Product datasheet

Specifications

Discontinued

motion control modules - for servomotors - 8 ms..10 s - 4 axis

TSXCAY41

Discontinued on: 31 December 2018

To be end-of-service on: 31 December 2026

TSXCAY41 has not been replaced. Please contact your customer care centre for more information.

EAN Code : 3389110726121

Main

Range of product	Modicon Premium Automation platform
Product or component type	Motion control modules
Product specific application	For servo motors
Servo loop type	Proportional to overshoot compensation and gain switching 4 ms
Checks	Presence of voltage/sensor feedback counter input Consistency of commands Encoder coupling, servo drive present, emergency stop Proper execution of movement Sensor power supply Validity of parameters

Complementary

Speed profile path	Trapezoidal or parabolic
Resolution	>= 0.5 position units per point <= 1000 position units per point
Length of axis	32000…32000000 P
Acquisition speed	<= 270000 points/mn >= 54000 points/mn
Acceleration time	8 ms...10 s
Operating mode	Automatic OFF Direct drive mode FOLLOWER Manual
Type of axis	Following axis static ratio Limited axis
I/O modularity	4 axes
Input compatibility	Absolute encoder SSI output 16...25 bits Incremental encoder 10...30 V totem pole Incremental encoder 5 V DC RS422 With 2-wire/3-wire sensor (24 DC) auxiliary input Absolute encoder parallel output ABE7CPA11
Clock frequency	200 kHz SSI absolute encoder
Incremental encoder frequency x1	500 kHz
Incremental encoder frequency x 4	1000 kHz in counting 250 kHz in input

Power dissipation in W	10…17 W
Input type	Current sink auxiliary input conforming to EN/IEC 1131 Type 2 Resistive servo drive control input conforming to EN/IEC 1131 Type 1 Resistive counter input
Input logic	Positive
Input voltage	24 V 8 mA auxiliary input 24 V 8 mA servo drive control input 5 V 18 mA counter input
Input voltage limits	<= 5.5 V counter input 19...30 V auxiliary input 19...30 V servo drive control input
Voltage state 1 guaranteed	>= 11 V for auxiliary input >= 11 V for servo drive control input >= 2.4 V for counter input
Current state 1 guaranteed	>= 3.5 mA (servo drive control input) >= 3.7 mA (counter input) >= 6 mA (auxiliary input)
Voltage state 0 guaranteed	<= 1.2 V for counter input <= 5 V for auxiliary input <= 5 V for servo drive control input
Current state 0 guaranteed	<= 1 mA (counter input) <= 1.5 mA (servo drive control input) <= 2 mA (auxiliary input)
Input impedance	270 Ohm for counter input 3000 Ohm for auxiliary input 3000 Ohm for servo drive control input
Number of outputs	4 reflex output static conforming to EN/IEC 61131 4 analogue output static 4 servo drive validation output relay
Analogue output range	+/- 10...24 V
Analogue output resolution	13 bits + sign
LSB value	1.25 mV for analogue output
Output voltage	24 V DC reflex output: 24 V DC servo drive validation output:
Output voltage limits	Reflex output: 19...30 V Servo drive validation output: 5...30 V
Nominal output current	0.5 A for reflex output
Maximum output current	1.5 mA analogue output 200 mA servo drive validation output 625 mA reflex output
Minimum load	1 mA 1 V
Maximum voltage drop	<1 V at state on for reflex output
Maximum leakage current	0.3 mA for reflex output
Switching time	< 5 ms for servo drive validation < 500 µs for reflex output
Output compatibility	Positive logic DC inputs (resistance <= 15 kOhm) for reflex
Short-circuit protection	Current limiter reflex output Thermal tripping reflex output
Output overload protection	Current limiter reflex output Thermal tripping reflex output
Output overvoltage protection	Zener diode between outputs and 24 DC reflex output
Reverse polarity protection	Reflex output: reverse diode on supply
Local signalling	1 LED (green) for module operating (RUN) 1 LED (red) for external fault (I/O) 1 LED (red) for internal fault, module failure (ERR) 4 LEDs (green) for axis diagnostics available
Electrical connection	1 connector HE-10 with 20 pins for servo drive ctrl inputs + for ext power supply of servo drive inputs/ outputs 3 connectors HE-10 with 20 pins for aux inputs, reflex output, for external sensor and preactuator power supply 1 connector SUB-D 9 for an analogue output (speed reference)

	4 connectors SUB-D 15 for an incremental or absolute encoder
Current consumption	22...40 mA at 24 V DC on 10/30 V absolute encoder module 1500 mA at 5 V DC 30 mA at 24 V DC
Module format	Double
Net weight	0.61 kg

Environment

Protective treatment	TC
Ambient air temperature for operation	0…60 °C
Ambient air temperature for storage	-25…70 °C
Relative humidity	5…95 % without condensation
Operating altitude	<= 2000 m

Packing Units

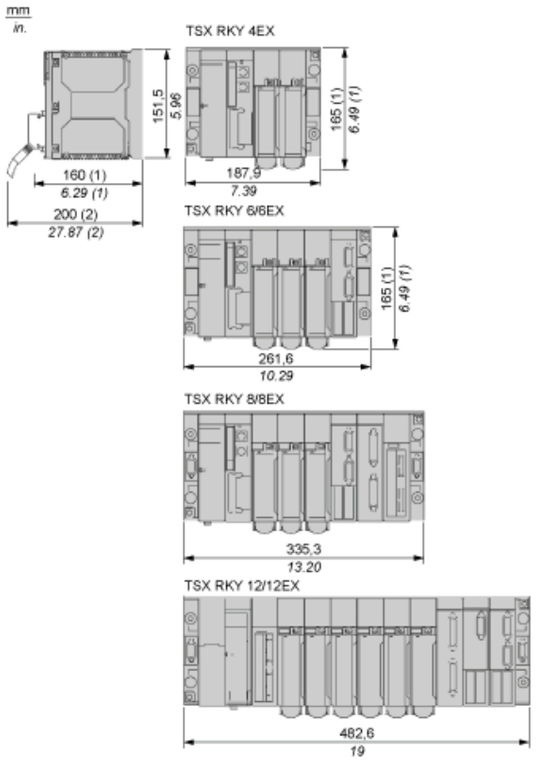
Unit Type of Package 1	PCE
Package 1 Length	26.0 cm
Number of Units in Package 1	1
Package 2 Width	40.0 cm
Package 2 Height	30.0 cm
Package 2 Weight	6.251 kg
Package 1 Width	18.0 cm
Package 1 Height	9.5 cm
Package 1 Weight	884.0 g
Number of Units in Package 2	6
Unit Type of Package 2	S04
Package 2 Length	60.0 cm

Contractual warranty

Warranty	18 months

Standard and Extendable Racks for Modules Mounting

Dimensions of Modules and Racks

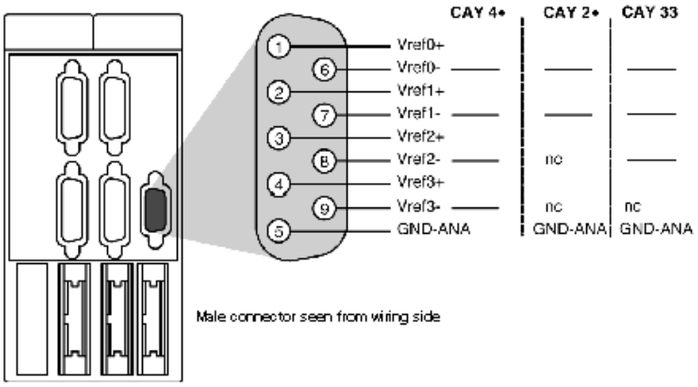


(**1**) With screw terminal block modules.

(**2**) Maximum depth for all types of modules and their associated connectors.

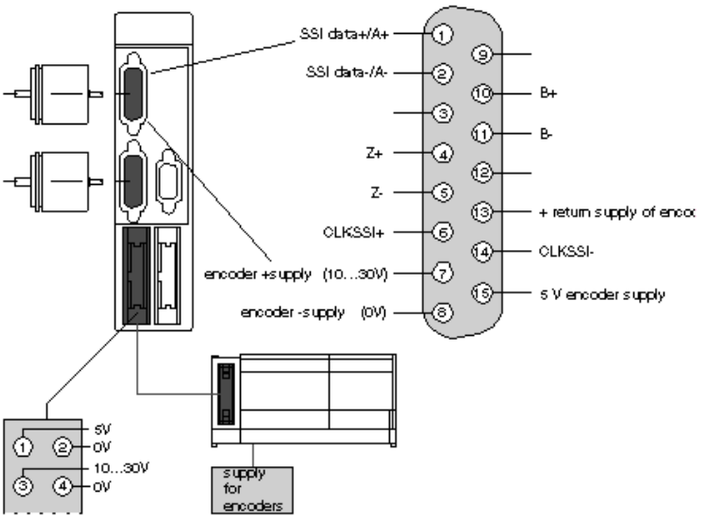
Connection of Speed Reference Signals

Connector Pinout



Connection of Counting Signals

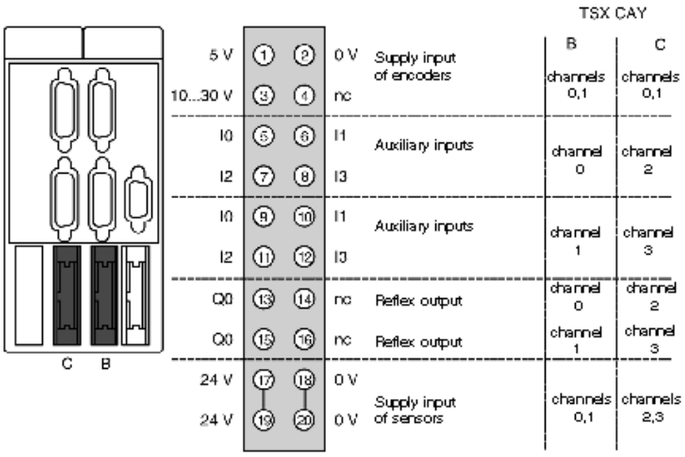
Connectors Pinouts



Element	Designation	Terminal
Incremental encoder	input A+	1
	input A-	2
	input Z+	4
	input Z-	5
	input B+	10
	input B-	11
	return supply of encoder	13
Absolute SSI encoder:	+ SSI Data	1
	- SSI data	2
	CLKSSI+	6
	CLKSSI-	14
5 V encoder power supply	+supply (5 V)	15
	- supply (0 V)	8
Encoder power supply (10-30 V)	+supply (10-30 V)	7
	- supply (0 V)	8

Connection of Sensors/Pre-actuators and Encoder Power Supply, without Variable Speed Controller

HE10 Connector Pinout



TSX CAY 2• module: Channels 0 and 1
TSX CAY 4• module: Channels 0,1,2 and 3
TSX CAY 33• module: Channels 0,1 and 2

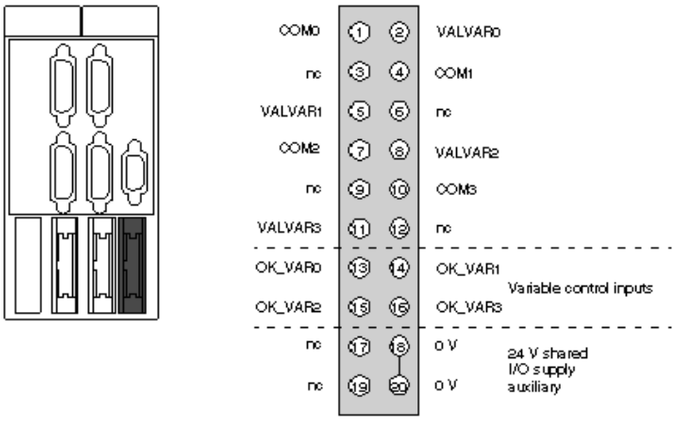
The auxiliary inputs/outputs are allocated the following functions:

- I0 = cam reference point input,
- I1 =emergency stop input (stop if there is no current in the input),
- I2 = adjusting input,
- I3 = adjustment input,
- Q0 = reflex output (static output),
- 0 V = shared auxiliary inputs and reflex outputs.

Connection of the Variable Speed Controller Signals

Connector Pinout

The axis command modules implement basic management of the signals necessary for correct operation of the variable speed controllers. There is only one connector, regardless of the number of axis command module channels.



COMx – VALVARx: potential free contact to validate variable speed controller

OK_VARx: variable speed controller input check

24 V – 0 V sensor power supply

NOTE: Each channel uses a potential free closing contact.