[KBZ Series control parts]

Master(Scanner) unit
KCA-01-M05

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High function master(scanner) unit
KCA-20-M00

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Slave(Adapter) unit
KCA-01-S05

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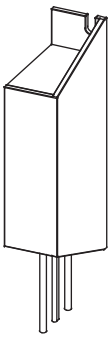
Regenerative discharge unit
KCA-CAR-UN50



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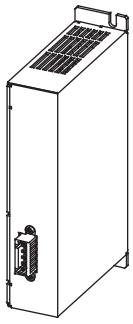
Regenerative discharge resistance
KCA-CAR-0500



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Handy terminal
KCA-TPH-4C

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PC software
KCA-SF-98D

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MEMO

Master(Scanner) unit

[Main functions]

* A KBZ Series dedicated single axis controller.
* The controller is operated by designating a point table with a 4-point input signal and inputting the start signal.
* The point table is composed of 12 types of data, including coordinate values, speed table No., acceleration/deceleration No., torque limit table No., etc.
* Gain adjustments, etc. are automatically set by inputting robot type parameter settings.
* JOG operation enabled through input signal (changing the coordinate values using this function is also possible).
* The 3-color LED displays the error status.
* A break release switch was added to the controller for safety purposes.

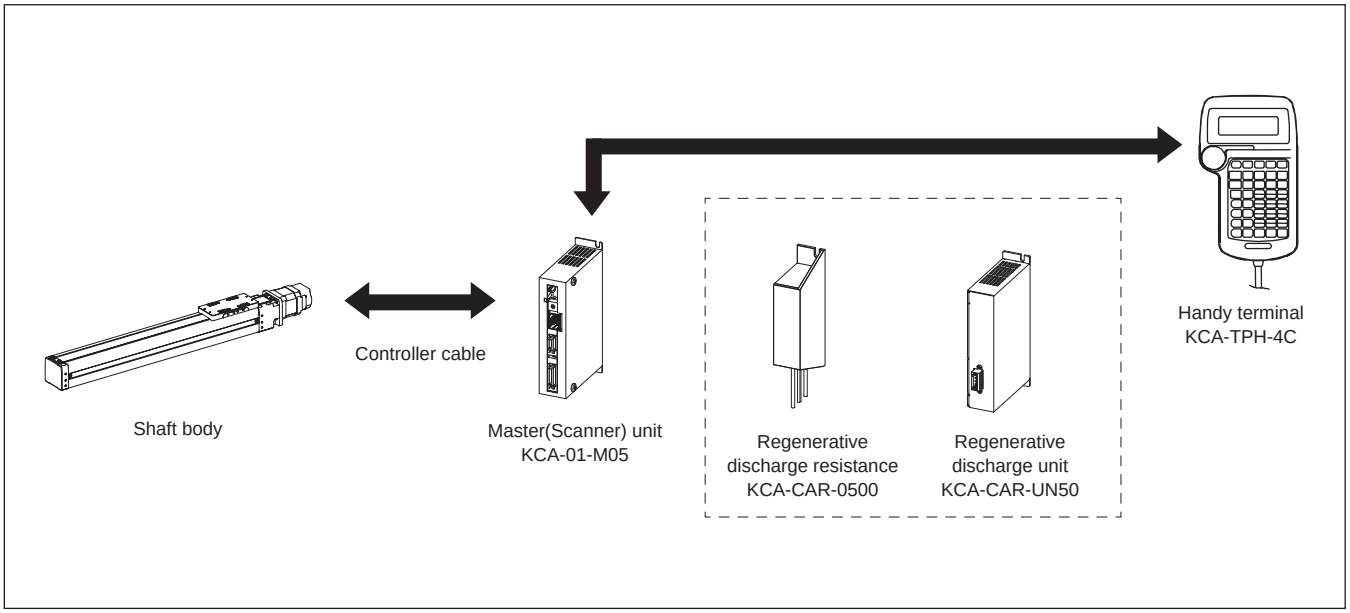
How to order

KCA - 01 - M 05

KCA-01-M05

[System configuration]

Basic unit Function extension unit



[General specifications]

Applicable robot		KBZ Series
Controller		KCA-01-M05
No. of control axes		1-axis
Motor capacity		50 W
Control method		Semi-closed loop function
Instruction method		Remote teaching Direct teaching or MDI
Speed setting		8 stages (changeable)
Acceleration/deceleration setting		8 stages (changeable)
Number of point tables		15
Memory		EEPROM (Number of times rewritable: 100)
Traveling mode		Point mode
Special function		Torque limit function
Emergency stop input		Yes
Origin sensor input		Yes
Regenerative function		Yes (external mounted regenerative resistance)
Dynamic brake function		None
Mechanical brake drive output		24 VDC to less than 0.4 A (For non-excitation brake) Brake release switch (SW1) enables forced release
Protection function	Hard error	Sensor abnormality, drive power supply abnormality, EEPROM abnormality, overheating, etc.
	Soft error	Acceleration, overload, excessive position deviation, etc.
	Warning	Drive power supply stoppage
Dimensions		31 (W) × 146 (H) × 89 (D) (Excluding screw projections)

Status display		Status LED (LED1) display Servo OFF..... green (steady light) Servo ON..... green (blinking) Normal mode Drive power supply OFF.... orange (steady light) (Set SW2 to "0") Battery power supply low..... orange (blinking) Power supply shutoff request OFF.... red (steady light) Error..... red + green (blinking)
System input		24 V 7 mA 10 points
System output		30 V max., 100 mA max., 8 points
Communication function		RS-232C × 1 channel (9,600 bps) For PC software KCA-SF-98D
Control power supply voltage		24 VDC ±10%
Drive power supply voltage		24 VDC ±10%
Control power supply capacity		0.25 A
Drive power supply capacity		Depends on the axis type, Rating 3 A (max. 9 A)
Ambient conditions	Operating ambient temperature	0 to 40°C
	Operating ambient humidity	90% or less (no condensation)
	Storage ambient temperature	−10 to 85°C
	Storage ambient humidity	90% or less (no condensation)
	Environment	Indoors (no exposure to direct sunlight) No dirt, dust, or corrosive or flammable gases 1,000 m or less above sea level
	Vibration/ impact	4.9 m/s^2 or less/ 19.6 m/s^2 or less
Weight		Approx. 0.25 kg

[I/O specifications]

Input specification	
Input rating	24 VDC 7 mA
Insulation method	Photo coupler
Power supply	Request from a third party supplier (24 VDC)

Output specifications	
Output style	Transistor output (open collector)
Output capacity	System output max. 100 mA/point * No general purpose output

* Refer to "System I/O Details" on pages 37 and 38 for signal details.
* Refer to page 39 for the emergency stop input and output connection method.

[Input pin No. and signal No.]

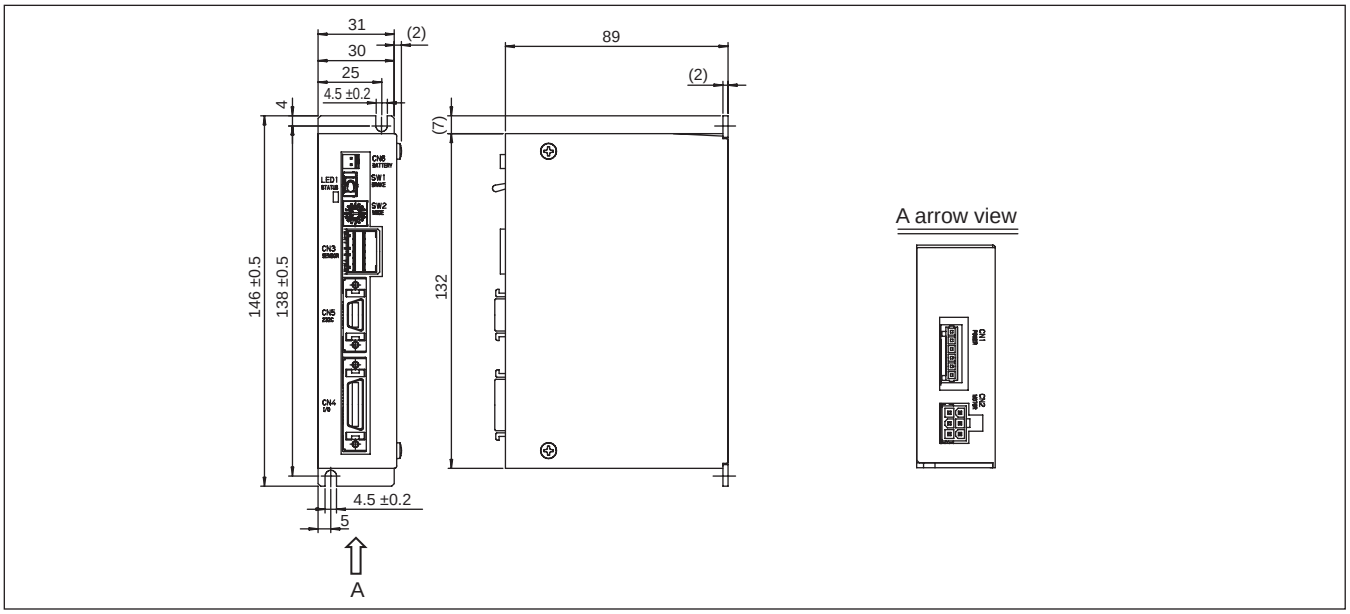
Pin No.	Input No.	Signal name	Content
1	-	+COM	Plus common
2	-	+COM	Plus common
3	IN1 (*1)	START	Start input
		+JOG	+JOG input
4	IN2 (*1)	STOP	Stop input
		−JOG	−JOG input
5	IN3	SVON	Servo ON input
6	IN4	WRITE	Writing input
7	IN5	ALRST	Error reset input
8	IN6	RTSEL	Operating/teaching switch input
9	IN7	PIN1	Directive point No. input
10	IN8	PIN2	
11	IN9	PIN3	
12	IN10	PIN8	
13	-	Emergency stop input (+)	

Pin No.	Input No.	Signal name	Content
14	OUT1	RUN	Operation output
15	OUT2 (*2)	ERROR	Abnormal output
	OUT3	RDY/ERR	READY/Abnormal output
16	OUT3	POSI	Positioning completion output
17	OUT4	AREA	Area output
18	OUT5 (*3)	POUT1	Completion point No. output
		TQCON	Torque limit operation output
19	OUT6 (*3)	POUT2	Complete point No. output
		TQLOAD	Load output
20	OUT7 (*3)	POUT4	Complete point No. output
		TQLIM	Limit output
21	OUT8 (*3)	POUT8	Complete point No. output
		TQLOCK	Lock output
22	-	−COM	Minus common
23	-	−COM	Minus common
24	-	N.C.	
25	-		
26	-	Emergency stop input (−)	

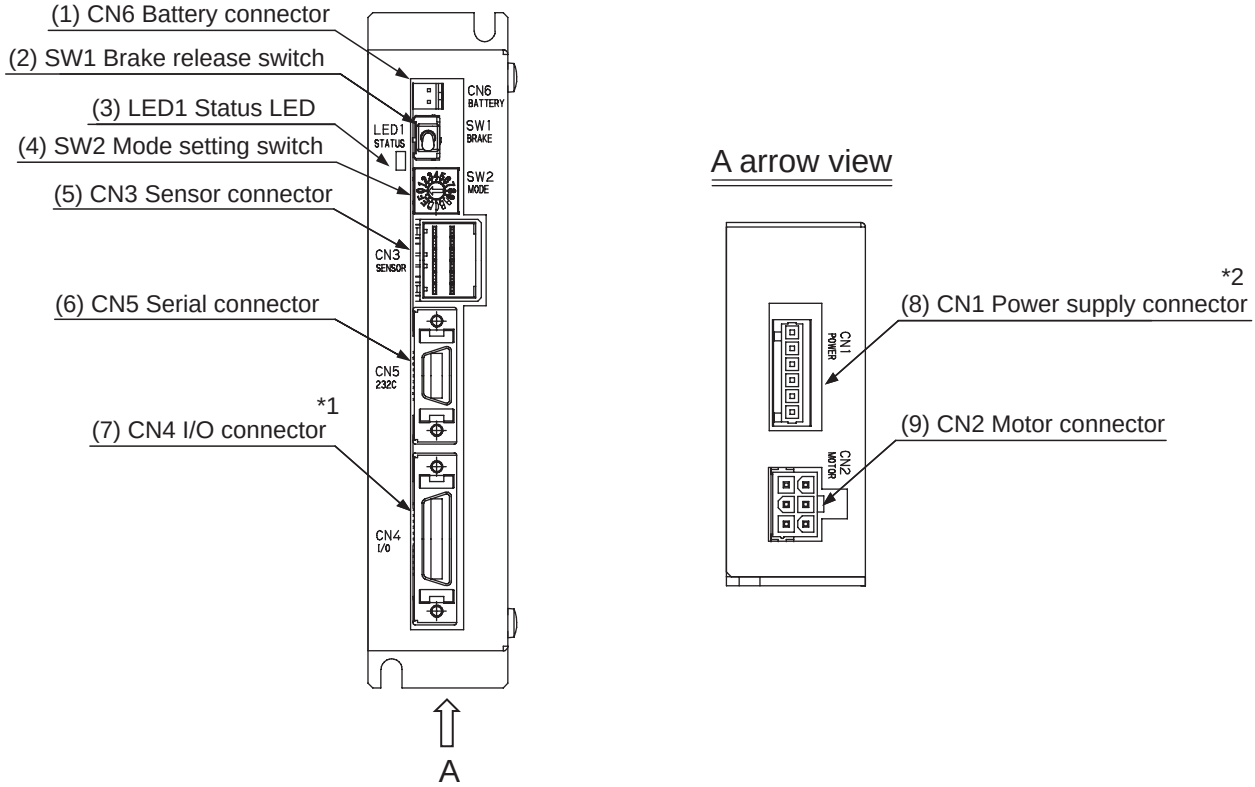
(*1) The top cell is the signal in operation, the bottom cell is the signal when teaching.
(*2) Select function with parameter M13.
(*3) The top cell is the signal in normal operation and when teaching, the bottom cell is the signal during torque limit operation.

[Dimensions]

Master(Scanner) unit



[Section names]



(1) CN6 Battery connector
Used to connect the backup battery for the resolver ABS.

(2) SW1 Brake release switch
A momentary switch used to forcibly release the brake. While the lever is held up, the brake is forcibly released. When the lever is loosened, the brake returns to normal control.

(3) LED1 Status LED
Displays controller status in 3 colors.

(4) SW2 Mode setting switch
Used to set the operation mode.

*1 Comes equipped with a plug and shell kit.
*2 Comes equipped with a plug and wiring lever.

(5) CN3 Sensor connector
Used to connect motor sensor cables.

(6) CN5 Serial connector
RS-232C connector used for communication cables (option) for handy terminal or PC connection.

(7) CN4 I/O connector
Composed of system I/O and emergency stop input. Used to for external robot control by connecting to the PLC, etc.

(8) CN1 Power supply connector
Used to input control power supply and drive power supply.

(9) CN2 Motor connector
Used to connect motor cables.

High function master(scanner) unit KCA-20-M00

* Max. 4-axis simultaneous control
* CC-Link and DeviceNet can be used as the interface with external devices.
* Data communication of each I/O, coordinate table, status, and JOG operation can be performed through the CC-Link interface.
* Data communication of each I/O and JOG operation can be performed through the DeviceNet interface.
* The unit is equipped with two/three dimensional linear and circular interpolation and a pass function, useful in work for which tracing is important.
* General purpose output control can be turned ON and OFF using the coordinates determined during robot travel. (command: OUTS)
* The target position can be changed to the coordinate data received from RS232C communication mid-transition to the designated coordinates. (command: RSMV)
* In sequential mode, I/O control is equipped with a multitask function for up to 4 tasks. (only one task for axis operation)
* Handy terminal KCA-TPH-4C is used.

How to order

KCA - 20 - M 00 - 0 0

Ⓐ Extension I/F unit

Code	Content
Ⓐ **Extension I/F unit**	
0	None
C	CC-Link unit
D	DeviceNet unit

KCA-20-M00-00

KCA-20-M00-C0

[General specifications]

Controller	KCA-20-M00
No. of control axes	Control of up to four axes by connecting slave(adapter) units. Simultaneous control
Control method	CP control, PTP control semi-closed loop control
Interpolation function	Three dimensional linear interpolation, three dimensional circular interpolation
Encoder signal	Line driver communication method
Instruction method	Remote teaching, direct teaching, or MDI
Speed/acceleration	Speed 10 stages (changeable) Acceleration 20 stages (changeable)
Operation method	Step, continuous, single acting
Operation mode	Sequential (multitask) (*1) Palletizing, easy External point designation
Number of programs	Sequential: 16, palletizing: 16, easy: 8
Step No.	Max. 2,500 steps (*2)
Coordinate table	Each task: 999
Number of counters	99
Number of timers	9
Memory	FRAM
CPU	32 bit (RISC/CPU SH7085)
Power supply voltage	24 VDC ±10% 0.5 A (external supply)

Self-diagnostic function	CPU error, memory error, driver error, master power voltage error, program error, etc. by watchdog timers
Abnormal display	Abnormal display indicator ON (front panel) Handy terminal display
External input	System input: 4 points/general purpose input: 20 points (*3)
External output	System output: 4 points/general purpose output: 12 points (*3)
Communication function	1CH (RS232C) For handy terminal
External drive power supply	No output power (external supply)
Emergency stop I/O	No power voltage input (contact input), relay C contact Output
Noise resistance	1,500 Vp - p, Pulse width 1 μs (Based on a noise simulator)
Environment conditions	Indoor location, Temperature: 0 to 40°C Humidity: 30 to 90% RH, no condensation No corrosive gas.
Dimensions	65 (W) × 170 (H) × 150 (D) Mounting bracket not included
Weight	1.2 kg (excluding optional base)

(*1) Multitask is for up to four tasks (one task for axis control).
(*2) Varies by mode used.
(*3) Refer to the interface specifications on pages 209 and 210 to select Field/Bus interface specifications.

[I/O specifications]

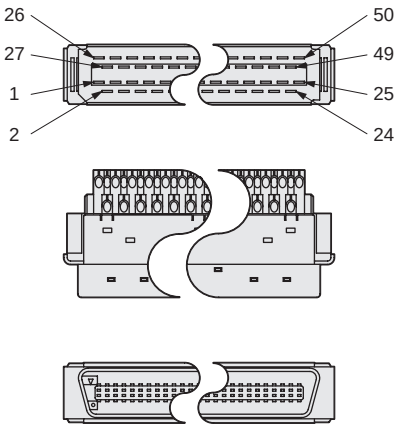
Input specification	
Input rating	24 VDC 7 mA/point
Insulation method	Photo coupler
Power supply	Request from a third party supplier (24 VDC)

Output specifications	
Output style	Transistor output (open collector)
Output capacity (24 VDC)	System output max. 20 mA/point
	General purpose output max. 300 mA/point

[Input pin No. and signal No.]

Panel side connector pin layout

(BOTTOM VIEW)



No.	Signal name	No.	Signal name
1	+COM1 (*1)	26	General purpose input port 1-1
2	General purpose output port 1-1	27	General purpose input port 1-2
3	General purpose output port 1-2	28	General purpose input port 1-3
4	General purpose output port 1-3	29	General purpose input port 1-4
5	General purpose output port 1-4	30	General purpose input port 1-5
6	General purpose output port 1-5	31	General purpose input port 1-6
7	General purpose output port 1-6	32	General purpose input port 1-7
8	General purpose output port 1-7	33	General purpose input port 1-8
9	General purpose output port 1-8	34	General purpose input port 2-1
10	General purpose output port 2-1	35	General purpose input port 2-2
11	General purpose output port 2-2	36	General purpose input port 2-3
12	General purpose output port 2-3	37	General purpose input port 2-4
13	General purpose output port 2-4	38	General purpose input port 2-5
14	−COM1 (*1)	39	General purpose input port 2-6
15	−COM1 (*1)	40	General purpose input port 2-7
16	+COM2 (*1)	41	General purpose input port 2-8
17	Operation output	42	General purpose input port 3-1
18	Abnormal output	43	General purpose input port 3-2
19	Positioning completion output	44	General purpose input port 3-3
20	Origin return completion output	45	General purpose input port 3-4
21	Origin return input	46	Emergency stop input
22	Start input	47	Emergency stop input
23	Stop input	48	Emergency stop output (N.O)
24	Reset input	49	Emergency stop output (COM)
25	−COM2 (*1)	50	Emergency stop output (N.C)

(*1): +COM1 is not connected to +COM2, −COM1 and −COM2 internally.
* One plug is attached for I/O connector connection. An I/O cable with plug is also available optionally.

[CC-Link interface specifications]

Descriptions	Specifications
Transmission specifications	CC-Link Ver1.10
Communication speed	10 M/5 M/2.5 M/625 K/156 kbps (set by parameters)
Station	Remote device station
Number of occupied stations	4 fixed stations (RX/RY each 128 points, RWw/RWr each 16 points)
Station No. setting	1 to 61 (set by parameters)
Number of I/O points	System input 4 points/system output 4 points
	General purpose input 64 points/general purpose output 64 points
	JOG input 8 points/JOG output 8 points
	Handshake input 1 point/handshake output 2 points
	Data selection input 4 points/data selection confirmation output 4 points
Data communication function	Coordinate table transmission and reception, current position monitor, error code request, status request et.

* I/O are in the direction viewed from the controller side

[I/O signal list]

Signal direction CC-Link master(scanner) ← KCA-20-M00		Signal direction CC-Link master(scanner) → KCA-20-M00	
Device No. (input)	Signal name	Device No. (output)	Signal name
RXn0	Operation output	RYn0	Origin return input (*2)
RXn1	Abnormal output	RYn1	Start input (*2)
RXn2	Positioning completion output	RYn2	Stop input (*2)
RXn3	Origin return completion output	RYn3	Reset input (*2)
RXn4 to RXn7	Use prohibited	RYn4 to RYn7	Use prohibited
RXn8 to RXnF	General purpose output ports 1-1 to 8	RYn8 to RYnF	General purpose input ports 1-1 to 8 (*2)
RX(n+1)0 to RX(n+1)7	General purpose output ports 2-1 to 8	RY(n+1)0 to RY(n+1)7	General purpose input ports 2-1 to 8 (*2)
RX(n+1)8 to RX(n+1)F	General purpose output ports 3-1 to 8	RY(n+1)8 to RY(n+1)F	General purpose input ports 3-1 to 8 (*2)
RX(n+2)0 to RX(n+2)7	General purpose output ports 4-1 to 8	RY(n+2)0 to RY(n+2)7	General purpose input ports 4-1 to 8
RX(n+2)8 to RX(n+2)F	General purpose output ports 5-1 to 8	RY(n+2)8 to RY(n+2)F	General purpose input ports 5-1 to 8
RX(n+3)0 to RX(n+3)7	General purpose output ports 6-1 to 8	RY(n+3)0 to RY(n+3)7	General purpose input ports 6-1 to 8
RX(n+3)8 to RX(n+3)F	General purpose output ports 7-1 to 8	RY(n+3)8 to RY(n+3)F	General purpose input ports 7-1 to 8
RX(n+4)0 to RX(n+4)7	General purpose output ports 8-1 to 8	RY(n+4)0 to RY(n+4)7	General purpose input ports 8-1 to 8
RX(n+4)8 to RX(n+4)F	JOG output	RY(n+4)8 to RY(n+4)F	JOG input
RX(n+5)0 to RX(n+5)7	Reserve	RY(n+5)0 to RY(n+5)7	Reserve
RX(n+5)8 to RX(n+5)F		RY(n+5)8 to RY(n+5)F	
RX(n+6)0 to RX(n+6)7		RY(n+6)0 to RY(n+6)7	
RX(n+6)8	Command complete (*1)	RY(n+6)8	Command request (*1)
RX(n+6)9	Command error (*1)	RY(n+6)9	Use prohibited
RX(n+6)A to RX(n+6)B	Use prohibited	RY(n+6)A to RY(n+6)B	Use prohibited
RX(n+6)C to RX(n+6)F	Data selection confirmation output	RY(n+6)C to RY(n+6)F	Data selection input
RX(n+7)0 to RX(n+7)7	Use prohibited	RY(n+7)0 to RY(n+7)7	Use prohibited
RX(n+7)8 to RX(n+7)F	Use prohibited	RY(n+7)8 to RY(n+7)F	Use prohibited

n: Addresses assigned to the master(scanner) unit by station No. setting.
(*1) Data communication handshake signal
(*2) System input and general purpose input ports 1 to 3 are selected for use by parameter.

[CC-Link status display LED]

Name	Color	ON/OFF	Content
RUN	Green	ON	Operating normally
		OFF	Timeout or network stopped
ERR	Red	ON	CRC error, abnormal speed, abnormal station No. setting
		OFF	Operating normally
SD	Green	ON	Transmitting data
		OFF	Not transmitting data
RD	Green	ON	Receiving data
		OFF	Not receiving data

[DeviceNet interface specifications]

Descriptions	Specifications		
Communication protocol	DeviceNet compliant		
Support connection	I/O connection (polling)		
Communication speed	125 k/250 k/500 kbps (set by parameters)		
Station No. setting	0 to 63 (set by parameters)		
Cable length	Communication speed	Thick cable	Thin cable
	125 k	500 m	100 m
	250 k	250 m	
	500 k	100 m	
Number of occupied points	Transmission: 128 points Reception: 128 points		
Number of I/O points	System input 4 points/system output 4 points		
	General purpose input 64 points/general purpose output 64 points		
	JOG input 8 points/JOG output 8 points		
Device	0 (Generic Device)		

* I/O are in the direction viewed from the controller side

[I/O signal list]

Signal direction DeviceNet master(scanner) ← KCA-20-M00		Signal direction DeviceNet master(scanner) → KCA-20-M00 (*1)	
Input device No. (offset *2)	Signal name	Output device No. (offset *2)	Signal name
+0	Operation output	+0	Origin return input (*3)
+1	Abnormal output	+1	Start input (*3)
+2	Positioning completion output	+2	Stop input (*3)
+3	Origin return completion output	+3	Reset input (*3)
+4 to +7	Use prohibited	+4 to +7	Use prohibited
+8 to +15	General purpose output ports 1-1 to 8	+8 to +15	General purpose input ports 1-1 to 8 (*3)
+16 to +23	General purpose output ports 2-1 to 8	+16 to +23	General purpose input ports 2-1 to 8 (*3)
+24 to +31	General purpose output ports 3-1 to 8	+24 to +31	General purpose input ports 3-1 to 8 (*3)
+32 to +39	General purpose output ports 4-1 to 8	+32 to +39	General purpose input ports 4-1 to 8
+40 to +47	General purpose output ports 5-1 to 8	+40 to +47	General purpose input ports 5-1 to 8
+48 to +55	General purpose output ports 6-1 to 8	+48 to +55	General purpose input ports 6-1 to 8
+56 to +63	General purpose output ports 7-1 to 8	+56 to +63	General purpose input ports 7-1 to 8
+64 to +71	General purpose output ports 8-1 to 8	+64 to +71	General purpose input ports 8-1 to 8
+72 to +79	JOG output	+72 to +79	JOG input
+80 to +127	Reserve	+80 to +127	Reserve

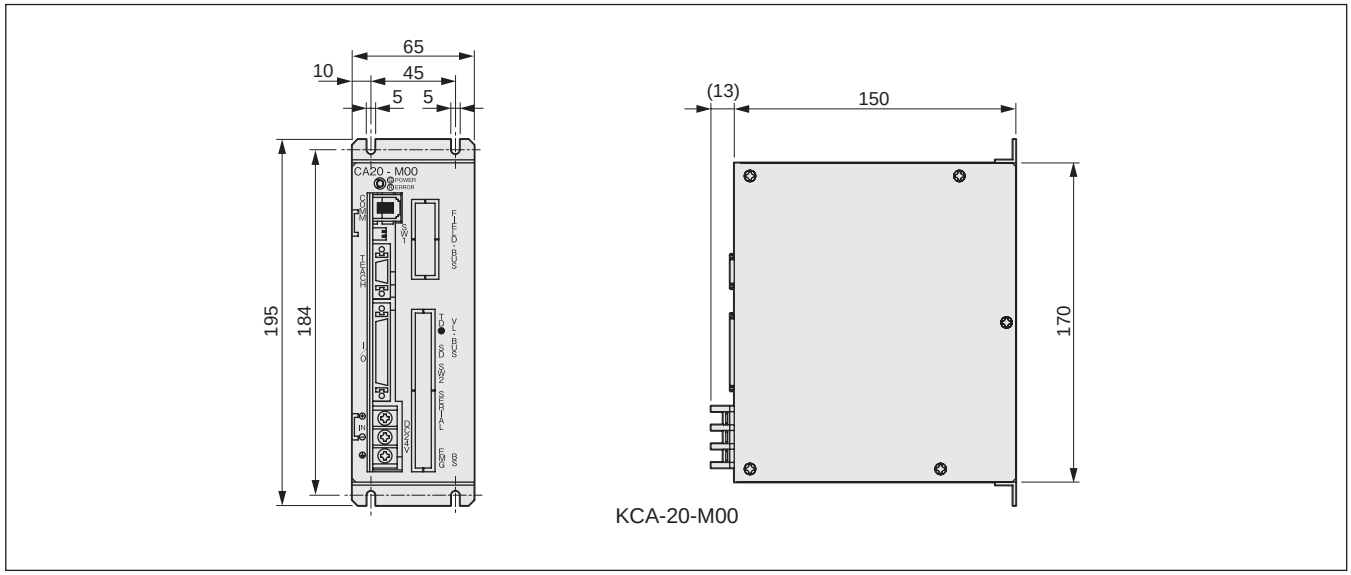
(*1) When there is interference with the DeviceNet communication, set the stop input to 1 and other input to 0.
However, stop input will also be cleared to 0 during T/P operation.
(*2) The amount of offset from the lead device. (Unit: bit)
(*3) System input and general purpose input ports 1 to 3 are selected for use by parameter.

[DeviceNet status display LED]

Name	Color	ON/OFF		Causes/countermeasures
MS	Green	● ON	Normal	Normal operation
		★ Blinking	Status not set	Master(Scanner) unit set value error. Confirm settings and restart. May also be on standby. Confirm that the master(scanner) unit is operating normally.
	Red	● ON	Catastrophic failure	Indicates a serious error. (DPRAM, internal ROM, internal RAM, EEPROM, CAN error, WDT error, etc.) Restart. In the event of another occurrence, replace the unit.
		★ Blinking	Minor failure	User settings are abnormal and user side timeout interruption has occurred. Reconfirm settings and restart.
	Green/Red	○ OFF	No power supply	Power is not being supplied, the unit is initializing, etc. Confirm power supply.
NS	Green	● ON	Normal	The unit is online and at least one connection has been established.
		★ Blinking	Waiting for connection	Master(Scanner) unit is not operating normally. (This includes configuration errors in the I/O area of the master(scanner) unit.) Confirm that the master(scanner) unit is operating normally.
	Red	● ON	Catastrophic communication error	Indicates a communication error. (Node address overlap, busoff detection, communication speed inconsistency, etc.) Confirm connection status, noise conditions, node address setting, communication speed setting, etc. and restart.
		★ Blinking	Minor communication error	Communication with the master(scanner) unit has timed out. Confirm master(scanner) unit status, connection status, noise conditions, node address setting, communication speed setting, etc. and restart.
	Green/ Red	○ OFF	No power supply	Indicates WDT error, baud rate check, node address overlap, lack of power supply, etc. Confirm power supply.

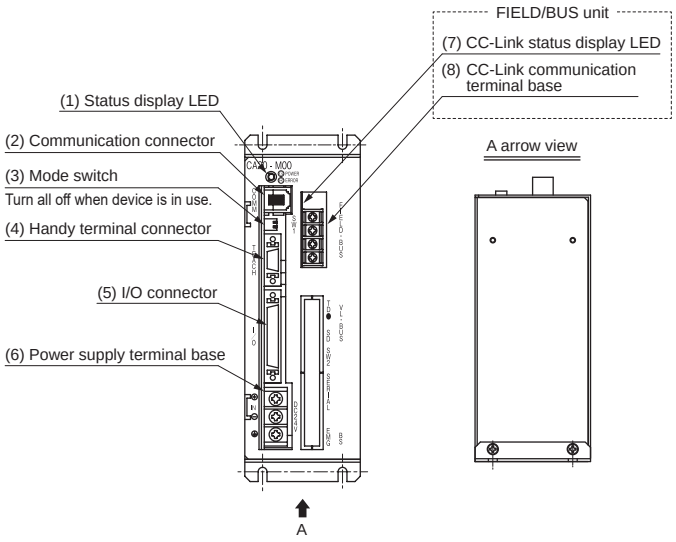
* The LED indicator lights ON for 0.5 seconds, and OFF for 0.5 seconds.

Dimensions

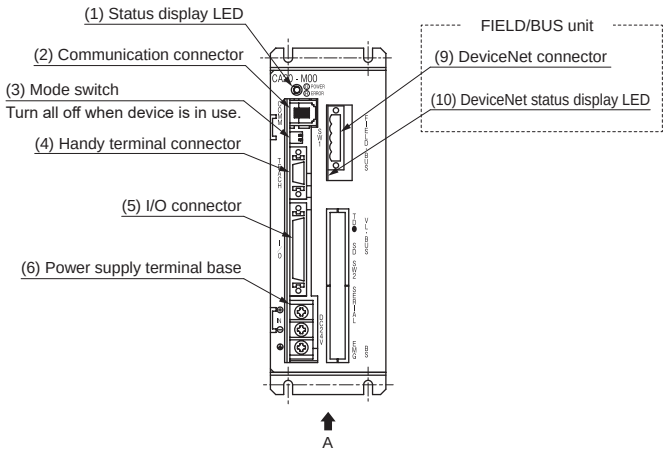


KCA-20-M00

[Section names]



KCA-20-M00-C0



KCA-20-M00-D0

(1) Status display LED
Displays the controller status. When the power is turned on, it lights in green. In case of an error, it lights in red.

(2) Communication connector
Used to connect link cables for slave(adapter) unit connection.

(3) Mode switch
Not used on this device. Turn all OFF when device is in use.

(4) Handy terminal connector
Used to connect communication cables (option) for handy terminal or PC connection.

(5) I/O connector
Connect exterior control components (PLC, etc.).

(6) Power supply terminal base
A power supply input terminal and FG (frame ground) terminal are equipped.

(7) CC-Link status display LED (option)
Displays CC-Link status.

(8) CC-Link communication terminal base (option)
Used to connect the CC-Link dedicated cable for data link.

(9) DeviceNet connector (option)
Used to connect the DeviceNet dedicated cable for data link.

(10) DeviceNet status display LED (option)
Displays DeviceNet status.

Slave(Adapter) unit

[Main function]

* Can be connected to a KBX Series controller.

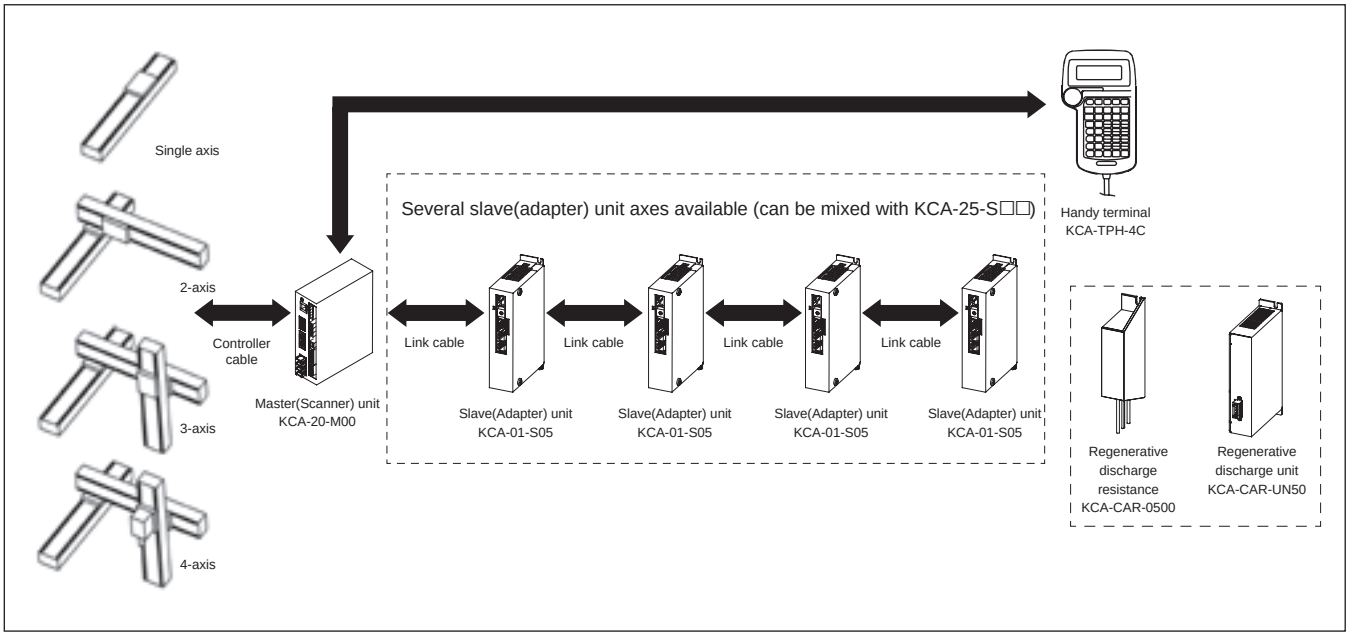
KCA-01-S05

How to order

KCA - 01 - S 05

[System configuration]

● KCA-20-M00



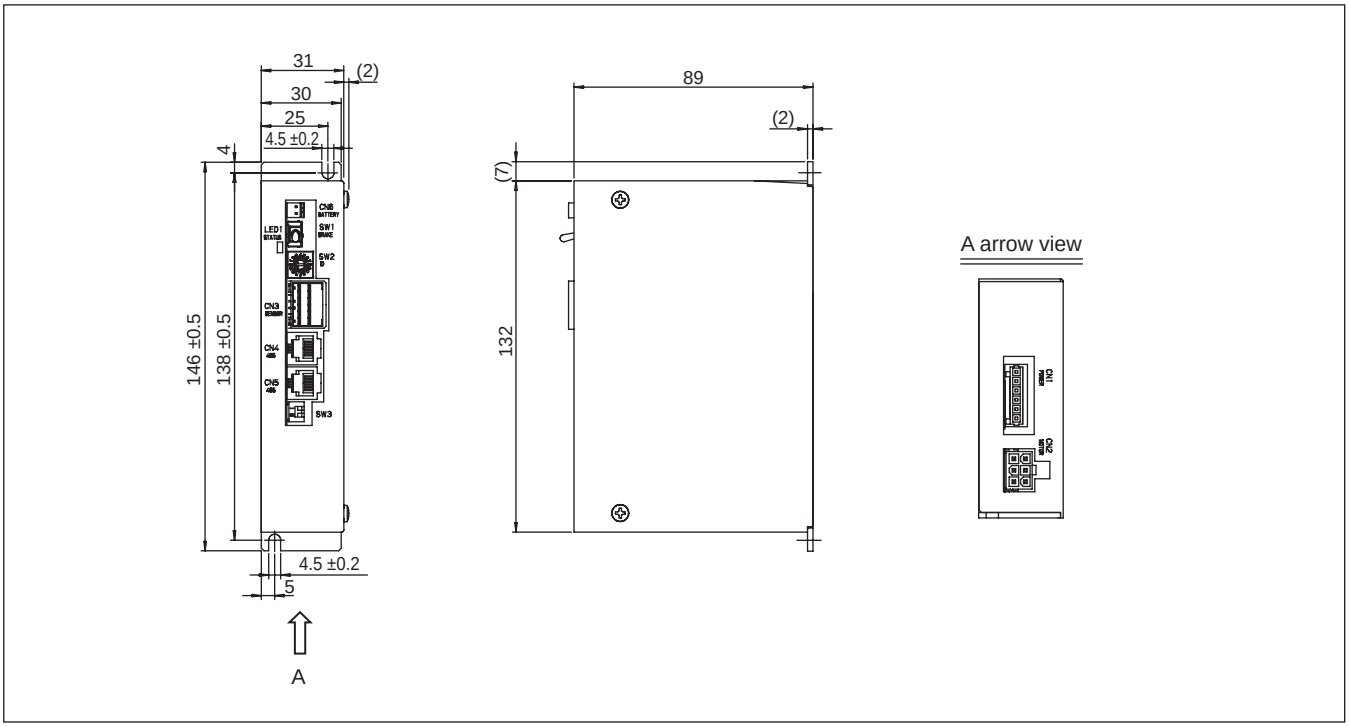
[General specifications]

Actuator		KBZ Series
Controller		KCA-01-S05
No. of control axes		1-axis (connect to master(scanner) unit)
Motor capacity		50 W
Abnormal display		Abnormal display indicator ON (front panel) Handy terminal (Connect to master(scanner) unit)
Origin sensor input		Yes
Regenerative function		Yes (external mounted regenerative resistance)
Dynamic brake function		None
Mechanical brake drive output		24 VDC to less than 0.4 A (For non-excitation brake) Brake release switch (SW1) enables forced release
Protection function	Hard error	Sensor abnormality, drive power supply abnormality, volatile memory abnormality, etc.
	Soft error	Acceleration, overload, excessive position deviation, etc.
	Warning	Battery voltage low
Status display		When the power is turned on, it lights in green. In case of an error, it lights in red.

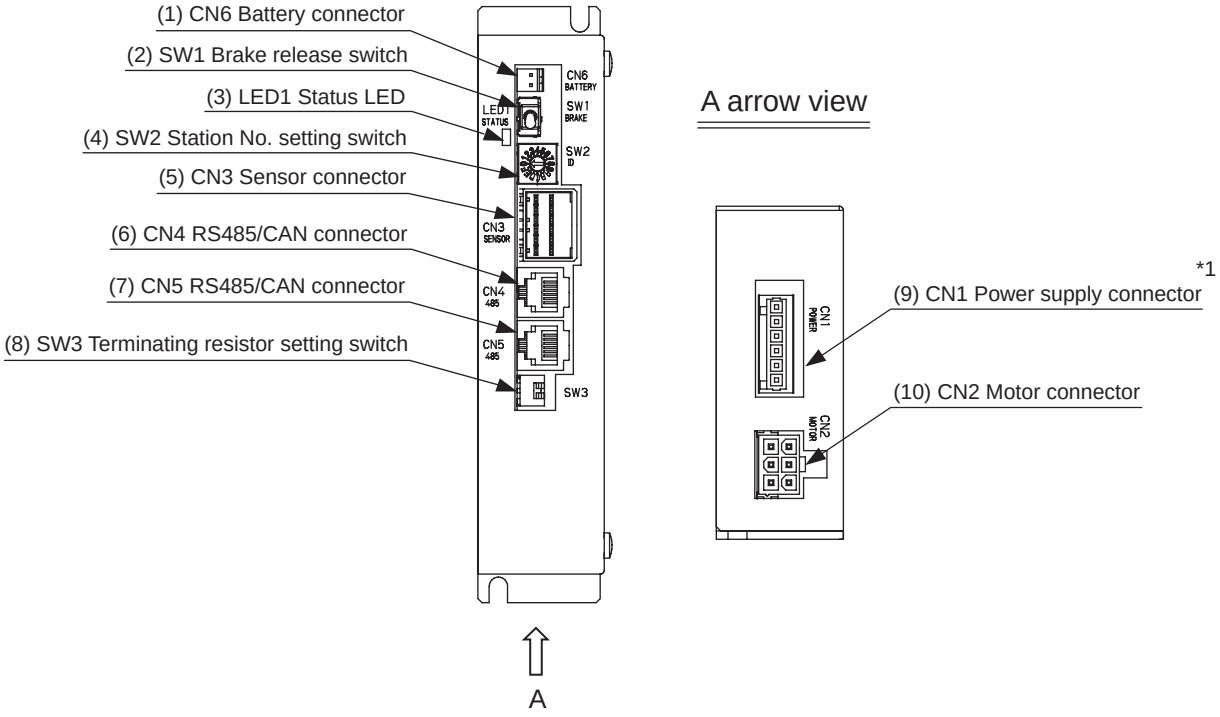
Control power supply voltage	24 VDC ±10%	
Drive power supply voltage	24 VDC ±10%	
Control power supply capacity	0.25 A	
Drive power supply capacity	Depends on the axis, Rating 3 A (max. 9 A)	
Ambient conditions	Operating ambient temperature	0 to 40°C
	Operating ambient humidity	90% or less (no condensation)
	Storage ambient temperature	−10 to 85°C
	Storage ambient humidity	90% or less (no condensation)
	Environment	Indoors (no exposure to direct sunlight); No dirt, dust, or corrosive or flammable gases; at 1,000 m or less above sea level
	Vibration/ impact	Less than 4.9 m/s^2/less than 19.6 m/s^2
Dimensions	31 (W) × 146 (H) × 89 (D) (excluding screw projections)	
Weight	Approx. 0.25 kg	

[Dimensions]

Slave(Adapter) unit



[Section names]



(1) CN6 Battery connector
Used to connect the backup battery for the resolver ABS.

(2) SW1 Brake release switch
A momentary switch used to forcibly release the brake.
While the lever is held up, the brake is forcibly released. When the lever is loosened, the brake returns to normal control.

(3) LED1 Status LED
Displays the controller status. When the power is turned on, it lights in green. In case of an error, it lights in red.

(4) SW2 Station No. setting switch
Used to specify the station No. of each slave(adapter) unit when they are connected to control multiple axes.
Set to "F" when updating the firmware.

*1 Comes equipped with a plug and wiring lever.

(5) CN3 Sensor connector
Used to connect motor sensor cables.

(6) CN4 RS485/CAN connector
Used to connect communication cables for slave(adapter) unit (option) connection.

(7) CN5 RS485/CAN connector
Used to connect communication cables for slave(adapter) unit (option) connection.

(8) SW3 Terminating resistor setting switch
Used to connect the terminating resistor for communication when a slave(adapter) unit (option) is connected.

(9) CN1 Power supply connector
Used to input control power supply and drive power supply.

(10) CN2 Motor connector
Used to connect motor cables.

Controller cable

[Applications]

Cable to connect the shaft body to the controller. It contains both power lines and resolver signal lines, and is formed from two bend resistant cables.
This is a dedicated cable for the shaft body. There is no user cable included.

How to order

KBZ - CC - M 30

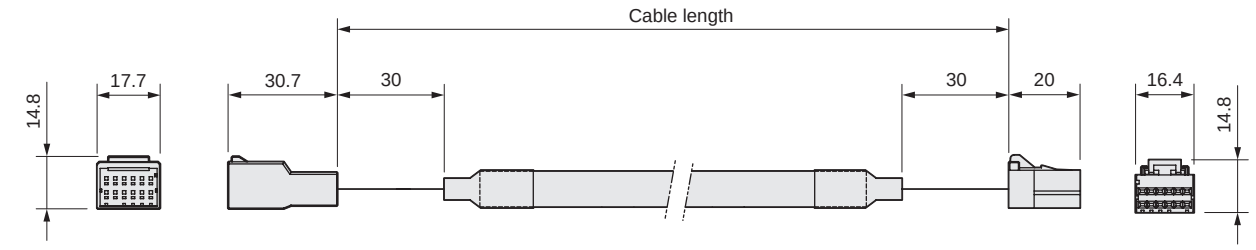
Controller cable

Ⓐ Cable length

Code	Content
Ⓐ **Cable length**	
30	3000 mm
40	4000 mm
50	5000 mm

* The controller cable is a set made from one motor line and one resolver line.

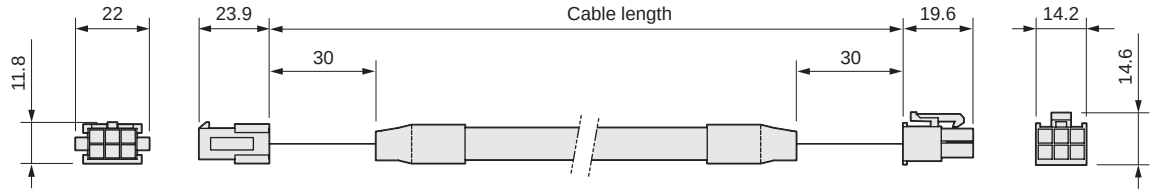
[Dimensions]



Tab housing: 1-1318115-6 (Tyco Electronics)
Tab contact: 1318112-1 (Tyco Electronics)

Resolver cable covering diameter: 8.9 mm

Receptacle housing: 1-1318118-6 (Tyco Electronics)
Receptacle contact: 1318108-1 (Tyco Electronics)



Plug: 5559-06P (MOLEX)
Pin: 5558-PBT (MOLEX)

Motor cable covering diameter: 8.7 mm

Receptacle: 5557-06R (MOLEX)
Pin: 5556TL (MOLEX)

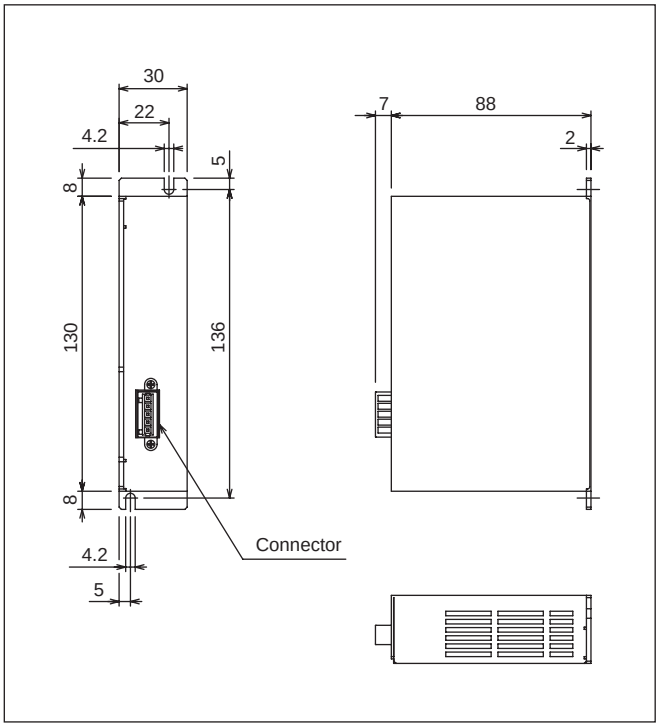
Regenerative resistance

[Applications]

Use with the vertical axis.
(The unit prevents overvoltage generated in the controller.)
* There is a unit type with a cover (KCA-CAR-UN50) and a resistance type without a cover (KCA-CAR-0500).
* Discharge unit energy is all converted to heat.
* If there is abnormal heat generation in the resistance, it experiences contact output (N.C.).
* A one axis unit.

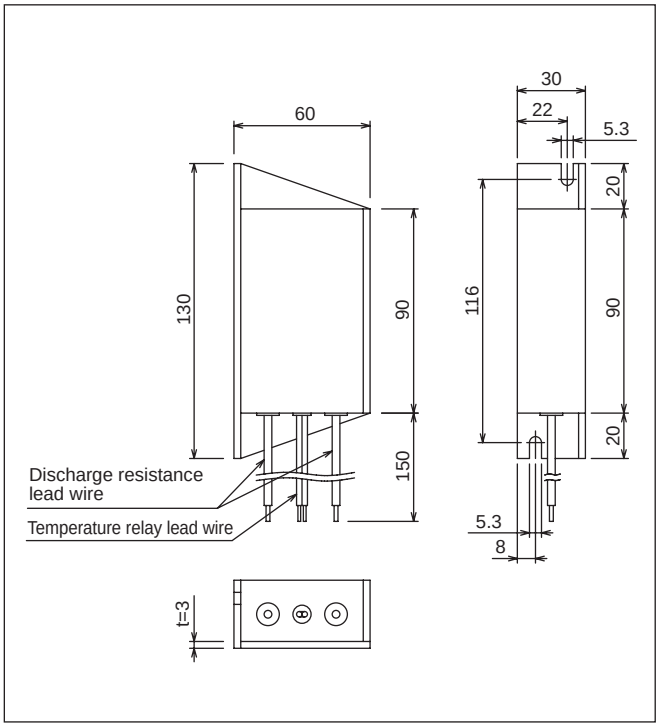
[Dimensions]

KCA-CAR-UN50



Accessories: connector, wiring lever

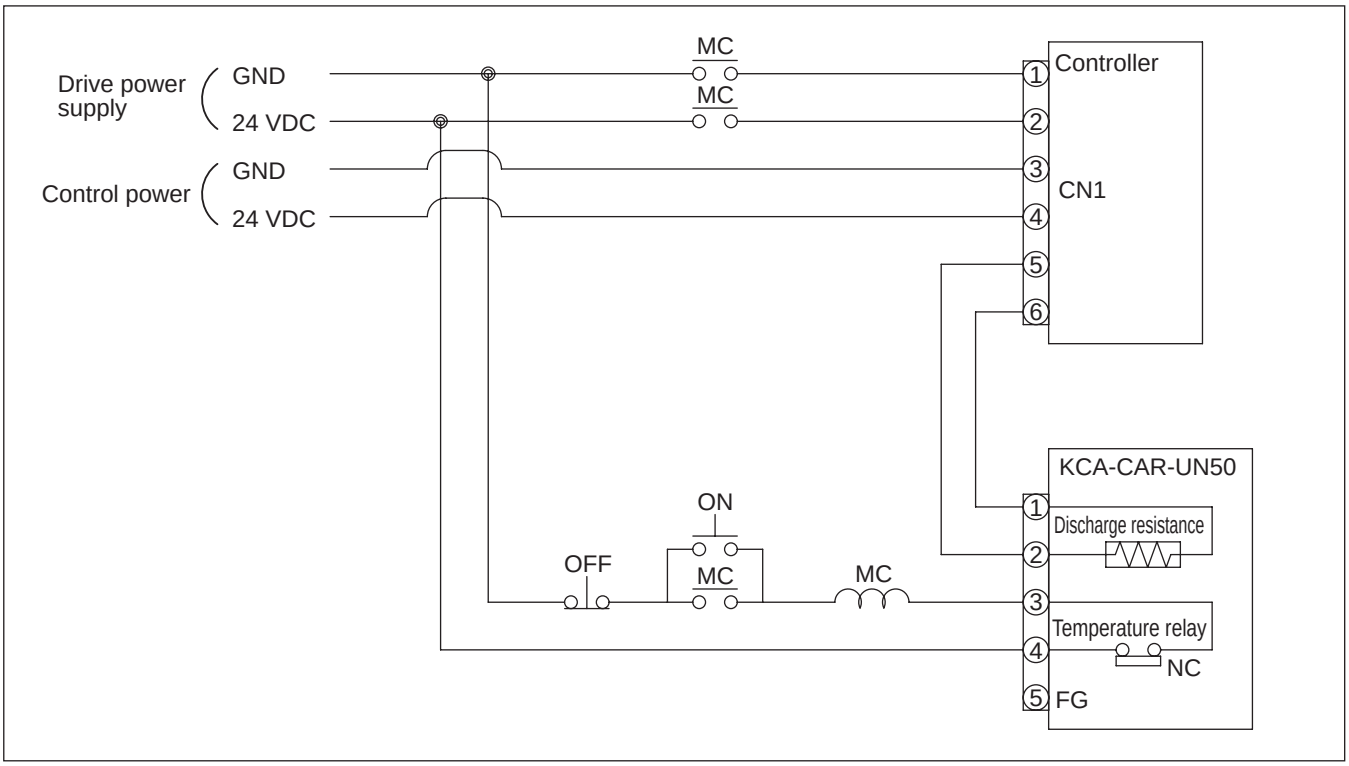
KCA-CAR-0500



Accessories: relay connector × 2

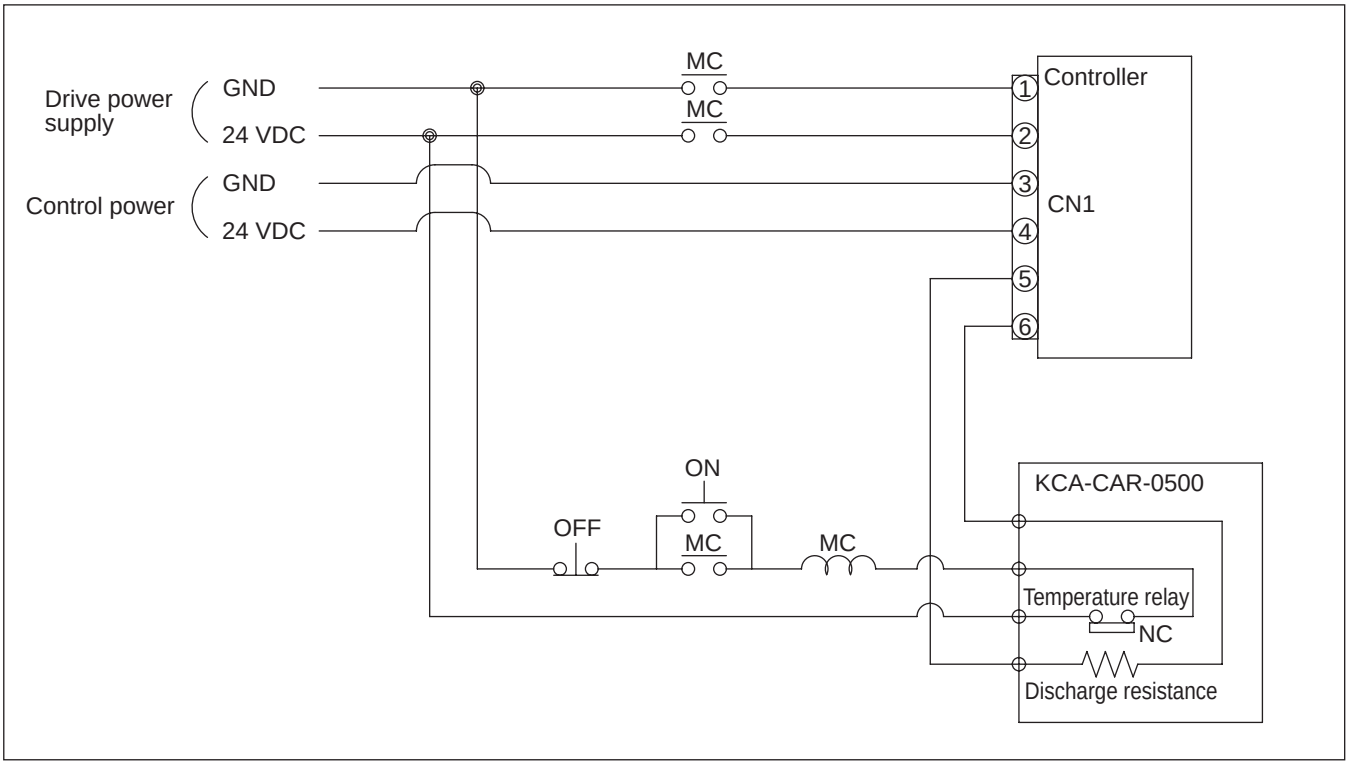
[Connection example]

KCA-CAR-UN50



- A temperature relay which operates at the temperature of 120°C is incorporated in KCA-CAR-UN50.
- When this relay has operated, output intervals of the temperature relay are set open.
- Program a sequence so that the controller drive power supply is always turned off when the temperature relay is operating.

KCA-CAR-0500



- A temperature relay which operates at the temperature of 135°C is incorporated in KCA-CAR-0500.
- When this relay has operated, output intervals of the temperature relay are set open.
- Program a sequence so that the controller drive power supply is always turned off when the temperature relay is operating.

I/O cable

[Applications]

Used to connect an I/O port of a master(scanner) unit to transmit signals with an external operation panel or control device.
A plug is attached to one side of the cable, which can be connected directly to the controller. The I/O cable should be connected to an external device according to the color marking put on the core wire and the sign table.
Before connecting the external device, the core wire should be treated with a crimp-terminal.

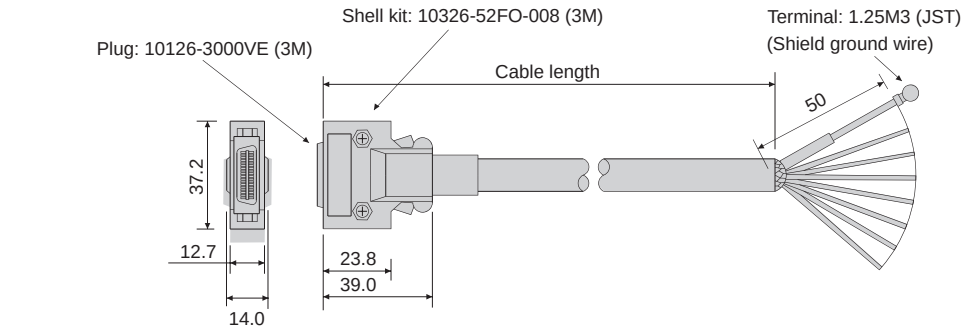
How to order

KCA - 01 - IC - A 30

Ⓐ Cable length

Code	Content
Ⓐ **Cable length**	
30	3000 mm
50	5000 mm

Dimensions



Type	Number of core wires	Core wire size	Covering diameter
KCA-01-IC-A□□	26	0.13 sq	9.1 mm

Resolver ABS backup battery (for maintenance)

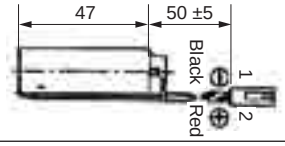
[Applications]

Mounted on the controller as a backup battery for a resolver ABS.
One battery each is attached to the master(scanner) unit (KCA-01-M05) and slave(adapter) unit (KCA-01-S05).

How to order

KCA - 10 - EB - 05

● Lithium battery specifications

Descriptions			Content	Remarks
Part name			Lithium battery	Thionyl chloride lithium battery
Model			ER17500V C	Made by Toshiba
Specifications	Nominal voltage, capacity		3.6 V 2700 mAh	
	External	Battery body	ø17 × 47 mm (excluding projections)	
		Harness length	50 ±5 mm (excluding connectors)	
	Weight		Approx. 20 g	
Backup duration (*1)			Approx. 1 year (*2)	25°C, backup battery 260 µA

(*1) Total time when the controller power is turned off.
(*2) Duration of battery varies with the ambient temperature, etc. The value only provides a rough guide.