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**BRAUMS**

*"ITS" Moving Traffic*

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**CARPARKING  
SOLUTIONS**

**swarco** 

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Stress-free parking

Less traffic congestion

Reduces pollution

Improves safety

Provides information

# BRAUMS

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## DYNAMIC PARKING GUIDANCE SYSTEMS

BRAUMS, in co-operation with SWARCO, offer a range of carparking solutions designed to improve traffic and parking management. There are multiple options for data acquisition including barrier contacts, loop contacts, ultrasonic detectors and single space detectors.

Dynamic parking guidance systems provide an effective solution by acquiring data on available parking spaces and (via a control centre) displaying the information to drivers, in real time. This enables drivers to make an informed decision on their choice of parking zone. By comparison static signs direct drivers to car parks but without the added confidence that that a parking space is available or the carpark is open.

Dynamic parking guidance systems have many applications:

- Cities and towns
- Airports, hotels, hospitals, universities
- Convention centres, sports stadiums, shopping centres
- Corporate and apartment carparks

## Benefits

- Parking signage guides traffic directly to available parking spaces
- Minimises the time spent finding a parking space
- Reduces traffic congestion
- Minimises driver frustration
- Reduces incidents/accidents
- Reduces air and noise pollution as a result of less vehicle idling time
- Captures data on parking space occupancy
- Flexible and able to manage one parking building or several within an area



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## DATA ACQUISITION

### USS350D SINGLE SPACE MONITORING SENSOR

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Stress free parking – The sensors record what spaces are available in the carpark. The way-finding system then shows a red or green light\* over each parking space to indicate whether it is available or not.

\*Blue/red version is also available for monitoring of handicapped parking spaces.

## Key Features

- Small, robust cabinet
- Exposed or rail mounting options, can also be attached to hanging cable ducts
- Measurement area of up to 5 metres
- Integrated, bright green/yellow/red display
- No maintenance or adjustments required
- The sensor is separated into two modules. A connecting module is used during construction and installation. The sensor module is connected before parking operations commence.
- Power and data in one cable - a >0.5mm<sup>2</sup> four core cable (two for voltage and two for data communications).
- The clearly arranged clamps and operating lever connection provide for fast and error-free wiring



## Operation

The sensor uses ultrasonic sound to measure the distance between itself and either the vehicle or the floor. The results of these measurements are sent to the zone controller over a serial interface. The zone controller compares the measurement with the stored ceiling height of the free space. After taking other factors into consideration, the zone controllers are able to drive the red/yellow/green display in the sensor.

Up to 32 sensors can be connected in parallel on the same supply and each sensor can be addressed separately. The address is adjusted by a button in the sensor.

If communications to the zone controller are disrupted the sensor can continue to function independently.

The sensor measures and displays the current state of the parking space (green – available; red – occupied/unavailable).



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## DATA ACQUISITION

### USDS 300 SENSOR FOR COUNTING PASSING VEHICLES

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Stress free parking – The sensors record how many vehicles are entering and exiting the carpark. This data can be transmitted to a way-finding sign which displays the number of parking spaces currently available in the carpark.



## Key Features

- Robust steel case
- Direct ceiling mounting at 2-3 metres, or hanging for over 3m high ceilings
- Serial data output
- Potential free counting contacts
- Conditional direction counting
- No maintenance or adjustments required
- Optional PC programme to service and test the quality of the sensor's registration

## Operation

Two groups of sensors continually determine the gap. A passing vehicle produces a typical height-profile as shown in the picture. Using the correlating information and a suitable pattern recognition process, each vehicle is able to differentiate itself from other objects. Apart from that, the two sensors enable a reliable recognition of distance and the difference between two vehicles driving closely behind one another. The detection of a vehicle is, depending on direction, transmitted to a counting machine using two relays. The information can also be sent over the serial interface. In this case, other information, such as the height of the vehicle and its speed, are also transmitted.

## Technical Data

Dimensions: 1900 mm W x 65 mm L x 90 mm H

Weight: 7 Kg

Measurement: ultrasonic distance measurement

Effective range: up to 3 m

Resolution: 0.01 m

Frequency: 41 KHz

Bandwidth: < 1khz

Angle of projection: 10 °

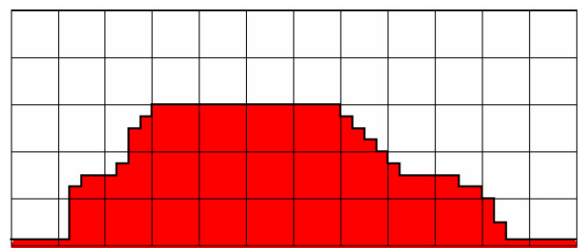
Supply: 230 V (115 V)

Intake: 5 W (in middle)

Data transfer: RS485 2-Cone; Plus-Minus relay

Temperature: -20°C to +70°C

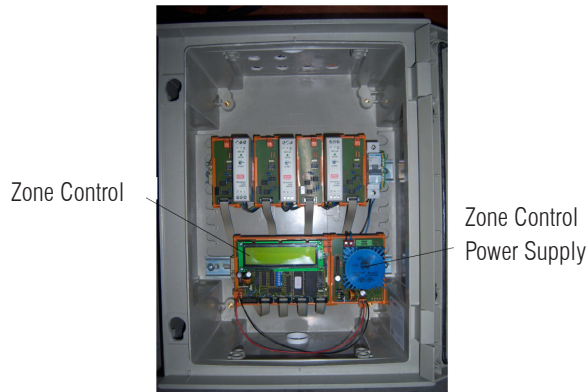
Protection: IP54 Inside Option



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## CONTROL AND COMMUNICATIONS DEVICE ZK300 ZONE CONTROL

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### Key Features

- Operates as a self-sufficient processor
- Evaluates up to 96 sensors (per control) over three RS485 bus-lines
- RS485 communication interface to the centre of operations (optional V23 modem)
- Keyboard and display panel for easy configuration
- Enables real time sign display of free spaces via RS485 communication
- Digital input and output for external devices (barriers, switching displays)

### Operation

The Zone Control supplies up to 96 sensors in three bus-systems and enables data exchange between sensors. The device configuration (number of sensors, ceiling height etc.) is stored in the zone control and can be adjusted using the menu. There are three operating modes, to provide a practical solution for all situations:

**Local Mode:** The sensors are independent devices and control their red/green display themselves. They only transmit their free/occupied data to the zone control. Useful for smaller applications, or where a central display of parking availability information is not required.

**Remote mode:** The sensors are used as distance measuring devices only. Measurements are transferred to the Zone Control, which controls the corresponding display on the sensor. Remote mode offers further functionality such as programming individual spaces as occupied (e.g. for reserved spaces), and displaying space availability on signage. Useful for small/medium applications, where a central display is only needed at each individual zone. Also useful for carparks with leased or reserved parking options.

**Central Mode:** Measurements are transferred from the sensor to the Zone Control (as per Remote Mode), however these are then communicated to a central processor (PC) which controls the configuration of the device. Full flexibility with all zones controlled centrally, enabling multiple display data (i.e. on each level/row, and at the carpark entry).

### Technical Data

#### Casing:

- Plastic casing 530 mm H x 430 mm W x 200 mm; Ral 7032 colour; Approx. 13 kg
- IP66 (with ventilation IP44)
- Two three-edged locks
- Wall mounted through the back wall (Screwing measured on the outside).

#### Equipment:

- Controls with displays and keys for configuration
- Communication of occupied spaces over a RS485 interface to the centre of operations
- Voltage supply of the controls
- Up to 96 sensors on three bus-lines.

#### Connection:

- 230 V (115 V) supply connection
- If required, communications line to a centre of operations
- Three sensor buses are connected by using two wires to each bus (i.e. power supply and communication)

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## CONTROL AND COMMUNICATIONS DEVICE DZK UNI

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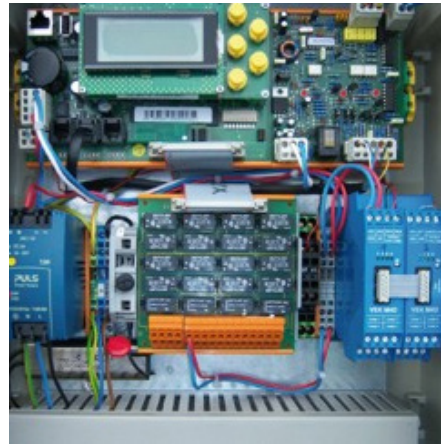
### Key Features

- Reading of contacts, or data transfer via serial interface
- Configuration and correction of parking space selection
- Communications via higher-level computer (main car park computer)
- Communications via displays directly connected to the DZK UNI
- Time base for statistical data
- Automatic start-up after power failure
- Storage of occupancy times in case of power failure
- Designed for installation in multi-storey car parks

### Operation

The parking data acquisition unit DZK UNI serves to record the unoccupied parking spaces of a parking area, or multi-storey car park, and to forward this information to the main car park computer.

The information about incoming and exiting vehicles is supplied by the parking system, either by potential-free contacts (e.g. barrier systems), inductive loop detectors, or by a serial interface to an existing car park management system. The parking data acquisition unit DZK UNI is installed either in the control room of the car park or, for open parking areas, in an outdoor plastic control cabinet.



### Technical Data

The core of the parking data acquisition unit DZK UNI is a multifunctional base module. Together with its controller, the module takes over the parking space occupancy detection, the control of communication to the connected interfaces as well as manual control panel supply.

The module has the following system properties:

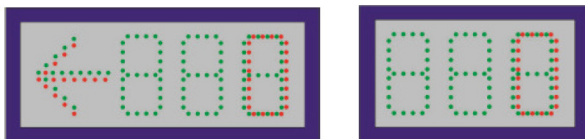
- Controller: IPC@Chip SC23
- Interfaces e.g.: Serial 1 - RS 232 (RxD, TxD, RTS, CTS), serial 2 - RS 232, RS 485 or TTL,
- serial 3 - RS 232, RS 485 or TTL, Ethernet 10/100 MBit, 1x CAN bus (detector connection),
- 1x USB 1.1, 1x SD card slot (optional)
- Power supply: 24 VDC
- Voltage output: Supply of a voltage output of 5 VDC for an external modem
- Dimensions: Approx. 100 x 160 x 50 mm

Data acquisition options (DZK UNI I / -S / -D / -P):

- -S: Serial connection to all commercially available parking management systems
- -D: Data acquisition via inductive loops via built-in IC detectors

## WAY-FINDING DISPLAY 3 DIGIT DISPLAY ESS 312 A

Stress free parking – Way-finding signage informs drivers of exactly how many parking spaces are available – in the carpark and/or on each level and/or down each row.



## Features

- Displays 3 green digits (0-999) showing the exact number of parking spaces available or a red 0 for fully occupied parking zones.
- If directional indication is required, the optional red/green arrow can be integrated into the display.
- Easily installed at the optimal location due to low installation depth and weight, and ceiling or wall mounting options
- Ultra-bright LEDs and integrated brightness control
- Low maintenance
- Options for different LED colours with viewing angles up to 100°, and different colours of sign enclosure
- Can be integrated into static signage, and can be installed outside to provide motorists with parking space occupancy information even before they get to the carpark.

## Technical Data

- 280 mm W x 180 mm H x 60 mm D (with arrow 420 mm W)
- Weighs less than 500g
- Only 60mm deep
- 230 V (115 V) power supply
- Temperature range -20°C bis +70°C
- IP43
- Ceiling or wall mount

## Symbols

Numbers:

- Dimensions: 120 x 60 mm per 7-segment character
- Number of LEDs: 108
- Luminous intensity: > 100 cd
- Viewing Angle: 30°

Red/green arrow:

- Dimensions: 100 x 100 mm
- Number of LEDs: 32
- Luminous intensity: > 32 cd
- Viewing Angle 30°

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## SWARCO TRAFFIC SYSTEMS GMBH

SWARCO TRAFFIC SYSTEMS GMBH is a company of the traffic technology group SWARCO. The SWARCO Group, based in Wattens/Austria, is one of the leading international one-stop shops for road safety and traffic management solutions. SWARCO TRAFFIC SYSTEMS is one of the leading suppliers of intelligent traffic systems in Germany. Building on many decades of experience, it offers a wide range of innovative solutions for urban and interurban traffic management, including parking and traffic detection. Its nationwide service and maintenance guarantees highest possible system availability and improved road safety. With economical, sustainable, and environmentally friendly technologies we help ensure smooth and safe traffic flows.



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