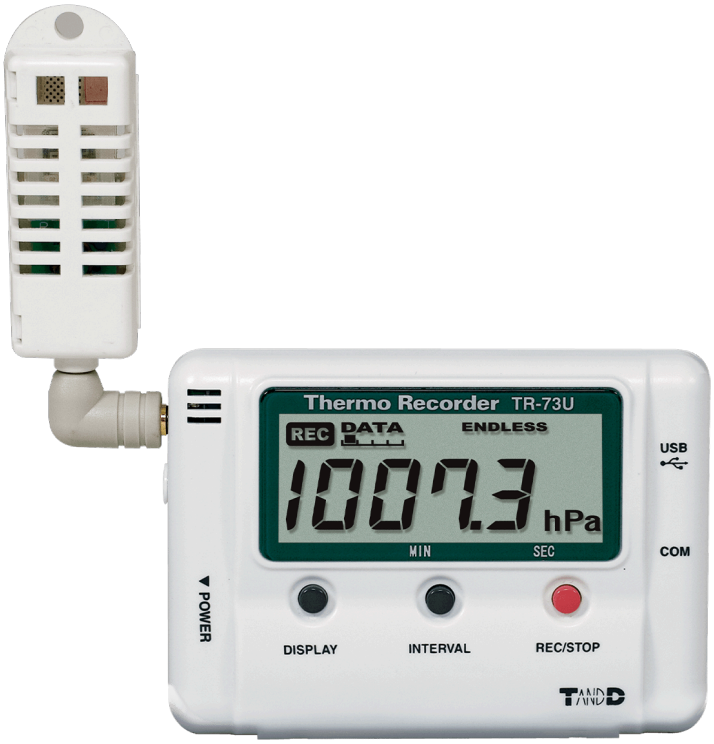
USER GUIDE

TR-73U

T&D

Distributed by AKRIBIS



Thermo Recorder
TR-73U

User's Manual

Thank you for purchasing our product.
Carefully read this instruction manual
before using this unit.

AKRIBIS · www.akribis.info · contacto@akribis.info
© Copyright T&D Corporation. All rights reserved.
2025.09 16504480020 13th Edition

Disclaimers

In order to properly use this product, please carefully read this manual before using.

- All rights of this document and attached documents belong to T&D Corporation (hereinafter referred to as "the Company"). It is prohibited to use, duplicate and/or arrange a part or whole of them without the permission of the Company.
- Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries.
- All registered trademarks, company names, product names and logos mentioned herein or for products being used are the property of the Company or of their respective owners.
- Specifications, design and other contents outlined in this document and attached documents are subject to change without notice.
- Please follow the safety precautions outlined in this manual carefully. We cannot guarantee nor are we responsible for safety if this product is used in any manner other than was intended.
- On-screen messages in this document may vary slightly from the actual messages.
- Please notify the distributor where you purchased this product or the Company of any mistakes, errors or unclear explanations in this document and attached documents.
- The Company's liability for the product shall be limited to repair or replacement in accordance with our free repair policy, as stated on the included warranty card. The Company shall not be liable for any lost profits, business interruption, other consequential damages, indirect damages, punitive damages, or damages based on a claim for compensation from a third party that the Customer incurs as a result of a failure or malfunction of the product. However, if due to the Company's intentional or gross negligence the Customer suffers damages, the Company shall be liable for damages up to the amount paid by the Customer for such product.
- This document cannot be reissued, so please keep them in a safe place.
- Please read the included warranty card and provisions for free repair carefully.

Compliance Information

Radio, EMC and Safety Regulations

This device complies with Part 15 of the Federal Communications Commission (FCC) rules. Operation is subject to the following two conditions: (1)This device may not cause harmful interference, and (2)this device must accept any interference received, including interference that may cause undesired operation.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

ARKRIBIS www.arkribis.info contact@arkribis.info

Table of Contents

Safety Precautions and Instructions 2
About Thermo Recorder TR-73U 8
Basic Procedures 10
Package Contents 11
Part Names and Functions 12
Installing the Battery 14
Turning ON the Power 15
Connecting the Sensors 16
Starting Recording from Main Unit Button 17
Setting Recording Interval from Main Unit Button 18
Changing the LCD Display Mode from Main Unit Button 19
Specifications 20

Safety Precautions and Instructions

To ensure safety obey all of the following warnings

The following items should be strictly obeyed for the safe usage of this unit, and for protecting yourself and other people from bodily harm and/or damage to property. Before using make sure to carefully read, understand and follow the safety rules and precautions for our products as outlined below.

Explanation of Symbols

Explanation of Warning Symbols

⚠ **WARNING**	These entries are actions that absolutely under no circumstance should be taken. The taking of such an action may cause serious personal physical damage or death.
⚠ **CAUTION**	These entries are actions that if taken may lead to physical injury or damage to persons or things.

Explanation of Picture Symbols

△	Denotes an important warning or caution.
⃠	Denotes a forbidden action.
●	Denotes an action that you must take.

⚠ **WARNING**	
⚠	This product has been designed for private and/or industrial use only. It should not be used in situations where strict safety precautions are necessary such as with medical equipment, or in systems directly or indirectly connected with human life or well-being.
●	When installing and using this product, make sure to follow all warnings and directions from your computer manufacturer.
⃠	Do not take apart, repair or modify the main unit. Doing so may cause fire or electrocution.
●	This product is not water resistant. Only use in an environment where there is no condensation or possibility of becoming wet. If liquid enters the product, immediately remove the battery and stop using it.
●	Store main units, sensors, batteries and communication cables out of the reach of children. It is dangerous to touch or swallow batteries.
⃠	If any smoke or strage smells are emitted from the unit, immediately remove the batteries and stop using. Continued use may cause fire or electrocution.
⚠	This device is designed to measure and record temperature and humidity. Do not use it for any other purpose than to measure and record temperature and humidity.

⚠ WARNING:

For Prevention of Serious Accidents with Batteries

Improper handling of batteries may cause leakage, overheating, fire or explosion, resulting in a serious accident or malfunction of the product.

- Never touch a leaking battery with bare hands. If it gets on your eyes, skin, or clothing, wash thoroughly with tap water. If it gets into your eyes, seek medical attention immediately.
- When installing batteries make sure that plus and minus are correct and do not short-circuit the terminals.
- When not using the product for long periods, make sure to remove the batteries.
- When resuming use of the product or changing the battery, make sure to use the correct type and size of battery.
- Ensure that the batteries are within their recommended expiration date.
- Do not use leaking batteries.
- The supplied battery is non-rechargeable. Do not attempt to recharge it.
- Never disassemble, modify, crush, or cut a battery.
- Do not peel off or damage the battery label.
- Do not use the unit with batteries installed in or near fire, or place it into heating cookers or high-pressure containers. Serious danger may result from the accidental heating of batteries.
- Do not use or store the unit with batteries installed in environments with extremely high temperatures, and/or high and low pressure.
- Please regularly check and replace any batteries installed as backup for an external power supply. Aging batteries may corrode and/or leak.
- Do not use counterfeit or imitation batteries.
- Dispose of used batteries in accordance with local regulations.

⚠CAUTION

Clean the product gently using a cloth dampened with a neutral detergent diluted in water. Do not use alkaline cleaners.

Do not expose the unit to harmful gases or chemicals. It may cause corrosion and/or other danger to the unit and to people handling the unit.

Condensation may occur if the units is moved from one environment to another where the difference in temperature is great.
Use the unit in an environment where the ambient temperature is great.
Use the unit in an environment where the ambient temperature is from -10 to 60°C and the humidity is 90%RH (no condensation) or less.

To prevent damage to the unit from static electricity, remove static electricity from your body by touching metal aroung you (door knob, window frame) before touching the unit.
Static electricity may cause not only damage to the unit, but may cause breaks in or a loss of data.

Please do not insert your fingers or any foreign objects into any of the devices' jacks.

Do not use any other batteries than those that are specified in this User's Manual.
It may cause a fire or other trouble including malfunction.

Do not use or store the Thermo Recorder in any of the following places. Doing so may cause electrocution, fire and/or other adverse effects to the device and/or your computer.

- Areas exposed to direct sunlight
This will cause the inside of the device to become overheated and may cause fire, deformation, and/or other damage including malfunction.
- Areas prone to strong magnetic fields
This may cause damage including malfunction.
- Areas exposed to water leakage
This may cause electrocution or other damage incluing malfunction.
- Areas exposed to excessive vibration
This may cause injury, malfunction, damage or loss of proper electrical contact.
- Areas near fire or exposed to excessive heat
This may cause damage including malfunction and deformation.
- Areas prone to smoke, duct and dirt
This may cause damage including malfunction.

Cautions about using the Sensors

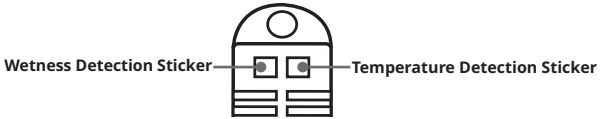
Cautions about using the temperature-humidity sensor TR-3100

	The sensor can measure temperature within the range of 0 to 50°C and humidity within the range of 10 to 95%RH. Only use the sensor within these ranges.
	If extremely severe temperature changes occur, the humidity measurements may appear abnormal. Once the sensor's temperature becomes stable, the measurements will return to normal.
	This sensor is not waterproof. Do not get wet.
	When measuring with the temperature-humidity sensor in an environment of 0 to 50°Cand less than 30%RH, the measurements may sometimes fluctuate. This is not abnormal.

Cautions about using the Sensors

Handling the temperature-humidity sensor

- The service life of humidity sensors can vary greatly depending on the operating environment. Periodic calibration may be required.
  During use the temperature-humidity sensor will accumulate impurities (dirt) on the surface of the sensor is being used in a bad environment (smoky or dusty places) it may be necessary to change the sensor sooner.
- When the temperature-humidity sensor is not being used, please place it in the attached vinyl bag with the drying agent included and store it in a cool dark place with a temperature of between 5 to 25°C and a humidity of below 30%RH.
- Attached to the temperature-humidity sensor are two stickers: a wetness detection sticker and a temperature detection sticker. If either of the stickers shows abnormality, you should change the old sensor to a new one immediately.



Wetness Detection Sticker

Informs you that the sensor has been wet.

Normal
Under normal conditions, black dots will appear on a white

Abnormal
Under abnormal conditions, it will turn to red.

Temperature Detection Sticker

Informs you that the sensor measured a temperature measurement over 60°C.

Normal
Under normal conditions, the number 60 will lightly appear on a pinkish white background.

Abnormal
Under abnormal conditions, the number 60 will clearly appear on a red background.

About Thermo Recorder TR-73U

Outline

TR-73U Thermo Recorder is a data logger capable of measuring, displaying and recording temperature, humidity, and barometric pressure data.
TR-73U has a total of three channels: one temperature, one humidity, and one barometric pressure channel.
The data recorded into the TR-73U units can then be downloaded quickly via USB cable to your computer whereby with our software you can easily process the data into graphs, tables, save to files and/or print it out.
Moreover, it is possible to connect more than one unit at the same time.

Basic Functions

Barometric Pressure Measuring Range : 750 to 1100 hPa

The TR-73U with the internal barometric pressure sensor can measure and record in a range of 750 to 1100 hPa.

Temperature Measuring Range: 0 to 50°C (with supplied temp-humidity sensor)

The TR-73U with the internal temperature sensor can measure and record in a range of -10 to 60°C, but by purchasing one of our optional temperature sensors it is possible to measure and record in the wider range of -40 to 110°C.
Please take a look at our full range of optional sensors to find one to match your application. (T&D Website > Products > TR-7Ui Series > TR-73U)

Humidity Measuring Range : 10 to 95%RH

The TR-73U with the sensor included in this package can simultaneously measure and record temperature in a range of 0 to 50°C and humidity in a range of 10 to 95% RH.

Amount of Recorded Data : 8000 readings x 3 channels

One channel can record and hold up to 8000 measurement readings.
At the longest recording interval of 60 minutes, recording can continue consecutively for 1 year.

10 Months of Operation with just 1 AA Alkaline Battery

Our low energy consumption design gives you ten months of continuous operation with only one AA alkaline battery.
This gives you the freedom to use the data loggers in places where they can be left alone for long periods of time, such as, in transportation or warehouse.

NOTE:

- Battery life varies depending upon the type of battery, the measuring environment, the frequency of communication, and the ambient temperature in which it is used.
  Specifications and explanations used in this User's Manual are based on operations carried out with a new battery and are in no way a guarantee of your actual battery life.
  Also, if the recording interval is less than 10 seconds, battery life will be much shorter.

Battery Life Warning Display

When the battery power becomes low, a battery life warning signal will appear in the unit's LCD display.
If the battery power becomes even lower the unit will automatically go into sleep mode in order to protect the data.

15 Recording Intervals

Select from 15 recording intervals (from 1 second to 1 hour) to meet your needs.
Select from 2 Recording Modes
One-time Mode : When the number of recorded readings reaches 8000, [FULL] will appear in the unit's LCD display and recording will automatically stop.
Endless Mode : When the number of recorded readings reaches 8000, the oldest data readings will be overwritten and recording will continue.

Current Readings Monitoring Display

With our software T&D Recorder for Windows, you cannot only monitor the current measurements at a set interval, but can view those measurements in a continually changing graph.
You can simultaneously display the current measurements and corresponding graphs for the number of units you have connected.

Adjustment Function

By entering the adjustment values beforehand with the software, it is possible to view and record the adjusted measurement values.
There are two methods of adjustment: adjusting by one point or adjusting by two points. Adjustment for differences will be based upon the following simple equation y=ax+b. (x: pre-adjusted reading, y: post-adjusted reading)

Basic Procedures

The following outline shows the basic procedures for getting ready, making settings and using the TR-73U.

Getting Ready

1. Install the software “T&D Recorder for Windows”
2. Get the TR-73U ready to use

Making Settings / Starting Recording

1. Make device settings (via software)*
2. Start recording (via button or software)

* Recording interval can be set via buttons on the logger as well.

Downloading Data / Displaying Graphs (via software)

1. Connect the TR-73U with a USB cable to a computer
2. Download data via software
3. Display graphs via software

Note

- The software “T&D Graph” can also be used for graph display and data analysis. (Available for free download from T&D’s website)
- If you have no internet access or prefer to install using a software DVD, "T&D Software SO-TD1" is also available as an option.
  Please contact your distributor for details. (https://tandd.com/purchasing/)
- This manual explains about the device preparation and operation with the buttons on the TR-73U unit. For how to use the software, please refer to the software manual.

Package Contents

Thermo Recorder TR-73U

Temperature-Humidity Sensor
TR-3100

User’s Manual
Warranty

AA Alkaline battery

USB Mini-B Cable
US-15C

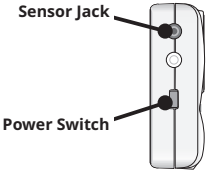
Part Names and Functions

FRONT

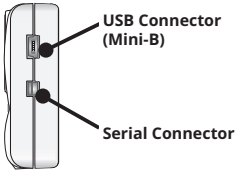
<DISPLAY> button **<INTERVAL> button** **<REC/STOP> button**

DISPLAY : Pressing this button will change the LCD Display Mode.
INTERVAL : Pressing this button will display the currently set recording interval.
REC/STOP : Pressing this button will start or stop recording.

LEFT SIDE

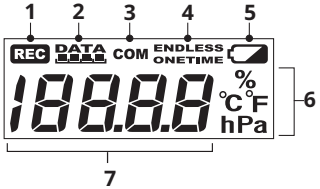


RIGHT SIDE



Upon purchase, first Install the Software, and then turn the power ON.

LCD Display



1. Recording Mark

The recording condition will appear.
ON : Recording in progress.
BLINKING : Waiting for programmed start.

2. Data Capacity Scale

After every 2000 readings the scale will be marked from left to right.

3. COM Mark

This will appear when data is being sent or received.
ON : USB cable is connected.
BLINKING : In communication with the computer.

4. Recording Mode

One-time Mode :
When the number of recorded readings reaches 8000, [FULL] will appear in the unit's LCD display and recording will automatically stop.
Endless Mode :
When the number of recorded readings reaches 8000, the oldest data readings will be overwritten and recording will continue.

5. Battery Life Warning Signal

When the battery power becomes low, a mark will appear on the LCD of the main unit.
If the battery power becomes even lower, [SLP] will appear and normal operations will stop. Please change the battery as soon as the Battery Warning Mark appears.

IMPORTANT:

- If the main unit remains in sleep mode for about 1 month without a change of battery, or if the battery is left out of the unit for more than 2 minutes, all recorded data will be lost.

6. Unit of Measurement

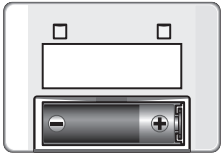
The unit of the measurement for the display will appear.

7. Measurements and Messages Area

Current measurements or operational messages such as [FULL] or [SLP] will appear.

Installing the Battery

1. Remove the battery cover from the back of the unit.
2. Insert 1 AA alkaline battery, making sure that the + and – are in the correct direction.
   Always use a new battery.



3. Replace and close the battery cover.

[Changing the Battery]

1. When battery power becomes low, a battery life warning signal will appear in the unit's LCD display.

   If, at this time you change the battery, recording will continue uninterrupted and all data will be saved for downloading.
2. If the battery is not changed and power becomes even lower, [SLP] will appear in the LCD display.

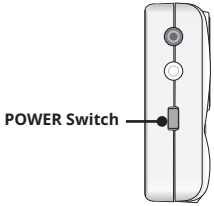
   The unit will automatically go into sleep mode in order to protect the data and all normal operations will stop.
   If you change the battery at this point, it is still possible to download all saved recorded data.
3. If the battery is further left unchanged, the display will automatically shut off.

   If all battery power is lost, all data will be lost as well.

   NOTE:
   - If a unit is left without a battery for more than 2 minutes, all data will be lost, so please work quickly when changing the battery.

Turning ON the Power

By holding in the POWER switch at the left side, the unit will turn on.



[Turning OFF the Power]

By holding in the POWER switch, the unit will turn off.

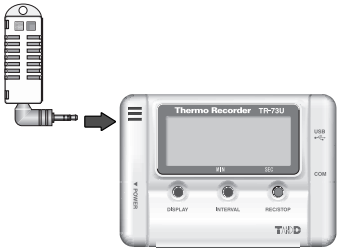
- During recording, the power cannot be turned off. Please stop recording first and then turn off the power.
- Even if the power has been turned off, the recorded data will be saved. However, if the battery power is totally lost, all data will be lost, so please download data as soon as possible to avoid losing any necessary data.

Connecting the Sensors

Connect the Sensor

To avoid poor connections, be sure to push the sensor connector securely into the jack.

**** When using the temperature-humidity sensor in environments where the temperature is 0 to 15 °C and humidity under 30 RH, there may occur changes in measurement readings. This is not a malfunction.***



NOTE:

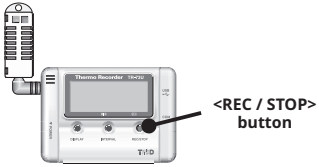
- If a sensor extension cable is being used with the data logger connected by USB to your computer, electromagnetic waves may cause large errors in measurements.
- For details about handling the temperature-humidity sensor, please refer to page 7 “Cautions about using the Sensors” of “Safety Precautions and Instructions”

Starting Recording from Main Unit Button

The <REC/STOP> button on the TR-73U unit allows you to start a recording session immediately.

**** You can also use the software T&D Recorder for Windows to start recording as well as make settings (such as device name, channel name, and recording mode).***

****When you set the programmed start date and time via the software, the [REC] mark will start flashing on the unit’s display.***



Start Recording

Press in the <REC/STOP> button on the front of the unit until the [REC] mark lights up in the display. When displayed, recording has begun.

NOTE:

- By starting a new recording session, all data currently saved in the unit will be erased.
- Even if the unit is waiting for a programmed recording to start, by pressing the <REC/STOP> button until the [REC] mark changes from flashing to lit, you can start a new recording session immediately.

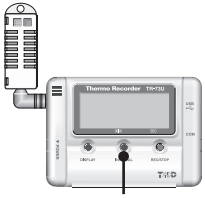
Stop Recording

You can stop a recording session by pressing the <REC/STOP> button until the [REC] mark disappears from the display. When it has disappeared, recording has stopped.

Setting Recording Interval from Main Unit Button

You can make or change recording interval settings from the <INTERVAL> button on the front of the TR-73U main unit.

During recording or while waiting for a programmed recording to start, you cannot change the settings.



<INTERVAL> button

1. Press in the <INTERVAL> button on the front of the device until the recording interval appears in the display.

2. With each pressing of the <INTERVAL> button the recording interval time will change.
   Press until the desired setting appears.
   *Recording Interval : 1,2,5,10,15,20,30 seconds 1,2,5,10,15,20,30,60 minutes

15 seconds

15 minutes

3. When the desired recording interval appears, stop pressing the <INTERVAL> button.
   Within a few seconds, the current measurement readings will return to the display and the setting will be finished.

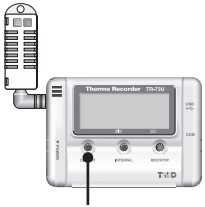
   By pressing the <INTERVAL> button during recording or while waiting for a programmed recording to start via the software, the currently set recording interval will be displayed.

AKRIBIS · www.akribis.info · contacto@akribis.info

Changing the LCD Display Mode from Main Unit Button

You can make or change the LCD display settings from the <DISPLAY> button on the front of the TR-73U main unit.

1. By pressing the <DISPLAY> button on the front of the unit, you can change the screen display.



<DISPLAY> button

2. If the LCD display shows three channels' readings alternatively, it will show one channel as a fixed display by pressing the button.
   By pressing the button again, the LCD display pattern will be set for displaying three channels alternatively.
   If the display has been set for a fixed channel, with each pressing of the button the channel display will change.

Specifications

Device Type	TR-73U		
Sensor	Temp-Humidity Sensor TR-3100 (*1)		Barometric Pressure Sensor (Internal)
	Thermistor	Polymer Resistance	
Measurement Channels	Temperature 1ch	Humidity 1ch	Barometric Pressure 1ch
Units of Measurement	°C, °F	%RH	hPa
Measurement Range	0 to 50°C (Supplied Sensor) -40 to 110°C (Optional Sensor)	10 to 95 %RH	750 to 1100 hPa
Accuracy	Avg. ± 0.3°C at 0 to 50°C	±5 %RH at 25 °C, 50 %RH	±1.5 hPa
Measurement Resolution	0.1°C	1 %RH	0.1 hPa
Responsiveness	Response Time (90%): Approx. 7 min.		4 seconds or 40 seconds if recording interval is 10 sec. or more.
Logging Capacity	8,000 data sets (One data set consists of readings for all channels in that type of unit.)		
Recording Interval	Select from 15 choices: 1, 2, 5, 10, 15, 20, 30 sec. or 1, 2, 5, 10, 15, 20, 30, 60 min.		
Recording Mode	Endless (Overwrite oldest data when capacity is full) or One Time (Stop recording when capacity is full)		
Communication Interfaces	USB Communication: USB 2.0 (Mini-B connector) Serial Communication (*2)		
Power	AA Alkaline Battery LR6 x 1		
Battery Life (*3)	Approx. 10 months		
Dimensions	H 55 mm x W 78 mm x D 18 mm		
Weight	Approx. 40 g		
Operating Environment	Temperature: -10 to 60 °C Humidity: 90 %RH or less (no condensation)		
Software (*4)	PC Software (Windows) T&D Recorder for Windows (TR-5, 7xU), T&D Graph		

AKRIBIS www.akribis.info contacto@akribis.info

*1: It is also possible to measure temperature with the internal sensor. However, the measurement range is restricted to the operating environment for the whole device.

*2: Customers wishing to write their own software, please contact your local distributor for the serial communications protocol specifications. (Note: Optional serial communication cable TR-07C is also required.)

*3: Battery life varies depending upon multiple factors including ambient temperature, recording interval, frequency of communication, and battery performance. All estimates are based on operations carried out with a new battery and are in no way a guarantee of actual battery life.

*4: Software on CD-ROM is not supplied with the product. Free software download and information on OS compatibility is available on the Software page of our website at https://tandd.com/software/.

The specifications listed above are subject to change without notice.

T&D Corporation

Product Support

For support, please contact the distributor from which you purchased the product.

A list of distributors can be found at:
https://tandd.com/purchasing/
Product information can be found at:
https://tandd.com/product/

AKRIBIS · www.akribis.info · contacto@akribis.info