KTD

Description

The KTD control unit is used to programme and control a solar thermal systems. Two different versions are available, KTD3 and KTD5, which are used in combination with R586S, R586S-0 and R586S-1 circulation groups.
The control unit is user-friendly thanks to its backlight graphic display, four buttons, handy programming assistant and on-line help pages.
The KTD control unit has inputs for temperature probes type Pt1000, a relay output for controlling an electronic circulator, and one or two relay outputs for commanding a electronic circulator (predisposition for commanding circulator by PWM or 0-10 V signal) and one or two relay outputs for other additional functions.
The programs on the control unit allows to set various system configurations. Operation control functions range from the mere reading of the current measured values to long-term system monitoring and analysis by means of charts and statistics. Numerous other functions complete the possibilities offered by the KTD control unit:
• at any time, you can reset the previous values or, if necessary, the manufacturer's default values;
• the menu locking function prevents any unwanted modification of the operating parameters set during the unit programming phase;
• the anti-lockout function activates the pump or valve connected to the relay for 5 seconds, at regular intervals, to prevent any possible lockout due to a lengthy period of non-use;
• the anti-legionella function heats the boiler to a high temperature at fixed time intervals.
The KTD allows also to view the thermal energy level produced by the solar thermal system thanks to the setting of certain additional parameters (e.g. glycol type and percentage, and system flow rate).

Versions and product codes

Serie	Product code	N° of input for temperature probe	N° of included temperature probe
KTD3	KTD3Y003	3	3
KTD5	KTD5Y006	6	4

Optionals

• **KTDPY001:** overvoltage protection
• **KTDSY001:** temperature probe Pt1000 (180 °C)

Technical data

• Operational room temperature range: 0÷40 °C
• Operational room humidity range: max. 85 %
• Supply voltage: 100÷240 Vac
• Frequency: 50÷60 Hz
• Power consumption: 0,5÷2,5 W (low consumption in standby)
• Pt1000 probes easuring range: -40÷300 °C
• Power outputs: - mechanical relay: 460 VA resistive / 460 W inductive
- electronic relay: 5÷120 W inductive
• Output to control the ErP circulator: - PWM frequency 1 kHz, level 10 V
- 0-10 V tollerance 10 %, for load 10 KΩ
• Internal fuse: 2 A / 250 V slow blow
• Protection degree: IP40
• Protection class: II

Main characteristics

• Outputs 0-10 V / PWM to control the ErP circulator
• Casing: in 2 parts, ABS
• Type of installation: integrated in the circulation groups (R586S, R586S-0, R586S-1) or separate on the wall
• Display: graphic display, 128 x 64 points
• Signalling: 1 multi-colour LED
• Programming: 4 buttons
• 18 languages selectable
• Guided installation
• Compliance: - Low voltage 2006/95/EC
- Electromagnetic Compatibility Directive 2004/108/EC

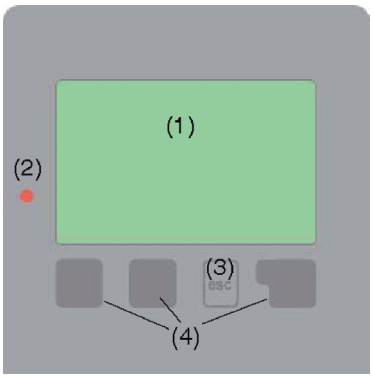
Operating characteristics

Functions	KTD3	KTD5
Inputs for Pt 1000 probes	3	6
Pt1000 probes supplied	3	4
Relays outputs: - mechanical relay - electronic relay	 2 (R1 - R2) -	 1 (R3) 2 (R1- R2)
Number of system configuration	27	42
Measurement of thermal energy	SI	SI
Measurement of thermal energy via VFS sensor	NO	SI (x 2)
Times and temperat. controlled by thermostat function	SI	SI
Anti-legionella protection via solar system	SI	SI
Anti-legionella protection via auxiliary heat generator	SI	SI
Anti-freezing protection	SI	SI
Net communication	CAN Bus	CAN Bus

Additional function for not used relays

• Solar By-pass
• Back-up heating control
• Solar panel cooling
• Increase the return flow
• Anti-legionella function
• Tank transfering
• Universal ΔT
• Thermostat 2
• Control of solid fuel boiler
• Signalling with activated protective function
• Signalling with new information message
• Pressure monitoring
• Booster for fast start-up of the system
• Heating circuit
• Parallel operation with R1
• Parallel operation with R2

Signal and command elements



The user interface of the KTD control unit consists of a graphic display, a signalling LED and 4 buttons. The dot matrix display (1) indicates the operation of the KTD control unit via text and graphics. The signalling LED (2) is multi-colour and can assume the following status conditions:

- fixed green light if a relay is activated
- fixed red light if "OFF" mode is selected
- slow red flashing in "manual" mode
- fast red flashing if there is an error.

Using the 4 buttons (3, 4), you can access the various functions of the control unit. The "esc" button (3) is used to enter or quit the menu; when it is pressed, the control unit asks for confirmation that the modifications must be stored. The function of each of the other three buttons (4) is shown in the row of the display just above the buttons themselves
The right-hand button is only used to choose and confirm a function.

Examples of the button functions:

Button	Function
+/-	increase/reduce a value
▼/▲	scroll up/down through the menu
yes/no	confirm/refuse
Info	more information
Back	go backwards
ok	confirm your choice
Confirm	confirm the setting

Meaning of the symbols on the display:

Symbol	Meaning
	Circolator (the symbol rotates if the circulator is working)
	Valve (in black is indicated the flow direction)
	Solar panel
	Boiler or accumulator
	Swimming pool
	Temperature probe
	Heat exchanger
	Attention / Error message
	New information

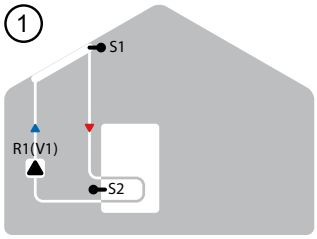
Typical applications

Warning.
The following illustrations should be viewed only as schematic diagrams showing the respective hydraulic systems, and do not claim to be complete. The controller does not replace safety devices under any circumstances. Depending on the specific application, additional system components and safety components may be mandatory, such as check valves, non-return valves, safety temperature liwithers, scalding protectors, etc., and must therefore be provided.

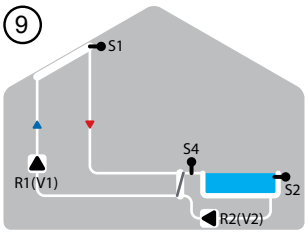
Symbol	Meaning
	Circulator
	Valve
	3-way Valve R2 on
	Heat exchanger
	Solar
	Probe
	Radiator

Symbol	Meaning
	Chiller
	Wood boiler
	Accumulator
	Auxiliary heating
	Auxiliary heating
	Swimming pool

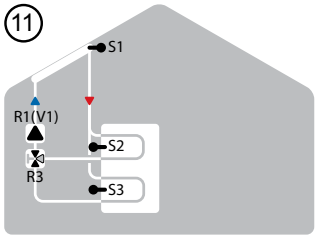
Typical application for KTD3 and KTD5

1


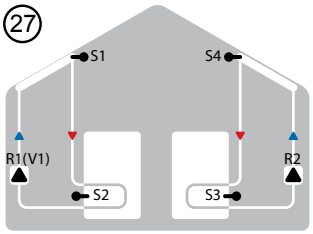
Solar

9


Solar with swimming pool + heat exchanger

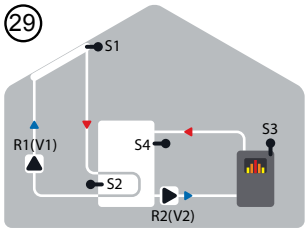
11


Solar + boiler double coil

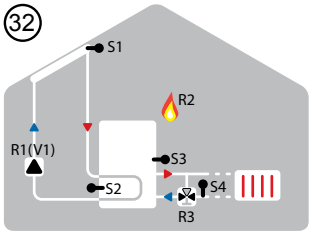
27


Double solar

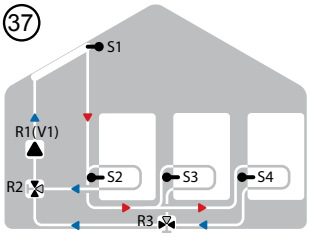
Typical application only for KTD5

29


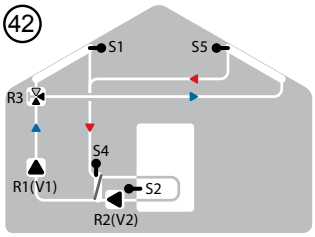
Solar, accumulator and wood boiler

32


Solar with thermostat and pre-heating

37


Solar 3 accumulators and 3 valves

42


Double solar, heat exchanger, 2 circulators

Note.
For other possible applications refer to the instruction manual.

Installation

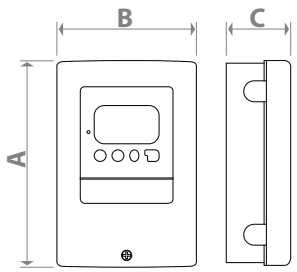
Warning.
The installation and programming of the KTD control unit, and the initial start-up of the solar thermal system, should only be carried out by expert personnel who must scrupulously respect current laws and comply with the Standards, project indications, technical documentation and assembly instructions supplied with the device.

The KTD control unit can be installed integrated in the R586S, R586S-0, R586S-1 circulation groups or separated on the wall.

The permissible lengths of the connecting cables are:
- Solar panel and external probe: < 30 m
- Other Pt1000 probes: < 10 m
- CAN Bus: < 3 m
- PWM o 0-10 V: < 3 m
- Mechanical relay: < 10 m
- Electronic relay (only for KTD5): < 10 m

Note.
For installation and configuration steps, refer to the instruction manual.

Dimensions



Product code	A [mm]	B [mm]	C [mm]
KTD3Y003	163	110	52
KTD5Y006	163	110	52

Product specification

KTD3

Differential control unit for programming and controlling the operation of the solar thermal system. To be used with the R586S, R586S-0 and R586S-1 circulation group. Backlight graphic dot matrix display (128x64). 4 buttons, 1 multi-colour signalling LED. Programming assistant and on line help pages. 3 inputs for Pt1000 temperature probes (3 probes included), 2 mechanical relay outputs. 27 possible system configurations. Thermal energy measurement function. Anti-legionella protection function via activation of the solar thermal system. Menu locking function to prevent any unwanted modification of the operating parameters. Anti-lockout function with activation (for 5 sec) of circulator or valve connected to relay output. Value reset function (previous or default values). Supply voltage 230 V AC ± 10 %. 2 A internal protection fuse, slow-blow type 250 V. ABS casing. Dimensions 163x110x52mm.

KTD5

Differential control unit for programming and controlling the operation of the solar thermal system. To be used with the R586S, R586S-0 and R586S-1 circulation group. Backlight graphic dot matrix display (128x64). 4 buttons, 1 multi-colour signalling LED. Programming assistant and on line help pages. 6 inputs for Pt1000 temperature probes (5 probes included), 2 mechanical relay outputs. 42 possible system configurations. Thermal energy measurement function. Anti-legionella protection function via activation of the solar thermal system. Menu locking function to prevent any unwanted modification of the operating parameters. Anti-lockout function with activation (for 5 sec) of circulator or valve connected to relay output. Value reset function (previous or default values). Supply voltage 230 V AC ± 10 %. 2 A internal protection fuse, slow-blow type 250 V. ABS casing. Dimensions 163x110x52mm.

Additional information

For additional information please check the website www.giacomini.com or contact the technical service: ☏ +39 0322 923372 🖷 +39 0322 923255 ✉ consulenza.prodotti@giacomini.com

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