

EVERYTHING IN A NEW LIGHT.

erkinElmer's Triggered Spark Gaps are a family of versatile high voltage switches. They consist of three electrodes in a hermetically sealed, pressurized ceramic envelope. Triggered Spark Gaps are generally characterized by a peak current capability of thousands to tens of thousands of amperes, delay times of tens of nanoseconds, arc resistance of tens of milliohms and inductance of 5 to 30 nanohenries. They are suitable for capacitor switching applications such as flashlamps, electrically pumped gas lasers, medical lithotripters, and as crowbar protection devices.

Triggered Spark Gaps Ceramic-Metal



Features

- Fast switching operation
- High voltage holdoff
- Ceramic-metal construction
- No warm up period
- High current capability
- Long life



| Triggorod | Spork | Con | Datinga |
|-----------|-------|-----|---------|
| Triggered | Spark | Gap | каннуз |

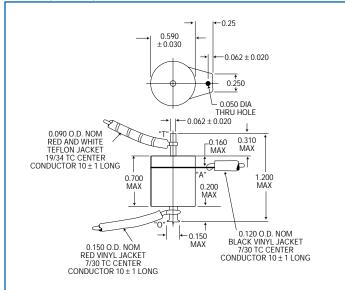
| PerkinElmer Model Min/Max | | ge, kV | , | V _T Min Trig (kV Open | | Recommended PerkinElmer | ecommended * when opera | elay Time* ted in mode A econds) | Simultaneous Ratings Crowbar Service, Typical Life: | Simultaneous Ratings Repetitive Switching Typical Life: |
|------------------------------|---------|--------|------------------|----------------------------------------|----------------------|----------------------------|---------------------------------|----------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------|
| No. (1,10) SBV, kV | Circuit | Mode | Mode Transformer | At 70% SBV | At 40% SBV | 5000-20,000 Shots | 1-5 Million Shots | | | |
| | (2) | (3) | (4) | (5) | | (6, 7) | | | (11) | (11) |
| GP-89 | 0.7 | 2.1 | 2.6 | - 10 | С | TR-148A | | | | |
| GP-90 | 1.3 | 3.4 | 4.2 | | С | 1R-148A 100 | 1000 | 5 kA peak | 3 millicoulombs/shot | |
| GP-91 | 4.4 | 10 | 12.5 | | A,C | TR-180B | 100 | 1000 | 0.1 coulomb | lb = 35 mAdc |
| GP-93 | 8 | 20 | 25 | | A, C | | | | | lp = 6 Aac |
| GP-82B | 0.4 | 1.6 | 2 | A,B | | TR-148A | 20 | 200 | | |
| GP-31B | 2 | 6 | 7.5 | 10 | A TR-180B | 7.5 kA peak | | | 4 millicoulombs/shot | |
| GP-20B | 3.5 | 11 | 14 | | | TR-180B | 30 | 300 | 0.2 coulomb | lb = 60 mAdc |
| GP-46B | 8 | 20 | 25 | | | | | | | lp = 8 Aac |
| GP-85 | 2 | 6 | 8 | 20 A,B | A,B | TR-1795 | TR-1795 TR-180B 30 TR1700 | 300 | | |
| GP-86 | 6 | 15 | 20 | | A TR-180E | | | | 25 kA peak | 4 millicoulombs/shot |
| GP-87 | 10 | 24 | 30 | | | | | | 0.4 coulomb | lb = 100 mAdc |
| GP-70 | 12 | 36 | 42(8) | | | | | | | lp = 10 Aac |
| GP-30B | 2 | 6 | 7.5 | | A,B | | | | | |
| GP-22B | 6 | 15 | 19 | 20 | TR-1795 A TR-1700 | 30 | 300 | 50 kA peak | | |
| GP-12B | 10 | 24 | 30 | | | | 30 | 300 | 0.5 coulomb | |
| GP-14B | 12 | 36 | 42(8) | | | | | | | 10 millicoulombs/shot |
| GP-41B | 12 | 36 | 42 | 20 | A,B | TR-1795 | | 30 300 | kA and charge transfer | lb = 200 mAdc |
| GP-32B | 20 | 48 | 60(8) | | A TR-1700 | | 30 | | | lp = 15 Aac |
| GP-15B | 25 | 60 | 86(8) | | | | | | up to 5 coulombs are obtainable at reduced | |
| GP-74B | 40 | 100 | 120(8) | 20 | TR-1795 | TR-1795 | 30 | 300 | life (100-1000 shots). | |
| GP-81B | 40 | 100 | 120(9) | 20 | ~ | TR-1700 | | | , | |

Notes

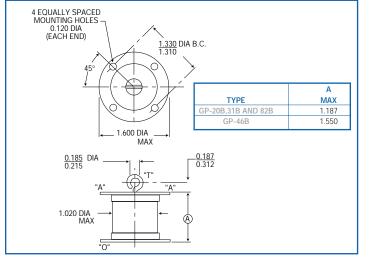
- 1. Optimum operating voltage is typically 60 to 80% of SBV.
- 2. Operation below minimum value may result in erratic firing over time.
- 3. Operation at this value may result in self-firing over time.
- 4. Represents minimum main-gap breakdown voltage with no trigger applied.
- 5. Value shown contains safety factor for end-of-life requirements.
- 6. PerkinElmer TM-11A Trigger Module can be used to trigger all gaps.
- 7. Transformers listed vary mechanically and electrically. See PerkinElmer Transformer Data Sheet.

- 8. These units must be operated in a liquid or gas dielectric to prevent external flashover: GP-70 and GP-14B, above 24 kV; GP-32B and GP-15B, above 35 kV; GP-74B and GP-81B, above 60 kV.
- 9. Designed for high altitude, high holdoff conditions.
- 10. Other voltage ranges and mechanical configurations are available on request; for example, the GP-20B can be supplied with a 6 to 16 kV operating range by specifying GP-20B-20. The 20 would be the SBV and E-E maximum would be 80% of SBV = 16kV.
- **11.** E = Stored energy in joules $(\frac{1}{2}CV^2)$, lb = average current in amperes, Ip = RMS current in amperes, R = total circuit resistance in ohms, P = average power in watts.

GP-89, GP-90, GP-91 AND GP-93



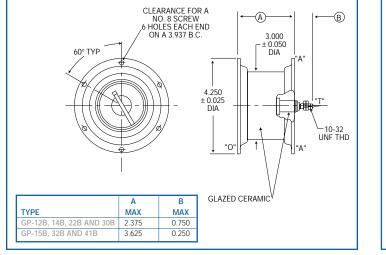
GP-20B, GP-31B, GP-46B, AND GP-82B



CLEARANCE FOR A NO. 8 SCREW 4 HOLES EACH END 3.0 MAX ON A 2.575 B.C 2.250 MAX 1 780 REF $90^{\circ} \pm 1^{\circ}$ 3.0 MAX DIA "Т" — 10-32 UNF THD "0' "Δ CERAMIC BODY 2.000 ± 0.010 DIA

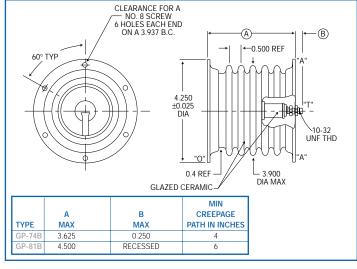
GP-70, GP-85, GP-86, AND GP-87

GP-12B, GP-14B, GP-15B, GP-22B, GP-30B, GP-32B AND GP-41B



"A" = ADJACENT ELECTRODE.

GP-74B and GP-81B



"T" = TRIGGER PROBE

Note: Dimensions in inches

"O" = OPPOSITE ELECTRODE,

All data and specifications subject to change without notice.



| Environmental Specifications | |
|--------------------------------|------------------------------|
| Ambient temperature range | |
| Operating temperature range | -54 to +100°C |
| Nonoperating temperature range | -65 to +125°C |
| Vibration | 15 to 500 Hz at 10 g maximum |
| Shock | 50 g, 11 milliseconds |
| Thermal Shock | -65 to +125°C |

| Electrical Specifications | |
|---------------------------|----------------------------------------------|
| Electrode capacity | Less than 5 pf. |
| Interelectrode resistance | Greater than 10 ¹⁰ ohms at 500 V. |

| Mechanical Specification | ns |
|--------------------------|------------------------------------------------------------------------|
| Envelope | Ceramic-metal, hermetically sealed, exposed metal parts nickel plated. |
| Torque applied to studs | 6 inch-pounds maximum. |

Marking

PerkinElmer's trademark, part designation, and date code.

PerkinElmer welcomes inquiries about special types. We would be pleased to discuss the requirements of your application and the feasibility of designing a type specifically suited to your needs.

Our Quality and Environmental Policy

"Our goal is to supply our customers the agreed quantity of specified products and services, defect free and on time while conducting business in an environmentally responsible manner"

* All values are nominal; specifications subject to change without notice.

To request additional information, receive a quote, or place an order, please contact PerkinElmer Optoelectronics at office listed below.



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