ACP&D Limited

ES3 OP - EUROSTEP3 for ac power supply input

FEATURES:

Stepping motor drive, power supply from 18 to 60 Vac, current up to 7A.
NPN/PNP optoisolated inputs and outputs compatibles with TTL (0-5V) or 12-24V level.

POWER SUPPLY:

EUROSTEP	VALUES
Vac nom. [V]	From 18 to 60
Vac max. [V]	63
Vac min. [V]	14
I max. [A]	7
I min. [A]	1
Working temperature [°C]	0-55

DEFINITIONS

Vac nom: Suggested nominal voltage value with unstabilized source

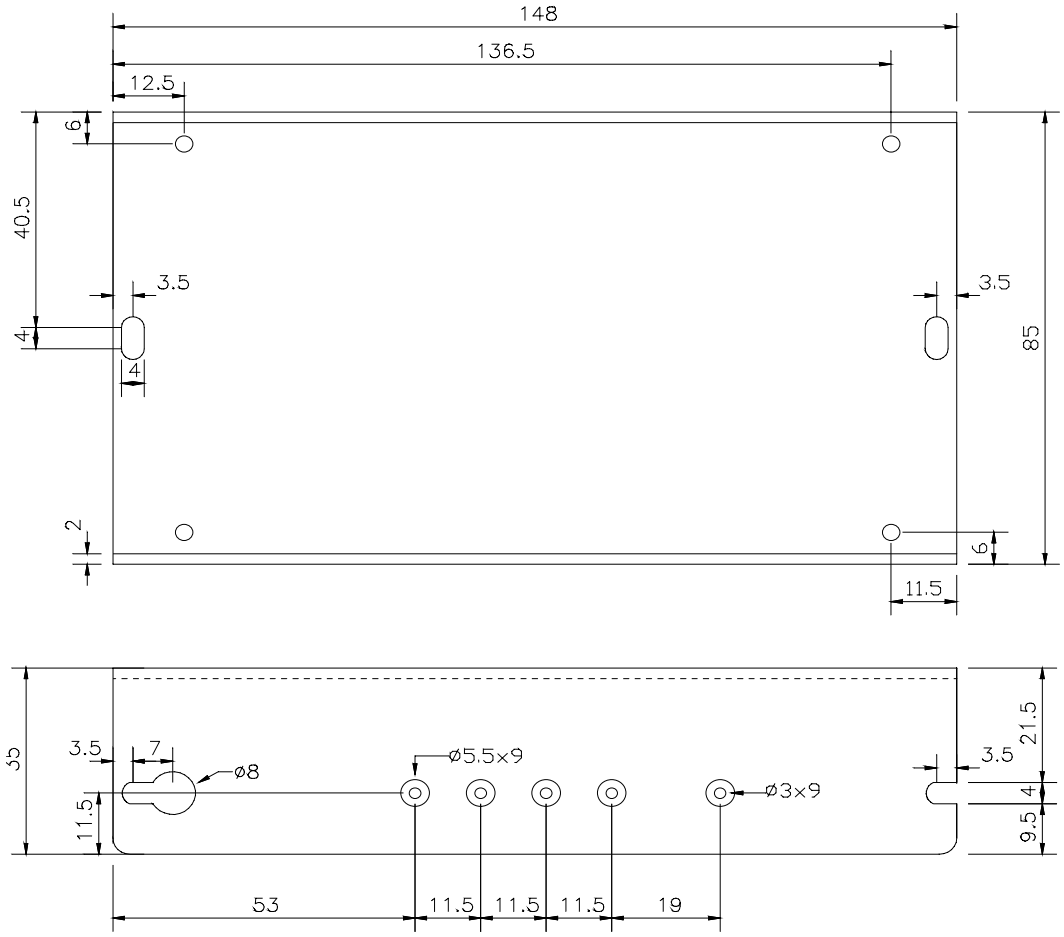
Vac max: Maximum dc working voltage of the drive. Above such value, maximum voltage protection occurs, and drive working is inhibited

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

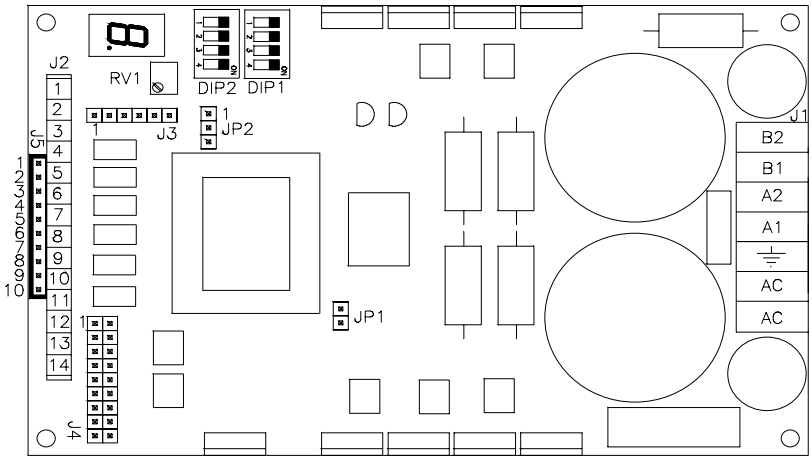
I max: Maximum phase current

I min: Minimum phase current

MECHANICAL DIMENSIONS:



LAYOUT:



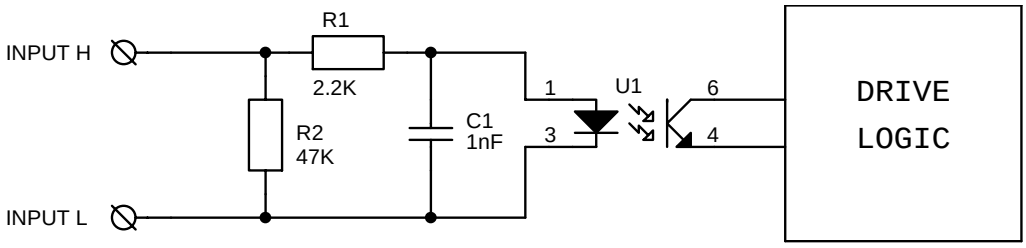
PROTECTION AND SEGNALATIONS

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)

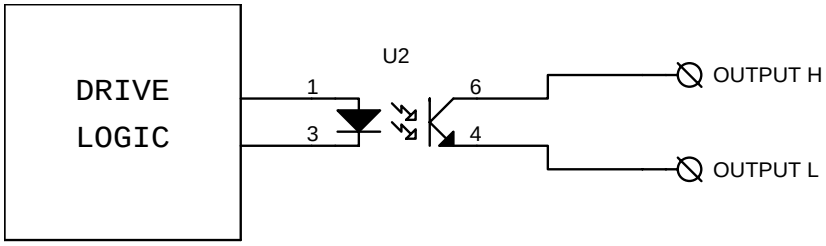
If drive is ready, display shows the letter ‘r’ (ready).

INPUTS:



SIGNAL	FUNCTION
STEP-IN J2-7(L), J2-8(H)	The motor make a step at the HIGH-LOW signal transition. Best is a square wave with 50% duty-cycle. The absence of this signal for 0.5 seconds determines the intervention of the automatic current reduction (stand-by).
DIRECTION J2-5(L), J2-6(H)	Set the motor rotation direction. Signal must be stable al least 100 microseconds before and 100 after the STEP IN transition.
CURR. RED. J2-1(L), J2-1(H)	Reduce motor current. Percentage of reduction is selectable with DIP2: DIP2-1 = ON → reduct to 50% of setting current DIP2-1 = OFF → reduct to 25% of setting current NOTE: This bit set also automatic stand-by current reduction
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
OUT1 J2-9(L), J2-10(H)	STEP OUT : every front is a step generated **(maximum current 5 mA)**
DRIVE-READY 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

RESOLUTION SETTINGS:

Resulution setting through DIP-SWITCHES:

DIP1-1	DIP1-2	DIP1-3	DIP1-4	STEPS/TOUR
OFF	OFF	OFF	OFF	200 step/rev. (full step)
ON	OFF	OFF	OFF	400 step/rev. (1 / 2 of step)
OFF	**ON**	OFF	OFF	800 step/rev. (1 / 4 of step)
ON	**ON**	OFF	OFF	1600 step/rev. (1 / 8 of step)
OFF	OFF	**ON**	OFF	3200 step/rev. (1 / 16 of step)
OFF	OFF	OFF	**ON**	500 step/rev. (1 / 2.5 of step)
ON	OFF	OFF	**ON**	1000 step/rev. (1 / 5 of step)
OFF	**ON**	OFF	**ON**	2000 step/rev. (1 / 10 of step)
ON	**ON**	OFF	**ON**	4000 step/rev. (1 / 20 of step)

MOTOR RESONANCE REDUCTION:

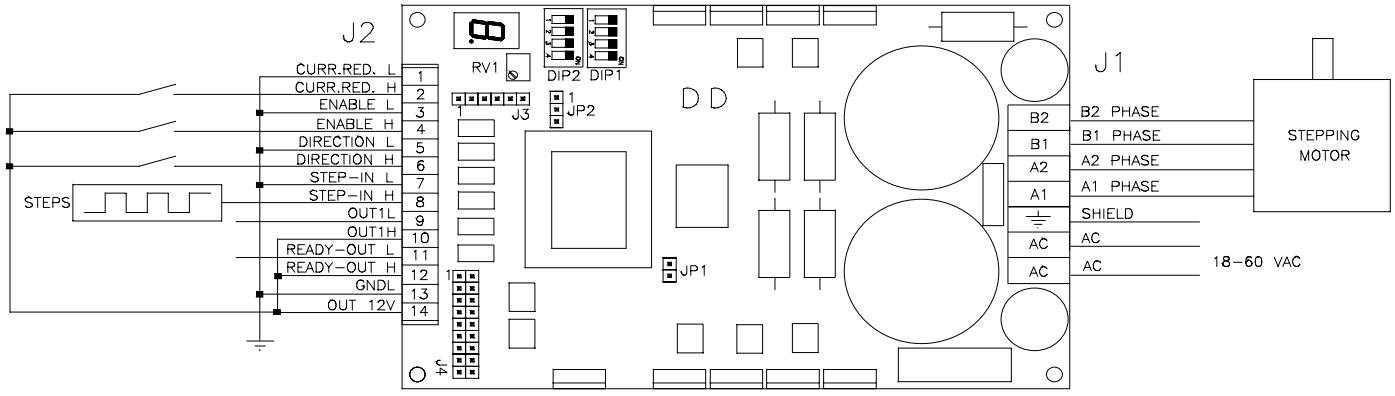
This drive is provided by an innovative system to reduce motor resonance.
To active this function set DIP2-3 ON, to disabile set DIP2-3 OFF.

AUTOMATIC CURRENT REDUCTION WHEN MOTOR IS STOPPED:

The motor current is automatically reduced when motor is stopped. To change reduction value set DIP2-1:
DIP2-1 = ON → don't reduce current
DIP2-1 = OFF → reduct to 25% of setting current
NOTE: This dip select also percentage of current reduction input.

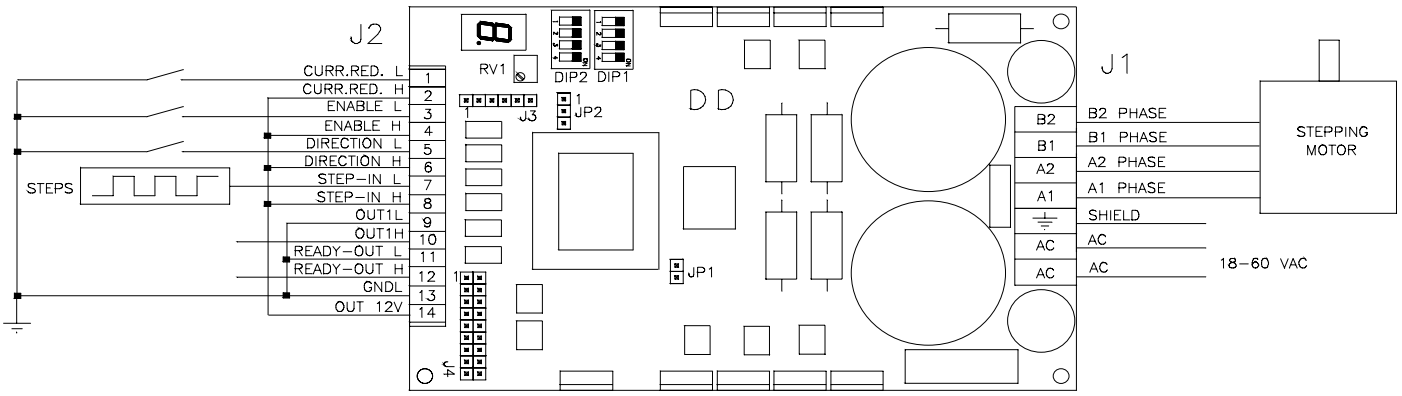
WIRING DIAGRAM

PNP INPUTS AND OUTPUTS:



In this diagram is used internal +12V but you can use an external power supply from 12 to 24 Vdc.

NPN INPUTS AND OUTPUTS:



In this diagram is used internal +12V but you can use an external power supply from 12 to 24 Vdc.

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