

ECN

Compact digital Master controller for single-phase and three-phase EC fan motors

EC EC fans

M Master



ECN is a **compact** digital controller designed for **proportional** or **PID** control of single-phase and three-phase EC motors in HVAC&R and industrial applications such as dry coolers, remote condensers and decentralised ventilation systems. Its simplified architecture and reduced footprint make it ideal for installations requiring **efficient, reliable** and easy-to-integrate control.

Power supply is provided either directly by EC fans at **20 Vdc ($\pm 10\%$)** or via an external **24 Vac ($\pm 15\%$)** transformer. Fan control is provided through a **0–10 Vdc** analogue output, **short-circuit protected**, capable of driving up to **30 EC motors ($\geq 100 \text{ k}\Omega$)**.

The controller features **two analogue inputs** with automatic selection based on the **highest value: 4–20 mA** and **NTC 10 k Ω @ 25 °C (scale +5 to +65 °C)**. ECN operates in **proportional** or **PID** mode, **direct** or **reverse**, selectable via **DIP switches**.

With the **0.75–10 Vdc** output configuration, the EC fans' **Cable Break** function can be enabled: if the control signal is lost, fans switch to **emergency speed** to ensure **operational continuity**.

Configuration is quick via **two 13-position rotary switches** (setpoint + fine adjustment) and **DIP switches**. Four diagnostic **LEDs** indicate power, configuration errors, signal disconnection/short-circuit, and the measured value position vs setpoint.

Available as **IP00** DIN-rail version or in an **IP65 enclosure** for outdoor installations.

Supply voltage

Available options:

24 Vac

$\pm 10\%$

20 Vdc

+25% -10%

50/60 Hz:

Automatic

Control output signal

0-10V

1-10V

The fan control signal is provided via a 0(1)–10 V output, short-circuit protected, capable of controlling up to 30 EC motors.

Inputs

2 Inputs

For sensors and control signals

Two analogue inputs with automatic selection based on the highest value, configurable as 1× 4–20 mA and 1× NTC 10 kΩ @ 25 °C, or dual 4–20 mA, or dual NTC.

4-20 mA

NTC +5/+65°C

Control system



Proportional Master



Master PID

ECN operates in both proportional and PID modes, with direct or reverse selection via DIP switches, ensuring dynamic adaptation to changing operating conditions and precise control of system parameters.

Setpoint

1 Setpoint

Configuration via two 13-position rotary switches for main setpoint and fine adjustment, plus DIP switches for operating mode selection.

Technical specifications

Control input types	4–20 mA transducer, NTC probe (+5/+65 °C)
Interface	Analogue
Electrical protections	<ul style="list-style-type: none">• Control input protection• Mains overvoltage protection
Protection ratings	IP00 Din-rail IP65 enclosure
Applicable earthing systems	Full compliance with international earthing standards IT / TT / TN
Operating temperature	-20°C / 50°C
Weight (kg)	0,2 kg
Dimensions (H×W×D) (mm)	110x110x57



Selpro SRL

Via Padre Giovanni Piamarta, 5/11
25021 Bagnolo Mella (BS) - Italy

↗ selpro.it

↗ info@selpro.it

↗ +39 030 6821611