

# 800 Laser Guided Vehicles



SKILLED 800 is a Laser Guided Vehicle system which, together with the palletizing systems SKILLED ROBOTS, allows complete "end of line" automation. This results in cost savings and significant improvements in production management.

SKILLED 800 offers the following advantages:

- transportation of different products and pallets, coming from different production lines, from and to the storage and trucking area;
- thanks to its modularity the system can easily be adapted to future production needs;
- extremely easy installation at customer's site, that saves productivity time;
- compliance with the current safety rules and regulations.

## GENERAL FEATURES

## DESCRIPTION

Type of battery:	Gel / Lead
Driving system:	Motors 48 V DC
Wheel configuration :	3 wheels, 1 with single steering
Frame:	Steel
Brake system:	Electromagnetic on motor's shaft
Precision:	$\pm 10 \text{ mm}$ ( $\pm 0,39''$ )
Speed range:	1,5 m/sec (4,92'/sec)

# Laser Navigation System

The laser guiding system is similar to an electronic "eye" which, by means of reflectors positioned on the surrounding walls uses "triangulation" to determine the exact position of the vehicle to allow it to carry out its required tasks in the operating area.

Advantages:

- No floor works required (magnetic tape/coloured tapes or lines, etc)
- Route changes can be easily made via CAD system

## 1 - LASER SCANNER

The position of the vehicle is updated 8 times a second to ensure supreme accuracy. A sophisticated filtering system excludes reflected signals from other sources such as bright walls, windows, etc. The security class 1 laser is harmless to humans and is not visible to the naked eye.

## 2 - VEHICLE CONTROL

This unit carries out the following functions:

- Laser scanner interface;
- Driving wheel speed control;
- Management of pallet loading and unloading with possibility of personalizing the sequence by programming the inner PLC;
- Communication with the portable hand-held operator panel (ePalm);
- Communication with the stationary control unit.

## 3 - RADIO COMMUNICATION

The radio is a client wireless ethernet (WLAN) that communicates with the other machines connected to the installation Ethernet through one or more access points.

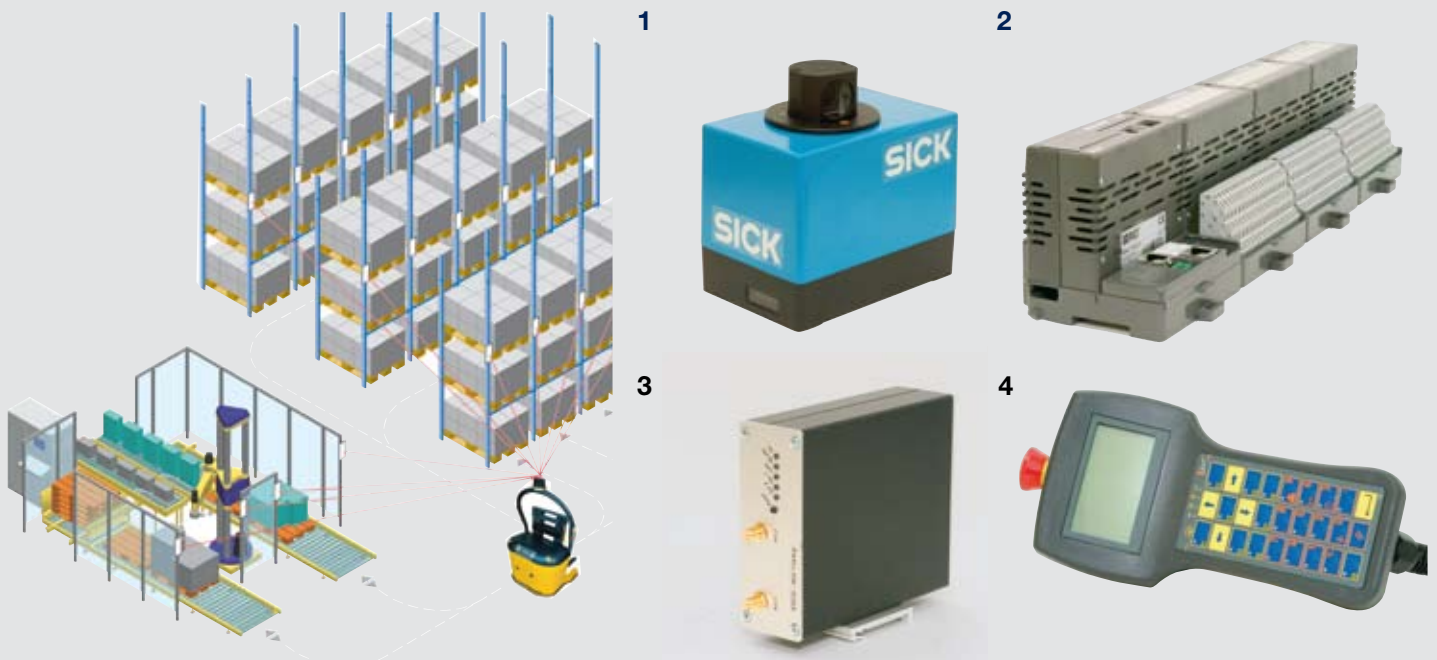
The 802.11x communication standard utilizes a frequency of 2.4Ghz, which does not require official authorisation.

## 4 - PORTABLE HAND-HELD OPERATOR INTERFACE

The ePalm operator panel has been designed so that the operator can carry out non-automatic operations and display vehicle status and diagnostics.

In particular, the following functions are available:

- Display of vehicle position
- Display and control of operating mode
- Manual movements of the vehicle
- Display of I/O status
- Display of diagnostics and alarms.



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# Software and controls

## 5 - STATIONARY MASTER CONTROLLER UNIT

The Master Controller Unit consists of a PC running Windows which constantly maintains the contact between the central control unit and the vehicle.

The most important activities are:

- Communication with the vehicles;
- Receipt of orders;
- Optimization of SKILLED 800's time and functions;
- Management of vehicle's traffic.

The operator can monitor, on a graphic display, the position and the state of SKILLED 800, at any time.

## 6 - BATTERY CHARGING STATION

The vehicle recognizes when the battery is low, and it automatically moves to the battery changing station. The battery has an endurance of 8 ongoing hours, whereas the recharge requires less than 8 hours. Therefore, a 24 hour/7 days performance is guaranteed with only 2 battery sets.

## 7 - SKILLED 800 COMPONENTS

PLC SKILLED 800 / movement control	EUROIMPIANTI
Traction and steering motors	SAUER DANFOSS
Motors drive	SAUER DANFOSS
Laser scanner	SICK
Operator panel	EUROIMPIANTI
Encoder	ELTRA
Photocells	SICK
Safety laser scanner	SICK
Battery	SONNENSCHNEID
Battery charger	ACCU ITALIA
Safety limit switch (BUMPER)	OEM AUTOMATION
SKILLED 800 limit switch	ERSCE





## Safety Devices

*Euroimpianti is very perceptive to the safety of the working environment. The SKILLED 800 are equipped with front and back anti-collision PLS sensors and with side bumpers.*

### **Advantages:**

- possibility of adapting the monitoring safety range directly to the dangerous area of the machine;
- easy access to working area, due to the absence of receivers or supplementary reflectors;
- the safety area is dynamic and can be set up following the different requirements of the system;
- the action area of the safety system changes automatically following the direction and the mode (manual/automatic) of the SKILLED 800. Moreover the reading distance of this area increases in proportion to a moving speed.



## Remote Service Support

*All the systems can be equipped with VPN SERVICE, through which the customer can connect via Internet with Euroimpianti's After-sale Service for a prompt diagnosis and resolution of many problems. The VPN SERVICE can also be used to update the software and to monitor the functioning of the system.*

*As an alternative, the same services can be guaranteed through the phone line, with the MODEM SERVICE.*