

TRV1.x Outline Specification

DHD20161205

Feature	TRV1 Dev Prototype Only
Control	
Automated Temperature Regulation/Energy Saving by zoning and occupancy detection (Microcontroller controlled)	Y
User Temperature Set Point via Control Dial and Boost button	Y
30 minute temperature Boost by manual override	Y
Operation Indication (RED LED - various flashes or Solid)	Y
Ambient Light Level Detect	Phototransistor (TEPT4400) uncalibrated ~5–100 lux range for domestic indoor lighting
Temperature sensor	Y (SHT21 ; TMP112 can be fitted instead) resolution 1/16C, absolute error <0.5C over working range.
Relative Humidity	Y (SHT21) absolute error ~3% over working range
Connector for extra pluggable sensors etc	Y (I2CEXT)
Remote Control/Monitoring	Yes (TX only with current firmware) ISM 868.35MHz (EU band 48) radio module (RFM23B)
General	
	TRV1 Dev Prototype
Target average Current Consumption	10 uA

Supplied Batteries	GP ReCyko / Maplin ~ 2.5 - 3V DC
Operational Time (Guide Only)	Approx. 2 years
Battery Empty Indication	Some
Min Valve Open/Close Time	20s
Fitting	“Danfoss” M30 x 1.5
Noise Level	< ?? dBA
Materials	Plastics: ABS (body), polycarb (cap), acetyl (leadscrew), motor, PCB
Environmental Temperature Range	0C to 85C at rad, 0 to 40C at valve
Storage Temperature	0C to 85C
Humidity	10% to 80% approx
IP Rating	IP30
Safety Features	PCBA fitted with non resettable Fuse
Valve Controller weight	206 g without batteries
Shipping weight	~300g
Mechanical Dimensions	136mm x 68mm
Target design Life	10 years
Warranty	None
CE Conformity	-

Notes:

- 1) Selected radio module is not CE approved.
- 2) External standards/components referenced:
 - a) TMP112 <http://www.ti.com/product/TMP112>

- b) SHT21 <https://www.sensirion.com/products/humidity-sensors/humidity-temperature-sensor-sht2x-digital-i2c-accurate/>
- c) IC2EXT <https://github.com/opentrv/OpenTRV-standards/blob/master/standards/I2CEXT/tech-specs/201409-AVR-I2CEXT-connector.txt>
- d) RFM23B http://www.hoperf.com/upload/rf/RFM22B_23B.pdf
- e) TEPT4400 <http://www.vishay.com/photo-detectors/list/product-81341/>