

Laboratory relays TST

- For sensitive contact givers with security circuit (for example contact-thermometers)
- Are worked-up according to VDE and in connection to contact-thermometers (Add-on "st3") also according to DIN 12 878
- All-transistor with galvanically isolated circuit
- Security circuit DBGM in connection with diode socket cap "st3" according to DIN 41 524 for relays with add-on "A". A security circuit is also possible in common contact-thermometers by installing a semiconductor: the relay turns off if the connection is objectionable, disconnected or hot-wired. **Also for cable breach on one side!**
- Highly exact adjustment of control process by using relays with add-on "IMP" or "Vario" by stepless adjustment of the heating power
- Especially for operations at night: Relays with add-on "S" for connection of a second contact-thermometer for upper temperature limitation with shut-down
- All-purposed as ground-mounted or tripod mounted appliance
- Clearly arrangement of all operation and control units on the frontside
- Robust powder-coated aluminium housing, frontplate is anodized

Description (valid to all relays)

We especially set a high value on a solid execution for laboratory operations. The housing is fully manufactured in aluminium and powder-coated, except the profiles on the side and the anodized frontplate. On the backside is serially a tripod clamp.

As on-off switch a 2-pole rocker switch with green illuminating rocker according to VDE is used. The 1,5 m long feeder with protective contact plug is also installed according to VDE on the frontside.

The relays are all-transistor. The contact giver load is 0,5mA for 0,7V terminal voltage at the contact giver, thereby nearly unlimited lifetime of the contact giver.

The operation voltage is 230V, 50 Hz (on demand 110V), the bracking capacity is 2000 Watt non-inductive, which is lead over the protective contact socket.

Generally our security circuit DBGM turns the appliance off, if the conection between contact giver end relay is disconnected. More protection by the add-on "A". For executions according to DIN 12 878 the add-on „st3“ has to be chosen anyway.

The status of the appliance is shown by a white glow lamp.

Technical datas

Aluminium housing	H = 100 mm, W = 160 mm, D = 145 mm (incl. Tripod clamp)
On-Off switch	iluminated rocker switch, 2-pole, green
Feeder	1,5 m long with protective contact plug
Security circuit	DBGM in connection with diode socket cap "st3" according to DIN 12878
Status	is shown by a white glow lamp

Add-ons

A = Security circuit

Every common contact-thermometer can be used but primarily contact-thermometers with add-on "st3". A semiconductor is soldered in under the diode contact cap. The relay only works when the connection between contact giver and relay is correct, also for cable breach on one side!

S = Additional security relay

For unmanned experiments (for example at night) add-on "S" is recommended. Thereby a second contact-thermometer takes over the control function. If the security temperature is reached the appliance turns off in all poles and a red glow lamp lights up. Continuing the experiment is only possible by pushing the red unlock-key and after understepping the adjusted temperature.

IMP = Metering of the heating power by burst-firing mode

To avoid an overshooting above the adjusted temperature the ON- and OFF-times are adjustable by the integrated burst-firing mode via potentiometer steplessly from 5 to 95%. The burst-firing is indicated by a white glow lamp. The appliance works wear-free by the use of semi-conductive technology. The burst can only begin or end in absolute zero group channel so the relay works completely trouble-free; RFI grade is better than "K"!

VARIO = Metering of the heating power via leading-edge control

While the metering of "IMP" is only dedicated for ohme resistive loads the leading-edge control also allows the controlling of inductive loads up to 1,5A. The metering is also adjustable via potentiometer. Brightness or dimness of the white glow lamp depends on adjustment; RFI grade is "N".

Laboratory relays

TST II (without illustration)

Operating principle	Operating current or quiescent current principle (for cooling)
Security circuit	Switchable via key-switch to DBGM for supply; correspondance to DIN 12878 (class 1 + 2) depends on the execution of the used contact-thermometer
Scope of delivery	Relay TST II (1,1kg), connection cable A2 (on demand A1)

TST II-A



Operating principle	Operating current principle
Security circuit	The correspondance to DIN 12878 (class 1 + 2) of add-on "A" depends on the execution of the used contact-thermometer
Scope of delivery	Relay TST II-A (1,1kg), connection cable A2 (on demand A1), 2 semi-conductors

TST II-S

Operating principle	Operating current principle
Security circuit	DBGM for supply; add-on „S“ for connection of a second contact-thermometer; correspondance to DIN 12878 (class 1 + 2) depends on the execution of the used contact-thermometer
Scope of delivery	Relay TST II-S (1,2kg), connection cable A2 (on demand A1)

TST II-S-A (without illustration)

Operating principle	Operating current principle
Security circuit	Add-on “A” for supply, otherwise like TST II-S
Scope of delivery	Relay TST II-S-A, 2 connection cables A2 (on demand A1), 4 semi-conductors

TST II-Vario (without illustration)

Operating principle	Operating current principle
Security circuit	DBGM for supply; add-on “VARIO” for metering the capacity of leading-edge control
Scope of delivery	Relay TST II-VARIO (1,3kg), connection cable A2 (on demand A1)

TST II-A-Vario (without illustration)

Operating principle	Operating current principle
Security circuit	Add-on “A” for supply, otherwise like TST II-VARIO
Scope of delivery	Relay TST II-A-VARIO (1,3kg), connection cable A2 (on demand A1), 2 semi-conductors

TST II-IMP (without illustration)

Operating principle	Operating current principle
Security circuit	DBGM for supply
Scope of delivery	Relay TST II-IMP (1,2kg), connection cable A2 (on demand A1)

TST II-A-IMP (without illustration)

Operating principle	Operating current principle
Security circuit	Add-on “A” for supply
Scope of delivery	Relay TST II-A-IMP (1,2kg), connection cable A2 (on demand A1), 2 semi-conductors

TST II-S-IMP (without illustration)

Operating principle	Operating current principle
Security circuit	DBGM for supply; add-on “S” for connection of a second contact-thermometer; add-on “IMP” for metering the heating power; correspondance to DIN 12878 (class 1 + 2) depends on the execution of the used contact-thermometer
Scope of delivery	Relay TST II-S-IMP (1,2kg), 2 connection cables A2 (on demand A1)

TST II-AS-IMP

Operating principle	Operating current principle
Security circuit	Add-on „A“ for supply, otherwise like TST II-AS-IMP; HIGHEST SECURITY!
Scope of delivery	Relay TST II-S-IMP (1,2kg), 2 connection cables A2 (on demand A1), 4 semi-conductors

Capacity Meters**TST-IMP** (without illustration)

Operating principle	Like TST II-IMP, but without relay or connection for contact-thermometers. Metering of the heating power stepplessly from 5 to 95%; with burst-firing mode; RFI grade is “K” only for ohme resistive loads!
Scope of delivery	Relay TST-IMP (1,0kg)

TST-Vario (without illustration)

Operating principle	Like TST II-IMP, but without connection for contact-thermometers. Metering of the heating power stepplessly from 5 to 95%; with leading-edge control for ohme resistive and inductive loads; RFI grade is “N”
Scope of delivery	Relay TST-VARIO