

CATALOG

THERMOVAL[®]

Heat Pumps – KOBE



unit type:

heat pump, Monobloc type

intended use:

space heating and cooling

area of application:

homes, offices, shops, etc.

installation:

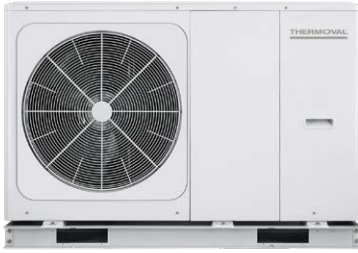
outdoor

- **Supply - model dependent:** 230 / 400 V 50 Hz
- **Refrigeration system:** integrated in the unit
- **Energy-efficient compressors:** DC Inverter, EVI technology
- **Water heating:** up to -25°C
- **Ecological fluid:** R32
- **Self-diagnostics:** WiFi, Online
- **Control:** WiFi and remote control
- **Online control software:** Tuya, Smart Life
- **WiFi module:** 2.4 GHz band, IEEE 802.11 b/g/n standard
- **Wired controller:** Touch Screen
- **Modes of operation:** Heating, Cooling, DHW
- **Functional settings:** Auto mode, Disinfection mode
- **Integrated hydraulic module**
- **Brushless DC fan motor**
- **24-hour On/Off programming**
- **Weekly timer**
- **Additional features:**
 - DHW priority mode
 - ECO mode
 - Silent/night mode

Model	Dimensions (mm) L x W x H	Power (kW)	Catalogue number
KOBE Thermoval® Monobloc			
KOBE TVHP-K06	1100 × 445 × 850	6	5 904 302 016 811
KOBE TVHP-K10	1100 × 445 × 850	10	5 904 302 016 828
KOBE TVHP-K14	1100 × 445 × 850	14	5 904 302 016 835

The KOBE monobloc air-to-water heat pump is a device that uses energy from the air for space heating and domestic hot water. They operate based on the environmentally friendly refrigerant R32. KOBE heat pumps are equipped with DC inverter compressors with EVI technology to achieve increased refrigerant pressure at the compressor outlet. To check more than 100 parameters of the unit, use the controller included in standard, and you can also control the pump remotely via a dedicated application.

Heat Pump Model		KOBE TVHP-K06	KOBE TVHP-K10	KOBE TVHP-K14	
Power supply	V/Ph/Hz	220~240/1/50	380~415/3/50	380~415/3/50	
Heating Power Range	kW	2.20-8.30	3.60-12.20	5.50-16.30	
Heating (A7/6°C, W30/35°C)	Heating Capacity	kW	6,58	10,52	15,43
	Power Supply	kW	1,35	2,26	3,27
	COP	W/W	4,87	4,65	4,72
Heating (A7/6°C, W47/55°C)	Heating Capacity	kW	5,92	9,47	13,89
	Power Supply	kW	1,85	3,09	4,47
	COP	W/W	3,21	3,06	3,11
Chłodzenie (A35/24°C, W12/7°C)	Heating Capacity	kW	5,66	8,34	13,24
	Power Supply	kW	1,87	2,66	4,12
	COP	W/W	3,02	3,14	3,21
Seasonal Energy Efficiency Class, Heating Mode (LWT = 35°C)	/	A+++	A+++	A+++	
Seasonal Energy Efficiency Class (LWT = 55°C)	/	A++	A++	A++	
Max. Input Power	kW	2,71	3,83	5,97	
Max. Input Current	A	12,00	17,00	10,50	
Rated Water Flow	m3/h	1,10	1,75	2,65	
HP Valve Shut-Off Pressure	MPa	4,4	4,4	4,4	
LP Valve Shut-Off Pressure	MPa	1,5	1,5	1,5	
IP		IPX4			
Sound Pressure Level at 1 m	dB(A)	46	46	52	
Max Leaving Water Temperature	°C	60	60	60	
Liquid Line Connections	/	DN 25 (1")	DN 25 (1")	DN 32 (1-1/4")	
Pressure Drop at Rated Water Flow	kPa	25	27	30	
Operating Temperature (Heating Mode)	°C	-25~45			
Operating Temperature (Cooling Mode)	°C	16~45			
Dimensions After Unpacking (L×W×H)	mm	1100×445×850	1100×445×850	1100×445×850	
Dimensions After Packing (L×W×H)	mm	1150×580×1000	1150×580×1000	1150×580×1000	
Weight Without Packaging	kg	85	90	125	
Weight With Packaging	kg	100	105	140	


unit type:

heat pump, Monobloc type

intended use:

space heating and cooling

area of application:

homes, offices, shops, etc.

installation:

outdoor

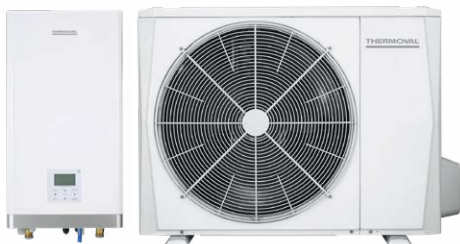
- **Supply - model dependent:** 230 / 400 V 50 Hz
- **Refrigeration system:** integrated in the unit
- **Energy-efficient compressors:** DC Inverter
- **Water heating:** up to -25°C
- **Ecological fluid:** R32
- **Easy pump installation and maintenance**
- **BMS gateway, Modbus communication**
- **Control:** WiFi and remote control
- **WiFi module:** 2.4 GHz band,
- **Integrated electric heater**
- **Integrated hydraulic module**
- **Wired controller:** in standard
- **Integrated temperature sensor:** in controller
- **Modes of operation:** Heating, Cooling, DHW
- **Functional settings:** Auto mode, Disinfection mode
- **Brushless DC fan motor**
- **24-hour On/Off programming**
- **Weekly timer**
- **Additional features:**
 - **DHW priority mode**
 - **ECO mode**
 - **Silent mode**

Model	Dimensions (mm) L x H x W	Power (kW)	Catalogue number
MITO Thermoval® Monobloc			
MITO TVHP-M08	1385 × 945 × 526	8	5 904 302 015 128
MITO TVHP-M10	1385 × 945 × 526	10	5 904 302 015 135
MITO TVHP-M12	1385 × 945 × 526	12	5 904 302 015 142

Heat Pump Model			MITO TVHP-M08	MITO TVHP-M10	MITO TVHP-M12
Power supply		V/Ph/ Hz	220-240/1/50	220-240/1/50	3 80-415/3/50
Heating (LWT=35°C) (Outdoor temperature 2°C, 85% RH, EWT 30°C, LWT 35°C)	Capacity	kW	7,10	8,20	9,2
	Power cons.	kW	1,73	2,05	2,36
	COP	-	4,10	4,00	3,90
Heating (LWT=35°C) (Outdoor temperature 7°C, 85% RH, EWT 30°C, LWT 35°C)	Capacity	kW	8,40	10,0	12,1
	Power cons.	kW	1,63	2,02	2,44
	COP	-	5,15	4,95	4,95
Heating (LWT=55°C) (Outdoor temperature 7°C, 85% RH, EWT 47°C, LWT 55°C)	Capacity	kW	7,50	9,50	11,9
	Power cons.	kW	2,36	3,06	3,90
	COP	-	3,18	3,10	3,05
Cooling (LWT=18°C) (Outdoor temperature 35°C, EWT 23°C, LWT 18°C)	Capacity	kW	8,30	9,90	12,00
	Power cons.	kW	1,64	2,18	3,04
	COP	-	5,05	4,55	3,95
Cooling (LWT=7°C) (Outdoor temperature 35°C, EWT 12°C, LWT 7°C)	Capacity	kW	7,45	8,20	11,5
	Power cons.	kW	2,22	2,52	4,18
	COP	-	3,35	3,25	2,75
Seasonal energy efficiency class, heating mode	LWT =35°C	-	A+++	A+++	A+++
	LWT =55°C	-	A++	A++	A++
Overcurrent protection		A	25	32	20
Power supply (no. of conductors × cross-section)		mm ²	3×4,0	3×4,0	5×2,5
Sound pressure level (max)		dB(A)	48,5	50,5	53,5
Ext. unit dimensions (L×H×W)		mm	1385×945×526		
Net/gross weight		kg	121/148	121/148	160/188
Compressor	Type		DC INVERTER with double rotor (Mitsubishi)		
Motor type			Silnik DC		
Refrigerant	Gas type/quantity	kg	R32 / 1,4	R32 / 1,4	R32 / 1,75
Expansion element			Electronic Expansion Valve (EXV)		
Recommended operating range	Chłodzenie	°C	-5~43		
	Grzanie	°C	-25~35		
	CWU	°C	-25~43		
Water-side heat exchanger	Typ		Plate heat exchanger		
Water-side connection	Typ		R5/4"		
Water pump (Grundfos)	Max. pumping head	m	9		
Leaving water temperature	Cooling	°C	5~30		
	Heating	°C	12~65		
	DHW (tank)	°C	10~60		

RH - relative humidity EWT - Entering Water Temperature, inlet LWT - Leaving Water Temperature. Unit complies with EU Directive no. 811/2013

Heat Pumps – SAPPORO



Model	Dimensions (mm) L x H x W	Power (kW)	Catalogue number
SAPPORO Thermoval® Split			
SAPPORO TVHP-S08-JW	1118 × 865 × 523	8	5 904 302 015 074
SAPPORO TVHP-S08-JZ			5 904 302 015 067
SAPPORO TVHP-S10-JW	1118 × 865 × 523	10	5 904 302 015 098
SAPPORO TVHP-S10-JZ			5 904 302 015 081
SAPPORO TVHP-S12-JW	1118 × 865 × 523	12	5 904 302 015 104
SAPPORO TVHP-S12-JZ			5 904 302 015 111

unit type:

heat pump, Split

intended use:

space heating and cooling

area of application:

homes, offices, shops, etc.

hydraulic module installation:

indoor

unit installation:

outdoor

- **Supply - model dependent:** 230 / 400 V 50 Hz
- **Refrigeration system:** integrated in the unit
- **Energy-efficient compressors:** DC Inverter
- **Heating water up to:** -25°C
- **Ecological fluid:** R32
- **BMS gateway, Modbus communication**
- **Control:** WiFi and remote control
- **WiFi module:** 2.4 GHz band, IEEE 802.11 b/g/n standard
- **Integrated electric heater**
- **External hydraulic module with controller**
- **Wired controller:** in standard
- **Integrated temperature sensor:** in controller
- **Modes of operation:** Heating, Cooling, DHW
- **Functional settings:** Auto mode, Disinfection mode
- **Brushless DC fan motor**
- **Quiet operation of heat pump unit**
- **24-hour On/Off programming**
- **Weekly timer**
- **Additional features:**
 - **Holiday mode**
 - **DHW priority mode**
 - **ECO mode**
 - **Silent mode**

Heat Pump Model		SAPPORO TVHP-S08-JZ	SAPPORO TVHP-S10-JZ	SAPPORO TVHP-S12-JZ	
Matching hydraulic module model		TVHP-S08-JW	TVHP-S10-JW	TVHP-S12-JW	
Power supply		V/Ph/Hz	220-240/1/50	220-240/1/50	380-415/3/50
Heating (LWT=35°C) (Outdoor temperature 2°C, 85% RH, EWT 30°C, LWT 35°C)	Capacity	kW	7,10	8,20	9,30
	Power cons.	kW	1,73	2,02	2,35
	COP	-	4,10	4,05	3,95
Heating (LWT=35°C) (Outdoor temperature 7°C, 85% RH, EWT 30°C, LWT 35°C)	Capacity	kW	8,30	10,0	12,1
	Power cons.	kW	1,60	2,00	2,44
	COP	-	5,20	5,00	4,95
Heating (LWT=55°C) (Outdoor temperature 7°C, 85% RH, EWT 47°C, LWT 55°C)	Capacity	kW	7,50	9,50	12,0
	Power cons.	kW	2,36	3,06	3,87
	COP	-	3,18	3,10	3,10
Cooling (LWT =18°C) (Outdoor temperature 35°C, EWT 23°C, LWT 18°C)	Capacity	kW	14,90	10,00	12,00
	Power cons.	kW	4,38	2,08	3,00
	EER	-	3,40	8,78	4,00
Cooling (LWT=7°C) (Outdoor temperature 35°C, EWT, 12°C, LWT 7°C)	Capacity	kW	14,0	8,20	11,6
	Power cons.	kW	5,71	2,48	4,22
	EER	-	2,45	5,98	2,75
Seasonal energy efficiency class, heating mode	LWT =35°C	-	A+++	A+++	A+++
	LWT =55°C	-	A++	A++	A++
Overcurrent protection	A	20	20	16	
Sound pressure level (max)	dB(A)	46	49	50	
Ext. unit dimensions (L×H×W)	mm	1118×865×523			
Net/gross weight	kg	77/88	77/88	112/125	
Compressor	Type	DC INVERTER with double rotor (Mitsubishi)			
Motor type		DC motor			
Additional agent above 15 m		30g/m			
Freon system connection	Refrigerant liquid/gas	mm	9,52 / 15,88		
Level difference between outdoor unit and indoor unit	m	max, 20			
Length of installation	m	2-30			
Refrigerant	Gas type/quantity	kg	R32 / 1,65	R32 / 1,65	R32 / 1,84
Expansion element	Electronic Expansion Valve (EXV)				
Recommended operating range	Cooling	°C	-5/43		
	Heating	°C	-25/35		
	DHW	°C	-25/43		

Hydraulic module for heat pump SPLIT		TVHP-S08-JW	TVHP-S10-JW	TVHP-S12-JW	
Outlet water temperature	Heating / Cooling / DHW	°C	25 ~ 65 / 5 ~ 25 / 30 ~ 60		
Power supply	V/Ph/Hz	220-24 0/1/50	220-24 0/1/50	380-415/3/50	
Sound pressure level (max)	dB(A)	30	30	32	
Unit dimensions (L×H×W)	mm	420×790×270			
Net/gross weight	kg	37/43	37/43	39/45	
Water-side heat exchanger	Plate exchanger				
Water pump (Grundfos)	Max. pumping head	m	9		
Expansion vessel (primary circuit)	Volume / Pressure	L / MPa	8 / 0,3		
Electric heater	Power / Supply	kW / V/ Ph/Hz	3~6 kW / 220-240/1/50	3~6 kW / 220-240/1/50	6~9 kW / 380-415/3/50
Water system connection	Water side	mm	R1"		
Freon system connection	Refrigerant liquid/ Refrigerant gas	mm	9,52 / 15,88		

RH - relative humidity EWT - Entering Water Temperature, inlet LWT - Leaving Water Temperature.

Unit complies with EU Directive no. 811/2013

SAKAI series air conditioners



type of appliance:
air conditioning with heating option, Split type

intended use:
air cooling heating of rooms

application:
rooms in homes, offices, shops

installation:
wall-mounted

- Power supply: ~ 230V / 50 Hz
- Cooling agent mode: R32
- WiFi module: band 2.4 GHz, standard IEEE 802.11 b/g/n
- Weekly programming
- Energy-saving standby mode 1 W
- Sleep mode
- Auto restart, Auto cleaning
- Two-sided condensation channel
- Split 1+1
- Timer function, Follow Me function
- Start with low power consumption
- Smart defrosting
- DC motor
- Automatic up/down blinds
- 12 ventilator gears
- 3D air vent

Model	Cooling capacity (kW)	Heating capacity (kW)	Catalogue number
THERMOVAL SAKAI - air conditioning units			
Sakai TVK-S20-KPL	2,6	2,9	5 904 302 015 371
Sakai TVK-S30-KPL	3,6	3,8	5 904 302 015 388
Sakai TVK-S50-KPL	5,3	5,6	5 904 302 015 395
Sakai TVK-S70-KPL	7,0	7,3	5 904 302 015 401

The latest stylistic version of the Thermoval Sakai wall-mounted air conditioning system. The appliance has been fitted with many useful functions, as well as a set of filters and an electronic ioniser which make the air conditioning health-friendly for the user. The wireless control function allows convenient remote control via wi-fi from a smartphone or tablet.

Interior unit model	TVK-S20-JW	TVK-S30-JW	TVK-S50-JW	TVK-S70-JW
Exterior unit model	TVK-S20-JZ	TVK-S30-JZ	TVK-S50-JZ	TVK-S70-JZ
Cooling/heating energy class	A++/A+	A++/A+	A++/A+	A++/A+
SEER (medium)	6,3	6,1	7,4	6,1
SCOP (medium)	4,0	4,0	4,0	4,0
Amount of cooling agent [kg]	0,55	0,55	1,08	1,42
Average power consumption for cooling (min-max) [W]	732 (100~1240)	1213 (130~1580)	1550 (140~2300)	2600 (420~3150)
Average power consumption for heating (min-max) [W]	733 (120~1200)	1088 (100~1680)	1570 (220~2350)	2400 (300~2750)
Average running current for cooling (min-max) [A]	3,18 (0,4~5,4)	5,27 (0,5~6,9)	6,7 (0,6~10,0)	11,5 (1,8~13,8)
Average running current for heating (min-max) [A]	3,18 (0,5~5,2)	4,73 (0,4~6,9)	6,8 (0,95~10,3)	11 (1,3~12,2)
Air flow of interior unit (Hi/Mi/Lo) [m³/h]	466/360/325	540/430/314	840/680/540	980/817/662
Air flow of exterior unit [m³/h]	1750	1800	2100	3500
Operating temp. external unit cooling [°C]	-15~50	-15~50	-15~50	-15~50
Operating temp. external unit heating [°C]	-15~30	-15~30	-15~30	-15~30
Operating temp. internal unit cooling [°C]	17~30	17~30	17~30	17~30
Operating temp. internal unit heating [°C]	0~30	0~30	0~30	0~30
Internal unit sound level (Hi/Mi/Lo/Si) [dB]	38,5/32/25/21	40,5/34,5/25/22	42,5/36/26/25	45/40,5/36/28
External unit sound level [dB]	55,5	56	56	59
Cooling output [Btu/h]	9000 (3100~11600)	12000 (3800~14200)	18000 (6200~21000)	24000 (7100~27000)

MISHIMA series air conditioners



type of appliance:
air conditioning with heating option, Split type

intended use:
air cooling heating of rooms

application:
rooms in homes, offices, shops

installation:
wall-mounted

- Power supply: ~ 230V / 50 Hz
- Cooling agent mode: R32
- WiFi module: band 2.4 GHz, standard IEEE 802.11 b/g/n
- Silver ion and catalytic filters
- Weekly programming
- Standby mode 1 W, Sleep mode
- Auto restart, Auto cleaning
- Two-sided condensation channel
- Split 1+1
- Timer function, Follow Me function
- Start with low power consumption
- Smart defrosting
- DC motor
- 12 ventilator gears
- 3D air vent
- Additional module attachment
- Automatic up/down blinds
- 12 ventilator gears
- Additional drip tray heater

Model	Cooling capacity (kW)	Heating capacity (kW)	Catalogue number
THERMOVAL MISHIMA - Split			
Mishima TVK-M20-KPL	2,6	3,2	5 904 302 015 449
Mishima TVK-M30-KPL	3,6	3,8	5 904 302 015 432
Mishima TVK-M50-KPL	5,3	5,6	5 904 302 015 425
Mishima TVK-M70-KPL	7,0	7,3	5 904 302 015 418

The Thermoval Mishima wall-mounted air conditioner in a classic style characterised by minimalism and elegance. The appliance has been fitted with useful functions, as well as a set of filters and an electronic ioniser which make the air conditioning healthfriendly for the user. The wireless control function allows convenient remote control via wi-fi from a smartphone or tablet. Its top quality and highly efficient sub-assemblies enable the air conditioner to heat a room even with an external temperature of -25 °C and achieve an A+++ level of energy efficiency.

Interior unit model	TVK-M20-JW	TVK-M30-JW	TVK-M50-JW	TVK-M70-JW
Exterior unit model	TVK-M20-JZ	TVK-M30-JZ	TVK-M50-JZ	TVK-M70-JZ
Cooling/heating energy class	A+++/A++	A+++/A++	A++/A+	A++/A+
SEER (medium)	8,8	8,5	7,0	6,4
SCOP (medium)	4,6	4,6	4,0	4,0
Amount of cooling agent [kg]	1,0	1,0	1,1	1,45
Average power consumption for cooling (min-max) [W]	628 (80~1100)	1005 (130~1650)	1550 (560~2050)	2402 (420~3200)
Average power consumption for heating (min-max) [W]	651 (70~990)	977 (160~1560)	1750 (780~2000)	2130 (300~3100)
Average running current for cooling (min-max) [A]	2,73 (0,35~4,78)	4,37 (0,6~7,2)	6,7 (2,4~9,0)	10,5 (1,8~13,9)
Average running current for heating (min-max) [A]	2,83 (0,32~4,32)	4,24 (0,7~6,78)	7,6 (3,4~8,7)	9,3 (1,3~13,5)
Air flow of interior unit (Hi/Mi/Lo) [m³/h]	560	630	800/600/500	1090/770/610
Air flow of exterior unit [m³/h]	2150	2200	2100	3500
Operating temp. external unit cooling [°C]	-15~50	-15~50	-15~50	-15~50
Operating temp. external unit heating [°C]	-25~30	-25~30	-25~24	-25~24
Operating temp. internal unit cooling [°C]	16~32	16~32	17~32	17~32
Operating temp. internal unit heating [°C]	0~30	0~30	0~30	0~30
Internal unit sound level (Hi/Mi/Lo/Si) [dB]	37/31/22/19	39/33/22/21	41/37/31/20	46/37/34,5/21
External unit sound level [dB]	54	55	56	62
Cooling output [Btu/h]	9000 (3500~11000)	12000 (4700~14700)	18000 (11570~20130)	24000 (7200~28000)

Osaka series air conditioners

THERMOVAL®



type of appliance:
cassette air conditioner, Split type

intended use:
air cooling heating of rooms

application:
rooms in homes, offices, shops

installation:
ceiling

- **Power supply:** ~ 230 V / 50 Hz
- **Wi-Fi module:** band 2,4 GHz, standard IEEE 802.11 b/g/n
- **Weekly programming**
- **Auto restart**
- **Quick exchanger cleaning**
- **Built-in condensate pump**
- **TIMER function**
- **DC Inverter compressor**
- **Wi-Fi control**
- **Arctic Kit immersion heater kit**
- **Room dehumidification and ventilation function**
- **Able to supply outdoor air**
- **Basic air filters**
- **Remote controller**

Model	Cooling capacity (kW)	Heating capacity (kW)	Catalogue number
THERMOVAL OSAKA - air conditioning units			
OSAKA TVK-012-KPL	3,6	3,9	5 904 302 016 736
OSAKA TVK-018-KPL	5,3	5,6	5 904 302 016 743
OSAKA TVK-024-KPL	7,0	7,3	5 904 302 016 750

Model		TVK-012-KPL	TVK-018-KPL	TVK-024-KPL	
Nominal capacity	kW	3,6	5,3	7,0	
Capacity	Cooling	3,52 (1,52-5,28)	5,28 (2,90-5,74)	7,03 (3,22-8,21)	
	Heating	4,40 (1,03-5,57)	5,42 (2,37-6,10)	7,62 (2,43-8,65)	
Power consumption	Cooling	850 (350-1600)	1633 (720-1860)	2190 (480-2850)	
	Heating	1100 (310-1800)	1460 (700-1930)	2050 (500-2880)	
Current consumption	Cooling	3,8 (1,6-7,1)	7,2 (3,2-8,2)	9,5 (2,1-12,4)	
	Heating	5,0 (1,4-7,9)	6,4 (3,1-8,5)	8,9 (2,2-12,5)	
Operating temp.	Cooling	-15 - +50	-15 - +50	-15 - +50	
	Heating	-25 - +24	-25 - +24	-25 - +24	
Energy class	Cooling	A++	A++	A++	
	Heating	A++	A+	A+	
SEER (average)		7,8	6,1	6,1	
SCOP (average)		4,6	4,0	4,0	
Indoor unit	Air flow (H/M/L)	m³/h	617/504/416	720/625/540	1378/1200/1032
	Dimensions (LxHxW)	mm	570x570x260	570x570x260	840x840x245
	Panel dimension (LxHxW)	mm	647x647x50	647x647x50	950x950x55
	Net weight	kg	16,2	16,2	23
	Sound pressure level (H/M/L)	dB (A)	41/36/33	42,5/39/35,5	47/43/40
Indoor unit	Dimensions (LxHxW)	mm	800x554x333	800x554x333	845x702x363
	Net weight	kg	34,7	34,7	49,4
	Sound pressure level (max)	dB (A)	55,5	55,5	62
	Refrigerant type/quantity		R32/870	R32/1150	R32/1500
Connections	Liquid/gas pipe diameters	cal	1/4" - 3/8"	1/4" - 1/2"	3/8" - 5/8"
	Max. installation length/Max. level difference	m	25/10	30/20	50/25
Electrical connection	Voltage/phases/frequency	V/t/Hz	220-240/1/50	220-240/1/50	220-240/1/50
	Power cable to outdoor unit (no. of conductors x cross-section)	mm²	3x2,5	3x2,5	3x2,5
	Connection between units (no. of conductors x cross-section)	mm²	4x2,5	4x2,5	4x2,5

Tokio – Multi Split



type of appliance:
Multi Split unit

intended use:
air cooling heating of rooms

application:
connects several air conditioning indoor units

installation:
outside the building

- **Power supply:** ~ 230 V / 50 Hz
- **Up to 5 indoor units can be connected**
- **Arctic Kit immersion heater kit**
- **Ability to connect group controllers**
- **Comprehensive communication with indoor units available**
- **from SAKAI, MISHIMA and OSAKA series**
- **Ability to operate the unit in heating mode at temperatures up to -25 degrees**
- **DC Inverter compressor**

Model	Cooling capacity (kW)	Heating capacity (kW)	Catalogue number
THERMOVAL TOKIO - Multi Split			
TVK-T18-2-JZ	5,3	5,6	5 904 302 016 408
TVK-T27-3-JZ	8,0	8,2	5 904 302 016 415
TVK-T42-5-JZ	12,3	12,3	5 904 302 016 422

Model		TVK-T18-2-JZ X2	TVK-T27-3-JZ X3	TVK-T42-5-JZ X5	
Power supply	V, Hz, Ph	220-240V, 50Hz, 1Ph	220-240V, 50Hz, 1Ph	220-240V, 50Hz, 1Ph	
Cooling	Capacity	kW	5,3 (2,0-6,9)	8,0 (2,0-8,5)	12,3 (2,0-14,15)
	Nom. power consumption	W	1630 (690-2000)	2450 (240-3220)	4260 (1490-4580)
	Current consumption	A	13	17,5	22,0
	EER (average)		3,24	3,23	3
	SEER (average)		6,1	6,1	6,1
	Energy efficiency class		A++	A++	A++
Heating	Capacity	kW	5,6 (2,3-7,3)	8,2 (2,0-8,5)	12,3 (2,4-14,8)
	Nom. power consumption	W	1500 (600-1670)	2200 (320-2840)	3100 (1090-4000)
	Current consumption	A	6,5 (2,6-7,3)	9,6 (1,4-12,4)	13,5 (4,7-17,4)
	COP (average)		3,71	3,73	3,71
	SCOP (average)		4	4	3,8
	Energy efficiency class		A	A+	A
Max. number of connected indoor units		2	3	5	
Max. power consumption	W	2850	3600	4700	
Electrical connections	Power cable to outdoor unit (no. of conductors x cross-section)	mm²	3x2,5	3x2,5	3x2,5
	Connection between units (no. of conductors x cross-section)	mm²	4x1,5	4x1,5	4x1,5
Air flow	m³/h	2200	2700	3850	
Sound pressure level (max)	dB(A)	56	54	64	
Outdoor unit	Dimensions (LxHxW)	mm	800x554x333	845x702x363	946x810x410
	Net/gross weight	kg	35,5/38,5	51,1/55,8	73,3/80,4
Refrigerant	Type	kg	R32	R32	R32
	Quantity	kg	1,25	1,72	2,4
Cooling pipes	Liquid/Gas	cal	2x1/4, 2x3/8	3x1/4, 3x3/8	5x1/4, 4x3/8, 1x1/2
	Max. overall length	m	40	60	80
	Max. length to each unit	m	25	30	35
	Max. level difference between outdoor unit and indoor unit	m	15	15	15
	Max. height difference between indoor units	m	10	10	10
Recommended operating temperatures (outdoor)	Cooling	°C	-15 - +50	-15 - +50	-15 - +50
	Heating	°C	-25 - +24	-25 - +24	-25 - +24

AQUA Ti Electric water heater



Model	Dimensions (mm) Height x width x depth	Power (kW)	Catalogue number
AQUA Ti			
Aqua Ti-50L-W	433 x 256 x 910	2,00	5 904 302 016 781
Aqua Ti-80L-W	493 x 290 x 950	2,00	5 904 302 016 798
Aqua Ti-100L-W	493 x 290 x 1160	2,00	5 904 302 016 804

Electric water heater Wi-Fi SLIM Aqua Ti series by Thermoval is designed for heating domestic water in classic households. This heater has a Wi-Fi function, allowing you to control it using your mobile device. In addition, this heater has the following functions: ECO mode, i.e. reduced power consumption and temperature, as well as FAST option for quick heating. Inside the heater there is one electron titanium anode, which protects the tank from corrosion. The Aqua Ti has a double immersion heater with a maximum power of 2000 W, with the possibility of splitting the power 1300 W + 700 W.

type of appliance:

electric, storage water heater

intended use:

heating household water

application:

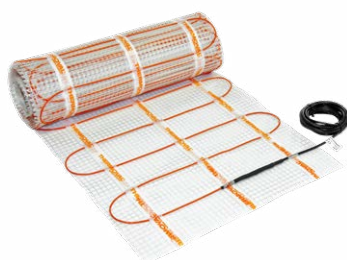
residential rooms, bathrooms

installation:

wall-mounted

- **power source voltage:** ~ 230 V / 50 Hz
- **temperature range:** from 40 to 75°C max.
- **working pressure:** 7 bar
- **protection level:** IPX4
- **installation:** horizontal or vertical
- **sound pressure level [dB]:** 15
- **tank and coating:** Steel / Blue Diamond glaze
- **casing colour:** white
- **warranty on control components:** 2 years
- **tank leakage warranty:** 6 years

Heating mats TV TO 50



intended use:

electric floor heating

application:

basic or auxiliary heating

surface type:

ceramic, stone, concrete, etc.

installation location:

building interior

installation technique:

in glue or thin concrete screed

- **heating power:** 150 W/m² or 170 W/m²
- **power supply:** ~230 V / 50 Hz
- **power supply type:** single-source
- **power lead:** 3 m
- **protection level:** IPX7
- **structure:** stable resistance, dual core, screen
- **heating element:** multi-strand core
- **internal insulation:** ETFE teflon
- **external insulation:** PVC
- **heating element thickness:** 3.5 mm
- **maximum operating temperature:** 60°C
- **base:** fibreglass mesh
- **cable colour:** 170W/m² - orange
- **cable colour:** 150W/m² - red
- **Warranty period:** 25 years

Area (m ²)	Dimensions (m)	Power (W)	Catalogue number
TV TO 50 – 170 W/m²			
0.50	0.5 x 1	85	5 901 812 594 051
1.00	0.5 x 2	170	5 901 812 592 576
1.50	0.5 x 3	255	5 901 812 592 583
2.00	0.5 x 4	340	5 901 812 592 590
2.50	0.5 x 5	425	5 901 812 592 606
3.00	0.5 x 6	510	5 901 812 592 613
3.50	0.5 x 7	595	5 901 812 592 620
4.00	0,5 x 8	680	5 901 812 592 637
5.00	0.5 x 10	850	5 901 812 592 644
6.00	0.5 x 12	1020	5 901 812 592 651
7.00	0.5 x 14	1190	5 901 812 592 668
8.00	0.5 x 16	1360	5 901 812 592 675
9.00	0.5 x 18	1530	5 901 812 592 682
10.00	0.5 x 20	1700	5 901 812 592 699
15.00	0.5 x 30	2550	5 901 812 592 705
20.00	0.5 x 40	3400	5 901 812 592 712
TV TO 50 – 150 W/m²			
10.00	0.5 x 20	1500	5 901 812 597 182
12.00	0.5 x 24	1800	5 901 812 597 199
14.00	0.5 x 28	2100	5 901 812 597 205
15.00	0.5 x 30	2250	5 901 812 597 212
16.00	0.5 x 32	2400	5 901 812 597 229
20.00	0.5 x 40	3000	5 901 812 597 236

Heating mats TV TT 50



intended use:

electric floor heating

application:

basic or auxiliary heating

surface type:

ceramic, stone, concrete, etc.

installation location:

building interior

installation technique:

in glue or thin concrete screed

- heating power: 170 W/m²
- power supply: ~230 V / 50 Hz
- power supply type: single-source
- power lead: 3 m
- protection level: IPX7
- structure: stable resistance, dual core, screen
- heating element: multi-strand core
- internal insulation: ETFE teflon
- external insulation: PVC
- heating element thickness: 3.5 mm
- maximum operating temperature: 60°C
- base: elastic textile mesh
- Warranty period: 25 years

Area (m ²)	Dimensions (m)	Power (W)	Catalogue number
TV TT 50			
1,00	0,5 x 2	170	5 904 302 015 555
1,50	0,5 x 3	255	5 904 302 015 562
2,00	0,5 x 4	340	5 904 302 015 579
2,50	0,5 x 5	425	5 904 302 015 586
3,00	0,5 x 6	510	5 904 302 015 593
4,00	0,5 x 8	680	5 904 302 015 609
5,00	0,5 x 10	850	5 904 302 015 616
6,00	0,5 x 12	1 020	5 904 302 015 623
8,00	0,5 x 16	1 360	5 904 302 015 630
10,00	0,5 x 20	1 700	5 904 302 015 647

Heating mats WT 2010 AL



intended use:

electric underfloor heating

application:

basic or auxiliary heating

surface type:

panels, wood, etc..

installation location:

building interior

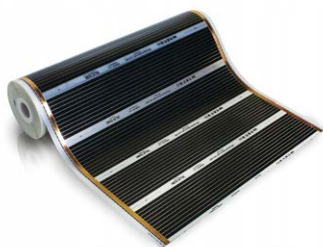
installation technique:

dry fitting directly under panels

- heating power: 150 W/m²
- power supply: ~230 V / 50 Hz
- power supply type: single-source
- power lead: 3 m
- protection level: IPX7
- structure: stable resistance, dual core, screen
- heating element: multi-strand core
- internal insulation: ETFE teflon
- cable colour: white
- heating element thickness: 2 x 1 mm
- maximum operating temperature: 60°C
- base: double aluminium mantle
- Warranty period: 10 years

Area (m ²)	Dimensions (m)	Power (W)	Catalogue number
WT 2010 AL in aluminium foil screen			
1.00	0.5 x 2	150	5 901 812 595 485
1.50	0.5-3	225	5 901 812 595 492
2.00	0.5-3	300	5 901 812 595 508
2.50	0.5 x 5	375	5 901 812 595 515
3.00	0.5 x 6	450	5 901 812 595 522
4.00	0,5 x 8	600	5 901 812 595 546
5.00	0.5 x 10	750	5 901 812 595 560
6.00	0.5 x 12	900	5 901 812 595 577
7.00	0.5 x 14	1050	5 901 812 595 584
8.00	0.5 x 16	1200	5 901 812 595 591
9.00	0.5 x 18	1350	5 901 812 595 607
10.00	0.5 x 20	1500	5 901 812 595 614
12.00	0.5 x 24	1800	5 901 812 595 621
15.00	0.5 x 30	2250	5 901 812 590 893

Heating foil TV HP 220



intended use:
electric underfloor, wall, ceiling heating

application:
basic or auxiliary heating

installation location:
inside buildings

installation technique:
dry installation

Area (m ²)	Dimensions (mm)	Power (W)	Catalogue number
TV HP 220			
1	1000 x 1000	220	5 901 812 598 127

- **heating power:** 220 W/m²
- **power supply:** ~230 V / 50 Hz
- **power supply type:** single-source
- **protection class:** II
- **heating element:** carbon, resistive tracks
- **external coating:** polyester foil
- **maximum operating temperature:** up to 70°C
- **foil thickness:** 0.35 mm
- **Warranty period:** 10 years

Heating foil TV PTC 50



purpose:
electric underfloor heating

application:
primary or auxiliary heating

place of installation:
indoors

installation technique:
dry installation under the panelled floor

Area (m ²)	Dimensions (mm)	Power (W)	Catalogue number
TV PTC 50			
0,5	1000 x 500	60	5 904 302 015 494

The heating foils of the TV PTC series are designed for use as electric underfloor heating, installed as primary or secondary heating.

Installation inside buildings using dry installation technology.

The mats are suitable for heating panelled floors, wooden floors or floors covered with suitable plastic floor coverings.

PTC foils are characterised by self-regulation of temperature, thus protecting the usable part of the floor from overheating.

- **heating power:** 120 W/m²
- **specific heating power:** 60 W/m
- **power supply:** ~230 V / 50 Hz
- **power supply type:** single-sided
- **protection class:** II
- **heating element:** resistance material, permanent resistance
- **external coating:** polyester film
- **max. working temperature:** 40°C
- **film thickness:** 0.338 mm
- **width of PTC 50:** 50 cm
- **on roll:** 100 m
- **warranty period:** 20 years

Heating foil TV PTC 100



purpose:
electric floor heating

application:
primary or auxiliary heating

place of installation:
indoors

installation technique:
dry installation under panelled floor

Area (m ²)	Dimensions (mm)	Power (W)	Catalogue number
TV PTC 100			
1	1000 x 1000	120	5 904 302 015 487

The heating foils of the TV PTC series are designed for use as electric underfloor heating, installed as a primary or secondary heating.

Installation inside buildings using dry installation technology.

The mats are suitable for heating panelled floors, wooden floors or floors covered with suitable plastic floor coverings.

The 100 cm wide mats are particularly suitable for laying over large surfaces in lounge leisure rooms, bedrooms, offices, etc.

PTC foils are characterised by self-regulation of temperature, thus protecting the usable part of the floor from overheating.

- **heating output:** 120 W/m²
- **specific heating power:** 120 W/m
- **power supply:** ~230 V / 50 Hz
- **power supply type:** single-sided
- **protection class:** II
- **heating element:** resistance material, permanent resistance
- **external coating:** polyester film
- **max. working temperature:** 65 °C
- **film thickness:** 0.338 mm
- **width of PTC 100:** 100 cm
- **on roll:** 50 m
- **warranty period:** 20 years

Under-mirror heating foil



intended use:
removing water vapour

application:
bathrooms, bathing rooms

installation location:
on the back of the mirror

installation technique:
self-adhesive foil

Area (m ²)	Dimensions (mm)	Power (W)	Catalogue number
		F4, F6	
F4: 0.20	400 x 500	39	5 901 812 591 050
F6: 0.33	550 x 600	59	5 901 812 591 067

- **heating power:** from 39 to 59 W
- **power supply:** ~230 V / 50 Hz
- **power supply type:** single-source
- **protection class:** II
- **heating element:** tracks of resistive material
- **external coating:** polyester foil
- **foil thickness:** 0.2 mm
- **Warranty period:** 24 months

Couplings



Catalogue number
Mounting couplings for power leads (50)
5 901 812 598 134
Mounting couplings for power leads (1)
5 904 302 010 314

Mounting tape



- **tape width:** 40 mm
- **length in roll:** 20 m
- **thickness:** 1.2 mm
- **temperature resistance:** from -40 to +120°C

Catalogue number
Butyl tape for insulating electrical joints (20 m roll)
5 901 812 598 141

Effectively seals and sticks a wide range of materials. The adhesive strength increases with time, while the tape remains flexible and moisture-resistant.

Heating cables TV MC 18



intended use:

electric underfloor heating

application:

basic or auxiliary heating

surface type:

ceramic, stone, concrete, etc.

installation location:

building interior

installation technique:

in glue or thin concrete screed

- heating power: 18 W/m
- power supply: ~230 V / 50 Hz
- power supply type: single-source
- power lead: 3 m
- protection level: IPX7
- structure: stable resistance, dual core, screen
- heating element: multi-strand core
- internal insulation: ETFE teflon
- external insulation: PVC
- heating element thickness: 3.5 mm
- maximum operating temperature: 60°C
- cable colour: orange
- Warranty period: 10 years

Area (m)	Power (W)	Catalogue number
TV MC 18 – 18 W/m		
7.50	135	5 901 812 592 392
11.00	200	5 901 812 592 408
15.00	270	5 901 812 592 415
22.00	400	5 901 812 592 422
30.00	535	5 901 812 592 439
33.30	600	5 901 812 592 446
38.00	680	5 901 812 592 453
44.00	800	5 901 812 592 460
52.00	935	5 901 812 592 477
61.00	1100	5 901 812 592 484
68.00	1220	5 901 812 592 491
74.50	1340	5 901 812 592 507
83.00	1500	5 901 812 592 514
90.00	1625	5 901 812 592 521
106.00	1900	5 901 812 592 538
119.00	2135	5 901 812 592 545
127.50	2295	5 901 812 592 552
154.00	2775	5 901 812 592 569

Heating cables SHTV 10



intended use:

universal

application:

indoors and outdoors

installation location:

electrical underfloor heating, anti-icing protection: roofs, gutters, drain pipes, pavements, driveways, pipelines, etc.

installation technique:

in glue, concrete, ballast, specially designed mounting

- heating power: 10 W/m
- power supply: ~230 V / 50 Hz
- power supply type: single-source
- power lead: 3,5 m
- protection level: IPX7
- structure: stable resistance, dual core, screen
- heating element: multi-strand core
- internal insulation: XLPE
- external insulation: UV-resistant PVC
- cable colour: black
- heating element thickness: 6.2 mm
- max. operating temperature: up to 60°C
- Warranty period: 10 years

Area (m)	Power (W)	Catalogue number
SHTV 10		
5,5	55	5 904 302 015 678
10,00	100	5 904 302 015 661
15,00	150	5 904 302 015 685
20,00	200	5 904 302 015 692
25,00	250	5 904 302 015 708
30,00	300	5 904 302 015 715
40,00	400	5 904 302 015 722
50,00	500	5 904 302 015 739
60,00	600	5 904 302 015 746
70,00	700	5 904 302 015 753
80,00	800	5 904 302 015 760
90,00	900	5 904 302 015 777
100,00	1 000	5 904 302 015 784
110,00	1 100	5 904 302 015 791
120,00	1 200	5 904 302 015 807
140,00	1 400	5 904 302 015 821
150,00	1 500	5 904 302 015 838
200,00	2 000	5 904 302 015 845



type of appliance:
manual

intended use:
underfloor heating of rooms

application:
electric heating

installation:
surface

installation location:
inside buildings

Dimensions (mm) Height x width x depth	Load capacity max. (W)	Catalogue number
	FRE-E 525 31	
75 x 75 x 27,5	16 A (3600 W)	5 901 812 591 081

Regulator in surface mounting electronic version. The regulator works together with an underfloor temperature sensor. The temperature is adjusted with the use of a knob.

- **power supply:** ~230 V / 50 Hz
- **sensor:** underfloor
- **range of temp. regulation:** from +10 to +60°C
- **relay type:** voltage ~230 V
- **mains switch:** mechanical
- **on signal diode:** YES
- **protection level:** IP30
- **casing colour:** white
- **warranty:** 24 months



type of appliance:
manual

intended use:
underfloor heating of rooms

application:
electric heating

installation:
concealed

installation location:
inside buildings

Dimensions (mm) Height x width x depth	Load capacity max. (W)	Catalogue number
	TVM 05	
80 x 80 x 16	16 A (3600 W)	6 938 888 501 118

Manual temperature regulators with underfloor temperature sensor, manual temperature adjustment and ON/OFF switch.

- **power supply:** ~230 V / 50 Hz
- **sensor:** underfloor
- **range of temp. regulation:** from +5 to +40°C
- **hysteresis:** 0.5°C
- **relay type:** voltage ~230 V
- **mains switch:** mechanical
- **on signal diode:** YES
- **protection level:** IP20
- **casing colour:** white
- **warranty:** 24 months



type of appliance:
programmable

intended use:
underfloor and air heating of rooms

application:
electric or water heating

installation:
concealed

installation location:
inside buildings

Dimensions (mm) Height x width x depth	Load capacity max. (W)	Catalogue number
	TVT 04 ED	
85 x 85 x 16	16 A (3600 W)	5 901 812 597 090

Programmable regulator with built-in air temperature sensor and underfloor sensor. It has a week-long programme and functions allowing electricity to be saved.

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012

- **power supply:** ~230 V / 50 Hz
- **power consumption:** 2 W
- **sensors:** air and floor
- **range of air temp. regulation:** from +5 to +35°C
- **range of floor temp. regulation:** from +5 to +50°C
- **hysteresis:** 0.5°C
- **relay type:** voltage ~230 V
- **mains switch:** mechanical
- **protection level:** IP21
- **programming:** week
- **screen:** LCD, illuminated
- **additional functions:**
 - open window
 - malfunction self-diagnosis
 - free choice of sensors
 - permanent manual mode
 - quick temperature change
- **casing colour:** white
- **warranty:** 24 months



type of appliance:
programmable

intended use:
underfloor and air heating of rooms

application:
electric or water heating

installation:
concealed

installation location:
inside buildings

Dimensions (mm) Height x width x depth	Load capacity max. (W)	Catalogue number
TT 16		
90 x 85 x 14	16 A (3600 W)	5 904 302 010 185

Programmable regulator with LCD touchscreen. Works together with built-in air and floor sensor. It has a week-long programme and functions allowing electricity to be saved.

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012

- **power supply:** ~230 V / 50 Hz
- **power consumption:** 2 W
- **sensors:** air and floor
- **range of air temp. regulation:** from +5 to +35°C
- **range of floor temp. regulation:** from +5 to +45°C
- **hysteresis:** adjustable 0.5 - 10°C
- **relay type:** voltage ~230 V
- **mains switch:** touch
- **protection level:** IP20
- **programming:** week
- **screen:** illuminated TouchScreen
- **additional functions:**
 - adaptive INTELLIGENT
 - open window
 - malfunction self-diagnosis
 - anti-freeze
 - free choice of sensors
 - permanent manual mode
 - quick temperature change
 - screen block
 - casing colour: white
 - warranty: 24 months



type of appliance:
programmable

intended use:
underfloor and air heating of rooms

application:
electric or water heating

installation:
concealed

installation location:
inside buildings

Dimensions (mm) Height x width x depth	Load capacity max. (W)	Catalogue number
TVT30 BB (white casing and white screen frame)		
85 x 85 x 14	16 A (3600 W)	5 901 812 590 619
TVT30 CS (black casing and silver screen frame)		
85 x 85 x 14	16 A (3600 W)	5 901 812 590 992

Regulator with LCD touchscreen. The versatile structure has a full week programming. The main intended use of the device is to work together with electric underfloor heating. The device can additionally collaborate with electrical air heating, and floor and air water heating.

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012

- **power supply:** ~230 V / 50 Hz
- **power consumption:** 2 W
- **sensors:** air and floor
- **range of air temp. regulation:** from +5 to +60°C
- **range of floor temp. regulation:** from +5 to +50°C
- **hysteresis:** adjustable 1 - 10°C
- **relay type:** voltage ~230 V
- **mains switch:** touch
- **protection level:** IP20
- **programming:** week
- **screen:** illuminated TouchScreen
- **additional functions:**
 - open window
 - adaptive INTELLIGENT
 - holiday break
 - malfunction self-diagnosis
 - anti-freeze
 - free choice of sensors
 - permanent manual mode
 - quick temperature change
 - screen block
 - casing colour:
 - BB – white
 - BS – white + silver frame
 - CS – black+ silver frame
 - CM – black+ copper frame
 - warranty: 24 months

Wi-Fi temperature regulation



type of appliance:
programmable

intended use:
underfloor and air heating of rooms

application:
electric or water heating

installation:
concealed

installation location:
inside buildings

Dimensions (mm) Height x width x depth	Load capacity max. (W)	Catalogue number
TVT 31 Wi-Fi		
86 x 86 x 13	16 A (3600 W)	5 901 812 597 052

A modern regulator fitted with an LCD touchscreen and Wi-Fi wireless control module. The versatile structure has a full week programming. The main intended use of the device is to work together with electric underfloor heating. The device can additionally collaborate with electrical air heating, and floor and air water heating.

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012

- **power supply:** ~230 V / 50 Hz
- **power consumption:** 3 W
- **sensors:** air and floor
- **range of air temp. regulation:** from +5 to +99°C
- **range of floor temp. regulation:** from +5 to +99°C
- **additional control:** Wi-Fi band 2.4GHz, 802.11 a/b/g
- **relay type:** voltage ~230 V
- **mains switch:** touch
- **sensor hysteresis:** adjustable, air 1-9°C, floor 0.5-3°C
- **protection level:** IP20
- **programming:** week
- **screen:** illuminated TouchScreen
- **additional functions:**
 - emergency memory
 - malfunction self-diagnosis
 - anti-freeze
 - free choice of sensors
 - permanent manual mode
 - quick temperature change
 - screen block
 - casing colour: white
 - warranty: 24 months
 - mobile app: Thermoval Wi-Fi (Android / ISO)



type of appliance:
programmable

intended use:
underfloor and air heating of rooms

application:
electric or water heating

installation:
concealed

installation location:
inside buildings

Dimensions (mm) Height x width x depth	Load capacity max. (W)	Catalogue number
TVT 33 - white screen frame		
84 x 84 x 20	16 A (3600 W)	5 904 302 016 118
TVT 33 - black screen frame		
84 x 84 x 20	16 A (3600 W)	5 904 302 016 125

Thermoval TTV 33 Wi-Fi, is a modern regulator equipped with an LCD touchscreen and a 2.4G Wi-Fi wireless control module via the TUYA Smart app.

The controller can operate in manual mode with a fixed temperature setting as well as according to a weekly program. Full weekly software (only available via the TUYA Smart app).

The main purpose of the device is to work with electric underfloor heating. The unit can additionally be used with electric underfloor heating, underfloor heating, or air-conditioning systems.

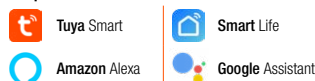
It has software with an automatic timer for the operating system.

The controller is equipped with many useful functions, which classify it among the modern designs, compliant with the EU Ecodesign / Ecodesign directive.

The controller is available in two colors: white and black.

- **power supply:** ~230 V / 50 Hz
- **power consumption:** 2 W
- **sensors:** air and floor
- **range of air temp. regulation:** from +0.5 to +40°C
- **range of floor temp. regulation:** from +0.5 to +40°C
- **additional control:** Wi-Fi band 2.4GHz, 802.11 a/b/g
- **relay type:** voltage ~230 V
- **mains switch:** touch
- **hysteresis:** 0.5°C
- **protection level:** IP20
- **programming:** week
- **screen:** illuminated TouchScreen
- **additional functions:**
 - open window
 - malfunction self-diagnosis
 - anti-freeze
 - monitoring of energy statistics
 - free choice of sensors
 - permanent manual mode
 - quick temperature change
 - screen block
 - eco mode
 - casing colour: white or black
 - warranty: 24 months
 - mobile app: TUYA Smart (Android / ISO)

Compatible with:



Wi-Fi temperature regulation



type of appliance:

programmable

intended use:

underfloor and air heating of rooms

application:

electric or water heating

installation:

concealed

installation location:

inside buildings

Compatible with:



Dimensions (mm) Height x width x depth	Load capacity max. (W)	Catalogue number
TVT 45 Wi-Fi		
86 x 86 x 15	16 A (3600 W)	5 901 812 591 982

Regulator with LCD touchscreen and Wi-Fi wireless control module. The versatile structure has a full week programming. The main intended use of the device is to work together with electric underfloor heating. The device can additionally collaborate with electrical air heating, and floor and air water heating.

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012

- **power supply:** ~230 V / 50 Hz
- **power consumption:** 2 W
- **sensors:** air and floor
- **range of air temp. regulation:** from +5 to +60°C
- **range of floor temp. regulation:** from +5 to +50°C
- **additional control:** Wi-Fi band 2.4GHz, 802.11 a/b/g
- **relay type:** voltage ~230 V
- **mains switch:** touch
- **hysteresis:** 0.5°C
- **protection level:** IP20
- **programming:** week
- **screen:** illuminated TouchScreen
- **additional functions:**
 - open window
 - malfunction self-diagnosis
 - anti-freeze
 - holiday break
 - free choice of sensors
 - permanent manual mode
 - quick temperature change
 - screen block
 - casing colour: white
 - warranty: 24 months
 - mobile app: TUYA Smart (Android / ISO)



Dimensions (mm) Height x width x depth	Load capacity max. (W)	Catalogue number
TVT 40 CB Wi-Fi - white casing		
86 x 86 x 13	16 A (3600 W)	5 901 812 597 540
TVT 40 CC Wi-Fi - black casing		
86 x 86 x 13	16 A (3600 W)	5 901 812 597 557

fully universal, intuitive modern device equipped with a convenient touchscreen and Wi-Fi wireless control module. The versatile structure has a full week programming. The device is to work together with electric underfloor heating, but it is also suitable to work along with electric air heating, and with air or floor water heating. The device is also compatible with air conditioning systems.

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012



- **power supply:** ~230 V / 50 Hz
- **power consumption:** 2 W
- **sensors:** air and floor
- **range of air temp. regulation:** from +5 to +60°C
- **range of floor temp. regulation:** from +5 to +50°C
- **additional control:** Wi-Fi band 2.4GHz, 802.11 a/b/g
- **relay type:** voltage ~230 V
- **mains switch:** mechanical
- **hysteresis:** 0.5°C
- **protection level:** IP21
- **programming:** week
- **screen:** illuminated TouchScreen
- **additional functions:**
 - open window
 - adaptive INTELLIGENT
 - work time clock
 - malfunction self-diagnosis
 - anti-freeze
 - free choice of sensors
 - permanent manual mode
 - quick temperature change
 - screen block
 - heating / air conditioning setting
 - casing colour: white or black
 - warranty: 24 months
 - mobile app: TUYA Smart (Android / ISO)

type of appliance:

programmable

intended use:

underfloor and air heating of rooms, air conditioning systems

application:

electric or water heating, air conditioning

installation:

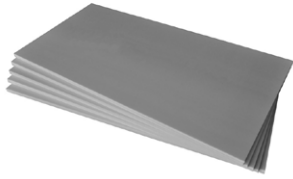
concealed

installation location:

inside buildings

Compatible with:





Dimensions (mm) Height x width x depth	Catalogue number
	Insulation plate
1200 x 600 x 6	5 904 302 012 714



Catalogue number
Pipe bend support 90° to protective tube of underfloor sensor
5 901 812 593 764



Catalogue number
Deep flush-mounted panel box 60 mm
5 907 813 211 836



Catalogue number
Protective tube for underfloor sensor
5 901 812 593 771



Catalogue number
Accessory
5 904 302 010 338



Catalogue number
Repair kit - for repairing damage to heating mats and heating cables
5 901 812 595 638

Underfloor heating set - regulator TT 16



Area (m ²)	TT 16 [EAN]
Set with mat TV TO 50 170 W/m² dual core	
0.50	5 904 302 014 008
1.00	5 901 812 593 511
1.50	5 901 812 593 528
2.00	5 901 812 593 535
2.50	5 901 812 593 542
3.00	5 901 812 593 559
3.50	5 901 812 593 566
4.00	5 901 812 593 573
5.00	5 901 812 593 580
6.00	5 901 812 593 597
7.00	5 901 812 593 603
8.00	5 901 812 590 213
9.00	5 901 812 590 251
10.00	5 901 812 590 268
15.00	5 901 812 590 275
Set with mat TV TO 50 170 W/m² dual core	
10.00	5 904 302 012 691
12.00	5 904 302 012 707
14.00	5 904 302 014 725
15.00	5 904 302 014 732
16.00	5 904 302 014 749
20.00	5 904 302 014 756

Area (m ²)	TT 16 [EAN]
Set with mat WT 2010 AL 150 W/m² dual core	
1.00	5 904 302 012 660
1.50	5 904 302 014 596
2.00	5 904 302 014 602
2.50	5 904 302 014 619
3.00	5 904 302 014 626
4.00	5 904 302 014 633
5.00	5 904 302 014 640
6.00	5 904 302 014 657
7.00	5 904 302 014 664
8.00	5 904 302 014 671
9.00	5 904 302 014 688
10.00	5 904 302 014 695
12.00	5 904 302 014 701
15.00	5 904 302 014 718

Underfloor heating set - regulator TVT 04 ED



Area (m ²)	TVT 04 ED [EAN]
Set with mat TV TO 50 170 W/m² dual core	
0.50	5 904 302 012 899
1.00	5 901 812 593 887
1.50	5 901 812 593 894
2.00	5 901 812 593 900
2.50	5 901 812 593 917
3.00	5 901 812 593 924
3,50	5 901 812 593 931
4.00	5 901 812 593 948
5.00	5 901 812 593 955
6.00	5 901 812 593 962
7.00	5 901 812 593 979
8.00	5 901 812 594 044
9.00	5 901 812 597 779
10.00	5 901 812 594 112
15.00	5 901 812 594 129
Set with mat TV TO 50 170 W/m² dual core	
10.00	5 904 302 013 483
12.00	5 904 302 013 490
14.00	5 904 302 013 506
15.00	5 904 302 013 513
16.00	5 904 302 013 520
20.00	5 904 302 013 537



Area (m ²)	TVT04ED [EAN]
Set with mat WT 2010 AL 150 W/m² dual core	
1.00	5 904 302 010 086
1.50	5 904 302 010 307
2.00	5 904 302 010 345
2.50	5 904 302 010 420
3.00	5 904 302 010 437
4.00	5 904 302 012 684
5.00	5 904 302 014 107
6.00	5 904 302 014 114
7.00	5 904 302 014 121
8.00	5 904 302 014 138
9.00	5 904 302 014 145
10.00	5 904 302 014 152
12.00	5 904 302 014 169
15.00	5 904 302 014 176

Underfloor heating set - regulator TVT 30

BB



CS



Area (m ²)	TVT 30 BB [EAN]	TVT 30 CS [EAN]
Set with mat TV TO 50 170 W/m² dual core		
0.50	5 904 302 013 544	5 904 302 013 414
1.00	5 901 812 596 512	5 901 812 594 181
1.50	5 901 812 596 529	5 904 302 013 407
2.00	5 901 812 596 536	5 904 302 013 582
2.50	5 901 812 596 543	5 904 302 013 599
3.00	5 901 812 596 550	5 901 812 594 587
3,50	5 901 812 596 567	5 901 812 595 355
4.00	5 901 812 596 574	5 901 812 595 416
5.00	5 901 812 596 581	5 901 812 595 423
6.00	5 901 812 596 598	5 901 812 595 430
7.00	5 901 812 596 604	5 901 812 595 447
8.00	5 901 812 596 611	5 901 812 595 454
9.00	5 901 812 596 628	5 901 812 595 775
10.00	5 901 812 596 635	5 901 812 595 782
15.00	5 901 812 596 642	5 901 812 595 799
Set with mat TV TO 50 150 W/m² dual core		
10.00	5 904 302 013 278	5 904 302 013 438
12.00	5 904 302 013 285	5 904 302 013 445
14.00	5 904 302 013 292	5 904 302 013 469
15.00	5 904 302 013 308	5 904 302 013 476
16.00	5 904 302 013 315	5 904 302 013 551
20.00	5 904 302 013 322	5 904 302 013 575

Area (m ²)	TVT 30 BB [EAN]	TVT 30 CS [EAN]
Set with mat WT 2010 AL 150 W/m² dual core		
1.00	5 904 302 014 312	5 901 812 598 417
1.50	5 904 302 014 329	5 901 812 598 424
2.00	5 904 302 014 336	5 901 812 598 431
2.50	5 904 302 014 343	5 901 812 598 448
3.00	5 904 302 014 350	5 901 812 598 455
4.00	5 904 302 014 367	5 901 812 598 462
5.00	5 904 302 014 374	5 901 812 598 479
6.00	5 904 302 014 381	5 901 812 598 486
7.00	5 904 302 014 398	5 901 812 598 493
8.00	5 904 302 014 404	5 901 812 598 509
9.00	5 904 302 014 411	5 901 812 598 516
10.00	5 904 302 014 428	5 901 812 598 523
12.00	5 904 302 014 435	5 901 812 598 530
15.00	5 904 302 014 442	5 901 812 598 547

Underfloor heating set - regulator TVT 31 Wi-Fi



Area (m ²)	TVT 31 Wi-Fi [EAN]
Set with mat TV TO 50 170 W/m² dual core	
0.50	5 904 302 010 796
1.00	5 904 302 013 865
1.50	5 904 302 013 872
2.00	5 904 302 013 889
2.50	5 904 302 013 896
3.00	5 904 302 013 902
3.50	5 904 302 013 919
4.00	5 904 302 013 926
5.00	5 904 302 013 933
6.00	5 901 812 597 397
7.00	5 901 812 597 403
8.00	5 901 812 597 410
9.00	5 901 812 597 427
10.00	5 901 812 597 434
15.00	5 901 812 597 441
Set with mat TV TO 50 150 W/m² dual core	
10.00	5 904 302 013 940
12.00	5 904 302 013 957
14.00	5 904 302 013 964
15.00	5 904 302 013 971
16.00	5 904 302 013 988
20.00	5 904 302 013 995



Area (m ²)	TVT 31 Wi-Fi [EAN]
Set with mat WT 2010 AL 150 W/m² dual core	
1.00	5 904 302 010 574
1.50	5 904 302 014 183
2.00	5 904 302 014 190
2.50	5 904 302 014 206
3.00	5 904 302 014 213
4.00	5 904 302 014 220
5.00	5 904 302 014 237
6.00	5 904 302 014 244
7.00	5 904 302 014 251
8.00	5 904 302 014 268
9.00	5 904 302 014 275
10.00	5 904 302 014 282
12.00	5 904 302 014 299
15.00	5 904 302 014 305

Underfloor heating set - regulator TVT 45 Wi-Fi



Area (m ²)	TVT 45 Wi-Fi white [EAN]
Set with mat TV TO 50 170 W/m² dual core	
0.50	5 904 302 013 261
1.00	5 901 812 598 165
1.50	5 901 812 598 172
2.00	5 901 812 598 189
2.50	5 901 812 598 196
3.00	5 901 812 598 066
3.50	5 901 812 598 073
4.00	5 901 812 598 745
5.00	5 901 812 598 752
6.00	5 901 812 598 769
7.00	5 901 812 598 776
8.00	5 901 812 598 783
9.00	5 901 812 598 790
10.00	5 901 812 598 813
15.00	5 901 812 597 724
Set with mat TV TO 50 150 W/m² dual core	
10.00	5 904 302 013 421
12.00	5 901 812 597 700
14.00	5 901 812 597 717
15.00	5 904 302 013 452
16.00	5 901 812 597 731
20.00	5 901 812 597 748



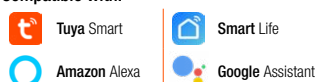
Area (m ²)	TVT 45 Wi-Fi white [EAN]
Set with mat WT 2010 AL 150 W/m² dual core	
1.00	5 904 302 012 752
1.50	5 904 302 012 769
2.00	5 904 302 012 776
2.50	5 904 302 012 783
3.00	5 904 302 012 790
4.00	5 904 302 012 806
5.00	5 904 302 012 813
6.00	5 904 302 012 820
7.00	5 904 302 012 837
8.00	5 904 302 012 844
9.00	5 904 302 012 851
10.00	5 904 302 012 868
12.00	5 904 302 012 875
15.00	5 904 302 012 882

Underfloor heating set - regulator TVT 40 Wi-Fi



Area (m ²)	TVT 40 CB [EAN]	TVT 40 CC [EAN]
Set with mat TV TO 50 170 W/m² dual core		
0.50	5 904 302 014 015	5 904 302 014 060
1.00	5 901 812 599 032	5 901 812 598 820
1.50	5 901 812 599 049	5 901 812 598 837
2.00	5 901 812 599 056	5 901 812 598 844
2.50	5 901 812 599 063	5 901 812 598 851
3.00	5 901 812 599 070	5 901 812 598 868
3.50	5 901 812 599 087	5 901 812 598 875
4.00	5 901 812 599 094	5 901 812 598 882
5.00	5 901 812 599 100	5 901 812 598 899
6.00	5 901 812 599 117	5 901 812 598 905
7.00	5 901 812 599 124	5 901 812 598 912
8.00	5 901 812 599 131	5 901 812 598 929
9.00	5 901 812 599 148	5 901 812 598 936
10.00	5 901 812 599 155	5 901 812 598 943
15.00	5 901 812 599 186	5 901 812 598 974
Set with mat TV TO 50 150 W/m² dual core		
10.00	5 904 302 014 022	5 904 302 014 046
12.00	5 901 812 599 162	5 901 812 598 950
14.00	5 901 812 599 179	5 901 812 598 967
15.00	5 904 302 014 039	5 904 302 014 053
16.00	5 901 812 599 193	5 901 812 598 981
20.00	5 901 812 599 230	5 901 812 598 998

Compatible with:



Area (m ²)	TVT 40 CB [EAN]	TVT 40 CC [EAN]
Set with mat WT 2010 AL 150 W/m² dual core		
1.00	5 901 812 599 568	5 901 812 598 219
1.50	5 901 812 599 575	5 901 812 598 226
2.00	5 901 812 599 582	5 901 812 598 233
2.50	5 901 812 599 599	5 901 812 598 240
3.00	5 901 812 599 605	5 901 812 598 257
4.00	5 901 812 599 612	5 901 812 598 325
5.00	5 901 812 599 629	5 901 812 598 332
6.00	5 901 812 599 636	5 901 812 598 349
7.00	5 901 812 599 643	5 901 812 598 356
8.00	5 901 812 599 650	5 901 812 598 363
9.00	5 901 812 599 667	5 901 812 598 370
10.00	5 901 812 599 674	5 901 812 598 387
12.00	5 901 812 599 681	5 901 812 598 394
15.00	5 901 812 598 202	5 901 812 598 400

Underfloor heating set - regulator TVT 33 Wi-Fi



Area (m ²)	TVT 33 White	TVT 33 Black
Set with mat TV TT 170 W/m² dual core		
1,00	5 904 302 016 163	5 904 302 016 170
1,50	5 904 302 016 187	5 904 302 016 194
2,00	5 904 302 016 200	5 904 302 016 217
2,50	5 904 302 016 224	5 904 302 016 231
3,00	5 904 302 016 248	5 904 302 016 255
4,00	5 904 302 016 262	5 904 302 016 279
5,00	5 904 302 016 286	5 904 302 016 309
6,00	5 904 302 016 293	5 904 302 016 316
8,00	5 904 302 016 323	5 904 302 016 347
10,00	5 904 302 016 330	5 904 302 016 354



Underfloor heating set - regulator TVT 31 Wi-Fi



Area (m ²)	TVT 31
Set with mat PTC 120 W/m² and accessories	
1,00	5 904 302 015 869
2,00	5 904 302 015 876
3,00	5 904 302 015 883
4,00	5 904 302 015 890
5,00	5 904 302 015 906
10,00	5 904 302 015 944
14,00	5 904 302 015 951
16,00	5 904 302 015 968
18,00	5 904 302 015 975
20,00	5 904 302 015 982
22,00	5 904 302 015 999
24,00	5 904 302 016 002
26,00	5 904 302 016 019



Heating mats TV HMO



intended use:
anti-icing protection

application:
outdoors

surface type:
ceramic, stone, concrete, etc.

installation location:
roofs, driveways, pavements, stairs

installation technique:
in glue, concrete, ballast, specially designed mounting

- **heating power:** 300 W/m²
- **power supply:** ~230 V / 50 Hz
- **power supply type:** single-source
- **power lead:** 4 m
- **protection level:** IPX7
- **structure:** stable resistance, dual core, screen
- **heating element:** multi-strand core
- **internal insulation:** XLPE
- **external insulation:** UV-resistant PVC
- **cable colour:** black
- **heating element thickness:** 6.2 mm
- **max. operating temperature:** up to 60°C
- **Warranty period:** 10 years

Area (m ²)	Dimensions (m)	Power (W)	Catalogue number
TV HMO - 300 W/m²			
1.00	0.5 x 2	300	5 901 812 593 108
1.50	0.5-3	450	5 901 812 593 115
2.00	0.5-3	600	5 901 812 593 122
3.00	0.5 x 6	900	5 901 812 594 068
4.00	0,5 x 8	1200	5 901 812 593 139
5.00	0.5 x 10	1500	5 901 812 593 146
6.00	0.5 x 12	1800	5 901 812 593 153
7.00	0.5 x 14	2100	5 901 812 594 075
8.00	0.5 x 16	2400	5 901 812 593 160
10.00	0.5 x 20	3000	5 901 812 593 177
12.00	0.5 x 24	3600	5 901 812 593 184
14.00	0.5 x 28	4200	5 901 812 593 191
16.00	0.5 x 32	4800	5 901 812 593 207

Heating cables TV ThermoSwitch



intended use:
anti-freezing protection

application:
indoors and outdoors

installation location:
water pipes

installation technique:
under thermal insulation

- **control:** bimetallic Thermo Switch controller
- **working range:** between +3 and +15°C
- **heating power:** 15 W/m
- **power supply:** ~230 V / 50 Hz
- **power supply type:** dual core
- **power lead:** 3.5 m
- **protection level:** IPX7
- **structure:** stable resistance, dual core, screen
- **heating element:** multi-strand core
- **internal insulation:** XLPE
- **external insulation:** PVC
- **cable colour:** black
- **heating element thickness:** 6.2 mm
- **max. operating temperature:** up to 60°C
- **Warranty period:** 24 months

Length (m)	Power (W)	Catalogue number
TV ThermoSwitch - 15 W/m		
2	30	5 901 812 594 754
4	60	5 901 812 594 761
5	75	5 901 812 594 778
6	90	5 901 812 594 785
8	120	5 901 812 594 792
10	150	5 901 812 594 808
12	180	5 901 812 594 815
14	210	5 901 812 595 393
15	225	5 901 812 594 822
18	270	5 901 812 594 839
20	300	5 901 812 594 846
24	360	5 901 812 595 409
25	375	5 901 812 594 853

Self-regulating heating cables TV ELSR BO UV



intended use:

anti-icing and anti-freezing protection

application:

protecting the infrastructure of buildings, special structures and equipment

installation location:

roofs, gutters, outlet pipes, drainage channels, pipelines, infrastructure of buildings, parts of machines and equipment

installation technique:

with the aid of specially designed mounting and installation techniques

- **heating power:** 10, 16, 20, 24, 25, 30 W/m
- **power supply:** ~230 V / 50 Hz
- **power supply type:** dual core
- **structure:** self-regulating (variable resistance), screened
- **heating element:** resistive polymer
- **external coating:** TPE
- **max. operating temperature:** up to 65°C
- **max. ambient temperature:** up to 85°C
- **external insulation:** resistant to mechanical damage and UV radiation

heating power: 10, 20, 25, 30, 40 W/m (Ex)- cables intended to work in areas where there is a risk of explosions, available on order

Power (W)	Catalogue number
TV ELSR BO UV 10	
10 W/m	5 901 812 595 461
TV ELSR BO UV 16	
16 W/m	5 901 812 595 362
TV ELSR BO UV 20	
20 W/m	5 901 812 595 379
TV ELSR BO UV 24	
24 W/m	5 901 812 595 478
TV ELSR BO 25 - not resistant to UV / red	
25 W/m	5 901 812 598 110
TV ELSR BO UV 30	
30 W/m	5 901 812 595 386

Self-regulating (variable resistance) cables from the TV ELSR series are designed for various types of applications aimed at protecting structural elements of buildings or industrial infrastructure against the unwanted effects of frost and snow.

The heating element in the structure of self-regulating cables is a cross-linked polymer which can adapt its heating power depending on changes in the temperature of its surroundings. The changing heating power also prevents the leads from overheating.

Self-regulating cables can be trimmed to any length, crossed together and one section installed in various different working conditions.

TV ELSR cables can be used to keep liquids at a positive temperature in industrial tanks, pipeline installations, heating and ventilation installations and various different parts of machines and equipment.

The cables have a coating which is resistant to sunlight and can also be used to protect outdoor structural elements of buildings exposed to ice, freezing or excessive snow, such as roof planes, gutter systems, drainage channels and open structural elements.

Heating cables TV SHTV 20



intended use:

universal

application:

indoors and outdoors

installation location:

electrical underfloor heating, anti-icing protection: roofs, gutters, drain pipes, pavements, driveways, pipelines, etc.

installation technique:

in glue, concrete, ballast, specially designed mounting

- **heating power:** 20 W/m
- **power supply:** ~230 V / 50 Hz
- **power supply type:** single-source
- **power lead:** 3.5 m
- **protection level:** IPX7
- **structure:** stable resistance, dual core, screen
- **heating element:** multi-strand core
- **internal insulation:** XLPE
- **external insulation:** UV-resistant PVC
- **cable colour:** black
- **heating element thickness:** 6.2 mm
- **max. operating temperature:** up to 60°C
- **Warranty period:** 10 years

Length (m)	Power (W)	Catalogue number
TV SHTV 20 - 20 W/m		
4.00	80	5 901 812 594 860
7.50	150	5 901 812 594 877
12.50	250	5 901 812 594 884
18.50	370	5 901 812 594 891
25.00	500	5 901 812 594 907
31.00	670	5 901 812 594 914
40.00	790	5 901 812 594 921
50.00	1000	5 901 812 594 938
60.00	1180	5 901 812 594 945
70.00	1400	5 901 812 594 952
85.00	1740	5 901 812 594 969
100.00	2000	5 901 812 594 976
120.00	2420	5 901 812 594 983
135.00	2810	5 901 812 594 990
150.00	3140	5 901 812 595 003
170.00	3470	5 901 812 595 010
195.00	3960	5 901 812 595 027

Heating cables TV SHTV 30



intended use:

universal

application:

indoors and outdoors

installation location:

electrical underfloor heating, anti-icing protection: roofs, gutters, drain pipes, pavements, driveways, pipelines, etc.

installation technique:

in glue, concrete, ballast, specially designed mounting

- heating power: 30 W/m
- power supply: ~230 V / 50 Hz
- power supply type: single-source
- power lead: 3.5 m
- protection level: IPX7
- structure: stable resistance, dual core, screen
- heating element: multi-strand core
- internal insulation: XLPE
- external insulation: UV-resistant PVC
- cable colour: black
- heating element thickness: 6.2 mm
- max. operating temperature: up to 60°C
- Warranty period: 10 years

Length (m)	Power (W)	Catalogue number
TV SHTV 30 - 30 W/m		
6.00	180	5 901 812 595 034
10.00	300	5 901 812 595 041
16.00	480	5 901 812 595 058
21.00	630	5 901 812 595 065
25.00	750	5 901 812 595 072
32.00	960	5 901 812 595 089
41.00	1230	5 901 812 595 096
49.00	1470	5 901 812 595 102
57.00	1710	5 901 812 595 119
70.00	2100	5 901 812 595 126
82.00	2460	5 901 812 595 133
98.00	2940	5 901 812 595 140
112.00	3360	5 901 812 595 157
125.00	3750	5 901 812 595 164
140.00	4200	5 901 812 595 171
160.00	4800	5 901 812 595 188

Accessories - anti-icing



Catalogue number
Steel cord with grips for installing heating in drainage pipes - 5 m
5 901 812 593 726



Catalogue number
Crossbar for drainage outlets, curved profile, diameter 5 mm
5 901 812 590 978



Catalogue number
Cable box Thermoval 11 P/C
8 585 007 328 576



Catalogue number
Cable box Thermoval 27 P/C
8 585 007 331 712



Catalogue number
Cable box Thermoval 12 P/C
8 585 007 309 360



Catalogue number
Cable box Thermoval 22 P/C
8 585 007 324 882

Accessories - anti-icing



Catalogue number
Fabric-reinforced duct tape (with glue), designed for mounting heating cables on pipes (45 m roll) 5 901 812 591 869



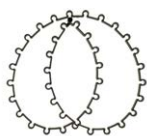
Catalogue number
Self-adhesive aluminium tape, designed for mounting heating cables on pipes (45 m roll) 5 901 812 593 788



Catalogue number
Gutter clamp (pack of 25) 5 901 812 594 532



Catalogue number
Aluminium mounting tape (25 m roll) 5 901 812 593 795



Catalogue number
Universal mounting tape - 1 m 5 901 812 592 378



Catalogue number
Connecting/finishing sets for ELSR self-regulating cables 5 901 812 592 958

Set of clamp connections and heat-shrink tubing used for connecting a self-regulating heating cable with power leads.

Temperature regulators - anti-icing systems



Casing width (mm)	Max. load capacity (W)	Catalogue number
107 (6 modules)	6 A (1300 W)	5 901 812 591 654

The regulator is intended to work along with electrical anti-icing systems protecting the surfaces of driveways, pavements, stairs, roofs, gutters, outlet pipes, drainage channels, etc. The device serves one heating zone and manages the system based on indications of two parameters - the temperature reading or the temperature and humidity level reading. It has extensive software enabling the correct setting of vital parameters such as humidity, upper and lower working temperature ranges, cyclical working time of the system, sensor calibration, work with one or two sensors, tests of the measuring system and heating system. The controller is equipped with an LCD screen and software in Polish.

type of appliance:

regulator with temperature and humidity readings

intended use:

anti-icing systems

application:

roofs, gutters, outlet pipes, stairs, pavements, driveways, etc.

installation:

in the electrical control box, DIN rail

- **software:** multifunctional control software
- **number of zones served:** 1 (single zone)
- **multilingual interface:** Polish, English, German
- **screen:** illuminated LCD
- **adjustment:** manual, control buttons
- **compatible with sensors of type:** TC 3354, TC 3356
- **range of air temp. regulation:** from -20 to +5°C
- **upper temperature range:** from 0 to +5°C
- **humidity regulation range:** from 5 to +50°C
- **working cycle regulation range:** from 30 to 240 minutes
- **temperature units:** °C / °F
- **power supply:** ~230 V / 50 Hz +/- 6%
- **power consumption:** 10 VA
- **hysteresis:** 0.5°C
- **mains switch:** electro-mechanical
- **relay type:** low voltage 230 V 6A
- **alarm switches:** 24 V +/- 20%, sensitivity 15 mA
- **ambient temp.:** from 0 to +50°C
- **protection level:** IP20
- **protection class:** II
- **casing width 6 modules (107 mm)**
- **warranty:** 24 months
- **possible working modes:**
 - temperature measurement only
 - humidity measurement only
 - simultaneous temperature and humidity measurement
- **additional functions:**
 - test of heating unit efficiency
 - test of sensor efficiency
 - malfunction self-diagnosis
- **any sensor connection:**
 - 1 x TC 3354, 2 x TC 3354
 - 1 x TC 3356, 2 x TC 3356
 - **mixed:** 1 x TC 3354 +1 x TC 3356



Catalogue number
TC 3354 - gutter humidity and temperature sensor 6 m 5 901 812 591 661
TC 3354 - gutter humidity and temperature sensor 20 m 5 901 812 591 678
TC 3356 - ground humidity and temperature sensor 6 m 5 901 812 591 685
TC 3356 - ground humidity and temperature sensor 20 m 5 901 812 591 692



Casing width (mm)	Max. load capacity (W)	Catalogue number
TVR 292		
52.5 (3 modules)	16 A (3600 W)	5 901 812 595 744

A regulator designed to control one anti-icing protection or heating zone. Works together with two types of sensor: air, surface or cable. The regulator is equipped with a digital function display with real-time temperature reading.

type of appliance:

regulator with temperature reading

intended use:

heating and anti-icing systems, air conditioning

application:

roofs, gutters, outlet pipes, pipelines, building infrastructure, machine parts, residential, office and warehouse rooms, etc.

installation:

in the electrical control box, DIN rail

installation location:

indoors or outdoors

- **software:** multifunctional control software
- **number of zones protected:** 1 (single zone)
- **screen:** LCD display
- **adjustment:** manual, control buttons
- **temperature reading:** electronic
- **sensor calibration range:** +10 / -10°C
- **range of air temp. regulation:** from -29 to +90°C
- **power supply:** ~230 V / 50 Hz
- **power consumption:** 2 W
- **relay type:** potential-free
- **permissible load:** 16 A
- **adjustable hysteresis:** from 1 to 20°C
- **casing, protection level:** IP20
- **casing width 3 modules**
- **permissible ambient temperature:** from -10 to +40°C
- **warranty:** 24 months
- **compatible with sensors:**
 - **CZN 200:** cable sensor
 - **CZP 200:** air sensor



Casing width (mm)	Max. load capacity (W)	Catalogue number
TVR 295		
52.5 (3 modules)	16 A (3600 W)	5 901 812 595 751

A regulator designed to control two independent anti-icing systems. Works together with two temperature sensors. It has two relays. It has an inbuilt real-time clock and time programmer enabling automatic temperature changes. Has a digital display.

type of appliance:

regulator with temperature reading

intended use:

heating and anti-icing systems, air conditioning

application:

roofs, gutters, outlet pipes, pipelines, building infrastructure, machine parts, residential, office and warehouse rooms, etc.

installation:

in the electrical control box, DIN rail

installation location:

indoors or outdoors

- **programming:** simplified weekly software
- **number of zones protected:** 2 (double zone)
- **screen:** illuminated LCD display
- **adjustment:** manual, control buttons
- **temperature reading:** electronic
- **sensor calibration range:** +10 / -10°C
- **range of air temp. regulation:** from -30 to +80°C
- **power supply:** ~230 V / 50 Hz
- **power consumption:** 2 W
- **relay type:** potential-free
- **permissible load:** 16 A
- **hysteresis:** from 0.5 to 10°C
- **casing, protection level:** IP20
- **casing width 3 modules**
- **permissible ambient temperature:** from -10 to +40°C
- **warranty:** 24 months
- **compatible with sensors:**
 - **CZN 200:** cable sensor
 - **CZP 200:** air sensor



Catalogue number
CZN 200 - cable temperature sensor for reg. TVR 292, 295 5 901 812 595 935
CZP 200 - air temperature sensor for reg. TVR 292, 295 5 901 812 595 928

Temperature regulators - anti-icing systems



type of appliance:
regulator with temperature and humidity readings

intended use:
anti-icing systems

application:
roofs, gutters, outlet pipes, stairs, pavements, driveways, etc.

installation:
in the electrical control box, DIN rail

Set	Max. load capacity (W)	Catalogue number
ETO 2		
ET02 + ETOG 55	16 A (3600 W)	5 904 302 013 193
ET02 + ETOR 55 + ETF 744/99	16 A (3600 W)	5 904 302 014 077

A two-zone regulator designed to work along with electrical anti-icing protection systems for roofs, gutters, outlet pipes, drainage channels, driveways, stairs, pavements and building infrastructure. All working parameters are enterable. When the programme is running, the device may make use of temperature measurement and humidity measurement, or temperature measurement only. The values of the current ambient temperature, humidity level and working time of the heating system are shown on the screen. The controller is equipped with an LCD screen and multilingual software, including in Polish.

- **software:** multifunctional control software
- **number of zones served:** 2 (double zone)
- **multilingual interface:** Polish, English, German
- **screen:** illuminated LCD
- **adjustment:** manual, control knob
- **compatible with sensors:** ETF-744/99, ETOR 55, ETOG 55
- **any sensor connection:**
 - 1 x ETOG 55, 2 x ETOG 55
 - 1 x ETOR 55 + 1 x ETF 744/99
 - 2 x ETOR 55 + 1 x ETF 744/99
 - mixed 1 x ETOR 55 + 1 x ETOG 55 + 1 x ETF 744/99
- **range of air temp. regulation:** from -20 to +10°C
- **humidity measurement range:** from 10 to +95°C
- **working cycle regulation range:** from 0 to 18 hours
- **temperature units:** °C / °F
- **possible working modes:**
 - temperature measurement only
 - humidity measurement only
 - simultaneous temperature and humidity measurement
- **additional functions:**
 - test of heating unit efficiency
 - test of sensor efficiency
 - sensor calibration
 - malfunction self-diagnosis
- **power supply:** 230 V / 50 Hz +/- 10%
- **power consumption:** VA
- **mains switch:** electro-mechanical
- **relay type:** 3 x potential-free 16 A
- **alarm switches:** potential-free 5 A
- **ambient temp.:** from 0 to +50°C
- **protection level:** IP20
- **casing width 9 modules (156 mm)**
- **mounting:** DIN rail
- **protection class:** II
- **casing colour:** white / blue
- **warranty:** 24 months



type of appliance:
regulator with temperature and humidity readings

intended use:
anti-icing systems

application:
roofs, gutters, outlet pipes, stairs, pavements, driveways, etc.

installation:
in the electrical control box, DIN rail

Set	Max. load capacity (W)	Catalogue number
ETR 2		
ETR2 + ETOG 55	16 A (3600 W)	5 904 302 014 084
ETR2 + ETOR 55 + ETF	16 A (3600 W)	5 904 302 014 091

The regulator is intended to work along with electrical anti-icing systems protecting the surfaces of driveways, pavements, stairs, roofs, gutters, outlet pipes, drainage channels, etc. The device serves one heating zone and manages the system based on indications of the temperature and humidity level reading.

- **number of zones served:** 1 (single zone)
- **adjustment:** manual, control knobs
- **indicator lights:**
 - ON (green) diode: switched on
 - RELAY (red) diode: relay on
 - TEMP (red) diode: temperature lower than set value
 - MOIST (red) diode: moisture detected
- **compatible with sensors of type:** ETF-744/99, ETOR 55, ETOG 55
- **any sensor connection:**
 - 1 x ETOG 55
 - 1 x ETOR 55+ 1 x ETF744
- **range of air temp. regulation:** from 0 to +10°C
- **humidity measurement range:** permanent setting 50%
- **working cycle regulation range:** from 0 to 5 hours
- **temperature units:** °C
- **possible working modes:** simultaneous temperature and humidity measurement
- **additional functions:** malfunction self-diagnosis
- **power supply:** 230 V / 50 Hz +/- 10 %
- **power consumption:** 3 VA
- **mains switch:** electro-mechanical
- **relay type:** potential 16 A
- **ambient temp.:** from -10 to +50°C
- **protection level:** IP20
- **casing width 3 modules (52 mm)**
- **mounting:** DIN rail
- **protection class:** II
- **casing colour:** white / blue
- **warranty:** 24 months



Catalogue number
Humidity and temperature sensor ETOG 55 with 10 m cable
5 901 812 591 906

Sensor for mounting in the ground Protection level IP 68.

Catalogue number
humidity and temperature sensor ETOG 55 with 10 m cable
5 901 812 597 007

Sensor with protective sleeve for mounting in the ground Protection level IP 68.

Catalogue number
Humidity sensor ETOR 55 with 10 m cable
5 901 812 591 890

Sensor for mounting in the gutter. Protection level IP 68.

Catalogue number
Temperature sensor ETF 744/99 for gutter (air) systems
5 703 866 101 854

Sensor for mounting on the façade. Protection level IP 65.



Model	Dimensions (mm) height x width x depth	Heater power max. (kW)	Total weight (kg)	Catalogue number
TX				
TX 500	400 x 450 x 80	0.50	2.9	5 901 812 594 464
TX 1000	490 x 450 x 80	1.00	3.3	5 901 812 594 471
TX 1500	600 x 450 x 80	1.50	3.8	5 901 812 594 488
TX 2000	740 x 450 x 80	2.00	4.6	5 901 812 594 495
TX 2500	890 x 450 x 80	2.50	5.4	5 901 812 594 501

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012

type of appliance:

electric convection heater

intended use:

air heating of rooms

application:

dry residential and office rooms

installation:

wall or free-standing (wall mounting and legs included)

installation location:

inside buildings

- **control:** adjustable knob
- **control element:** bimetal thermostat
- **heating element:** comb element
- **sensors:** bimetal, air
- **power supply:** ~230 V / 50 Hz
- **range of air temp. regulation:** from +7 to +28°C
- **ambient temp. range:** from 0 to +35°C
- **hysteresis:** 1.5°C
- **relay type:** bimetal contactor
- **mains switch:** mechanical
- **protection level:** IP20
- **casing:** steel sheet
- **casing colour:** white
- **power lead:** 1.5 m
- **warranty:** 24 months
- **warranty on heater:** 5 years
- **additional functions:**
 - anti-freezing setting
 - thermal cutoff
 - heating power distribution 50-100% (models 1500, 2000, 2500 W)



Model	Dimensions (mm) height x width x depth	Heater power max. (kW)	Total weight (kg)	Catalogue number
TC				
TC 500	475 x 420 x 80	0,5	3,3	5 904 302 015 500
TC 1000	475 x 420 x 80	1,0	3,3	5 904 302 015 517
TC 1500	615 x 420 x 80	1,5	4,2	5 904 302 015 524
TC 2000	755 x 420 x 80	2,0	4,9	5 904 302 015 531
TC 2500	895 x 420 x 80	2,5	5,9	5 904 302 015 548

type of appliance:

electric convection heater

intended use:

air heating of rooms

application:

dry residential and office rooms

installation:

wall or free-standing (wall mounting and legs included)

installation location:

inside buildings

- **control:** adjustable knob
- **control element:** bimetal thermostat
- **heating element:** comb element
- **sensors:** bimetal, air
- **power supply:** ~230 V / 50 Hz
- **range of air temp. regulation:** from +7 to +28°C
- **ambient temp. range:** from 0 to +35°C
- **hysteresis:** 1.5°C
- **relay type:** bimetal contactor
- **mains switch:** mechanical
- **protection level:** IP20
- **casing:** steel sheet
- **casing colour:** white
- **power lead:** 1.5 m
- **warranty:** 24 months
- **warranty on heater:** 5 years
- **additional functions:**
 - anti-freezing setting
 - thermal cutoff
 - heating power distribution 50-100% (models 1500, 2000, 2500 W)



Model	Dimensions (mm) height x width x depth	Heater power max. (kW)	Total weight (kg)	Catalogue number
T17				
T17 500	400 x 450 x 80	0.50	3.2	5 901 812 594 419
T17 1000	490 x 450 x 80	1.00	3.8	5 901 812 594 426
T17 1500	600 x 450 x 80	1.50	4.3	5 901 812 594 433
T17 2000	740 x 450 x 80	2.00	5.2	5 901 812 594 440
T17 2500	890 x 450 x 80	2.50	6.1	5 901 812 594 457

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012

type of appliance:

electric convection heater

intended use:

air heating of rooms

application:

rooms in homes, offices, shops, standard and damp rooms

installation:

wall or free-standing (wall mounting and legs included)

installation location:

inside buildings

- **control:** adjustable knob
- **control element:** bimetal thermostat
- **heating element:** bayonet heater with radiator
- **sensors:** sensor, capillary
- **power supply:** ~230 V / 50 Hz
- **range of air temp. regulation:** from +7 to +28°C
- **ambient temp. range:** from 0 to +35°C
- **hysteresis:** 1.5°C
- **relay type:** bimetal contactor
- **mains switch:** mechanical
- **protection level:** IP24
- **casing:** steel sheet
- **casing colour:** white
- **power lead:** 1.5 m
- **warranty:** 24 months
- **warranty on heater:** 5 years
- **additional functions:**
 - anti-freezing setting
 - thermal cutoff



type of appliance:
electric convection heater

intended use:
air heating of rooms

application:
rooms in homes, offices, shops, standard and damp rooms

installation:
wall or free-standing (wall mounting and legs included)

installation location:
inside buildings

Model	Dimensions (mm) height x width x depth	Heater power max. (kW)	Total weight (kg)	Catalogue number
T17 PRO				
T17 PRO 1000	750x400x60 mm	1,00	7,2	5 904 302 015 289
T17 PRO 1500	750x400x60 mm	1,50	7,4	5 904 302 015 463
T17 PRO 2000	750x400x60 mm	2,00	7,6	5 904 302 015 296

- **control element:** bimetal thermostat
- **heating element:** bayonet heater with radiator
- **sensors:** sensor, capillary
- **power supply:** ~230 V / 50 Hz
- **range of air temp. regulation:** from +5 to +35°C
- **ambient temp. range:** from 0 to +35°C
- **hysteresis:** 1.0°C
- **relay type:** bimetal contactor
- **mains switch:** mechanical, control light
- **protection level:** IP24
- **casing:** steel sheet 0,8 mm
- **casing colour:** white
- **power lead:** 1.8 m
- **warranty:** 24 months
- **warranty on heater:** 5 years
- **additional functions:**
 - thermal cutoff



type of appliance:
electric convection heater

intended use:
air heating of rooms

application:
dry residential and office rooms

installation:
wall (wall mounting included)

installation location:
inside buildings

Model	Dimensions (mm) height x width x depth	Heater power max. (kW)	Total weight (kg)	Catalogue number
T18 ED				
T18 ED 500	460 x 450 x 90	0.50	4.1	5 901 812 596 796
T18 ED 1000	530 x 450 x 90	1.00	4.7	5 901 812 596 161
T18 ED 1500	660 x 450 x 90	1.50	5.4	5 901 812 596 178
T18 ED 2000	785 x 450 x 90	2.00	6.1	5 901 812 596 185

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012

- **programming:**
 - 5 weekly factory programmes
 - 3 weekly individual programmes
- **screen:** illuminated LCD
- **control:** mechanical, sensor
- **heating element:** bayonet heater with radiator
- **sensors:** air
- **additional functions:**
 - open window
 - anti-freeze
 - manual mode
 - settings memory
 - thermal cutoff
- **power supply:** 230 V / 50 Hz
- **power lead:** 1.5 m
- **range of air temp. regulation:** from +8 to +28°C
- **ambient temp. range:** from 0 to +35°C
- **hysteresis:** 0.5°C
- **relay type:** electronic TRIAC
- **mains switch:** electronic sensor
- **protection level:** IP24
- **casing:** steel sheet
- **casing colour:** white
- **warranty:** 24 months
- **warranty on heater:** 5 years



type of appliance:
electric convection heater

intended use:
air heating of rooms

application:
rooms in homes, offices, shops, standard and damp rooms

installation:
wall or free-standing (wall mounting and legs included)

installation location:
inside buildings

Compatible with:



Model	Dimensions (mm) height x width x depth	Heater power max. (kW)	Total weight (kg)	Catalogue number
T19 Wi-Fi				
T19 1000 Wi-Fi	600 x 380 x 65	1.00	4.1	5 901 812 592 354
T19 1500 Wi-Fi	760 x 380 x 65	1.50	4.8	5 901 812 592 361
T19 2000 Wi-Fi	920 x 380 x 65	2.00	5.4	5 901 812 592 385

The product meets the requirements of the standard Ekoprojekt PN-EN 303-5:2012

- **screen:** colour LCD, illuminated
- **control:** mechanical, sensor
- **additional control:** Wi-Fi band 2,4G, 802.11 a/b/g
- **dedicated application:** TUYA Smart
- **heating element:** 2 x bayonet heaters with radiator
- **sensors:** air
- **additional functions:**
 - heating power distribution 50/100 %
 - timer 24 H
- **power supply:** 230 V / 50 Hz
- **power lead:** 1.5 m
- **range of air temp. regulation:** from +5 to +40°C
- **ambient temp. range:** from 0 to +40°C
- **hysteresis:** 2.5°C
- **relay type:** 2 x voltage 230 V
- **mains switch:** mechanical
- **safety:** thermal cutoff
- **protection level:** IP24
- **casing:** steel sheet
- **casing colour:** white
- **warranty:** 24 months
- **warranty on heater:** 5 years

Bathroom heaters INOX



type of appliance:

electrical dryer

intended use:

dryer for clothes and towels

application:

residential rooms, bathrooms

installation:

wall-mounted

Model	Dimensions (mm) Height x width x depth	Power (W)	Catalogue number
TVX TR CIRI			
TVX TR 60 CIRI	600 x 445 x 55	50	590 181 259 60 48
TVX TR 80 CIRI	800 x 445 x 55	80	590 181 259 60 55
TVX TR 100 CIRI	1000 x 455 x 55	105	590 181 259 60 62

- **control:** electronic programmer
- **regulation:** touch sensors
- **sensors:** internal, thermal
- **heating power:** 50 / 80 / 105 W
- **power supply:** ~230 V / 50 Hz
- **range of air temp. regulation:** from +40 to +50°C
- **mains switch:** electronic
- **relay type:** electronic TRIAC

- **power lead:** 1.5 m, rolled into a 60 cm coil
- **protection level:** IP44
- **structure:** divided 180° rotary arms
- **material:** stainless steel, polished INOX
- **warranty:** 24 months, 10 years for the coating
- **additional functions:**
 - 3 temperature levels 40°/45°/50°C
 - TIMER 3h / 6h
 - permanent manual mode

Bathroom heaters carbon steel



type of appliance:

electrical dryer

intended use:

dryer for clothes and towels

application:

residential rooms, bathrooms

installation:

wall-mounted

Model	Dimensions (mm) Height x width x depth	Power (W)	Catalogue number
TVB CL			
TVB CL 60	600 x 480 x 55	80	5 901 812 590 336
TVB CL 80	800 x 480 x 55	120	5 901 812 590 558

- **regulation:** internal thermal sensor
- **constant temperature:** +60°C
- **sensors:** internal, thermal
- **heating power:** 80 / 120 W
- **power supply:** ~230 V / 50 Hz
- **mains switch:** mechanical

- **power lead:** 1.5 m, rolled into a 60 cm coil
- **protection level:** IP44
- **structure:** fixed, rack
- **material:** powder-painted carbon steel
- **colour:** powder lacquer, white
- **warranty:** 4 years, 8 years for the coating



type of appliance:

electrical dryer

intended use:

dryer for clothes and towels

application:

residential rooms, bathrooms

installation:

wall-mounted

Model	Dimensions (mm) Height x width x depth	Power (W)	Catalogue number
TVB SD			
TVB SD 60	600 x 530 x 55	80	5 901 812 590 589
TVB SD 80	800 x 530 x 55	120	5 901 812 590 596

- **regulation:** internal thermal sensor
- **constant temperature:** +60°C
- **sensors:** internal, thermal
- **heating power:** 80 / 120 W
- **power supply:** ~230 V / 50 Hz
- **mains switch:** mechanical

- **protection level:** IP44
- **power lead:** 1.5 m, rolled into a 60 cm coil
- **structure:** fixed, rack
- **material:** powder-painted carbon steel
- **colour:** powder lacquer, white
- **warranty:** 4 years, 8 years for the coating



type of appliance:

electrical dryer

intended use:

dryer for clothes and towels

application:

residential rooms, bathrooms

installation:

wall-mounted

Model	Dimensions (mm) Height x width x depth	Power (W)	Catalogue number
TVB SI			
TVB SI 60	600 x 480 x 55	80	5 901 812 590 565
TVB SI 80	800 x 480 x 55	120	5 901 812 590 572

- **regulation:** internal thermal sensor
- **constant temperature:** +60°C
- **sensors:** internal, thermal
- **heating power:** 80 / 120 W
- **power supply:** ~230 V / 50 Hz
- **mains switch:** mechanical
- **power lead:** 1.5 m, rolled into a 60 cm coil
- **protection level:** IP44
- **structure:** fixed, rack
- **material:** powder-painted carbon steel
- **colour:** powder lacquer, white
- **warranty:** 4 years, 8 years for the coating



unit type:

electric heater, FIR infrared heater

intended use:

air space heating

area of application:

home, office, shop, standard and high-humidity rooms

installation:

wall-mounted or free-standing (wall fixings and feet included). Ceiling installation possible

installation location:

indoor

Model	Dimensions (mm) H x L x W	Power (W)	Catalogue number
CRYSTAL			
Crystal 350	600 x 600 x 50	350	5 904 302 016 910
Crystal 520	600 x 900 x 50	520	5 904 302 016 927
Crystal 700	600 x 1200 x 50	700	5 904 302 016 934

- **control:** programmer with LCD display with remote control
- **additional control:** WiFi 2.4G band, 802.11 a/b/g
- **dedicated app:** TUYA Smart
- **heating element:** carbon crystal
- **sensors:** air
- **additional features:**
 - weekly programmer
 - "Open window" function
- **power supply:** 230 V / 50 Hz
- **power cord:** 1.8 m
- **air temperature control range:** +5 to +50°C
- **type of relay:** electronic 230V
- **protection:** thermal fuse
- **degree of protection:** IP24
- **body:** powder-coated sheet steel
- **colour:** white, RAL 9016
- **guarantee:** 24 months

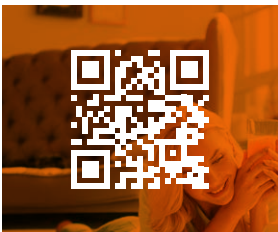
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