Message Display
Operator Panel

UCT-33/36
Industrial Terminal

Manual

32.00

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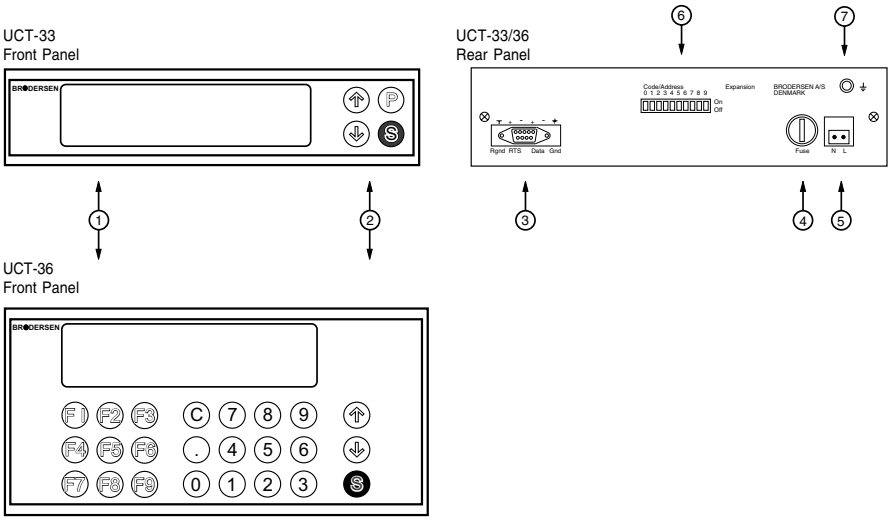


1. Text field. 2. Keypad. 3. RS232C connector. 4. Fuse. 5. Supply voltage. 6. Code switch. 7. Ground terminal.

1 GENERAL DESCRIPTION.

UCT-33/36 message display and operator panel is compatible with a Digital VT100 terminal. Due to physical and functional limitations only a subset of the VT100 control commands are applicable to this device.

UCT-33/36 can be used as a nonintelligent man machine interface in industrial installations. The display acts as an output device for a "host", e.g. a PLC or a computer - data coming from the host is displayed on the screen. The terminal utilizes a serial RS232C data interface to transfer data between the terminal and the host.
Simultaneously the keypad can be used as an input device to the host - information entered through the keyboard is sent to the host.

UCT-33 has 4 keys, UCT-36 has 24 keys on the front panel, both versions are equipped with a 2x20 character VFD display.

The units have IP65 front sealing and are designed for mounting in installation panels. The dimensions corresponds to DIN standard for panel meters etc.

Versions are available for a.c./d.c. supply voltage.

2 PROTOCOL/DATA INTERFACE.

2.1 Keypad (UCT → Host).

The operator uses the keypad to transmit codes to the host. All keys transmit one or more codes to the host immediately when typed.

An acoustic feedback will verify to the operator that the keystroke has been processes by the terminal.

The codes sent by the keypad are shown below:

UCT-33:

Key	ASCII code
↑	ESC [A
↓	ESC [B
P	ESC [C
S	CR LF

UCT-36:

Key	ASCII code
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
.	. decimal point
C	BS
S	CR LF
↑	ESC [A
↓	ESC [B
F1	ESC O q
F2	ESC O r
F3	ESC O s
F4	ESC O t
F5	ESC O u
F6	ESC O v
F7	ESC O w
F8	ESC O x
F9	ESC O y

2.2 Terminal Control Commands (Host → UCT).

The UCT-33/36 has a number of control commands which will cause the display to take action other than displaying a character on the display, e.g.: move cursor, delete text, beep, etc.

Control characters have values of 08H-1FH and 7FH.
The control characters recognized by the UCT-33/36 are shown in the table below. All other control codes are ignored.

Control character		
	Hex code	
		Function
NUL	00	Ignored. Not stored in input buffer.
ENQ	05	Transmit answerback message.
BEL	07	Alert tone
BS	08	Move the cursor to the left one character. If at the left margin command is ignored.
HT	09	Move the cursor to the right one character. If at the right margin command is ignored.
LF	0A	Causes a line feed or a new line operation.
VT	0B	Interpreted as LF
FF	0C	Interpreted as LF
CR	0D	Moves cursor to left margin on current line.
SO	0E	Ignored. Not stored in input buffer.
SI	0F	Ignored
XON	11	Causes terminal to resume transmission
XOFF	13	Causes terminal to stop transmitting all codes except XOFF and XON
CAN	18	If sent during a control sequence, the sequence is immediately terminated and not executed and an error character is displayed.
SUB	1A	Interpreted as CAN
ESC	1B	Introduces a control sequence
DEL	7F	Ignored. Not stored in input buffer

2.3 Control Sequences (Host → UCT).

All supported control sequences are a subset of Digital VT100's specified in ANSI X 3.64 1977 and ANSI X 3.41 1974. The following control sequences, host to UCT unless otherwise noted, are implemented:

Cursor Movement	
Cursor up	**ESC [A** or **ESC [** `Pn` **A**
Cursor down	**ESC [B** or **ESC [** `P n` **B**
Cursor Forward	**ESC [C** or **ESC [** `Pn` **C**
Cursor backward	**ESC [D** or **ESC [** `Pn` **D**
Cursor position	**ESC [** `Pl` **;** `Pc` **H** or **ESC [** `Pl` **;** `Pc` **f**
Index	**ESC D**
Next line	**ESC E**
Save cursor and attributes	**ESC 7**
Restore cursor and attributes	**ESC 8**

Erasing	
From cursor to end of line	**ESC [K** or **ESC [0 K**
From beginning of line to cursor	**ESC [1 K**
Entire line containing cursor	**ESC [2 K**
From cursor to end of screen	**ESC [J** or **ESC [0 J**
From beginning of screen to cursor	**ESC [1 J**
Entire screen	**ESC [2 J**

Reports	**Command**
	Response
Cursor Position Report	**ESC [6 n**
	ESC [`Pl` **;** `Pc` **R**
Status Report	**ESC [5 n**
(terminal ok)	**ESC [0 n**
(terminal not ok)	**ESC [3 n**
Device attributes report	**ESC [c** or **ESC [0 c**
(no options)	**ESC [? 1 ; 0 c**
Power-up reset routine	**ESC c**
	-

Ignored control sequences
Control seq. not mentioned above are ignored.

`Pn`: The number of positions the cursor should move relative to its current position (1 ... 19).
Examples:
ESC[12C Moves cursor 12 positions to the right.
ESC[D Moves cursor 1 position to the left.
If the entered number exceeds maximum possible movement the cursor stops at first/last position in the display.

`Pl`: The absolute line position the cursor should move to (1 or 2).

`Pc`: The absolute coloumn position the cursor should move to (1 ... 20).
Example:
ESC]2;20H Moves cursor to lower right corner.

2.4 Handshake.

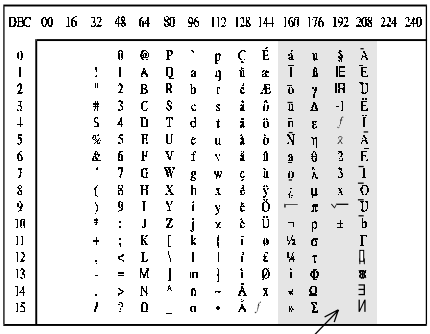
The terminal can operate at transmission speeds from 300 up to 9600 baud, however, the terminal may not be able to keep up with incoming data.

The terminal stores incoming characters in a 96-character buffer and processes them on a first-in/first-out basis. When the content of the buffer reaches 48 characters, the terminal will transmit XOFF (DC3). On this signal the host should suspend transmission to the terminal. If the host stops transmitting, the terminal will delete the buffer. When 24 characters remain in the buffer, the terminal will transmit XON (DC1) to signal the host that it may resume transmission.

If the host fails to respond to an XOFF from the terminal in a timely manner, the buffer will continue to fill. When the 96-character capacity of the buffer is exceeded, a condition occurs called “buffer overflow”.

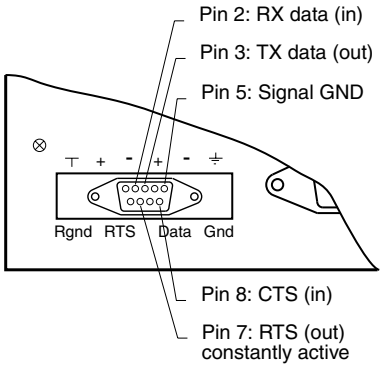
If the buffer overflows, the UCT will begin to discard incoming characters and the error character will be displayed.

2.5 Display Character Set (Host ➔ UCT).

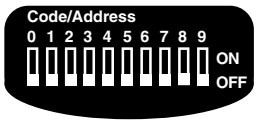


Note: The characters in this area are not fully compatible with the standard code page 850 layout.

3 CONNECTORS.



4 CODESWITCH.



The setting of the code switch is loaded when the message display is connected to supply voltage.

Sw.no.	Sw.setting	Function
0, 1, 2:	000	Baud rate=300
	100	=1200
	010	=2400
	110	=4800
	001	=9600
3:	0	Data bit=8
	1	=7
4:	0	Parity Off
	1	Parity On
5:	0	Odd parity
	1	Even parity
6, 7:	00	Light level=20%
	10	=40%
	01	=60%
	11	=100%
8:	0	Key click off
	1	Key click on
9:	-	None

NOTE
7 data bit/no parity ⇒ 2 stop bit.
All other setups ⇒ stop bit.

5 TECHNICAL DATA.

Display: VFD type,
2 x 20 characters,
5 x 7 dotmatrix.
Readable at a distance up to 3 m.
Display field: 125 x 22 mm.
Height of characters: 5 mm.
Intensity: Selectable, 4 levels.

Keypad: UCT-33: 4 keys.
UCT-36: 24 keys.
Tactile feedback type.
Acoustic feedback selectable.

Serial interface: EIA, RS 232C.
Mode: Full duplex.
Speed: 300, 1200, 2400, 4800, 9600.
Code: ASCII.
Format: Asynchronous.
Character size: 7 or 8 bit.
Parity: Even, odd or none.
Synchronization: XON / XOFF.
Control: Subset of VT100 (ANSI)
Connector: 9 way SUB-D (male).

Supply voltage: 110-240V a.c. (90-265V).
12-48V a.c./d.c. (10.5-58V).
Connector: Plug-in screw terminals.

Mains frequency: 40-60Hz.

Consumption: Approx. 10W.

Ambient temperature: -20 to +50°C.

Protection: Front: IP54.
Rear: IP20.

EMC: According to EN50081-1, EN50082-2.

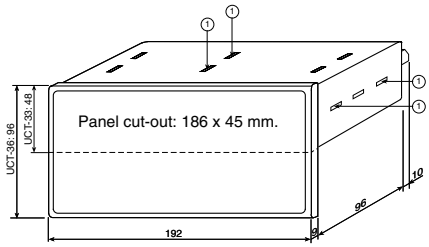
Isolation:
Mains: 4kV a.c. according to EN 60950 class II.

Dimensions:
Front: 192 x 48/96 mm according to DIN43700.
Depth: 96 mm + connectors (10 mm) + front (9 mm).

Housing:
Front: Plastic.
Rear: Anodized aluminium.

Weight: Approx. 600 g.

6 MECHANICAL DIMENSIONS/MOUNTING.



Use the slots marked 1 (top/bottom/sides) to the four mounting clips.

7 DISPLAY TYPES.

Display type: UCT-36 924

Number of keys:
4 keys. UCT-33
24 keys. UCT-36

Supply voltage:
12-48V a.c./d.c. 924
110-240V a.c. 230

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