

Rugged Keypad



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Product Summary: Compact Rugged Keyboard

The Cortron Rugged Keypad offers Cortron's ultra-reliability, and quality in a variety of shapes and sizes to meet your particular keypad requirements.

The product is virtually impervious to contaminants found in the harshest applications, both in and out of shelters. Vital electronics and switch bearing surfaces are sealed for long-term survival and protection against water, beverages, sand, dust, dirt, and many chemicals. Units can be cleaned in the sink with soap and hot water or hosed down in the field. Cortron keypads are designed and manufactured for reliable trouble-free operation in life dependent applications typical of shipboard, airborne, ground mobile, and severe industrial applications.

Cortron keypad key layout and design, like all Cortron keyboards is designed to reduce the stress and strain on end users. High contrast non-backlit and negative image (white on dark) keys with backlighting options provide high visibility in nearly all applications. The sculptured, full travel key switches have been ergonomically positioned for optimal typing and high speed data entry.

Many options and configurations are available – mounting options include table top (with or without feet for bolt down applications) or mounting flange for top panel installation. Different models with different keys, with and without key guards, different key layouts and other options are all available. Keypads can act as standalone devices or connected through a keyboard to connect up to the host system.



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Rugged Keypad

Product Features

Cortron products are designed with the user in mind. You get rugged, sealed products that can be used every day. Ruggedization is not just an 'afterthought' – it's built in from the ground up. Install it today and depend on it for years. Rugged grade products typically include a limited *LIFETIME* warranty.

Cortron keypads are available in a number of layouts and feature (either standard or via selectable options):

Backlighting

Negative image legends (legends glow) and key brightness control available

Backlighting colors: green, red, yellow, white, blue, NVIS Green A or B

Low power backlighting, no extra power needed, plug compatible to typical host ports

Keys, Key Caps and Legends

Cortron ForEver keys / legends are chemically and abrasion resistant

Key legends: Standard USA layout or per customer request

Custom keycap legends and Multi color keys available

High speed data entry, N-Key rollover (easy to type ergonomic keys)

Full-Travel, solid state switches with electronically controlled debounce

Interfaces

USB, SUN USB, PS2, other interfaces upon request

Enclosures

Durable metal enclosure with scratch resistant finish

Panel mount and custom modifications available upon request

Enclosure Colors: Standard are black, Navy gray, Army green, and off-white; Custom colors are available upon request

Cables (optional)

Various lengths, USB (Type A single or pair), PS2 (6 pin Mini DIN), or per customer request

Pointing Devices

Various options available, including 1 3/8" or 2" Trackballs, Puck pointing device, or none

Environmental Protections & Performance

Sealed rain proof, spill proof/sand and dust proof (IP65 and MIL-STD-810) construction

EMI/RFI/ESD/EMP shielded and protected for critical applications

Optional Extreme High Shock Protection (+100gs): Includes shock sensing (Stop Codes) and keycap clips as well as other options



Panel Mount KP19



Table Top Model KP24 with 2" Duratrackball

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Rugged Keypad
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Rev C

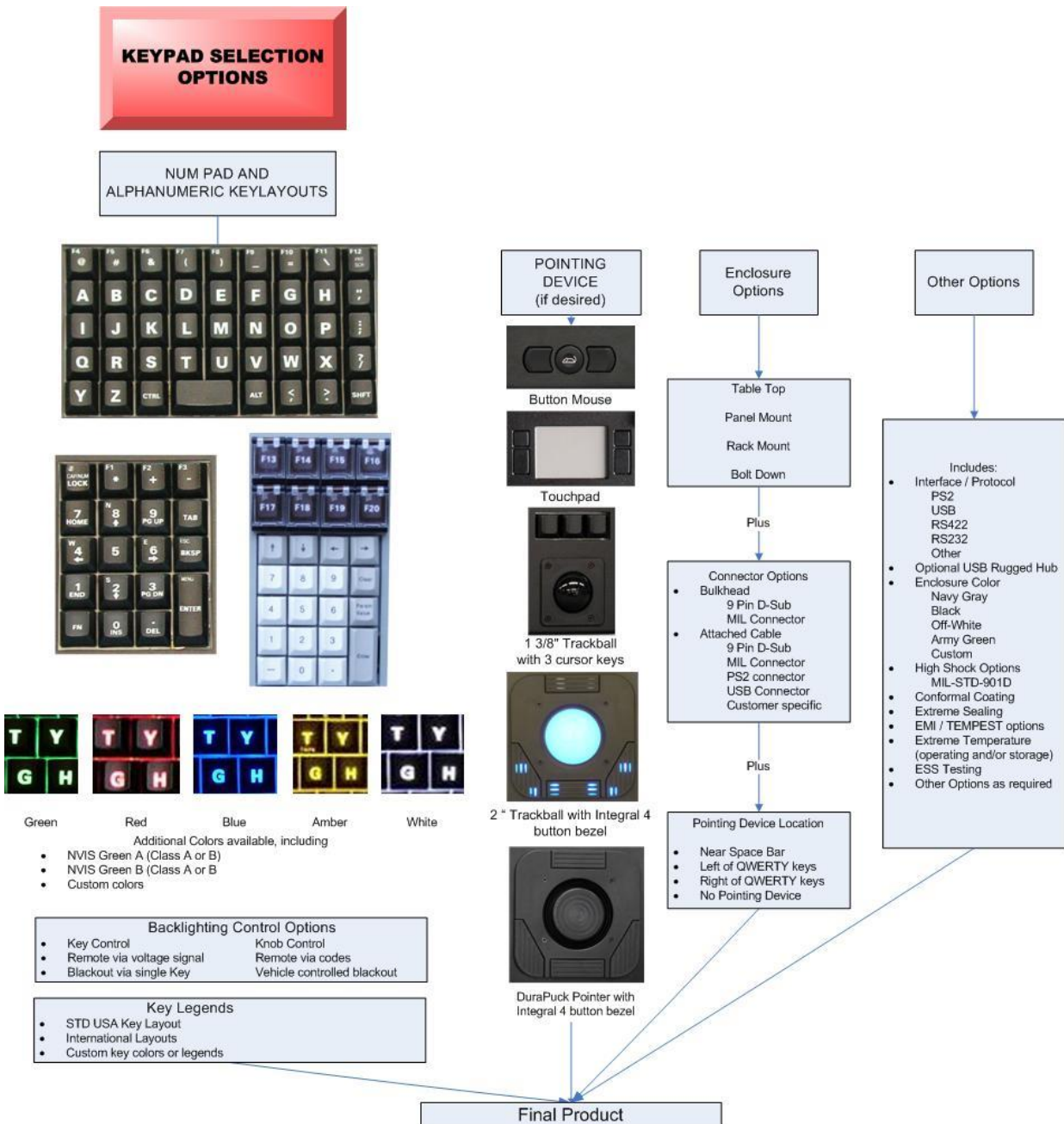
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Product Options

Get What YOU want for YOUR project. With the modular nature of our product options, Cortron will build a keyboard to meet **your** project requirements while still being COTS. With over 1900 active part numbers, there's a good chance that Cortron has already built a product similar to what you are looking for. And if we haven't, we're happy to work with you to make a new version that will meet your application requirements. Contact us today to get a keyboard that meets **your** needs!



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Rugged Grade Keyboard Specifications

Cortron Rugged Keyboard Products have been designed and manufactured to meet the following commercial and military environmental specifications. Optional specifications are only installed upon request by customer.

Size: Varies depending on options selected, see Cortron detailed mechanical drawing prefixed with EMK.

Weight: Varies depending on installed options

MTBF: Keyboard:

200,000-300,000 hours, typical, 25°C Ground Benign, MIL-HDBK-217, depending on installed options, see TM-389 for additional information.

MTBF: Trackball:

100,000-200,000 hours, typical, 25°C Ground Benign, MIL-HDBK-217, depending on installed options, see TM-336 for additional information.

Ergonomics: MIL-STD-1472, MOPP IV

Switches, Keyboards: Full-Travel, 100 million cycles

Switches, Pointing Devices: 5 to 100 million cycles, dependent on device and installed options

Switch Spacing: 0.75" OC (on center), typical

Power, Input: Logic +5VDC @ 250mA or less depending on installed options

Power, Input, Low Power Backlighting (Optional): Unless specified by customer, combined keyboard logic and backlighting not to exceed + 5VDC @ 450mA Max., powered from keyboard and/or trackball ports. Max current can be tailored per customer specification.

Power, Input (Optional): +24 to +28VDC, MIL-STD-704

Temperature:

Operating: -20°C to +70°C Non-operating: -40°C to +70°C

Temperature, Extended (Optional):

Operating: -40°C to +71°C Non-operating: -55°C to +85°C

Thermal Shock (Optional): Operating: -40°C to +71°C, Non-operating: -55°C to +85°C; transition less than 1 minute

Humidity: 0-95% RH, non-condensing

Humidity (Optional): 0-100% RH, condensing

Humidity / Corrosion, Operational (Optional): IEC60945: 4 cycles of 2hrs salt spray, 168hrs thermal soak +20-+40C.

Salt Fog (Optional): MIL-STD-810 (24, 48 or 96 hours)

Rain/Spill/Drip/Fire Sprinkler: MIL-STD-810/108 15° inclination or (Optional) 45° inclination

Water Jet Cleaning (Optional): 1500 PSI @ 20 inches

Sealing; Liquid/Dust Ingress Protection: NEMA 4 & IP65

Sealing; Liquid/Dust Ingress Protection (Optional): NEMA 6 & IP66, or IP67

Submersion (Optional): MIL-STD-810, 1m, Contact Cortron

Sand/Dust: MIL-STD-810

Shock: MIL-STD-810, +30g

Shock (Optional): MIL-STD-901D, Grade A Class I, Type A

Acceleration: MIL-STD-810 ranges 1.5-6.5g

Crash Safety: MIL-STD-810 ranges 4-16g

Vibration: MIL-STD-810, 20-2000Hz

+6db/Octave 20Hz -70Hz;

0.01G²/Hz 70Hz -700Hz

-6db/Octave 700-2,000Hz

Vibration (Optional): MIL-STD-810, 20-2000Hz

+6db/Octave 20Hz -70Hz;

0.04G²/Hz 70Hz -700Hz

-6db/Octave 700-2,000Hz

EMI / RFI: Designed to meet MIL-STD-461, CE, IEC60945 and FCC regulations

Nuclear Survivability / Vulnerability (S/V):

Contact Cortron.

EMP / HEMP: Contact Cortron

ESD: EN61000-4-2, 6kV Contact Discharge, 8kV Air Discharge

ESD (Optional): DO-160, 18kV

TEMPEST (Optional): Contact Cortron; Level I or II, Red-Black

Altitude: +40,000 feet

Explosive Atmosphere: MIL-STD-810, Intrinsically Safe

Decompression:

MIL-STD-810 11psia to 3psia in greater than 15 seconds

Decompression, Rapid (Optional):

MIL-STD-810 11psia to 3psia in less than 4 seconds

Decompression, Explosive (Optional):

MIL-STD-810 11psia to 3psia in less than 0.5 seconds

Compass Safety (Optional): IEC60945

Solar Radiation: MIL-STD-810

Fluids (chemical) Resistance (Optional): MIL-STD-810

NBC Decontamination (Optional): Contact Cortron

Fungus (Optional): MIL-STD-810

Bench Handling: MIL-STD-810

Safety: MIL-HDBK-454, UL1950, CE, materials UL recognized/approved, File #E179526

Workmanship: MIL-STD-454, IPC-610, Class 2

Workmanship (Optional):

IPC-610 Class 3 or J-STD001 Class 2 or 3

NOTES:

1. Above specifications (Cortron TE10212601 Rev A3) subject to change without notice unless otherwise under written agreement.
2. Performance levels stated above are based on actual test results from many product tests using common Cortron standard design practices, components and modules.
3. Specifications noted above are assumed to be latest revisions. Cortron test data may be originated from older test specification revisions. Some tests performed by customers so Cortron may not have all test reports available.
4. Excessive spill, rain, salt fog or humidity, desire for product to survive for 10-20 years, or mitigate against RoHS tin whiskers may require optional conformal coating.
5. Performance levels may be dependent upon mounting configuration and options installed.
6. Optional performance levels must be requested by customer, standard Cortron products may not have extra performance capability installed, and may be configuration dependent.
7. All options and features may not be ready for immediate shipment depending on product version, contact Cortron for additional information.
8. Some options and features and combinations thereof may not meet all listed specifications without limitations or exceptions.
9. Unless specified otherwise, all products are compliant to DFARS 252.225-7014 Specialty Metals, Berry Amendment.
10. Prohibited materials: unless otherwise stated please assume Cortron products contain materials as listed on TM-334, available upon request. If customer requirement includes flow down of prohibited materials, please provide information for review by Cortron.
11. RoHS: Cortron is in process of migrating all standard product designs and materials to RoHS compliance. All plastics, standard enclosure case finishes, and standard electrical components used in Cortron products are RoHS compliant. As of 2014, unless specified otherwise, products may use lead based solder on electronic assemblies. Full RoHS compliant versions available upon request.

Please do not hesitate to contact Cortron for application assistance or if additional information is required.