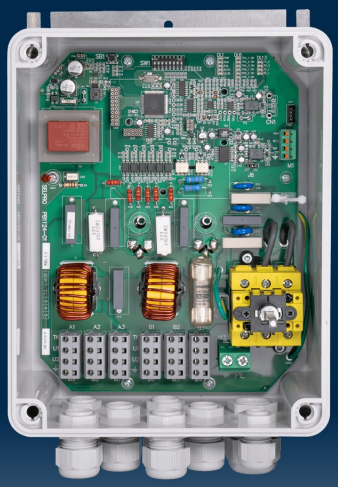
EMK

Dual-channel Modbus digital control panel system for single-phase asynchronous fan motors



AC fans

Single-phase

Slave

EMK is a **compact panel** with **integrated isolator switch**, designed to operate exclusively via **Modbus RTU** protocol, allowing the **master controller** to manage all **operating parameters** in **real time**, both **read** and **write**. Ideal for controlling **single-phase fans** in HVAC&R systems, it provides **precise** and **efficient** speed control and is distinguished by **two independent 10 A outputs**, enabling management of up to **six single-phase motors** split into **two separate circuits**, offering greater **installation flexibility**.

Motor control is performed via **mains-balanced phase-cut control**, with **continuous proportional control** from **0% to 100%**. Each output is characterised by a fixed **6-second acceleration/deceleration ramp** for each full speed change.

Thanks to its **integrated architecture**, **EMK** simplifies system design, eliminating the need for **external components** such as **relays**, **terminal blocks** or **auxiliary control units**. The **integrated isolator switch** and the **two independent outputs** make installation **faster**, **safer** and more **orderly**, helping to reduce **time**, **costs** and **panel space**.

If requested at order stage, it can be connected to an optional **remote display** for local **parameter management** and **operating status** visualisation.

In the absence of communication for a time interval longer than the default **timeout**, the fans are automatically driven to the **emergency speed**, selectable via **DIP switches**.

Monitoring of **TK protections** is integrated in the **motor output terminals** and is accessible via **Modbus** for **remote diagnostics**.

Housed in a high-resistance **technopolymer IP55 enclosure**, **EMK** is suitable for use in **dusty**, **humid** or **high-temperature environments**, providing a **complete**, **ready-to-use** solution.

Rated current (RMS)

at 50 °C ambient temperature

10 + 10A

Supply voltage

Available options:

230 Vac ± 15%

50/60 Hz:

Automatic

Control principle

Phase-cut control

Single-phase phase-cut control, mains-synchronised and line-balanced

Modbus RS-485 (RTU) connection

Designed to operate exclusively via **Modbus RTU** protocol, **two independent 10 A outputs** are available, enabling management of up to **six single-phase motors** split into **two separate circuits**, offering greater **installation flexibility**.

2 Slave

Control system

Proportional Slave

Digital inputs

6 Inputs
On/Off

The controller is equipped with **3+3 inputs** (**three per circuit**) for **TK thermal contacts**, enabling direct monitoring of **fan group protections**, with status readable via **Modbus**.

Motor thermal contacts (TK)

Operating parameters

Modbus registers channel 1

Modbus registers channel 2

Integrated isolator switch

Thanks to the **integrated isolator switch**, the device is configured as a **compact** and **self-contained electrical panel**, eliminating the need for **external components** for system installation.

Integrated isolator switch

2 outputs

Technical specifications

Number of motor connection outputs	3+3
Interface	Optional 2×16 character LCD display
Electrical protections	• Control input protection • Mains overvoltage protection
Protection ratings	IP55
Applicable earthing systems	Full compliance with international earthing standards IT / TT / TN
Operating temperature	-20°C / 50°C
Weight (kg)	2,35 Kg
Dimensions H × W × D (mm)	290 x 200 x 183

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