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Uninterruptible power supply with integrated power supply unit, 2 A, in combination with MINI-BAT/24/DC 0.8 AH or 1.3 AH

Your advantages

- High operational safety - comprehensive signaling and temperature-dependent battery charging
- Fast installation – minimal wiring effort with COMBICON connectors for easy connection

Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2866640             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | CMUM13              |
| Product key                          | CMUM13              |
| Catalog page                         | Page 350 (C-4-2019) |
| GTIN                                 | 4046356113533       |
| Weight per piece (including packing) | 496 g               |
| Weight per piece (excluding packing) | 447 g               |
| Customs tariff number                | 85371091            |
| Country of origin                    | CN                  |

# MINI-DC-UPS/24DC/2 - Uninterruptible power supply



2866640

<https://www.phoenixcontact.com/au/products/2866640>

## Technical data

### Input data

#### DC operation

|                                            |                                                                                               |
|--------------------------------------------|-----------------------------------------------------------------------------------------------|
| Input voltage                              | 24 V DC                                                                                       |
| Input voltage range                        | 100 V DC ... 350 V DC                                                                         |
| Voltage type of supply voltage             | DC                                                                                            |
| Inrush current                             | < 34 A (< 1.1 A <sup>2</sup> s)                                                               |
| Inrush current integral (I <sup>2</sup> t) | < 1.1 A <sup>2</sup> s                                                                        |
| Mains buffering time                       | see diagram                                                                                   |
| Buffer period                              | 20 min (2 A)                                                                                  |
| Rotary selector switch                     | Can be set to: 0.5 min; 1 min; 2 min; 3 min; 5 min; 10 min; 15 min; 20 min; 30 min; permanent |
| Current consumption                        | 0.6 A                                                                                         |
|                                            | 0.85 A (230 V AC)                                                                             |
|                                            | 1.1 A                                                                                         |
|                                            | 1.5 A (120 V AC)                                                                              |
| Protective circuit                         | Varistor                                                                                      |
| Power factor (cos phi)                     | approx. 0.5                                                                                   |
| Typical response time                      | 100 ms                                                                                        |
| Input fuse                                 | 3.15 A (slow-blow, internal)                                                                  |
| Permissible backup fuse                    | B6 B10 B16                                                                                    |
| Recommended breaker for input protection   | 6 A ... 16 A (Characteristics B, C, D, K)                                                     |

#### AC operation

|                                |                       |
|--------------------------------|-----------------------|
| Nominal input voltage range    | 100 V AC ... 240 V AC |
| Input voltage range            | 85 V AC ... 264 V AC  |
| Voltage type of supply voltage | AC                    |

### Output data

|                                                         |                                                                                                                      |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Efficiency                                              | > 83 %                                                                                                               |
| Nominal output voltage                                  | 24 V DC (AC input voltage available: 22.5 to 29.5 V DC, AC input voltage not available: 27.9 to 19.2 V DC)           |
| Setting range of the output voltage (U <sub>Set</sub> ) | 22.5 V DC ... 29.5 V DC (normal mode; in the buffer mode, dependent on a battery voltage of 27.9 V DC ... 19.2 V DC) |
| Nominal output current (I <sub>N</sub> )                | 2 A                                                                                                                  |
| Output current limit                                    | max. 3 A                                                                                                             |
| Bridging time                                           | 1200 s                                                                                                               |
| Derating                                                | 60 °C ... 70 °C (2.5 %/K)                                                                                            |
| Feedback voltage resistance                             | 35 V DC                                                                                                              |
| Protection against overvoltage at the output (OVP)      | < 35 V DC                                                                                                            |
| Max. capacitive load                                    | unlimited                                                                                                            |
| Control deviation                                       | < 1 % (change in load, static 10 % ... 90 %)                                                                         |
| Residual ripple                                         | < 50 mV <sub>PP</sub>                                                                                                |

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|                                      |                        |
|--------------------------------------|------------------------|
| Output power                         | 48 W                   |
| Peak switching voltages nominal load | < 100 mV <sub>PP</sub> |
| Maximum no-load power dissipation    | 3.8 W                  |
| Power loss nominal load max.         | 15 W                   |
| Power dissipation battery operation  | 2.1 W                  |
| Rise time                            | < 100 ms               |
| Connection in parallel               | yes                    |
| Connection in series                 | no                     |

## Mains operation

|                                          |                         |
|------------------------------------------|-------------------------|
| Nominal output voltage                   | 24 V DC                 |
| Output voltage range                     | 22.5 V DC ... 29.5 V DC |
| Nominal output current (I <sub>N</sub> ) | 2 A                     |

## Battery operation

|                                          |                                                                          |
|------------------------------------------|--------------------------------------------------------------------------|
| Nominal output voltage                   | 24 V DC                                                                  |
| Output voltage range                     | 19.2 V DC ... 27.6 V DC (U <sub>OUT</sub> = U <sub>BAT</sub> - 0,5 V DC) |
| Nominal output current (I <sub>N</sub> ) | 2 A                                                                      |

## Signal: Active (high = buffer module is loaded)

|                           |            |
|---------------------------|------------|
| Output description        | Power Good |
| Maximum switching voltage | ≤ 24 V     |
| Output voltage            | + 24 V     |
| Continuous load current   | ≤ 20 mA    |

## Signal: Alarm

|                           |              |
|---------------------------|--------------|
| Output description        | Relay output |
| Maximum switching voltage | ≤ 24 V       |
| Output voltage            | 24 V         |
| Continuous load current   | ≤ 200 mA     |

## Signal: Battery charge

|                           |              |
|---------------------------|--------------|
| Output description        | Relay output |
| Maximum switching voltage | ≤ 24 V       |
| Output voltage            | 24 V         |
| Continuous load current   | ≤ 200 mA     |

## Signal: Battery mode

|                           |              |
|---------------------------|--------------|
| Output description        | Relay output |
| Maximum switching voltage | ≤ 24 V       |
| Output voltage            | 24 V         |
| Continuous load current   | ≤ 200 mA     |

## Energy storage

|                        |                                   |
|------------------------|-----------------------------------|
| Charging current       | 1 A                               |
| Nominal capacity range | 0.8 Ah ... 1.3 Ah                 |
| Memory medium          | external, battery 0.8 Ah / 1.3 Ah |

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|                    |    |
|--------------------|----|
| IQ technology      | no |
| Network management | No |

## Connection data

### Input

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| Connection method                     | Pluggable COMBICON screw connections |
| Conductor cross section, rigid min.   | 0.2 mm <sup>2</sup>                  |
| Conductor cross section, rigid max.   | 2.5 mm <sup>2</sup>                  |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup>                  |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup>                  |
| Conductor cross section AWG min.      | 24                                   |
| Conductor cross section AWG max.      | 12                                   |
| Stripping length                      | 8 mm                                 |
| Screw thread                          | M3                                   |
| Tightening torque, min                | 0.5 Nm                               |
| Tightening torque max                 | 0.6 Nm                               |

### Output

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| Connection method                     | Pluggable COMBICON screw connections |
| Conductor cross section, rigid min.   | 0.2 mm <sup>2</sup>                  |
| Conductor cross section, rigid max.   | 2.5 mm <sup>2</sup>                  |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup>                  |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup>                  |
| Conductor cross section AWG min.      | 24                                   |
| Conductor cross section AWG max.      | 12                                   |
| Stripping length                      | 8 mm                                 |
| Screw thread                          | M3                                   |
| Tightening torque, min                | 0.5 Nm                               |
| Tightening torque max                 | 0.6 Nm                               |

### Signal

|                                       |                     |
|---------------------------------------|---------------------|
| Conductor cross section, rigid min.   | 0.2 mm <sup>2</sup> |
| Conductor cross section, rigid max.   | 2.5 mm <sup>2</sup> |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup> |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup> |
| Conductor cross section AWG min.      | 24                  |
| Conductor cross section AWG max.      | 12                  |
| Screw thread                          | M3                  |
| Tightening torque, min                | 0.5 Nm              |
| Tightening torque max                 | 0.6 Nm              |

## Signaling

|                    |     |
|--------------------|-----|
| Types of signaling | LED |
|--------------------|-----|

Signal output: Active (high = buffer module is loaded)

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|                        |                                 |
|------------------------|---------------------------------|
| Status display         | LED "Power Good", green         |
| Note on status display | Buffer module is loaded: LED ON |

## Signal output: Alarm

|                        |                                        |
|------------------------|----------------------------------------|
| Status display         | LED (red)                              |
| Note on status display | Malfunction/alarm: LED permanently lit |

## Signal output: Battery charge

|                        |                                                       |
|------------------------|-------------------------------------------------------|
| Status display         | LED flashing yellow                                   |
| Note on status display | Battery charge/battery is being charged: LED flashing |

## Signal output: Battery mode

|                        |                                               |
|------------------------|-----------------------------------------------|
| Status display         | LED (yellow)                                  |
| Note on status display | Battery mode/buffer mode: LED permanently lit |

## Electrical properties

|                                 |                     |
|---------------------------------|---------------------|
| Insulation voltage input/output | 4 kV (type test)    |
|                                 | 2 kV (routine test) |

## Product properties

|                            |                                             |
|----------------------------|---------------------------------------------|
| Product type               | DC UPS with integrated power supply         |
| Product family             | MINI UPS – UPS with integrated power supply |
| IQ technology              | no                                          |
| MTBF (IEC 61709, SN 29500) | > 753000 h (40 °C)                          |

## Insulation characteristics

|                     |                                |
|---------------------|--------------------------------|
| Protection class    | II (in closed control cabinet) |
| Degree of pollution | 2                              |

## Dimensions

|        |         |
|--------|---------|
| Width  | 67.5 mm |
| Height | 99 mm   |
| Depth  | 107 mm  |

## Installation dimensions

|                                  |               |
|----------------------------------|---------------|
| Installation distance right/left | 0 mm / 0 mm   |
| Installation distance top/bottom | 30 mm / 30 mm |

## Mounting

|                   |                                                |
|-------------------|------------------------------------------------|
| Mounting type     | DIN rail mounting                              |
| Assembly note     | alignable: horizontally 0 mm, vertically 50 mm |
| Mounting position | horizontal DIN rail NS 35, EN 60715            |

## Material specifications

|                  |                            |
|------------------|----------------------------|
| Housing material | Plastic                    |
| Type of housing  | Polyamide PA, color: green |

## Environmental and real-life conditions

### Ambient conditions

|                                                |                                                                   |
|------------------------------------------------|-------------------------------------------------------------------|
| Degree of protection                           | IP20                                                              |
| Ambient temperature (operation)                | -25 °C ... 70 °C (> 60 °C Derating: 2,5 %/K)                      |
| Ambient temperature (storage/transport)        | -40 °C ... 85 °C                                                  |
| Climatic class                                 | 3K3 (in acc. with EN 60721)                                       |
| Max. permissible relative humidity (operation) | 95 % (at 25 °C, non-condensing)                                   |
| Shock                                          | 18 ms, 30g, in each space direction (according to IEC 60068-2-27) |
| Vibration (operation)                          | < 15 Hz, amplitude $\pm 2.5$ mm (according to IEC 60068-2-6)      |
|                                                | 15 Hz ... 150 Hz, 2.3g, 90 min.                                   |

## Standards and regulations

|                                                                                                                                  |                            |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Rail applications                                                                                                                | EN 50121-4                 |
| Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations | EN 50178/VDE 0160 (PELV)   |
| Standard - Electrical safety                                                                                                     | EN 60950-1/VDE 0805 (SELV) |
|                                                                                                                                  | EN 61558-2-17              |
| Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment               | EN 50178                   |
| Standard – Safety extra-low voltage                                                                                              | EN 60950-1 (SELV)          |
|                                                                                                                                  | EN 60204 (PELV)            |
| Standard - Safe isolation                                                                                                        | DIN VDE 0100-410           |

## Approvals

|              |                                                                                  |
|--------------|----------------------------------------------------------------------------------|
| UL approvals | UL Listed UL 508                                                                 |
|              | UL/C-UL Recognized UL 60950-1                                                    |
|              | UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location) |

## EMC data

|                                     |                                                   |
|-------------------------------------|---------------------------------------------------|
| Electromagnetic compatibility       | Conformance with EMC Directive 2014/30/EU         |
| Low Voltage Directive               | Conformance with Low Voltage Directive 2014/35/EC |
| EMC requirements for noise emission | EN 61000-6-3                                      |
|                                     | EN 61000-6-4                                      |
| EMC requirements for noise immunity | EN 61000-6-1                                      |
|                                     | EN 61000-6-2                                      |

### Noise emission

|                       |                     |
|-----------------------|---------------------|
| Standards/regulations | EN 55011 (EN 55022) |
|-----------------------|---------------------|

### Electrostatic discharge

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-2 |
| Housing               | Level 3      |

### Electrostatic discharge

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|                   |             |
|-------------------|-------------|
| Contact discharge | 6 kV        |
| Discharge in air  | 8 kV        |
| Comments          | Criterion B |

## Electromagnetic HF field

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-3 |
|-----------------------|--------------|

## Electromagnetic HF field

|                     |                  |
|---------------------|------------------|
| Frequency range     | 80 MHz ... 2 GHz |
| Test field strength | 10 V/m           |
| Comments            | Criterion A      |

## Fast transients (burst)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-4 |
|-----------------------|--------------|

## Fast transients (burst)

|          |                                                    |
|----------|----------------------------------------------------|
| Input    | 4 kV (level 4 - asymmetrical: conductor to ground) |
| Output   | 2 kV (level 3 - asymmetrical: conductor to ground) |
| Signal   | 1 kV (level 2 - asymmetrical: conductor to ground) |
| Comments | Criterion B                                        |

## Surge voltage load (surge)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-5 |
|-----------------------|--------------|

## Surge voltage load (surge)

|          |                                                      |
|----------|------------------------------------------------------|
| Input    | 4 kV (level 4 - asymmetrical: conductor to ground)   |
|          | 2 kV (level 4 - symmetrical: conductor to conductor) |
| Output   | 2 kV (Level 3 - asymmetrical)                        |
|          | 1 kV (Level 3 - symmetrical)                         |
| Signal   | 2 kV (Level 3 - asymmetrical)                        |
|          | 1 kV (Level 3 - symmetrical)                         |
| Comments | Criterion B                                          |

## Conducted interference

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-6 |
|-----------------------|--------------|

## Conducted interference

|                     |                   |
|---------------------|-------------------|
| Input/output/signal | Level 3           |
| Frequency range     | 10 kHz ... 80 MHz |
| Comments            | Criterion A       |
| Voltage             | 10 V              |

## Voltage dips

|                       |               |
|-----------------------|---------------|
| Standards/regulations | EN 61000-4-11 |
|-----------------------|---------------|

## Emitted interference

|                                                  |                                                                            |
|--------------------------------------------------|----------------------------------------------------------------------------|
| Standards/regulations                            | EN 61000-6-3                                                               |
| Radio interference voltage in acc. with EN 55011 | EN 55011 (EN 55022) Class B, area of application: Industry and residential |

# MINI-DC-UPS/24DC/2 - Uninterruptible power supply



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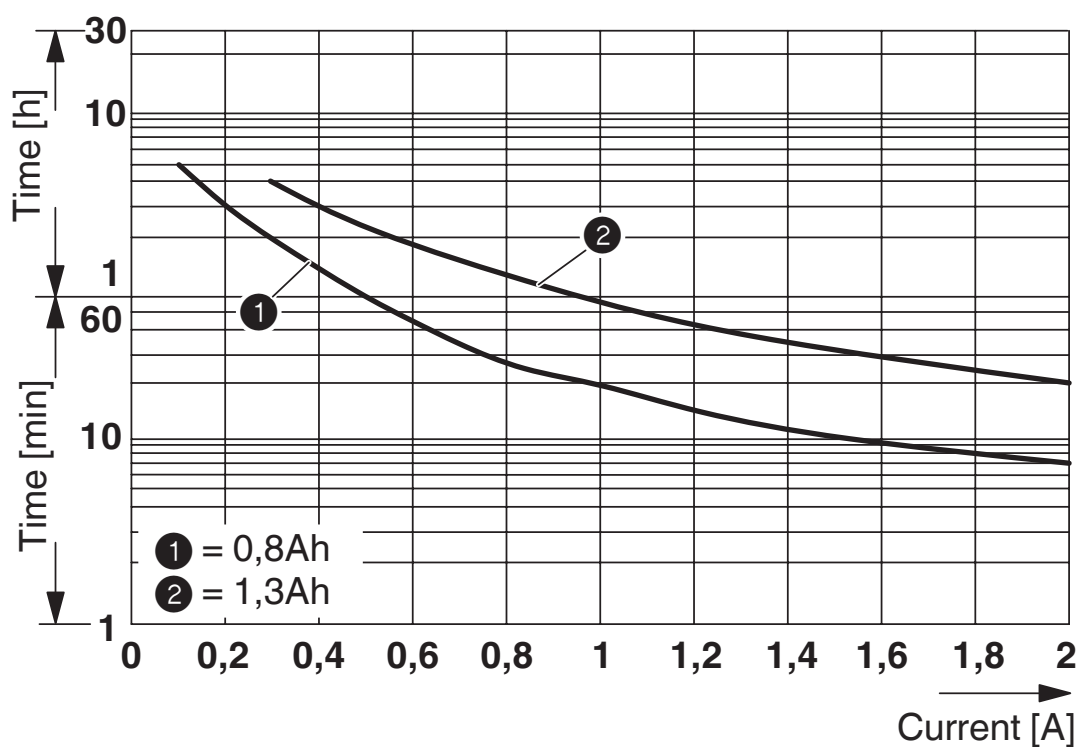
<https://www.phoenixcontact.com/au/products/2866640>

Emitted radio interference in acc. with EN 55011

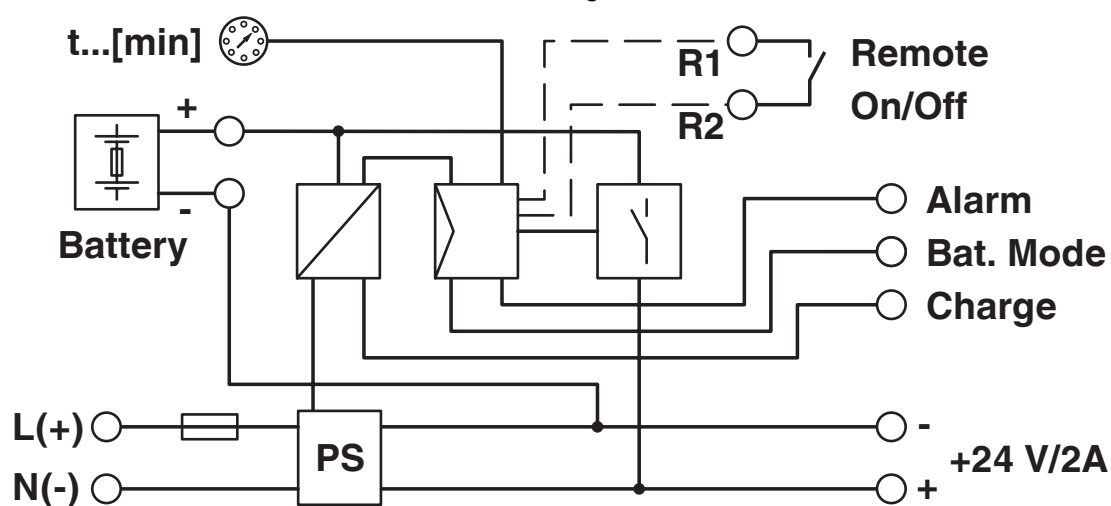
EN 55011 (EN 55022) Class B, area of application: Industry and residential

## Drawings

Diagram



Block diagram



Graphic

| Load<br>Current | Buffertime for 24 V DC system |   |    |    |    |    |    |    |    |    |      |
|-----------------|-------------------------------|---|----|----|----|----|----|----|----|----|------|
|                 | Minutes                       |   |    |    |    |    |    |    |    |    | Hour |
|                 | 8                             | 9 | 10 | 15 | 20 | 25 | 30 | 40 | 45 | 50 | 1    |
| 0.5 A           |                               |   |    |    |    |    |    |    |    |    |      |
| 1 A             |                               |   |    |    |    |    |    |    |    |    |      |
| 1.5 A           |                               |   |    |    |    |    |    |    |    |    |      |
| 2 A             |                               |   |    |    |    |    |    |    |    |    |      |

The data is based on an ambient temperature of +25 °C at the start of use.

2866666 MINI-BAT/24DC/0.8AH

1394729 TRIO-BAT/PB/24DC/1.2AH

Buffer times for MINI DC UPS for 24 V systems

# MINI-DC-UPS/24DC/2 - Uninterruptible power supply



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/au/products/2866640>



**cUL Recognized**  
Approval ID: FILE E 211944



**UL Recognized**  
Approval ID: E211944



**EAC**  
Approval ID: EAC-Zulassung



**EAC**  
Approval ID: RU S-DE.BL08.W.00764



**UL Listed**  
Approval ID: E123528



**EAC**  
Approval ID: RU-DE.B.00184/20



**KC**  
Approval ID: R-R-PCK-2866640

**CoC / Compliance Statement**  
Approval ID: 17-235-00



**cUL Listed**  
Approval ID: E199827



**UL Listed**  
Approval ID: E199827

Classifications

ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27040705 |
|-------------|----------|

ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC000382 |
|----------|----------|

UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121000 |
|-------------|----------|

# MINI-DC-UPS/24DC/2 - Uninterruptible power supply



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## Environmental product compliance

### EU RoHS

|                                         |                    |
|-----------------------------------------|--------------------|
| Fulfills EU RoHS substance requirements | Yes                |
| Exemption                               | 6(c), 7(a), 7(c)-I |

### China RoHS

|                                        |                                                                                                                                                                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-25                                                                                                                                                                                                                           |
|                                        | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | 2b4b9094-1235-45d0-bf72-fefce9e27e6c |

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