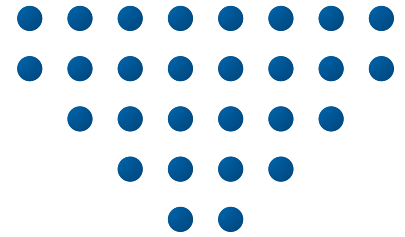
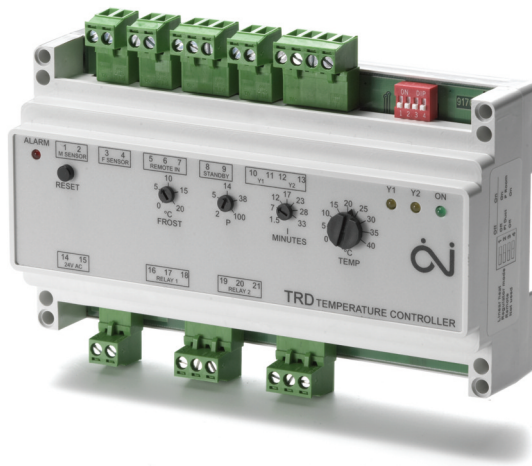


Controller  
**TRD**

## HVAC CONTROLS AND POWER

# Temperature controller with frost protection

TRD is a temperature controller for use in small and medium-sized HVAC systems where it controls heating valves, electric heating batteries and heat recovery devices.

TRD is particularly suitable for ventilation systems in which the supply-air temperature or the room temperature is to be held constant.

TRD has integrated active frost protection, thus reducing installation costs in systems that require frost protection.

With TRD, our customers receive the perfect combination of exceptional quality and accurate control.

## TRD FUNCTIONS

### Adjustable PI/P controller

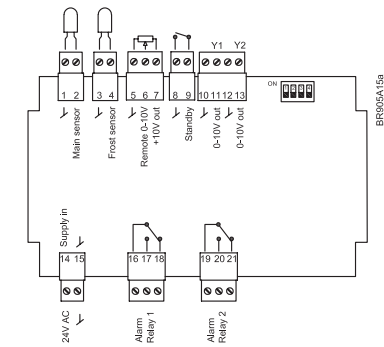
TRD has a built-in PI controller suitable for maintaining a constant temperature in the ventilation duct. Stable room temperature control can easily be obtained by changing to P control by means of a DIP switch. P and I settings are easily adjusted on the TRD front panel.

### Frost protection

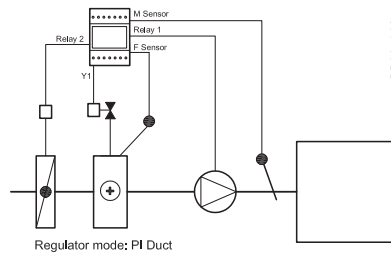
TRD has integrated frost protection, providing efficient protection of water-based heating batteries. If the temperature in the heating battery approaches the set alarm limit, heat is applied and frost damage prevented. Should the temperature fall below the set alarm limit, alarm relays are activated to stop the fan and close the damper, thus minimising the risk of frost damage. The frost alarm is reset by pressing the RESET button on the TRD front panel.

### Standby heating

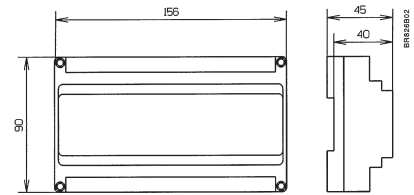
If the standby input is activated, the unit switches from controlling duct or room temperature to maintaining a temperature of 25°C in the heating battery. Water circulation within the heating battery is thus ensured despite the ventilation system being shut down, minimising the risk of frost damage during standby and cut-out during start-up.



Connection



Application example



Dimensions

## TRD FUNCTIONS

### Sequential control

Thanks to its integrated sequential control, TRD can control two loads sequentially and fully proportional to heat demand. The controller can therefore be connected to two heating batteries or to a single heating battery and a heat recovery unit.

### Linearisation of heat output

If heating valves or a rotary heat exchanger with non-linear heat output is used, linearisation can be selected by means of a DIP switch. This compensates the controller output signal, increasing heat output linearity and improving temperature control.

### Sensor fault monitoring

If a sensor is disconnected or short-circuited, the TRD controller will activate an alarm in order to safeguard against lacking alarms in case of system failure.

## TECHNICAL DATA

Supply voltage	24 V AC/DC +/-15 %
Output signal	2 x 0-10 V DC, max. 10 mA
Sensor input	2 x PT-1000
Temperature range	0-40 °C
P range	2-100 K
I range	1.5-33 min
Alarm temperature range	0-20 °C
Alarm relay	2 x SPDT, 5 A, 250 V
External setpoint	0-40 °C
Potentiometer	4.7-100 KΩ
Input signal	0-10 V DC
Ambient temperature	-10 / +40 °C (operation) -50 / +70 °C (storage)
Power consumption	6 VA
Enclosure	IP20
Dimensions (W/D/H)	156 x 45 x 90 mm
Weight	300 g

## CE MARKING

EMC DIRECTIVE	LOW-VOLTAGE DIRECTIVE
EN 61000-6-2 EN 61000-6-3	EN 60730-1

## INSTALLATION

### TRD installation

TRD controllers are designed to be mounted on a DIN rail inside an enclosure with a suitable rating.

### Control signal cable installation

Sensor cables and any other control signal cables may be up to 50 m in length. Control signal cables should not be run parallel to mains carrying cables as voltage signals may be produced that can interfere with controller function.

## PRODUCT PROGRAMME

TYPE	PRODUCT
TRD-3986	Temperature controller with frost protection

ACCESSORIES	
TYPE	PRODUCT
ETF-498	Liquid sensor Ø6.5 mm, L 100 mm, 1/4" pipe thread
ETF-898	Liquid sensor Ø6.5 mm, L 200 mm, 1/4" pipe thread
ETF-1698	System sensor for pipe mounting
ETF-1898A	Clip-on sensor
ETF-998-H	Room sensor for wall mounting, white
ETF-1798	Room sensor, waterproof IP54
ETF-1198	Duct sensor Ø6.5 mm, L 200 mm, flange mounting