

User Guide

THOMA

TR10 / TR20

Remote-System

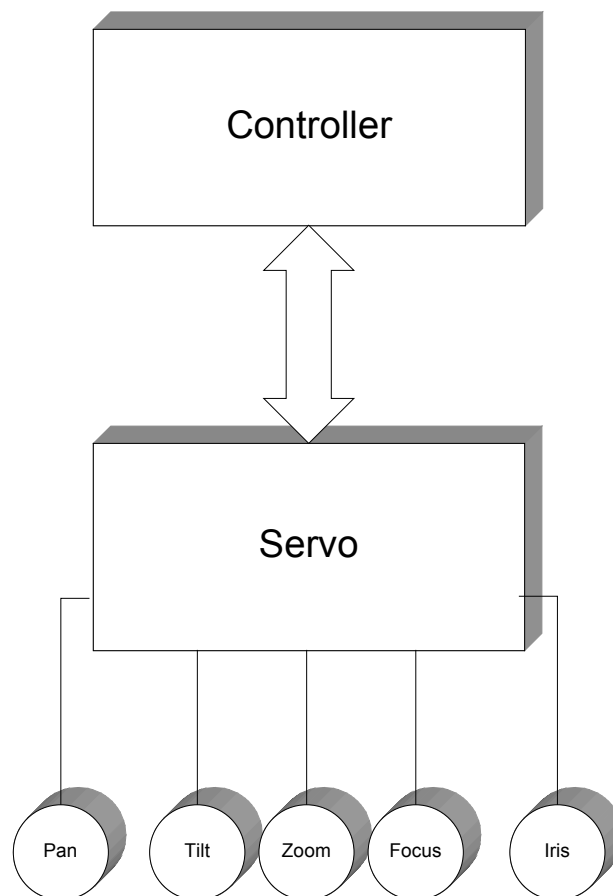
Version 2009

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6 SAVE SETTINGS IN FLASH**18****1 Starting Up**

The TR10-TR20 consists of two units, the controller and the servo box. At the controller box user settings are made and axis movements are commanded. The servo box provides the regulation of the pan, tilt, focus, zoom and iris axis movements. The two boxes are connected by a communication line.



Before starting up the TR10-TR20, all cables between camera, objective, servo box, remote head and control box shall be connected. The power supply shall be activated in the following order:

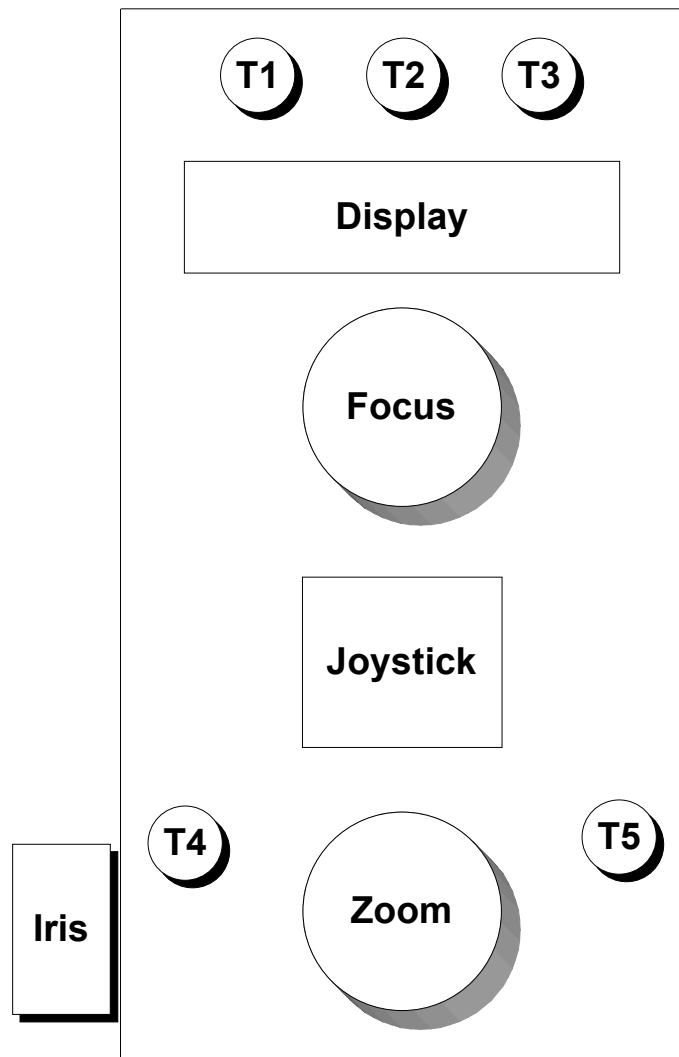
- camera und objective
- servo box
- controller box

The system recognizes also the subsequent attaching of the zoom, focus and iris objectives, however only during the offline mode.

In the case of a failure, switch off all power supplies and reactivate them in the indicated order.

2 Key Allocation

The TR10-TR20 supports the keys T1 – T5 :








The keys T1-T3 provide the menu selection and the change of parameter settings.

The key T4 switches the TR10-TR20 online and offline.

The key T5 switches the relay VTR on and off.

3 Layout of Display

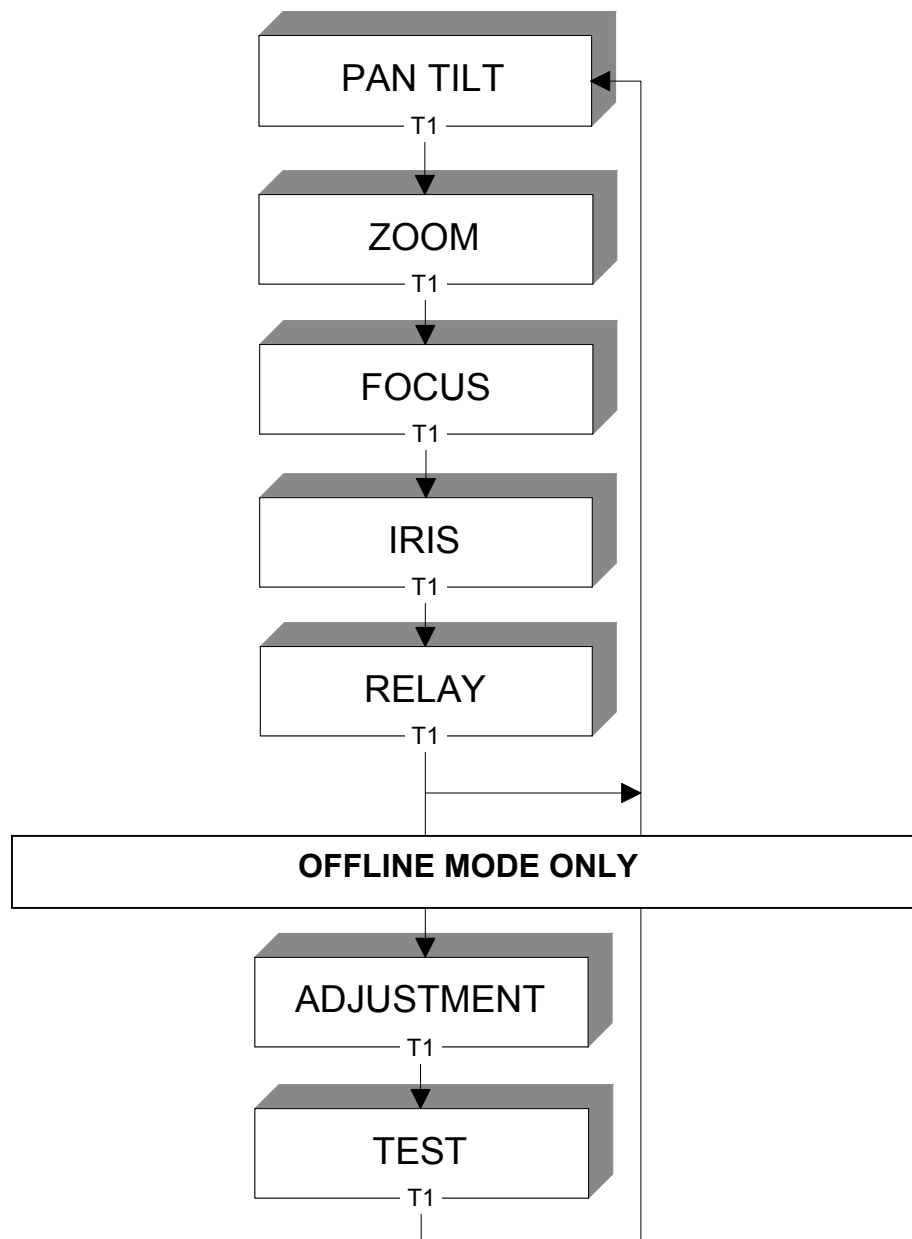
The display of the TR10-TR20 represents two lines each 16 characters wide. The last 3 characters in each line are used for status information.

 Low voltage for controller box	 Low voltage for servo box	 TR10-TR20 is online
	 Relay RET is on.	 Relay VTR is on.

4 Menu Control

4.1 Main Menu

The main menu consists of the functions PAN TILT, ZOOM, FOCUS, IRIS, RELAY, ADJUSTMENT and TEST. The menus are selected with the key T1.



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PAN TILT

This menu serves settings for direction and velocity of the pan and tilt axis.

ZOOM

This menu serves settings for direction and velocity of the zoom objective.

FOCUS

This menu serves settings for direction of the focus objective.

IRIS

This menu serves settings for direction of the iris objective.

RELAY

This menu serves settings for the relay RET.

ADJUSTMENT

This menu serves settings, which are made rarely. It can be called only if the TR10-TR20 is switched offline.

TEST

This menu should be used only for service purposes. It can be called only if the TR10-TR20 is switched offline.

4.2 Menu PAN TILT

This menu serves settings for the direction and velocity of the pan and tilt axis.

4.2.1 Key Functions

<i>Key</i>	<i>Function</i>
T1	Selection of the menu PAN TILT (from the main menu or a PAN TILT sub menu).
T2	Selection of a PAN TILT sub menu.
T3	Parameter selection in the respective PAN TILT sub menu. All changes are stored permanently in the flash (→ chapter 6).

4.2.2 Maximum Pan / Tilt Velocity

<div style="border: 1px solid black; background-color: #e0e0e0; padding: 5px; width: fit-content;"> PT velo 10 ... 100 % </div>	With the key T3 the maximum velocity of the pan and tilt axis is changed in steps from 10% up to 100%. The maximum velocity is reached by the full modulation of the joystick.
---	--

4.2.3 Pan Direction

<div style="border: 1px solid black; background-color: #e0e0e0; padding: 5px; width: fit-content;"> pan dir <<< ... >>> </div>	With the key T3 the direction of the pan axis is changed (related to the modulation of the joystick).
--	---

4.2.4 Tilt Direction

<div style="border: 1px solid black; background-color: #e0e0e0; padding: 5px; width: fit-content;"> tilt dir <<< ... >>> </div>	With the key T3 the direction of the tilt axis is changed (related to the modulation of the joystick).
---	--

4.2.5 Dead Zone

<div style="border: 1px solid black; padding: 5px; width: fit-content;"> dzone 5% ... 30 % </div>	<p>With the key T3 the size of the dead zone of the joystick is changed. The first and the second value provide the minimum / maximum size of the dead zone, in percentage of the maximum joystick modulation. The dead zone varies between the two values.</p> <p>The variation of the dead zone for the pan axis depends on the joystick modulation of the tilt axis. The variation of the dead zone for the tilt axis depends on the joystick modulation of the pan axis.</p> <p>If the minimum is equal to the maximum, the size of the dead zone is independent from the joystick modulation.</p>
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4.3 Menu ZOOM

This menu serves settings for the direction and velocity of the zoom objective.

4.3.1 Key Functions

<i>Key</i>	<i>Function</i>
T1	Selection of the menu ZOOMS (from the main menu or a ZOOM sub menu).
T2	Selection of a ZOOM sub menu.
T3	Parameter selection in the respective ZOOM sub menu. All changes are stored permanently in the flash (→ chapter 6).

4.3.2 Maximum Zoom Velocity

<div style="border: 1px solid black; padding: 5px; width: fit-content;"> zoom velo 10 ... 100 % </div>	<p>With the key T3 the maximum velocity of the zoom objective is changed in steps starting from 10% up to 100%. The maximum velocity is reached by the full modulation of the zoom control.</p>
--	---

4.3.3 Zoom Direction

<div style="border: 1px solid black; padding: 5px; width: fit-content;"> zoom dir <<< ... >>> </div>	<p>With the key T3 the direction of the zoom objective is changed (related to the modulation of the zoom control).</p>
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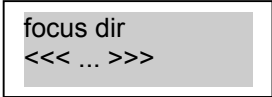
4.4 Menu FOCUS

This menu serves settings for the direction of the focus objective.

4.4.1 Key Functions

<i>Key</i>	<i>Function</i>
T1	Selection of the menu FOCUSES (from the main menu or a FOCUS sub menu).
T2	Selection of a FOCUS sub menu
T3	Parameter selection in the respective FOCUS sub menu. All changes are stored permanently in the flash (→ chapter 6).

4.4.2 Focus Direction

	With the key T3 the direction of the focus objective is changed (related to the modulation of the focus control).
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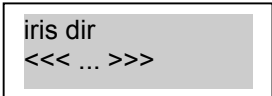
4.5 Menu IRIS

This menu serves settings for the direction the iris objective.

4.5.1 Key Functions

<i>Key</i>	<i>Function</i>
T1	Selection of the menu IRIS (from the main menu or an IRIS sub menu).
T2	Selection of an IRIS sub menu.
T3	Parameter selection in the respective IRIS sub menu. All changes are stored permanently in the flash (→ chapter 6).

4.5.2 Iris Direction

	With the key T3 the direction of the iris objective is changed (related to the modulation of the iris control).
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4.6 Menu RELAY

This menu serves settings for switching the relay RET on and off.

4.6.1 Key Functions

<i>Key</i>	<i>Function</i>
T1	Selection of the menu RELAY (from the main menu or a RELAY sub menu).
T2	Selection of a RELAY sub menu.
T3	Parameter selection in the respective RELAY sub menu. All changes are stored permanently in the flash (→ chapter 6).

4.6.2 Switching the Relay RET

	<p>With the key T3 the relay RET is switched on and off. The current state of the relay is shown in the display (→ chapter 3).</p>
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4.7 Menu ADJUSTMENT (offline mode only)

This menu serves settings, which are made rarely. It can be called only if the TR10-TR20 is switched offline.

4.7.1 Key Functions

<i>Key</i>	<i>Function</i>
T1	Selection of the menu ADJUSTMENT (from the main menu or an ADJUSTMENT sub menu). It can be called only if the TR10-TR20 is switched offline.
T2	Selection of an ADJUSTMENT sub menu.
T3	Parameter selection in the respective ADJUSTMENT sub menu. All changes are stored permanently in the flash (→ chapter 6).

4.7.2 Characteristics of Joystick for Pan / Tilt Velocity

<div style="border: 1px solid black; padding: 5px; width: fit-content;"> PT ramp normal ... dynamic </div>	<p>With the key T3 the mode "normally" and "dynamic" is set.</p> <p>In the mode „normal“ the modulation of the joystick causes a square change of the velocity starting from 0 up to the adjusted value "PT velo" (→ chapter 4.2.2).</p> <p>In the mode „dynamic“ the modulation of the joystick causes a exponential change of the velocity starting from 0 up to the maximally possible. The adjusted velocity of "PT velo" determines the slope of the velocity curve.</p>
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4.7.3 Characteristics of Zoom Control for Zoom Velocity

<div style="border: 1px solid black; padding: 5px; width: fit-content;"> zoom ramp normal ... dynamic </div>	<p>With the key T3 the mode "normally" and "dynamic" is set.</p> <p>In the mode „normal“ the modulation of the zoom control causes a square change of the velocity starting from 0 up to the adjusted value "zoom velo" (→ chapter 4.2.2).</p> <p>In the mode „dynamic“ the modulation of the zoom control causes a exponential change of the velocity starting from 0 up to the maximally possible. The adjusted velocity of "zoom velo" determines the slope of the velocity.</p>
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4.7.4 Calibration of the Joystick

PT calib.
start >

With the calibration of the joystick the TR10-TR20 determines the maximum modulation of the joystick and adapts the required velocity for the pan/tilt axis.

This function must be done only if the maximum modulation of the joystick does not relate to the required velocity for the pan/tilt axis.

With the key T3 the calibration is started. The joystick must be driven then manually to all of the four maximum end points. In the display two numbers are shown, first for pan, second for tilt. They intend a measure for the way of the joystick from one end point to the other. Each number must reach the value 100 at minimum.

By the next hit of the key T3 the calibration is terminated. In the display the message "success" or "failed" appears. In the event of an error the calibration is rejected and must be restarted.

4.7.5 Offset Voltage of the Zoom Objective

zoom offset

The zoom objective needs theoretically a voltage of 5 V, in order to hold the current position. In practice this voltage differs from 5 V and can be adapted over this menu.

With the zoom control the zoom objective can be driven to any position. During the offset setting the best position of the zoom objective is the center position.

With the joystick (pan) the voltage offset is set in steps starting from -100 up to +100. Do the settings, until the zoom objective is standing still.

4.7.6 Calibration of the Focus Control

focus calib
start >

With the calibration of the focus control the TR10-TR20 determines the maximum modulation of the focus control and adapts the mechanical end points to that of the focus objective.

This function must be done only if the mechanical end points of the focus control do not relate to that of the focus objective.

With the key T3 the calibration is started. The focus control must be driven then manually to both end positions. In the display a numbers is shown, which intends a measure for the way from one end point to the other. This number must reach the value 100 at minimum.

By the next hit of the key T3 the calibration is terminated. In the display the message "success" or "failed" appears. In the event of an error the calibration is rejected and must be restarted.

4.7.7 Calibration of the Iris Control

iris calib
start >

With the calibration of the iris control the TR10-TR20 determines the maximum modulation of the iris control and adapts the mechanical end points to that of the iris objective.

This function must be done only if the mechanical end points of the iris control do not relate to that of the iris objective.

With the key T3 the calibration is started. The iris control must be driven then manually to both end positions. In the display a numbers is shown, which intends a measure for the way from one end point to the other. This number must reach the value 100 at minimum.

By the next hit of the key T3 the calibration is terminated. In the display the message "success" or "failed" appears. In the event of an error the calibration is rejected and must be restarted.

4.7.8 Switching Mode of Relay VTR

VTR mode
toggle ... impulse

The mode of relay VTR is set.

With the key T3 the mode „toggle“ or „impulse“ is set.

In the "toggle" mode the relay VTR is switched between on and off, when ever the key T5 is hit.

In the "impulse" mode the relay VTR is switched on for one second, if the key T5 is hit.

The current state of the relay is shown in the status display (→ chapter 3).

4.7.9 Auto Voltmeter

Voltmeter
off ... on

The auto voltmeter is enabled / disabled.

With the key T3 the mode „off“ or „on“ is set.

If the auto voltmeter is switched on, and no buttons his hit for 30 seconds – no matter of the selected menu, the 12V power supply voltage of the controller and servo box is displayed and updated every second.

If there is no connection to the servo box, the 12V power supply voltage of the servo box is displayed as “----“.

Hit any button, to close the auto voltmeter and to return to the previous menu.

4.8 Menu TEST (offline mode only)

This menu serves for test purposes and should be used only by the service.

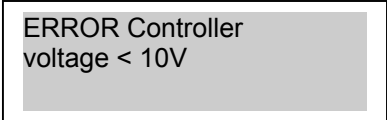
5 Low Voltage Protection

The TR10-TR20 examines constantly the power supply voltage of the controller box and the servo box.

5.1 Controller Box

If the 12V power supply voltage of the controller box is below 10.75 V, a warning indicator is shown in the display (→ chapter 3).

If the 12V power supply voltage of the controller box is below 10.00 V, the following error message is shown in the display. In order to delete the error condition, the equipment must be switched off.



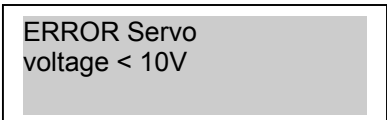
ERROR Controller
voltage < 10V

Additionally the auto voltmeter can be activated, in order to watch the 12 V power supply voltage permanently (see chapter 4.7.9).

5.2 Servo Box

If the 12V power supply voltage of the servo box is below 10.75 V, a warning indicator is shown in the display (→ chapter 3).

If the 12V power supply voltage of the servo box is below 10.00 V, the following error message is shown in the display. In order to delete the error condition, the equipment must be switched off.



ERROR Servo
voltage < 10V

Additionally the auto voltmeter can be activated, in order to watch the 12 V power supply voltage permanently (see chapter 4.7.9).

6 Save Settings in Flash

The current parameter settings, done in the menus, are saved in the flash in the following cases :

- in offline mode after a delay of 30 seconds.
- with the change of offline to online mode
- with the change of online to offline mode

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