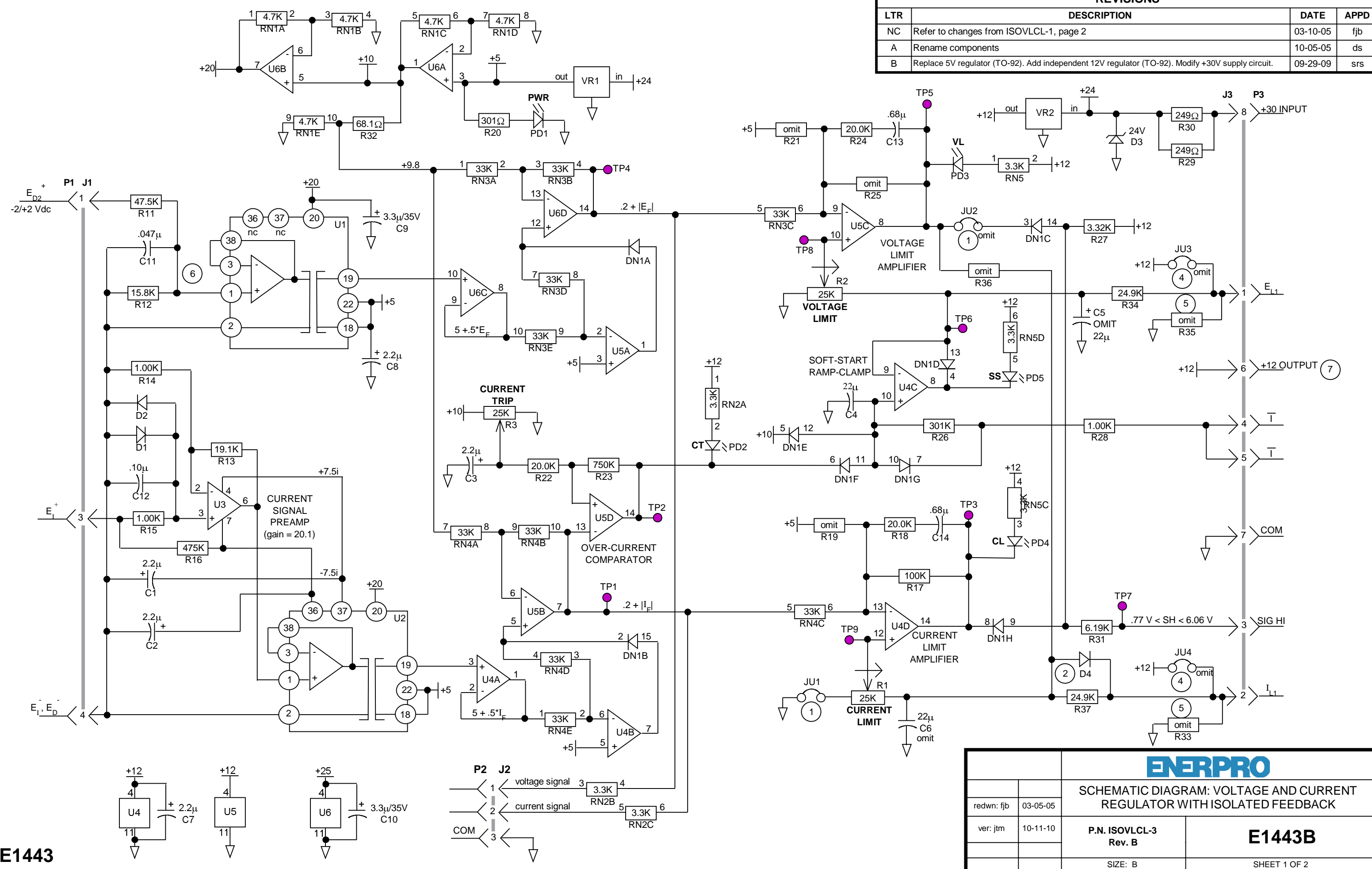


REVISIONS

| LTR | DESCRIPTION | DATE | APPD |
|-----|--|----------|------|
| NC | Refer to changes from ISOVLCL-1, page 2 | 03-10-05 | fjb |
| A | Rename components | 10-05-05 | ds |
| B | Replace 5V regulator (TO-92). Add independent 12V regulator (TO-92). Modify +30V supply circuit. | 09-29-09 | srs |



E1443



SCHMATIC DIAGRAM: VOLTAGE AND CURRENT REGULATOR WITH ISOLATED FEEDBACK

redwn: fjb 03-05-05

ver: jtm 10-11-10

P.N. ISOVLCL-3 Rev. B

E1443B

SIZE: B

SHEET 1 OF 2

| PART | DESCRIPTION | STOCK NUMBER |
|---------|----------------|--------------|
| U1-U2 | AD202KN | I1AD202KN |
| U3 | OP20GZ | I1OP177FPZ |
| U4-U6 | LM34074P | I134074P |
| VR1 | LM78L05 | T2VLM78L05 |
| VR2 | LM78L12 | T2VLM78L12 |
| DN1 | MAD1109P | D1MAD1108P |
| D1-D2 | 1N914B | D1N914B |
| D3 | 1N5359B(24V) | D1N5359B |
| D4 | 1N914B | D1N914B |
| PD1 | 555-2204(grn) | DIL5502204R |
| PD2,PD5 | 550-2404(red) | DIL5502404R |
| PD3-PD4 | 5381H3IDI(amb) | DIL5381H3 |
| RN1 | 10R-2-472 | R1S10I472 |
| RN2 | 8R-2-332 | R1S08I332 |
| RN3 | 10R-2-473 | R1S10I333 |
| RN4 | 10R-2-473 | R1S10I333 |
| RN5 | 6R-2-332 | R1S06I332 |
| R1-R3 | 93P-25K | R1P93P253 |
| R11 | RN60 - 47.5K | R1F4752 |
| R12 | RN60 - 15.8K | R1F1582 |
| R13 | RN60 - 19.1K | R1F1912 |
| R14 | RN60 - 1.00K | R1F1001 |
| R15 | RN60 - 1.00K | R1F1001 |
| R16 | RN60 - 475K | R1F4753 |
| R17 | RN60 - 100K | R1F1003 |
| R18 | RN60 - 20.0K | R1F2002 |
| R19 | RN60 - omit | |
| R20 | RN60 - 301Ω | R1F3010 |
| R21 | RN60 - omit | |
| R22 | RN60 - 20.0K | R1F2002 |
| R23 | RN60 -750K | R1F7503 |
| R24 | RN60 -20.0K | R1F2002 |
| R25 | RN60 - omit | |
| R26 | RN60 - 301K | R1F3013 |
| R27 | RN60 - 3.32K | R1F3321 |
| R28 | RN60 - 1.00K | R1F1001 |
| R29 | RN60 - 249Ω | R1F2490 |
| R30 | RN60 - 249Ω | R1F2490 |
| R31 | RN60 - 6.19K | R1F6191 |
| R32 | RN60 - 68.1Ω | R1F6812 |
| R33 | RN60 - omit | |
| R34 | RN60-24.9K | R1F2492 |
| R35 | RN60 - omit | |
| R36 | RN60 - omit | |
| R37 | RN60 - 24.9K | R1F2492 |
| C1-C3 | ECSF16E2R2 | C1TN016225 |
| C4 | ECSF16E22 | C1TN016226 |
| C5-C6 | ECSF16E22 | (omit) |
| C7-C8 | ECSF16E2R2 | C1TN016225 |
| C9-C10 | ECSF35E3R3 | C1TN035335 |

| PART | DESCRIPTION | STOCK NUMBER |
|---------|-------------|------------------|
| C11 | MKS3-.047μ | C1FL100473 |
| C12 | MKS3-.10μ | C1FL100104 |
| C13 | MKS3-.68μ | C1FL063684 |
| C14 | MKS3-.68μ | C1FL063684 |
| JU1-JU4 | W1J02 | J.200x.250 W1J02 |
| J1 | 1-350944-0 | C2MNLRPH04 |
| P1 | 350779-0 | C2MNLPLG04 |
| J2 | 2-350943-0 | C2MNLRPH03 |
| P2 | 350766-1 | C2MNLPLG03 |
| J3 | 640584-2 | C2MNLRPH08 |
| P3 | 640582-1 | C2MNLPLG08 |

NOTES

- For parallel voltage and current regulation loops, install JU2 and R32, omit R35 and DN4. Apply voltage command to J3-1 and current command to J3-2.
- For outer voltage regulation loop and inner current regulation loop, omit JU2 and R32, install R35 and D4. Apply voltage command to J3-1 and apply current limit reference to J3-2. The current reference source must be current sinking with impedance of less than 5 kohm.
- To use the ISOVLCL-3 board as a slave current regulator with its current command taken from the current signal at J2-1 of the master current regulator ISOVLCL-3 board:
 - On the slave regulator board:
 - Remove R32, JU1 and C6,
 - Remove CLA proportional gain resistor R17,
 - Set the voltage command pot to 100%.
 - On the master regulator board:
 - Configure parallel voltage and current regulation loops by installing JU2 and R34 and removing R33 and D4.
 - Set the voltage command pot to the desired voltage (with the current command pot set to 100%) or set the current command pot to the desired current(with the voltage command pot set to the desired voltage).
- Install JU3 and JU4 for on-board voltage and current commands.
- Install 249 ohm burden resistors R23 and R33 when applying 4-20 mA voltage or current command signals.
- Select R12 and the external attenuator resistor to get 1.5 Vdc voltage feedback signal at the junction of R11 and R12.
- Revision B of the ISOVLCL-3 features a dedicated, on-board 12V supply powered from the +30V input on J3-8. Earlier revisions of the ISOVLCL-3 required an external 12V supply. To avoid potential equipment damage, ensure that the 12V output at J3-6 is not connected to an external 12V supply (such as the aux supply from an Enerpro firing board).

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|------------|----------|--|---------------|
| | | ENERPRO | |
| | | SCHEMATIC DIAGRAM: VOLTAGE AND CURRENT REGULATOR WITH ISOLATED FEEDBACK | |
| redwn: fjb | 03-05-05 | P.N. ISOVLCL-3 Rev. B | E1443B |
| ver: jtm | 10-11-10 | | |
| | | SIZE: B | SHEET 2 OF 2 |