1. Product Description

The AL-3511 is a switched power supply, 19.2 to 57.6 Vdc input, double-height euro standard, and supplies power for AL-2002 and AL-2003 programmable controllers.

2. Components

The package contains the following items:

- AL-3511: power source
- QK2691:1/2 AA Lithium battery – module for memory retention in CPUs connected at the same rack as the power supply. It is installed on the front panel of the power supply, and is hot-swappable.

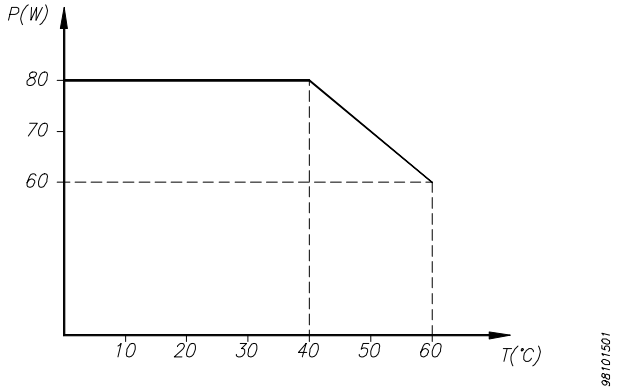
3. Functional Features

3.1. General Features

- Connected to the process by screw terminals.
- Cables with gauges between 0.5 and 1.5 mm^2
- LEDs that indicate the status of the output voltages.
- Normally open dry contact indicating operation of the power source, available at the OK0, OK1 and the GND connector.
- Battery self-test circuit. The status is shown in a LED on the panel, and may be read by the CPU diagnostic function.
- Reading of the power supply statu (+5, +15 and – 15V) by the CPU diagnostic function.
- Protection class: IP20, protection from incidental access by tools, when installed in the rack
  according to IEC Pub. 144 (1963) standard
- Operating temperature: 0 to 60°C
  according to IEC 1131 standard
- Storage temperature: -25 to 70°C
- Relative humidity: 5 to 95% non-condensing
  according to IEC 1131 standard, level RH2
- MTBF: 20.850@ 40°C
  calculated according to MIL HBDF 217E standard
- Weight:
  unpacked: 2,250 g
  packed: 2,500 g

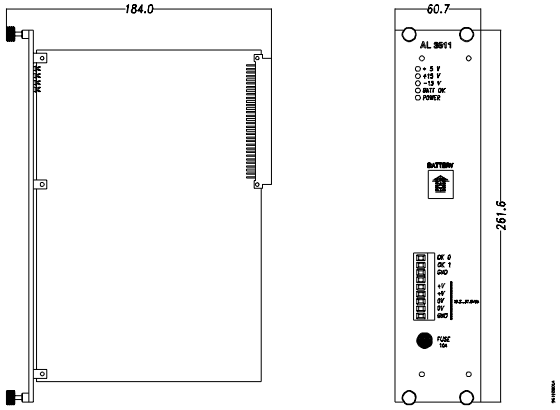
3.2. Electrical Features

- Input voltages:
  19.2 to 57.6 Vdc
- Output voltages:
  +5 Vdc ±5%
  +15 Vdc ±10%
  -15 Vdc ±10%
- Maximum output currents:
  +5 Vdc: 10.0 A
  +15 Vdc: 1.0 A
  -15 Vdc: 1.0 A
- Inrush current:
  25 A per 10 ms
- Ripple at the outputs:
  +5 Vdc: maximum of 50 mVpp
  +15 Vdc: maximum of 100 mVpp
  -15 Vdc: maximum of 100 mVpp
- Spikes:
  +5 Vdc: maximum of 150 mVpp
  +15 Vdc: maximum of 200 mVpp
  -15 Vdc: maximum of 200 mVpp
- Charge and line regulation:
  +5 Vdc: 5%
  +15 Vdc: 10%
  -15 Vdc: 10%
- Maximum input power:
  150 VA
- Maximum output power according to ambient temperature:



- Efficiency:
  A minimum of 70% with nominal charge
- Fuse:
  10 A, through the front panel
- Battery:
  Lithium 1/2 AA - 3 V
  capacity: 0.95 Ah @ 25°C
  charge duration (self-discharging): 5 years @ 25°C
- Operation with maximum output load up to 10 ms of interruption in power supply without affecting operation
  according to IEC 1131/IEC 255-11 standards
- Protections: any of these failures causes the source to turn off, with automatic reactivation after repair:
  - input undervoltage
  - short-circuit at the output
- Protection from electric shock:
  according to the IEC 1131 and IEC-536-1976 standards , class I
- Dielectrical rigidity:
  2500 Vdc between input and outputs
  1500 Vac rms between inputs and outputs during 1 minute
  according to the IEC 1131 e IEC 255-5 standards
  1000 Vac rms between the dry contacts which indicate operation of the outputs.
- Severity level of the electrostatic discharge: 4
  according to the IEC 801-2 standard
- Immunity to electric noise:
  according to the IEC-1131 standard of severity level A and IEEE 3790.1 part AC (SWC)/IEC 255-22-1
- Immunity to electric noise of the fast transient type:
  according to the IEC 801-4 standard, level IV
- Immunity to the radiated electromagnetic field:
  10 V/m @ 140 MHz
  according to the IEC-1131/IEC 801-3 standard
- Resistive switching capacity of relay indication of functionality:
  1 A @ 30 Vdc
  0.28 A @ 110 Vdc
  1 A @ 62.5 Vac
  0.5 A @ 125 Vac

4. Physical Dimensions



5. Purchase Information

5.1. Optional Items

The following item can be purchased separately:

	Name
QK2691	Lithium Battery model ½ AA

The QK2691provides energy for RAM memory retention in the CPUs connected to the power source rack; it consists of a non-rechargeable lithium battery.

6. Installation

The AL-3511 source must be connected to the rack bus with the power supply off. The power is supplied from the front connector, using cables from 0.5 to 1.5 mm^2

The ground wire connection must be carefully carried out. A wire with a minimum 1.5 mm^2 gauge must be connected to the system common ground.

For further information refer to the AL 2002/MSP, AL-2003 and AL-3000 CPU User's Guides.