KV-NC32T

Base unit 32-point type Input: 16 points, output: 16 points

*Please note that accessories depicted in the image are for illustrative purposes only and may not be included with the product.

Specifications

Model				KV-NC32T
General specifications	Power voltage			24 VDC (+10%/-15%)
	Operating ambient temperature			0 to 55°C 32 to 131°F (no freezing)*1
	Operating ambient humidity			5 to 95% RH (no condensation)
	Operating environment			As little dust and corrosive gas as possible
	Noise immunity			1500 V peak-to-peak or more, pulse duration 1 μs, 50 ns (based on noise simulator) Conforms to IEC standards (IEC61000-4-2/3/4/6)
	Withstand voltage			1500 VAC for 1 minute, between power supply terminal and I/O terminals and between all external terminals and case (1000 VAC for 1 minute, between power supply terminal and output terminals for the transistor output type expansion I/O unit)
	Insulation resistance			50 MΩ or more (500 VDC megger used to perform measurements between power supply terminal and input terminals, and between all external terminals and case)
	Storage temperature			−25 to +75°C −13 to +167°F
	Vibration resistance	Intermittent vibration	Frequency: 5 to 9 Hz	Amplitude: 3.5 mm 0.14"*2
			Frequency: 9 to 150 Hz	Acceleration: 9.8 m/s² 32.2'/s²*2
		Continuous vibration	Frequency: 5 to 9 Hz	Amplitude: 1.75 mm 0.07"*2
			Frequency: 9 to 150 Hz	Acceleration: 4.9 m/s² 16.1'/s²*2
	Shock resistance			Acceleration: 150 m/s² 492.1'/s², application time: 11 ms, three times in each of the X, Y, and Z directions
	Operating altitude			2000 m 6561.7' or less
	Overvoltage category			I
	Pollution degree			2
Performance specifications	Calculation control method			Program storage method
	I/O control method			Refresh method
	Program language			Expanded ladder, KV Script, mnemonic
	Number of instructions			Basic instruction: 81 types and 182 instructions, Application instruction: 39 types and 56 instructions Calculation instruction: 123 types and 311 instructions, Expansion instruction: 92 types and 141 instructions Total: 335 types and 690 instructions
	Instruction execution speed			Basic instruction: 50 ns minimum, Application instruction: 170 ns minimum
	Program capacity			32k steps
	Maximum number of attachable I/O units			8
	Maximum number of I/O points			256

	Input relay/ Output relay/ Internal auxiliary relay	R	Total of 9600 points 1 bit (R000 to R59915)
	Link relay	B	8192 points 1 bit (B0 to B1FFF)
	Internal auxiliary relay	MR	9600 points 1 bit (MR000 to MR59915)
	Latch relay	LR	3200 points 1 bit (LR000 to LR19915)
	Control relay	CR	1440 points 1 bit (CR000 to CR8915)
	Timer	T	512 points 32 bits (T0 to T511)
	Counter	C	256 points 32 bits (C0 to C255)
	Data memory	DM	32768 points 16 bit (DM0 to DM32767)
	Link register	W	16384 points 16 bit (W0 to W3FFF)
	Temporary memory	TM	512 points 16 bit (TM0 to TM511)
	High-speed counter	CTH	3 points (CTH0 to CTH2) 32-bit automatic reset counter*3 (Input response: 100 kHz per single phase, 50 kHz per phase difference)*4
	High-speed counter comparator	CTC	6 points (CTC0 to CTC5) 32 bits, two points per high-speed counter
	Index register	Z	12 points 32 bit (Z01 to Z12)
	Control memory	CM	9000 points 16 bit (CM0 to CM8999)
	Positioning pulse output		3 axes Maximum output frequency: 100 kHz
	Base unit I/O		Input: 16 points output: 16 points Input common: 1 point Output common: 1 point
	Number of comments and labels that can be stored in the main unit	Device comment	20000 When a maximum-length ladder program is written with no labels.
		Label	28000 When a maximum-length ladder program is written with no device comments.
	Power off hold function	Program memory	Flash ROM can be rewritten 10000 times
		Device	Nonvolatile RAM*5
	Clock function		±60 seconds/month (at 25°C 77°F)
	Self-diagnosis function		CPU error, RAM error, and other problems
Input specifications	Relay number		General input: R000 to R009 (10 points), High-speed A-phase and B-phase input: R010 to R015 (6 points)
	Input mode		24 VDC input (open collector)
	Maximum input voltage		26.4 VDC
	Rated input voltage		24 VDC (General input: 5.3 mA, High-speed A-phase and B-phase input: 6.5 mA*6)
	Minimum ON voltage		19 VDC
	Maximum OFF current		1.5 mA
	Common method		All points/1 common (1 terminal)
	Circuit delay time		General input: OFF to ON: Max. 30 µs (Typ. 3.5 µs), ON to OFF: Max. 50 µs (Typ. 15 µs) High-speed A-phase and B-phase input: OFF to ON: Max. 2 µs (Typ. 1.1 µs), ON to OFF: Max. 2 µs (Typ. 0.3 µs) *7
	Input time constant		Normal: 10 ms, When the HSP instruction is used: 10 µs When CR2305 is turned ON: 10 µs to 10 ms, eight-level switching is possible (set with CM1620). Can also be set from the Unit Editor.*7
			Delay by input time constant

				Input time constant setting 10 µs: Digital filter 1.6 to 2 µs Input time constant setting 20 µs: Digital filter 9 to 12 µs Input time constant setting 110 µs: Digital filter 90 to 93 µs Input time constant setting 500 µs: Digital filter 300 to 400 µs Input time constant setting 1 ms: Digital filter 800 to 900 µs Input time constant setting 2.5 ms: Digital filter 2.3 to 2.4 ms Input time constant setting 5 ms: Digital filter 4.0 to 4.5 ms Input time constant setting 10 ms: Digital filter 9 to 9.5 ms
	Response frequency			(High-speed A-phase and B-phase input) Single phase: 100 kHz, phase difference: 50 kHz, 24 V ±10%, Duty 50%
Output specifications	Relay number			General output: R506 to R515 (10 points), High-speed output: R500 to R505 (6 points)
	Output mode			MOSFET (N-ch) output
	Rated load			30 VDC General output: 0.2 A (1.6 A/common), High-speed output: 0.3 A (1.6 A/common)
	Maximum OFF voltage			30 VDC
	Leakage current at OFF			100 µA or less
	Residual voltage at ON			0.6 VDC or less
	Common method			16 points/1 common
	ON/OFF response time			General output: OFF to ON: 100 µs (load of 1 mA or more), ON to OFF: 200 µs (load of 1 mA or more) High-speed output: OFF to ON: 2 µs (load of 7 mA or more), ON to OFF: 5 µs (load of 7 mA or more)
	Overcurrent protection			Protection provided for each common*8
	Output frequency			High-speed output: 100 kHz (7 to 100 mA load)
Built-in serial port	Interface	Communication standard		RS-232C
		Connection		Modular connector
	Transmission specifications RS-232C	Baud rate		1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps
		Transmission method		Full duplex
		Data format	Start bit	1 bit
			Data bits	7 bits, 8 bits
			Stop bits	1 bit, 2 bits
		Error detection	Parity	Even, odd, none
		Transmission distance		15 m 49.2'
		Number of transmission units		1
	Indication			Common between SD/RD SD: (green) RD: (red) The color may appear as orange during transmission.
Internal current consumption				260 mA
Weight				Approx. 220 g

*1 The temperature below the unit center (30 mm 1.18") inside a control panel.
*2 Conforms to JIS B 3502 and IEC61131-2. Scan times: 10 times (100 minutes) in each of the X, Y, and Z directions
*3 You can also configure the settings so that automatic reset is not used.
*4 Only open collectors are supported. Line drivers are not supported.
*5 You can set the target device by clicking “CPU system setting” and then “Power off holding” in KV STUDIO.
*6 Reference value of input current.
*7 The input response time corresponding to the input time constant can be calculated as shown below.
(Response time) = (Circuit delay of the input circuit) + (Delay by the digital filter)
Example: Maximum response time when the input time constant is set to 10 µs
OFF to ON: 2 µs (circuit delay) + 2 µs (digital filter) = 4 µs
ON to OFF: 2 µs (circuit delay) + 2 µs (digital filter) = 4 µs
Example: Maximum response time when the input time constant is set to 500 µs
OFF to ON: 30 µs (circuit delay) + 400 µs (digital filter) = 430 µs
ON to OFF: 50 µs (circuit delay) + 400 µs (digital filter) = 450 µs

*8 If an overcurrent occurs, protection operation (output turned OFF) and automatic recovery are repeated for all outputs within the shared common until the cause of the problem is removed.

Dimensions

* Download CAD file or product manual for larger image/text and more detail.

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