

TOSHIBA MACHINE'S
COMPACT AND HIGH-SPEED
SCARA ROBOT

TH180

- **COMPACT**... Arm length 180 mm
- **HIGH LOAD CAPACITY**... Maximum 2 kg
- **HIGH SPEED**
... Cycle time 0.35 s (1 kg Load)
- **CLEANROOM DESIGN**
... Class 10 equivalent (0.1 μm)*1
- **BUILT-IN PLC**
... Ready for Touch-Sensitive Operation panel

Robot specifications



ROBOT:
TH180

| Model | TH180 | |
|--|-----------------------------------|-----------|
| Type | Horizontal Multi-joint | |
| Clean-ness | Class 10 (0.1 μm)*1 | |
| Number of controlled axis | 4 | |
| Arm length | 180 mm (70 mm+110 mm) | |
| Working envelope | Axis 1 | ±120° |
| | Axis 2 | ±140° |
| | Axis 3 (Z-axis) | 120 mm |
| | Axis 4 (Z-axis rotation) | ±360° |
| Maximum speed | Axis 1 | 533°/s |
| | Axis 2 | 480°/s |
| | Axis 3 (Z-axis) | 1013 mm/s |
| | Axis 4 (Z-axis rotation) | 1186°/s |
| | Composite | 2.6 m/s |
| Standard cycle time (with 1kg payload) | 0.35 s*2 | |
| Maximum payload mass | 2 kg | |
| Allowable moment of inertia | X-Y (Plane) | ±0.01 mm |
| | Axis 3 (Z-axis) | ±0.01 mm |
| Positioning repeatability | Axis 4 (Z-axis rotation) | ±0.005° |
| | Axis 4 (Z-axis rotation) | ±0.005° |
| Input/output signals for hand | 5 inputs / 4 outputs | |
| Pneumatic piping for hand | 4 mm-dia. X4 pcs | |
| Robot-controller cable | 3 m (customized length available) | |
| Mass of robot body | 9 kg | |

Controller specifications



TEACH-PENDANT:
TP1000



CONTROLLER:
TS1000

| Model | TS1000 |
|-------------------------------|---|
| No. of axis | 4 |
| Types of motions | PTP, CP (linear, circular), Short-cut, Arch motion |
| Storage capacity | Total: 6400 points+12800 steps 1 program: 2000 points+3000 steps |
| No. of programs | Max. 256 (247 User files+9 System files) |
| Program language | SCOL (proprietary, similar to BASIC) |
| Teaching unit (optional) | Teach pendant TP1000, with 5-meter cable (Program can be written on PC) |
| External input/output signals | 8+8 inputs / 8+8 outputs (8/8 can be switchable with system for external-mode operation) |
| Hand control signals | 5 inputs / 4 outputs |
| External operation signals | Inputs: cycle operation start, stop, program reset, etc. Outputs: servo-on status, emergency stop, malfunction alarm, etc. |
| Serial communication ports | RS-232C: 2 ports |
| Other functions | Torque control, Interruptive functions, self-diagnosis, I/O control and communications during motion, Coordinate calculations, etc. |
| Power supply | Single-phase AC170~220 V 50/60 Hz |
| Power capacity | 1.1 kVA |
| Dimensions and mass | 170 W X 290 H X 280 D (mm), 10 kg |
| PC software (optional) | TSPC: Programming support, Teaching, Remote operation etc. |
| Options | I/O extension, I/O cables, Field network (CC-Link, DeviceNet, Profibus)*3 |

*1 Applicable only around the hand area, in the downward airflow of speed 0.4 m/s or larger and the robot air-purged at 60 L/min.

*2 100 mm for horizontal direction, 25 mm for vertical direction, round-trip.

*3 CC-Link is a registered trademark of CC-Link Partner Association.
DeviceNet is a registered trademark of ODVA.
Profibus is a registered trademark of Profibus User Organization.

