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**ZERA**

**MT78x**  
**Product Catalog**

Doc.No: 100352716  
Version from:07.09.2011

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## Device



### Portable three phase test system MT781

Instrument with integrated current and voltage source, fixed in a waterproof and shock-resistant suitcase. Including adjustment and standard factory calibration.

- Slot for exchangeable Compact Flash card to store customer data and measuring values.
- Range of the current source is 10 mA to 120 A.
- Range of the voltage source is 40 V to 500 V.
- Supplied via test voltage with protective earth conductor or mains voltage.
- For direct current measurement up to 500 V/120 A
- Accuracy for power/energy measurement:  $< \pm 0.1 \%$

Ord.No. **100678300**



### Portable three phase reference meter MT786

Instrument with integrated current and voltage source, fixed in a waterproof and shock-resistant suitcase. Including adjustment and standard factory calibration.

- Slot for exchangeable Compact Flash card to store customer data and measuring values.
- Range of the current source is 10 mA to 120 A.
- Range of the voltage source is 40 V to 500 V.
- Supplied via test voltage with protective earth conductor or mains voltage.
- For direct current measurement up to 500 V/120 A
- Accuracy for power/energy measurement:  $< \pm 0.05 \%$

Ord.No. **100648000**

## Adjustment and Calibration / Device



### Readjustment of MT78x

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

Ord.No. **100033895**



**Factory calibration of a new instrument MT78x according to ZERA standard, 50 Hz**

Note: This article only applies to a purchase of a new instrument MT78x.

- Including factory calibration certificate

Ord.No. **100519756**

**Source**

*Measuring points voltage measurement 50 Hz*

$U_R = 60 \text{ V}$ : 3 x 40 V; 3 x 72 V

$U_R = 125 \text{ V}$ : 3 x 72,1 V; 3 x 150 V

$U_R = 250 \text{ V}$ : 3 x 150,1 V; 3 x 300 V

$U_R = 420 \text{ V}$ : 3 x 300,1 V; 3 x 500 V

*Measuring points current measurement 50 Hz*

$I_R = 0,02 \text{ A}$ : 3 x 0,004 A; 3 x 0,024 A

$I_R = 0,05 \text{ A}$ : 3 x 0,025 A; 3 x 0,06 A

$I_R = 0,1 \text{ A}$ : 3 x 0,061 A; 3 x 0,12 A

$I_R = 0,2 \text{ A}$ : 3 x 0,121 A; 3 x 0,24 A

$I_R = 0,5 \text{ A}$ : 3 x 0,241 A; 3 x 0,6 A

$I_R = 1 \text{ A}$ : 3 x 0,601 A; 3 x 1,2 A

$I_R = 2 \text{ A}$ : 3 x 1,21 A; 3 x 2,4 A

$I_R = 5 \text{ A}$ : 3 x 2,41 A; 3 x 6 A

$I_R = 10 \text{ A}$ : 3 x 6,01 A; 3 x 12 A

$I_R = 20 \text{ A}$ : 3 x 12,1 A; 3 x 24 A

$I_R = 50 \text{ A}$ : 3 x 24,1 A; 3 x 60 A

$I_R = 100 \text{ A}$ : 3 x 60,1 A; 3 x 120 A

*Measuring points with load at 45 Hz and 65 Hz*

Voltage: 3 x 500 V / 0,06 A / 30 VA

Current: 3 x 120 A / 0,5 V / 60 VA

*Measuring points phase-angle and distortion factor 50 Hz*

Voltage: 3 x 500 V / 0,06 A / 30 VA

Current: 3 x 120 A / 0,5 V / 60 VA



### Factory re-calibration of MT78x 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.

- Including factory calibration certificate

Ord.No. **100519758**

#### Source

*Measuring points voltage measurement 50 Hz*

$U_R = 60 \text{ V}$ : 3 x 40 V; 3 x 72 V

$U_R = 125 \text{ V}$ : 3 x 72,1 V; 3 x 150 V

$U_R = 250 \text{ V}$ : 3 x 150,1 V; 3 x 300 V

$U_R = 420 \text{ V}$ : 3 x 300,1 V; 3 x 500 V

*Measuring points current measurement 50 Hz*

$I_R = 0,02 \text{ A}$ : 3 x 0,004 A; 3 x 0,024 A

$I_R = 0,05 \text{ A}$ : 3 x 0,025 A; 3 x 0,06 A

$I_R = 0,1 \text{ A}$ : 3 x 0,061 A; 3 x 0,12 A

$I_R = 0,2 \text{ A}$ : 3 x 0,121 A; 3 x 0,24 A

$I_R = 0,5 \text{ A}$ : 3 x 0,241 A; 3 x 0,6 A

$I_R = 1 \text{ A}$ : 3 x 0,601 A; 3 x 1,2 A

$I_R = 2 \text{ A}$ : 3 x 1,21 A; 3 x 2,4 A

$I_R = 5 \text{ A}$ : 3 x 2,41 A; 3 x 6 A

$I_R = 10 \text{ A}$ : 3 x 6,01 A; 3 x 12 A

$I_R = 20 \text{ A}$ : 3 x 12,1 A; 3 x 24 A

$I_R = 50 \text{ A}$ : 3 x 24,1 A; 3 x 60 A

$I_R = 100 \text{ A}$ : 3 x 60,1 A; 3 x 120 A

*Measuring points with load at 45 Hz and 65 Hz*

Voltage: 3 x 500 V / 0,06 A / 30 VA

Current: 3 x 120 A / 0,5 V / 60 VA

*Measuring points phase-angle and distortion factor 50 Hz*

Voltage: 3 x 500 V / 0,06 A / 30 VA

Current: 3 x 120 A / 0,5 V / 60 VA



### DKD calibration of MT78x, 50 Hz

- Including DKD calibration certificate

Ord.No. **100519639**



**Factory calibration of a new instrument MT78x according to ZERA standard, 60 Hz**

*Note:* This article only applies to a purchase of a new instrument MT78x.

- Including factory calibration certificate

Ord.No. **100519757**

**Source**

*Measuring points voltage measurement 60 Hz*

$U_R = 60 \text{ V}$ : 3 x 40 V; 3 x 72 V

$U_R = 125 \text{ V}$ : 3 x 72,1 V; 3 x 150 V

$U_R = 250 \text{ V}$ : 3 x 150,1 V; 3 x 300 V

$U_R = 420 \text{ V}$ : 3 x 300,1 V; 3 x 500 V

*Measuring points current measurement 60 Hz*

$I_R = 0,02 \text{ A}$ : 3 x 0,004 A; 3 x 0,024 A

$I_R = 0,05 \text{ A}$ : 3 x 0,025 A; 3 x 0,06 A

$I_R = 0,1 \text{ A}$ : 3 x 0,061 A; 3 x 0,12 A

$I_R = 0,2 \text{ A}$ : 3 x 0,121 A; 3 x 0,24 A

$I_R = 0,5 \text{ A}$ : 3 x 0,241 A; 3 x 0,6 A

$I_R = 1 \text{ A}$ : 3 x 0,601 A; 3 x 1,2 A

$I_R = 2 \text{ A}$ : 3 x 1,21 A; 3 x 2,4 A

$I_R = 5 \text{ A}$ : 3 x 2,41 A; 3 x 6 A

$I_R = 10 \text{ A}$ : 3 x 6,01 A; 3 x 12 A

$I_R = 20 \text{ A}$ : 3 x 12,1 A; 3 x 24 A

$I_R = 50 \text{ A}$ : 3 x 24,1 A; 3 x 60 A

$I_R = 100 \text{ A}$ : 3 x 60,1 A; 3 x 120 A

*Measuring points with load at 45 Hz and 65 Hz*

Voltage: 3 x 500 V / 0,06 A / 30 VA

Current: 3 x 120 A / 0,5 V / 60 VA

*Measuring points phase-angle and distortion factor 60 Hz*

Voltage: 3 x 500 V / 0,06 A / 30 VA

Current: 3 x 120 A / 0,5 V / 60 VA



**Factory re-calibration of MT78x 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.

- Including factory calibration certificate

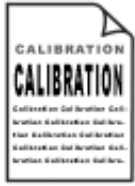
Ord.No. **100519759**



**DKD calibration of MT78x, 60 Hz**

- Including DKD calibration certificate

Ord.No. **100519640**



**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 B to IEC 60320 C13", 2.5 m**  
For supply via power socket.

- 1x plug type B
- 1x socket IEC 60320 C13

Ord.No. **X00006459**



**Power cord "Plug type I to IEC 60320 C13", 2.5 m**

For supply via power socket.

- 1x plug type I (AS/NZS 3112, 3-pin)
- 1x socket IEC 60320 C13

Ord.No. **X00006460**



**Power cord "Plug type G (BS 1363) to IEC 60320 C13", 2.5 m**

For supply via power socket.

- 1x Plug type G (BS 1363)
- 1x socket IEC 60320 C13

Ord.No. **X00009832**



**Power cord "Class I grounded plug type E/F to IEC 60320 C13", 2.5 m**

For supply via power socket.

- 1x class I grounded plug type E/F (CEE 7/7), angled
- 1x socket IEC 60320 C13

Ord.No. **M00481006**



**Power cord with protective earth "stackable safety plug to IEC 60320 C13", 2,5 m**

For supply via test voltage.

- 3x stackable, spring-loaded 4 mm plugs with rigid insulating sleeve (1x black, 1x blue, 1x yellow/green)
- 1x socket IEC 60320 C13

Ord.No. **100067609**



**Power cord with protective earth "stackable safety plug to IEC 60320 C13", 2,5 m**

For supply via test voltage.

- 3x stackable, spring-loaded 4 mm plugs with rigid insulating sleeve (1x brown, 1x blue, 1x yellow/green)
- 1x socket IEC 60320 C13

Ord.No. **100067610**

## 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:
  - <  $\pm 0.15\%$  / <  $0.1^\circ$  (500 mA ... 120 A)
  - <  $\pm 0.3\%$  / <  $0.1^\circ$  (50 mA ... 500 mA)
  - <  $\pm 0.6\%$  / <  $0.1^\circ$  (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.

100319200



### 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.

100061300

**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.	<b>100032100</b>
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**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 frequency: 50 Hz or 60 Hz

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

Ord.No.	<b>100032000</b>
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## Adapter for Sensors

**MT3412, adapter “4 mm safety plug to D-Sub plug 25-pin”, 1.0 m.**

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

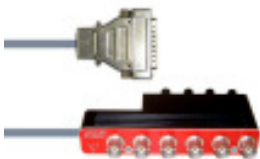
Ord.No.	<b>100032203</b>
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**MT3412, adapter “4 mm safety plug to D-Sub plug 25-pin”, 4.0 m, phase colours: red/yellow/blue**

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.	<b>100032204</b>
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**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.	<b>100032202</b>
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## 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.	<b>100033805</b>
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### 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:

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



**Factory 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 MT3416 / MT3417, 50 Hz**

incl. DKD-Calibration Certificate

Ord.No. **100519600**

**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 ( $I_R=0,05A$ )



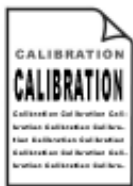
### DKD calibration of current clamp MT3416 / MT3417, 60 Hz

Including DKD calibration certificate (example available on request)

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

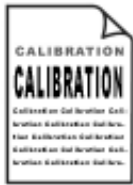
$\cos \varphi 1, 0,5i, 0,5c$ ; 300A ( $I_R=200A$ ); 200A; 100A; 20A; 10A; 2A; 1A; 0,5A ( $I_R=1A$ ); 0,2A; 0,1A

Ord.No. **100519603**



### Calibration, each load point, DKD

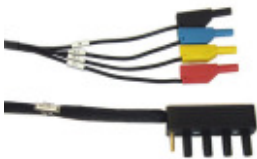
Ord.No. **100006892**



### Calibration, each load point, factory calibration

Ord.No. **100007092**

## Quick Connection Cable

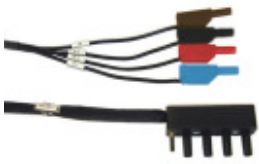


### Quick connection cable "voltage/rigid sleeve" for MT series, 2.5 m, phase colours: red/yellow/blue/black

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**

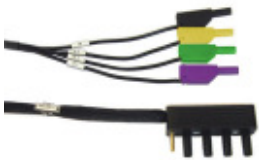


**Quick connection cable “voltage/rigid sleeve” for MT series, 2.5 m, phase colours: brown/black/red/blue**

To prevent connecting faults on the instrument’s side.

- 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 brown, 1x black, 1x red, 1x blue
- Cable cross-section: 2.5 qmm

Ord.No. **100023410**

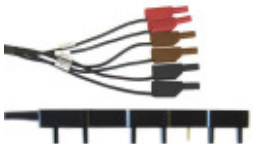


**Quick connection cable for “voltage/rigid sleeve” for MT series, 2.5 m, phase colours: yellow/green/violet/black**

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 up to 24 A for “current/rigid sleeve” for MT681, MT78x, 2.5 m, phase colours: brown/black/red**

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 plug with rigid insulating sleeve - 2x brown, 2x black, 2x red
- Cable cross-section: 2.5 qmm

Ord.No. **100013226**



**Quick connection cable for “current/rigid sleeve” for MT681, MT78x, 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 plug with rigid insulating sleeve - 2x red, 2x yellow, 2x blue
- Cable cross-section: 2.5 qmm

Ord.No. **100013229**



**Adapter cable "current/single Entrelec" for MT681, MT78x, 12 A, 0.5 m**

To connect the instrument to metering installations with Entrelec connector system.

- Instrument's side: 6x 4mm safety plugs
- Mains side: 1x multipoint Entrelec plug
- Cable cross section: 2.5 qmm

Ord.No. **100013227**



**Adapter cable "current/dual Entrelec" for MT681, MT78x, 12 A, 0.5 m**

To connect the instrument to metering installations with Entrelec connector system.

- Instrument's side: 6x 4mm safety plugs
- Mains side: 2x multipoint Entrelec plug
- Cable cross section: 2.5 qmm

Ord.No. **100013228**

## 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

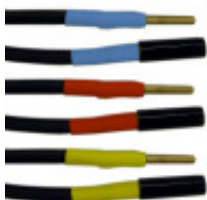
Ord.No. **100739800**



**Cable set for current 120 A, „connector pin/socket“, 2 m**

- 6 current cables (2x yellow, 2x green, 2x violet)
- 6 mm socket for connection to the instrument
- 5,8 mm pin for connection to screw terminals
- Cable cross section: 25 qmm

Ord.No. **Z10353028**



**Cable set for current 120 A, „connector pin/socket“, 2 m**

- 6 current cables (2x red, 2x yellow, 2x blue)
- 6 mm socket for connection to the instrument
- 5,8 mm pin for connection to screw terminals
- Cable cross section: 25 qmm

Ord.No. **Z10353029**



**Connection cable for current 120 A, „socket /socket“, 2 m**

- 2x 6 mm socket
- Phase colour: red
- Cable cross section: 35 qmm
- **Note:** For connection to a unit under test, a connection adapter has to be ordered additionally.

Ord.No. **100434306**



**Connection cable for current 120 A, „socket /socket“, 2 m**

- 2x 6 mm socket
- Phase colour: brown
- Cable cross section: 35 qmm
- **Note:** For connection to a unit under test, a connection adapter has to be ordered additionally.

Ord.No. **100434304**



**Connection cable for current 120 A, „socket /socket“, 2 m**

- 2x 6 mm socket
- Phase colour: black
- Cable cross section: 35 qmm
- **Note:** For connection to a unit under test, a connection adapter has to be ordered additionally.

Ord.No. **100434305**



**Connection adapter for current up to 120 A, “flat conductor/socket, with voltage connection”, 320 mm**

- Mains side 1x flat metal conductor (H 2 mm x W 4 mm x L 25 mm), instrument's side 1x 6 mm safety socket for current cable and 1x 4 mm safety socket for voltage cable

Ord.No. **100424410**



**Connection cable for current up to 120 A, “flat conductor/socket, with voltage connection”, 320 mm**

- Mains side 1x flat metal conductor 90° bended (H 2 mm x W 4 mm x L 25 mm), instrument's side 1x 6 mm safety socket for current cable and 1x 4 mm safety socket for voltage cable

Ord.No. **100424411**



**Adapter plug PETM-AC “ESSAILEC to 4 mm safety plug”**

The PETM-AC adapter plug has been designed for voltage connection to ESSAILEC systems.

- 1x ESSAILEC plug
- 4x socket for 4 mm safety plugs

Ord.No. **100424300**



### Adapter plug PSTM-AC "SECURA to 4 mm safety plug"

The PSTM-AC adapter plug has been designed for voltage connection to SECURA systems.

- 1x SECURA plug
- 4x socket for 4 mm safety plugs

Ord.No. **100424301**

## Software



### CD-ROM with software SSM3000 / MTVis / WM303 / MCS

The software runs under Windows XP. The documentation is 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.

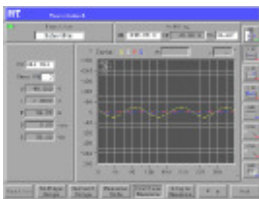
Ord.No. **100090705**



### 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 selective power measurement MT68x/MT78x/MT365

To determine and display active, reactive and apparent power on each harmonic value up to 40<sup>th</sup>.

Ord.No. **100078860**

## Documentation



### Operation manual for MT78x, German

Ord.No. **100367460**

**Operation manual for MT78x, English**Ord.No. **100367461****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**

**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**

## 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 (crocodile clips), slim	X00009329
03	4 mm test clips (crocodile clips), wide	X00010059
10	Fuse, 5 A / 500 V AC, 6.3 mm x 32 mm, time-lag	M00460187

Ord.No. **100023730**

### 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, 5 A / 500 V AC, 6.3 mm x 32 mm, time-lag**Ord.No. **m00460187****Transport****Trolley transportation system, pneumatic tires Ø180mm**

3-stages extendable pull-out handle with wheels for comfortable transport. Via a snap-lock system the device case can be securely fixed and easily released.

Ord.No. **100425102****Nylon bag**

Nylon bag for transport of accessories. With smooth-rolling wheels and telescopic handle.

- Dimensions: H 490 mm × W 420 mm × D 250 mm

Ord.No. **100148203****Additional Accessories for The Device****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****Compact-Flash Card, 32 MB**

To store customer data and measuring values. Provides easy data transfer from the instrument to the PC.

Ord.No. **Z10310412**

**Compact-Flash card reader**

For connecting to the PC and reading the Compact-Flash card.

Ord.No. **100748000****Adapter "USB to RS232"**

For use with an external PC/notebook.  
Can be used with Windows Vista.

Ord.No. **100286701**

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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

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WEEE-Reg.Nr. DE 53879641

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