TECHNICAL MANUAL

BLD-07-INTB2

DC BRUSHLESS MOTORS DRIVE

Pls read carefully this manual before installation

This manual supersedes any previous edition and revision. We reserve the right to implement modifications without notice.

Intecno srl, Via Caduti Di Sabbiuno 9E, 40011 Anzola Emilia (BO) Italy
Tel ++39-051-19985350 Fax ++39-051-19985360 **www.intecno-srl.com** **info@intecno-srl.com**

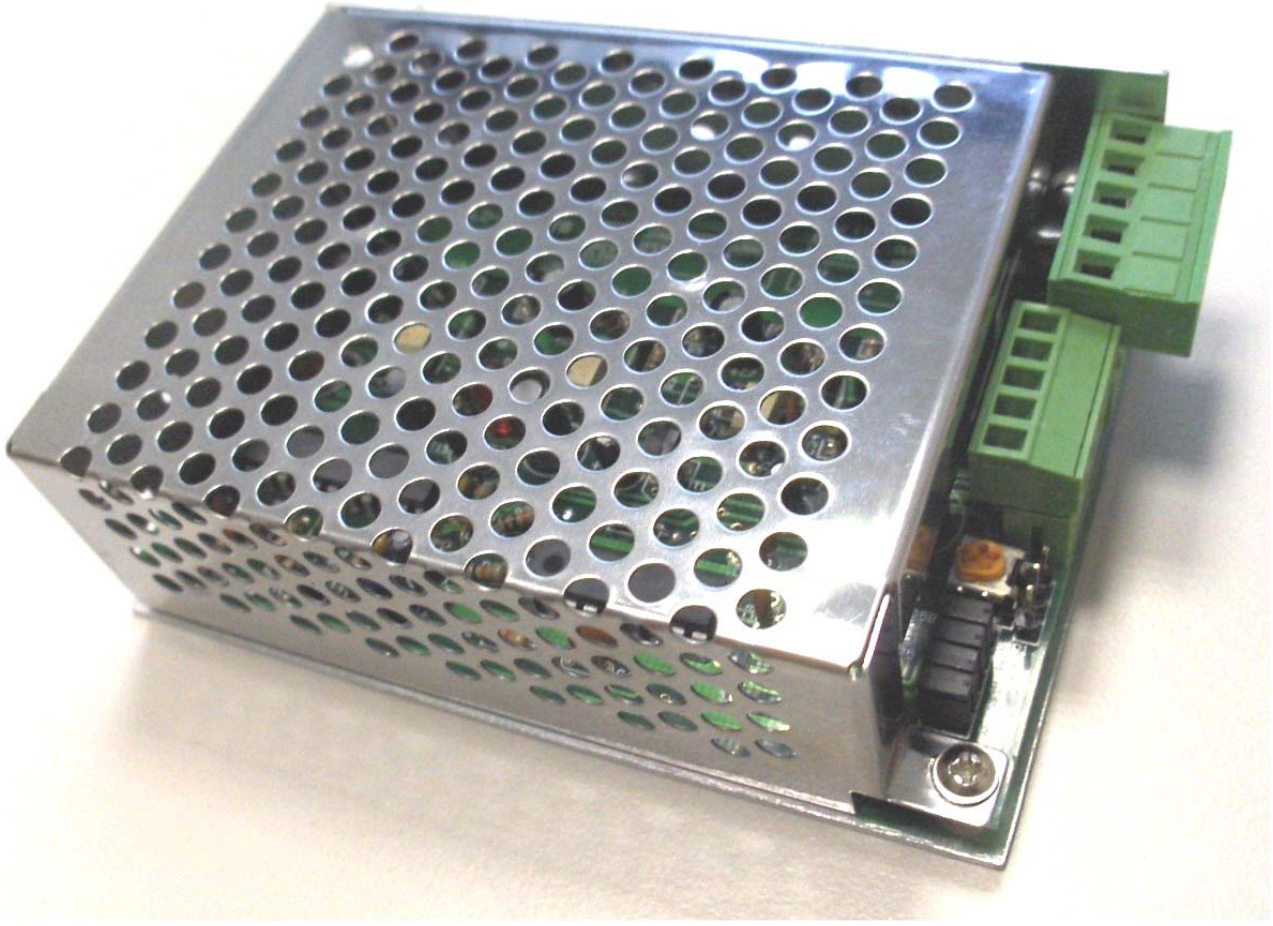
DC BRUSHLESS MOTOR DRIVE
Model:

BLD-07-INTB2

1 INTRODUCTION

DC brushless motor drive of series BLD-07 runs by the means of Hall sensors transducer, a special microprocessor control and a built in drive device.

It can drive every DC brushless permanent magnet motors, low voltage, of series BL005.240, BL012.240, BL018.240, BL032.240 and BL043.240.



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2 DRIVE'S FEATURES

MODEL	BLD-07-INTB2
Operating voltage	DC 20V-36V
Phases number	3
Peak current (max for 4 seconds after start)	12A
Rated max current	7A
Output max power	180W
Control system	Closed lood, speed ring
speed control error	<10%
Speed setpoint	• Internal built in potentiometer, • external potentiometer (supplied together with the drive) • external insuleted signal 0-2.5 vdc
Speed range	From 10% to max rated motor speed
Rotation	Both sense of rotation Note: the drive is bidirection 2Q: it means the motor is driven in both direction but not regenerative (=no possible to decelerate when big inertial load applied). **Drive damage danger**
Protection	Motor fault, Hall sensor fault, overvoltage, undervoltage, shortcircuit
Dimension	110x78x36
Selection Jumpers	JP4: 4 poles : 8 poles JP5/JP5B: 2 Amp (max rated current) 5 Amp (" ") 7 Amp (" ")
Connectors:	screw terminal connectors

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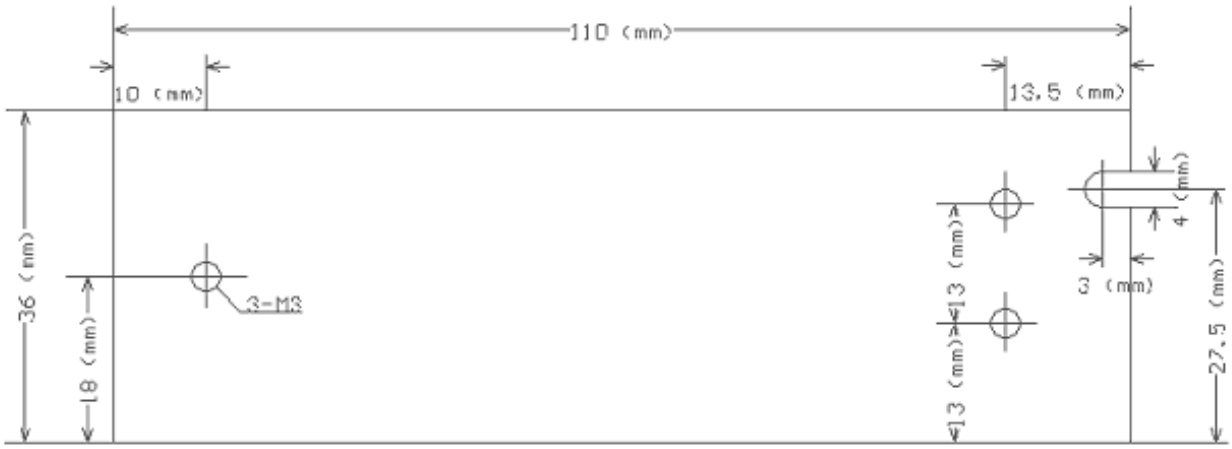
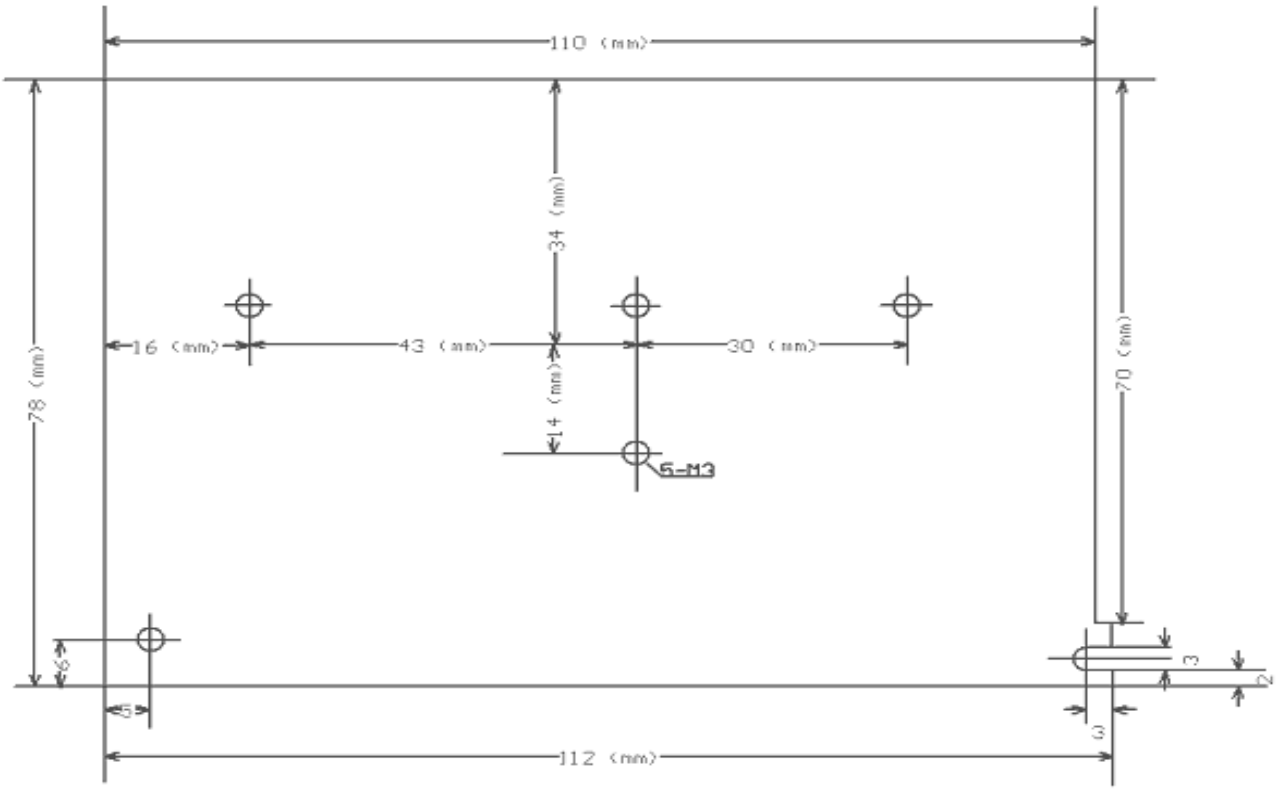
3 DIMENSIONS

Side



Front



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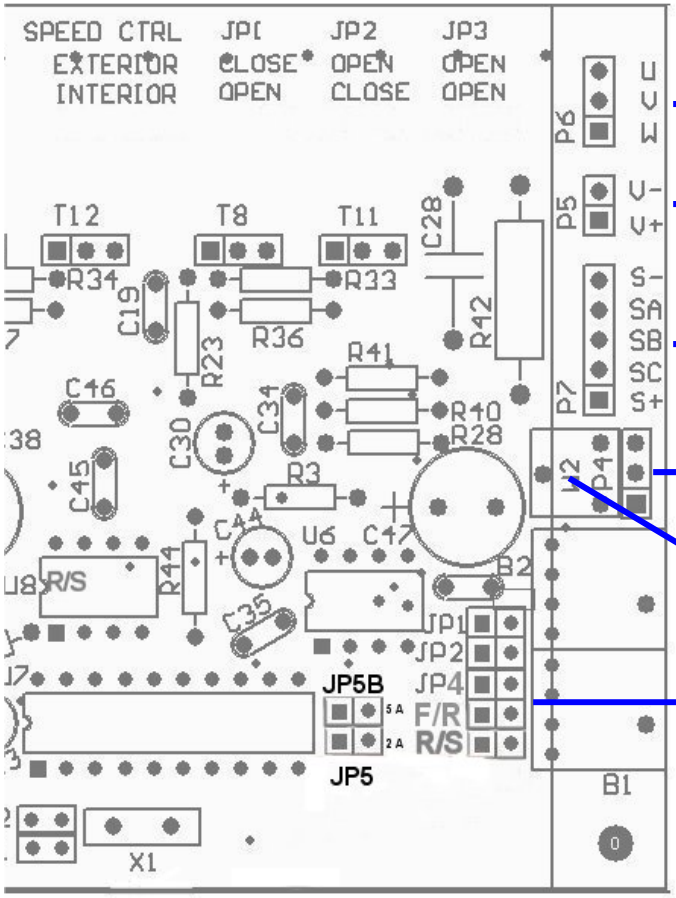
4 Safety use

When powered, do not open or remove the cover, neither draw near to terminals any device or plug.

5 Connections



(U) phase A motor
(V) phase B motor
(W) phase C motor

(V-) drive supply, negative

(V+) drive supply, positive

(S-) Hall sensor negative supply
(SA) phase A Hall sensor
(SB) phase B Hall sensor
(SC) phase C Hall sensor
(S+) Hall sensor negative supply

External speed pot for speed reference
- Potentiometer: 10 KOhm
- DO NOT the speed pot pins come in touch with metallic parts of the machine

Internal speed pot for speed reference

Selection jumpers

Jumper selection JP1, JP2, JP4, F/R, R/S, JP5/JP5B

JP1	JP2	Speed setpoint selection
OPEN	CLOSE	Internal speed pot
CLOSE	OPEN	External speed pot

F/R	Motor direction
OPEN	clockwise
CLOSE	counterclockwise

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JP4	Polarity selection
OPEN	8 poles (BL012.240, BL018.240)
CLOSE	4 poles (all others motors)

R/S	Run/Stop contact
OPEN	Stop
CLOSE	Run If this contact is always close, the Run/Stop is performed cutting the input power line.

JP5	JP5B	Current limit selection (**)
CLOSE	OPEN	2 A rated current limit, about 4.5 A for 4 seconds at start up(*)
OPEN	CLOSE	5 A rated current limit, about 8.5 A for 4 seconds at start up(*)
OPEN	OPEN	7 A rated current limit, about 12 A for 4 seconds at start up(*)

(*) active each starting R/S contact and each cutting or power input line
(**) start up limit is not active in case of sudden full load (for instance: start up with locked rotor). Damaging drive danger.

6 How to perform the connections

1. Connect Hall sensor leads and Hall sensor power leads taking care of correct sequence.
2. Connect the 3 motor power leads U,V,W taking care of correct sequence.
3. Connect the drive to power input, DC stabilized supplier.
4. Select Jumpers as per needings
5. Before powering the drive, take care nobody is near to the motor.
6. Every good common sense cautions for people or things due to danger of moving mechanical bodies. Motor can heat during running. Wait for some minutes before touching the motor after stop.

Note: wrong connection or miswiring of correct sequence of the leads can damage the drive

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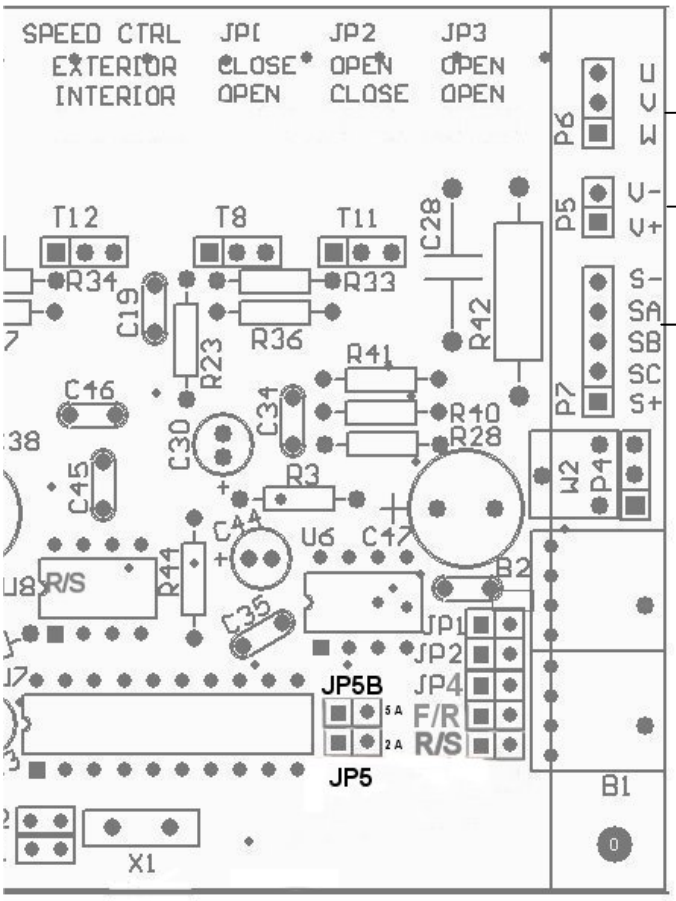
APPENDIX A: motor connection:

BL012.240, BL018.240, BL032.240, BL043.240



U: Motor phase A: yellow lead
V: Motor phase B: red lead
W: Motor phase C: black lead

V-: input power supply: negative
V+:input power suplly: positive + 24 Vdc

S-: Hall sensor ground: small black lead
SA: Hall sensor phase A: blue lead
SB: Hall sensor phase B: green lead
SC: Hall sensor phase C: white lead
S+: Hall positive supply (+5Vdc): red small lead

Suggested Jumper selection for current limitation.

Motor selection	JP5	JP5B	Current available
BL012.240, BL018.240	OPEN	CLOSE	5 A - 8.5 A about
BL032.240, BL043.240	OPEN	OPEN	7 A - 12 A about

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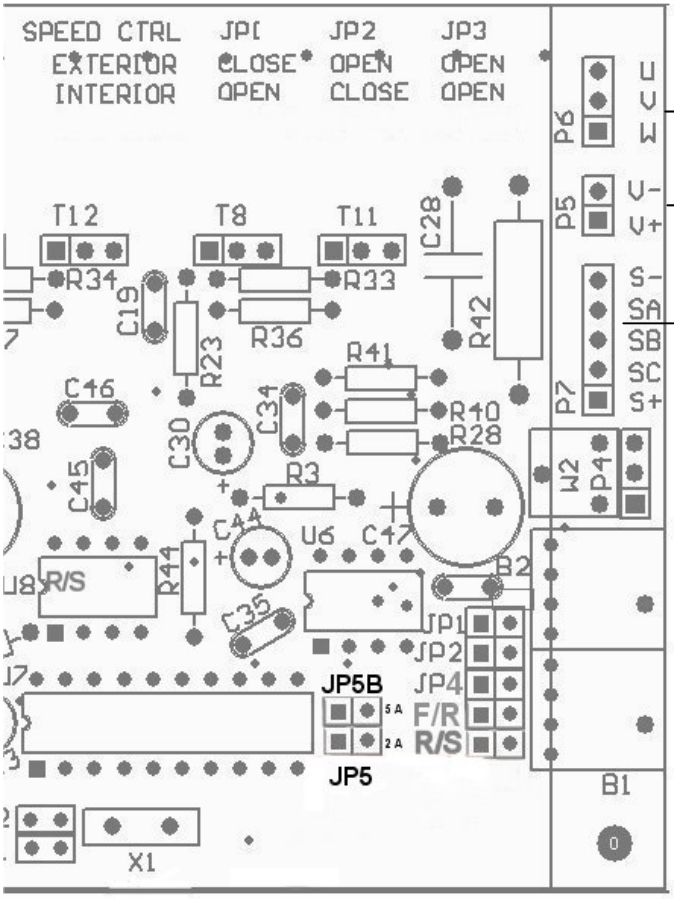
APPENDIX B: motor connection:

BL005.240



U: Motor phase A: green lead
V: Motor phase B: red lead
W: : Motor phase C: black lead

V-: input power supply: negative
V+:input power suplly: positive + 24 Vdc

S-: Hall sensor ground: white lead
SA: Hall sensor phase A: blue lead
SB: Hall sensor phase B: orange lead
SC: Hall sensor phase C: brown lead
S+: Hall positive supply (+5Vdc): yellow lead

Suggested Jumper selection for current limitation.

Motor selection	JP5	JP5B	Current available
BL005.240	CLOSE	CLOSE	2A - 4.5 A about

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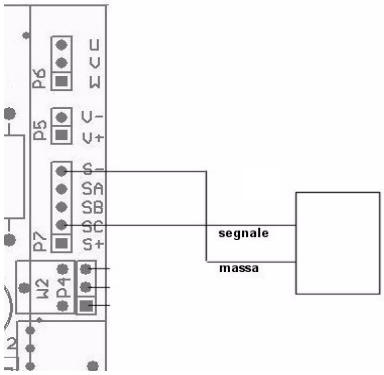
APPENDIX C:

How extracting a signal proportional to motor speed by the means of a Hall sensor channel



To get a signal proportional to motor speed:
use one Hall sensor channel and Hall GND.

Note: pls, use a data logger with high impedance input and insulated GND.

Square wave signal 5 Vdc, duty cycle about 50%.

2 ppr for motors: BL005.240, BL032.240, BL043.240
4 ppr for motors: BL012.240, BL018.240

Pls, call Tech Dept of Intecno Srl for questions and/or specific applications not clearly mentioned in the above features.

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