Single Axis RS Actuator Controllers

Specifications

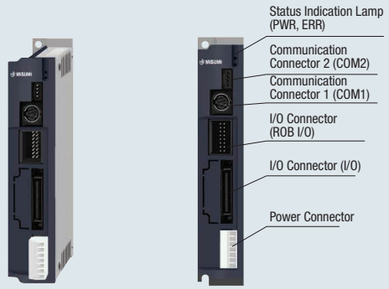
MISUMI's Single Axis RS Controllers are compact and high performance. *Included with RS Actuators at time of order. Only select separate units for maintenance purposes.

Part Number	Specifications	Controlled Actuators	Input Power Supply
EXRS-C1	Incremental Type	RS1/2/3 RS1C/2C/3C RSD1/2/3 RSDG1/2/3	DC24V±10% 3A

Part Number	Specifications	Controlled Actuators	Input Power Supply
EXRS-C21A	Absolute Encoders (with Data Storage Battery)	RSH1/2/3 RSH1C/2C/3C	Single phase AC100 – 115V±10%
EXRS-C22A			Single phase AC200 – 230V±10%
EXRS-C21B	Incremental Type		Single phase AC100 – 115V±10%
EXRS-C22B			Single phase AC200 – 230V±10%

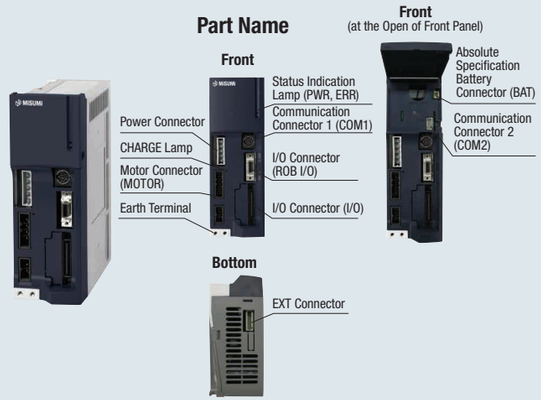
ⓘ Controllers are shipped with preset parameters for each specification.

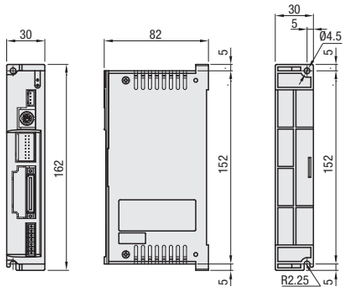
Part Name

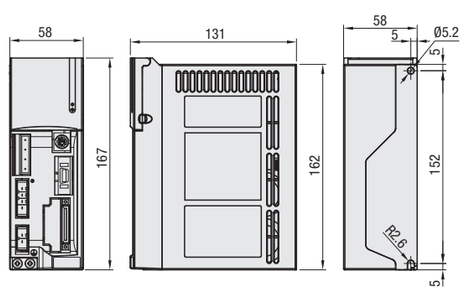


Part Name

Front (at the Open of Front Panel)







Part Number	I/O Module
EXRS-C1	NPN: N
	PNP: P
	CC-Link: C
	DeviceNet: D

Part Number	I/O Module
EXRS-C21A/C22A Absolute Encoders (with Data Storage Battery)	NPN: N
	PNP: P
	CC-Link: C
	DeviceNet: D
EXRS-C21B/C22B Incremental Type	NPN: N
	PNP: P
	CC-Link: C
	DeviceNet: D

Dedicated Feet and Flanges for Rod Type

Part Number	Applicable Model	Specifications	Components (1 set)
EXRS-HP1	RSD1 RSDG1	Foot	Mounting Plate 2 pcs.
EXRS-VP1	RSD1	Flange	Mounting Plate 1 pc.
EXRS-HP2	RSD2 RSDG2	Foot	Mounting Plate 2 pcs. Square Nut 12 pcs.
EXRS-VP2	RSD2	Flange	Mounting Plate 1 pc.
EXRS-HP3	RSD3 RSDG3	Foot	Mounting Plate 2 pcs. Square Nut 8 pcs.
EXRS-VP3	RSD3	Flange	Mounting Plate 1 pc.

Standard Specifications

Part Number	EXRS-C1	EXRS-C21A/BEXRS-C22A/B
No. of Controlled Axes	1 Axis	
Controlled Actuators	RS1 / 2 / 3 / 1C / 2C / 3C RSD1 / 2 / 3 RSDG1 / 2 / 3	RSH1 / 2 / 3 / 1C / 2C / 3C
External Dimensions	30 mm (W) x 162 mm (H) x 80 mm (D)	58 mm (W) x 162 mm (H) x 131 mm (D)
Main Body Mass	Approx. 200 g	Approx. 1.1 kg
Input Power Supply Voltage	DC24V±10% 3A	EXRS-C21A/B : Single Phase AC100 – 115V±10% EXRS-C22A/B : Single Phase AC200 – 230V±10%
Power Capacity	70 VA	400 VA
Position Detection Method	Resolver	Resolver with Multiple Rotation Absolute Functions
Resolution	20480 P/rev	16384 P/rev
Control Method	Closed Loop Vector Control Method	
Dielectric Strength Voltage	DC500V 1 MΩ or More	
Memory Capacity	Point (255 Pts), Parameters, Alarm Log (50 Items)	
Protection Features	Overload, Overvoltage, Temp., Power Module and Excessive Position Deviation Errors	
Operating / Storage Temp.	0–40°C / -10–65°C	
Operating Humidity	35–85% RH (No Condensation)	
Ambience	Indoors without direct sunlight. No corrosive, flammable gases, oil mist and dust.	
Vibration Resistance	In each X, Y and Z direction 10–57 Hz Half amplitude 0.075 mm 57–150 Hz 9.8 m/s²	

Part Number Example Part Number: EXRS-C1 - I/O Module: N

MiSUMi

Single Axis RS Actuator Controllers

Specifications, *continued*

CE Compliant

ⓘ See notes on CE Marking P.511

EXT Connector Signal Table

Pin No.	Signal Name	Descriptions
1	+24V	Mechanical Brake Power Input
2	0V	(Provided by customer)
3	ES+	Emergency Stop Input Internal Power Supply
4	ES1	Emergency Stop Input 1
5	ES2	Emergency Stop Input 2
6	ES-	Emergency Stop Ready Signal (Open: Emergency Stop)
7	MPRDY1	Main Power Supply Ready Output Contacts
8	MPRDY2	(DC24V Transistor Output)

I/O Connector Signal Table (NPN / PNP Specifications)

Pin No.	Signal Name	Pin No.	Signal Name	Pin No.	Signal Name	Pin No.	Signal Name
A1	+COM	A11	PIN6	B1	POUT0	B11	OUT2
A2	+COM	A12	PIN7	B2	POUT1	B12	OUT3
A3	(NC)	A13	JOG+	B3	POUT2	B13	BUSY
A4	(NC)	A14	JOG-	B4	POUT3	B14	END
A5	PIN0	A15	MANUAL	B5	POUT4	B15	/ALM
A6	PIN1	A16	ORG	B6	POUT5	B16	SRV-S
A7	PIN2	A17	/LOCK	B7	POUT6	B17	(NC)
A8	PIN3	A18	START/TEACH	B8	POUT7	B18	(NC)
A9	PIN4	A19	RESET	B9	OUT0	B19	-COM
A10	PIN5	A20	SERVO	B10	OUT1	B20	-COM

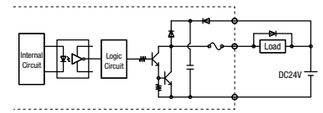
Signal Feature Descriptions

Types	Signal Name	Meaning	Descriptions
Input	PIN0–7	Point No. Set 0–7	– Specify point No. for positioning operation – Specify point No. for current position teachings (in manual mode)
	JOG+	Jog Move (+)	Jog moves in + direction when ON (in manual mode)
	JOG-	Jog Move (-)	Jog moves in - direction when ON (in manual mode)
	MANUAL	Manual Mode	ON: Manual Mode
	ORG	Return to Home	Start Homing
	/LOCK	Interlock	ON: Movable, OFF: Immovable, OFF while in movement: Deceleration Stop
	START	Start	Start positioning operation by specified point No.
	TEACH	Current Position Teach	Teach current position for specified point No. (in manual mode)
	RESET	Reset	– Reset alarm – Reset point No. output – Clear remaining travel distance in relative positioning operation
	SERVO	Servo ON	ON: Turn ON Servo, OFF: Turn OFF Servo
Output	POUT0–7	Output Point No. 0–7	– Output point No. to be activated by positioning operation – Output alarm No. in the event of alarm status.
	OUT0	Control Output 0	Assigned by following outputs based on parameters
	OUT1	Control Output 1	– Zone Output / Individual Zone Output / Manual Mode Status
	OUT2	Control Output 2	– Completion of Return to Home, Clamp Position, Alarm Output
	OUT3	Control Output 3	– Proximity Output, Moving
	ZONE	Zone Output	ON output when position is within the zones set by parameters
	PZONE	Individual Zone Output	ON output when moving into the zones specified by each point
	MANU-S	Manual Mode	ON in manual mode
	ORG-S	Completion of Homing	Output ON with the completion of return to home.
	TLM-S	In Clamp Position	ON while in push operation
	/WARN	Alarm Output	ON while in alarm status
	NEAR	Proximity Range Output	ON Output in the proximity of positioning operation completion.
	MOVE	In Motion	ON in motion
	BUSY	In Operation	ON in operation
	END	Completion of Operation	Output operation results ON at normal stop
	/ALM	Alarm	ON in normal status, OFF Output in the event of alarm status
	SRV-S	Servo Status	Output ON when servo is ON

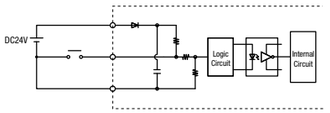
I/O Circuit Diagram

NPN Specifications

Output Area

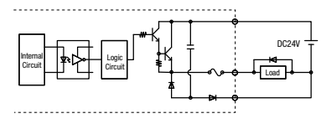


Input Area

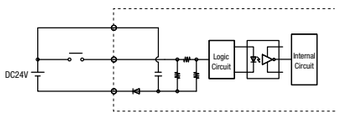


PNP Specifications

Output Area



Input Area



I/O Specifications

Selectable from 5 options according to controller specifications.

Types	Descriptions
NPN	16 Input / DC24V±10% / 4mA/1point / +Common 16 Outputs - DC24V±10%, 50mA/1 point, 0.4A max. total / 8 points, Sinking
PNP	16 Input / DC24V±10% / 4mA/1point / -Common 16 Outputs – DC24V±10%, 50mA/1 point, 0.4A max. total / 8 points, Sourcing
CC-Link	CC-Link applicable to Ver1.10, Remote Device Station (1)
DeviceNet	DeviceNet Slave 1 Node

Communication Specifications

CC-Link Network Board Specification

Items	CC-Link Network Specification				
Communications Protocol	CC-Link V1.10				
Station	Remote Device Station				
No. of Stations Occupied	1 Station				
Station Number Setting	1–64 (42 Units at a Max)				
Communication Speed Setting	156 Kbps	625 Kbps	2.5 Mbps	5 Mbps	10 Mbps
Total Extended Distance	1200 m	900 m	400 m	160 m	100 m
Monitor LED	RUN / ERR / SD / RD				

DeviceNet Network Board Specification

Items	DeviceNet		
Compatible DeviceNet Specification	Volume 1, Release 2.0 Volume 2, Release 2.0		
Device Type	Generic Device		
MAC ID Setting	0–63		
Communication Speed Setting	125 kpbs	250 kbps	500 kbps
Total Extended Distance	500 m	250 m	100 m
Monitor LED	Module, Network		

RS232C Communication Specification

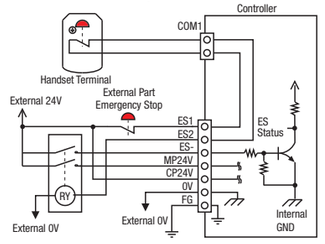
Items	Specifications
Transmission Rate	38400 bps
Data Bit Length	8 Bits
Stop Bit Length	1 Bit
Parity	Odd
Control Method	Not Provided
Transmission Method	Full-Duplex Communications
Synchronizing Method	Asynchronous Type

Main Power Shutdown Circuit Examples

Examples of circuits necessary to interrupt the main power by emergency stop.

Controller EXRS-C1 Circuit Examples

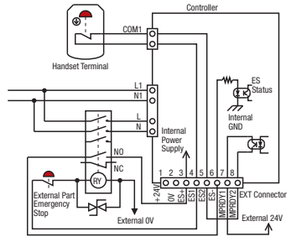
Applicable Actuators: **RS1/2/3 (P.480–485) RSD1/2/3 (P.492–497) RS1C/2C/3C (P.498–503) RSDG1/2/3 (P.492–497)**



ⓘ See instruction manual for examples of circuits for handy terminals with Deadman switches.

Controller EXRS-C21 / 22 Circuit Examples

Applicable Actuators: **RSH1/2/3 (P.486–491) RSH1C/2C/3C (P.504–509)**



ⓘ See instruction manual for examples of circuits for handy terminals with Deadman switches.

Note: A power interruption circuit is not installed in this controller. Please be sure to provide an external power interruption circuit and form an emergency stop circuit.