Robot positioner **Single-axis** **TS series**

TS-S2/TS-SH/TS-X/TS-P

● **CE compliance**

TS series are positioner type controllers that only performs point trace. No program is needed. Operation is simple. After setting point data, specify the point number and enter a START signal from host controller such as a PLC. Positioning or pushing operation then begins.

Main functions ▶ P.94

Handy terminal
▶ **HT1/HT1-D**
P.698

Support software for PC
▶ **TS-Manager**
P.688

TS-S2 **TS-SH** **TS-X** **TS-P**

■ Basic specifications

▌ TS-S2/TS-SH

	Item		TS-S2	TS-SH
Basic specifications	Number of controllable axes		Single-axis	
	Controllable robots		TRANSERVO series	
	Current consumption		2.5A (Rating) 4.5A (Max.)	3.5A (Rating) 6.5A (Max.)
	Dimensions		W30 × H162 × D82mm	W30 × H162 × D123mm
	Weight		Approx. 0.2kg	Approx. 0.3kg
	Input power supply	Control power supply	DC24V +/-10%	
		Main power supply	DC24V +/-10%	
Axis control	Control method		Closed loop vector control method	
	Operating method		I/O point tracing (Positioning operation by specifying point number) / Remote command	
	Operation types		Positioning, merge-positioning, push, and jog operations	
	Position detection method		Resolver	Resolver with multi-turn absolute function
	Resolution		20480 pulses/rev. or 4096 pulses/rev. depending on the robot	
	Origin search method		Incremental	Absolute / Incremental
Points	Points		255 points	
	Point type setting		(1) Standard setting: Set speed and acceleration in percent of the respective maximum settings. (2) Custom setting: Set speed and acceleration in SI units.	
	Point teaching method		Manual data input (coordinates input), Teaching, Direct teaching	
External input/output	I/O interface		Selectable from the following: NPN, PNP, CC-Link, DeviceNet[TM], EtherNet/IP[TM], PROFINET	
	Input		Servo ON (SERVO), reset (RESET), start (START), interlock (/LOCK) origin search (ORG), manual mode (MANUAL), jog motion - (JOG-), jog motion + (JOG+), Point number selection (PIN0 to PIN7)	
	Output		Servo status (SRV-S), alarm (/ALM), operation end (END), operation in-progress (BUSY), control outputs (OUT0 to 3), Point number output 0 to 7 (POUT0 to POUT7)	
	External communications		RS-232C 1CH	
	Safety circuit		Emergency stop input, emergency stop contact output (1 system: When the HT1 is used.)	
Options	Handy terminal		HT1, HT1-D (with enable switch)	
	Support software for PC		TS-Manager	
General specifications	Operating temperature / Operating humidity		0°C to 40°C, 35% to 85%RH (non-condensing)	
	Storage temperature/ Storage humidity		-10°C to 65°C, 10% to 85%RH (non-condensing)	
	Atmosphere		Indoor location not exposed to direct sunlight. No corrosive , flammable gases, oil mist, or dust particles	
	Anti-vibration		All XYZ directions 10 to 57Hz unidirectional amplitude 0.075mm 57 to 150Hz 9.8m/s^2	
	Protective functions		Position detection error, temperature error, overload, overvoltage, low voltage, excessive position deviation, overcurrent, motor current error, motor cable faulty wiring, Excitation power failure error [Note 1]	

Note 1. The excitation power failure error is a protection function that is available only in TS-SH.

TS-S2/TS-SH/TS-X/TS-P

Controllable robot	TS-S2/TS-SH ▶ TRANSERVO P.253	TS-X ▶ FLIP-X P.295	TS-P ▶ PHASER P.341
CE marking	◯		
Field networks	CC-Link DeviceNet EtherNet/IP PROFINET		

■ Model Overview

Name	TS-S2	TS-SH	TS-X/TS-P
Controllable robot	Dedicated compact single-axis TRANSERVO		TS-X: Single-axis robot FLIP-X TS-P: Linear motor single-axis PHASER
Input power — Control power supply	DC24V +/-10%		● AC100V specifications Control power supply Single phase 100 to 115V AC +/-10%
Input power — Main power supply	DC24V +/-10%		Main power supply Single phase 100 to 115V AC +/-10%
Operating method	I/O point tracing / Remote command /Operation using RS-232C communication		
Maximum number of controllable axes	Single-axis		
Origin search method	Incremental	Absolute / Incremental	TS-X: Absolute / Incremental TS-P: Absolute / Semi-absolute

(AC200V specifications: Control power supply Single phase 200 to 230V AC +/-10%; Main power supply Single phase 200 to 230V AC +/-10%)

■ Ordering method

▌TS-S2/TS-SH (TRANSERVO)

Robot positioner	Type	I/O	Battery Note 1
S2: TS-S2 SH: TS-SH	No entry: Standard S: Sensor	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: With no I/O board	B: With battery (Absolute model) N: None (Incremental model)

Note 1. Battery can only be selected for TS-SH. (Not provided for TS-S2).

▌TS-X/TS-P (FLIP-X/PHASER)

Controller	Driver: Power-supply voltage/Power capacity	Regenerative unit	LCD monitor	Input/Output Selection	Battery Note 2
TSX: TS-X TSP: TS-P	105: 100V / 100W more less 110: 100V / 200W 205: 200V / 100W more less 210: 200V / 200W 220: 200V / 400 to 600W	No entry: None R: With RGT R: With RGU-2	No entry: None L: With LCD	NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ PT: PROFINET GW: With no I/O board	B: With battery (Absolute model) N: None (Incremental model)

Note 2. Battery can only be selected for TS-X. (Not provided for TS-P).

▌TS-X/TS-P

	Item	TS-X / TS-P				
		100V AC input		200V AC input		
Basic specifications	Driver model	TS-X105 / TS-P105	TS-X110 / TS-P110	TS-X205 / TS-P205	TS-X210 / TS-P210	TS-X220 / TS-P220
	Number of controllable axes	Single-axis				
	Controllable robots	TS-X: Single-axis robot FLIP-X series TS-P: Linear motor single-axis robot PHASER series				
	Power capacity	400VA	600VA	400VA	600VA	1400VA
	Dimensions	W58 × H162 × D131mm				W70 × H162 × D131mm
	Weight	Approx. 0.9kg				Approx. 1.1kg
	Input power supply — Control power supply	Single phase 100 to 115V AC +/-10% 50/60Hz		Single phase 200 to 230V AC +/-10% 50/60Hz		
	Input power supply — Main power supply	Single phase 100 to 115V AC +/-10% 50/60Hz		Single phase 200 to 230V AC +/-10% 50/60Hz		
Axis control	Control method	Closed loop vector control method				
	Operating method	I/O point tracing (Positioning operation by specifying point number) / Remote command				
	Operation types	Positioning, merge-positioning, push, and jog operations				
	Position detection method	TS-X: Resolver with multi-rotation absolute function TS-P: Magnetic type linear scale				
	Resolution	TS-X: 16384 pulses/rev. TS-P: 1μm				
	Origin search method	TS-X: Absolute / Incremental TS-P: Incremental / Semi-absolute				
Points	Number of points	255 points				
	Point type setting	(1) Standard setting: Set speed and acceleration in percent of the respective maximum settings. (2) Custom setting: Set speed and acceleration in SI units.				
	Point teaching method	Manual data input (coordinates input) , Teaching, Direct teaching				
External input/output	I/O interface	Selectable from the following: NPN, PNP, CC-Link, DeviceNet™, EtherNet/IP™, PROFINET				
	Input	Servo ON (SERVO), reset (RESET), start (START), interlock (/LOCK) origin search (ORG), manual mode (MANUAL), jog motion - (JOG-), jog motion + (JOG+), Point number selection (PIN0 to PIN7)				
	Output	Servo status (SRV-S), alarm (/ALM), operation end (END), operation in-progress (BUSY), control outputs (OUT0 to 3), Point number output 0 to 7 (POUT0 to POUT7)				
	External communications	RS-232C 1CH				
	Power supply for brake	DC24V +/-10% 300mA (prepared by the customer)				
	Safety circuit	Emergency stop input, main power input ready output, emergency stop contact output (1 system: When the HT1 is used.)				
Options	Handy terminal	HT1, HT1-D (with enable switch)				
	Support software for PC	TS-Manager				
General specifications	Operating temperature / Operating humidity	0°C to 40°C, 35% to 85%RH (non-condensing)				
	Storage temperature / Storage humidity	-10°C to 65°C, 10% to 85%RH (non-condensing)				
	Atmosphere	Indoor location not exposed to direct sunlight. No corrosive , flammable gases, oil mist, or dust particles				
	Anti-vibration	All XYZ directions 10 to 57Hz unidirectional amplitude 0.075mm 57 to 150Hz 9.8m/s^2				
	Protective functions	Position detection error, power module error, temperature error, overload, overvoltage, low voltage, excessive position deviation, overcurrent, motor current error				
	Protective structure	IP20				

Side tab labels (right margin): Articulated robots YA | Linear conveyor modules LCM | Single-axis robots GX | Motor-less single axis actuator Robonity | Compact single-axis robots TRANSERVO | Single-axis robots FLIP-X | Linear motor single-axis robots PHASER | Cartesian robots XY-X | SCARA robots YK-X | Pick & place robots YP-X | CLEAN | CONTROLLER | INFORMATION | Robot positioner | Pulse string driver | Robot controller | RCX/iVY2+ Electric gripper | Option

■ TS-X / TS-P specification selection table

Some specifications are automatically determined by the robot model.

■ TS-X

			T4LH/C4LH	T5LH/C5LH	T6L/C6L	T9	T9H	F8/C8	F8L/C8L	F8LH/C8LH	F10/C10	F10H	F14/C14	F14H/C14H	GF14XL	F17/C17	F17L/C17L	GF17XL	F20/C20	F20N	N15/N15D	N18/N18D	B10	B14	B14H	R5	R10	R20
Power supply voltage / Current sensor	TS-X	105	●	●	●	●		●	●	●	●			●									●	●	●	●	●	
		110					●					●	●	●														●
		205	●	●	●	●		●	●	●	●			●									●	●	●	●	●	
		210					●						●	●														●
		220														●	●	●	●	●	●	●						
Regenerative unit	No entry (None)					(1)	(2)				(1)	(2)	(1)	(2)	●	(3)		(6)	(3)	(4)					(5)			
	R (RGT)					(1)	(2)				(1)	(2)	(1)	(2)		(3)		(6)	(3)	(4)	●	●			(5)			

(1) Regenerative unit is needed if using in a perpendicular position and movement stroke is 700mm or more.
(2) Regenerative unit is needed if using in a perpendicular position.
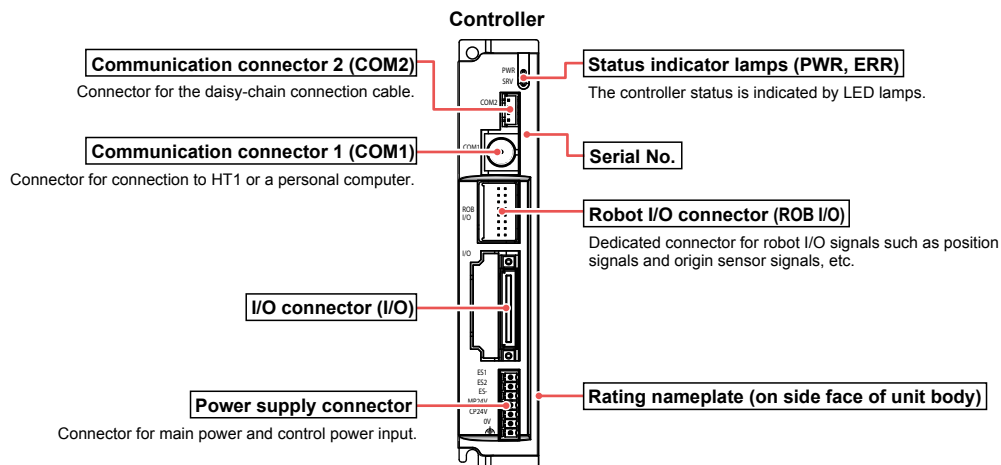**(3)** [The following arrangements require a regeneration unit.]
 • Using in the upright position.
 • To move at a speed exceeding 1,000 mm/sec horizontally.
 • High lead (40) used horizontally.

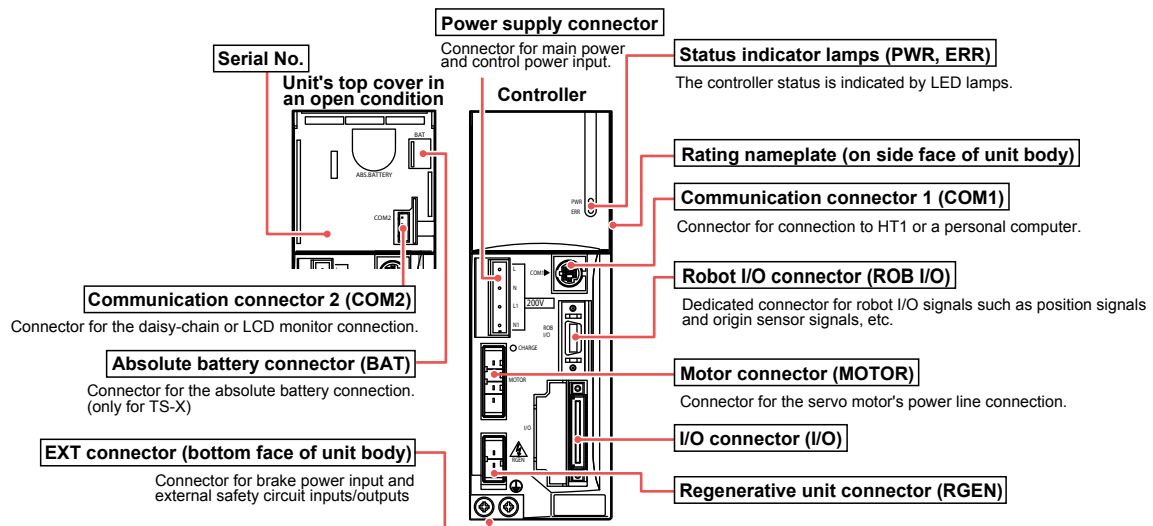**(4)** Regenerative unit is needed if using at maximum speeds exceeding 1000mm per second.
(5) Regenerative unit is needed if using at maximum speeds exceeding 1250mm per second.
(6) Regenerative unit is needed if using at maximum speeds exceeding 750mm per second.

■ TS-P

			MF7/7D	MF15/15D	MF20/20D	MF30/30D	MF75/75D
Power supply voltage / Current sensor	TS-P	105					
		110	●	●	●		
		205					
		210	●	●	●		
		220				●	●
Regenerative unit	No entry (None)		●	●			
	R (RGT)				●	●	
	R (RGU-2)						●

■ Part names

■ TS-S2/TS-SH

Controller

Communication connector 2 (COM2)
Connector for the daisy-chain connection cable.

Communication connector 1 (COM1)
Connector for connection to HT1 or a personal computer.

I/O connector (I/O)

Power supply connector
Connector for main power and control power input.

Status indicator lamps (PWR, ERR)
The controller status is indicated by LED lamps.

Serial No.

Robot I/O connector (ROB I/O)
Dedicated connector for robot I/O signals such as position signals and origin sensor signals, etc.

Rating nameplate (on side face of unit body)

■ TS-X/TS-P

Serial No.

Unit's top cover in an open condition

Power supply connector
Connector for main power and control power input.

Controller

Communication connector 2 (COM2)
Connector for the daisy-chain or LCD monitor connection.

Absolute battery connector (BAT)
Connector for the absolute battery connection.
(only for TS-X)

EXT connector (bottom face of unit body)
Connector for brake power input and external safety circuit inputs/outputs

Status indicator lamps (PWR, ERR)
The controller status is indicated by LED lamps.

Rating nameplate (on side face of unit body)

Communication connector 1 (COM1)
Connector for connection to HT1 or a personal computer.

Robot I/O connector (ROB I/O)
Dedicated connector for robot I/O signals such as position signals and origin sensor signals, etc.

Motor connector (MOTOR)
Connector for the servo motor's power line connection.

I/O connector (I/O)

Regenerative unit connector (RGEN)

■ Dimensions

■ TS-S2

■ TS-SH

■ TS-X/TS-P (105/110/205/210)

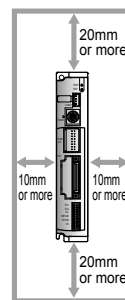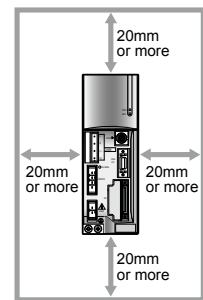### ■ TS-X/TS-P (220)

EXT connector

EXT connector
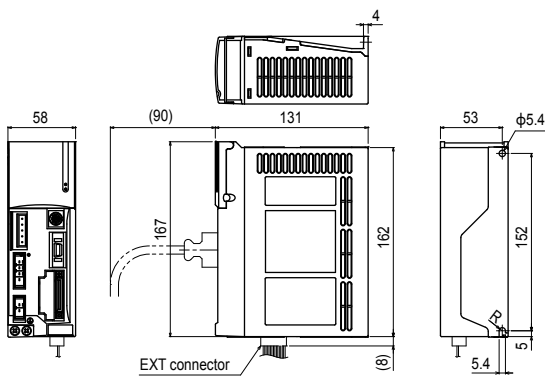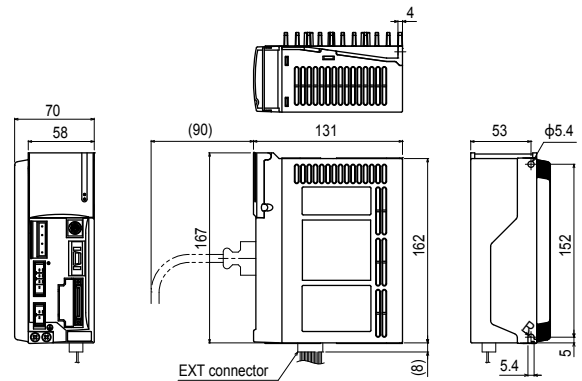
■ Installation conditions

- Install the TS-S2/TS-SH/TS-X/TS-P inside the control panel.
- Install the TS-S2/TS-SH/TS-X/TS-P on a vertical wall.
- Install the TS-S2/TS-SH/TS-X/TS-P in a well ventilated location, with space on all sides of the TS-S2/TS-SH/TS-X/TS-P (See fig. at right.).
- Ambient temperature　: 0 to 40°C
- Ambient humidity　　: 35 to 85% RH (no condensation)

■ TS-S2/TS-SH

20mm or more

10mm or more　　10mm or more

20mm or more

■ TS-X/TS-P

20mm or more

20mm or more　　20mm or more

20mm or more

■ Cautions on TS-S2 / TS-SH

For the RF type sensor specifications, the controllers "TS-S2" and "TS-SH" become "TS-S2S" and "TS-SHS", respectively.

TS-S2 / TS-SH (Standard specifications)

"BK" label is affixed to the front of the controller.

TS-S2S / TS-SHS (Sensor specifications)

"SENSOR" label is affixed to the front of the controller.
(Be aware that "TS-S2S" is affixed to the front of the controller.)
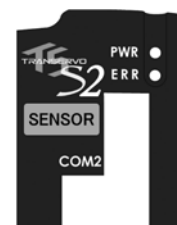
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■ Regenerative unit RGT/RGU-2

Regenerative unit RGT
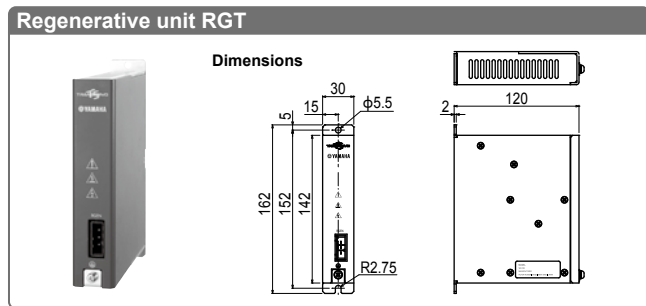
Dimensions

● Basic specifications

Item	RGT
Model	KCA-M4107-0A (including cable supplied with unit)
Dimensions	W30 × H142 × D118mm (Not including installation stay)
Weight	470g
Regenerative voltage	Approx. 380V or more
Regenerative stop voltage	Approx. 360V or less
Accessory	Cable for connection with controller (300mm)

Note. Always leave an empty space (gap of about 20mm) between this unit and the adjacent controller.
Also, always use the dedicated cable when connecting the controller.

Regenerative unit RGU-2
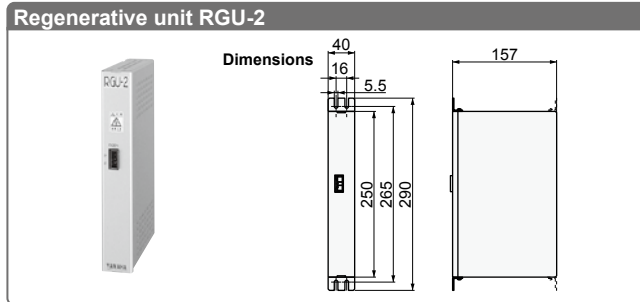
Dimensions

● Basic specifications

Item	RGU-2 TS-P
Model	KCA-M4107-2A (including cable supplied with unit)
Dimensions	W40 × H250 × D157mm
Weight	0.9kg
Regenerative voltage	Approx. 380V or more
Regenerative stop voltage	Approx. 360V or less
Accessory	Cable for connection with controller (300mm)

Note. Always leave an empty space (gap of about 20mm) between this unit and the adjacent controller. Also, always use the dedicated cable when connecting the controller.

■ Data overview

Point data and parameter data settings must be specified in order to operate a robot from a TS series controller.
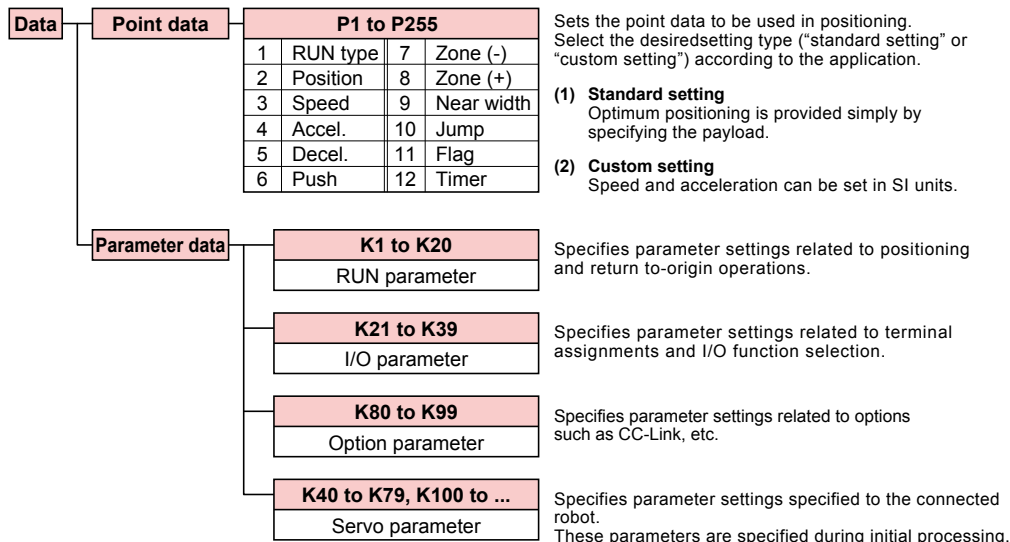
Point data

The point data used in positioning operations includes items such as the "RUN type", "Position", and "Speed", etc. Up to 255 points (P1 to P255) can be registered. There are two point data setting types: "Standard setting" type that automatically defines optimal positioning simply by specifying the payload and "Custom setting" type that allows setting the speed (mm/s) and acceleration (m/s^2) in SI units. Select the desired setting type according to the application.

Parameter data

Parameter data is divided into the following categories: "RUN parameters", "I/O parameters", "option parameters", and "servo parameters".

● Data structure

Data	Point data	**P1 to P255**			
		1	RUN type	7	Zone (-)
		2	Position	8	Zone (+)
		3	Speed	9	Near width
		4	Accel.	10	Jump
		5	Decel.	11	Flag
		6	Push	12	Timer

Sets the point data to be used in positioning. Select the desiredsetting type ("standard setting" or "custom setting") according to the application.

(1) Standard setting
Optimum positioning is provided simply by specifying the payload.

(2) Custom setting
Speed and acceleration can be set in SI units.

Parameter data	**K1 to K20**
	RUN parameter

Specifies parameter settings related to positioning and return to-origin operations.

	K21 to K39
	I/O parameter

Specifies parameter settings related to terminal assignments and I/O function selection.

	K80 to K99
	Option parameter

Specifies parameter settings related to options such as CC-Link, etc.

	K40 to K79, K100 to ...
	Servo parameter

Specifies parameter settings specified to the connected robot.
These parameters are specified during initial processing.

■ Point data

Point data item list

| P1 to P255		
	Item	Description
1	RUN type	Specifies the positioning operation pattern.
2	Position	Specifies the positioning target position or movement amount.
3	Speed	Specifies the positioning speed.
4	Accel.	Specifies the positioning acceleration.
5	Decel.	Specifies the positioning deceleration (as a percentage of the acceleration).
6	Push	Specifies the electrical current limit value for "Push" operations.
7	Zone (-)	Specifies the "personal zone" output range.
8	Zone (+)	
9	Near width	Specifies the "near width" zone (distance tolerance relative to target position).
10	Jump	Specifies the next movement destination, or the next merge operation merge destination point No. following positioning completion.
11	Flag	Specifies other information related to the positioning operation.
12	Timer	Specifies the waiting time (delay) after positioning completion.

"Standard setting" and "custom setting"

There are 2 setting types for point data ("standard setting" or "custom setting"). Select the desired setting type according to the application.
The maximum number of setting points for both setting types is 255 points (P1 to P255).

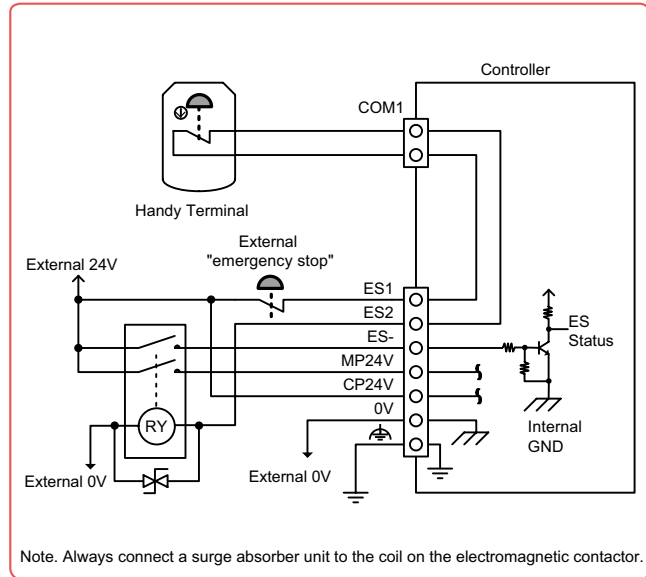| Setting Type	Description
Standard setting	Optimum positioning is provided simply by specifying the payload. This setting type is well-suited to assembly and transport applications.
Custom setting	Allows changing the speed and acceleration in SI units so the desired positioning operation can be set. This setting type is suited for machining and inspection systems.

■ NPN type input / output wiring diagram

■ TS-S2/TS-SH

■ TS-X

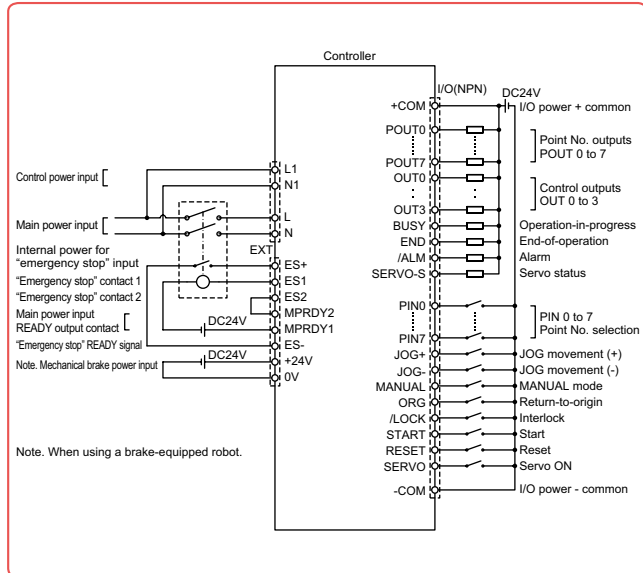Note. When using a brake-equipped robot.

■ TS-P
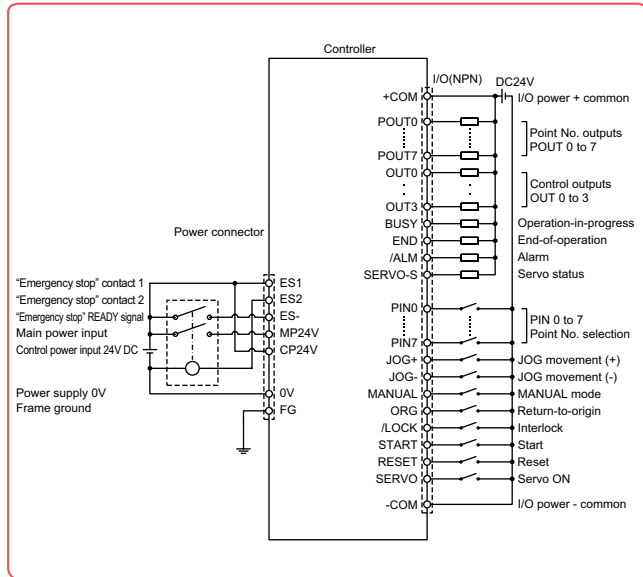
■ Emergency stop circuit example

■ TS-S2/TS-SH (power connector and host unit connection example)

Note. Always connect a surge absorber unit to the coil on the electromagnetic contactor.

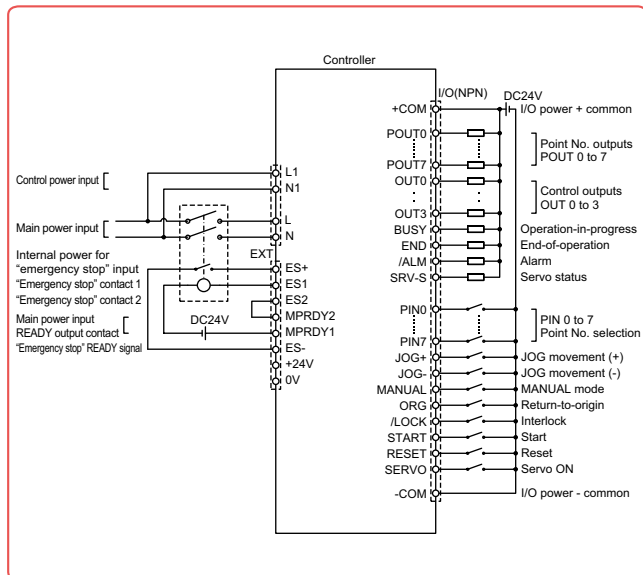### ■ TS-X/TS-P (EXT connector and host unit connection example)
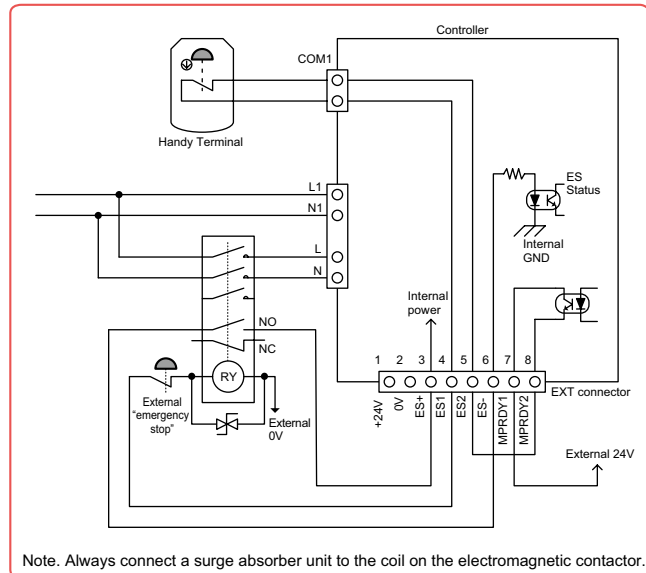
Note. Always connect a surge absorber unit to the coil on the electromagnetic contactor.

Installing an external safety circuit will satisfy safety category class 4 standards. See P.748 for more information.

■ I/O Specifications

| Item	Description
NPN	Input 16 points, 24VDC +/-10%, 5.1mA/point, positive common Output 16 points, 24VDC +/-10%, 50mA/point, sink type
PNP	Input 16 points, 24VDC +/-10%, 5.5mA/point, minus common Output 16 points, 24VDC +/-10%, 50mA/point, source type
CC-Link	CC-Link Ver.1.10 compatible, Remote station device (1 node)
DeviceNet™	DeviceNet™ Slave 1 node
EtherNet/IP™	EtherNet/IP™ adapter (2 ports)
PROFINET	PROFINET Slave 1 node

TS-S2/TS-SH/TS-X/TS-P

Articulated robots YA | Linear conveyor modules LCM | Single-axis robots GX | Motor-less single axis actuator Robonity | Compact single-axis robots TRANSERVO | Single-axis robots FLIP-X | Linear motor single-axis robots PHASER | Cartesian robots XY-X | SCARA robots YK-X | Pick & place robots YP-X | CLEAN | CONTROLLER | INFORMATION | Robot positioner | Pulse string driver | Robot controller | RCX|Y|Y2+ Electric gripper | Option

■ I/O signals (NPN / PNP)

No.	Signal Name	Description	No.	Signal Name	Description
A1	+COM	I/O power input, positive common (24VDC +/-10%)	B1	POUT0	Point No. outputs
A2	+COM		B2	POUT1	
A3	NC	No connection	B3	POUT2	
A4	NC		B4	POUT3	
A5	PIN0	Point No. select	B5	POUT4	
A6	PIN1		B6	POUT5	
A7	PIN2		B7	POUT6	
A8	PIN3		B8	POUT7	
A9	PIN4		B9	OUT0	OUT0 to OUT3 assignments include: • Zone output • Personal zone output • MANUAL mode status • Return-to-origin end status • NEAR output • Movement-in-progress • Push status • Warning output
A10	PIN5		B10	OUT1	
A11	PIN6		B11	OUT2	
A12	PIN7		B12	OUT3	
A13	JOG+	JOG movement (+ direction)	B13	BUSY	Operation-in-progress
A14	JOG-	JOG movement (- direction)	B14	END	Operation-end
A15	MANUAL	MANUAL mode	B15	/ALM	Alarm
A16	ORG	Return-to-origin	B16	SRV-S	Servo status
A17	/LOCK	Interlock	B17	NC	No connection
A18	START	Start	B18	NC	
A19	RESET	Reset	B19	-COM	I/O power input, negative common (0V)
A20	SERVO	Servo ON	B20	-COM	

■ NPN type I/O circuit details
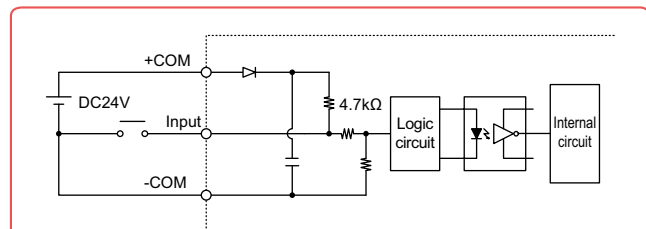
● Input circuit

Type : DC input (plus common type)
Photo-coupler isolation format
Load : 24VDC +/- 10%, 5.1mA
OFF voltage : 19.6Vmin (1.0mA)
ON voltage : 4.9Vmax (4.0mA)

● Output circuit

Type : NPN open collector output
(Minus common type)
Photo-coupler isolation format
Load : 24VDC, 50mA/point

■ PNP type I/O circuit details

● Input circuit

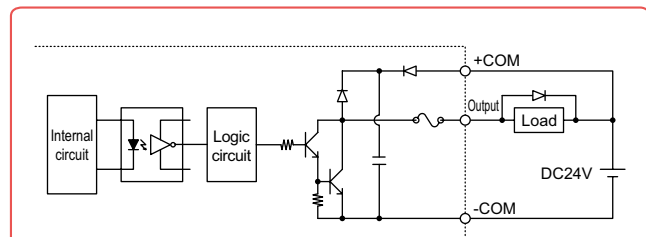**Type : DC input (minus common type)**
Photo-coupler isolation format
Load : 24VDC +/- 10%, 5.5mA
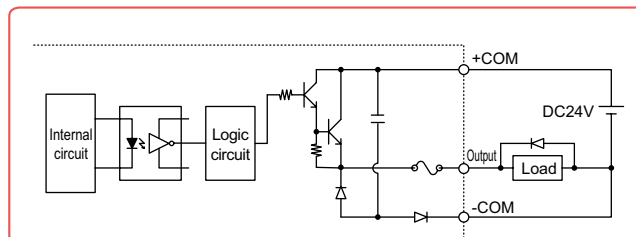ON voltage : 19.6Vmin (4.5mA)
OFF voltage : 4.9Vmax (1.1mA)

● Output circuit

Type : PNP open collector output
(Plus common type)
Photo-coupler isolation format
Load : 24VDC, 50mA/point

Accessories and part options

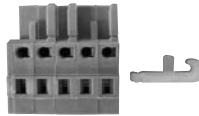## TS-S2/TS-SH/TS-X/TS-P

■ Standard accessories

● **Power connector**

Model	KCC-M4421-00

TS-S2
TS-SH
TS-SD

● **Power connector (AC100V specifications)**

Included when 100V model is purchased
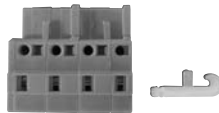
Model	KCA-M5382-00

TS-X
TS-P

● **Power connector (AC200V specifications)**

Included when 200V model is purchased

Model	KAS-M5382-00

LCC140
TS-X
TS-P
SR1-X
SR1-P
RCX320
RCX221
RCX222
RCX340

● **EXT connector**

For braking power and safety circuit connections.

Model	KCA-M5370-00

TS-X
TS-P

● **Dummy connector**

Model	KCA-M5163-00

TS-S2
TS-SH
TS-X
TS-P

● **I/O cables (2m/20-core×2)**

Model	KCA-M4421-20

TS-S2
TS-SH
TS-X
TS-P

● **Absolute battery**

● **Absolute battery basic specifications**

Item	For TS-X	For TS-SH
Battery type	Lithium metallic battery	
Battery capacity	3.6V / 1,650mAh	3.6V / 2,700mAh
Data holding time	About 1 year (in state with no power applied)	
Dimensions	φ18 × L60mm	φ17 × L53mm
Weight	24g	21g
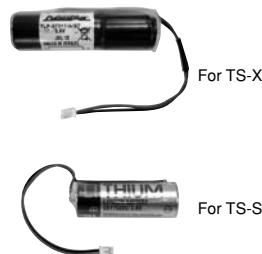
For TS-X
For TS-SH

| Model	KCA-M53G0-10 (For TS-X)
	KCA-M53G0-02 (For TS-SH)

Note. The absolute battery is subject to wear and requires replacement.
If trouble occurs with the memory then remaining battery life is low so replace the absolute battery. The battery replacement period depends on usage conditions. But generally you should replace the battery after about 1 year counting the total time after connecting to the controller and left without turning on the power.

TS-X
TS-SH
RCX320
RCX340

● **CC-Link connector (CC-Link specifications)**

Included when CC-Link model is purchased

Connector
Jump socket
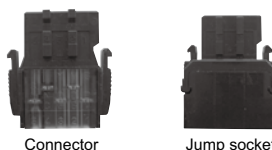
Model	Connector Note.	KCA-M4872-00
	Jump socket	KCA-M4873-00

Note. This is a single connector type. (Insert two connectors into a branching socket.)

TS-S2
TS-SH
TS-X
TS-P

633

YA — Articulated robots
LCM — Linear conveyor modules
GX — Single-axis robots
Robonity — Motor-less single axis actuator
TRANSERVO — Compact single-axis robots
FLIP-X — Single-axis robots
PHASER — Linear motor single-axis robots
XY-X — Cartesian robots
YK-X — SCARA robots
YP-X — Pick & place robots
CLEAN
CONTROLLER
INFORMATION
Robot positioner
Pulse string driver
Robot controller
RCX/iVY2+ Electric gripper
Option

Articulated robots YA | Linear conveyor modules LCM | Single-axis robots GX | Motor-less single axis actuator Robonity | Compact single-axis robots TRANSERVO | Single-axis robots FLIP-X | Linear motor single-axis robots PHASER | Cartesian robots XY-X | SCARA robots YK-X | Pick & place robots YP-X | CLEAN | CONTROLLER | INFORMATION | Robot positioner | Pulse string driver | Robot controller | RCX-IV Y2+ Electric gripper | Option

TS-S2/TS-SH/TS-X/TS-P

■ Options

● Handy terminal HT1/HT1-D P.698

		HT1	HT1-D
Model	3.5m	KCA-M5110-0J	KCA-M5110-1J
	10m	KCA-M5110-6J	KCA-M5110-7J
Enable switch		–	3-position
CE marking		Not supported	Applicable

TS-S2 TS-SH TS-X TS-P

HT1 **HT1-D**

● Support software TS-Manager P.688

Model	KCA-M4966-0J (Japanese)
	KCA-M4966-0E (English)

TS-S2 TS-SH TS-X TS-P TS-SD

● TS-Manager environment

OS	Windows 2000, XP (32bit), Vista, 7, 8 / 8.1, 10 (Supported version: V.1.4.5 or later)
CPU	Exceeding the environment recommended by the OS being used
Memory	Exceeding the environment recommended by the OS being used
Hard disk	Vacant capacity of more than 20MB in the installation destination drive
Communication port	Serial (RS-232C), USB
Applicable controllers	TS series

Note. Windows is the registered trademark of US Microsoft Corporation in U.S.A. and other countries.

● Data cables
Communication cable for TS-Manager. Select from USB cable or D-sub cable.

Model	USB type (5m)	KCA-M538F-A0
	D-Sub type (5m)	KCA-M538F-01

Note. USB driver for communication cable can also be downloaded from our website.

TS-S2 TS-SH TS-X TS-P TS-SD

USB **D-Sub**

● Daisy chain and gateway connection cable

Model	KCA-M532L-00 (300mm)

TS-S2 TS-SH TS-X TS-P TS-SD

● CC-Link termination connector (CC-Link specifications)
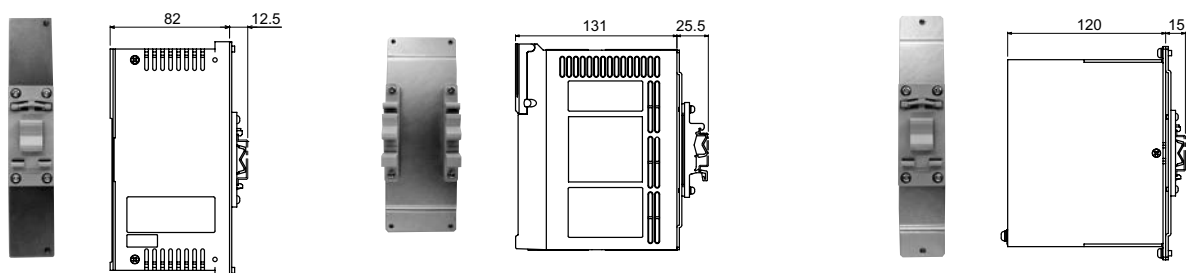
Model	KCA-M4874-00

TS-S2 TS-SH TS-X TS-P

● TS-Monitor (LCD monitor) P.702

Model	For TS-X	KCA-M5119-00
	For TS-P	KCA-M5119-10

TS-X TS-P

● DIN rail mounting bracket (This bracket is provided in TS-SH as standard equipment.)

82 12.5   131 25.5   120 15

Model	For TS-S2	TS-S2
	KCC-M499A-00	

Model	For TS-X / TS-P	TS-X
	KCA-M499A-00	TS-P

Model	For TS-X / TS-P with RGT	TS-X
	KCA-M499A-10	TS-P