USER-MANUAL
D1298

Tamson Instruments bv

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1 SAFETY AND WARNINGS 3
2 WARRANTY 3
3 PRECAUTIONS AND HAZARDS 4
4 INSTALLATION 4
4.1 IMPORTANT 4
4.2 UNPACKING 4
4.3 TILTING 5
4.4 VENTILATION 5
5 MEASUREMENT DATA 6
5.1 COOL DOWN 6
5.2 STABILITY OF TEMPERATURE IN FLASK 7
5.3 HEATING 11
5.4 COOLING 11
5.5 BATH LIQUID 12
5.6 DRAIN BATH FLUID 13
6 EC DECLARATION OF CONFORMITY THERMOSTATIC BATH TV-SERIES 15

1 SAFETY AND WARNINGS

Make sure before installing or operating the equipment to read and understand all instructions and safety precautions listed in this manual. If there are any questions concerning the operation of the equipment or about the information given in this manual please contact your local dealer or our sales department first.

Performance of installation, operation, or maintenance other than those described in this manual may result in a hazardous situation and may void the manufacturer's warranty.

Never operate equipment that is not correctly installed. Unqualified personnel must not operate the equipment. Avoid damage to the equipment, or its accessories, caused by incorrect operation.

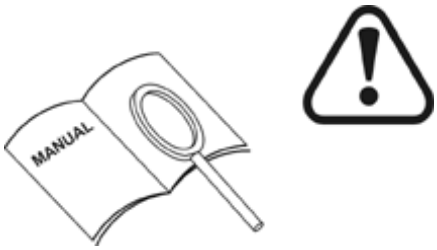
Important:
- When performing service, maintenance or moving the apparatus, always disconnect the apparatus at the main's socket,
- Proper skilled and trained personnel are only allowed to operate this equipment,
- Take notice of warning labels and never remove them,
- Refer service and repairs to qualified technician,
- If a problem persists, call your supplier or Tamson Instruments b.v.

2 WARRANTY

Tamson Instruments b.v. warrants that all their manufactured equipment is free from defects in material and workmanship, preventing the machine from normal operation. Tamson Instruments b.v does not warranty that the equipment is fit for any other use than stated in this manual. The manufacturer can only be held responsible for the security, reliability and performance of the equipment, when operated in accordance with the operating instructions, extensions, adjustments, changes and/or if repair is performed by Tamson Instruments b.v. or authorized persons only. This warranty is limited to one year from the date of invoicing. All equipment and materials are subject to standard production tolerances and variations.

3 PRECAUTIONS AND HAZARDS

Before attempting to operate the bath read all parts of this manual carefully to insure smooth operation and avoid damage to the equipment or its accessories.



READ CAREFULLY

If a malfunction occurs, consult section **Fout! Verwijzingsbron niet gevonden.**, page 3 at the end of this manual.
If problem persists, call your supplier or Tamson Instruments bv. Never operate the equipment if not correctly installed. The equipment must be operated only by qualified personnel. Avoid damage to the equipment or its accessories through incorrect operation.

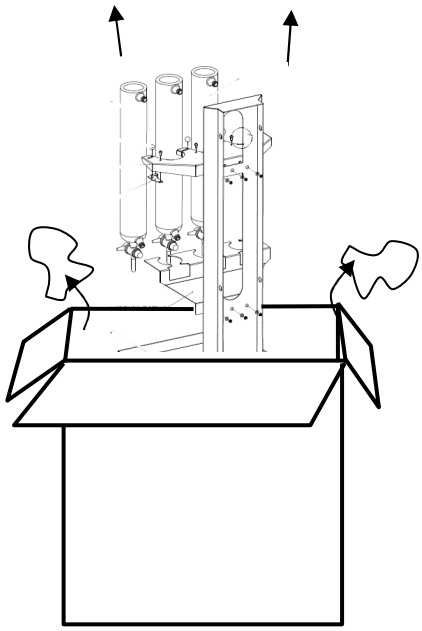
4 INSTALLATION

4.1 Important

Tamson Instruments bv is not responsible for any consequential damage or harm caused by using this bath. Repairs on the electrical system of the bath may only be carried out by well trained and authorized persons.

4.2 Unpacking

REMOVE ALL PACKAGE MATERIAL



Before leaving the factory Tamson baths are adequately packed to prevent damage during normal transportation. Check the packing for external damage and make a note on the shipping documents if any damage is found. Always retain the cartons and packing material until the bath has been tested and found in good condition. (Transport companies generally will not honor a claim for damage if the respective packing material is not available for examination).

The shipment contains at least the bath as mentioned in the delivery checklist. Further the consignment might contain one or more viscometers, individually packed in small boxes with the calibration certificate included in the box, as well as ASTM thermometers, thermometer holders etc. Please see the packing list for details concerning total contents of consignment.

Before filling the bath remove any remaining packing material from its interior. The interior of the bath can be accessed by taking off the lid on the top of the bath.

4.3 Tilting

Before unpacking inspect the tilt watch located on the outside of the packing. When the tilt watch indicates a red colour contact Tamson instruments and the forwarder before continuing with unpacking.

4.4 Ventilation

The bath has to be placed in a well ventilated area. Air circulation has to be enabled by 30 cm of free space at all sides.

If the bath has no or insufficient ventilation severe mechanical damage will occur

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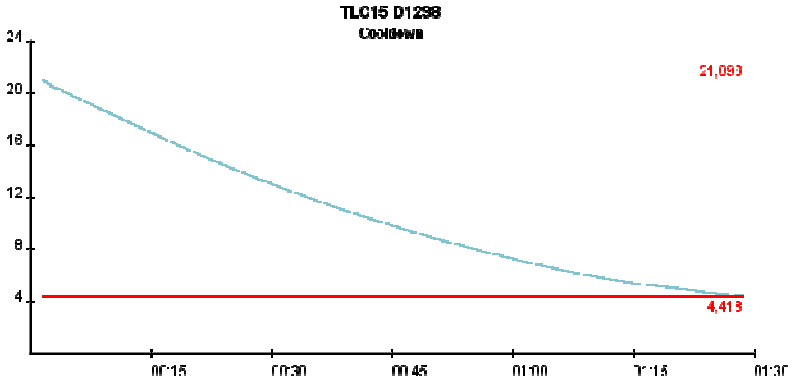
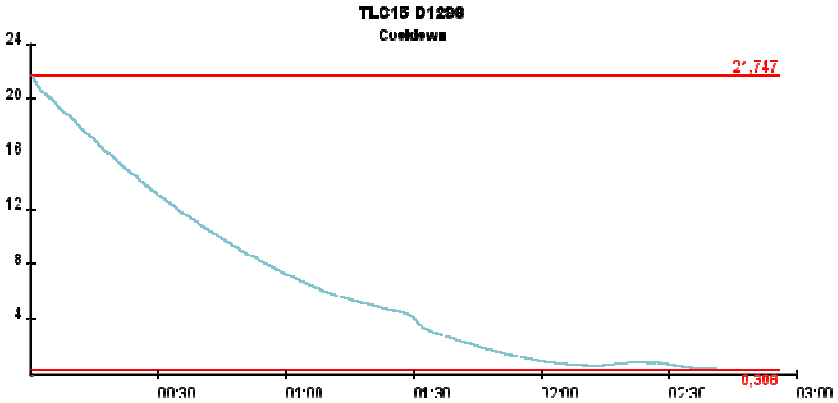
5 Measurement data

5.1 Cool down

Circulation fluid: Methanol
Liquid in flask: methanol

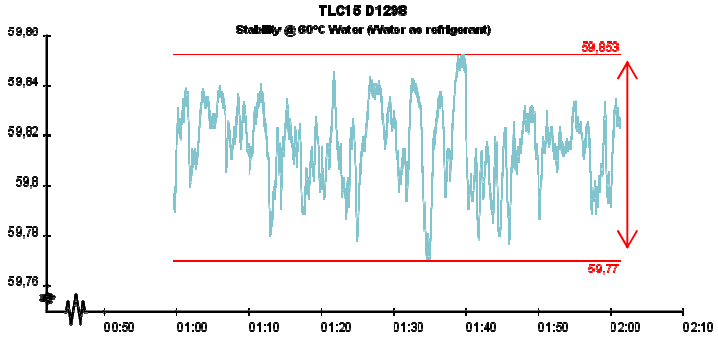


Circulation fluid: Methanol
Liquid in flask: Water



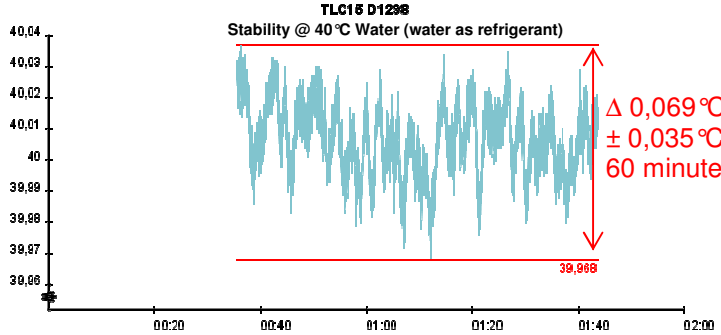
5.2 Stability of temperature in flask

Circulation fluid: Methanol
Liquid in flask: Water
Temperature: @ 60 °C



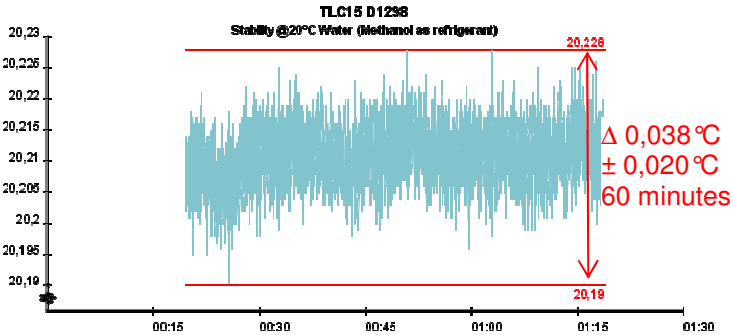
Δ 0,083 °C
± 0,040 °C
60 minutes

Circulation fluid: Methanol
Liquid in flask: Water
Temperature: @ 40 °C



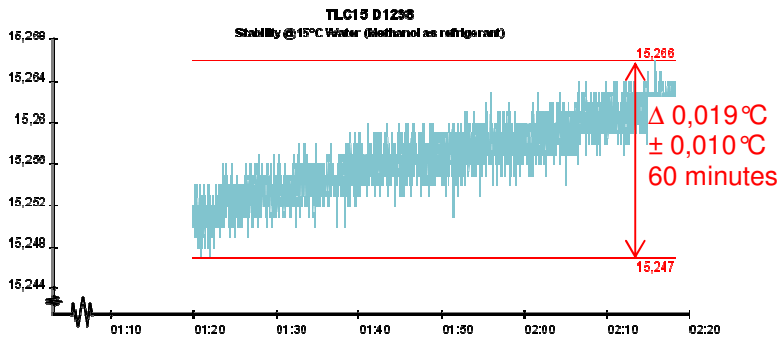
Δ 0,069 °C
± 0,035 °C
60 minutes

Circulation fluid: Methanol
Liquid in flask: Water
Temperature: @ 20 °C

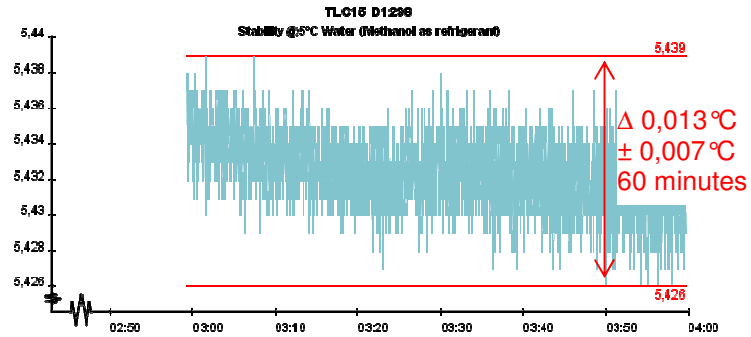


Δ 0,038 °C
± 0,020 °C
60 minutes

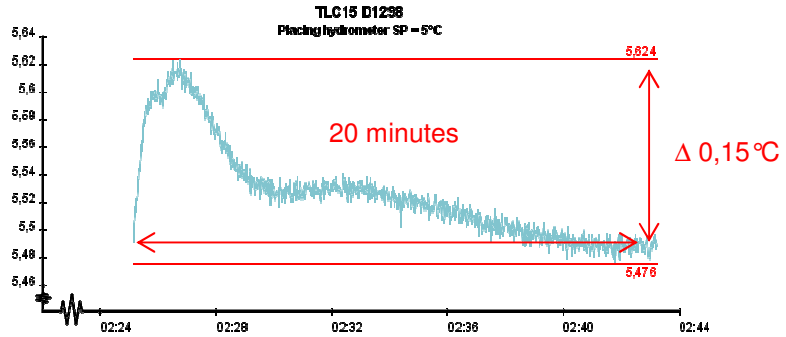
Circulation fluid: Methanol
Liquid in flask: Water
Temperature: @ 15°C

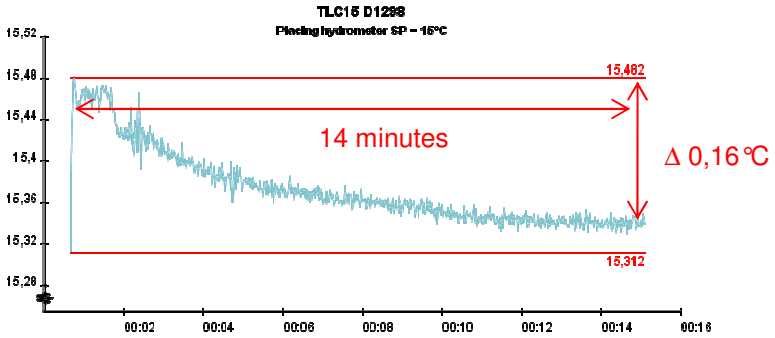


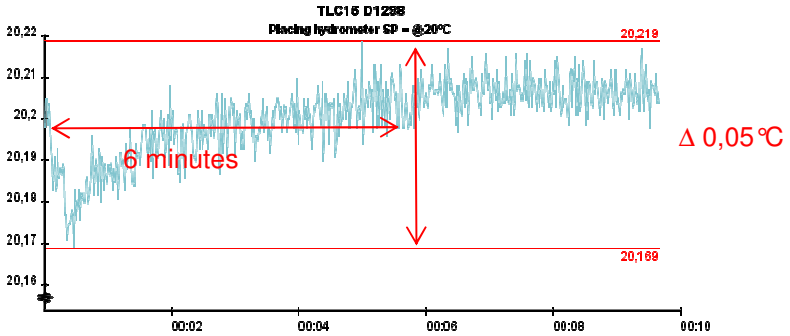
Circulation fluid: Methanol
Liquid in flask: Water
Temperature: @ 5°C

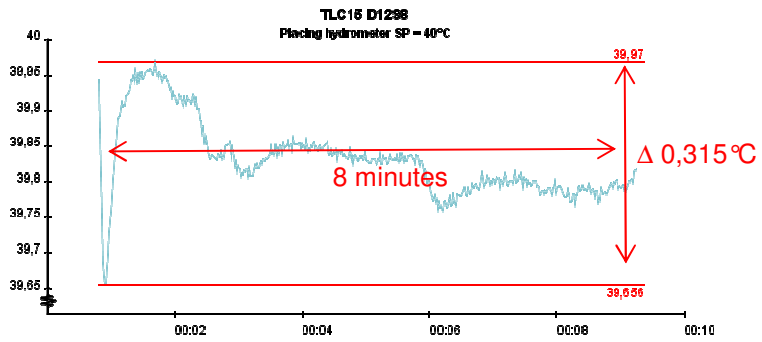


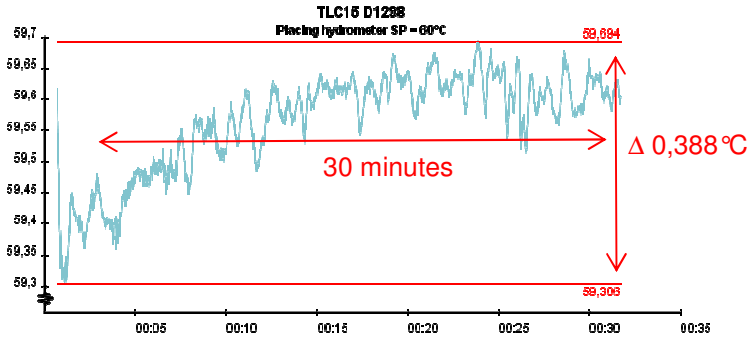
.
Temperature influence
Submercion of hydrometer with ambient temperature in flask.
Medium in flask is water.





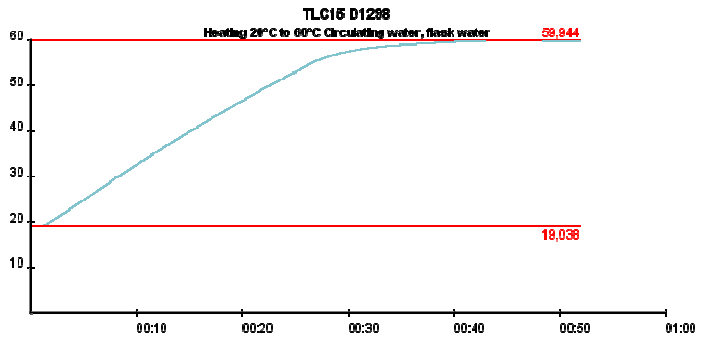



TLC15 D1298
Placing hydrometer SP = 40°C
39,97
39,655
8 minutes
Δ 0,315°C
40
39,95
39,9
39,85
39,8
39,75
39,7
39,65
00:02
00:04
00:06
00:08
00:10


TLC15 D1298
Placing hydrometer SP = 60°C
59,694
59,305
30 minutes
Δ 0,388°C
59,7
59,65
59,6
59,55
59,5
59,45
59,4
59,35
59,3
00:05
00:10
00:15
00:20
00:25
00:30
00:35

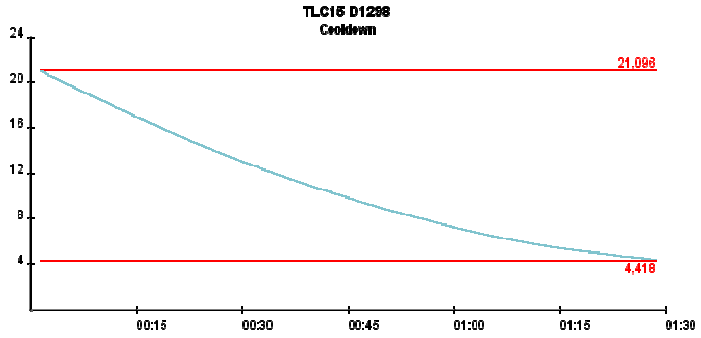
5.3 Heating

Conditions
Circulating fluid: water
Flask fluid: water



5.4 Cooling

Conditions
Circulating fluid: methanol
Flask fluid: water



5.5 Bath liquid

The bath must be filled with a liquid suitable for the minimum operating temperature.

It is very important to select a liquid with a viscosity of less than 20 cSt. At working temperature (SP) the viscosity must be below 10 cSt.

When using flamable bath liquid choose a flash point well above the operating temperature.

The use of other liquids is allowed as long as the viscosity of the fluid is low enough at the operating temperature. The viscosity must be below 10 cSt. High viscosity will result in poor stability as well as poor uniformity of the bath.

The fluid flashpoint must be well above the maximum operating temperature. Fluid must not be aggressive when in contact with stainless steel 304, 316, glass or PTFE and silicon sealing.

!! Extreme HAZARD !!
Do not use methanol at temperatures above 40°C. The methanol will vaporise and cause toxic and flammable vapours. Explosion hazard can build up in or around the bath

When working at temperatures above 40°C, oil or water can be used as an alternative.

Working - temperature [°C]	Mixture (volume percent)
5	90% water, 10% ethylene-glycol
0	80% water, 20% ethylene-glycol
-10	70% water, 30% ethylene-glycol
-15	65% water, 35% ethylene-glycol

Do not use the water glycol mixture at temperatures where the mixture can start to freeze. Frozen bath fluid can severely damage the bath and stirrer mechanism.

Commercial enterprises specialised in refrigeration may supply alternatives for mentioned circulation or bath fluids. These alternatives can be less toxic or flamable. However in some cases they are very corrosive for cupper, aluminium etc.

5.6 Drain bath fluid

The flasks can be emptied via the drain valve.

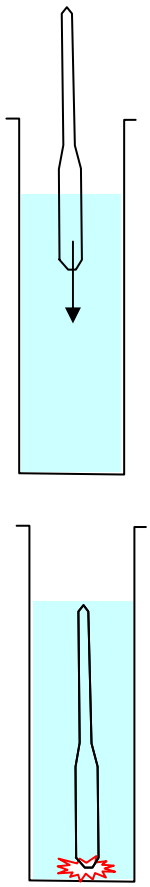
Take necessary precautions against fire hazard when removing flamable bath fluid.

When removing bath fluid do not inhale toxic vapor Always use appropriate ventilation.

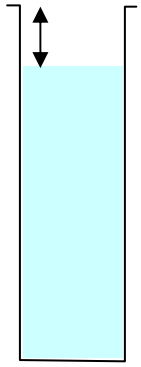
Handle old bath fluid as toxic waste.

Cool down bath fluid to ambient before removing.

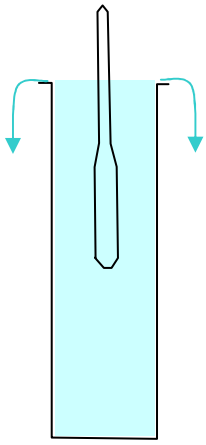
Gently release hydrometer



Keep level
60mm under
top



Prevent
overflow



Contents sample 600mL
Contents cooling circuit (tubes + double wall) 1000mL

6 EC DECLARATION OF CONFORMITY THERMOSTATIC BATH TV-SERIES

Manufacturer: **Tamson Instruments BV**
van 't Hoffstraat 12
2665 JL Bleiswijk
The Netherlands

Product: Thermostatic bath

Model: D1298

The products to which this statement relates, is manufactured and dully carried out in compliance with the provisions of Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

The products are in conformity with the machine safety directions.

November 2010, Tamson Instruments bv, The Netherlands

Ing. R.C. van Hall
Director