

# KENDRION

## INTORQ

POWERED BY KENDRION



KENDRION SOLUTIONS

### INTORQ BFK470

The spring-applied brake for  
harsh operating conditions

PRECISION. SAFETY. MOTION.

**CHAIN & DRIVES.**<sup>®</sup>

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# Our brakes – perfect for your safe application

KENDRION Industrial Brakes – stands for smart innovation and excellent service, 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. 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, United States, India and China as well as a large number of certified sales partners all over the world make us a strong partner for you!

# The INTORQ BFK470

## On the point

- Fail-Safe spring applied-brake
- Protection class according to IP66, also with hand release
- Inductive proximity sensor for function monitoring
- Increased maximum torques
- Maximum longevity due to the development of the mechanical structure
- UL-certified



## Suitable for the use of:



Conveyors



Industrial trucks



Cranes



Machine tools



## For harsh operating conditions – the INTORQ BFK470

**With the BFK470, the Kendrion INTORQ product range offers an IP66 sealed series as a modular system. This series is best suited for meeting very high requirements and provides reliable protection against dust and water.**

Their 7 sizes, from 2 – 370 Nm, make them a closed system predestined for use in wind power, agriculture and AGVs. The brake can also operate under extreme ambient temperatures.

In all its configurations and with additional elements such as manual release and sensors, the INTORQ BFK470 continues to offer IP66 protection. Our captive sealing elements are unique on the market. The intermediate toothed ring handles the highest alternating loads and is the only solution on the market to offer reliable performance over the entire service life.

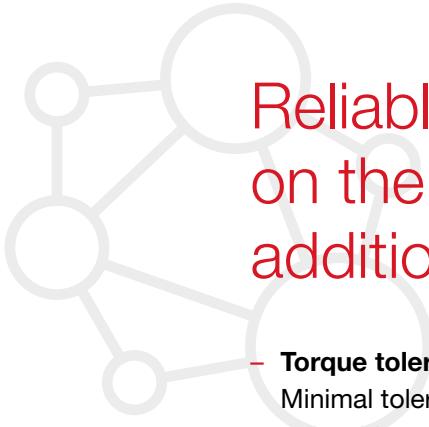
### **The modular system**

Our modular solutions have been successfully established on the market for over 20 years. The INTORQ BFK470 also relies on proven components of the modular system and combines them with state-of-the-art technology and manufacturing processes.

The INTORQ BFK458, labeled with the CE mark and CSA certified, is suitable for all markets worldwide. As with the BFK457, BFK458, and BFK557 series, the bolt circle, the available hub diameters, and the number of mounting screws are always identical so that interchangeability between the individual series is ensured.

The compact brake unit, with a fixed air gap, allows for a simple and cost-effective installation. Moreover, there are no maintenance costs when used as a holding brake.

For optimal control of the brakes, Kendrion offers the corresponding rectifiers depending on the requirements. Contact us!



# Reliable and versatile series solution based on the established modular system with additional high-quality features

## – **Torque tolerances**

Minimal tolerance range due to narrow component tolerances and optimized assembly processes.

## – **Certified IP protection**

The IP66 protection has been certified by a testing institute. All sealing elements are captive and fully assembled ex-works. Fast, reliable, and cost-effective assembly in the factory and the field.

## – **Paintable**

The well thought-out mechanical design without undercuts facilitates simple and process-reliable paintwork, installed in your application.

## – **Inductive, wear-free sensor**

The non-contact sensor is wear-free and monitors the brake reliably over its entire service life.

## – **Encoder mounting**

The brake supports a centered mounting and thus allows for the reliable use of centered encoders.

## – **Noise optimization**

The special intermediate toothed ring allows for a quiet brake operation in applications operated by frequency inverters.

## Technical highlights

- Allows corrosion protection class C4 or C5
- CCV (Cold Climate Version), temperature-resistant up to -40°C
- Optional mounting of an encoder
- Minimal torque tolerance
- Highest alternating load

# Technical data

<b>Types of designs</b>	IP66
<b>Standard rated voltage</b>	24 V, 103 V, 180 V, 205 V
<b>Protection class</b>	IP66
<b>Thermal class</b>	F (155°C)
<b>Ambient temperature</b>	-20°C to 50°C -40°C to 50°C (CCV variant)
<b>Rated torques</b>	2 to 250 Nm up to 370 Nm customer specific
<b>Duty time</b>	100% ED
<b>Nominal backlash</b>	1°
<b>Options</b>	Flange, hand release, cap, threaded holes, ...
<b>Note</b>	Please read the general information on data sheets and the corresponding operating instructions. Design subject to change without notice.



Brake size	Rated torques for operating brakes @ 100 [min <sup>-1</sup> ]	Rated torques for holding brakes <sup>1)</sup> @ 100 [min <sup>-1</sup> ]	Maximum speed n <sub>max</sub> [min <sup>-1</sup> ]	Shifting work for single shift W <sub>max</sub> [J]	Number of emergency stops Z <sub>ges</sub> [-]	Friction work up to maintenance for operating brakes with WR coating Q <sub>bw</sub> [MJ]
06	4	7,5	6000	3000	500	85
08	8	15	5000	7500	500	158
10	16	36	4000	12000	500	264
12	32	55	3600	24000	500	530
14	60	110	3600	30000	500	571
16	80	150	3600	36000	500	966
18	150	250	3600	60000	500	1542

<sup>1)</sup> The use of holding brakes as operating brakes is possible but requires more frequent adjustments or the use of over-excitation.

Project solutions with significantly higher torques and switching operations in coordination with the targeted application are possible.

You will find the right design for your application in our product finder!





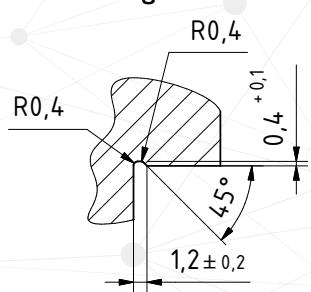
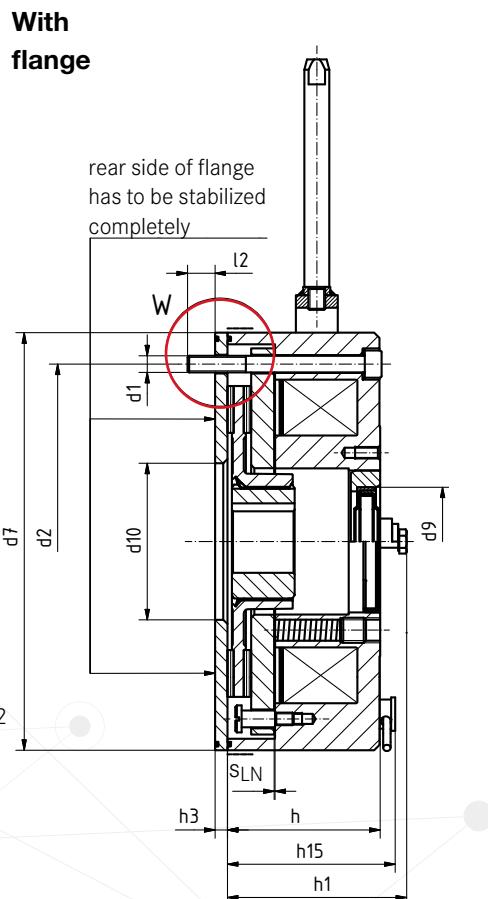
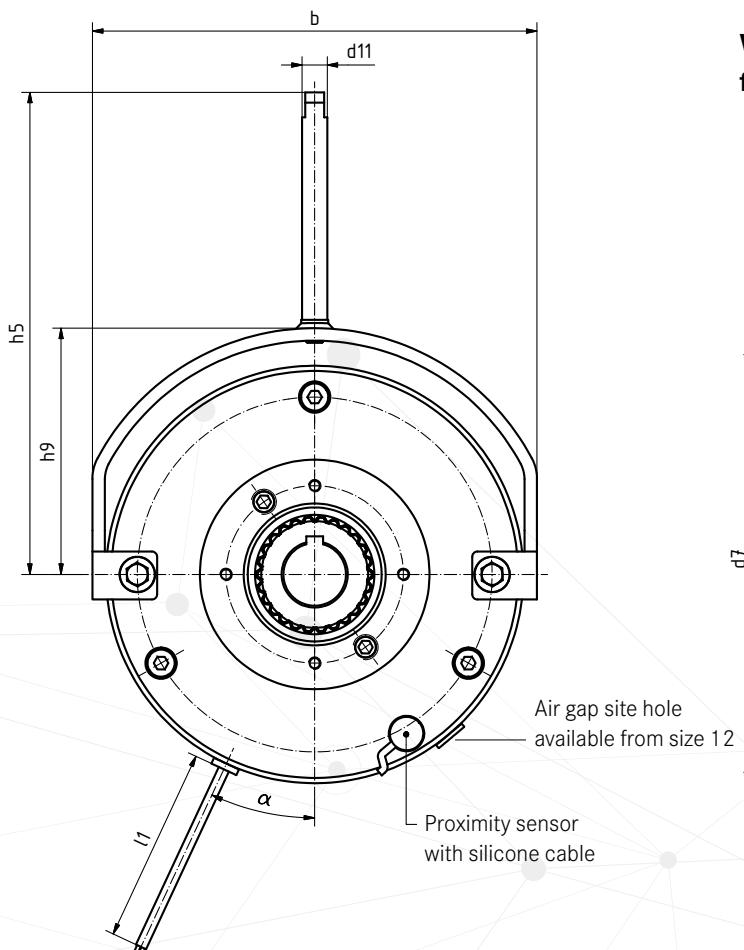
# Dimensions

Brake size	b	d <sup>h7</sup> vorg.	d <sup>h7</sup> Hub bore	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub> <sup>h7</sup>	d <sub>6</sub>	d <sub>7</sub> <sup>{-0,2/-0,3}</sup>	d <sub>8</sub>	d <sub>10</sub>	d <sub>11</sub>	d <sub>14</sub>	d <sub>15</sub>	d <sub>16</sub> <sup>h8</sup>	d <sub>17</sub> <sup>h8</sup>	d <sub>18</sub> <sup>h8</sup>	d <sub>19</sub>	d <sub>1</sub>	d <sub>a</sub>	h	h <sub>1</sub>
<b>06</b>	95	10	<b>10/11/12/14/15</b>	3xM4	72	24 H8	48	89	89	89	–	31	8	4xM4	37.7	89	35	89	94	40	60	39	45.2
<b>08</b>	112	10	<b>10/11/12/14/15/16/17/18/19/20</b>	3xM5	90	32 H8	58	106	106	106	–	42	8	4xM5	49	106	42	106	111	56.1	76.5	43	50
<b>10</b>	137	10	<b>10/11/12/14/15/16/17/18/19/20</b>	3xM6	112	42 H8	68	130	130	130	–	44	10	4xM5	54	130	44	130	136	66.1	95	51.2	59.4
<b>12</b>	157	14	<b>14/15/18/20/22/24/25</b>	3xM6	132	52 H7	82	148	148	148	–	52	12	4xM5	64	148	55	148	154	70.1	115	57.2	65.4
<b>14</b>	179	14	<b>20/22/24/25/28/30</b>	3xM8	145	60 H7	100	168	168	168	52	64	12	4xM6	75	168	70	168	175	80	124	67.1	75.3
<b>16</b>	213	15	<b>22/25/28/30/32/35</b>	3xM8	170	68 H7	110	200	200	200	52	74	12	4xM6	85	200	75	200	208	104	149	73.1	85.8
<b>18</b>	243	20	<b>25/28/30/32/35/38/40/42/45</b>	6xM8	196	75 H7	125	226 h8	226	226	62	95	14	4xM8	95	226	95	226	235	129	174	83.1	96.4

1) Pilot bored without keyway

2) Standard keyway in accordance with DIN 6885/1 P9, not all hub diameter for every rated torque available. Bold marked hubs are standard diameters.

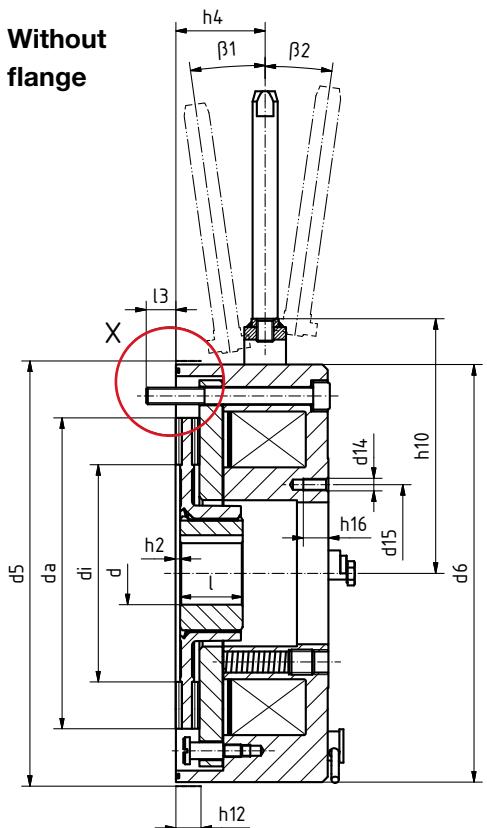
<sup>3)</sup> For high torques and/or reversing mode it is necessary to use a special hub.



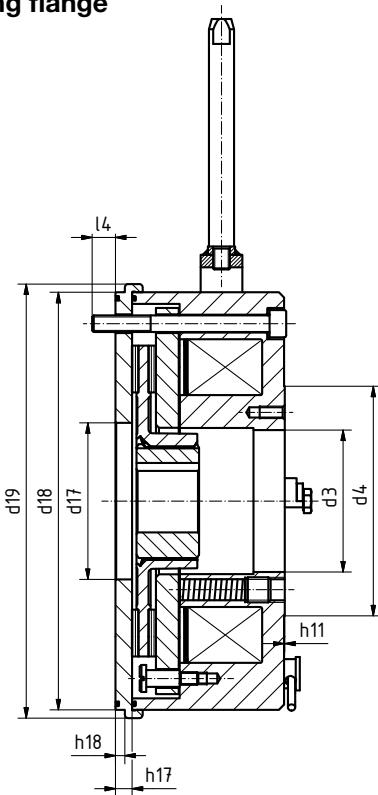
Brake size	$h_2$	$h_3$	$h_4$	$h_5$	$h_9$	$h_{10}$	$h_{11}$	$h_{12}$	$h_{13\ min.}$	$h_{13\ max.}$	$h_{14\ min.}$	$h_{14\ max.}$	$h_{15}$	$h_{16}$	$h_{17}$	$h_{18w}$
06	1	3.5	20.7	112	54.5	57	0.3	8	6.5	9.5	4.5	6	—	10	4.5	3
08	1	4.5	24.7	119.5	62	64.5	0.3	8	7.5	10.5	4.5	6	—	12	4.5	3
10	2	4.5	26.9	143	77	80	0.3	10	8	12.5	4.5	8	—	12	6.5	4
12	2	5	30.4	175	90	94	0.3	12	8.5	15	5	10	72	12	6.5	4
14	2	6	38.8	185.5	100.5	104.5	0.3	12	10	16	6.5	10	79.4	12	8	4.5
16	2.25	6	42.8	231	118	122	0.3	12	10	16	6.5	10	81.5	12	8	4.5
18	3	6	47.8	290	135	140	0.3	12	10	16	6.5	10	91.6	16	10	5

Brake size	$l$	$l_1$	$l_2$	$l_3$	$l_4$	$l_{5\ min.}$	$l_{6\ min.}$	$s_{LN}$	$\alpha$	$\beta_{1+3^\circ}$	$\beta_{2+3^\circ}$	$Y$	$Z$
06	18	400	6.8	5.3	5.8	9	7.5	0.2	25°	8.5°	8°	0.03	0.05
08	20	400	7.3	7.8	7.8	10	10.5	0.2	25°	8.5°	8°	0.03	0.05
10	20	400	10.2	10.7	8.7	13.5	14	0.2	25°	8°	7°	0.03	0.05
12	25	400	9.1	9.1	7.6	12.5	12.5	0.3	25°	8.5°	8°	0.05	0.05
14	30	400	14.3	15.3	12.3	19	20	0.3	25°	9°	8°	0.05	0.05
16	30	600	13.2	14.2	11.2	17	18	0.3	25°	8°	8°	0.08	0.05
18	35	600	19.3	15.3	15.3	23	19	0.4	25°	10°	9°	0.1	0.08

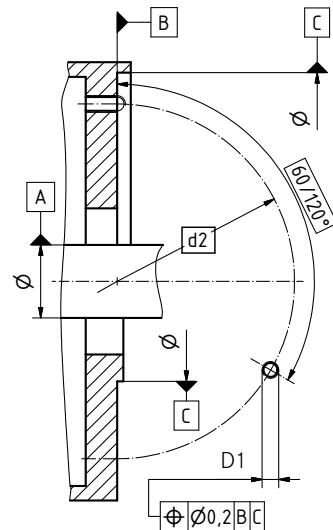
Without flange



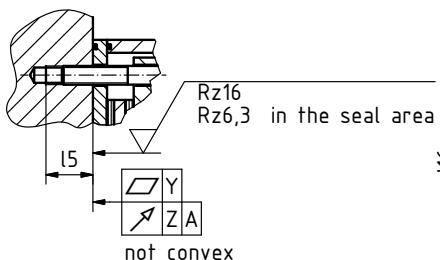
With centering flange



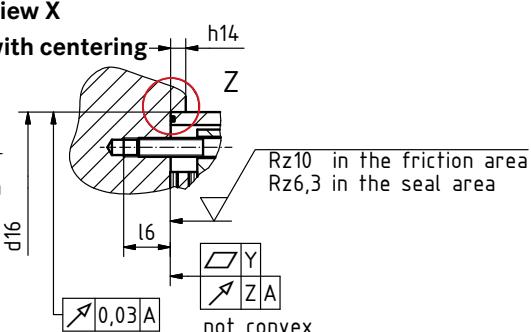
Motor mounting plate (position tolerance of the screw holes)



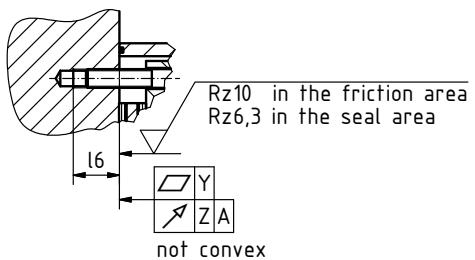
View W without centering



View X with centering



View X without centering

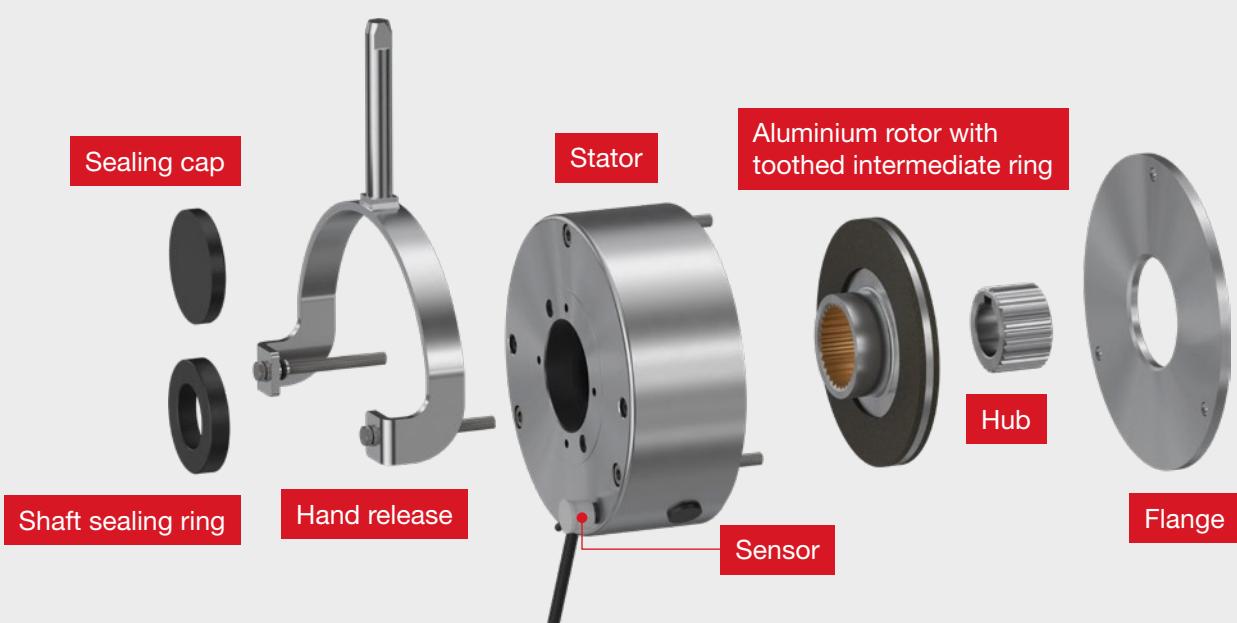


### Design

- Brake size**  06  08  10  12  14  16  18
- Voltage**  24 V  96 V  103 V  170 V  180 V  190 V  205 V  
Other voltages between 12 V and 250 V possible.
- Cable length**  Standard from 100 mm – 1000 mm in 100 mm steps  
from 1000 mm – 3000 mm in 250 mm steps
- Rotor**  Aluminium  Noise-reduced  
(rotor with toothed intermediate ring)
- Friction lining variants**  Standard (ST)  Other friction lining variants  
 Wear-resistant (WR) customer-specific available
- Fastening screws** Included in all versions and according to the option  
(counter-friction face) adjusted in length

### Options

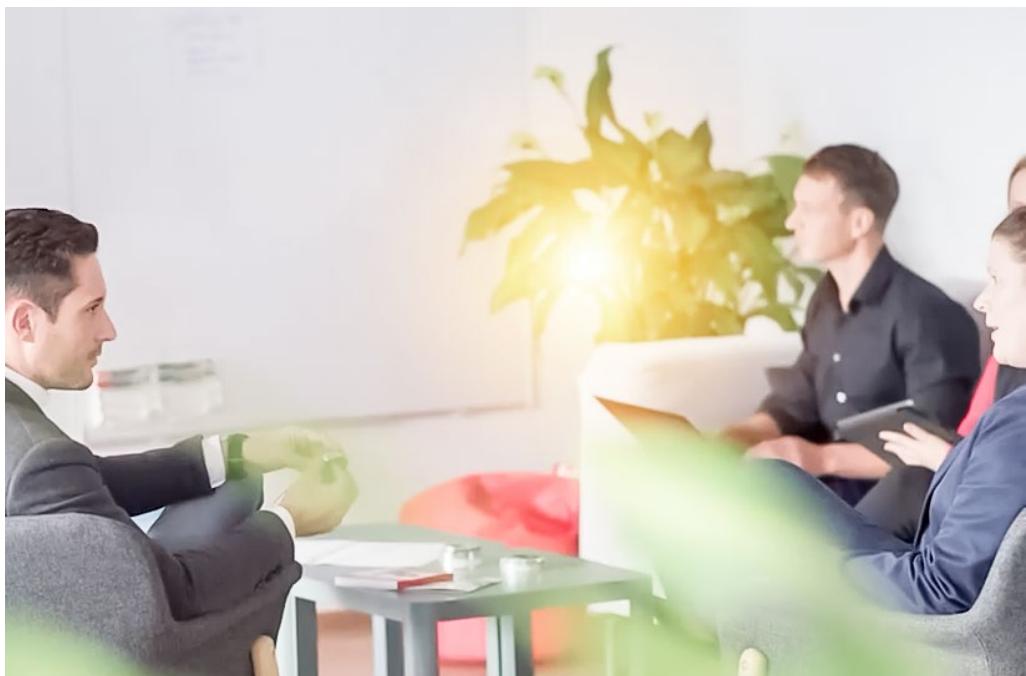
- Hand-release**  Mounted
- Sensor**  Non-contact proximity sensor for monitoring the switching function  
(only for holding brake from size 12)
- Temperature resistance -40°C**  CCV-Version
- Hub** For bore diameter, see dimensions
- Counter friction face**  Standard flange  Centering flange
- Sealing**  Sealing cap  Shaft sealing ring (shaft diameter on request)
- Tacho mounting**  Bores on rear side



# 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!



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