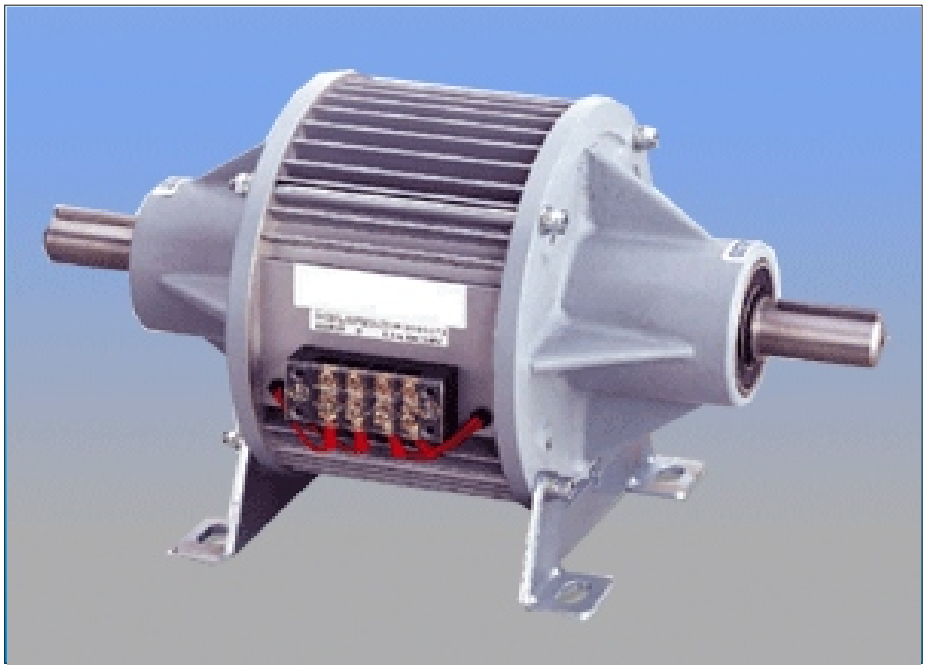
VORTEX ENGINEERING WORKS

Vortex

CLUTCH & BRAKE COMBINATION MODULES



Type EKA

VORTEX ENGINEERING WORKS produce a wide range of clutch and brake combination modules to suite a wide array of applications.

Type EKA

SALIENT FEATURES

Totally encased unit
Long life
Adjustable without dismantling --- simple wear compensation adjustment
High operating frequency and fast switching times
Single plate dry type
High operating reliability
Low inertia of rotating parts
Stationary field
Backlash free torque transmission
Special friction disc with high quality non-asbestos friction material having very high inherent heat dissipation properties
Coil with class “F” insulation (Class “H” insulation also on demand)
Slotted armature for torque stability

GENERAL

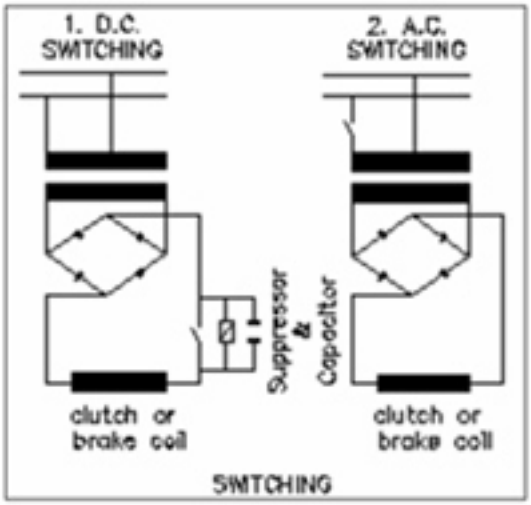
The VORTEX Model EKA is a ready to be installed electromagnetic actuated clutch-brake module. Our long-standing co-operation with industry has enabled us to understand its drive requirements, helping us to produce products, which are the latest technological standard. High-grade materials, the use of state of the art modern machine tools and uncompromising production and performance inspections guarantee reliability and safety.

The field of application for the VORTEX Type EKA clutch-brake modules is immense since they find application wherever machine parts are to be started and stopped quickly and efficiently. The benefit over other systems is that the input side can be run continuously. The start/stop is performed by our EKA clutch-brake combination module, therefore, considerably reducing power consumption.

This EKA Catalogue describes the operation modes and enlists the various mounting designs that can be achieved using the modular principle. In many cases, a tailor-made solution could optimally fulfill your requirement. These modules are available in the combinations of the well-proven VORTEX EAA series single-disc brake, EBA series single disc brakes and the ERD series fail safe brakes. Hence apart from the standard EKA versions numerous further combination possibilities are available.

SWITCHING

Our Clutch-Brake combination unit requires D.C. supply voltage, which is obtained through A.C./D.C. rectification. Normally switching is carried out on the A.C. side. However, for much faster engagement /disengagement time, switching is carried out on the D.C. side for which a suitable arc suppressor and a capacitor is a must to protect the coil and switches from high induction voltages. Engagement/disengagement time is a function of nominal release distance.



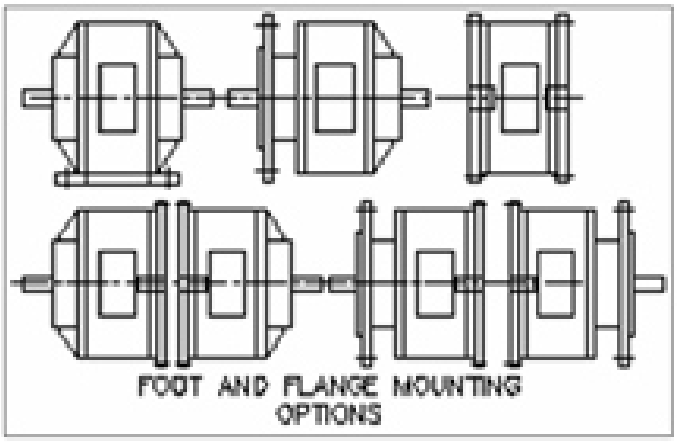
WORKING

When D.C. Power is supplied to Clutch coil, rotor attracts armature assembly, thus transmitting torque from drive connected to input shaft via clutch to load connected through output shaft. On withdrawal of current from clutch, relay contactor or some suitable circuit which is used, automatically diverts the current to brake coil, thus instantaneously disengaging drive and simultaneously stopping output shaft connected to load via brake.

VORTEX is able to provide a wide range of possibilities with these modules some of which are shown below:

a) Mounting options:
Flange mounting
Foot mounting

There are several possible options for mounting as can be seen in the diagram below. This gives the designer a much wider option to choose from, so as to suite the design of the final machine.



b) Combination options:

Single-disc clutch and Single-disc brake
Single-disc clutch and Single-disc clutch
Single-disc clutch and Fail-safe brake

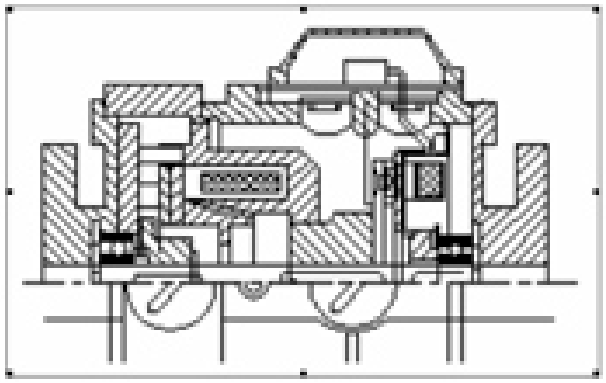
c) Shaft options:

Single shaft
Dual shaft
--- Both shaft provided with the unit
--- Single shaft provided with the unit
--- No shaft provided with the unit

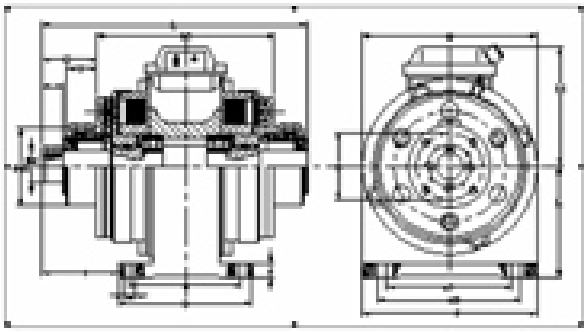
d) Arrangement options:

Totally encased (Std. IP44 but possible to supply with up to IP 64 protection as well)
Open and modular
Totally open

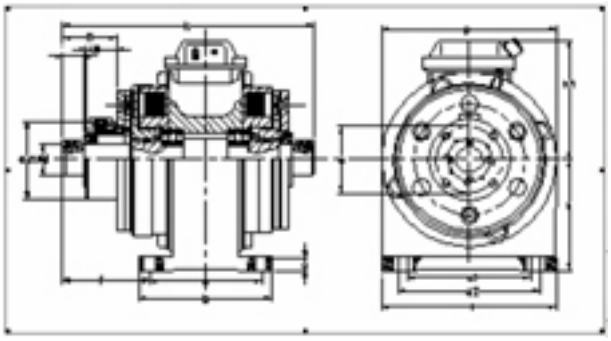
Find below some of the possibilities with our clutch brake combination modules. We can also offer permanent magnet brake as a possible component of these modules if the customer application might demand it. These are just few possibilities; hence please do make it a point to get in touch with our design team to get the best solution for your application and also to have up-to-date information on variants added to our product portfolio over a period of time



Flange mounting; Single-disc clutch and Fail-safe brake; Dual-shaft, Totally enclosed



Foot mounting; Single-disc clutch and Single-disc clutch; Single-shaft; Open and modular



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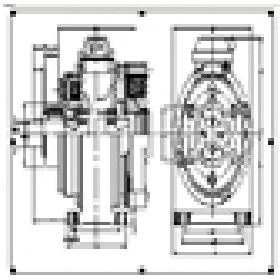
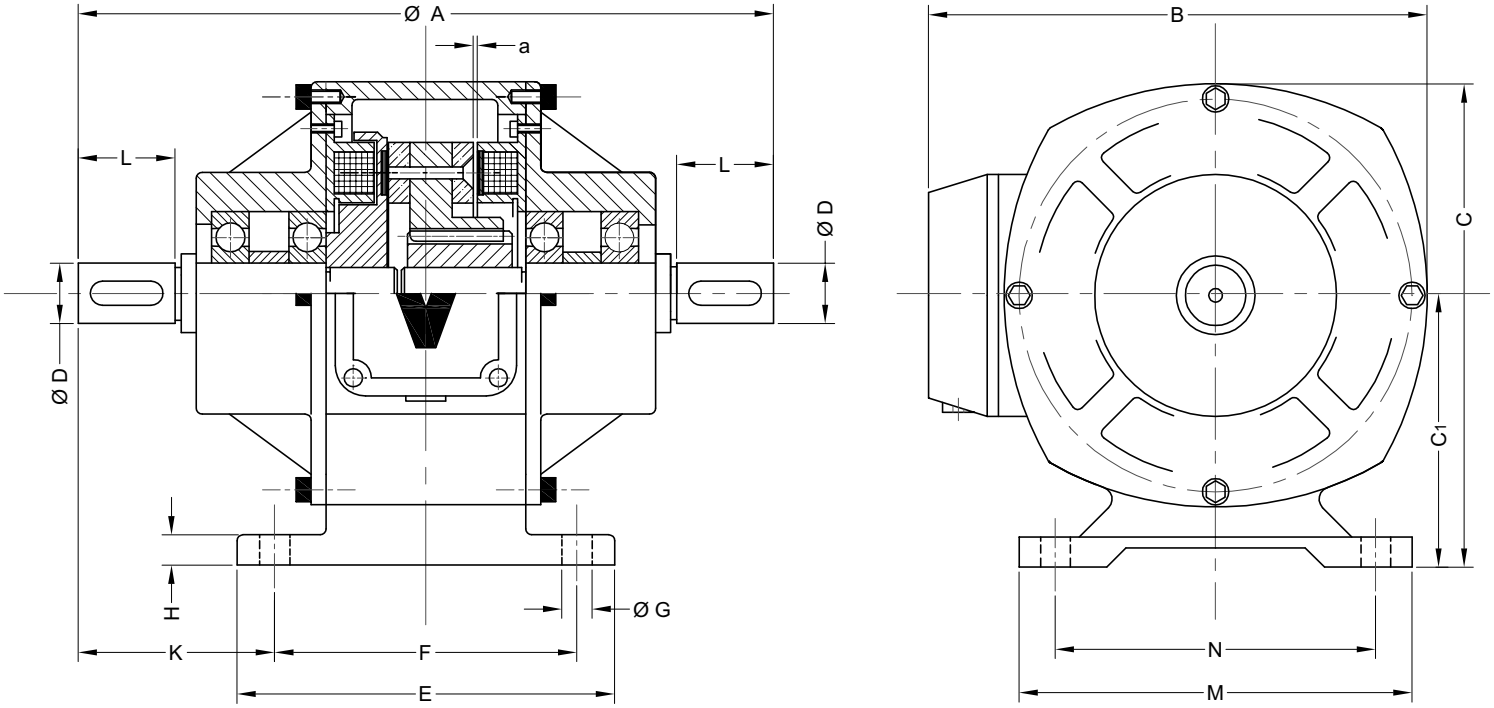


EKA SERIES



SIZE	01	02	03	06	10	20	40
TORQUE (Nm)	8	12	25	50	100	240	480
MAX SPEED(rpm)	7000	6000	5000	4000	3000	3000	2000
POWER (w)clutch	15	21	29	36	50	69	70
POWER (w)brake	11	16	21	27	37	45	85
A	129	150	172	200	223	250	268
B	153	172	206	231	284	330	402
C	123.5	141	177	200	258.5	308	378
C_1	63	71	90	100	132	160	200
ØD	11	14	19	24	28	32	42
E	100	115	130	160	200	200	225
F	80	95	100	130	160	165	185
ØG	7	7	10	12	14	20	18
H	12	12	15	15	15	20	25
K	55	58	87	99	110.5	-	-
L	23	30	40	50	60	80	80
M	110	130	170	185	220	280	325
N	90	105	140	150	175	230	270
a	0.2	0.2	0.2	0.3	0.3	0.5	0.5

Note:
a) Standard voltage is 24 V.DC, 96 V.DC &190 V.DC also available on demand. Other voltages possible on customer request
b) Values of power consumption aer specified at 20°C
c) *ØD & L are available in various options. For special demand apart from specification, please contact our design team
d) Torque values specified are the rated dynamic torque, both for the clutch as well as brake for corresponding sizes
e) Keyways are to DIN 6885 and IS:2048

Vortex Engineering Works

India's Foremost Manufacturers of full range of Long Life Clutches & Brakes.

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