MODEL APS - OCTAL PLUG-IN ACCESSORY POWER SUPPLY

DESCRIPTION
The Model APS is an unregulated +12 VDC supply designed to load share when connected in parallel with internal power supplies of many Red Lion Controls Counters and Rate Indicators. It can also be used as a general purpose “Stand-alone” power supply to power other control circuits, sensors and accessories. The APS is furnished for 115 VAC or 230 VAC, ±10%, 50/60 Hz primary supply. Operating temperature range is -20° to +50°C. Output current is per regulation curve.

TYPICAL CONNECTION DIAGRAM

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>APS01</td>
<td>115 VAC Accessory Power Supply</td>
<td>APS01000</td>
</tr>
<tr>
<td>APS02</td>
<td>230 VAC Accessory Power Supply</td>
<td>APS02000</td>
</tr>
<tr>
<td>SKT1</td>
<td>Base Mount 8-pin Octal Socket</td>
<td>SKT10000</td>
</tr>
<tr>
<td></td>
<td>DIN Rail 8-pin Socket</td>
<td>SKTDIN00</td>
</tr>
</tbody>
</table>
These industrial relays have a mechanical life expectancy in excess of 10 million cycles, and are both UL and CSA recognized.

**RELAY SPECIFICATIONS**

**COIL:** 12 VDC Coil - 120Ω ±10%,
Rated +12 VDC @ 100 mA.
115 VAC Coil - 2250Ω ±10%,
Rated 115 VAC @ 52 mA.

**CONTACTS:** 10 A @ 115 and 230 VAC
(1/6 HP @ 115 V, 1/3 HP @ 230 VAC)

**OPERATING TIMES:**
- Energize - 30 msec max.
- De-energize - 30 msec max.
- Operating times do not include bounce time (approx. 3 msec).

**OPERATING TEMPERATURE RANGE:**
-45° to +60°C

**ELECTRICAL LIFE:** In excess of 100,000 operations @ rated load.

**WEIGHT:** 3 oz (85.1 g)

Mating sockets sold separately. See Ordering Information.

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**LIMITED WARRANTY**

The Company warrants the products it manufactures against defects in materials and workmanship for a period limited to two years from the date of shipment, provided the products have been stored, handled, installed, and used under proper conditions. The Company’s liability under this limited warranty shall extend only to the repair or replacement of a defective product, at The Company’s option. The Company disclaims all liability for any affirmation, promise or representation with respect to the products.

The customer agrees to hold Red Lion Controls harmless from, defend, and indemnify RLC against damages, claims, and expenses arising out of subsequent sales of RLC products or products containing components manufactured by RLC and based upon personal injuries, deaths, property damage, lost profits, and other matters which Buyer, its employees, or sub-contractors are or may be to any extent liable, including without limitation penalties imposed by the Consumer Product Safety Act (P.L. 92-573) and liability imposed upon any person pursuant to the Magnuson-Moss Warranty Act (P.L. 93-573) and liability imposed upon any person pursuant to the Magnuson-Moss Warranty Act (P.L. 93-573), as now in effect or as amended hereafter.

No warranties expressed or implied are created with respect to The Company’s products except those expressly contained herein. The Customer acknowledges the disclaimers and limitations contained herein and relies on no other warranties or affirmations.
**MODEL APSIS - Octal Plug-in Accessory Power Supply With 20 mA Current Sources**

**PROVIDES...**

- 24 VDC UNREGULATED “HELPER” SUPPLY FOR LOAD SHARING WITH OTHER 24 VOLT SYSTEMS WITH UNUSUAL SENSOR AND ACCESSORY LOADS OR...

- “STAND-ALONE” APPLICATIONS FOR POWERING +24 VDC SENSORS AND ACCESSORIES OR...

- TWO 20 mA CURRENT SOURCES, EACH CAPABLE OF SUPPLYING 20 mA OF CURRENT FOR SERIAL COMMUNICATION LOOPS AND POWERING UP TO 16 UNITS PER LOOP.

**DESCRIPTION**

The Model APSIS is a convenient plug-in unregulated +24 VDC power supply designed to “load share” when connected in parallel with other +24 VDC unregulated systems with unusual power requirements due to sensor or accessory loading (see Fig.1). It can also be used as a general purpose stand-alone supply to power +24 VDC control circuits, sensors and accessories (see Fig.2). In addition, two 20 mA Current Source outputs are available, each capable of powering up to 16 Serial Communications units (see Fig.3). The APSIS is available in 115 and 230 VAC ±10%, 50/60 Hz. primary supply (see Ordering Information). Operating temperature range is -20°C to +50°C.

**SPECIFICATIONS**

1. **POWER SOURCE:** 2 versions, 115 VAC or 230 VAC ±10%, 50/60 Hz., 11 VA max. (see Ordering Information).
2. **POWER OUTPUT:** +24 VDC unregulated @ 200 mA max. current*, Ripple = 1.5 V P-P max.
3. **OUTPUT:** Two 20 mA current sources, each capable of supplying 20 mA of current for serial communication loops and powering up to 16 units per loop.
4. **OPERATING TEMPERATURE:** -20°C to +50°C (*Maximum available output current derates to 175 mA with 1 source active and 150 mA max. with both sources active.**

**TYPICAL LOAD SHARING CONNECTION DIAGRAM**

**DIMENSIONS In inches (mm)**

**TEMPERATURE MONITORING SYSTEM**

A temperature monitoring process requires both remote and control room indicators and datalogging capabilities. An RTD (Resistance Temperature Detector) to 4 to 20 mA Transmitter, provides a proportional 4 to 20 mA output from the RTD input. Two Red Lion Controls “Loop Powered Process Indicators” (Model LPPI) are installed in series in the “Loop” and scaled to provide Local and Remote temperature displays. A Datalogger is also placed in the “Loop” to provide a hard-copy of process temperatures. Each device in the “Loop” has an associated “voltage drop” as follows: RTD Transmitter = 9 VDC drop; LPPI = 3 VDC x 2 units = 6 VDC drop; Datalogger = 5 VDC drop. The total voltage drops in the “Loop” = 20 VDC. Therefore, RLC’s Model APSIS, with its +24 VDC Supply, is used to power this process “Loop”.

**FIGURE 1**

**FIGURE 2**
PROCESS MONITORING SYSTEM

8 Apollo Thermocouples (APLTC) and 8 GEMINIs, all with isolated 20 mA Current Loop Serial Communications, monitor and control processes within a plant. All units, which are located in different areas of the plant, are tied together in series in two “Loops” (one Transmit Tx, the other Receive Rx) and are connected to a Central Computer located in another area of the plant. Since there are more than 7, and no more than 16 units in the “Loop”, the APSIS +20 mA Current Source Outputs are used to power each “Loop”. (Both Apollo Thermocouple and Gemini units can power up to 7 units in a “Loop” when using their internal 20 mA sources. However, their sources may not be tied together to power more than 7 units.) Each unit is assigned a different address number and the same Baud rate (see appropriate APLTC or Gemini data sheet). An application program is written which allows the Central Computer to send and retrieve data from any APLTC or Gemini.

OUTPUT VOLTS/CURRENT

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>PART NUMBERS FOR AVAILABLE SUPPLY VOLTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>230 VAC</td>
</tr>
<tr>
<td>APSIS</td>
<td>Accessory Power Supply- Current Source</td>
<td>APSIS010</td>
</tr>
<tr>
<td></td>
<td>Base Mount, 8-Pin Octal Socket</td>
<td>SKT10000</td>
</tr>
<tr>
<td></td>
<td>Din Rail Mount, 8-Pin Octal Socket</td>
<td>SKTDIN00</td>
</tr>
</tbody>
</table>

*Unregulated output +(2) 20 mA current sources (if used).

ORDERING INFORMATION

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
**MODEL MLPS1 - MICRO-LINE POWER SUPPLY**

- PROVIDES +12 VDC POWER FOR THE MICRO-LINE SERIES
- 12 VDC OUTPUT @ 400 mA
- EASILY ATTACHED TO BACK OF DT8, DT9, CUB4 AND CUB5

**DESCRIPTION**

The Model MLPS1 is a +12 VDC power supply designed to attach to the rear of the Micro-Line Series. The MLPS1 can be powered from an 85-250 V AC source.

**Caution:** The maximum output current of the MLPS is 400 mA. Check the specifications of the specific counter(s)/indicators(s) and sensors(s) being used to ensure that total current requirements do not exceed 400 mA.

**SAFETY SUMMARY**

All safety related regulations, local codes and instructions that appear in the manual or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

**SPECIFICATIONS**

1. **POWER REQUIREMENTS:** 85-250 VAC, 50/60 Hz, 14 VA.
2. **POWER OUTPUT:** +16 VDC max @ 4 mA

   11.5 VDC min @ 400 mA
3. **ENVIRONMENTAL CONDITIONS:**
   - Operating Temperature: 0 to 60°C
   - Storage Temperature: -30 to 75°C
   - Operating and Storage Humidity: 85% max. (non-condensing) from 0°C to 50°C.
   - Altitude: Up to 2000 meters
4. **CERTIFICATIONS AND COMPLIANCES:**
   - **SAFETY**
     - UL Recognized Component, File # E179259
   - **ELECTROMAGNETIC COMPATIBILITY**
     - Emissions: EN 61326
     - Immunity: EN 61000-4:

<table>
<thead>
<tr>
<th>Test</th>
<th>Level</th>
<th>Requirement</th>
</tr>
</thead>
</table>
   | Electrostatic discharge | EN 61000-4-2 | Criterion A
   | Electromagnetic RF fields | EN 61000-4-3 | Criterion A
   | Fast transients (burst) | EN 61000-4-4 | Criterion A
   | Surge | EN 61000-4-5 | Criterion B
   | RF conducted interference | EN 61000-4-6 | Criterion A
   | Voltage dip/interruptions | EN 61000-4-11 | Criterion A

**Immunity to Industrial Locations:**

- Electrostatic discharge EN 61000-4-2
  - Criterion A
  - 4 kV contact discharge
  - 8 kV air discharge
- Electromagnetic RF fields EN 61000-4-3
  - Criterion A
  - 10 V/m
- Fast transients (burst) EN 61000-4-4
  - Criterion A
  - 2 kV power
  - 1 kV signal
- Surge EN 61000-4-5
  - Criterion B
  - 1 kV L,L
  - 2 kV L&N-E power
- Voltage dip/interruptions EN 61000-4-11
  - Criterion A
  - 3 V/rms
  - 0.5 cycle

**Emissions:**

- EN 55011
  - Class B

**Notes:**

2. Criterion B: Temporary loss of performance from which the unit self-recoveries.

5. **CONSTRUCTION:** High impact black plastic. Mounting hardware included. Installation Category II, Pollution Degree 2.
6. **CONNECTION:** Two position terminal block which accepts one 14 AWG wire (torque terminal screws to 5 inch-lbs. [0.56 N-m]).
7. **WEIGHT:** 2 oz (47 g)
INSTALLATION ENVIRONMENT
The unit should be installed in a location that does not exceed the maximum operating temperature and provides good air circulation. Placing the unit near devices that generate excessive heat should be avoided.

Installation Procedure
The MLPS1 is shipped with all the necessary hardware to mount to the rear of an installed Micro-Line unit. Refer to the instructions that correspond to your Micro-Line unit for proper installation.

TROUBLESHOOTING
For further technical assistance, contact technical support at the appropriate company numbers listed.
**MODEL MLPS2 - 24 VDC MICRO-LINE POWER SUPPLY**

- PROVIDES +24 VDC POWER FOR THE MICRO-LINE SERIES
- 24 VDC OUTPUT @ 200 mA
- EASILY ATTACHED TO BACK OF DT8, DT9, CUB4 AND CUB5

**DESCRIPTION**

The Model MLPS2 is a +24 VDC power supply designed to attach to the rear of the Micro-Line Series. The MLPS2 can be powered from an 85-250 V AC source.

Caution: The maximum output current of the MLPS2 is 200 mA. Check the specifications of the specific counter(s)/indicator(s) and sensor(s) being used to ensure that total current requirements do not exceed 200 mA.

**SAFETY SUMMARY**

All safety related regulations, local codes and instructions that appear in the manual or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

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**SPECIFICATIONS**

1. **POWER REQUIREMENTS:** 85-250 VAC, 50/60 Hz, 14 VA.

2. **POWER OUTPUT:** +24 VDC ±10% @ 200 mA

3. **ENVIRONMENTAL CONDITIONS:**
   - Operating Temperature: 0 to 60°C
   - Storage Temperature: -30 to 75°C
   - Operating and Storage Humidity: 85% max. (non-condensing) from 0°C to 50°C.
   - Altitude: Up to 2000 meters

4. **CERTIFICATIONS AND COMPLIANCES:**

   **SAFETY**
   - IEC 61010-1, EN 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use, Part 1.

   **ELECTROMAGNETIC COMPATIBILITY**
   - Emissions and Immunity to EN 61326: Electrical Equipment for Measurement, Control and Laboratory use.
   - Class B
   - EN 55011

   **EMISSIONS:**
   - Electrostatic discharge: EN 61000-4-2 - Criterion A
   - Electromagnetic RF fields: EN 61000-4-3 - Criterion A
   - Fast transients (burst): EN 61000-4-4 - Criterion A
   - Surge: EN 61000-4-5 - Criterion A
   - RF conducted interference: EN 61000-4-6 - Criterion A
   - Voltage dip/interruptions: EN 61000-4-11 - Criterion A

   **IMMUNITY:**
   - EN 55011 - Class B

**NOTES:**

2. Criterion B: Temporary loss of performance from which the unit self-recoveries.

5. **CONSTRUCTION:** High impact black plastic. Mounting hardware included. Installation Category II, Pollution Degree 2.

6. **CONNECTION:** Two position terminal block which accepts one 14 AWG wire (torque terminal screws to 5 inch-lbs [0.56 N-m]).

7. **WEIGHT:** 2 oz (47 g)

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**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLPS2</td>
<td>24 VDC Micro Line/Sensor Power Supply</td>
<td>MLPS2000</td>
</tr>
</tbody>
</table>
**INSTALLATION ENVIRONMENT**

The unit should be installed in a location that does not exceed the maximum operating temperature and provides good air circulation. Placing the unit near devices that generate excessive heat should be avoided.

**Installation Procedure**

The MLPS2 is shipped with all the necessary hardware to mount to the rear of an installed Micro-Line unit. Refer to the instructions that correspond to your Micro-Line unit for proper installation.

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**TROUBLESHOOTING**

For further technical assistance, contact technical support at the appropriate company numbers listed.

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**CUB4, DT8, DT9**

The user must remove the common and V+ screw terminals on the rear of the Micro-Line unit. Install the 1/4" hex drive stand-offs into the common and V+ terminals. The MLPS2 is then mounted to the stand-offs using the screw terminals and square washers. AC power can then be connected to the terminal block of the MLPS2.

**CUB5**

The user must remove the common and V+ screw terminals on the rear of the Micro-Line unit. Install the 3/16" hex drive stand-offs into the common and V+ terminals. The MLPS2 is then mounted to the stand-offs using the supplied screws and square washers. AC power can then be connected to the terminal block of the MLPS2.
MODEL PSDR - 24 V POWER SUPPLIES @ 1, 2, OR 4 A

DESCRIPTION
The compact PSDR power supplies are industrial input voltage supplies with primary switched-mode regulator technology. They feature low output ripple and adjusted output voltage from 22.5 to 28.5 VDC. The output is electronically protected against overloads and short circuits.

The modules snap onto standard 35 mm flat DIN rails and use removable terminal blocks for easy wiring.

SPECIFICATIONS
1. POWER REQUIREMENTS:
   Nominal Input Voltage: 100 to 240 VAC
   Input Voltage Range: 85 to 264 VAC or 90 to 350 VDC
   Current Consumption at nominal input voltage:
   PSDR0100: 0.5 A to 0.2 A @ 100 to 240 VAC, 0.4 to 0.1 A @ 90 to 350 VDC
   PSDR0200: 0.82 A to 0.33 A @ 100 to 240 VAC, 0.65 to 0.23 A @ 90 to 350 VDC
   PSDR0400: 1.8 A to 0.7 A @ 100 to 240 VAC, 1.3 to 0.4 A @ 90 to 350 VDC

2. FREQUENCY: 50 to 60 Hz

3. INPUT RECOMMENDED BACKUP FUSE:
   Power Circuit Breaker: 6 A or 10 A
   Characteristic: B (EN 60898)

4. SURGE VOLTAGE PROTECTION: Varistor

5. POWER OUTPUT: Nominal value of 24 VDC ±1%. Adjustable from 22.5 to 28.5 VDC via potentiometer

6. EFFICIENCY AT 230 VAC AND NOMINAL VALUES: > 80 %

7. ENVIRONMENTAL CONDITIONS:
   Operating Temperature Range: -25 to 60°C
   Storage Temperature: -40 to 85°C
   Humidity, no moisture condensation: 95 % at 25°C
   Vibration in acc. with IEC 68-2-6: < 15 Hz, amplitude ±2.5 mm;
   Shock in all directions acc. with IEC 68-2-27: 30 g
   Contamination in acc. with EN 50178: Degree of pollution 2
   Radio interference voltage
   EN 55011 (EN 55022) Class B 5)
   EN 61000-4-3 4)
   EN 61000-4-2 2)
   EN 61000-4-11 2)

8. STANDARDS AND CERTIFICATIONS:
   Electrical Safety (of information technology equipment) EN 60950 / VDE 0805
   Industrial regulating devices UL Recognized UL 60 950
   Electronic equipment for use in electrical power installations (surge voltage category II) EN 50178 / VDE 0160
   Limitation of output power NEC Class 2
   Safe isolation VDE 0100-410
   Protection against electric shock DIN VDE 0106-101

DIMENSIONS In inches (mm)

MODEL | C
PSDR0100 | 0.87 (22.5)
PSDR0200 | 1.77 (45)
PSDR0400 | 2.66 (67.5)

In conformance with EMC guideline 89/336/ECC and low-voltage directive 73/23/ECC


## CONNECTION AND OPERATION INSTRUCTIONS

**Caution**: Danger! Never work on live equipment!

**Caution**: When the device is opened, a dangerous voltage may remain at the electrolytic capacitors for up to 2 minutes after shutdown!

The installation must be performed by a specialist in accordance with the requirements of EN 60950.

For vertical installations we recommend a minimum spacing of 5 cm (1.97 in.) between other modules and this power supply to ensure sufficient convection.

No minimum spacing is required for horizontal alignment.

The mains feed line must have an appropriate fixing or strain relief outside of the device.

The supply-side installation and the connection via screw terminal blocks must be done in a way that ensures protection against electric shock.

### PROTECTION

The device must be installed in accordance with the specifications of EN 60950.

It must be possible to switch off the device using a suitable disconnecting device outside the power supply. For example, primary side line protection could be used.

*In case of DC applications it is necessary to connect in series an adequate fuse.*

### RAIL MOUNTING

The power supply unit can be snapped onto all mounting rails in accordance with EN 50022-35. Installation should be made horizontally (input terminal blocks below).

### CABLE CONNECTION

The device is equipped with COMBICON plug connectors.

This easy-to-assemble connection method allows devices to be exchanged easily and the electrical connection to be visibly isolated.

#### Connecting Cables:

Cable cross sections from 0.2 to 2.5 mm² rigid (solid)/flexible (stranded) (AWG 24-14) may be used.

To maintain UL, use copper cable rated for an operating temperature of 75°C/170°F.

#### For Reliable And Touch-proof Contacts:

Strip the connection ends (7 mm - See Figure). 7 mm (0.28")

### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>OUTPUT</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSDR1</td>
<td>24 VDC @ 1A</td>
<td>PSDR0100</td>
</tr>
<tr>
<td>PSDR2</td>
<td>24 VDC @ 2A</td>
<td>PSDR0200</td>
</tr>
<tr>
<td>PSDR4</td>
<td>24 VDC @ 4A</td>
<td>PSDR0400</td>
</tr>
</tbody>
</table>

## INPUT

The input connection is made by the screw connections “L(+)” and “N(-)” (torque 0.5 Nm) on the COMBICON plug connection.

For device protection, there is an internal fuse. Additional device protection is not necessary.

Recommended backup fuses are power circuit-breakers 6 A or 10 A, characteristic B (or identical function). In DC applications, a suitable backup fuse must be wired in.

If the internal fuse is triggered, there is most probably a malfunction in the device. In this case, the device must be inspected in the factory!

## OUTPUT

The 24 VDC connection is made by the screw connections “+” and “-” (torque 0.5 Nm) on the COMBICON plug connection.

At the time of delivery, the output voltage is 24 VDC. The output voltage can be set from 22.5 to 28.5 VDC on the potentiometer.

The device must be installed in accordance with the specifications of EN 60950.

In case of DC applications it is necessary to connect in series an adequate fuse.

### Function Monitoring

For function monitoring, there is the active DC OK switching output and the DC OK LED.

The 24 VDC signal is measured between the “DC OK” and “-” connection terminal blocks and can be loaded with 20 mA maximum. This signal output indicates that the output voltage has fallen below 21.5 VDC when “active high” changes to “low”.

The DC OK signal is isolated from the power output.

### Output Characteristic Curve

The device functions following the U-I characteristic curve. Under load, the operating point follows this curve. In the event of a short circuit or overload, the output current is limited to I_{BOOST}. The secondary voltage is reduced until the device functions following the U-I characteristic curve. Under load, the operating point follows this curve. In the event of a short circuit or overload, the output current is limited to I_{BOOST}. The secondary voltage is reduced until the device functions following the U-I characteristic curve. Under load, the operating point follows this curve.

### Thermal Behavior

In the case of ambient temperatures above +60°C, the output capacity has to be reduced by 2.5% per Kelvin increase in temperature.

From +70°C or a thermal overload, the device reduces the output power for its own protection, and returns to normal operation when it has cooled down.

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**DESCRIPTION**

Cub Counters and Ditak Tachometers are basically self-powered devices and do not have built-in capability for powering electronic sensors or accepting high level sensor outputs. The PSMA provides a convenient plug-in answer to those applications requiring electronic sensors or accessories for pulse input to Cub Counters or Ditak Tachometers.

The PSMA is available in 115 V AC and 230 V AC primary power input versions, and delivers regulated D.C. voltage for sensors and accessories. The signal conditioning amplifier can accept NPN or PNP Open Collector Inputs, or 2-Wire Proximity Sensor Inputs.

The signal conditioning amplifier supplies two separate outputs, one for direct drive to the H.S. Input of Cub Counters, and the other for direct drive input to the PSM Input of the Ditak 5 or Input to the Ditak 6 or 7. A “pulse stretcher” is used in the circuit that provides the output drive to Cub Counters (Terminal 4). This stretcher allows the PSM to accept 50 µsec input pulses, standard on some Red Lion Controls’ sensors and accessories, and expand it to the 100 µsec pulse, as required by the Cub Counters. The Ditak output (Terminal 8) is not pulse stretched, allowing this output to continue functioning to the full 10 KHz limit of the Ditak.

**SPECIFICATIONS**

1. **POWER SOURCE:** 2 versions, for 115 VAC ±10% 50/60 Hz, or 230 VAC ±10% 50/60 Hz. (See Ordering Information.)
2. **POWER OUTPUT TO SENSORS OR ACCESSORIES:** 12 VDC regulated ±5%, 100 mA max.
3. **INPUT SIGNAL:** (Terminal 3) NPN Open Collector (sink), PNP Open Collector (source), or 2-wire Input. Built-in 3.3 K resistor (Terminal 5) can be jumper connected for pull-up, pull-down, or left unconnected as required. Input Schmidt trigger levels as shown on BLOCK DIAGRAM.
4. **OUTPUTS:** (Terminal 4) Bi-polar drive to H.S. Input of Cub Counters supplies 100 µsec negative going logic pulse (switches from +3 to 0 volts) in response to a trailing (negative going) edge of the input pulse. This output will drive up to 3 Cub Counters in parallel. (Terminal 8) NPN Loaded Collector to drive PSM-input of Ditak 5 and Input of Ditak 6. The output voltage on this terminal is in phase with the input signal going into Terminal 3. The high level of this voltage will be clamped to 6.2 V by the zener diode in the Ditak. This output can drive up to 3 Ditak units. For Cub 4 products, use the Ditak output of the PSMA.
5. **OPERATING FREQUENCY:** 0 to 5000 cps with Cub Counters; 0 to 10,000 cps with Ditaks.

**BLOCK DIAGRAM (TOP VIEW OF SOCKET)**

```
+12 VDC at 100mA
(S入: COMMON, 2)
POWER SUPPLY
3.3K
3
SIGNAL
CONDITIONING
AMPLIFIER
4
+3 V BIPOLAR
OUTPUT FOR
H.S. INPUT TO
CUB 1 AND 2
COUNTERS
5
OUTPUT FOR
CUB 4, DITAK 5
6
115 VAC
OR 230 VAC
LINE
POWER
7
COMMON
2
1
KEY
8

c
(-)
SIGNAL
INPUT
VH = 3.0V
VIL = 0.0V
VIL = 8.0V
PULL UP/DOWN RESISTOR

NOTES
1. Inputs and Outputs are referenced to COMMON, on Terminal 2.
2. This Power Supply is regulated and cannot be parallel connected with +12 V outputs from other Red Lion Controls counters or tachometers.
```
GENERAL CONNECTION DIAGRAMS

NPX OPEN COLLECTOR SINK INPUT

PSMA TERMINALS

+1 (+12V) +2 (COMM.) +3 (INPUT)

SENSOR OR ACCESSORY
CONNECT TO CONNECT TO CONNECT TO JUMPER

NPN O.C. OUTPUTS
LMPC LOGIC MAG. PICKUP
PSAC PROXIMITY SENSOR
RPGC ROTARY PULSE GEN.
ASTC AMPSTICK AMPLIFIER
(See Note 1)

COS1 CLOCK OSCILLATOR TERM #1 TERM #2 TERM #7/8
TERM 1 JUMPER (sec/min.)

RMX RATE MULTIPLIER
TERM A TERM B TERM C
(See Note 2)

ACS ANTI COINC. SUMMER
NO JUMPER CONN.

NPN OUTPUT W/COLLECTOR
LOAD TO +12V IN SENSOR
RPGC ROTARY PULSE GEN.
RPGH ROTARY PULSE GEN.

PSA-1 or PSA-2 BLACK OR BROWN NO CONN. BLUE

2-WIRE PROXIMITY SENSORS
PSA-1 or PSA-2
BLACK
OR
BROWN
NO CONN.
TO SENSOR
BLUE
JUMPER 5
TO 2 ON
PSMA SKT

OUTPUT CONNECTIONS TO CUB COUNTERS & DITAK 5 TACHOMETER

DIAMETERS "In inches (mm)"

2.38" (60.5)
1.75" (44.5)

Mating Sockets
Sold Separately
(See Ordering
Information Below)

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSMA</td>
<td>Power Supply &amp; Interface Module (less socket), 115 VAC</td>
<td>PSMA1000</td>
</tr>
<tr>
<td>PSMA</td>
<td>Power Supply &amp; Interface Module (less socket), 230 VAC</td>
<td>PSMA2000</td>
</tr>
<tr>
<td></td>
<td>Base Mount, 8-Pin Octal Socket</td>
<td>SKT1000</td>
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<tr>
<td></td>
<td>Din Rail Mount, 8-Pin Octal Socket</td>
<td>SKTDIN00</td>
</tr>
</tbody>
</table>

Notes: 1) Connect cable shield to Term 2 on PSMA socket. 2) Must be set for 50 µsec output, see RMX Bulletin. Consult factory for exact setup.