

# TF20

## Automated JEDEC Tray Feeder for PS Series Machines

1-800-3-DATAIO  
www.dataio.com

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### TF20 Automated Matrix Tray Feeder Option for PP/PS Series Off-line Automated Programming System

#### High Throughput Tray Exchange

- High speed and smooth tray transfer mechanism ensures tray exchange time is less than 5 seconds.

#### Production Increase

- Automated tray handling eliminates manual tray replenishment and reduced operator supervision, gaining up to 25% more production.

#### Reliability

- Both elevator and tray conveyor drive mechanisms are driven by microprocessor controlled DC drivers, using pulse width modulation speed control.

#### Repeatable

- Position of matrix tray at pick point offers 3 sigma repeatability due to precise location mechanism.

#### Accurate

- Each feeder is calibrated for machine location using an alignment jig. This means that every feeder is ready to use from the packing box.

#### Expandable

- Automated Matrix Tray feeders form part of a standard machine option and are an easy machine upgrade that is available with a step by step installation procedure.

#### Reduced Machine Down-time

- Fewer operator interventions and machine stoppages means increased throughput and machine utilization.

#### Flexible

- Input and output tray feeders can be configured so that job set-up and job process time are parallel.

INTRODUCING THE TF20 AUTOMATED TRAY FEEDER FOR PS AUTOMATED PROGRAMMING SYSTEMS; INCREASING PRODUCTION THROUGHPUT AND LOWERING PROGRAMMING COST PER DEVICE.

### Maximize Throughput

One critical element of automated machine performance is having a continuous flow of programmable devices with minimal stoppage time. As today's off-line programming equipment capabilities increase, operator interaction replenishing device matrix trays have a greater effect. Automating this process with no stoppage for the host machine eliminates tray replenishment time and maximizes throughput. The TF20™ automated JEDEC Tray Feeder solution improves machine productivity and maximizes flexibility.

### Accurate and Flexible

The side mounting TF20 Tray Feeder is a portable, compact, high throughput JEDEC Tray Feeder designed to integrate easily with new or existing PS Series automated programming equipment, maximizing floor space by utilizing the existing machine footprint. Available in both load and unload configurations, the TF20 delivers standard IEC trays and thick or thin JEDEC trays to the host machine's pick position with a high degree of accuracy and repeatability. By allowing new trays of devices to be continually replenished without either removing the feeder or stopping the host machine, maximum flexibility and utilization are soon realized.

### High Quality and Low Maintenance

The TF20's ergonomical design incorporates electronically controlled drive systems that allow the feeder to safely handle thick or thin JEDEC or IEC trays without adjustment to the feeder. Automatic tray exchange controlled by the host machine is less than 5 seconds. Trays are fed automatically from the input stack to the pick position and returned when loading or unloading devices to and from programmers is complete. The vertical elevator carriage has linear guides and is driven by a robust chain drive. The horizontal tray feed is via a high adhesion anti-ESD conveyor belt. All tray positional control is by precision optical non-contact sensors, resulting in a low maintenance, highly reliable and accurate tray delivery system at speeds defined by the user. The TF20 meets the appropriate regulatory safety specifications for international shipments, including CE compliancy.



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### Specifications

#### Fast, Easy Loading Changeover

- TF20 is ergonomically designed to facilitate fast, easy feeder insertion and removal from host machine.
- The uniquely designed tray guides allow good access for loading and removing tray stacks.
- Empty trays are separated from the main stack and discarded into a convenient compartment.

#### High Capacity Tray Exchange

- Matrix tray elevator holds up to 30 thin and 20 thick matrix trays.
- High speed tray exchange in less than 5 seconds.

#### Standardization

- JEDEC thick and thin matrix tray and standard IEC matrix tray compliant.

#### Precision Drive System

- Microprocessor controlled dual high speed DC motor drive system for tray stack elevator and conveyor drives.

#### Flexible Configuration

- Variety of input and output configurations.

#### Host Communication

- Tray Feeder is fully integrated to the host machine software indicating "ready," "error," "run," "empty" and "full" conditions.

#### User-friendly Controls

- The intuitive user push button controls allow precise tray motion and exchange cycle.
- Status indicator lights visually guide operators through the feeder set-up process.

#### Machine Compatibility

- Tray feeders are compatible with PP and PS series machines.

#### Tray type

- JEDEC standard NO 95-1, IEC 60286-5

#### Capacity

- 30 Thin, 20 Thick

#### Tray exchange time

- <5secs

#### Pick location repeatability

- 0.125mm (0.005")



#### Feeder Size

- Width: 162mm (6.4 in.)
- Length: 1120mm (44 in.)
- Height: 588mm (23 in.)

#### Electrical/Power requirements

- PS Machine supply, 24VDC +/-10%, 2amps (peak), 0.4 amps (tray exchange)

#### Compressed Air Usage

- PS Machine supply, 80 psi/5.5bar, 28.3 l/min (1 CFM ) internally regulated to 60psi

#### Regulatory compliance

- SEMI-S2 and SEMI-S8, NFPA 70 and NFPA 79, CE conformance

#### Operator controls

- Manual tray exchange (two button control)
- Inhibit Mode
- Elevator Home
- Motor Power Energize
- Stop button

#### Indicators

- Green – Ready condition
- Orange – Error condition
- Yellow – Inhibit condition
- Blue – Stack elevator empty or full condition

#### Operating temperature

+10° to +35°C (+50° to +95°F)

#### Relative Humidity

- 10 to 95% R.H. non condensing

#### Weight

- 25Kg (55lbs)

#### Noise level

- 60dB



**Data I/O Corporation:** 10525 Willows Road NE, P.O. Box 97046, Redmond WA 98073-9746, USA  
(425) 881-6444 · (800) 332-8246 · <http://www.dataio.com>

**Data I/O GmbH:** Lochhamer Schlag 5, 82166 Graefelfing, Germany · 089 858580 · <http://www.dataio.de>

**Data I/O China:** Room 1010, 10/F, MLC Millennia Plaza, 663 King's Road, North Point, Hong Kong · 852-2258-1533

**Data I/O Japan:** Saisho Building 7F, 8-1-14, Nishigotanda, Shinagawa-ku, Tokyo 141-0031, Japan · 03-3779-2151

**Data I/O Canada:** 6725 Airport Road, Suite 102, Mississauga, Ontario L4V 1V2 · (905) 678-0761

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