

See Page 2 and 4
for part number
introduction

See Page 2 and 4
for part number
introduction

100V

RELAY IN
LAD STATE

TOP OF
LAD STATE

CONTROL

20



Solid-state Power Controllers

For aerospace, military and transportation applications

LEACH[®] INTERNATIONAL

Solutions for Power Switching and Control

A Leader in SSPC Innovation

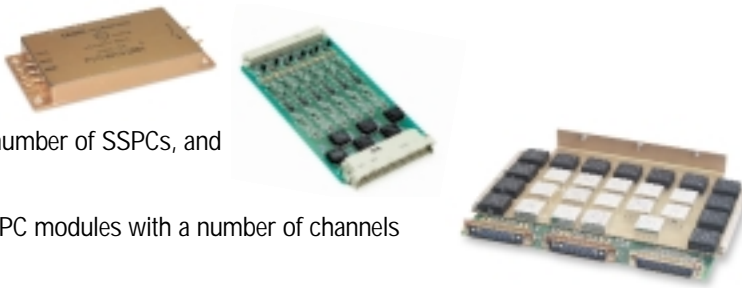
For two decades, Leach International has been the world's leading producer of Solid-state Power Controllers (SSPCs). As such, the company is responsible for the vast majority of SSPCs installed on aircraft today. Its current product line, designed specifically for modern computer-controlled systems, is an industry standard, recognized for high reliability in even the harshest environments.

Ideal for applications where reliability is key and size and weight are major concerns, Leach SSPCs employ an FET output stage and are constructed using thick-film technology in hermetically sealed, mainly metal enclosures. They are faster acting and generally have lower thermal dissipation than the electromechanical relay and circuit breaker combination they replace.

Unique Packaging Designs

Leach also provides unique product packaging designs for its SSPCs. The company takes full advantage of its advanced thermal analysis capabilities to provide three integrated packaging solutions:

- Individual SSPCs
- PCB containing a number of SSPCs, and
- Fully integrated SSPC modules with a number of channels



Next Generation Solid-state Power Controllers



In response to customers' expanding needs, Leach International currently is developing the Next Generation of Solid-state Power Controllers. This new line will be ideal for a variety of aerospace, military and transportation applications where advanced communications features and a "system friendly" interface are desired. Like Leach's standard SSPCs, these devices will feature a rugged design and a high MTBF.

Capabilities

In addition to their low on-resistance, the Next Generation SSPCs will incorporate an extensive Built-in-Test capability that can identify 95 percent of failures within the SSPC functions. Data bus compatibility provides for control and interrogation by the host system. These new devices, via the serial data bus, specifically can be commanded to:

- Set on/off
- Report a trip situation
- Reset after trip
- Report detailed information from the load and health and status of the device itself to the host system
- Report load current to 100 mA accuracy
- Report if the switch is failed (open/short)
- Identify if there is an internal malfunction and/or a problem with the load (commanded BIT)
- Recognize the presence or absence of the load
- Change its trip characteristics (threshold and trip time)

(Information contained in this brochure is for initial guidance purpose only. Please request more comprehensive data, specific application usage information, or a Product Control Drawing (PCD) from Leach International.)

Standard Solid-state Power Controllers, PCB and Stand-alone Mountings (1-150 Amps)

					
Leach Series:	P110	P160	P152	P140	P170
Rating:	2 Amps	2.5 Amps	2 to 7.5 Amps	1, 2, 4, 5, 7.5 and 10 Amps	2, 7, 10 and 15 Amps
Style/Voltage:	PCB Mounted/28 VDC	PCB Mounted/28 VDC	PCB Mounted/270 VDC	PCB Mounted/28 VDC	PCB Mounted/28 VDC
Designed to:	MIL-P-81653**	MIL-P-81653**	MIL-P-81653**	MIL-P-81653**	MIL-P-81653**
Electrical Data	P110	P160	P152	P140	P170
Bias on (voltage):	—	—	4.5-5.5	4.5-5.5 or 18-32	4.5-5.5
Control on (voltage):	4.5-32	3.8-32	2.4 min. (TTL)	2.4-32	2.4 min. (TTL)
Status Output Type:	—	—	Load Current + Trip	Load Current, Voltage	Load Current + Trip
Typical Operate Time (ms):	0.15	0.2	0.5	0.1	0.15
Full Load Voltage Drop	150	150	400	100	100
Environmental Data	P110	P160	P152	P140	P170
Operating temperature (°C):	-55 to +110 (Derated from +105)	-55 to +125 (Derated from +90)	-55 to +100 (Derated from +90)	-55 to +125*	-55 to +125 (Derated from +105)
Vibration (G):	20 (20-2000 Hz)	20 (20-2000 Hz)	20	20 (96-2000 Hz)	20
Shock (G):	1500	1500	1500	1500	1500
Acceleration (G):	5000	5000	5000	5000	5000
Seal:	Hermetic	Hermetic	Hermetic	Hermetic	Hermetic
Mechanical Data	P110	P160	P152	P140	P170
Weight, max. (grams):	5	10	65	20	65
Dimensions, max. (mm): (L x W x H)	20.6 x 10.4 x 6.35	25.4 x 12.7 x 6.5	69.6 x 34 x 9.7	25.7 x 25.7 x 9.5	38 x 27.3 x 9.5
					
Leach Series:	P111	P150	P600-Air	P600-Ground	P700
Rating:	25 Amps	2, 7, 10, 15, 20, 25 and 30 Amps	80 Amps	80 Amps	150 Amps
Style/Voltage:	PC Mounted/AC	PCB Mounted/28 VDC	Stand Alone/28 VDC	Stand Alone/28 VDC	Stand Alone/28 VDC
Designed to:	MIL-R-28750	MIL-P-81653**	MIL-P-81653**	MIL-P-81653**	MIL-P-81653**
Electrical Data	P111	P150	P600-Air	P600-Ground	P700
Bias on (voltage):	32	4.5-5.5	4.5-5.5 or 16-33.5	4.5-5.5	16-33.5
Control on (voltage):	2.4 min. (TTL)	2.4 min. (TTL)	16-32	TTL/CMOS	16-32
Status Output Type:	—	Load Current + Trip	Load Current + Trip + RCCB	Load Current + Trip	Load Current + Trip + RCCB
Typical Operate Time (ms):	Zero Voltage	0.2	1	1	1
Full Load Voltage Drop	1000	100	100	100	100
Environmental Data	P111	P150	P600-Air	P600-Ground	P700
Operating temperature (°C):	-25 to +70*	-55 to +125* (Derated from +105)	-40 to +70	-31 to +71	-55 to +90*
Vibration (G):	—	20	5 (5-500 Hz)	5 (5-500 Hz)	4.12 (10-2000 Hz)
Shock (G):	1500	1500	30	30	12
Acceleration (G):	5000	5000	10	10	10
Seal:	Hermetic	Hermetic	Hermetic	Hermetic (Internal module)	Hermetic (Internal module)
Mechanical Data	P111	P150	P600-Air	P600-Ground	P700
Weight, max. (grams):	75	65	500	454	500
Dimensions, max. (mm): (L x W x H)	69.8 x 34.1 x 10.2	69.6 x 34 x 9.7	95 x 84.5 x 75	95 x 79.5 x 76.2	96 x 80 x 36

* Derated according to rating from 70°C at full load. ** MIL-P-81653 was cancelled in 1997.

Leach Sales Offices

North America

California

6900 Orangethorpe Avenue
P.O. Box 5032
Buena Park, CA 90622-5032
Phone: (714) 736-7599
Fax: (714) 670-1145

Georgia

P.O. Box 1600
Richmond Hill, GA 31324-1600
Phone: (912) 961-7542
Fax: (912) 961-7872

New York

80 Orville Drive, Suite 100
Bohemia, NY 11716
Phone: (631) 244-1490
Fax: (631) 244-1487

Texas

P.O. Box 74514
Dallas, TX 75374-2514
Phone: (972) 387-9277
Fax: (972) 387-9779

Washington

14925 S.E. Allen Road, Suite 201B
Bellevue, WA 98006
Phone: (425) 746-7263
Fax: (425) 747-5337

International

France

2 Rue Goethe
F-57430 Sarralbe
France
Phone: +33 (0)3 87 97 98 97
Fax: +33 (0)3 87 97 84 04

Germany

Hofer Strasse 5
D-86720 Nördlingen
Phone: +49 (0)90 81 8000
Fax: +49 (0)90 81 8000 103

Hong Kong

20/Fir. Flat A
Shing Hing Commercial Building
21-27 Wing Kut St.
Central, Hong Kong
Phone: +852-2191-3830
Fax: +852-2389-5803

LEACH[®] INTERNATIONAL

Solutions for Power Switching and Control

Leach International
Europe S.A.

2 Rue Goethe
F-57430 Sarralbe
France

Leach International
North America

6900 Orangethorpe Avenue
P.O. Box 5032
Buena Park, CA 90622-5032
USA

Leach International
Asia-Pacific Ltd.

20/F, Flat A
Shing Hing Commercial
Building
21-27, Wing Kut St.
Central, Hong Kong

www.leachintl.com