Smart temperature monitoring relays

Reduced stocks, flexible adjustment
and easy setup: One relay for all applications.

One...

look
back-lit LCD for easy reading and setup

touch
NFC parametrization via smartphone

device
for a wide range of applications

START

Set up these innovative temperature monitoring relays exactly as you need, either via a back-lit LCD or smartphone app. Parametrization and configuration are just one touch away with the ABB EPiC app – even in a non-powered state – reducing installation time by 80%.

By keeping an eye on temperatures – either from the cloud, in a control room, or locally – operators can help minimize cost and risk while maximizing performance and safety.

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Features and benefits

The temperature monitoring relays can measure temperatures of solids, liquids and gaseous media in up to three sensor circuits using various types of sensors.

One...

look to have the information needed

The display shows the measured values and relay status at a glance. The symbol-based menu structure and presettings make parametrization simple.

touch for up to 80% faster setup

For easy parametrization and copying of settings between multiple devices via NFC with the ABB EPiC smartphone app – even if the relay is not powered.

device for thermal protection and condition monitoring

Just one relay to cover many different applications, monitor their condition, improve safety and ensure uptime.

One look – back-lit LCD

Easy reading and setup with one push

Just one look is all it takes to see the status and measured values of the relay, easily navigate through the symbol-based menu and even configure the device with the new, back-lit LCD at the front of the relay.

Start screen

Symbol-based menu structure

Pre- and user-defined settings

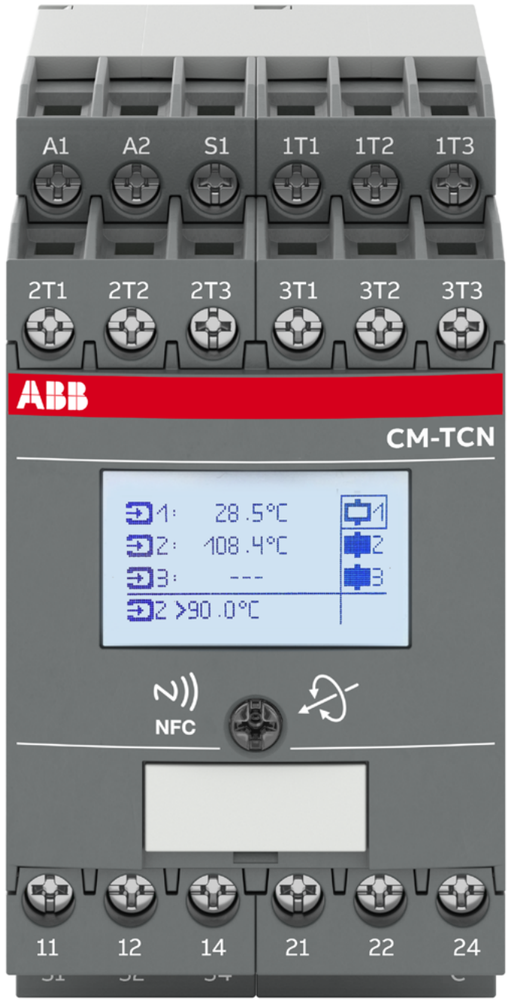
Simulation mode

Push-rotate adjustment

Back-lit LCD

Diagnostic data

Password & parameter lock



One touch – setup via smartphone app

Powerless configuration with NFC

Configuration and parametrization of temperature monitoring relays has never been simpler. One touch is all that is needed for fast, easy and intuitive configuration with the ABB EPiC mobile phone app.

Near Field Communication (NFC)

ABB EPiC smartphone app

Easy visualization

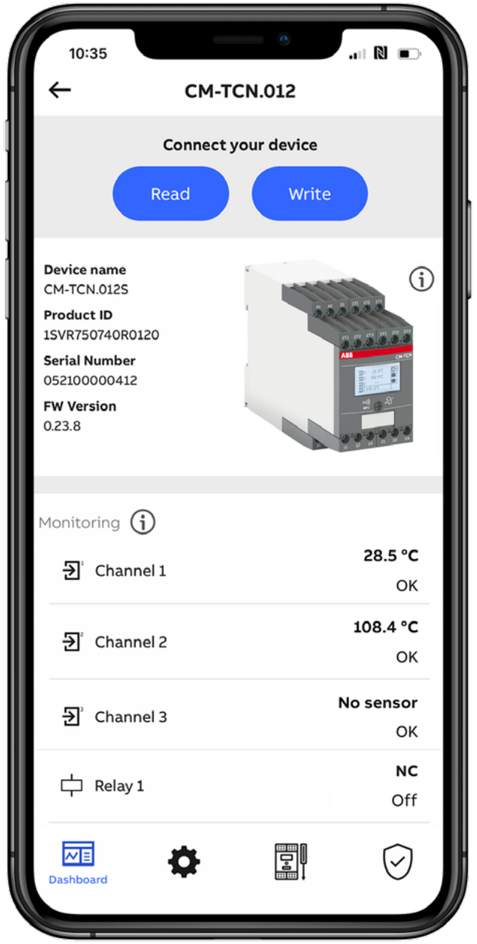
Store and send parameters

One touch setup

Event history

Powerless adjustment

Copy and paste functionality



One device – thermal protection

Flexible adjustment and condition monitoring

Knowing the status of your devices at all times: thanks to the smart monitoring relays, you are always up to date and flexible in controlling your devices. Remote monitoring via Modbus RTU and ABB AbilityTM Energy Manager and ABB AbilityTM Asset Manager also enables the early detection of potential errors and possible maintenance requirements.

Flexible adjustment

The smart monitoring relays are configurable over a wide setting range and can be adjusted flexibly no matter the thresholds, time values or other settings. For example, first relay can be assign as pre-alarm and second as alarm. Nine signals in CM-TCN and six signals in CM-TCS are available for assignment to allow various combination of tripping thresholds.

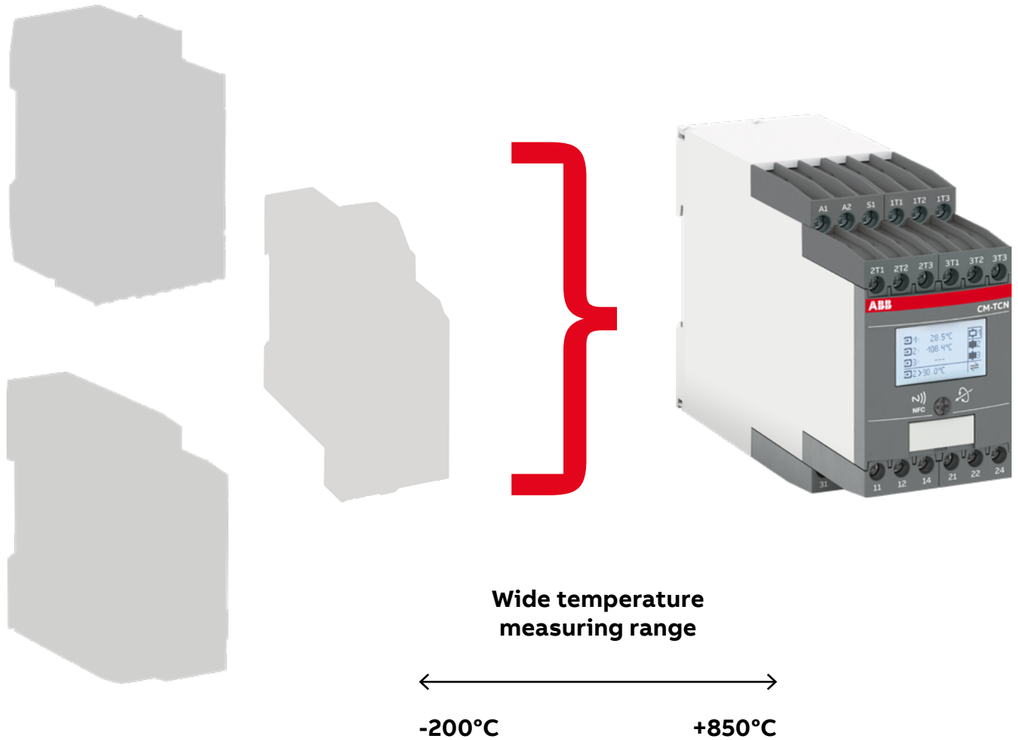
Early detection of potential fault and need for maintenance

Thanks to support of the most commonly used sensors (PTC, PT100, PT1000, NTC), the smart temperature relay can be used for temperature monitoring of busbars and cables allowing detecting the issues related to tightening, which results in the need for maintenance. In addition, the relay can be used for temperature monitoring of electrical motor's bearings and windings allowing to sense unacceptable temperature rise that shorten the lifetime of equipment.

Improved safety

The smart monitoring relays improves safety thanks to remote temperature monitoring using Modbus RTU or ABB AbilityTM Energy and ABB AbilityTM Asset Manager. The personal no longer need to access to the switchboard to read the measurements*.

*Available with CM-TCN.012.



Built-in connectivity

Communication via embedded Modbus RTU

The smart temperature monitoring relay CM-TCN.012 supports the data transfer using the Modbus RTU communication protocol. The communication interface RS-485 is embedded in the relay and does not require installation of any accessories.

The communication interface makes it possible to:

Read the temperature measurements, relays state and temperature sensors status.

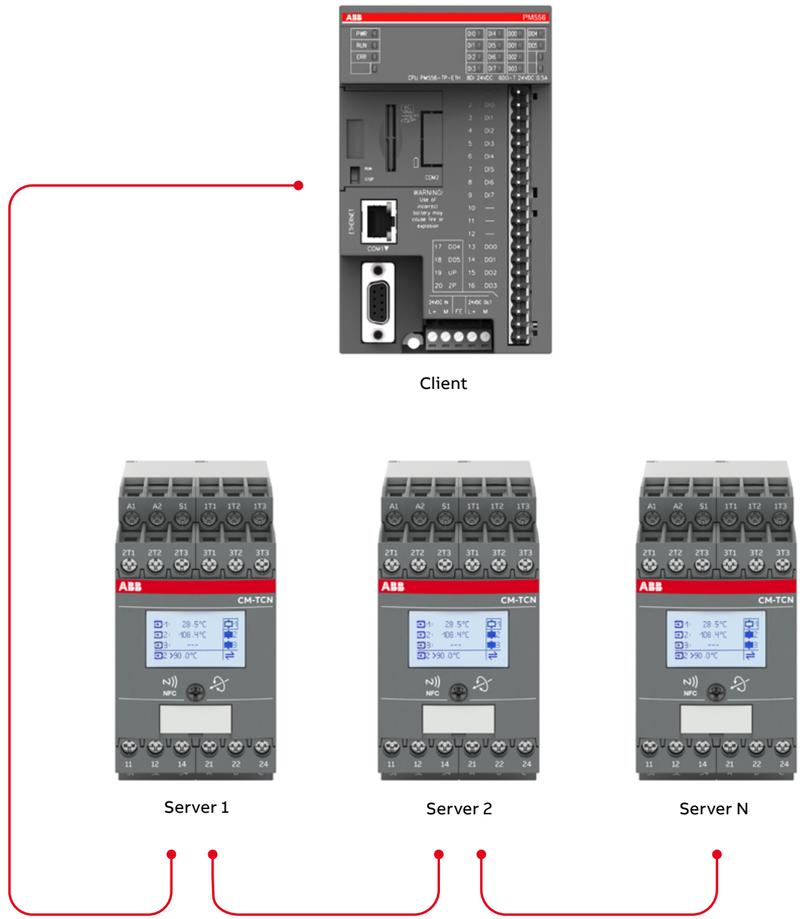
Configure the smart monitoring relay remotely.

Read system information (serial number, firmware version).

Access the diagnostic data such as event history, operating hours counter, maintenance counter, statistics.

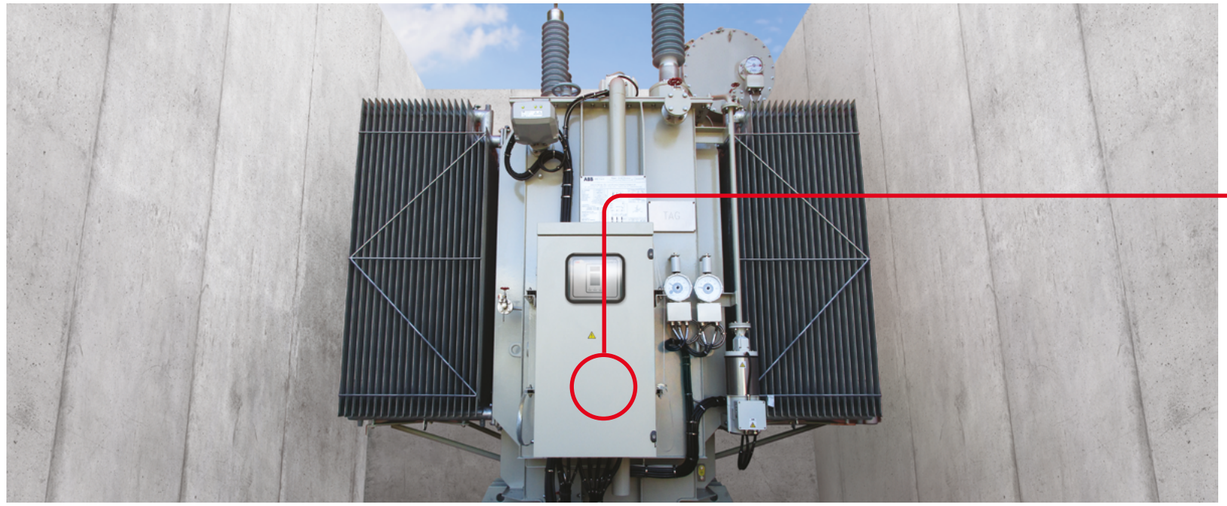
Reset the history and settings (trip counter, event history, etc).

Control output relays and trigger them in case of the communication bus error.



Applications

Temperature monitoring relays are used in a wide array of applications. In conjunction with temperature sensors, such as PT100 or PTC sensors, they monitor motor temperature, control cabinet temperature and protect transformers from overheating.



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Temperature sensor, e.g. PT100

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Smart temperature monitoring relay

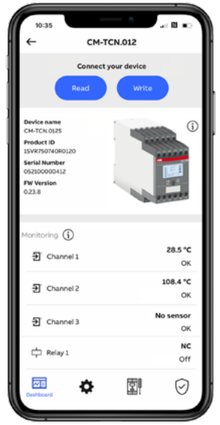

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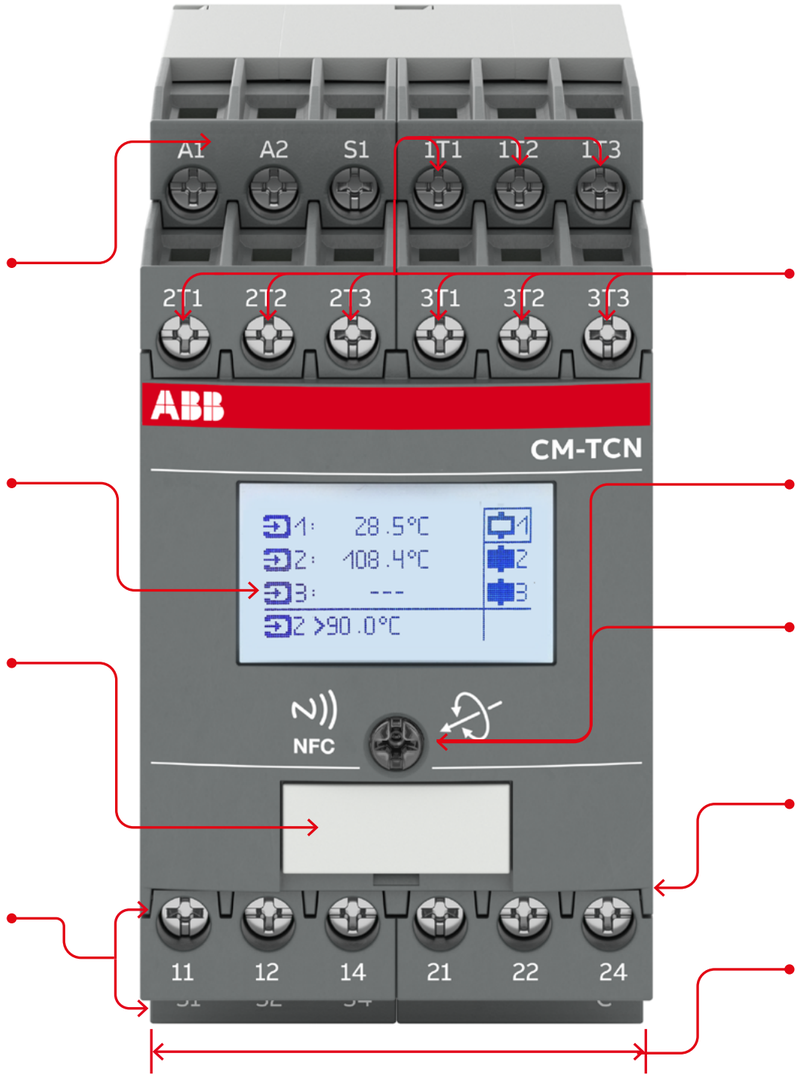
ABB EPiC smartphone app

Operating controls

Push-in and screw terminals

Marker label

Connection terminals
Wide terminal spacing allows connection of wires:
2 x 1.5 mm² (2 x 16 AWG) with wire end ferrules
or 2 x 2.5 mm² (2 x 14 AWG) without ferrules



3 measuring inputs
PT100, PT1000, PTC, NTC, bi-metal switch

Push-rotate button
Intuitive operation with just one button

LED status indication

Output circuits
3 c/o (SPDT) contacts configurable

Width 45 mm

Ordering details

The temperature monitoring relays CM-TCS and CM-TCN are able to measure temperatures of solids, liquids and gaseous media using different types of sensors, such as PT100, PT1000, PTC, NTC or bi-metal switch. CM-TCN allows to connect up to three sensor circuits, different types of sensors, e.g. PT100 and PTC sensors, can be monitored simultaneously. CM-TCS allows to connect one sensor circuit.
The temperature is obtained by the sensors in the medium, evaluated by the device and monitored to determine whether it is within an operating range (range monitoring function) or has exceeded or fallen below a threshold. Depending on the parametrization, output relays signalize the changes in the measuring circuits.

Smart temperature monitoring relays

Rated control supply voltage	Terminal type	Number of measuring circuits	Modbus RTU	Temperature sensor	Width mm	Type	Order code	Weight (1 pc) kg (lb)
24-240 V AC/DC	Screw	1	no	PT100, PTC, PT1000, NTC	22.5	CM-TCS.011S	1SVR730740R0110	0.172 (0.379)
	Push-in					CM-TCS.011P	1SVR740740R0110	0.172 (0.379)
	Screw	3			45	CM-TCN.011S	1SVR750740R0110	0.293 (0.646)
	Push-in					CM-TCN.011P	1SVR760740R0110	0.293 (0.646)
	Screw		yes			CM-TCN.012S	1SVR750740R0120	0.299 (0.659)
	Push-in					CM-TCN.012P	1SVR760740R0120	0.299 (0.659)

Accessories

Description	for type	Width mm	Type	Order code	Pkg qty	Weight (1 pc) g (oz)
Operating element for push-rotate button	CM-TCS.011, CM-TCN.01x		OPR.01	1SVR730007R0100	10	15 (0.53)
Adapter for screw mounting	CM-N.S/P	45	ADP.02	1SVR440029R0100	1	36.7 (1.30)
	CM-S.S/P	22.5	ADP.01	1SVR430029R0100	1	18.4 (0.65)
Marker label	CM-S.S/P, CM-N.S/P		MAR.01	1SVR366017R0100	10	0.19 (0.007)
Sealable transparent cover	CM-N.S/P	45	COV.12	1SVR750005R0100	1	7.0 (0.247)
	CM-S.S/P	22.5	COV.11	1SVR730005R0100	1	4.0 (0.129)

CM-TCS CM-TCN

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