display or modify a channel in the module, move the cursor under the object to be displayed or modified:

← →	Moves cursor from one channel to another
Shift →	Moves cursor in 8-channel steps
Shift ←	

Note:
The following display may appear on the screen in the case of a module fault:

```
Err=00000010
```

The significance of these bits is as follows:
- Bit 0: Internal fault (hardware failure)
- Bit 1: Functional fault (no power supply, etc)
- Bit 2: Terminal block fault
- Bit 3: Self-test
- Bit 4: -
- Bit 5: Configuration fault
- Bit 6: Module missing or not powered up
- Bit 7: Down fault

Displaying and modifying a numerical variable (eg: Internal word)

Edit 2	Accesses data editor
%MW 0	Selects internal word %MW0
↵	Confirms. Displays variable

Indicate the variable to be modified using the ↑ and ↓ arrows, enter the value and confirm with ↵

```
%MW0              0
%MW1            256
%MW2             12
%MW3              0
```

Modifying the display base of objects (eg: hexadecimal)

Menu 1 **Cnv** Access selection of base:
- **Hex**
- **Dec**
- **Bin**
- **Ascii**

Indicate the required base using the ↑ and ↓ keys, confirm with ↵

```
%MW0      16#0000
%MW1      16#0100
%MW2      16#000C
%MW3      16#0000
```

Displaying an object associated to an I/O channel

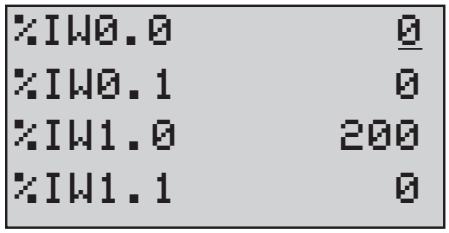
For complex objects or those not known to the keyboard, it is possible to enter the variable using a guided access. Eg: input channel word

[Var] [↵] Access selection of object type

[4] Select objects associated with I/O

[3] Select input word type %IW

Enter the number of the module, channel and position and confirm with [↵]. The position is optional: 0 if not known.

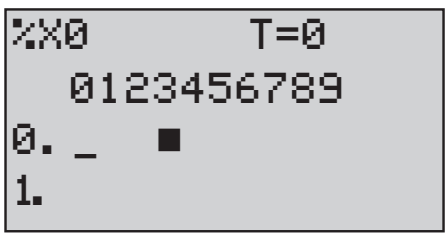


Displaying and modifying a GRAFCET step

Grafcet steps are accessed by pressing the [%X] key followed by the number of the step to be displayed.

%Xn: Displays the number of the step to which the cursor is pointing. Example %X0 for step 0.

T: Activity time of the step to which the cursor is pointing. Example T=0 indicates that step %X0 is not activated. The time is indicated in 100ms.



0. : Tens digit for the step number.

0123456789: Units digit for the step number.

state : ■ step active

nothing step inactive

The step display screen is in the form of a table where the rows indicate the number of tens of the step number and the columns the units.
The state of the step concerned is displayed at the point at which the tens row and the units column cross. In the example above, step 3 is active.

[↑] [↓] Used to change the display of the tens for the step number (within the limits of the PLC configuration).

[←] [→] Used to select the unit for the step number within the tens display selected.

Object list editor 3 Dti

Displays or modifies the values of a list of 16 variables.

Menu 0 **Inf**: displays information on the PLC status

Menu 1 **Cnv**: modifies the display base of non-Boolean variables (decimal, hexadecimal, binary, ASCII)

Menu 2 **Bit** or **S/R**: modifies the value of the Boolean variable indicated by the cursor (set, reset, force to 0, force to 1, unforce, unforce module)

G7: activates or deactivates the GRAFCET object indicated by the cursor

Menu 3 **Trf**: transfer function: stores or retrieves a list

Menu 4 **Clr**: deletes current object list

Del Deletes list object indicated by the cursor

The method of entering and modifying objects and their value is the same as for the data editor.

Storing/Retrieving a list of objects

This function requires a PCMCIA memory card in the terminal. It is possible to store up to 63 different lists on the same card.

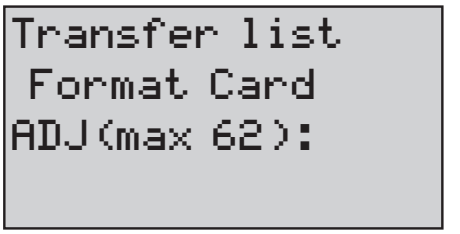
Formatting

Menu 3 Accesses type of transfer

Selects the option Format Card using the ← → keys to format a blank PCMCIA card.

Confirm with ↵

This formatting is specific to storing lists of objects.

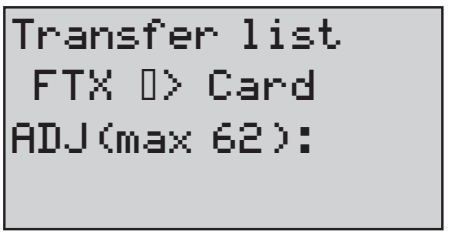


Storage

Menu 3 Accesses type of transfer

Selects the FTX -> Card transfer using the ← → keys to execute storage on the PCMCIA.

Enter the storage number between 0 and 62, confirm with ↵

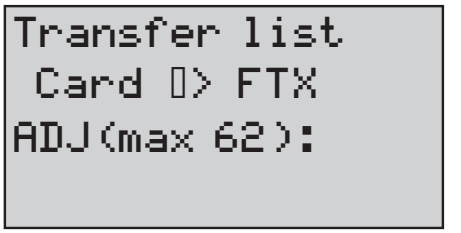


Retrieval

Menu 3 Accesses type of transfer

Selects the Card -> FTX transfer using the ← → keys to retrieve to the terminal.

Enter the storage number between 0 and 62, confirm with ↵



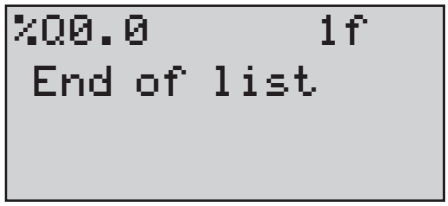
If the storage number is omitted, a list of stored files is displayed and one of these should be selected. The letter **'d'** next to a file indicates that this file already contains a list which corresponds to the type of processor connected. An asterisk **'*'** indicates that the list contained in the file does not correspond to the type of processor connected.

A message "Card Error" followed by a code, may appear in the following situations:

Code	Cause
2	The type of card is not recognized
3	Card not formatted
4	The card is not compatible
6	The card inserted is not a TELEMECANIQUE card
7	Recharge the battery
53	Card not formatted
54	Processing error

Find forced bit editor [4] Frc

Searches for and displays forced bits. The search is governed by the forced bits present in the PLC.



[Edit] [4] Accesses find editor

%Q: Selects output bit type %Q

[↵] Confirms. Displays result of search

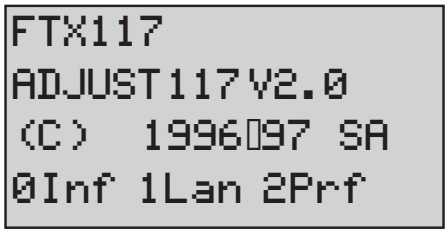
The [↑] [↓] keys start searching on the previous or next module.

The Shift [↑] and Shift [↓] keys start:

- Discrete modules: start searching on the previous or next channels
- Non-discrete modules: start searching on the previous or next positions

Terminal editor [5] FTX

Sets the parameters of the FTX117 terminal.



[0] **Inf**: displays the software version

[1] **Lan**: selects the working language of the terminal from 5 languages: French, English, German, Italian and Spanish

[2] **Prf**: selects:

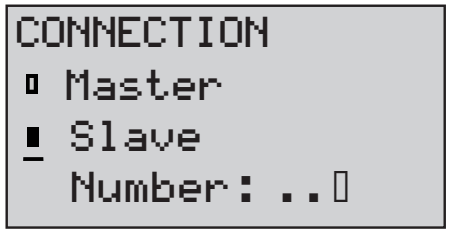
- **Sound** audible response or not when keys pressed
- **Back light** controls the length of time the screen remains lit following the last time a key was pressed. This time will be between 5 and 60 minutes. The value 0 deactivates this function.

Selections are made using the [←] [→] keys

[3] **Tst**: starts terminal self-tests (Reserved for Schneider Automation)

Connection [6] Adr

Changes the PLC address in order to be able to adjust a slave PLC on UNI-TELWAY.



[↑] [↓] Selects the Master or Slave option

Master option: Confirm with [↵]

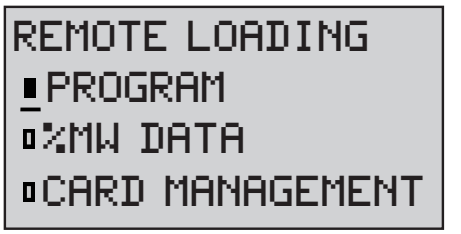
Slave option: Enter the number of the slave between 1 and 98, confirm with [↵]

[Esc] Cancels modification

Remote loading Editor [7] Trf

This is used to load programs and %MW data remotely from the PLC to the terminal and vice versa.

[↑] [↓] Used to select the type of remote loading or management of the PCMCIA card. These selections are context-specific.



Program: Loads a program remotely.

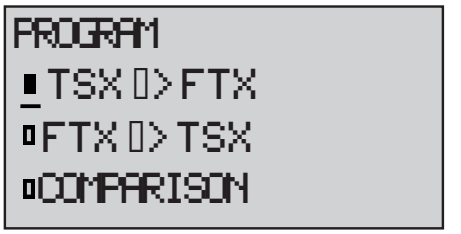
%MW data: Loads %MW data remotely.

Card management: Manages the PCMCIA card.

[↵] Confirms the selection

Remote loading of a program

[↑] [↓] Used to select the direction for remote loading or comparison of the program.



TSX->FTX: Downloads the program from the PLC and stores it on a PCMCIA card.

FTX->TSX: Uploads the program from the PCMCIA card to the PLC.

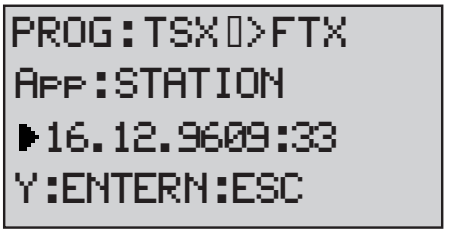
Comparison: Compares the PLC program with that on the PCMCIA card.

[↵] Confirms the selection

Program TSX->FTX

This screen displays:

- The name of the application, which is the name of the file stored on the PCMCIA card.
- The date and time of the PLC realtime clock, which will be the attributes of the file stored on the PCMCIA card.



[→] [←] Modifies the date and time.

[↵] Confirms the program download

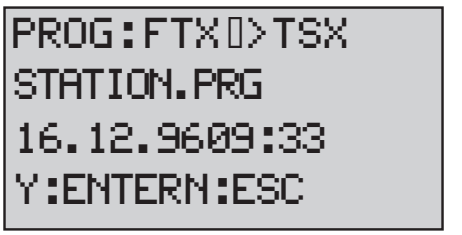
Notes:

• The program on the PCMCIA card cannot be executed in the PLC when the card is inserted into the processor (special format).

• The PCMCIA card can only contain a single program file.

Program FTX->TSX

This screen displays the name of the file found on the PCMCIA card as well as the date and time of this file.



[↵] Confirms the program upload

For TSX Nano, the user has the option of protecting the transferred program.

Program FTX->TSX (continued)

For TSX Nano and TSX Micro, if the transferred program is executed in the PLC internal RAM, the user is prompted to save it in the PLC internal FLASH at the end of the transfer if its size is <15Kb.

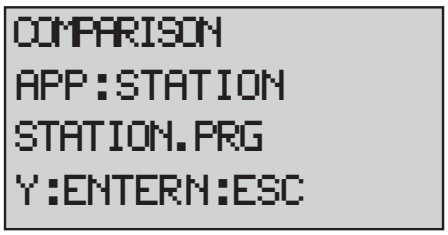
Note: this operation overwrites the values of any internal words saved in the Flash memory of the TSX Micro (if the %MW->FLASH function described on page 12 is used).

If the message "Appli. and TSX incompatible" appears, the transfer will not be performed. Possible causes of errors are:

- Type of TSX configured differs from and is incompatible with the connected PLC.
- Size of RAM configured is greater than the size of RAM of the connected PLC.
- Size of cartridge configured is greater than the size of cartridge of the connected PLC.
- Cartridge configured but missing in the connected PLC.
- Cartridge not configured but present in the connected PLC.
- Application level higher than that of the connected PLC.

Comparison

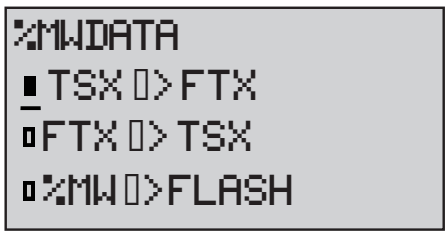
This screen displays the name of the application in the PLC as well as the name of the file found on the PCMCIA card.



[↵] Confirms the comparison which may result in:

- **IDENTITY**: the 2 applications are identical
- **DIFFERENCE**: the 2 applications are different

Remote loading of %MW data



[↑] [↓] Used to select the direction for the remote loading of %MW data.

TSX->FTX: Downloads %MW data from the PLC and stores it on a PCMCIA card.

FTX->TSX: Uploads data from the PCMCIA card to the PLC.

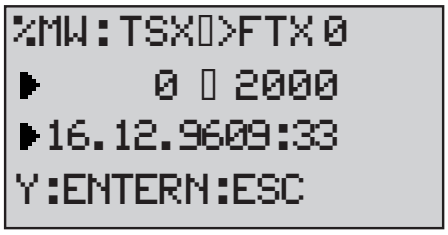
%MW->FLASH: Transfers %MW data from the PLC to the internal Flash of the PLC.

[↵] Confirms the selection

%MW data TSX->FTX

This screen displays the limits of the %MW data to be saved as well as the date and time of the PLC realtime clock which will be the attributes of the file stored on the PCMCIA card.

It is possible to save up to 10 files of %MW data for a single application on the PCMCIA card.



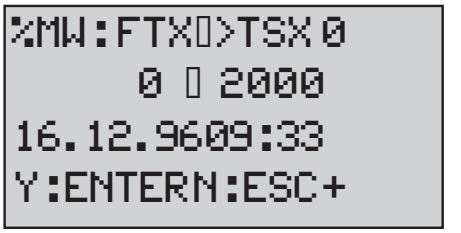
The number at the top right of the screen indicates the number of the data file.

[→] [←] [↑] [↓] Move to limits, date and time fields to modify them.

[↵] Confirms saving of data

%MW data FTX->TSX

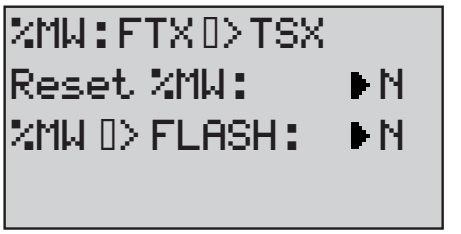
This screen displays the limits of the %MW data saved in the first data file found on the PCMCIA card as well as the date and time of this file.
The number at the top right of the screen indicates the number of the data file.
The + sign at the bottom right indicates that there are several data files on the card.



[↑] [↓] Used to access the previous/next file stored on the PCMCIA card.

[↵] Confirms file selection

After confirmation of the transfer of the selected file, a screen is used to select the transfer modes:



Reset %MW: Initialization of the whole internal %MW data zone of the PLC before transferring the new data.

%MW->FLASH: Memorization of the new data in the internal FLASH memory of the PLC. Possible for %MW0 to %MW999.

Warning: This selection is context-specific. The %MW->FLASH transfer is only available on a TSX Micro PLC version • 2.0. Moreover, the program contained in the RAM memory is also transferred to the FLASH memory.

[↑] [↓] Used to change from one mode to the other.

[→] [←] Used to change the choice of mode selected (Y or N).

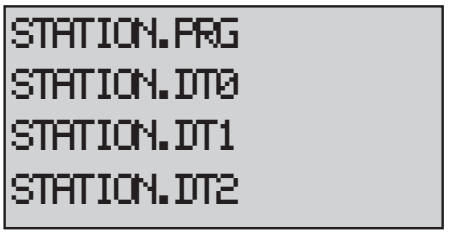
Note: The message "TSX comm.error" may appear during loading if an attempt is made to transfer %MW not configured in the PLC.

%MW data ->FLASH

Memorizes the %MW data from %MW0 to %MW999 (or maximum configured %MW if <999) in the internal FLASH memory of the PLC. The program contained in the RAM memory is also transferred to the FLASH memory.

Card management

This screen displays the names of the files found on the PCMCIA card.



[↑] [↓] Used to display the names of the previous or next files.

[Menu] [0] **Inf**: displays additional information on the selected file.

[Menu] [1] **Del**: deletes the selected file.

[Menu] [2] **For**: formats the PCMCIA card (specific to remote loading).

A PCMCIA card dedicated to remote loading can contain a single and unique program file and up to 10 data files associated with this program (including station name). This card cannot contain object list backup files.

Note: *.TMP files may appear if a problem is encountered when loading a program or data remotely.

List of accessible Boolean objects

Type	Syntax	TSX 07	TSX 37	TSX 57	Keys	Actions
Internal bit	%Mi	128	256	4096 max	%M or Var 1 1	R, W, F [1]
System bit	%Si	128	128	128	%S or Var 1 2	R, W [2]
Word extract bit	<word>:Xj j=0to15				%MWi:Xj	R

List of accessible word objects

Type	Syntax	TSX 07	TSX 37	TSX 57	Keys	Actions
Internal word	%MWi	256	32768 max	32768 max	%MW or Var 2 1	R, W
Constant word	%KWi	64	32768 max	32768 max	%KW or Var 2 2	R, W
System word	%SWi	128	128	128	%SW or Var 2 3	R, W [2]
Common word on network 0	%NW{j}k j=station no. k=word no.		 32 4	 32 4	%NW or Var 2 4	R, W
Common word on other network	%NW{i.j}k i=network no. j=station no. k=word no.		 256 32 4	 256 32 4	%NW or Var 2 4	R, W
Internal double word	%MDi		32768 max	23768 max	%MD or Var 2 5	R, W
Constant double word	%KDi		32768 max	32768 max	%KD or Var 2 6	R
System double word	%SDi		128	128	%SD or Var 2 7	R, W [2]
32-bit floating point	%MFi		32768 max	32768 max	%MF or Var 2 8	R, W
Floating point constant	%KFi		32768 max	32768 max	Var 2 9	R

1 No bit forcing on TSX07

2 Some system bits and words can be written

Principle of addressing in-rack module

		TSX 07	TSX 37	TSX 57	
In-rack module main	Module	0 to 4	0 to 10	0 to 10	
secondary	module-rack			1 to 7 0 to 10	

Principle of addressing module on bus

		TSX 07	TSX 37	TSX 57
TSX07 (Nanet)	\4.0\m.c		m: 1 to 4 c: 0 to 13	

module address: m=I/O module c=I/O channel

List of objects associated with an I/O channel

Type	Syntax	TSX 07	TSX 37	TSX 57	Keys	Actions
I/O logic channel object	%CH<@mod>.<channel>					inacces-sible
Periodic inputs %I						
Channel fault bit	%I<@mod>.<channel>.ERR [1]				Var4 7	R
Input bit	%I<@mod>.<channel> [1] %I<@mod>.<channel>.<pos.>	14	32 256	64 256	%I or Var4 1/12	R, W, F
Input word	%IW<@mod>.<channel> %IW<@mod>.<channel>.<pos.>	2	32 256	64 256	%IW or Var4 3/14	R, W
Input double word	%ID<@mod>.<channel> %ID<@mod>.<channel>.<pos.>		32 256	64 256	%ID or Var4 8	R, W
Input floating point	%IF<@mod>.<channel>.<pos.>					
Periodic outputs %Q						
Output bit	%Q<@mod>.<channel> [1] %Q<@mod>.<channel>.<pos.>	10	32 256	64 256	%Q or Var4 2/13	R, W, F
Output word	%QW<@mod>.<channel> %QW<@mod>.<channel>.<pos.>	2	32 256	64 256	%QW or Var4 3/15	R, W
Output double word	%QD<@mod>.<channel> %QD<@mod>.<channel>.<pos.>		32 256	64 256	%QD or Var4 9	R, W
Output floating point	%QF<@mod>.<channel>.<pos.>					
Aperiodic elements %MW						
Word	%MW<@mod>.<channel> %MW<@mod>.<channel>.<pos.>		32 256	64 256	%MW or Var4 5	R
Double word	%MD<@mod>.<channel> %MD<@mod>.<channel>.<pos.>		32 256	64 256	%MD or Var4 10	R
Floating point	%MF<@mod>.<channel>.<pos.>					
Constant elements %KW						
Word	%KW<@mod>.<channel> %KW<@mod>.<channel>.<pos.>		32 256	64 256	%KW or Var4 6	R
Double word	%KD<@mod>.<channel> %KD<@mod>.<channel>.<pos.>		32 256	64 256	%KD or Var4 11	R
Floating point	%KF<@mod>.<channel>.<pos.>					
Character string	%KB<@mod>.<channel>.<pos.> L<position>even					

<@mod> =module address <channel> =channel no. (0 to 127)
<position> =position number (0 to 255). 0 is proposed if the position is not entered.
1 Object only available on discrete modules

List of objects associated with an I/O module

Type	Syntax	TSX 07	TSX 37	TSX 57	Keys	Actions
Module channel object	%CH<@mod>.MOD					inacces -sible
Periodic inputs %I						
Module fault bit	%I<@mod>.MOD.ERR				%I or Var6 5	R
Input bit	%I<@mod>.MOD.<position>					
Input word	%IW<@mod>.MOD %IW<@mod>.MOD.<position>		256	256	%IW or Var6 1	R, W
Input double word	%ID<@mod>.MOD.<position>					
Input floating point	%IF<@mod>.MOD.<position>					
Periodic outputs %Q						
Output bit	%Q<@mod>.MOD.<position>					
Output word	%QW<@mod>.MOD %QW<@mod>.MOD.<position>		256	256	%QW or Var6 2	R, W
Output double word	%QD<@mod>.MOD.<position>					
Output floating point	%QF<@mod>.MOD.<position>					
Aperiodic elements %MW						
Word	%MW<@mod>.MOD %MW<@mod>.MOD.<position>		256	256	%MW or Var6 3	R
Double word	%MD<@mod>.MOD.<position>					
Floating point	%MF<@mod>.MOD.<position>					
Constant elements %KW						
Word	%KW<@mod>.MOD %KW<@mod>.MOD.<position>		256	256	%KW or Var6 4	R
Double word	%KD<@mod>.MOD.<position>					
Floating point	%KF<@mod>.MOD.<position>					
Character string	%KB<@mod>.MOD.<position>: L<position>even					

<@mod> =module address <position> =position number (0 to 255).

List of function block objects

Type	Syntax	TSX 07	TSX 37	TSX 57	Keys	Actions
PL7_3 timer	%Ti		64	256	%T or Var3 5	
current value	%Ti,V					R
preset	%Ti,P		1-9999	1-9999		R, W [1]
output done	%Ti,D					R
output running	%Ti,R					R
Timer	%TMi	32	64	256	%TM or Var3 1	
current value	%TMi,V	0/9999	0/9999	0/9999		R, W
preset	%TMi,P	0/9999	0/9999	0/9999		R, W [1]
output running	%TMi,Q					R

1 if the adjust option was selected during configuration

List of function block objects (continued)

Type	Syntax	TSX 07	TSX 37	TSX 57	Keys	Actions
Monostable	%MNi		8	256	%MN or Var3 6	
current value	%MNi,V					R
preset	%MNi,P		1/9999	1/9999		R, W [1]
output running	%MNi,D					R
Up/Down Counter	%Ci	16	32	256	%C or Var3 2	
current value	%Ci,V	0/9999	0/9999	0/9999		R, W
preset	%Ci,P	0/9999	0/9999	0/9999		R, W [1]
output empty	%Ci,E					R
output done	%Ci,D					R
output full	%Ci,F					R
Register	%Ri	4	4	256	%R or Var3 3	
input word	%Ri,I		-32768 32767	-32768 32767		R, W
output word	%Ri,O					R
output full	%Ri,F					R
output empty	%Ri,E					R
Drum	%DRi	4	8	256	%DR or Var3 4	
output full	%DRi,F					R
not running	%DRi,S					R
activity time	%DRi,V					R
Pulse width modulator	%PWM	1			Var3 7	
preset	%PWM,P	1/32767				R
percentage	%PWM,R	0/100				R,W
Pulse generator	%PLS	1			Var3 6	
preset	%PLS,P	1/32767				R,W [1]
number of pulses	%PLS,N	0/32767				R, W
output running	%PLS,Q					R
output done	%PLS,D					R
Fast counter	%FC	1			Var3 5	
threshold 0	%FC,S0	0/65535				R, W
threshold 1	%FC,S1	0/65535				R, W
current value	%FC,V					R
preset	%FC,P	0/65535				R, W
output full	%FC,F					R
output overrun S0	%FC,TH0					R
output overrun S1	%FC,TH1					R

1 if the adjust option was selected during configuration

List of function block objects (continued)

Type	Syntax	TSX 07	TSX 37	TSX 57	Keys	Actions
Message block	%MSG	1			Var310	
output link error	%MSG,E					R
output available	%MSG,D					R
Shift register	%SBRi i = 0 to 7	8			Var38	
register bit	%SBRi,j j = 0 to 15	16				R
Step to step	%SCi i = 0 to 7	8			Var39	
Step to step bit number	%SCi,j j = 0 to 255	256				R

List of Grafcet objects

Type	Syntax	TSX 07	TSX 37	TSX 57	Keys	Actions
Step status	%Xi	62	96/ 128	128	%X or Var5 1	R, W [1]
Step activation time	%Xi,T		96/ 128	128		indirect access
Macro-step status	%XMj					

1 except TSX07: read only

03

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