

SERIE CRISTAL



LCD
COUNTER
CHRONOMETER

KALI A-D

INSTRUCTIONS MANUAL

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KALIA-D
English

General information

Please find below the explanation to the symbols used in the following operation instructions.

This symbol induces actions.

- This symbol refers to additional technical information.



This symbol stands next to text passages that need special attention in order to ensure correct use of the instrument.



This symbol is placed in front of text passages that supply further important information.

italics

Important terms are written in italics on the left for quick reference purposes

KALIA-D**INDEX**

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1 SAFETY INDICATIONS

KALIA-D has been designed to be the latest state of the art.

Use the instrument only

- In a perfectly safe technical state,
- For the intended purpose,
- Conscious of relevant safety and danger and by observing its operating instructions.

Intended purpose

The instrument is to be used only indoors as built-in model for industrial processes and controls on production lines of the metal, wood, plastic, paper, glass and textile industries and similar; the overvoltage exerted on the terminals of the instrument must be limited to the voltages of category II.

Description of the overvoltage category under DIN VDE 0110, Part 2. The instrument may only be operated in a correctly mounted state. The instrument may only be operated as described under chapter "Technical data"

The instrument may not be used in hazardous areas, for medical apparatus, nor for applications expressly declared under EN 61010. If the instrument is to be used to control machines or processes, where the machine could be damaged or the operator could be injured due to a breakdown of the instrument or to a failure in operation, then relevant safety precautions will need to be taken.



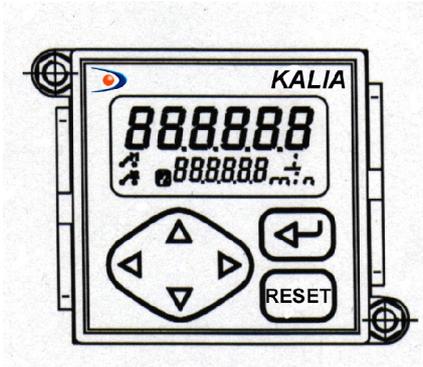
Organizational measures

Make sure that your personal has read and understood the operating instructions, especially the chapter "Safety indications".

In addition to the operating instructions, please make sure that generally applicable legal and other mandatory regulations relevant to accident prevention and environment protection are observed.

In the event of safety-relevant modifications (including those in the behavior of the instrument during operation), immediately stop operation of instrument.

Installation	<p>The installation may only be effected as described under the chapter "Connection".</p> <p>During installation work, take care to cut off the power supply of the instrument.</p> <p>Installations may only be effected by skilled expert</p> <p>Prior to initial operation of the instrument, please control the voltage selection.</p> <p>Set the switch to the required AC voltage.</p> <p>During installation make sure that supply voltage and connection of the output contacts are provided from the same MAINS phase.</p> <p>Max. Voltage 250V Terminal – Terminal ,Earth – Terminal.</p>
Initial operation	<p>The instrument is ready for use after it has been correctly mounted and installed.</p>
Maintenance / Servicing	<p>Cut off power supply of all connected machinery.</p>
Trouble shooting	<p>These tasks may only be effected by a skilled expert. In case of unsuccessful trouble shooting, you must absolutely interrupt use of instrument and contact your dealer.</p>
Getting acquainted	<p>After succesful initial operation, get acquainted with the handling of your instrument by studying the chapter "Get to know your KALIA-D"</p>



2 GET TO KNOW YOUR KALIA-D

2.1 KALIA-D Components

- 6-digits counter with 2 setpoints
- 8 digits totalizer with sign
- Time counter

2.2 LCD Display

Display actual counter value

P1 Setpoint 1

P2 Setpoint 2

Σ Totalizer

Setpoint 1 state

Setpoint 2 state

Measurement units m, dm, cm, mm, L, h, min, s



Shift key for display of functions Confirmation key



Reset



Key to select HIGHER decades



Key to select decades to the RIGHT



Key to select decades to the LEFT



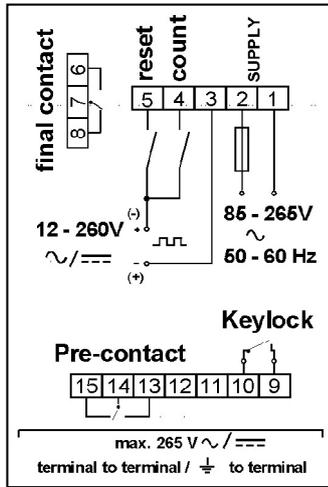
Key to select LOWER decades

3 KALIA-D CONNECTION

3.1 Connection

The instrument is connected via the enclosed plug-in screw terminals. Maximum size of core cross-section is 1.5 mm².

Assignment



Model with 1 or 2 Presets outputs

Contact	Function
---------	----------

1	Power supply AC/DC (please refer to nameplate)	
2	Power supply AC/DC (please refer to nameplate)	
3	Common connection Count, Reset	
4	Counting	
5	Reset	
6	Norm open	} P1 with 1 Preset P2 with 2 Presets
7	Common	
8	Norm closed	
9	Keylock	} Assignment 9-15 only available for counter models with two presets
10	Keylock	
11	Do not assign	
12	Do not assign	
13	Norm open	
14	Common	} P1 with 2 Presets
15	Norm closed	



Do not otherwise assign contacts that have been left unassigned ex factory.

The encoder leads should not be in the same phase winding as the MAINS supply and output contact leads .

3.2 Supply voltage connection

Connect the supply voltage at the contacts 1 and 2 according to the KALIA-D terminal diagram.

Supply voltage

Recommended external protection



85 - 265 V ac 50/60 Hz
10 - 30 V dc or ac 50 / 60 Hz

M 315 mA
M 250 mA

Connect interference-free supply voltage. Therefore, do not use the supply voltage for parallel supply of drives, contactors, electromagnetic valves, tec.

Fire protection: Operate instrument on the MAINS with external fuse recommended on the rating plate. In case of disturbance, make sure that 8A / 150 VA (W) are never exceeded as defined under EN 61010.

3.3 Relay output connection

Contacts P2 Contacts P1
Instrument with 2 presets

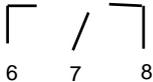


The signal outputs (Contacts 6, 7, 8 and 13, 14, 15) are floating relay contacts
The signal outputs can be assigned as per the adjacent terminal diagram.

The switching function, as open or closed or combined, can be chosen in the programming line 29.

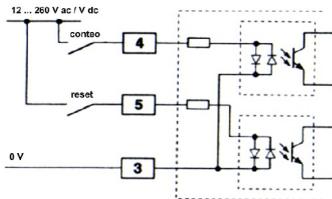
Max. rating	Max. Voltage	Max. Current
150 VA / 30 W	260 V	1 A

Contacts P1
Instrument with 1 Preset



The user must take care that, in case of disturbance, the contact rating of 8A / 150 VA (W) is not exceeded. Internal spark suppression by means of zinc-oxide varistor (275 V). The output relays of the instrument (1 relay or several) may in total switch 5 x per minute at the most. Admissible clicks according to interference suppression standard EN 55011, EN 50081-2 for the industrial sector. In case of higher switching rate, the operator will be responsible to take care of local interference suppression in consideration of the contact rating.

3.4 Counting and reset input connection



The inputs can be commanded in V ac or V dc from 12 to 260 V.

The inputs are optocoupled.

Maximum counting rate in V ac: 25 Hz

Maximum counting rate in V dc: 1kHz

4 OPERATION AND PROGRAMMING KALIA-D

4.1 Enter presets

Example: Set P1 to 30

KEY	FUNCTION
◀ 	Clear present preset value
◀ ◀	Start input and select 2 digit (digit starts to blink)
▲ ▲ ▲	Enter value 3
	Confirm preset of P1

Example: Set P2 to 200

▼ or ▲	Selection of P2 (2 line displays P2)
◀ ◀ ◀	Starts entry and select 3 digit (digit starts to blink)
▲ ▲	Enter value 2
	Confirm preset of P2

Hint: Access can be secured by code. Menu line 41.

4.2 Clear count

Press the key  to clear count.

Hint: Clearing can be locked in menu line 25

4.3 Clear totalizer

Select totalizer via key ▼ and the display will indicate Σ. Now press the key ◀ and the value displ. Of total starts blinking.

Now press the key  to clear the totalizer

4.4 Setting of Functions

In the configuration menu you will see the function setting that are effective when turning the counter on for the first time (factory setting). Here you may also effect the best setting for your task. The following table indicates how to access the configuration menu as well as how to select functions.

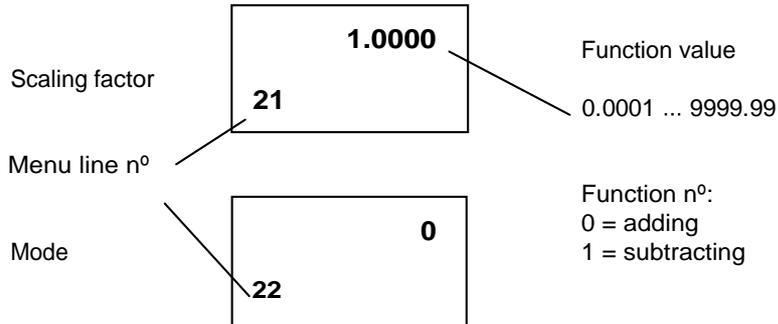
Hint: Access may be protected by a code. Please refer to menu line 42

4.5 Key Functions

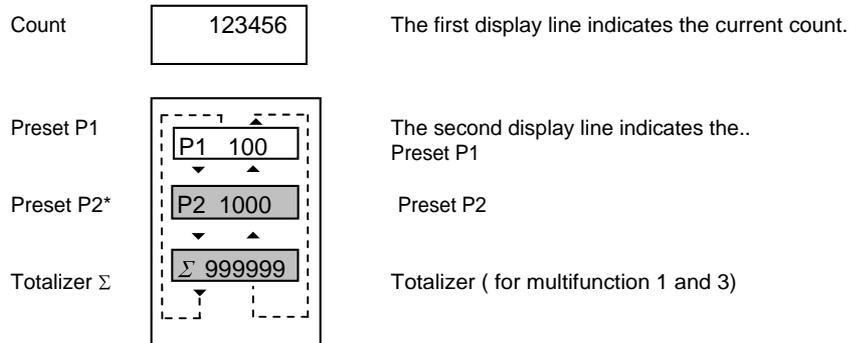
KEY	FUNCTION
▲  simultaneous	Call or Exit configuration menu. (Code is indicated on display)
	If no code is entered, quit only
▲ ◀ ▲ 	Enter and confir access code, e.g. 11
▼ or ▲	Select menu line number
◀ or ▶	Start entry and select digit (digit starts to blink)
▼ or ▲	Enter function value and/or function number
	Confirm entry
◀ and ▲ simultaneous	Reset to default settings: Keep button pressed and connect unit to the mains. Display: CLrPro

4.6 Configuration display

Here the display indicates the menu line number as well as the function value and/or the function number, all at one glance



4.7 Operation Menu



*** Menu line and/or function available for counters with two presets**

4.8 Configuration menu

Here you can select and modify all parameters of the operation

Multifunction	0 20	<ul style="list-style-type: none"> 1 Impulse meter 1 Impulse meter with totalizer Σ 2 Time measure 3 Time measure with time totalizer Σ 	
Scaling factor	1.0000 21	0.0001 9999.99 (max.)	
Mode	0 22	<ul style="list-style-type: none"> 0 adding 2 subtracting 	<ul style="list-style-type: none"> 0,1,2,3 ... P1...P2* P2* ...P1...3,2,1,0
Preset mode*	0 23	<ul style="list-style-type: none"> 0 Prog. preset. 1 Trailing preset 	<ul style="list-style-type: none"> P1 followed by P2 P1=Differ prior to P2
Automatic reset	0 24	<ul style="list-style-type: none"> 0 Yes 1 No 	No main contact
C-Key Clearing	0 25	<ul style="list-style-type: none"> 0 Released 1 Locked 	Count
Preset Confirmation	0 26	<ul style="list-style-type: none"> 0 with reset 1 without reset 	

* Menu line and/or function available for counters with two presets

Sign duration main contact	27 0.25	0.01 [s] 99.99 [s] Latch [permanet signal]	To enter briefly press ◀ then press 
Sign duration leader cont.*	28 0.25	0.01 [s] 99.99 [s] Latch [permanent signal]	To enter briefly press ◀ then press 
Signal logic when preset is reached	29 0	0 Normally open 1 Normally closed 2 * P1 normally closed, P2 normally open 3 * P1 normally open, P2 normally closed	
Decimal point / time range	30 0	0 0 / 999.99 s 1 0.0 / 999.59.9 min 2 0.00 / 9999.59 min 3 0.000 / 9999.59 h	
Counting rate.	31 0	0 25 Hz 1 1 kHz	only with DC-triggering

*** Menu line and/or function available for counters with two presets**

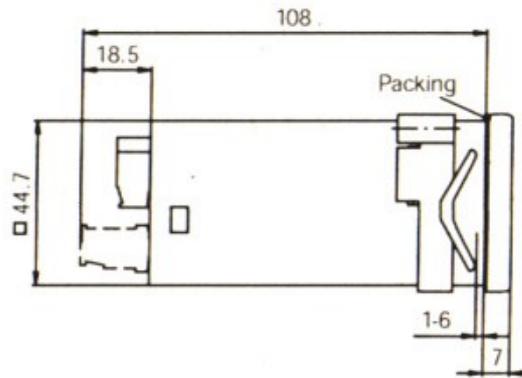
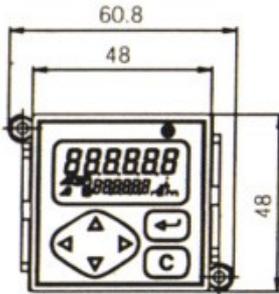
Measuring unit displayed	<div style="display: flex; justify-content: space-between;"> 32 0 </div>	<ul style="list-style-type: none"> 0 w/o measuring unit 1 m 2 dm 3 cm 4 mm 	<ul style="list-style-type: none"> 5 L 6 h 7 min 8 s
Basic display Second line	<div style="display: flex; justify-content: space-between;"> 33 1 (2) </div>	<ul style="list-style-type: none"> 0 not active 1 P1-preset 2 P2-preset * 3 Totalizer 	} Reset after about. 15 s
Operating code	<div style="display: flex; justify-content: space-between;"> 41 0 </div>	<ul style="list-style-type: none"> 0 not active 1 9999 	
Menu code	<div style="display: flex; justify-content: space-between;"> 42 0 </div>	<ul style="list-style-type: none"> 0 not active 1 ... 9999 	

*** Menu line and/or function available for counters with two presets**

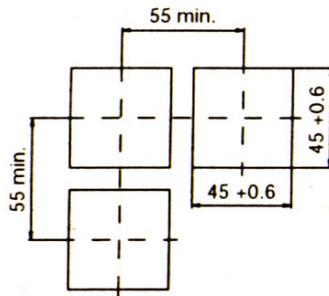
5 Installation

5.1 Mounting

The instrument is designed as built-in counter for indoor use. Please refer to the following drawings for the cutout measures, the cutout size, as well as the mounting accessories.



Cutout size 45 x 45 mm



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5.2 Technical data

Display	7 segments LCD-display with two lines
Digit height	First line 7 mm, second line 4 mm
Counting range	from 0 to 999999 (6 digits)
Keyboard	6 short-stroke keys, Polyester front foil
Front dimension	48 x 48 mm
Mounting depth	108 mm in total.
Cutout	45 ^{+0.5} x 45 ^{+0.5} mm. Front pan. max 12 mm
Fixing	By means of clamping frame
Type of connection	Plug-in screw terminals
Core cross-section	1.5 mm ²
Enclosure material	Polycarbonate black, UL 94V-0
Weight	Ca. 140 g
Power supply	85 ... 265 Vac or 10 ... 30 Vac / Vdc
Power consumption	2 W
Counting and reset voltage	12 ... 260 Vac / Vdc
Counting rate	25 Hz, (1 kHz with DC- triggering)
Least pulse duration	20 ms (0.5 ms)
Reset pulse duration	≥ 20 ms
Data memory	> 10 years by means of EEPROM
Relay output	Floating changeover contact. max. Switching voltage 260 Vac max. Switching power 1 A max. switching capa. 150 VA / 30 W Response time ca. 5 ms
Ambient temperature	0 ... +50 °C
Storage temperature	-20 ... +70 °C
Relative humidity	max. 80%, non-condensing
Protection	Frontal IP65 according to DIN 40050
General rating	EN 61010 Part 1 - Protection class II - Overvoltage protection category II - Contamination factor 2
Interference immunity	EN 61000-6-2
Emitted interference	EN 50081-2

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6 WARRANTY

All products are warranted against defective material and workmanship for a period of three years from date of delivery.

If a product appears to have a defect or fails during the normal use within the warranty period, please contact the distributor from whom you purchased the product.

This warranty does not apply to defects resulting from action of the buyer such as mishandling or improper interfacing.

The liability under this warranty shall extend only to the repair of the instrument ; no responsibility is assumed by the manufacturer for any damage which may result from its use.

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