

Temperature Controller for Panel Mounting

PID Controller, Dimensions 48 x 48 mm

Model CS3S

WIKA Data Sheet AC 85.01

Applications

- Plant construction
- Process and procedure technology
- Plastic technology and processing
- Ventilation and air conditioning technology
- General industrial applications

Special Features

- Control characteristic adjustable (PID, PI, PD, ON/OFF)
- Integrated self optimizing
- Control output optionally relay, logic level or 4 ... 20 mA
- Multi-function input for Pt 100 and thermocouples Type K, J, E
- Optional with alarm outputs, heater burnout alarm, serial interface or parameter memory for one 2. setting values



Temperature Controller Model CS3S

Description

The Model CS3S is a compact digital temperature controller for displaying, controlling and monitoring of temperatures.

The controller has a multi-function input, i. e. the input configuration is adjustable. Thereby the flexibility of the controller is significantly increased, a stock-keeping is simplified.

The control parameters can be set over wide ranges. An auto-tuning is startable, which makes it easier to find the ideal control parameters.

The controllers are designed for panel mounting.

The control output is alternatively equipped with a relay (for slow controls), with a logic level to drive a solid state relay (for fast controls and high current loads) or with an analog current signal 4 ... 20 mA.

Optionally available are up to 2 alarm outputs for process value and control loop monitoring or heater burnout alarm as well as a serial interface RS485 or a parameter memory for 2 set values. The parameter memory is externally selectable by terminals.

Specifications

Type CS3S

Display	
- Process value	7-segment-LED, 3-digits, red, character size 10 mm
- Setting value	7-segment-LED, 3-digits, green, character size 8 mm
- Indication range	-199 ... 999
Input	
- Number and type	1 multi-function input for resistance thermometer and thermocouple
- Input configuration	Selectable via terminal configuration and menu-driven programming
- Resistance thermometer	PT 100, JPt 100, 3-wire, max. permissible resistance per wire: 10 Ω
- Thermocouple	Type K, J, E, max. permissible resistance: 100 Ω
- Measuring time	250 ms
Control output	3 different versions are possible
- Relay contact	Load: AC 250 V, 3 A (resistive load) AC 250 V 1 A (inductive load, $\cos \varphi = 0,4$)
- Logic level	DC 0/12 V max. 40 mA (short-circuit proof) for solid state relay
{- analogue current signal}	4 ... 20 mA, load max. 550 Ω
Control parameters	PID, PD, PI, ON/OFF An autotuning is startable, to find suitable control parameters
- Proportional band	0 ... 999 $^{\circ}\text{C}$ ($^{\circ}\text{F}$) or 0.0 ... 99.9 $^{\circ}\text{C}$
- Integral time	0 ... 999 s
- Differential time	0 ... 300 s
- Cycle time	1 ... 120 s, not available for control output analogue current signal
- Hysteresis	0.1 ... 99.9 $^{\circ}\text{C}$ ($^{\circ}\text{F}$), only available by ON/OFF control characteristic
{Parameter memory} ¹⁾	Memory for a 2. setting value, activated per short-circuit of two connection terminals on the backside of the controller
{Alarm outputs}	Optional, max. 2 pieces
- Alarm output 1	For actual value monitoring, alarm action, switching mode, hysteresis and delay adjustable
- Alarm output 2 ¹⁾	alternatively for process value monitoring or control loop monitoring or process value and control loop monitoring with combined output
- Heater burnout alarm ¹⁾	For 1 phase systems (not available with control output in analogue current signal), Alternatively for max. 5 A, 10 A, 20 A or 50 A, current transformer is supplied with controller
- Relay contact	Load: AC 250 V, 3 A (resistive load) AC 250 V 1 A (inductive load, $\cos \varphi = 0,4$)
{Serial interface} ¹⁾	RS-485, maximum 31 CS3S-controller can be connected in one loop the transfer rate is adjustable (2400 bps, 4800 bps, 9600 bps or 19200 bps)
Power supply	AC 100 ... 240 V, 50/60 Hz (max. permissible 85 ... 264 V) or AC/DC 24 V, 50/60 Hz (max. permissible 20 ... 28 V)
Power consumption	max. 8 VA
Ambient conditions	
- Ambient temperature	0 ... 50 $^{\circ}\text{C}$
- Storage temperature	-20 ... +50 $^{\circ}\text{C}$
- Humidity	35 ... 85 % relative humidity, noncondensing
CE-conformity	Conformity in accordance with 89/336/EWG see EN 61000
Case	
- Material	polycarbonate
- Colour	black
- Ingress protection	Front: IP40, Back: IP00 (per IEC 60529/EN 60 529) or {Front: IP54, Back: IP00 (per IEC 60529/EN 60 529)}
- Weight	approx. 130 g
- Mounting	One touch type mounting bracket for a panel thickness of 1 up to 3 mm or screw bracket for a panel thickness of 1 up to 15 mm

{ } Items in curved brackets are optional extras for additional price.

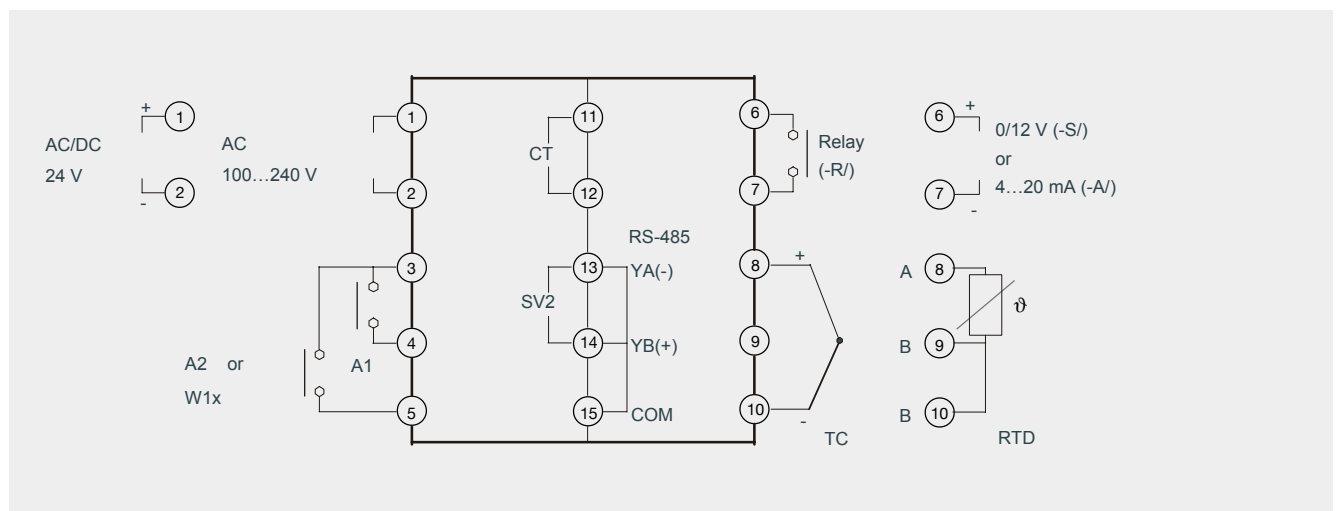
1) From the options alarm output 2, heater burnout alarm, serial interface and parameter memory only one option can be selected. Combinations are not possible.

Input signal	Measuring span		Measuring error in % of the span
Thermocouples			
Type K, NiCr-Ni	0 ... 400 °C		± 2 K
	0 ... 999 °C	0 ... 999 °F	± 0,3 % ± 1 Digit
Type J, Fe-CuNi	0 ... 999 °C	0 ... 999 °F	± 0,3 % ± 1 Digit
Type E, NiCr-CuNi	0 ... 600 °C	0 ... 999 °F	± 2 K
Resistance thermometers			
Pt 100 (3-wire)	-19,9 ... +99,9 °C		± 1 K
	-199 ... +400 °C	-199 ... +999 °F	± 0,2 % ± 1 Digit
JPt 100 (3-wire)	-19,9 ... +99,9 °C		± 1 K
	-199 ... +400 °C	-199 ... +999 °F	± 0,2 % ± 1 Digit

Other features

- Sensor correction settable
- Integrated cold junction compensation
- Sensor monitoring via optical signalling of sensor burnout and sensor short circuiting
- Automatic execution of initial test after connection to power supply
- Monitoring due to internal malfunction
- Control output vial button disengageable
- Optional terminal cover for protection additional

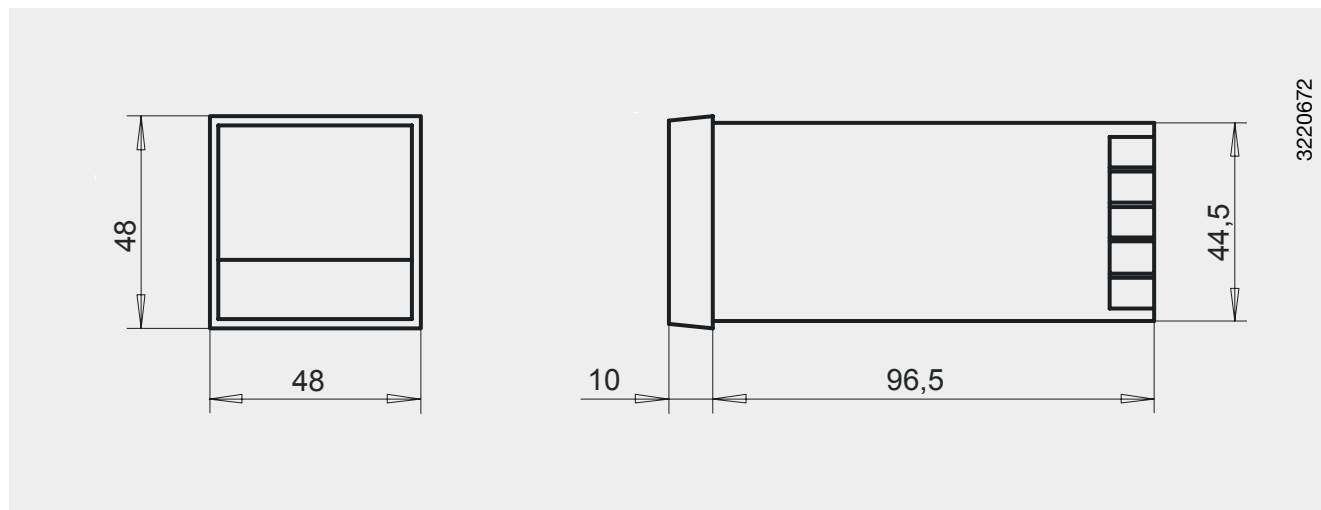
Designation of terminal connectors



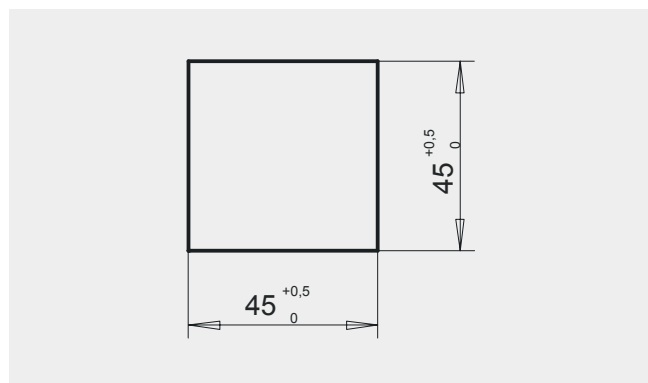
Legend:

A1	alarm output 1	(-R/)	control output relays
A2	alarm output 2	(-S/)	control output logic level 0/12 V
W1x	Heater burnout alarm	(-A/)	control output analogue current signal
CT	current transformer		4 ... 20 mA
SV2	parameter memory for 2. set value	TC	input thermocouple
RS 485	Serial interface	RTD	input RTD

Dimensions in mm



Panel cutout in mm



Modifications may take place and materials specified may be replaced by others without prior notice.
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.

