

ERT 200 FAMILY

Roof-Top / Packaged Unit Controllers 1 Circuit - 2 Compressors



Description

ERT 200 is a compact device that permits control of air conditioning units of the following types:

- AC precision units
- Mono-blocks
- Condensing units
- Roof-tops
- Close control
- Ducted split units

with single circuit, and with 2 compressors or 1 compressor with a stage. It is possible to control condensation fan speed proportionally for currents of up to 2 A without using external devices.

Main characteristics

- Temperature control on inlet air probe
- Condensation control based on temperature or pressure
- Automatic change over on inlet or outdoor air temperature
- Boiler or auxiliary electrical heater control for heating
- Dynamic setpoint based on outdoor temperature
- Temperature freecooling and freeheating through proportional output 0-10 V_m or 4-20 mA (**ERT215A**) (Damper)
- Heat pump lock under particularly cold outdoor temperature conditions
- Dynamic defrost setpoint based on outdoor temperature
- Exhausted filters digital input (based on differential pressure)
- Parameter setting from the keyboard or through a Personal Computer
- Copy Card for uploading and downloading parameter
- Redundancy capability for safety applications
- Remote keyboard (up to 100 m) which may be connected up directly without a serial interface
- ModBus protocol ("B" Models)
- Televis protocol

Using a personal computer, with PARAM MANAGER the user has very helpful software tool that guides the configuration of the controller easily and quickly using simple icons or default configuration.

Models

A series of models and optional DEVICES are available to cover a wide range of different applications and installations.



ERT210

1 stage Heat Pump or 2 Cool, Integrated control of fan speed (max 2A) + PWM



ERT210B

1 stage Heat Pump or 2 Cool, Integrated control of fan speed (max 2A) + PWM, ModBus



ERT215A

1 stage Heat Pump or 2 Cool, Fan speed control with PWM or ON/OFF(relay)

Free Cooling function with 4...20mA/0...10V



ERT215BA

1 stage Heat Pump or 2 Cool, Fan speed control with PWM or ON/OFF(relay)

Free Cooling function with 4...20mA/0...10V, ModBus

Optional - Remote Keyboard

EKW200-RT/S



Wall Mounting remote keyboard with internal temperature sensor



Features

Keyboard

Model	ERT210(B)	ERT215(B)A	EKW200-RT/S
Part Number Part Number (B models)	MW320050 (MW320060)	MW320080 (MW320090)	MW320630 –
Application			
Chiller	•	•	
Chiller/Heat Pump	•	•	
Roof Top	••	••	
Condensing Unit	••	••	
Packaged Unit	••	••	
Ducted Split	•	•	
Configuration			
Circuits	1	1	
Evaporators	1	1	
Compressors	2*	2	
Compressors Stages	1 or 2	1 or 2	
Continuous Fan (proportional) / Proportional Damper	Continuous Fan only	Selectable	
Electric Heaters	1	1	
Input/Output			
Digital Inputs	5	5	
Temperature Probes	3	3	1
Configurable Probes (Temperature/Pressure)	1	1	
Relays	4	5	
Triac Output 24 V~	500 mA	500 mA	
Triac Output 230 V~	2A max		
PWM Outputs (for Fan Speed)	1	1	
Functions			
Air Economizer (Air Free Cooling)		•	
Redundancy	•	•	

• compatible

*only cooling mode

•• recommended

Features common to all models

Functions	Diagnostic	Connectivity
Heat Pump	Faulty Sensor	TTL
Balancing Compressor Hours	High Pressure	Televis
Standard Defrost	Low Pressure	Modbus
Dynamic Defrost	Thermal Compressor Protection	
Dynamic Set Point	Thermal Fan Protection	
Condensing Temperature Control	Exhaust Air Filter (digital input)	Mechanical
Condensing Pressure Control	Antifreeze Alarm	Panel Mounting
Auto Change Over	High Input Temperature	Plastic Box
Remote Change Over	High Temperature Discharge Alarm	Fast Connectors
Remote ON-OFF		

User Interface

KEYS



DOWN key
Reset Alarms/SET/DOWN or SCROLL DOWN



UP key for heat mode enabled sequence (standby-cool-heat-standby/UP or SCROLL UP



UP/DOWN keys press together
one level UP/DOWN on menu tree

LEDs



LED compressor 1
ON if compressor 1 active/OFF inactive/BLINK timing count



LED compressor 2
ON if compressor 2 active/OFF inactive/BLINK timing count



LED cooling
ON if device in cooling mode



LED heating
ON if device in heating mode



LED defrost
ON if def. active OFF ended-disabled/BLINK timing count



LED anti-freeze
ON if antifreeze-heater-boiler active/OFF if inactive

Accessories

Transformers



TF411200: 230/12V - 5 VA for ERT200 (protected)

PROBES



NTC probe 103AT, 1,5m (plastic cap, 2wires cable)

NTC probe 6x40, 1,5m (metal cap, silicon or PVC cable)

NTC probe 6x40, 1,5m (plastic cap, PVC cable)



EWPA030, Pressure transducer 4...20mA/0...30bar

Different lengths are available on request

Fan Speed Controls



- CF-05: Max 2,5A/230V~ (max 500W)

- CF-15: Max 8A/230V~ (max 1500W)

- CF-20: Max 10A/230V~ (max 2200W)

- CF-REL: relay 6A/230V~

- DRV 300: 3 phases 12...20A/420V~ (IP22 or IP55)

OTHERS

COLV0100 - Connecting cable for signal (inputs or low voltage outputs)

COHV0100 - Connecting cable for power (Outputs)

Copy Card: To copy configuration between devices

Technical Data

	Typ.	Min.	Max.
Power supply voltage	12 V~	10 V~	14 V~
Power supply frequency	50/60 Hz		
Power consumption	5 VA		
Insulation class	1		
Operating temperature	25 °C	-10 °C	60 °C
Operating humidity*	30%	10%	90%
Storage temperature	25 °C	20 °C	85 °C
Storage humidity *	30%	10%	90%

*(non condensing)

Digital Outputs

n° 4 or 5 Relays 2(2)A - 250V~ (1/4hp 230V~, 1/8hp 120V~)

n° 1 Triac 2 A - 250V~ (**ERT210**)

n° 1 Triac 24V open collector output for alarm (max500mA)

Analogue outputs

n°1 PWM output

n°1 4...20mA/0...10V output for fan speed (**ERT215A**)

Analogue inputs

n° 3 Temperature sensors

n° 1 Configurable input: 4...20 mA pressure transducer or temperature sensor

Temperature resolution: 0,1 °K

Temperature accuracy: 0,8 °K in the range 0...35 °C

Pressure resolution: 0,1 bar

Pressure accuracy: 1% end scale

Digital inputs

n° 5 Voltage free digital inputs

Serial output

n° 1 TTL output for PC or network connection (9600 Baud)

NOTE: Input and outputs meanings are configurable by parameters

Terminal and connectors

n°1 quick coupling 9 -pin connector for high voltage output

n°1 quick coupling 16 -pin connector for low voltage signals

n°1 5 -pin connector for serial output or copy card

n°1 3 -pin connector for remote keyboard

n°1 3 -pin connector for analog output (**ERT215A**)

Installation

Dimensions: font panel 76x34 mm; depth 58 mm.

Housing: PC+ABS plastic resin with V0 extinguishing class.

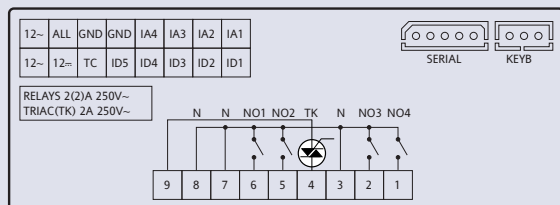
Assembly: panel, on 71x29mm hole.

IP protection: IP65 on the front.

Wiring Diagram

210

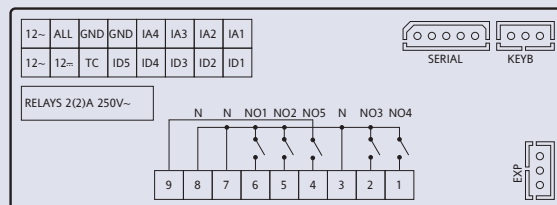
210B



Wiring Diagram

215A

215BA



Description Wiring Diagram

Labels

SERIAL	TTL Serial Connection for Copy Card or PC
KEYB	Connection to (optional) Remote Keyboard
EXP	Connection to Expansion

IAx	Analogue Input x
IDx	Digital Input x
12	12 V~
GND	Ground
N	Neutral
NOx	Digital Output x
TC	Output for external fan modules PWM
TK	Triac
ALL	Alarm
NC	Not connected

Regulations

The product meets the following CEE Directives:

- 73/23/CEE Council directive and subsequent modifications
- 89/336/CEE Council directive and subsequent modifications and meets the requirements of the following Armonised regulations:
- LOW VOLTAGE: EN60730
- EMISSION : EN50081-1 (EN55022)
- IMMUNITY : EN50082-2 (IEC 1000-4-2/3/4/5)

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