

DDL

DIN Dimension Line



COMES
ELECTRONIC CLIMATE CONTROL

DDL

DIN Dimension Line

The control units in this line are fitted on the dashboard with a metallic frame, the same size of the standard car radio (DIN dimensions). The ISO 7736 standard defines the mechanical dimensions.

The analog versions, either manual or automatic, feature three control knobs (for temperature adjustment, air flow with 3 manual speeds or electronic blower speed regulator and, in the automatic versions, AUTO mode position, air distribution or air conditioning).

The digital versions are characterised by a LCD display and two control knobs (for temperature adjustment and air flow with AUTO mode position).

Both analog and digital control units can have up to six push buttons (e.g. defrost function, air recirculation, over pressure which activates an auxiliary outside air fan, air conditioning, air distribution, external temperature).

When activating a function in the digital versions, the relevant icon becomes visible on the LCD display.

All versions are available with CAN-bus upon request.

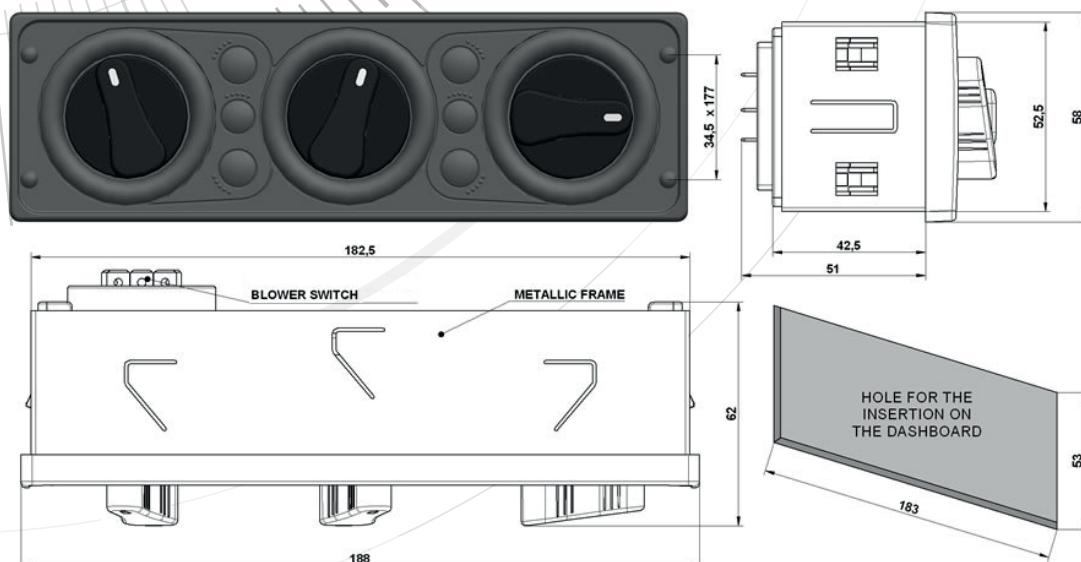
The control unit is fully backlit (all functions of the control unit, including the knobs, are backlit) and available for both 12V and 24V systems.

COMES control units are developed to get the maximum flexibility. If you are interested in different functions or configurations, please contact our sales team for professional assistance.

GENERAL PERFORMANCE, ELECTRONICAL AND ENVIRONMENTAL TESTS

Operating Voltage Range:	10.5÷16V/18÷32V
Nominal Power Supply Voltage:	12V/24V
Output Rated Current, each pin:	max 400mA
Operating Temperature Range:	from -40°C to 85°C
Storage Temperature Range:	from -40°C to 90°C
Dust/Water Resistance on the Front Panel:	IP54
Electromagnetic Compatibility according to UNECE Regulation No.10	
Over Voltage Protection	
Reverse Polarity Protection	
Short Circuit Protection	

MECHANICAL DIMENSIONS (ANALOG VERSIONS)





Manual Analog Control Unit 3 Blower Speeds

PART NUMBER	P/N 12V	P/N 24V
Control Unit	V02.70.001	V02.70.005
Metallic Frame	40.03.347	40.03.347
DC Motor Water Valve Kit	61.01.297	61.01.298
Connector and Pin Kit	61.01.326	61.01.326
Complete Kit (Relay not included)	Z01.70.002	Z01.70.003

FUNCTIONAL OVERVIEW

The control unit manages the following functions:

- Heating (by rotating the temperature control knob)
- Ventilation (by rotating the air flow control knob; the speed control ventilation is supplied with 3 steps)
- Air conditioning (by rotating the relevant knob)
- Defrost function (by pressing the relevant push button)
- Recirculation function (by pressing the relevant push button)

When the defrost or the recirculation functions are enabled, the relevant LED is switched on.



Manual Analog Control Unit Electronic Blower Speed Regulator

PART NUMBER	P/N 12V	P/N 24V
Control Unit	V02.70.002	V02.70.006
Metallic Frame	40.03.347	40.03.347
Electronic Blower Speed Regulator Kit	Z19.01.135	Z19.01.142
DC Motor Water Valve Kit	61.01.297	61.01.298
Connector and Pin Kit	61.01.326	61.01.326
Complete Kit (Relay not included)	Z01.70.004	Z01.70.005

FUNCTIONAL OVERVIEW

The control unit manages the following functions:

- Heating (by rotating the temperature control knob)
- Ventilation (by rotating the air flow control knob; the speed control ventilation is supplied with electronic blower speed regulator)
- Air conditioning (by rotating the relevant knob)
- Defrost function (by pressing the relevant push button)
- Recirculation function (by pressing the relevant push button)

When the defrost or the recirculation functions are enabled, the relevant LED is switched on.



Automatic Analog Control Unit Electronic Blower Speed Regulator

PART NUMBER	P/N 12V	P/N 24V
Control Unit	V02.70.003	V02.70.007
Metallic Frame	40.03.347	40.03.347
Electronic Blower Speed Regulator Kit	Z19.01.135	Z19.01.142
DC Motor Water Valve Kit	61.01.297	61.01.298
External Temperature Sensor	24.01.019	24.01.019
Internal Temperature Sensor	24.01.020	24.01.020
Mixed Air Temperature Sensor	24.01.017	24.01.017
Anti-icing Temperature Sensor Kit	61.01.279	61.01.279
Connector and Pin Kit	61.01.326	61.01.326
Complete Kit (Relays not included)	Z01.70.006	Z01.70.007

FUNCTIONAL OVERVIEW

The control unit features three control knobs and four push buttons, as below:

- Air flow control knob (the speed control ventilation is supplied with electronic blower speed regulator; the knob has also a OFF and AUTO mode position)
- Temperature control knob for selecting the desired temperature
- Air distribution control knob
- Air conditioning push button
- Recirculation push button
- Defroster push button
- Extra heating push button (which activates an auxiliary heater)

When activating a function, the relevant LED is switched on.

The software mathematical model receives information from four different temperature sensors:

- Cabin air sensor (internal)
- Outside air sensor (external)
- Mixed air sensor
- Anti-icing temperature sensor



Automatic Digital Control Unit Electronic Blower Speed Regulator

PART NUMBER	P/N 12V	P/N 24V
Control Unit	V02.85.001	V02.85.002
Electronic Blower Speed Regulator Kit	Z19.01.135	Z19.01.142
DC Motor Water Valve Kit	61.01.297	61.01.298
External Temperature Sensor	24.01.019	24.01.019
Internal Temperature Sensor	24.01.020	24.01.020
Mixed Air Temperature Sensor	24.01.017	24.01.017
Anti-icing Temperature Sensor Kit	61.01.279	61.01.279
Connector and Pin Kit	61.01.326	61.01.326
Complete Kit (Relays not included)	Z01.85.001	Z01.85.002
Optional: Metallic Frame	40.03.347	40.03.347

FUNCTIONAL OVERVIEW

The control unit features two control knobs, six push buttons and a LCD screen, as below:

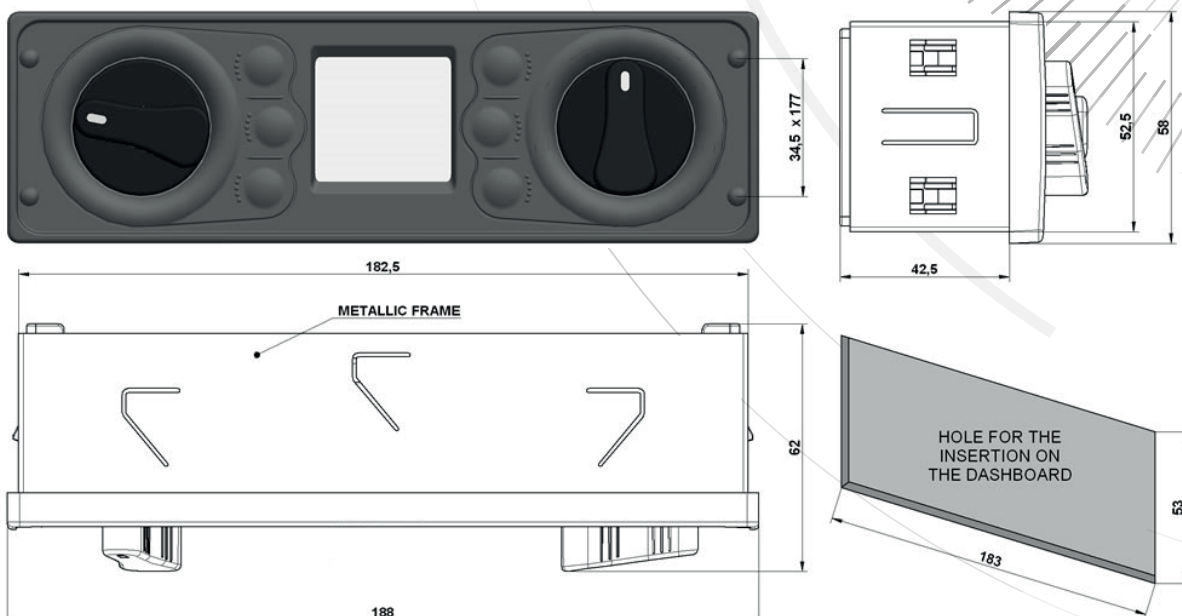
- Temperature control knob for selecting the desired temperature
 - Air flow control knob (the speed control ventilation is supplied with electronic blower speed regulator; the knob has also an OFF and AUTO mode position)
 - Air distribution push button
 - Air conditioning push button
 - Recirculation push button
 - Defroster push button
 - Over pressure push button (which activates an auxiliary outside air fan)
 - External temperature push button
 - LCD: customised icons, TN, Transflective Positive, 12:00 or 6:00 o'clock viewing direction
- When activating a function, the relevant icon becomes visible on the LCD display.

The software mathematical model receives information from four different temperature sensors:

- Cabin air sensor (internal)
- Outside air sensor (external)
- Mixed air sensor
- Anti-icing temperature sensor

The control unit can be supplied either with metallic frame or clips on the rear box

MECHANICAL DIMENSIONS (DIGITAL VERSION)



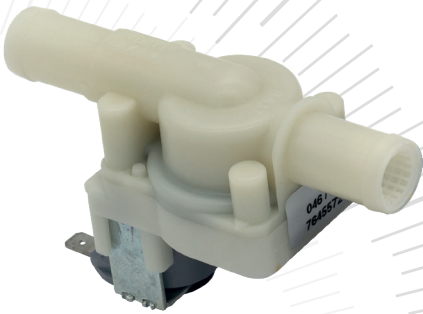
ACCESSORIES



Electronic Blower Speed Regulator



DC Motor Water Valve



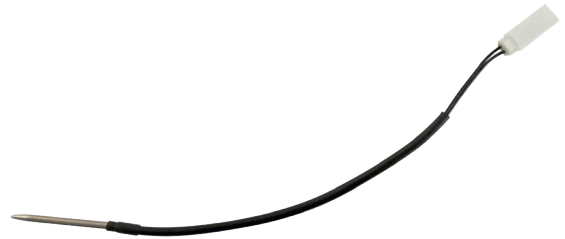
Solenoid Water Valve



Internal Temperature Sensor



External Temperature Sensor



Anti-icing Sensor



Mixed Air Temperature Sensor



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