

ECOM Module

Temperature controller
PID, Current Monitor and
communication interface in one
unit.

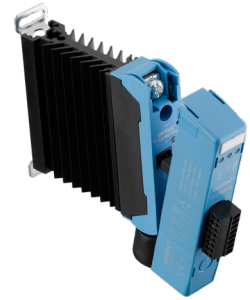


Why choose this module ?

- ▶ ECOM is the most compact solution available on the market, incorporating the latest measuring and control technology.
- ▶ By reducing wiring costs and minimizing the size of electrical cabinets, this solution increases efficiency.

Associated with our SU/SUL/SUM Solid State Relays, the ECOM module provides the following features:

- ▶ **Temperature control:** PID controller with automatic or manual tuning, isolated inputs for J, K, T and E thermocouples (PT100 support coming soon), configurable auxiliary outputs for heating, cooling, alarm functions or 3-phase Solid State Relay control, with integrated loop and heater fault alarms.
- ▶ **Current monitoring** up to 50 A with current transformer.
- ▶ **RS485/Modbus RTU serial link** (other protocols available on request) .
- ▶ **Power supply** : 24 VDC +/- 10%.



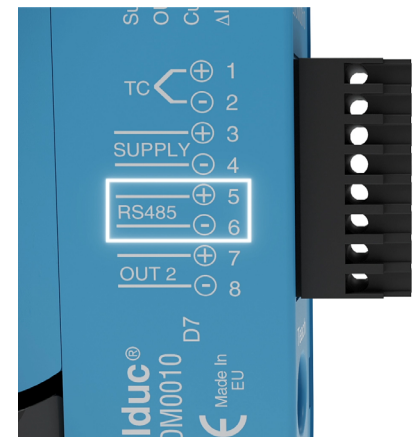
1- Communication interface

Our optional ECOM module enables real-time monitoring via the Modbus RTU communication protocol.

Modbus RTU is a non-proprietary communication protocol operating on a master/slave architecture, developed in 1979 by Modicon (integrated into Schneider Electric in 1996). It is widely used in PLC networks due to its simplicity, robustness, and high reliability. Today, it has become a standard in Building Management Systems (BMS) and Industrial Automation Systems (IAS).

The ECOM module can be directly controlled via an HMI or a PLC through a Modbus RTU link.

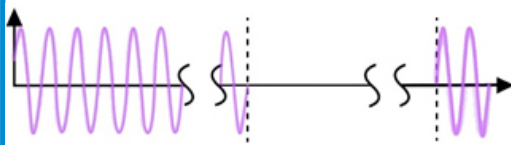
It can also be integrated into systems using other communication protocols (Ethernet/IP, Profinet, EtherCAT, etc.) via an appropriate gateway.



2- Load status and relay diagnostics



3- PWM mode to control load power



Pulse width modulation (PWM) is a great method of controlling the amount of power delivered to a load without dissipating any wasted power. The duty cycle and cycle time can be set-up via the communication interface. Logic outputs OUT1 and OUT2 can be used to control another Solid State Relay.

4- Current monitoring and alarms up to 50 A with current transformer



5- Temperature measurement, PID control and alarms

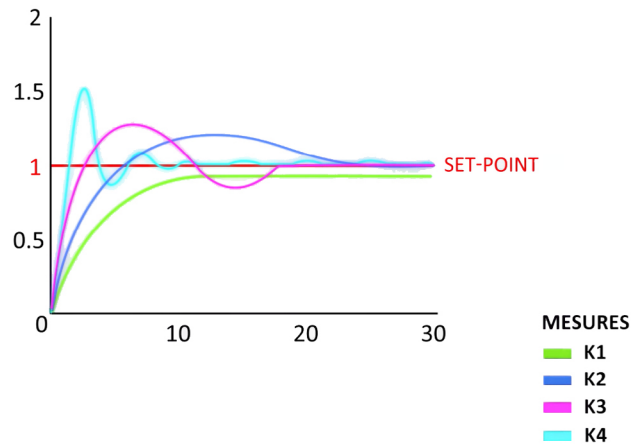
The thermocouple is a simple, widely used component for measuring temperature. An Insulated input is available for thermocouples type J, K, T, E.

Logic outputs OUT1 and OUT2 of the ECOM module can be used for heating and cooling.

The system features an auto-adaptive PID controller with both automatic and manual tuning modes.

In automatic mode, tuning is continuously active and permanently monitors the deviation between the setpoint and the measured value. When this deviation exceeds the threshold defined in parameter 7 (Max Gap Tune), the ECOM automatically determines when and how to adjust the PID parameters.

Manual tuning allows the user greater flexibility by deciding when the PID algorithm parameters should be updated, providing full control over the tuning process.



6- Our Solid State Relays compatible with the ECOM module

As the need for cost efficiency continues to grow, assembling components in electrical cabinets must be both quick and straightforward, while making optimal use of limited space. Our second-generation celpac® (2G) range has been specifically designed to meet these requirements.



celpac® 2G

The 22.5mm wide SSR solution !

Performances & reliability

- ▶ It has the same center-to-center fastening as the celduc SO and SC ranges,
- ▶ Maximum voltage up to 1600 V (690 VRMS), 600 VAC and 1200 VAC as standard,
- ▶ Thyristor rating up to 75 A,
- ▶ Large input range : 3-32 VDC with regulated current models,
- ▶ Models available with AC,
- ▶ Yellow input status LED,,
- ▶ Over-voltage protection on the input,
- ▶ New generation of TMS² technology for thyristors for a longer life expectancy,
- ▶ Quick and easy connections,
- ▶ Designed according to European standards EN60947-4-3 (IEC947- 4-3) and IEC/EN60335-1 - VDE0700-1 - IEC62314 - UL-cUL,
- ▶ IP20 protection with removable flaps (SU range) or cover (SA range),
- ▶ Other protection devices available as an option : RC snubber, VDR, self turn-on.

A cost-effective and compact solution

With an installation width of only 22.5 mm, our celpac® solid state relays and contacts take up the least possible space,

- ▶ Reduced assembly time, simple wiring,
- ▶ Reduced maintenance thanks to a very long service life,
- ▶ A single screwdriver for both the output and input.

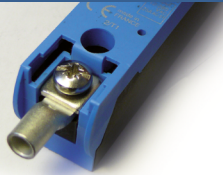
REMINDER

- SA7 / SU7 ▶ Random for inductive and motor loads
- SA8 / SU8 ▶ Zero-cross for all kinds of loads / heavy duty loads
- SA9 / SU9 ▶ Zero-cross for standard industrial loads / resistive loads AC-1 (AC-51)

«Ready to use» versions

- SAL / SUL ▶ 22.5mm heatsink - 3K/W
- SAM / SUM ▶ 45mm heatsink - 2.2K/W

Multiple, simple and fast connections

	SA range	SU range
Connection on the power side ►	 Direct connection by wire or end fitting	
Connection on the control side ►	 with screw connection on inputs	 with pluggable connector on inputs



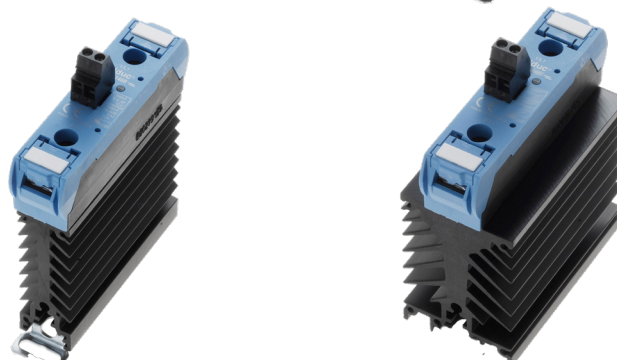
SA & SU ranges

Ready-to-use versions

celduc® relais provides “ready-to-use” solutions with integrated heatsinks. The “L” option features a 22.5 mm heatsink (3 K/W), while the “M” option comes with a 45 mm heatsink (2.2 K/W).



SAL & SAM ranges



SUL & SUM ranges

Thank you for your attention
and interest



www.celduc-relais.com