



INSTRUCTION MANUAL

JFS0750 SERIES POWER SUPPLY

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JFS SERIES INSTRUCTION MANUAL

RATINGS AND SPECIFICATIONS FOR LAMBDA MODEL NO. JFS0750:

I. MAXIMUM RATINGS

| SPECIFICATION | UNITS | JFS0750-24 | JFS0750-48 |
|---|-------|--|------------|
| OUTPUT VOLTAGE RANGE | V | 20-29 | 36-56 |
| MAXIMUM OUTPUT CURRENT (POWER) AT 50°C (AT V_{OUTNOM}) | A (W) | 31.2 (750) | 15.6 (750) |
| MAXIMUM OUTPUT CURRENT (POWER) AT 60°C (AT V_{OUTNOM}) | A (W) | 23.4 (562) | 11.7 (562) |
| MAXIMUM OUTPUT CURRENT (POWER) AT 70°C (AT V_{OUTNOM}) | A (W) | 15.6 (375) | 7.8 (375) |
| OPERATING TEMPERATURE | °C | CONTINUOUS DUTY FROM -20°C TO +70°C THIRTY MINUTE WARM-UP REQUIRED AT -20°C | |

II. INPUT SPECIFICATIONS

| SPECIFICATION | UNITS | JFS0750-24 | JFS0750-48 |
|---|-------|---|------------|
| INPUT VOLTAGE RANGE | VAC | 85-265 (47-63 Hz.) | |
| INPUT CURRENT (RMS) | A | 9.0 AT 110VAC | |
| INPUT CURRENT (PEAK, AT COLD START) | A | 35 AT 110VAC _{IN} 70 AT 220VAC _{IN} | |
| INPUT POWER (MAXIMUM) | W | 1050 AT 85 VAC _{IN} | |
| INPUT SURGE PROTECTION | — | COMPLIANT TO IEC1000-4-5, LEVEL 3 STANDARDS | |
| INPUT EMI, CONDUCTED EMISSIONS | — | FCC CFR PART 15, SUBPART J CLASS A STANDARDS EN55022 CLASS A STANDARDS | |
| EFFICIENCY AT P_{OUTMAX} | % | 75 TYPICAL AT 85VAC _{IN} | |
| POWER FACTOR CORRECTION AT P_{OUTMAX} | % | 99 TYPICAL, PER IEC1000-3-2 STANDARDS | |
| INPUT CURRENT HARMONICS | — | COMPLIANT WITH EN60555-2 ABOVE TEN PERCENT RATED POWER | |

III. OUTPUT SPECIFICATIONS

| SPECIFICATION | UNITS | JFS0750-24 | JFS0750-48 |
|---|-------|---|-----------------------------|
| LINE AND LOAD REGULATION | % | ±1 FROM NO LOAD TO FULL LOAD, 85-265VAC | |
| RIPPLE AND NOISE AT 20 MHz MEASUREMENT BANDWIDTH (0-70°C) PER EIAJ METHOD | mV | 250 _{PEAK TO PEAK} | 500 _{PEAK TO PEAK} |
| TEMPERATURE DRIFT | % | ±2 OVER TEMPERATURE RANGE AND LIFE | |
| HOLD-UP TIME | ms | OUTPUT REMAINS ABOVE V_{OUTMIN} LIMIT FOR 16ms UPON REMOVAL OF INPUT VOLTAGE AT $V_{in Nom}$ (110Vac) | |
| LOAD TRANSIENT RESPONSE (± 25% LOAD CHANGE) | — | RECOVERY TO WITHIN TWO PERCENT OF OUTPUT WITHIN 5ms. | |
| ESD SUSCEPTIBILITY | — | IEC1000-4-2 LEVEL 4 (8kV DIRECT DISCHARGE) STANDARDS | |

IV. OPERATING MODES

| DESCRIPTION | OPERATIONAL DEFINITION |
|---|---------------------------------------|
| PARALLEL OPERATION (ACTIVE CURRENT SHARE CONFIGURATION) | REFER TO JFS SERIES APPLICATION NOTES |

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FEATURES:

I. DC OUTPUT, CONTROLS AND INDICATORS

| DESCRIPTION | OPERATIONAL DEFINITION |
|-------------------------------|--|
| OUTPUT VOLTAGE ADJUST | FACTORY SET AT 24VDC OR 48VDC. CONSULT FACTORY FOR ADJUSTMENT. IT IS RECOMMENDED THAT THE VOLTAGE ADJUST POTENTIOMETER BE SEALED WITH RTV SEALANT AFTER ADJUSTMENT TO PREVENT OUTPUT VOLTAGE DRIFT IN THE EVENT THAT THE UNIT IS SUBJECTED TO VIBRATION. |
| OVERVOLTAGE PROTECTION ADJUST | FACTORY SET AT 30VDC OR 60VDC. CONSULT FACTORY FOR ADJUSTMENT (NON LATCHING). |
| OUTPUT- GOOD INDICATOR | GREEN-COLORED LED ILLUMINATES WHEN THE OUTPUT VOLTAGE IS WITHIN THE SPECIFIED OPERATING RANGE. |

II. REMOTE CONTROL FEATURES

| DESCRIPTION | OPERATIONAL DEFINITION |
|------------------------|--|
| REMOTE VOLTAGE SENSING | PROVIDES PRECISE REGULATION DIRECTLY AT LOAD. THE MAXIMUM TOTAL DC VOLTAGE DROP BETWEEN THE OUTPUT TERMINALS AND THE LOAD MUST BE LIMITED TO LESS THAN 1.0 VOLT. |
| REMOTE ON-OFF CONTROL | DC OUTPUT IS INHIBITED VIA A CONTACT CLOSURE BETWEEN PINS 7 AND 8 OF THE TERMINAL STRIP. |
| SIGNAL ISOLATION | REMOTE ON-OFF PINS ARE REFERENCED TO THE $-V_{OUT}$ TERMINAL. |
| REMOTE VOLTAGE CONTROL | ALLOWS ADJUSTMENT OF OUTPUT VOLTAGE USING EXTERNAL PROGRAMMING RESISTOR OR VOLTAGE SOURCE. REFER TO JFS SERIES APPLICATION NOTES; SEE FIGURES 3 AND 4 FOR CONNECTION DIAGRAMS. |

III. AUXILIARY MONITORING AND ALARM SIGNALS — OPTICALLY COUPLED, CONDUCTANCE OUTPUTS.
(CONDUCT UP TO 5mA AT A VOLTAGE OF LESS THAN 1.0VDC WHEN ACTIVE.)

| DESCRIPTION | OPERATIONAL DEFINITION |
|--------------------|--|
| AC FAIL SIGNAL | CONDUCTANCE SIGNAL WHICH INDICATES SUFFICIENT AC INPUT IS PRESENT TO PROVIDE A MINIMUM OF FIVE MILLISECONDS OF HOLD-UP TIME AFTER THE REMOVAL OF INPUT. |
| OUTPUT GOOD SIGNAL | CONDUCTANCE SIGNAL WHICH INDICATES THAT DELIVERED OUTPUT VOLTAGE, AS MEASURED AT THE +V AND -V TERMINALS IS WITHIN THE SPECIFIED OPERATING RANGE. |
| SIGNAL ISOLATION | SIGNALS ARE ISOLATED FROM POWER SUPPLY OUTPUT AND EACH OTHER FOR VOLTAGES UP TO 500VDC MAXIMUM AND 3000VAC ISOLATION FROM AC INPUT TO AUXILIARY SIGNALS. |

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FEATURES (CONT'D)

IV. PROTECTION FEATURES

| DESCRIPTION | OPERATIONAL DEFINITION |
|---|---|
| OVERCURRENT PROTECTION | OUTPUT CURRENT IS LIMITED TO APPROXIMATELY 110 PERCENT OF 50°C RATED POWER FROM V_{OUTMAX} TO V_{OUTNOM} . CURRENT LIMIT CHARACTERISTICS WILL PROVIDE FOLDBACK TO APPROXIMATELY 80 PERCENT OF RATED CURRENT BELOW V_{OUTNOM} . |
| OVERVOLTAGE PROTECTION | INVERTER SHUTDOWN, NON-LATCHING. CONSULT FACTORY FOR ADJUSTMENT. |
| THERMAL PROTECTION (OVERTEMPERATURE PROTECTION) | SELF-RESETTING INVERTER SHUTDOWN. |
| ISOLATION VOLTAGES | 3000VAC, INPUT TO OUTPUT 500VDC, OUTPUT TO CHASSIS GROUND 1500VAC, INPUT TO CHASSIS GROUND |
| LEAKAGE CURRENT (AC LINE TO CHASSIS GROUND) | LESS THAN 3.5mA WHEN OPERATED AT 250VAC (47-63Hz) OR LOWER VOLTAGES. |
| REGULATORY AGENCY COMPLIANCE | JFS SERIES POWER MODULES ARE COMPLIANT WITH THE FOLLOWING STANDARDS: <ul style="list-style-type: none"> • UL1950 • CSA 22.2-234 • EN60950 • CE MARKED FOR EUROPEAN COMMUNITY COMPLIANCE • IEC950 |

V. MECHANICAL FEATURES

| SPECIFICATION | UNITS | JFS0750-24 | JFS0750-48 |
|-------------------------------------|--------|---|------------|
| STORAGE TEMPERATURE (NON-OPERATING) | °C | -40 TO +85 | |
| OPERATING TEMPERATURE | °C | -20 TO +70 WITH DERATING ABOVE +50 (-20 OPERATION REQUIRES A THIRTY MINUTE WARM-UP PERIOD) | |
| WEIGHT (NET) | LBS | 7.5 | |
| WEIGHT (SHIP) | LBS | 8.5 | |
| SIZE (L x W x H) | INCHES | 12.81 x 5.00 x 3.30 (INCLUDES MOUNTING FLANGE) | |
| FINISH | — | GRAY | |
| MOUNTING | — | SEE OUTLINE DRAWING FOR MOUNTING | |

VI. OTHER FEATURES

| DESCRIPTION | DEFINITION |
|--------------|---|
| COOLING | FORCED AIR, FAN COOLED FROM THE FRONT OF THE POWER SUPPLY EXITING AT THE CONNECTOR END. |
| FUNGUS INERT | ALL JFS POWER SUPPLIES ARE INHERENTLY FUNGUS INERT. |
| GUARANTEE | FIVE YEARS FROM THE TIME OF DELIVERY, PARTS AND LABOR. |

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VII. CONNECTOR INFORMATION

| SENSING AND SIGNAL | DESIGNATION | DESCRIPTION |
|---------------------------|--------------------|--|
| 1 | +S | +SENSE CONNECTION. CONNECT TO +V TERMINAL OF LOAD FOR REMOTE-SENSING. CONNECT TO +LS FOR LOCAL SENSING. |
| 2 | +LS | +LOCAL SENSE CONNECTION |
| 3 | -LS | -LOCAL SENSE CONNECTION |
| 4 | -S | -SENSE CONNECTION. CONNECT TO -V TERMINAL OF LOAD FOR REMOTE-SENSING. CONNECT TO -LS FOR LOCAL SENSING. |
| 5 | PROG | JUMPER TO PIN 4 (-S) FOR INTERNAL PROGRAMMING. ALLOWS FOR REMOTE, EXTERNAL PROGRAMMING VIA INSERTION OF RESISTOR BETWEEN THE PROGRAMMING PIN AND PIN 4 (-S). |
| 6 | ISHARE | CURRENT SHARE BUSS |
| 7 | INTLK 1 | FUNCTIONS TO ENABLE AND DISABLE THE INVERTER OF THE POWER SUPPLY. A DIRECT SHORT TO INTERLOCK 2 (PIN 8) THROUGH A CONTACT CLOSURE WILL INHIBIT THE UNIT. AN OPEN CIRCUIT TO INTERLOCK 2 WILL ENABLE POWER SUPPLY. |
| 8 | INTLK 2 | (SEE DESCRIPTION, PIN 7) |
| 9 | AC FAIL 1 | 2 TRANSISTOR "DARLINGTON" OUTPUT SIGNAL INDICATING THAT A FAULT CONDITION HAS OCCURRED ON THE AC LINE. THIS PIN REPRESENTS THE COLLECTOR CAPABLE OF SINKING UP TO 5mA WITH 20 VOLTS MAXIMUM APPLIED FROM COLLECTOR TO EMITTER. |
| 10 | AC FAIL 2 | REPRESENTS THE EMITTER OF THE 2 TRANSISTOR "DARLINGTON" OUTPUT CAPABLE OF SINKING UP TO 5mA WITH 20 VOLTS MAXIMUM APPLIED FROM COLLECTOR TO EMITTER. |
| 11 | DC GOOD 1 | 2 TRANSISTOR "DARLINGTON" OUTPUT SIGNAL INDICATING THE OUTPUT IS PRESENT. THIS PIN REPRESENTS THE COLLECTOR CAPABLE OF SINKING UP TO 5mA WITH 20 VOLTS MAXIMUM APPLIED FROM COLLECTOR TO EMITTER. |
| 12 | DC GOOD 2 | REPRESENTS THE EMITTER OF THE 2 TRANSISTOR "DARLINGTON" OUTPUT CAPABLE OF SINKING UP TO 5mA WITH 20 VOLTS MAXIMUM APPLIED FROM COLLECTOR TO EMITTER. |

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Lambda JFS Series Safety and Installation Instructions for Lambda Model JFS0750

To comply with published safety standards; the following instructions must be used in conjunction with the Lambda JFS Series:

For earth fault protection, the unit must be protected in the final installation by suitable overcurrent protection means. If protection relies upon building wiring, the end product installation must ensure that the necessary protection is provided.

The internal fuse F101 may only be replaced with a Littelfuse type 324015 rated at 15A, 250VAC.

The internal fuse F102 may only be replaced with Littelfuse type 324020 rated at 20A, 250VAC.

The power supply is intended for use as a component of other equipment. When installing the power supply, the relevant safety standards (EN60950, IEC950, UL1950 or CSA-22.2-950) must be complied with.

In particular, creepage and clearance distances and distances through insulation between primary and earth or primary and secondary must be maintained.

The power supply output is SELV in accordance with requirements IEC-950. The output available has power greater than 240VA.

The CE mark on the product is applied to show conformance with the requirements outlined in the European Union's Low Voltage Directive [72/23/EEC] as amended by the CE Mark Directive [93/68/EEC].

The maximum ambient temperature of the operating environment must not exceed 50°C at 750W, 60°C at 562W or 70°C at 375W.

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Sicherheits und Installationsanleitung für Lambda Modell JFS0750

Die folgende Sicherheitshinweise müssen bei der Verwendung der Netzteile beachtet werden:

Gegen Isolationsfehler zum Schutzleiter muß in der Endanwendung eine angemessene Absicherung vorgenommen werden. Falls die Absicherung durch die Gebäudeinstallation erfolgt, muß beim Einbau in das Endgerät entsprechend darauf hingewiesen werden.

Die interne Sicherung F101 darf nur gegen den gleichen Typ mit gleichen Werten ausgetauscht werden. Es ist die Sicherung Littelfuse Typ 324015 mit 15A und 250VAC zu verwenden.

Die interne Sicherung F102 darf nur gegen den gleichen Typ mit gleichen Werten ausgetauscht werden. Es ist die Sicherung Littelfuse Typ 324020 mit 20A und 250VAC zu verwenden.

Das Netzteil ist nur als Baugruppe zum Einbau in Endgeräte vorgesehen und nicht zur eigenständigen Verwendung. Beim Einbau in Endgeräte sind die entsprechenden Sicherheitsbestimmungen (z. B. EN 60950, IEC-950, UL-1950, CSA 22.2-950) zu beachten.

Im Speziellen ist auf das Einhalten ausreichender Kriech- und Luftstrecken sowie Isolationsabständen zwischen dem Primaer- und Sekundaerkreis sowie zum Schutzleiter zu achten.

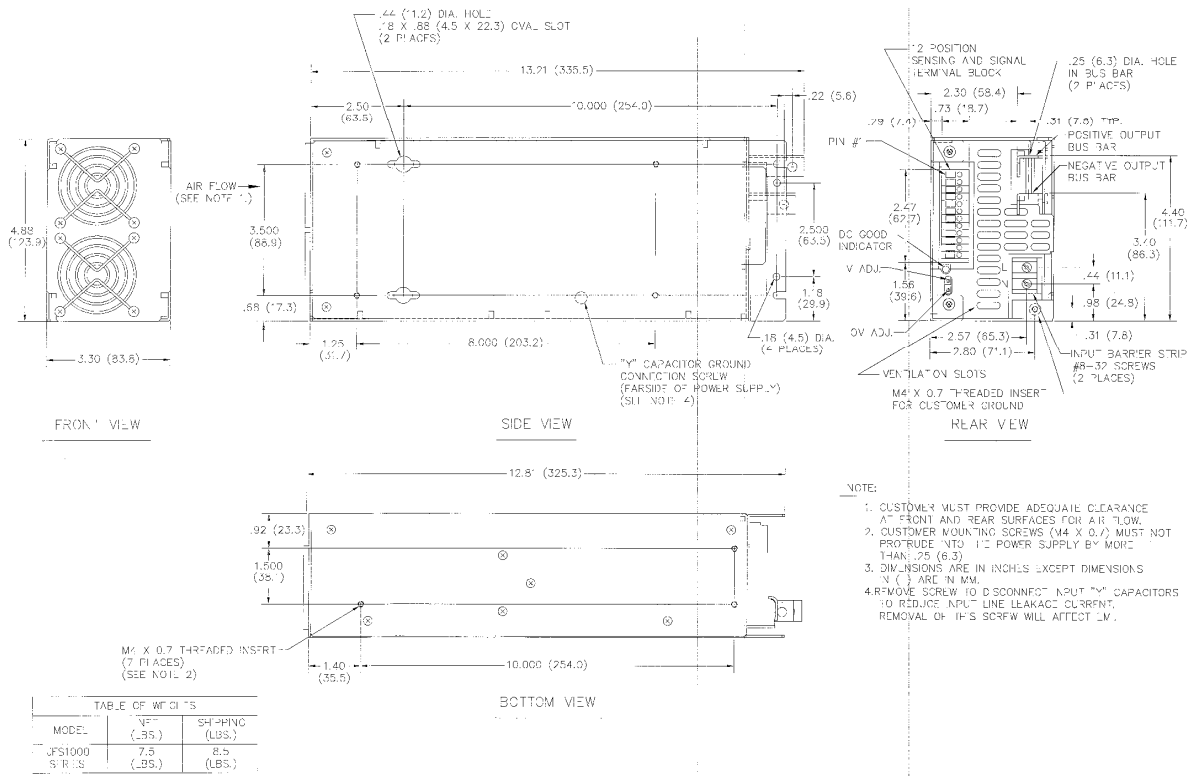
Das Netzteil liefert eine SELV-Spannung in Uebereinstimmung mit IEC-950. Die verfügbare Ausgangsleistung ist größer als 240VA.

Das CE-Konformitätszeichen auf dem Produkt zeigt die Uebereinstimmung mit den Anforderungen der EG-Niederspannungs-Richtlinie [72/23/EWG] und der Ergaenzung [93/68/EWG].

Die maximale Arbeitsumgebungstemperatur darf 50°C bei 750W, 60°C bei 562W und 70°C bei 375W nicht ueberschreiten.

Die Sicherung muß im L-Leiter (Phase) eingefuegt werden.

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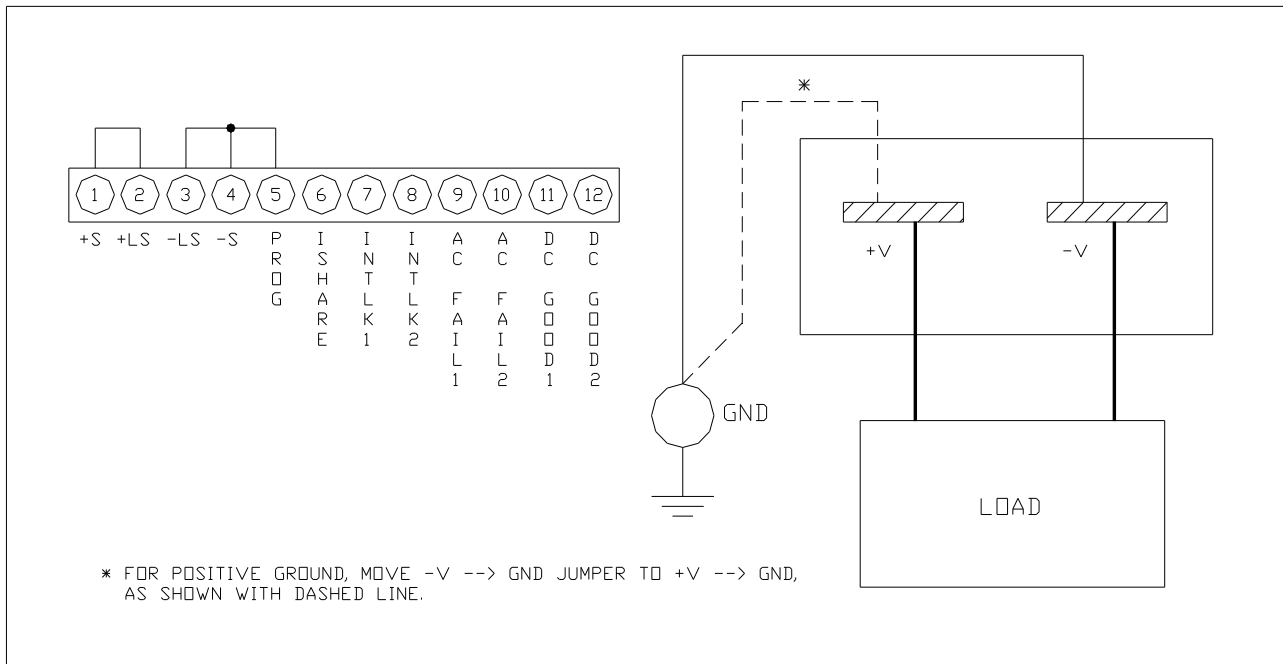


FIGURE 1: TYPICAL LOCAL SENSE CONNECTION

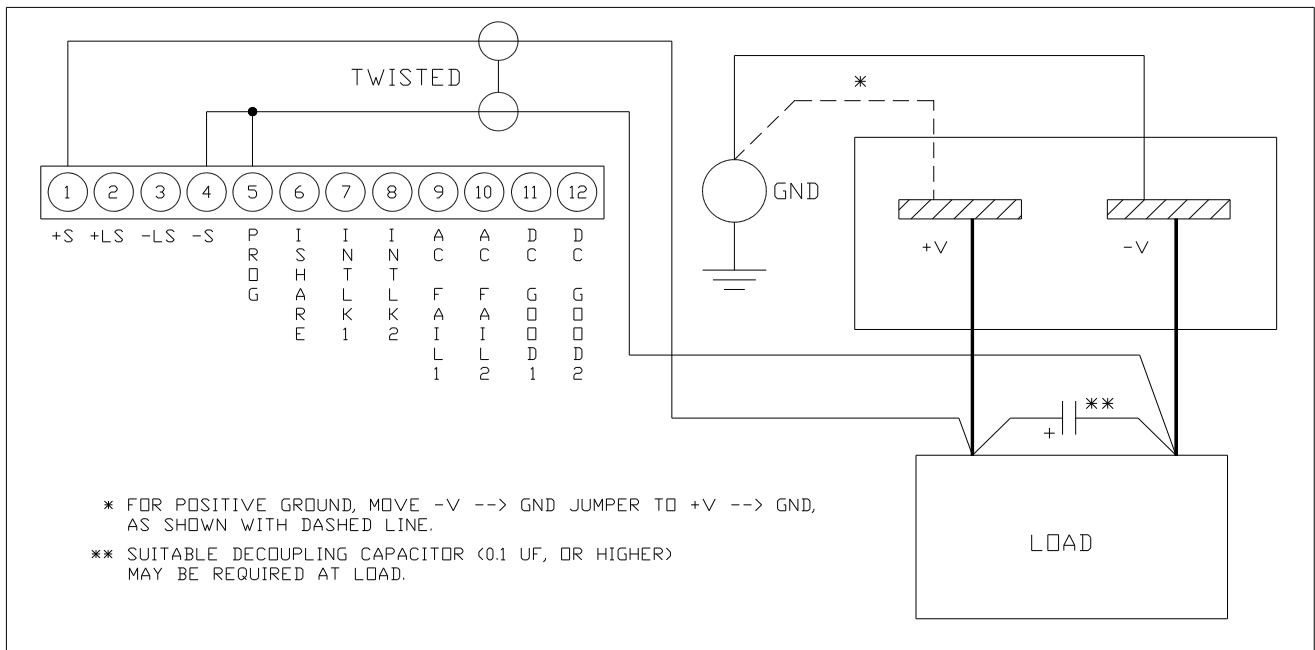


FIGURE 2: TYPICAL REMOTE SENSE CONNECTION

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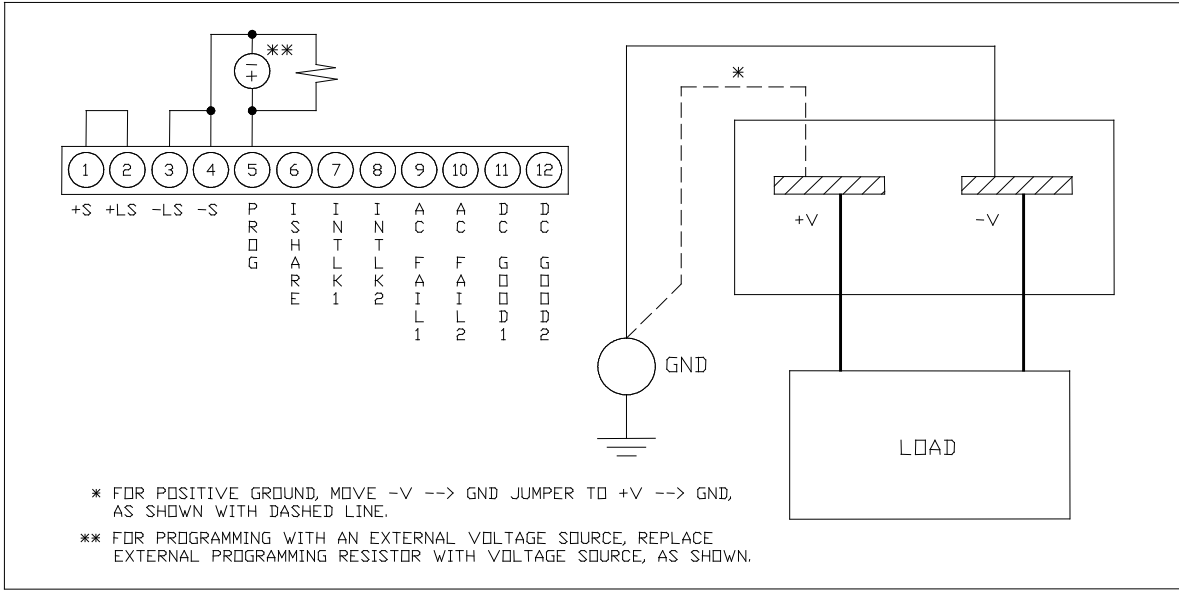


FIGURE 3: REMOTE VOLTAGE CONTROL WITH AN EXTERNAL PROGRAMMING RESISTOR OR VOLTAGE SOURCE (LOCAL SENSING)

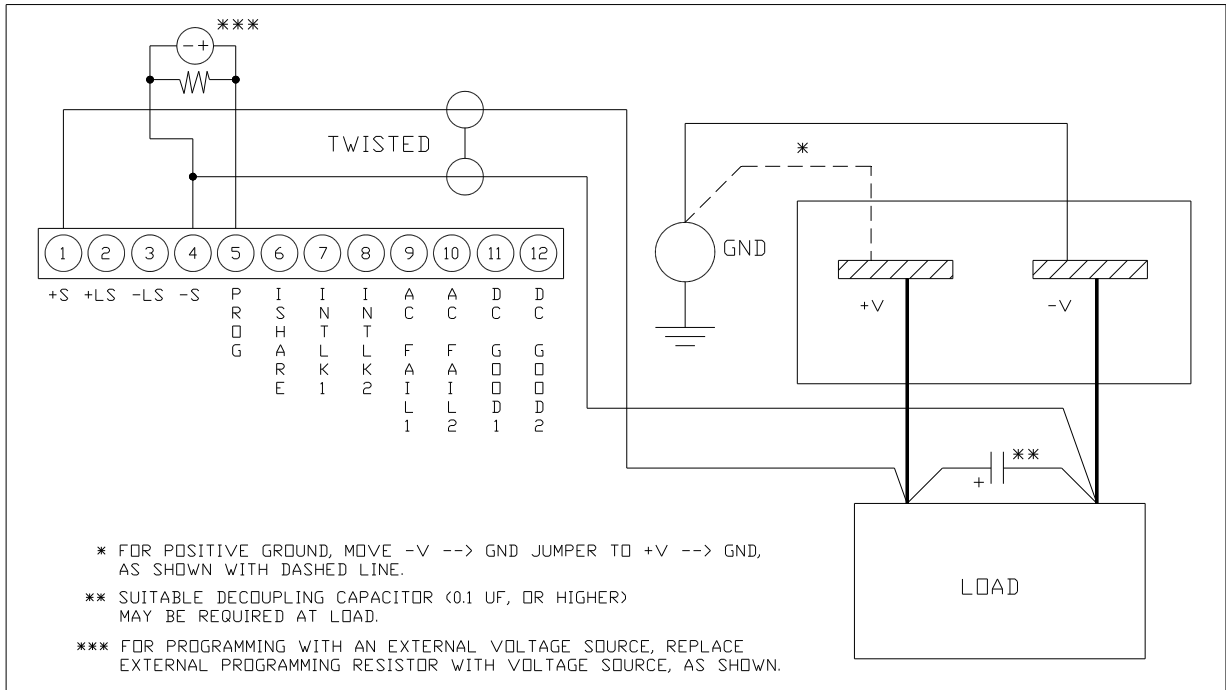
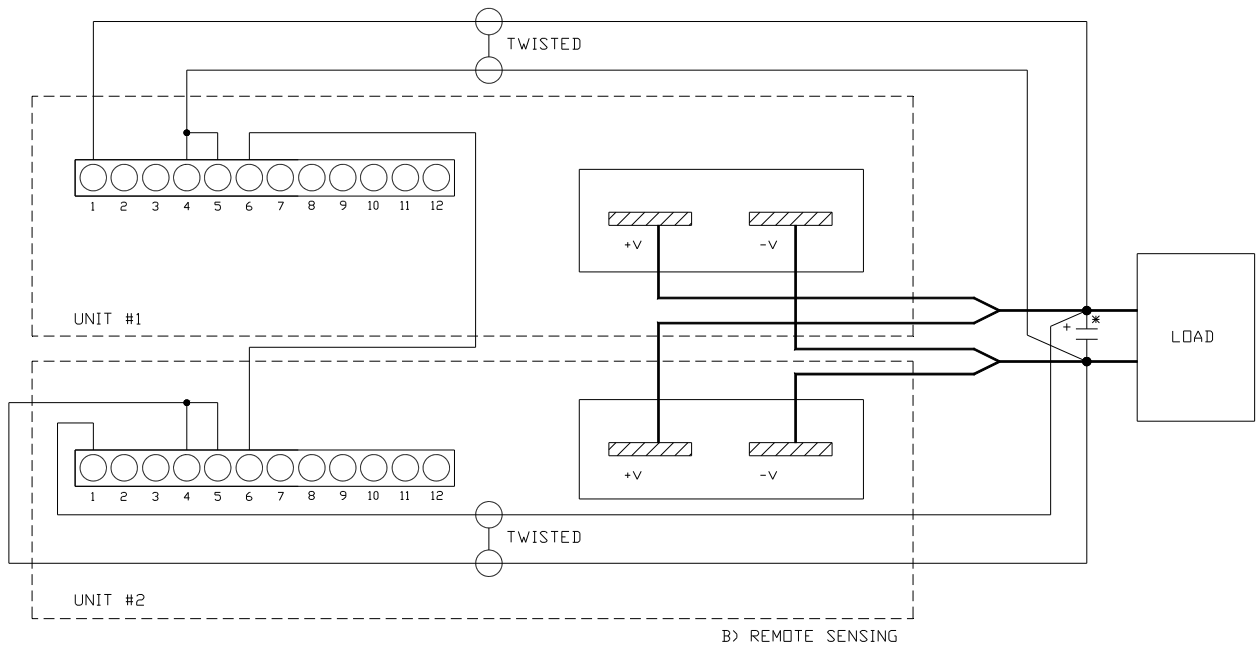
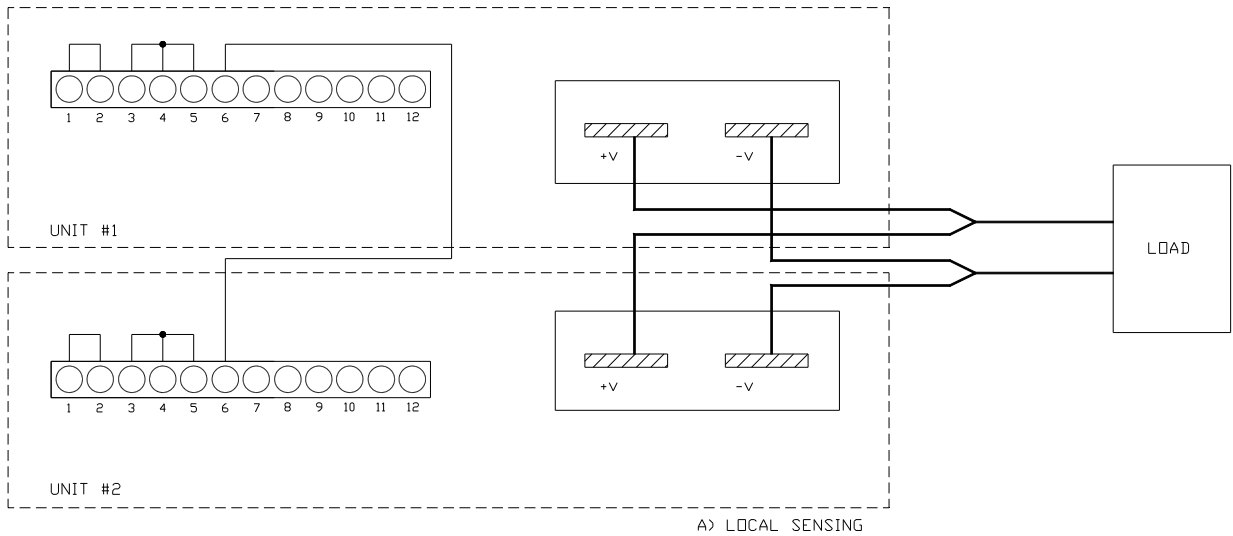


FIGURE 4: REMOTE VOLTAGE CONTROL WITH AN EXTERNAL PROGRAMMING RESISTOR OR VOLTAGE SOURCE (REMOTE SENSING)

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* SUITABLE DECOUPLING CAPACITOR (0.1 UF, OR LARGER) MAY BE REQUIRED AT LOAD.

FOR OPTIMAL PERFORMANCE, POWER SUPPLIES SHOULD HAVE THEIR OUTPUT VOLTAGES SET TO WITHIN 100MV OF EACH OTHER.

FIGURE 5: PARALLEL OPERATION

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