5. Maintenance and Inspection

- Check if the secondary leads are connected firmly at the measuring device.
- Check if the current transformer is closed properly.
- Remove severe pollution on the casing of the current transformer. Contact with moisture, especially with the surfaces of the core, must be strictly avoided.

6. Troubleshooting

e.g. unexpected or incorrect values, reversed power.

- Check the setting of the measuring device by using the installation guide of the measuring device.
- Check whether the current transformer is mounted on the intended cable in power flow direction.
- Check if the current transformer is closed properly.
- Check the power requirement of the measuring devices connected to the current transformer (including extra leads). This requirement should not exceed the rated power of the current transformer (see type label).
- If the points stated above did not solve the problem:
  Check if there is dust or other pollution between the two halves of the core. If this is the case, clean the surfaces carefully using a lint free cloth.
  Avoid contact with hand (skin acid)!

8. Technical Data (see type label for precise details)

8.1. General technical Data

Input

Primary rated current I_{pr}:	see table under point 8.2.
Thermal rated continuous current I_{cth}:	1,2 x I_{pr} KBR 18, 32,44 1,0 x I_{pr} other types
Thermal rated short-time current I_{th}:	60 x I_{pr} / 1s
Rated surge current I_{dyn}:	2,5 x I_{th}
Rated frequency f_R:	50 … 60 Hz

Output

Secondary rated current I_{sr}:	see table under point 8.2.
Optional voltage output KBR 18, KBR 32, KBR 44:	0…0,333V AC External burden min.1 kΩ
Accuracy class:	0,5 … 3
Rated power S_r:	0,3 … 5 VA
Over-current limiting factor FS:	FS5 bzw. FS10

Environmental conditions

Ambient temperature:	-5…+40 °C KBR 18S -5…+50 °C other types
Storage temperature:	-25 … +70 °C
Relative humidity (non condensing):	5 … 85 %
Altitude:	up to 2000 m

Isolation Characteristics:
Note: suitable only for insulated primary conductors

Max. voltage for electrical equipment U_m (in accordance with IEC 61010-1 under condition of: - Over voltage category III - Pollution degree 2 - Heterogeneous electrical field):	0,72/3/- kV
Insulation class:	E

Safety

Degree of Protection:	IP20
Housing Material KBR 18S, KBR 18L KBR 28, KBR 42, KBR 42L	PA66 + PA6
UL-housing classification these types:	UL94-V0
Housing material KBR 18, KBR 32, KBR 44:	PA6
UL- housing classification these types:	none

Anschluss

Primary conductor opening:	see table under point 8.2.
Secondary leads:	see table under point 8.2.

Verified Standards

EN 61869-1
EN 61869-2
IEC 61010-1

The latest edition of the referenced normative document (including any amendments) applies.

Accessory

Snap-on mounting
for top-hat rail (EN 60715)

KBR 18S	Order-nr. 55016
KBR 18L, KBR 28	Order-nr. 55017

8.2. Technical Data per Type

	KBR 18S	KBR 18	KBR 18L	KBR 28	KBR 32	KBR 42	KBR 42L	KBR 44
primary rated current [A]	60..250	50..250	100..250	200..500	100..600	250..1000	250..1000	250..1000
secondary rated current [A]	1	1	1 bzw. 5	1 bzw. 5	1 bzw. 5	1 bzw.5	1 bzw. 5	1 bzw. 5
suitable for cable-Ø max. mm	18,5	18,5	18,4	27,9	32,5	42,4	42,4	44,0
transformer-width mm	36,0	41,6	49,0	49,0	59,2	67,0	67,0	72,2
transformer-height mm	51,1	64,5	68,8	68,2	96,4	96,0	139,0	120,6
secondary leads 1A [1]	2,5 m 0,5 mm²	2,5 m 0,7 5mm²	2,5 m 0,5 mm²	2,5 m 0,5 mm²	2,5 m 0,75 mm²	2,5 m 0,5 mm²	2,5 m 0,5 mm²	2,5 m 0,75 mm²
secondary leads 5A [1]	---	---	0,5 m 1,5 mm²	0,5 m 1,5 mm²	0,5 m 1,5 mm²	0,5 m 1,5 mm²	0,5 m 1,5 mm²	0,5 m 1,5 mm²

1) Standard length, other lengths available on request.

The types KBR 32 and KBR 44 are optionally available as measuring transducers with output 4-20 mA DC.
For details, refer to www.mbs-ag.com.

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Operating Manual / Installation Guide

Please keep this!!

Low Voltage Current Transformer - split-core current transformer -

Model Range KBR

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Before installation, initial operation or operation of the product, please read these instructions completely and accurately.

1. Safety Instructions

CAUTION

Following points must be noted:

- The current laws, standards and regulations.
- The state of the art at the time of installation.
- The Operating Manual.
- The recognized rules of technology.
- The fact that operating instructions can only carry out general rules and that these rules must be considered.
- Before mounting please check the device carefully for visible transport damage. In case of mechanical damage the device may not be put into operation.
- The equipment described is intended for installation by qualified electrical personnel only, and may only be installed in electrical operating areas or in enclosed housings. Any other use, or failure to comply with these instructions will result in voiding of warranty.
- The devices may be installed only in dry indoor areas.
- Do not mount on or against highly combustible materials.
- Operation with higher current than specified on the rating plate can cause overheating of the current transformer and therefore cause burns.

2. Functional Description

Current transformers of the KBR series are inductive, single-conductor current transformers. They are used to adapt the primary measure quantity to the input nominal value of the connected measuring devices.
Based on the applied measuring principle, current transformers of this type are only for use in alternating current (AC) networks.

The KBR series is only suitable for insulated primary conductors.

3. Warning notes

WARNING

Dangerous voltage can cause an electrical shock or burnings.
Before beginning of installation work switch equipment free of voltage!
Make sure the information given on the rating plate and in the “Technical Data“ under point 8 corresponds to the operating parameters of the installation.

WARNING

For the secondary circuit of the current transformer not under load (open), high voltages may appear on the secondary terminals. These voltages pose a danger both for persons and functional reliability of the current transformer.
“Open operation“, i.e. operation without connection to a secondary circuit, is prohibited.

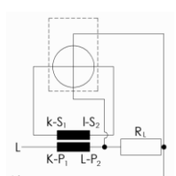
4. Installation

- Ensure a safe work environment during assembly, maintenance and inspection operations. If necessary interrupt the current supply of the primary conductor and take precautions against unintentional switching.
- Open the current transformer and fix it on the primary conductor using the fixing clamps included in the delivery. P1 side to power source and P2 side to power consumer. The arrow on the label will indicate the direction of power flow..
  Attention: Do not close the current transformer, high voltages may appear on the open secondary leads!
  Attention: Check for cleanness of the surfaces of the split core, Avoid contact with hand (skin acid)!
- Connect. The secondary leads of the current transformer to the measuring device (ammeter, energy meter ..). Please refer to the instruction manual of the measuring device.
- Close the current transformer, press until the lock engages.
- Enable the primary circuit if necessary.
- Check if the current transformer is assembled correctly and the secondary leads are connected properly and firmly.

Measurement circuit

brown lead: S1

blue lead: S2



- The types KBR 18S, KBR 18L and KBR 28 can be assembled on top hat rail with optional available snap-on mounting (order nr.: see accessory).

4.1. Installation Notes

Insertion of the fixing clamps

Sealing option of the types

KBR 18S, KBR 18L, KBR 28, KBR 42

and KBR 42L

The only opening option

Not an opening

otherwise warranty loss

This product was designed and manufactured in accordance with the applicable standards (IEC 61010, IEC 61869) and therefore meets the requirements of the
Low Voltage Directive 2014/35/EU.

MBS AG states that they only use components from qualified manufacturers, whose specifications meet or exceed the requirements of the European Directive for the Restriction of use of certain Hazardous Substances
RoHS Directive 2011/65/EU.

When the product has reached it´s “end of life“, it must be recycled. Do not dispose as unsorted municipal waste!
If necessary, contact a qualified recycler for disposal.

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