

EUROSTEP - ESx AP/S4



FEATURES:

Stepping motor drive, power supply from 18- 60Vac (ac version), current up to 7A (ES3) or 10A (ES4). NPN/PNP opto-isolated inputs and outputs compatibles with 0-12V or 0-24V level.

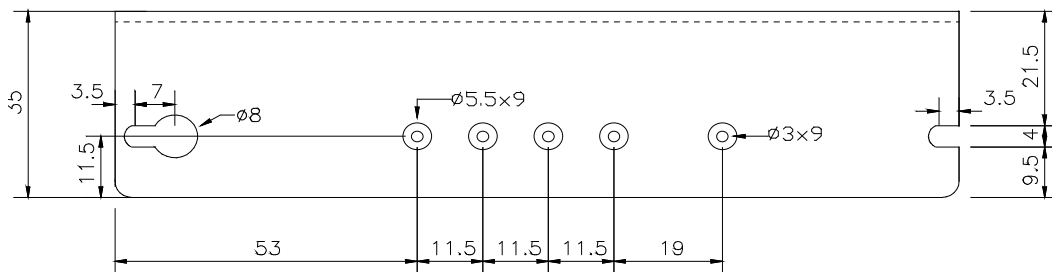
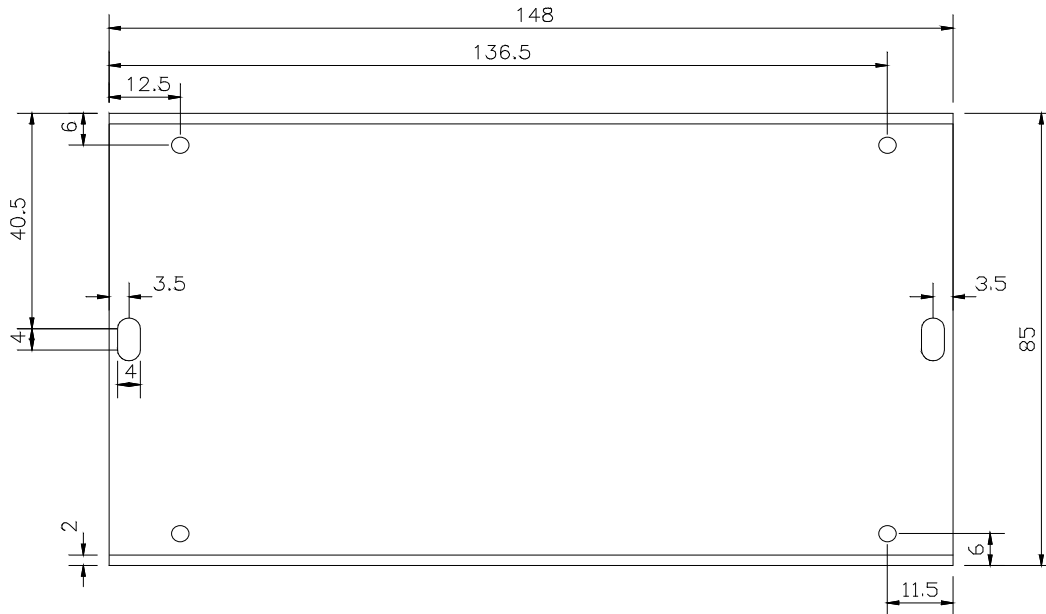
POWER SUPPLY:

Nominal voltage	From 18 to 60Vac
Maximum voltage	63Vac
Minimum voltage	14Vac
Maximum Current	ES3=7A, ES4=10A
Minimum current	ES3=1A, ES4=1A
Working temp.	0-55°C

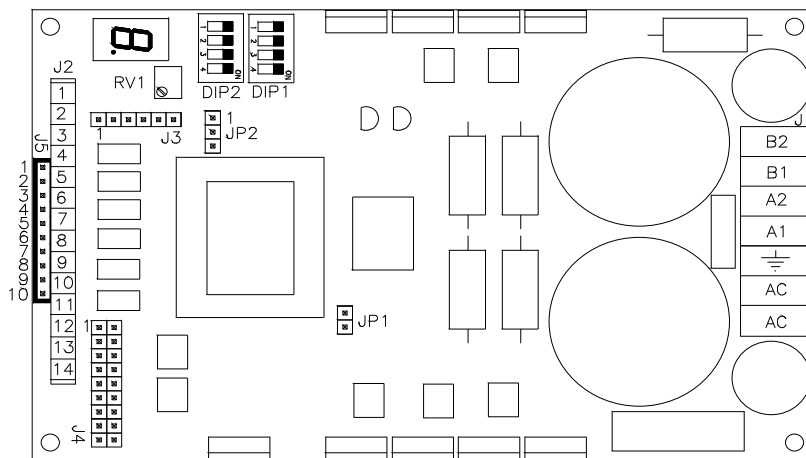
DEFINITIONS:

- Vdc nom:** Suggested nominal voltage value with unstabilized source
- Vdc max:** Maximum dc working voltage of the drive. Above such value, maximum voltage protection occurs, and drive working is inhibited
- Vdc min:** Minimum dc working voltage of the drive. Below such value, minimum voltage protection occurs, and drive working is inhibited
- I max:** Maximum phase current
- I min:** Minimum phase current

MECHANICAL DIMENSIONS:



LAYOUT:



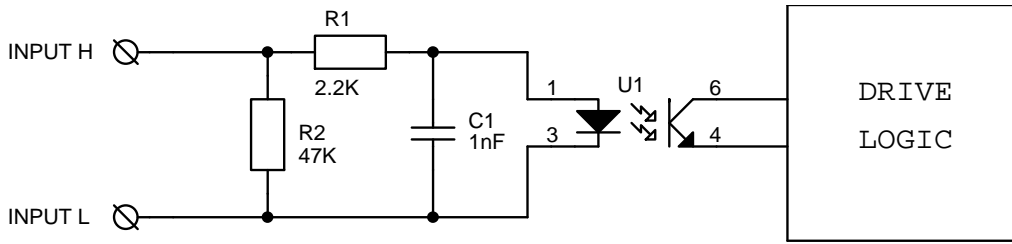
PROTECTION AND SIGNALATIONS

Drive is provided with protection against over-temperature, overvoltage, under-voltage, short-circuit among outputs and also among outputs and the positive power pole. If one of the mentioned conditions occurs, drive disables the power bridge and shows an error condition on the display. To reset alarm condition use DISABLE input.

- 'o' - Power supply overvoltage (Vdc max)
- 'u' - Power supply undervoltage (Vdc min)
- 't' - Thermic protection event occurred
- 'c' - Overcurrent protection event occurred
- 'd' - Drive disabled (input ENABLE/DISABLE active)
- 'C' - Paper broken (if stop sensor is not reached on 10 motor revolution)

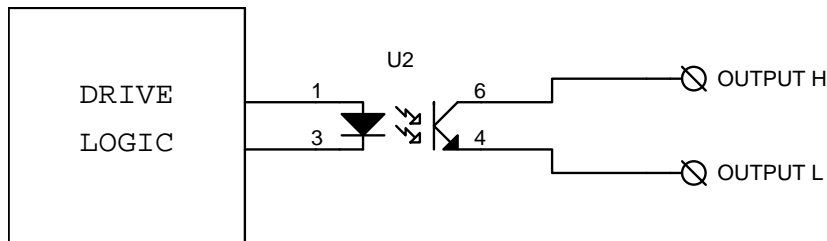
If drive is ready, display shows the letter 'r' (ready).

INPUTS:



SIGNAL	FUNCTION
START J2-7(L), J2-8(H)	OFF-ON edge : Start motor rotation
STOP J2-5(L), J2-6(H)	OFF-ON edge : Stop motor rotation with n brake steps (set brake steps with DIP1-3 e DIP1-4)
ANALOG-IN J2-1(L), J2-2(H)	Analog input 0-10V for speed setting from 20Hz a 10KHz
ENABLE/ DISABLE J2-3(L), J2-4(H)	When this signal is used, the drive is inhibited by cutting off the current flowing through the motor and reset alarm condition. You can use this input as ENABLE or DISABLE, select function with JP2: JP2 Inserted in 1-2 pins → DISABLE: When input is active motor current =0. JP2 Inserted in 2-3 pins → ENABLE: When input is not active motot current=0.

OUTPUTS:



SIGNAL	FUNCTION
PRINT MARK J2-9(L), J2-10(H)	After STOP this output will be activate for 200 ms. (maximum current 100 mA)
READY-OUT J2-11(L), J2-12(H)	DRIVER-READY Drive fault or paper broken : Output disable (Low level) (see letter on display) Drive ready : Output enabled (High level) (maximum current 5 mA)

MOTOR CURRENT REGULATION:

For setting current proceed as follows:

- Set DIP2-4 to ON (current regulation mode).
- Turn RV1 trimmer until display shows the required current (CW to increase).
- Set DIP2-4 to OFF (Run mode).

Table for setting current values and relating values shown on the display of drive:

ES3: 1 = 1 A, 1. = 1.5 A, ..., 7 = 7 A

ES4: 1 = 1 A, 1. = 1.5 A, ..., 7 = 7 A, 0 = 10 A

AUTOMATIC CURRENT REDUCTION WHEN MOTOR IS STOPPED:

The motor current is automatically reduced when motor is stopped to 50%.

SPEED REGULATION:

Motor speed is set by analog input (ANALOG-IN), with RV2 trimmer you can set top speed. With RV2 trimmer at top speed, if ANALOG_IN=10V speed is 10KHz.

RESOLUTION SETTINGS:

Resolution setting through DIP-SWITCHES:

DIP1-1	STEPS/REVOLUTION
OFF	200 step/rev. (full step)
ON	400 step/rev. (1 / 2 of step)

BRAKE STEPS SETTING:

To set brake steps use DIP1-3, DIP1-4:

DIP1-3	DIP1-4	STOP DELAY [steps]
OFF	OFF	8
OFF	ON	16
ON	OFF	32
ON	ON	64

RAMP:

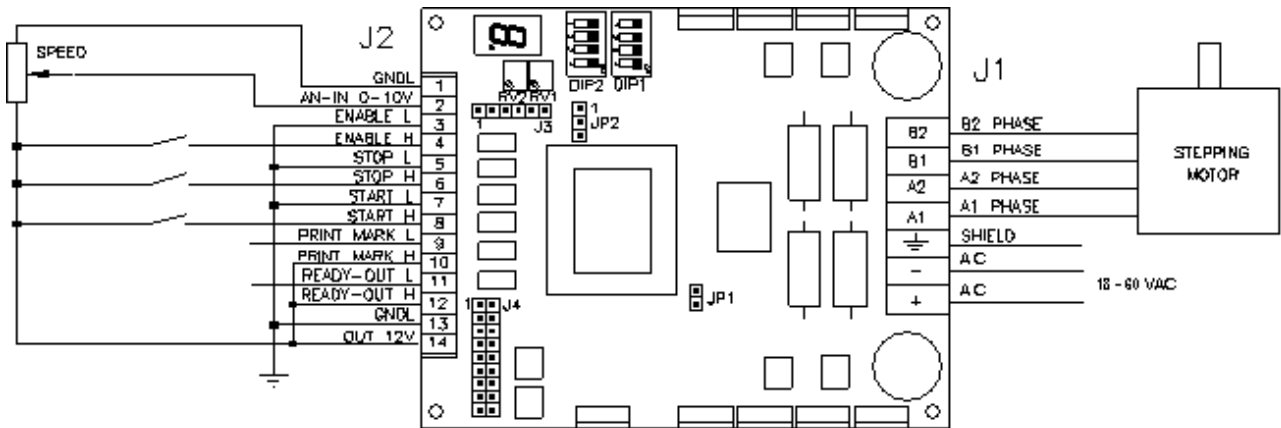
To set the acceleration ramp use DIP2-1, DIP2-2, DIP2-3.

Select value from 0 ms (no ramp) up to 1 s (time is referred to acceleration from 1Hz to 10KHz).

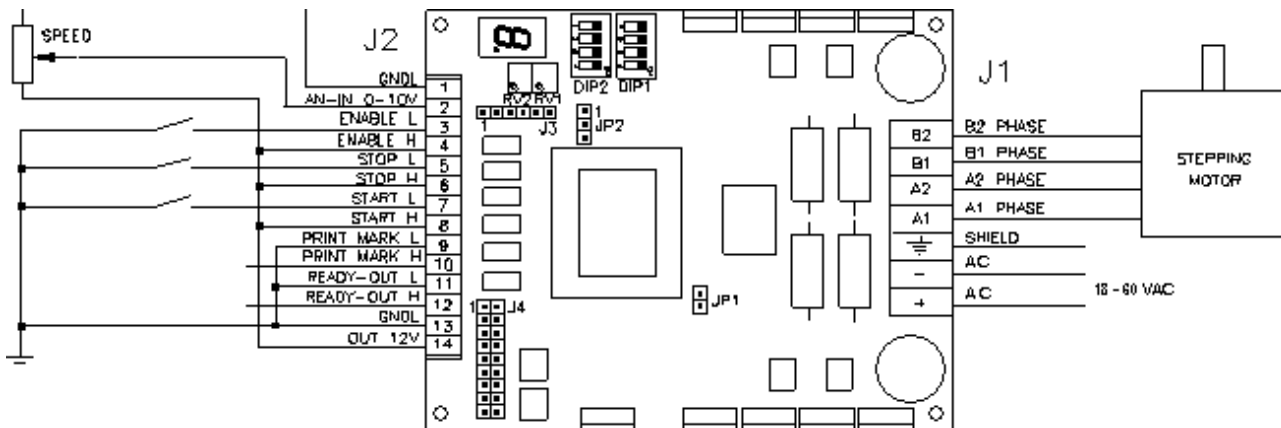
DIP2-1	DIP2-2	DIP2-3	RAMP [ms]
OFF	OFF	OFF	0 (no ramp)
OFF	OFF	ON	10
OFF	ON	OFF	30
OFF	ON	ON	80
ON	OFF	OFF	150
ON	OFF	ON	300
ON	ON	OFF	500
ON	ON	ON	1000

WIRING DIAGRAM:

PNP INPUTS AND OUTPUTS:



NPN INPUTS AND OUTPUTS:



In the wiring diagram the input/output common voltage is connected to OUT 12V, you could use an external power supply from 12 to 24 Vdc for opto-isolated inputs.

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