

CAPABILITIES OVERVIEW

Design, build, and qualify custom **high-voltage interconnect** — in one house, since 1973

Caton engineers and manufactures custom high-voltage cable assemblies and connectors. Cable, connector, termination, and overmold are designed as one dielectric system, built on in-house molding and assembly, and qualified on our own high-voltage test benches — so design intent, process, and test data stay tightly connected from first article to production.

What we do in-house

Engineering · manufacturing · test

ENGINEERING & DESIGN

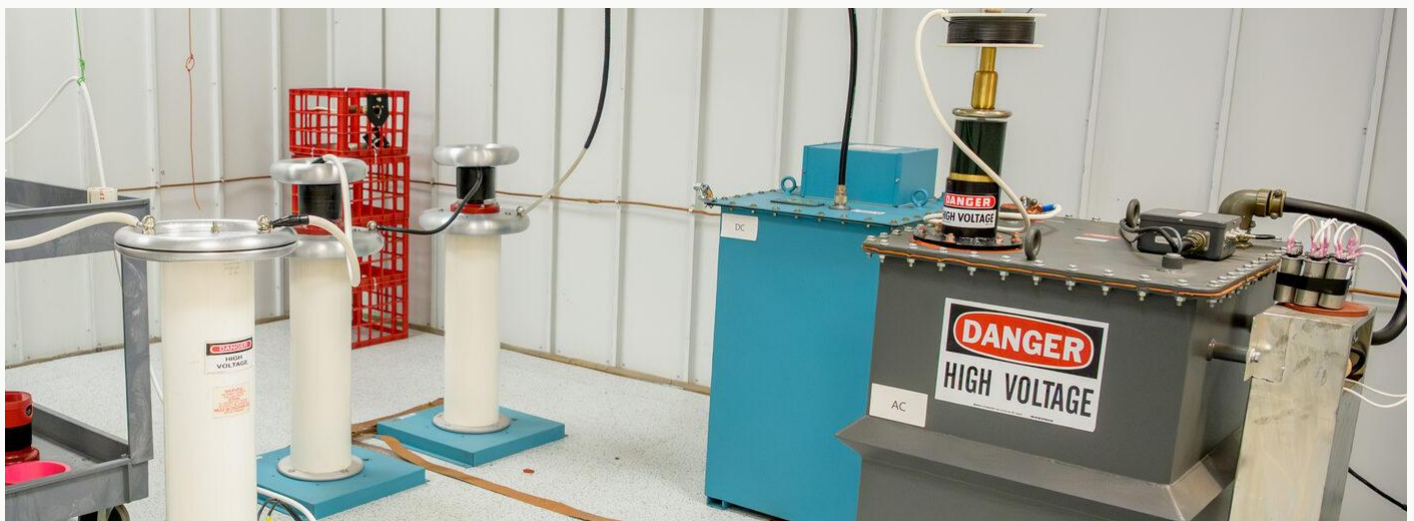
- **Full-interconnect design** — cable, connector, termination, and overmold as one dielectric system
- **Electrostatic field / FEA modeling** in Electro V10.2 to manage field stress and corona inception
- **Prototype & NRE development**, from requirement to qualified design
- **Design-for-manufacture** and dielectric / material selection
- **Re-engineering** of obsolete or unsupported HV interconnect

MANUFACTURING

- **Overmolding** (in-house)
- **Insert molding** (in-house)
- **Potting / encapsulation** (in-house)
- **Cable, harness & connector assembly** and termination
- HV conductors **through 2/0 (00) AWG**; cable OD to ~2 in, with custom methods for larger
- Materials: **silicone, PTFE** (incl. silicone-coated), **XLPE** — silicone preferred for its bond to our moldings and HV flexibility

TEST & QUALIFICATION

- **Corona / partial discharge** — actual CIV measured; corona cages to **100 kVDC**; PD acceptance as strict as **≤ 5.0 pC at 20 kV RMS**
- **Hi-pot / dielectric withstand** to **65 kVDC** (production-line cages)
- **Thermal cycling** in subzero-capable temperature chambers
- **Altitude to 70,000 ft** — designed to requirement; testing via qualified partners



IN-HOUSE HIGH-VOLTAGE TEST LAB — KINGSTON, MASSACHUSETTS

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STANDARD PRODUCT FAMILIES

FAMILY	VOLTAGE RANGE	TYPICAL APPLICATION
14 Series	10–50 kVDC	Compact single-conductor HV for instrumentation, power supplies & test systems
16 Series	5–50 kVDC	Multi-conductor & hybrid power-and-signal; adaptable across industries
17 Series	10–60 kVDC	Mechanically robust shielded single-conductor for aerospace & industrial — vibration, mechanical stress, EMI
19 Series	to 60 kVDC / 20 kV RMS	Designed for applications where corona inception is the primary constraint
HV Wire	5–30 kV AC / 10–80 kV DC	High-voltage silicone wire with semi-conductive corona control, compatible with Caton connector platforms and most silicone encapsulation systems. 8–22 AWG · silicone insulation

Standard families are proven starting points — see the individual Series datasheets for full ratings.

Custom & engineered-to-order

Most of what we build

The majority of Caton programs are engineered to the customer's requirement, not pulled from a catalog. The high-voltage interconnect is designed around your voltage, environment, geometry, and interfaces — then qualified to your specification.

New platform

Clean-sheet HV interconnect designed to a new requirement, from concept through qualification.

Adaptation

A standard family reworked for your voltage, envelope, connector interface, or environment.

Qualification recovery

Re-engineering an interconnect that fell short on corona, hi-pot, or environmental test.

Sustainment & obsolescence

Re-creating fielded or obsolete interconnect that is no longer supported.

Markets served

Where our interconnect ships

Defense — airborne, naval, ground, EW • **Semiconductor** — implant, inspection, metrology, deposition • **Aerospace** — flight & high-altitude
Medical — imaging, therapy, accelerator • **Scientific & Research** — accelerators, plasma, fusion • **Industrial Power & Test** — HV supplies & test sets

Quality, standards & registrations

Built to spec, recorded, traceable

AS9100 QMS (includes ISO 9001)	ITAR Registered — DDTC	CMMC Compliant	AS5553 Counterfeit part control
CAGE 52196 U.S. contractor code			

Workmanship: IPC J-STD-001 (soldering) & IPC/WHMA-A-620 (cable & wire harness) — Certified IPC Trainers (CIT) on staff for both, training assemblers in-house
Test & analysis referenced to: IEC 60270 (PD) · IEEE 400.3-2022 · IEEE Std 98-2016 · NASA-HDBK-4007A
Continuous improvement: leaders trained in the Shingo Model · first-article inspection · full material, process & test records

TALK TO ENGINEERING

Send us your requirement

Voltage, environment, geometry, lifecycle — we'll route it to the right engineer. Your design engineer talks to our design engineer.

SALES

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