



Main

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

Complementary

Speed profile path	Trapezoidal or parabolic
Resolution	<= 1000 position units per point >= 0.5 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 Direct drive mode FOLLOWER Manual OFF
Type of axis	Limited axis Following axis static ratio
I/O modularity	4 axes
Input compatibility	Absolute encoder parallel output ABE7CPA11 With 2-wire/3-wire sensor (24 DC) auxiliary input Incremental encoder 5 V DC RS422 Incremental encoder 10...30 V totem pole Absolute encoder SSI output 16...25 bits
Clock frequency	200 kHz SSI absolute encoder
Incremental encoder frequency x1	500 kHz
Incremental encoder frequency x 4	250 kHz in input 1000 kHz in counting
Power dissipation in W	10...17 W
Input type	Resistive servo drive control input conforming to EN/IEC 1131 Type 1 Resistive counter input Current sink auxiliary input conforming to EN/IEC 1131 Type 2
Input logic	Positive
Input voltage	5 V 18 mA counter input 24 V 8 mA servo drive control input 24 V 8 mA auxiliary input
Input voltage limits	19...30 V servo drive control input 19...30 V auxiliary input <= 5.5 V counter input
Voltage state1 guaranteed	>= 2.4 V counter input >= 11 V servo drive control input >= 11 V auxiliary input
Current state 1 guaranteed	> 6 mA auxiliary input > 3.7 mA counter input > 3.5 mA servo drive control input

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Voltage state 0 guaranteed	<= 5 V servo drive control input <= 5 V auxiliary input <= 1.2 V counter input
Current state 0 guaranteed	< 2 mA auxiliary input < 1.5 mA servo drive control input < 1 mA counter input
Input impedance	3000 Ohm servo drive control input 3000 Ohm auxiliary input 270 Ohm counter input
Number of outputs	4 servo drive validation output relay 4 reflex output static conforming to EN/IEC 61131 4 analogue output static
Analogue output range	+/- 10...24 V
Analogue output resolution	13 bits + sign
LSB value	1.25 mV analogue output
Output voltage	24 V DC servo drive validation output 24 V DC reflex output
Output voltage limits	5...30 V servo drive validation output 19...30 V reflex output
Nominal output current	0.5 A reflex output
Maximum output current	625 mA reflex output 200 mA servo drive validation output 1.5 mA analogue output
Minimum load	1 mA 1 V
Voltage drop	< 1 V at state on reflex output
Leakage current	< 0.3 mA reflex output
Switching time	< 500 µs for reflex output < 5 ms for servo drive validation
Output compatibility	Positive logic DC inputs (resistance <= 15 kOhm) reflex
Short-circuit protection	Thermal tripping reflex output Current limiter reflex output
Output overload protection	Thermal tripping reflex output Current limiter reflex output
Output overvoltage protection	Zener diode between outputs and 24 DC reflex output
Reverse polarity protection	Reverse diode on supply reflex output
Local signalling	4 LED green axis diagnostics available 1 LED red internal fault, module failure (ERR) 1 LED red external fault (I/O) 1 LED green module operating (RUN)
Electrical connection	4 connectors SUB-D 15 for an incremental or absolute encoder 3 connectors HE-10 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) 1 connector HE-10 20 pins for servo drive ctrl inputs + for ext power supply of servo drive inputs/outputs
Current consumption	30 mA 24 V DC 22...40 mA 24 V DC on 10/30 V absolute encoder module 1500 mA 5 V DC
Module format	Double
Product weight	0.61 kg

Environment

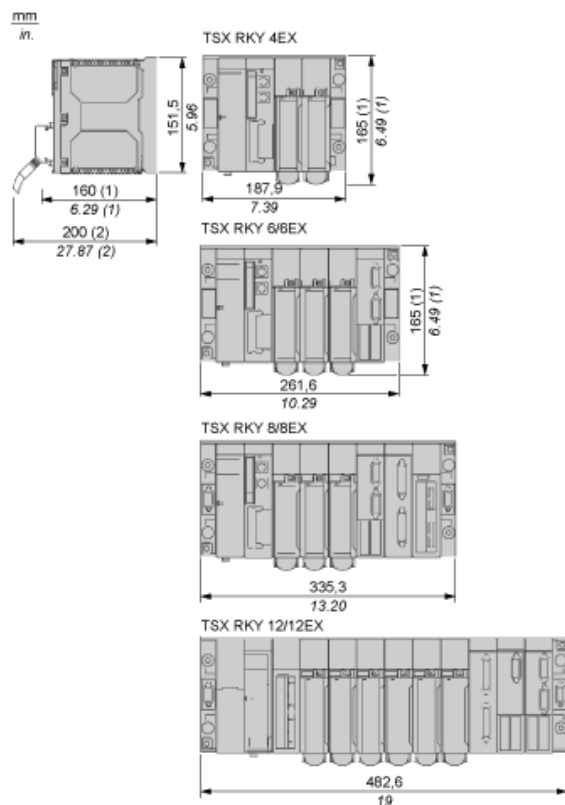
Protective treatment	Conformal coating Humiseal 1A33 TC
Ambient air temperature for operation	0...60 °C
Ambient air temperature for storage	-25...70 °C
Relative humidity	5...95 % without condensation
Operating altitude	<= 2000 m

Offer Sustainability

Sustainable offer status	Not Green Premium product
RoHS	Compliant - since 0801 - Schneider Electric declaration of conformity download declaration of conformity

Standard and Extendable Racks for Modules Mounting

Dimensions of Modules and Racks

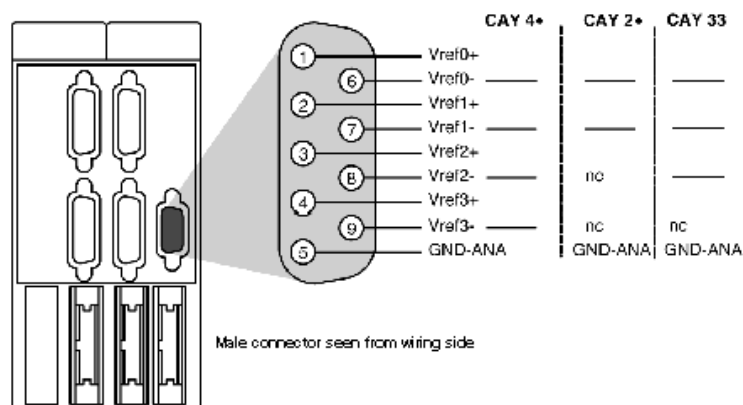


(1) With screw terminal block modules.

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

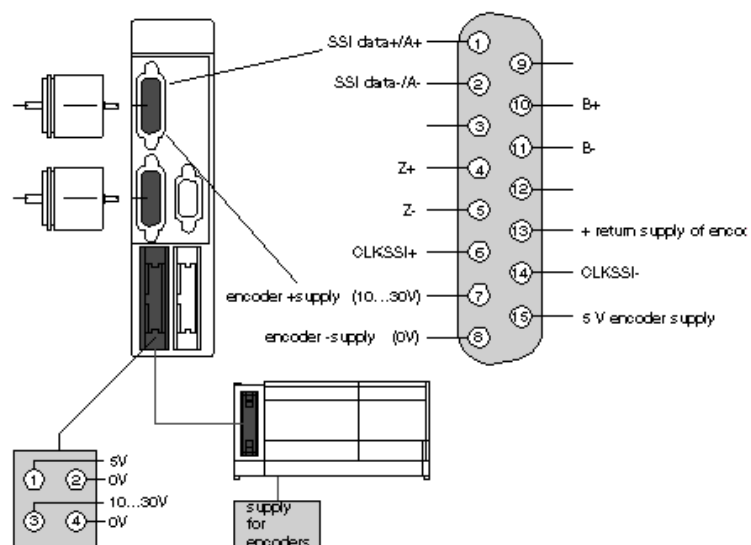
Connection of Speed Reference Signals

Connector Pinout



Connection of Counting Signals

Connectors Pinouts

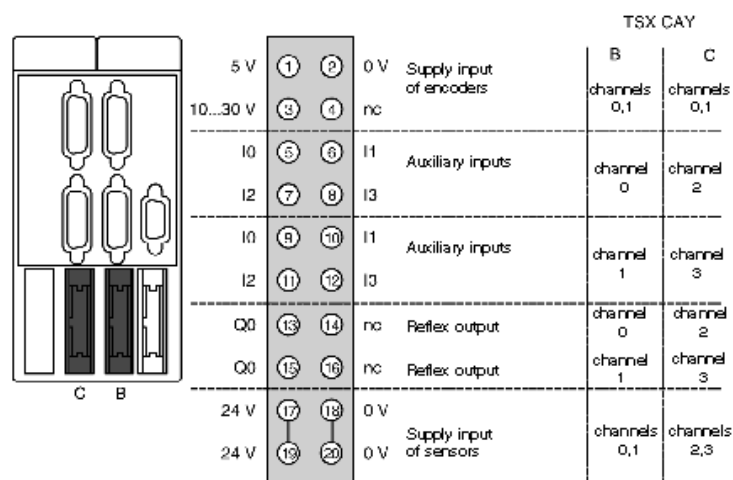


Element	Designation	Terminal
Incremental encoder	input A+	1
input A-	2	
input Z+	4	
input Z-	5	
input B+	10	
input B-	11	
return supply of encoder	13	
Absolute SSI encoder:	+ SSI Data	1
- SSI data	2	
CLKSSI+	6	
CLKSSI-	14	

Element	Designation	Terminal
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

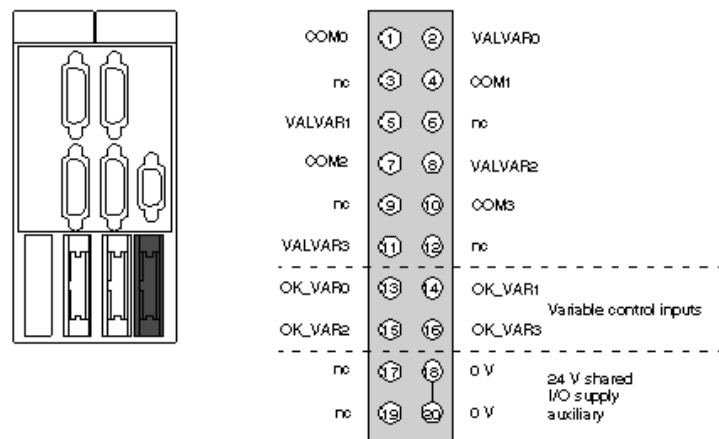
The auxiliary inputs/outputs are allocated the following functions:

- 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.