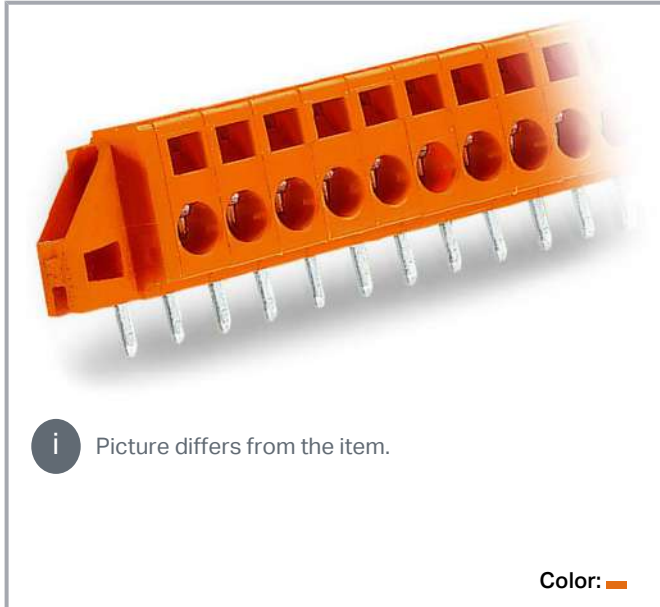


**Data sheet | Item number: 231-639/017-000**

Through-panel PCB terminal strip; angled solder pin 1x1.2 mm; 9-pole; with fixing flanges; pin spacing 5.08 mm / 0.2 in; orange

[www.wago.com/231-639\\_017-000](http://www.wago.com/231-639_017-000)



Dimensions in mm

$$L = (\text{pole no.} \times \text{pin spacing}) + 3 \text{ mm}$$

$$L_1 = L + 5.8 \text{ mm}$$

$$L_2 = L_1 + 6.4 \text{ mm}$$

Subject to changes. Please also observe the further product documentation!

WAGO Corporation  
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Email: [info.us@wago.com](mailto:info.us@wago.com) | Web: [www.wago.us](http://www.wago.us)

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## Item description

- Feedthrough PCB terminal strips with screwdriver-actuated CAGE CLAMP®
- With flanges for PCB or front-panel mounting – either flush with enclosure or protruding

## Data

### Notes

Variants:

Other pole numbers

Other colors

Direct marking

Versions without mounting flanges

Other versions (or variants) can be requested from WAGO Sales or configured at <https://configurator.wago.com/>

## Electrical data

### IEC Approvals

| Ratings per                 | IEC/EN 60664-1                                                    |
|-----------------------------|-------------------------------------------------------------------|
| Rated voltage (III / 3)     | 320 V                                                             |
| Rated surge voltage (III/3) | 4 kV                                                              |
| Rated voltage (III/2)       | 320 V                                                             |
| Rated surge voltage (III/2) | 4 kV                                                              |
| Nominal voltage (II/2)      | 630 V                                                             |
| Rated surge voltage (II/2)  | 4 kV                                                              |
| Rated current               | 16 A                                                              |
| Legend (ratings)            | (III / 2) $\hat{=}$ Overvoltage category III / Pollution degree 2 |

### UL Approvals

| Approvals per                  | UL 1059 |
|--------------------------------|---------|
| Rated voltage UL (Use Group B) | 300 V   |
| Rated current UL (Use Group B) | 15 A    |
| Rated voltage UL (Use Group C) | 150 V   |
| Rated current UL (Use Group C) | 15 A    |
| Rated voltage UL (Use Group D) | 300 V   |
| Rated current UL (Use Group D) | 10 A    |

Subject to changes. Please also observe the further product documentation!

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## CSA Approvals

| Approvals per                   | CSA   |
|---------------------------------|-------|
| Rated voltage CSA (Use Group B) | 300 V |
| Rated current CSA (Use Group B) | 15 A  |
| Rated voltage CSA (Use Group C) | 150 V |
| Rated current CSA (Use Group C) | 15 A  |
| Rated voltage CSA (Use Group D) | 300 V |
| Rated current CSA (Use Group D) | 10 A  |

## Connection data

|                                   |   |
|-----------------------------------|---|
| Total number of connection points | 9 |
| Total number of potentials        | 9 |
| Number of connection types        | 1 |
| Number of levels                  | 1 |

## Connection 1

|                                                   |                                              |
|---------------------------------------------------|----------------------------------------------|
| Connection technology                             | CAGE CLAMP®                                  |
| Actuation type                                    | Operating tool                               |
| Solid conductor                                   | 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG |
| Fine-stranded conductor                           | 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG |
| Fine-stranded conductor; with insulated ferrule   | 0.25 ... 1.5 mm <sup>2</sup>                 |
| Fine-stranded conductor; with uninsulated ferrule | 0.25 ... 2.5 mm <sup>2</sup>                 |
| Strip length                                      | 8 ... 9 mm / 0.31 ... 0.35 inch              |
| Conductor connection direction to PCB             | 0°                                           |
| Number of poles                                   | 9                                            |

## Physical data

|                                      |                          |
|--------------------------------------|--------------------------|
| Pin spacing                          | 5.08 mm / 0.2 inch       |
| Width                                | 60.92 mm / 2.398 inch    |
| Height                               | 19 mm / 0.748 inch       |
| Height from the surface              | 14.3 mm / 0.563 inch     |
| Depth                                | 19.1 mm / 0.752 inch     |
| Solder pin length                    | 4.7 mm                   |
| Solder pin dimensions                | 0.8 x 1.3 mm             |
| Drilled hole diameter with tolerance | 1.8 <sup>(+0.1)</sup> mm |

Subject to changes. Please also observe the further product documentation!

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## Mechanical data

|               |                                         |
|---------------|-----------------------------------------|
| Mounting type | Mounting flange                         |
| Mounting type | Feed-through mounting<br>Panel mounting |

## PCB contact

|                                     |                                          |
|-------------------------------------|------------------------------------------|
| PCB Contact                         | THT                                      |
| Solder pin arrangement              | over the entire terminal strip (in-line) |
| Number of solder pins per potential | 1                                        |

## Material data

|                             |                                        |
|-----------------------------|----------------------------------------|
| Color                       | orange                                 |
| Material group              | I                                      |
| Insulation material         | Polyamide (PA66)                       |
| Flammability class per UL94 | V0                                     |
| Clamping spring material    | Chrome nickel spring steel (CrNi)      |
| Contact material            | Electrolytic copper (E <sub>Cu</sub> ) |
| Contact plating             | tin-plated                             |
| Fire load                   | 0.203 MJ                               |
| Weight                      | 13.1 g                                 |

## Environmental requirements

|                         |                 |
|-------------------------|-----------------|
| Limit temperature range | -60 ... +105 °C |
|-------------------------|-----------------|

## Commercial data

|                       |                        |
|-----------------------|------------------------|
| Product Group         | 3 (Multi Conn. System) |
| PU (SPU)              | 25 Stück               |
| Packaging type        | box                    |
| Country of origin     | DE                     |
| GTIN                  | 4044918260473          |
| Customs tariff number | 8536904000             |

## Approvals / Certificates

### Country specific Approvals



| Logo | Approval | Additional Approval Text | Certificate name |
|------|----------|--------------------------|------------------|
|------|----------|--------------------------|------------------|

Subject to changes. Please also observe the further product documentation!



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|                                                                                  |                                       |           |            |
|----------------------------------------------------------------------------------|---------------------------------------|-----------|------------|
|                                                                                  | CB<br>DEKRA Certification B.V.        | IEC 61984 | NL-39756   |
|  | CSA<br>DEKRA Certification B.V.       | C22.2     | 1466354    |
|  | KEMA/KEUR<br>DEKRA Certification B.V. | EN 61984  | 2190761.01 |

Ship Approvals

| Logo                                                                              | Approval                                         | Additional Approval Text | Certificate name |
|-----------------------------------------------------------------------------------|--------------------------------------------------|--------------------------|------------------|
|   | ABS<br>American Bureau of Shipping               | -                        | 19-HG1869876-PDA |
|  | BV<br>Bureau Veritas S.A.                        | IEC 60998                | 11915/D0<br>BV   |
|                                                                                   | DNV GL<br>Det Norske Veritas, Germanischer Lloyd | -                        | TAE000016Z       |

UL-Approvals

| Logo                                                                               | Approval                             | Additional Approval Text | Certificate name |
|------------------------------------------------------------------------------------|--------------------------------------|--------------------------|------------------|
|  | UL<br>UL International Germany GmbH  | UL 1977                  | E45171           |
|  | UR<br>Underwriters Laboratories Inc. | UL 1059                  | E45172           |

Optional accessories

Marking accessories

Marking strip

Item no.: 210-332/508-202

Marking strips; as a DIN A4 sheet; MARKED; 1-16 (160x); Height of marker strip: 3 mm; Strip length 182

[www.wago.com/210-332/508-202](http://www.wago.com/210-332/508-202)

Subject to changes. Please also observe the further product documentation!

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mm; Horizontal marking; Self-adhesive; white

**Item no.: 210-332/508-204**

Marking strips; as a DIN A4 sheet; MARKED; 17-32 (160x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white

[www.wago.com/210-332/508-204](http://www.wago.com/210-332/508-204)**Item no.: 210-332/508-206**

Marking strips; as a DIN A4 sheet; MARKED; 33-48 (160x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white

[www.wago.com/210-332/508-206](http://www.wago.com/210-332/508-206)**Item no.: 210-332/508-205**

Marking strips; as a DIN A4 sheet; MARKED; 1-32 (80x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white

[www.wago.com/210-332/508-205](http://www.wago.com/210-332/508-205)**Tools**

## Operating tool

**Item no.: 210-657**

Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

[www.wago.com/210-657](http://www.wago.com/210-657)**Item no.: 210-720**

Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

[www.wago.com/210-720](http://www.wago.com/210-720)**Ferrules**

## Ferrule

**Item no.: 216-101**Ferrule; Sleeve for 0.5 mm<sup>2</sup> / AWG 22; uninsulated; electro-tin plated; silver-colored[www.wago.com/216-101](http://www.wago.com/216-101)**Item no.: 216-104**Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; uninsulated; electro-tin plated; silver-colored[www.wago.com/216-104](http://www.wago.com/216-104)**Item no.: 216-106**Ferrule; Sleeve for 2.5 mm<sup>2</sup> / AWG 14; uninsulated; electro-tin plated; silver-colored[www.wago.com/216-106](http://www.wago.com/216-106)**Item no.: 216-102**Ferrule; Sleeve for 0.75 mm<sup>2</sup> / AWG 20; uninsulated; electro-tin plated; silver-colored[www.wago.com/216-102](http://www.wago.com/216-102)**Item no.: 216-103**Ferrule; Sleeve for 1 mm<sup>2</sup> / AWG 18; uninsulated; electro-tin plated[www.wago.com/216-103](http://www.wago.com/216-103)**Item no.: 216-123**Ferrule; Sleeve for 1 mm<sup>2</sup> / AWG 18; uninsulated; electro-tin plated; silver-colored[www.wago.com/216-123](http://www.wago.com/216-123)**Item no.: 216-122**Ferrule; Sleeve for 0.75 mm<sup>2</sup> / AWG 20; uninsulated; electro-tin plated; silver-colored[www.wago.com/216-122](http://www.wago.com/216-122)**Item no.: 216-124**Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; uninsulated; electro-tin plated[www.wago.com/216-124](http://www.wago.com/216-124)**Item no.: 216-142**Ferrule; Sleeve for 0.75 mm<sup>2</sup> / 18 AWG; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92[www.wago.com/216-142](http://www.wago.com/216-142)**Item no.: 216-132**Ferrule; Sleeve for 0.34 mm<sup>2</sup> / AWG 24; uninsulated; electro-tin plated[www.wago.com/216-132](http://www.wago.com/216-132)

Subject to changes. Please also observe the further product documentation!



|                                                                                                                                                                                                       |                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| <b>Item no.: 216-121</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / AWG 22; uninsulated; electro-tin plated; silver-colored                                                                         | <a href="http://www.wago.com/216-121">www.wago.com/216-121</a> |
| <b>Item no.: 216-143</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92                   | <a href="http://www.wago.com/216-143">www.wago.com/216-143</a> |
| <b>Item no.: 216-131</b><br>Ferrule; Sleeve for 0.25 mm <sup>2</sup> / AWG 24; uninsulated; electro-tin plated; silver-colored                                                                        | <a href="http://www.wago.com/216-131">www.wago.com/216-131</a> |
| <b>Item no.: 216-141</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / 20 AWG; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92                 | <a href="http://www.wago.com/216-141">www.wago.com/216-141</a> |
| <b>Item no.: 216-152</b><br>Ferrule; Sleeve for 0.34 mm <sup>2</sup> / AWG 24; uninsulated; electro-tin plated                                                                                        | <a href="http://www.wago.com/216-152">www.wago.com/216-152</a> |
| <b>Item no.: 216-203</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; insulated; electro-tin plated; red                                                                                        | <a href="http://www.wago.com/216-203">www.wago.com/216-203</a> |
| <b>Item no.: 216-202</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / 18 AWG; insulated; electro-tin plated; gray                                                                                    | <a href="http://www.wago.com/216-202">www.wago.com/216-202</a> |
| <b>Item no.: 216-151</b><br>Ferrule; Sleeve for 0.25 mm <sup>2</sup> / AWG 24; uninsulated; electro-tin plated                                                                                        | <a href="http://www.wago.com/216-151">www.wago.com/216-151</a> |
| <b>Item no.: 216-204</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; insulated; electro-tin plated; black                                                                                    | <a href="http://www.wago.com/216-204">www.wago.com/216-204</a> |
| <b>Item no.: 216-144</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92; silver-colored | <a href="http://www.wago.com/216-144">www.wago.com/216-144</a> |
| <b>Item no.: 216-201</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / 20 AWG; insulated; electro-tin plated; white                                                                                    | <a href="http://www.wago.com/216-201">www.wago.com/216-201</a> |
| <b>Item no.: 216-223</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; insulated; electro-tin plated; red                                                                                        | <a href="http://www.wago.com/216-223">www.wago.com/216-223</a> |
| <b>Item no.: 216-241</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / 20 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; white            | <a href="http://www.wago.com/216-241">www.wago.com/216-241</a> |
| <b>Item no.: 216-242</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray            | <a href="http://www.wago.com/216-242">www.wago.com/216-242</a> |
| <b>Item no.: 216-222</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / 18 AWG; insulated; electro-tin plated; gray                                                                                    | <a href="http://www.wago.com/216-222">www.wago.com/216-222</a> |
| <b>Item no.: 216-221</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / 20 AWG; insulated; electro-tin plated; white                                                                                    | <a href="http://www.wago.com/216-221">www.wago.com/216-221</a> |
| <b>Item no.: 216-224</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; insulated; electro-tin plated; black                                                                                    | <a href="http://www.wago.com/216-224">www.wago.com/216-224</a> |
| <b>Item no.: 216-243</b>                                                                                                                                                                              |                                                                |

Subject to changes. Please also observe the further product documentation!



Ferrule; Sleeve for 1 mm<sup>2</sup> / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; [www.wago.com/216-243](http://www.wago.com/216-243)  
acc. to DIN 46228, Part 4/09.90; red



**Item no.: 216-244**

Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black [www.wago.com/216-244](http://www.wago.com/216-244)



**Item no.: 216-263**

Ferrule; Sleeve for 1 mm<sup>2</sup> / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; [www.wago.com/216-263](http://www.wago.com/216-263)  
acc. to DIN 46228, Part 4/09.90; red



**Item no.: 216-264**

Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black [www.wago.com/216-264](http://www.wago.com/216-264)



**Item no.: 216-284**

Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black [www.wago.com/216-284](http://www.wago.com/216-284)



**Item no.: 216-262**

Ferrule; Sleeve for 0.75 mm<sup>2</sup> / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray [www.wago.com/216-262](http://www.wago.com/216-262)



**Item no.: 216-301**

Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow [www.wago.com/216-301](http://www.wago.com/216-301)



**Item no.: 216-321**

Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow [www.wago.com/216-321](http://www.wago.com/216-321)



**Item no.: 216-322**

Ferrule; Sleeve for 0.34 mm<sup>2</sup> / 22 AWG; insulated; electro-tin plated; green [www.wago.com/216-322](http://www.wago.com/216-322)



**Item no.: 216-302**

Ferrule; Sleeve for 0.34 mm<sup>2</sup> / 22 AWG; insulated; electro-tin plated; light turquoise [www.wago.com/216-302](http://www.wago.com/216-302)

**Mounting**

Mounting accessories



**Item no.: 209-147**

Self-tapping screw [www.wago.com/209-147](http://www.wago.com/209-147)



**Item no.: 231-194**

Self-tapping screw; B 2.2x13, fixing hole 1.8 mm Ø [www.wago.com/231-194](http://www.wago.com/231-194)



**Item no.: 231-195**

Screw with nut; M2x12; for fixing element [www.wago.com/231-195](http://www.wago.com/231-195)

**Downloads**

**Documentation**

**Additional Information**

|                        |            |               |          |
|------------------------|------------|---------------|----------|
| Technical explanations | 2019 Apr 3 | pdf<br>2.0 MB | Download |
|------------------------|------------|---------------|----------|

Subject to changes. Please also observe the further product documentation!





## CAD files

### CAD data

| 2D/3D Models 231-639/017-000 | URL | Download |
|------------------------------|-----|----------|
|------------------------------|-----|----------|

### CAE data

| EPLAN Data Portal 231-639/017-000 | URL | Download |
|-----------------------------------|-----|----------|
|-----------------------------------|-----|----------|

| ZUKEN Portal 231-639/017-000 | URL | Download |
|------------------------------|-----|----------|
|------------------------------|-----|----------|

| EPLAN Data Portal 231-639/017-000 | URL | Download |
|-----------------------------------|-----|----------|
|-----------------------------------|-----|----------|

### PCB Design

| Symbol and Footprint 231-639/017-000 | URL | Download |
|--------------------------------------|-----|----------|
|--------------------------------------|-----|----------|

CAX data for your PCB design, consisting of "schematic symbols and PCB footprints", allow easy integration of the WAGO component into your development environment.

### Supported formats:

- Accel EDA 14 & 15
- Altium 6 to current version
- Cadence Allegro
- DesignSpark
- Eagle Libraries
- KiCad
- Mentor Graphics BoardStation
- Mentor Graphics Design Architect
- Mentor Graphics Design Expedition 99 and 2000
- OrCAD 9.X PCB and Capture
- PADS PowerPCB 3, 3.5, 4.X, and 5.X
- PADS PowerPCB and PowerLogic 3.0
- PCAD 2000, 2001, 2002, 2004, and 2006
- Pulsonix 8.5 or newer
- STL
- 3D STEP
- TARGET 3001!
- View Logic ViewDraw
- Quadcept
- Zuken CadStar 3 and 4

Subject to changes. Please also observe the further product documentation!

- Zuken CR-5000 and CR-8000

PCB Component Libraries (EDA), PCB CAD Library Ultra Librarian

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## Environmental Product Compliance

### Compliance Search

Environmental Product Compliance 231-639/017-000

URL

Download

PCB terminal block; 2,5 mm<sup>2</sup>; Pin spacing 5.08 mm; 9-pole; CAGE CLAMP®; clamping collar; 2,50 mm<sup>2</sup>; orange

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## Installation Notes



Feedthrough PCB terminal strips – front-entry conductor termination



Feedthrough PCB terminal strips can be used as front-panel feedthrough for external conductor termination.

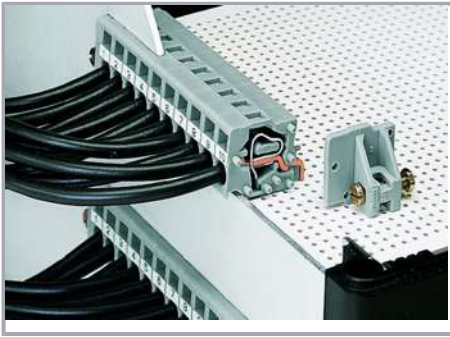
## Application

Subject to changes. Please also observe the further product documentation!

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With flanges for PCB or front-panel mounting – either flush with enclosure or protruding

Subject to changes. Please also observe the further product documentation!

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