

Kuhnke Elektronik

Instruction manual KDT 630 Kuhnke Dialog Terminal

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KUHNKE

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```

***** (Flash (several messages))*****
FLASH L PL00.01 ;start
      = PT00.00/50*10MS/C ;clock generator 1Hz
L PT00.00 ;clock generator on ?
JPC AST_ON ;--> Asterisk on if yes
L " " ;else !
      = BM00.02 ;after character marker
JP OUTPUT ;--> Output
      = " " ;produce asterisk
AST_ON L = BM00.02 ;after character marker
***** Display character *****
OUTPUT L BM00.02 ;display character after
      = BC00.00 ;text 1, line 1, character 1
      = BC02.00 ;text 2, line 1, character 1
      = BC04.00 ;text 3, line 1, character 1
      = BC06.00 ;text 4, line 1, character 1
      = BC08.00 ;text 5, line 1, character 1
      = BC10.00 ;text 6, line 1, character 1
      = BC12.00 ;text 7, line 1, character 1
      = BC14.00 ;text 8, line 1, character 1
      = SBC00.00 ;text 9, line 1, character 1
      = SBC02.00 ;text 10, line 1, character 1
      etc.

```

4.7.6 Co-ordination Chart of Texts

text1	SM13.00	BC00.00 - 01.15	text17	SM14.00	SBD00.00-01.15
text2	SM13.01	BC02.00 - 03.15	text18	SM14.01	SBD02.00-03.15
text3	SM13.02	BC04.00 - 05.15	text19	SM14.02	SBD04.00-05.15
text4	SM13.03	BC06.00 - 07.15	text20	SM14.03	SBD06.00-07.15
text5	SM13.04	BC08.00 - 09.15	text21	SM14.04	SBD08.00-09.15
text6	SM13.05	BC10.00 - 11.15	text22	SM14.05	SBD10.00-11.15
text7	SM13.06	BC12.00 - 13.15	text23	SM14.06	SBD12.00-13.15
text8	SM13.07	BC14.00 - 15.15	text24	SM14.07	SBD14.00-15.15
text9	SM13.08	SBC00.00 - 01.15	text25	SM14.08	SBR00.00-01.15
text10	SM13.09	SBC02.00 - 03.15	text26	SM14.09	SBR02.00-03.15
text11	SM13.10	SBC04.00 - 05.15	text27	SM14.10	SBR04.00-05.15
text12	SM13.11	SBC06.00 - 07.15	text28	SM14.11	SBR06.00-07.15
text13	SM13.12	SBC08.00 - 09.15	text29	SM14.12	SBR08.00-09.15
text14	SM13.13	SBC10.00 - 11.15	text30	SM14.13	SBR10.00-11.15
text15	SM13.14	SBC12.00 - 13.15	text31	SM14.14	SBR12.00-13.15
text16	SM13.15	SBC14.00 - 15.15	text32	SM14.15	SBR14.00-15.15

4.8. Assignment formular KDT 630

Manufacturer:	Type:
Project:	Project -No.:
Projector:	Date:

KDT 630	PLC-address	Comment	Input range
timer 1	PT00.00		
timer 2	PT00.01		
timer 3	PT00.02		
timer 4	PT00.03		
timer 5	PT00.04		
timer 6	PT00.05		
timer 7	PT00.06		
timer 8	PT00.07		
timer 9	PT00.08		
timer 10	PT00.09		
timer 11	PT00.10		
timer 12	PT00.11		
timer 13	PT00.12		
timer 14	PT00.13		
counter 1	C00.00		
counter 2	C00.01		
counter 3	C00.02		
counter 4	C00.03		
value 1	BD00.02		
value 2	BD00.04		
value 3	BD00.06		
value 4	BD00.08		

4.7.4.1 Values of Keys

The values of the keys are handed over to the PLC as ASCII characters according to the following assignment chart.

Z	W	P	B	U
7	8	9	S	L
4	5	6	C	R
1	2	3	K	D
0	.	J	N	E

4.7.4.2 Example with dialogue

In the following example, the KDT is supposed to switch the lifting motor on or off respectively. The "YES"-key is scanned before switching.

Deposition of a text in the INIT module named INIT

```
BC00.00 BYTE "lifting motor on ?$"  
BC01.00 BYTE " YES/NO ?$"  
BC02.00 BYTE "lifting motor off ?$"  
BC03.00 BYTE " YES/NO ?$"
```

Main program for example in the ORG module

Program for text selection with initialization

```
L M00.00 ;initialization marker  
JPC MAINP ;on ? --> main program  
;..... Initialization .....  
L PL00.01 ;set  
= M00.00 ;initialization marker  
LD $5AA5 ;code for text release  
=D BD15.10 ;into the text release marker  
L 2 ;number of texts (max. 32)  
= BD00.01 ;into the text number marker  
JP INIT ;jump to init module (KUAX 657)  
;jump to program module texts (KUAX 667)  
;.....  
L PL00.01 ;  
= SM13.00 ;output of text 1  
CLR BD15.08 ;clear text number  
CLR BD15.09 ;clear value of key  
;..... Main program .....  
MAINP L BD15.08 ;current text number  
V 1 ;compare to 1  
JP= MOT_ON ;= --> Motor on  
V 2 ;compare to 2  
JP= MOT_OFF ;= --> Motor off  
JP T_END ;after end of text output
```

```
;..... Motor on .....  
MOT_ON L BD15.09 ;current value of key  
V 1 ;compare to yes  
JP<= T_END ;end of text output if unequal  
L PL00.01 ;load logical 1  
S A00.00 ;lifting motor on  
R SM13.00 ;text 1 is cleared  
S SM13.01 ;output of text 2  
CLR BD15.09 ;clear current value of key  
JP T_END ;after end of text output  
;..... Motor off .....  
MOT_OFF L BD15.09 ;current value of key  
V 1 ;compare to yes  
JP<= T_END ;end of text output if unequal  
L PL00.01 ;load logical 1  
R A00.00 ;lifting motor off  
R SM13.01 ;text 2 is cleared  
S SM13.00 ;output of text 1  
CLR BD15.09 ;clear current value of key  
T_END NOP
```

4.7.5 Collective Message

In the case of several simultaneous messages (e.g. error messages) it seems practical to tell the user about it. He can then either scroll through the messages using the cursor keys or confirm them by pressing ENTER. The following program suggestion produces a flashing signal if there is more than one message. For this the first character in the first line has to be left free during text generation. In the following example, a flashing '*'-'!' appears as the first sign if several messages occur.

Program suggestion collective message using KUAX 657

```
;..... Counting current messages .....  
CLR BM00.00 ;clear loop counter  
CLR BM00.01 ;clear message counter  
SM13.00[BM00.00] ;check text marker  
LOOP L CARRY_ON ;--> Carry on if no  
JPC INC ;else increase message counter  
CARRY_ON INC BM00.00 ;increase loop counter  
L BM00.00 ;compare loop counter  
V 32 ;to number of messages  
JP<= LOOP ;--> Loop is unequal  
;..... Check if there are several messages .....  
L BM00.01 ;if message counter  
V 1 ;greater 1  
JP> FLASH ;--> Flash  
L = BM00.02 ;else produce blank  
JP OUTPUT ;after character marker  
;--> Output
```

4.7.2.2 Deposition of Texts using KUAX 667

As no INIT module was admitted in the KUAX 667 at the time when this instruction manual was prepared the texts have to be generated via a program in a program module.

Example for a program for KUAX 667:

```
L      L'      :ASCII character for L as in
=      BC00.00 :text 1, line 1, character 1
L      L'      :ASCII character for i as in
=      BC00.01 :text 1, line 1, character 2
L      L'      :ASCII character for f as in
=      BC00.02 :text 1, line 1, character 3
L      L'      :ASCII character for t as in
=      BC00.03 :text 1, line 1, character 4
etc.
```

4.7.2.3 Special Characters

There are mutated vowels (umlaut) and special characters available apart from the standard ASCII characters. For this the appropriate value has to be entered into the corresponding byte marker.

Character	Value
ä	225
ö	239
ü	245
ß	226
µ	228
Ω	244
Σ	246
+	253
°(degrees)	223

4.7.3 Calling-up Texts

32 text markers in the user program (cf. co-ordination chart) establish the texts to be activated.

SM13.00 - SM14.15 text markers 1-32

Example for program lifting motor on/off:

```
L      M00.00 :initialization marker
JPC MAINP :on ? -> main program
;..... Initialization .....
L      PL00.01
=      M00.00 :set
;initialization marker
;code for release
;into the text release marker
;number of texts (max. 32)
L      BD15.10
=      2
;into the text number marker
;jump to init module (KUAX 657)
JPINIT INIT
;jump to program module texts
;
;output of text 1
L      PL00.01
=      SM13.00
;..... Main program .....
MAINP L      I00.00
AN      I00.01
S      A00.00 :input lifting motor on
R      SM13.00 :input lifting motor off
S      SM13.01 :switch lifting motor on
;text 1 is cleared
;output of text 2
L      I00.01
R      O00.00 :input lifting motor off
R      SM13.01 :switch lifting motor off
S      SM13.01 :text 2 is cleared
;output of text 1
```

Note for projecting:

If the user is not supposed to be able to delete the displayed text by pressing the ENTER key you should use other markers as text markers (e.g. SM11.00-SM12.15). These can then be copied to the original text markers via the program.

e. g.

```
CIT16 SM11.00 :fetch the first 16 pseudo text markers
C16T1 SM13.00 :copy to text marker
CIT16 SM12.00 :fetch the next 16 pseudo text markers
C16T1 SM14.00 :copy to text marker
```

4.7.4 Dialogue in Text Mode

With the KDT 630 you can have a user specific dialogue. For this the KDT reports the current text number and the current key value to the PLC.

BD15.08 current text number
BD15.09 current key number (cf. Values of Keys)

KDT 630			KDT 630			KDT 630		
time	PLC-time	Variable	time	PLC-time	Variable	time	PLC-time	Variable
time 1	PT00.00	ABM00.02	time 33	PT02.00	ABM04.02	time 65	PT04.00	ABM08.02
time 2	PT00.01	ABM00.04	time 34	PT02.01	ABM04.04	time 66	PT04.01	ABM08.04
time 3	PT00.02	ABM00.06	time 35	PT02.02	ABM04.06	time 67	PT04.02	ABM08.06
time 4	PT00.03	ABM00.08	time 36	PT02.03	ABM04.08	time 68	PT04.03	ABM08.08
time 5	PT00.04	ABM00.10	time 37	PT02.04	ABM04.10	time 69	PT04.04	ABM08.10
time 6	PT00.05	ABM00.12	time 38	PT02.05	ABM04.12	time 70	PT04.05	ABM08.12
time 7	PT00.06	ABM00.14	time 39	PT02.06	ABM04.14	time 71	PT04.06	ABM08.14
time 8	PT00.07	ABM01.00	time 40	PT02.07	ABM05.00	time 72	PT04.07	ABM09.00
time 9	PT00.08	ABM01.02	time 41	PT02.08	ABM05.02	time 73	PT04.08	ABM09.02
time 10	PT00.09	ABM01.04	time 42	PT02.09	ABM05.04	time 74	PT04.09	ABM09.04
time 11	PT00.10	ABM01.06	time 43	PT02.10	ABM05.06	time 75	PT04.10	ABM09.06
time 12	PT00.11	ABM01.08	time 44	PT02.11	ABM05.08	time 76	PT04.11	ABM09.08
time 13	PT00.12	ABM01.10	time 45	PT02.12	ABM05.10	time 77	PT04.12	ABM09.10
time 14	PT00.13	ABM01.12	time 46	PT02.13	ABM05.12	time 78	PT04.13	ABM09.12
time 15	PT00.14	ABM01.14	time 47	PT02.14	ABM05.14	time 79	PT04.14	ABM09.14
time 16	PT00.15	ABM02.00	time 48	PT02.15	ABM06.00	time 80	PT04.15	ABM10.00
time 17	PT01.00	ABM02.02	time 49	PT03.00	ABM06.02	time 81	PT05.00	ABM10.02
time 18	PT01.01	ABM02.04	time 50	PT03.01	ABM06.04	time 82	PT05.01	ABM10.04
time 19	PT01.02	ABM02.06	time 51	PT03.02	ABM06.06	time 83	PT05.02	ABM10.06
time 20	PT01.03	ABM02.08	time 52	PT03.03	ABM06.08	time 84	PT05.03	ABM10.08
time 21	PT01.04	ABM02.10	time 53	PT03.04	ABM06.10	time 85	PT05.04	ABM10.10
time 22	PT01.05	ABM02.12	time 54	PT03.05	ABM06.12	time 86	PT05.05	ABM10.12
time 23	PT01.06	ABM02.14	time 55	PT03.06	ABM06.14	time 87	PT05.06	ABM10.14
time 24	PT01.07	ABM03.00	time 56	PT03.07	ABM07.00	time 88	PT05.07	ABM11.00
time 25	PT01.08	ABM03.02	time 57	PT03.08	ABM07.02	time 89	PT05.08	ABM11.02
time 26	PT01.09	ABM03.04	time 58	PT03.09	ABM07.04	time 90	PT05.09	ABM11.04
time 27	PT01.10	ABM03.06	time 59	PT03.10	ABM07.06	time 91	PT05.10	ABM11.06
time 28	PT01.11	ABM03.08	time 60	PT03.11	ABM07.08	time 92	PT05.11	ABM11.08
time 29	PT01.12	ABM03.10	time 61	PT03.12	ABM07.10	time 93	PT05.12	ABM11.10
time 30	PT01.13	ABM03.12	time 62	PT03.13	ABM07.12	time 94	PT05.13	ABM11.12
time 31	PT01.14	ABM03.14	time 63	PT03.14	ABM07.14	time 95	PT05.14	ABM11.14
time 32	PT01.15	ABM04.00	time 64	PT03.15	ABM08.00			

ABM00.00 = Number of variable timers

Note: The variables are 16-bit values (2 Byte)

4.4. Counters

4.4.1. Establishing Number of Counters

Via KDT 630 a maximum of 32 counters can be observed and altered. The projector determines how many counters may be altered. To do this he must deposit the number in the ABM00.01.

Example of program:

```
L 12
= ABM00.01
;there are 12 counters (C00.00-C00.11)
;released for alteration.
```

4.4.2. Programming Counters

Counters released for alteration have to be programmed as counters with a variable counter value (cf. PLC instruction manual - Programming with Software-Counters).

The preset-values which are entered via the KDT 630 range from ABM12.00 to ABM15.14 (cf. co-ordination chart below).

Example of program:

Two counters with a variable selection and one counter with a constant selection are programmed.

```
L 2
= ABM00.01
;two counters are released for alteration
;(see above Establishing Number of Counters)

L 100.00
= C00.00-ABM12.00:F
;start of counter
;variable forward counter

L 100.01
= C00.01-ABM12.02:B
;start of counter
;variable backward counter

L 100.02
= C00.02:35:F
;start of counter
;constant forward counter
```

If a new preset-value is entered via the KDT 630, it will be taken over at the next start of the counter.

4.4.3. Co-ordination Chart of Counters

KDT 630			KDT 630			KDT 630		
counter	PLC-counter	Variable	counter	PLC-counter	Variable	counter	PLC-counter	Variable
counter 1	C00.00	ABM12.00	counter 12	C00.11	ABM13.06	counter 23	C01.06	ABM14.12
counter 2	C00.01	ABM12.02	counter 13	C00.12	ABM13.08	counter 24	C01.07	ABM14.14
counter 3	C00.02	ABM12.04	counter 14	C00.13	ABM13.10	counter 25	C01.08	ABM15.00
counter 4	C00.03	ABM12.06	counter 15	C00.14	ABM13.12	counter 26	C01.09	ABM15.02
counter 5	C00.04	ABM12.08	counter 16	C00.15	ABM13.14	counter 27	C01.10	ABM15.04
counter 6	C00.05	ABM12.10	counter 17	C01.00	ABM14.00	counter 28	C01.11	ABM15.06
counter 7	C00.06	ABM12.12	counter 18	C01.01	ABM14.02	counter 29	C01.12	ABM15.08
counter 8	C00.07	ABM12.14	counter 19	C01.02	ABM14.04	counter 30	C01.13	ABM15.10
counter 9	C00.08	ABM13.00	counter 20	C01.03	ABM14.06	counter 31	C01.14	ABM15.12
counter 10	C00.09	ABM13.02	counter 21	C01.04	ABM14.08	counter 32	C01.15	ABM15.14
counter 11	C00.10	ABM13.04	counter 22	C01.05	ABM14.10			

ABM00.01 = Number of variable counters

Note: The variables are 16-bit values (2 Byte)

4. Projecting

4.1. Definition of Operands Overview

In the PLC, the following ranges of operands are defined by means of the KDT 630.

ABM00.00	Number of variable timers (max. 95)
ABM00.01	Number of variable counters (max. 32)
ABM00.02 - ABM11.15	Preset-values of variable timers (16-bit)
ABM12.00 - ABM15.15	Preset-values of variable counters (16-bit)

BD00.00	Number of variable values (max. 99)
BD00.01	Number of texts
BD00.02 - BD12.07	99 16-bit values
BD15.08	Selected text number
BD15.09	Selected key value in function texts
BD15.10 + BD15.11	Text released via S5AA5
BD15.12 + BD15.13	Operator key (16-bit, 4-digit)
BD15.14 + BD15.15	Projector key (16-bit, 4-digit)
BC00.00 - BC15.15	Texts 1 - 8 in ASCII characters
SBC00.00 - SBC15.15	Texts 9 - 16 in ASCII characters
SBD00.00 - SBD15.15	Texts 17 - 24 in ASCII characters
SBR00.00 - SBR15.15	Texts 25 - 32 in ASCII characters

SM13.00 - SM14.15 32 text markers 1 = text activated

You will find the exact relation to timers, counters, texts and values under the corresponding functions (cf. Co-ordination Chart).

4.2. Deposition of Keys

In order to protect the control against unauthorized alteration of parameters, the projector has to place two keys within the PLC program.

operator key	=	alteration in functions Timer, Counter and Value = BD15.12 + BD15.13 (4-digit)
operator key	=	projector key = alteration in functions Timer, Counter, Value and Test = BD15.14 + BD15.15 (4-digit)

If an 0 is placed as a code, the operator does not need to type in a key.

Example of program:

```
LD 0 ;As the operator key is 0 the operator does not
=D BD15.12 ;need to type in a key for alteration of timers,
;counters and values.
```

```
LD 1234 ;As the projector key is 1234 the operator cannot
=D BD15.14 ;alter operands in the function Test before he has
;typed in the key.
```

4.3. Timers

4.3.1. Establishing Number of Timers

Via KDT 630 a maximum of 95 timers (KUAX 667 - 32 timers) can be observed and altered. The projector determines how many timers may be altered. To do this he must deposit the number in the ABM00.00.

Example of program:

```
L 14 ;there are 14 timers (PT00.00-PT00.13)
= ABM00.00 ;released for alteration.
```

4.3.2. Programming Timers

Timers released for alteration have to be programmed as timers with a variable timer value (cf. PLC instruction manual - Programming with Software-Timers).

The preset-values which are entered via the KDT 630 range from ABM00.02 to ABM11.14 (cf. co-ordination chart on next page).

Example of program:

Two timers with a variable selection and one timer with a constant selection are programmed.

```
L 2 ;two timers are released for alteration
= ABM00.00 ;(see above Establishing Number of Timers)
L 100.00 ;start of timer
= PT00.00-ABM00.02*10ms;R ;variable raising delay
L PT00.00 ;time over?
= 000.00 ;then switch on output

L 100.01 ;start of timer
= PT00.01-ABM00.04*10ms;F ;variable falling delay
L PT00.01 ;time over?
= 000.01 ;then switch off output

L 100.02 ;start of timer
= PT00.02-185*10ms;P ;constant impulse of 1.85 s
L PT00.02 ;time on?
= 000.02 ;then switch on output
```

If a new preset-value is entered via the KDT 630, it will be taken over at the next start of the timer.

3.6. Function Test

The function Test can be used for display and alteration of operands. The KDT 630 must be unlocked with the projector key for alteration (see Key). The corresponding PLC instruction manual will tell you, in the chapter "operand ranges", which operands exist.

Input	Display	Remarks
TEST	FUNCTION ?	The input of a function, in this case "Test", is expected.
↑	I ? O M R SI SO SM SR	A selection of operands is offered; the current cursor position is I for inputs.

Note
Arrow pointing up or down switches to the next or the previous field of selection. Arrow pointing right moves in this field of selection. ENTER confirms the chosen operand (left of the cursor), e.g. BM (Byte Marker).

ENTER	BM No. ?	A BM-No, e.g. BM01.06, is asked for
-------	----------	-------------------------------------

1	.	6	ENTER
BM 01.06 A=XXX new ?			

desired operand is displayed. If released for alteration a new value can be put in. Switch to 16 bit-format by pressing the 16/8 Bit-Key.

BM 01.06 A=035 new ?	
-------------------------	--

The new value is shown 3-digit (8 bit) or 5-digit (16 bit).

The following keys are now allowed to be pressed:

switches to the next operand

switches to the previous operand

the operand can be altered now as described above

goes back to the field of selection

goes back to the field of selection; 2 x ESC exits the function Test

Note
If in text mode, the display automatically switches to the function Tests 10s after the last pressing of a key. Pressing Escape brings the display back to the previously selected function. The display of the actual value is momentarily interrupted every 2s if no text marker is set.

3.7. Display and Selection of Texts

If the text mode is activated and if a minimum of one text marker is set the display automatically switches to the function Tests 10s after the last pressing of a key. There are 32 text markers to determine which text is displayed. If several text markers are activated (logical 1) the text of the first active text marker is displayed. After clearing the text marker, the KDT 630 automatically searches for the next activated text marker. The display returns to the previously selected function if no text marker is logical 1.

Key functions in text mode:

ESC	Display returns to the previously selected function.
↑	Display changes to the next activated text.
↓	Display changes to the previously activated text.
ENTER	Confirmation - clears the corresponding text marker.

Further user-specific inputs are possible (cf. Projecting - Dialogue with the KDT 630).

Note
The function Tests is available as from KDT 630 version 1.1.

3.4. Display and Input of Counters

The KDT 630 must be unlocked for input (see Key).

Input	Display	Remarks
COUNT.	FUNCTION ?	The input of a function, in this case "Counter", is expected.
2 ENTER	COUNTER-No. ?	The number of a counter (1...32), in this case 2, is expected.
YES	CN 02 P=XXXXX new ? A=XXXXX	Preset-value and actual value are displayed. If released for alteration, a new preset-value can be put in.
		Note vertical arrows, NO or ESCape are allowed to be pressed if no alteration of the counter is intended. If "new ?" is not displayed the counter cannot be altered. <vertical arrow>, <NO> or <ESCape> are allowed to be pressed if no alteration is intended.
1 2 ENTER	CN 02 P=XXXXX P = ?	type in desired counter 1-65535, in this example 12.
	CN 02 P=00012 new ? A=XXXXX	Preset-value and actual value are displayed. At the next start of the counter, the new preset-value will be taken over.
		The following keys are now allowed to be pressed:
NO	↑	switches to the next counter
↓		switches to the previous counter
YES		the counter can be altered now as described above
COUNT.		subsequently asks for a new counter-no.
ESC		exits the function Counter
		Note If in text mode, the display automatically switches to the function Texts 10s after the last pressing of a key. Pressing Escape brings the display back to the previously selected function. The display of the actual value is momentarily interrupted every 2s if no text marker is set.

3.5. Display and Input of Values (Actual Values - Setpoints)

The KDT 630 must be unlocked for input (see Key).

Input	Display	Remarks
VALUE	FUNCTION ?	The input of a function, in this case "Value", is expected.
2 ENTER	VALUE-No. ?	the number of a value (1...99), in this case 2, is expected.
YES	Value02 A=XXXXX new ?	The value is displayed. If released for alteration, a new value can be put in.
		Note vertical arrows, NO or ESCape are allowed to be pressed if no alteration of the value is intended. If "new?" is not displayed the value cannot be altered.
1 2 ENTER	Value02 A=XXXXX P = ?	type in desired value 1-65535, in this example 12.
	Value02 A=00012 new ?	The new value is displayed.
		The following keys are now allowed to be pressed:
NO	↑	switches to the next value
↓		switches to the previous value
YES		the value can be altered now as described above
VALUE		subsequently asks for a new value-no.
ESC		exits the function Value
		Note If in text mode, the display automatically switches to the function Texts 10s after the last pressing of a key. Pressing Escape brings the display back to the previously selected function. The display of the actual value is momentarily interrupted every 2s if no text marker is set.

3.2.2. Type in Key

3.2.2.1. "unlock"

Press key-key, then type in 4-digit code and confirm by pressing Enter.

3.2.2.2. "lock"

If the wrong code is typed in within the function 'Key', the KDT 630 will "close" itself if it was open before. Nothing else can be altered in the PLC.

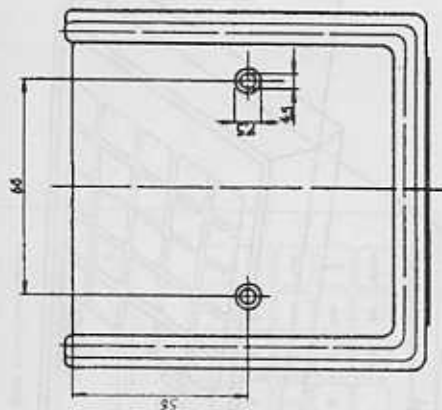
3.3. Display and Input of Timers

Zur Eingabe muß das KDT 630 angeschlossen sein (s. Schlüssel).

Input	Display	Remarks
TIMER	FUNCTION ?	The input of a function, in this case "Timer", is expected.
3 ENTER	Timer-No. ?	The number of a timer (KUAX 657; 1-95, KUAX 667; 1-32), in this case 3, is expected.
YES	TM 03 S=XXX.XXs
new? 1=XXX.XXs	Preset-value and actual value are displayed. If released for alteration, a new preset-value can be put in.
Note If "new?" is not displayed the timer cannot be altered. <vertical arrow>, <NO> or <ESCAPE> are allowed to be pressed if no alteration of the timer is intended.		
3 . 5 ENTER	TM03 P=XXX.XXs
P = ?	Type in desired timer value 0.01-65535, in this example 3.5.
NO ↑	TM 03 P=003.50s
new ? 1=XXX.XXs	Preset-value and actual value are displayed. At the next start of the timer the new preset-value will be taken over.
YES ↓		The following keys are now allowed to be pressed:
TIMER		switches to the next timer
ESC		switches to the previous timer
		the timer can be altered now as described above
		subsequently asks for a new timer-no.
		exits the function Timer

Note

If in text mode, the display automatically switches to the function Texts 10s after the last pressing of a key. Pressing Escape brings the display back to the previously selected function. The display of the actual value is momentarily interrupted every 2s if no text marker is set.



2.7. Order Numbers

KDT 630 (English)	630.001.10
KDT 620 (German)	630.001.00
Front-plate fitting-frame Bracket	671.180.00
	671.180.01

3. Operation

3.1. After Switching on - "Version"

If the KDT 630 is switched on while connected to the control (and thus supplied with 24V) the following will be prompted after ca. 1s:

FUNCTION ?
V n.n. Tdd.mm.yy

n.n = Number of version of the KDT 630
T = Type M=Moducontrol KUAX 657
dd.mm.yy = Date of the operating system of the control
C=KUAX 667

The KDT 630 now expects the pressing of a function key (Timer, Counter, Value, Test or Key). If no key is pressed within 10s, the device switches to the function Text (if activated).

Should this display not appear the control is either not switched on or communication is disabled. If neither of these is the case the brilliancy may have been turned to 'Dark' via the potentiometer.

3.2. Key

3.2.1. General notes

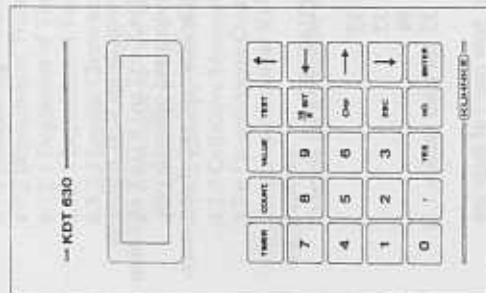
In order to protect the control against unauthorized alteration of parameters the projector has to place two keys (4-digit codes) within the PLC program.

Operator key	Alteration of timers, counters and values allowed
Projector key	Alteration of timers, counters, values and operands allowed

Explanations for the operator:

1. If the projector placed the code 0000, the operator does not need to type in a key. The KDT 630 is open.
2. If an operator key was placed but not typed in (see below Type in Key), the operator is only authorized to observe but not to alter.
3. If the operator key was typed in, the operator is authorized to observe. He may alter all those timers, counters and values that the projector has released for alteration.
4. If the projector key was typed in, operands can be altered in the function Test additionally to the possibilities under 3.

2.3. Device Diagram



2.4. Explanation of Keys

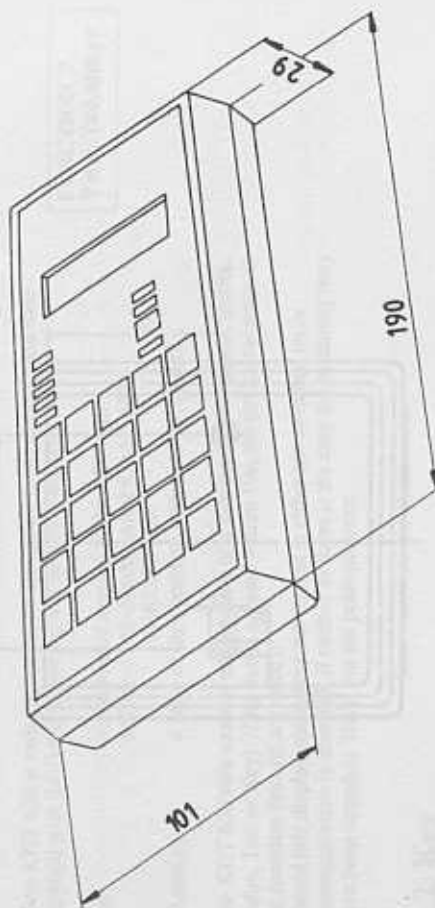
TIMER	Timer-Display/Timer-Input function
COUNTER	Counter-Display/Counter-Input function
VALUE	Preset value-input and actual value-display function
TEST	Test function for display/alteration of operands
16/8 BIT	Switch over from 8 <--> 16 bit values in the function
Key	Test
ESC	Input of a 4-digit code (authority-code)
YES	Escape - exit/interrupt of function
NO	Answering a question with yes, e.g. new?
ENTER	Answering a question with no, e.g. new?
Arrows	Termination of input
0 - 9	scroll, change, delete (←)
	Separation during input of timers and operands
	Numbers for input and selection

2.5. Technical Data

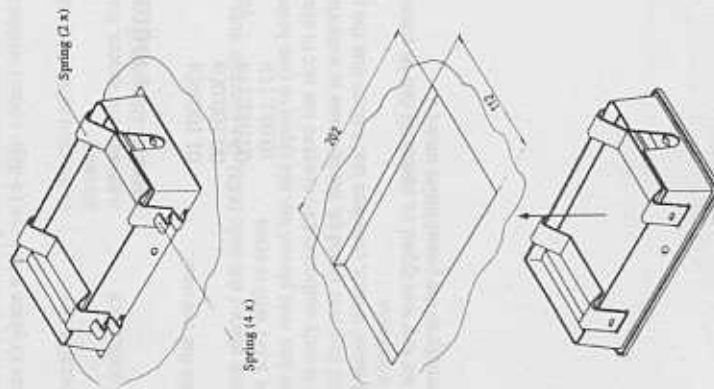
Power Supply:	24 V $\pm$ 20 % via the two leads at the plug
Residual Ripple:	$\leq$ 5 %
Power Input:	ca. 100 mA
Display:	2*16 symbols LCD
Brilliance:	can be regulated by potentiometer
Keyboard:	25 foilkeys with noticeable working point
Measurements:	cf. Hardware - Dimensions
Supply-lead:	V.24, length 2.5 m, 9pol. D-plug (pins)
Ambient Temperature:	0° - 40 °C
Protection:	IP 40, or IP 65 as front-plate fitting

2.6. Dimensions

2.6.1. KDT 630



2.6.2. Mounting-frame Front-plate Fitting



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1. General Notes

The KUHNKE Dialog Terminal, in the following called KDT 630, is an easy-to-use hand-terminal for the controls KUAX 657 and KUAX 667 from KUHNKE. Via KDT 630, timers, counters, values and operands (via function 'Test') in the controls mentioned can be observed and, if necessary, altered.

The following are shown:

	KUAX 657	KUAX 667
Timers	95	32
Counters	32	32
Values 16-bit	99	99
Texts 2x16 Char.s	32	32 (as from version 1.1)

In the PLC-program, the projector determines how many of these are released for alteration (cf. Projecting).

The operator can type in his authority to alter parameters by using a 4-digit code, in the following called 'key' (cf. Operation - Key).

2. Hardware

2.1. General Notes

The KDT 630 has a solid and compact plastic casing. Display and operation elements are compactly but clearly arranged for industrial use.

For the mounting support of the hand-terminal a frame or a bracket can be used (cf. Hardware - Dimensions).

The brilliancy of the display (2*16 symbols) can be regulated by a potentiometer on the left of the device.

2.2. Power Supply

The device is plugged into the V.24 programming interface of the control. The voltage of 24 V= is supplied by two leads coming out of the plug.

4.9. Example

Manufacturer: Kuhnke	Type: KUAX 657
Project: Motor Control	Project -No.: 630.657
Projector: Heinz Obersofti	Date: 21.07.89

KDT 630	PLC-address	Comment	Input range
Zeit 1	PT00.00	starting time lifting motor	1.50 s - 2.5 s
timer 2	PT00.01	running time lifting motor	0.01 s - 7.50
timer 3	PT00.02	reserved timer	
timer 4	PT00.03	reserved timer	
timer 5	PT00.04	supervisory time 10.0 s	internal
timer 6	PT00.05		
timer 7	PT00.06		
timer 8	PT00.07		
timer 9	PT00.08		
timer 10	PT00.09		
timer 11	PT00.10		
timer 12	PT00.11		
timer 13	PT00.12		
timer 14	PT00.13		
counter 1	C00.00	lifting counter	1 - 65535
counter 2	C00.01		
counter 3	C00.02		
counter 4	C00.03		
value 1	BD00.02	max. lifting value (kg)	0 - 100
value 2	BD00.04	reserved counter	
value 3	BD00.06	measured lifting value (kg)	internal
value 4	BD00.08		

Example 1.: a complete program without text selection;

```

;***** Establish number of variable timers, counters and values *****
L 2
= ABM00.00 ;number of variable timers
L 1
= ABM00.01 ;number of variable counters
L 1
= BD00.00 ;number of variable values
L 0
= BD00.01 ; no texts

;***** Establish keys *****
LD 0
= D BD15.12 ;user key: 0
LD I234
= D BD15.14 ;projector key: 1234
LD 0
= D BD15.10 ; no text release

;***** Control lifting motor *****
L I00.00 ;motor on
O I00.00 ;motor: latching on
AN I00.02 ;stopp
AN M00.01 ;max. weight reached
AN M00.02 ;counter level reached
= M00.00 ;motor on
= PT00.00: ABM00.02*10MS,R ;warm-up time

L I00.01 ;lifting motor on
A PT00.00 ;warming-up time over
AN M00.03 ;monitoring of time
= PT00.01: ABM00.04*10MS,P ;running time
L PT00.01 ;running time lifting motor
= A00.00 ;lifting motor

;***** Monitoring time *****
L M00.00 ;motor on
= PT00.04:100*10MS,R ;10s monitoring time
L PT00.04 ;time over?
= M00.03 ;monitoring of time

;***** Lifting counter *****
L M00.00 ;motor on
= C00.00: ABM12.00,F ;counter
L A00.00 ;lifting motor
=C C00.00 ;counter clock
L C00.00 ;counter level reached
= M00.02 ;motor off

;***** Weight control *****
LD BD00.02 ;max. lifting value
VD BD00.06 ;measured lifting value
JP=> M_OFF ;switch motor off
L PL00.01 ;by "1"
JP M_MARK ;after marker
M_OFF L PL00.00 ;by "0"
M_MARK = M00.01 ;max. weight reached

```