

Factory
Automation
Solutions

ORTNER

Slim Load Port

Manual Input / Output Station
for Overhead Transport Systems



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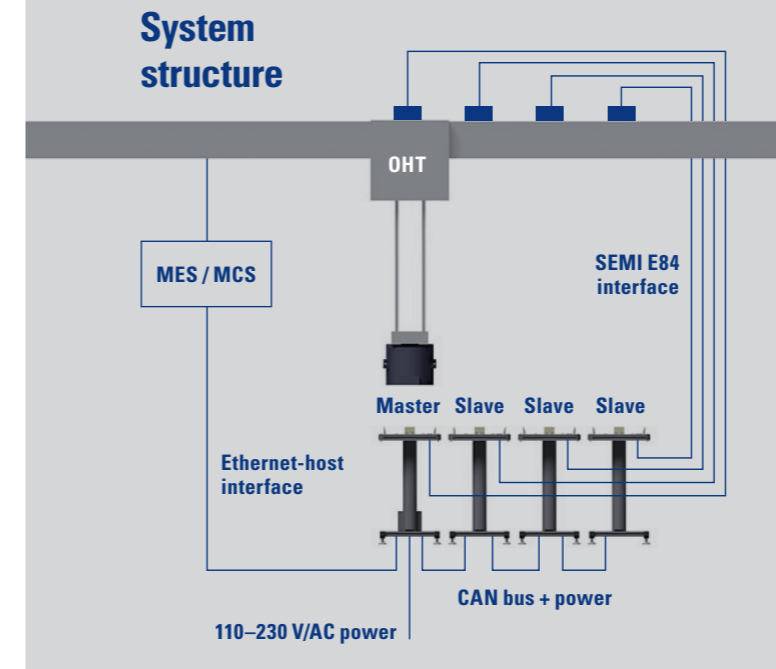
In 300 mm semiconductor fabs, production lots are transported fully automatically between the process machines and storage areas via an overhead transport system (OHT). But here it is also necessary that the operators have manual access to the individual production lots. Up until recently, this involved long routes and waiting times, because the FOUPs often needed to be moved from storage areas on the periphery of the production



area first. Now, the Slim Load Port provides manual access to the FOUPs exactly where it is needed, namely wherever the operator requires it for his/her work. The load ports are compact, flexible stations that may be placed at any location in a factory to ensure short- or long-term manual OHT input and output in this area. This is important, for example, if the operator needs to take measurements or complete tests involving the production lots; this also proves to be advantageous if planned or unplanned interruptions in the OHT hinder the automatic production process.

In order to enable simple manual access to lots from anywhere, at any time, the Slim Load Ports may also be installed preventatively at every production line. Tool simulations for the OHT with the help of Slim Load Ports are also feasible.

The narrow construction and low weight of the ports enables them to be utilized at any point in the factory. In this way, low investment costs free up important manpower resources with the operators, and production profits simultaneously from long-term security in case interruptions occur in the OHT.



Construction

Each load port features a built-in RFID reader which may be triggered by FOUP placement sensors or remotely via the host interface. The load port is prepared for connection with an SEMI E84 transceiver for OHT vehicle communication.

Two indicator lights on the top plate display the operation status, e.g. "ready" and "alarm".

There are two versions available:

- Slim Load Port – master
(integrated power supply and host interface:
CAN2Web Advanced MAXI gateway device)
- Slim Load Port – slave (extension for master)

Several load ports may be connected together via CAN bus. One master Slim Load Port establishes the host link via Ethernet or RS-232 interface and supplies the main power for up to three additional slave Slim Load Ports.

Features

- Narrow design & low weight
- Fast and easy installation
- Easy to move
- Small footprint
- SEMI standard conformant
- Works with every 300 mm OHT
- Maintains FOUP distances according to the SEMI standard (505 mm) when the load ports are chained "edge-to-edge"
- Interfaces
- Simple MES/MCS interface
- Built-in RFID reader (134.2 kHz)
- Built-in SEMI E84 interface for handshake between Slim LP and OHT vehicle



Technical Data

Designation	Slim Load Port
Dimensions (W x H x D)	505 x 955 x 434 mm
Weight	Master: 25.6 kg, Slave: 24.1 kg
Power supply	Master: 85-264 V/AC universal input 50/60 Hz Slave: powered by master
Power consumption	Master: idle 17.4 W, operate 21.1 W Slave: idle 8 W, operate 11.7 W
Built-in RFID reader	Ortner LF-134-CAN
Built-in host middleware	Ortner CAN2Web Advanced MAXI (master only)
Available software protocols	IRG, ASCII, SECS (SEMI E99)
Material	Aluminum
Operating temperature	0 °C to +50 °C
Storage temperature	-25 °C to +50 °C
Connectors	1 x power supply (IEC60320-C13, master only) 1 x Ethernet 100 Mbps (RJ45, master only) 1 x CAN bus out (DSUB9) 1 x CAN bus in (DSUB9, slave only) 1 x RS-232 (DSUB9 male, master only) 1 x auxiliary power out 24 V/DC (Binder 680, master only) 1 x SEMI-E84 transceiver connector (DSUB25)

Option

- LOT ID display

Further applications possible

With a suitably customized design, the Slim Load Port may also be used for other wafer sizes (e.g. 450 mm FOUPs) or product carriers (e.g. reticle pods). We would be pleased to develop a suitable model for your requirements. Just contact us!

Ortner's divisions at a glance

Factory Automation Solutions		
Installation & Service	Automation	Products
Pre-production Services	Consulting & Engineering Services	RFID Components
Project Management	Design, Conception & Implementation of Automation Projects	LF- , HF- Readers (Stationary & Mobile)
Installation	Software Development	Antennas
Commissioning	Feasibility Studies	Controllers
Production Services	Process & Fault Analysis	Interfaces (Serial, Ethernet)
System Support	Wafer & Carrier Handling	Protocols (SEMI E144 & E99, ASCII, SECS)
Help Desk	Transportation	RFID based Logistic Systems
Corrective Maintenance	Storage	Reader Station
Preventive Maintenance	Direct Tool Loading	RFID Trolley
Cleaning, Repair & Refurbishment	Wafer Handling (Sorting, Mapping, Notching)	Smart Loadport™
Continuous Improvement	Identification	Slim Load Port
Failure Analysis	Software Integration	RFID Shelf (AWIC® / ARIC)
Development of Optimization Measures		Zero Footprint Storage
Upgrades		Conveyor Systems
		Other Logistic Systems
		IntelliTrack®
		Customized Conveyor Systems
		Smart Cart
		Cassette Loading Station

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