Title: Tyre_PCB_4in
Date: 1-Jul-2020
File: E:\Tyre_PCB_4in\Tyre_PCB_4in.ddb
Size: B
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Drawn By:

Tyre controller using PIC24FG256GA702

PIC24FJ256GA702-I/PT 28 Pin dip

PIN	NAME	Fullname
1	MCLR	MCLR
2	RA0	VREF+/CVREF+/AN0/C3INC/RP26/CTED1/RA0
3	RA1	VREF-/CVREF-/AN1/C3IND/RP27/CTED2/RA1
4	RB0	PGD1/AN2/CTCMP/C2INB/RP0/RB0
5	RB1	PGC1/AN1-/AN3/C2INA/RP1/CTED12/RB1
6	RB2	AN4/C1INB/RP2/SDA2/CTED13/RB2
7	RB3	AN5/C1INA/RP3/SCL2/CTED8/RB3
8	Vss	VSS
9	RA2	OSCI/CLKI/C1IND/RA2
10	RA3	OSCO/CLKO/C2IND/RA3
11	RB4	SOSCI/RP4/RB4
12	RA4	SOSCO/PWRLCLK/RA4
13	VDD	Vdd
14	RB5	PGD3/RP5/ASDA1/OCM1E/RB5
15	RB6	PGC3/RP6/ASCL1/OCM1F/RB6
16	RB7	RP7/OCM1A/CTED3/INT0/RB7
17	RB8	TCK/RP8/SCL1/OCM1B/CTED10/RB8
18	RB9	TDO/C1INC/C2INC/C3INC/TMPRN/RP9/SDA1/T1CK/CTED4/RB9
19	Vss	Vss
20	Vcap	Vcap
21	RB10	PGD2/TDI/RP10/OCM1C/CTED11/RB10
22	RB11	PGC2/TMS/REFI1/RP11/CTED9/RB11
23	RB12	AN8/LVDIN/RP12/RB12
24	RB13	AN7/C1INC/RP13/OCM1D/CTPLS/RB13
25	RB14	CVREF/AN6/C3INB/RP14/CTED5/RB14
26	RC1	AN9/C3INA/RP15/CTED6/RB15
27	AVss	AVSS/VSS
28	AVdd	AVDD/VDD

PORT	PIN name	RE:Prog	ANALOG	PIN #
PORTA	RA0	RP26	AN0	2
	RA1	RP27	AN1	3
	RA2			9
	RA3			10
	RA4			12
Port B	RB0	RP0	AN2	4
	RB1	RP1	AN3	5
	RB2	RP2	AN4	6
	RB3	RP3	AN5	7
	RB4	RPi4		11
	RB5	RP5	5.5V tolerant	14
	RB6	RP6	5.5V tolerant	15
	RB7	RP7	5.5V tolerant	16
	RB8	RP8	5.5V tolerant	17
	RB9	PR9		18
	RB10	RP10	5.5V tolerant	21
	RB11	RP11	5.5V tolerant	22
	RB12	PR12	AN8	23
	RB13	PR13	AN7	24
	RB14	PR14	AN6	25
	RB15	RP15	AN9	26

Application allocation

Purpose	Name in MCC	Group
Motor Drive	MD	Digital Outputs
Chip Select SD	CS_SD	
Chip Select Port Exp	CS_PE	
Port Expand INT	INT_PE	Digital input
Spare		
Left for PGD1		
Left for PGC1		
SDI1	Default	SPI for SD card
SDO1	Default	
SCK1	Default	
UART Receive data	Default	Pin 2 Terminal comms
SDO2	Default	SPI for LCD
SCK2	Default	
SDI3	Default	SPI for port expander
SDO3	Default	
SCK3	Default	
UART Transmit data	Default	Pin 1 Terminal comms
Temperature	LM45	Analog in
Pressure Sens 2	SENS2	
Pressure Sens 1	SENS1	
Supply Voltage in	VIN	

MD has to be a direct RP Pin as it's connected to the PWM module

Switch 1	PE_SW1	Digital inputs
Switch 2	PE_SW2	
Air release Valve	PE_VALVE	Digital outputs
Buzzer	PE_BUZER	
Indicator LED	PE_LED1	
LCD Chip Select	PE_LCD_CS	
LCD Data/Command	PE_LCD_DC	
LCD back light	PE_LCD_BL	Spare

Pump control board.   TC 2020_06_22

PIC24FJ256GA702

Pump control board   V2.1

The on board sensor is connected to VIN1
You can have one or the other, not both.
Connect a 2nd sensor to VIN2

SENS1
MPXV5700GP

CPU
SKT-COM1

C_PBP_13   C_PBP_5
0.1uF   10uF

R_COMRx   220
R_COMTx   220
C_PBP_4   10uF
R_LED1   0.1uF
LED1_TO   2K
PON_LED
R_PON   680

C_PBP_12   0.1uF
10uF
100K   RM5
10uF

RM1   220
DZ1   3.3K
RIN13   200   RIN12
RIN43   3.3K
RIN41   12K
C_PBP_9   0.1uF
CIN4   200
RIN22   0.1uF
COUT3   0.1uF
CIN2
RIN23   3.3K
RIN31
C_PBP_6   1.5K
10uF
220   RLCD_DC
TLP291   OPTO_V

OPTO_M
DZ1   BZT52H
BZT52H

DZ24
RM4   1K
COUT4   0.1uF
RM3   1K
RM2   100K
CUIN
RIN42   4.7K   TC1047A
RIN32   200
CIN3   0.1uF
RIN33   3.3K
RLCD_CS   100K
100K
RV3   1K

BZT52H
TLP291

EARTH_BRIDGE

T_SENS

1N4004 DM

BZ_FET
2N7002
R_BZ2   100K
R_BZ3   220

BZ1
DSUPPLY
MBRS330T3G
PUMP+
BAT+

50K
1.5K RIN11
BZT52H DZ2
0.1uF 0.1uF
RS2
100K VIN1
S1
220
DZ3   RS1
C_S2
R_BZ1
0.1uF
100K
1.5K RS4
VIN2   RS4
RIN21
RS3
1K
10uF
1N4004
DV
VALVE

1K
RV2   100K
0.1uF

PUMP-   BAT-

25A

Pump control board. TC_2020_06_22

Pump control board.
TC 2020 06 22

NCP1117DT50G

AZ1117CH-3.3TRG1

Quad Op-Amp

MDF2

NDT2955

MCP6004

M_PFET Port Expander

MDF1

MCP23S08

V_PFET   NDT2955