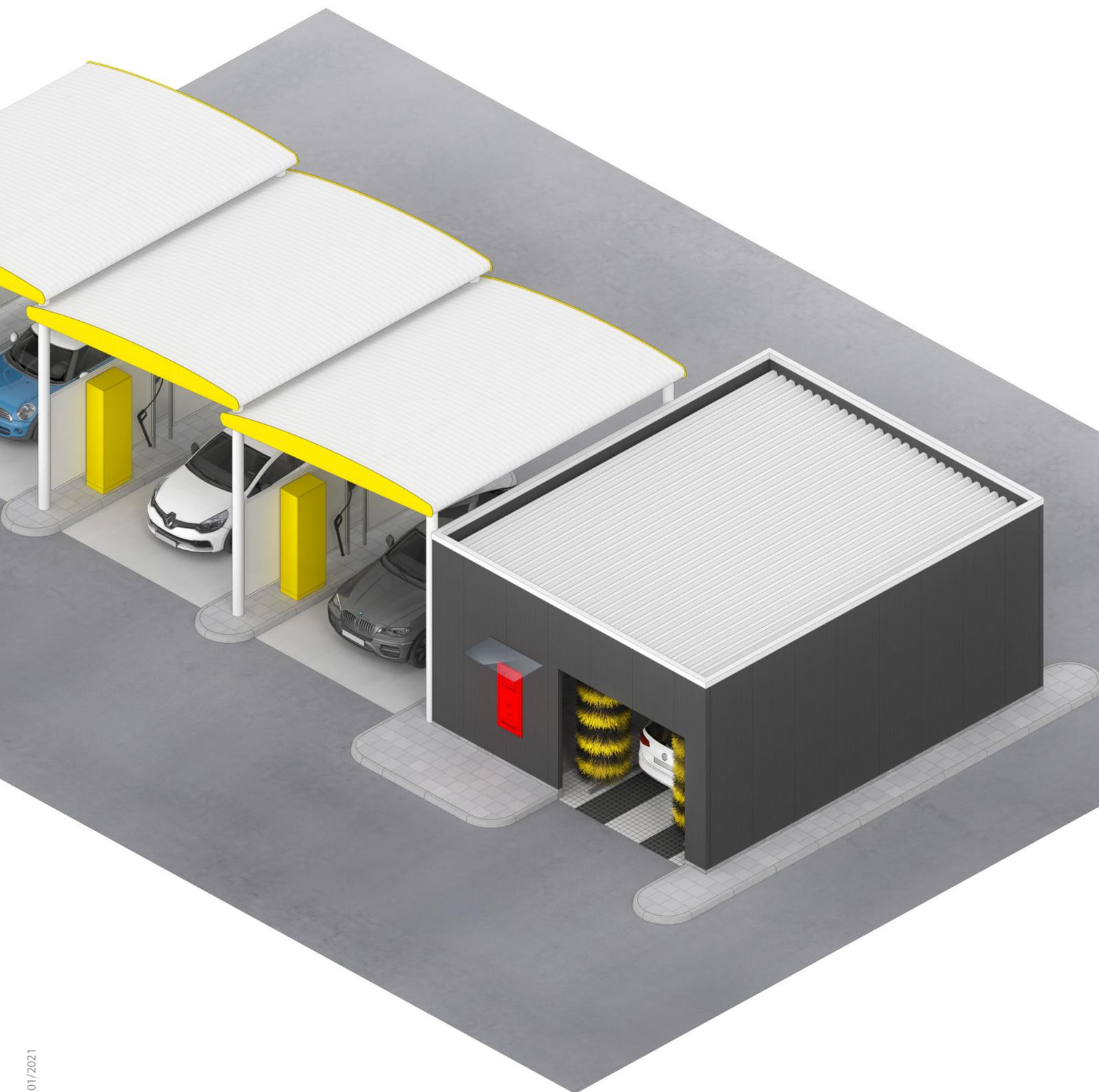
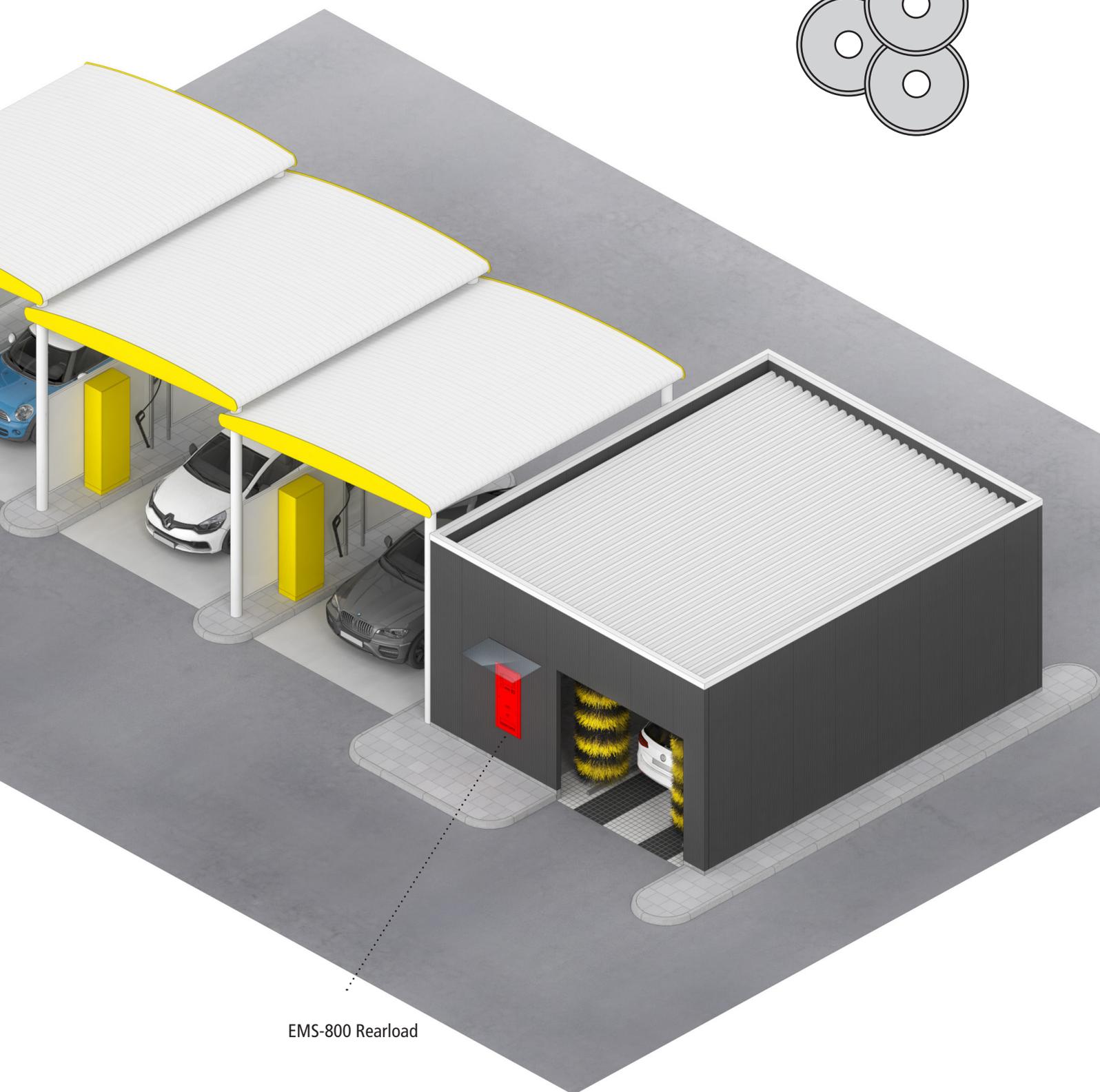
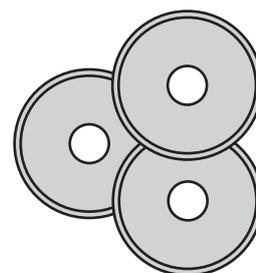


Solutions for **CAR WASHES & CLEANPARKS**



Token sale & exchange
TOKEN OPERATION



EMS-800 Rearload

Token sale & exchange

TOKEN OPERATION

DESCRIPTION

In scenario 1, the pay station EMS-800 Rearload is used for the sale of tokens. The robust pay station is installed through the wall, service access takes place from the rear side from the protected technical room.

HANDLING PROCEDURE

After selecting the desired amount of tokens, the payment can be transacted by using coins, bank notes, bank-, credit cards and smartphones. A receipt can be printed for each payment process.

With the dispensed tokens, the customer can start existing devices (e.g. vacuum cleaner, high-pressure cleaner) by inserting a token as usual.

REMOTE & DATA ACCESS

If an Internet connection is available, updates can be uploaded to the EMS-800 Rearload pay stations and log files can be retrieved remotely. In addition to remote maintenance, the optional software EMS-DATA offers the possibility to retrieve cash register statistics data for further analysis.

BENEFIT

- Low effort by simple replacement of existing cash system
- Reuse of the existing infrastructure
- Reuse of existing token-acceptors at devices
- Reuse of dispensed tokens, no media change necessary
- Same payment-handling for customers at devices
- Robustness, remote maintenance, receipt printing



Figure:
Token hopper

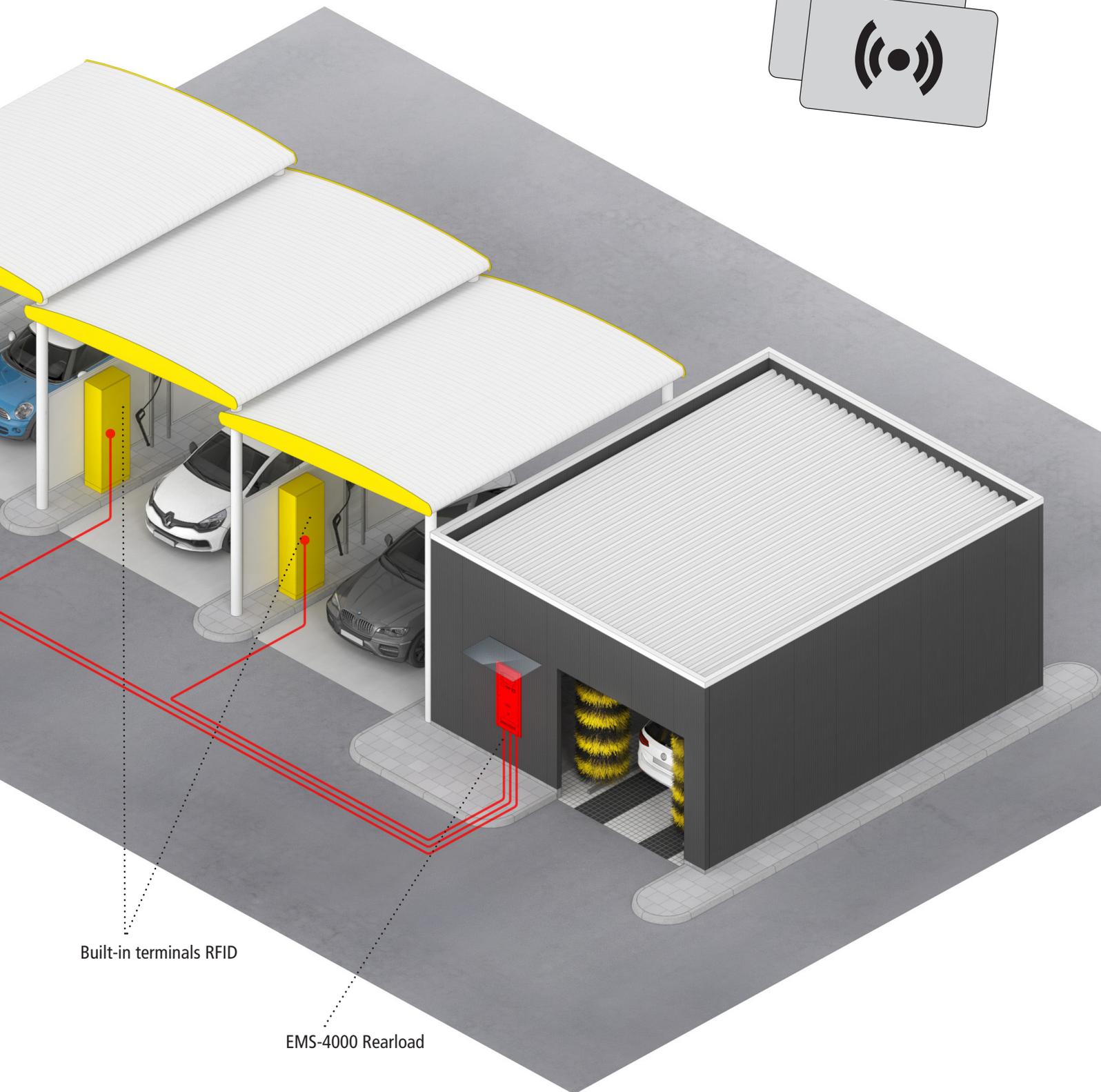
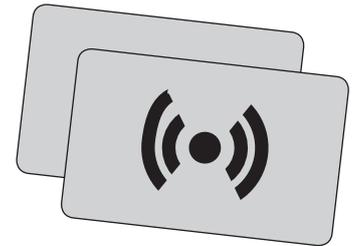


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Beckmann GmbH
Brandtstraße 1
33161 Hövelhof
Germany

Fon +49 (0) 52 57-98 23-0
Fax +49 (0) 52 57-98 23-11
info@beckmann-gmbh.de
www.beckmann-gmbh.de

Value-card sales, recharge and return **COINLESS CARD OPERATION**



Built-in terminals RFID

EMS-4000 Rearload

Value-card sales, recharge and return

COINLESS CARD OPERATION

DESCRIPTION

In scenario 2, RFID-value cards can be bought, loaded and dispensed with the cash system EMS-4000 Rearload. By presenting the value-cards in front of the RFID-terminals, local devices (e.g. vacuum cleaner, high-pressure cleaner) can be started cashless.

HANDLING PROCEDURE

After selecting and paying the credit amount with coins, banknotes or credit card at EMS-4000, the RFID-hard-plastic card is dispensed. By presenting the value-card in front of RFID-terminals, the local devices (e.g. vacuum cleaner, high-pressure cleaner) can be started cashless. If the credit is expended, the RFID card can be recharged or returned at EMS-4000. This eliminates the staffing costs for coin emptying at the devices, the maintenance effort is reduced by contactless RFID technology and the risk of break-up at the devices is minimized. With the use of RFID-value cards, discounts and promotions can be realized to strengthen customer loyalty. By using the cash system EMS-4000 it is also possible to start the connected car wash directly via BCD interface.

REMOTE & DATA ACCESS

A webinterface provides status information and allows an intuitive parameter configuration of EMS-4000 via remote access. Further, a detailed analysis of sales data is possible by using the optional software EMS-DATA.

EXCHANGE OF EXISTING COIN SELECTORS

Existing devices (high-pressure cleaners, vacuum cleaners, mat beaters, ...) can be converted to cashless payment with customer and prepaid cards with minimal effort: The existing coin selector is simply exchanged by the dimensionally compatible built-in terminal RFID. Also, the existing device control does not need to be changed: The built-in terminal simulates the coin-insertion pulses expected by the device control when making a card payment.



Figure: Built-in terminal RFID

BENEFIT

- Limited effort by replacement of existing cash system and integration of RFID-terminals at devices
- Reuse of the existing device-controls, simple upgrade to cashless payment by exchanging compatible built-in terminals
- Reduction of staff costs due to elimination of coin-emptying at devices
- Cash-free operation reduces the risk of theft at devices
- Nonwearing contactless RFID technology
- Customer loyalty through value cards & discounts realizable



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Beckmann GmbH
 Brandtstraße 1
 33161 Hövelhof
 Germany

Fon +49 (0) 52 57-98 23-0
 Fax +49 (0) 52 57-98 23-11
 info@beckmann-gmbh.de
 www.beckmann-gmbh.de

Pay station (through the wall installation) **EMS-4000 Rearload**



Pay station (through the wall installation) EMS-4000 Rearload

DESCRIPTION

The EMS-4000 Rearload is designed for through the wall mounting and therefore ideally suited for harsh environmental conditions. This databased pay station is used for dispensing, loading or taking back RFID value cards.

Besides the acceptance of banknotes, coins as well as tokens can be processed. Furthermore, cashless payments with bank and credit cards with pin input can be made at the card terminal. For the return of the card deposit, coin hoppers with a large capacity are integrated, which allow a long service life until refilling. The EMS-4000 is equipped with a thermal printer for issuing barcode tickets, receipts or cash reports. A heating package is also part of the standard equipment.

HANDLING PROCEDURE

After selecting the desired card amount, the corresponding credit balance is loaded onto the RFID hard plastic card after payment (with coins, bank bills, EC & credit cards) at the automatic pay station and the card is issued. With the cashless RFID card, the customer can start the existing high-pressure cleaner and vacuum cleaner stations by holding it in front of the respective RFID terminal. The card can be recharged at any time at the pay machine or returned against payment of the card deposit.



Figure 1:
 RFID value card, e.g. Kärcher Wash-Card



Figure 2:
 Tube changer and coin hopper

TECHNICAL DATA

- 10" TFT-Color-Display
- GUI Touchscreen
- Bank-/ Credit card terminal for cashless payments with Chip/NFC and Pinpad
- RFID-value card dispenser
- Self-refilling tube changer (6x coin tubes)
- Coin dispenser with large capacity
- Banknote reader (all directions)
- Thermal printer (e.g. for tickets, vouchers, receipts)
- Heating package
- Safe lock with a special locking mechanism
- Separate lockable internal cash stocks
- Door hinge left (viewed from behind)
- Dimensions frontplate: 800 x 880 mm (WxH)
- Dimensions housing: 700 x 780 x 380 (WxHxD)
- Stainless steel frontplate: 4mm, housing-colour: Tiger P7
- Web-Interface for remote-access and parameter settings

OPTIONS

- Cashless version (w/o coin validator & banknote reader)
- Statistics software EMS-DATA

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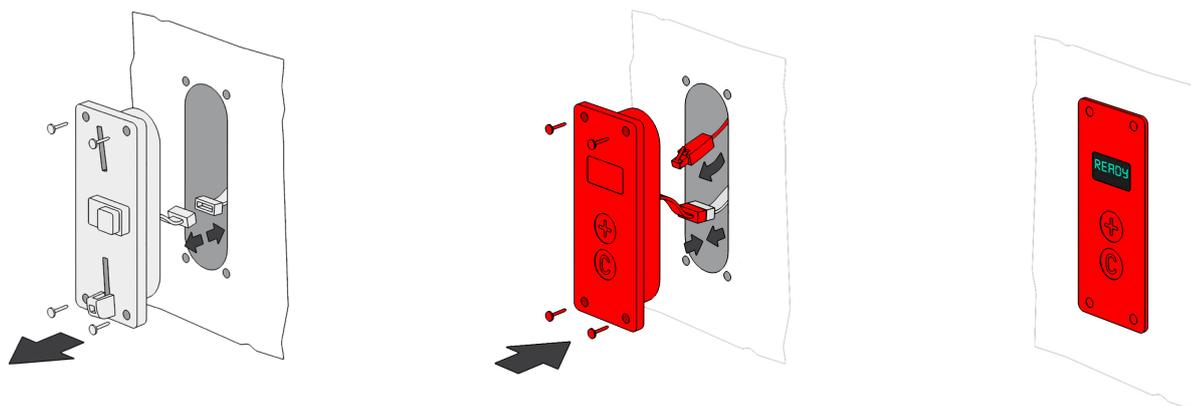
Beckmann GmbH
 Brandtstraße 1
 33161 Hövelhof
 Germany

Fon +49 (0) 52 57-98 23-0
 Fax +49 (0) 52 57-98 23-11
 info@beckmann-gmbh.de
 www.beckmann-gmbh.de

Use of customer and prepaid cards **BUILT-IN TERMINAL RFID**



Use of customer and prepaid cards **BUILT-IN TERMINAL RFID**



EXCHANGE OF EXISTING COIN SELECTORS

Existing devices (high-pressure cleaners, vacuum cleaners, mat beaters, ...) can be converted to cashless payment with customer and prepaid cards with minimal effort: The existing coin selector is simply exchanged by the dimensionally compatible built-in terminal RFID. Also, the existing device control does not need to be changed: The built-in terminal simulates the coin-insertion pulses expected by the device control when making a card payment.

DESCRIPTION

Key features include user-friendly operation coupled with reliable RFID card processing and robust overall system functionality. The housing, the vandal-proof buttons and the contactless card technology guarantee wear-free operation outdoors. The terminal processes Beckmann RFID cards, which can be issued, charged or returned at the EMS-4000 cash machines.

INTERFACE-VERSIONS

- Electronic coin selector
- Coin selector with photocell or micro switch

FEATURES

- Nonwearing contactless RFID technology
- Vandal-proof buttons for amount preselection
- High-contrast graphic display
- Network connection to EMS-4000 required
- Dimensions (HxWxD): 156 x 64 x 55 mm

HANDLING PROCEDURE

By pressing the +-button, the amount to be debited can be preselected by the customer. After providing a valid RFID card, the price will be deducted from the card balance and the amount will be sent to the device control via coin impulses. Additional payments by re-holding the RFID card are also possible. With the RFID master card, adjustments can be made to the terminal (e.g. price adjustments) and counters can be read out.

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Beckmann GmbH
 Brandtstraße 1
 33161 Hövelhof
 Germany

Fon +49 (0) 52 57-98 23-0
 Fax +49 (0) 52 57-98 23-11
 info@beckmann-gmbh.de
 www.beckmann-gmbh.de

Control for car washers
WALL TERMINAL WITH TICKET READER



Control for car washers

WALL TERMINAL WITH TICKET READER

DESCRIPTION

This wall-mounted terminal is ideally suited for harsh environmental conditions in Cleanparks. The robust housing made of stainless steel, the vandal-proof start and stop buttons and the reader technology guarantee high availability in humid environments. The terminal reads barcode and RFID-media, transmits the program and starts the automated car wash.

MEDIA

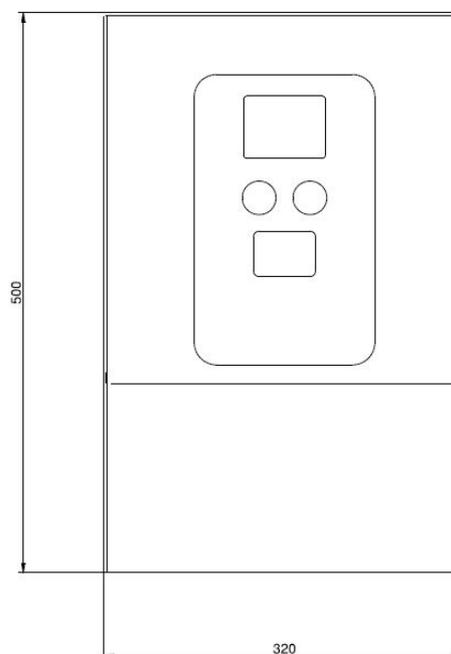
The terminal is connected online to the database of the EMS-4000 pay station or server box. Issued barcode tickets and RFID special cards are processed. The tickets and cards can be optionally withdrawn by the motorized reader. Thus, a reuse by reissuing the RFID cards is possible.

HANDLING PROCEDURE

After entering a valid barcode ticket or RFID card, the wash program is transmitted to the automated car wash via BCD code. The washing is started by pressing the green button. As an alternative to pressing the lateral EMERGENCY STOP button, the washing program can be interrupted by pressing the red illuminated stop button. The color display informs the waiting customer e.g. about the current care progress and the remaining waiting time.

FEATURES

- Robust and weather resistant stainless steel housing
- Large backlit colour display for customer information
- One ticket slot for in- and output of tickets
- Hybrid motor reader for barcode and RFID tickets
- RGB-LEDs und akustische Rückmeldung
- Integrated heating and rain deflector
- Intuitive operation and fast ticket processing
- Large collection box for drawn-in media
- BCD-output interface to automated car wash
- 230V AV operating voltage
- Dimensions (HxWxD): 500 x 320 x 350 mm



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Beckmann GmbH
 Brandtstraße 1
 33161 Hövelhof
 Germany

Fon +49 (0) 52 57-98 23-0
 Fax +49 (0) 52 57-98 23-11
 info@beckmann-gmbh.de
 www.beckmann-gmbh.de

Pay station (through the wall installation) **EMS-800 Rearload**



Pay station (through the wall installation) EMS-800 Rearload

VARIANTS

The cash system EMS-800 Rearload is designed for „through the wall“ installation and is ideal for harsh environmental conditions. The following variants are available:

- direct token sale after money insertion
- token sale after product selection

DESCRIPTION

The robust EMS-800 Rearload is featured by an intuitive, user-friendly operation combined with a reliable money and token processing. This machine is ideal, when coins, tokens and banknotes shall be accepted for payment. In addition, cashless micropayments can be transacted at the optional card terminal up to an amount of 25€. Up to three integrated coin hoppers guarantee a maximum of flexibility and reduce service expenditures. The internal cash stocks (hopper, cash box and banknote cassette) are secured by additional locks against unauthorized access. A receipt can be printed for each payment process.

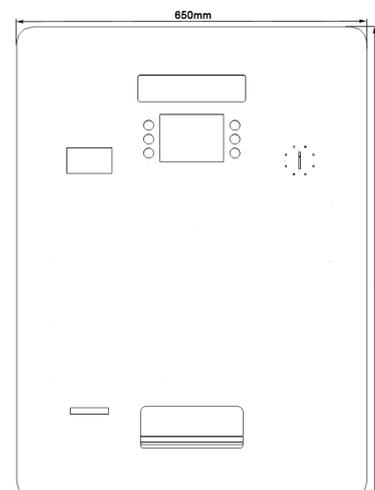
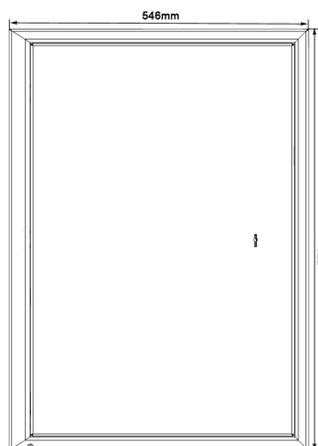
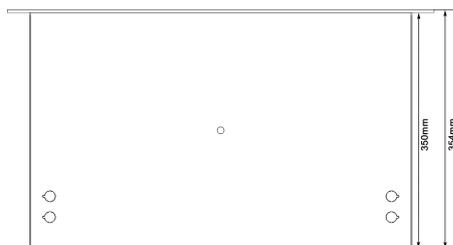
The system is also equipped with a heating package, an internal alarm system and a LED-illuminated logofield. A contactless reader is installed in the stainless steel front, which automatically prints a cash report when an authorized service-card is inserted. By inserting the RFID master-card, the system can be configured with the display and the keys from the front side.

TECHNICAL DATA

- Electronic coin selector 0,10 EUR to 2,- EUR and tokens
- Banknote reader all directions (5€, 10€, 20€)
- Up to 3 selectable coin dispenser with large capacity (e.g. 1 hopper = 1000 coins)
- Thermal printer for receipts and cash reports
- 5,7" TFT-colour-display, 6 stainless steel buttons
- Multicoloured LEDs with status indication
- Comfortable parameter configuration via display
- RFID-reader in front (cash reports, programming modus)
- Remote access via FTP possible
- Heating package
- Safe lock with a special locking mechanism
- Separate lockable internal cash stocks
- Door hinge left (viewed from behind)
- Dimensions frontplate: 650 x 880 mm (WxH)
- Dimensions housing: 546 x 776 x 350 mm (WxHxD)
- Stainless steel frontplate: 4mm, housing-colour: Tiger P7

OPTIONS

- Banknote acceptance up to 50€
- Creditcard-terminal for cashless payment with chip/NFC up to 25€ w/o pin (Micropayment)
 Requirement: internet-connection must be provided
- Statistics software EMS-DATA



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Beckmann GmbH
 Brandtstraße 1
 33161 Hövelhof
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Fon +49 (0) 52 57-98 23-0
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QUALITY
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Universal payment of up to 8 devices EMS-1080



EMS-1080 operating unit with RFID-card-terminal
(Payment with prepaid customer card credit)

EMS-1080 operating unit with card-terminal and coin selector
(ONLINE-payment up to 25€ per transaction)

Universal payment of up to 8 devices

EMS-1080

DESCRIPTION

The system family EMS-1080 is developed for the central control of up to eight devices (e.g. washing machines, dryers, showers, toilet doors,...). The payment can be transacted either with coins or credit cards or loaded RFID-customer-cards. The use of stainless steel, a robust construction and the use of high quality components lead to a long product life, less service expenditure and very good weather resistance.

HANDLING PROCEDURE

The individual status RGB-LEDs clearly indicate, which devices are occupied or free. After choosing a free device, the large display shows the individual minimum amount of insertion. After the payment is completed, the selected device is switched on for the stored time period. After the program time has elapsed, an optional door opening pulse is available.

An EMS-1080 system consists of two components:

- Operating unit (for selection, payment, configuration)
- PowerBox (power supply, relais I/Os)



Figure:
Separated PowerBox

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 Brandtstraße 1
 33161 Hövelhof
 Germany

Fon +49 (0) 52 57-98 23-0
 Fax +49 (0) 52 57-98 23-11
 info@beckmann-gmbh.de
 www.beckmann-gmbh.de

PAYMENT OPTIONS

- Electronic coin selector 0,10 EUR to 2,- EUR and tokens
- creditcard-terminal for cashless payment with chip/NFC up to 25€ w/o pin (Micropayment)
- RFID-customer-card-terminal

The inexpensive card terminal handles contactless cashless payment by simply holding the card or smartphone in front of it without entering a PIN. The integrated SIM card ensures wireless data transmission. Furthermore, the operator has the possibility to monitor sales and device status remotely.

RFID-CUSTOMER-CARDS

The customer card terminal processes Beckmann-RFID-plastic cards that can be issued, recharged or returned at the pay station EMS-4000. Alternatively, one-way RFID tickets can be used on the EMS-1080, which are pre-programmed with a defined number of uses.

TECHNICAL DATA - Operating unit

- Weatherproof stainless steel housing
- Robust stainless steel buttons and multicoloured status LEDs
- Access to cash and hour meters
- OS on exchangeable controller chip
- Supply voltage: supply with low voltage from powerbox
- Dimensions (HxWxD): 300 x 320 x 155mm

TECHNICAL DATA – PowerBox

- Supply voltage: 230VAC, 50 / 60Hz
- Number of relay outputs (NO): 4x (EMS-1040)
8x (EMS-1080)
- Switching capacity per relay: 16A, 250VAC
- Dimensions (HxWxD): 175 x 175 x 80mm (EMS-1040)
- Dimensions (HxWxD): 180 x 250 x 65mm (EMS-1080)

Coin machines
EMS-5x/EMS-8x



Coin machine EMS-57

Coin machines

EMS-5x/EMS-8x

DESCRIPTION

With the EMS-5x and EMS-8x series of coin machines, any services can be easily time-controlled by coin or token. The bright and clear display informs concerning the inserted coins or the remaining time. For the optional use in outdoor / wet area, we offer a robust stainless steel housing, encapsulated electronics and 24V AC SELV.

While the EMS 5x represents the entry-level model for simple applications, the EMS-8x shows its strengths through several settings and flexible applications.

BENEFITS EMS-8x

- Extensive settings, comfortable adjustable via display
- Integrated counters (cash counter, hour meter,...), easy accessible via display
- Electronic coin selector: 0,10 EUR to 2,- EUR and tokens (EMS 82)
- Application-specific versions (e.g. for washing machines, showers, toilet access, solarium, pulse counters, ...)
- Powerful microprocessor
- Modern SMD technology
- Software updates via optional SD-card module possible



EMS-57



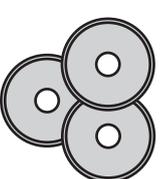
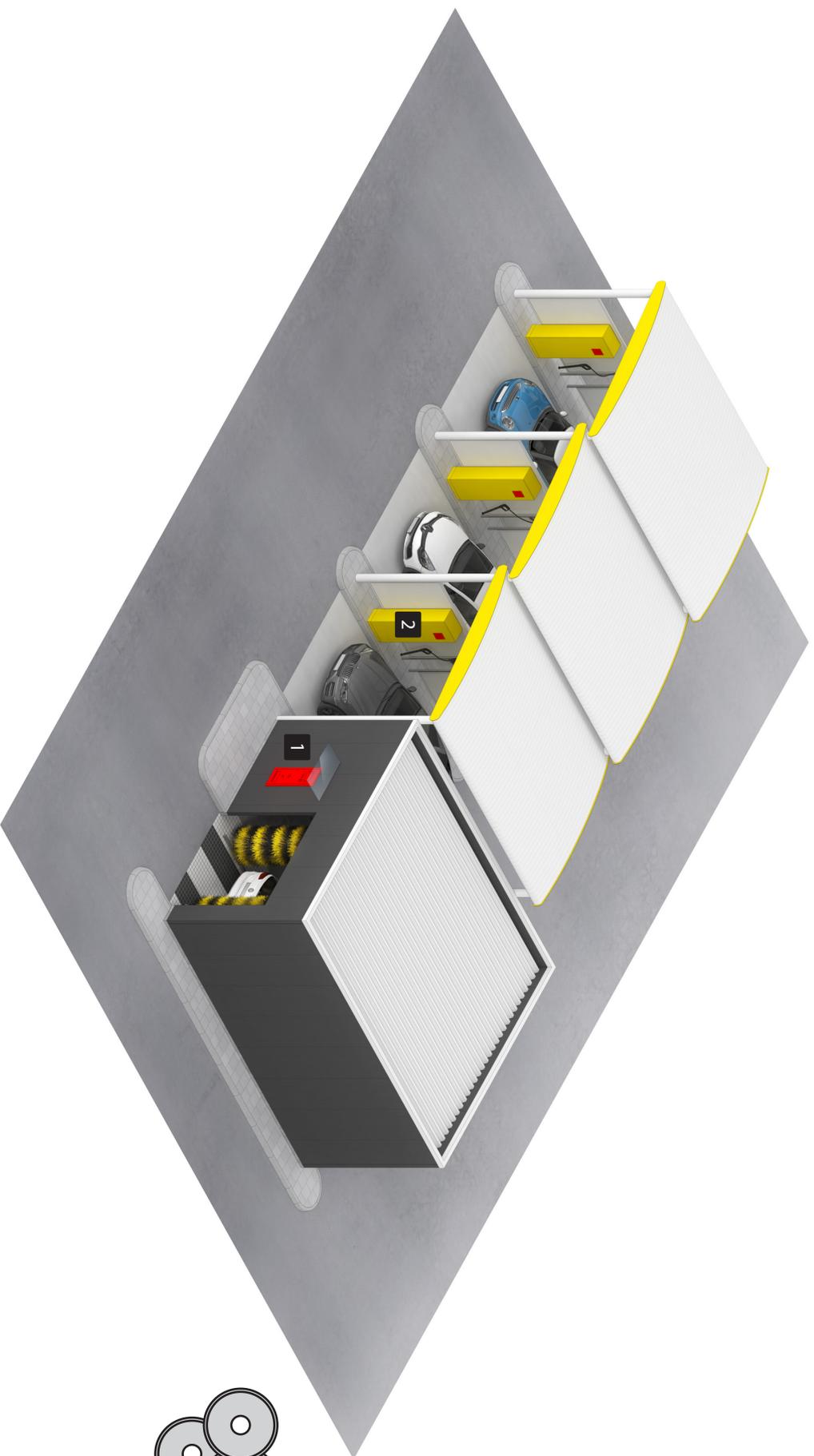
EMS-81



EMS-82

Coin selector	MP = Mechanical coin selector EMP = Electronic coin selector	MP 1 type of coin	MP 1 type of coin	EMP several coin types
Display	LED-Display	3-digits, green Remaining time	3-digits, red Remaining time	3-digits, red Remaining time
Settings	Minimum insertion, price, timing	via DIP-switches	comfortable via display	comfortable via display
Integrated counters	Cash counter, hour meter, customer counter accessible via display	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Version	TE door unlocking - for washing machines and dryers - additional payment during operation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	SO solarium - redundant switch-off reliability - switch-on delay - remote start	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	DU showers - start/stop-button - hygiene flushing	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	IM impulse (water/energy) - impulse counter for energy- and water - delivery with start/stop function	-	-	<input checked="" type="checkbox"/>
	WC toilet access - potential-free contact - display FREE / OCCUPIED	-	-	<input checked="" type="checkbox"/>
Housing		Steel metal	Steel metal, stainless steel optional	
Operating voltage (switching capacity)		230V (16 A/AC1)	230V (16 A/AC1), 24V AC SELV optional	
Dimensions (HxWxD)		260 x 160 x 110 mm		

SCENARIO 1: TOKEN OPERATION



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GIVE US A CALL!



Beckmann GmbH
Brandstraße 1
33161 Hövelhof
Deutschland

Fon +49 (0) 52 57 -9823-0
Fax +49 (0) 52 57 -9823-11
info@beckmann-gmbh.de
www.beckmann-gmbh.de

1 **Cash system EMS-800RL:**
Token sale and exchange

2 **Coin selector:**
Device starts after coin insertion

Overview pay stations

EMS-800 RL / EMS-4000 RL



EMS-800 RL

EMS-4000 RL

		EMS-800 RL	EMS-4000 RL
Cash Payment	Electronic coin selector - 0,10€ - 2€ - tokens	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Banknote acceptor - 5€ - 50€	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Card Payments	NFC credit cards and NFC smartphones - micropayments up to 25€ w/o PIN - contactless NFC reader	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	EC-, credit-, fleetcards, smartphones - unlimited payment amount with PIN - chip, magnetic stripe and NFC reader		<input checked="" type="checkbox"/>
Tariff Structure	Sale of each single product	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Sale of multiple products per payment process		<input checked="" type="checkbox"/>
Database	Dynamic management of sold items in an integrated database		<input checked="" type="checkbox"/>
Issued Media	Receipts and vouchers -medium: paper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Barcode tickets with database mapping -medium: paper -online connection required		<input checked="" type="checkbox"/>
	RFID-card with database mapping -medium: plastic card -online connection required		<input checked="" type="checkbox"/>
Peripherie	Possible connection of peripherals for direct device control - RFID built-in terminals on vacuum cleaners & high pressure cleaners - Barcode readers for portal washing systems		<input checked="" type="checkbox"/>
Remote Access	FTP -firmware-updates and logfiles -online connection required	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	EMS-DATA -pc statistics-software for analysis -online connection required	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Webinterface -systemstatus and product settings -online connection required		<input checked="" type="checkbox"/>

Note: This matrix of available, maximum functions presupposes a selection of the required product-options