

OPERATION MANUAL
Photo electric scanning head
TK118-05



Keep for future use.

ZERA



content	page
---------	------

1. Safety Instructions	3
1.1. Important user considerations	4
1.1.1. Danger references	4
1.1.2. User information, hints, references	4
1.1.3. Text markings	4
2. General description	5
2.1. Scanning of LED's	5
2.2 Technical data of TK118-05	6
2.3 Using the TK118-05 and holding arrangement	7
3. Service	8

1. Safety Instructions

The scanning head TK118-05 is developed only for scanning LED's of electronic meters.

It is not allowed to modify the TK118-05 in any way.

Only electrically skilled person (older than 18 years) having relevant education and experience which enable him/her to perceive risks and to avoid hazard/damage which electricity can create, are allowed to operate the equipment.

Every person putting this equipment into operation, operating or servicing the system should read, understand and follow the user manual including all safety instructions. Use of equipment tools, cables in a manner not specified may damage the protection provided by the equipment.

Also observe the local safety regulation, general guideline for accident prevention, general guideline for safety engineering regulations.

If the units appears to be damaged or operates abnormally, protection may be impaired. Do not attempt to operate it and report the defect or damages to the supervisor in-charge immediately. The test operation has to be stopped until defects and damages have been repaired and removed.

This operation manual has to be kept close and accessible to the tester at any time.




The protective earth conductor of the meter test system should be connected with the protective earth conductor of the main supply. This is necessary to safe against unintended contact.

1.1. Important user considerations


1.1.1. Danger references


In this manual the red box with black text is used to warn the operator that ignoring the message or action can cause hazard and/or damage to operator or property or test tools.

 Red Box with text inside means that if ignored, damage to property or person can occur.

1.1.2. User information, hints, references

The blue box with blue text is used in this manual to provide information, hints and references to further documentation to user.

 Blue box with black text provides information, hints and references to further documentation to use.

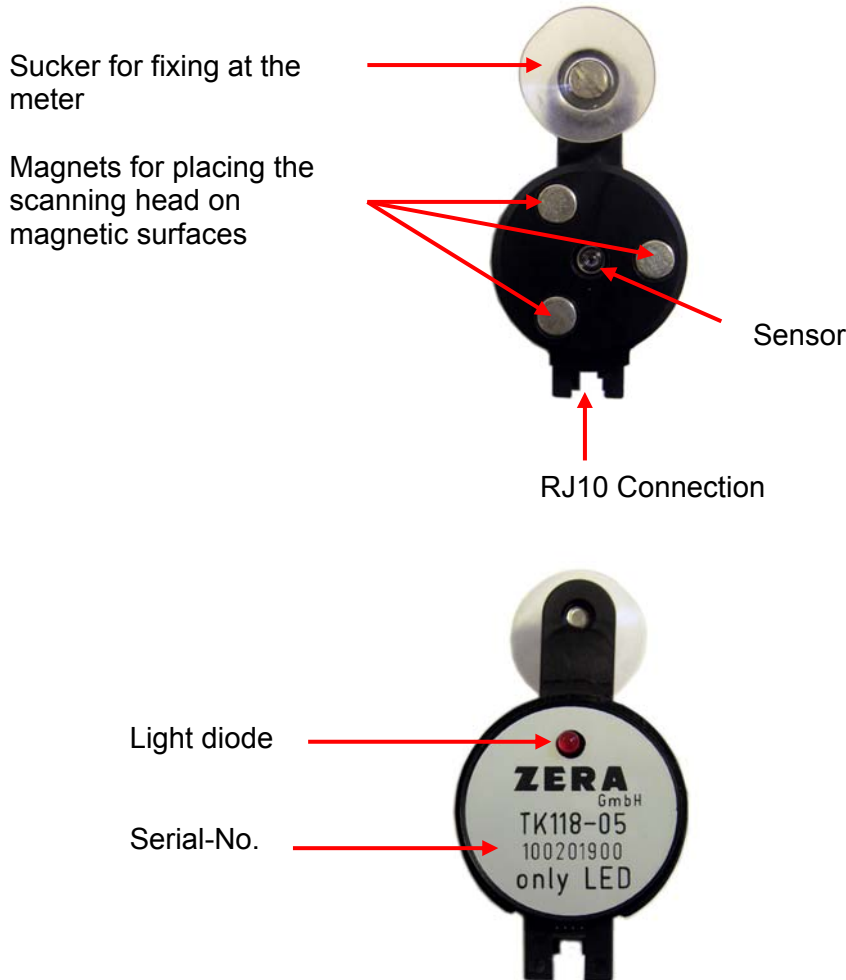
 The gray box with black text is used in this manual to provide tips

1.1.3. Text markings

1. Numbers mark activities, which are to be accomplished in the indicated order.
- Hyphens mark general enumerating

2. General description

The scanning head TK 118 detects the frequency of electronic meters by LED.



2.1. Scanning of LED's

The scanning head is positioned in front of the diode. The diode on the rear of the scanning head flashes in time with the pulse transmission.

To scan the LED's, the scanning head must be adjusted centred and vertical to the LED.

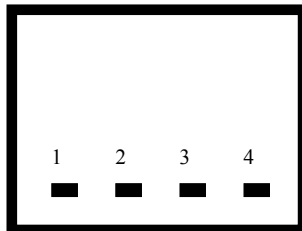


For difficult scanning meters:

The density of the scanning head falls with rising of illumination of the room. It might be advantageous to darken the room. Avoid direct sunlight.

2.2 Technical data of TK118-05

<u>Operating voltage:</u>	12 V \pm 2 V DC
<u>Current input:</u>	approx. 15 mA
<u>Output:</u>	12 V / max. 50 mA
<u>Temperature range:</u>	0 ... +70°C
<u>Connector:</u>	RJ10 4-pole



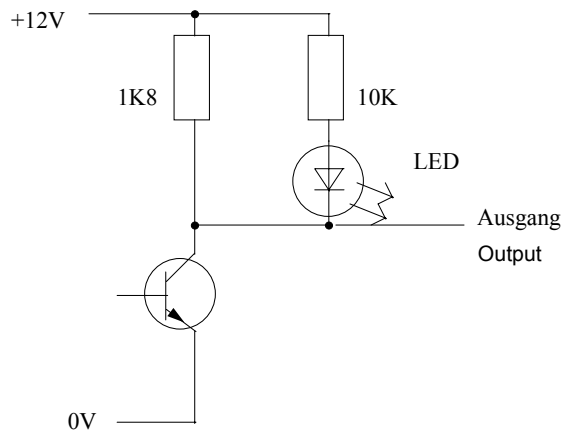
(rear view)

Pin 1	not used
Pin 2	0 V
Pin 3	output
Pin 4	+ 12 V

Dimensions:

TK 118: \varnothing 29 x 26 mm (\varnothing x L)

Output circuit:



Scanning of LED's :

Wavelength: 450 ... 950 nm

Pulse data:

max. frequency	1000 Hz
max. rising time	20 μ s
min. pulse width	100 μ s
max. falling time	20 μ s
min. pulse pause	400 μ s

Squarewave 1:1 :

max. frequency	1000 Hz
max. rising time	20 μ s
max. falling time	20 μ s

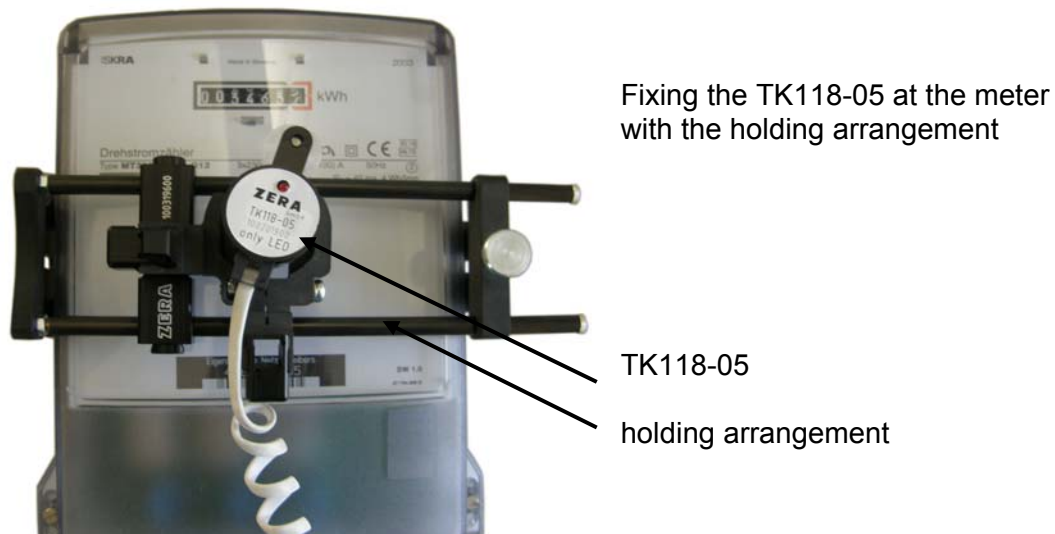
Squarewave 1:1, Amplitude modulation 8 kHz:

max. frequency	500 Hz
max. rising time	20 μ s
max. falling time	20 μ s

uncertainty of switching edge detection $\pm 1\mu$ s

2.3 Using the TK118-05 and holding arrangement

Examples for fixing at the meter



3. Service

If you have technical questions, please contact our service department along with the following information:

- serial-number of the scanning head (position see **chapter 2.**)
- commissioning number
- detailed description of the problem

