



TRANSPORT



FABMATICS

Automate your success

SLIM LOAD PORT

Manual Input/Output Station
for Overhead Transport Systems



SLIM LOAD PORT

Manual Access to OHT-Transported Wafer Pods

In highly automated semiconductor fabs, production lots are transported fully automatically via overhead transport systems between process tools and storage areas. At the same time, many fab processes still require manual access to individual wafer pods, for example for measurements, inspections, engineering tasks or logistics activities. In conventional fab layouts, this often results in long waiting times and additional transport effort, as pods must first be retrieved from remote stockers at the periphery of the production area.

The Slim Load Port by Fabmatics provides manual pod access exactly where it is needed. As a compact manual input and output station, it enables operators to access production lots locally and directly, without detours and without disrupting the automated transport flow.

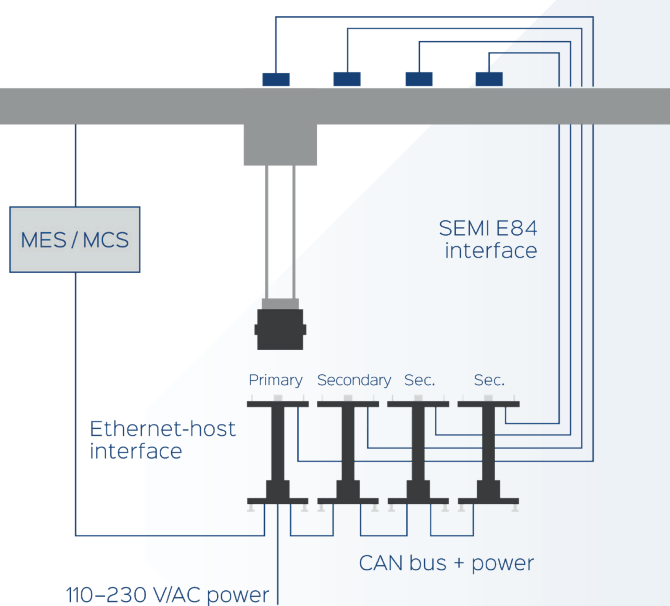


Slim Load Ports can be installed at any location in the fab, either temporarily or as a preventive installation along production lines. They integrate seamlessly into existing OHT environments and connect easily to MES and MCS systems, ensuring controlled and traceable material handling.

In daily fab operations, the Slim Load Port supports a wide range of application scenarios. It enables fast manual handling of test lots for measurements and inspections directly at the point of use and provides a reliable fallback option in case of planned or unplanned OHT interruptions. Preventive installation increases long-term operational resilience and ensures continuous access to production lots, even under exceptional conditions. Slim Load Ports can also be used for OHT tool and workflow simulations during planning or optimization phases.

Beyond classic engineering use cases, the Slim Load Port enables controlled wafer starts by allowing the defined & trackable introduction of new lots into the automated material flow. It also supports outbound logistics processes, such as the tracked removal of FOUPs or FOSBs for shipment or inter-fab transport. With its slim design, low weight & minimal footprint, the Slim Load Port is a flexible & future-proof solution for modern fabs.

System Structure



Construction

Each Slim Load Port features an integrated RFID reader that is automatically triggered by pod placement or can be addressed via the host interface. The system is prepared for SEMI E84 communication to ensure reliable handshaking with OHT vehicles. Multiple Slim Load Ports can be linked via CAN bus. One primary unit establishes the host connection via Ethernet or RS232 and supplies power and data to up to three secondary units. Two status indicators on the top plate provide clear visual feedback, while immediate confirmation of correct pod placement and successful RFID reading enables intuitive “place & go” operation.

Available for different pod types/products:

- FOUP and FOSB
- SMIF Pod
- RSP and MRSP
- Frame Cassette
- Probe Card

All Slim Load Port variants are available as primary or secondary units.

Benefits

Immediate Local Access to Pods

- Manual input/output at any fab location
- Integrated RFID reader (134.2 kHz)
- SEMI E84 handshake with OHT, AGV or AMR

Higher Operational Resilience

- Manual handling and buffer option during OHT downtime
- Preventive installation along production lines
- Host-controlled, trackable material flow via MES/MCS

Maximum Flexibility with Minimal Footprint

- Narrow design and low weight
- Small footprint for space-constrained layouts
- Fast installation and easy relocation

Low Investment, High Impact

- Reduced transport effort and shorter handling paths
- Efficient use of existing OHT infrastructure
- Lower installation effort compared to fixed solutions

SEMI-Compliant

- Works with every OHT system
- SEMI-conform FOUP spacing (505 mm) when chained edge-to-edge
- Built-in SEMI E84 interface and RFID support



Slim Load Port
application for FOUPs

Technical Data

Slim Load Port

Dimensions (W x H x D)	505 x 955 x 434 mm 19.9 x 37.6 x 17.0"
Weight	Primary: 28 kg Secondary: 26.5 kg
Power supply	Primary: 85-264 V/AC universal input 50/60 Hz Secondary: powered by primary
Power consumption	Primary: idle 17.4 W, operate 21.1 W Secondary: idle 8 W, operate 11.7 W
Built-in RFID reader	FABMATICS LF-134-CAN
Built-in host middleware	FABMATICS CAN2Web Advanced MAXI (Primary only)
Host communication protocol	HSMS SEMI E99
Material	Aluminum
Operating temperature	+5 °C to +45 °C
Storage temperature	-25 °C to +50 °C
Connectors	Primary: Power supply (IEC60320-C14) Ethernet 100 BaseT (RJ45) Serial RS-232 (DSUB9 female) Auxiliary voltage 24 V/DC (Binder 680-2p female) CAN bus / 24V Out (terminal block - X1) SEMI E84 I/F (DSUB25 female) Secondary: CAN bus / 24V In (terminal block - X1) CAN bus / 24V Out (terminal block - X1) SEMI E84 I/F (DSUB25 female)

Options:

- Damped feet for vibration reduction and improved stability
- Protective cover for side & rear panels to shield the OHT transport path & prevent unintended operator interference
- Barcode or data matrix code reader
- Second SEMI E84 for AMR handshake

Further applications possible:

With a customized design, the Slim Load Port can also be adapted for additional product carriers. Contact us to discuss your application.

OUR PRODUCT PORTFOLIO

COMPLETE MATERIAL HANDLING AUTOMATION



CONSULTING
FAB ASSESSMENT
FEASIBILITY STUDIES
FAB OPTIMIZATION



MODELING
ANALYTICS
SIMULATION
DIGITAL TWIN



IDENTIFICATION
RFID SYSTEMS
RFID RETROFIT
FAB RTLS



TRANSPORT
CONVEYOR SYSTEMS
AGVs / RGVs / PGVs
LIFTS & ELEVATORS



HANDLING
MOBILE ROBOTS
ROBOT CELLS
EFEMs



STORAGE
STOCKERS
RFID RACKS
TEST WAFER CENTER



PROTECTION
PURGE SYSTEMS



SOFTWARE
SYSTEM INTEGRATION
FLEET MANAGER
GUI DEVELOPMENT



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