

TLR-D5 Base unit for fan coil controller

Features

- Temperature control for 2 and 4-pipe fan coil systems.
- Relays switching for each up to 10(6)A
- Automatic fan control for three stage fans.
- Control for heating, cooling and fan only operation
- Cost saving option with economy functionality and set point limitation
- Password protected programmable user and control parameters
- External sensor or open contact for remote control, external heat – cool change or auto-changeover on supply temperature with selectable activation limits
- One terminal may control up to 8 base units in master-slave mode

Ordering

A working controller consists of one operation terminal and at least one base unit.

Item name	Item code	Function	Type	Key-data
TLR-D5-24	40-11 0017	24VAC	Base unit	Fan coil controller with: 1 TI int or ext 3 DO (Relay) Fan control 2 DO (Relay) Binary control
TLR-D5-230	40-11 0018	230VAC		
OPA-D5	40-10 0083	Standard	Operation	
OPA-D5-D	40-10 0084	Deluxe	Terminal (88x88)	
OPU-D5	40-10 0091	Standard	Operation	
OPU-D5-D	40-10 0092	Deluxe	terminal (2x4")	
Parameter preset OPA-D5-xx	40-11 00xx	2-Pipe System		Add -Wx at the end of the Item Name or -x at the end of item code to order pre-configured model
OPA-D5-xx -W01	40-11 00xx -01	Cooling only		

Accessories

Item name	Item code	Function	Type	Key-data
OPR-1	40-50 0001		2xAAA bat	Infrared remote controller
S-Tn10-2	40-20 0001	Flying lead sensor with 2 m cable		
SD-Tn10-12-2	40-20 0002	Flying lead duct sensor 12cm immersion depth, 2m cable		
SD-Tn10-20-2	40-20 0003	Flying lead duct sensor 20cm immersion depth, 2m cable		
SDB-Tn10-12	40-20 0051	Duct sensor with housing, 12cm immersion depth		
SDB-Tn10-20	40-20 0004	Duct sensor with housing, 20cm immersion depth		
SRA-Tn10	40-20 0005	Room sensor		
SOD-Tn10	40-20 0059	Outdoor sensor		

Selection of valve actuators, fans and sensors

Temperature Sensors: Use only our approved NTC sensors to achieve maximum accuracy. .

Binary auxiliary devices: E.g. fans and on/off valves. Do not directly connect devices that exceed 250 VAC, 10(6) A.

Configuration of external input

The external input may be configured as external temperature control input or as binary input. The external temperature input can replace the internal sensor as control input or serve as input for the auto-changeover function. The binary input may be used to toggle Comfort and Economy modes or comfort and off modes. This may be used together with key card switches for hotels or motion detectors for offices.

Installation Base

The housing of the TLR base unit is a robust plastic enclosure. The controller may be mounted in any orientation by surface mounting on a wall or in a cabinet. 4 mounting-holes for screws up to 4mm diameter are provided. Mounting onto a standard 35mm DIN rail is also possible.

When mounting note the following:

- The controller should not be freely accessible after mounting. A protective housing should be used, if mounted outside an electrical cabinet.
- **Ensure adequate air circulation to dissipate heat generated during operation.**
- Local installation regulations must be observed.

Connection base to terminal

- Max. Distance: 200m (565 ft.)
- Normal twisted pair copper wires maybe used for wiring in an EMC-save environment. In an impaired EMC environment use only shielded cables. The operating voltage must comply with the requirements for safety extra-low voltage (SELV) as per EN 60 730.
- 1 terminal may drive up to 8 base units. See wiring for parallel connections. Total wire distance should not exceed 200 m.
- Conductor resistance will influence external temperature reading. 450 Ω will result in an increase of 1°C (2°F). Compensate using UP-08 if external temperature is used to control unit.

Technical Specification

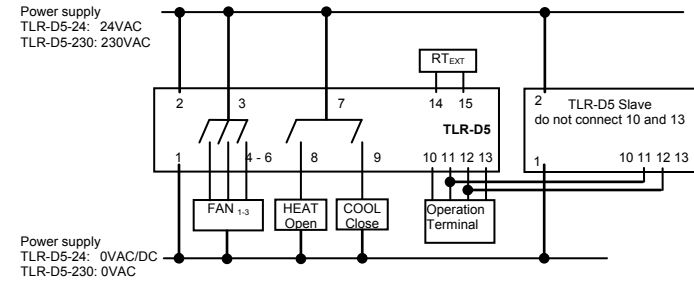
Power Supply	Operating Voltage TLR-D5-24	24V AC ±10% 50/60 Hz, 24V DC ±10% SELV to HD 384, Class II, 48VA max
	TLR-D5-230	230V AC ±10% 50/60 Hz
	Power Consumption TLR-D5-24	Max 3 VA
	TLR-D5-230	Max 5 VA
Electrical Connection	Terminal Connectors	
	Deluxe type only: Power backup for real time clock	Min 48h if charged for 24h
Signal Inputs	Range	0...50 °C (32...122 °F)
	Accuracy	0.5°C, 1°F
Signal Outputs	Digital Switching Outputs	DO1 to DO5
	Switching Type	Relays
	AC Switching power	0...240V AC 10(6)A max. each output
	Insulation strength	3750V AC to EN 60 730-1 1250V AC to EN 60 730-1 1<->2<->3, 4<->5 3750V AC to EN 60 730-1 1/2/3<->4/5
Communication Base - Terminal	Communication Type	Digital: peer to peer
	Cable Type	Use twisted pair copper wire 0.8...2.5 mm ² (AWG18...AWG13) 200m (650ft) use shielded wire in an EMC challenged environment. Conductor resistance must be compensated if external sensor is used
Environment	Operation	To IEC 721-3-3 class 3 K5
	Climatic Conditions	Temperature 0°C ...50°C (32°F...122°F) Humidity <95% R.H. non-condensing
Standards	Transport & Storage	To IEC 721-3-2 and IEC 721-3-1 class 3 K3 and class 1 K3
	Climatic Conditions	Temperature -10°C... 70°C (14°F... 158°F) Humidity <95% R.H. non-condensing Mechanical Conditions class 2M2
General	CE conformity	2004/108/EC 2006/95/EC
	EMC Directive	
	Low Voltage Directive	
	Product standards	EN 60 730 – 1 Automatic electrical controls for household and similar use Special requirement on temperature dependent controls EN 60 730 – 2 - 9 Electromagnetic compatibility for domestic sector Emissions: EN 60 730-1 Immunity: EN 60 730-1
Safety Class	II (IEC 60536)	
Degree of Protection	IP20 to EN 60 529	
Housing Material	PC+ABS plastic (UL94 class V-0)	
Color	Gray (RAL 7001 / 7035)	
Dimensions (H x W x D)	57 x 147 x 115 mm (2.25 x 5.8 x 4.5 in)	
Weight including package	TLR-D5-24	345 g (12.2 oz)
	TLR-D5-230	445 g (15.7 oz)

Status LED

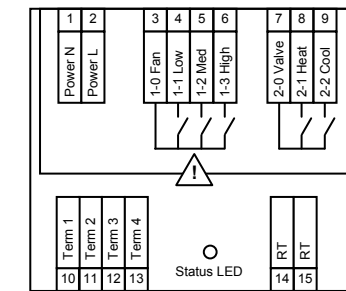
The status LED is located on the base unit between the two low power terminal connector groups. The status LED may display the following feedback:

- No light: No power or unit is damaged
- Blink every 1s: Error, terminal – base unit do not match or signal is not clear.
- Blink every 2s: Normal communication, base unit detected
- Blink every 5s: Base unit operates normal, no terminal detected

Wiring Diagram



Terminal Connections



Legend

1. Power supply :
TLR-D5-24: 0V AC, 24V DC -
TLR-D5-230: 0V AC
2. Power supply:
TLR-D5-24: 24V AC, 24V DC +
TLR-D5-230: 230V AC
3. 1-0 Power for Fan speed
4. 1-1 Fan Speed Low
5. 1-2 Fan Speed Medium
6. 1-3 Fan Speed High
7. 2-0 Power for valve
8. 2-1 DO4 Heating valve, Open for 3point
9. 2-2 DO5.Cooling valve, Close for 3point
10. Terminal Connection 1, +5V
11. Terminal Connection 2, 0V
12. Terminal Connection 3, BUS
13. Terminal Connection 4, RT
14. Temperature Sensor Sx-Tn10
15. Temperature Sensor Sx-Tn10

Dimensions Base

