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**ZERA**

**MT320**  
**Product Catalog**

Doc.No: 100352702  
Version from:04.04.2011

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## Device



### Portable three phase reference standard MT320

Including adjustment and standard factory calibration.

- Internal memory area for up to 1000 measured values.
- Double insulated plastic housing
- Supplied via test voltage or mains
- For direct current measurement up to 300 V/12 A
- Error of measurement for power/energy: <math>< \pm 0.05 \%</math>

Ord.No. **100335300**

## Adjustment and Calibration / Device



### Readjustment of MT3xx series

*Note:* With initial purchase of an instrument the adjustment is included. This article only applies to a readjustment.

Ord.No. **100033852**



### Factory calibration of a new instrument of the MT3xx series according to ZERA standard, 50 Hz

*Note:* This article only applies to a purchase of a new instrument of the MT3xx series.

Incl. factory calibration certificate

Ord.No. **100007055**

#### Load points 240 V, 50 Hz, 4 WA:

$\cos \varphi 1$ : 12 A ( $I_R=10$  A); 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_R=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_R=0,05$  A)

$\cos \varphi 0,8c$ : 5 A; 1 A; 0,5 A; 0,25 A ( $I_R=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_R=0,05$  A)

$\cos \varphi 0,8i$ : 5 A

$\cos \varphi 0,5i$ : 12 A ( $I_R=10$  A); 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_R=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_R=0,05$  A)

$\cos \varphi 0,5c$ : 12 A ( $I_R=10$  A); 10 A; 5 A; 2,5 A

$\cos \varphi 0,25i, 0,25c$ : 5 A

#### Load points 120 V ( $U_B=250$ V), 50 Hz, 4 WA

$\cos \varphi 1, 0,5i, 0,8c$ : 5 A



### Factory re-calibration of MT3xx series according to ZERA standard, 50 Hz

Note: With initial purchase of an instrument the factory calibration is included. This article only applies to a re-calibration.

incl. factory calibration certificate

Ord.No. **100007038**

#### load points 240V, 50Hz, 4WA:

*cos φ1:* 12A( $I_B=10A$ ); 10A; 5A; 2,5A; 1A; 0,5A;  
0,25A( $I_B=0,5A$ ); 0,1A; 0,05A; 0,025( $I_B=0,05A$ )

*cos φ0,8c:* 5A; 1A; 0,5A; 0,25A( $I_B=0,5A$ ); 0,1A; 0,05A;  
0,025( $I_B=0,05A$ )

*cos φ0,8i:* 5A

*cos φ0,5i:* 12A( $I_B=10A$ ); 10A; 5A; 2,5A; 1A; 0,5A;  
0,25A( $I_B=0,5A$ ); 0,1A; 0,05A; 0,025( $I_B=0,05A$ )

*cos φ0,5c:* 12A( $I_B=10A$ ); 10A; 5A; 2,5A

*cos φ0,25i, 0,25c:* 5A

#### load points 120V( $U_B=250V$ ), 50Hz, 4WA

*cos φ1, 0,5i, 0,8c:* 5A



### Factory re-calibration of MT3xx incl. current clamp MT3430\*, 50 Hz

Incl. factory calibration certificate

Ord.No. **100519770**

#### MT3xx

##### Load points 240 V, 50 Hz, 4 WA:

*cos φ1:* 12 A( $I_B=10 A$ ); 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A( $I_B=0,5 A$ ); 0,1 A; 0,05 A; 0,025( $I_B=0,05 A$ )

*cos φ0,8c:* 5 A; 1 A; 0,5 A; 0,25 A( $I_B=0,5 A$ ); 0,1 A; 0,05 A;  
0,025( $I_B=0,05 A$ )

*cos φ0,8i:* 5 A

*cos φ0,5i:* 12 A( $I_B=10 A$ ); 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A( $I_B=0,5 A$ ); 0,1 A; 0,05 A; 0,025( $I_B=0,05 A$ )

*cos φ0,5c:* 12 A( $I_B=10 A$ ); 10 A; 5 A; 2,5 A

*cos φ0,25i, 0,25c:* 5 A

##### Load points 120 V ( $U_B=250 V$ ), 50 Hz, 4 WA

*cos φ1, 0,5i, 0,8c:* 5 A

#### MT3430\*

##### load points 240V, 50Hz, 4WA:

*cos φ 1, 0,5i, 0,5c:* 120A ( $I_B=100A$ ); 100A; 50A; 10A; 5A; 1A;  
0,5A; 0,25A ( $I_B=0,5A$ ); 0,1A; 0,05A; 0,025A ( $I_B=0,05A$ )

\*valid also for previous versions



**DKD-Calibration MT3xx**  
Incl. DKD-Calibration Certificate

Ord.No. **100006838**

**Load points 240 V ( $V_R=250$  V), 50 Hz, 4 WA:**

$\cos \varphi 1$ : 12 A; 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A);  
0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

$\cos \varphi 0,8c$ : 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05  
A; 0,025 ( $I_B=0,05$  A)

$\cos \varphi 0,5i$ : 12 A; 10 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A);  
0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

$\cos \varphi 0,5c$ : 12 A; 10 A

$\cos \varphi 0,25i, 0,25c$ : 5 A

**Load points 120 V ( $V_R=250$  V), 50 Hz, 4 WA:**

$\cos \varphi 1, 0,5i, 0,8c$ : 5 A



**DKD-Calibration for MT3xx incl. current clamp MT3430\*,  
50 Hz**  
Incl. DKD-Calibration Certificate

Ord.No. **100519651**

**MT3xx**

**Load points 240 V ( $V_R=250$  V), 50 Hz, 4 WA:**

$\cos \varphi 1$ : 12 A; 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A);  
0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

$\cos \varphi 0,8c$ : 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05  
A; 0,025 ( $I_B=0,05$  A)

$\cos \varphi 0,5i$ : 12 A; 10 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A);  
0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

$\cos \varphi 0,5c$ : 12 A; 10 A

$\cos \varphi 0,25i, 0,25c$ : 5 A

**Load points 120 V ( $V_R=250$  V), 50 Hz, 4 WA:**

$\cos \varphi 1, 0,5i, 0,8c$ : 5 A

**MT3430\***

**load points 240V, 50Hz, 4WA:**

$\cos \varphi 1, 0,5i, 0,5c$ : 120A ( $I_B=100A$ ); 100A; 50A; 10A; 5A; 1A;  
0,5A; 0,25A ( $I_B=0,5A$ ); 0,1A; 0,05A; 0,025A ( $I_B=0,05A$ )

\*valid also for previous versions



### Factory calibration of a new instrument of the MT3xx series according to ZERA standard, 60 Hz

Note: This article only applies to a purchase of a new instrument of the MT3xx series.

Incl. factory calibration certificate

Ord.No. **100007056**

#### load points 240V, 60Hz, 4WA:

*cos φ1:* 12A( $I_B=10A$ ); 10A; 5A; 2,5A; 1A; 0,5A;  
0,25A( $I_B=0,5A$ ); 0,1A; 0,05A; 0,025( $I_B=0,05A$ )

*cos φ0,8c:* 5A; 1A; 0,5A; 0,25A( $I_B=0,5A$ ); 0,1A; 0,05A;  
0,025( $I_B=0,05A$ )

*cos φ0,8i:* 5A

*cos φ0,5i:* 12A( $I_B=10A$ ); 10A; 5A; 2,5A; 1A; 0,5A;  
0,25A( $I_B=0,5A$ ); 0,1A; 0,05A; 0,025( $I_B=0,05A$ )

*cos φ0,5c:* 12A( $I_B=10A$ ); 10A; 5A; 2,5A

*cos φ0,25i, 0,25c:* 5A

#### load points 120V( $U_B=250V$ ), 60Hz, 4WA

*cos φ1, 0,5i, 0,8c:* 5A



### Factory re-calibration of MT3xx series according to ZERA standard, 60 Hz

Note: With initial purchase of an instrument the factory calibration is included. This article only applies to a re-calibration.

Incl. factory calibration certificate

Ord.No. **100007054**

#### load points 240V, 60Hz, 4WA:

*cos φ1:* 12A( $I_B=10A$ ); 10A; 5A; 2,5A; 1A; 0,5A;  
0,25A( $I_B=0,5A$ ); 0,1A; 0,05A; 0,025( $I_B=0,05A$ )

*cos φ0,8c:* 5A; 1A; 0,5A; 0,25A( $I_B=0,5A$ ); 0,1A; 0,05A;  
0,025( $I_B=0,05A$ )

*cos φ0,8i:* 5A

*cos φ0,5i:* 12A( $I_B=10A$ ); 10A; 5A; 2,5A; 1A; 0,5A;  
0,25A( $I_B=0,5A$ ); 0,1A; 0,05A; 0,025( $I_B=0,05A$ )

*cos φ0,5c:* 12A( $I_B=10A$ ); 10A; 5A; 2,5A

*cos φ0,25i, 0,25c:* 5A

#### load points 120V( $U_B=250V$ ), 60Hz, 4WA

*cos φ1, 0,5i, 0,8c:* 5A



**Factory re-calibration for MT3xx incl. current clamp  
MT3430\*, 60 Hz**  
Incl. factory calibration certificate

Ord.No. **100519771**

**MT3xx**

**Load points 240 V, 60 Hz, 4 WA:**

*cos φ1:* 12 A ( $I_B=10$  A); 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

*cos φ0,8c:* 5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

*cos φ0,8i:* 5 A

*cos φ0,5i:* 12 A ( $I_B=10$  A); 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

*cos φ0,5c:* 12 A ( $I_B=10$  A); 10 A; 5 A; 2,5 A

*cos φ0,25i, 0,25c:* 5 A

**Load points 120 V ( $U_B=250$  V), 60 Hz, 4 WA**

*cos φ1, 0,5i, 0,8c:* 5 A

**MT3430\***

**load points 240V, 60Hz, 4WA:**

*cos φ 1, 0,5i, 0,5c:* 120A ( $I_B=100$ A); 100A; 50A; 10A; 5A; 1A; 0,5A; 0,25A ( $I_B=0,5$ A); 0,1A; 0,05A; 0,025A ( $I_B=0,05$ A)

\*valid also for previous versions



**DKD-Calibration MT3xx**  
Incl. DKD-Calibration Certificate

Ord.No. **100006854**

**Load points 240 V, 60 Hz, 4 WA:**

*cos φ1:* 12 A ( $I_B=10$  A); 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

*cos φ0,8c:* 5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

*cos φ0,8i:* 5 A

*cos φ0,5i:* 12 A ( $I_B=10$  A); 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

*cos φ0,5c:* 12 A ( $I_B=10$  A); 10 A; 5 A; 2,5 A

*cos φ0,25i, 0,25c:* 5 A

**Load points 120 V ( $U_B=250$  V), 60 Hz, 4 WA**

*cos φ1, 0,5i, 0,8c:* 5 A



**DKD-Calibration for MT3xx incl. current clamp MT3430\*, 60 Hz**  
 Incl. DKD-Calibration Certificate

Ord.No. **100519652**

**MT3xx**

**Load points 240 V ( $V_R=250$  V), 60 Hz, 4 WA:**

*cos φ1:* 12 A; 10 A; 5 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

*cos φ0,8c:* 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

*cos φ0,5i:* 12 A; 10 A; 2,5 A; 1 A; 0,5 A; 0,25 A ( $I_B=0,5$  A); 0,1 A; 0,05 A; 0,025 ( $I_B=0,05$  A)

*cos φ0,5c:* 12 A; 10 A

*cos φ0,25i, 0,25c:* 5 A

**Load points 120 V ( $V_R=250$  V), 60 Hz, 4 WA:**

*cos φ1, 0,5i, 0,8c:* 5 A

**MT3430\***

**load points 240V, 60Hz, 4WA:**

*cos φ 1, 0,5i, 0,5c:* 120A ( $I_B=100A$ ); 100A; 50A; 10A; 5A; 1A; 0,5A; 0,25A ( $I_B=0,5A$ ); 0,1A; 0,05A; 0,025A ( $I_B=0,05A$ )

\*valid also for previous versions



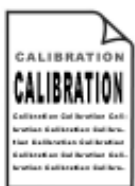
**Calibration, each additional load point for power and energy, DKD**

Ord.No. **100006893**



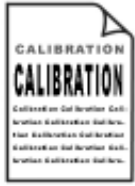
**Calibration, each additional load point for current and/or voltage, DKD**

Ord.No. **100006894**



**Calibration, each additional load point for power and energy, factory calibration**

Ord.No. **100007093**



**Calibration, each additional load point for current and/or voltage, factory calibration**

Ord.No. **100007094**

## Power Cords



**Power cord “Plug type A to figure-of-eight”, 2.0 m**

For supply via mains supply.

- 1x Plug type A
- 1x Figure-of-eight socket (IEC 60320-1 C7)

Ord.No. **100277201**



**Power cord “Euro plug type C to figure-of-eight”, 2.0 m**

For supply via mains supply.

- 1x Euro plug type C (CEE 7/16)
- 1x Figure-of-eight socket (IEC 60320-1 C7)

Ord.No. **100067700**



**Power cord “Plug type G to figure-of-eight”, 2.0 m**

For supply via mains supply.

- 1x Plug type G (BS1363)
- 1x Figure-of-eight socket (IEC 60320-1 C7)

Ord.No. **100277200**



**Power cord “Plug type I to figure-of-eight”, 2.0 m**

For supply via mains supply.

- 1x Plug type I (AS/NZS 3112, 2-pin)
- 1x Figure-of-eight socket (IEC 60320-1 C7)

Ord.No. **100277202**



**Power cord “stackable safety plug (black) to figure-of-eight”, 2.0 m**

For supply via test voltage.

- 2x stackable, spring-loaded 4 mm plugs with rigid insulating sleeve (2x black)
- 1x Figure-of-eight socket (IEC 60320-1 C7)

Ord.No. **100067608**



**Power cord “stackable safety plug (black/yellow) to figure-of-eight”, 2.0 m**

For supply via test voltage.

- 2x stackable, spring-loaded 4 mm plugs with rigid insulating sleeve (1x black; 1x yellow)
- 1x Figure-of-eight socket (IEC 60320-1 C7)

Ord.No. **100067601**



**Power cord “stackable safety plug (violet/yellow) to figure-of-eight”, 2.0 m**

For supply via test voltage.

- 2x stackable, spring-loaded 4 mm plugs with rigid insulating sleeve (1x violet/1x yellow)
- 1x Figure-of-eight socket (IEC 60320-1 C7)

Ord.No. **100067602**

## Sensors



**MT3430, AC current clamp set**

Electronically compensated, calibration independent from the instrument.

- Clamping diameter: 12 mm
- Output: D-Sub plug 25-pin
- Measuring range: 5 mA ... 120 A
- Error of measurement:
  - <math>< \pm 0.15\% / < 0.1^\circ</math> (500 mA ... 120 A)
  - <math>< \pm 0.3\% / < 0.1^\circ</math> (50 mA ... 500 mA)
  - <math>< \pm 0.6\% / < 0.1^\circ</math> (25 mA ... 50 mA)
- Frequency range: 45 ... 65 Hz
- Rated voltage: 30 V, CAT III (only for insulated leads)

Ord.No. **Z10301903**

**MT3416, AC current clamp set 300 A**

Electronically compensated, calibration independent from the instrument.

- Clamping diameter: 52 mm
- Output: D-Sub plug 25-pin
- Measuring range: 100 mA ... 300 A
- Error of measurement:
  - <  $\pm 0,15\%$  / <  $0,1^\circ$  (1 A ... 300 A)
  - <  $\pm 0,3\%$  / <  $0,1^\circ$  (500 mA ... 1 A)
  - <  $\pm 0,6\%$  / <  $0,15^\circ$  (200 mA ... 500 mA)
- Frequency range: 45 ... 65 Hz
- Rated voltage: 600 V, CAT III / 300 V, CAT IV

Ord.No.	<b>100319200</b>
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**MT3403, AC current clamp 1200 A**

- Clamping diameter: 52 mm
- Output: 2x 4 mm safety sockets
- Measuring range: 10 mA ... 1200 A (1200 A for 40 min max. and a pause between measurement > 20 min)
- Error of measurement:
  - <  $\pm 0,3\%$  /  $0,7^\circ$  (100 A ... 1200 A)
  - <  $\pm 0,5\%$  /  $1,0^\circ$  (10 A ... 100 A)
  - <  $\pm 1,0\%$  /  $2,0^\circ$  (1 A ... 10 A)
- Frequency range: 48 ... 65 Hz
- Rated voltage: 600 V, CAT III / 300 V, CAT IV

*Note:* Connection to MTxxx via input for direct current measurement.

Ord.No.	<b>100032403</b>
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**MT3413, AC current clamp 1800 A**

Clamping of round or square conductors.

- Clamping diameter: 64 mm or busbar from 50 x 135 mm up to 64 x 100 mm
- Output: 2x 4 mm safety sockets
- Measuring range: 1 A ... 1800 A (1800 A measurement for max. 10 min)
- Switchable ranges: 500 A, 1000 A, 1500 A
- Error of measurement in 1500 A range:
  - <  $\pm 1,5\%$  /  $1,5^\circ$  (75 A)
  - <  $\pm 0,75\%$  /  $0,75^\circ$  (300 A)
  - <  $\pm 0,5\%$  /  $0,5^\circ$  (1500 A)
- Frequency range: 48 ... 65 Hz
- Rated voltage: 600 V, CAT III / 300 V, CAT IV

*Note:* Connection to MTxxx via input for direct current measurement.

Ord.No.	<b>100032401</b>
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**MT3411, flexible AC current sensor 2000 A, 0.45 m**

Flexible clamping of any conductor to be measured (cable, bar, core, etc.) even on places difficult to access.

- Diameter: ca. 14 cm
- Output: 2x 4 mm safety plug
- Measuring range: 500 mA ... 2000 A
- Switchable ranges: 200 A, 2000 A
- Error of measurement:
  - 200 A range:  $\leq \pm 1.0\%$  /  $0.7^\circ$  (5 A ... 200 A)
  - 2000 A range:  $\leq \pm 1.0\%$  /  $0.7^\circ$  (0.5 A ... 2000 A)
- Frequency range: 10 Hz ... 100 Hz
- Rated voltage: 1000 V, CAT III

*Note:* Connection to the instrument is via adapter MT3412. The adapter has to be ordered separately.

Ord.No.	<b>100061300</b>
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**MT3415, flexible AC current sensor 2000 A, 0.80 m**

Flexible clamping of any conductor to be measured (cable, bar, core, etc.) even on places difficult to access.

- Diameter: ca. 25 cm
- Output: 2x 4 mm safety plug, connection via adapter MT3412
- Measuring range: 500 mA ... 2000 A
- Switchable ranges: 200 A, 2000 A
- Error of measurement:
  - 200 A range:  $\leq \pm 1.0\%$  /  $0.7^\circ$  (5 A ... 200 A)
  - 2000 A range:  $\leq \pm 1.0\%$  /  $0.7^\circ$  (0.5 A ... 2000 A)
- Frequency range: 10 Hz ... 100 Hz
- Rated voltage: 1000 V, CAT III

*Note:* Connection to the instrument is via adapter MT3412. The adapter has to be ordered separately.

Ord.No.	<b>100061301</b>
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**MT3404, flexible AC current sensor 10,000 A, 1.20 m**

Flexible clamping of any conductor to be measured (cable, bar, core, etc.) even on places difficult to access.

- Diameter: ca. 38 cm
- Output: 2x 4 mm safety plug, connection via adapter MT3412
- Measuring range: 500 mA ... 10,000 A
- Switchable ranges: 1,000 A, 10,000 A
- Error of measurement:
  - 1,000 A range:  $\leq \pm 1.0\%$  /  $0.5^\circ$  (5 A ... 1,000 A)
  - 10,000 A range:  $\leq \pm 1.0\%$  /  $0.5^\circ$  (0.5 A ... 10,000 A)
- Frequency range: 10 Hz ... 100 Hz
- Rated voltage: 1000 V, CAT III

*Note:* Connection to the instrument is via adapter MT3412. The adapter has to be ordered separately.

Ord.No.	<b>100032500</b>
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**MT3406, current sensor**

For primary current measurement on power transmission lines. Including telescopic stick. Only sold together with a calibration standard. Without CE marking.

- Measuring range: Up to 2000 A
- Error of measurement:  $< \pm 1.5 \%$
- Operating frequency: 50 Hz or 60 Hz
- Rated voltage: 150 kV

*Note:* Connection to the instrument is via adapter MT3409. The adapter has to be ordered separately.

Ord.No. **100032100**

**MT3405, voltage sensor**

For primary voltage measurements on power transmission lines (phase to phase or phase to ground). Including telescopic stick. Only sold together with a calibration standard. Without CE marking.

- Measuring range: 0 kV AC... 40 kV AC
- Operating frequenz: 50 Hz or 60 Hz

*Note:* Connection to the instrument is via adapter MT3409. The adapter has to be ordered separately.

Ord.No. **100032000**

## Adapter for Sensors

**MT3412, adapter "4 mm safety plug to D-Sub plug 25-pin", 1.0 m, phase colour: grey**

For connecting max. three flexible current sensors of the same type to the instrument. Suitable for the types MT3415, MT3411 and MT3404. Equipped with:

- 3x socket for two 4 mm safety plugs
- 1x D-Sub plug, 25-pin

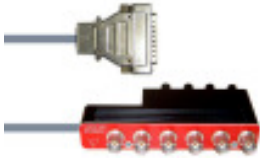
Ord.No. **100032203**

**MT3412, adapter "4 mm safety plug to D-Sub plug 25-pin", 4.0 m, phase colours: red/yellow/blue**

For connecting max. three flexible current sensors of the same type to the instrument. Suitable for the types MT3415, MT3411 and MT3404. Equipped with:

- 3x socket for two 4 mm safety plugs
- 1x D-Sub plug, 25-pin

Ord.No. **100032204**



### MT3409, adapter “BNC socket to 4 mm safety plug/D-Sub plug 25-pin”

To connect MT3405 and/or MT3406 to the instrument.

Equipped with:

- 6x BNC socket (3x for voltage, 3x for current)
- 4x 4 mm safety plug, 1x D-Sub plug, 25-pin

Ord.No. **100032202**

## Adjustment and Calibration / Sensors



### Readjustment of current clamp MT3430 or MT3422

*Note:* With initial purchase of one of the current clamps named above the adjustment is included. This article only applies to a readjustment.

Ord.No. **100033805**



### Readjustment of current clamp MT3416 / MT3417

*Note:* With initial purchase of one of the current clamps named above the adjustment is included. This article only applies to a readjustment.

Ord.No. **100033894**



### Factory calibration of a new current clamp MT3430 / MT3422, 50 Hz

*Note:* This article only applies to a purchase of a new current clamp of one of the types named above.  
incl. factory calibration certificate

Ord.No. **100007059**

#### load points 240V, 50Hz, 4WA:

$\cos \varphi 1, 0,5i, 0,5c$ ; 120A ( $I_R=100A$ ); 100A; 50A; 10A; 5A; 1A; 0,5A; 0,1A; 0,05A; 0,025A ( $I_R=0,05A$ )



### Factory calibration of a new current clamp MT3416 / MT3417, 50 Hz

*Note:* This article only applies to a purchase of a new current clamp of one of the types named above.  
incl. factory calibration certificate

Ord.No. **100519702**

#### load points 240V, 50Hz, 4WA:

$\cos \varphi 1, 0,5i, 0,5c$ ; 300A ( $I_R=200A$ ); 200A; 100A; 20A; 10A; 2A; 1A; 0,5A ( $I_R=1A$ ); 0,2A; 0,1A



**Factory re-calibration of current clamp MT3430 / MT3422, 50 Hz**

*Note:* With initial purchase of one of the current clamps named above the factory calibration is included. This article only applies to a re-calibration.  
incl. factory calibration certificate

Ord.No. **100007058**

**load points 240V, 50Hz, 4WA:**

*cos φ 1, 0,5i, 0,5c;* 120A ( $I_R=100A$ ); 100A; 50A; 10A; 5A; 1A; 0,5A; 0,1A; 0,05A; 0,025A ( $I_R=0,05A$ )



**Factory re-calibration of current clamp MT3416 / MT3417, 50 Hz**

*Note:* With initial purchase of one of the current clamps named above the factory calibration is included. This article only applies to a re-calibration.  
incl. factory calibration certificate

Ord.No. **100519701**

**load points 240V, 50Hz, 4WA:**

*cos φ 1, 0,5i, 0,5c;* 300A ( $I_R=200A$ ); 200A; 100A; 20A; 10A; 2A; 1A; 0,5A ( $I_R=1A$ ); 0,2A; 0,1A



**DKD-Calibration MT3430 / MT3422, 50 Hz**

incl. DKD-Calibration Certificate

Ord.No. **100006857**

**load points 240V, 50Hz, 4WA:**

*cos φ 1, 0,5i, 0,5c;* 120A ( $I_R=100A$ ); 100A; 50A; 10A; 5A; 1A; 0,5A; 0,1A; 0,05A; 0,025A ( $I_R=0,05A$ )



**Factory calibration of a new current clamp MT3430 / MT3422, 60 Hz**

*Note:* This article only applies to a purchase of a new current clamp of one of the types named above.  
incl. factory calibration certificate

Ord.No. **100007063**

**load points 240V, 60Hz, 4WA:**

*cos φ 1, 0,5i, 0,5c;* 120A ( $I_B=100A$ ); 100A; 50A; 10A; 5A; 1A; 0,5A; 0,1A; 0,05A; 0,025A ( $I_B=0,05A$ )



**Factory calibration of a new current clamp MT3416 / MT3417, 60 Hz**

*Note:* This article only applies to a purchase of a new current clamp of one of the types named above.  
incl. factory calibration certificate

Ord.No. **100519705**

**load points 240V, 60Hz, 4WA:**

*cos φ 1, 0,5i, 0,5c;* 300A ( $I_R=200A$ ); 200A; 100A; 20A; 10A; 2A; 1A; 0,5A ( $I_R=1A$ ); 0,2A; 0,1A



**Factory re-calibration of current clamp MT3430 / MT3422, 60 Hz**

*Note:* With initial purchase of one of the current clamps named above the factory calibration is included. This article only applies to a re-calibration.  
incl. factory calibration certificate

Ord.No. **100007062**

**load points 240 V, 60 Hz, 4 WA:**

*cos φ 1, 0,5i, 0,5c;* 120A ( $I_R=100A$ ); 100A; 50A; 10A; 5A; 1A; 0,5A; 0,1A; 0,05A; 0,025A ( $I_R=0,05A$ )



**Factory re-calibration of current clamp MT3416 / MT3417, 60 Hz**

*Note:* With initial purchase of one of the current clamps named above the factory calibration is included. This article only applies to a re-calibration.  
incl. factory calibration certificate

Ord.No. **100519704**

**load points 240V, 60Hz, 4WA:**

*cos φ 1, 0,5i, 0,5c;* 300A ( $I_R=200A$ ); 200A; 100A; 20A; 10A; 2A; 1A; 0,5A ( $I_R=1A$ ); 0,2A; 0,1A



**DKD calibration of current clamp MT3430 / MT3422, 60 Hz**

Including DKD calibration certificate (example available on request)

Ord.No. **100006861**

**load points 240V, 60Hz, 4WA:**

*cos φ 1, 0,5i, 0,5c;* 120A ( $I_R=100A$ ); 100A; 50A; 10A; 5A; 1A; 0,5A; 0,1A; 0,05A; 0,025A ( $I_R=0,05A$ )



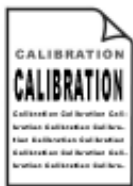
### DKD calibration of current clamp MT3416 / MT3417, 60 Hz

Including DKD calibration certificate (example available on request)

#### load points 240V, 60Hz, 4WA:

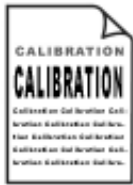
$\cos \varphi 1, 0,5i, 0,5c$ ; 300A ( $I_R=200A$ ); 200A; 100A; 20A; 10A; 2A; 1A; 0,5A ( $I_R=1A$ ); 0,2A; 0,1A

Ord.No. **100519603**



### Calibration, each load point, DKD

Ord.No. **100006892**



### Calibration, each load point, factory calibration

Ord.No. **100007092**

## Quick Connection Cable



### Quick connection cable “current/rigid sleeve” for MT series, 12 A, 2.5 m, phase colours: red/yellow/blue

To prevent connecting faults on the instrument’s side.

- Instrument’s side: 1x 6-pin connector with anti-twist safeguard.
- Mains side: 6x stackable, spring-loaded 4 mm plugs with rigid insulating sleeve. 2x red, 2x yellow, 2x blue.
- Cable cross-section: 2.5 qmm

Ord.No. **100023411**

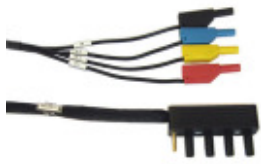


### Quick connection cable “current/retractable sleeve” for MT series, 12 A, 2.5 m, phase colours: red/yellow/blue

To prevent connecting faults on the instrument’s side.

- Instrument’s side: 1x 6-pin connector with anti-twist safeguard.
- Mains side: 6x stackable, spring-loaded 4 mm plugs with retractable sleeve to prevent accidental touching. 2x red, 2x yellow, 2x blue.
- Cable cross-section: 2.5 qmm

Ord.No. **100013207**

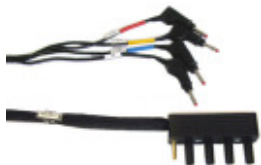


**Quick connection cable “voltage/rigid sleeve” for MT series, 2.5 m, phase colours: red/yellow/blue/black**

To prevent connecting faults on the instrument's side. Measurement category III (CAT III).

- Instrument's side: 1x 4-pin connector with anti-twist safeguard.
- Mains side: 4x stackable, spring-loaded 4 mm plug with rigid insulating sleeve - 1x red, 1x yellow, 1x blue, 1x black
- Cable cross-section: 2.5 qmm

Ord.No. **100023402**

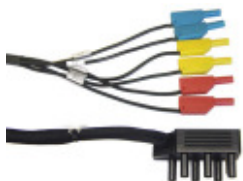


**Quick connection cable “voltage/retractable sleeve” for MT series, 2.5 m, phase colours: red/yellow/blue/black**

To prevent connecting faults on the instrument's side. Measurement category III (CAT III).

- Instrument's side: 1x 4-pin connector with anti-twist safeguard.
- Mains side: 4x stackable, spring-loaded 4 mm plug with retractable sleeve to prevent accidental touching - 1x red, 1x yellow, 1x blue, 1x black
- Cable cross-section: 2.5 qmm

Ord.No. **100013307**

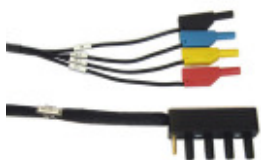


**Quick connection cable “current/rigid sleeve” for MT series, sloped, 12 A, 4.0 m, phase colours: red/yellow/blue**

To prevent connecting faults on the instrument's side. Can be plugged even if 25-pin socket is in use.

- Instrument's side: 1x 6-pin connector with anti-twist safeguard, sloped
- Mains side: 6x stackable, spring-loaded 4 mm plug with rigid insulating sleeve - 2x red, 2x yellow, 2x blue
- Cable cross-section: 2.5 qmm

Ord.No. **100013206**



**Quick connection cable for “voltage/rigid sleeve” for MT series, 4.0 m, phase colours: red/yellow/blue/black**

To prevent connecting faults on the instrument's side. Measurement category III (CAT III).

- Instrument's side: 1x 4-pin connector with anti-twist safeguard.
- Mains side: 4x stackable, spring-loaded 4 mm plug with rigid insulating sleeve - 1x red, 1x yellow, 1x blue, 1x black
- Cable cross-section: 2.5 qmm

Ord.No. **100013306**



**Quick connection cable for “current/rigid sleeve” for MT series, 12 A, 2.5 m, phase colours: yellow/green/violet**

To prevent connecting faults on the instrument’s side.

- Instrument’s side: 1x 6-pin connector with anti-twist safeguard.
- Mains side: 6x stackable, spring-loaded 4 mm plugs with rigid insulating sleeve - 2x yellow, 2x green, 2x violet.
- Cable cross-section: 2.5 qmm

Ord.No. **100023412**



**Quick connection cable for “voltage/rigid sleeve” for MT series, 2.5 m, phase colours: yellow/green/violet/black**

To prevent connecting faults on the instrument’s side.

Measurement category III (CAT III).

- Instrument’s side: 1x 4-pin connector with anti-twist safeguard.
- Mains side: 4x stackable, spring-loaded 4 mm plug with rigid insulating sleeve - 1x yellow, 1x green, 1x violet, 1x black
- Cable cross-section: 2.5 qmm

Ord.No. **100023413**



**Quick connection cable “voltage/Entrelec” for MT series, 2.5 m**

To connect the instrument to metering installations with Entrelec connector system. Pin assignment upon agreement. Measurement category III (CAT III).

- Instrument’s side: 1x 4-pin connector
- Mains side: 1x multipoint Entrelec plug, 2x in-line 4 mm rigid sockets, accepting spring-loaded 4 mm plugs with rigid insulating sleeve - black.
- Cable cross section: 2.5 qmm

Ord.No. **100013320**

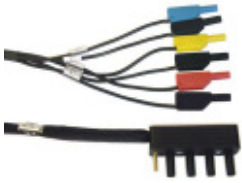


**Quick connection cable “current/Essailec” for MT series, 12 A, 2.5 m**

To connect the instrument to metering installations with Essailec connector system. Pin assignment upon agreement.

- Instrument’s side: 1x 6-pin connector
- Mains side: 1x multipoint Essailec plug
- Cable cross section: 2.5 qmm

Ord.No. **100013220**



**Quick connection cable “voltage/rigid sleeve” for MT series, burden measurement, 4.0 m, phase colours: red/yellow/blue/black**

For burden measurement. On each phase there is a separate connector for neutral. Measurement category III (CAT III).

- Instrument's side: 1x 4-pin connector
- Mains side: 6x stackable, spring-loaded 4 mm plug with rigid insulating sleeve, colours: 1x red, 1x yellow, 1x blue, 3x black
- Cable cross-section: 2.5 qmm

Ord.No. **100013308**

## Laboratory Cables



**Laboratory cable with safety plug/connection pin, red, 0.45 m**

Only suitable for voltage up to 60 V.

- 1x 2 mm pin for connection to screw terminals.
- 1x insulated in-line safety plug
- Lead cross section: 0.75 qmm

Ord.No. **Z09826311**



**Laboratory cable with safety plug/connection pin, blue, 0.45 m**

Only suitable for voltage up to 60 V.

- 1x 2 mm pin for connection to screw terminals.
- 1x insulated in-line safety plug
- Lead cross section: 0.75 qmm

Ord.No. **Z09826312**



**Laboratory cable with stackable plug, red, 2.0 m**

Measurement category III (CAT III).

- 2x stackable 4 mm plugs with rigid insulating sleeve
- Lead cross section: 2.5 qmm

Ord.No. **X00007597**



**Laboratory cable with stackable plug, yellow, 2.0 m**

Measurement category III (CAT III).

- 2x stackable 4 mm plugs with rigid insulating sleeve
- Lead cross section: 2.5 qmm

Ord.No. **X00006907**

**Laboratory cable with stackable plug, blue, 2.0 m**

Measurement category III (CAT III).

- 2x stackable 4 mm plugs with rigid insulating sleeve
- Lead cross section: 2.5 qmm

Ord.No. **X00007598****Laboratory cable with stackable plug, black, 2.0 m**

Measurement category III (CAT III).

- 2x stackable 4 mm plugs with rigid insulating sleeve
- Lead cross section: 2.5 qmm

Ord.No. **X00006910****Laboratory cable with stackable plug, green, 2.0 m**

Measurement category III (CAT III).

- 2x stackable 4 mm plugs with rigid insulating sleeve
- Lead cross section: 2.5 qmm

Ord.No. **X00006908****Laboratory cable with stackable plug, violet, 2.0 m**

Measurement category III (CAT III).

- 2x stackable 4 mm plugs with rigid insulating sleeve
- Lead cross section: 2.5 qmm

Ord.No. **X00006909****Laboratory cable with stackable plug, brown, 2.0 m**

Measurement category III (CAT III).

- 2x stackable 4 mm plugs with rigid insulating sleeve
- Lead cross section: 2.5 qmm

Ord.No. **100414100**



**Laboratory cable with stackable plug, grey, 2.0 m**  
 Measurement category III (CAT III).  
 • 2x stackable 4 mm plugs with rigid insulating sleeve  
 • Lead cross section: 2.5 qmm

Ord.No. **100739800**

**Software**



**CD-ROM with software SSM3000 / MTVis / WM303 / MCS**  
 The software runs under Windows XP. The documentation in on CD (PDF or Online-Help).  
 • SSM3000: To control the instrument.  
 • MTVis: To readout and display data saved in the instrument.  
 • WM303: To control WM303-I and WM303-U.  
 • Demo Meter Check Simulation (MCS): For simulation of circuit errors.

Ord.No. **100090705**



**License key for Meter Check Simulation (MCS)**  
 Via the license key, the demo version is transformed to a full version.

Ord.No. **100475650**



**Software option for I-transformer testing, MT3xx series**  
 The option supports the simultaneous measurement of primary and secondary currents of a current transformer. The following values are tested:  
 • Transformer ratio  
 • Transformer error  
 • The phase angle between primary and secondary current  
 Note: This option is not available for the MT30.

Ord.No. **100078800**



**Software option for selective power measurement, MT3xx series**  
 To determine and display active, reactive and apparent power on each harmonic value up to 40<sup>th</sup>.

Ord.No. **100078801**



### Software option for energy dosage, MT3xx series

By the help of this option you can specify a certain amount of energy that the electricity meter is supplied with by an external voltage or current source. The switching current of the external source is controlled.

Ord.No. **100078802**



### Software option „Print“, MT3xx series

Option to trigger an externally connected printer of type DPU414 Seiko for printing the measured data. You cannot print the saved data via this option.

Ord.No. **100078804**

## Documentation



**Operation manual for MT300/MT310/MT320, German**  
incl. short description

Ord.No. **100369020**



**Operation manual for MT300/MT310/MT320, English**  
incl. short description

Ord.No. **100369021**



**Operation manual for MT3430, German**

Ord.No. **100550560**

**Operation manual for MT3430, English**Ord.No. **100550561****Operation manual for MT3430, French**Ord.No. **100550562****Operation manual for MT3416, German**Ord.No. **100432575****Operation manual for MT3416, English**Ord.No. **100432576****Operation manual for TK326, German**Ord.No. **100432500**



**Operation manual for TK326, English**

Ord.No. **100432501**



**Operation manual for TK326, French**

Ord.No. **100432502**



**Operation manual for TK118-05, German**

Ord.No. **100432520**



**Operation manual for TK118-05, English**

Ord.No. **100432521**



**Operation manual for TK118-05, French**

Ord.No. **100432522**

## Impulse Sensors and Accessories



### TK 326-01, scanning head with holding device

For detection of rotor disc markings on Ferraris meters and LED signals on electronic meters. Fixing at the electricity meter via stretchable holding device, maximum wingspan 19.0 cm.

Ord.No. **100102202**



### TK 326-01, scanning head without holding device

For detection of rotor disc markings on Ferraris meters and LED signals on electronic meters.

- Fixing: Via stretchable holding device for scanning heads TK326/TK118.

Ord.No. **100313300**



### Holding device for scanning head TK326/TK118

Stretchable holding device to fix the scanning head TK326 or TK118 at the electricity meter.

- Maximum wingspan: 19.0 cm.

Ord.No. **100319600**



### TK118-05, scanning head

For detection of LED signals of electronic meters.

- Fixing: Via provided suction cup or via optionally available stretchable holding device for scanning heads TK326/TK118.

Ord.No. **100201900**



### TK122-01, scanning head without holding device

For detection of LED signals.

- Detection switchable between active and reactive LED signals.
- Fixing: Via holding device for TK122-01

Ord.No. **100147400**



#### Holding device for TK122-01

Holding device to fix the scanning head at the electricity meter of types GEM, GET 1, GET 2A and GET 2D, GSM, GIST, GISS.

Ord.No. **Z10142903**



#### Contact pin for TK122-01 holding device

To pick up the test voltage. The measuring lead is plugged onto the contact pin.

Ord.No. **100249400**



#### Start-stop pushbutton for signal entry

The start-stop pushbutton is used for manual signal entry when testing electricity meters.

Ord.No. **Z09969204**



#### K121-01, S0 pulse converter with measuring leads

For pulse detection of floating contacts as well as of S0 pulse output on electricity meters. Including two laboratory cables with safety plug/connection pin.

Ord.No. **100004200**



#### K121-01, S0 pulse converter without measuring leads

For pulse detection of floating contacts as well as of S0 pulse output on electricity meters.

Ord.No. **Z09894100**



### Connection cable for scanning head input (SC) on ZERA instruments with RJ10 socket

The spiral cable connects TKxxx and K121 to the instrument.

- 2x Modular connector RJ10
- Length: 1.00 m / expanded: 6.00 m

Ord.No. **Z10353027**

## Printer and Accessories



### Thermal printer DPU414 Seiko

For printing the measured data while testing metering installations.

Ord.No. **100078900**



### Interface cable, RS232, 1:1 wiring

Connection cable with 1:1 wiring.

- 1x D-Sub plug, 9-pin
- 1x D-Sub socket, 9-pin
- Cable length: 2.00 m

Ord.No. **X00010761**



### AC adapter thermal printer DPU414, 230 V / 50 Hz

For connecting the DPU414 Seiko to the power supply. Euro plug (CEE 7/16)

Ord.No. **100087600**



### Battery pack for thermal printer DPU414

Cell type: Ni-MH, 4.8 V, rechargeable

Ord.No. **100131300**

**Paper for thermal printer**

Width: 112 mm, length approx. 28 m

Ord.No. **100087400****Small Parts and Accessories Bag for Small Parts****Accessories bag with connection adapters**

- |    |  |           |
|----|--|-----------|
| 01 | Accessories bag                                  | 100214400 |
| 03 | Spring clip                                      | Z09508700 |
| 04 | 4-mm plug adapter (banana plug)                  | X00004962 |
| 10 | Adapter for terminal blocks                      | X00004961 |
| 10 | Connecting terminals for current                 | X00011923 |
| 03 | 4-mm test clips<br>(crocodile clips), slim       | X00009329 |
| 10 | 4-mm test clips<br>(crocodile clips), wide       | X00010059 |
| 10 | Fuse, 1.6 A / 440 V,<br>6.3 mm x 32 mm, time-lag | M00460183 |

Ord.No. **100023714****Connecting terminals for current**Ord.No. **X00011923****Adapter for terminal blocks**

- Connection via insulated flexible copper conductor.
- Socket: 4 mm rigid socket in insulator, made of brass, accepting spring-loaded 4 mm plugs with rigid insulating sleeve.

Ord.No. **X00004961****4 mm plug adapter (banana plug)**

- Plug: 4 mm spring-loaded plug, made of brass.
- Socket: 4 mm rigid socket in insulator accepting spring-loaded 4 mm plugs with rigid insulating sleeve.

Ord.No. **X00004962**



#### 4 mm cable lug adapters

- Cable lug adapter, made of brass for permanent installation, e. g. for connecting screw terminals.
- Socket: 4 mm rigid socket in insulator accepting spring-loaded 4 mm plugs with rigid insulating sleeve.

Ord.No. **X00004963**



#### Spring clip

- Connection via spring clip.
- Socket: Stackable, spring-loaded 4 mm plugs with rigid insulating sleeve.

Ord.No. **Z09508700**



#### Test plugs for terminal blocks

- Plug: 4 mm test plug, made of brass with spring-loaded plug for connecting into rail mounted terminals with 4 mm sockets.
- Socket: 4 mm rigid socket in insulator accepting spring-loaded 4 mm plugs with rigid insulating sleeve.

Ord.No. **100102400**



#### 4 mm test clips (crocodile clips), wide

- Crocodile clip made of brass with all-round insulation. Toothed jaws for wide grip with surface for fine wire.
- Socket: 4 mm rigid socket in insulator accepting spring-loaded 4 mm plugs with rigid insulating sleeve.

Ord.No. **X00010059**



#### 4 mm test clips (crocodile clips), slim

- Small, slim crocodile clip made of brass with all-round insulation. Toothed jaws for wide grip with surface for fine wire.
- 4 mm rigid socket in insulator accepting spring-loaded 4 mm plugs with rigid insulating sleeve.

Ord.No. **X00009329**



**Accessories bag without content**  
DIN A6, material: polypropylene

Ord.No. **100214400**

**Fuse, 1.6 A / 440 V, 6.3 mm x 32 mm, time-lag**

Ord.No. **m00460183**



## Transport



**Aluminium case, small**

Hard-top case with inlet. For transport of accessories or the measuring instrument and accessories (depends on the instrument).

- Dimensions: H 380 mm × W 500 mm × D 150 mm

Ord.No. **100023930**



**Aluminium case, large**

Hard-top case with inlet. For transport of accessories or the measuring instrument and accessories (depends on the instrument).

- Dimensions: H 180 mm × W 535 mm × D 470 mm

Ord.No. **100023910**



**Carrying strap for reference meter, black, width 25 mm**  
Belt length: 700 - 1,400 mm, adjustable by sliding buckle, metal snap hooks on both sides.

Ord.No. **100170000**

## Additional Accessories for The Device



**Tripod with fixing device for MT3xx devices**  
For fixing and individual positioning of the instrument.

Ord.No. **100114801**



**Tripod with fixing device**  
For the individual positioning of the instrument.

Ord.No. **X00012611**



**Fixing device for MT3xx devices**  
For fixing the MT3xx device at the tripod.

Ord.No. **Z10374301**



**Interface cable, RS232, cross wired  
(null modem cable)**  
Cross wired connection cable.

- 2x D-Sub socket, 9-pin
- Cable length: 3.00 m

Ord.No. **X00010844**



**Protection cover for MT series 3xx/400/500**  
To protect the front plate against mechanical collision during transport without transport case.

Ord.No. **100466701**



**Adapter "USB to RS232"**  
For use with an external PC/notebook.  
Can be used with Windows Vista.

Ord.No. **100286701**

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Internet: [www.zera.de](http://www.zera.de)  
Managing Directors:  
Dr. Prosper Suwelack / Rainer Otto  
Headquarter: Königswinter

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## Notes on using the product catalogue

When ordering, always state the order number.

Pictures can differ from original product.

We follow ZVEI terms of delivery, see on [www.zera.de](http://www.zera.de)

Deutsche Bank Bonn  
bank code: 380 700 59  
account: 005 705 150 0  
IBAN: DE16 3807 0059 0057 0515 00  
SWIFT: DEUTDEDK380

Commerzbank Bonn  
bank code: 380 400 07  
account: 113 313 100  
IBAN: DE29 3804 0007 0113 3131 00  
SWIFT: COBADEFF380

Kreissparkasse Köln  
bank code: 370 502 99  
account: 001 078 492  
IBAN: DE15 3705 0299 0001 07  
SWIFT: COKSDE33

HRB 7073 Siegburg  
VAT-IdNo. DE 218 515 479  
WEEE-Reg.Nr. DE 53879641

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