GOSSEN METRAWATT

KURTH ELECTRONIC

User

TP09D

Analogue Test Telephone

Version 3

Made in Germany

Control and function keys

Removable hook

Control buttons Up / Down

Select button (SEL)

LCD monitor with backlight

Control buttons Right / Left

Menu-sensitive function keys

On / Off

Retrieve memory slots

Redial incoming

Redial outgoing

Alphanumeric keypad

Off Hook (pick up)

Flash button (flash times selectable in the menu)

On Hook (hang up)

Speaker mode

Volume +

Volume -

Battery compartment lid

Speaker

Test cords with 6-ANB clips A- and B-core

The TP09D is a rugged and waterproof analogue test phone with a back-lit graphic display, protected keyboard, menu-driven operation and caller ID (CLIP), message waiting indicator (MWI), DTMF grabbing, line voltage and current, high-impedance monitor, overvoltage and undervoltage lockout, data security through high-impedance monitor, open listening for monitor and telephony and calling

Main functions

RING
TP09D switched off. Default setting is *on hook*. Waiting for incoming call with or without CLIP information.

TALK
TP09D switched on. Pressing the **off Hook** key displays: Line allocation, information in display such as device mode, dialing mode, programming, charge pulses, line voltage, line current, battery status, dialed number, caller ID, speed dial memory.

ON
Switch on TP09D with the **ON** button. The following functions can be selected immediately:

    F1 = Configuration menu
    F2 = PRG – Programming the speed dial
    F4 = MON – Line Monitor on / off

RING mode (on Hook) – normal operating mode

Incoming call (default)

In the default setting *on Hook*, the TP09D waits for a call. The sequence and volume of the sound signal can be adjusted in the setup menu.

Immediately after the first incoming call, the device is automatically switched on and „listens" to the line. If the line transmits CLIP data in FSK format, it is evaluated and shown on the display. The phone number and, if transmitted, name, date and time are displayed for 10 seconds. With the TP09D, the first call signal suppressed by conventional SMS telephones is not suppressed for control purposes.

If CLIP is transmitted, all transmitted information is displayed and stored under CID RCL.

The last three calls are stored in the CID RCL memory. If no CLIP is transmitted, the information *NO CLIP DETECTED*. If the information is transmitted but errors are detected, the *CRC ERROR* information appears in the display. These errors can be caused by poor signal quality or missing information.

An incoming call is accepted by pressing the **off Hook** key.

The test handset can now be used for telephoning like a normal handset. The open listening mode is activated with the **SPKR On/Off** button on the rear handle. The volume can be adjusted in 6 steps with the **Vol +** and **Vol -** keys. These keys are greatly delayed to prevent incorrect operation. The microphone is deactivated in open listening mode. This mode is only used to document and check whether a dial tone is present without having to hold the test handset to the ear.

TALK mode (off Hook) – normal operating mode

Outgoing call

When the TP09D is switched on, after pressing the **off Hook** key, the line voltage is first measured in order to prevent inadvertent occupancy of the line when the *Low Voltage Lockout* is activated. If the measured line voltage is between 2 and 75 volts, the information *No line* disappears and the line is occupied. If *Low Voltage Lockout* is not activated (default), it can always be used.

In this configuration, the following appears in the second line from left to right on the display:

T	For TALK mode
T or P	Set dial, tone or pulse
- or I	*Low Voltage Lockout* off or on
- or 0	One-position counter for charge pulse
<47 mA	Current line current depending on the terminal device at LLC
Battery	Display of battery capacity
+5 V	Display of polarity (- or +) and three-digit display of line voltage, max. 199 V
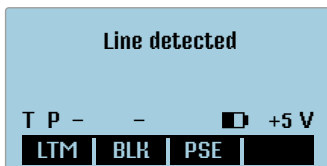
The display shows the first symbol with *T*. This shows the status clearly. If it was an incoming call, the connection is now established. The dial tone can now be heard on an outgoing call.

With the TP09D, the selection type, pulse or frequency selection is selected in the menu. Press the corresponding numeric keys to cancel the selection. Either direct dialling – each key press is selected immediately – or block dialling – the digits are written to the display and then selected by **SEL**. Block dialing is activated or deactivated by **F2 = BLK**. Dialling sequences can be compiled and tested, pauses with **F3** or Flash can be inserted.

The last number dialed can be dialled immediately by pressing the **LNR** key. Each time the **CID RCL** or **LNR** button is pressed, the number (LNR and CID RCL), name and time and date (CID RCL only) of the last call are displayed in sequence. The last three calls or calls are displayed by pressing the key repeatedly. Press **SEL** to dial the number on the display. The TP09D has a total of 12 memory locations.

In order to limit errors in telephone systems as easily as possible, the flash time (the three most important times are adjustable via the *Flash times* option in the menu) is set to a direct key. The pause can be inserted for block dialing or stored call numbers by pressing **F3**.

The open listening mode is activated with the **SPKR On/Off** key on the handset side. The volume can be adjusted in 6 steps with the **Vol +** and **Vol -** keys. These keys are greatly delayed to prevent incorrect operation. The microphone is deactivated in open listening mode. This mode is only used to record and check whether a dial tone is present without having to hold the test handset to the ear.

LTM – Line Test Mode

Identification of wire pairs or connections by calling a service number, whereby a DTMF tone sequence is sent back to the caller in order to identify the connection. If LTM is activated, the connection number is sent by this subscriber as a DTMF tone sequence after the service number has been called and is decoded and displayed by the TP09D. This mode can be permanently activated or deactivated in the menu under *LTM On-Off.* This serves to avoid disturbances during normal conversations or calls.

ON / OFF (Advanced funtions)

For further functions, the TP09D is switched on using the red **ON / OFF** key (keep the key pressed for more than one second). The following functions can be selected:

- **F1** Setup menu
- **F2** Programming speed dial numbers
- **F3** High-impedance line monitor

F1 – Setup menü

Pressing the **F1** key opens the setup menu, you can scroll through it with the **Up** and **Down** keys. The parameter to be changed is selected by pressing the **SEL** key. If a submenu is stored, it is displayed. Settings are selected with **SEL**. This saves the changes and the device immediately returns to test mode. If no changes are made, the menu can be exited by selecting functions already set or **ESC**.

Menu structure

SEL: Saving and switching back, **ESC**: Back without change

	Ebene 1		Ebene 2		Ebene 3		Ebene 4
1	*OKSMS#	→ 8888					
2	*NOSMS#	→ 8888					
3	Options	1	Dial mode	1	Pulse		
				2	Tone		
		2	Pulse mode	1	10 pps, 33 / 66		
				2	40 pps, 40 / 60		
		3	CID mode	1	V23, DT-AS		
		4	SMS options	1	SMS center	1	Number
				2	Display SMS text	1	On
						2	Off
				3	Exit		
		5	Meter pulse	1	12 kHz		
				2	16 kHz		
		6	Line test mode	1	Off		
				2	On		
		7	Low Voltage Inhibit	1	On		
				2	Off		
		8	Ringer mode	1	Slow		
				2	Fast		
		9	LLC	1	Off		
				2	Low		
				3	High		
		10	Language	1	English		
				2	German		
		11	Backlight	1	Off		
				2	On		
		12	Flas times	1	100 ms		
				2	270 ms		
				3	600 ms		
		13	Exit				
4	Exit						

Monitor mode

Pressing the **F4 = MON** key activates the monitor mode, in which a data-safe, high-impedance listening („monitoring") of the line is possible.

In monitor mode, the second line of the display shows from left to right:

M	For **MON**itor mude
T oder P	Set dial, tone or pulse
- oder I	Low Voltage Lockout off or on
- oder 0	One-position counter for charge pulse
Batterie	Display of battery capacity
+005	Display of polarity (- or +) and three-digit display of line voltage, max. 199 V

If connected correctly to the line, the A-wire is *minus* and the B-wire is *plus*. Listening into the line can be done either by using the handset or the loudspeaker. This makes it easy to limit disturbances such as earth voltage, noise, etc. or to determine that the line is occupied.

The open listening mode is activated with the **SPKR On / Off** on the display side. The volume can be adjusted in 6 steps with the **Vol +** and **Vol -** keys. These keys are greatly delayed to prevent incorrect operation.

In monitor mode the *DIGIT-GRABBER* function is active. The *DIGIT-GRABBER* function decodes the number dialed by the terminal (e.g. telephone, fax, modem, alarm dialer) and displays it. The maximum length displayed is 48 characters.

CID RCL (Caller ID Recall)

The **CID RCL** key stores all transmitted information of the last three calls (e.g. phone number, name, date and time), if offered by the network operator. In talk mode, the stored information can be recalled by pressing the key repeatedly and selected with **SEL**.

SMS (depending on network operator)

Since the SMS function always starts with a normal CLIP transmission, the error information mentioned in CLIP also applies here. However, before SMS is detected, the SMS centre must be entered in the menu. If this is not the case or if the number does not match the transmitted number, only the CLIP is shown in the display instead of SMS.

Activate / deactivate SMS

The SMS service must be activated if it is not yet activated on the connection to be checked. In RING mode, this is done in the setup menu under the first item *OKSMS*. If this is to be deactivated after the check has been completed, the item *NOSMS* must be selected in the menu. If the settings are correct, the display shows the sequence of the SMS transmission and, if the transmission was successful, *SMS OK!* as the result. All parameters as well as the transmitted information are checked and compared with the checksum. Errors are output with the *CRC ERROR* error notice.

For data protection reasons, the transmitted content, with the exception of caller data (such as number and, if transmitted, name), is not stored.

The display of the transmitted text can be activated or deactivated in the menu. If activated, only the first 32 characters and the sender's phone number are shown in the display for verification.

SMS can only be received if the correct SMS Center phone number for the service provider is entered in the setup menu and the service is activated. Activation and deactivation can be carried out in the menu.

MWI (depending on network operator)

In TP09D, the MWI status (*Message Waiting*) can be checked in monitor mode. The phone number of the caller who initiated the message is shown in the display. The MWI status *ON* or *OFF* is also displayed.

CIDCW-Option (depending on network operator)

If another call arrives during a call (*Caller ID Call Waiting*), its call number is shown in the display of the TP09D.

DTMF-Grabbing

In monitor mode, the TP09D can decode the number dialed by another device on the line (e.g. fax, modem or other terminal) and display up to 48 digits (DTMF dialing only).

Saving phone numbers

To save a call number, use the **F2** key to select the PRG mode. The desired memory location (0−9) is requested and selected by pressing one of the keys 0−9. If a number is already stored, it is displayed.

Stored numbers can be deleted completely with **F1** (**DEL**) or individually from behind with the **<** key. If new numbers or an extension are entered, both Pause (**F3**) (2 sec) and **Flash** (both also multiple times) can be inserted and saved. Press **F2** (STO) to save.

Dialling from the speed-dial memory

The line is assigned the **TALK** key.

LNR	Re-dialling the last three outgoing numbers
CID RCL	Re-dialling the last three incoming numbers
MR	Retrieval of indirect memory locations (0−9)

When a dial tone is audible, dialing can begin. The call is made by pressing the **LNR** or **CID RCL** key, scrolling through the stored numbers each time the key is pressed. If **MR** is selected, followed by a number key, the corresponding number is retrieved from the respective speed dial memory. The number is dialled with **SEL**.

Connection

The TP09D is equipped with highly flexible test cords with 6-ABN clips. The red test cord is connected to the A-wire, the green one to the B-wire. If the cores are correctly connected to the box or strip to be tested (no mix-ups), the voltage polarity is displayed without sign in monitor and talk mode. In this case, the negative pole is on the A-wire and the positive pole on the B-wire.

The black test cord is intended for connection to earth, but is, as not required, without function with normal delivery status.

Replacing the test cords

To replace the test cords, open the battery compartment. The cover simultaneously holds the test cords in the housing. When it is removed, the test cord can be pulled out. The connections are screwed and can be opened easily.

Insert / replace battery

Open the battery compartment using the four captive screws. Make sure the polarity is correct when inserting the battery. Use only good quality batteries.

The TP09D is waterproof. Only the battery compartment and the test cord connection area are not protected. If water has penetrated into the TP09D, this area must be dried.

The TP09D is supplied with a sturdy, exchangeable hook for mounting, the position of which can be changed. If the hook is to be removed completely, a cover cap for the receptacle is included.

9 V Alkaline Battery
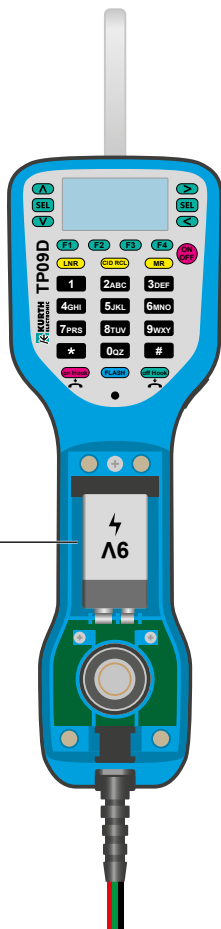
Technical Specifications

Line Impedance	Complex or Real
Pulse dial	Rate: 10 pps +/-5%
	Ratio: 40/60, 33/66
Tone dial	Freq. Error: +/- 1%
	Level: High group -6 dBm
	Low group -8 dBm
Flash times	100 ms, 270 ms, 600 ms
Pause duration	2 sec per key press
Memory	2 programm., 1 LNR, 1 CID RCL with 24 digits each
	10 indirect memory locations with 24 digits each
Monitor-Impedanz	> 120 kOhm bei 100 kHz
	> 500 kOhm bei 4 kHz

General device data

Power supply	9 V Alkaline Battery
Display	Graphical display
Housing	Stable and impact-resistant weatherproof ABS housing with membrane keyboard, waterproof sealing IP54
Test cords	150 cm long test cords made of flexible PVC with crocodile clips, exchangeable on site
	Strain relief of the test cords
	Separate battery compartment with captive screw
Dimensions	250 x 80 x 30/70 mm
Weight	450 g with battery

The device was manufactured according to the following guidelines:

Electromagnetic Compatibility Directive 2014/53/EC
LVD Directive 2014/53/EC
IEC/CISPR: 11:2009 + A1:2010, 16-1-2:2006 Edition 1.2, 16-2-1:2008 +
A1:2010, 16-2-3:2008 + A1:2010
IEC: 61000-4-1:2016, 61000-4-2:2008 Edition 2, 61000-4-3:2006 +
A1:2007 + A2:2010, 61000-4-8:2009, 61326-1:2012, 61326-2-1:2012

CE [trash bin symbol]   [drop symbol] **IP 54**

Safety instructions

The TP09D may only be operated with the accessories originally pro-
vided. Using the device with accessories that are not original or for ap-
plications for which it was not intended can lead to incorrect measure-
ments and may damage the device. The relevant safety regulations in
VDE 0100, 0800 and 0805 must be adhered to.

- The usage of connections other than those provided can damage
  the device. The device should not be used with high-voltage current.
  Kurth Electronic assumes no liability for damage resulting from
  improper use.
- Never apply external voltage to the device.
- The device only needs to be opened to change the battery and the
  test cords. There are otherwise no parts inside the device that can
  or must be maintained or adjusted.
- The test handset is protected against ingress of dirt and water in
  accordance with IP 54. But it's not waterproof.
- Never pull unnecessarily on the cables connected to the device.

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