Sensor input

V+
5V+ard
J1 Conn_01x04_Male
J2 Conn_01x04_Male
analog4+
analog1+
Input4+ Input4+
Input1+ Input1+
Input1- Input1-
R4 10k
R5 10k
GND

Lm324N circuit for simple line follower with backup circuit provided by arduino nano for 2 sensor input and 2 motors output.

By: Ajaya Dahal

Motor Output

Motor1a   Motor2a
J7   GND   J8
Conn_01x02_Male   Conn_01x02_Male

Power switch between lm324 and arduino

CONN_01X03_MALE 1-Ard
J6
5V+ard   5V   V+

Voltage Regulator LM317T

IC1 LM317T
IN   OUT   ADJ
J3   9V+
GND   J4 PowerIN
1N4001 D1
OUT
IN
Adjust
D2 1N4001
R1 240
C3 1.0UF-0402-16V-10% CAP-12417
C1 0.1UF-0402-16V-10% CAP-12416
VR1 10K pot
C2 10UF-0805-10V-10% CAP-11330
RES-09730
F1 Fuse 5V
GND   GND

Control from arduino

L293D_Motor1a   L293D_Motor1b   L293D_Motor2a   L293D_Motor2b
J5
U2
VS   9V+
VSS   5V+ard
ENABLE1
ENABLE2
arOutputPIN1   INPUT1   OUTPUT1   L293D_Motor1a
arOutputPIN2   INPUT2   OUTPUT2   L293D_Motor1b
arOutputPIN3   INPUT3   OUTPUT3   L293D_Motor2a
arOutputPIN4   INPUT4   OUTPUT4   L293D_Motor2b
L293D   GND

CONN Arduino Backup Motor driver
ARDUINO_NANO
COM/GND
arOutputPIN3   arOutputPIN2   arOutputPIN1
Input4-   Input1-
analog4+   analog1+   5V+ard
D6 D5 D4 D3 D2 D1/TX D0/RX A7 A6 A5 A4 A3 A2 A1 A0 RESET VIN
D13/SCK D12/MISO D11/MOSI D10 D9 D8 D7   AREF 3V3 +5V
arOutputPIN4
TB1
GND

D7 1N4001
K3   R12 270   2N3904   D9 LED
5V+ard
Motor1a
EC2-5NU   R14 1k   arOutputPIN3
Q3

D8 1N4001
K4   R13 270   2N3904   D10 LED
Motor2a
EC2-5NU   R15 1k   arOutputPIN1
Q4
GND

LM324N operation

D3 1N4001
K1   R2 270   2N3904   D5 LED
Motor1a
V+
EC2-5NU   R6 1k   OutputPIN4
Q1

D4 1N4001
K2   R3 270   2N3904   D6 LED
Motor2a
EC2-5NU   R7 1k   OutputPIN1
Q2

U1
OUTPUT1   OUTPUT4   Input4-
Input1-   INPUT1-   INPUT4-
Input1+   INPUT1+   INPUT4+
V+   GND
INPUT2+   INPUT3+
INPUT2-   INPUT3-
OUTPUT2   OUTPUT3
lm324
OutputPIN1   OutputPIN4
Input1-   Input4-
Input1+   Input4+
GND
R8 10k R9 270   R10 10k R11 270
V+

Ajaya Dahal
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