

ES3 - EUROSTEP3 (Standard unit)



FEATURES:

Stepping motor driver, power supply from 25 to 85 VDC, current up to 7A.
NPN/PNP optoisolated inputs and outputs compatibles with TTL (0-5V) or 12-24V level.

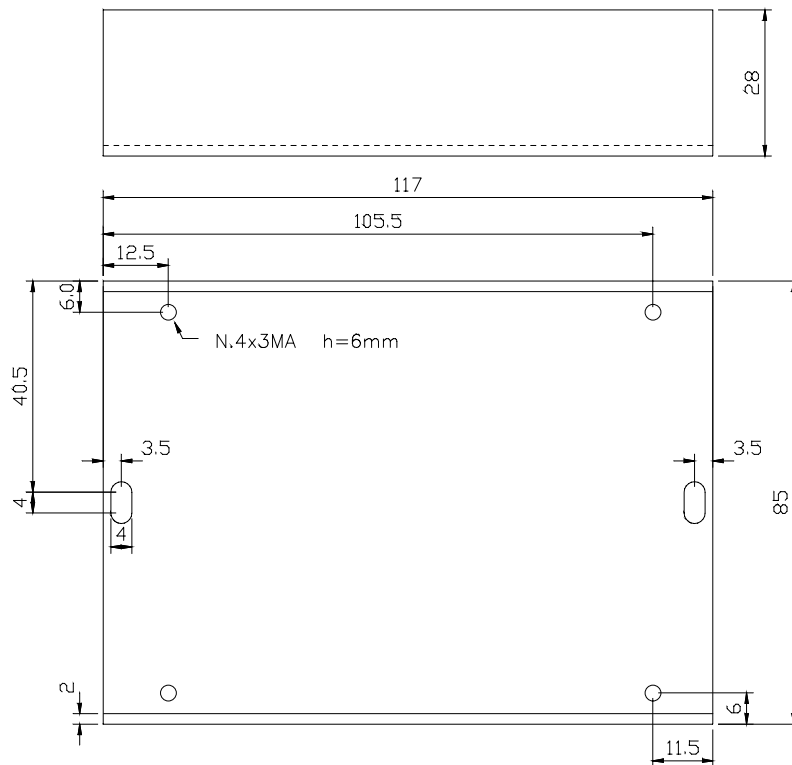
TECHNICAL DATA:

| EUROSTEP | VALUES |
|--------------------------|---------------|
| VDC nom. [V] | From 25 to 85 |
| VDC max. [V] | 90 |
| VDC min. [V] | 20 |
| I max. [A] | 7 |
| I min. [A] | 1 |
| Max. step pulses [kHz] | 10 |
| Working temperature [°C] | 0-55 |

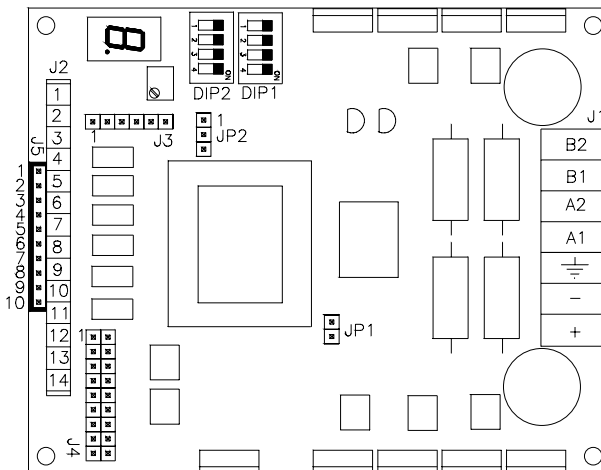
DEFINITIONS

- 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:



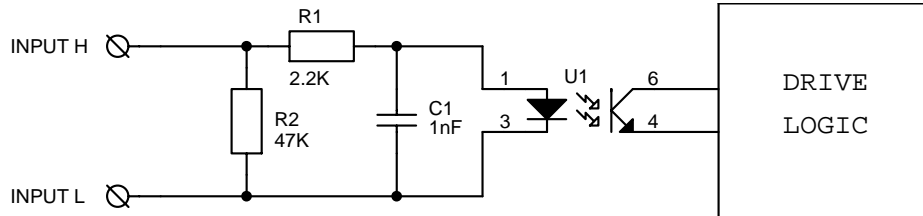
PROTECTION AND DIAGNOSTICS

The Driver is provided with protections against over-temperature, over-voltage, under-voltage, short-circuits among outputs and also among outputs and the positive power pole. If one of the mentioned conditions occurs, drive disables the power and shows an error condition on the display.

- 'o' - Power supply over-voltage (VDCc max)
- 'u' - Power supply under-voltage (VDC min)
- 't' - Thermal protection event occurred
- 'c' - Over-current protection event occurred
- 'd' - Drive disabled (input ENABLE/DISABLE active)

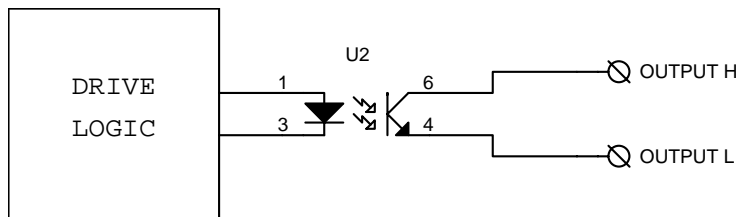
- 'r' - driver ready

INPUTS:



| SIGNAL | FUNCTION |
|--|--|
| STEP-IN J2-7(L), J2-8(H) | The motor execute 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 at 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 → reduce to 25% of setting current DIP2-1 = OFF → reduce to 50% of setting current |
| 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. 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 motor 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, CCW decrease).
- 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:

Resolution 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:

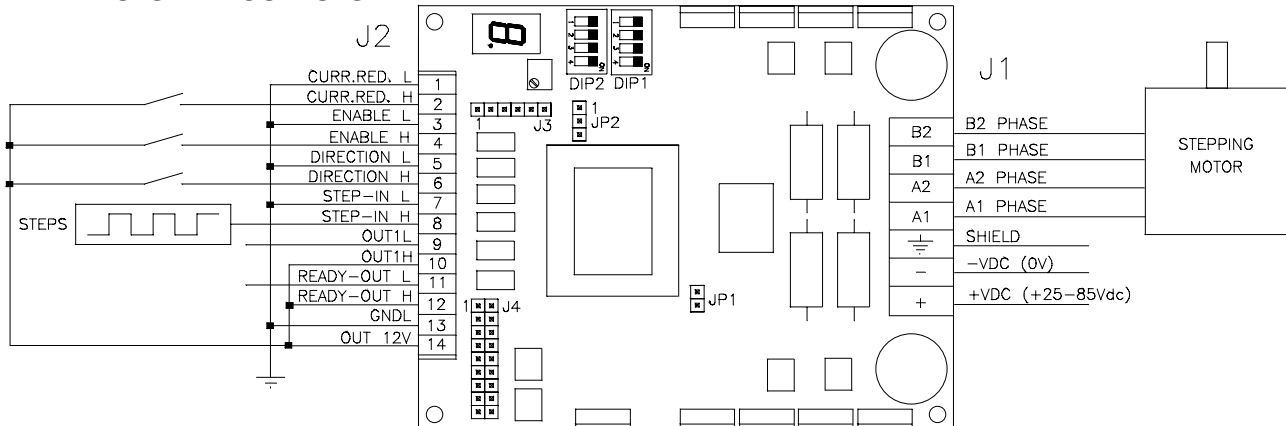
This drive is provided by an innovative system to reduce motor resonance. To active this function set DIP2-3 ON, to disable set DIP2-3 OFF.

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 → reduce to 25% of setting current
 DIP2-1 = OFF → reduce to 50% of setting current

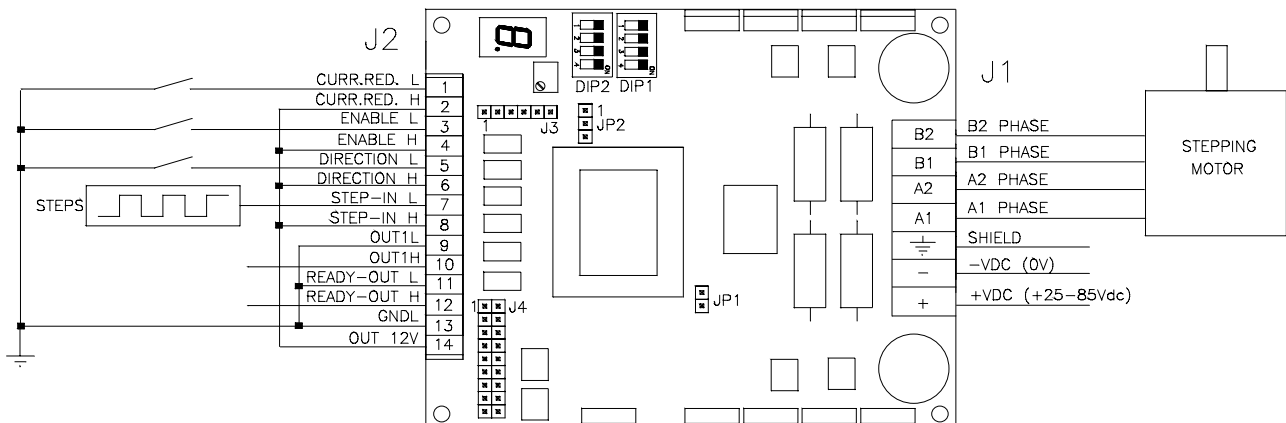
WIRING DIAGRAM

PNP INPUTS AND OUTPUTS:



This diagram connection use the internal +12V, you can also use an external power supply from 5 to 24 Vdc.

NPN INPUTS AND OUTPUTS:



This diagram connection use the internal +12V, you can also use an external power supply from 5 to 24 Vdc.

ACP&D Limited
Units 6 & 9A,
Charlestown Industrial Estate,
Robinson Street,
Ashton-under-Lyne,
Lancashire, OL6 8NS.

Tel: +44 (0)161 343 1884
Fax: +44 (0)161 339 0650
e-mail: sales@acpd.co.uk
Websites: www.acpd.com &
www.acpd.co.uk

