

# Temperature Monitors and Limiters



# Range Overview

Electronic temperature monitors and limiters provide essential control and safety override capabilities for thermal process machinery. West Control Solutions offers a comprehensive range of devices, from simple, cost-effective units to high-end SIL 2 compliant solutions for safety-critical applications.

The use of limit devices provides vital protection for temperature controlled process systems and where necessary the safety of both the workforce and the plant itself.





Several factors should be considered in selecting the correct device: limit device and machinery standards, risk assessment or legislation defining the safety integrity level and the mounting style needed for a machine.

Applications regularly requiring use of limit and monitoring devices are ovens, furnaces, combustion plant, steam systems and food heating equipment plus many more.



## European Standard

### Compact temperature limiting devices - EN14597-1:2013

	 <b>TB40-1</b>	 <b>TB45-2</b>	 <b>STB50</b>	 <b>STB55</b>
<b>Format</b>	1/8 DIN (96 x 48mm)	DIN-rail mounted	1/8 DIN (96 x 48 mm)	DIN-rail mounted
<b>Product type</b>	Monitor TW or Limiter TB	Monitor TW or Limiter TB	Safety Limiter STB or Safety Monitor STW	Safety Limiter STB or Safety Monitor STW
<b>Input type</b>	Thermocouple (Single, TW or Dual, TB), PT100, Linear DC	Thermocouple (Single, TW or Dual, TB), PT100, Linear DC	PT100 or double-thermocouple	PT100 or double-thermocouple
<b>Max number of outputs</b>	2	3	3	3
<b>Key features</b>	As TB: SIL1 compliant Digital input or front key reset	Single device for TB or TW As TB: SIL1 compliant Digital input or front key reset	SIL2 compliant STB, unlock by input or front key	SIL2 compliant STB, unlock by input or front key

# At a Glance

## Standards

For safety-critical applications, temperature monitors and limiters must be type tested to appropriate standards. These include EN14597-1 in Europe and in the US, FM3545: Approval criteria for temperature limit and supervisory switches.

Additional safety and security features include password protection of limit settings and outputs for remote alarm and monitoring systems.

## Device types

Temperature monitors use a non-latching output relay, allowing equipment to restart without external intervention once temperature has returned to the acceptable operating range.

Temperature limiters use a latching output relay, requiring a local or remote reset before operation is resumed.

## Safety integrity level




Standard temperature monitors and limiters that have been type tested according to EN14579-1 are approved to operate as an independent safety system offering protection to SIL 1.

Safety temperature limiters include dual sensor inputs for thermocouples to protect against sensor failure. When used with appropriate safety sensors, they are type tested and approved to operate as an independent safety system offering protection to SIL 2 (EN61508).



# US Standard

## General purpose temperature limiting devices - FM 3545

	 <b>P6700 / 8700 / 4700</b>	 <b>MAXVU RAIL</b>	 <b>CAL 3300 / 9300</b>
<b>Format</b>	1/16 DIN (48 x 48mm), 1/8 DIN (96 x 48mm), 1/4 DIN (96 x 96mm)	DIN-rail	1/32 DIN (24 x 48mm), 1/16 DIN (48 x 48mm)
<b>Input type</b>	Thermocouple (single), PT100, Linear DC		
<b>Max number of outputs</b>	3	3	2
<b>Key features</b>	Annunciator alarm Modular I/O and options (except limit output) Digital input or front key reset	Text OLED for easy setup Annunciator alarm All outputs can be latched Digital input or front key reset	Compact front panel format Min/Max monitor Front key reset

# Application Range

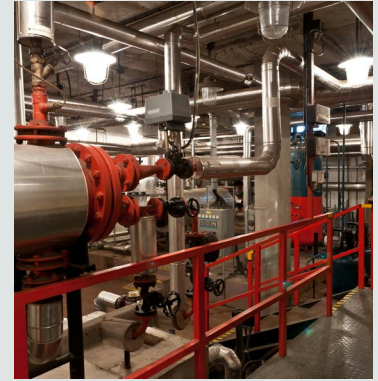
## Biomass combustion plants



## Industrial Furnaces



## Heat exchangers



## General Heat Processes



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BR-LD-2-US-1903

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