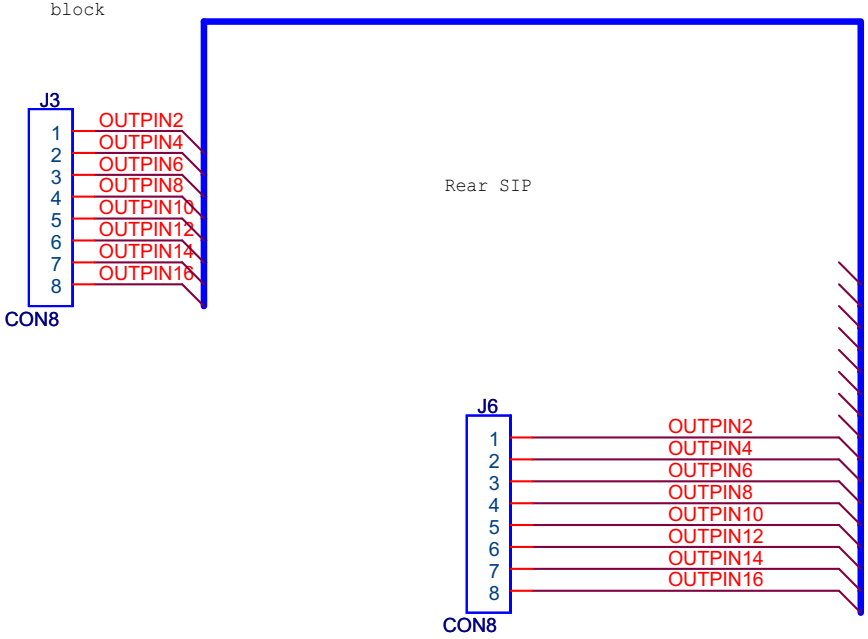
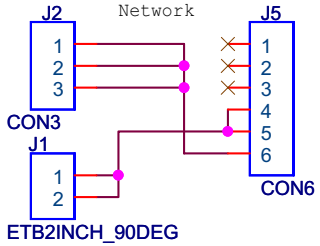
T3-32AI

SIP terminal block





Ground Connections

Calcuated spacing for upper connector = 0.621"

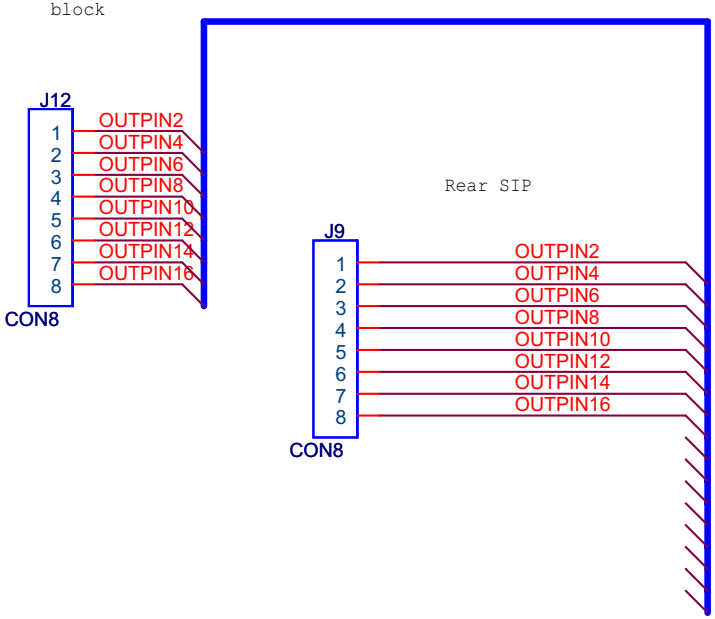
Jus use sip haeders as Amang has, try them out

Rev9: added header for RS485 connector

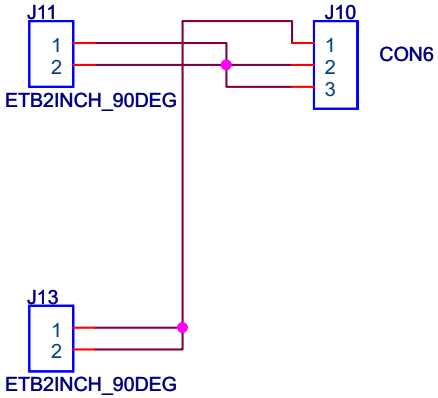
	TEMCO CONTROLS LTD. 1027 WEST 7TH AVE VANCOUVER BC, V6H 1B2 TEL: (604) 438 - 8294 FAX: (604) 438 - 9313
	T3000 OUTPUT CARD
	Size: A; CAGE Code: <Cage Code>; DWG NO: ; Rev: 03
Friday, July 19, 2013	Scale: ; Sheet: 0 of 2

T3-32AI

SIP terminal block



Ground Connections



Calcuated spacing for upper connector = 0.621"

Jus use sip haeders as Amang has, try them out

Rev9: added header for RS485 connector

TEMCO CONTROLS LTD.
1027 WEST 7TH AVE
VANCOUVER BC, V6H 1B2
TEL: (604) 438 - 8294
FAX: (604) 438 - 9313

T3000 OUTPUT CARD

Size	CAGE Code	DWG NO	Rev
A	<Cage Code>		03

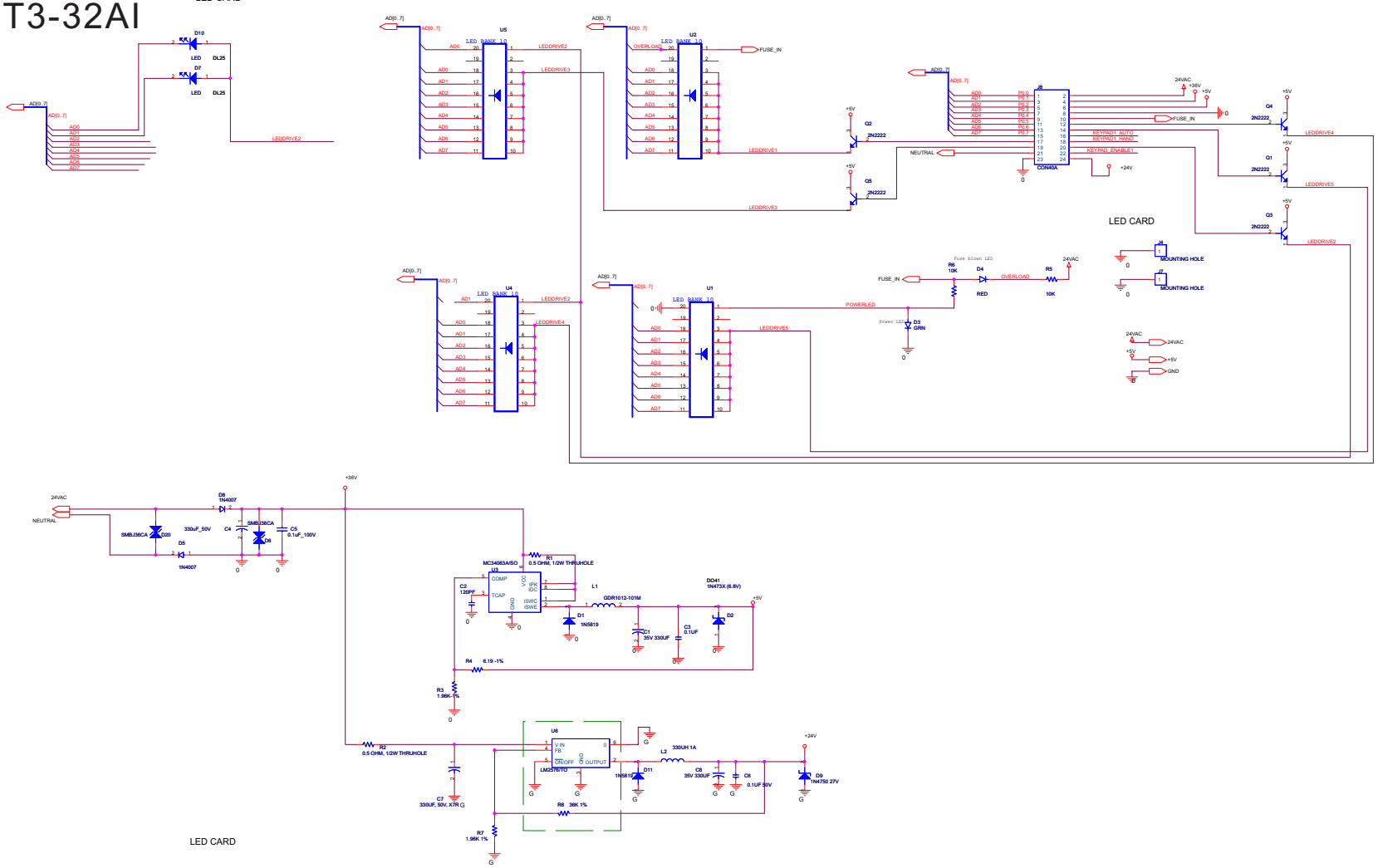
Friday, February 18, 2011

Scale

Sheet 0 of 2

T3-32AI

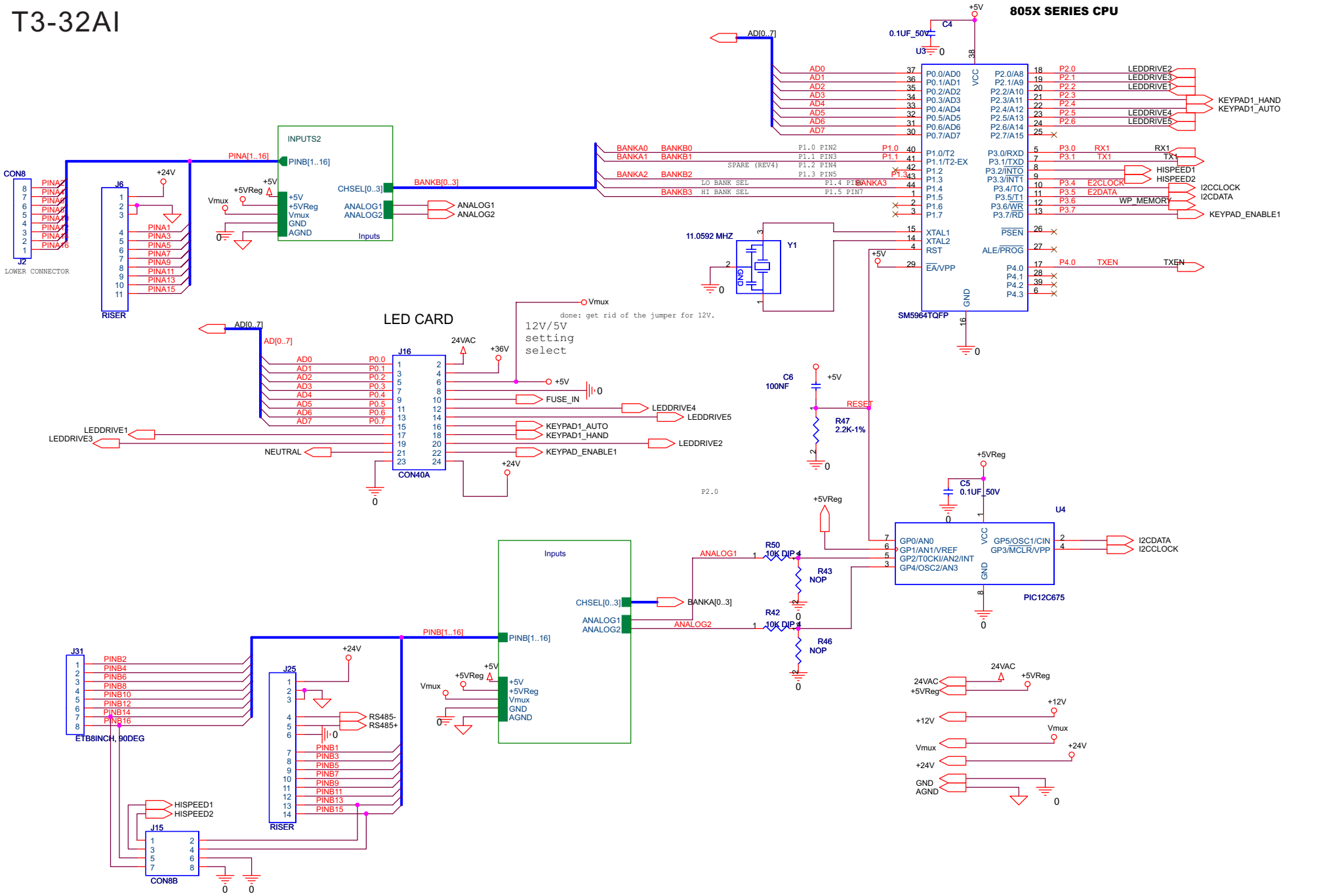
LED CARD



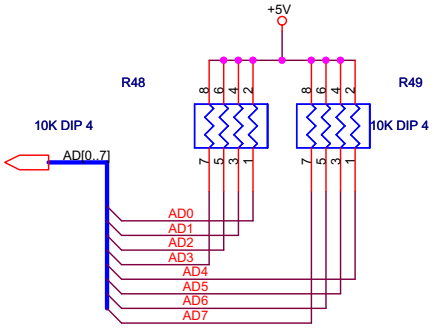
LED CARD

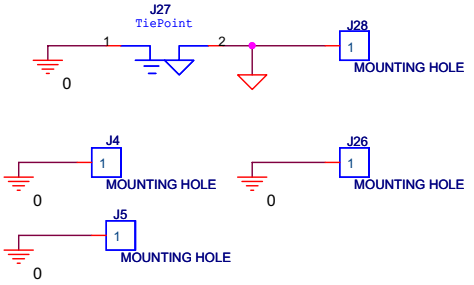
	TEMCO CONTROLS LTD. 1027 WEST 7TH AVE VANCOUVER BC, V6H 1B2 TEL: (604) 438 - 9204 FAX: (604) 438 - 9313
	T3000 OUTPUT CARD
	Size: D; CAGE Code: <Cage Code>; DWG NO; Rev: | 03
Monday, August 05, 2013	Scale; Sheet: 1 of 2

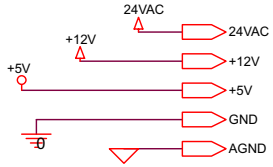
T3-32AI


805X SERIES CPU
SM5964TQFP
PIC12C675
LED CARD
12V/5V setting select
done: get rid of the jumper for 12V.
11.0592 MHZ
CON8
LOWER CONNECTOR
RISER
ETB8INCH, 90DEG
CON40A
CON8B
INPUTS2
Inputs
J34
1--2 ,3--4,5--6,7--8
SHORT T3-32I
OPEN T3-28I
Title
Sensors
Size A3
Document Number <Doc>
Rev <RevCode>
Date: Wednesday, August 21, 2013
Sheet 1 of 6

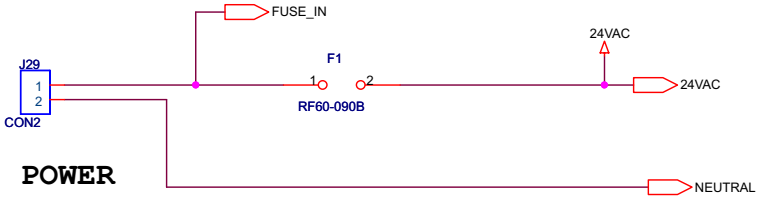
T3-32AI

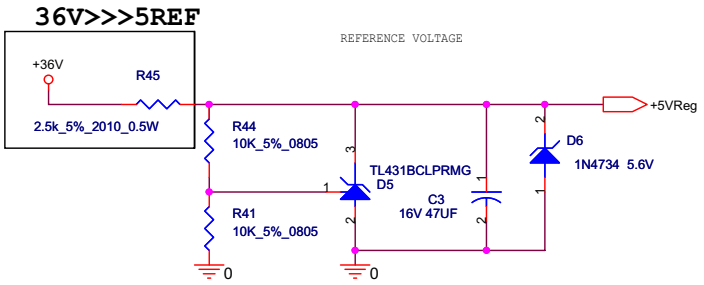


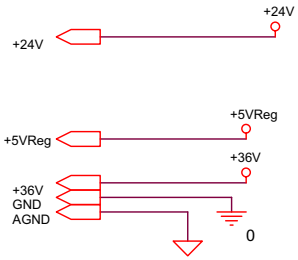


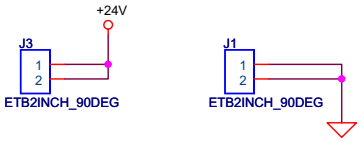


Mounting Holes





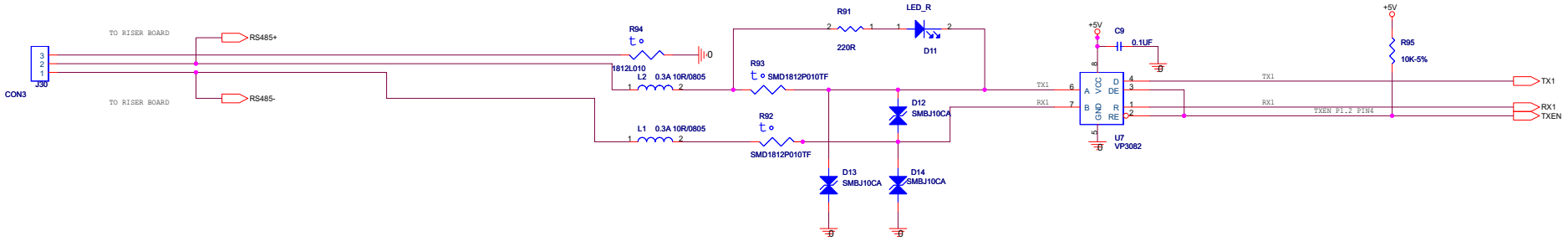


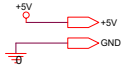


POWER

Title: <Title>		
Size: B	Document Number: <Doc>	Rev: <RevCode>
Date: Wednesday, August 21, 2013	Sheet 2 of 6	

T3-32AI





Title	<Title>		
Size C	Document Number <Doc>		Rev <RevCode>
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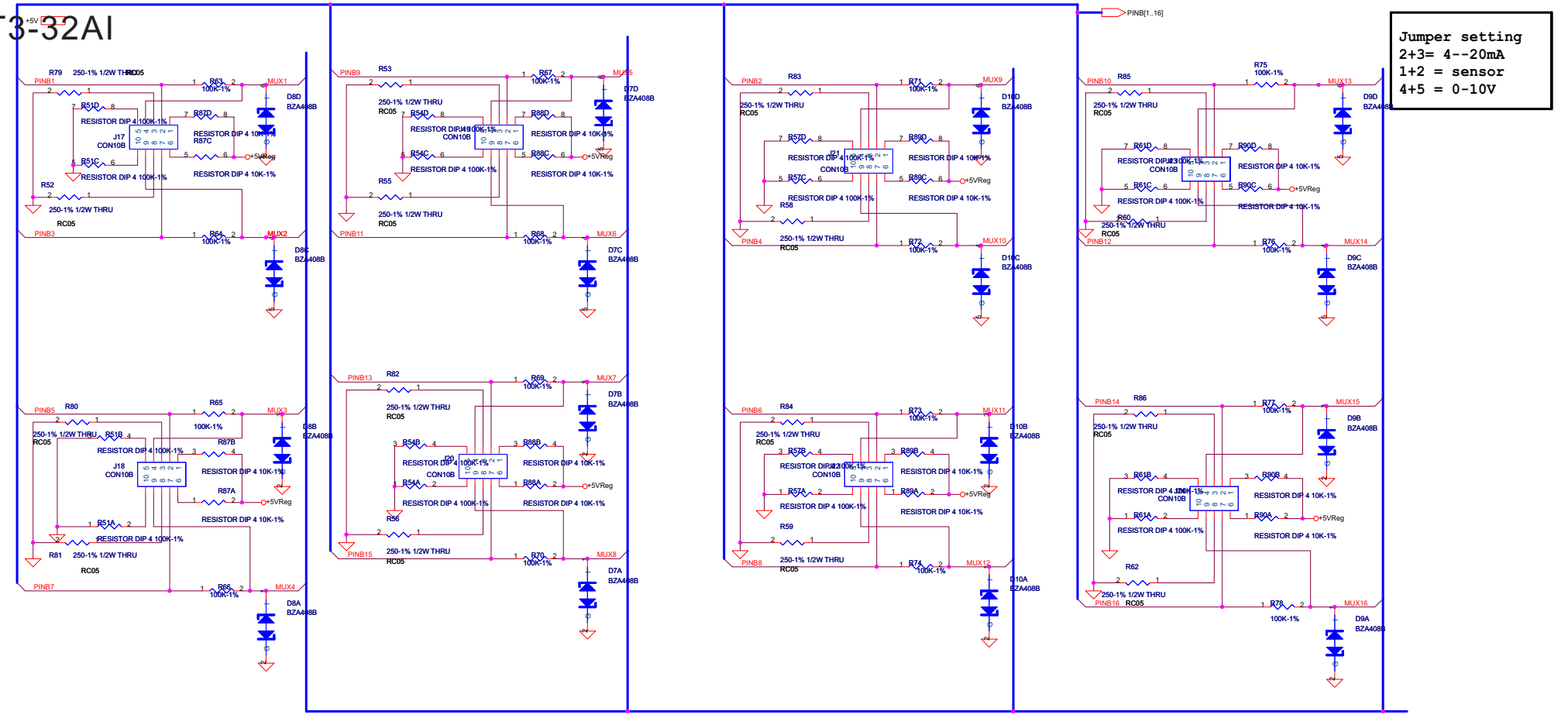
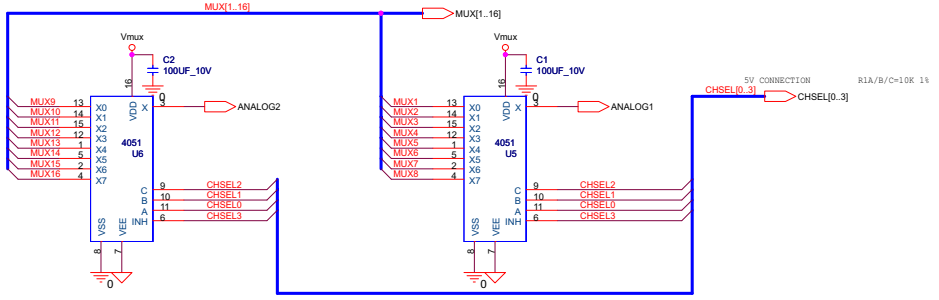
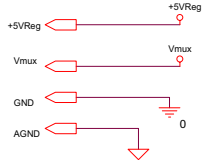
T3-32AI

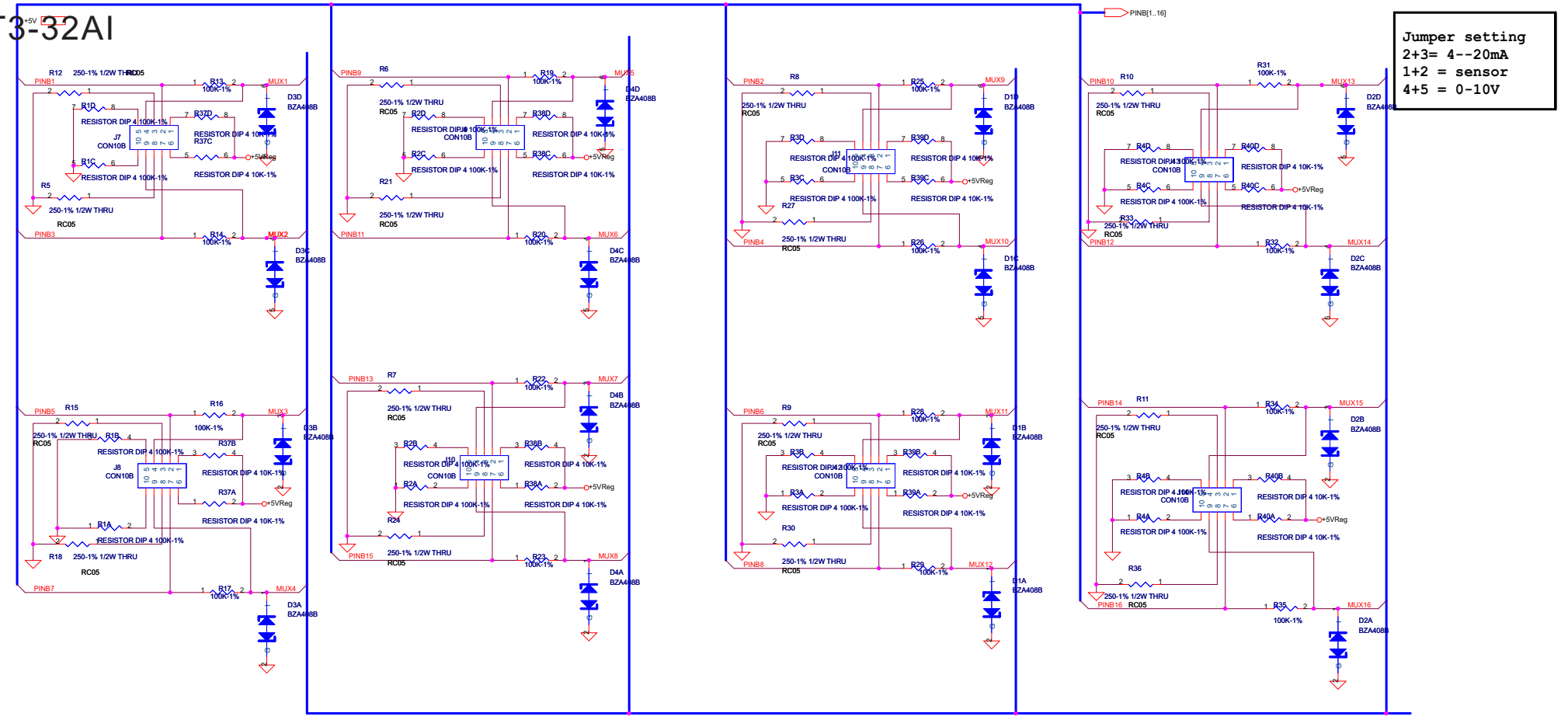






Title: Sensors		
Size: C	Document Number: <Doc>	Rev: <RevCode>
Date: Tuesday, August 20, 2013	Sheet 5 of 6	

T3-32AI



Title	Sensors	
Size C	Document Number <Doc>	Rev <RevCode>
Date: Tuesday, August 20, 2013	Sheet 6 of 6	

32 INPUT

Rev1

Done: Took 8in8out board and modified for 32 inputs

Done: Reduce number of pins on riser cards since they get in the way, align in the center

Done: allow full and half wave power supplies, this means changing the upper card, jumper selectable

Done: add LEDs, use the bargraph type

Done: for the full wave make sure to have two separate lines, gnd and neutral

Done: synchronize the pins from the bottom board to the led board

Rev2

- (01/24/05) add a 12 volt voltage divider for inputs

- (01/24/05) add a 5 volt pull up on the input lines.

- (01/24/05) removed the 10K packets and placed a 1K current limitting

- (01/24/05) added connection to the 5 volts reg

- (01/25/05) added Vmux which allows us to set the mux to 12 or 5 volts Vdd.

Done: make hardware rev visible on board while inside the enclosure

Rev3

Done: change the VDD supply to the pic chip to 5Vreg

Done: fix BAS40 on RS485 line

Done: DELETE rs485 RESISToRS

Done: make space for 24pin header

Rev4

TBD: update thermal relief

TBD: need to work out mux vcc, 12V is too high

Done: input resistor is OK, double confirmed now

Done: Add RS485 opto isolator module.

Rev5

Done: swap power lines to RS485 module

Done: rotate F1

Done: make 120, mostly for datanab

For using OPTO-Isolated RS485 module, the corresponding LEDBOARD is modified as following: R6 changed to 2K 1% R8 changed to 5.9K 1%

TBD: the Ground of two RS485 connectors are different, they should both be connected to the ground of the RS485 module

```
TBD: the voltage of J5(mux's supply) need to
be decreased to 10v to adapt 5v supply
required by RS485 module, in series with  an
extra diode to the supply
```

Rev10

```
TBD:move the hole far away to component
pad on PCB,modify 16SOP150 footprint.
```

Rev11

```
done::add 5v vref for input<Check this
```

Rev12

```
done:Rev12: add TXEN pin for RS485 module
done:Rev12: try to fit zigbee module here
done:Rev12: check 24vac protection on all pins
done:Rev12: check jumper silk screen is big
```

Rev13

```
done:ADD J35&J34 JUMPER  , J34&J35 SHORT 28I, J34&J35 OPEN 32I
```

Rev14

```
done:Del J35&J34  Jumpers  ,  Add  new  8PIN  pinheader  for  32I&28I switchover .
```

Rev15

```
done: change the rev14  J34 net.  now jumper out for T3-32IN and jumper in for T3-28IN with two channels high speed counting.
```

Rev16

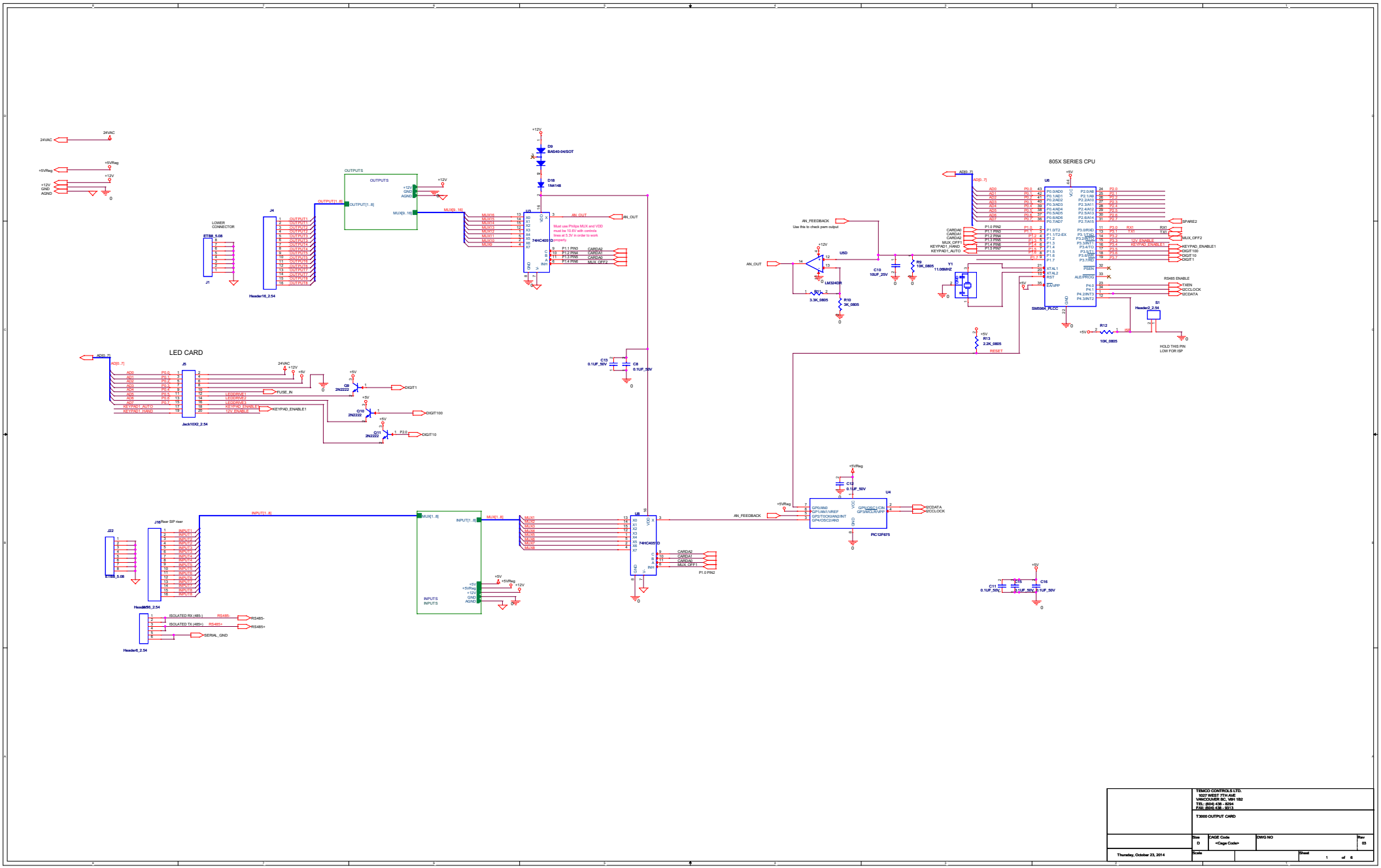
```
done:get the RS485 module down lower.
done: move the top row of terminal inward for 1mm
done:Silk screen shows rev12 and rev5 for bottom.
tbd: update rev notes, check half wave jumper, get rid of it next rev
tbd: get rid of the jumper for 12V.
tbd: change the reference vaoltage circuit.
```

Rev17:

```
done: update rev notes, check half wave jumper, get rid of it next rev
done: get rid of the jumper for 12V.
done: change the reference vaoltage circuit.
done: delete 12V power supply.
```

Title <Title>		
Size B	Document Number <Doc>	Rev <RevCode>
Date: Tuesday, July 30, 2013	Sheet 2 of 2	

T3-8AI8AO


805X SERIES CPU
LED CARD
OUTPUTS
INPUTS
LOWER CONNECTOR
Header16_2.54
Jack10X2_2.54
Header8_2.54
Header6_2.54
PIC12F675
LM324DR
74HC4051D
SM5964PLCC
AN_FEEDBACK
AN_OUT
RS485+
RS485-
SERIAL_GND
ISOLATED RX (485-)
ISOLATED TX (485+)
HOLD THIS PIN LOW FOR ISP
RESET
TOWCO CONTROLS LTD.
1027 WEST 7TH AVE
VANCOUVER B.C. V6H 1B2
TEL: (604) 438 - 8294
FAX: (604) 438 - 8013
T3008 OUTPUT CARD
Thursday, October 23, 2014
Sheet 1 of 6

T3-8AI8AO

May2: 2001

DONE Pin7 No ground on U7

DONE Analog output from DAC needs to be routed to output mux, missing wire

DONE LED card needs ot be really checked over, not working

Added spares to connector, moved pins around, moved connectors around

DONE 15V fused, doest make it out to led card, renamed it to 15V, all are on the fuse now

DONE Q2n222 for 5V regulated, its backwards

DONE CardSelect can go directly to Pjn 6 of small output mux

DONE Chip select for mux for inputs, U??, can go to ground all the time since there are separate In lines for each input card. Actually its just done in parallel with the other mux

DONE No room: moved MOV's to terminal block card

Rev8

Rework to plastic enclosure

Rev9

Add local controller, modbus port
USB...???

Rev11

Switched + and - 485 pins

Added +5Reg to VREF of PIC

Fixed the positioning of connectorboard1

Made mounting holes bigger

More room for input/output connectors

Moved power and fuse LEDs to top board

Added latches for both switch banks on LED board

Rev12

Switched 485 + and - on upper header

made traces on 485 protection wider

moved pin labelling to bottom of board

Added 4148 protection diodes to +V on inputs and outputs

Removed 1W resistors on output lines

moved 485 to top and made thru-hole (use a socket)

Rev13

added 30R resistors to the 485 lines

connected reset pin to one pin of the PIC chip

moved shunting diodes on input lines to CPU side of 100K resistor

got rid of J7 and J8 - TTL no longer necessary

Rev14

TBD: move flash jumper to location accessable when board is in enclosure

TBD: make hardware rev visible on board while inside the enclosure

Rev15

Done: make sure LED board connector complies with new rev (led rev14)

Done: add a 5Vreg and take out op-amps

Done: remove 470ohm current limitting resistor such that can obtain zero voltage level

Done: the 100k resistors were reduced to 1K on the input. don't remember why though

Done: change current sensing resistors to 1/2W thru-hole

Done: use new crystal footprint

Done: add current limiting resistor to gnd line of com485

Done: use 10K packet resistors for pull-up

Done: check footprint of various chips

Done: use BAS40 for protection on inputs and outputs

Done: when uploading the code make sure using analog. Never been tested so probably modification needed.

Done: move flash jumper to location accessable when board is in enclosure

Done: make hardware rev visible on board while inside the enclosure

Rev16 (make 35 for data Nab)

Done: BAS40 on RS485 line to flip. layout incorrect!

Done: need 1M pull down resistor on all outputs

Done: Bigger footprint for 1/2 watt 250 ohm R's

Done: Bigger footprint for RS485 transorbs

Rev17

Done: put pull-up on reset line. PIC will pull it down
Done: add pullup for isp line, noticed NC module was going into ISP mode sometimes.
Done: remove pull up and pull down on RS-485 lines
Done: wider spacing for 250 Ohm resitors
Done: smt for PIC chip
Done: add RS485 optoisolator module
Done: move PWM cap away from connector
Done: add fuse to neutral on power connector

Not done: 10uF AO caps can be changed to 100uF.

TODO: make 9 for Malaysia

Rev18

Done: The RS485 module need to be moved toward U6 about 1-2mm, moved toward R30, R32 a little to shun J4(the erected PCB), and R30,R32 also need to be keep away from the RS485 module

Done: the footprint of C1 - C7, C9 is too narrow, need to be extended

TBD: the 78L12 in the LED borad is too hot, change to 7812

Done: check the ground of two RS485 connectors to see whether they are connected to the ground of RS485 module

Done: the voltage of U3(mux) need to be decreased to 10v to adapt 5v supply required by RS485 module, in series with an extra diode to the supply

Rev19

TBD: the polarity of C1 - C7, C9 should be annotated in silk layer

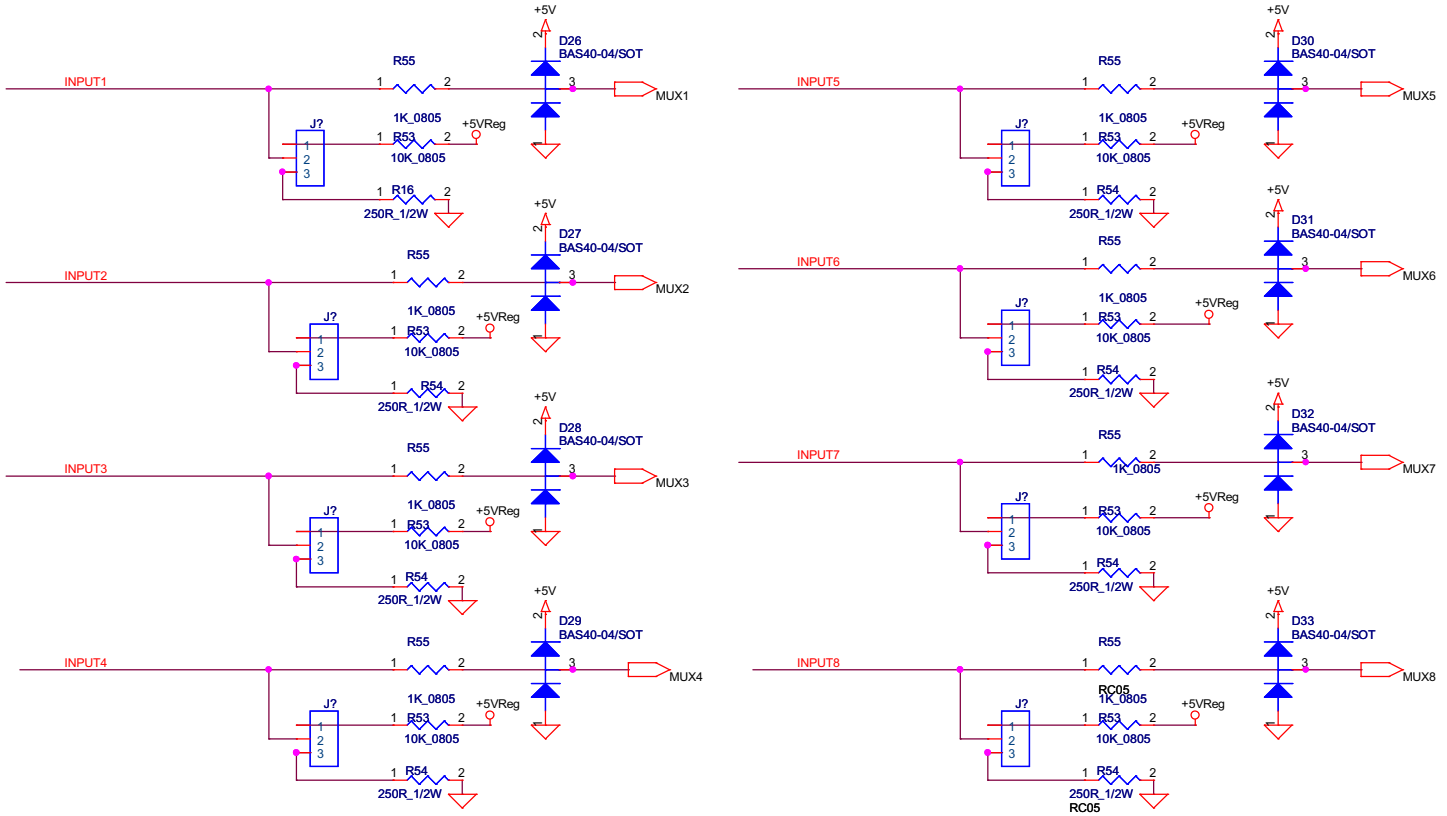
TBD: delete the temco controls on the top board.

TBD: Add RS485 TXEN Signal , From U6 PIN23 to J6 pin8 .

TBD: xx.dsn and xx.max will change 2n2222 to star dard footprint (SM/SOT23_123)

Title: <Title>		
Size: C	Document Number: <Doc>	Rev: <RevCode>
Date: Thursday, October 23, 2014	Sheet 1 of 1	

T3-8AI8AO



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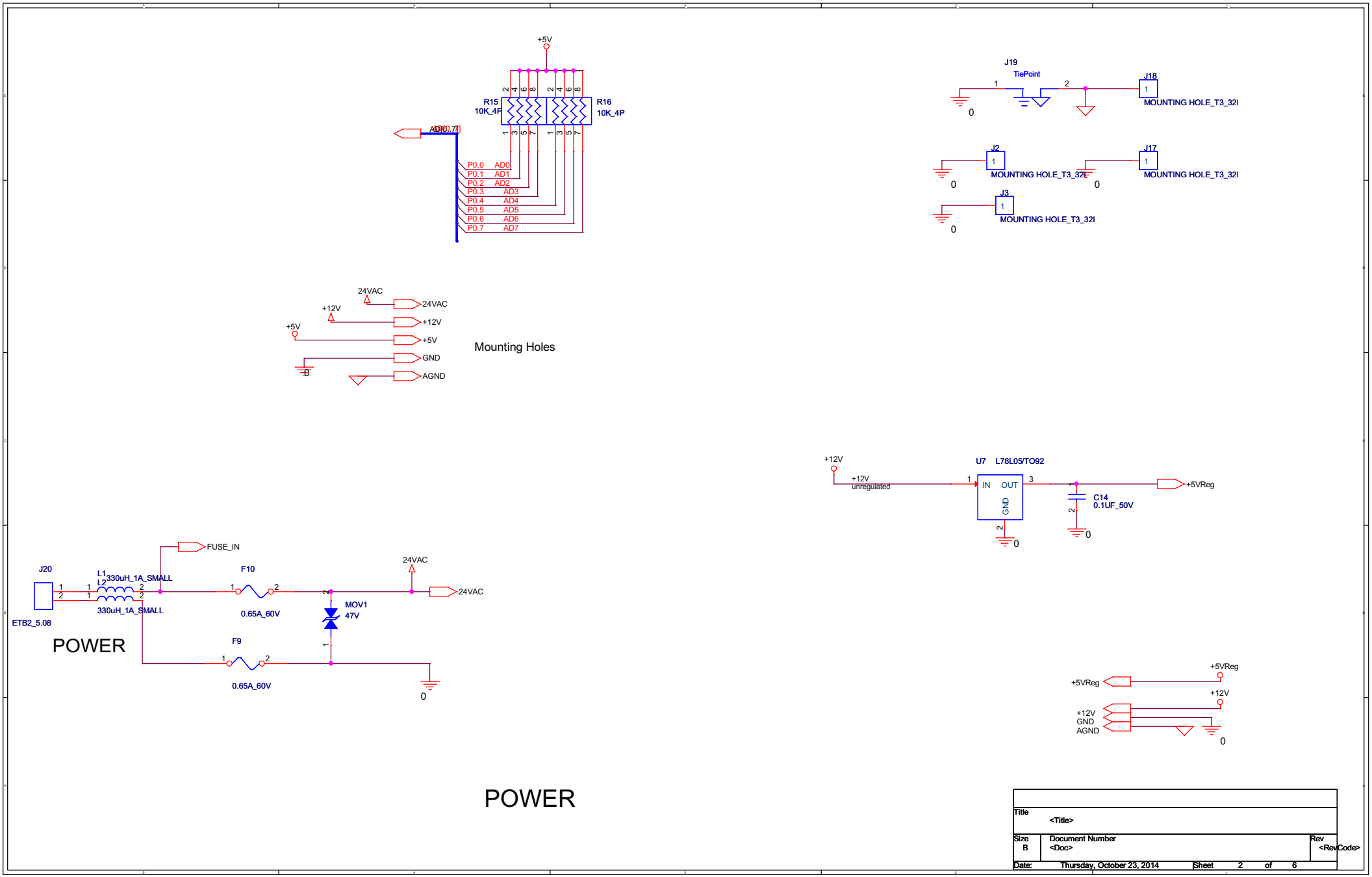
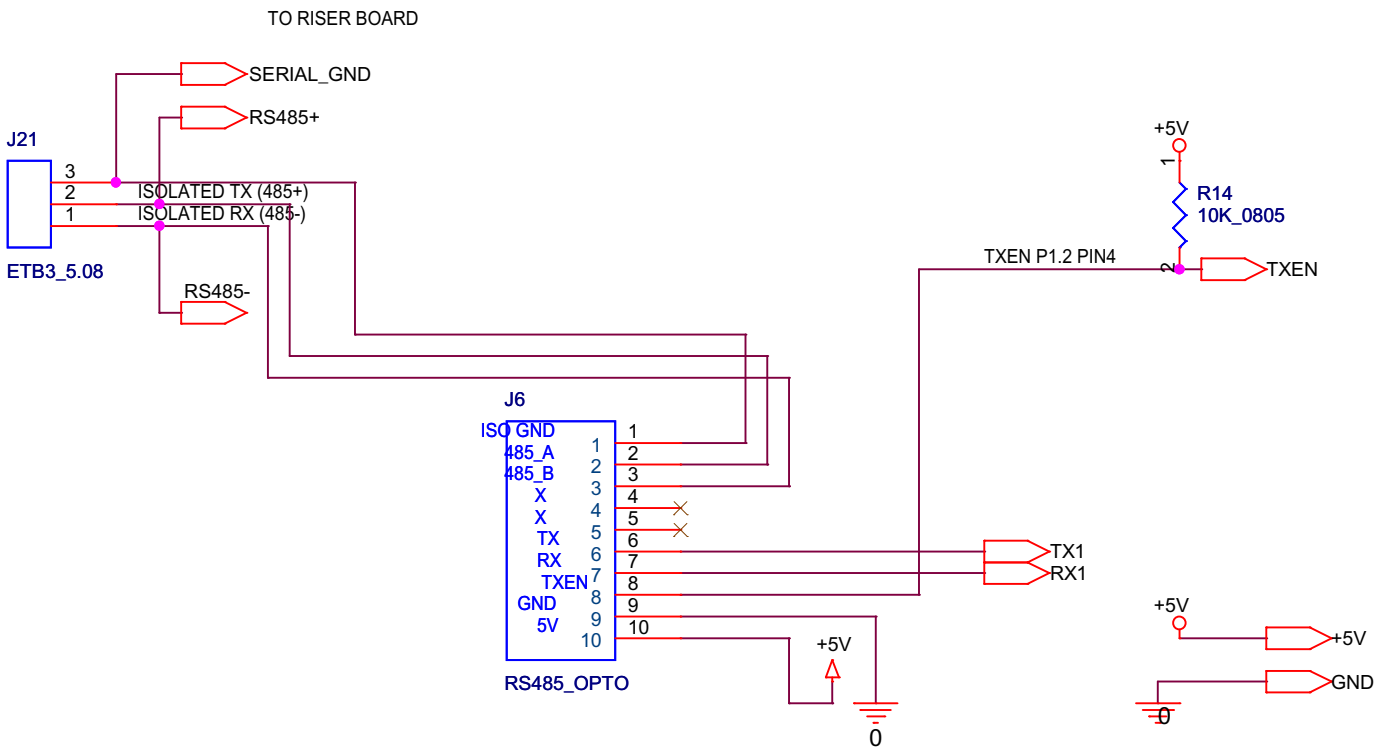
Size: B	Document Number: <Doc>	Rev: <RevCode>
Date: Thursday, October 23, 2014	Sheet 1 of 1	


+5V
R15
10K_4P
R16
10K_4P
AD[0..7]
P0.0 AD0
P0.1 AD1
P0.2 AD2
P0.3 AD3
P0.4 AD4
P0.5 AD5
P0.6 AD6
P0.7 AD7
J19
TiePoint
J18
MOUNTING HOLE_T3_32I
J2
MOUNTING HOLE_T3_32I
J17
MOUNTING HOLE_T3_32I
J3
MOUNTING HOLE_T3_32I
24VAC
+12V
+5V
GND
AGND
Mounting Holes
U7 L78L05/TO92
+12V unregulated
IN
OUT
GND
+5VReg
C14
0.1UF_50V
J20
ETB2_5.08
L1 330uH_1A_SMALL
L2 330uH_1A_SMALL
FUSE_IN
F10
0.65A_60V
F9
0.65A_60V
MOV1
47V
24VAC
POWER
POWER
Title
<Title>
Size B
Document Number
<Doc>
Rev
<RevCode>
Date: Thursday, October 23, 2014
Sheet 2 of 6

T3-8AI8AO



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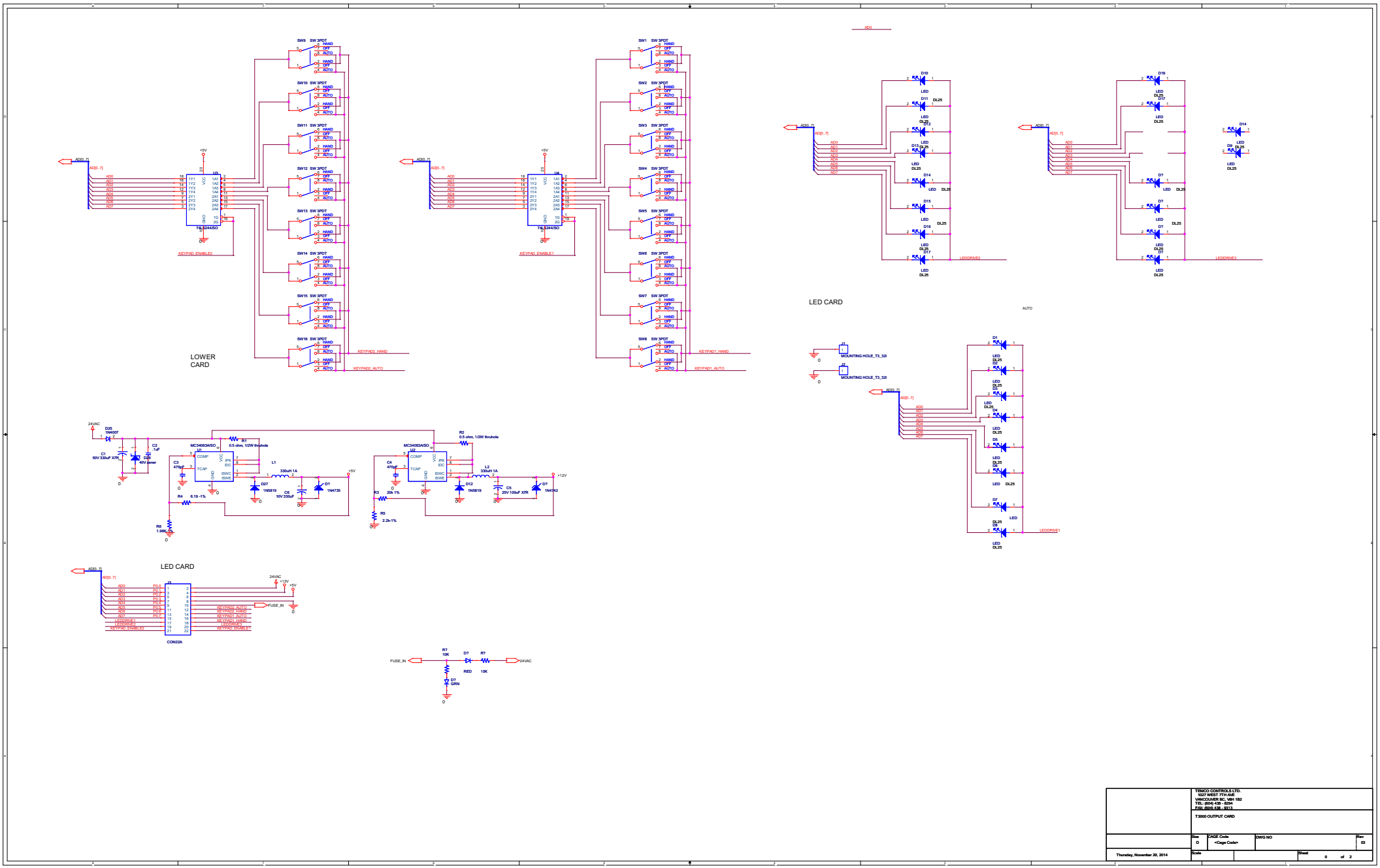
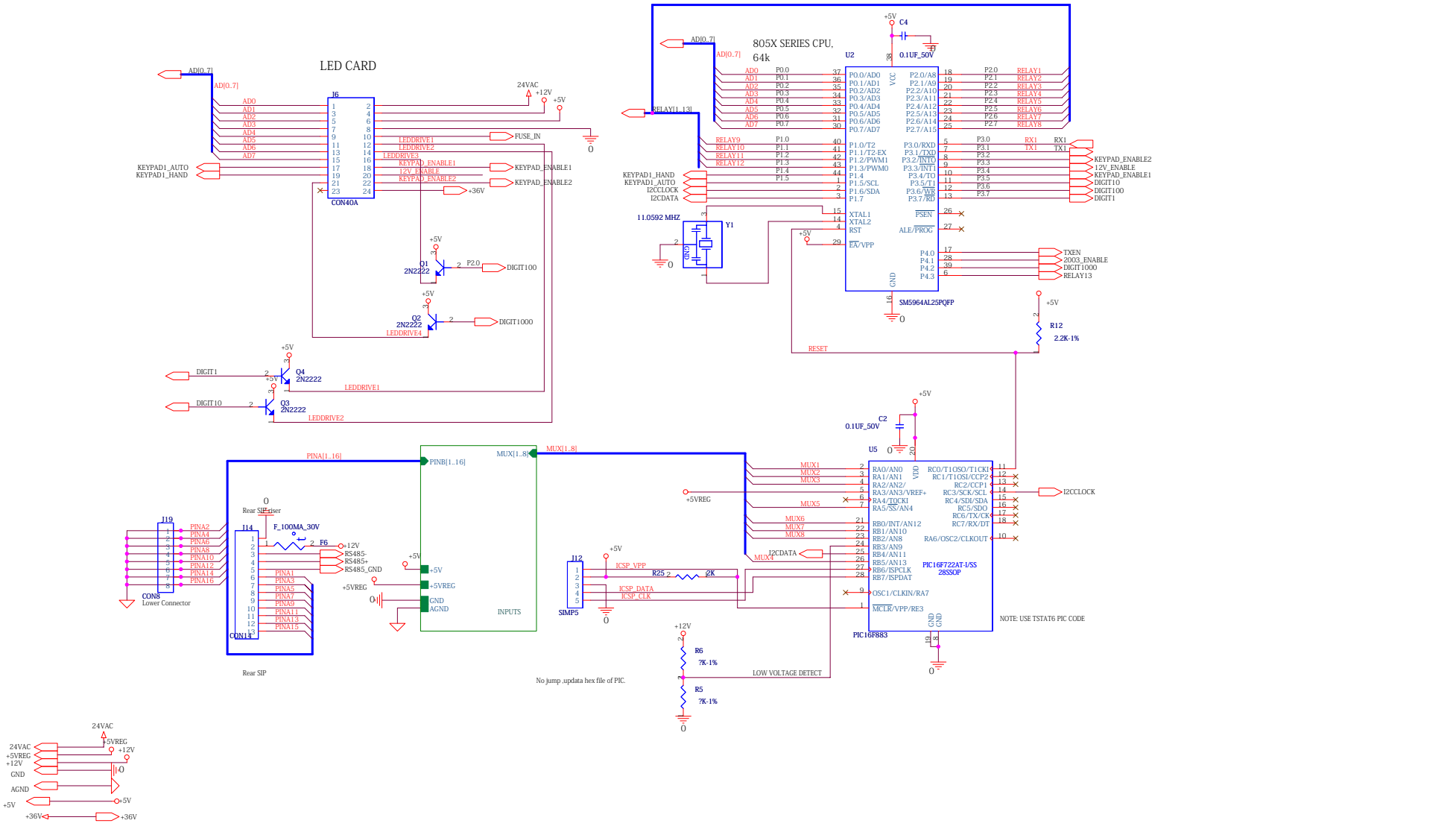
Size A	Document Number <Doc>	Rev <RevCode>
Date: Thursday, October 23, 2014	Sheet 4 of 6	

T3-8AI8AO

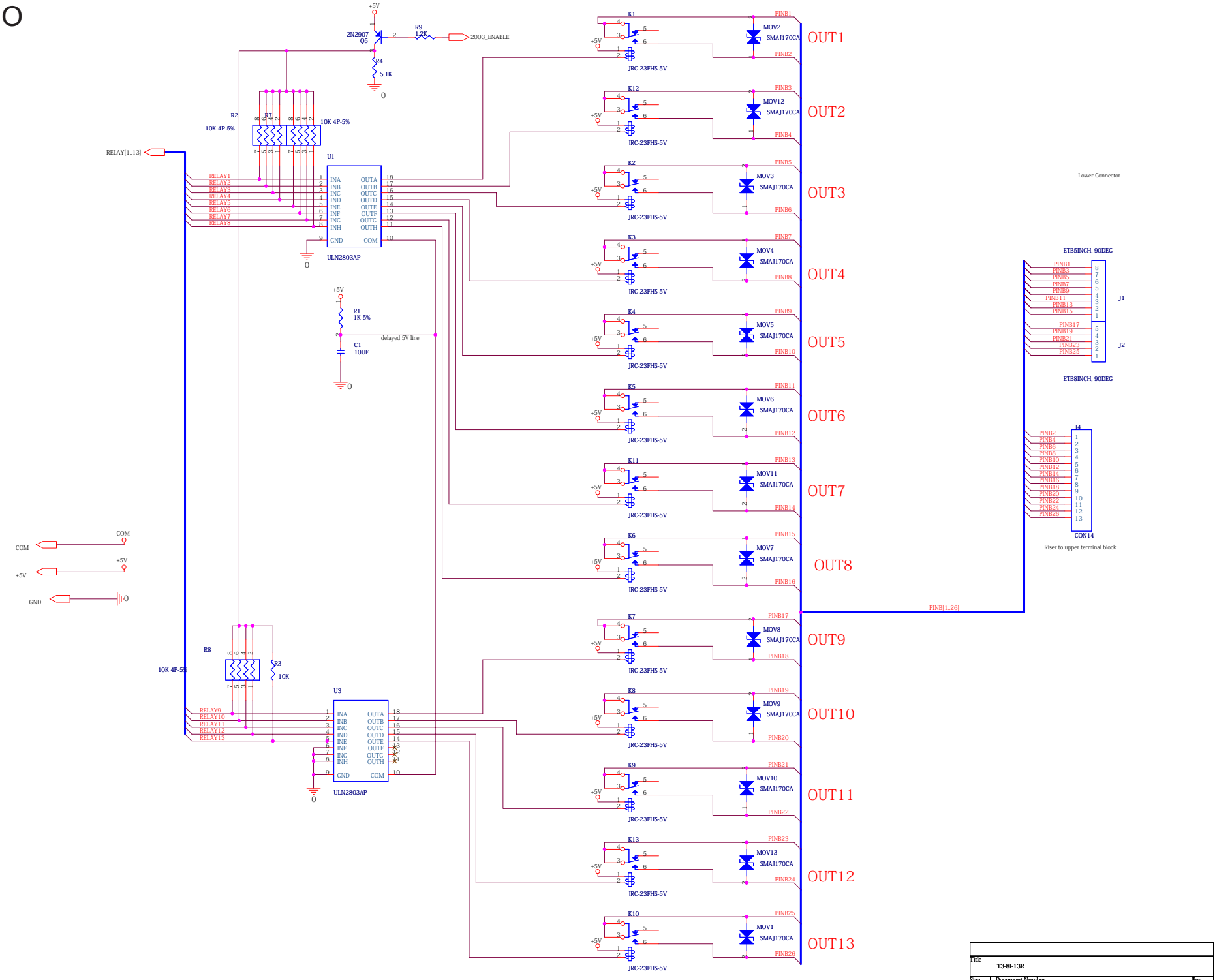

LOWER CARD
LED CARD
LED CARD
KEYPAD_ENABLE2
KEYPAD_ENABLE1
KEYPAD2_HAND
KEYPAD2_AUTO
KEYPAD1_HAND
KEYPAD1_AUTO
LEDDRIVE2
LEDDRIVE3
LEDDRIVE1
MOUNTING HOLE_T3_32I
MC34063A/SO
CON22A
FUSE_IN
TEMCO CONTROLS LTD.
1027 WEST 7TH AVE
VANCOUVER BC, V6H 1B2
TEL: (604) 438 - 8264
FAX: (604) 438 - 9313
T3000 OUTPUT CARD
Thursday, November 20, 2014

T3-8I13O



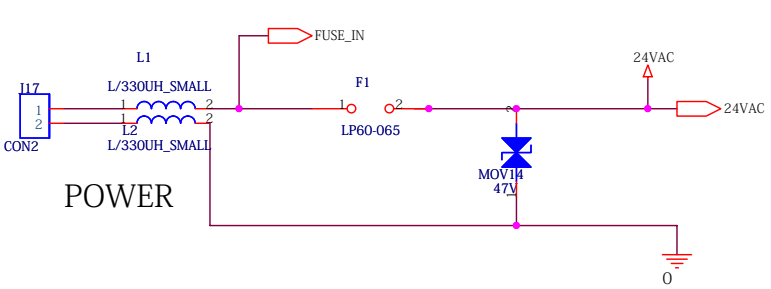
Title	T3-8I-13R		
Size C	Document Number Modular8in13out		Rev 08
Date: Saturday, November 23, 2013	Sheet 1	of 6	

T3-8I13O

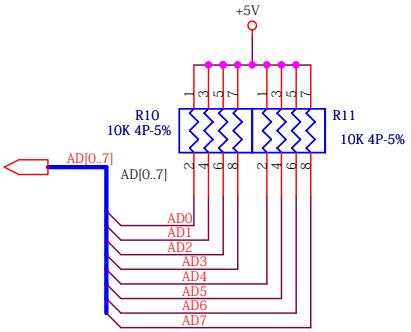


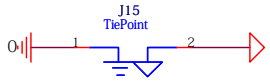
Title	T3-8I-13R	
Size C	Document Number OUTPUTS	Rev 08
Date: Tuesday, July 10, 2012	Sheet 2 of 6	

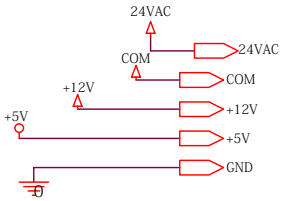
POWER

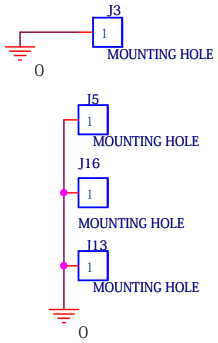


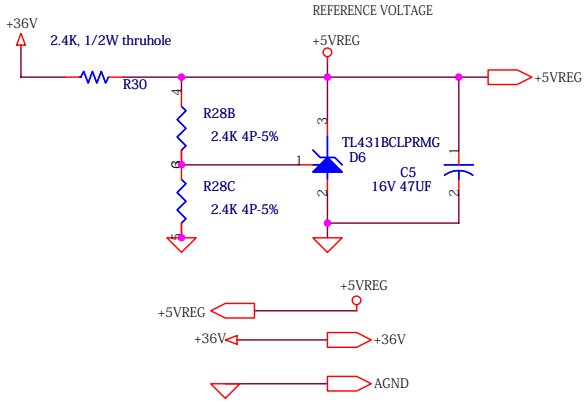
Mounting Holes











Title	T3-8I-13R	
Size B	Document Number POWER	Rev 08
Date: Saturday, November 23, 2013	Sheet 3 of 6	

note given output relays, cannot put AC power

T3-8I13O

TBD: on analog board, all the above chanegs

TBD: isolated network gnd
TBD: change riser card header from 0.1inch to 0.2 inch
TBD: on upper board, no vias allowed under switches, add 4 holes to switch footprint
TBD: try to pass 110VAC on any pin

InOut Relay Rev4
Done: use DS2003 chip to drive relays
Done: change LM4040 to 7405
Done: move board to board header away from relays, to make room for shrouded header
Done: replaced output filter caps with TVSs

SINKING REV0
Done: Use new crystal footprint
Done: added voltage regulator to the system and added capacitor for stability
TBD: make sure all outputs are off during RS485 flash update, no relays jumping allowed
TBD: add resistror on RS485 GND line
TBD: make hardware rev visible on board while inside the enclosure

T3-8IN-16OUT REV0 (05/02/11)
Done: fix RX and TXEN lines. They were swapped.
Done: spread MOVs out a bit so they are not so crammed
Done: spread switches out just a bit so they are not so crammed
Done: verify connections to the out connector. 12 V was not done properly
Done: connect zero crossing and low voltage.

T3-8IN-16OUT REV1 (05/03/14)
Done: corrected the ground connection on the lower INPUT line
Done: correct footprint of 2803 and 273 chips
Done: update thermal relief
Done: make space for 20 pin header

T3-8IN-16OUT REV2 (05/06/02)
Done: change the VCC supply to the pic chip to 5Vreg
Done: made more space between Goal and PIC for sockets
Done: move the 12V output jumper (J2) cuz too close to output header

T3-8IN-16OUT REV3
Done: move the i2c data line, conflict with ISP
Done: shift LED board to the left
Done: high speed counter signal added to pic and CPU.
note that firmware will not be same anymore given some pin connections had to be swapped
Done: add p-channel mosfet to driver chip
Done: out connector with REX header to be more centered
Done: in connector top header not alligned
Done: added a 12V_enable for the 2003 enable chips
note forgot to change label on silk screen... still writes rev02

T3-8IN-16OUT REV4
Done: remove pull-up and pull-down resistor on RS485 line
Done: fix BAS40 on RS485 line
Done: add PIC for high speed analog inputs
Done: no need for 12V supply, deleted
Done: added 16 relays, 5V
Done: add the Clear line on the Latches to reduce relay startup problems.
Done: add an RC on latches to reduce relay flicker on startup
Need to experiment with values

T3-8IN-13RELAY_REV0
TBD: add terminal for 12V aux output
Done: change to larger PIC for high speed inputs
Done: delete hand_off_auto_2 pins
Done: get rid of one latch, use CPU
Done: similar hardware connections as 8out type
Done: put header to the side of the board
Done: clean up board output

T3-8IN-13RELAY_REV01
DONE:Change the part NO of the mov1..mov13
DONE: fix the part no of the mcu chip
DONE: add the pic chip programming jumper

T3-8IN-13RELAY_REV05
TBD: put notes from the last revisions
TBD: add 0-10V jumper positions if there is room
TBD: change the TVS to be MOV components for the relay side
TBD: change the rs485 chip to opto module
TBD: change the rs485 chip to 34063 module
TBD: change the power supply chip to 34063 module
TBD: change the connector
TBD: Change I2CLOCK to pin RC5 of PIC,conflict with ICD2
TBD:Add ISP jumper,put this jumper nearby terminal,the user does not open the encloure to put/take this jumper.

T3-8IN-13RELAY_REV5

TBD:use rs485 module replace 485 circuit
TBD:change the input circuit make it support 40v
TBD:change to relay 2apm N4100

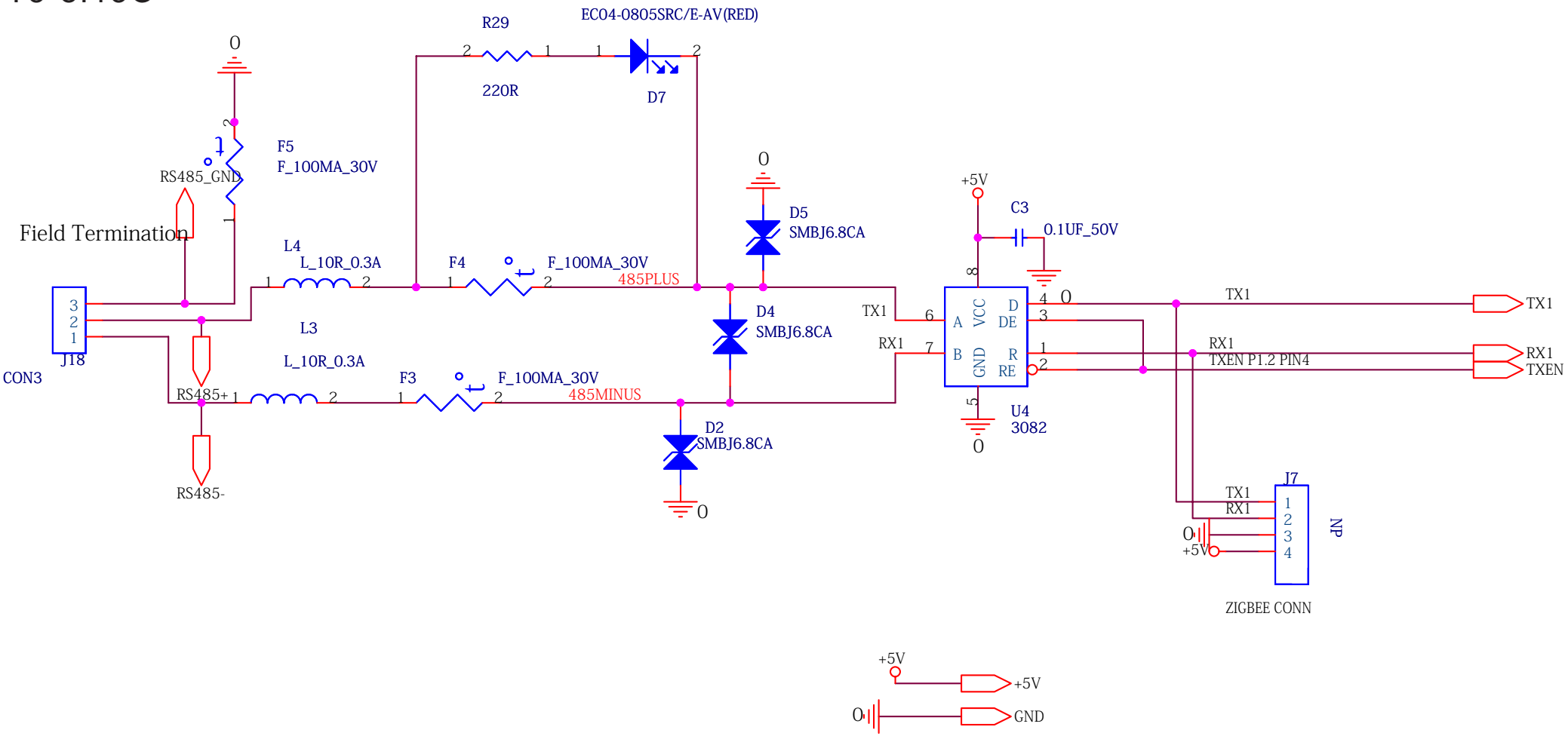
T3-8IN-13RELAY_REV06
DONE: change the pic to 16f882 and add vref chip.
DONE: change RS485 circuit
DONE: move the termial a little far away. About 2.5mm
DONE: change the 12v chip LM2576 to 34063.
DONE: add the jumper for 10v voltage input .
DONE: change the pic to 16f882 and add vref chip.

T3-8IN-13RELAY_REV07
DONE: CHANGE THE PIC CHIP TO 16F882
DONE:ADD THE INPUT TYPE . 0-5V. 0-10V. 4- 20MA
DONE : The sm5964 schematic footrprint is copy from the rev 5 ,but it is not correct . Correct it

T3-8IN-13RELAY_REV08
DONE: change the 5VRef to match mini panel
DONE: change the input resistors from 1k to 10k, MATCH TSTAT6
DONE: CHECK ALL SCREW TERMINALS WITH 24VAC ON REV7 BEFORE MAKING REV8
DONE: change this to fuse symbol, not R, update bom, SAME PART# AS TSTAT6
DONE: need to add zigbee header
DONE: J6 PIN24 ADD +36V FOR +5VREG INPUT .
DONE: Add RS485 LED .

Title: T3-8I-13R		
Size: C	Document Number: Revisions	Rev: 08
Date: Thursday, December 27, 2012	Sheet 4 of 6	

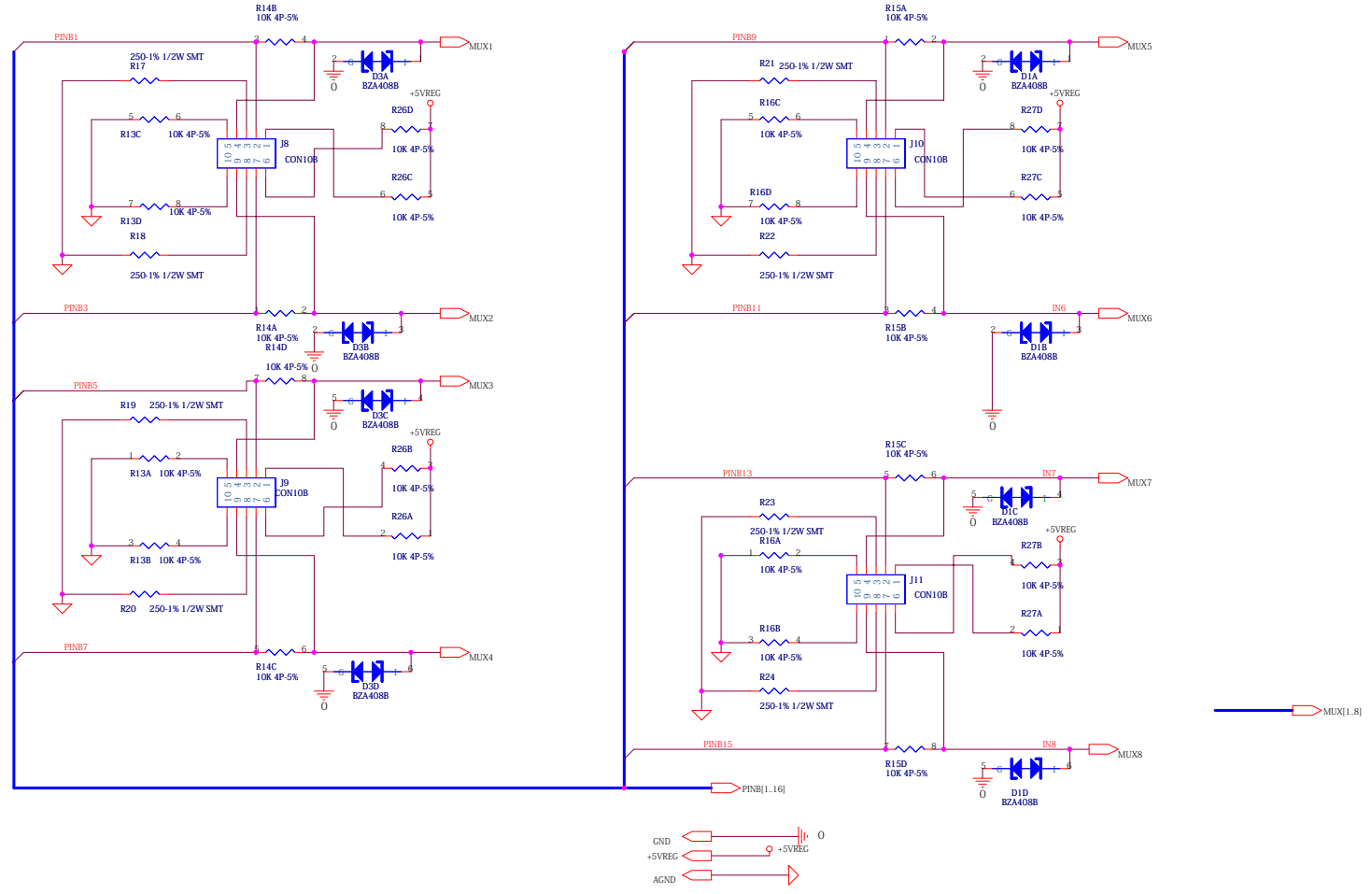
T3-8I13O



Title	T3-8I-13R	
Size: A	Document Number: SERIAL PORT	Rev: 08
Date: Thursday, December 27, 2012	Sheet 5 of 6	

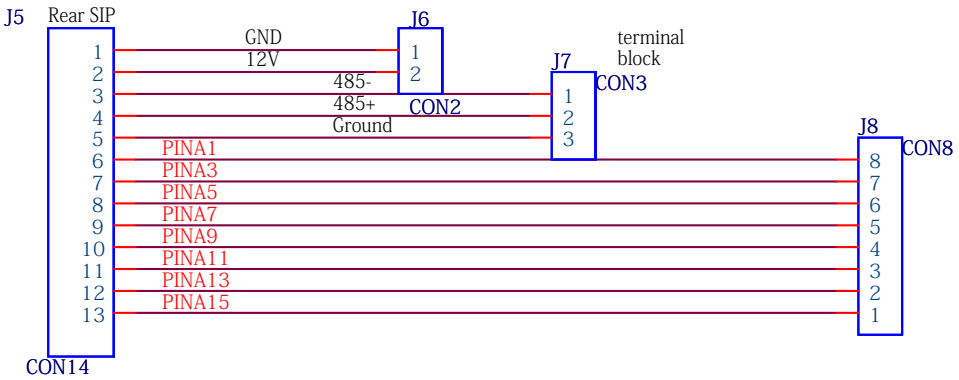
T3-8I13O

TBD: change the input resistors from 1k to 10k



Title	T3-8I-13R		
Size C	Document Number INPUTS		Rev 08
Date: Tuesday, July 10, 2012	Sheet 6 of 6		

T3-8I13O



Calcuated spacing for upper connector = 0.621"

Jus use sip haeders as Amang has, try them out

Rev9: added header for RS485 connector

TEMCO CONTROLS LTD.
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VANCOUVER BC, V6H 1B2
TEL: (604) 438 - 8294
FAX: (604) 438 - 9313

T3000 OUTPUT CARD

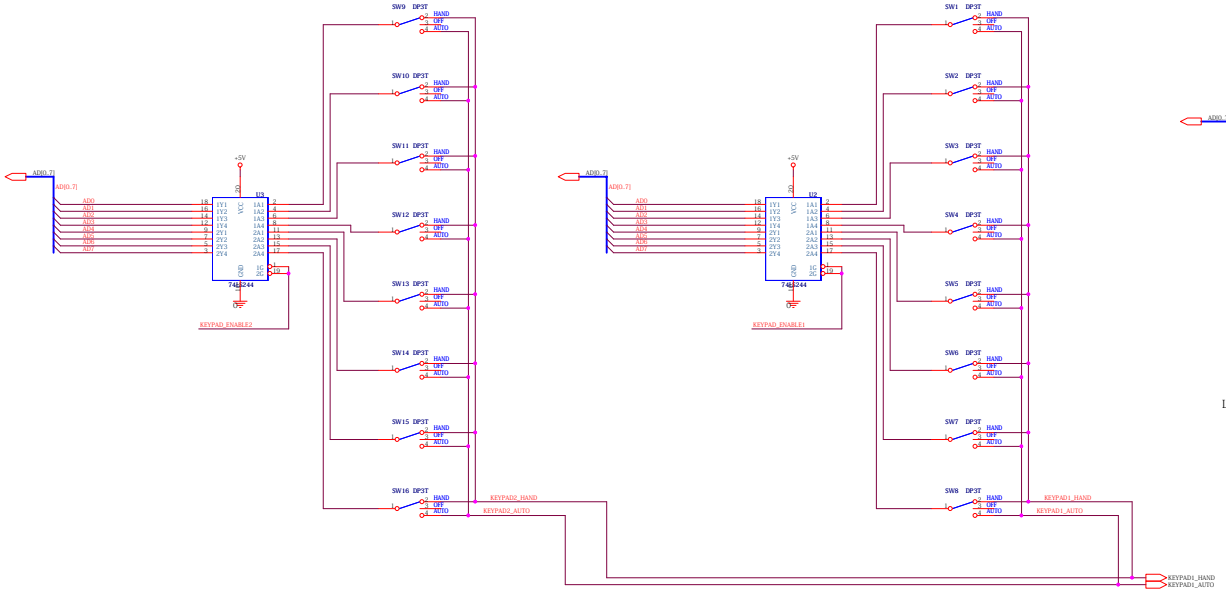
Size	CAGE Code	DWG NO	Rev
A	<Cage Code>		03

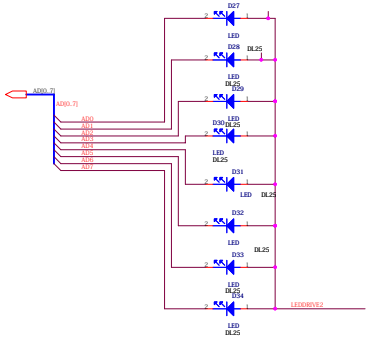
Tuesday, June 26, 2012

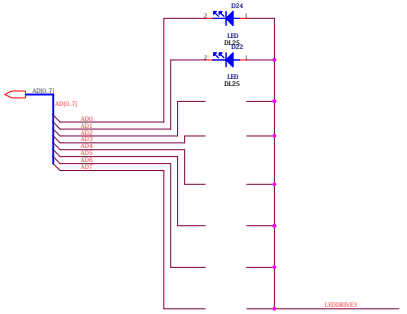
Scale

Sheet 1 of 4

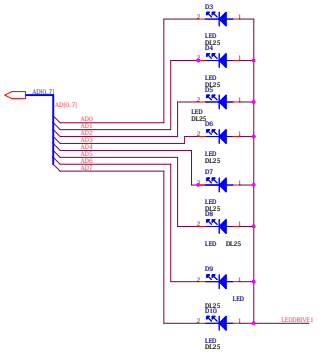
T3-8I13O

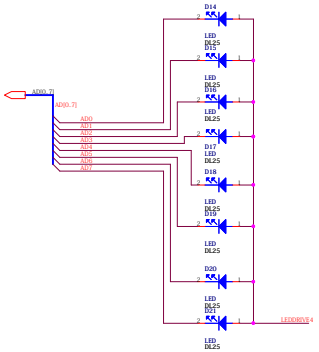


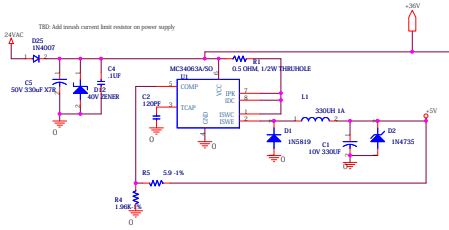


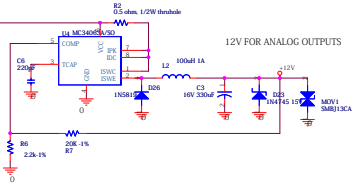


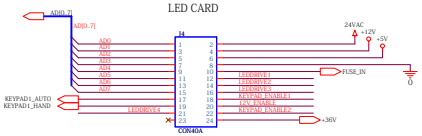
LED CARD

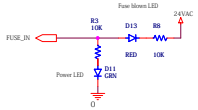








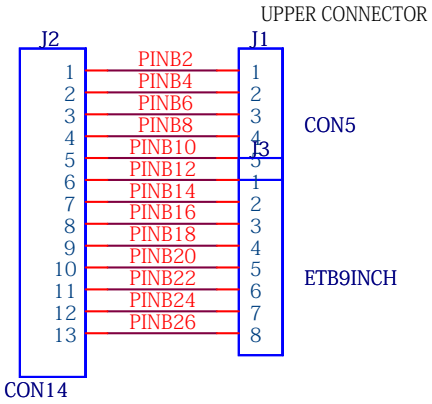




	TEMCO CONTROLS LTD. 10327 WEST 7TH AVE VANCOUVER BC, V6H 1H2 TEL: (604) 438 - 8294 FAX: (604) 438 - 9313		
	T3000 OUTPUT CARD		
	Size: D	CAGE Code: <Cage Code>	DWG NO	Rev: 03
Tuesday, June 26, 2012	Scale		Sheet: 2 of 4	

T3-8I13O

Riser from lower board



TEMCO CONTROLS LTD.
1555 Caobao Rd
Shanghai China, 201101
TEL:
FAX: (604) 438 - 9313

16 RELAY OUTPUT CARD

Size	CAGE Code	DWG NO	Rev
A	0		03

Monday, July 25, 2011

Scale

Sheet 3 of 4

T3-8I13O

Rev01

Done: tie enable pin of 12V supply to the cpu

Done: change LED to square ones for all of them

Rev02

Done: corrected U2 and U3 footprint. used to be too large

Done: D29 footprint needed to do wider (copy D10 & D11)

Done: make space for 20pin header

Done: the 12V supply footprint has been changed, GND added for heat transfer

16 RELAY VERSION, Rev00

Copied from 16 sinking output version

Done: move around header connections to be the same as 8 relay versions

Done: get rid of spare header for Rex's output type

Done: get rid of spare header for Rex's output type

Rev07

TBD: change the silkscreen for jumper to big

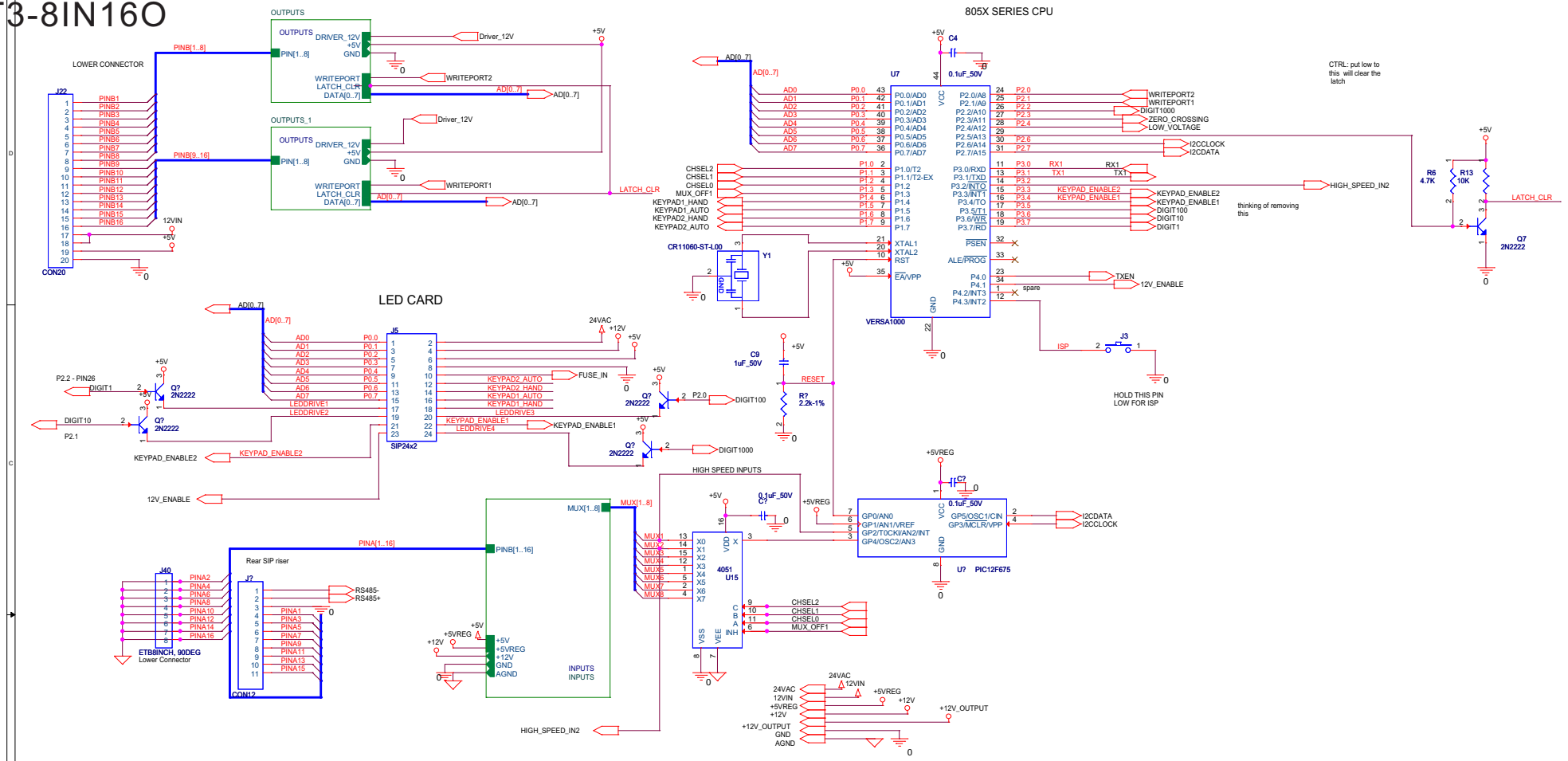
TBD: change the footprint for dam-board

TBD: change the R15 footprint For bot board

Rev08

Title <Title>		
Size A	Document Number <Doc>	Rev <RevCode>
Date: Tuesday, June 26, 2012	Sheet 4 of 4	

T3-8IN16O


805X SERIES CPU
LOWER CONNECTOR
OUTPUTS
OUTPUTS_1
LED CARD
Rear SIP riser
INPUTS
HIGH SPEED INPUTS
VERSA1000
CON20
CON12
SIP24x2
ETB8INCH, 90DEG
Lower Connector
4051
U15
U7
U?
PIC12F675
Y1
CR11060-ST-L00
C4
C9
1uF_50V
C7
0.1uF_50V
R?
2.2k-1%
R6
4.7K
R13
10K
Q7
2N2222
J22
J40
J5
J2
J3
C?
Driver_12V
WRITEPORT2
WRITEPORT1
LATCH_CLR
AD[0..7]
PINB[1..8]
PINB[9..16]
PINA[1..16]
MUX[1..8]
12VIN
24VAC
+5V
+5VREG
+12V
GND
AGND
RESET
ISP
HOLD THIS PIN
LOW FOR ISP
CTRL: put low to
this will clear the
latch
thinking of removing
this
spare
FUSE_IN
HIGH_SPEED_IN2
+12V_OUTPUT
I2CCLOCK
I2CDATA
TXEN
12V_ENABLE
KEYPAD_ENABLE1
KEYPAD_ENABLE2
DIGIT100
DIGIT1000
DIGIT10
DIGIT1
ZERO_CROSSING
LOW_VOLTAGE
RS485-
RS485+
CHSEL2
CHSEL1
CHSEL0
MUX_OFF1

T3-8IN16O

note given output relays, cannot put AC power

TBD: on analog board, all the above chanegs

TBD: isolated network gnd

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InOut Relay Rev4

Done: use DS2003 chip to drive relays

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SINKING REV0

Done: Use new crystal footprint

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T3-8IN-16OUT REV0 (05/02/11)

Done: fix RX and TXEN lines. They were swapped.

Done: spread MOVs out a bit so they are not so cram med

Done: spread switches out just a bit so they are no t so crammed

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Done: correct footprint of 2803 and 273 chips

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Done: make space for 20 pin header

T3-8IN-16OUT REV2 (05/06/02)

Done: change the VCC supply to the pic chip to 5Vre g

Done: made more space between Goal and PIC for sock ets

Done: move the 12V output jumper (J2) cuz too close to output header

T3-8IN-16OUT REV3

Done: move the i2c data line, conflict with ISP

Done: shift LED board to the left

Done: high speed counter signal added to pic and CP U.

note that firmware will not be same anymore given s ome pin connections had to be swapped

Done: add p-channel mosfet to driver chip

Done: out connector with REX header to be more cent ered

Done: in connector top header not alligned

Done: added a 12V_enable for the 2003 enable chips

note forgot to change label on silk screen... still writes rev02

T3-8IN-16OUT REV4

Done: add the Clear line on the Latches before driv er chip (avoids flickers)

Done: remove pull-up and pull-down resistor on RS48 5 line

Done: remove current limitting resistor on RS485 li ne

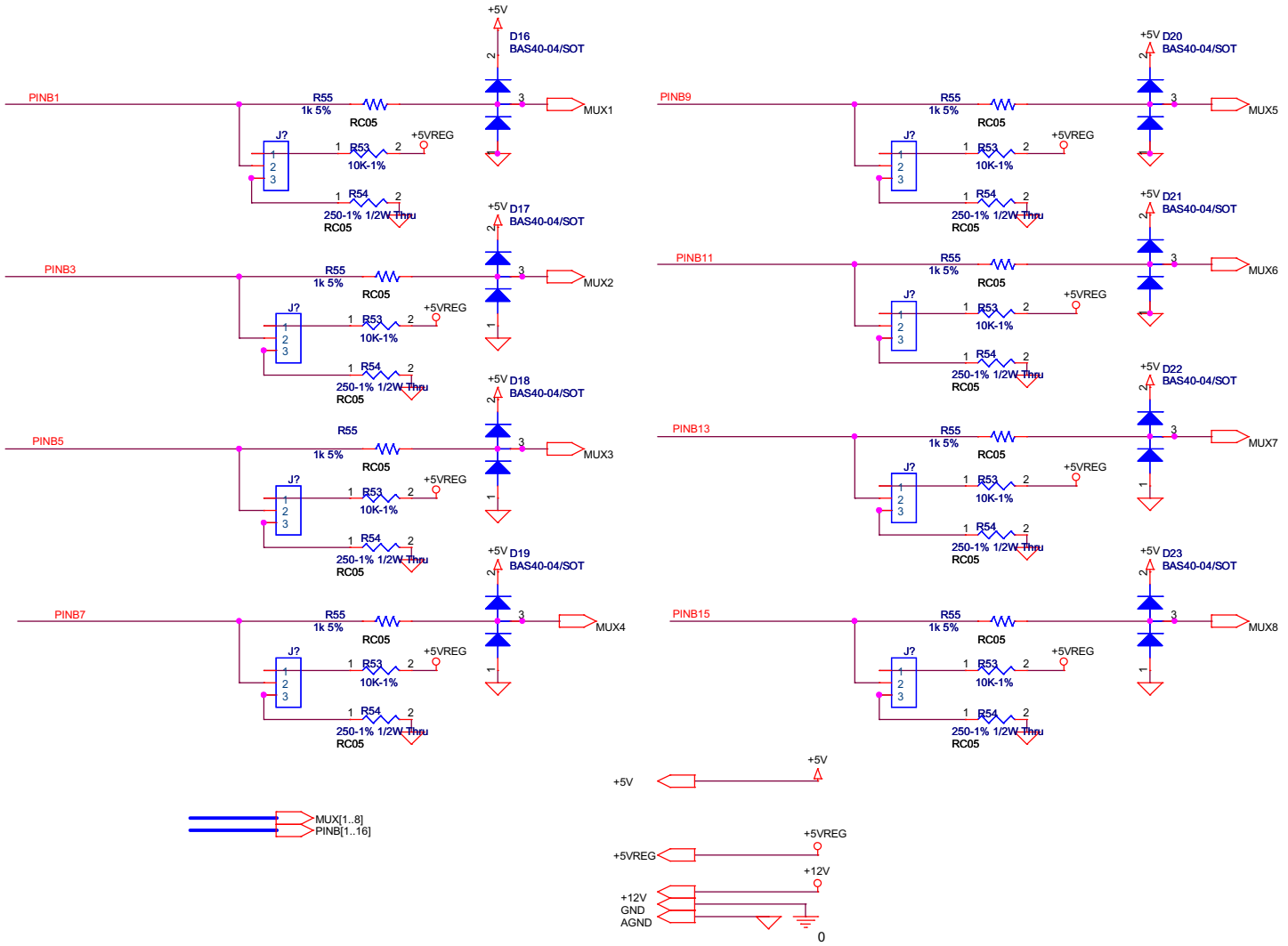
Done: fix BAS40 on RS485 line

DONE: Add a transistor to invert the CLR line of 7 4HC273 to reduce flicker on startup of UL2803 outpu ts

TBD: HIGH SPEED input wire need to be cut.
TBD: TXEN is not connected on PCB

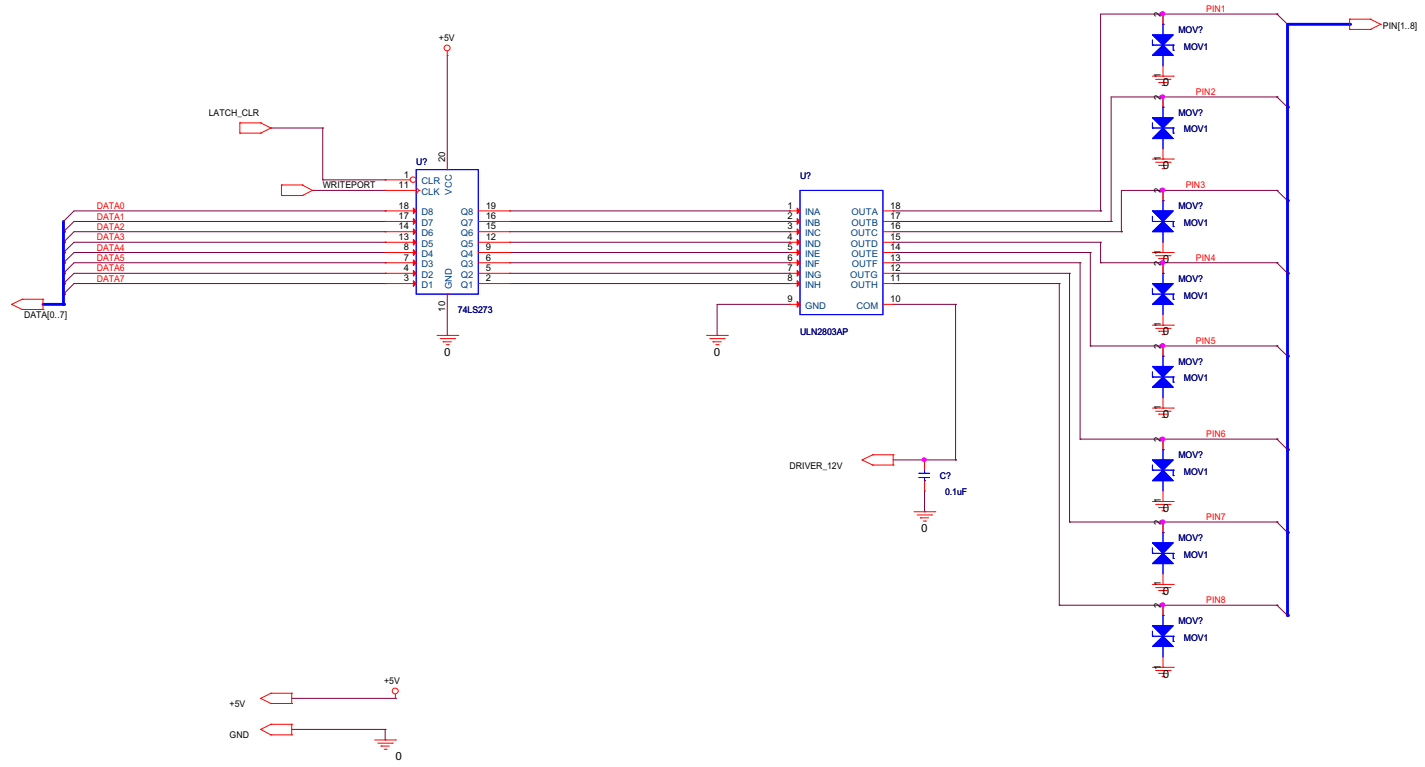
Title	<Title>	
Size B	Document Number <Doc>	Rev <RevCode>
Date: Friday, November 13, 2015	Sheet 1 of 1	

T3-8IN16O



Title: Sensors		
Size: B	Document Number: <Doc>	Rev: <RevCode>
Date: Friday, November 13, 2015	Sheet 1 of 1	

T3-8IN16O

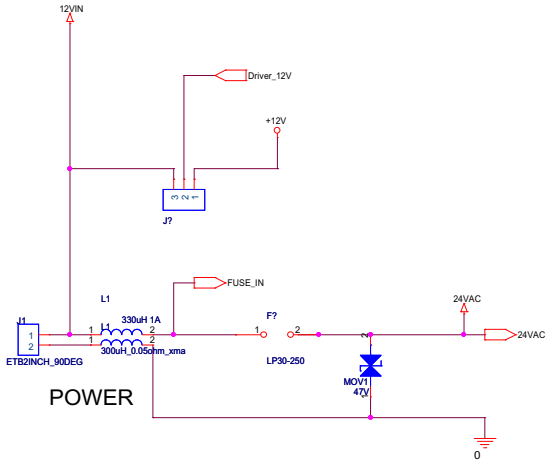


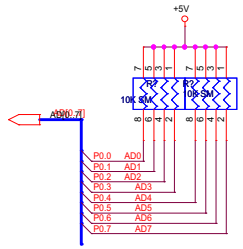
Title	Sensors	
Size: C	Document Number: <Doc>	Rev: <RevCode>
Date: Friday, November 13, 2015	Sheet 1 of 1	

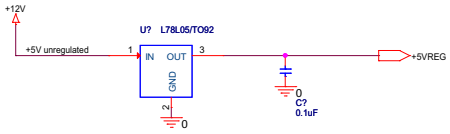
T3-8IN16O

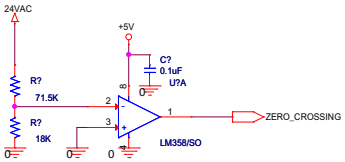
POWER

12 Vin: comes in through the Out_Connector side
+12 V: comes from the LEDboard 12V supply
+12 V_output: goes to the driver chips

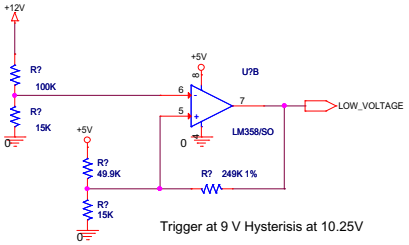








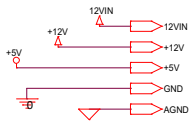
Trigger at 0 V (ac powered applications only)

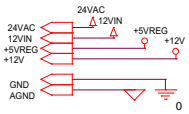


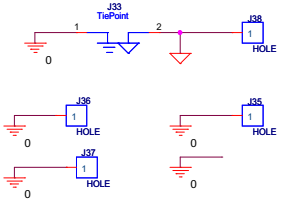
Trigger at 9 V Hysterisis at 10.25V

Mounting Holes

MH6 Screw Hole
MH3 Screw Hole
MH7 Screw Hole

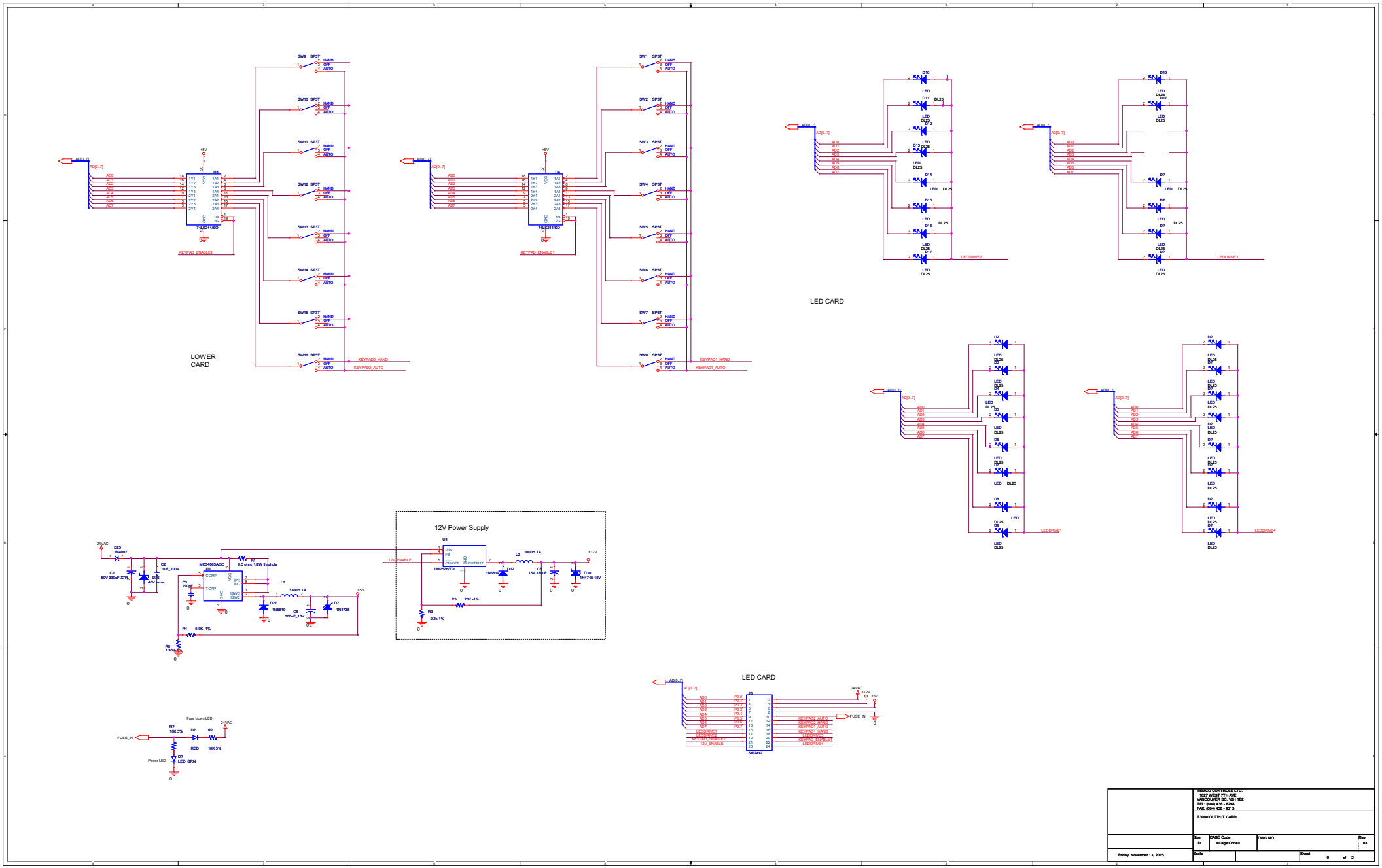




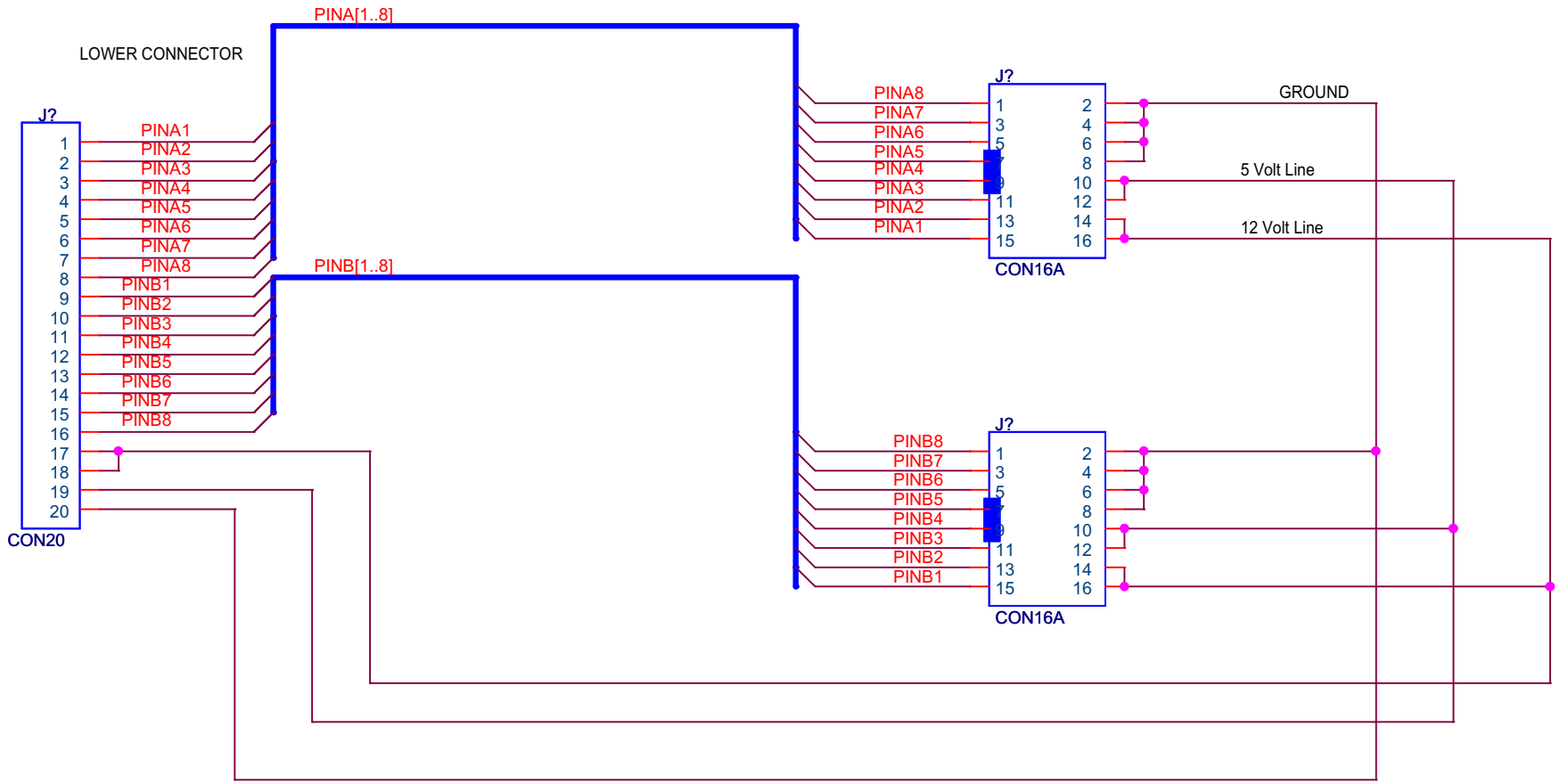


Title	<Title>	
Size C	Document Number <Doc>	Rev <RevCode>
Date: Friday, November 13, 2015	Sheet 2 of 6	

T3-8IN16O


LOWER CARD
LED CARD
12V Power Supply
LED CARD
TEMCO CONTROLS LTD.
1027 WEST 7TH AVE
VANCOUVER BC, V6H 1B2
TEL: (604) 438 - 8294
FAX: (604) 438 - 3013
T3000 OUTPUT CARD
Friday, November 13, 2015

T3-8IN16O



Calcuated spacing for upper connector = 0.621"

Jus use sip haeders as Amang has, try them out

Rev9: added header for RS485 connector

TEMCO CONTROLS LTD.
1027 WEST 7TH AVE
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T3000 OUTPUT CARD

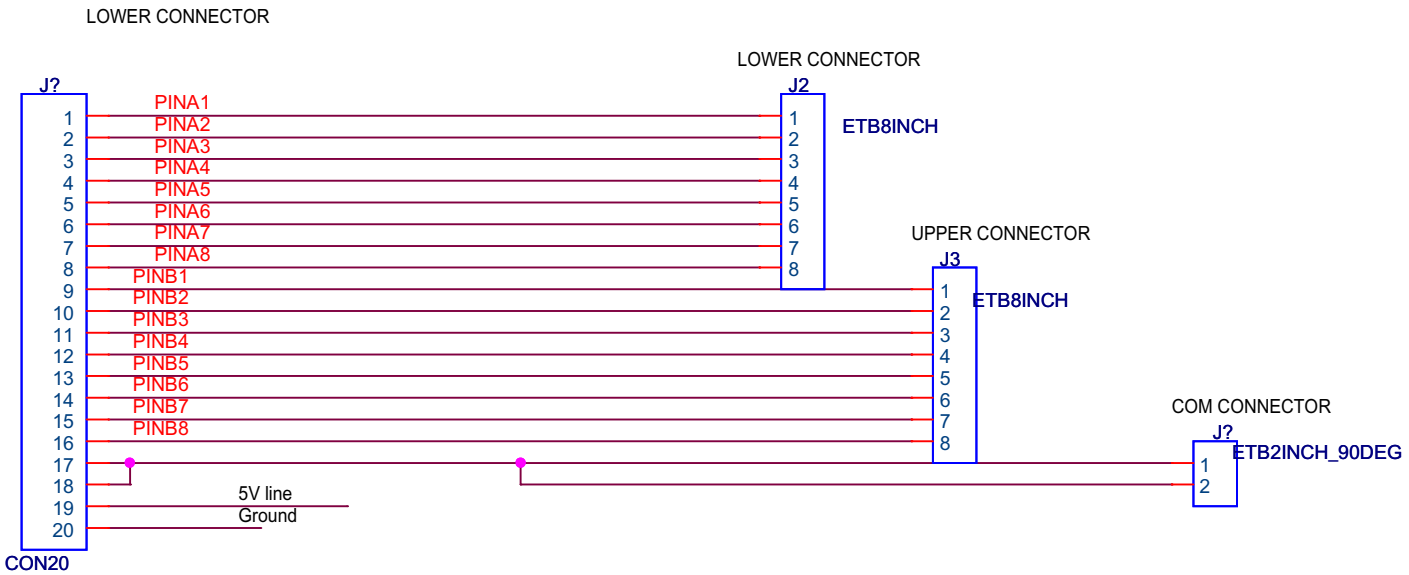
Size	CAGE Code	DWG NO	Rev
A	<Cage Code>		03

Friday, November 13, 2015

Scale

Sheet 0 of 2

T3-8IN16O



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T3000 OUTPUT CARD

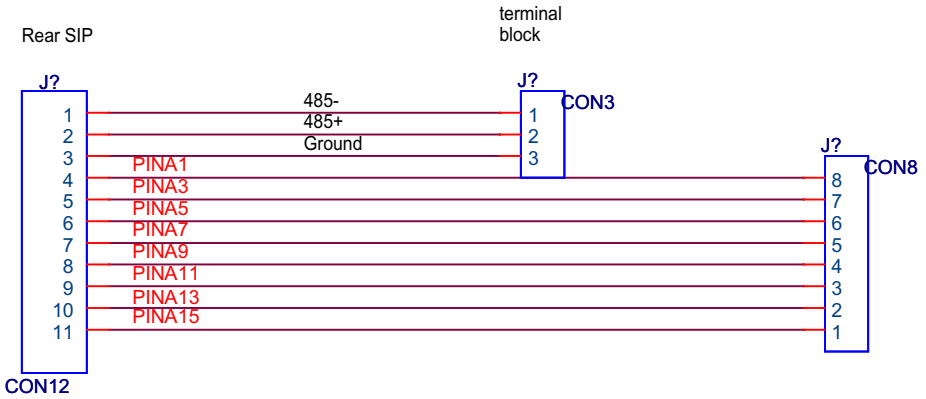
Size	CAGE Code	DWG NO	Rev
A	<Cage Code>		03

Friday, November 13, 2015

Scale

Sheet 0 of 2

T3-8IN16O



Calcuated spacing for upper connector = 0.621"

Jus use sip haeders as Amang has, try them out

Rev9: added header for RS485 connector

TEMCO CONTROLS LTD.
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VANCOUVER BC, V6H 1B2
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T3000 OUTPUT CARD

Size	CAGE Code	DWG NO	Rev
A	<Cage Code>		03

Friday, November 13, 2015

Scale

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T3-8IN16O

Rev01

Done: tie enable pin of 12V supply to the cpu

Done: change LED to square ones for all of them

Rev02

Done: corrected U2 and U3 footprint. used to be too large

Done: D29 footprint needed to do wider (copy D10 & D11)

Done: make space for 20pin header

Done: the 12V supply footprint has been changed, GND added for heat transfer

TBD: need a bigger schottkey to match the power chip

Rev03

NO NOTES AVAILABLE

Rev04

Copied Rev03, No changes

Title <Title>		
Size A	Document Number <Doc>	Rev <RevCode>
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