CT Analyzer

Technical Data

This technical data was extracted from the following manual: ENU 1039 05 05

The product information, specifications, and technical data embodied in this manual represent the technical status at the time of writing and are subject to change without prior notice.

We have done our best to ensure that the information given in this manual is useful, accurate and entirely reliable. However, OMICRON does not assume responsibility for any inaccuracies which may be present.

OMICRON translates this manual from the source language English into a number of other languages. Any translation of this manual is done for local requirements, and in the event of a dispute between the English and a non-English version, the English version of this manual shall govern.

1 Technical data

Guaranteed data are specified for an ambient temperature of 23 °C ± 5 ° (73 °F ± 9 °), a power supply of 115/230 V_{AC}, and after a warm-up time longer than 15 minutes.

Guaranteed data are valid for the period of one year after factory adjustment.

1.1 Mains power supply

Table 1-1: Mains power supply

Characteristic	Rating
Connection	Connector according to IEC 60320
Mains voltage	100 ... 240 V_{AC} / 50/60 Hz / 6 A Instead of supplying *CT Analyzer* from phase-neutral (L1-N, A-N), it may also be supplied from phase-phase (e.g. L1-L2, A-B). However, the nominal voltage must not exceed 240 V_{AC}.
Mains fuses	2 x T6 AH 250 V (high-breaking capacity wire fuse 5 x 20 mm)

1.2 Output and input specifications

If possible, always use the original coax measurement cables delivered by OMICRON. Always keep the measurement cables as short as possible to reduce the influence of noise.

- Observe the maximum cable lengths and the instructions given in section 3.7 of the CT Analyzer User Manual.
- Observe the instructions given in section 3.1.2 of the CT Analyzer User Manual.

Permitted cable length for OUTPUT and input SEC: max. 3 m

Permitted cable length for input PRIM: max. 100 m

1.2.1 Generator output

Table 1-2: Generator output data (OUTPUT)

Characteristic	Rating
Output voltage / current	AC: 40 V_{rms} / 5 A_{rms} max. DC: 120 V / 5 A (15 A_{peak})
Output power	400 VA_{rms} max.

1.2.2 Measurement inputs

Table 1-3: Measurement input SEC

Characteristic	Rating
Voltage ranges	0 ... 0.3 / 3 / 30 / 300 V_{AC} (auto ranging)
Accuracy	0.1 % (guaranteed)
Insulation	Reinforced insulation (R) to all other circuits

Table 1-4: Measurement input PRIM

Characteristic	Rating
Voltage ranges	0 ... 0.03 / 0.3 / 3 / 30 V_{AC} (auto ranging)
Accuracy	0.1 % (guaranteed)
Insulation	Reinforced insulation (R) to all other circuits

1.3 Winding resistance measurement accuracy

Table 1-5: Winding resistance measurement accuracy

Characteristic	Rating
Resolution	1 mΩ
Accuracy	0.05 % (typical) 0.1 % + 1 mΩ (guaranteed)

1.4 Ratio and phase measurement accuracy

The values given in the following table are only valid under the following conditions:

- All utility lines to the primary side of the CT are disconnected.
- One terminal of the primary side of the CT is connected to PE.
- The original measurement cables delivered by OMICRON for *CT Analyzer* are used.
- The CT under test is a CT with a non-gapped core.
- The knee point voltage according to IEEE C57.13 is > 3 V.

Under interfering conditions the device has reduced accuracy.

Values without the prefix "!" in the ratio table of the **Ratio** card have guaranteed accuracy. The accuracy of values marked with a "!" in the table is reduced by factor 2.

Table 1-6: Ratio measurement accuracy for 1 A CTs at rated current

CT ratio	I_{sn}	Rated power[1]	Typical accuracy	Guaranteed accuracy
0.2 ... 1	1 A	1.0 ... 30 VA	0.05 %	0.1 %
> 1 ... 2000	1 A	0 ... 30 VA	0.02 %	0.05 %
> 2000 ... 5000	1 A	0 ... 30 VA	0.03 %	0.1 %
> 5000 ... 10000	1 A	0 ... 30 VA	0.05 %	0.2 %

1. Nominal burden of the CT.

Table 1-7: Ratio measurement accuracy for 5 A CTs at rated current

CT ratio	I_{sn}	Rated power[1]	Typical accuracy	Guaranteed accuracy
0.2 ... 1	5 A	1.0 ... 75 VA	0.05 %	0.1 %
> 1 ... 2000	5 A	0 ... 75 VA	0.02 %	0.05 %
> 2000 ... 5000	5 A	0 ... 75 VA	0.03 %	0.1 %
> 5000 ... 10000	5 A	0 ... 75 VA	0.05 %	0.2 %

1. Nominal burden of the CT.

Table 1-8: Phase measurement accuracy at rated current

Characteristic	Rating
Resolution	0.01 min
Accuracy (cos φ 0.8 ... 1)	1 min (typical) 3 min (guaranteed)

Table 1-9: Turns ratio measurement accuracy

Characteristic	Rating
Resolution	0.01 turns
Accuracy	0.05 % (typical) 0.1 % (guaranteed)

1.5 Compact Flash card interface

Table 1-10: Compact Flash card interface

Characteristic	Rating
Card type	CF type 1
Allowed memory size	16 MB ... 2 GB

1.6 Remote control interface

The remote control interface of *CT Analyzer* is exclusively intended to connect *CT Analyzer* to a computer (e.g. running the *CT Analyzer Suite* software) or to the optional *CT SB2* switch box (for multi-ratio CT measurement).

As of serial number JHxxxx or newer, *CT Analyzer* is equipped with a USB interface and a RS232 interface.

Note: The user has to select the interface to be used in the *CT Analyzer* settings before connecting *CT Analyzer* to a computer (refer to section 3.3 of the CT Analyzer User Manual). *CT Analyzer* will only communicate via the selected interface. It will not be recognized by the computer if *CT Analyzer* settings do not match the interface used for connection.

1.6.1 RS232 interface

The RS232 interface can be used to connect *CT Analyzer* to a computer or to the optional *CT SB2* switch box.

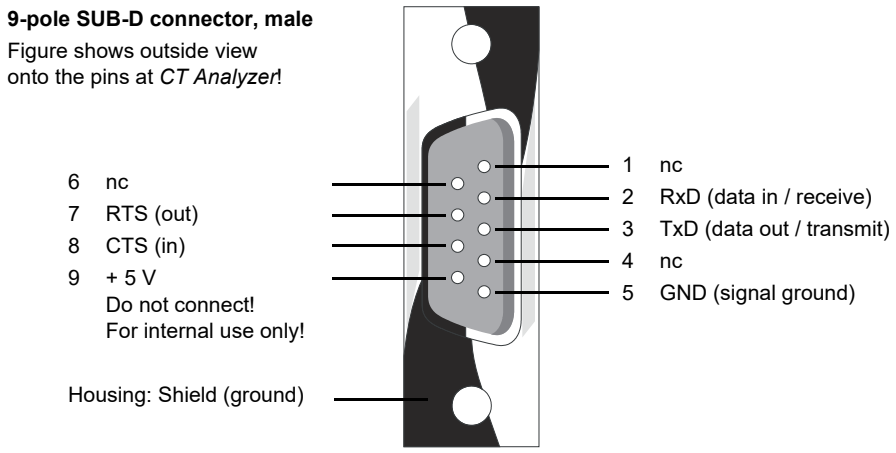

Figure 1-1: Pin assignment for RS232 remote control interface

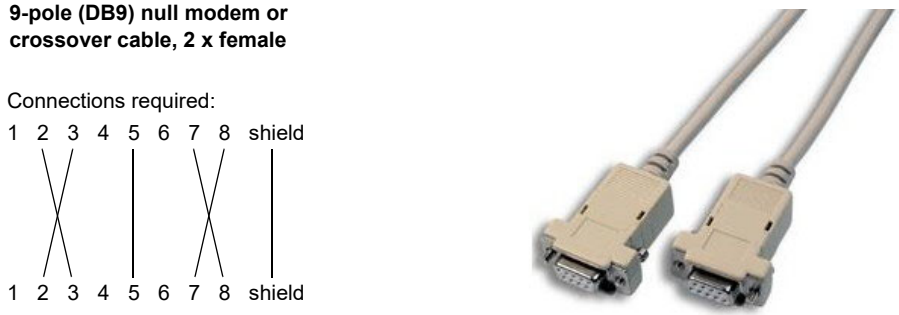

Figure 1-2: Connection cable for RS232 remote control interface

1.6.2 USB interface

The USB interface can be used to connect *CT Analyzer* to a computer. Communication via USB is considerably faster than communication via RS232.

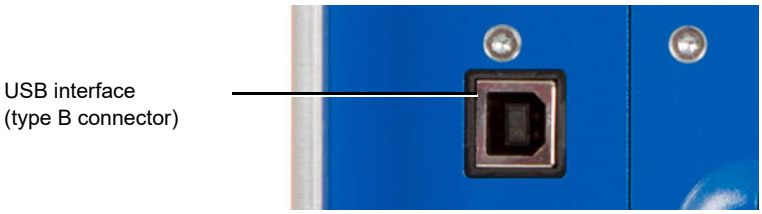

Figure 1-3: USB remote control interface (standard type B connector)

1.7 Environmental conditions

Table 1-11: Environmental conditions

Characteristic	Rating
Operating temperature	–10 … +50 °C (14 … 122 °F)
Storage and transportation	–25 … +70 °C (–13 … 158 °F)
Max. altitude for operation	2000 m

1.8 Mechanical data

Table 1-12: Mechanical data

Characteristic	Rating
Weight	< 8 kg (17.6 lbs) without accessories
Dimensions W x H x D	360 x 285 x 145 mm (14.2 x 11.2 x 5.7")

1.9 Standards

Table 1-13: Standards

EMC, safety		
EMC	IEC/EN 61326-1 (industrial electromagnetic environment) FCC subpart B of part 15, class A	
Safety	IEC/EN/UL 61010-1	 
Other		
Shock	IEC/EN 60068-2-27 (15 g/11 ms, half-sinusoid, 3 shocks in each axis)	
Vibration	IEC/EN 60068-2-6 (frequency range 10 Hz…150 Hz, acceleration 2 g continuous (20 m/s^2/65 ft/s^2), 20 cycles per axis)	
Humidity	IEC/EN 60068-2-78 (5%…95% relative humidity, no condensation), tested at 40 ºC/104 ºF for 48 hours	
Protection class	IP20 according to EN 60529	