

**Anti-Sag / Energy Storage / Smoothing Module (SEMI F47 Knight)**

**Features**

- An Energy Storing Module, especially created for the delay of fading power supply voltage or to prevent voltage sagging in sensitive equipment.
- An easy, cheap way to meet for instance the SEMI F47 standard. Often low-cost power supplies and other components can be used together with these modules.
- Controlled output allows for automatic emergency power control. For instance, connecting the stored energy to a data backup unit at power failure.
- Can be used as a Smoothing Unit for unregulated, noisy DC Voltage, full wave or even half wave rectified signals\*\*\*\*.
- Standard version has included:
  - Soft start (protecting preceding contacts against capacitive load)
  - Semiconductor Switch, allowing external power control with signals as low as 2.2V CMOS.
  - Short circuit protection
  - 3 different ways of controlling the output voltage
- Reduced version\* available: without protection and control, but including Soft-Start
- Very compact module (Electroquick), mountable on 15 and 35mm DIN rail
- On request:
  - other supply voltage (e.g. 12V)
  - other energy storage capacity

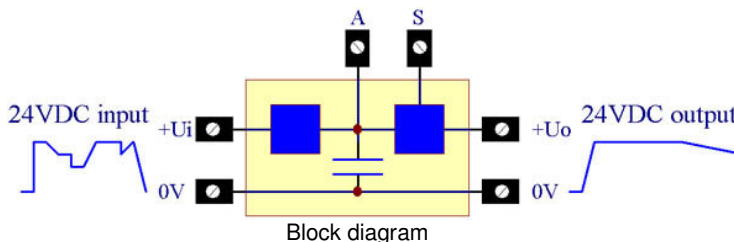


**S+A connected:** Uo is longest possible time on (even after Ui totally disappeared)

**S+Ui connected:** Uo will switch off when Ui decreases to approximately 1V

**S externally controlled:** Output Uo is directly controlled by the applied signal. ON threshold is approx. 2.2V, OFF threshold approx. 1V

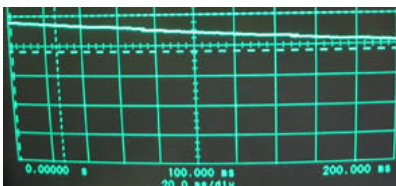
**A** can be used as output, but has **no** protection or control function (A **Reduced Version** is offered\*: terminals S and Uo are missing)



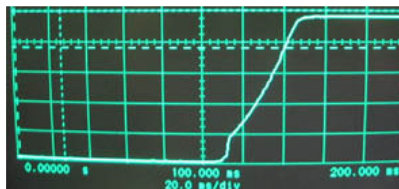
Technical data (Ta = 25°C)	low power	mid. power	high power
<b>Supply (Ui / 0V)</b>			
Operating voltage (Un=24V)	future version	18-30VDC	future version
<b>Control Input (S)</b>			
Sure on level	-	2.2-30VDC	-
Sure off level	-	0-0.8VDC	-
Turn on time, turn off time	-	typ. 90µs	-
<b>Output (Uo)</b>			
Max. continuous current	-	0.4A	-
Activation of Short Circuit Protection (approx.)	-	>1A	-
Output voltage drop (approx.)	-	0.4V (@Iload=70mA)	-
Energy storing capacity (approx.)	-	1.3J (Q=110mAs @24VDC)	-
ΔU example; Uo_start=24V, Ui=0V, t=200ms **	-	Uo=20.5V (@Rload=340Ω)	-
Initial Soft-Start Rise Time (approx.) ***	-	150ms (@ Rload=340Ω)	-
<b>General data</b>			
Operating temperature range	-	-20°C to +60°C	-
Max. wire cross section	-	2.5mm <sup>2</sup> (24-12AWG)	-
Module size LxWxH	-	77x17x58mm	-

**Order numbers:**

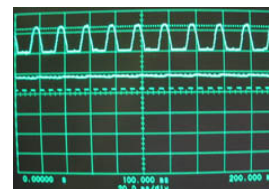
Standard ver.	to be defined	ESM-S1.3-24VD	to be defined
*Reduced ver. (no control, no protection)	to be defined	ESM-R1.3-24VD	to be defined



\*\*Output during 200ms of 100% failing input voltage, load= 24V/70mA (340Ω)



\*\*\*Output voltage during initial Soft-Start load= 24V/70mA (340Ω)



\*\*\*\*50Hz half wave rectified input load= 24V/70mA (340Ω)