ACP&D Limited

EUROSTEP - ES4 AP/S11

FEATURES:

Stepping motor drive, power supply from 18 to 60 Vac, current up to 10A.
NPN/PNP optoisolated inputs and outputs compatibles with 0-12V or 0-24V level.

POWER SUPPLY:

EUROSTEP	VALUES
Vac nom. [V]	from 18 to 60
Vac max. [V]	63
Vac min. [V]	14
I max. [A]	10
I min. [A]	1
Working temperature [°C]	0-55

DEFINITIONS:

Vdc nom: Suggested nominal voltage value with unstabilized source

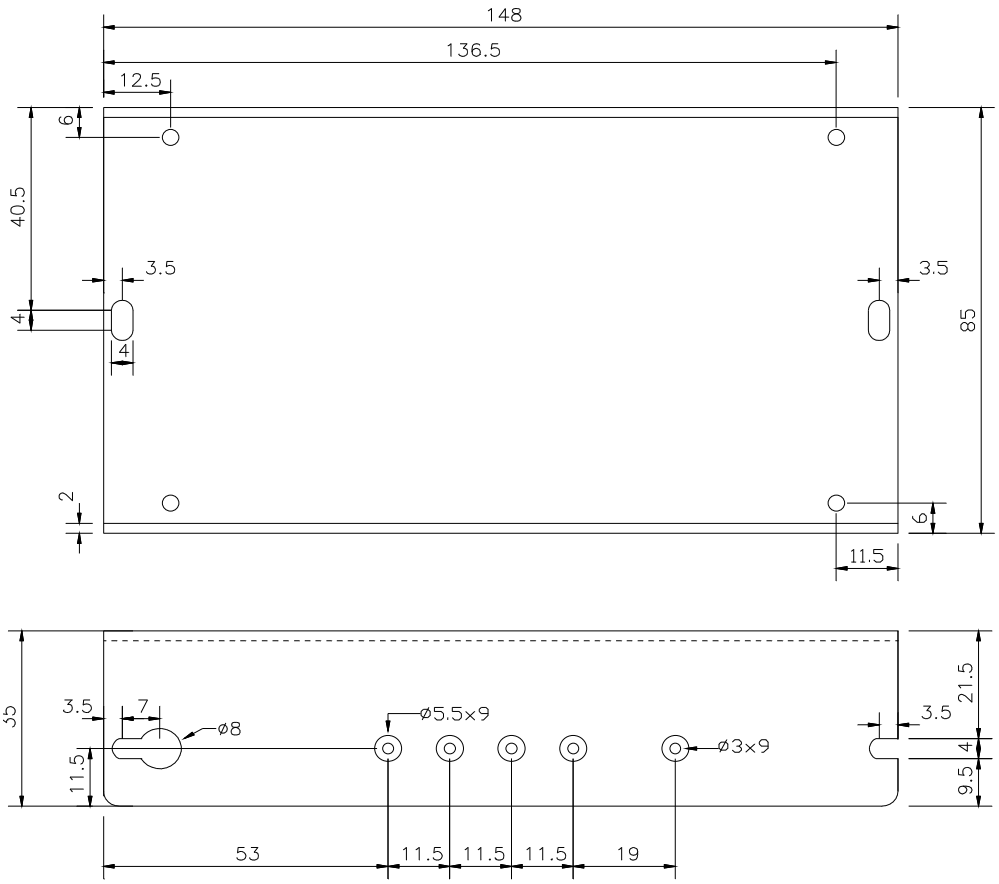
Vdc max: Maximum dc working voltage of the drive. Above such value, maximum voltage protection occurs, and drive working is inhibited

Vdc min: Minimum dc working voltage of the drive. Below such value, minimum voltage protection occurs, and drive working is inhibited

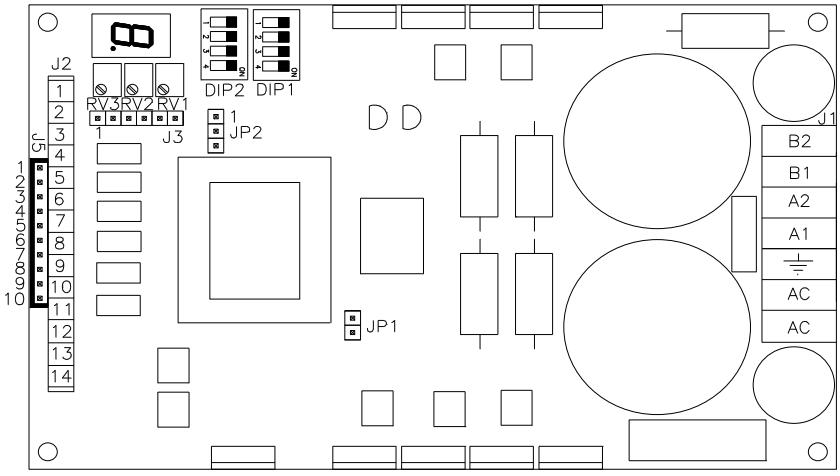
I max: Maximum phase current

I min: Minimum phase current

MECHANICAL DIMENSIONS:



LAYOUT:



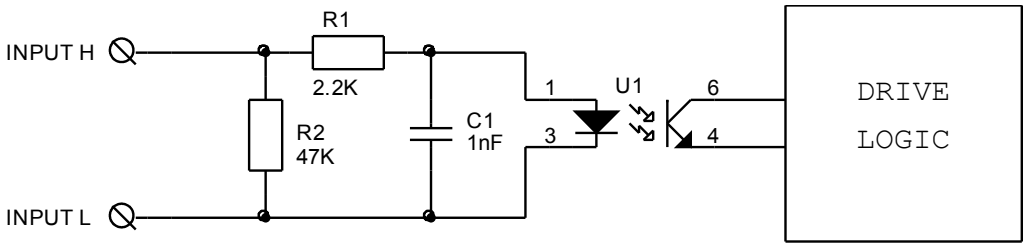
PROTECTION AND SEGNALATIONS

Drive is provided with protections against overtemperature, overvoltage, undervoltage, short-circuits 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)

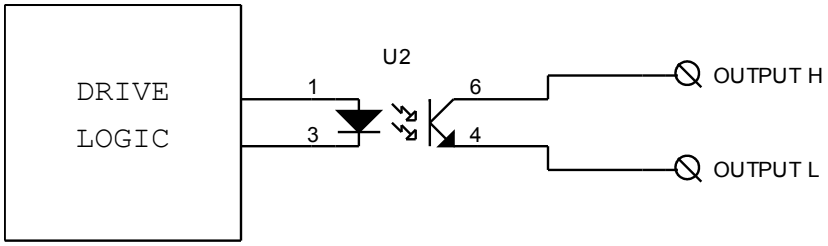
If drive is ready, display shows the letter ‘r’ (ready).

INPUTS:



SIGNAL	FUNCTION
START ***START/STOP*** J2-7(L), J2-8(H)	OFF-ON edge : Start motor rotation ON-OFF edge : **Input active only DIP1-2 ON**: Stop motor rotation with n brake steps (setting with DIP1-3, DIP1-4 and with RV3)
STOP J2-5(L), J2-6(H)	**Input active only DIP1-2 OFF** Fronte ON-OFF : Stop motor rotation with n brake steps (setting with DIP1-3, DIP1-4 and with RV3)
AN-IN1 J2-1(gnd), J2-2(input)	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 : Output disable (Low level) 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:
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) from 0 to 10Vdc (12Vdc max), 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 and RV3 trimmer. With RV3 select stop quote from 0 to 500 (CW increase steps).

DIP1-3	DIP1-4	STOP DELAY [full steps]
OFF	OFF	0 + RV3 value
OFF	**ON**	16 + RV3 value
ON	OFF	32 + RV3 value
ON	**ON**	64 + RV3 value

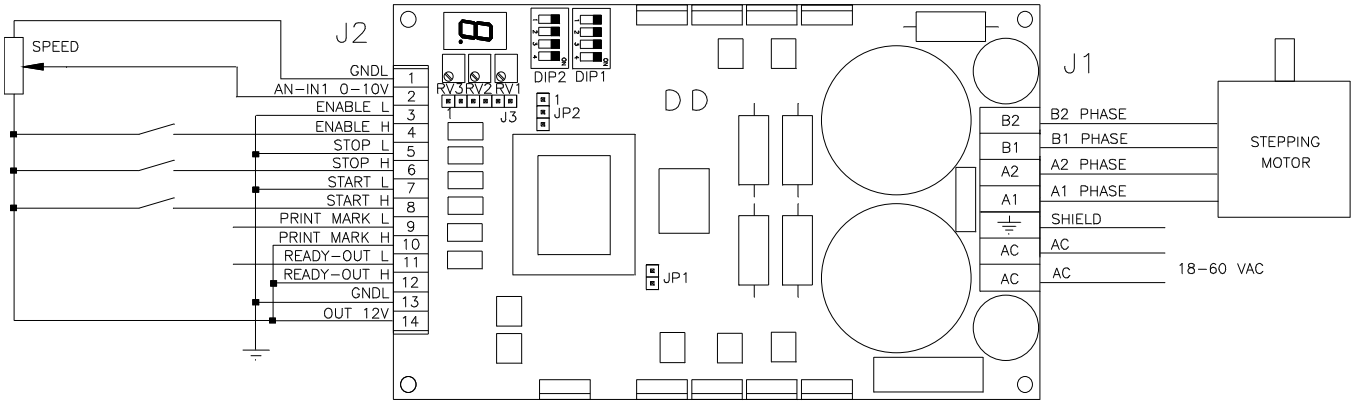
RAMP:

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).

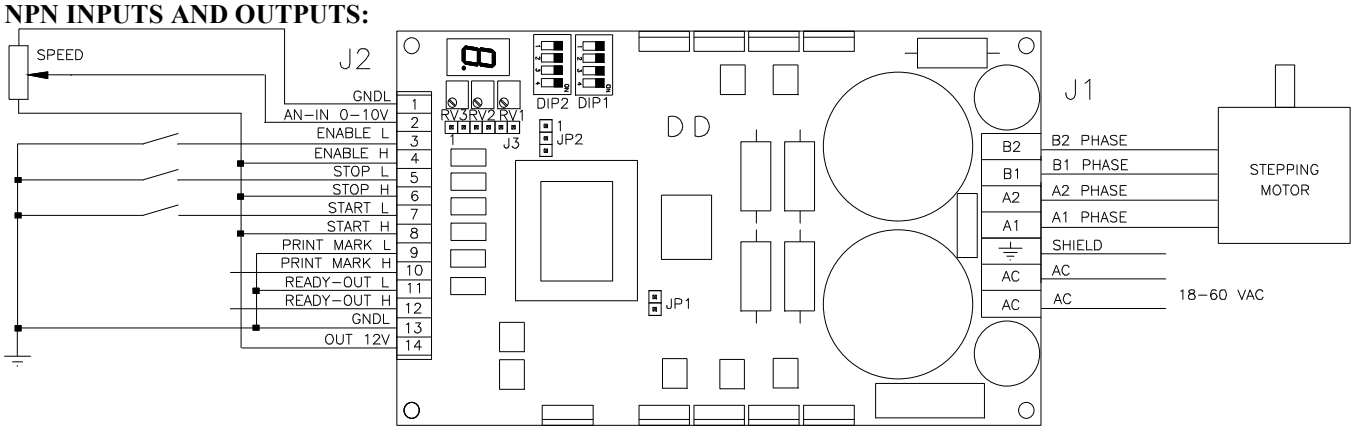
DIP2-1	DIP2-2	DIP2-3	RAMP [ms]
OFF	OFF	OFF	0 (no ramp)
OFF	OFF	**ON**	10
OFF	**ON**	OFF	30
OFF	**ON**	**ON**	80
ON	OFF	OFF	150
ON	OFF	**ON**	300
ON	**ON**	OFF	500
ON	**ON**	**ON**	1000

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 optoisolated inputs.

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