CTI **E L E C T R O N I C S**
An Affiliate of **ELECTRO SWITCH**

M7000-Nx Series

uCTI-Pod™ UNIVERSAL INDUSTRIAL JOYSTICK CONTROLLER

M7000-Nx SERIES OPERATOR CONTROL MODULE

CTI's uCTI-Pod™ or Universal Industrial Joystick Controller is a hardened, lightweight, mobile operator control module that has versatile functions such as a joystick motion controller, mouse cursor pointer, and keyboard/keypad. The joystick is configured as a motion controller with absolute positioning. The patented button style Orbital Mouse® technology will function as a relative mouse pointing device. A set of four button and six button sub-assemblies provide keyboard or keypad F-Key functions or momentary switch selection functionality. Combinations of keyboard functions and switching control can be tailored to meet specific application requirements. And for those applications requiring a rapid change of viewpoint, a four way "point of view" or "hat-switch" control is available.

The NEMA 4X (IP 66) sealed aluminum enclosure has been ruggedized to withstand heavy handedness and/or rough usage under extreme environmental conditions. Its robust design is intended for critical applications requiring high durability, and high reliability while operating under extreme temperatures, exposure to harsh climate and/or solid, liquid contaminants. It's well protected against high vibration, EMI/RFI signals, and a dual purpose carry handle/crash bar for in-field mobile situations. Or, the bottom plate is securable to a surface via stainless steel threaded inserts with an alternative cable bar protector. In mobile applications, the design allows for quick connect/disconnect of cabling, efficient storage of the uCTI-Pod™ and shielded cable. In low-level lighting situations, an intuitive light control switch provides 10 levels of illumination.

The uCTI-Pod™ is the operator control module for military, commercial, public sector applications like Unmanned Vehicle Systems such as UAV, UGV, USV, UUV Control, and Video Surveillance Systems such as Pan-Tilt-Zoom (PTZ) Camera System Control or Closed Circuit Television (CCTV) Control. Customizable, the uCTI-Pod™ offers a single or dual port USB or a single port RS-422/RS-485 communication interface. Modular sub-assemblies offer mouse, switch, or keypad functionality and illumination by light emitting diodes (LEDs). And, two axes or three axes joysticks for motion control via a USB HID Compliant Game Control signal or a RS-422/RS-485 serial signal.

• Pictured with N84 Joystick, Switchpad (S1-S6) and Hat Swtich

M7000-Nx STANDARD FEATURES

• NEMA 4X(IP66) Aluminum Enclosure with 4 mounting inserts on bottom plate
• Operating Temperature -40°C to 80°C (-40°F to 176°F)
• Inductive Joysticks and Sub-Assemblies with high reliability and durability (MTBF 100,000+ hours, 10,000,000+ deflections)
• Molded rubber elastomer keys rated for 10 million cycles
• Silicone Conductive Boot (EMI/RFI Protection)
• Joystick movement is Spring Return to Center
• Conformal Coating of PCB protects against condensation or humidity
• Syn-Proof™ coated elastomer protects against harsh oils and chemicals
• USB Output Signal has 8 bits of precision
• 10 foot shielded USB Disconnect Cable with Standard USB "A" Plug
• RS-232/RS-485 Output Signal has 10 bits of precision
• Closed Foam Cushion Padding for reduced hand fatigue
• Crash Bar/Carrying Handle for N33, N34, and N84 models
• Cable Bar (protects cable and connector) for N24 and N3 models

M7000-Nx JOYSTICK KNOB OPTIONS

N24   N3   N33   N34   N84

M7000-Nx MAJOR CONFIGURABLE FUNCTIONAL DEVICES

USB Game Controller (Joystick, Hat Switch, plus Switch buttons)
USB Composite Device (Joystick plus Keyboard Function Keys)
USB Composite Device (Joystick, Keyboard Function Keys, plus Orbital Mouse®)
Combination USB Game Controller and USB Composite Device (Keyboard Function Keys, Orbital Mouse®)
RS-422 / RS-485 Motion Controller (Joystick, Hat Switch, plus Switch Buttons)
RS-422 / RS-485 Motion Controller (Joystick, Keyboard Function Keys, Orbital Mouse®)
Combination RS-422 / RS-485 Motion Controller, Orbital Mouse®, and Switch Buttons
*For complete ordering information please contact CTI Electronics Corporation

M7000-Nx KEYPAD SWITCHPAD SUB-ASSEMBLY OPTIONS

F13-F16   F17-F20   F21-F24   F13-F18   F19-F24   Hat Switch

S1-S4   S5-S7   S9-S11   S1-S6   S7-S12   Orbital Mouse®

M7000-Nx TECHNICAL DRAWINGS

761834	uCTI-Pod™ M7000-N33 Technical Drawing (USB HID)
761835	uCTI-Pod™ M7000-N34 Technical Drawing (USB HID)
761836	uCTI-Pod™ M7000-N84 Technical Drawing (USB HID)
761837	uCTI-Pod™ M7000-N84 Technical Drawing (RS422/RS485)
	uCTI-Pod™ M7000-N24 Technical Drawing (USB HID)
	uCTI-Pod™ M7000-N3 Technical Drawing (USB HID)

(vertical side text) performance   durability   reliability

CTI ELECTRONICS
An Affiliate of ELECTRO SWITCH

performance

M7000-Nx Series
uCTI-Pod™ UNIVERSAL INDUSTRIAL JOYSTICK CONTROLLER

uCTI-Pod™ SPECIFICATION — Preliminary Data

Overall Dimensions	Crash Bar	Width: 6.75" (17.15cm)	Height: 6.3" (16.00cm)	Depth: 8.5" (21.60cm)
	Cable Bar	Width: 6.75" (17.15cm)	Height: 2.6" (6.60cm)	Depth: 10.5" (26.68cm)
Enclosure	Iridited Aluminum with Black Powder Coating			
Operating Systems	Microsoft Windows® Operating System (Windows XP, Windows 7, Windows 8)			
	Mac OS X® or Linux OS requires compliant USB Device Class Definition for Human Interface Devices 1.11			
Mounting Capability	4 Threaded Stainless Steel Inserts on bottom plate			
Closed Foam Padding	Top and bottom cushioning for operator comfort			

uCTI-Pod™ ELECTRICAL SPECIFICATION — Preliminary Data

MTBF	Greater than 100,000 hours		
USB Interfaces	USB Single Port		USB Dual Port
Serial Interfaces	RS422 ANSI TIA/EIA-422	RS485 ANSI TIA/EIA-485	RS232 ANSI TIA/EIA-232 (Special Order)
Output Precision	USB 8-Bits		Serial 10-Bits
Cabling	USB 10ft Disconnectable Cable (S7S009-P0743)		Serial use mating plug to MIL Socket D38999/20WB5SN
Illumination	USB (ON/OFF with 10 levels)	Serial (Progammable)	Colors Red, Green, Other (Special Order)

uCTI-Pod™ MECHANICAL SPECIFICATION — Preliminary Data

N84 Specifications	Knob Type Non-Pushbutton	Axes Three Axes	Sensor Technology Inductive / Potentiometer
N34 Specifications	Knob Type Dual Pushbutton	Axes Dual or Three Axes	Sensor Technology Inductive / Momentary Switch
N3 / N33 Specifications	Knob Type Pushbutton	Axes Single or Dual Axes	Sensor Technology Inductive / Momentary Switch
N24 Specifications	Knob Type Non-Pushbutton	Axes Single or Dual Axes	Sensor Technology Inductive
Life Expectancy	X, Y, & Z Axes 10,000,000 random deflections		Momentary Switch 1,000,000+ cycles
Joystick Movement	X & Y Axes Spring Return to Center		Z Axis N84 (Spring Return to Center)
N3, N33, N34 Swtich Movement	Normally Open Momentary Swtich		
Joystick Operational Force	X & Y Breakout Force 140g (typical)		X & Y Full Scale Force 235g (typical)
Shock	Peak Value 30g (typical)	Peak Duration 11ms	Waveform Half Sine
Vibration	Frequency / Displacement	5-25 Hz / 0.1" (typical)	25-55 Hz / 0.03" (typical)

durability

uCTI-Pod™ ENVIRONMENTAL SPECIFICATION

Operating Temperature	-40º to 80º C / -40º to 176º F	
Storage Temperature	-40º to 80º C / -40º to 176º F	
Relative Humidity	100% condensing	
Sealing Rating	NEMA 4X (IP66)	
Elastomer Protection	SynProof™ Coating resists most oils and harsh chemicals	Parylene Coating (Special Order)

CONFORMANCE / CERTIFICATIONS / COMPLIANCE — subject to manufacturing options applied

U.S.A. Standards	U.S. FCC 47 CFR 15 Class A & B	RF Emissions Compliant 8Kv (Contact), 15Kv (Air)
	MIL-STD-461F	Radiated Emissions and Susceptibility Conformance
	MIL-STD-810G	Protection against humidity, fungus, and salt spray Conformance
	MIL-STD-901D	Protection against shock Conformance
	MIL-STD-167-1	Protection against vibration Conformance
	MIL-STD-1472G	Human Factors Conformance
	MIL-I-45208	Quality System Conformance
	IPC-A-610 II	Acceptability of Electronics Assemblies Certification
European Standards	"CE" Compliant	
	Restriction of Hazardous Substance (RoHS) Directive Compliant	
	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Directive Compliant	
International Standards	IEC 61000-4-2 and EN61000-4-2	ESD 8Kv contact and 15Kv air Conformance
	IEC 61000-4-3 and EN61000-4-3	Radiated Emissions and Susceptibility Conformance
	IEC 61000-6-3 and EN61000-6-3	Electromagnetic Compatibility Conformance

reliability

08-2016

110 Old South Avenue Stratford, CT 06615 U.S.A. | Tel +1 203-386-9779 | Fax +1 203-378-4986 | sales@ctielectronics.com
www.ctielectronics.com