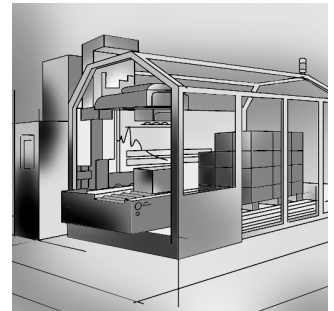**A range of industrial control panels for Micro and Premium PLCs**

- **Display**
- **Control**
- **Connection**
- **Software installation**

Display

The range of CCX 17 industrial operator panels -comprises display units of various sizes and technologies.

These units can display characters in 2 sizes.

Various display attributes (flashing, reverse video, etc) are associated with each message.
Alarms processed by the operator panels are time-stamped, recorded, and can be displayed in overprint mode, and can be printed.
The list of alarms can also be transferred, via X-Way, to a PC compatible as an Excel file.

Control

View control functions are provided by the buttons located on either side of the CCX 17 panel display. The designer can label these buttons, using either dynamic labels (intuitive control guided by text displayed on-screen) or static labels (labels inserted from behind the product).

- Panel with 2 x 2 control buttons and screen displaying 2 to 4 lines (of 20 or 40 characters) available as :
  - fluorescent : **T CCX 1720 F**
  - back-lit LCD : **T CCX 1720 L**
- Panel with 2 x 4 control buttons and screen displaying 4 to 8 lines (of 20 or 40 characters) available as :
  - back-lit LCD: **T CCX 1730 L**

Connection

The various possible connections for CCX 17 industrial operator panels to Micro/Premium PLCs are :
- Either via the integrated Uni-Telway port
- Or via the Uni-Telway protocol PCMCIA card
- Or via the FIPIO protocol PCMCIA card

Several CCX 17 operator panels can be connected on the same Uni-Telway or Fipio bus port.

Software installation

Software installation is via :
- Either the MMI functions integrated in the PL7 Micro or PL7 Junior software
- Or using the MMI 17 installation software (under Windows)

Premium automation platform
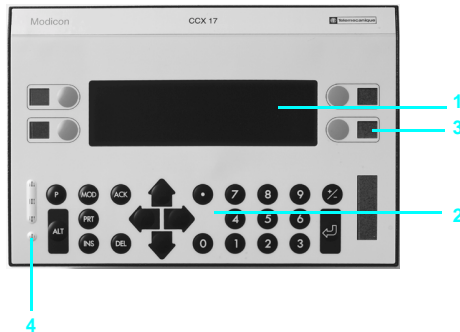CCX 17 industrial operator panels

General

CCX 17 industrial operator panels provide high-performance display, data entry, fault management, logging and control services. They offer the following functions :
- Display of any character in single or double size.
- Display of any character redefined by the designer (1).
- Display of numerical values in graphic form (bargraph) (1).
- Enter values directly using the numeric keypad.
- Enter values by incrementing/decrementing the value displayed.
- Enter values selected from a list preconfigured during design (1).
- Display of time-stamped faults, in an active list and in overprint mode.
- Recording of faults with appearance and acknowledgment time-stamped.
- Transfer the list of alarms in Excel format to a PC compatible, via X-Way
- Recording of all operator actions.
- Provide control via the keys beside the screen, transmitted via the serial link, the fieldbus, or the parallel link.

Description

Front of CCX 17-20 panels

CCX 17-20 industrial operator panels comprise :
1 A display screen, back-lit LCD for the CCX 17-20 L or fluorescent for the CCX 17-20 F, with 2 to 4 lines of 40 characters
2 A keypad divided into 3 zones :
- system keys
- cursor movement keys
- numeric keys
3 Four control buttons with identification labels
4 Three signalling lamps activated during self-tests and by the PLC application during operation

Front of CCX 17-30 panels
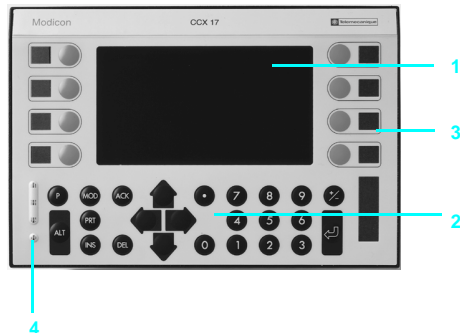
CCX 17-30 industrial operator panels comprise :
1 A back-lit LCD display screen with 4 to 8 lines of 40 characters
2 A keypad divided into 3 zones :
- system keys
- cursor movement keys
- numeric keys
3 Eight control buttons with identification labels
4 Three signalling lamps activated during self-tests and by the PLC application during operation

Underside of CCX 17-20/30 panels
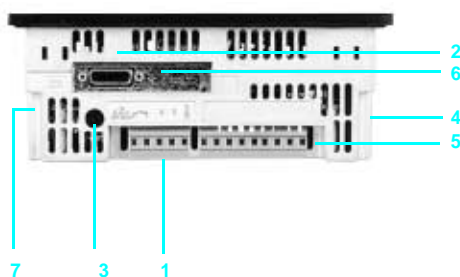
Located on the underside of CCX 17-20/30 industrial operator panels are :
1 A removable screw terminal block for the ⎓ 24 V power supply and the alarm relay connector
2 A 26-way high density SUB-D connector for the Uni-Telway link to PLCs
3 A 3.15 A TD5 X 20 fuse carrier
4 A slot for the backup battery
Depending on the version :
5 A removable screw terminal block for connecting the discrete solid state outputs of the panel
6 A 9-way SUB-D connector for connecting to a printer
7 A PCMCIA card slot for connection to the Fipio bus or storing/retrieving the MMI application

(1) In the event of installation using MMI 17 software.

Functions

Display

```
Display the colour:        RED
Open valve :          254
Fill  tank 2        ▮▮▮▮
```
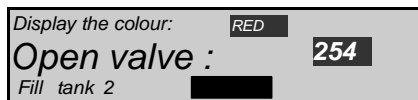
Messages can be displayed in single or double size. Each character can be redefined by the application designer. The newly defined characters become an integral part of the application.
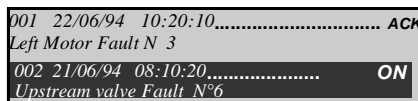A message can be static or composed of a dynamic value. This dynamic variable is displayed in numeric form. In the case of installation using MMI 17 software, this variable can also be displayed in graphic (bargraph) or text form (character string).

Entry

```
Valve number  :        260
Valve state: CLOSED
```
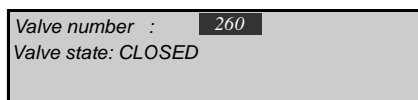
The operator can modify those values which are displayed in reverse video on the screen. The operator moves the selection window (using the arrow keys) to access the value to be modified. Modification mode is accessed by pressing the MOD key. The operator can make the entry via the numeric keypad, or by incrementing/decrementing using the up and down arrow keys, or by choosing from a preconfigured list (defined using MMI 17 software).

Fault management

```
001  22/06/94  10:20:10.............................. ACK
Left Motor Fault N 3
002  21/06/94  08:10:20..................... ON
Upstream valve Fault  N°6
```

Alarm type data is time-stamped, displayed and recorded by the operator panel. Any appearance of a new alarm activates the alarm relay on the panel. This relay can control an audible or visual warning. If the alarm has been defined as priority, it is displayed in overprint mode on the screen. Pressing any key clears the information from the screen.
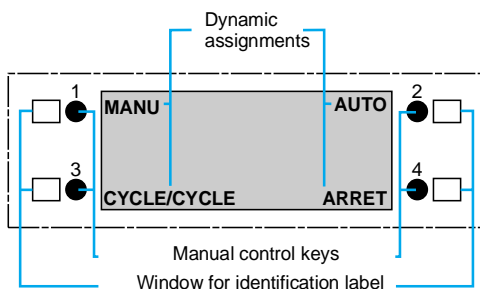
The active alarms list is accessed by pressing the ALT and ACK keys simultaneously. All alarms present are displayed and time-stamped. Pressing the local acknowledge key acknowledges the alarms present one by one and deactivates the alarm relay.
The alarm log can be accessed by pressing the ALT and ACK keys again. Pressing them a third time returns the operator to the process operating screens.

Logs

Two log memories are installed in each CCX 17 panel. One log relates to faults, while the other relates to all actions performed by the operator. Any modification of a value by the operator is time-stamped and recorded.The faults log can be transferred, via X-Way, in Excel format, to a PC compatible for sorting or statistical processing

Manual controls

```
        Dynamic
        assignments

  ┌──────────────────────────────┐
  │ □ 1 ● │ MANU      AUTO │ ● 2 □ │
  │       │               │       │
  │ □ 3 ● │ CYCLE/CYCLE  ARRET │ ● 4 □ │
  └──────────────────────────────┘
        Manual control keys
        Window for identification label
```

The manual control keys located on either side of the display can be assigned to either :

● Internal bits of the PLC. These assignments can be redefined during operation (the data is transferred to the PLC on request).

● Discrete PLC inputs. These are connected to the solid state outputs on the panel.

Printing

A printer port, available on certain operator panels, enables the alarm log, the operator action log and faults to be printed as they occur.

Specifications :
page 43583/5

References :
pages 43583/6 and 43583/7

Dimensions :
page 43583/7

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Modicon
Telemecanique

Schneider Electric

Premium automation platform
CCX 17 industrial operator panels

Software installation

Using MMI 17 software

MMI 17 software, running under Windows, is used to create the MMI applications loaded in the CCX 17 industrial operator panels. These applications consist of :
● The operator panel configuration
● Status and alarm messages (screen creation under the WYSIWYG editor)
● Message groups (enables the screen to be divided into "independent" display zones)
● Associating CCX 17 operator panel control keys with PLC bit objects

The basic principle of PLC/operator panel exchanges is mailbox communication. The mailbox is defined by a zone of PLC internal words, %MWi, which serves as an exchange between the two devices and is scanned by the CCX 17 operator panel.

Using PL7 Micro/Junior/Pro software

PL7 Micro/Junior/Pro software includes MMI management functions. These integrated functions authorize control of CCX 17 operator panels without using MMI 17 software.
Status and alarm messages together with all parameters are created using screens predefined in the PL7 Micro/Junior/Pro software and stored in the PLC data memory (%KWi constant words or %MWi internal words).
PL7 Micro/Junior/Pro software also enable CCX 17 operator panels to be used with control functions (without programming the PLC application program).

Specifications

Type of panel		T CCX 17 20 F●	T CCX 17 20 L●	T CCX 17 30 L●
Display				
Type of screen		Fluorescent	Back-lit LCD	
Number of lines		4 single height, 2 double height		8 single height, 4 double height
Number of characters per line		40 single height, 20 double height		
Character size	**mm**	6.2 or 12.4	5.3 or 10.6	
Control keys beside screen				
Number		2 rows of 2		2 rows of 4
Status messages				
Number		150		300
Message groups				
Number		50		100
Messages per group				
Number		8		16
Alarm messages				
Number		150		300
Alarm logs				
Number		150		300
Operator action logs				
Number		50 of each		100 of each
Connections				
PLCs		Integrated Uni-Telway bus, Fipio bus (with TSX FPP 10 PCMCIA card)		
Printer		RS 232 C link for T CCX 17●●●PS models		
Supply voltage	**V**	--- 24 not isolated		
Data backup		TSX PLP 01 battery (annual replacement recommended)		
"Discrete" outputs				
Number		4		8
Voltage	**V**	--- 24, positive logic		
Current	**mA**	350		
Protection				
Front panel		IP 65		
Rear panel		IP 20		
Temperature				
Operating	**°C**	0…55	0...45	
Storage	**°C**	- 20…+ 70	- 20…+ 70	
Shock resistance				
Standard		IEC 68-2-27		
Vibration resistance				
Standard		IEC 68-2-6		
Certification		CE, UL		

T CCX 1720 F●

T CCX 1720 L●

T CCX 1730 L●

TSX MRP/MFP ●●●P

CCX 17 operator panels with fluorescent screen

Number of lines	Number of keys	Bus connection	Printer port	Discrete outputs	Reference (1)	Weight kg
4	4	Uni-Telway	–	–	**T CCX 1720 FW**	1.720
		Uni-Telway, Fipio (2)	–	–	**T CCX 1720 F**	1.780
			Yes	4	**T CCX 1720 FPS**	1.810

CCX 17 operator panels with LCD screen

Number of lines	Number of keys	Bus connection	Printer port	Discrete outputs	Reference (1)	Weight kg
4	4	Uni-Telway	–	–	**T CCX 1720 LW**	1.450
		Uni-Telway, Fipio (2)	–	–	**T CCX 1720 L**	1.510
			Yes	4	**T CCX 1720 LPS**	1.510
8	8	Uni-Telway	–	–	**T CCX 1730 LW**	1.470
		Uni-Telway, Fipio (2)	–	–	**T CCX 1730 L**	1.530
			Yes	8	**T CCX 1730 LPS**	1.560

Separate parts

Description	Use	Memory capacity	Reference	Weight kg
Fipio Agent PCMCIA card	Connection to Fipio bus (3) (all operator panels except T CCX 17●0 ●W)	–	**TSX FPP 10**	0.110
Protected RAM memory PCMCIA cards	Back up MMI applications	32 Kwords (4)	**TSX MRP 032P**	0.060
		64 Kwords	**TSX MRP 064P**	0.060
		128 Kwords	**TSX MFP 0128P**	0.060
Flash EPROM memory PCMCIA cards	Archive MMI applications	64 Kwords	**TSX MFP 064P**	0.060
		128 Kwords	**TSX MFP 0128P**	0.060

Replacement parts

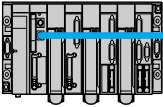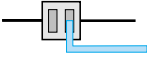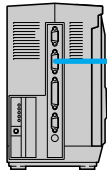| Description	Type of operator panel	Unit reference	Weight kg
Front panels	T CCX 1720 F/FW/FPS	**T CCX 1720 FFP**	0.120
	T CCX 1720 L/LW/LPS	**T CCX 1720 LFP**	0.110
	T CCX 1730 L/LW/LPS	**T CCX 1730 LFP**	0.180
Backup batteries (CCX 17 operator panel data)	All types	–	**TSX PLP 01**	0.010
	Sold in lots of 10	**TSX PLP 101**	0.320

(1) Includes the T CCX CB 10 002 cable as standard (0.2 m long with 2 x 26-way and 25-way SUB-D connectors). Includes a multilingual quick reference guide as standard (English, French, German, Italian and Spanish).
(2) Includes the MMI application archive and retrieval function on a PCMCIA card.
(3) The CCX 17 operator panel connected on a FIPIO bus communicates with the bus arbitrator PLC station.
(4) Only compatible with MMI applications on T CCX 1720 ●●● operator panels.

Premium automation platform
CCX 17 industrial operator panels

Uni-Telway bus connecting cables

Device	Uni-Telway bus connection from CCX 17 to	Length	Reference kg	Weight
Nano/Micro/Premium	Nano/Micro/ Premium auxiliary/ terminal port	2.5 m	**XBT-Z968**	0.180
		5 m	**XBT-Z9681**	0.340
TSX SCA 62	TSX SCA 62 subscriber socket	1.83 m	**XBT-Z908**	0.240
FT2100, FTX 417/517, compatible PC	RS 485 port for FTX 417/517 terminals to CCX 17	3 M	**T CCX CB8 030**	0.250
	RS 232 C port for FT2100 terminal or PC compatible via RS 232 C/RS 485 adaptor TSX SCA 72	3 m	**T CCX CB9 030**	0.250

Fipio bus connecting cables

| Device	Fipio bus connection from CCX 17 to	Length	Reference	Weight kg
TSX FP ACC 3/ACC 4	TSX FP ACC 3 insulated junction box TSX FP ACC 4 dust and damp proof junction box	1 m	**TSX FP CG 010**	0.210
		3 m	**TSX FP CG 030**	0.410

Development software for MMI applications

Description	Use	Composition	Reference (1)	Weight kg
MMI 17 applicationt development software (under Windows 3.1, Windows 95/NT 4.● or IBM OS/2)	For CCX 17 operator panel MMI application included in the CCX 17 operator panel	1 set of disks and 2 user manuals	**TMX LP M17 XWF 6E**	0.850
PL7 Micro/Junior/Pro application development software (under Windows 95, Windows NT 4.●)	CCX 17 operator panel controlled using integrated functions	–	See page 43100/17	–

(1) The letter **E** at the end of a reference indicates that the product is supplied with documentation in English.

Dimensions, mounting

Flush-mounted

134

9   P

152

a

a1

207

137 ± 0,5

l ± 0,5
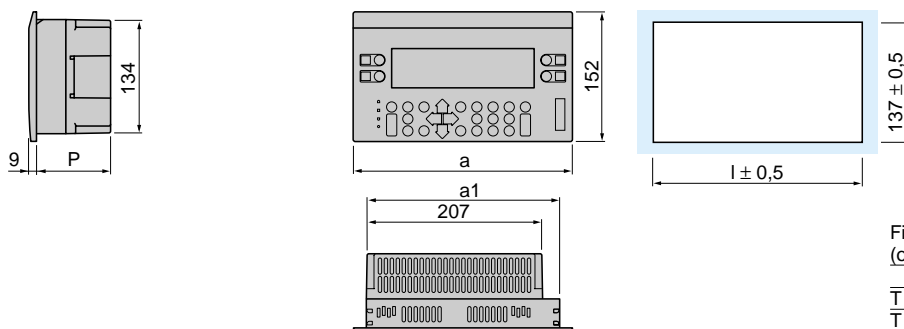
Fixed by 4 or 6 locking clips (supplied) pressure mounted (on panel 1 to 6 mm thick)

	a	a1	P	l
T CCX 1720 F●	257	227	87	230
T CCX 1720 L● /30 L●	225	207	80	210

Modicon Telemecanique