ISO-9001

SPRING-OPERATED BRAKES WITH ELECTROMAGNETIC RELEASA WITH HAND-RELEASE

Brakes Torque:2 · 5 · 10 · 20 · 40 · 60 · 100 · 160 · 250 · 400Nm

TRANTEX CORP.

安全剎車器—產品結構圖 & 訂購說明

The **TRANTEX** quality standards for development, material, selection, production and assembly mean that the new spring-operation brakes fulfill the highest requirements. These electro-magnetically released, spring-operated brakes can be used in all cases where movable masses have to be brakes in the shortest possible time or have to be hold in defined position.

The braking force is provided by compression springs.This means that the frictional brake torque is produced in the non-current state, i.e.also in event of a supply failure. The brakes are released electro-magnetically.

The new **SAB** range replaces the spring-operated brakes types from 2 Nm to 400 Nm is standard design.The main components of the new modular system consist of the modules P (adjustable brake torque) and N (brake torquenot adjustable). This offers flexibility by combining the basic modules with further modular elements to cover the widest possible range of applications.

Order type code:

SAB□□□- □ -□□□

Spring-Operated Disc Brake
Type
Stator Design
Supply Voltage

Type is braking rated torque (Nm) refer to speed at r.p.m.2, 5, 10, 20, 40, 60, 100, 160, 250, 400.

Stator Design

P-adjustable (brake torque can be reduced usingadjuster nut)
N - not adjustable

Supply Voltage

standard 24, 96, 190, 205. VDC Other voltage on request

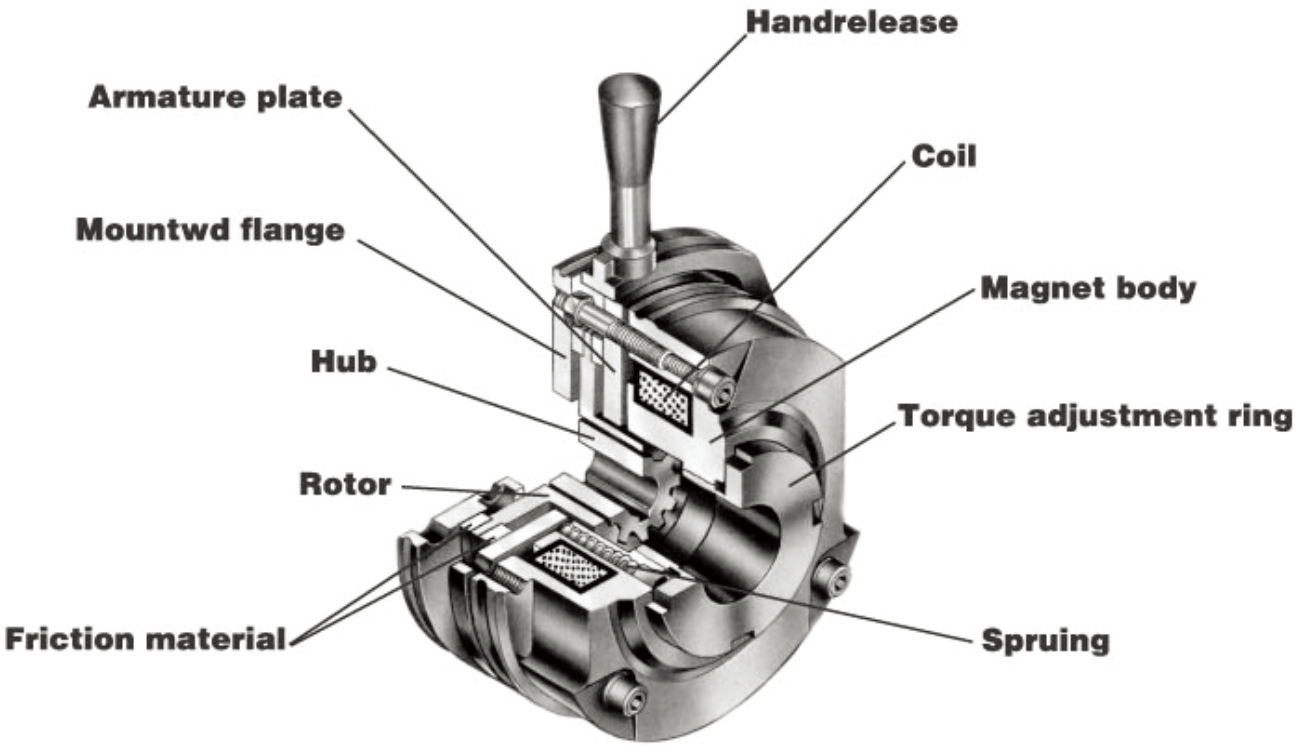
Encoded

Hub bore (see table), Options.

Other Special Type on request

Other combinations or other adjusted braking torque are possible on request.
All brake friction linings are **asbestos-free.**

Brake Construction:



安全剎車器—技術資料

Technical Data and Operating Times

Operating

Type SAB	Brake torque rated value at Δn = 100 min⁻¹ Mk[Nm]	Maximum permissible friction work per one operation only QE[J]	Transition operating frequency Sh[h⁻¹]	Maximum speed in aluminum rotor [min⁻¹]	Reduction per notches in twist position [Nm]	Excess end of torque adjuster ring [mm]
2	2	1000	95	3600	0.2	4.0
5	5	3000	80	3600	0.2	5.0
10	10	7500	50	3600	0.4	5.0
20	20	12000	40	3600	0.8	7.5
40	40	24000	30	3600	1.3	9.5
60	60	30000	28	3600	1.7	11.0
100	100	36000	26	3600	1.6	10.0
160	160	60000	20	1800	3.6	15.0
250	250	80000	18	1800	5.6	17.0
400	400	120000	16	1800	6.2	20.0

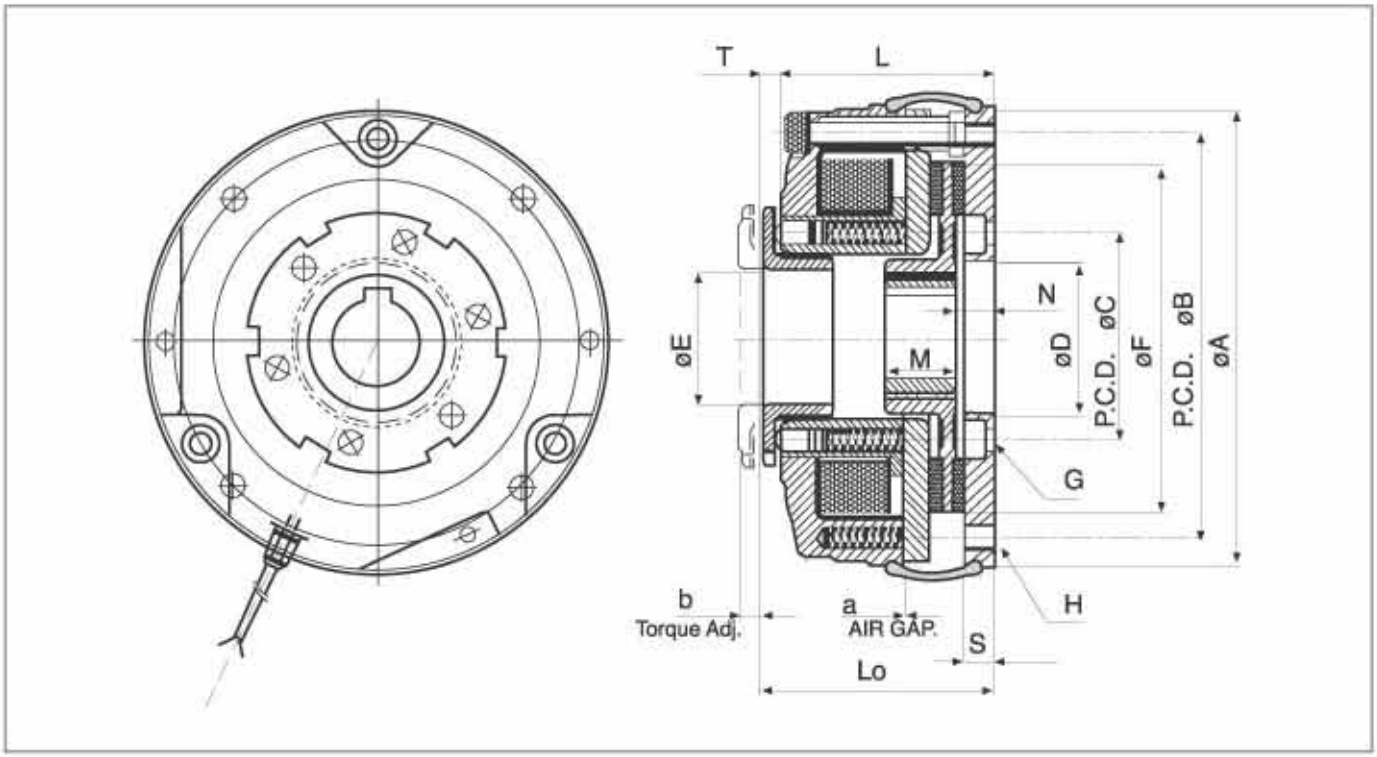
Technical Data and Operating Times

Ratings

Type SAB	P[1]	Air gap		Rotor thickness[2]		Moment inertia	Operating time for normal air gap			
	20°C	a	a max	Max.	Min.	Aluminum rotor	t_{11}	t_{12}	t_1	t_2
	[W]	[mm]	[mm]	[mm]	[mm]	[Kgcm²]	[ms]	[ms]	[ms]	[ms]
2	16	0.2	0.5	7	5.0	0.15	5	10	15	30
5	20	0.2	0.5	7	5.0	0.21	7	10	17	35
10	25	0.2	0.5	9	6.0	0.6	10	10	20	50
20	30	0.2	0.6	12	7.0	1.8	10	20	30	90
40	40	0.3	0.8	12	7.0	4.4	15	25	40	120
60	50	0.3	0.8	12	7.0	6.3	15	50	65	150
100	65	0.3	0.8	14	8.0	14.1	20	70	90	180
160	85	0.4	1.0	15	8.0	26	30	80	110	300
250	110	0.4	1.0	18	12	60	50	150	200	400
400	120	0.5	1.2	24	14	200	70	200	270	500

(1) Coil power at 20°C in watt, difference up to + 10% is possible, depending on the selected connecting voltage.
(2) The friction lining is dimensioned such that the brake can be readjusted at least five times.

安全剎車器—規格表



Unit in mm

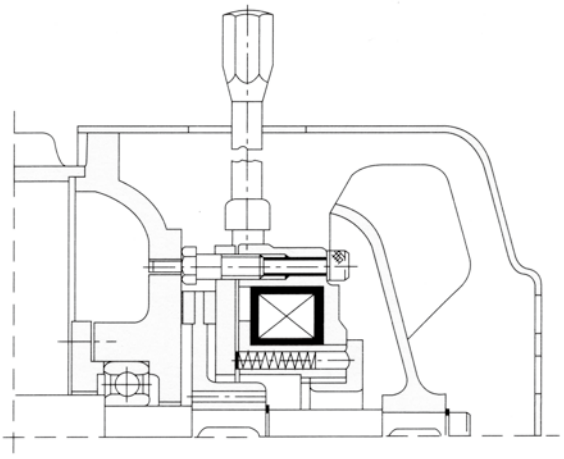
Type SAB	2	5	10	20	40	60	100	160	250	400
Dynamical 2) [Nm]	2	5	10	20	40	60	100	160	250	400
Hub bore 1) d max	11	14	15	20	24	28	35	45	55	70
Hub bore d min	6	8	10	10	16	20	25	30	35	40
øA	73	85	105	130	150	165	190	217	254	302
øB	60	72	90	112	132	145	170	196	230	278
øC	x	30	45	55	62	74	84	100	120	150
øD	25	20	30	40	45	55	65	75	90	120
øE	27	19	24	35	40	48	55	62	73	90
øF	49	61	76	96	115	125	150	175	208	254
G	x	3xM4	3xM5	3xM6	3xM6	3xM8	3xM8	6xM8	10xM8	5xM10
H	3xø4.5	3xø4.5	3xø5.8	3xø7.0	3xø7.0	3xø9.0	3xø9.0	6xø9.0	6xø11	6xø11
L	42.5	44	49	59	66	76	85	95	109	120
M	15	18	20	20	25	30	30	35	45	50
N	8	8	9.5	12.5	12	14	14.5	15	15	20
S	6	6	7	9	9	11	11	11	11	14
T	0	5	6	6	7	7	8	9	10	13
Lo	x	49	55	65	73	83	93	104	119	133
b	x	5.0	5.0	7.5	9.5	11.0	10.0	15.0	17.0	20
Air gap a	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5
Air gap amax	0.5	0.5	0.5	0.6	0.8	0.8	0.8	1.0	1.0	1.2
Weight [kg]	1.0	1.2	1.8	3.0	4.8	7.3	12.2	18.5	27.6	35.9
Micro-switch	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes

1) Standard parallel keyway accordance to DIN 6885/1 P9.
The Hub bore tolerances is ISO H7. Recommended ISO shaft tolerances
up to ø50 mm = k 6
Over ø50 mm = m 6.

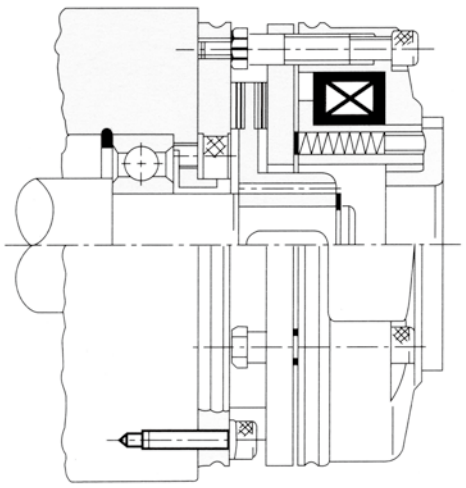
2) Braking torque dynamical (△n = 100 r.p.m.)

安全剎車器—安裝方式

1. The **SAB** brake with optional hand release as an integral part of an electric induction brake motor.



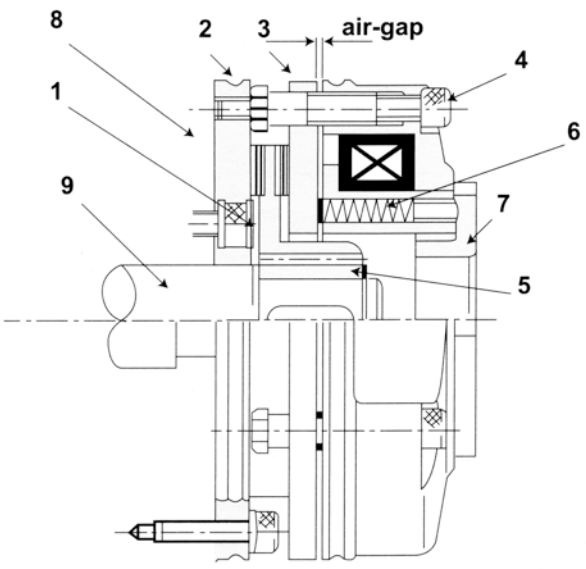
2. The **SAB** brake may be integrated into the design of many machines, and performs well in both dynamic and static applications.



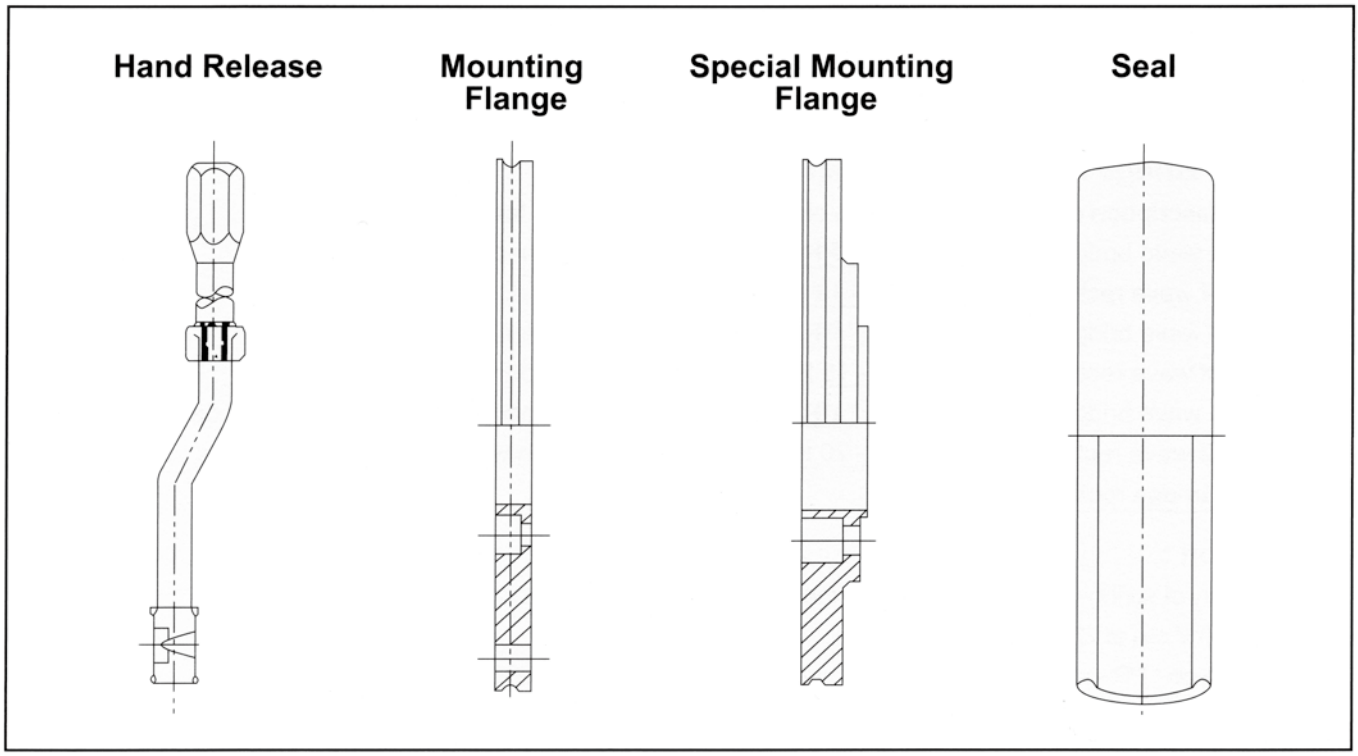
Brake Installation and Adjusting the brake Torque

If no suitable opposing surface is available, a mounting flange (8) or a special mounting flange can be used.

1. Fit the hub (5) onto the shaft (9) and secure axially.
2. Now fit rotor (1) onto hub (5).
3. Insert armature plate (3) and spring (6) & magnet body.
4. Insert the fixing screws (4) through the holes provided in the stator and fit those to the counter friction surface.
5. Remove transport clips.
6. Check the air-gap between the magnet body and the anchor (the brake operational clearance).
7. Measure the air-gap with a feeler gauge and find out. If the air-gap needs to be reduced, rotate the adjustment screw (2) counter-clockwise. Loosen them evenly.
8. Tighten the screws (see table) and measure the air-gap again.
9. The friction surfaces must be kept from oil and grease.
10. Connect electrically.
11. The brakes have been adjusted to rate load torque by the manufacture.
12. The torque can be adjusted by the rotating the adjustment ring (7) in the back of the brake.
13. The torque is reduced when the adjustment ring is rotated counter-clockwise and increased when rotated clocked.
14. It is possible to equip brakes with hand release levers so that the brake can be pried open without electricity.
15. If the brake has a hand lever the air-gap has to be checked frequently otherwise holding the hand lever could obstruct the anchor and prevent normal braking.



安全剎車器—配件說明



Hand release :

The hand release serves to release the brake manually. It can also be retrofitted. The hand release goes back to its base position automatically after operation. The release screws are carried in ball joints and are only tensioned. When assembling the hand release the distance between armature plate and screw dimension must be maintained.

Caution :

Even with a reduced rated torque, a readjustment of the working air gap reaching the dimension is necessary for reasons of safety.

Special mounting flange :

The special mounting flange can be used to adapt a second basic module to the basic module N; the resulting double brake is suitable for stage machinery or other applications with increased safety requirements. (See accessories other design)

Seal :

The seal prevents to a large extent exit or penetration of dust, humidity, dirt, etc. into the braking area. The seal is pulled. If no suitable groove is available at the output side, we recommend using a mounting flange or other friction plate (surface).

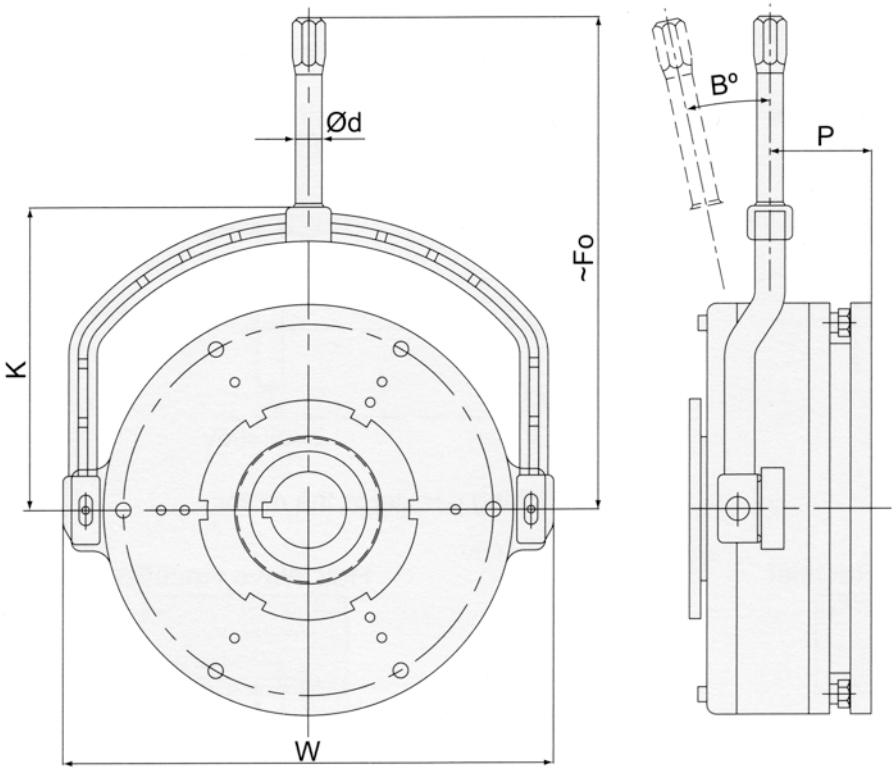
Micro-switch :

The micro-switch is used when a monitoring of the air gap required and is available from the type 15-A to 80-A. If the armature plate is in contact with the magnet body the electric contactor is controlled via the micro-switch. The machine can only start, if the brake is released. If the maximum air gap is reached, the magnet body no longer attracts the armature plate. The electric contactor is not activated, the electric does not start. The air gap of basic module P and basic module N can be readjusted. The micro-switch can be adjusted such that a signal is output before the wear reserve is reached (wear monitoring).

Mounting flange :

If no suitable friction surface is available, the mounting flange can be used, which at the same time is able to carry the seal.

安全剎車器—技術資料



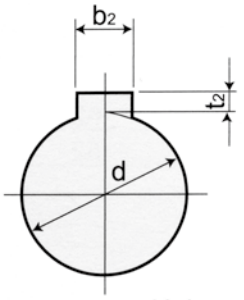
Unit：mm

TYPE	φd	K	W
SAB 2	8	50	74.5
SAB 5	8	54	86
SAB 10	8	64	106
SAB 20	10	77	131
SAB 40	10	90	151
SAB 60	12	100	168
SAB100	12	115	194
SAB160	14	140	226
SAB250	14	160	260
SAB400	15	185	315
TYPE	**Fo**	**P**	**β°**
SAB 2	102	22	12°
SAB 5	106	23	12°
SAB 10	116	24	10°
SAB 20	141	32	10°
SAB 40	165	32	10°
SAB 60	185	37	10°
SAB100	220	40	10°
SAB160	260	42.5	12°
SAB250	301	46.5	12°
SAB400	325	45	10°

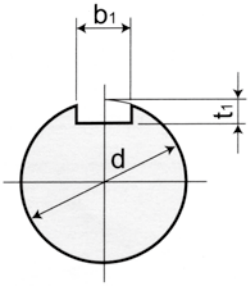
Standard parallel keyway accordance to DIN 6885/1 P9

Unit:mm

Suitable Shaft Dia.	Tolerance (N9)	(Js9)	Basic Dimension		Nominal Key Size
ø d	b_1	b_2	t_1	t_2	b x h
6 < d ≦ 8	–0.004 –0.029	±0.0125	1.2	1.0	**2 x 2**
8 < d ≦ 10			1.8	1.4	**3 x 3**
10 < d ≦ 12	–0 –0.030	±0.0150	2.5	1.8	**4 x 4**
12 < d ≦ 17			3.0	2.3	**5 x 5**
17 < d ≦ 22			3.5	2.8	**6 x 6**
22 < d ≦ 30	–0 –0.036	±0.0180	4.0	3.3	**8 x 7**
30 < d ≦ 38			5.0	3.3	**10 x 8**
38 < d ≦ 44	–0 –0.043	±0.0215	5.0	3.3	**12 x 8**
44 < d ≦ 50			5.5	3.8	**14 x 9**
50 < d ≦ 58			6.0	4.3	**16 x 10**
58 < d ≦ 65			7.0	4.4	**18 x 11**
65 < d ≦ 75	–0 –0.052	±0.0260	7.5	4.9	**20 x 12**
75 < d ≦ 85			9.0	5.4	**22 x 14**
85 < d ≦ 95			9.0	5.4	**25 x 14**
95 < d ≦ 110			10.0	6.4	**28 x 16**



Keyway on Hole



Keyway on Shaft

安全剎車器—技術資料

Basic module P, N + Cover

As an option, a cover can be mounted to the basic module P and N to product the brake from water and dust (enclosure accordance to IP 65). It's encapsulated design. And it's installation dimension please on option.

Full Wave Bridge Rectifiers and Half Wave Rectifiers

We have a description of SAB series brakes electrical accessories as follow.

1. 6-pole full wave bridge rectifier order is **" PR - 10 F "**. It's cable connection.
   6-pole half wave rectifier order is **" PR - 10 H "**. It's cable connection.
2. 6-pole full wave bridge rectifier order is **" PR - 15 F "**. It's terminal block connection.
   6-pole half wave rectifier order is **" PR - 15 H "**. It's terminal block connection.
3. 4-pole full wave bridge rectifier order is **" PR - 20 F "**. It's cable connection with fast switching devices.
4. 4-pole half-wave rectifier order is **" PR - 20 H "**. It's cable connection with fast switching devices

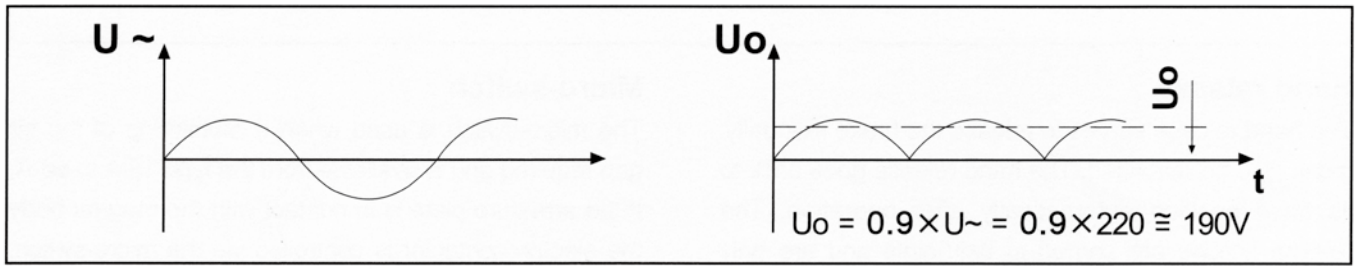
◎ **full wave bridge rectifier " PR - xx F "**

Application :

Current supply of spring-operated brakes from the AC mains (for normal excitation).

Example: 190 V coil at 220 V mains.

The rectifier type " PR - xxF " include the spark suppressor require to VDE 0580.



Technical data :

Max. connecting voltage U~= 270 V~

Max. DC current at 60ºC I = 0.75 A

Max. ambient temperature T= 80ºC

Other current on request

The rectifiers are protected against over-voltage by variations in the input and output.

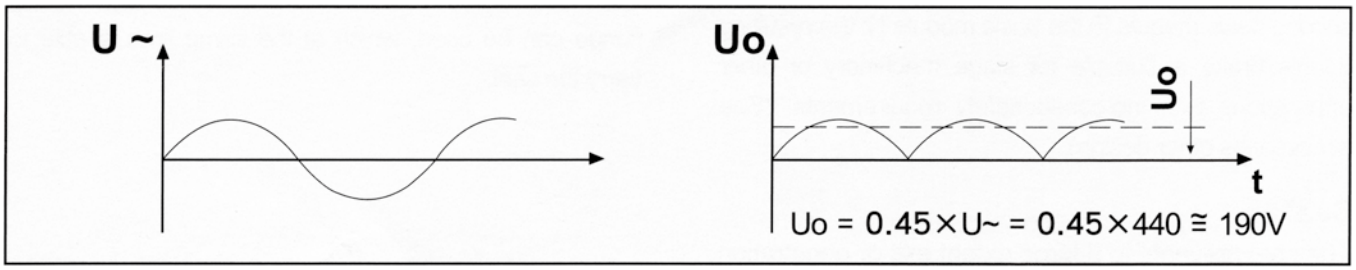
◎ **half wave rectifier " PR - xxH "**

Application :

Current supply of spring-operated brakes from the AC mains (for normal excitation).

Example: 190 V coil at 440 V mains.

The rectifier type " PR - xxH " include the spark suppressor require to VDE 0580.



Technical data :

Max. connecting voltage U~= 550 V~

Max. DC current at 60ºC I = 0.75 A

Max. ambient temperature T= 80ºC

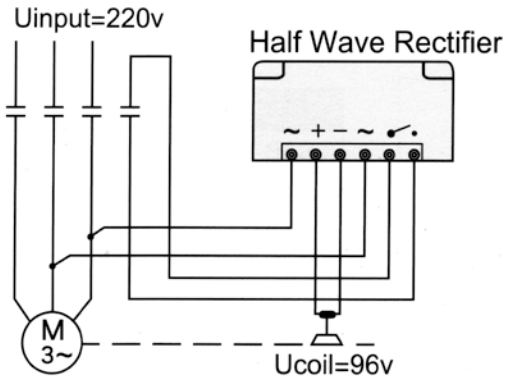
Other current on request

The rectifiers are protected against over-voltage by variations in the input and output.

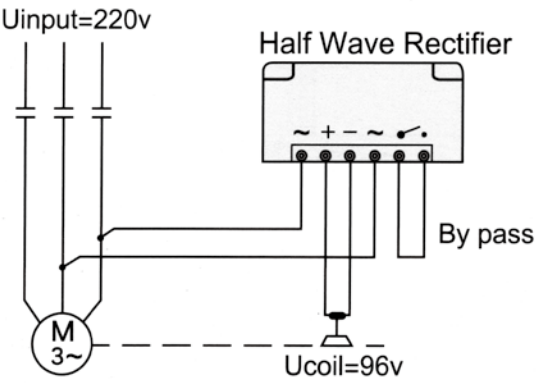
安全剎車器—技術資料

◎ AC switching parallel to the motor：

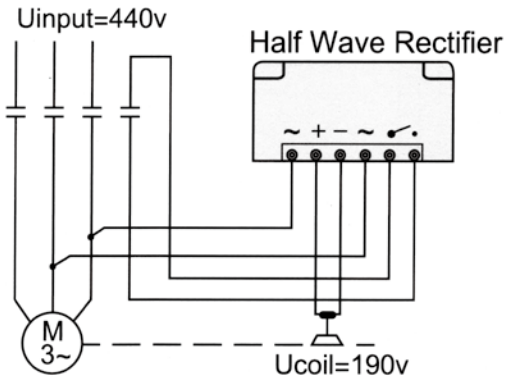
AC switching parallel to the motor



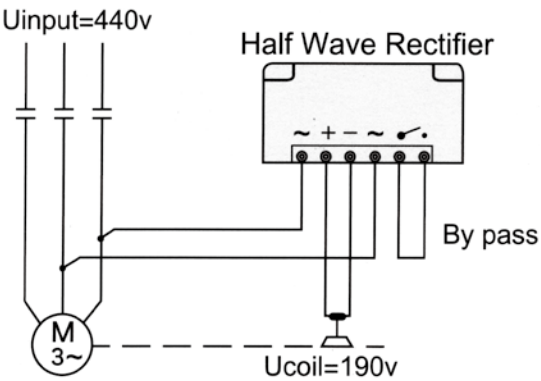
AC switching parallel to the motor



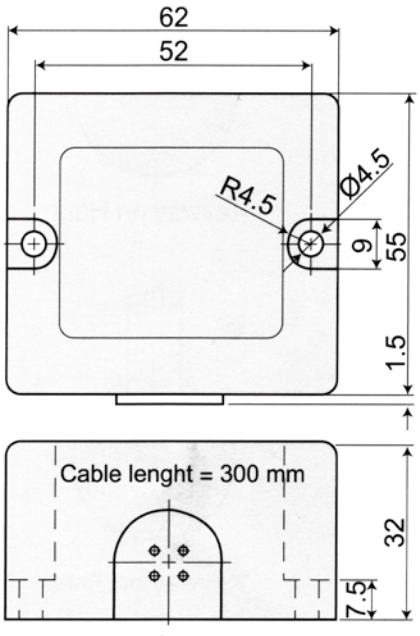
AC switching parallel to the motor



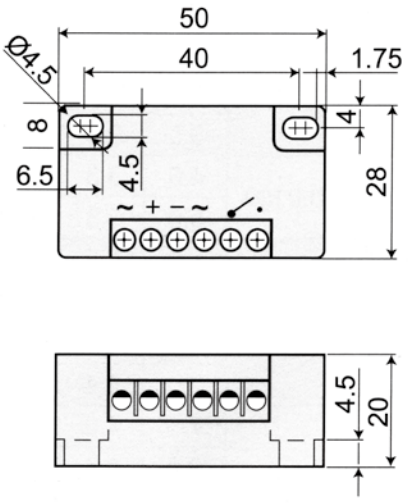
AC switching parallel to the motor



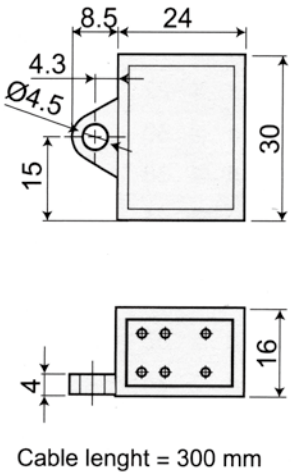
◎ Rectifiers dimensions：



PR-20

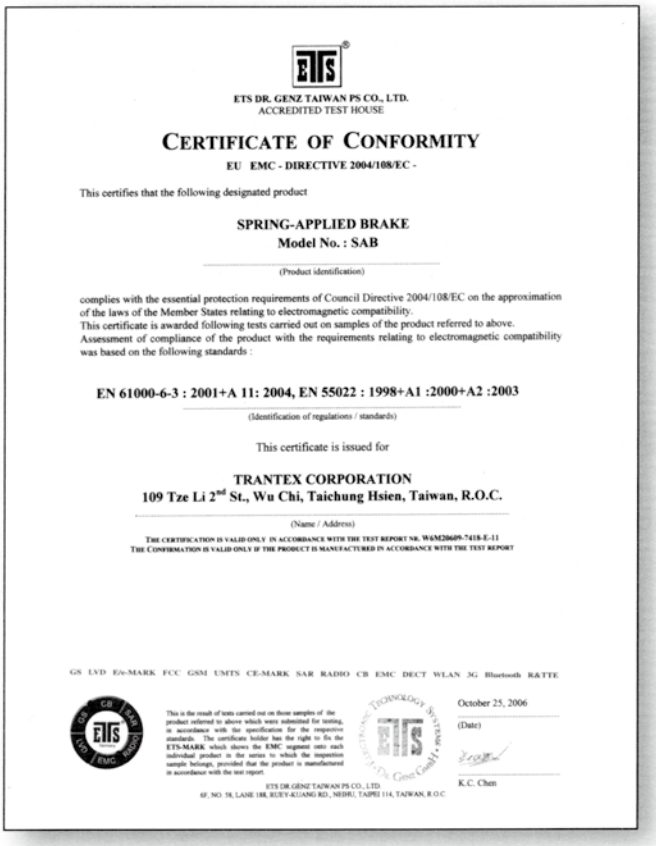


PR-15



PR-10

安全剎車器—認證書



ETS DR. GENZ TAIWAN PS CO., LTD.
ACCREDITED TEST HOUSE

CERTIFICATE OF CONFORMITY

EU EMC - DIRECTIVE 2004/108/EC -

This certifies that the following designated product

SPRING-APPLIED BRAKE
Model No. : SAB

(Product identification)

complies with the essential protection requirements of Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility.
This certificate is awarded following tests carried out on samples of the product referred to above.
Assessment of compliance of the product with the requirements relating to electromagnetic compatibility was based on the following standards :

EN 61000-6-3 : 2001+A 11: 2004, EN 55022 : 1998+A1 :2000+A2 :2003

(Identification of regulations / standards)

This certificate is issued for

TRANTEX CORPORATION
109 Tze Li 2nd St., Wu Chi, Taichung Hsien, Taiwan, R.O.C.

(Name / Address)

THE CERTIFICATION IS VALID ONLY IN ACCORDANCE WITH THE TEST REPORT NR. W6M20609-7418-E-11
THE CONFORMATION IS VALID ONLY IF THE PRODUCT IS MANUFACTURED IN ACCORDANCE WITH THE TEST REPORT

GS LVD E/e-MARK FCC GSM UMTS CE-MARK SAR RADIO CB EMC DECT WLAN 3G Bluetooth R&TTE

This is the result of tests carried out on those samples of the product referred to above which were submitted for testing, in accordance with the specification for the respective standards. The certificate holder has the right to fix the ETS-MARK which shows the EMC segment onto each individual product in the series to which the inspection sample belongs, provided that the product is manufactured in accordance with the test report.

October 25, 2006
(Date)

K.C. Chen

ETS DR.GENZ TAIWAN PS CO., LTD.
6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU, TAIPEI 114, TAIWAN, R.O.C.

Integrity EnE Lab

Verification

of Test Report No.: IL-6137

Product:
SPRING-APPLIED BRAKE

Type reference:
Model No.: SAB

Applicant:
TRANTEX CORPORATION
109 Tze Li 2nd St., Wu Chi, Taichung Hsien, Taiwan, R.O.C.

Issue Date:
Nov.01, 2006

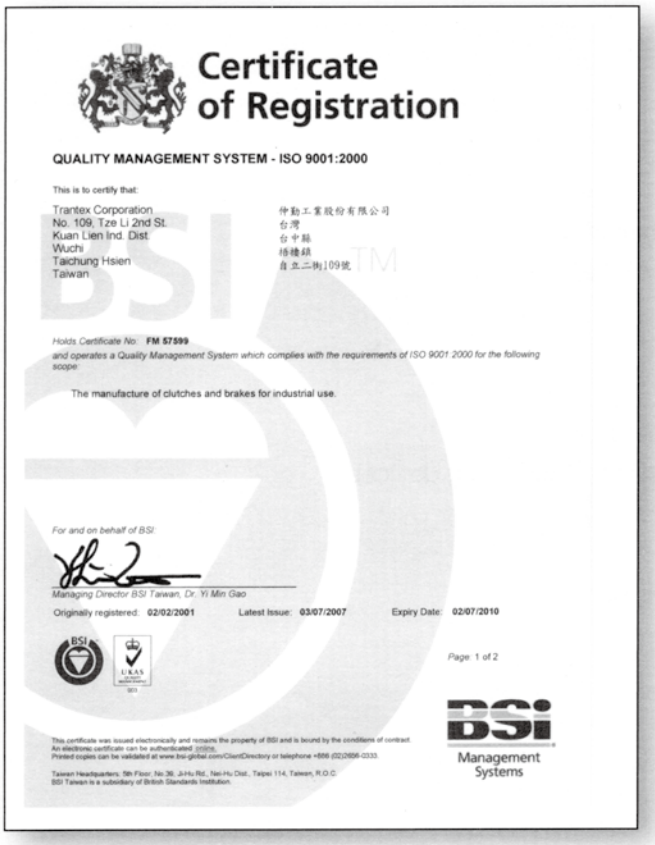
A sample of the equipment has been tested for CE marking according to the EC Low Voltage Directive, 73/23/EEC, 93/68/EEC.
Standard(s) used for showing compliance with essential requirments o f the directive:

Standard:
EN 60335-1: 2002 + A11:2004
Household and similar electrical appliances – Safety
Part 1:General requirements

The referred test report(s) show that the product fulfills the requirement in the EC Low Voltag Directive for CE marking. On the basis, together with the manufacturer's own documented production control, the manufacturer (or his European authorized representative) can in his EC Declaration of Conformity verify with the EC Low Voltage Directive
This verification shall be accompanied with test report.

CE *Approved by:* *Managing Director*

Test site: Integrity EnE Lab
5F., No.36, Songde Rd., Taipei City, Taiwan.
Tel: +886-2-8789-3367 Fax:+886-2-8789-4070



Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2000

This is to certify that:

Trantex Corporation
No. 109, Tze Li 2nd St.
Kuan Lien Ind. Dist.
Wuchi
Taichung Hsien
Taiwan

仲勤工業股份有限公司
台灣
台中縣
梧棲鎮
自立二街109號

Holds Certificate No: **FM 57599**
and operates a Quality Management System which complies with the requirements of ISO 9001:2000 for the following scope:

The manufacture of clutches and brakes for industrial use.

For and on behalf of BSI:

Managing Director BSI Taiwan, Dr. Yi Min Gao

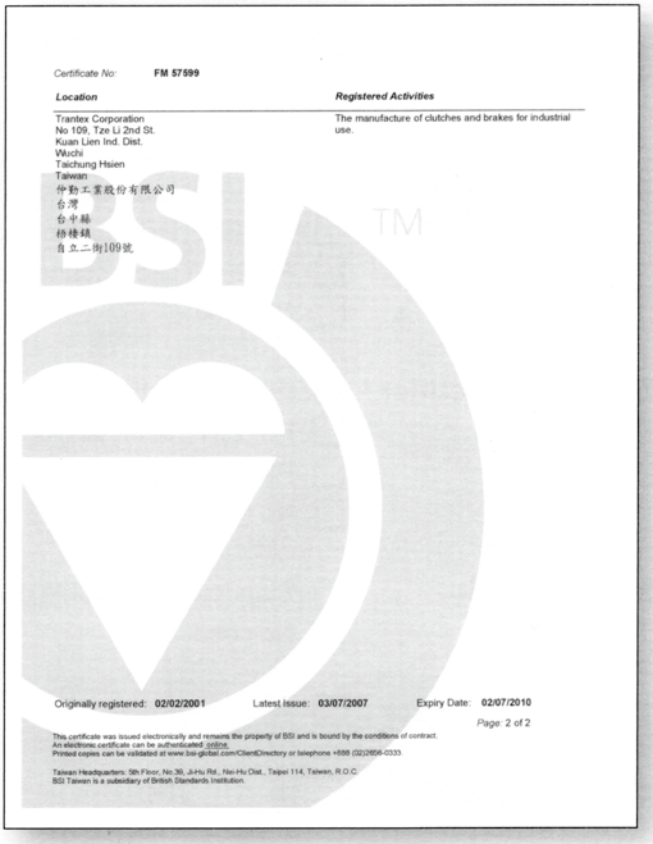
Originally registered: **02/02/2001** Latest Issue: **03/07/2007** Expiry Date: **02/07/2010**

Page: 1 of 2

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.
An electronic certificate can be authenticated online.
Printed copies can be validated at www.bsi-global.com/ClientDirectory or telephone +886 (02)2656-0333.

Taiwan Headquarters: 5th Floor, No.36, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
BSI Taiwan is a subsidiary of British Standards Institution.

BSI Management Systems



Certificate No: **FM 57599**

Location	*Registered Activities*
Trantex Corporation No 109, Tze Li 2nd St. Kuan Lien Ind. Dist. Wuchi Taichung Hsien Taiwan 仲勤工業股份有限公司 台灣 台中縣 梧棲鎮 自立二街109號	The manufacture of clutches and brakes for industrial use.

Originally registered: **02/02/2001** Latest Issue: **03/07/2007** Expiry Date: **02/07/2010**

Page: 2 of 2

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.
An electronic certificate can be authenticated online.
Printed copies can be validated at www.bsi-global.com/ClientDirectory or telephone +886 (02)2656-0333.

Taiwan Headquarters: 5th Floor, No.36, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.
BSI Taiwan is a subsidiary of British Standards Institution.