

# KENDRION

## INTORQ

POWERED BY KENDRION

**KENDRION** SOLUTIONS

## Electromagnetic brake systems for lift applications

PRECISION. SAFETY. MOTION.

# Our brakes – perfect for your safe application

KENDRION Industrial Brakes - stands for excellent service and smart innovation, which we consistently apply for the benefit of our customers:



## Strong know-how

Our specialists develop the leading-edge permanent magnet and spring-applied brakes. To do this, they use the combined know-how of the team on the one hand; on the other hand, they foster dialog with customers in order to keep up with trends and requirements at all times. With INTORQ as a new member of KENDRION, we have once again consistently expanded our range of spring-applied brakes and clutches for you. This way, we can find the right solution for any of your requirements.

## Complete product portfolio

Electromagnetic brakes and clutches as well as perfectly matched accessories: with us you will find an exceptionally large selection of quickly available off-the-shelf products that can be put together in a modular system and the best expertise for customer-specific solutions.

## Dynamic innovative power

More than 50 specialists working in agile teams in our research and development worldwide are creating convincing product solutions for tomorrow.

## Excellent market knowledge

We are very familiar with our focus markets - thanks to extensive experience and research, but also thanks to long-term customer relationships built on partnership and eye-to-eye cooperation.

## International power

Committed and competent employees, production sites in Germany, America, India and China as well as a large number of certified sales partners all over the world make us a strong partner for you!

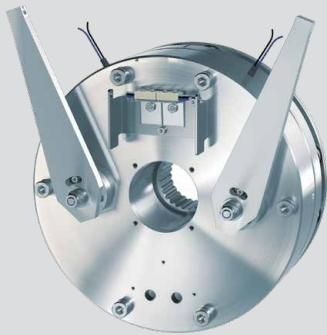
# Brakes for elevator systems – Safety with a system

Safety is the top priority when using braking systems in elevator systems. We offer you specific solutions for different drive concepts in elevator technology.

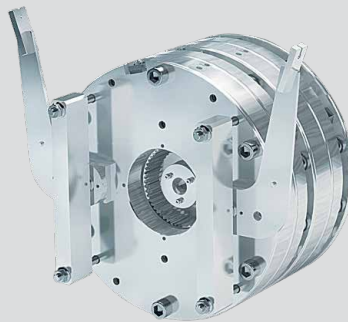
Whether geared motors or direct drives - our braking systems are precisely tailored to your requirements.

The most important features of INTORQ braking systems for elevator systems:

- redundant brake circuits
- Stable braking torque even on friction surfaces with high temperatures
- Long-term stable noise damping



**Kendrion INTORQ BFK464-R**  
Dual-circuit spring-applied brake



**Kendrion INTORQ BFK455**  
Double spring-applied brake



**Kendrion INTORQ BFK457**  
Double spring-applied brake



**Kendrion INTORQ BFK454**  
Dual-circuit spring-applied brake



**Kendrion INTORQ BFK458**  
Double spring-applied brake

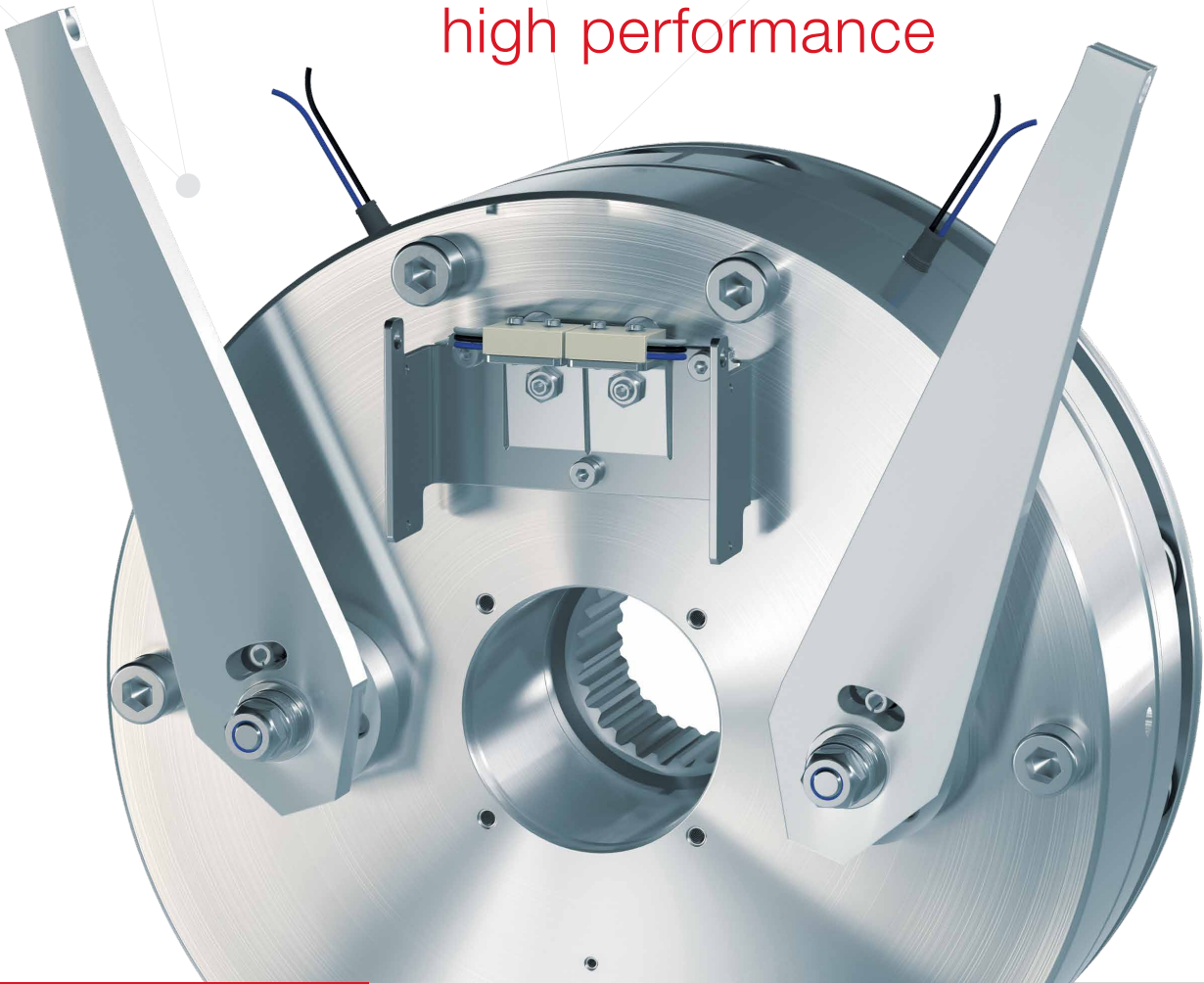








The smart solution –  
small design with  
high performance



**BFK464-R**  
compact &  
strong.

The compact and powerful BFK464-R dual-circuit spring-applied brake enables a high braking torque in a small installation space. With a split armature plate and two independent coil circuits, the brake achieves the redundancy required for use in elevator systems. Fast switching times and sophisticated noise damping are further performance features of the BFK464-R.

- Seven sizes with braking torques up to 2x1200 Nm
- Low switching noise thanks to long-term stable, maintenance-free noise damping
- Function monitoring by microswitch, mechanical or inductive
- Optional wear detection by microswitch, mechanical
- Manual release is optionally available and can be retrofitted
- Type tested in accordance with EN 81-20/50:2020

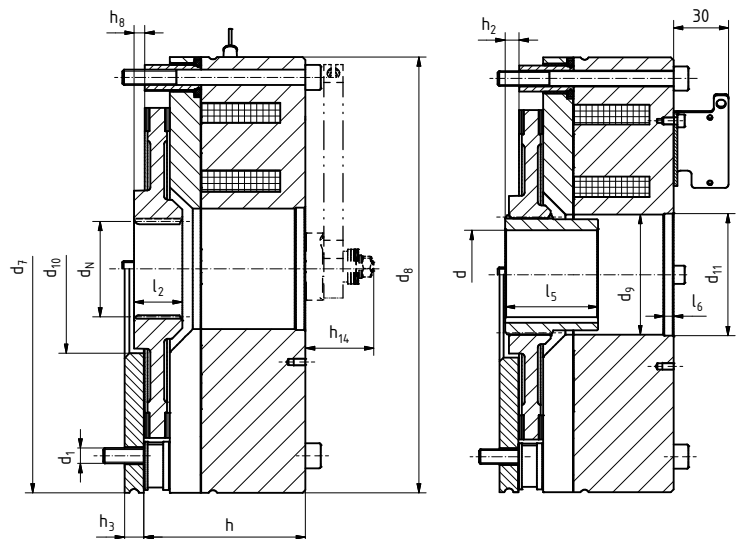
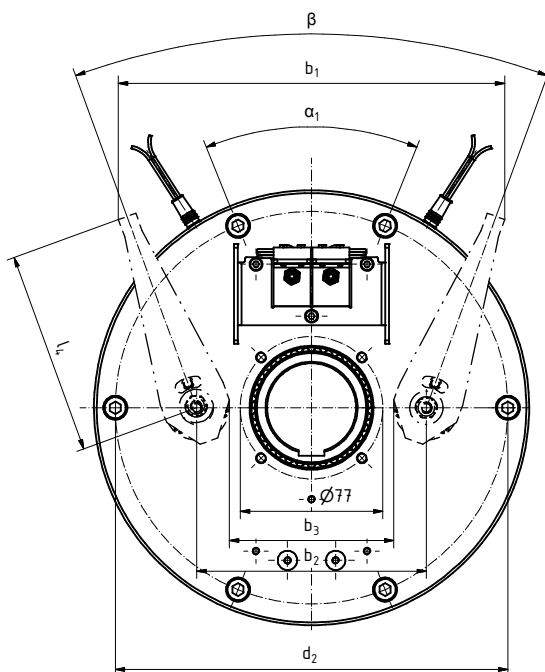
# INTORQ BFK464-R

## Dual circuit spring-applied brake

| Size  |                              | 17          |         | 18       |         | 19       |         | 20       |         | 22       |         | 25       |         | 28                      |         |
|---|------------------------------|-------------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|-------------------------|---------|
| Voltage Switching/<br>Holding <sup>1)</sup> | [V]                          | 103/103     | 205/103 | 103/103  | 205/103 | 103/103  | 205/103 | 103/103  | 205/103 | 103/103  | 205/103 | 103/103  | 205/103 | 103/103                 | 205/103 |
| Overexcitation                              | [-]                          | without     | with    | without  | with    | without  | with    | without  | with    | without  | with    | without  | with    | without                 | with    |
| Max. rated torque <sup>2)</sup>             | [Nm]                         | 2x75        | 2x150   | 2x170    | 2x280   | 2x210    | 2x350   | 2x280    | 2x450   | 2x360    | 2x600   | 2x540    | 2x900   | 2x720                   | 2x1200  |
| Electrical power <sup>3)</sup>              | [W]                          | 2x75        | 2x200   | 2x88     | 2x230   | 2x95     | 2x245   | 2x100    | 2x270   | 2x110    | 2x285   | 2x120    | 2x300   | 2x160                   | 2x400   |
| Max. speed of rotation <sup>4)</sup>        | [r/min]                      | 900         |         | 900      |         | 900      |         | 900      |         | 750      |         | 700      | 600     | 600                     | 500     |
| Dimensions brake                            | d <sub>1</sub>               | 6xM8        |         | 6xM8     |         | 6xM10    |         | 6xM10    |         | 6xM10    |         | 6xM12    |         | 6xM16                   |         |
|   | d <sub>2</sub>               | 176         |         | 212      |         | 220      |         | 233      |         | 252      |         | 282      |         | 314                     |         |
|   | d <sub>8</sub>               | 197         |         | 235      |         | 247      |         | 260      |         | 280      |         | 315      |         | 348                     |         |
|   | d <sub>9</sub> +0.1          | 45          |         | 65       |         | 65       |         | 65       |         | 65       |         | 65       |         | 65                      |         |
|   | d <sub>10</sub>              | 90          |         | 90       |         | 90       |         | 90       |         | 120      |         | 120      |         | 120 (150) <sup>6)</sup> |         |
|   | d <sub>11</sub>              | 65          |         | 66       |         | 66       |         | 66       |         | 66       |         | 66       |         | 66                      |         |
|   | h                            | 73.9        |         | 83.4     |         | 85.4     |         | 90.4     |         | 90.4     |         | 93.4     |         | 102.5                   |         |
|   | α <sub>1</sub>               | 44°         |         | 44°      |         | 44°      |         | 40°      |         | 40°      |         | 44°      |         | 44°                     |         |
| Dimensions gear teeth                       | l <sub>2</sub>               | 22.5        |         | 25       |         | 28       |         | 35       |         | 30       |         | 42       |         | 55                      |         |
|   | h <sub>8</sub>               | 5.5         |         | 5.5      |         | 6.7      |         | 11       |         | 12       |         | 16.5     |         | 14.5                    |         |
|   | d <sub>N</sub> <sup>5)</sup> | N45x1.25x34 |         | N55x2x26 |         | N55x2x26 |         | N55x2x26 |         | N70x2x34 |         | N70x2x34 |         | N70x2x34                |         |
| Dimensions hub                              | h <sub>2</sub>               | 7.5         |         | 7.5      |         | 8.7      |         | 14       |         | 14       |         | 18.5     |         | 16.5                    |         |
|   | l <sub>5</sub>               | 25          |         | 40       |         | 45       |         | 55       |         | 45       |         | 70       |         | 60                      |         |
|   | d <sup>H7</sup>              | 30          |         | 35       |         | 40       |         | 40       |         | 50       |         | 50       |         | 60                      |         |
| Dimensions flange                           | d <sub>7</sub>               | 197         |         | 235      |         | 247      |         | 260      |         | 280      |         | 315      |         | 348                     |         |
|   | h <sub>3</sub>               | 10          |         | 10       |         | 10       |         | 11       |         | 11       |         | 12.5     |         | 12.5                    |         |
|   | b <sub>1</sub>               | 208         |         | 212      |         | 280      |         | 280      |         | 345      |         | 365      |         | 385                     |         |
| Dimensions hand-release                     | b <sub>2</sub>               | 120         |         | 124      |         | 146      |         | 146      |         | 150      |         | 170      |         | 190                     |         |
|   | b <sub>3</sub>               | 80          |         | 84       |         | 98       |         | 98       |         | 102      |         | 122      |         | 142                     |         |
|   | l <sub>4</sub>               | 110         |         | 110      |         | 180      |         | 180      |         | 270      |         | 270      |         | 270                     |         |
|   | h <sub>14</sub> +2.5         | 38.5        |         | 35.5     |         | 46.6     |         | 43.6     |         | 45.6     |         | 45.6     |         | 53.5                    |         |
|   | β                            | 40°         |         | 40°      |         | 40°      |         | 40°      |         | 40°      |         | 40°      |         | 40°                     |         |
|   |                              |             |         |          |         |          |         |          |         |          |         |          |         |                         |         |

- 1) Additional voltage values and overexcitations on request
- 2) M<sub>K</sub>: Brake rated torque in Nm in relation to n = 100 r/min
- 3) Electrical power at 20°C; at overexcitation (overflux) the releasing power is specified
- 4) higher speed of rotation on request
- 5) Toothed shaft according DIN 5480
- 6) Valid for design with hub

- Type-tested in accordance with EN 81-20/50:2020
- Other sizes and characteristic torques on request
- Dimensions in mm
- Further technical information can be found in the operating instructions



# INTORQ BFK455

## Double spring-applied brake

The powerful double spring-applied brake BFK455-28 is a redundant braking system intended for use in direct drives. Due to its flat design this brake can be easily integrated in existing drive solutions.



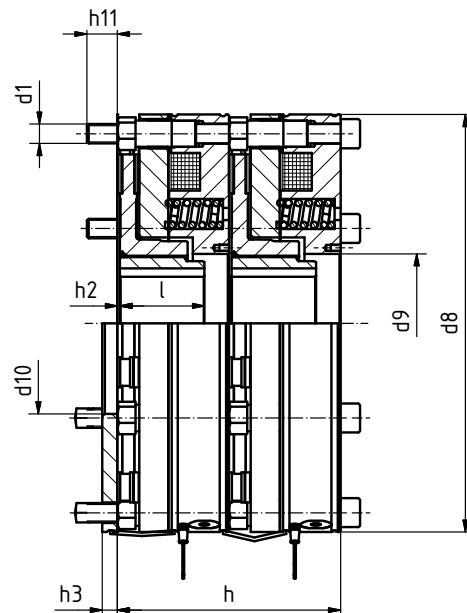
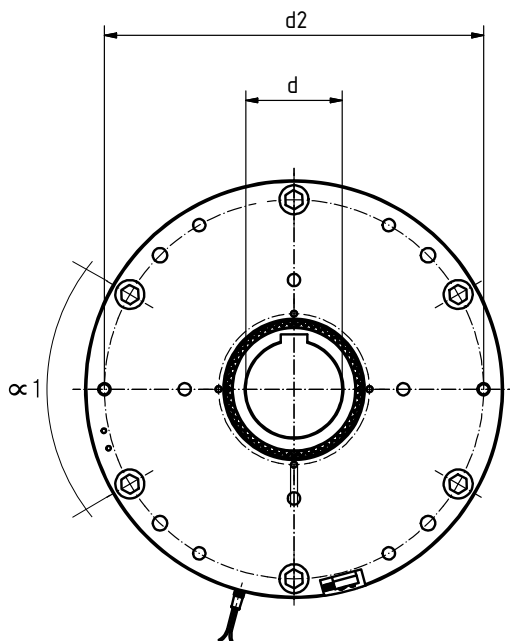
### Characteristics

- Braking torques up to 2x2065 Nm
- Stable braking torque against contact surfaces with high temperature
- Long-term stable noise damping
- Flat design
- Cost-optimized control through bridge/half-wave rectifier (required)
- Safe operation due to monitoring of the circuits with microswitch
- Manual release optional
- Type-tested in accordance with EN 81-20/50:2020

| Size | M <sub>K</sub> | P <sub>20</sub> Switch | Hold    | d <sup>H7/l</sup> (bore diameter/length) Standard <sup>1)</sup> | d1    | d2  | d8  | d9 H9 | d10 | h   | h2  | h3   | h11 | α 1 |
|------|----------------|------------------------|---------|---|-------|-----|-----|-------|-----|-----|-----|------|-----|-----|
| 25   | 2x1200         | 2x236                  | 2x59    | <sup>2)</sup>   | 6xM12 | 282 | 315 | 117   | 120 | 167 | 1   | 12.5 | 21  | 44  |
| 25   | 2x1500         | 2x425                  | 2x106   | <sup>2)</sup>   | 6xM12 | 282 | 315 | 117   | 120 | 167 | 1   | 12.5 | 21  | 44  |
| 28   | 2x1200         | 2x434                  | 2x108.5 | (55/85), (60/50), (65/50)                                       | 6xM16 | 314 | 346 | 115   | 150 | 185 | 3.7 | 12.5 | 25  | 60  |
| 28   | 2x1800         | 2x434                  | 2x108.5 | (70/70), (80/70)  | 6xM16 | 314 | 346 | 115   | 150 | 185 | 2   | 12.5 | 25  | 60  |
| 28   | 2x2065         | 2x434                  | 2x108.5 | (80/70)   | 6xM16 | 314 | 346 | 115   | 150 | 185 | 2   | 12.5 | 25  | 60  |

- Additional sizes and braking torques on request
- M<sub>K</sub>: Brake rated torque in Nm in relation to n = 100 r/min
- P<sub>20</sub>: Coil power at 20°C in W
- <sup>1)</sup> Standard keyway according to DIN 6885/1-P9

- <sup>2)</sup> Rotor preferably mounted directly on toothed shaft
- Angle dimensions in °
- Dimensions in mm
- More technical information can be found in the operating instructions



# INTORQ BFK454

## Dual circuit spring-applied brake

The dual circuit spring-applied brake BFK454 complies Directive 2014/33/EU and EN-81 for lift systems. The dual-circuit braking system is achieved by splitting the armature plate into two segments, the spring force for

generating the braking torque acts

- 80% directly on the front armature plate and
- 20% indirectly via the rear armature plate

INTORQ 155-1  
  
 E318895



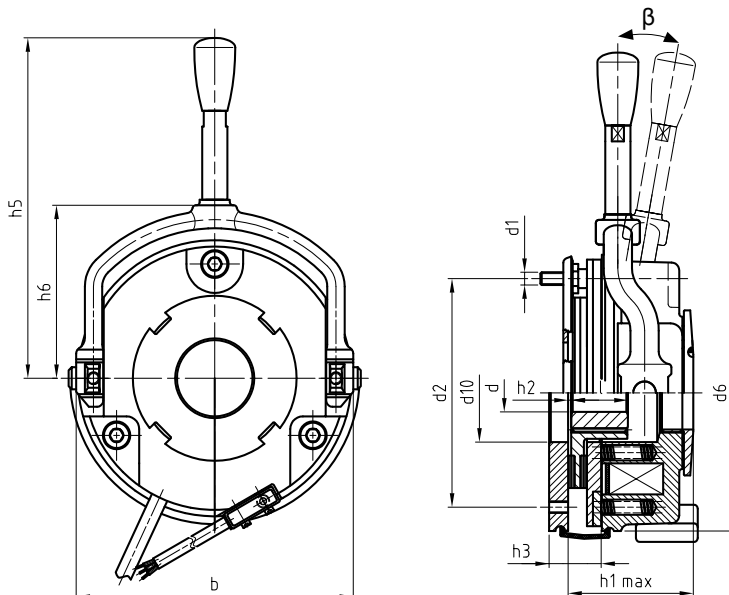
## Characteristics

- Braking torques of up to 400 Nm
- Small construction volume
- Easy adjustment (reduction) of braking torque via the central adjustment ring
- Simple maintenance and inspection of dual-circuit function
- No splitting of the friction surface

| Size | M <sub>K</sub> | P <sub>20</sub> | b     | d J7 pre. 1) | d H7 max. 2) | d1    | d2  | d6  | d10 | h1 max. | h3   | h5    | h6   | l  | β   |
|------|----------------|-----------------|-------|--------------|--------------|-------|-----|-----|-----|---------|------|-------|------|----|-----|
| 10   | 15             | 33              | 132   | 10           | 20           | 3xM6  | 112 | 130 | 45  | 60.1    | 9    | 134   | 73.8 | 20 | 9°  |
| 12   | 30             | 40              | 152   | 14           | 25           | 3xM6  | 132 | 150 | 52  | 68.5    | 9    | 163.5 | 85   | 25 | 10° |
| 14   | 60             | 53              | 169   | 14           | 30           | 3xM8  | 145 | 165 | 55  | 79.5    | 11   | 195.5 | 98   | 30 | 9°  |
| 16   | 90             | 56              | 194.5 | 15           | 38*          | 3xM8  | 170 | 190 | 70  | 87.5    | 11   | 240   | 113  | 30 | 10° |
| 18   | 150            | 85              | 222   | 20           | 45           | 6xM8  | 196 | 217 | 77  | 103     | 11   | 347   | 124  | 35 | 9°  |
| 20   | 200            | 100             | 258   | 25           | 50           | 6xM10 | 230 | 254 | 90  | 119     | 11   | 418   | 146  | 40 | 10° |
| 25   | 400            | 110             | 302   | 30           | 70           | 6xM10 | 278 | 302 | 120 | 130     | 12.5 | 504   | 170  | 50 | 10° |

- M<sub>K</sub>: Brake rated torque in Nm in relation to n = 100 r/min
- P<sub>20</sub>: Coil power at 20°C in W
- 1) Predrilled, without keyway
- 2) Standard keyway according to DIN 6885/1-P9
- \*Keyway according to DIN 6885/3-P9

- Dimensions in mm
- More technical information can be found in the operating instructions.





# INTORQ BFK458

## Double spring-applied brake

Double spring-applied brakes of the BFK458 series are suitable for lifts. The required redundant braking system is achieved by using individual components of the BFK458.



## Characteristics

- Braking torques of up to 2x400 Nm
- Noise-reduced (optional)
- Modular structure
- Simple mounting using connection flange
- Manual release with “one-hand-operation”

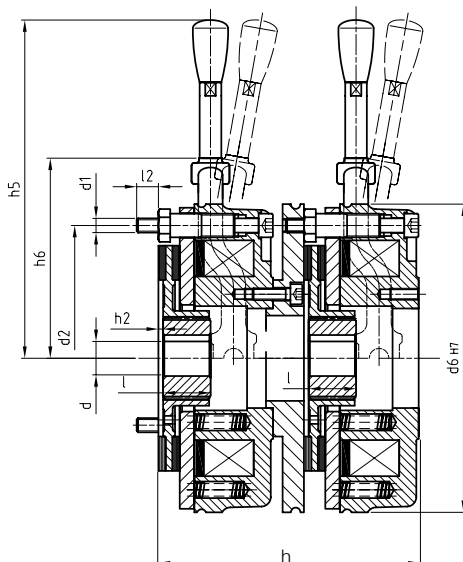


| Size | M <sub>K</sub> | P <sub>20</sub> | d J7<br>pre. 1) | d H7<br>max. 2) | d1    | d2  | d6  | h     | h5    | h6    | l  | l2   |
|------|----------------|-----------------|-----------------|-----------------|-------|-----|-----|-------|-------|-------|----|------|
| 06   | 2x4            | 2x20            | 10              | 15              | 3xM4  | 72  | 87  | 84.6  | 107   | 56.3  | 18 | 8.7  |
| 08   | 2x8            | 2x25            | 10              | 20              | 3xM5  | 90  | 105 | 97.6  | 118   | 65    | 20 | 9.8  |
| 10   | 2x16           | 2x30            | 10              | 20              | 3xM6  | 112 | 130 | 109.8 | 134   | 77.8  | 20 | 12.7 |
| 12   | 2x32           | 2x40            | 14              | 25              | 3xM6  | 132 | 150 | 125.8 | 163.5 | 88.5  | 25 | 13.1 |
| 14   | 2x60           | 2x50            | 14              | 30              | 3xM8  | 145 | 165 | 148   | 195.5 | 101.5 | 30 | 13.1 |
| 16   | 2x80           | 2x55            | 15              | 38*             | 3xM8  | 170 | 190 | 165   | 240   | 116   | 30 | 16.4 |
| 18   | 2x150          | 2x85            | 20              | 45              | 6xM8  | 196 | 217 | 186.2 | 347   | 128.5 | 35 | 17.5 |
| 20   | 2x260          | 2x100           | 25              | 50              | 6xM10 | 230 | 254 | 215.2 | 418   | 149.5 | 40 | 17.8 |
| 25   | 2x400          | 2x110           | 30              | 70              | 6xM10 | 278 | 302 | 236.4 | 504   | 175.5 | 50 | 21.5 |

- Additional sizes and braking torques on request
- M<sub>K</sub>: Brake rated torque in Nm in relation to n = 100 r/min
- P<sub>20</sub>: Coil power at 20°C in W
- 1) Pre-drilled, without keyway

- 2) Standard keyway according to DIN 6885/1-P9
- \*Keyway according to DIN 6885/3-P9

- Dimensions in mm
- More technical information can be found in the operating instructions



# INTORQ BFK457

## Double spring-applied brake

Double spring-applied brakes BFK457 fulfill the high demands on redundant braking systems in lifts. The switching noise is minimised by special arrangement of damping elements and achieves values of <50 dbA.



### Characteristics

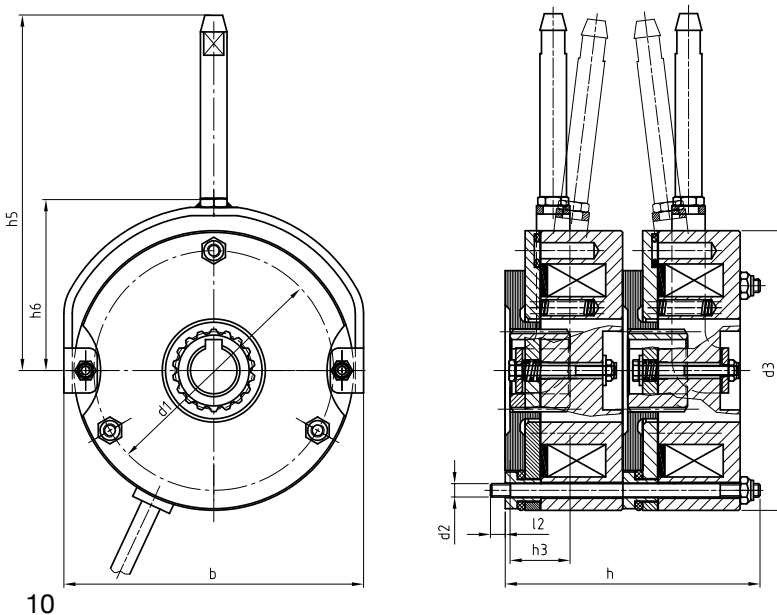
- Braking torques up to 2x80 Nm
- Noise-reduced < 50 dbA (armature plate and rotor)
- Modular structure
- Easy installation
- Manual release with "one-hand-operation"



| Size | M <sub>K</sub> | P <sub>20</sub> | b   | d J7 pre. 1) | d H7 max. 2) | d1  | d2   | d3  | h     | h3 | h5    | h6    | l2 |
|------|----------------|-----------------|-----|--------------|--------------|-----|------|-----|-------|----|-------|-------|----|
| 06   | 2x4            | 20              | 90  | 10           | 15           | 72  | 3xM4 | 84  | 75.5  | 18 | 109   | 54    | 6  |
| 08   | 2x8            | 25              | 108 | 10           | 20           | 90  | 3xM5 | 102 | 90.5  | 20 | 121.7 | 62    | 9  |
| 10   | 2x16           | 30              | 137 | 10           | 20           | 112 | 3xM6 | 130 | 102.9 | 20 | 147   | 84    | 11 |
| 12   | 2x32           | 40              | 157 | 14           | 25           | 132 | 3xM6 | 150 | 114.7 | 25 | 166   | 93    | 11 |
| 14   | 2x60           | 50              | 174 | 14           | 30           | 145 | 3xM8 | 165 | 140.5 | 30 | 186   | 106   | 14 |
| 16   | 2x80           | 55              | 203 | 15           | 38*          | 170 | 3xM8 | 190 | 153.1 | 30 | 230   | 120.5 | 14 |

- Additional sizes and braking torques on request
- M<sub>K</sub>: Brake rated torque in Nm in relation to n = 100 r/min
- P<sub>20</sub>: Coil power at 20°C in W
- 1) Pre-drilled, without keyway

- 2) Standard keyway according to DIN 6885/1-P9
- \*Keyway according to DIN 6885/3-P9
- Dimensions in mm
- More technical information can be found in the operating instructions



# Customized solutions – tailored exactly to your needs

**Automation solutions have become an indispensable part of industry and everyday life. In this context, it is often the brakes that ensure safety: They hold loads and brake reliably in an emergency.**

Just as automation continues to evolve, brakes must also face higher demands – forward-looking products are in demand. At the same time, quality and safety must be unconditionally guaranteed. This is a challenge that Kendrion Industrial Brakes meets with passion and care.



When it comes to developing customer-specific solutions, we have three aces up our sleeves:

- With our **new agile organization**, we respond much faster to customer requests.
- Our **modularly developed products** enable new configurations without complete redevelopment.
- The **global structure of our organization** bundles competencies and ensures valuable knowledge transfer.

This makes us a competent and reliable partner for our customers – starting with industry-savvy consulting, through product development with practical experience, to uncompromising quality assurance.



We will find the  
solution that suits  
you best!





# **KENDRION**

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