1 - Introduction

Presentation

The CCX 17 operator panels are compact man-machine interface systems that can be connected to Telemecanique Series 7, APRIL Series 1000, TSX Modicon Nano/Micro/Premium PLCs.

At machine or process level, they can be used for :

- **Displaying messages and variables** on display screens of different sizes and types, depending on the type of operator panel selected for use :
  - Fluorescent display unit in T CCX 17 20 F ● models
  - Back-lit LCD display units in T CCX 17 20 L ● / 17 30 L ● models
- **Interactive control**

  Function keys on each side of the display screen are used to select commands assigned to messages displayed on-screen.
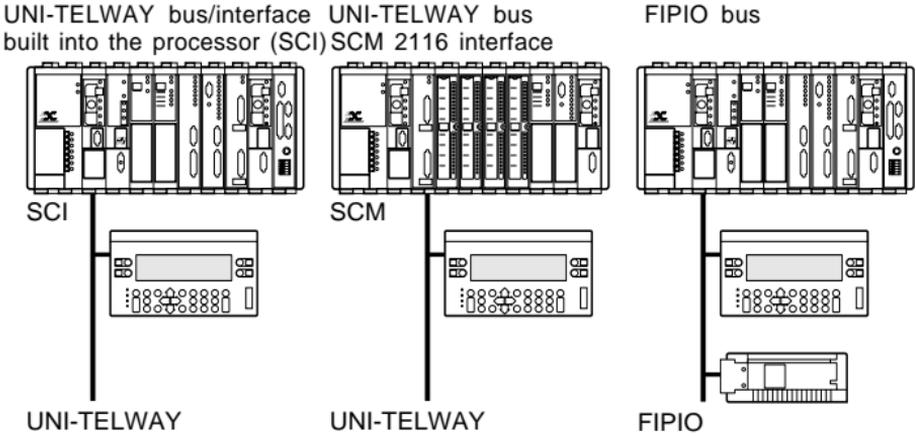- **Modifying parameters**

  A numeric keypad with additional function keys is used to enter values and modify parameters.
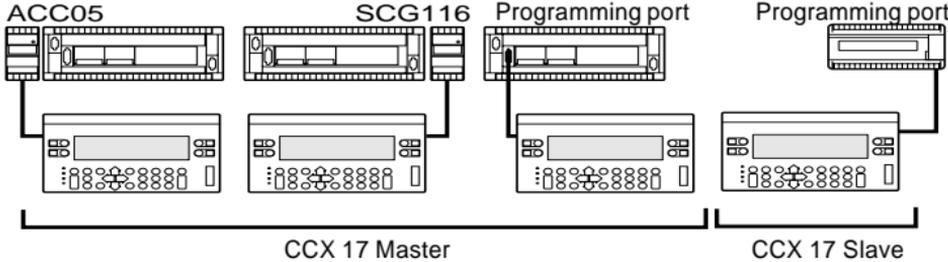- **Recording operating incidents**

  The operator panel stores a record of failures with the time and date when they occurred. This record can be printed out as a continuous log if a printer is connected.

### Connecting CCX 17 operator panels to TSX 7 Model 40 PLCs

UNI-TELWAY bus/interface   UNI-TELWAY bus   FIPIO bus
built into the processor (SCI) SCM 2116 interface

SCI   SCM

UNI-TELWAY   UNI-TELWAY   FIPIO

Connecting CCX 17 operator panels to TSX 17 PLCs and TSX 07 nano-PLCs via UNI-TELWAY bus

ACC05   SCG116   Programming port   Programming port
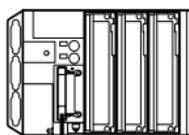

| CCX 17 Master | | CCX 17 Slave |

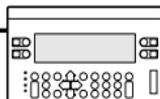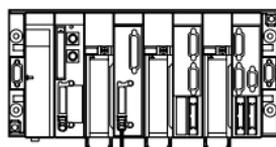**Connection of CCX 17 operator panels to TSX Micro/Premium PLCs via UNI-TELWAY bus**
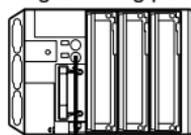
Programming port   SCP 114   SCY 21 600

General characteristics

Operator panels	T CCX 17 20 F.	T CCX 17 20 L.	T CCX 17 30 L.
Display technology	Fluorescent	Back-lit LCD	Back-lit LCD
Connections	UNI-TELWAY bus or FIPIO fieldbus depending on type		
Configuration	PL7 MMI 17 software under X-TEL or PL7 MMI 17 Windows		
Number of lines	2 to 4	2 to 4	4 to 8
Characters per line	40	40	40
Character height	6.2mm/12.4mm	5.3mm/10.6mm	5.3mm/10.6mm
Keypad technology	Membrane	Membrane	Membrane
Configurable	Side buttons	Side buttons	Side buttons
function keys	2x2	2x2	2x4
Direct operator control	Yes	Yes	Yes
Variable size characters	Yes	Yes	Yes
Modifiable font	Yes	Yes	Yes
Operator data entry	Keypad	Keypad	Keypad
Display	text/bargraph	text/bargraph	text/bargraph
Status messages	150	150	300
Alarm messages	150	150	300
Status message log	150	150	300
Operator entry log	50	50	100
Number of message	50	50	100
groups			
Number of messages/group	8	8	16
Max. number of messages			
Display	Limited by the memory		
Entry	16	16	32
Update	16	16	32

2 - Compatibility with PLC processors

Compatibility with series 7, version 5 PLCs

CCX 17 operator panels can be connected to Series 7 V5 PLCs.
- Connection to UNI-TELWAY bus : compatible with all V5 PLC processors.
- Connection to FIPIO fieldbus : compatible with PLC processors with bus driver, version 5.2 or later (version 5.4 or later if connecting several CCX 17 operator panels).
  The TSX FPP 10 PCMCIA card included with the CCX 17 panel must be version 1.7 or later (II02) in order to obtain optimum performance.

Compatibility with TSX Premium PLCs

CCX 17 V2.3 operator panels can be connected to TSX Premium PLCs.
- Connection to UNI-TELWAY bus : the consistency of the communication speeds between the PLCs and operator panels must be checked. By default, the CCX 17 is configured at 9600 bauds, whereas the PLC is configured at 19200 bauds.
- Connection to FIPIO bus : the minimum requirement is CCX 17 V2.4, which is compatible with TSX 57-•52 PLCs (FIPIO bus manager) version 3.0 or later.
  The TSX FPP 10 PCMCIA card included with the CCX 17 panel must be version 1.8 or later.

SETTING-UP

• **Front panel description (display and commands)**

T CCX 17 20 F●/ 20 L●Operator panels

T CCX 17 30 ●Operator panels
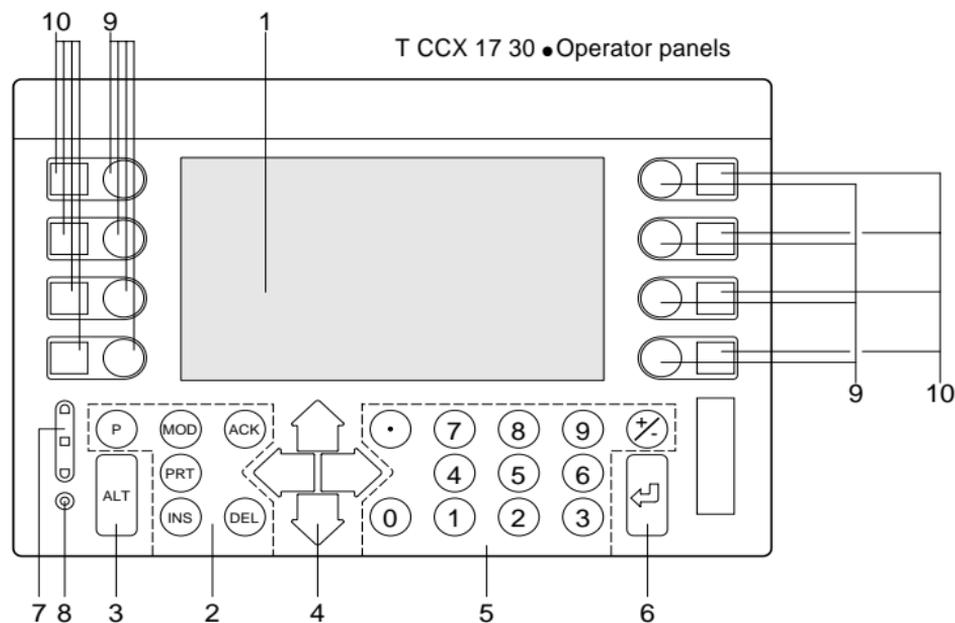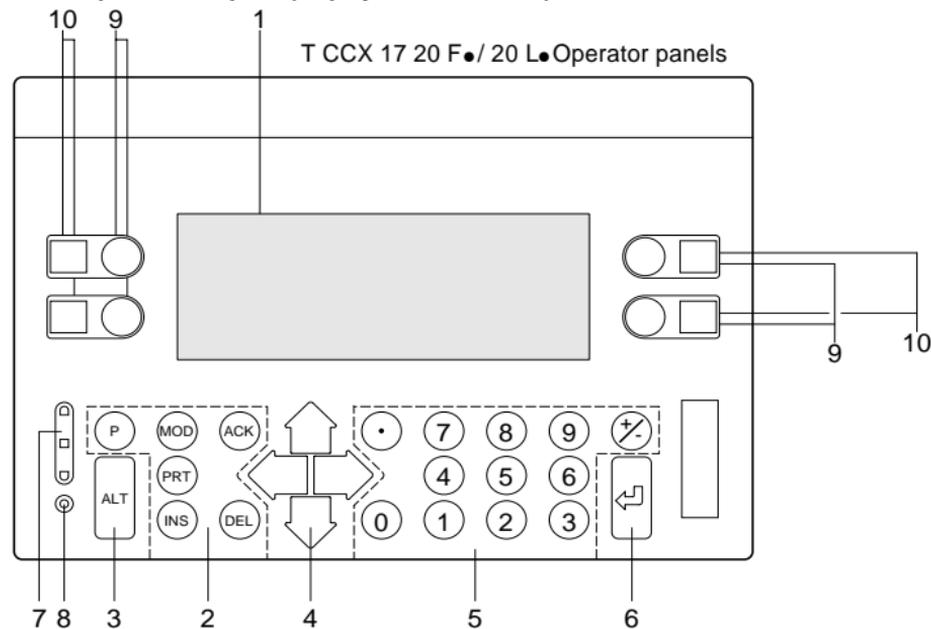
1 Screen :
  • Fluorescent or back-lit LCD.

2 System keys :
  P : Access to protected SETUP parameters,
  MOD : Allows data entry or cancels modifications, accesses or exits data entry mode
  ACK : Acknowledges alarms,
  PRT : Prints out recorded information,
  INS : Inserts a character,
  DEL : Deletes a character.

3 Alt key + other keys :
  • Alt + left arrow :
    - Reduces fluorescent display brightness or adjusts LCD display contrast.
  • Alt + right arrow :
    - Increases fluorescent display brightness or adjusts LCD display contrast.
  • Alt+ ACK : Displays the active and recorded alarms,
  • Alt + PRT : Displays the recorded data entries,
  • Alt + ENTER : Calls up SETUP.
  • Alt + P : Displays the status of the diagnostic OFBs.

4 Arrow keys :
  • Left and right arrows : decrease or increase variables,
  • Up and down arrows : move around data entry screen.

5 Numeric keys :
  • 0 to 9 and • : Allow numerical data entry,
  • + / - : Specify a positive or negative value.

6 [↵] key : Validates the entries made and can be used to exit the alarm screen.

7 Small LED display column : Comprises three LEDs (red, yellow and green).
  The significance of these LEDs differs depending on the operator panel operating phase :
    - On power-up : They display the results of the self-tests,
    - In normal operation : They are controlled by the PLC application program.

8 Battery state LED :
    - Lit during the self-test phase or if the battery has failed,
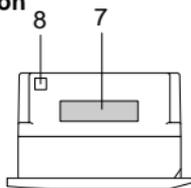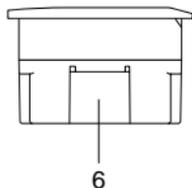   - Off if the battery condition is correct and if the self-tests have been completed.

9 Configurable manual control keys :
  • 2x2 keys on T CCX 17 20 ●
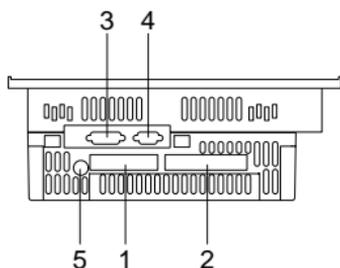 • 2x4 keys on T CCX 17 30 ●

10 Windows for custom labels

- **Connection description**

Side view

PCMCIA connector view

Underside view

1 Removable screw terminal block for connecting :
  - the operator panel 24 VDC power supply,
  - the alarm relay output volt-free contact,
2 Removable screw terminal block for connecting solid state discrete outputs, assigned to the manual control keys (only on T CCX 17 20/30 ● PS operator panels).
3 26-pin high-density connector for connecting the communication bus connection cable.
4 9-pin connector for connecting a printer (only on T CCX 17 20/30● PS operator panels).
5 Fuse : 3.15A TD 5x20.
6 Flap for access to the back-up battery
7 PCMCIA connector card enables FIPIO cards to be connected or the memory card to be inserted.
8 Ground connector.

4 - Dimensions
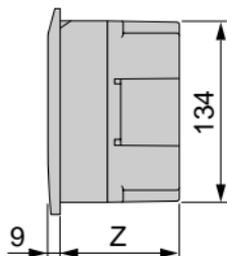
All dimensions are in millimeters
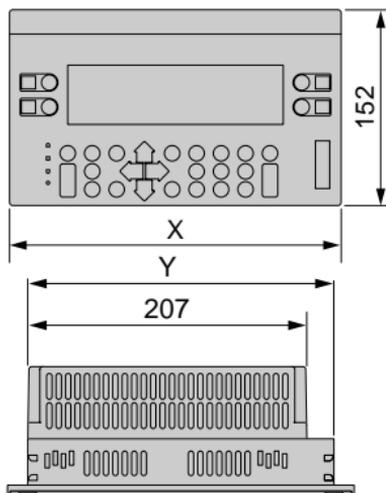
Operator panels	T CCX 17 20 F ●	T CCX 17 20 L ●/ 30 L ●
X	257 mm	225 mm
Y	227 mm	207 mm
Z	87 mm	80 mm

5 - Mounting Instructions

The CCX 17 operator panels are designed to be built into panels.

- **Panel thickness**

$1 \text{ mm} \leq e \leq 6 \text{ mm}$

- **Panel cut-out dimensions**
  T CCX 17 20 F ● operator panels

137 +/-0,5 (mm)

230+/-0,5 (mm)
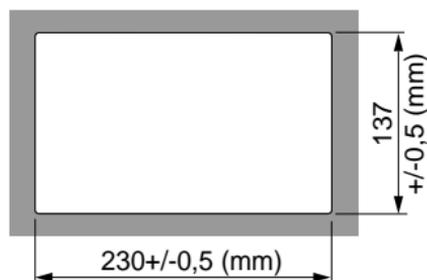
T CCX 17 20/30 L● operator panels

137 +/-0,5 (mm)

210+/-0,5 (mm)

- **Mounting**

The CCX 17 operator panels are mounted in the cut-outs using adjustable locking clips **1** (T CCX SMK 06), a total of :
- 8 are used for T CCX 17 20 F ● operator panels
- 6 are used for T CCX 17 20 L ● / 30 L ● operator panels

The locking clips are attached to the CCX 17 operator panel and are pressed into the cut-outs to retain the operator panel.

Position of locking clips on T CCX 17 20 F ● operator panels

Pressure

Pressure
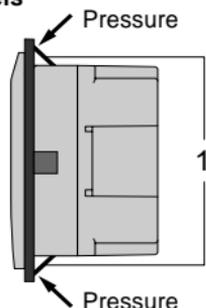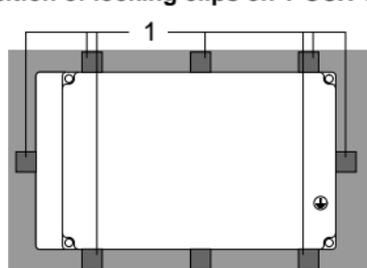
Position of the anchor points for the adjustable locking clips depending on the thickness of the panel.
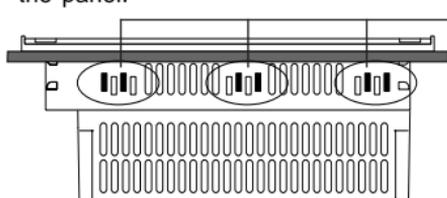
Anchor points for 1mm $\leq e \leq 4$ mm thick panels

Anchor points for 3 mm $\leq e \leq 6$ mm thick panels

Position of locking clips on T CCX 17 20 L ● / 17 30 L ● operator panels

• For 1mm ≤ e ≤ 4mm thick panels
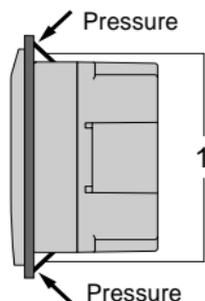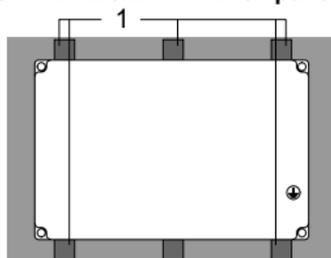
Pressure

1

Pressure

Position of the adjustable locking clip anchor points on the upper part of the operator panel.
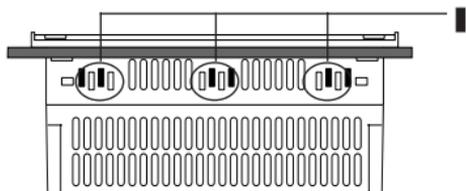
Anchor points for 1 mm ≤ e ≤ 4 mm thick panels

• For 3mm ≤ e ≤ 6mm thick panels
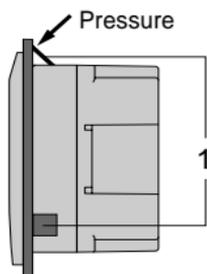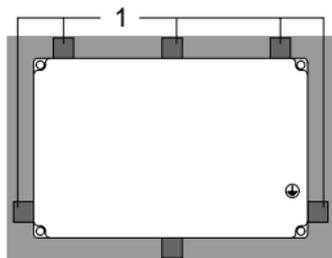
Pressure

1

Position of the adjustable locking clip anchor points on the upper part of the operator panel.
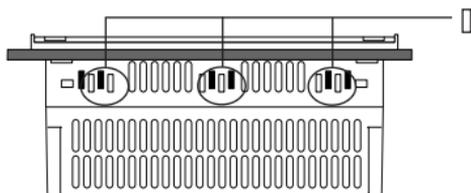
Anchor points for 3 mm ≤ e ≤ 6 mm thick panels

6 - Connections

Power supply and discrete outputs

Device ground connector

Alarm relay | Operator panel supply | Discrete output supply (1)

Discrete outputs (1)

| | | PE | 0V | 24 VDC | 24 VDC | 0V | COM | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

(2)

FU2

Alarm relay output

FU1

Common load to -

Chassis ground

- +
24V

FU1 : 10A delayed action fuse
FU2 : 8A fast action fuse
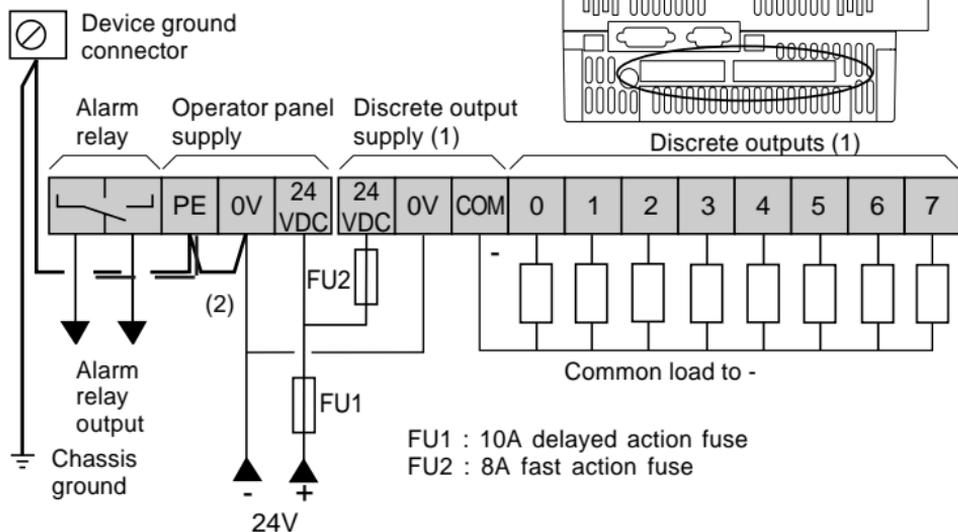
Note : The supply to the operator panel and the discrete outputs can be sourced from two independent power supplies.

(1) 0 discrete output on T CCX 20 F/FW, T CCX 20 L/LW, T CCX 30 L/LW models,
4 discrete outputs (0 to 3) on T CCX 20 F PS and T CCX 20 L PS models
8 discrete outputs (0 to 7) on T CCX 30 L PS models

(2) 1.5 mm^2 external shunt to be fitted when a non TBTS power supply is used

Consequence of incorrect connection

Reverse polarity	Main power supply	None
	Discrete output supply	External fuse blown
Overvoltage	Main power supply	Internal fuse blown
	Discrete output supply	External fuse blown
Undervoltage	Main power supply	CCX17 does not operate
	Discrete output supply	Incorrect output level

⚠ Warning

The 0V and the mechanical ground are internally connected in the CCX 17 operator panel, the network wiring accessories and certain PLCs. Special connection arrangements are necessary for specific applications using "free-floating" mounting. These depend on the installation mode.

Please contact us when defining the electrical installation.

Printer interface (only on T CCX 20 / 30 ● PS)

1		
2	RXD	Reception
3	TXD	Transmission
4		
5	GND	0V
6	BUSY	Printer not ready
7		
8		
9		

Connector pin arrangement
(9-pin female SUB-D)
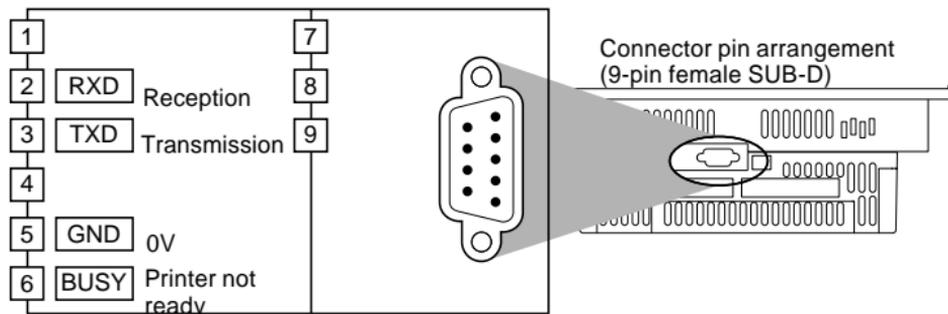
Note : do not connect pin 6 (BUSY) for use with XON/XOFF protocol.

Connection to the communication bus (26-pin high density SUB-D connector)

1	0VL	10	TX-	19	0VL
2	RX+	11	TX+	20	CSL
3	GND	12	RX-	21	N0
4	N3	13	N1	22	N2
5	-UTW	14	N4	23	NP
6		15		24	
7		16		25	
8		17		26	
9		18			

12
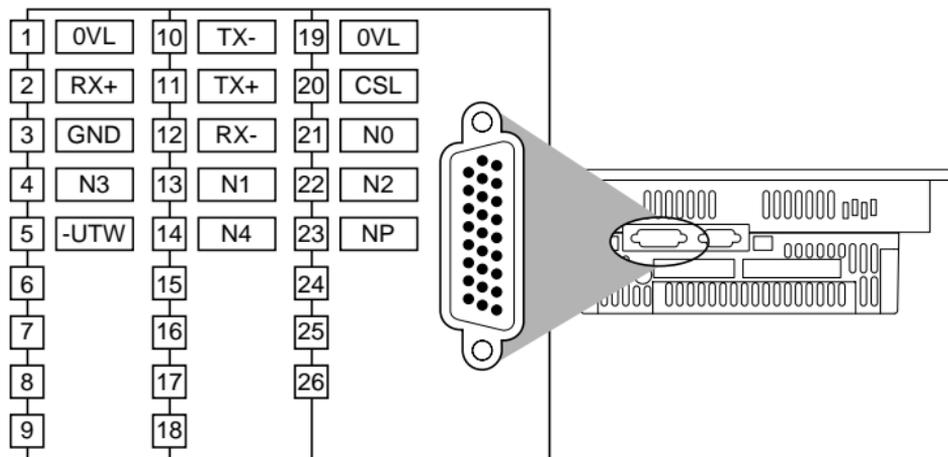
• Connecting a CCX 17 to a point-to-point data link

When connecting a CCX 17 to a point-to-point data link and due to the use of short connection cable lengths (≤ 5 meters), no end of line termination is required.

In some specific cases, other cable lengths (≥ 5 meters) can be considered for use. In these specific cases, it is necessary to provide end of line termination using an RC network at each end of the line.
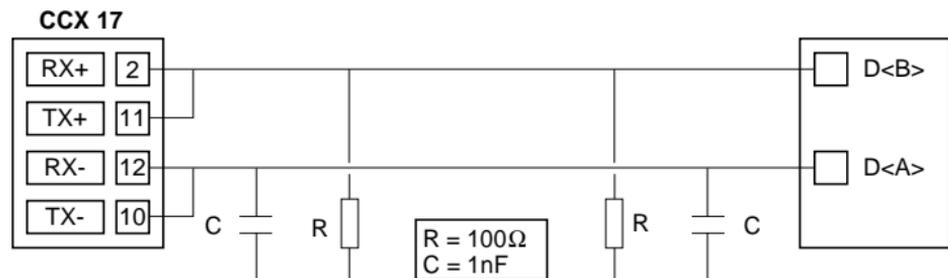
CCX 17

• Connecting a CCX 17 to a multi-point data link

When connecting a CCX 17 to a multi-point data link, a TSX SCA 50 junction box or a TSX SCA 62 junction box is required. In all cases, end of line termination is obtained by setting a jumper located in the TSX SCA 50 junction box or in the TSX SCA 62 junction box (refer to the documentation for these products).

7 - Connecting Series 7 PLCs/CCX 17 Operator Panels via a UNI-TELWAY Bus

A 26-pin SUB-D connector is provided for connecting the operator panel to the communication bus. To support the use of common cables for CCX 17 and XBT operator panels, a 26-pin/25-pin 20 cm long adaptor cable is supplied with the CCX 17 operator panel. The cable ref. number is **T CCX CB10 002**.
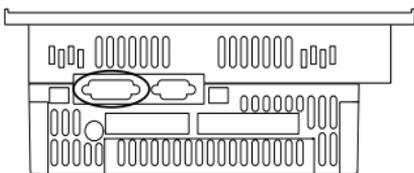
• **Connecting TSX 17 PLCs/CCX 17 operator panels**
CCX 17/TSX 17 programming port connection : **T CCX CB4 030**

TSX 17   CCX 17

T CCX CB4 030   T CCX CB10 002
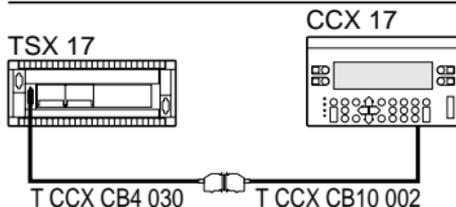
Protocol : UNI-TELWAY
Addresses : defined in the TSX 17 configuration
TSX 17 slave : address 1 (@101 in CCX 17 SETUP)
CCX 17 master : address 0

CCX 17/TSX ACC5 connection : **T CCX CB2 030**

T CCX CB2 030   T CCX CB10 002
CCX 17
TSX 17

ACC5
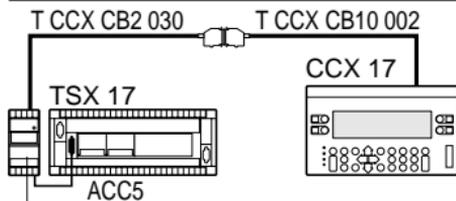
Protocol : UNI-TELWAY
Addresses : defined in the TSX 17 configuration
TSX 17 slave : address 1
CCX 17 master : address 0

CCX 17/TSX SCG 116 connection : **XBT Z 928**

XBT Z 928   T CCX CB10 002
CCX 17
TSX 17
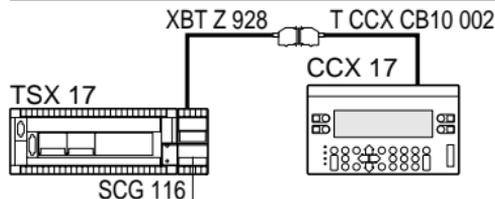
SCG 116

Protocol : UNI-TELWAY
Addresses : defined by the cable
SCG 116 master : address 0
CCX 17 slave : address 1 and 2 (*)

CCX 17/UNI-TELWAY bus connection : **XBT Z 908**

UNI-TELWAY
SCA 62   XBT Z 908   T CCX CB10 002
TSX 17   CCX 17

SCG 116

Protocol : UNI-TELWAY
Addresses : defined in the TSX SCA 62 junction box
SCG 116 : coding in TSX SCA 62
CCX 17 slave : coding in the TSX SCA 62 (*)

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- **Connecting TSX7/PMX 7 Model 40 PLCs/CCX17 operator panels**

CCX 17/UNI-TELWAY port integrated in processors (SCI)

TSX 7/PMX 7

CCX 17

LES
64/74

XBT Z 948   T CCX CB10 002
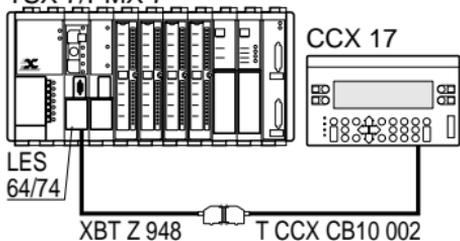
Protocol : UNI-TELWAY
Addresses :
TSX7 CPU master : address 0
(coding in LES 64/74)
CCX 17 slave : addresses 1 and 2
(*), defined by the cable

CCX 17/UNI-TELWAY bus connection via SCI and TSX SCA 62 junction box

TSX 7/PMX 7

CCX 17

LES
64/74   UNI-TELWAY

SCA 62   XBT Z 908   T CCX CB10 002
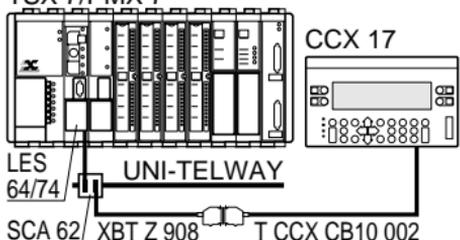
Protocol : UNI-TELWAY
Addresses :
TSX7 CPU (coding in LES 64/74)
CCX 17 slave (*) : (coding in SCA 62)

CCX 17/UNI-TELWAY bus connection via SCM 2116 and TSX SCA 62 junction box

TSX 7/PMX 7

CCX 17

SCM
2116   UNI-TELWAY

SCA 62 XBT Z 908   T CCX CB10 002
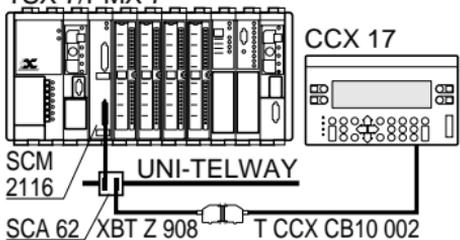
Protocol : UNI-TELWAY
Addresses :
SCM 2116 (coding in SCA 62)
CCX 17 slave (*) : (coding in SCA 62)

CCX 17/SCM 2116 connection (UNI-TELWAY)

TSX 7/PMX 7

CCX 17

SCM
2116

XBT Z 918   T CCX CB10 002
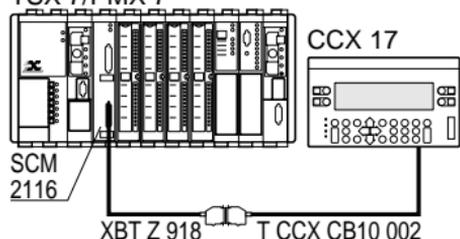
Protocol : UNI-TELWAY
Addresses : defined by the cable
SCM 2116 master : address 0
CCX 17 slave : addresses 1 and 2 (*)

(*) The CCX 17 operator panel uses two consecutive addresses when it is a slave on the UNI-TELWAY bus.

- **Connecting CCX17 operator panels/TSX 07 nano-PLC terminal port**
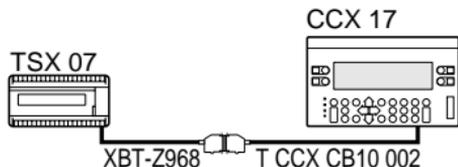
Protocol : UNI-TELWAY
Addresses : defined by the cable
TSX 07 master : address 0
CCX 17 slave : address 4 (server)
address 5 (client)

- **Connecting CCX17 operator panels/TSX Micro and TSX Premium PLCs**

CCX 17/TSX Micro and TSX Premium terminal port connection
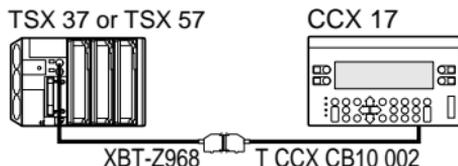
Protocol : UNI-TELWAY
Addresses : defined by the cable
TSX 37/TSX 57 : master address 0
CCX 17 slave : addresses 4 and 5(*)

Note the speed of both devices : 9600 or 19200 bds

CCX17/UNI-TELWAY bus connection on terminal port and TSX P ACC 01 junction box
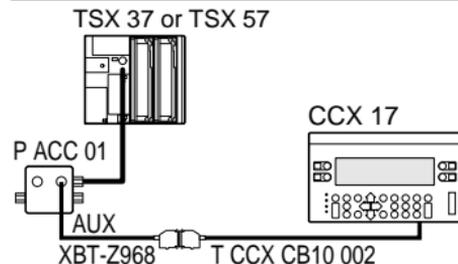
Protocol : UNI-TELWAY
Addresses : defined by the cable
TSX 37/TSX 57 : master address 0
CCX 17 : slave : addresses 4 and 5 (*)

CCX17/UNI-TELWAY bus connection on SCP 114 and TSX SCA 62 junction box
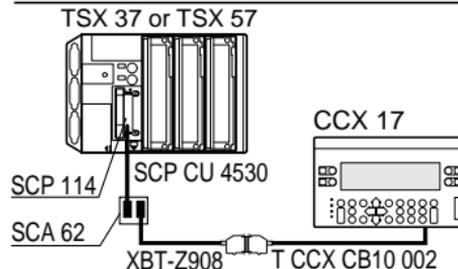
Protocol : UNI-TELWAY
Addresses :
TSX 37/TSX 57 : master address 0
(coding in SCA 62)
CCX 17 : slave (coding in SCA 62) (*)

(*) The CCX 17 operator panel occupies 2 consecutive addresses when it is the UNI-TELWAY link slave.

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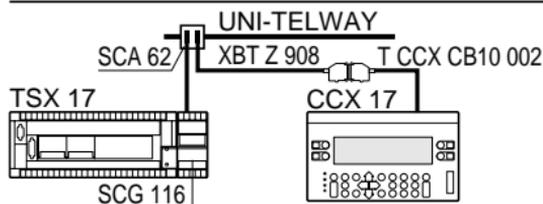CCX 17/SCY 21 600 (UNI-TELWAY bus) connection
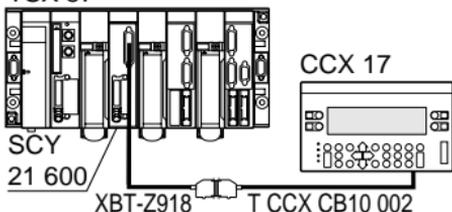
Protocol : UNI-TELWAY
Adresses : defined by the cable
SCY 21 600 : master address 0
CCX 17 : slave : addresses 1 and 2(*)

CCX 17/UNI-TELWAY bus connection on SCY 21 600 and TSX SCA 62 junction box
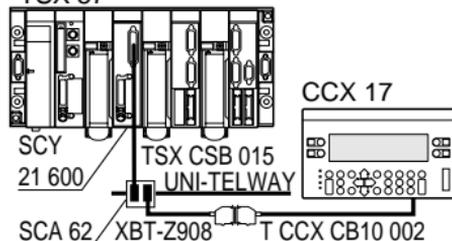
Protocol : UNI-TELWAY
Addresses :
SCY 21 600 : master address 0
(coding in SCA 62)
CCX 17 : slave (coding in SCA 62) (*)

(*) The CCX 17 operator panel uses two consecutive addresses when it is a slave on the UNI-TELWAY link.

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- **Connecting CCX 17 operator panels / FTX 417 / 507 terminals or PC compatible for a local transfer**

CCX17/FTX417 or FTX507 connection

FTX 417
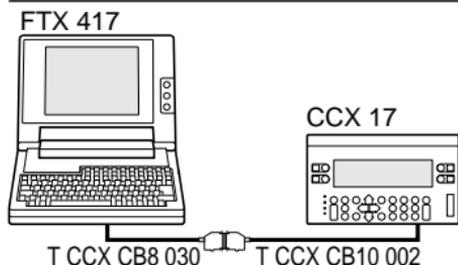
CCX 17

Protocol : UNI-TELWAY
Adresses : defined automatically
FTX ••• slave, RS 485 port :
adresses 1 to 20
(only one address used)
CCX 17 master : address 0
(The driver must already have been installed on the FTX or PC).

T CCX CB8 030   T CCX CB10 002

CCX 17/PC compatible connection
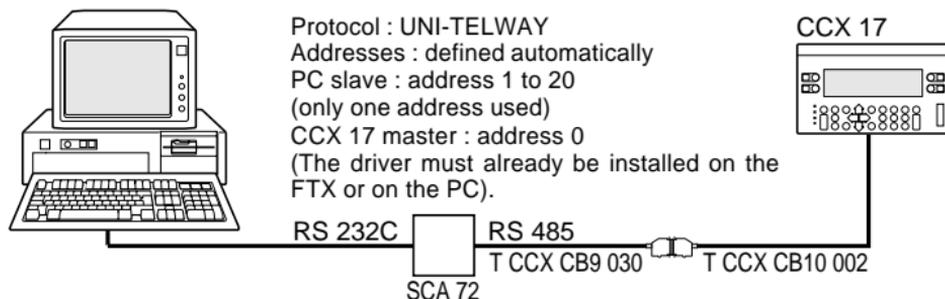
Protocol : UNI-TELWAY
Addresses : defined automatically
PC slave : address 1 to 20
(only one address used)
CCX 17 master : address 0
(The driver must already be installed on the FTX or on the PC).

CCX 17

RS 232C   RS 485
SCA 72   T CCX CB9 030   T CCX CB10 002

0VL	5	white
D<B>	4	white
D<A>	3	yellow
		blue

TSX SCA 72   T CCX CB9 030
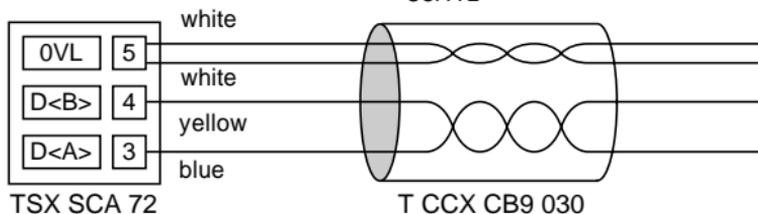
TSX SCA 72/T CCX CB9 030 connection

- **Lengths of the various types of cable**

References	Length in m	References	Length in m
TCCX CB2 030	3	XBT-Z908	1.8
TCCX CB4 030	3	XBT-Z918	5
TCCX CB8 030	3	XBT-Z928	5
TCCX CB9 030	3	XBT-Z948	5
TCCX CB10 002	0.2	XBT-Z968	2

8 - Connecting Series 7 or TSX Premium PLCs/CCX 17 operator panels via a FIPIO bus

Connection to a FIPIO fieldbus is established via the PCMCIA FPP10 card.
This PCMCIA card is type III. For version compatibility, see section 2, page 5.
Setting-up principle :

• Fit the TSX FP CG 010/030 cable to the TSX FPP10 card and screw the card in the slot provided.

Warning : Insert the equipment card when powered down.

Connection to FIPIO fieldbus :

Connection to the FIPIO fieldbus is made via a TSX FP ACC4 T-junction.
Then connect the TSX FP CG 010/030 cable (9-pin SUB-D) to the 9-pin SUB-D connector on the T-junction.
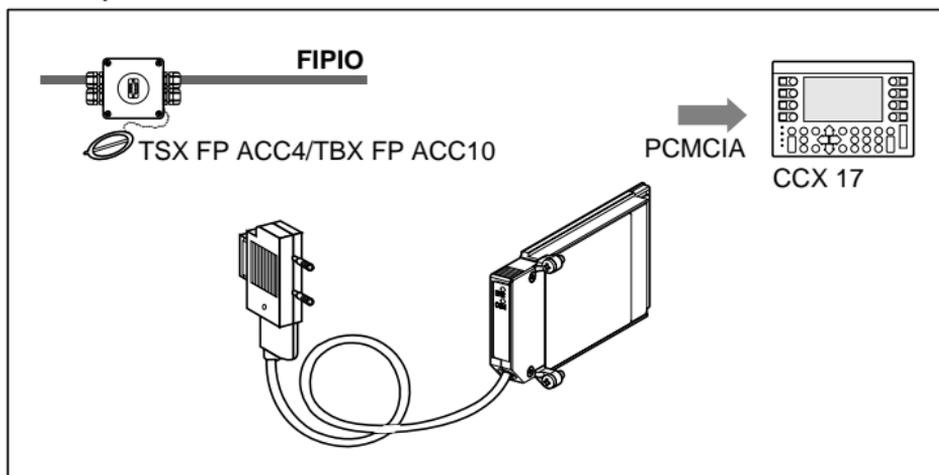
Performance on model 40 TSX7/PMX7 and TSX Premium PLCs

Uni-Telway connection

The performance levels shown below are correct for 2 CCX 17s connected to the bus.
Above this limit, any increase in the number of CCX 17s connected significantly reduces the performance.

FIPIO connection on series 7 PLCs

Type of PL7 object	Type of CCX 17	No. of CCX 17 which can be connected
RIW/ROW only	CCX 17	25
	CCX 17-A	7
Message handling only (*)	CCX 17 and	No. = 1/2 NCT
	CCX 17-A	NCT : CPU cycle time

(*) For a TSX/PMX 47-455 this number is halved.

FIPIO connection on TSX Premium PLCs

Type of CCX 17	Number of CCX 17 which can be connected
CCX 17	4 (1)
CCX 17-32	4 (1)

(*) For more than 4 CCX 17 operator panels, programming precautions should be taken.
Please contact your Regional Sales Office.

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9- Characteristics

Electrical characteristics

Operator panels		T CCX 17 20 F ●	T CCX 17 20 L ●	T CCX 17 30 L ●
Power supply	Nominal voltage	$=$ 24 V	$=$ 24 V	$=$ 24 V
	Limit voltage (1)	19.2...30 V	19.2...30 V	19.2...30 V
	Peak to peak ripple	5% of Un F = 90 Hz...1 KHz		
	Inrush current	100 A	100 A	100 A
	Inrush current It	0.2 As	0.2 As	0.2 As
	Inrush current I²t	12.5 A²s	12.5 A²s	12.5 A²s
	Nominal current drawn	1.2 A + 0.35 A per discrete output		
	Max current drawn	1.5A + 0.45 A per discrete output		
	Power up threshold	24 VDC supply ≥ 19.2 V		
	Power off threshold	24 VDC supply < 19.2 V		
	Imperceptible power break	1 ms		
	Service life at maximum power :			
	• 30°C 80000 H	• 50°C 30000 H	• 55°C	15000 H

(1) 34 VDC for one hour for a battery with charger

Characteristics of 24 VDC / 0.35 A (discrete) solid state outputs

Type		Transistors
Loads	Nominal voltage	$=$ 24 V
	Nominal current	0.35 A
	Tungsten wire indicator lamp	8.5 W
Limit values	Voltage	19.2V...30 V (1)
	Current	0.43 A per channel
Logic		Positive
Load common		To - of supply
Leakage current	At state 0	< 2.3 mA
Residual voltage	At state 1	< 0.4 V
Response	From state 0 to 1	≤ 1.5 ms
time	From state 1 to 0	≤ 1.5 ms
Integrated	Against overloads	Yes (thermal)
protection	Against overvoltages	Yes (Zener diode)
	Against power supply inversion	Yes (inverse diode)
Isolation	Outputs / ground	2000 V rms F= 50/60 Hz 1min
	Outputs / main power supply	2000 V rms F= 50/60 Hz 1min
	Isolation resistance	≥ 10 MΩ at $=$ 500 V

(1) 34 VDC for one hour for a battery with charger

Printer interface characteristics

Operator panels	T CCX 17 20 LPS / 30 L PS
Printer type	Serial link and support for XON-XOFF or BUSY protocol
Data link	Type : RS 232 C simplified asynchronous serial link
characteristics	Maximum transmission speed : 9600 baud
	Maximum distance CCX 17 / printer : 5 m
	Connection : 9-pin SUB D connector

Alarm relay output characteristics

Type			Relay			
Maximum operating voltage			19...264 VAC or 10..34 VDC			
Thermal current			3 A			
Loads in AC	Resistive load AC12	Voltage	24 V $\sim$	48 V $\sim$	110 V $\sim$	220 V $\sim$
		Power	24 VA (1)	50 VA (1)	110 VA (1)	220 VA (1)
	Inductive load AC14 and AC15	Voltage	24 V $\sim$	48 V $\sim$	110 V $\sim$	220 V $\sim$
		Power	24VA (2)	24 VA (2)	110 VA (2)	220 VA (2)
Loads in DC	Resistive load DC-12	Voltage	24 V $=$			
		Power	24 W (1)			
	Inductive load DC-13	Voltage	24 V $=$			
		Power	24 W (1)			
Isolation	Outputs / ground		2000 V rms F=50/60 Hz 1min			
	Outputs / main supply		2000 V rms F=50/60 Hz 1min			
	Isolation resistance		≥ 10 MΩ at $=$ 500 V			

(1) 1×10^6 operations
(2) 0.1×10^6 operations

Mechanical characteristics

Mounting	Flush mounting with seal attached to operator panel end and adjustable locking clips	
	Panel thickness : 1 mm min., 6 mm max.	
Connections	Power supply	Removable screw terminal block (max. capacity : 1 x 2.5 mm^2 wire per terminal)
	Discrete outputs	Removable screw terminal block (max. capacity : 1 x 2.5 mm^2 wire per terminal)
	Data link to the communication bus	26-pin high density SUB D connector
	Printer link	9-pin SUB D connector
Weight	T CCX 17 20 F ●	1.900 kg
	T CCX 17 20 L ●	1.600 kg
	T CCX 17 30 L ●	1.600 kg

Environmental characteristics

Degree of protection	Front panel	IP 65	
	Other panels IP 20		
Temperature	Operating	Front panel	+5 to +40°C
		Other panels	+5 to +55°C
	Storage	- 20°C to + 60°C	
Humidity	T CCX 17 20 F ●	20 to 85% no condensation	
	T CCX 17 20 L ● / 30L ●	60% no condensation	
Impact resistance	Conforming to IEC 68-2-27 (15g. 1/2 wave 11 ms)		
Vibration resistance	Conforming to IEC 68-2-6		
	Amplitude : 0.075mm from 10 to 57 Hz,		
	acceleration 1g max. from 57 to 150 Hz, acceleration 1g		
Resistance to electrical interference	Conforming to IEC 801-4 level 3		
Conforming to EC standard			

Each time it is powered up, the operator panel performs a set of self-tests to check that it is operating correctly. The result of the self-tests is displayed by the three LED indicators and the battery condition LED on the front panel.

Status of LED indicators/Battery LED		
Power-up	Self-test phase	Self-tests completed (OK)
●	⊗	○
●	⊗	○
●	⊗	○
●	⊗	○
● On	⊗ Unknown	○ Off

Once the self-tests are completed, if no errors are found, all of the LEDs are extinguished and the operator panel display the initial screen showing :

• The type of operator panel and the software version,

```
CCX 17-20 FW.....................V2.3
UTW  SLAVE,9600 bauds, AdS=1, AdC=2
APPLICATION.....................NONE
CONNECTION.....................  OK
```

• The configuration parameters for the PLC data link :
  Master/slave, transmission speed, Server address (AdS), Client address (AdC).

• Whether or not an application is present :
  - "LOADED" : application present without an default group,
  - "EXEC" : application present with a default group defined under PL7-MMI 17,
  - "NONE" : no application present,

• Whether or not connection with the PLC is established.

Note: The display "Front panel coding invalid" indicates an error concerning the configuration of the switches on the front panel in relation to the type of sub-base.

Automatic retrieval of an application (version V2.6 or later)

If the operator panel does not contain a valid application ("NONE"), and if a PCMCIA memory card is present :

• The PCMCIA memory contains a valid compatible application. This application is automatically transferred to the operator panel. The user does not have to do anything. The transfer can be cancelled by pressing ↵ when the barchart appears.

• The PCMCIA memory does not contain a valid application, the application is invalid or incompatible, or the transfer fails. The operator panel still has no application (NONE).

See the following pages for information about compatible PCMCIA memory cards.

OPERATION

The CCX 17 operator panel integrates a configuration facility called "SETUP".
Configuration parameters and functions which can be accessed :
- Display language, date display format, password entry and modification
- Choice of communication driver used for the PLC link,
- Save/restore application to PCMCIA memory card (version V2.2 min),
- Init. application : total or partial deletion of CCX 17 application,
- Configure printer connected to operator panel.

General navigation functions in SETUP :

[ALT] + [↵] Calls up SETUP or exits SETUP without taking into account the modifications.

[←] [→][↓] [↑] Moves the cursor between the various fields that can be modified.

[MOD] Allows modification of the selected field, the cursor blinks.

[↓] [↑] Modify the parameters of the selected field, if they are preset.
or
[0] to [9]. Direct entry of values for fields that do not have preset values, without pressing the MOD key. (The MOD key retains the former value).

[↵] Validates the modifications made in the selected field.

[P] Accesses general menu for SETUP : Parameters protected (from the second screen only).

OPERATION

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Calling up SETUP

From the initial screen, pressing the **[ALT] + [↵]** keys will display the first screen. The current language is displayed in reverse video.

```
<1> English          <4> Italiano
<2> Français         <5> Español
<3> Deutsch
                          <↵>
```

• Changing the display language

Languages that can be selected : English, French, German, Italian and Spanish

[←] [→] [↓] [↑] or **<n>** Selects the language.

[↵] Validates the selection.

Message display in the selected language is effective when confirmed with [↵].

[ALT] + [↵] Cancels the selection.

• Changing the date display format

Formats that can be selected : MM/DD/YY, DD/MM/YY, YY/MM/DD.

[MOD] Calls up modification :

[↓] [↑] Selects the format,

[↵] Validates the selection,

```
Format Date: DD/MM/YY
Password:

          <P> Protected parameters
                   <↵ >
```

• Accessing the protected SETUP parameters

These can be accessed after the password has been entered.

[P] Accesses the protected SETUP parameters

```
<1> Operator panel configuration
<2> Application initialization
<3> Save/Restore
<9> Exit setup              <↵>
```

• Entering and modifying the password

By default there is no password.

The password is a four-figure one (each figure can take a value from 0 to 9) and it is shown on-screen as four number symbols (#).

The password is modified in the configuration screen of the operator panel :

[P] Accesses the protected SETUP parameters

[1] and **[↵]** Accesses the operator panel configuration

To change the password,

[2] and **[↵]**

```
New password :            ####
Confirm password :

                          <↵>
```

The "New password" field : Lets the user enter a new password. To enter a new password, the previous password must first be entered in the "Password" field.

Enter the four-number combination and confirm. The password is cancelled by entering four "0"s.

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• Modifying PLC data link parameters

"**UTW" fields** :   Lets the user choose communication protocol adjustment parameters.

The "**Speed**" field :   Lets the user define the communication speed as 300, 600, 1200, 2400, 4800, 9600 and 19200 baud (predefined values).

The "**Connection**" field :   Lets the user define the terminal as master or slave on the data link,

The "**Time out**" field :   Lets the user define the maximum wait time of a response.

[1] [↵] Accesses the operator panel configuration.
[1] [↵] Accesses the line configuration.
[1] Accesses the UNI-TELWAY communication protocol selection.
[↵] Validates the selection.

```
<1> Line configuration
<2> Change password
<3> Printer configuration
<8> Return                      <↵>
```

```
    Communication protocol
   <1>  UTW   <2>FIPIO
              <↵>
```

The communication parameters are defined using the cursor keys
[↓] [→]
[MOD] Used to modify the parameters.
Enter the time-out value, using keys **[0] to [9]**
[↵] Validates the selection

```
Communication protocol UTW
Rate (bauds) : 9600 Connection : Slave
Time Out (ms) : 10000
                <↵>
```

"FIPIO" fields :

"Connection point" and **"Connection mode"** fields : Used to enter the connection point number attributed to the CCX 17 and the connection mode.

[2] Accesses the FIPIO communication protocol selection.
[↵] Validates the selection.
Enter the connection point number using keys **[0] to [9].**

```
    Communication point
   <1>  UTW   <2>FIPIO
              <↵>
```

[↵] Validates the connection point.
Select the connection mode :
[MOD] Used to modify the selected field

```
Communication protocol FIPIO
Connection point : 11
                <↵>
```

[↓] Used to select the connection mode : AUTO (automatically adapts to the connected PLC), CCX17 (8 RIW and 8 ROW or 8% IW and 8% QW), CCX 17-A (8 RIW and 78 ROW) or CCX 17-32 (32 %IW and 32 % QW).
[↵] Validates the selection

• Configuring the printer link

The "**Speed**" field: Lets the user define the printer speed as 300, 600, 1200, 2400, 4800, 9600 baud (predefined values).

The "**Parity**" field : none, even, odd.

The "**Stop bit**" field : 1, 2.

The "**Data**" field : 7 or 8 bits.

The "**Print continuous log**" field : enables the use of the printer for continuous messages.

[1] and [↵] Accesses the operator panel configuration

[3] and [↵] Accesses the printer configuration

```
<1> Line configuration
<2> Change password
<3> Printer configuration
<8> Return              <↵>
```

[↓] [↑] Moves the cursor between the various fields.

[MOD] Allows modification of the selected field.

[↵] Validates and returns to operator panel configuration menu.

```
Rate (bauds): 9600  Parity: No
Stop bit(s): 1      Data: 8 bits
Log print-out: No
              <↵>
```

• Application initialization (version V2.2 minimum)

This function is used to delete all or part of the CCX 17 application :
• Initialize entire application : Total reset
• Initialize operator input only : Entries
• Initialize archived alarms only : Alarms

After a total initialization of the application, the user can choose whether or not to reinitialize the CCX17 directly.

[2] and[↵] : Accesses the application reset function

```
<1> Operator panel configuration
<2> Application initialization
<3> Save/Restore
<9> Exit setup          <↵>
```

[8] and[↵] : Returns to the Setup main screen

```
<1> Total initializ. with Restart
<2> Total initializ. no Restart
<3> Initialization of entries  <↵>
<4> Alarm init.    <8> Return
```

OPERATION

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[1] + [↵] : Accesses the total initialization with reboot of CCX17 function

```
<1> Total initializ. with Restart
<2> Total initializ. no Restart
<3> Initialization of entries   <↵>
<4> Alarm init.     <8> Return
```

[1] + [↵] : Cancel
[2] + [↵] : Confirms and starts initialization. The CCX17 is restarted immediately after deletion

```
Application will be destroyed
CCX17 will restart
<1> Cancel
<2> OK                          <↵>
```

[2] + [↵] : Accesses the total initialization with no CCX17 restart function

```
<1> Total initializ. with Restart
<2> Total initializ. no Restart
<3> Initialization of entries   <↵>
<4> Alarm init.     <8> Return
```

[1] + [↵] : Cancel
[2] + [↵] : Confirms and starts initialization.

```
Application will be destroyed

<1> Cancel
<2> OK                          <↵>
```

[3] + [↵] : Accesses the initialization of operator entries function

```
<1> Total initializ. with Restart
<2> Total initializ. no Restart
<3> Initialization of entries
<4> Alarm init.     <8> Return
```

[1] + [↵] : Cancel
[2] + [↵] : Confirms and starts initialization

```
Archiving operator entries
will be destroyed
<1> Cancel
<2> OK                          <↵>
```

[4] + [↵] : Accesses initialization function of archived alarms in CCX 17

```
<1> Total initializ. with Restart
<2> Total initializ. no Restart
<3> Initialization of entries   <↵>
<4> Alarm init.     <8> Return
```

[1] + [↵] : Cancel
[2] + [↵] : Confirms and starts initialization

```
Archiving alarms
will be destroyed
<1> Cancel
<2> OK            <↵>
```

OPERATION

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• Save/Restore application (version V2.2 minimum)

This function offers the option of saving the application contained in the CCX 17 on a PCMCIA memory cartridge. Application thus saved can be restored to the same operator panel or any other CCX 17 operator panel. It is therefore possible to load an application in a CCX 17 without using a programming PC.

Modicon TSX Nano/Micro/Premium PLC memory cartridges can be used for this operation.

Memory cards	SRAM 32K16 :	TSX MRP 32K16P	TFTX RSM 32K16
	SRAM 64K16 :	TSX MRP 64K16P	
	SRAM 128K16 :	TSX MRP 128K16P	TFTX RSM 128K16
	Flash EPROM 64K16 :	TSX MFP 064K16P	
	Flash EPROM 128K16 :	TSX MFP 0128K16P	

Compatibility of memory cartridge capacities according to type of operator panel:

Panel		T CCX 17 20 ••••	T CCX 17 30 ••••
SRAM/FEPROM	128K16	Yes	Yes
SRAM/FEPROM	64K16	Yes	Yes
SRAM	32K16 (*)	Yes	No

The memory cartridge is inserted in the PCMCIA slot in place of the FIPIO communication module if this is present.

To facilitate removal of the memory card, it is advisable to stick one of the plastic tabs supplied with the card to it as shown in the diagram below :
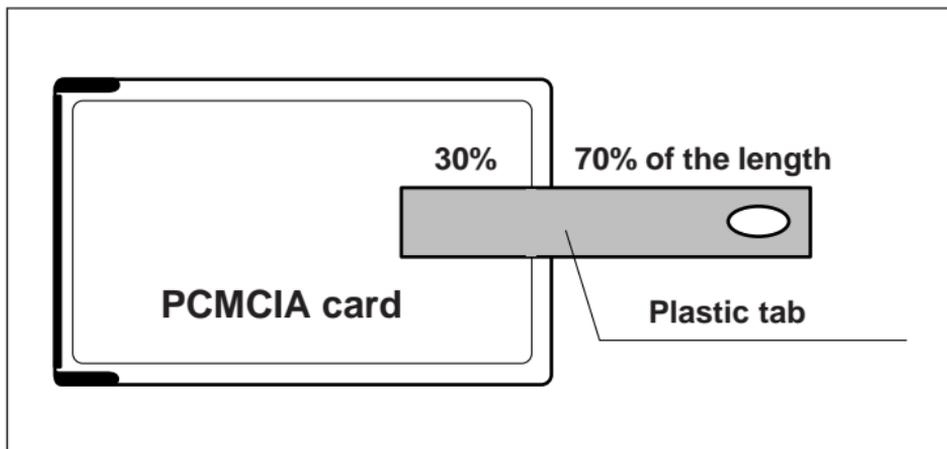
(*) Application with OFB and DFB STATUS cannot be saved on 32K16 memory cards (insufficient space on CCX 17-20, memory card incompatible with CCX 17-20).

[3] + [↵] : Accesses the Save/
Restore function

```
<1> Operator panel configuration
<2> Application initialization
<3> Save/Restore
<9> Exit setup              <↵>
```

[8] + [↵] : Returns to the previous
Setup screen

```
Save/Restore the application
<1> Save
<2> Restore
<8> Return                  <↵ >
```

[1] + [↵] : Accesses the Save
function

[2] + [↵] : Initiates the save

Card : Reference of the
identified card

```
Card : TSXRSM12816          <↵ >
Contents :APP_NAME    01/01/96 20LPS
comments on 40 characters
<1> Cancel          <2> Save
```

Contents: Application name, date
of save to cartridge,
type of CCX 17,
application description

[↵] : Cancels the current
save displayed by a
bargraph

```
Card : TSXRSM12816


<↵ > Cancel
```

[8] + [↵] : Returns to the
previous screen after
the save has finished

```
Card : TSXRSM12816
Contents :APP_NAME     01/01/96 20LPS
Save completed
<8> Return                  <↵ >
```

[1] + [↵] : Accesses the Restore function

[2] +[↵] : Initiates the Restore

Card : Reference of the identified card

Contents : Application name, date of save to cartridge, type of CCX 17, application description

[↵] : Cancels the current restore displayed by a bargraph

```
Card : TSXRSM12816              <↵ >
Contents :APP_NAME    01/01/96 20LPS
comments on 40 characters
<1> Cancel          <2> Restore
```

```
 Card : TSXRSM12816

 
 <↵ > Cancel
```

[8] + [↵] : Returns to the previous screen after the restore has finished

```
Card : TSXRSM12816
Contents :APP_NAME    01/01/96 20LPS
Restore completed
<8> Return                      <↵ >
```

Note: The application contained in the CCX 17 will be destroyed during the restore.

If an error is detected on the memory cartridge (cartridge not present or faulty) a message on screen indicates the fault after the function has be launched.

[8] + [↵] : Returns to the previous screen

```
Card : ????????
Contents :????????
Card Missing
<8> Return                      <↵ >
```

• Save modifications

[9] + [↵] Exits setup

```
<1> Operator panel configuration
<2> Application initialization
<3> Save/Restore
<9> Exit setup                  <↵ >
```

Yes : The modifications will be saved when validated.

No : The modifications will not be saved.

```
 Do you want to save changes to
 Setup?
          <1> Yes   <2> No
                   <↵>
```

[1] followed by**[↵]** : Validation of the Setup modifications and reinitialization of the operator panel,

[2] exit without saving.

Note: The operator panel is automatically reinitialized when the application is restored or initialized.

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3 - Creating the Man-Machine Interface Application

The man-machine interface application can be created from :
- the PL7-MMI 17 software under OS/2 or MMI 17 WIN under Windows,
- the PLC application.

Note : To create a man-machine application using PL7-MMI 17 or MMI 17 WIN, refer to the associated manuals (an example of a man-machine interface developed from an application program is detailed in this manual).

To simplify setup and to benefit from all of the features supported by the operator panel, it is recommended that the interface application be developed in PL7-MMI 17 or MMI 17 WIN.

4 - Displaying messages

- **Displaying messages** :

  A message comprises two optional parts :
  - A fixed text,
  - Its assigned variable.

A variable can be displayed as a string of ASCII characters, a numerical value or a bar chart.
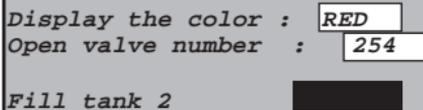
```
Display the color :   RED
Open valve number :    254

Fill tank 2
```

In order to optimize screen message display performance, the rules described in the documentation for PL7-MMI 17 software (under OS/2 or Windows) must be observed.

• **Principle**

A variable can be entered when the field assigned to the latter variable is displayed in reverse video and is flashing.

```
Valve number :
Valve status : CLOSED
```

The variable can be entered in several ways :
- By predefined values,
- By incrementing or decrementing the current value,
- By entering characters.

[←] [→] [↑] [↓] Moving among the various fields that can be modified.

• **Entering by incrementing or decrementing the current value**

The value of the increment and the minimum and maximum values can be set in the message.

[MOD] Allows access to modification of a field. Also allows exit from data entry in a field without changing the initial value.

```
Valve number : 250
Valve status : CLOSED
```

[→] Increases the current value of the increment value.

```
Valve number : 260
Valve status : CLOSED
```

[←] Reduces the current value of the increment value.

```
Valve number : 240
Valve status : CLOSED
```

[↵] Validates the selection made and enables :
- Sending the newly selected value to the PLC,
- Access to the next entry.

[MOD] Pressing again exits data entry mode.

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• Character by character entry

The minimum and maximum values can be set in the message

[MOD] Allows access to modification of a field and positions the cursor at the beginning of the field.

Also allows exit from data entry in a field without changing the initial value.

```
Valve number : [        ]
Valve status : CLOSED
```

[←] [→] Move the cursor from right to left and from left to right; movement is restricted to within the field.

[0]...[9], [.] and [+/-] Allow the selected value to be entered.

```
Valve number : 254
Valve status : CLOSED
```

[↵] Validates the selection made and enables the newly selected value to be sent to the PLC (by UNI-TE request).

Deleting a character

[DEL] Is used to delete the character selected by the cursor.

```
Valve number : 254
Valve status : CLOSED
```

The characters located to the right of the character are shifted left.

```
Valve number : 24
Valve status : CLOSED
```

Inserting a character

[INS] Is used to create an insertion point between two characters. The insertion point is located just before the character selected by the cursor.

```
Valve number : 24
Valve status : CLOSED
```

All of the characters located after the insertion point are shifted to the right. If a character is located at the far right of the field, it is lost.

```
Valve number : 2_4
Valve status : CLOSED
```

Each alarm and each operator entry is archived to a storage memory field that is distributed as follows :
- A "Record of alarms triggered" field. This field is in turn split into two fields :
  - An active alarm field (alarms acknowledged with the fault still present and unacknowledged alarms) : 150 local alarms + 100 PLC alarms + 80 DFB alarms in CCX 17 20 or 300 local alarms (including 80 DFB alarms) + 100 PLC alarms in CCX 17 30,
  - An archived alarm field containing all of the alarms which have disappeared: 150 local alarms + 100 PLC alarms + 80 DFB alarms in CCX 17 20 or 300 local alarms (including 80 DFB alarms) + 100 PLC alarms in CCX 17 30.
- A "Record of operator entries" field : 50 in CCX 17 20, 100 in CCX 17 30.

<div style="margin-left:2em;">**OPERATION**</div>

Storage field for alarms and operator entries		
Alarms triggered		Operator entries
Active alarm field	Archived alarms field	Operator entries field
Alarms acknowledged and unacknowledged with a fault present or alarms from a diagnostic DFB with acknowledgment requested, not acknowledged, fault fed back	All alarms disappeared	All operator entries made

Note: When the maximum limit on the number of alarms or operator entries archived is reached, the occurrence of a new alarm or of a new operator entry overwrites the first alarm or the first operator entry archived.

For alarms from a diagnostic DFB, when a new alarm of this type occurs once the maximum limit has been reached, this alarm will be overprinted, with the message "BUFFER FULL". Pressing the ENTER key automatically acknowledges this alarm.

Record of alarms triggered

When an alarm occurs, it is saved in the active alarm field and in the archived alarms field with an occurrence number and the date and time of its appearance.

When the error disappears, the alarm is deleted from the active alarm field, and added to the archived alarms field with its date and time of disappearance.

• **Displaying active alarms**

Information relative to an alarm is displayed on two lines :

- • The first line displays the occurrence number, the date and time of failure occurrence, the type of alarm and the local status of the alarm :
  The type of alarms displayed are as follows :
  - BIT if the alarm comes from a bit,
  - PLC if the alarm comes from an OF or command,
  - EVDG, MVDG, TRDG or NEPO if the alarm comes from a diagnostic OFB (application generated by CCX V2.3),
  - EV_DIA, MV_DIA, NEPO_DIA or ASI_DIA if the alarm comes from a diagnostic DFB.
  - OFB if the alarm comes from a diagnostic OFB.
- • The various alarm statuses are as follows :
  - ACK : alarm acknowledged (seen by the operator), the alarm number is fed back to the PLC,
  - ON : alarm not acknowledged,
  - DIS : alarm from a diagnostic DFB with acknowledgment requested, not acknowledged, fault fed back.
- • The second line displays the message assigned to the alarm.

This screen also displays the number of activated alarms and the sequences of keys which can be used to browse in the CCX17 screens.
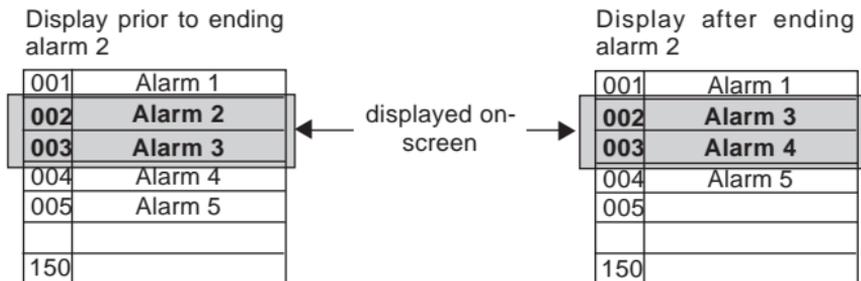
An alarm displayed as flashing is an alarm from a diagnostic DFB which must be acknowledged by the operator.

From the application screen, pressing **[ALT] + [ACK]** displays the list of active alarms, moving to the most recent.

```
 *  ACTIVE ALARMS :  011  *
002 03/04/97 11:07:54...NEPO...ACK
Failure left motor N°3
<ALT>+<P>- > Status<↵>- > Return
```

[↑] [↓] Moves the cursor in the list. The selected alarm is displayed in reverse video.

[ALT] + [↓] moves the cursor to the end of the list.

[ALT] + [↑] moves the cursor to the start of the list.

[ACK] allows the user to acknowledge the alarm selected. For a DFB type alarm, the acknowledgement information is sent to the PLC, if this option has been configured in the DFB instance.

[ALT] + [P] if the alarm comes from a diagnostic OFB or DFB, the status screen is displayed.

[↵] used to exit consultation mode and return to the current dialog screen.

Disappearance of error

For alarms from a diagnostic DFB with acknowledgment requested:

Disappearance of error

Remark on displaying active alarms

The alarms are saved in the memory field as they occur with an occurrence number. The screen provides a real-time display of a group of alarms and when a displayed alarm above the displayed field is removed from the list, it is compacted (see the example below).

Display prior to ending alarm 2

001	Alarm 1
002	**Alarm 2**
003	**Alarm 3**
004	Alarm 4
005	Alarm 5
150	

◄— displayed on-screen —►

Display after ending alarm 2

001	Alarm 1
002	**Alarm 3**
003	**Alarm 4**
004	Alarm 5
005	
150	

Note :

If the message "Buffer full" appears on the screen when an alarm occurs, please note that :

- the alarm relay cannot handle this alarm,
- the alarm is not stored in the operator panel.

In order for alarms to be handled correctly, the user must "initialize archived alarms" in Setup in CCX 17.

• Displaying the OFB or DFB status

Information on the status of the OFB which has generated the alarm, is displayed on two lines. To display all the messages, use the **[↑] [↓]** keys. If the last message is displayed (last status bit), only the **[↑]** key appears. Similarly if the first message is displayed, only the **[↓]**key appears.

As well as the status messages, the screen displays :
- The symbol (SDBASE) of the error bit which generated the error (OFB only),
- The name of the DFB instance (DFB only),
- The message associated with the alarm.
  If the fault has disappeared (OFB error bit = 0), the message "ALARM DISAPPEARED" is displayed and the status messages are deleted.

From the activated alarm display screen,

[ALT] + [P]displays on screen the messages which correspond to status word bits at state 1.

```
Motga3            *STATUS*           ↑↓
Failure left motor N°3
00 error on abnormal sensor information
or commands.
```

```
Motga3            *STATUS*
ALARM DISAPPEARED

PRESS ENTER TO RETURN TO PREVIOUS SCREEN
```

[ALT] + [P]   Returns to the activated alarm screen.
[↵]   Exits the status screen and returns to the current dialog screen.

• Displaying archived alarms
From the active alarms field, pressing **[ALT] + [ACK]** displays the list of archived alarms, positioning on the most recent alarm. The following information is provided for each alarm :

```
001 22/07/95 10:20:1022/07/95 10:28:40
Failure left motor N°3
002 21/07/95 08:10:20 21/07/95 08:25:10
Failure upstream valve N°6
```

- its sequence number (001, 002, etc.),
- the date and time when the error condition occurred and ended,
- the corresponding message.
  [↑] [↓]   move within the list.
  [ALT] + [↓]   move to the end of the list.
  [ALT] + [↑]   move to the start of the list.
  To return to the application screen, press the **[ALT] + [ACK]** or **[↵]** keys.

Alarm relay operation
- Triggers on :
  - the occurrence of an error condition,
- Is released by :
  - the end of all error conditions, including unacknowledged ones,
  - the acknowledgment of all errors even if they are still present.

Timing diagram for managing configured alarms with display

The timing diagram below describes the behavior of alarm processing by the control panel.
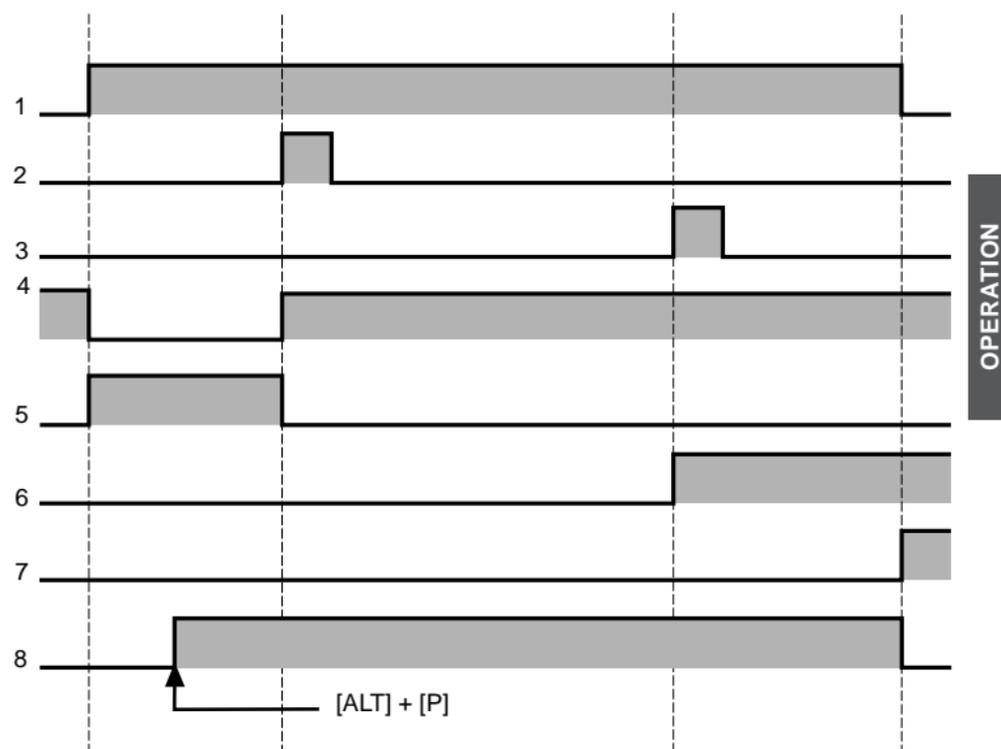
1 Alarm present.

2 Push any button (visual acknowledgment of alarm if the "overprint" option is selected in the alarm message).

3 Acknowledge by <ACK> (after pressing the ALT+ACK keys at the same time).

4 Status message

5 Alarm message   } Storage.

6 Optional feedback of the alarm number to the PLC (ACK key).

7 Storage of the alarm in the alarm log zone of the operator panel.

8 If OFB or DFB status management has been configured, pressing [ALT] + [P] when an OFB or DFB alarm occurs will display the status screen.

Record of operator entries

When an operator entry occurs in a message or when SETUP is selected, the operator entry record field is filled in. **[ALT] + [PRT]** are used to access and exit this record.

• **Displaying operator entries**
  • The first line displays the date and time when the entry was made along with the :
    - Message number, if it is in the terminal memory,
    - Label "PLC" for a message sent by the PLC,
    - Label "SET" for an activation of SETUP,
    - Label "CNX" for a connection on the bus,
    - Label "DCX" for disconnection from the bus.
    - Label "ERR" when a command key is pressed and the associated request is refused
  • The second line displays the value of the variable entered, only in the case of an operator entry in a message.

From the application screen :

[↑] [↓] moves within the list.
[ALT] + [↓] moves to the end of the list.
[ALT] + [↑] moves to the start of the list.

```
22/06/94 12:01:50...............OO4
254
21/06/94 12:28:00...............SET
```

Managing the time display

On restarting, the CCX 17 operator panel reads the time from the PLC then updates it locally. It then synchronizes itself every 30 minutes on the PLC clock.

Note : Managing the time as defined above only applies to CCX 17 operator panels connected to PLCs equipped with real-time clocks.

7 - Alarm Message Display

So that the user can quickly identify an alarm triggered, the corresponding message can be displayed in a message screen replacing the current display.

```
              *ALARM*
Humidity level too low : 80

Press any key to return.
```

The **"Display"** option must be previously declared when generating the message in PL7-MMI 17.
Pressing any key returns the user to the previous screen.

8- Managing the printing of messages

The "printer" function is available on all 3 types of operator panel : CCX 1720 FPS, CCX 1720 LPS and CCX 1730 LPS. The printer used must have a buffer memory of at least 4 Kb.

This function is used to print :
- messages as they occur,
- the log of operator entries,
- the alarm log.

The PLC activates these functions via a specific command.

Print format :

- **Status messages**

  Messages are printed as they occur. They are printed in order starting with the oldest. The last line of the list shows the most recent event.

  ```
  O  Speed of brush motor = 3600 tr/mn   O
  O  3200                  I 4000 tr/mn   O
  O  Consumption of cutting oil = 5,00    O
  O  Faulty parts = - 18                  O
  ```

  This type of printing has priority.

- **Alarm messages**

  The following are printed on appearance of an alarm :
  - the alarm number,
  - the date,
  - the time,
  - its appearance, disappearance or acknowledgment,
  - its reference.

  ```
  O 001 12/06/95 10:02:56....ON.MotTemp.10 O
  O 002 12/06/95 10:07:14....OFF.Lamp 1    O
  O 001 12/06/95 10:23:51....ACK.MotTemp.10 O
  O 006 12/06/95 15:41:28....ON.Valve Ok   O
  ```

  The acknowledgment of an alarm and the time of acknowledgment are also printed.

- **Table of operator entries**

  The following are printed when an operator enters a value or an acknowledge command :
  - the date,
  - the time,
  - the current value,
  - the value entered.

  ```
  O 12/06/95 10:02:56.................077 O
  O 3600                                  O
  O 12/06/95 10:07:14.................095 O
  O - 562                                 O
  ```

- **Table of archived alarms**

  The alarms archived on the panel are printed with :
  - their number, the date and time they appeared, the date and time they disappeared, and their reference.

  Access command : **[PRT]**

  ```
  O 001 12/06/95 10:02:56.12/06/95 10:23:51.MotTemp1 O
  O 006 12/06/95 11:56:04.12/06/95 12:18:20.Lamp 1.  O
  O 005 12/06/95 12:02:53.12/06/95 12:20:24.Motor10  O
  O 003 12/06/95 13:21:45.12/06/95 14:18:22.Tempera. O
  ```

Manual control keys

Window slots for custom labels
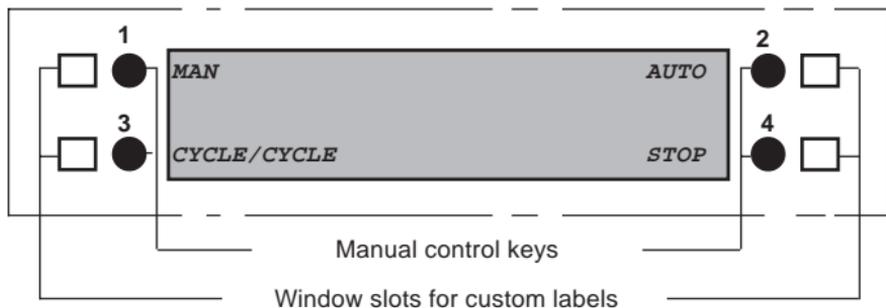
When the man-machine interface program is created, each manual control key can be assigned to a PLC internal bit, usable by the PLC application program.

These keys can operate in one of two ways, defined when the man-machine interface application is configured :

• Rising edge operation : Pressing the key sets the associated bit (or associated %IW or RIWpt,mod,chan,i) to 1 ; releasing it resets it to 0,
• Toggle type operation : Pressing the key changes the state of the bit.

On operator panels with discrete outputs (T CCX 17●●●PS), each control key is assigned a discrete output that can for example be connected to a PLC input. This association is only possible if no PLC bit is associated with the control key.

Caution

> **The manual control keys are permanently active, even when a system screen (Alarm or Setup) is displayed.**

Operating principle diagram
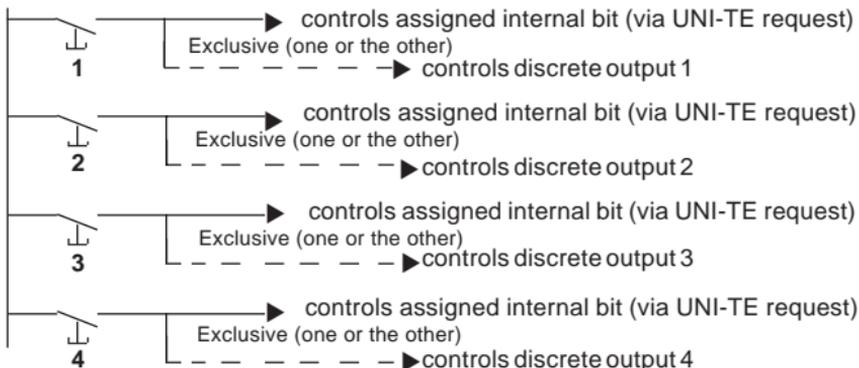
Note : The operating principle of manual control keys is identical for T CCX 17 30 L●● terminals with 2x4 control keys.

1 - Changing the Battery

The service life of the battery is at least one year, replacement of the battery is recommended at least every year. While changing the battery, data is retained for at least five minutes.

Replacement part reference number : TSX PLP 01

Procedure

1 Power down the operator panel,
2 Open the battery compartment cover,
3 Disconnect the battery from the operator panel,
4 Install the replacement battery,
5 Close the cover,
6 Power up the operator panel.
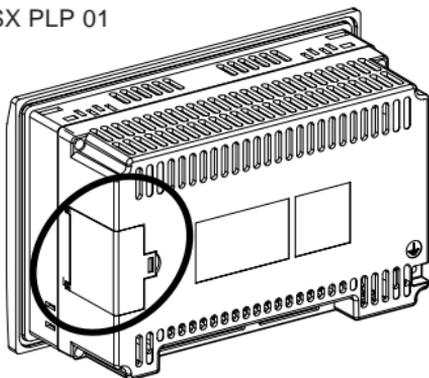
2 - Replacing the front panel

The CCX 17 operator panels comprise two parts that can be separated :
• The front panel that comprises the displays and their control electronics. This component can be replaced,
• The back panel comprising the power supply, the operator panel control electronics and its connections.

Procedure
#### A- Preliminary operations to perform on the front panel replacement component

Depending on the type of operator panel already installed, proceed with the encoding of the front panel using the jumpers on the JSTR connector.

Jumper positions for operator panels with fluorescent displays type : T CCX 17 20 F•

Panels Jumpers	T CCX 17 20 F	T CCX 17 20 FW	T CCX 17 20 FPS
ST1			
ST2		□ □	
ST3			□ □
ST4			
ST5			
ST6			

■ Jumper in place   □ □ No jumper

Position of the connector on the board inside the front panel

43
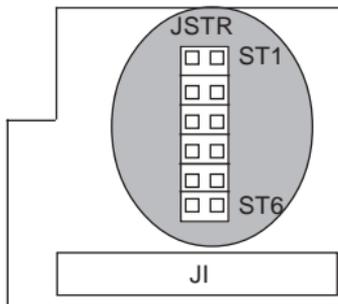
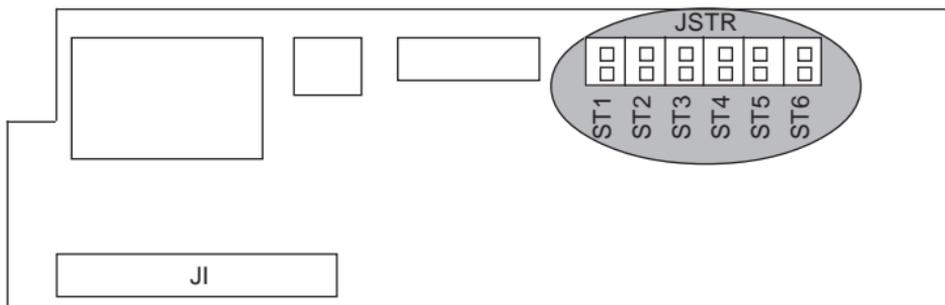Jumper positions for LCD type display operator panels : T CCX 17 20/30 L●

Panels \ Jumpers	ST1	ST2	ST3	ST4	ST5	ST6
T CCX 17 20 L		☐	☐			
T CCX 17 20 LW	☐	☐	☐			
T CCX 17 20 LPS				☐		

Panels \ Jumpers	ST1	ST2	ST3	ST4	ST5	ST6
T CCX 17 30 L				☐	☐	
T CCX 17 30 LW	☐		☐	☐		
T CCX 17 30 LPS		☐	☐	☐		

▨ Jumper in place   ☐ No jumper

Position of the connector on the board inside the front panel

JSTR — ST1 ST2 ST3 ST4 ST5 ST6

JI

MAINTENANCE

B - Operations to perform on the previously installed operator panel

1 Power down the operator panel,

2 Disconnect all connections,

3 Remove the operator panel from the panel,

4 Unscrew the four screws that attach the front panel to the back panel,

5 Separate the two elements (front panel and back panel),

6 Install the new front panel,

7 Attach the two elements (new front and back panels) using the four screws,

8 Install the operator panel and its connections,

9 Power up the operator panel.