

High-performance driver dedicated to YAMAHA single-axis robot “TRANSERVO”

# TS-SD

**The TS series now includes a pulse driver for smooth and easy operation using the support software “TS-Manager”**



## ■ Pulse train input driver for single-axis robot “TRANSERVO”

Robot driver that supports pulse train input has now been added for YAMAHA single-axis robot “TRANSERVO”.

## ■ Uses the same control as the TS-S

Design based on the TS-S robot positioner allows easy control combining the best points of servos and stepping motors.

A highly reliable resolver used for the position sensor delivers a resolution of 20480 pulses per revolution.

## ■ Supports a wide range of pulse train control

Supports open collector and line driver methods selectable by parameter setting and signal wiring connection.

The open collector method is compatible with a wide voltage range from 5 to 24 V, and easily matches specs of the host device you want to use.

## ■ Operable with the TS-Manager software for the TS series

The TS-SD can be operated with the TS-Manager software (Ver. 1.3.0 or later) having a full range of functions including robot parameter setting, backup, and real-time trace the same as on the TS series controllers.

(The handy terminal “HT1” cannot be used with the TS-SD.)

### Series models **TRANSERVO Series** TRANSERVO series all models : Slider type / Rod type

Slider type  
Standard/Clean



Rod type  
Standard



Rod type  
With support guide



## Ordering method

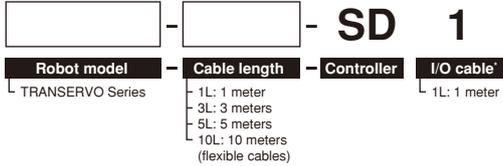
### ● Controller only

# TS-SD

Controller

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

### ● Robot + Controller

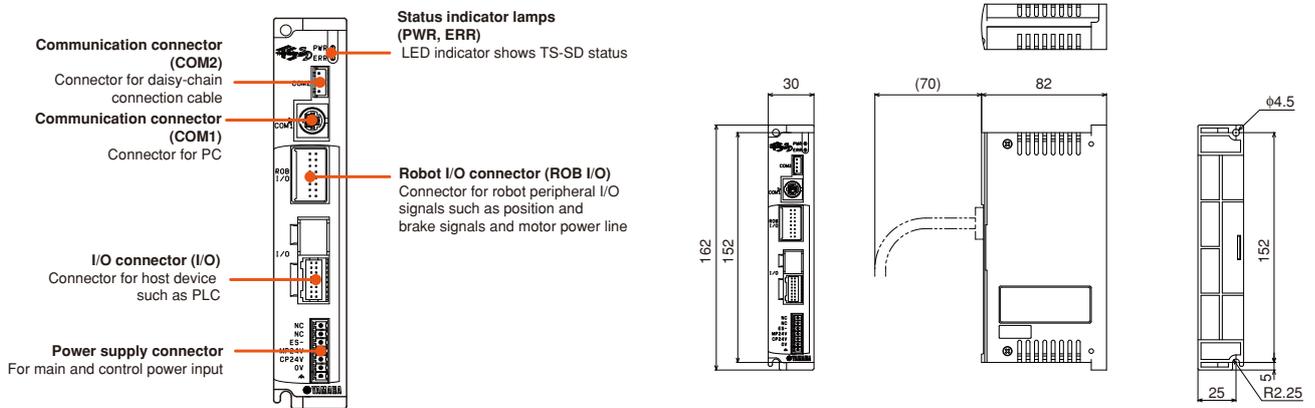


\* If a 2 meter cable is required then please consult us.

## Basic specifications

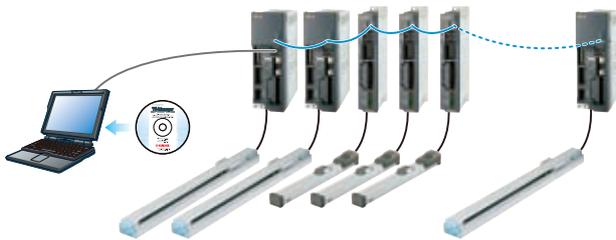
Item	Description
Control axes	1 axis
Controllable robots	All TRANSERVO series models
Power supply capacity	3 to 4.5 A
Dimensions	W30×H162×D82mm
Weight	Approx. 0.2kg
Input power	Control power supply: 24 V DC±10% / Main power supply : 24 V DC±10%
Position detection method	Resolver
Resolution	20480 pulses per revolution
Pulse train command input	Open collector : 100 kpps or less (DC5 to 24V ± 10%)
	Type: Phase A/Phase B, pulse/sign, CW/CCW

## Outer View



## Daisy chain function / TS-Manager functions

### ● 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.

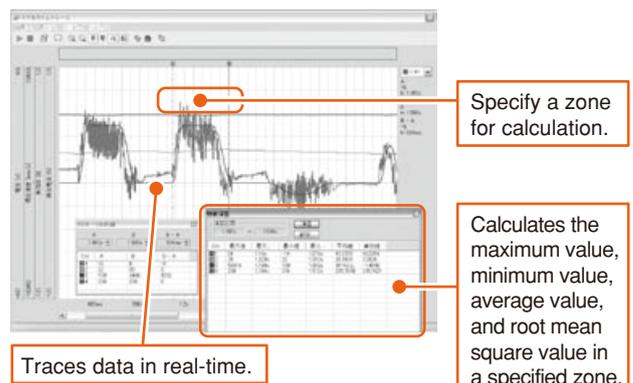
- Up to 16 units connectable
- Requires dedicated cables (sold separately)

### ● Real-time trace function

This function traces the current position, speed, load factor, electrical current and voltage values, etc. in real-time. This function also sets trigger conditions to automatically acquire data when conditions are satisfied.

Monitor results also specify zones that allow calculating the maximum, minimum, and average values. These values will prove useful for troubleshooting analysis.

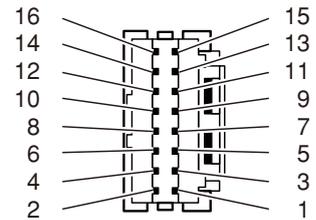
Real-time traceable items (up to four items)		
• Voltage value	• Commanded position	• Current position
• Command speed	• Current speed	• Internal temperature
• Command current value	• Present current value	• Motor load factor
• Input/output I/O status	• Input pulse count *1	• Movement pulse count *1
• Word input/output status*2	*1: Only on TS-SD *2: Only on TS controllers	



## I/O signal table

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

### I/O connector



## I/O signal list

Type	Signal Name	Open collector	Line driver	Description
Inputs	OPC	Open collector power supply input	(Connection prohibited. <sup>*2</sup> )	Input the power supply for the open collector. (DC5 to 24V ± 10%)
	PULS1	(Connection prohibited. <sup>*1</sup> )	Command pulse input (+)	Input terminal for pulse train input commands. Select from 3 command forms by changing parameters. • Phase A/Phase B input • Pulse/Sign input • CW/CCW input
	DIR1	(Connection prohibited. <sup>*1</sup> )	Command direction input (+)	
	PULS2	Command pulse input	Command pulse input (-)	
	DIR2	Command direction input	Command direction input (-)	
	ORG	Return-to-origin	←	Starts return-to-origin when ON and stops it when OFF.
	RESET	Reset	←	Alarm reset
SREVO	Servo ON	←	ON: servo on; OFF: servo off.	
Outputs	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.

\*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.

\*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.

## Accessories and options

### I/O cable (1 meter)

Supplied

Connector and cable used for connecting an external unit to the TS-SD standard parallel I/O.



Model No. | KCC-M5362-00

### Support software TS-Manager

Required option

Besides data writing, editing and backup functions, the TS-Manager also offers cycle time simulation and various types of monitor functions.



Model No. | KCA-M4966-0E

\* Usable on all TS series models (TS-SD only supports Ver. 1.3.0 or later)

### Data cables

Required option

Communication cable for TS-Manager  
Select from USB or D-Sub cables.



Model No.	USB type (5 meters)	KCA-M538F-A0
	D-Sub type (5 meters)	KCA-M538F-00

\* USB driver for communication cable can also be downloaded from our website (driver supports VIP+, POPCOM, and TS-Manager).

### Daisy chain coupler cable

Option

Connects a maximum of 16 units in a daisy chain (ring or loop sequence).



Model No. | KCA-M532L-00

### ● TS-Manager system requirements

OS	Microsoft Windows 2000/XP/Vista/7
CPU	Recommended system specs for OS or higher.
RAM memory	Recommended system specs for OS or higher.
Hard disk	Requires 20MB or more of available memory on installation drive.
Communication port	Serial (RS-232C), USB
Applicable controller	TS-SD/TS-S/TS-X/TS-P

\* Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

● Specifications and appearance are subject to change without prior notice.

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