

EWCM 400

Controllers for multiple compressors and condensers



Description

EWCM 400 controllers can be used to manage compressor plants with standard Eliwell 32x74 sizes.

These controllers have 4 relay outputs for the management of compressors, an analogue input for inlet (NTC temperature or pressure probe configurable by means of a parameter), a condenser analogue input (4...20 mA for pressure probe) and 7 digital inputs for the management of temperature control alarms of compressors, high and low pressure and generic shutdowns.

All models have TTL connections that enable the controllers to be used with Copy Card, the quick programming accessory. All models use the ModBUS-RTU standard communication protocol.

The values measured by probes is displayed with 3 digits. These controllers have a 12 V power supply.

EWCM 412

EWCM 412 has a triac 12...24V output for the management of condensing fans with powers up to 2 A, for power in higher range, a PWM connection to an external fan module is excepted.

EWCM 415

EWCM 415 has a relay output for the management of alarms. This controller does not control condensation.

EWCM 418

EWCM 418 has a relay output for the management of alarms and an analogue output (4...20 mA or 0...10 V) to enable the control of condensation by means of an inverter.



Technical Data

Front panel protection: IP65

Casing: plastic, fire extinguishing, UL94-V0

Dimensions: front panel 70x32 mm, depth 70 mm

Mounting: panel-mounting, 71x29 mm hole

Connection: COLV power cable

COHV signal cable

CORK inverter output cable (EWCM 418 only)

Operating temperature: -5...60°C

Storage temperature: -20...85°C

Inlet analogue input: NTC temperature probe or 4...20 mA for pressure probe configurable by means of a parameter

Analogue condensation input: 4...20 mA for pressure probe

Digital inputs: 7 free-voltage digital inputs reserved to low and high pressure alarms, remote ON/OFF and four generic alarms for compressor.

Digital outputs for compressors: 4 2(2)A 250V~ relays

Alarm output: 1 TRIAC output, 12...24 V~/500 mA max (EWCM 412) or 1 2(2)A 250V~ relay (for models

EWCM 415 and EWCM 418)

Analogue output: 1 PWM output for the management of a condenser control card (EWCM 412)

Inverter output: 4...20 mA analogue output or 0...10 V

configurable by means of a parameter for the direct management of an inverter module (only for model EWCM 418).

Serial output: TTL port for quick programming with Copy Card or for the connection to remote supervision system.

Communication protocol: protocol Televis® or ModBUS-RTU

Resolution of inlet probe: 0.1°C/1°F for NTC temperature probe, 0.1 bar or 0.01 bar for the inlet pressure probe (configurable by means of a parameter)

Resolution of condensation probe: 0.1 bar (fixed)

Precision: 0.8°C with the 0...35°C range for temperature sensor, 1% of bottom scale for pressure sensor

Power supply: 12 V~/±10%, 50/60 Hz

EWCM 800 series

controller for compressor pack units



Description

EWCM 800 controllers can be used to manage all compressors in a compressor room of refrigerating plant by means of the inlet pressure. These controllers offer reversal tables for the most used freon gases and enable therefore values to be displayed and set in bar, PSI, °C and °F.

Depending models, they can have 4 (EWCM 840/S), 6 (EWCM 860/S) or 9 (EWCM 890/S) compressors; each compressor must have an alarm input to disconnect the system in the event of failure.

It is possible to configure two different set points: for standard operation or for operation with limited requirements.

The reduced set point can be configured by means of the internal clock or by a clock enabled with a digital input. EWCM 800 models have a RS485 serial connection for TelevisSystem. The values measured by the probes are displayed with 4 digits.

These controllers are available with 230, 115, 24 or 12 V~ power supplies.

Technical Data

Casing: plastic, ABS UL-94 V0.

Size: front panel 72x144 mm, depth 120 mm.

Mounting: panel-mounting with fixing brackets, 67x136 mm hole.

Connections: screws with a disjoining clamp.

Display: 4 digits.

Compatible freon gases: 22, R 134 A, 502, 404 A, 407 A, 507A.

Low pressure input sensor: 4...20 mA programmable or NTC (depending on model).

Minimum pressure switch: 1 opto-insulated voltage input (same voltage as power supply).

Alarm output: 6(3)A 250V~ SPST relay.

Alarm controller output: 6(3)A 250V~ SPST relay.

Number of configurable outputs: 4, 6 or 9 on 6(3)A 250V~ SPST relay, depending on model.

Alarms: 4, 6 or 9 inputs in opto-insulated voltage (usually with the same voltage as power supply).

Serial output: RS485 port for connection of TelevisSystem.

Resolution: 0,01 bar; 0,1 PSI (°C); 1 °F.

Accuracy: above 0.5% of bottom scale.

Consumption: 6 VA.

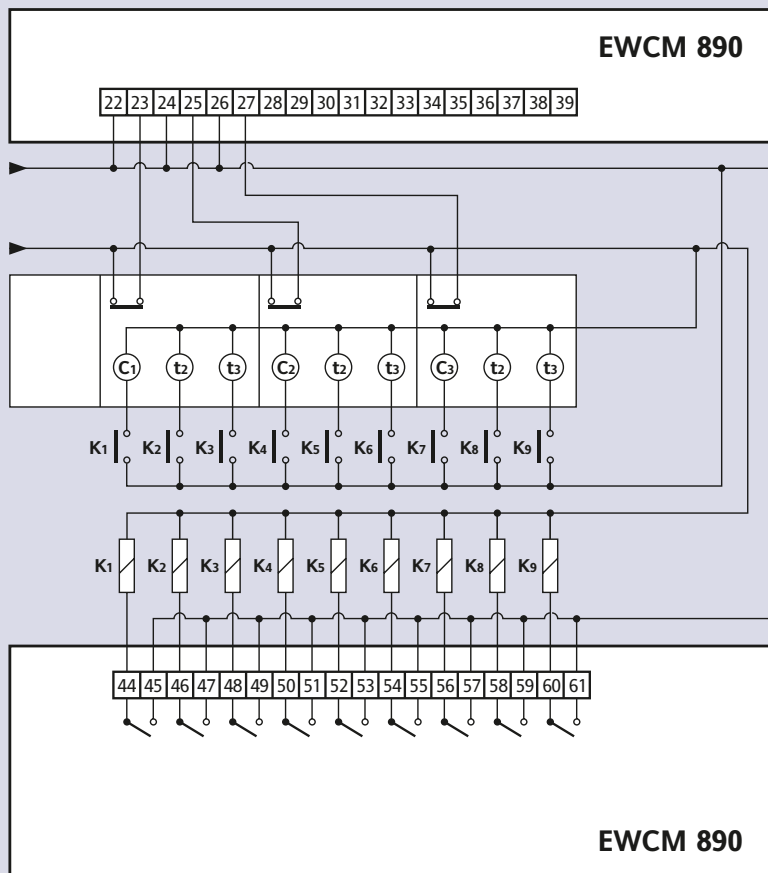
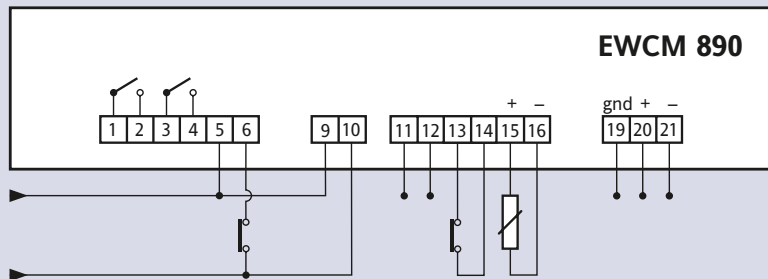
Power supply: 230, 115, 24, 12 V~ ±10%; 50/60 Hz.

Description of Wiring Diagram

1 – 2	Alarm relay output	44 – 45	Relay 1 output
3 – 4	Safety relay output	46 – 47	Relay 2 output
5 – 6	Low pressure alarm input	48 – 49	Relay 3 output
9 – 10	Power supply	50 – 51	Relay 4 output
11 – 12	GND	52 – 53	Relay 5 output
13 – 14	Reduced set input	54 – 55	Relay 6 output
15 – 16	Evaporator probe input	56 – 57	Relay 7 output
19 – 20 – 21	RS485 serial connection to the TelevisSystem	58 – 59	Relay 8 output
22 – 23	Alarm input	60 – 61	Relay 9 output
24 – 25	Alarm input		
26 – 27	Alarm input		



Wiring Diagram



EWCM 900/S

controller for compressor pack units



Description

EWCM 900/S are controllers for managing compressors and fans in the machinery compartment of a refrigerating system. The compressor control is performed by detecting the suction pressure of the system while the fan control is performed by monitoring the condensation pressure. They contain the reversal tables for the most used freon gases, allowing to display and set data directly in bars, °C and °F. They have 11 outputs on relay for compressor and fan management; each compressor is provided with an alarm input in order to cut off from operation in case of fault. Two different setpoints can be set: one for standard operation and the other for reduced operation. The reduced setpoint is set through either an internal clock or by a clock enabled with a digital input. EWCM 900/S are provided with a RS485 serial connection to link to the TelevisSystem; data are viewed on two displays: a 4-digit display and a 3-digit display. The power supply voltage can be optionally 230, 115, 24, or 12 V~.

Technical Data

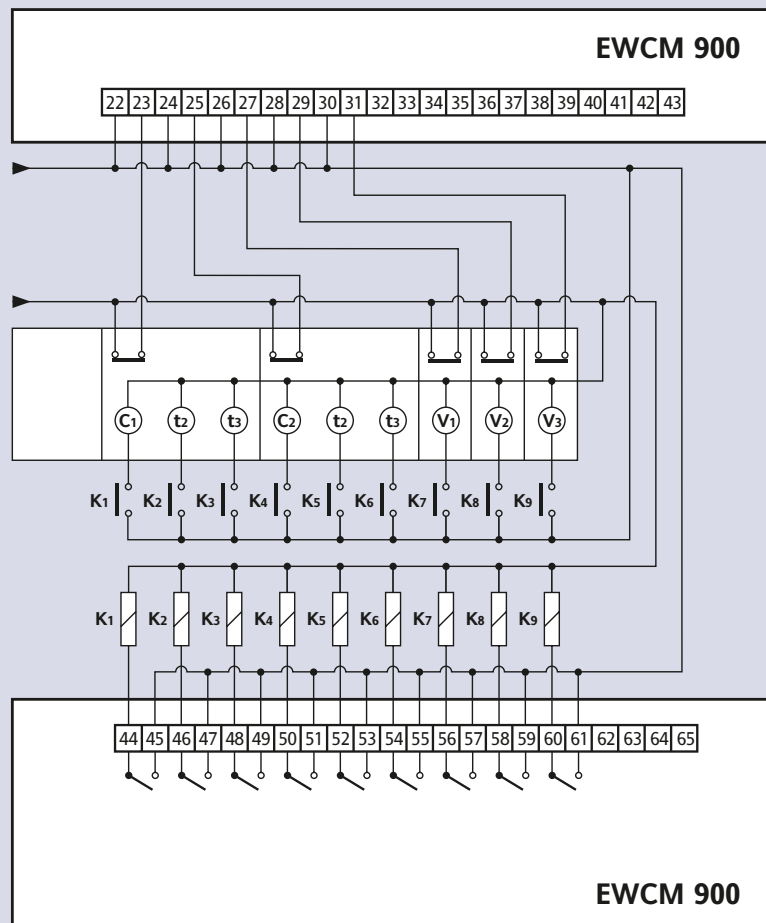
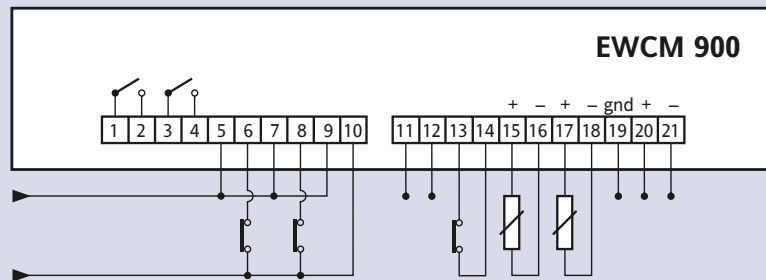
Casing: plastic ABS UL-94V0.
 Size: front panel 72x144 mm, depth 120 mm.
 Mounting: panel-mounting with fixing brackets, 67x136 mm hole.
 Connections: removable screws terminals.
 Compatible freon gases: 22, R 134 A, 502, 404 A, 407 A, 507A.
 Inlet sensor input: 4...20 mA programmable or NTC (depending on model).
 Outlet sensor input: 4...20 mA programmable or NTC (depending on model).
 Minimum pressure switch: 1 opto-insulated voltage input (same voltage as power supply).
 Outlet pressure switch: 1 opto-insulated voltage input (usually with the same voltage as power supply).
 Alarm output: 6(3)A 250V~ SPST relay.
 Failure controller output: 6(3)A 250V~ SPST relay.
 Number of configurable outputs: 11 on 6(3)A 250V~ SPST relay.
 Alarms: 11 opto-insulated voltage inputs (usually with the same voltage as power supply).
 Serial output: RS485 port for connection of TelevisSystem.
 Consumption: 6 VA.
 Power supply: 230, 115, 24, 12 V~ ±10%; 50/60 Hz.

Description of Wiring Diagram

1 – 2	Alarm relay output	44 – 45	Relay 1 output
3 – 4	Safety relay output	46 – 47	Relay 2 output
5 – 6	Low pressure alarm input	48 – 49	Relay 3 output
7 – 8	High pressure alarm input	50 – 51	Relay 4 output
9 – 10	Power supply	52 – 53	Relay 5 output
11 – 12	GND	54 – 55	Relay 6 output
13 – 14	Reduced set input	56 – 57	Relay 7 output
15 – 16	Evaporator probe input	58 – 59	Relay 8 output
17 – 18	Condenser probe input	60 – 61	Relay 9 output
19 – 20 – 21	RS232 serial connection to the TelevisSystem		
22 – 23	Alarm input		
24 – 25	Alarm input		
26 – 27	Alarm input		
28 – 29	Alarm input		
30 – 31	Alarm input		



Wiring Diagram



EWCM 809/NH3/S

controller for compressor pack units



Description

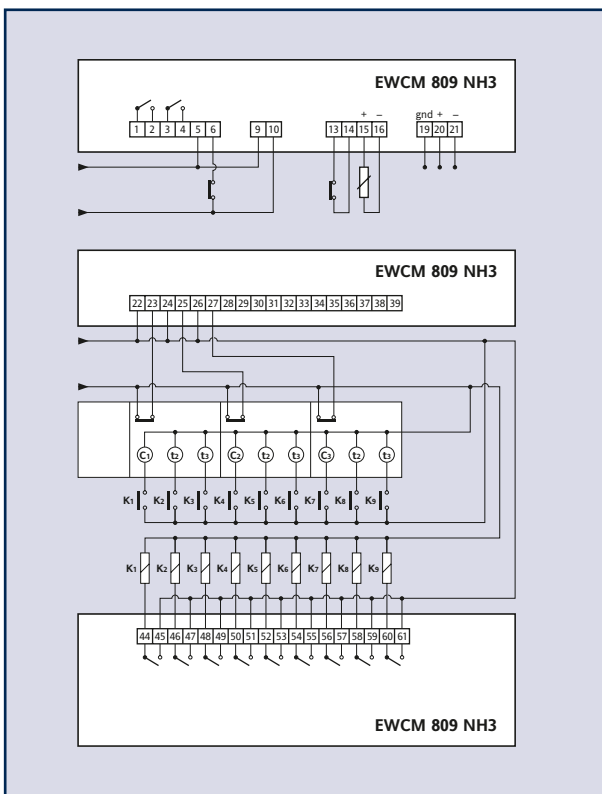
EWCM 809/NH3/S controllers can be used to manage all compressors in a compressor room. The compressors are controlled by means of the inlet pressure. These controllers offer reversal tables for R-717 gas (ammonia) and enable therefore values to be displayed and set in bar, °C and °F. These controllers have 9 relay outputs that can be used to manage compressors and fans. Each compressor has an alarm input to disconnect the system in the event of failure. In the event of failure, the control switches to an emergency system to allow it to run at its minimum load until it is serviced.

It is possible to configure two different set points: for standard operation or for operation with limited requirements.

The reduced set point can be configured by means of the internal clock or by a clock enabled with a digital input. EWCM 809/NH3/S models have a RS485 serial connection for TelevisSystem. The values measured by the probes are displayed with 4 digits.

These controllers are available with 230, 115, 24 or 12 V~ power supplies.

Wiring Diagram



Technical Data

Casing: plastic ABS UL-94V0.

Size: front panel 72x144 mm, depth 120 mm.

Mounting: panel-mounting with fixing brackets, 67x136 mm hole.

Connections: removable screws terminals.

Type of cooler: ammonia.

Low pressure input sensor: 4...20mA programmable or NTC (depending on the model)

Minimum pressure switch: 1 optic insulated voltage input (same voltage as power supply)

Alarm output: on 6(3)A 250V~ SPST relay.

Falling controller output: on 6(3)A 250V~ SPST relay.

Number of configurable outputs: 9 outputs on 6(3)A 250V~ SPST relay according to the model.

Alarms: 9 optic insulated voltage inputs (usually with the same voltage as power supply).

Serial output: RS485 port for connection to the TelevisSystem.

Consumption: 6VA.

Power supply: 230, 115, 24, 12V~ ±10%, 50/60 Hz.

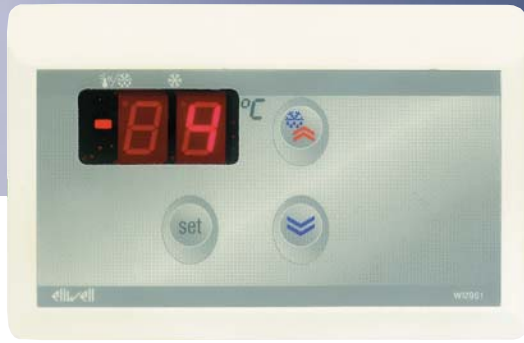
Description of Wiring Diagram

- 1 – 2 Alarm relay output
- 3 – 4 Safety relay output
- 5 – 6 Low pressure alarm input
- 9 – 10 Power supply
- 13 – 14 Reduced set input
- 15 – 16 Evaporator probe input
- 19 – 20 – 21 RS232 serial connection to the TelevisSystem
- 22 – 23 Alarm input
- 24 – 25 Alarm input
- 26 – 27 Alarm input
- 44...61 Relay output 1...Relay output 9



WM 961 (/A, /B)

single stage controller for temperature



Description

WM 961 controllers have one point of intervention only, are for wall-mounting and can be used for refrigeration applications. These controllers have 1 input for NTC temperature probes and 1 output relay to manage the loads.

Defrost cycles are controlled through timers that stop the compressor at specific intervals of time.

The values measured by the probe are displayed with two digits and sign. The WM 961/A model also has a alarm relay output, while the WM 961/B model has a buzzer for acoustic alarms. These controllers are available in standard 80x123S size for wall-mounting and with 230 V~ or 12 V~/~ power supplies.

Technical Data

Front panel protection: IP30.

Casing: plastic, PC+ABS, self-extinguishing, UL94-V0.

Size: front panel 80x123 mm, depth 25 mm.

Mounting: wall-mounting.

Connections: screw terminals for max 2.5 mm² leads (one lead per terminal for power connections).

Operating temperature: -5...55°C.

Storage temperature: -30...75°C.

Display: 2 digits plus sign, 12.5 mm high.

Data storage: permanent memory (EEPROM).

Input: NTC probe with reinforced insulation.

Main output: 1 output on 15A 1 hp 250 V~ SPDT relay.

Auxiliary output: 1 output on 12 V~/20 mA max (/A model).

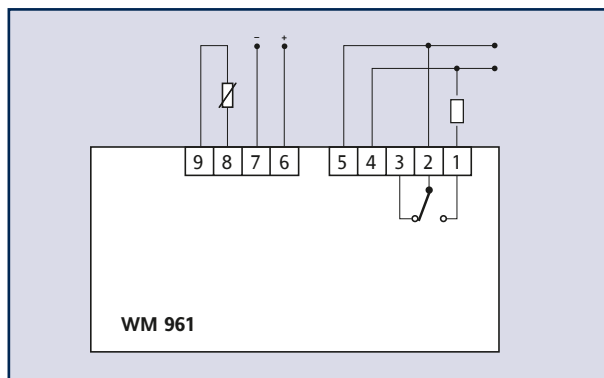
Measurement range: -50...50°C.

Resolution: 1°C.

Accuracy: above 0.5% of bottom scale.

Power supply: 230 V~ or 12 V~/~±10%, 50/60 Hz.

Wiring Diagram



Description of Wiring Diagram

- 1-2 Relay N.O.
- 2-3 Relay N.C.
- 4-5 Power supply
- 6-7 Output 12 V~ (optional)
- 8-9 Probe input

