
	TI9000en	Technical Information	
RRF3- Series (T)	Room Fan- Coil Thermostat for 2- Pipe Systems		

The RRF3- Series is designed to control the temperature in rooms or areas.

The modern designed flush mounted fan coil room thermostat is used for individual control of temperature in commercial and residential buildings.

It is tailored for two-pipe fan coil units:

Heating, Cooling or Heating/Cooling control applications.

The Fan Speed Control Outputs are ON/OFF, the Control Valve output is

ON- OFF or 0...10V.




USE	Stand-Alone Thermostat used in residential or commercial building																	
	Controlling the temperature with Fan-Coil Units in rooms and areas																	
	Used in all common Fan Coil Application 2- pipe systems																	
	Used in Commercial and Residential Buildings																	
Features	Flush Mounting with ø55mm																	
	Full LCD display with 6 touch buttons																	
	Manual / Automatic 3- speed Fan Control																	
	Manual / Automatic Heating- Cooling change over																	
	Common or daily time scheduler with 4- time frames																	
	Comfort / Economy switch																	
	Control Valve output ON-OFF or 0...10V																	
Product Range	Order Code	Various			Outputs		Functionality					User Interfaces						
		Frame Color	Flush Mounted	Power Supply	3- ON/OFF Fan Speed	Control Output	Control Application	Change Over	Fan Speed Control	Time Scheduler	Comfort / Economy Mode	User interface						
		RRF3.AB	White	ø55mm	AC230V	Q1-Q2-Q3 ; 240V ON/OFF	Qv ; 230V ON/OFF	Heating, Cooling or Heating/Cooling controls	Change/Over Sensor or Manual	Manual or Automatic Fan Speed Controls	Common or daily time scheduler with 4 time frames	External Comfort / Economy switch	Full LCD display with 6 touch buttons	Heating/Cooling touch button	Time / Date touch button			
		RRF3.BB	Black													Yv ; 0...10V	Comfort / Economy / Off touch button	Fan Operation touch button
	RRF3.AG	White	RRF3.BG				Black											





All Information and technical data are subject to alternation

Sensor Specification	Room Temperature Sensor	Sensor	Passive ; NTC10k (b25/85 3435)
		Accuracy	± 0.3K @ 25°C
		Measuring Range	0...50°C
	Change Over Sensor	Sensor	Passive ; NTC10k (b25/85 3435)
		Accuracy	± 0.3K @ 25°C NTC10k
		Measuring Range	0...50°C
Setpoint	Setpoints	Comfort heating Setpoint	20°C (1...50°C)
		Comfort cooling Setpoint	22°C (1...50°C)
		Economy heating Setpoint	16°C (1...50°C)
		Economy cooling Setpoint	28°C (1...50°C)
		OFF mode	only frost protection setpoint (6°C) in Heating Mode active
		Change Over heating	28°C (27...50°C)
		Change Over Cooling	16°C (10...25°C)
Technical Information	Outputs	Fan Speed Q1 / Q2 / Q3 Relays	
		Relays rated	AC 240V 5A
		Minimum OFF-time	3 sec. (1...120sec)
		Minimum ON-time	3 sec. (1...120sec)
		Control Output Qv	
		Relay Output	AC 240V 5A
		Switching differential heating	2 K (0.5...4K)
		Switching differential cooling	1 K (0.5...4K)
		Control Output Yv	
		Output	DC 0...10V, max ±1 mA
		P-band Heating	2 K (0.5...4K)
		P-band Cooling	1 K (0.5...4K)
		Presence / Window Switch	
	User Interfaces	Relays rated	AC 240V 5A
		Delay time	5s
		Touchscreen	
		Control Mode Button	Heating/Cooling Mode selection
		Date & Time Button	Actual Date and Time settings
		Fan Speed Selection Button	1-2-3-Automatic Fan settings
		Increase Button	Temperature (+) settings
		Decrease Button	Temperature (-) settings
		Comfort / Economy / OFF	Comfort / Economy / OFF Mode selection
	Electrical Information	Power Supply	AC 105...265V
		Frequency	50 / 60 Hz at AC 24V
		Terminal Clamp	Screw terminal, max. 1.5mm²
	Mechanical Information	Power Consumption	0.9VA at AC 265V
		Cable Connection	Backside of the controller
		Sensing Element Position	Inside the housing, top of the housing
	Color and Materials	Housing Cover	ABS Plastic (Black or White)
		Housing Bottom	ABS- Plastic (Black or White)
		Display	Touch-LCD with LED-Illumination scratch resistant acrylic class
	Environmental Conditions	Operation Temperature	0°C...+50°C
		Operation Humidity	<85 % r.h., no condensation
		Transport Temperature	-35°C...+70°C
		Transport Humidity	< 90% r.h.
		Storage Temperature	-10°C...+70°C
		Storage Humidity	< 85% r.h., no condensation
	Norms and Directives	IP- Rating	IP20 to IEC60529
		Safety Class	III to EN 60 730
		Product Standard 1	Automatic Electric. Controls for household and similar use
		Product Standard 2	2009/EN 60 730-1
		CE Conformities to	2004/108/EG Electromagnetic Compatibility EMV
		CE Electromagnetic Compatibility Emitted Interference	2000/EN60730-1 Emitted Interference
		CE Electromagnetic Compatibility Interference resistance	2000/EN60730-1 Interference Resistance
		RoHS Compatibility	RoHS 2011/65/EC
		Operation Climatic Condition	IEC 60 721-3-3
		Operation Mechanical Condition	IEC 60 721-3-2 to class2M2
		Transport to Climatic Condition	IEC 60 721-3-2
		Transport Mechanical Condition	IEC 60 721-3-2 to class2M2
		Storage Climatic Condition	IEC 60 721-3-1
		Storage Mechanical Condition	IEC 60 721-3-1 to class2M2
Miscellaneous	Accessories	Accessory, not included	TPS2.CV, Change- Over sensor
	Shipping & Handling	Minimum Order	1 box with 1 piece
		Product Dimension (L x W x H) / ~Weight	86mm x 86mm x 45mm
		Transport and Storage dimension (L x W x H) / ~Weight	93mm x 93mm x 60mm / 160gr
	Order Notes	Packaging	Rigid Cardboards Packaging
		Order Code	See Product Range, Page 1, e.g. RRF3.AB

Entering the Commissioning Screen:


Press  for approximately 5sec until the commissioning screen appears.

**Changing of the Commissioning Parameters**


- 1 Press  until the desired Parameter number appears
- 2 Press  or  until the desired value appears
- 3 Press  to confirm the selected value

the program goes to the next Parameter until all parameters set










At the end of the parameter list, the Standard Screen will appear

Press  at any time of the setting process to leave the Commissioning screen

Entering the Date and Time



Press  shortly until the Day Icon flashes

**Changing of the Date / Time**



















- 1 Press  or  until the desired day appears
- 2 Press  to confirm the selection
- 3 Press  or  until the desired hour appears
- 4 Press  to confirm the selection
- 5 Press  or  until the desired minute appears
- 6 Press  to confirm the selection

When finished all the programming, the Standard Screen will appear.

Entering the Time Scheduler Screen, Common Day Schedule

Press  for approximately 5 sec until the  and the a Hour flashes




**Changing of the Time Schedules**

- 1 Press  or  until the desired starting hour for  schedule appears
- 2 Press  to confirm the selection
- 3 Press  or  until the desired starting minute for  schedule appears
- 4 Press  to confirm the selection
- 5 Press  or  to select  or  mode for this time schedule
- 6 Press*  or  to select desired  temperature for this time schedule
- 7 Press*  or  to select desired  temperature for this time schedule






















*if Thermostat is configured as heating or only cooling application, only the heating or cooling temperature will appear

Continue until the last time schedule  is programmed. When finished all the programming, the Standard Screen will appear.


Entering the Time Scheduler Screen, 7 Day Schedule

Press  for approximately 2 sec until the Day Icon flashes, the  and then  time schedule icons is appearing





















**Changing of the Time Schedules**

- 1 Press  or  until the desired day appears
- 2 Press  to confirm the desired day
- 3 Press  or  until the desired starting hour for  schedule appears
- 4 Press  to confirm the selection
- 5 Press  or  until the desired starting minute for  schedule appears
- 6 Press  to confirm the selection
- 7 Press  or  to select  or  mode for this time schedule
- 8 Press  or  to select desired  temperature for this time schedule
- 9 Press  or  to select desired  temperature for this time schedule

















*if Thermostat is configured as heating or only cooling application, only the heating or cooling temperature will appear

Continue until the last time schedule  is programmed. Continue to program the next days as outlined above. When finished all the programming, the Standard Screen will appear.

















Default Settings for the Time schedule**Heating / Cooling Application**

Schedule 1	Schedule 2	Schedule 3	Schedule 4
 Starting Time 00:00	 Starting Time 07:00	 Starting Time 18:00	 Starting Time 20:00
 Control Mode 	 Control Mode 	 Control Mode 	 Control Mode 
Setpoint  28°C	Setpoint  22°	Setpoint  28°C	Setpoint  28°C
Setpoint  16°C	Setpoint  20°	Setpoint  16°C	Setpoint  16°C



Only Cooling Application

Schedule 1	Schedule 2	Schedule 3	Schedule 4
 Starting Time 00:00	 Starting Time 07:00	 Starting Time 18:00	 Starting Time 20:00
 Control Mode 	 Control Mode 	 Control Mode 	 Control Mode 
Setpoint  28°C	Setpoint  22°	Setpoint  28°C	Setpoint  28°C

Only Heating Application

Schedule 1	Schedule 2	Schedule 3	Schedule 4
 Starting Time 00:00	 Starting Time 07:00	 Starting Time 18:00	 Starting Time 20:00
 Control Mode 	 Control Mode 	 Control Mode 	 Control Mode 
Setpoint  16°C	Setpoint  20°	Setpoint  16°C	Setpoint  16°C

Entering the Controls Parameter Screen:





Press  and  for approximately 5sec until the commissioning screen appears.



Note:


These Parameters can be only changed by HVAC professionals

Changing of the Commissioning Parameters

- 1 Press  until the desired Parameter number appears
- 2 Press  or  until the desired value appears
- 3 Press  to confirm the selected value

the program goes to the next Parameter until all parameters set

At the end of the parameter list, the return to the Standard Screen



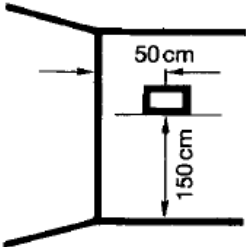
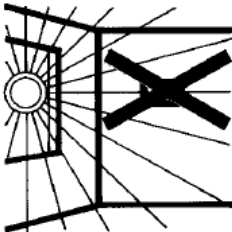
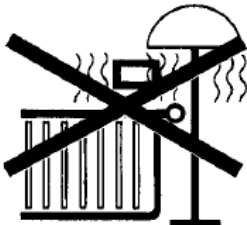
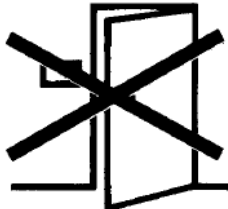

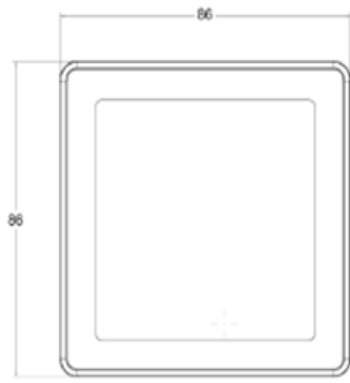
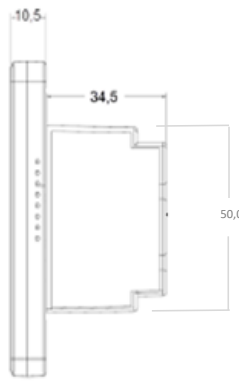
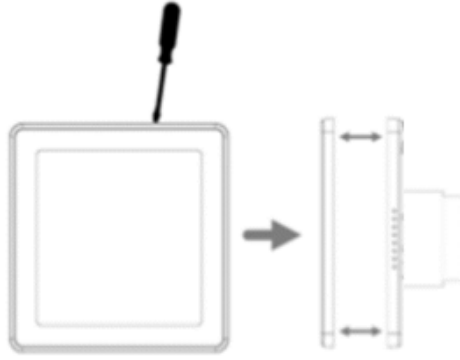
Press  at any time of the setting process to leave the Commissioning screen

HVAC- Parameters

PARA	Name	Range	Description	Default Value
PO1	Forced Ventilation	0	Available Fan Stages 0-1-2-3	0
		1	Available Fan Stage 1-2-3	
PO2	Fan Stage Control	0	Manual and Auto Fan- Stages Control	0
		1	Only Automatic Fan Stage Control	
PO3	User Interface Button Configuration	0	all active	0
		1	Fan, Time/Date and Setpoint button inactive	
		2	Fan Stage button inactive	
		3	Setpoint button inactive	
PO4	Display configuration during the Back-Light is OFF	0	Com/Eco Mode button (50%)	2
		1	Com/Eco Mode button und Temperature (50%)	
		2	Com/Eco Mode button, Clock and Temperature (50%)	
		3	Standard Display	
PO5	Screen Saver active time	2...150sec.	Time after the last key stroke	120sec.
PO6	Displayed Temperature Unit	0	Degree Centigrade (°C)	0
		1	Degrees Fahrenheit (°F)	
PO7	Room Temperature Calibration	-3...+3k	Adjustment of room temperature sensor	0k
PO8	Setpoint Over Upper Limit	10...45°C	Change Over Setpoint Comfort Cooling	28°C
PO9	Setpoint Over Lower Limit	10...45°C	Change Over Setpoint Comfort Heating	18°C
P10	Comfort/Economy switch setpoint	5...40°C	Setpoint when in Heating Mode	6°C
P11	Time Format	1	European Time Format	1
		2	American Time Format	
P12	Date & Time display	1	no time schedule	1
		2	4 Schedules for 7 individual days	
		3	4 Schedules for all day identical	
P13	N.A.			
P14	Comfort/Economy switch Icon	1	displayed as Not Occupied Symbol	1
		2	displayed as Window Switch Symbol	
P15	Date & Time display	1	Displayed in Standard Screen	1
		2	Not displayed in Standard Screen	

Control Parameter, only for HVAC professionals

PARA	Name	Range	Description	Default Value
PP1	Controller Functionality	0	2-pipe Fan Coil, cooling only	0
		1	2-pipe Fan Coil, heating only	
		2	2-pipe Fan Coil, heating/cooling with manual C/O	
		3	2-pipe Fan Coil, heating/cooling with auto C/O	
PP2	Temperature Changeover heating	5...+45 °C / +41...113 °F	Changeover Temperature Setpoint heating	28 °C / 82 °F
PP3	Temperature Change Over cooling	5...+45 °C / +41...113 °F	Changeover Temperature Setpoint cooling	16 °C / 61 °F
PP4	Power Failure	0	last saved settings	1
		1	default settings	
PP5	Switching differential Heating (SDh)	0.5...4 K	applicable for SDh output or P-band	2 K
PP6	Switching differential Cooling (SDc)	0.5...4 K	applicable for SDc output or P-Band	1 K
PP7	Fan Stages ON-time	1...120 sec.	applicable for Q1, Q2, Q3 outputs	3 sec.
PP8	Fan Stages ON-time	1...120 sec.	applicable for Q1, Q2, Q3 outputs	3 sec.
PP9	Economy Setpoint Cooling	1...+50 °C / +34...99 °F	Economy Setpoint Cooling	28°C
PP10	Economy Setpoint Heating	1...+50 °C / +34...99 °F	Economy Setpoint Heating	16°C
PP11	Comfort Setpoint Cooling	1...+50 °C / +34...99 °F	Comfort Setpoint Cooling	22°C
PP12	Comfort Setpoint Heating	1...+50 °C / +34...99 °F	Comfort Setpoint Heating	20°C

Advices	<div><div>Installation Notes</div><div><div><div><div></div><div>Caution</div></div></div><div>Observe the following general regulations for engineering and implementation:</div><div><div>All relevant national and heavy power regulations</div><div>Other country specific regulations</div><div>Country-specific regulations</div><div>Local electrical supply authority regulations</div><div>Schematics, cable listings, dispositions, specification and arrangements from the customer or engineering office in charge</div><div>Third party specifications, e.g. general contractors or constructors</div></div></div></div>																																				
	<div><div>Mounting Advices</div><div><div><div><div></div><div>Caution</div></div><div><div><div><div></div><div><div><div><div></div><div><div><div><div></div><div><div><div><div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>																																				
	<div><div>Disposal Notes</div><div><div><div><div></div></div><div>The device is considered an electronic device for disposal in terms of the EUROPEAN DIRECTIVE 2012/19/EU.</div><div>The device may not be disposed as domestic garbage.</div><div>The device must be disposed through channels provided for this purpose.</div><div>It is mandatory to complying with local currently applying laws and regulations.</div></div></div></div>																																				
Connections	<div><div>Terminal Connection</div><div><div><table><tr><td>QV</td><td></td><td>Q3</td><td>Qc</td><td>Q2</td><td>Q1</td></tr><tr><td colspan="6">RRF3.AB - RRF3.BB</td></tr><tr><td>N</td><td>L</td><td></td><td>SE</td><td>DI</td><td>M</td></tr></table><table><tr><td>YV</td><td></td><td>Q3</td><td>Qc</td><td>Q2</td><td>Q1</td></tr><tr><td colspan="6">RRF3.AG - RRF3.BG</td></tr><tr><td>N</td><td>L</td><td></td><td>SE</td><td>DI</td><td>M</td></tr></table><div><div>N - L</div><div>Q1</div><div>Q2</div><div>Q3</div><div>Qc*</div><div>YV**</div><div>SE</div><div>D1</div><div>M</div><div>*</div><div>**</div></div><div><div>Operating Voltage AC 230 V</div><div>Control Output "Fan Speed 1" AC 230 V</div><div>Control Output "Fan Speed 2" AC 230 V</div><div>Control Output "Fan Speed 3" AC 230 V</div><div>Control Output "Valve" AC 230 V</div><div>Control Output 0...10V Valve</div><div>Change Over Sensor</div><div>Comfort / Economy Switch (normally open)</div><div>Measuring Neutral</div><div>Control output for RRF3.AB & RRF3.BB</div><div>Control output for RRF3.AG & RRF3.BG</div></div></div></div></div>	QV		Q3	Qc	Q2	Q1	RRF3.AB - RRF3.BB						N	L		SE	DI	M	YV		Q3	Qc	Q2	Q1	RRF3.AG - RRF3.BG						N	L		SE	DI	M
QV		Q3	Qc	Q2	Q1																																
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Dimensional Drawing / Mounting Instruction	<div><div><div></div><div><div></div><div><div></div></div></div></div></div>																																				

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Thermokon Asia Pacific

RRF3- Series (T) V20.1

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