



THE STRONGEST LINK.



UPS
UNINTERRUPTIBLE POWER SUPPLY





CUSTOMIZED SYSTEM SOLUTIONS

In times of increasing relevance of decentral power supplies and decreasing reliability of the power supply networks, uninterruptable power supplies (UPS) become more and more important. Especially for applications which are safety critical, applications with a high requirement concerning the plant availability, lighting systems e.g. for helidecks on ships or PLC systems which would cause a high damage in case of data loss, UPS systems more often belong to the basic equipment of the plant. R. STAHL, with its more than 80 years of experience in explosion protection, is able to transfer the requirements of a modern UPS system into systems, which are suitable for use in explosion-protected areas.

R. STAHL is able to deliver complete systems beginning with terminal boxes over AC or DC distribution boards up to UPS systems with battery boxes and also off-grid solutions can be scope of supply. Therefore R. STAHL is able to revert on a wide spectrum of standard products and solutions and if the standard is not feasible for the customer's requirements, R. STAHL with its longtime experience, its knowhow and its qualified employees is able to prepare customized solutions, which perfectly match the requirements of the customer.

R. STAHL is the strongest link

BENEFITS

- 100% process safety
- Reliable battery backup
- Standardized solutions
- System solutions customized to your needs
- VRLA, NiCd, Li-Ion battery or capacitors as buffer technology available
- Competent technical support prior, during and after purchase
- Maximum safety in explosion-protected areas
- Solutions for the most extreme environmental conditions (i.e. heat, cold, humidity or marine atmosphere)



CAPACITOR UPS

MAIN FEATURES

- Extremely short charging time, which means ready for operation within seconds
- USB port and shut-down software for connection to PC systems
- Output up to 40A DC
- Backup time range - 1s up to a few minutes (customize up to a few hours)

TYPICAL APPLICATIONS

Backup for PC, PLC, HMI and low power applications like sensors

BENEFITS

The 100% maintenance-free Capacitor UPS provides 20 years of service life, even at high temperatures. It comes with a lightweight and compact design, and if required, energy storage modules can be added to increase backup time.

The capacitor UPS is especially designed to prevent PCs, HMIs or PLCs from data loss in case of a power failure. Therefore a special external signal will start the shutdown of the PC, HMI or PLC system. No matter how long it takes to shutdown, the capacitor UPS will supply the power for the system.



TECHNICAL DATA

MARKING

| | |
|---------------------------|------------------------------------|
| IECEX | |
| GAS EXPLOSION PROTECTION | Ex db eb IIC T6, T5, T4 Gb |
| DUST EXPLOSION PROTECTION | Ex tb IIC T80°C, T95°C Db |
| | |
| ATEX | |
| GAS EXPLOSION PROTECTION | ⊕ II 2 G Ex db eb IIC T6/5/4 Gb |
| DUST EXPLOSION PROTECTION | ⊕ II 2 D Ex tb IIC T80°C, T95°C Db |
| | |
| INSTALLATION | ZONE 1, 2 OR ZONE 21, 22 |

CERTIFICATES

| | |
|-------|-------------------|
| IECEX | IECEX PTB 07.0029 |
| ATEX | PTB 06 ATEX 1077 |

AMBIENT CONDITIONS

| | |
|----------------------|-----------------|
| AMBIENT TEMPERATURE | - 55 ... + 55°C |
| DEGREE OF PROTECTION | IP66 |

ELECTRICAL DATA

| | |
|------------------|---------------------------------|
| INPUT VOLTAGE DC | 12V / 24V DC |
| INPUT VOLTAGE AC | 340 - 550V AC; 115 - 230V AC |
| OUTPUT VOLTAGE | 12V / 24V DC |

MECHANICAL DATA

| | |
|------------|-------------------------------|
| DIMENSIONS | STARTING FROM 290 x 290 x 230 |
| WEIGHT | STARTING FROM 12KG |

ENCLOSURE MATERIAL

| | |
|----------------------|--|
| FLAMEPROOF ENCLOSURE | ALUMINIUM (COPPER-FREE) OTHER MATERIAL ON DEMAND |
| CONNECTION CHAMBER | GLASS-FIBRE REINFORCED POLYESTER RESIN (GRP), DARK GREY, SIMILAR TO RAL 7024 GALVANIZED SHEET STEEL, POWDER COATED, LIGHT GREY, RAL 7035 STAINLESS STEEL WITHOUT POWDER COATING (OPTION) |

STANDARD UPS

MAIN FEATURES

- Power range AC up to 500 VA
- Power range DC up to 300 W
- Offline UPS (for AC systems)
- SOC and SOH battery monitoring
- Temperature-guided battery charging

TYPICAL APPLICATIONS

- HMI, Safe shutdown of PC or PLC
- Helideck Lighting
- Machinery and plants: Elevators, Cranes, Drilling
- Automation: CCTV, Wireless
- Telecommunication installations

BENEFITS

- Modular design using Ex d and Ex e technique
- Low footprint
- The lightweight and compact UPS enables a safe shutdown in combination with HMI or PC.
- 1:1 redundancy possible



TECHNICAL DATA

MARKING

| | |
|----------------------|---------------------------|
| ATEX | |
| EXPLOSION PROTECTION | II 2 G Ex db eb IIC T4 Gb |
| INSTALLATION | ZONE 1, 2 |

CERTIFICATES

| | |
|------|------------------|
| ATEX | PTB 06 ATEX 1077 |
|------|------------------|

AMBIENT CONDITIONS

| | |
|----------------------|-------------------------|
| AMBIENT TEMPERATURE | - 20 ... + 50°C |
| DEGREE OF PROTECTION | IP66 (BATTERY BOX IP23) |

ELECTRICAL DATA

| | |
|---------|---|
| INPUT | 120V / 230V AC, 100 ... 240V AC / 24V DC |
| OUTPUT | 120V / 230V AC 24V DC |
| BATTERY | VRLA |

MECHANICAL DATA

| | |
|------------|-------------------------------|
| DIMENSIONS | STARTING FROM 290 x 290 x 230 |
| WEIGHT | STARTING FROM 200KG |

ENCLOSURE MATERIAL

| | |
|------|---|
| Ex d | ALUMINIUM (COPPER-FREE) OR STAINLESS STEEL |
| Ex e | SHEET STEEL OR STAINLESS STEEL |

COMPACT UPS

MAIN FEATURES

- Customized design
- Power range AC UPS up to 3.000 VA
- Power range DC UPS up to 2.000 W
- Both offline and online
- Temperature-guided battery charging

TYPICAL APPLICATIONS

- NavAids
- Aircraft warning light
- Lighting: helideck, emergency, parking
- Offshore / Onshore: pumps, valves

BENEFITS

The maintenance-free UPS is simple to install and can provide a backup time up to 2 hours, depending on the load and the battery capacity. The UPS is available for varied requirements.



TECHNICAL DATA

MARKING

| | |
|---------------------------|----------------------------|
| IECEX | |
| GAS EXPLOSION PROTECTION | Ex db eb IIC T6, T5, T4 Gb |
| DUST EXPLOSION PROTECTION | Ex tb IIC T80°C, T95°C Db |

| | |
|----------------------|--------------------------------|
| ATEX | |
| EXPLOSION PROTECTION | ⊕ II 2 G Ex db eb IIB T4/T5 Gb |
| INSTALLATION | ZONE 1, 2 |

CERTIFICATES

| | |
|-------|---------------------|
| IECEX | IECEX KEM 07.0051X |
| ATEX | KEMA 01 ATEX 2145 X |

AMBIENT CONDITIONS

| | |
|----------------------|-----------------|
| AMBIENT TEMPERATURE | - 20 ... + 50°C |
| DEGREE OF PROTECTION | IP66 |

BATTERY

VRLA OR NI-CD

ELECTRICAL DATA AC AND DC UPS

| | |
|--------|---------------------------|
| INPUT | 120V AC, 230V AC, 400V AC |
| OUTPUT | 24V DC, 48V DC, 110V DC |

MECHANICAL DATA

| | |
|------------|-------------------------------|
| DIMENSIONS | STARTING FROM 290 x 290 x 230 |
| WEIGHT | STARTING FROM 200KG |

ENCLOSURE MATERIAL

| | |
|------|--|
| Ex d | ALUMINIUM (COPPER-FREE) OR STAINLESS STEEL |
| Ex e | SHEET STEEL OR STAINLESS STEEL |

POWER UPS

MAIN FEATURES

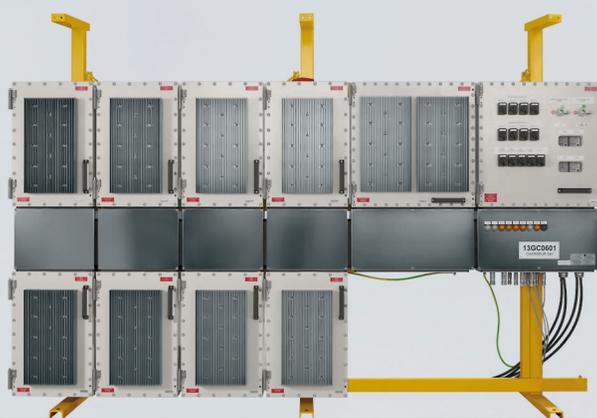
- Power range AC up to 7.000 VA
- Temperature-guided battery charging

TYPICAL APPLICATIONS

- Offshore / Onshore: pumps, valves
- Energy distribution downstream
- Safety ensured power supply
- Lighting, NavAid

BENEFITS

The UPS uses either the Thyristor or IGBT technology. Additionally the UPS has both, an AC and a DC output. An overvoltage limiter (OVL) is optionally available.



TECHNICAL DATA

MARKING

| | |
|---------------------------|-----------------------------|
| IECEx | |
| GAS EXPLOSION PROTECTION | Ex db eb IIC T6, T5, T4 Gb |
| DUST EXPLOSION PROTECTION | Ex tb IIC T80°C, T95°C Db |
| | |
| ATEX | |
| EXPLOSION PROTECTION | ⊕ II 2 G Ex db eb IIB T4 Gb |
| INSTALLATION | ZONE 1, 2 |

CERTIFICATES

| | |
|-------|---------------------|
| IECEx | IECEx KEM 07.0051X |
| ATEX | KEMA 01 ATEX 2145 X |

AMBIENT CONDITIONS

| | |
|----------------------|-----------------|
| AMBIENT TEMPERATURE | - 20 ... + 55°C |
| DEGREE OF PROTECTION | IP66 |

ELECTRICAL DATA

| | |
|----------------|----------------|
| INPUT VOLTAGE | 400V AC, 3-PH. |
| OUTPUT VOLTAGE | 24V DC |

ENCLOSURE MATERIAL

| | |
|------|--|
| Ex d | ALUMINIUM (COPPER-FREE) OR STAINLESS STEEL |
| Ex e | SHEET STEEL OR STAINLESS STEEL |

OFF-GRID UPS

MAIN FEATURES

- Power range up to 4.000 W
- AC or DC output
- Temperature-guided battery charging

TYPICAL APPLICATIONS

- Offshore: NavAid, Wireless, CCTV, Automation
- Pipeline: CCTV, Valve Control, Power Supply, Automation
- Autonomous lighting systems

BENEFITS

The Off-Grid UPS is equipped with a high performance solar module which provides a high level of efficiency. We ensure a 5 year product guarantee and a 20 year performance guarantee (80% of the output).

Furthermore the system is available in extended versions with integrated solutions like HMI, camera systems and lighting. Complete solution including frame work according to customer's requirements.



TECHNICAL DATA

MARKING

| | |
|--------------------------|-----------------------------|
| ATEX | |
| GAS EXPLOSION PROTECTION | ⊕ II 2 G Ex db eb IIB T4 Gb |
| INSTALLATION | ZONE 1, 2 |

CERTIFICATES

| | |
|------|--------------------|
| ATEX | KEMA 04 ATEX 2145X |
|------|--------------------|

AMBIENT CONDITIONS

| | |
|----------------------|----------------|
| AMBIENT TEMPERATURE | - 50 ... +55°C |
| DEGREE OF PROTECTION | IP66 |

ELECTRICAL DATA AC AND DC UPS

| | |
|----------------|---------|
| OUTPUT VOLTAGE | 230V AC |
| | 24C DC |

ENCLOSURE MATERIAL

SEAWATER RESISTANT ALUMINUM ALLOY ACCC. TO EN 13195 (COPPER-FREE) AND SS 316L

COMPLEMENTARY EQUIPMENT

DISTRIBUTION BOARDS AC/DC



- Distribution boards AC or DC
- available in GRP housing, aluminium (copper-free), stainless steel or sheet steel in Ex d or Ex e technology
- low maintenance
- easy operation with certifications for worldwide use

BATTERY BREAKERS



- Reliable switching of currents up to 1200 A according to ATEX / IECEx directive for Zone 1 and 2
- available in Ex d and Ex e technology
- Hassle free commissioning and maintenance
- Manual disconnection of circuits possible

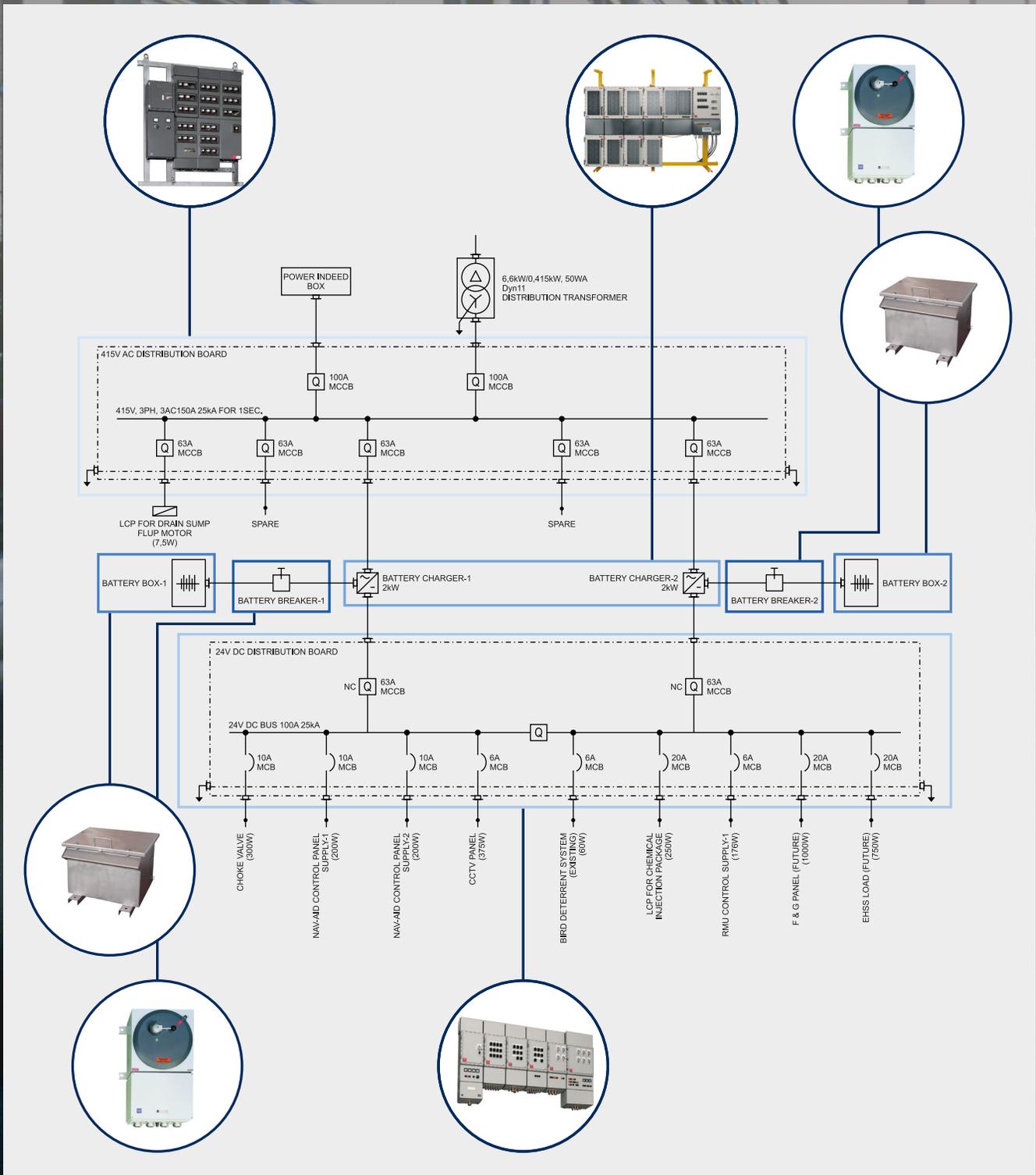
BATTERY BOXES



- The battery container type BC is designed especially to operate under harsh environmental conditions and outdoor use for onshore and offshore environment
- ATEX certification is available

THE RESULT: A COMPLETE SYSTEM

The main focus is given with the core system of a UPS. Furthermore, all belonging components which are relevant for the complete system may come from the same technical design and matching perfectly into the plant requirements as well as into the system requirements.



WITHOUT BORDERS FOR EVERY APPLICATION

R. STAHL is at home all over the world and with its more than 74 subsidiaries and agents always close to you. With great commitment, competent teams meet the customers' requirements and ensure that they comply with national standards and the specific environmental conditions. Irrespective of climatic conditions, whether the environment is corrosively or harsh, the system solutions of R. STAHL always guarantee a high level of safety and ensure the explosion protection. Our solutions can be used worldwide in pharmaceutical plants, in harsh offshore operations or in places with extreme high or low ambient temperatures. All standard components come with a high level of ingress protection and are suitable for all typical applications. For products, which will be used in maritime environment different types of enclosures are available, e.g. seawater-resistant aluminum enclosures with a copper content of less than 0.5 %, high-quality stainless steel enclosures or salt-water resistant polyester enclosures. The accrue-ment of condensate inside the enclosures in case of high temperature differences can effectively be avoided by using heating elements or breathers. The solutions of R. STAHL have already been successfully tested and installed in applications and projects around the world.

International certification

- IECEx, CENELEC and NEC

Ambient temperature range

- -20°C ... +40°C
- -50°C ... +55°C
- Others on request

Sea water resistant

- Stainless steel, AISI 316L
- GRP
- Copper-free aluminium

Safe and reliable technology

- Quality assurance is implemented in all manufacturing steps and is one of our major management principles

Proven and robust products

- 80 years of experience in development and manufacturing

Installation techniques

- Direct entry with cable glands
- Direct entry with conduits
- Indirect cable entry with connection chamber

Type of protection (IP-rating)

- IP65 and IP66

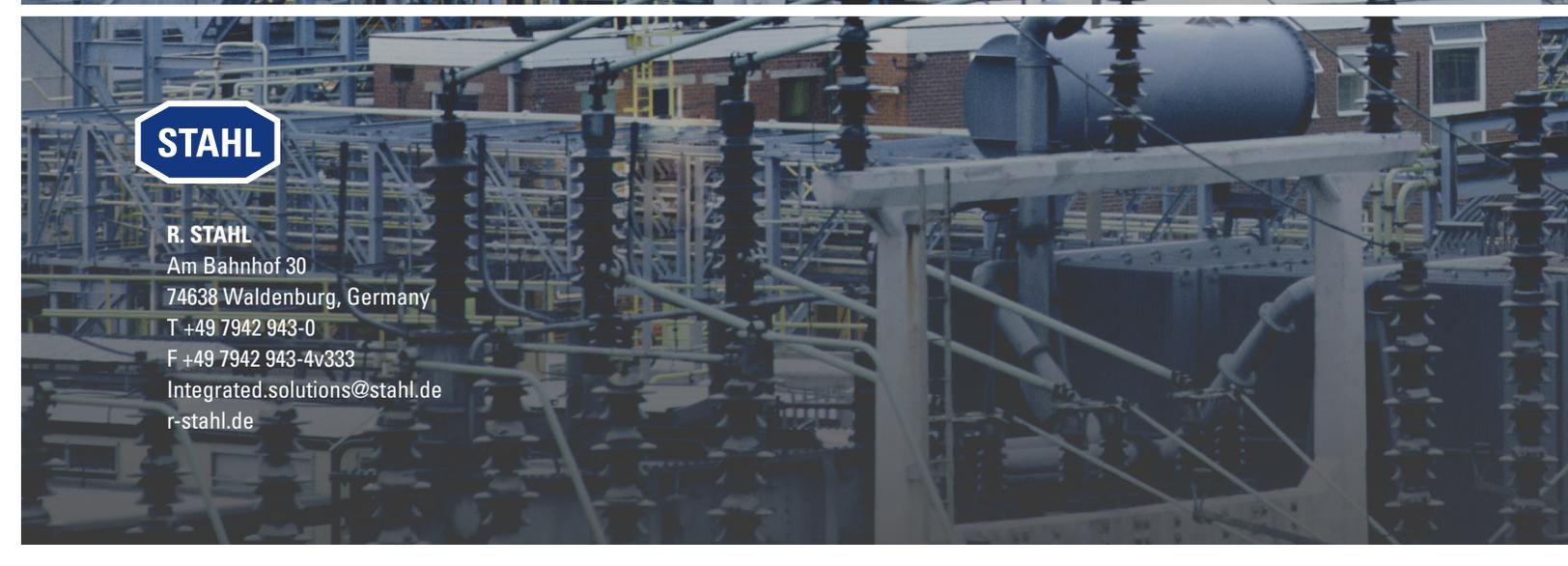
Worldwide organisation

- Over 70 subsidiaries for your support with explosion protection





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