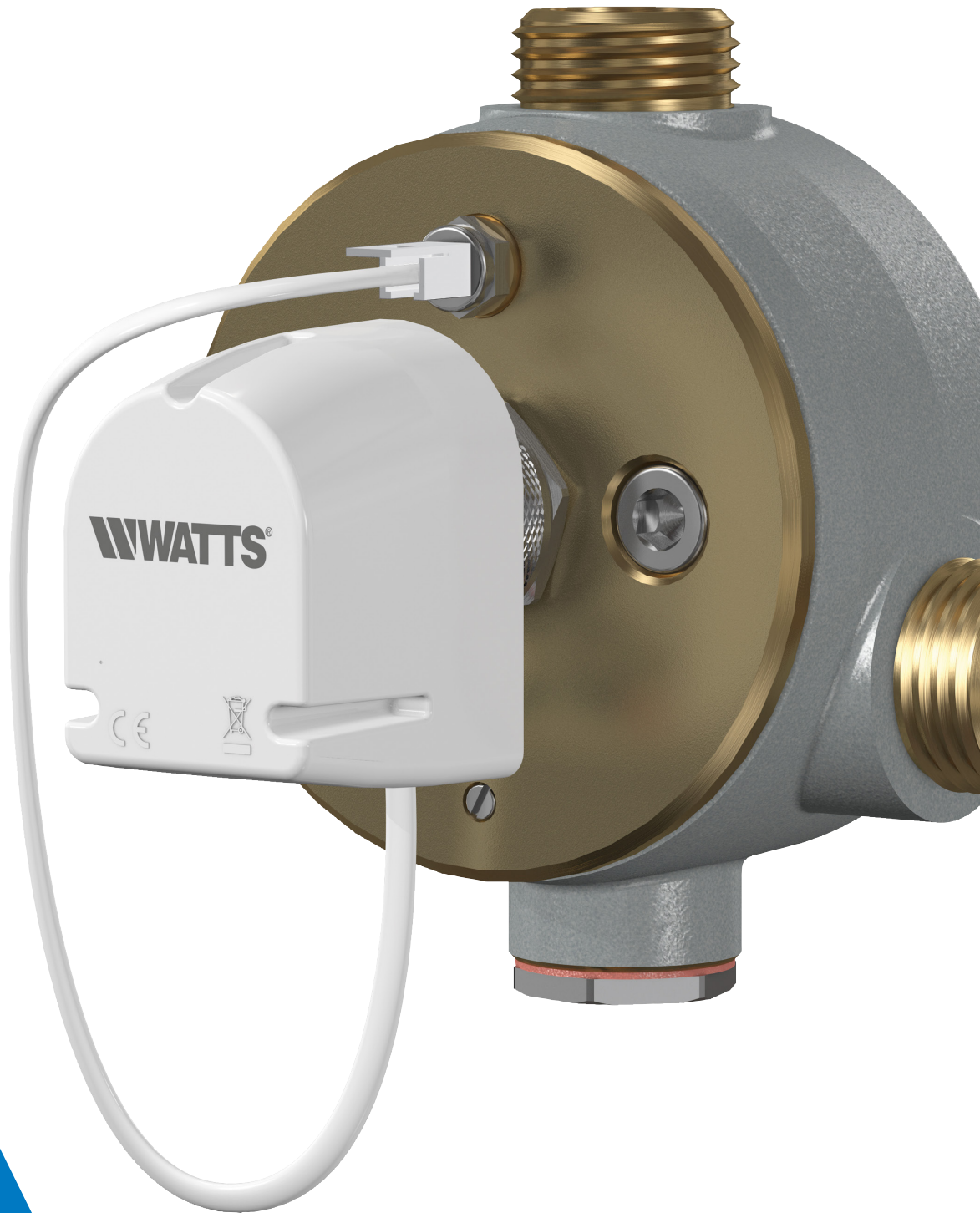


# Series e-ULTRAMIX®

Smart thermostatic mixing valve

## Technical Data Sheet



## Description

e-ULTRAMIX® is the system designed to locally or remotely electronically configure the temperature of the mixed water in a collective installation.

This electronic system is fitted with a smart controller used to program thermal disinfection cycles automatically, safely and securely, in order to prevent any risks of legionellosis within the domestic hot water installation. The system records all parameters concerning the disinfection process, as well as the various alerts and alarms, providing genuine health tracking of the installation. The history can be transferred to a micro SD on which all data will have been recorded, or remotely using a connection to a Building Management System (Modbus protocol) via the RS485 interface provided.

e-ULTRAMIX® can be used on a new installation or on an installation already fitted with an ULTRAMIX® mixing valve by simply adding an e-Kit.

**Complies with: LVD. 2014/35/EU, RoHS 2011/65/EU. Regulation Reach 1907/2006.**



### e-ULTRAMIX®

For new installations.

Thermostatic mixing valve with Rinsing kit, e-Cartridge, electric actuator, controller (with micro SD card included), cables and probes (mixing valve and return).

Part no.	Description	Flow rate	Points of use	Size
22TX91E37ELEC	e-ULTRAMIX 3/4"	3-56 l/min	1-7 pts	SIZE 1
22TX92E37ELEC	e-ULTRAMIX 3/4"	3-80 l/min	1-10 pts	SIZE 2
22TX93E37ELEC	e-ULTRAMIX 1"	3-120 l/min	1-15 pts	SIZE 3
22TX94E37ELEC	e-ULTRAMIX 1"1/4	5-175 l/min	1-21 pts	SIZE 4
22TX95E37ELEC	e-ULTRAMIX 1"1/2	5-260 l/min	1-32 pts	SIZE 5
22TX96E37ELEC	e-ULTRAMIX 2"	6-400 l/min	1-50 pts	SIZE 6

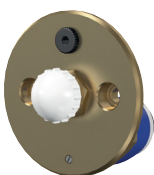


### e-Kit

For upgrading an installed e-ULTRAMIX®.

It consists in e-Cartridge, electric actuator, controller (with micro SD card included), cables and probes (mixing valve and return).

Part no.	Description	Flow rate	Points of use	Size
22TX1E37EKIT	e-Kit 3/4"	3-56 l/min	1-7 pts	SIZE 1
22TX2E37EKIT	e-Kit 3/4"	3-80 l/min	1-10 pts	SIZE 2
22TX3E37EKIT	e-Kit 1"	3-120 l/min	1-15 pts	SIZE 3
22TX4E37EKIT	e-Kit 1"1/4	5-175 l/min	1-21 pts	SIZE 4
22TX5E37EKIT	e-Kit 1"1/2	5-260 l/min	1-32 pts	SIZE 5
22TX6E37EKIT	e-Kit 2"	6-400 l/min	1-50 pts	SIZE 6



### e-Cartridge

Replacement cartridge for e-Kit and e-ULTRAMIX®.

Part no.	Description	Flow rate	Temperature	Size
22TX1E37ECART	e-Cartridge 3/4"	3-56 l/min	30÷70°C	SIZE 1
22TX2E37ECART	e-Cartridge 3/4"	3-80 l/min	30÷70°C	SIZE 2
22TX3E37ECART	e-Cartridge 1"	3-120 l/min	30÷70°C	SIZE 3
22TX4E37ECART	e-Cartridge 1"1/4	5-175 l/min	30÷70°C	SIZE 4
22TX5E37ECART	e-Cartridge 1"1/2	5-260 l/min	30÷70°C	SIZE 5
22TX6E37ECART	e-Cartridge 2"	6-400 l/min	30÷70°C	SIZE 6



### Accessories

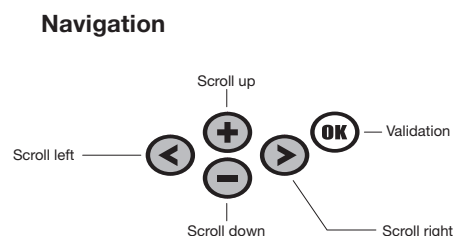
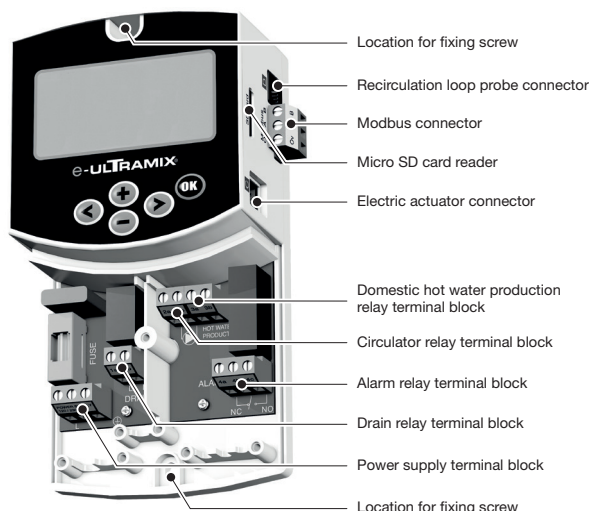
Anti-burn cartridge

Part no.	Description
2297155	Sealed cartridge MF 1/2" (shower)
2297156	Sealed cartridge M 24x1 with aerator

Electric actuator	
Power supply:	5VDC
Consumption	2.5 W (motor ON)
Protection index	IP 30
Ambient temperature range	0÷50°C
Length of the C system/actuator cable (red)	2m
Actuator/mixing valve probe E (green)	0.27m
Cable connectors	actuator/system RJ9/RJ9, actuator/mixing valve RJ9 NTC 10 KΩ screw tip

Smart controller	
Control box	ABS
Power supply	90 VAC to 260 VAC/50 or 60 Hz
Consumption	3W max (loads on non-connected relays)
T° regulation range	30÷70°C
T° disinfection range	50÷70°C
Operating temperature range	0÷50°C
Protection index	IP 30
Breaking capacity: - for the drain, circulator, hot water production relays: - for the alarm relay:	10A/250 VAC (NO). 8A/250 VAC (NO/NC).
CE conformity:	yes
The clock	available for 24 hours in the event of a power supply failure
The programs and user settings	backed up whatever the duration of the power failure
Connectors: return mixed water probe/controller D (blue)	3m

Thermostatic mixing valve	
Setting range:	30÷70°C
Maximum operating pressure:	10 bar
Minimum. operating pressure:	1 bar
Recommended operating pressure:	2÷4 bar
Maximum hot water temperature:	85°C
Minimum difference between inlet temperatures:	5°C
For recirculation loop and recycling system:	Minimum $\Delta t$ (HW-CF) must be 35°C (as per the EN1111 standard)
Maximum pressure difference:	1.5 bar
Performance anti-burn safety	If the cold water supply is cut, the mixed water is quickly shut off ( $\Delta$ Hot water/Mixed water >10°C)



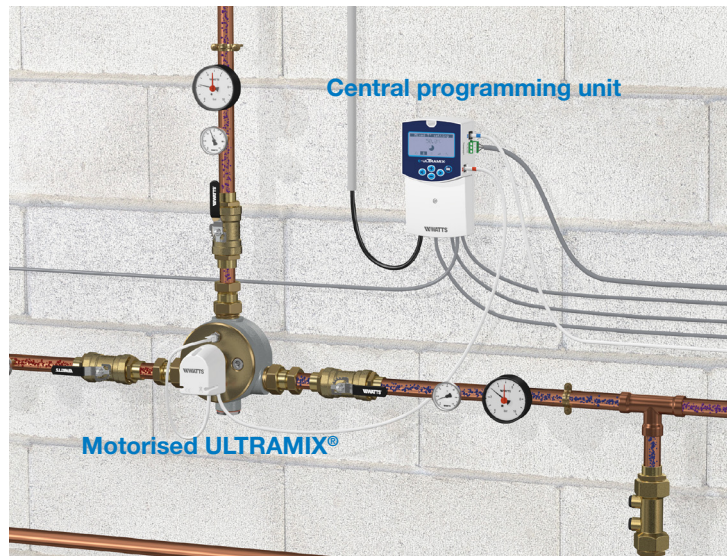
## Application

The e-ULTRAMIX® has different functions to provide effective domestic hot water installation management and maintenance.

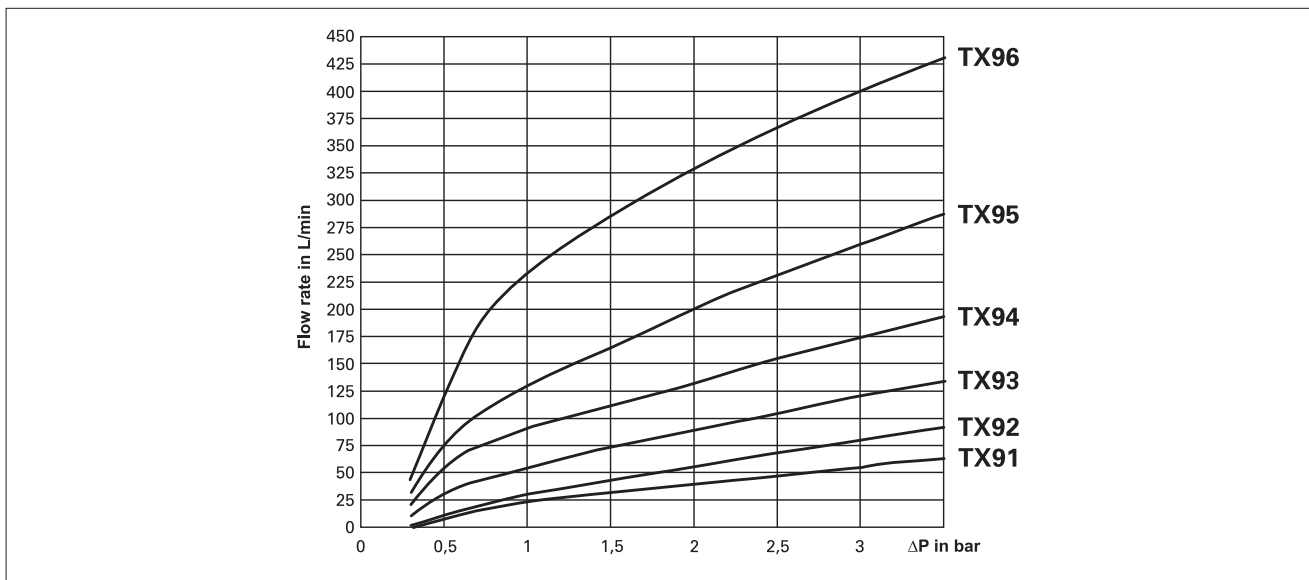
**Mixed water distribution:** the e-ULTRAMIX® supplies mixed water at a constant temperature, whatever the installation flow rate or pressure variations. Thereby it guarantees safety by providing a maintained safe and suitable temperature. Using the electric actuator, the controller sends the set point temperature that the mixing valve must provide using the probe placed on the mixed water outlet. The supplied mixed water T° is displayed on the system screen. The mixed water set point temperature can be configured (using the controller) in 1°C steps.

**Disinfection:** the e-ULTRAMIX®'s built-in timer is used to program thermal disinfection cycles. Disinfection is carried out by increasing the water temperature to a certain value for a predefined period of time. The return probe is used to measure the temperature reached in all or part of the network (it can be installed at a suitable location on the recirculation loop).

**Drainage (depending on your installation):** this phase follows on automatically from the disinfection phase so that the water temperature quickly returns to normal conditions of use. It can also be programmed to drain the mixed water production system of possible residue.



## Chart



	Size 1 3/4" 1 to 7 outlets	Size 2 3/4" 1 to 10 outlets	Size 3 1" 1 to 15 outlets	Size 4 1 1/4" 1 to 21 outlets	Size 5 1 1/2" 1 to 32 outlets	Size 6 2" 1 to 50 outlets
at Δp 1 bar (l/m)	24	31	56	91	130	231
at Δp 2 bar (l/m)	41	56	91	133	201	328
at Δp 3 bar (l/m)	56	80	120	175	260	400



## Installation

### **Installation and technical recommendations for drawing up special technical specifications for e-ULTRAMIX® thermostatic mixing valves for DHW systems in collective facilities**

The installation shall be equipped with a Watts e-ULTRAMIX® or equivalent programmable electronic thermostatic mixing valve to maintain the water temperature in the DHW system and to allow programming of automatic thermal disinfection cycles.

#### **Electronic temperature control:**

The Watts e-ULTRAMIX® shall enable the temperature of the mixed water to be electronically set either locally or remotely. The programming control unit shall use the electric actuator to transmit the set temperature to be supplied by the thermostatic mixing valve by means of the mixed water probe. It shall be possible to set the temperature with a resolution of one degree by means of the programming control unit. This system shall ensure safety by maintaining an appropriate temperature irrespective of flow rate (one draw-off point or several draw-off points simultaneously) and pressure variations in the system, thanks to the use of proven, bimetallic-strip-type control technology.

#### **Programming thermal disinfection:**

The control unit shall allow weekly programming of automatic thermal disinfection cycles by increasing the water temperature for a given duration (as defined in the applicable decree of 30 November 2005) in order to prevent all risk of legionella in the DHW system.

#### **Retrieving data history:**

The e-ULTRAMIX® shall provide the possibility of retrieving thermal disinfection data locally (by means of an SD card) or remotely, for the purposes of full monitoring of system hygiene. The system shall enable one year of data history to be exported (in .csv format) for direct use with spreadsheet software.

#### **Remote control and management:**

It shall be possible to connect the system to the existing Building Management system (via an RS485 interface) by means of a fieldbus (Modbus communication protocol). The e-Ultramix shall be integrated with the existing Building Management software with the aid of the Modbus table supplied with the system. It shall therefore be possible to remotely control and programme the e-ULTRAMIX® or equivalent thermostatic mixing valve, and consult temperature information, disinfection history and system alerts.

#### **Safety and continuity of service:**

In the event of a power outage, the system shall ensure continuity of service irrespective of the duration of the outage. Building operation shall therefore continue uninterrupted at all times thanks to the mechanical bimetallic strip technology, which continues to mix the water precisely. It shall be possible to adjust the mixed water temperature manually using a back-up control supplied with the product.

Each draw-off point shall be equipped with a specific Watts or equivalent anti-burn cartridge, in order to prevent any risk of scalding in the event of inappropriate water draw-off during thermal disinfection. The cartridge shall shut off the outflow of water when the temperature of the latter exceeds 48°C.

In the event of interruption of the cold water supply, furthermore, the hot water shall be shut off instantly.

#### **Wiring:**

- . One 2P+E 230 VAC (50Hz) socket shall be provided to power the programming control unit.
- . A 1mm<sup>2</sup> (10A) multicore cable shall be provided for connection to the drain solenoid and the circulation pump. If the connection distance is >30m, however, provide a 1.5mm<sup>2</sup> cable
- . A 0.75mm<sup>2</sup> or 1mm<sup>2</sup> (8A) multicore cable shall be provided for a possible alarm. If the connection distance is > 30m, however, provide a 1mm<sup>2</sup> cable
- . Should it be necessary to increase the water temperature during thermal disinfection cycles, a 1mm<sup>2</sup> (10A) multicore cable shall be provided for connection to the DHW production system. If the connection distance is > 30m, however, provide a 1.5mm<sup>2</sup> cable.

#### **For systems with closed loop:**

An external probe shall be fitted on the closed loop and connected to the control unit in order to send return water temperature data.

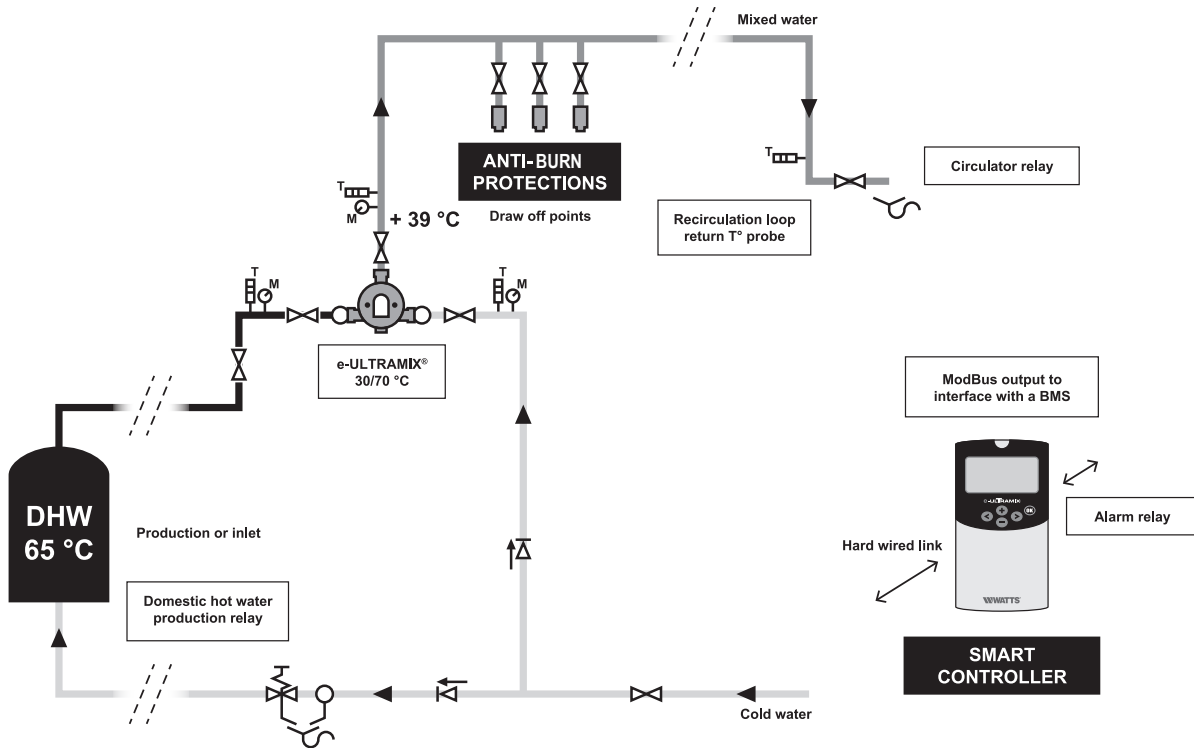
The system's circulation pump shall be connected to the control unit relay provided for the purpose. If the circulation pump is managed by a clock, the circulation pump relay shall be wired in parallel with this clock.

The drain relay shall be wired from the drain valve supply.

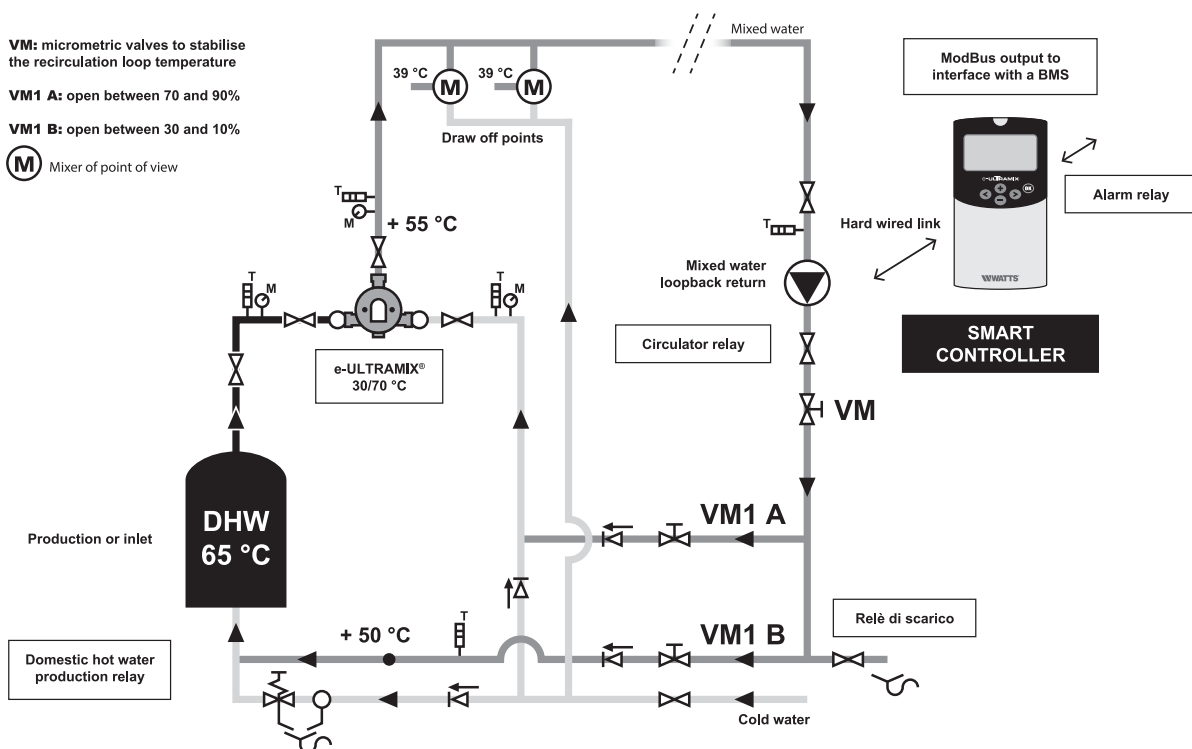
#### **For systems with open loop:**

In the absence of a circulation pump, specific wiring shall be provided to activate the drain solenoid during the disinfection phases.

### Example of normal “mixed water” operation without recirculation loop



### Example of normal “mixed water” operation with recirculation loop

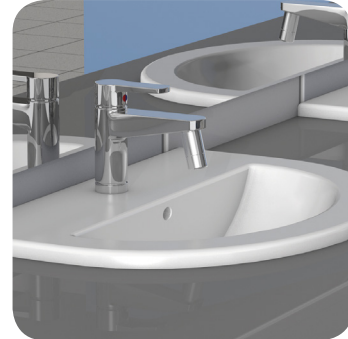


### Protection of the draw off points

It is MANDATORY for the installation to be fitted with anti-burn protections on each draw off points to protect users from the risk of scalding in the event of accidental use during the thermal disinfection cycles. The water supply is cut if the temperature exceeds 48°C.



Sealed protection for shower

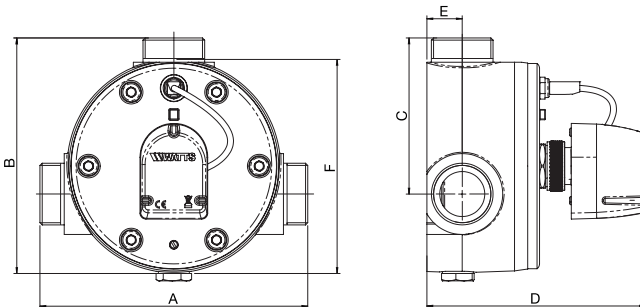


Sealed protection for washbasin

SEALED PROTECTION SPECIFICATIONS: maximum static pressure 10 bar. Maximum dynamic pressure 5 bar. Cut-off temperature between 48 and 50°C Kv = 1.3 at 42°C. Follow the water flow direction as shown by the arrow on the product.

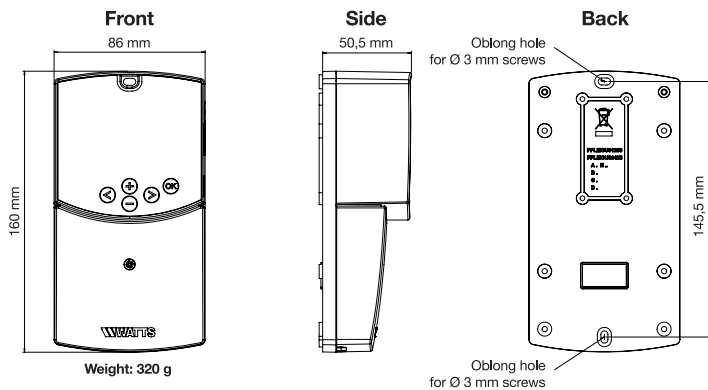
## Overall dimensions (mm)

### e-ULTRAMIX

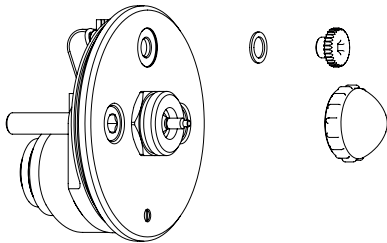


	Size 1 3/4" 1 to 7 outlets	Size 2 3/4" 1 to 10 outlets	Size 3 1" 1 to 15 outlets	Size 4 1 1/4" 1 to 21 outlets	Size 5 1 1/2" 1 to 32 outlets	Size 6 2" 1 to 50 outlets
A (mm)	117	117	144	182	218	242
B (mm)	120	120	142	160	200	217
C (mm)	81	81	96	108	129	144
D (mm)	126	126	133	149	164	173
E (mm)	19	19	23	24	36	36
F (mm)	98	98	116	145	175	198
Connexion Ø	BSP 3/4"	BSP 3/4"	BSP 1"	BSP 1 1/4"	BSP 1 1/2"	BSP 2"
Total weight with motorised valve	2,06 kg	2,06 kg	3,06 kg	4,86 kg	8,06 kg	10,26 kg

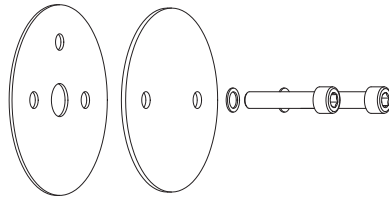
## Controller



## e-Cartridge



## Flushing kit (only delivered with e-ULTRAMIX)



Please flash the QR codes to view the videos relative to the assembly and installation of the e-ULTRAMIX® system.



## Specification text

### e-ULTRAMIX® Series

Electronic system **e-ULTRAMIX® Series** WATTS brand fitted with a smart controller used to program thermal disinfection cycles automatically. The system includes thermostatic mixing valve with Rinsing kit, e-Cartridge, electric actuator, controller (with micro SD card included), cables and probes (mixing valve and return).

**Complies with: LVD. 2014/35/EU, RoHS 2011/65/EU. Regulation Reach 1907/2006.**

The descriptions and photographs contained in this product specification sheet are supplied by way of information only and are not binding.

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