

TS-SD

- CE compliance
- Only for pulse train control
- Dedicated for TRANSERVO

The TS-SD is a high-performance robot driver specifically designed for the TRANSERVO series that supports pulse train command input.

Main functions ▶ P.93



Support software for PC

▶ TS-Manager

P.688



TS-SD

Basic specifications

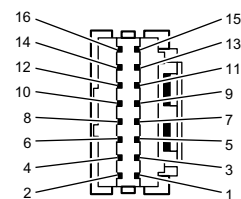
Item	TS-SD
Basic specifications	
Number of controllable axes	Single-axis
Controllable robots	TRANSERVO series ^{Note}
Current consumption	3A (Rating) 4.5A (Max.)
Dimensions	W30 × H162 × D82mm
Weight	Approx. 0.2kg
Input power supply	Control power supply
	Main power supply
Operating method	Pulse train control
Control method	Closed loop vector control method
Position detection method	Resolver
Resolution	20480 P/rev, 4096 P/rev
Origin search method	Incremental
External input/output	
Pulse train command input	Line driver method : 500 kpps or less Open collector method : 100 kpps or less (DC5 to 24V +/- 10%)
Input	Servo ON (SERVO), reset (RESET) origin search (ORG)
Output	Servo status (SRV-S), alarm (/ALM), positioning completion (IN-POS), return-to-origin end status (ORG-S)
External communications	RS-232C 1CH
Options	
Support software for PC	TS-Manager
General specifications	
Operating temperature	0°C to 40°C
Storage temperature	-10°C to 65°C
Operating humidity	35% to 85%RH (non-condensing)
Storage humidity	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, overheat, overload, overvoltage, low voltage, position deviation, control power voltage drop, overcurrent, motor current error, CPU error, motor line disconnection, command speed over, pulse frequency over

Note. Except for RF type sensor specifications and STH type vertical specifications.

I/O signal table

No.	Signal Name	Description
1	+COM	I/O power supply input (DC 24V +/- 10%)
2	OPC	Open collector power supply input
3	PULS1	Command pulse input 1
4	PULS2	Command pulse input 2
5	DIR1	Command direction input 1
6	DIR2	Command direction input 2
7	ORG	Return-to-origin
8	NC	Prohibited to use this signal.
9	RESET	Reset
10	SERVO	Servo ON
11	ORG-S	Return-to-origin end status
12	IN-POS	Positioning completion
13	/ALM	Alarm
14	SRV-S	Servo status
15	-COM	I/O power supply input (0V)
16	FG	Ground

I/O connector



Controllable robot	TRANSERVO P253
CE marking	
Field networks	—

Model Overview

Name		TS-SD
Controllable robot		Dedicated compact single-axis TRANSERVO
Input power	Control power supply	DC24V +/-10% maximum
	Main power supply	
Operating method		Pulse train control
Maximum number of controllable axes		Single-axis
Origin search method		Incremental

Ordering method

Controller only **Robot + Controller**

TS-SD Note

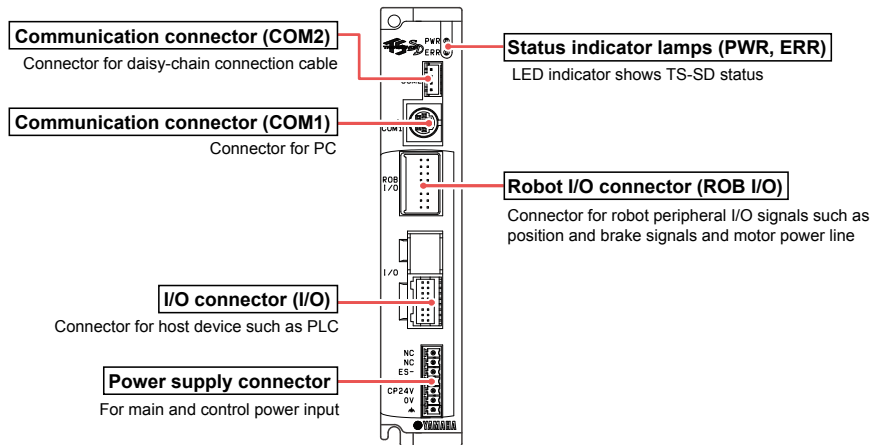
Controller Robot model Cable length Controller I/O cable

TRANSERVO Series 1L: 1 meter
 3L: 3 meters
 5L: 5 meters
 10L: 10 meters
 (flexible cables)

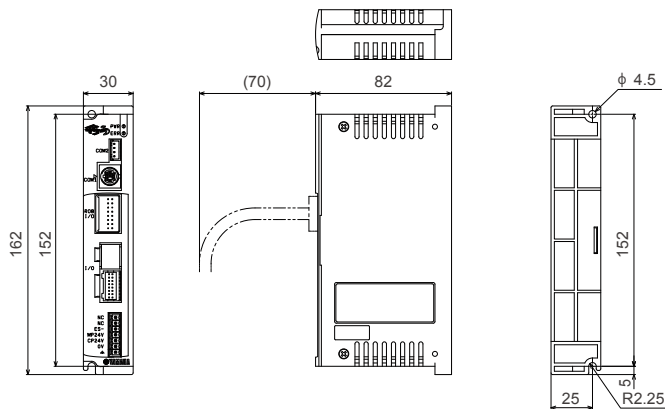
SD 1

Note. I/O cable (1 meter) comes supplied with unit.

Part names



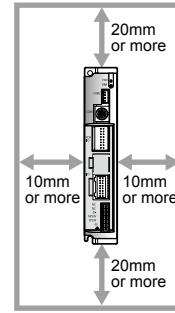
Dimensions



- Articulated robots
YA
- Linear conveyor modules
LCM
- Single-axis robots
CX
- 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
- RCXIVY2+ Electric gripper
- Option

Installation conditions

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

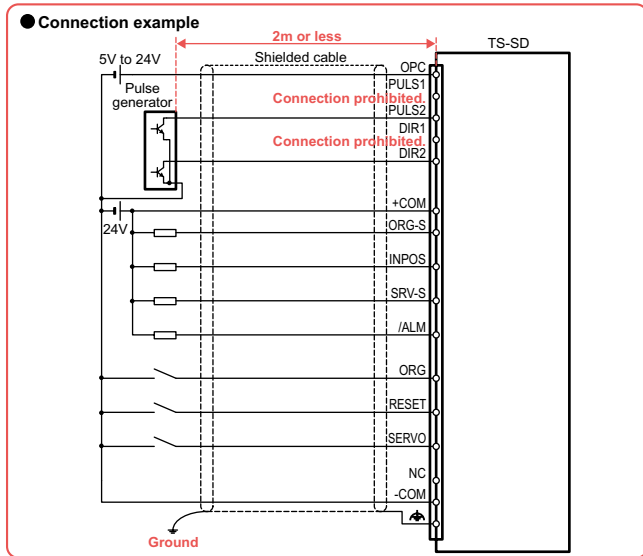


I/O signal list

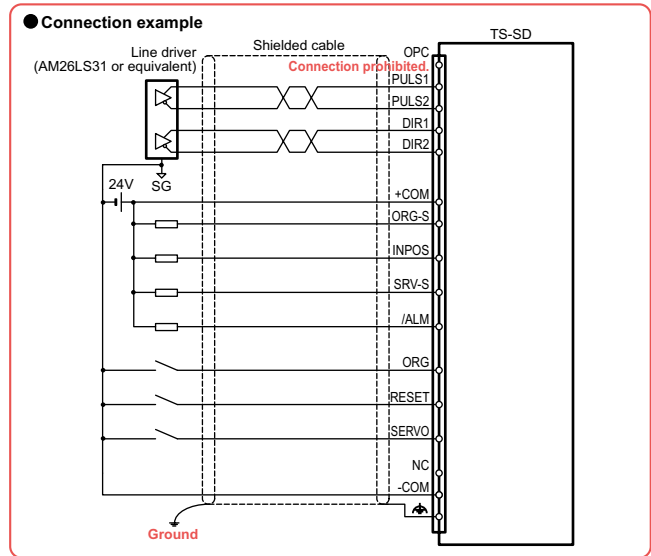
Type	Signal Name	Open collector	Line driver	Description		
Inputs	OPC	Open collector power supply input	(Connection prohibited. ^{Note 2})	Input the power supply for the open collector. (DC5 to 24V +/- 10%)		
	PULS1	(Connection prohibited. ^{Note 1})	Command pulse input (+)	Input terminal for pulse train input commands. Select from 3 command forms by changing parameters.		
	DIR1	(Connection prohibited. ^{Note 1})	Command direction input (+)			
	PULS2	Command pulse input	Command pulse input (-)			
	Outputs	DIR2	Command direction input	Command direction input (-)	<ul style="list-style-type: none"> • Phase A/Phase B input • Pulse/Sign input • CW/CCW input 	
		ORG	Return-to-origin	←		Starts return-to-origin when ON and stops it when OFF.
		RESET	Reset	←		Alarm reset
Outputs		SREVO	Servo ON	←	ON: servo on; OFF: servo off.	
		ORG-S	Return-to-origin end status	←	ON at return-to-origin end.	
		IN-POS	Positioning completion	←	ON when accumulated pulse in deviation counter are within specified value range.	
		/ALM	Alarm	←	ON when normal. OFF when alarm occurs.	
	SRV-S	Servo status	←	ON when servo is on.		

Note 1. When using the open collector specifications, do not connect any signal to the PULS1 and DIR1 terminals. Doing so may cause the driver to malfunction or breakdown.
 Note 2. When using the line driver specifications, do not connect any signal to the OPC terminal. Doing so may cause the driver to malfunction or breakdown.

Input / output signal connection diagram [open collector]



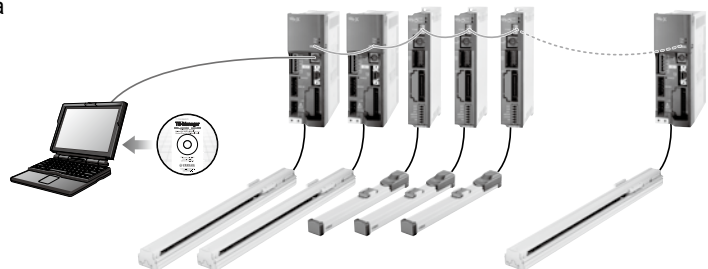
Input / output signal connection diagram [line driver]



Daisy chain function

Connecting two or more TS series controllers and drivers in a daisy chain allows editing data on any one unit from a PC.

- Up to 16 units connectable
- Requires daisy chain coupler cables.



Accessories and part options



TS-SD

Standard accessories

● **Power connector**



Model KCC-M4421-00

TS-S2
TS-SH
TS-SD

● **I/O cables (1m)**



Model KCC-M5362-00

TS-SD

Options

● **Support software TS-Manager**

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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

● **Daisy chain and gateway connection cable**



Model KCA-M532L-00 (300mm)

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

YA	Articulated robots
LCM	Linear conveyor modules
CX	Single-axis robots
Robonity	Motor-less single axis actuator
TRANSEVO	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	CLEAN
CONTROLLER	CONTROLLER
INFORMATION	INFORMATION
Robot positioner	Robot positioner
Pulse string driver	Pulse string driver
Robot controller	Robot controller
RCXIVY2+	RCXIVY2+ Electric gripper
Option	Option