

Description

Introduction

Easy 200 is a family with easy, low price control units designed to control climate systems in large vehicles and mini buses. These control units comes complete with potentiometer, control unit, in/output connections in a standard SWF 44x22 mm box with back lighting, intended for panel installation.

The Easy control units are, depending on control purpose, available in the following variants:

Temperature regulation

- EasyTerm 200 Defroster 12 to 24V
- EasyTerm 200 Compartment 12 to 24V
- EasyFloor 200 12 to 24V
- EasyRemote 12 to 24V

Flap regulation

- EasyFlap 200 12 to 24V

Speed regulation

- EasyFan 200 12 to 24V

Potentiometer 0-10k ohm

- EasyPot 200 Basic 12V
- EasyPot 200 Basic 24V



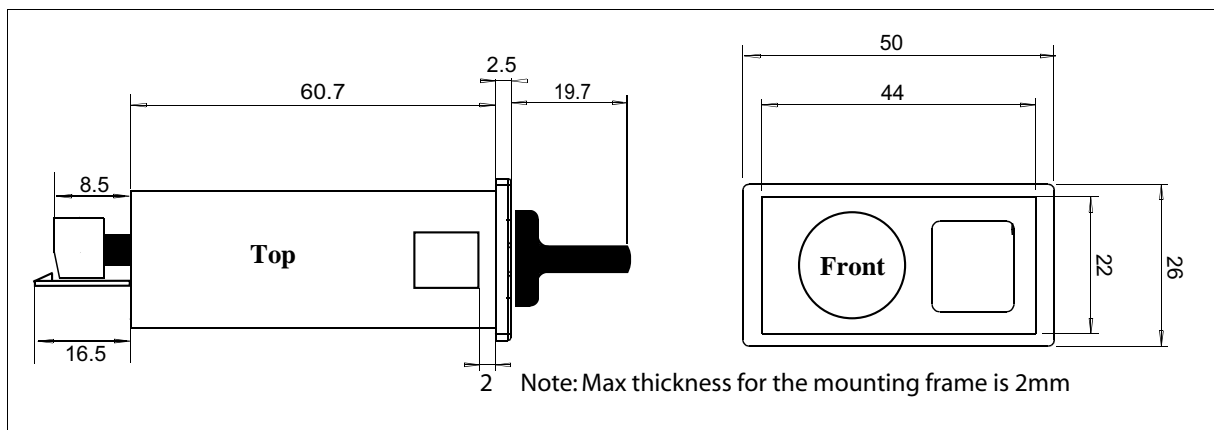
Figure: Easy 200 family

Panel design & Dimensions

Panel design

The panel consists of a turning knob, foil with scale for the turning knob, symbol and one indicator.

Dimensions (mm)



EasyTerm 200 Defroster (12 to 24V) Temperature regulation



EasyTerm 200 Defroster is foremost used to regulate the temperature of the defroster air in buses. Integrated in the control unit is a knob which, via a regulation valve, controls the defroster air temperature from 7.5 to 80°C (with sensor connected), or 0-100% without sensor.

The temperature sensor is of the type NTC-4k7.

There is a fault indicator that blinks if the temperature sensor is short-circuited or open (not connected).

Optional equipment, such as extra fan, pump etc. can be connected to start either immediately when the control unit is on (via out 1) or to be activated at 1/6 of the governing valve's maximum value (via output 2).

Turning knob

Range: Total of 11 click steps: **Off•7.5•15•20•25•32•40•50•60•80•Open**

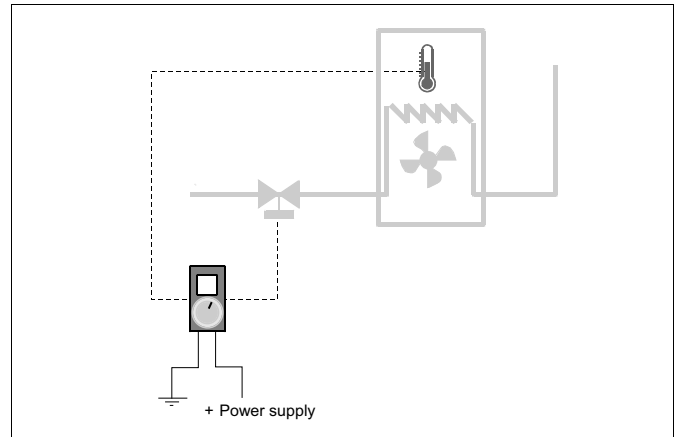


Figure: Defroster circuit

EasyTerm 200 Compartment (12 to 24V) Temperature regulation



EasyTerm 200 Compartment is suitable for regulation of the convector & blower circuits in buses. The air temperature in the bus can be controlled using the turning knob (18 to 26°C) *with a sensor* connected. *Without a sensor* the control is 0-100% via a regulation valve.

When the regulation valve is open, heating fans (if present) can be started with outputs; out 1, out 2.

The first fan step (Out 1) is turned on as soon as the valve opens. The second fan step (Out 2) is activated when the heating need is greater, air temperature 3°C under the set temperature.

Other features:

- heating supply can be closed by turning the temperature knob counter-clockwise to its end position.
- heat supply can be set to "Open" (opens the valve and turns on both fan steps). Done by turning the temperature knob clockwise to its end position.
- fault indicator that blinks if the sensor is short-circuited or not connected.
- temperature sensors are type NTC-4k7.

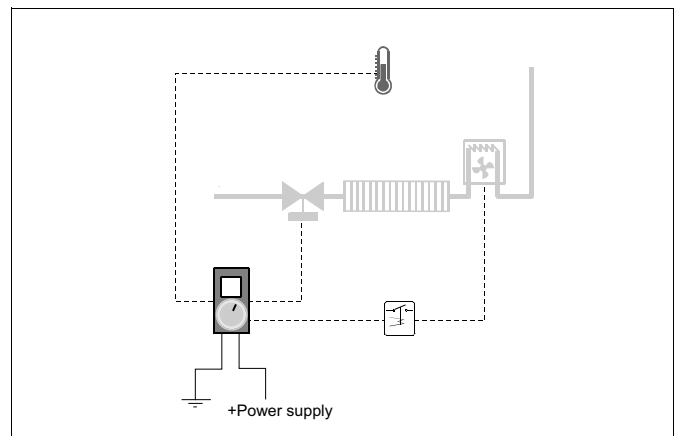


Figure: Compartment circuit

Turning knob

Range: Total of 11 click steps: **Off•18•19•20•21•22•23•24•25•26•Open**

EasyFloor 200 (12 to 24V) Temperature regulation



EasyFloor 200 is a new variant of EasyTerm that controls floor heating installations. Examples of heating installations are *Sleeper Cabins* and entrance steps.

This unit can control a motor valve or a solenoid type. Suitable motor valves with a opening time of 3 to 7 seconds can work together with EasyFloor electronics.

Turning knob

Range: Total of 11 click steps: **Off•1•2•3•4•5•6•7•8 9•Open**.
The EasyFloor 200 together with UWE “Com floor” heating panels operates in a temperature range of 22 to 36°C

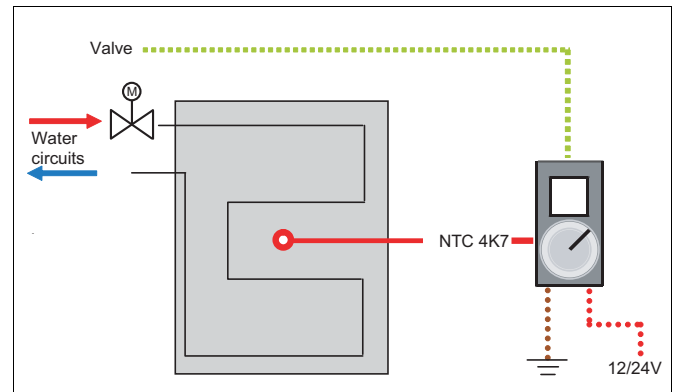


Figure: EasyFloor 200

EasyFlap 200 (12 to 24V) Flap regulation



EasyFlap 200 is used to regulate a flap, that is, to enable selection between fresh/ re circulated air, or mix both. The flap is controlled with the turning knob from 0-100% with feedback or open/ closed without feedback.

The outputs to the flap break after 1 minute if the position, selected by the turning knob, has not been reached.

Turning knob

Range: Total of 11 click steps: **0, 10•20•30•40•50•60•70•80 •90•100%**

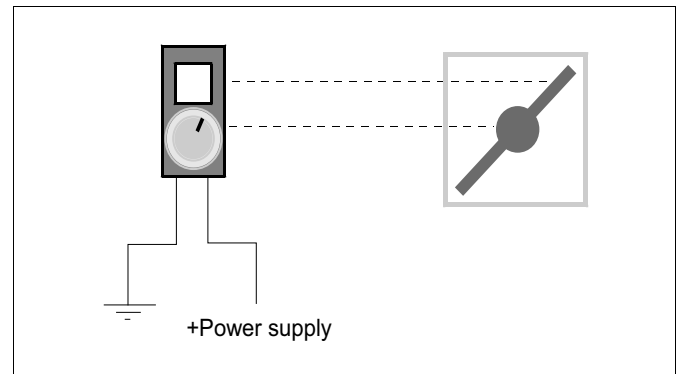
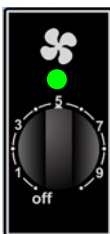


Figure: Flap circuit

EasyFan 200 (12 to 24V) Speed regulation



EasyFan 200 is developed to regulate the speed of a fan directly (max 5A), without any need of separate governing equipment. The fan can be started/ stopped and the speed is controlled in 10 steps (10-100%). There is an **ON** indicator that lights when the fan is activated.

Turning knob

Range: Total of 11 click steps: **Off• 10•20•30•40•50•60•70•80 •90•100%**

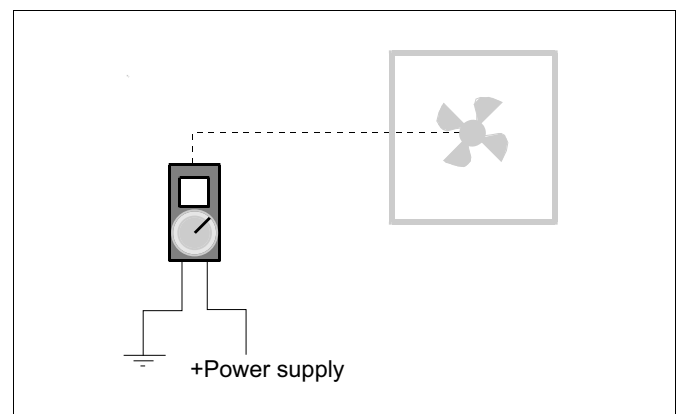
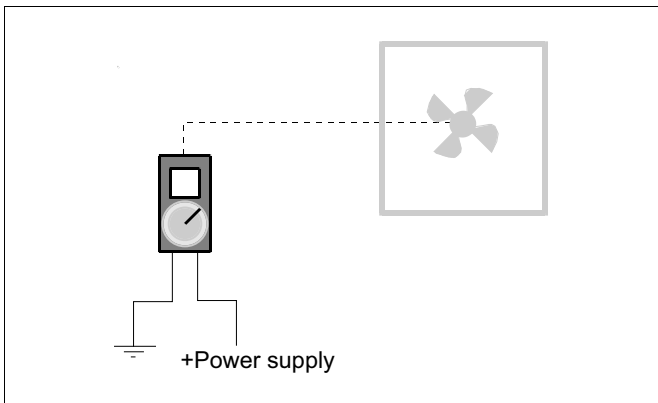


Figure: Fan circuit

EasyPot 200 Basic (12V or 24V) Potentiometer 0-10k Ohm



EasyPot 200 Basic works like a potentiometer 0-10k Ohm, however, a turning switch with 11 click steps is used instead of a potentiometer. When used as an voltage divider, the output (Out 1) can activate a pump, fan, etc.

Turning knob

Range: Total of 11 click steps: **0, 1•2•3•4•5•6•7•8•9•10k Ohm.**

Figure: Fan circuit

Technical data

Electrical

Supply voltage (valid for all 24VDC)

Specification	Value
Nominal supply voltage	+22V to +29V
Maximum working supply range	+10V to +33V
Maximum allowed supply voltage	42V for 5 minutes
Load dump protection	65V
False polarity protection	-30V

Supply voltage (valid for EasyPot 12VDC)

Specification	Value
Nominal supply voltage	+10V to +15V
Maximum working supply range	+10V to +17V
Maximum allowed supply voltage	21V for 5 minutes
Load dump protection	65V
False polarity protection	-30V

Current consumption (back light, logic, and outputs)

Note: valid for EasyTerm 12 to 24VDC

Stand-by	<15mA (with back light and logic active)
Maximum	<6.1A (with all outputs (maximum 6.0A) back light and indicator active)

Current consumption (back light, logic, and outputs)

Note: valid for EasyFlap and Easy Floor 12 to 24VDC

Stand-by	<15mA (with back light and logic active)
Maximum	<3A (with all output (maximum 0.7A) back light and indicator active)

Current consumption (back light, logic, and outputs)

Note: valid for EasyFan 12 to 24VDC

Stand-by	<15mA (with back light and logic active)
Maximum	<5.1A (with the fan output (maximum 5A) back light and indicator active)

Current consumption (back light, logic, and outputs)

Note: valid for EasyPot 24VDC

Stand-by	<10mA /27VDC (with back light and logic active)
Stand-by	<65mA /42VDC (with back light and logic active)
Maximum	<0.8A (with the output (maximum 0.7A) back light and indicator active)

Current consumption (back light, logic, and outputs)

Note: valid for EasyPot 12VDC

Stand-by	<10mA /13.5VDC (with back light and logic active)
Stand-by	<15mA /21VDC (with back light and logic active)
Maximum	<0.8A (with the output (maximum 0.7A) back light and indicator active)

Type approval

Approval number: e5*72/245*2006/28*0210*00

Comments on the above:

All outputs have a continuous short-circuit protection within working supply range.

Circulation pumps must be controlled via relays because the driver circuit of the Easy 200 series can not withstand reverse voltage if the unit is dead (no supply voltage).

Transient voltages

(all digital IO + supply connections are designed to withstand the following normative test pulses

Tp 1a	Vs -150V, Ri 10Ω, t1 5s
Tp 3a	Vs -150V
Tp 3b	Vs +100V
Tp 4	Vb +24V, Vs -16V, t6 50ms, t8 20s
Tp 5b	Vs +65V, Ri 1.5Ω, td 600ms, tr 10ms

ESD protection according to IEC 61000-4-2: 1995, level 4

Products

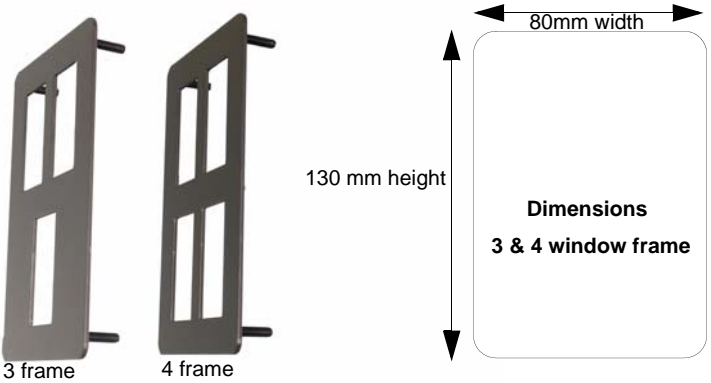
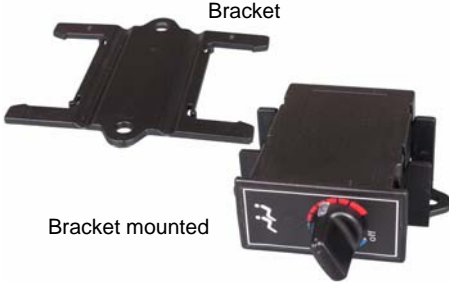



NOTE: All control units are delivered without contact housing. These are to be ordered separately, see accessories.

Item	Illustration	Part number
EasyTerm 200 Compartment 12 to 24V		18573
EasyTerm 200 Defroster 12 to 24V		18571
EasyFlap 200 12 to 24V		18578

Item	Illustration	Part number
EasyFan 200 12 to 24V		24V 18576
EasyPot 200 Basic		12V 18575 24V 18574
EasyFloor 200 12 to 24V		18799
EasyRemote 200 12 to 24V		18572

Accessories

Item	Illustration	Part number
Mounting frame 3 and 4 frame		3 frame= 14312 4 frame= 14311
Mounting bracket	 <p>Note: Intended for use with EasyRemote and DSC</p>	18612
Contact housing, seven poles		15283

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