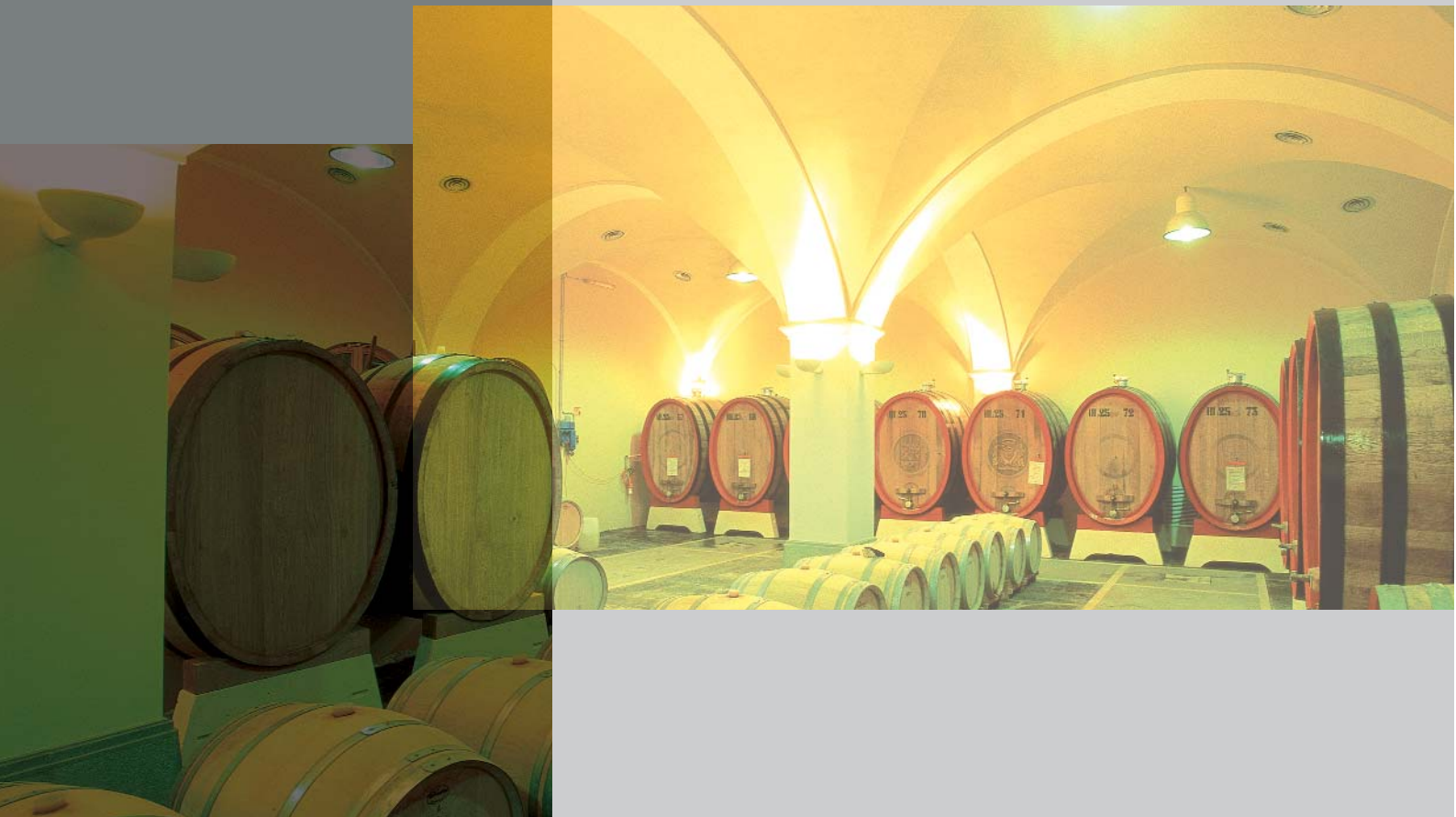


# Industrial refrigeration



The industrial controllers line, suitable for all refrigeration systems right up to the most complex ones used in power stations, is capable of managing all applications in such a way as to guarantee maximum quality in the preservation of fresh and frozen food, thanks to a set of specific algorithms, whilst ensuring maximum energy efficiency in refrigeration systems. The innovative design combines ease of installation with water resistance. The user interface makes the use of these devices easy and intuitive, thanks to a display technology that makes it possible to monitor all the main system variables, with direct access to control functions. The controllers are available with a series of advanced functions, such as the logging of HACCP events with a yearly calendar, combined temperature and humidity control, simultaneous control of suction and condensation sections and, in the more evolved models, multi-compressor systems.



EWCM 8400	... B2
EWCM 8600	... B2
EWCM 8900	... B2
EWCM 9100	... B3
EWCM 9900	... B3
EWCM 840/S	... B4
EWCM 860/S	... B4
EWCM 890/S	... B4
EWCM 809/S	... B5
EWCM 900/S	... B5
EWCM 400	... B6
EWRC 300 LX	... B7
EWRC 500 LX	... B7
EWRC 550 LX	... B8
EWRC 800 LX	... B8
EWHT 800 LX	... B9
EWHT 1800 LX	... B9
FASEC 33	... B10
FASEC 43 ( C )	... B10
FASEC 53	... B10
FASEC 100	... B11
FASEC 105	... B11
FASEC 155	... B11
FASEC 500	... B12
FASEC 505	... B12
FASEC 555	... B12
WM 203	... B13
WM 253	... B13



## **MODBUS-RTU**

Modbus is a serial communication protocol that allows communication between different devices connected to the same network. Modbus is often used to connect a supervisor computer to a remote terminal unit (RTU) in monitoring control and data acquisition systems.



## **RS-485**

This is the standard that describes the communication interface for serial connection between a network of devices and the computer. The network, normally 3-wire, makes it possible to cover much longer distances than the RS232 standard. The protocol used for the communication can either be Eliwell, i.e. created according to Eliwell specifications, or Modbus.



## **LINK**

The Link function makes it possible to connect a master and a number of slave and echo devices in a network and allows the sharing of network functions in order to maximise management of small control systems.



## **COPY CARD**

The Copy Card is an accessory that connects to a TTL type serial port and allows the rapid programming of instrument parameters.



## **TELEVISSYSTEM**

TelevisSystem is a remote management and monitoring system for industrial and commercial systems, ideal for supermarkets and hypermarkets and also for viewing the history of the recordings made. Data can either be printed or extracted and downloaded in a form compatible with the most commonly used office IT softwares. The monitoring system can be accessed remotely via a web browser, using any PC or handheld device connected to the network.



## **RTC**

Internal clock (Real Time Clock) for managing programmable functions at preset times.

A product with an RTC has a function that can give the current time of day, together with the day of the week. This function is used, for example, to set the defrosting start time or setpoint changes at times preset by the user. A set of dedicated parameters makes this important function easy to manage. In Eliwell instruments, the clock continues to operate in the event of power cuts without the use of batteries such as the Nickel-Cadmium type, which are well known for having memory storage and general recharging problems. Autonomy is guaranteed for over 6 hours with a recharging time of about 1 minute.



### HACCP

This is a sophisticated diagnostics system capable of detecting all temperature and black-out events that occur in the monitored refrigerated environment, recording them internally in the device in a non-volatile memory. This system was devised to meet the most exacting demands of the market with regard to the temperature control of preserved food in compliance with the 93/43/EU Directives.



### TEMPERATURE PROBES

Thanks to the different materials used in the different models, the temperature probes are capable of covering a very wide temperature range; the sensors used are PTC, NTC, thermocouple, Pt100 and Pt1000. Depending on the kind of sensor, the protective casing (usually cylindrical) can be made of either ABS, Aisi 304/316 stainless steel or Inconel; for additional sensor protection, special materials are used (e.g. resins) between sensor and casing. The cable that transmits the signal to the instrument is made of either PVC, Silicone or Vetrotex and is available in different lengths. The range of use depends on the materials used, as well as on the type of sensor.



### HUMIDITY PROBES

The EWHS series of probes are specially made for connection to humidity measurement instruments. EWHS 280 and EWHS 300 probes have one current output (4...20 mA) proportional to the relative humidity. EWHS 310 probes have two current outputs (0...20 mA), one for humidity and one for temperature.



### PRESSURE PROBES

The EWPA series of probes are pressure reading devices; they have one 4...20 mA current output for transferring the signal to the measuring instrument. The EWPA 007 probes have an operating range up to 7 bar, whereas the EWPA 030 probes operate up to 30 bar.



### PID

The PID function is an alternative to the on-off control for use in situations requiring greater precision and reduced oscillations with regard to the setpoint, in both 'hot' and 'cold' applications. Controllers with the PID function have a further option known as autotuning, which automatically calculates the parameters necessary for better process control.



### SWITCHING POWER SUPPLY

The switching power supply, that switches from either 95...240V~ or from 12...24V~/12...36V~ gives the installer the possibility of covering most areas of application, thus reducing the number of models that would be necessary if a transformer-type power supply was used.



### Applications

The new series of controllers for EWCM compressor rooms provides a single solution to temperature control in refrigeration systems. The external keyboard with graphic LCD and the rapid parameter setting menu give greater accessibility and make it easier for the operator to configure parameters and access data. Energy saving is guaranteed thanks to the dedicated control algorithms.

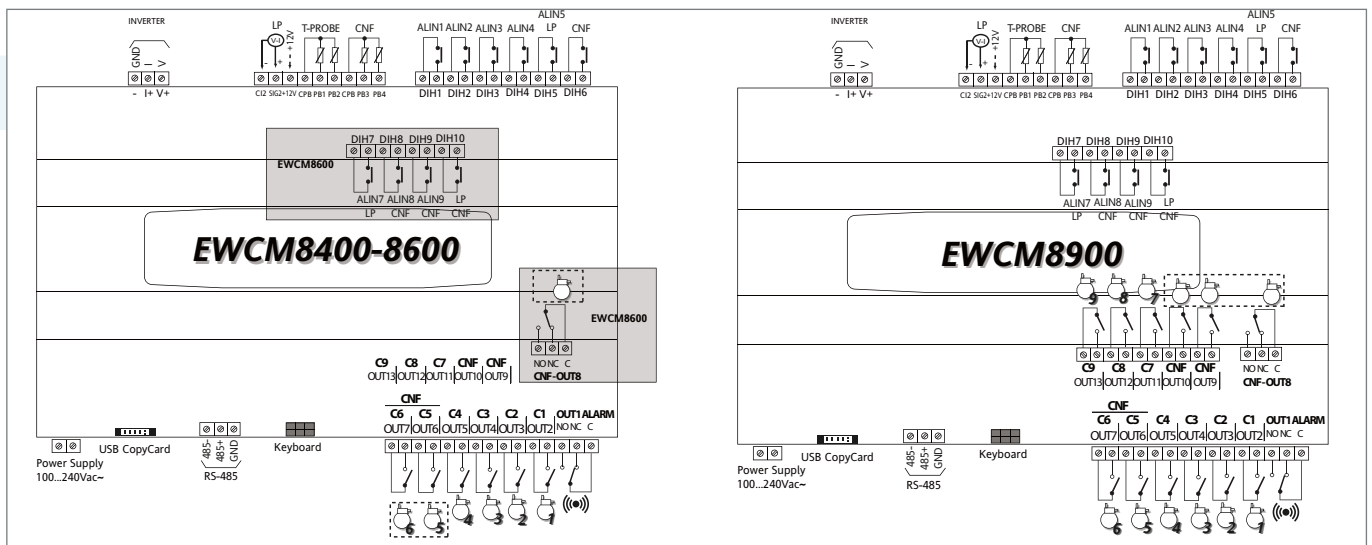
### Common features

Container: plastic casing, 13 DIN module (227.5x110x60mm)  
 Insulation class: 2  
 Functions: inverter control both in suction and delivery  
 Mounting: on DIN Omega rail  
 Connections: screw-on with removable terminal block  
 Operating temperature: -5...55°C

Storage temperature: -30...85°C  
 Ambient humidity for use and storage:  
 10...90% RH (non-condensing)  
 Display: LCD on external keyboard  
 Power board-keyboard connector:  
 6-way quick connector

General features	EWCM8400	EWCM8600	EWCM8900
Analogue inputs	2 for NTC temperature + 1 high precision current (4...20mA / 0...5V / 0...10V)	2 for NTC temperature + 1 high precision current (4...20mA / 0...5V / 0...10V)	2 for NTC temperature + 1 high precision current (4...20mA / 0...5V / 0...10V)
Digital inputs	6 voltage (100...240V~) + 2 configurable voltage-free	10 voltage (100...240V~) + 2 configurable voltage-free	10 voltage (100...240V~) + 2 configurable voltage-free
Analogue outputs	1 voltage/current (0...10V/4...20mA)	1 voltage/current (0...10V/4...20mA)	1 voltage/current (0...10V/4...20mA)
Digital outputs:	6 SPST 5(2)A 250V~ (2 configurable) + 1 SPDT 8(3)A 250V~ (alarm)	6 SPST 5(2)A 250V~ (compressors) + 2 SPDT 8(3)A 250V~ (1 for alarm and 1 configurable)	11 SPST 5(2)A 250V~ (9 compressors) + 2 SPDT 8(3)A 250V~ (1 alarm) (3 configurable relays)
Serial ports	TTL for connection to CopyCard USB + RS-485 for connection to TelevisSystem and systems based on Modbus protocol	TTL for connection to CopyCard USB + RS-485 for connection to TelevisSystem and systems based on Modbus protocol	TTL for connection to CopyCard USB + RS-485 for connection to TelevisSystem and systems based on Modbus protocol
Clock	present	present	present
Consumption:	20W	20W	20W
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz

### Wiring diagrams



### Codes

p/n	descr.	p/n	descr.
EM34AH1*1BH99	EWCM 8400	EM34CH1*1BH99	EWCM 8900
EM34DH1*1BH99	EWCM 8600		

\* The letter in this position indicates the languages available for the code:  
 A: ITA/ENG; C: FRA/ENG; D: SPA/ENG; E: SWE/ENG; F: GER/ENG



### Applications

The new series of controllers for EWCM compressor rooms provides a single solution to temperature control in refrigeration systems. The external keyboard with graphic LCD and the rapid parameter setting menu give greater accessibility and make it easier for the operator to configure parameters and access data.

Energy saving is guaranteed thanks to the dedicated control algorithms.

### Common features

Insulation class: 2

Operating temperature: -5...55°C

Ambient humidity for use and storage:

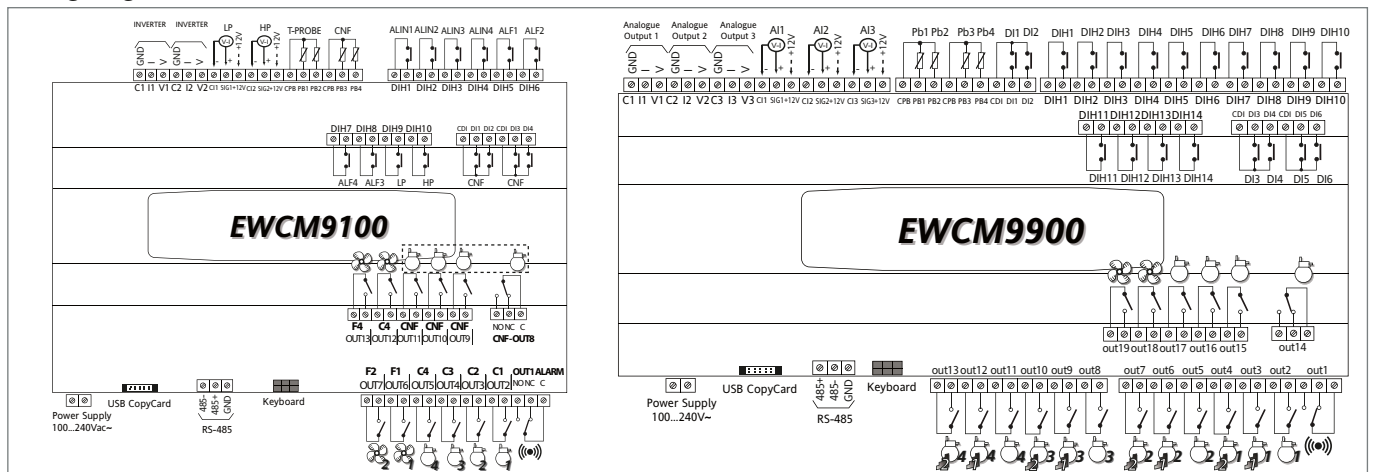
10...90% RH (non-condensing)

Power board-keyboard connector:

6-way quick connector

General features	EWCM9100	EWCM9900	Keyboard
Container	PC+ABS UL94 plastic resin casing V-0 13DIN module (227.5x110x60mm)	PC+ABS UL94 plastic resin casing V-0 18DIN module (315x110x60mm)	PC+ABS UL94 plastic resin casing V-0 (160x96x10mm)
Mounting:	on DIN Omega rail	on DIN Omega rail	panel mounting with 138x68mm drilling template
Storage temperature:	-30...85°C	-30...85°C	-20...85°C
Analogue inputs:	4 for NTC temperature + 2 high precision current (4...20mA / 0...5V / 0...10V)	4 for NTC temperature + 3 high precision current (4...20mA / 0...5V / 0...10V)	-
Digital inputs	10 voltage (100...240V~) + 4 configurable voltage-free	14 voltage (100...240V~) + 4 configurable voltage-free	-
Analogue outputs:	2 voltage/current (0...10V/4...20mA)	3 voltage/current (0...10V/4...20mA)	-
Digital outputs:	11 SPST 5(2)A 250V~ (4 compressors, 4 fans and 3 configurable) + 2 SPDT 8(3)A 250V~ (1 alarm and 1 conf.)	17 SPST 5(2)A 250V~ (4 compressors, 8 partial compressors and 5 configurable) + 2 SPDT 8(3)A 250V~ (1 alarm and 1 conf.)	-
Serial ports:	TTL for connection to CopyCard USB + RS-485 for connection to TelevisSystem and systems based on <b>Modbus</b> protocol	TTL for connection to CopyCard USB + RS-485 for connection to TelevisSystem and systems based on <b>Modbus</b> protocol	-
Display:	LCD on external keyboard	LCD on external keyboard	128x64 pixel graphic LCD backlit with LEDs
Functions:	inverter control both in suction and delivery	inverter control both in suction and delivery	-
Consumption:	20W	20W	3VA
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz	from power board

### Wiring diagrams



### Codes

p/n	descr.
EM35CH2*1BH99	EWCM 9100
EM83CI3A*0BH99	EWCM 9900

\* The letter in this position indicates the languages available for the code:

A: ITA/ENG; C: FRA/ENG; D: SPA/ENG; E: SWE/ENG; F: GER/ENG

# EWCM 840/S-EWCM 860/S - EWCM 890/S



## Applications

EWCM 800 controllers are designed for managing all the compressors in a refrigeration system machine room, by reading the system suction pressure.

## Common features

Container: plastic casing

Dimensions: front panel 72x144mm, depth 120mm

Installation: panel-mounting, with mounting brackets

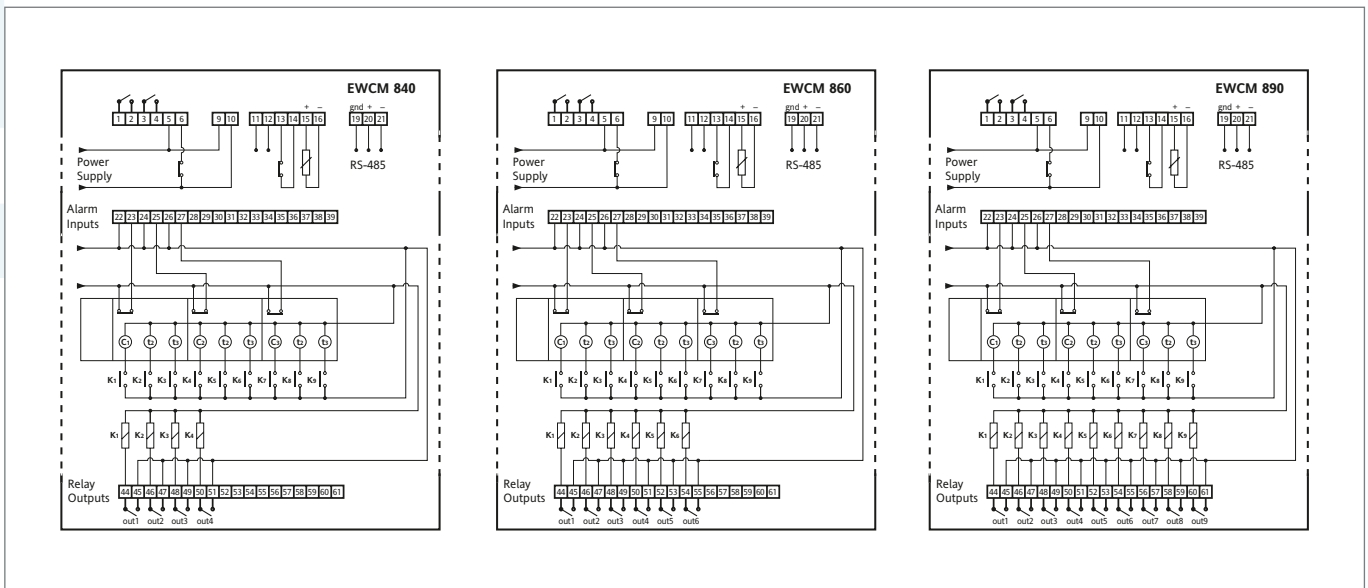
Connections: screw-on with removable terminal block

Data storage: non-volatile memory

Types of freon recognised: 22, R134 A, 502, 404 A, 407 A, 507 A

General features	EWCM 840/S	EWCM 860/S	EWCM 890/S
Display	4 digit	4 digit	4 digit
Low pressure sensor input (suction)	4...20 mA/NTC	4...20 mA/NTC	4...20 mA/NTC
Minimum pressure switch:	1 optoisolated voltage input (same voltage as power supply)	1 optoisolated voltage input (same voltage as power supply)	1 optoisolated voltage input (same voltage as power supply)
Alarm output:	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~
Controller fault output:	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~
Configurable outputs:	4 optoisolated voltage outputs	6 optoisolated voltage outputs	9 optoisolated voltage outputs
Serial ports:	1 RS-485 output for connection to TelevisSystem	1 RS-485 output for connection to TelevisSystem	1 RS-485 output for connection to TelevisSystem
Resolution:	0.01 bar; 0.1 PSI (°C)	0.01 bar; 0.1 PSI (°C)	0.01 bar; 0.1 PSI (°C)
Accuracy:	better than 0.5% of end of scale	better than 0.5% of end of scale	better than 0.5% of end of scale
Consumption:	6VA max	6VA max	6VA max
Power supply:	<ul style="list-style-type: none"> <li>• 230V~ ±10% 50/60Hz</li> <li>• 115V~ ±10% 50/60Hz</li> <li>• 24V~/~ ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 230V~ ±10% 50/60Hz</li> <li>• 115V~ ±10% 50/60Hz</li> <li>• 24V~/~ ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 230V~ ±10% 50/60Hz</li> <li>• 115V~ ±10% 50/60Hz</li> <li>• 24V~/~ ±10% 50/60Hz</li> </ul>

## Wiring diagrams



## Codes

p/n	descr.	Power supply	p/n	descr.	Power supply
EM8A151700	EWCM 840/S pressure	230V~	EM8B251700	EWCM 860/S temperature	230V~
EM8A251700	EWCM 840/S temperature	230V~	EM8C151750	EWCM 890/S pressure	230V~
EM8B151700	EWCM 860/S pressure	230V~	EM8C251700	EWCM 890/S temperature	230V~



## Applications

EWCM 809 and 900 controllers are designed for managing the compressors and fans in a refrigeration system machine room. The compressors are controlled by reading the system suction pressure, whereas the fans are controlled by monitoring the condensation pressure.

## Common features

Container: plastic casing

Installation: panel-mounting with mounting brackets

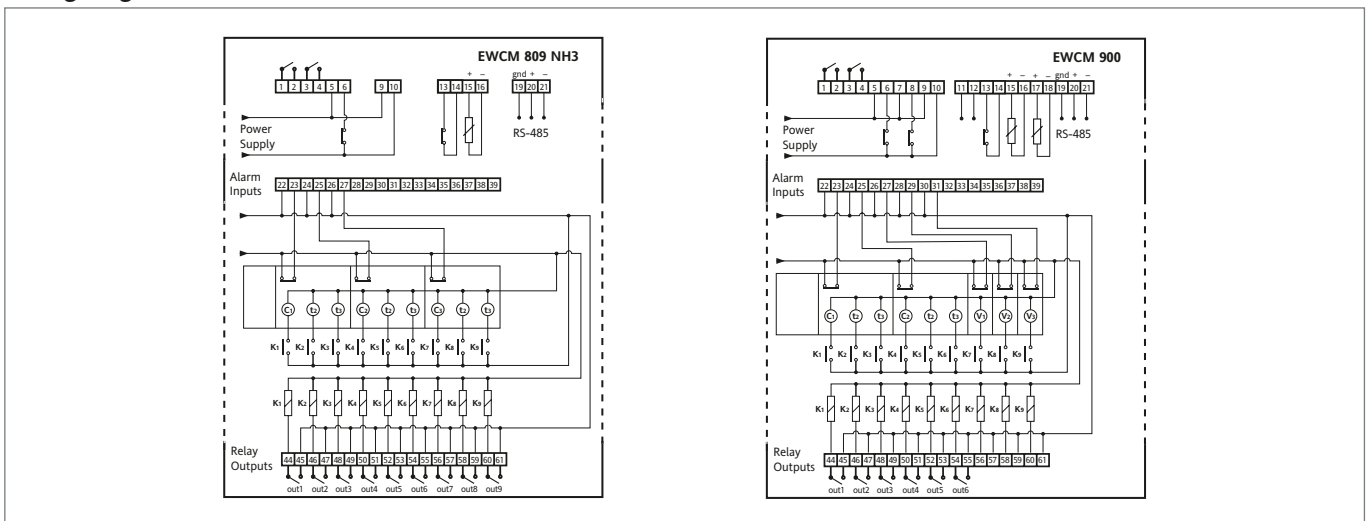
Dimensions: front panel 72x144mm, depth 120mm

Connections: screw-on with removable terminal block.

General features	EWCM 809/S	EWCM 900/S
Data storage:	non-volatile memory	-
Type of refrigerant:	ammonia	freon 22, R134 A, 502, 404 A, 407 A, 507 A
Low pressure sensor input (suction)	4...20 mA or NTC	4...20 mA or NTC
High pressure sensor input (delivery)	-	4...20 mA/NTC
Alarm output:	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~
Alarms:	9 optoisolated voltage inputs *	11 optoisolated voltage inputs *
Number of configurable outputs:	9 SPST 6(3)A 250V~ 1 RS-485 output for connection to TelevisSystem	11 SPST 6(3)A 250V~ 1 RS-485 output for connection to TelevisSystem
Serial port:	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~
Controller fault output:	-	1 optoisolated voltage input *
Delivery pressure switch:	1 optoisolated voltage input *	1 optoisolated voltage input *
Suction pressure switch:	-	4...20mA or NTC
Delivery sensor input:	6VA	6VA max
Consumption	• 220V~ ±10% 50/60Hz	• 220V~ ±10% 50/60Hz
Power supply:	• 110V~ ±10% 50/60Hz • 12, 24V~/~ ±10% 50/60Hz	• 110V~ ±10% 50/60Hz • 12, 24V~/~ ±10% 50/60Hz

\*(selectable by parameter).

## Wiring diagrams



## Codes

p/n	descr.	Power supply
EM7C351700	EWCM 809/S pressure	230V~
EM7C151700	EWCM 809/S temperature	230V~

## Codes

p/n	descr.	Power supply
EM9D151750	EWCM 900/S pressure	230V~
EM9D251700	EWCM 900/S temperature	230V~





### Applications

The range, made up of three different controllers, is the ideal solution for small and medium sized compressor rooms, where ease of use, high control reliability and versatility are essential features for meeting all operational requirements in compressor room management

### Common features

Front panel: IP65

Container: plastic casing, flame retardant grade UL94-V0

Dimensions: front panel 32x74mm, depth 70mm

Installation: panel mounting with 71x29mm hole

Use temperature: -5...60°C

Storage temperature: -20...85°C

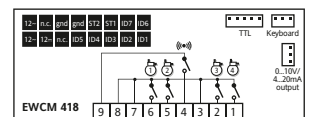
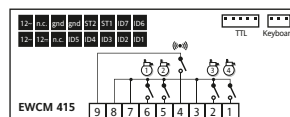
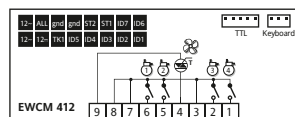
Ambient humidity for use and storage:

10...90% RH (non-condensing)

General features	EWCM 412	EWCM 415	EWCM 418
Suction analogue input	temperature probes NTC or 4...20mA for pressure probe *	temperature probes NTC or 4...20mA for pressure probe *	temperature probes NTC or 4...20mA for pressure probe *
Delivery analogue input	4...20 mA for pressure probe	4...20 mA for pressure probe	4...20 mA for pressure probe
Digital inputs:	7 digital inputs reserved for high and low pressure alarms remote ON/OFF and 4 general compressor alarms	7 digital inputs reserved for high and low pressure alarms remote ON/OFF and 4 general compressor alarms	7 digital inputs reserved for high and low pressure alarms remote ON/OFF and 4 general compressor alarms
Digital outputs for compressors:	4 SPST 2(2)A 250V~	4 SPST 2(2)A 250V~	4 SPST 2(2)A 250V~
Alarm output:	1 triac output, 12...24V~/~	1 SPST 2(2)A 250V~	1 SPST 2(2)A 250V~
Analogue output condenser fans:	1 PWM for condenser card	-	4...20mA or 0...10V
Serial ports:	TTL for connection to Copy Card, TelevisSystem and systems based on Modbus protocol	TTL for connection to Copy Card, TelevisSystem and systems based on Modbus protocol	TTL for connection to Copy Card, TelevisSystem and systems based on Modbus protocol
Suction probe resolution	0.1 bar fixed	0.1 bar fixed	0.1 bar fixed
Accuracy:	0.8°C in range 0...35°C for temperature sensor, 1% on end of scale value for pressure sensor	0.8°C in range 0...35°C for temperature sensor, 1% on end of scale value for pressure sensor	0.8°C in range 0...35°C for temperature sensor, 1% on end of scale value for pressure sensor
Power supply:	12V~/~ ±10% 50/60Hz	12V~/~ ±10% 50/60Hz	12V~/~ ±10% 50/60Hz
Consumption:	5VA	5VA	5VA

\*(selectable by parameter).

### Wiring diagrams



### Codes

p/n	descr.	Power supply	p/n	descr.	Power supply
EM4A150300	EWCM 412	12V~/~	EM4A150370	EWCM 418	12V~/~
EM4A150350	EWCM 415	12V~/~			



**Applications**

Controllers for static and ventilated cold rooms with single-phase compressors up to 2 HP for on-board installation. The EWRC 300 LX and EWRC 500 LX have 3 and 5 outputs respectively on configurable relays for controlling all the room's accessory users.

**Common features**

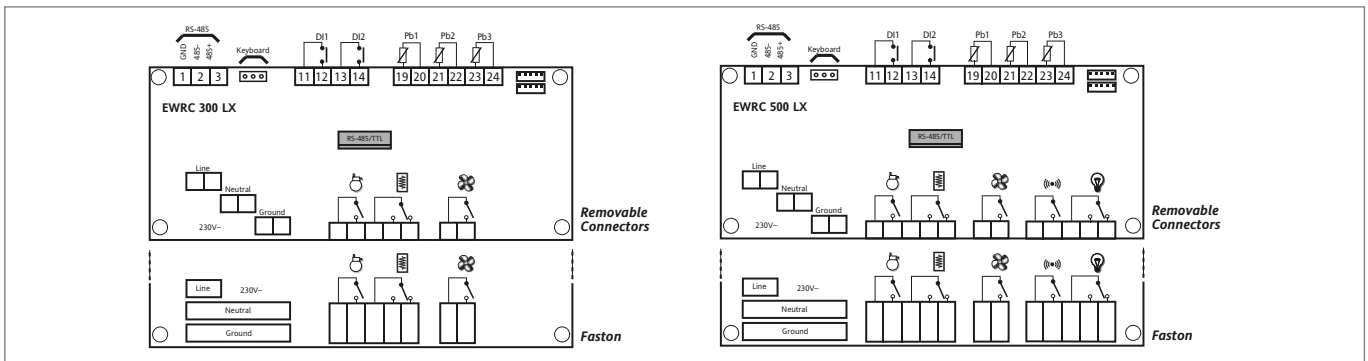
Front panel: IP54  
 Container: Bayblend FR110  
 Dimensions: front panel 210x245mm, depth 90mm  
 Installation: wall

Use temperature: -5...50°C  
 Storage temperature: -20...85°C  
 Ambient and storage humidity: 10...90% RH (non-condensing)

General features	EWRC 300 LX	EWRC 500 LX
Display range:	• NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C	• NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C
Display:	no decimal point * 2 displays: 3 digits + sign and 4 digits	no decimal point * 2 displays: 3 digits + sign and 4 digits
Analogue inputs:	3 x NTC/PTC *	3 x NTC/PTC *
Digital inputs:	2 clean contacts at safety extra low voltage	2 clean contacts at safety extra low voltage
Serial ports:	TTL and RS-485 (with optional plug-in module) for connection to CopyCard, TelevisSystem and systems based on Modbus protocol	TTL and RS-485 (with optional plug-in module) for connection to CopyCard, TelevisSystem and systems based on Modbus protocol
Digital outputs:	1 SPST 2Hp 250V~ 1 SPDT 1HP 250V~ 1 SPST 8(3)A 250V~	1 SPST 2Hp 250V~ 1 SPDT 1HP 250V~ 1 SPST 8(3)A 250V~ 1 SPDT 8(3)A 250V~ 1 SPST 1HP 250V~
Measurement range:	-55...140°C	-55...140°C
Accuracy:	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Consumption:	8VA max	8VA max
Power terminals:	6.3mm faston - removable terminals	6.3mm faston - removable terminals
HACCP:	optional	optional
Clock:	optional	optional
Power switch:	optional	optional

\*(selectable by parameter).

**Wiring diagrams**



**Codes**

p/n	description	Plus
RCP3HDTX1H700	EWRC 300 LX removable	RTC/HACCP
RCP3UDTX1H700	EWRC 500 LX removable	RTC/HACCP

**Codes**

p/n	description	Plus
RCP3UDVX1H700	EWRC 500 LX removable	RTC/ Main Switch

NOTE: check availability of possible options with sales department



### Applications

Controllers with advanced operational features for applications with double compartment cold rooms, with temperature, humidity and fan speed control and serial connection for synchronized defrosting management and the installation of a remote keyboard.

### Common features

Front panel: IP54

Container: Bayblend FR110

Dimensions: front panel 210x245mm, depth 90mm

Installation: wall

Use temperature: -5...50°C

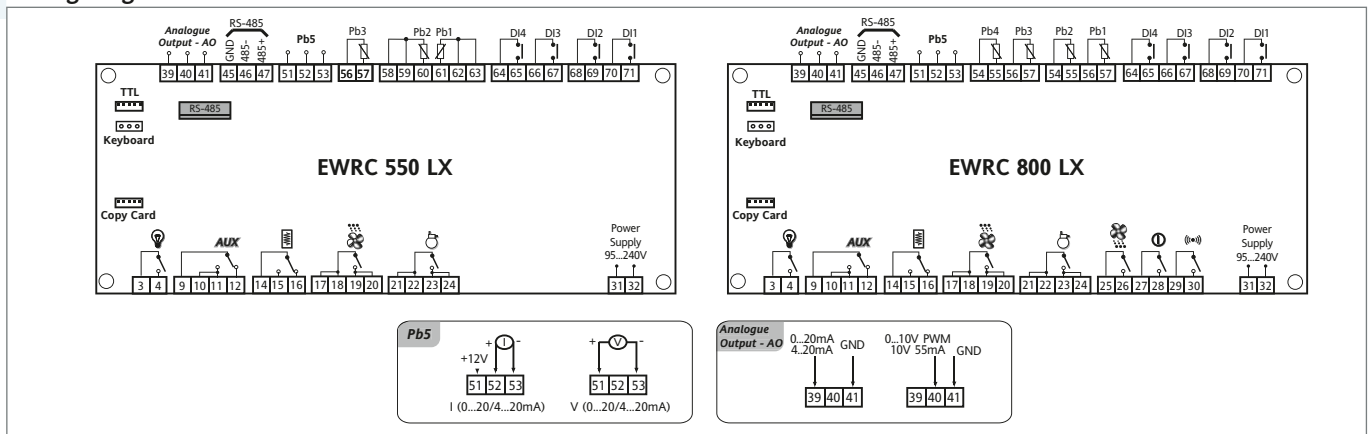
Storage temperature: -20...85°C

Ambient and storage humidity:  
10...90% RH (non-condensing)

General features	EWRC 550 LX	EWRC 800 LX
Display:	no decimal point * 2 displays: 3 digits + sign and 4 digits	no decimal point * 2 displays: 3 digits + sign and 4 digits
Analogue inputs:	2 Pt100* + 1 NTC* + 1 4...20mA	4 NTC* + 1 4...20mA *
Digital inputs:	2 clean contacts at safety extra low voltage	4 clean contacts at safety extra low voltage
Serial ports:	TTL for connection to CopyCard and to TelevisSystem RS-485 serial on optional plug-in module	TTL for connection to CopyCard and to TelevisSystem RS-485 serial on optional plug-in module
Digital outputs:	3 SPST 8(3)A 250V~ 1 SPST 2Hp 250V~ 1 SPDT 1HP 250V~	3 SPST 8(3)A 250V~ 1 SPST 2Hp 250V~ 1 SPDT 1HP 250V~ 1 SPDT 8(3)A 250V~ 2 SPST 1HP 250V~
Analogue outputs:	1 configurable analogue output (see wiring diagram)	1 configurable analogue output (see wiring diagram)
Measurement range:	-200...800°C	-50...110°C
Accuracy:	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power supply:	230V~ ±10% 50/60Hz	95...240V~ ±10% 50/60Hz
Consumption:	15W max	15W max
Power terminals:	6.3mm faston - removable terminals	6.3mm faston - removable terminals
HACCP:	optional	optional
Clock:	optional	optional
Power switch:	optional	optional

\*(selectable by parameter).

### Wiring diagrams



### Codes

p/n	descr.	Power supply	p/n	descr.	Power supply
RCEMIPTX1HH00	EWRC 550 LX Pt100	95...240V~	RCE48DXTX1HH00	EWRC 800 LX	95...240V~



**Applications**

Controllers with advanced operational features for applications with double compartment cold rooms, with temperature, humidity, and fan speed control for the management of curing and drying processes.

**Common features**

Front panel: IP54

Container: Bayblend FR110

Dimensions: front panel 210x245mm, depth 90mm

Installation: wall

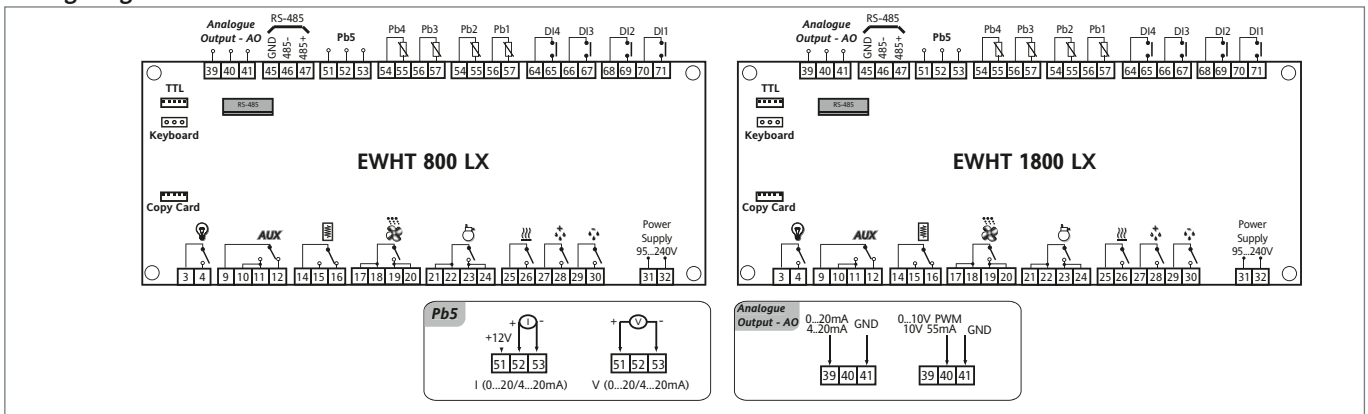
Storage temperature: -20...85°C

Ambient and storage humidity: 10...90% RH (non-condensing)

General features	EWHT800 LX	EWHT1800 LX
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• input 0...10V/4...20mA: 0...2000</li> </ul>	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• input 0...10V/4...20mA: 0...2000</li> </ul>
Display:	no decimal point * 2 3-digit displays + sign	Graphic LCD 64x128 pixels, backlit
Analogue inputs:	4 x NTC * + 1 input 0...10V/4...20mA *	4 x NTC * + 1 input 0...10V/4...20mA *
Digital inputs	4 clean contacts at safety extra low voltage *	4 clean contacts at safety extra low voltage *
Serial ports:	1 TTL for connection to CopyCard and 1 TTL for connection to TelevisSystem RS-485 serial on optional plug-in module	1 TTL for connection to CopyCard USB and 1 TTL for connection to TelevisSystem RS-485 serial on optional plug-in module
Digital outputs:	2 SPST 1HP 250V~ 1 SPDT 1HP 250V~ 1 SPDT 8(3)A 250V~ 1 SPDT 2Hp 250V~ 3 SPST 8(3)A 250V~	2 SPST 1HP 250V~ 1 SPDT 1HP 250V~ 1 SPDT 8(3)A 250V~ 1 SPDT 2HP 250V~ 3 SPST 8(3)A 250V~
Analogue outputs:	1 configurable analogue output (see wiring diagram)	1 configurable analogue output (see wiring diagram)
Use temperature:	-5...50°C	-5...45°C
Accuracy:	according to probe used	according to probe used
Resolution:	according to probe used	according to probe used
Power supply:	95...240V~ ±10% 50/60Hz	95...240V~ ±10% 50/60Hz
Consumption:	15W max	15W max
Power terminals:	Removable terminals	Removable terminals
HACCP:	present	present
Clock:	present	present
Relative humidity control:	present	present
Data Logger	not present	present

\*(selectable by parameter).

**Wiring diagrams**



**Codes**

p/n	description	Power supply
HTE48DTX1HH00	EWHT800 LX	95...240V~

**Codes**

p/n	description	Power supply
HTF48DTU1GH00	EWHT1800 LX	95...240V~

# FASEC 33-FASEC 43(C) - FASEC 53



## Applications

The FASEC 33 and FASEC 43(C) instruments are designed for speed control and are particularly suited for applications on refrigeration units for the condensation function.

The FASEC 53 is a manual fan regulator suitable for applications on refrigeration units.

## Common features

Front panel: IP20

Container: flame retardant NORYL plastic casing

Dimensions: front panel 48x96mm, depth 96mm excluding baseboard

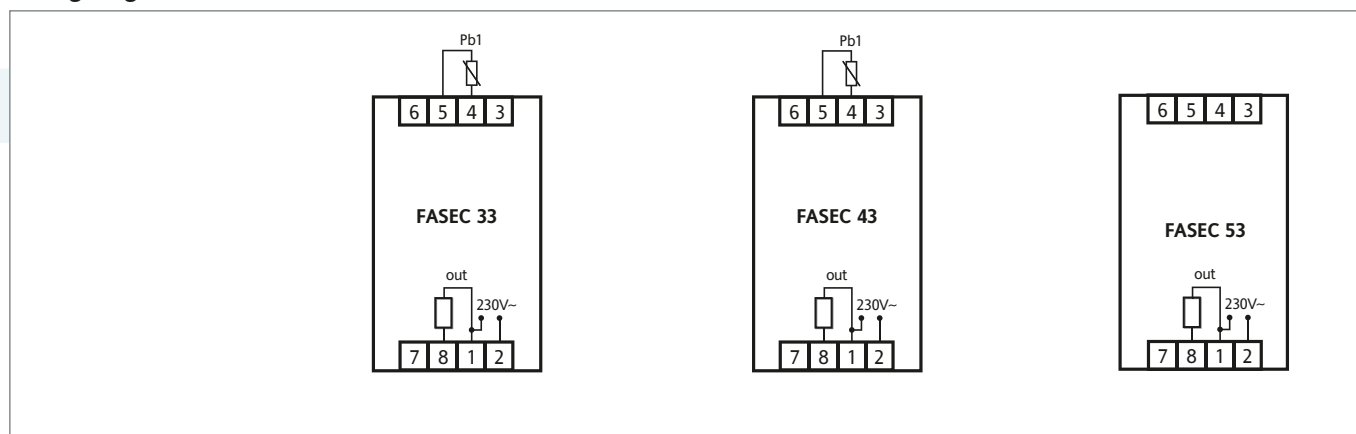
Installation: panel mounting with 45x92mm hole

Use temperature: -5...60°C

Storage temperature: -30...75°C

General features	FASEC 33	FASEC 43(C)	FASEC 53
Connections:	Octal baseboard	Octal baseboard	Octal baseboard
Regulation:	-	-	from 0 to 100% with knob on front panel
Analogue inputs:	1 PTC	1 PTC	-
Setting output:	1 2.5A triac, 7A triac	1 2.5A triac, 7A triac	1 2.5A triac, 7A triac
Setting range:	0...60°C	<ul style="list-style-type: none"> <li>FASEC 43: -40...30°C</li> <li>FASEC 43C: 0...60°C</li> </ul>	
External filter (for version 7A):	load power supply max current 7A; cylinder diameter 38mm, height 28mm; M8 fixing bolt.	load power supply max current 7A; cylinder diameter 38mm, height 28mm; M8 fixing bolt.	load power supply max current 7A; cylinder diameter 38mm, height 28mm; M8 fixing bolt.
Type of setting:	proportional phase capacity step	proportional phase capacity step	manual phase capacity step
Type of function:	for condensation	for evaporation	-
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz

## Wiring diagrams



## Codes

p/n	description	Power supply	p/n	description	Power supply
FA53370000	FASEC 33	230V~	FA55370000	FASEC 53	230V~
FA54370000	FASEC 43	230V~			



## Applications

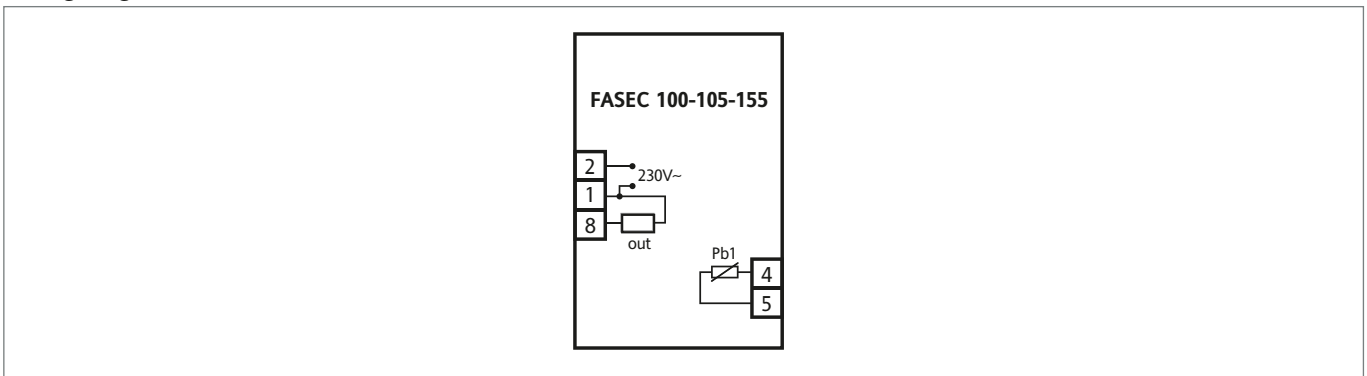
FASEC 100 units are automatic fan regulators suitable for applications on refrigeration units for both evaporation and condensation

## Common features

Installation: panel mounting or back panel mounting (FASEC 100), wall mounting (FASEC 105, 155)  
 Storage temperature: -30...75°C  
 Use temperature: -5...60°C

General features	FASEC 100	FASEC 105	FASEC 155
Container:	open version	IP55 plastic container	IP55 plastic container
Connections:	on screw-on terminal block	on screw-on terminal block	on screw-on terminal block
Analogue inputs:	1 PTC	1 PTC	1 PTC
Setting output:	proportional on filtered triac with anti-interference unit	proportional on filtered triac with anti-interference unit	proportional on filtered triac with anti-interference unit
Switching point:	settable with trimmer in range 3...55°C	settable with trimmer in range 3...55°C	settable with trimmer in range 3...55°C
Type of setting:	phase capacity step	phase capacity step	phase capacity step
Type of function:	for condensation and evaporation	for condensation and evaporation	manual
Power supply:	220V~ ±10% 50Hz	220V~ ±10% 50Hz	220V~ ±10% 50Hz
Pilotable power:	5A	7A	7A
Type of control:	automatic	automatic	automatic

## Wiring diagrams



## Codes

p/n	description	Power supply
FA100780	FASEC 100	220V~
FA105780	FASEC 105	220V~

## Codes

p/n	description	Power supply
FA155700	FASEC 155	220V~

# FASEC 500-FASEC 505 - FASEC 555



## Applications

FASEC 500 units are automatic fan regulators suitable for applications on refrigeration units for both evaporation and condensation

## Common features

Installation: panel mounting or back panel mounting

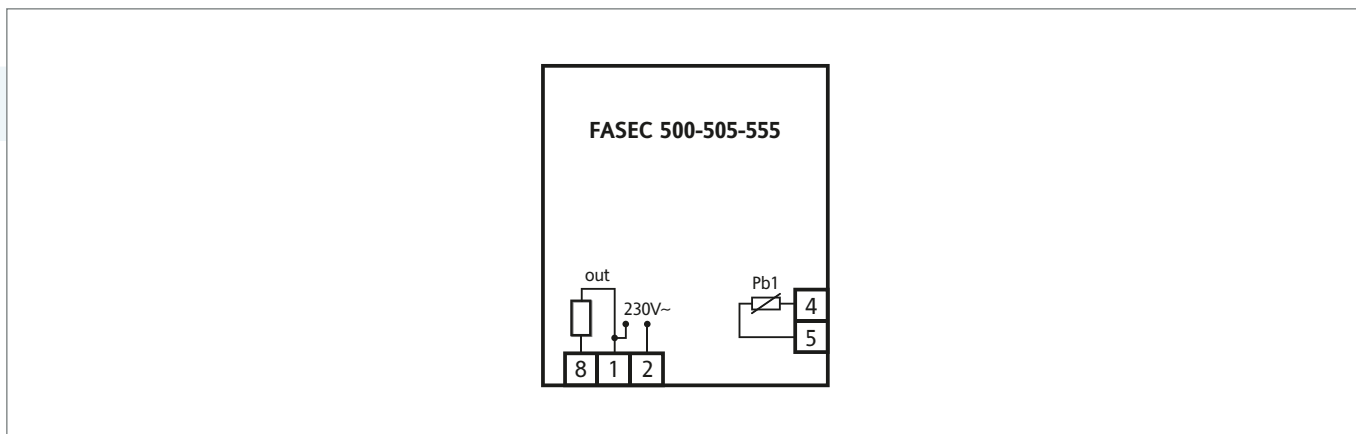
Storage temperature: -30...75°C

(FASEC 500), wall mounting (FASEC 505, 555)

Use temperature: -5...60°C

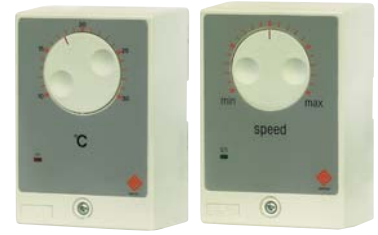
General features	FASEC 500	FASEC 505	FASEC 555
Container:	open version	IP55 plastic container	IP55 plastic container
Connections:	on screw-on terminal block	on screw-on terminal block	on screw-on terminal block
Analogue inputs:	1 PTC	1 PTC	1 PTC
Setting output:	proportional on filtered triac with anti-interference unit	proportional on filtered triac with anti-interference unit	proportional on filtered triac with anti-interference unit
Switching point:	settable with trimmer in range 3...55°C	settable with trimmer in range 3...55°C	settable with trimmer in range 3...55°C
Type of setting:	phase capacity step	phase capacity step	phase capacity step
Type of function:	for condensation and evaporation	for condensation and evaporation	manual
Power supply:	220V~ ±10% 50Hz	220V~ ±10% 50Hz	220V~ ±10% 50Hz
Pilotable power:	23A	23A	23A
Type of control:	automatic	automatic	automatic

## Wiring diagrams



## Codes

p/n	description	Power supply	p/n	description	Power supply
FA500780	FASEC 500	220V~	FA555700	FASEC 555	220V~
FA505780	FASEC 505	220V~			



**Applications**

The WM 203 units are automatic fan regulators suitable for air conditioning systems.  
 The WM 253 units are automatic fan regulators suitable for air conditioning systems.

**Common features**

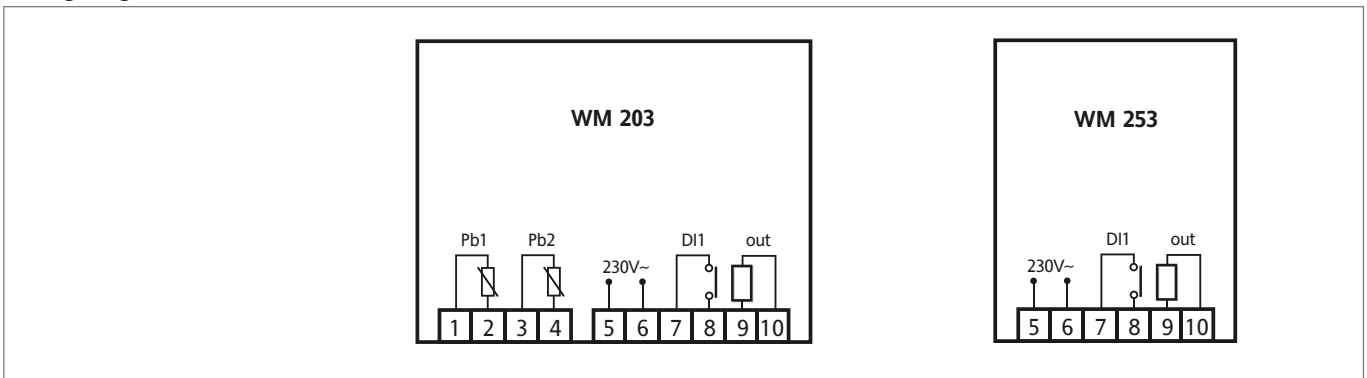
Front panel: IP50  
 Container: Flame retardant ABS plastic with snap shutting  
 Dimensions: front panel 75x108mm, depth 49mm

Installation: wall mounting, fixing screws provided  
 Use temperature: -5...55°C  
 Storage temperature: -30...75°C  
 Ambient and storage humidity: 10...90% RH (non-condensing)

General features	WM 203	WM 253
Connections:	on screw-on terminal block for max 2.5mm wires	on screw-on terminal block for max 2.5mm wires
Setting:	from 10°C a 30°C by means of knob on front panel	from 0 to 100% with knob on front panel
Input:	2 x NTC/PTC *	not available
Setting output	2.5A triac	2.5A triac
Type of function:	automatic fan speed control; automatic winter-summer reversing	manual control; speed proportional to position of potentiometer on front panel
Type of setting:	proportional phase capacity step	proportional phase capacity step
Consumption:	3VA max	3VA max
Power supply:	230V~ ±10% 50Hz	230V~ ±10% 50Hz

\*(selectable by parameter).

**Wiring diagrams**



Codes p/n	description	Probes	Power supply	Codes p/n	description	Probes	Power supply
WM203781	WM 203 Automatic	2 PTC	230V~	WM253710	WM 253 Manual	-	230V~