

TRM212

TRM 212 is a weather-compensated PID controller. This device has been specifically designed with dedicated internal logic to implement PID control of analog or 3-step control valves. The TRM212 requires 230 V AC power supply and can be operated as Slave in a Modbus network (RTU or ASCII) over the RS485 interface.

Functions and features:

- Reception and transmission of the input signal according to the sensor type
- Displaying process values and configuration parameters on two 4-digit LED displays
- Scaling and filtering the input signal
- Signal correction, square root function
- Calculation of the sum, difference, ratio, or root of the measured signal values
- PID control of analog or three-step control valves
- Remote setpoint adjustment in accordance with an external parameter
- Autotuning function
- Stand-alone control
- Manual control
- Modbus RTU/ASCII communication in slave mode over the RS485 interface
- Alarm output
- Sensor / input error and Loop Break Alarm detection
- Error indication
- Remote start / stop with the digital input
- Configuration via the functional keys



1 channel for controlling

1
CHANNEL

2 universal analog inputs

2 AI

Thermocouple
Resistance temperature detector
Analog input 4-20 mA
Analog input 0-1 V

Output type on request

OUTPUT
TYPE

Relay output
Analog output 4-20 mA
Analog output 0-10 V

PID control

PID
CONTROL

Modbus RTU/ASCII | RS485

Modbus
RS485

Ambient temperature

+50°C
+1°C

Areas of application:

The process controller TRM212 is designed to measure and control temperature or other physical variables in different areas of industry, agriculture and utilities. It is especially recommended to use this device to control analog or three-step control valves.

Technical data:

Power supply	230 (90...264) V AC; 50 (47...63) Hz		
Power consumption, max.	6 VA		
Inputs	2 (ADC resolution 16 bit)		
Optional outputs	2		
Sampling rate, max.	1 s		
Interface	RS485		
Protocols	Modbus RTU / ASCII, akYtec		
Baud rate	2.4...115.2 kbit/s		
Ambient temperature	+1...+50 °C		
Enclosure			
Type	H1	H2	H3
Enclosure	96 x 96 x 70 mm	96 x 48 x 100 mm	105 x 130 x 65 mm
IP Code	front IP54	front IP54	IP44
Input signal			
RTD	Pt50, Pt100, 50P, 100P, 50M, 100M, Cu50, Cu100		
TC	B, J, N, K, S, R, A, T, L, A-2, A-3		
Standard signals	0-5 mA, 0-20 mA, 4-20 mA, -50...+50 mV, 0-1 V		
Outputs			
R (Relay)	1 A (PID control) / 8 A (alarm), 30 V DC / 230 V AC		
I (4-20 mA)	10...36 V, max. 1 kohm (DAC resolution 10 bit)		
U (0-10 V)	15...36 V, min. 2 kohm (DAC resolution 10 bit)		

Types of enclosure:

TRM212-H1.RR

for panel mounting



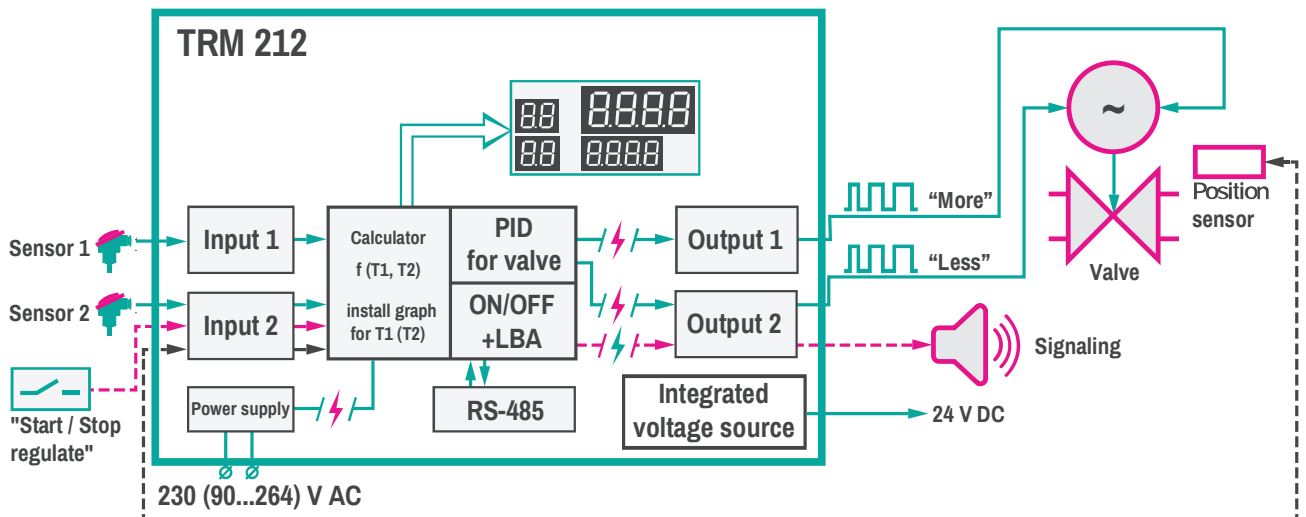
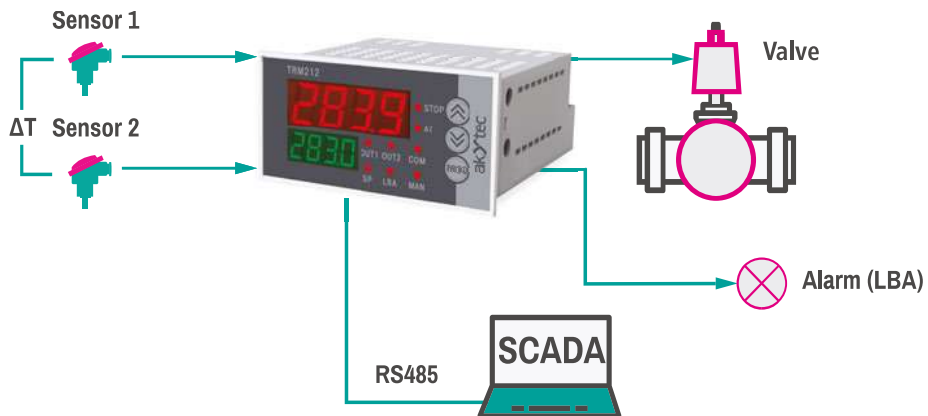
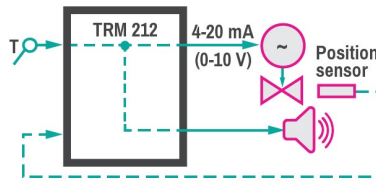
TRM212-H3.RR

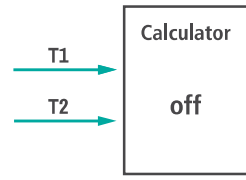
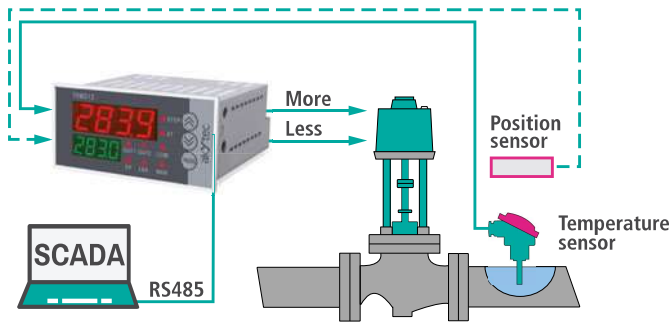
for wall mounting



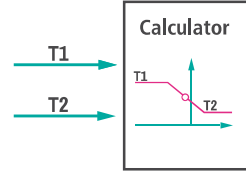
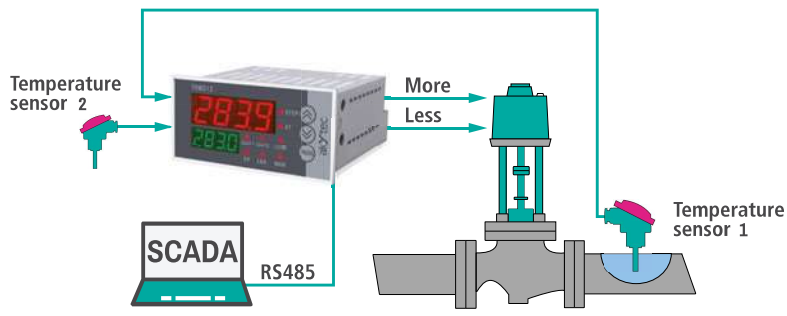
Standard variants	Description	Enclosure
TRM212-H1.RR	2DO (Relay)	96 x 96 x 70 mm, panel mount
TRM212-H2.RR		96 x 48 x 100 mm, panel mount
TRM212-H3.RR		105 x 130 x 65 mm, wall mount
TRM212-H1.IR	1AO (4-20 mA)+1DO (Relay)	96 x 96 x 70 mm, panel mount
TRM212-H2.IR		96 x 48 x 100 mm, panel mount
TRM212-H3.IR		105 x 130 x 65 mm, wall mount
TRM212-H1.UR	1AO (0-10 V)+1DO (Relay)	96 x 96 x 70 mm, panel mount
TRM212-H2.UR		96 x 48 x 100 mm, panel mount
TRM212-H3.UR		105 x 130 x 65 mm, wall mount

Typical application cases:

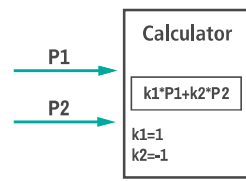
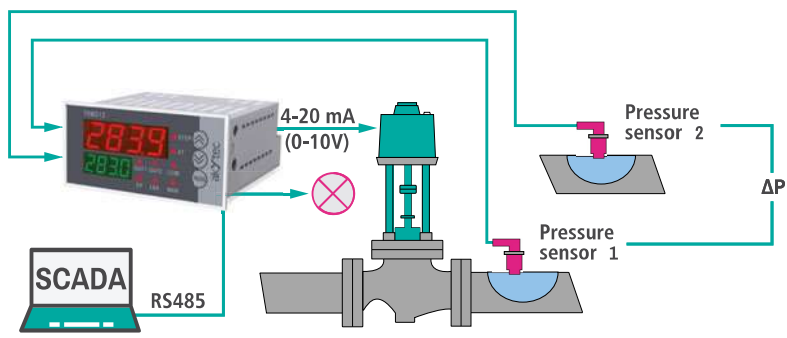




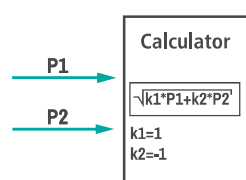
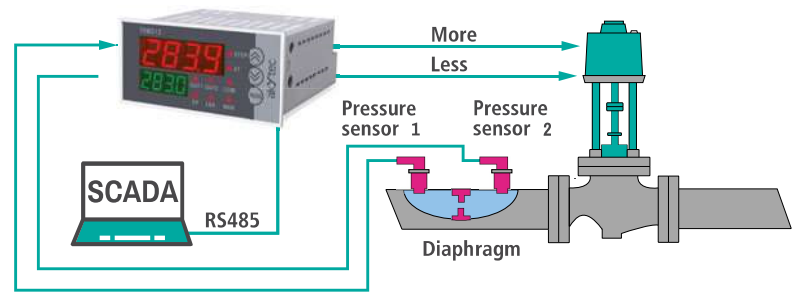
Temperature control using a three-step control valve with / without a position sensor.



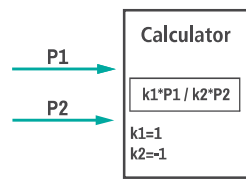
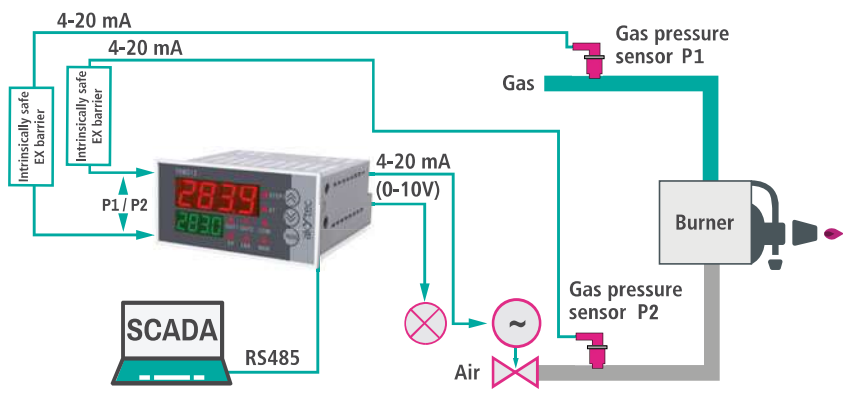
Weather-compensated control: temperature regulation in a heating system depending on the outdoor temperature.



Pressure difference regulation in pipes using a three-step control valve without any position sensor.



Pressure-based flow measurement and regulation in standard orifice plates or Venturi tubes without using differential manometers.



Regulation of gas/air ratio using valves with an analog input. The second output may be used for alarm.