

RDM

Digital multifunction Master & Slave multi-input controller for three-phase asynchronous fan motors

AC AC fans

Three-phase

MS Master & Slave



RDM is a multifunction digital controller designed for speed control of **high-slip** three-phase **asynchronous motors** used on **axial, radial** or **centrifugal fans** in HVAC&R and **industrial applications**. The control principle is based on **mains-balanced phase-cut control**, enabling **precise** and **dynamic** ventilation control, optimising **energy efficiency** and reducing **electrical** and **mechanical wear** of components.

The device is available in **two software versions** selectable during **configuration**: one with advanced **PID control** and one with a dedicated algorithm for **Copeland Digital Scroll** compressors. Both versions also support **proportional operating mode** and can operate in **Master** or **Slave mode**, providing up to **13 predefined configurations** to meet any **system requirement**.

In the proportional **PID version**, RDM features **two analogue inputs** compatible with **4–20 mA**, **0–10 Vdc**, **0–5 Vdc** signals and **NTC probes** (**-10 / 90 °C**), plus an independent **PWM input**. In the **Digital Scroll version**, there are **two analogue inputs**: one compatible with **4–20 mA** signals and one for **4–20 mA** signals or **NTC probes** (**-10 / 90 °C**). The signal type read is determined by the selected **configuration**. There are **3 configurations**, each of which is in turn divided into **two distinct parameter banks**.

Both versions include **two programmable on/off contacts**. In the proportional **PID model** they can be configured for functions such as **remote Start/Stop**, **TK protection**, **night limit activation** or **heat pump mode**. In the **Digital Scroll version**, the contacts are intended only for **remote Start/Stop** and reading of **TK protection**.

A **programmable relay** is provided for **alarm** or other functions, while the **0–10 Vdc analogue output** enables **proportional control** of **slave devices** or **external actuators**. Protection against **overvoltage**, **overload** and **thermal faults** ensures high **operational reliability** even in **complex industrial environments**. RDM is available in an **IP55** version for **outdoor use** or **IP20** for installation inside **electrical panels**.

Thanks to its **operational versatility**, **dual software configuration** and compatibility with **Digital Scroll compressors**, RDM is a **complete** and **high-performance** solution.

Rated current (RMS)

at 50 °C ambient temperature



Supply voltage

Available options:



50/60 Hz:

Automatic

Control principle



Phase-cut control

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

Inputs

3

Inputs

PID version

RDM features two analogue inputs compatible with 4–20 mA, 0–10 Vdc, 0–5 Vdc signals and NTC probes (–10 / 90 °C), plus an independent PWM input.

4-20 mA

0-10 V

0-5 V

NTC -10/+90°C

PWM

2

Inputs

Digital Scroll version

In the Digital Scroll version, there are two analogue inputs: one compatible with 4–20 mA signals and one for 4–20 mA signals or NTC probes (–10 / 90 °C).

4-20 mA

NTC -10/+90°C

Control system



Proportional Slave



Proportional Master



Master PID



Copeland digital scroll

Available in **two software versions** selectable during **configuration**: one with advanced **PID control** and one with a dedicated algorithm for **Copeland Digital Scroll** compressors. Both versions also support **proportional operating mode** and can operate in **Master** or **Slave mode**, providing up to **13 predefined configurations**.

Setpoints and operating profiles

1

Setpoint

In both **PID** and **Digital Scroll** configurations, **RDM** integrates a configurable **operating bank**, enabling configuration of the **control setpoint parameters** or the **Digital Scroll parameters**, respectively.

Operating parameters:

2

Banks

Customisable parameters

Parameter bank for Setpoint 1

Parameter bank for Setpoint 2

Digital inputs

2 Inputs On/Off

Both versions include **two programmable on/off contacts**. In the proportional **PID model** they can be configured for functions such as **remote Start/Stop, TK protection, night limit activation or heat pump mode**. In the **Digital Scroll version**, the contacts are intended only for **remote Start/Stop** and reading of **TK protection**.

Remote Start/Stop

Motor thermal contacts (TK)

Night speed limit

Direct/Reverse mode

Heat pump

Digital outputs

1 Output Relay

The controller is equipped with a relay with configurable functions, enabling advanced customisation for alarm management or other auxiliary components.

Auxiliary control outputs

For control of **power slave devices**, the controller provides a **0–10 V analogue output** (only for the **PID version** of **RDM**).

0–10 Vdc output

Technical specifications

| | |
|---|--|
| Control input types | 4–20 mA transducer, 0–5 Vdc transducer, NTC probe (–10/+90 °C) |
| Number of motor connection outputs | 1-4 2-8 (28A) |
| Interface | Digital |
| Electrical protections | <ul style="list-style-type: none">• Control input protection• Mains overvoltage protection |
| Protection ratings | IP55 IP20 (on request) |
| Applicable earthing systems | Full compliance with international earthing standards IT / TT / TN |
| Operating temperature | –20°C / 50°C |
| Weight (kg) | <ul style="list-style-type: none">• 8A 2,6 kg• 12A 2,8 kg• 20A 4 kg• 28A 5,8 kg |
| Dimensions H × W × D (mm) | <ul style="list-style-type: none">• 8A 255 x 235 x 115• 12A 255 x 230 x 128• 20A 255 x 230 x 157• 28A 350 x 235 x 182 |



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