

Electromagnetic Clutch and Brake Combinations Series EM/EMER/EP



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Clutch / Brake Combinations

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Customised Models

More than 60% of today's production is customized to meet specific client demands. If we cannot fulfil your requirements in any way with our standard product, such as bore size, improved IP ratings, quiet brakes, mounting configurations, more torque ... call us!

CE DECLARATION OF CE CONFORMITY AND INCORPORATION

WE: WARNER ELECTRIC EUROPE S.A.S.
7, rue Champfleür, BP 20095, F-49182 St Barthélemy d'Anjou Cedex

declare under our sole responsibility that all products in this catalogue are exclusively designed for incorporation into a machine or to be assembled with other machines to create a machine. The operation of the product is submitted to the conformity of the complete equipment, following the provisions of the machinery directive 89/392/EEC and if electric to the EMC directive 89/336/EEC. The conformity of the electric units to the Low Voltage directive 73/23/EEC is supported by the full respect of the following standards: NFC 79300 and VDE 0580/8.65

Clutches and Brakes Sizing and Selection

The sizing of a Warner Electric clutch or brake depends on various factors. The most common of these factors are shown below in chronological order:

- Transmissible torque: In Nm
- Energy source: Electric, Pneumatic, Hydraulic, or Mechanical
- Actuation mode: Static or Rotating
- Operational environment: Oil, Dry or Mixed
- Heat dissipation: Duty Cycle, Inertia, Speed, etc.
- Orientation of mounting: Horizontal, Vertical, Inclined

The majority of applications can be computed using the formulas and calculation methods given below. For special cases we recommend that you contact the factory.

Transmissible Torque

Calculation of the torque provides a first approximation of the size of Warner Electric device required. The various transmissible torque's are:

Static Torque

The maximum transmissible torque when components to be coupled are in synchronism (zero relative speed).

Dynamic Torque

This is the torque developed by a clutch or brake during acceleration or deceleration until zero relative speed between the driving and driven component is achieved. This torque is a variable, as a function of the rotational speed, the friction factor, the type of friction material used, the operating ambient and the acceleration or deceleration time required to obtain the desired rotational speed.

Residual Torque

Normally applies for multi-disc devices only. This torque results from the friction between internal and external discs in a non-energized device.

Nominal Torque

The nominal torque of a power source can be calculated utilizing the following formula:

$$M_n = 9550 \cdot P / n$$

where:

- M_n = required torque in Nm
- P = power in kW
- n = speed in min^{-1}

Calculation for Clutch Torque

In case the nominal torque is unknown, it is recommended to add a safety factor K as a function of the type of drive source and the coupling mode: single disc, multi-disc or tooth. This results in formula:

$$M_n = (9550 \cdot P / n) \cdot K$$

For quick selection based on drive power use $K =$:

- 2,5 - 3 for electric motors
- 4 - 5 for Diesel engines
- 5 - 6 for compressors

Method to determine the transmission torque for a Warner Electric clutch or brake. This method enables you to proceed on the basis of the machine characteristics and to accurately define the type of product most suitable for the application.

1) Calculate the load torque

This is the torque of the load and the friction of the mechanism, which the clutch has to overcome before rotation of the driven part is obtained. The value is basically equal to the tangential force exercised on a lever arm.

$$M_l = F \cdot R \cdot n_2 / n_1$$

where:

- M_l = static source torque in Nm
- F = force in N
- R = radius in m
- n_1 = speed of the clutch or brake shaft in min^{-1}
- n_2 = speed of the mechanism's shaft in min^{-1}

2) Calculate the moment of inertia

The moment of inertia represents the mass to be brought to speed or to stop until synchronism between the drive shaft and driven shaft has been obtained. Consequently this is directly related to the inertia reflected on the clutch shaft. Rotational and linear inertia's are calculated utilizing following formulas:

Rotational Inertia

Solid cylinder

$$J = 1/2 \cdot m \cdot R^2$$

Hollow cylinder

$$J = 1/2 \cdot m \cdot (R^2 + r^2)$$

where:

- J = in kgm^2
- m = mass in kg
- R = outer radius in m
- r = inner radius in m

Next the total of the inertia's need to be referred to the shaft of the clutch as a function of the square of the speed ratios.

$$J_{\text{total}} = J_1 + J_2 \left(\frac{n_2}{n_1} \right)^2 + J_3 \left(\frac{n_3}{n_1} \right)^2$$

where:

- J_{total} = Total inertia in kgm^2
- n_1 = speed of drive shaft in min^{-1}
- n_2 = speed of intermediate shaft in min^{-1}
- n_3 = speed of driven shaft in min^{-1}
- J_1 = inertia of drive shaft in kgm^2
- J_2 = inertia of intermediate shaft in kgm^2
- J_3 = inertia of driven shaft in kgm^2

Linear Inertia

$$J = 91 \cdot m \cdot v^2 / n^2$$

where:

- J = inertia in kgm^2
- m = mass in kg
- v = speed in m/s
- n = rotational speed in min^{-1}

Clutches and Brakes Size and Selection

Total Inertia

This is the sum of all rotational and reflected inertia's (including the inertia of the clutch or brake parts).

3) Time to accelerate or decelerate

$$M_d = (J_{total} \cdot n) / (9,55 \cdot t)$$

where:

M_d = acceleration/deceleration torque in Nm

J_{total} = total inertia in kgm^2

n = speed of clutch or brake shaft in min^{-1}

t = acceleration / deceleration time required in s

4) Time to accelerate or decelerate

$$M_{total} = M_d \pm M_i$$

(except lifting, for this kind of application, please contact us)

where :

M_{total} = in Nm

M_i = static torque in Nm

M_d = acceleration/deceleration torque in Nm

The nominal clutch or brake's torque has to be always bigger than the torque calculated with this method.

5) acceleration or deceleration real time

$$t = (J_{total} \cdot n) / (9,55 \cdot (M_n \pm M_i))$$

where:

t = in s

J_{total} = total inertia in kgm^2

n = speed of clutch or brake shaft in min^{-1}

M_n = nominal torque of the chosen clutch or brake in Nm

M_i = static torque in Nm (- for a clutch, + for a brake)

Energizing Modes

The Warner Electric product line of clutches and brakes contains devices energized:

- Electromagnetically
- Hydraulically
- Pneumatically
- Mechanically

They can be activated by:

- Applying power or pressure; = the friction surfaces are compressed when the force is applied.
- Absence of power or pressure; = the friction surfaces are compressed by spring force which makes these products suitable for use as security devices.

The choice is also determined by the time of use in the rotating or stop position.

Engagement

When a speed difference between the drive and the driven axis is present, only the use of single or multi-disc clutches or brakes is permitted. With zero speed difference or engagement at standstill, the use of a tooth clutch or brake becomes possible.

Usually toothed devices have smaller diameters D than disc devices of the same ratings. Also they are normally activated by applying power. To establish the torque rating of a tooth device one should understand that

under no condition can they withstand loads higher than specified in their data tables. (contrary to a friction clutch, the tooth clutch can never slip). Therefore one must know:

- The maximum peak torque produced by the drive system (watch out for accel/decelerations and inertia functions).
- The presence of shock and vibration in the drive system

Since in many cases it is difficult to know these elements, for devices engaged by power on, a safety factor $K = 3$ should be applied. For lifting motion, use of a tooth device is forbidden. For friction based devices, the torque ratings listed in our tables are based on "run in" conditions. In new conditions the transmissible torque may be below 50% of their nominal value. Nominal ratings are obtained after several operations with a differential speed above 1m/s. In order to obtain a high positioning precision and rapid acceleration a "run in" operation before use is recommended. In such applications the use of a Warner Electric power supply with boost current will help to reduce the engage and disengage times.

Operating Conditions

Lubricated - For applications with high energy per cycle, we recommend the use of a multi disc device in lubricated environment. This will keep the surface wear low and particularly the lifetime of the friction surface will be increased. The lubricant used should have a viscosity below 40 centistokes at 50°C without a high-pressure additive. If possible do not submerge the devices.

Dry - Recommended operation temperature -25°C to +40°C. The functional friction materials used in dry environments, generally steel/organic combinations, have a higher friction factor than those used in lubricated environments. This results in a higher level of wear as a function of the energy per cycle. As a consequence it is important to correctly select the product as a function of the operation parameters and heat dissipation capacity. Underrating will result in higher wear as well as deformation of the friction materials.

Mixed - For use in mixed environments a protection against grease and dirt particles should be taken into account.

Heat Dissipation

During clutching or braking, the mechanical energy is through friction transformed into heat. This lost energy needs to be absorbed by the clutch or brake without causing damage. In addition it affects its lifetime. Use the following formulae to calculate the heat dissipation:

Clutch or Brake

$$W = (J_{total} \cdot n^2 / 182,5) \cdot (M_n / (M_n \pm M_i))$$

where:

W = Work in Joules

J_{total} = Total inertia in kgm^2

M_n = nominal torque of the chosen clutch or brake in Nm

Clutches and Brakes Sizing and Selection

- M_s = static torque for clutch in Nm
- + M_s = static torque for brake in Nm
- n = clutch or brake speed in min^{-1}

For vertical motion from top to bottom + and - are reversed

Torque limiter

$$W = M_d \cdot n \cdot t / 9,55$$

where:

- W = in Joules
- M_d = slip torque in Nm
- n = speed in min^{-1}
- t = slipping time in seconds

Using the results obtained, verify the heat dissipation using the diagrams shown with each product to see if the product selected meets this requirement.

EM VAR 01 | EMER VAR 01

Electro-Magnetic Single Disc Clutch & Brake Combination

Characteristics

- Electrically operated 24 VDC
- Single friction face
- Clutch activated by power on
- Brake activated by power on = **EM**
Brake activated by power off = **EMER**
- Shafts at both sides
- Standard with lead termination or connector as option

Utilisation

- Coupling of a pulley or a shaft

Particularities

- For dry use
- Input and output with flange M1 or cover

Adjustments

- No wear compensation required

Maintenance Manual

- SM 305

IEC Mounting Flanges

Permitted combinations and dimensions

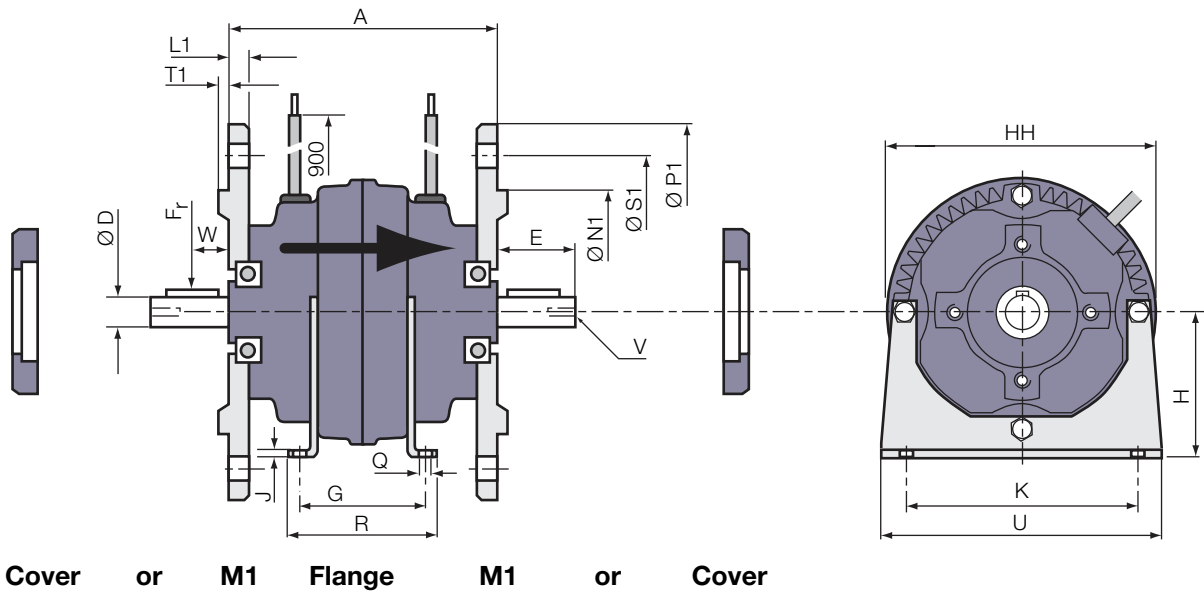
Selection and Heat Dissipation Curves

See page 14

| Size | EM2 | EMER2 | EM3 | EMER3 | EM4 | EMER4 | EM5 | EMER5 | EM6 | EMER6 |
|------------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| Flange M1 | 115 | X | X | – | – | – | – | – | – | – |
| | 130 | X | X | X | X | X | X | – | – | – |
| | 165 | – | – | X | X | X | X | X | – | – |
| | 215 | – | – | – | – | – | – | X | X | X |
| | 265 | – | – | – | – | – | – | – | X | X |
| Cover | X | X | X | X | X | X | X | X | X | X |

| Size with | 115 EM2 EMER2 | 130 EM2 EMER2 | 130 EM3 EMER3 | 130 EM4 EMER4 | 165 EM3 EMER3 | 165 EM4 EMER4 | 165 EM5 EMER5 | 215 EM5 EMER5 | 215 EM6 EMER6 | 265 EM6 EMER6 |
|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| L1 | 10 | 10 | 12 | 14 | 12 | 14 | 14 | 17 | 14 | 17 |
| N1 | h8 | 95 | 110 | 110 | 110 | 130 | 130 | 180 | 180 | 230 |
| Flange M1 | P1 | 140 | 160 | 160 | 160 | 200 | 200 | 250 | 250 | 300 |
| S1 | 115 4x Ø9 | 130 4x Ø9 | 130 4x Ø9 | 130 4x Ø9 | 165 4x Ø11 | 165 4x Ø11 | 165 4x Ø11 | 215 4x Ø14 | 215 4x Ø14 | 265 4x Ø14 |
| T1 | 3 | 3,5 | 3,5 | 3,5 | 3,5 | 3,5 | 3,5 | 4 | 4 | 4 |

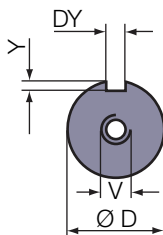
Electro-Magnetic Single Disc Clutch & Brake Combination



| Sizes | | EM2 | EMER2 | EM3 | EMER3 | EM4 | EMER4 | EM5 | EMER5 | EM6 | EMER6 |
|---------------------------|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Nom. Torque | [Nm] | 7.5 | 4.5 | 15 | 9 | 25 | 14 | 50 | 28 | 130 | 75 |
| Max. Speed | [min ⁻¹] | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 |
| Power | P20 [24V] [W] | 13 | 12 | 11 | 12 | 26 | 20 | 20 | 24 | 30 | 36 |
| | A | 136 | 147 | 144 | 155 | 160 | 171 | 170 | 181 | 230 | 241 |
| | D ^{J6} x E | 11x23 14x30 | 11x23 14x30 | 14x30 19x40 | 14x30 19x40 | 19x40 24x50 | 19x40 24x50 | 24x50 28x60 | 24x50 28x60 | 28x60 38x80 | 28x60 38x80 |
| | G | 90 | 101 | 105 | 116 | 117 | 128 | 124 | 135 | 160 | 171 |
| | H | 63 | 63 | 71 | 71 | 90 | 90 | 100 | 100 | 132 | 132 |
| | HH | 112 | 112 | 142 | 142 | 180 | 180 | 200 | 200 | 240 | 240 |
| | J | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 |
| | K | 100 | 100 | 112 | 112 | 140 | 140 | 160 | 160 | 216 | 216 |
| | Q | 7 | 7 | 9 | 9 | 10 | 10 | 12 | 12 | 12 | 12 |
| | R | 109 | 120 | 120 | 131 | 136 | 147 | 140 | 151 | 186 | 197 |
| | U | 116 | 116 | 144 | 144 | 170 | 170 | 200 | 200 | 264 | 264 |
| | W | 11 | 11 | 20 | 20 | 20 | 20 | 30 | 30 | 35 | 35 |
| | X | 100 | 100 | 110 | 110 | 122 | 122 | - | - | - | - |
| Inertia | [kgm ²] | 0,00011 | 0,00011 | 0,0003 | 0,0003 | 0,0008 | 0,0008 | 0,0018 | 0,0018 | 0,0085 | 0,0085 |
| Coil Build up time | tb [s] | 0,025 | 0,030 | 0,030 | 0,040 | 0,052 | 0,040 | 0,070 | 0,080 | 0,11 | 0,09 |
| Coil Delay Time | td [s] | 0,004 | 0,003 | 0,005 | 0,003 | 0,006 | 0,005 | 0,0012 | 0,008 | 0,02 | 0,01 |
| Radial Load | Fr [N] | 480 | 480 | 900 | 900 | 1450 | 1450 | 1850 | 1850 | 3000 | 3000 |
| Weight | [kg] | 2,9 | 2,9 | 4,0 | 4,0 | 7,0 | 7,0 | 11 | 11 | 23 | 23 |
| Connection | | Cable | | | | | | | | | |

Keyway BS 4235
DIN 6885
NF E 22-175

Option Connector



| | | | | | | |
|--------|---------|---------|---------|---------|----------|----------|
| ØD | 11 | 14 | 19 | 24 | 28 | 38 |
| DY x Y | 4 x 2,5 | 5 x 3 | 6 x 3,5 | 8 x 4 | 8 x 4 | 10 x 5 |
| V | M4 x 10 | M5 x 12 | M6 x 16 | M8 x 19 | M10 x 22 | M12 x 28 |

EM VAR 02 | EMER VAR 02

Electro-Magnetic Single Disc Clutch & Brake Combination

Characteristics

- Electrically operated 24 VDC
- Single friction face
- Clutch activated by power on
- Brake activated by power on = **EM**
- Brake activated by power off = **EMER**
- Shaft on brake side - hollow shaft on clutch side
- Standard with lead termination or connector as option

Adjustments

- No wear compensation required

Maintenance Manual

- SM 305

IEC Mounting Flanges

Permitted combinations and dimensions

Utilisation

- Coupling of a pulley or a shaft

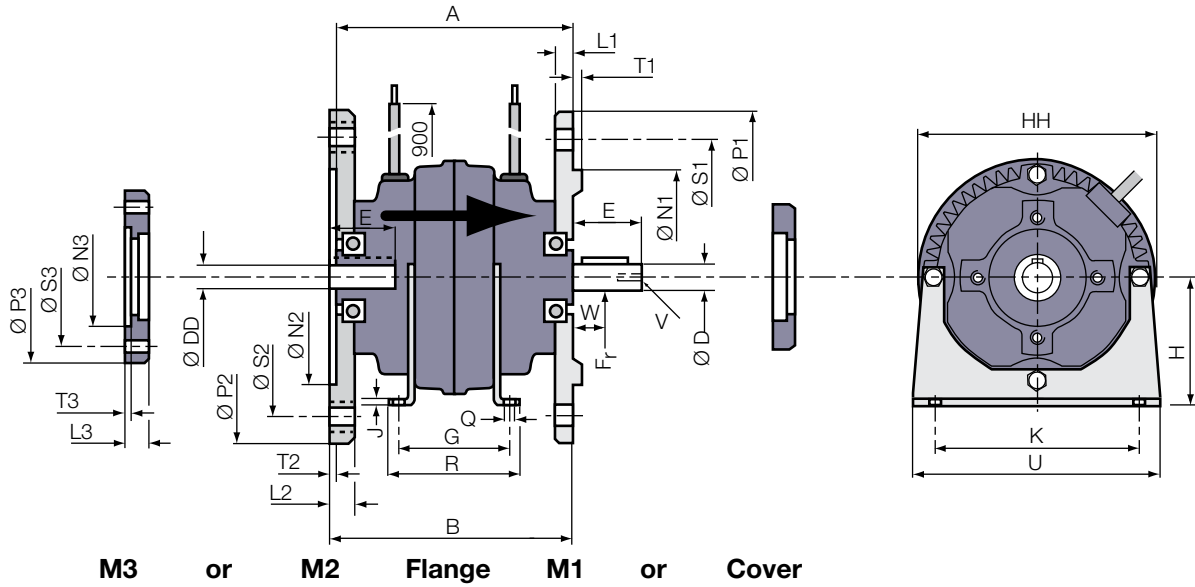
Particularities

- For dry use
- Input with flange M2 or M3, output with flange M1 or cover

| Size | EM2 | EMER2 | EM3 | EMER3 | EM4 | EMER4 | EM5 | EMER5 | EM6 | EMER6 |
|-----------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| Flange M1 | 115 | X | X | - | - | - | - | - | - | - |
| | 130 | X | X | X | X | X | X | - | - | - |
| | 165 | - | - | X | X | X | X | X | - | - |
| | 215 | - | - | - | - | - | X | X | X | X |
| | 265 | - | - | - | - | - | - | - | X | X |
| Flange M2 | 115 | X | X | - | - | - | - | - | - | - |
| | 130 | X | X | X | X | X | X | - | - | - |
| | 165 | - | - | X | X | X | X | X | - | - |
| | 215 | - | - | - | - | - | X | X | X | X |
| | 265 | - | - | - | - | - | - | - | X | X |
| Flange M3 | 75 | X | X | X | X | - | - | - | - | - |
| | 85 | X | X | X | X | - | - | - | - | - |
| | 100 | - | - | X | X | X | X | - | - | - |
| | 115 | - | - | - | - | X | X | X | X | - |
| | 130 | - | - | - | - | - | - | X | X | - |
| | 165 | - | - | - | - | - | - | - | X | X |
| | 215 | - | - | - | - | - | - | - | X | X |
| Cover | X | X | X | X | X | X | X | X | X | X |

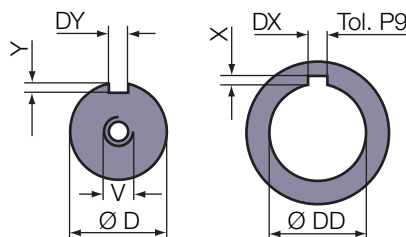
| Size with | 75 EM2 | 75 EM3 | 85 EM2 | 85 EM3 | 100 EM3 | 100 EM4 | 115 EM2 | 115 EM4 | 115 EM5 | 130 EM2 | 130 EM3 | 130 EM4 | 130 EM5 | 165 EM3 | 165 EM4 | 165 EM5 | 165 EM6 | 215 EM5 | 215 EM6 | 265 EM6 | |
|-----------|-------------|---------|---------|---------|---------|----------|----------|---------|----------|----------|----------|----------|---------|-----------|-----------|-----------|---------|-----------|-----------|-----------|-----|
| Flange M1 | L1 | - | - | - | - | - | 10 | - | - | 10 | 12 | 14 | - | 14 | 12 | 14 | - | 17 | 14 | 17 | |
| | N1 h8 | - | - | - | - | - | 95 | - | - | 110 | 110 | 110 | - | 130 | 130 | 130 | - | 180 | 180 | 230 | |
| | P1 | - | - | - | - | - | 140 | - | - | 160 | 160 | 160 | - | 200 | 200 | 200 | - | 250 | 300 | 300 | |
| | S1 | - | - | - | - | - | 115 4x09 | - | - | 130 4x09 | 130 4x09 | 130 4x09 | - | 165 4x011 | 165 4x011 | 165 4x011 | - | 215 4x014 | 215 4x014 | 265 4x014 | |
| | T1 | - | - | - | - | - | 3 | - | - | 3,5 | 3,5 | 3,5 | - | 3,5 | 3,5 | 3,5 | - | 4 | 4 | 4 | |
| Flange M2 | L2 | - | - | - | - | - | 14 | - | - | - | 14 | 14 | - | 15,5 | 18 | 18 | - | 18 | 14 | 17 | |
| | N2+0,3/+0,2 | - | - | - | - | - | 95 | - | - | - | 110 | 110 | - | 130 | 130 | 130 | - | 180 | 180 | 230 | |
| | P2 | - | - | - | - | - | 140 | - | - | - | 160 | 160 | - | 200 | 200 | 200 | - | 250 | 300 | 300 | |
| | S2 | - | - | - | - | - | 115 4xM8 | - | - | - | 130 4xM8 | 130 4xM8 | - | 165 4xM10 | 165 4xM10 | 165 4xM10 | - | 215 4xM12 | 215 4xM12 | 265 4xM12 | |
| | T2 | - | - | - | - | - | 3,5 | - | - | - | 4 | 4 | - | 4 | 4 | 4 | - | 4,5 | 4,5 | 4,5 | |
| Flange M3 | L3 | 15 | 15 | 15 | 15 | 16 | 16 | - | 15 | 15 | - | - | - | 16 | - | - | - | 22 | - | 22 | |
| | N3+0,3/+0,2 | 60 | 60 | 70 | 70 | 80 | 80 | - | 95 | 95 | - | - | - | 110 | - | - | - | 130 | - | 180 | |
| | P3 | 90 | 90 | 105 | 105 | 120 | 120 | - | 140 | 140 | - | - | - | 160 | - | - | - | 200 | - | 250 | |
| | S3 | 75 4x06 | 75 4x06 | 85 4x06 | 85 4x07 | 100 4x07 | 100 4x07 | - | 115 4x09 | 115 4x09 | - | - | - | 130 4x09 | - | - | - | 165 4x011 | - | 215 4x014 | 265 |
| | T3 | 3 | 3 | 3 | 3 | 3 | 3 | - | 3,5 | 3,5 | - | - | - | 4 | - | - | - | 4 | - | 4,5 | |

Electro-Magnetic Single Disc Clutch & Brake Combination



| Sizes | | EM2 | EMER2 | EM3 | EMER3 | EM4 | EMER4 | EM5 | EMER5 | EM6 | EMER6 | |
|---------------------------|------------------------------------------|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Nom. Torque | [Nm] | 7.5 | 4.5 | 15 | 9 | 25 | 14 | 50 | 28 | 130 | 75 | |
| Max. Speed | [min ⁻¹] | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | |
| Power | P20 [24V] | [W] | 13 | 12 | 11 | 12 | 26 | 20 | 20 | 30 | 36 | |
| | A | | 136 | 147 | 144 | 155 | 160 | 171 | 171 | 182 | 230,5 | 241,5 |
| | B | | 140 | 151 | 148 | 159 | 164 | 175 | 175 | 186 | 235 | 246 |
| | D ¹⁶ xE & DD ⁶⁷ xE | | 11x23 14x30 | 11x23 14x30 | 14x30 19x40 | 14x30 19x40 | 19x40 24x50 | 19x40 24x50 | 24x50 28x60 | 24x50 28x60 | 28x60 38x80 | 28x60 38x80 |
| | G | | 90 | 101 | 105 | 116 | 117 | 128 | 124 | 135 | 160 | 171 |
| | H | | 63 | 63 | 71 | 71 | 90 | 90 | 100 | 100 | 132 | 132 |
| | HH | | 112 | 112 | 142 | 142 | 180 | 180 | 200 | 200 | 240 | 240 |
| | J | | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 |
| | K | | 100 | 100 | 112 | 112 | 140 | 140 | 160 | 160 | 216 | 216 |
| | Q | | 7 | 7 | 9 | 9 | 10 | 10 | 12 | 12 | 12 | 12 |
| | R | | 109 | 120 | 120 | 131 | 136 | 147 | 140 | 151 | 186 | 197 |
| | U | | 116 | 116 | 144 | 144 | 170 | 170 | 200 | 200 | 264 | 264 |
| | W | | 11 | 11 | 20 | 20 | 20 | 20 | 30 | 30 | 30 | 30 |
| | X | | 100 | 100 | 110 | 110 | 122 | 122 | - | - | - | - |
| Inertia | [kgm ²] | | 0,00011 | 0,00011 | 0,0003 | 0,0003 | 0,0008 | 0,0008 | 0,0018 | 0,0018 | 0,0085 | 0,0085 |
| Coil Build up time | tb [s] | | 0,025 | 0,030 | 0,030 | 0,040 | 0,052 | 0,040 | 0,070 | 0,080 | 0,11 | 0,09 |
| Coil Delay Time | td [s] | | 0,004 | 0,003 | 0,005 | 0,003 | 0,006 | 0,005 | 0,0012 | 0,008 | 0,02 | 0,01 |
| Radial Load | Fr [N] | | 480 | 480 | 900 | 900 | 1450 | 1450 | 1850 | 1850 | 3000 | 3000 |
| Weight | [kg] | | 2,9 | 2,9 | 4,0 | 4,0 | 7,0 | 7,0 | 11 | 11 | 23 | 23 |
| Connection | | | Cable | | | | | | | | | |

Keyway BS 4235
DIN 6885
NF E 22-175



Option Connector



| | | | | | | |
|---------|---------|---------|---------|---------|----------|----------|
| ØD, ØDD | 11 | 14 | 19 | 24 | 28 | 38 |
| DX x X | 4 x 1,8 | 5 x 2,3 | 6 x 2,8 | 8 x 3,3 | 8 x 3,3 | 10 x 3,3 |
| DY x Y | 4 x 2,5 | 5 x 3 | 6 x 3,5 | 8 x 4 | 8 x 4 | 10 x 5 |
| V | M4 x 10 | M5 x 12 | M6 x 16 | M8 x 19 | M10 x 22 | M12 x 28 |

EM VAR 03 | EMER VAR 03

Electro-Magnetic Single Disc Clutch & Brake Combination

Characteristics

- Electrically operated 24 VDC
- Single friction face
- Clutch activated by power on
- Brake activated by power on = **EM**
- Brake activated by power off = **EMER**
- Shafts at both sides
- Standard with lead termination or connector as option

Power Supply

- For EM models:
CBC 400, CBC 450,
CBC 500, CBC 550,
CBC 700
- For EMER models:
CBC 500, CBC 550

Selection and Heat Dissipation Curves

See page 14

Utilisation

- Coupling of a pulley or a shaft

Particularities

- For dry use
- Input with flange M2 or M3, output with flange M2 or M3

Adjustments

- No wear compensation required

Maintenance Manual

- SM 305

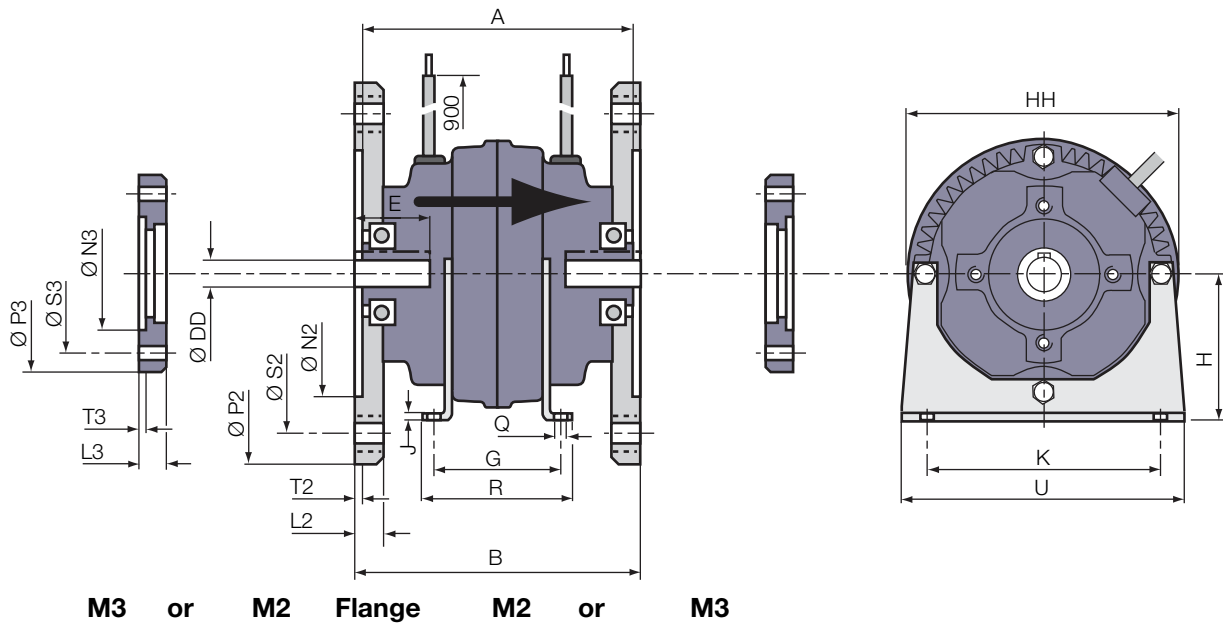
IEC Mounting Flanges

Permitted combinations and dimensions

| Size | EM2 | EMER2 | EM3 | EMER3 | EM4 | EMER4 | EM5 | EMER5 | EM6 | EMER6 |
|-----------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| Flange M1 | 115 | X | X | - | - | - | - | - | - | - |
| | 130 | X | X | X | X | X | X | - | - | - |
| | 165 | - | - | X | X | X | X | X | - | - |
| | 215 | - | - | - | - | - | - | X | X | X |
| | 265 | - | - | - | - | - | - | - | X | X |
| Flange M2 | 75 | X | X | X | X | - | - | - | - | - |
| | 85 | X | X | X | X | - | - | - | - | - |
| | 100 | - | - | X | X | X | X | - | - | - |
| | 115 | - | - | - | - | X | X | X | X | - |
| | 130 | - | - | - | - | - | - | X | X | - |
| | 165 | - | - | - | - | - | - | - | - | X |
| 215 | - | - | - | - | - | - | - | - | X | X |
| Cover | X | X | X | X | X | X | X | X | X | X |

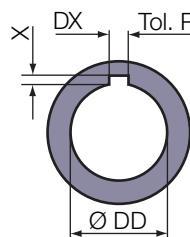
| Size with | 75 EM2 | 75 EM3 | 85 EM2 | 85 EM3 | 100 EM3 | 100 EM4 | 115 EM2 | 115 EM4 | 115 EM5 | 130 EM2 | 130 EM3 | 130 EM4 | 130 EM5 | 165 EM3 | 165 EM4 | 165 EM5 | 165 EM6 | 215 EM5 | 215 EM6 | 265 EM6 | |
|-----------|-------------|---------|---------|---------|---------|----------|----------|---------|----------|----------|----------|----------|---------|-----------|-----------|-----------|---------|-----------|-----------|-----------|---|
| Flange M2 | L2 | - | - | - | - | - | 14 | - | - | - | 14 | 14 | - | 15,5 | 18 | 18 | - | 18 | 14 | 17 | |
| | N2+0,3/+0,2 | - | - | - | - | - | 95 | - | - | - | 110 | 110 | - | 130 | 130 | 130 | - | 180 | 180 | 230 | |
| | P2 | - | - | - | - | - | 140 | - | - | - | 160 | 160 | - | 200 | 200 | 200 | - | 250 | 300 | 300 | |
| | S1 | - | - | - | - | - | 115 4xM8 | - | - | - | 130 4xM8 | 130 4xM8 | - | 165 4xM10 | 165 4xM10 | 165 4xM10 | - | 215 4xM12 | 215 4xM12 | 265 4xM12 | |
| | T2 | - | - | - | - | - | 3,5 | - | - | - | 4 | 4 | - | 4 | 4 | 4 | - | 4,5 | 4,5 | 4,5 | |
| Flange M3 | L3 | 15 | 15 | 15 | 15 | 16 | 16 | - | 15 | 15 | - | - | - | 16 | - | - | - | 22 | - | 22 | - |
| | N3+0,3/+0,2 | 60 | 60 | 70 | 70 | 80 | 80 | - | 95 | 95 | - | - | - | 110 | - | - | - | 130 | - | 180 | - |
| | P3 | 90 | 90 | 105 | 105 | 120 | 120 | - | 140 | 140 | - | - | - | 160 | - | - | - | 200 | - | 250 | - |
| | S3 | 75 4x06 | 75 4x06 | 85 4x07 | 85 4x07 | 100 4x07 | 100 4x07 | - | 115 4x09 | 115 4x09 | - | - | - | 130 4x09 | - | - | - | 165 4x011 | - | 215 4x0 | - |
| | T3 | 3 | 3 | 3 | 3 | 3 | 3 | - | 3,5 | 3,5 | - | - | - | 4 | - | - | - | 4 | - | 4,5 | - |

Electro-Magnetic Single Disc Clutch & Brake Combination



| Sizes | | EM2 | EMER2 | EM3 | EMER3 | EM4 | EMER4 | EM5 | EMER5 | EM6 | EMER6 |
|---------------------------|----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Nom. Torque | [Nm] | 7.5 | 4.5 | 15 | 9 | 25 | 14 | 50 | 28 | 130 | 75 |
| Max. Speed | [min ⁻¹] | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 |
| Power | P20 [24V] | [W] | 13 | 12 | 11 | 12 | 26 | 20 | 20 | 30 | 36 |
| | A | 136 | 147 | 144 | 155 | 160 | 171 | 177 | 188 | 231 | 242 |
| | B | 144 | 155 | 152 | 163 | 168 | 179 | 186 | 197 | 240 | 251 |
| | DD ⁶⁷ xE | 11 x 23 14 x 30 | 11 x 23 14 x 30 | 14 x 30 19 x 40 | 14 x 30 19 x 40 | 19 x 40 24 x 50 | 19 x 40 24 x 50 | 24 x 50 28 x 60 | 24 x 50 28 x 60 | 28 x 60 38 x 80 | 28 x 60 38 x 80 |
| | G | 90 | 101 | 105 | 116 | 117 | 128 | 124 | 135 | 160 | 171 |
| | H | 63 | 63 | 71 | 71 | 90 | 90 | 100 | 100 | 132 | 132 |
| | HH | 112 | 112 | 142 | 142 | 180 | 180 | 200 | 200 | 240 | 240 |
| | J | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 |
| | K | 100 | 100 | 112 | 112 | 140 | 140 | 160 | 160 | 216 | 216 |
| | Q | 7 | 7 | 9 | 9 | 10 | 10 | 12 | 12 | 12 | 12 |
| | R | 109 | 120 | 120 | 131 | 136 | 147 | 140 | 151 | 186 | 197 |
| | U | 116 | 116 | 144 | 144 | 170 | 170 | 200 | 200 | 264 | 264 |
| | X | 100 | 100 | 110 | 110 | 122 | 122 | - | - | - | - |
| Inertia | [kgm ²] | 0,00011 | 0,00011 | 0,0003 | 0,0003 | 0,0008 | 0,0008 | 0,0018 | 0,0018 | 0,0085 | 0,0085 |
| Coil Build up time | tb [s] | 0,025 | 0,030 | 0,030 | 0,040 | 0,052 | 0,040 | 0,070 | 0,080 | 0,11 | 0,09 |
| Coil Delay Time | td [s] | 0,004 | 0,003 | 0,005 | 0,003 | 0,006 | 0,005 | 0,012 | 0,008 | 0,02 | 0,01 |
| Weight | [kg] | 2,9 | 2,9 | 4,0 | 4,0 | 7,0 | 7,0 | 11 | 11 | 23 | 23 |
| Connection | | Cable | | | | | | | | | |

Keyway BS 4235
DIN 6885
NF E 22-175



Option Connector



| | | | | | | |
|---------|---------|---------|---------|---------|---------|----------|
| øD, øDD | 11 | 14 | 19 | 24 | 28 | 38 |
| DX x X | 4 x 1,8 | 5 x 2,3 | 6 x 2,8 | 8 x 3,3 | 8 x 3,3 | 10 x 3,3 |

EM VAR 04 | EMER VAR 04

Electro-Magnetic Single Disc Clutch & Brake Combination

Characteristics

- Electrically operated 24 VDC
- Single friction face
- Clutch activated by power on
- Brake activated by power on = **EM**
- Brake activated by power off = **EMER**
- Shaft on clutch side - hollow shaft on brake side
- Standard with lead termination or connector as option

Utilisation

- Coupling of a pulley or a shaft

Particularities

- For dry use
- Input with flange M2 or M3, output with flange M2 or M3

Adjustments

- No wear compensation required

Maintenance Manual

- SM 305

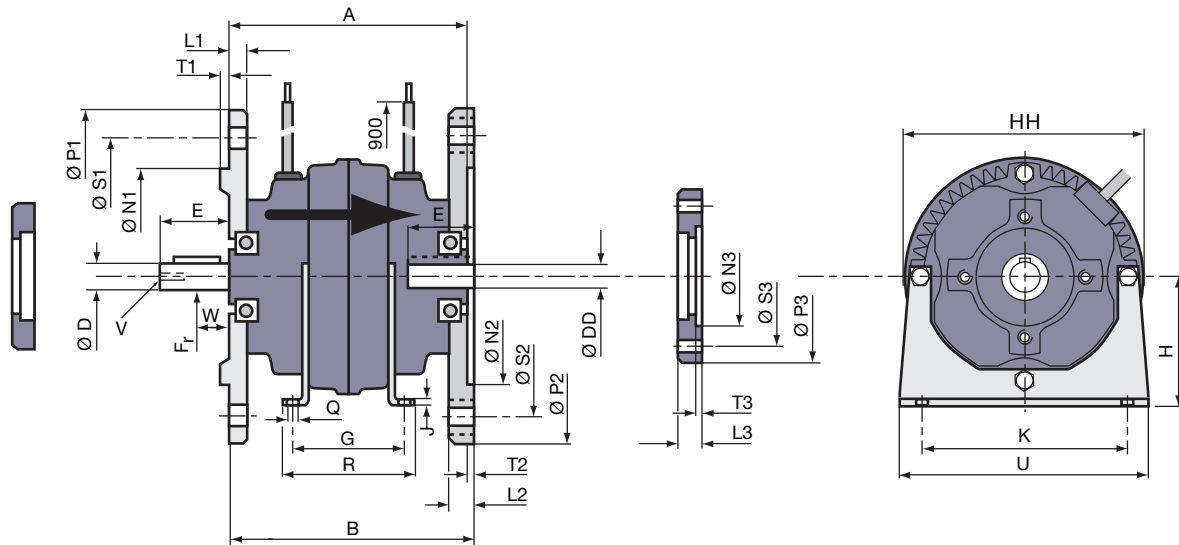
IEC Mounting Flanges

Permitted combinations and dimensions

| Size | EM2 | EMER2 | EM3 | EMER3 | EM4 | EMER4 | EM5 | EMER5 | EM6 | EMER6 |
|-----------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| Flange M1 | 115 | X | X | - | - | - | - | - | - | - |
| | 130 | X | X | X | X | X | X | - | - | - |
| | 165 | - | - | X | X | X | X | X | - | - |
| | 215 | - | - | - | - | - | X | X | X | X |
| | 265 | - | - | - | - | - | - | - | X | X |
| Flange M2 | 115 | X | X | - | - | - | - | - | - | - |
| | 130 | X | X | X | X | X | X | - | - | - |
| | 165 | - | - | X | X | X | X | X | - | - |
| | 215 | - | - | - | - | - | X | X | X | X |
| | 265 | - | - | - | - | - | - | - | X | X |
| Flange M3 | 75 | X | X | X | X | - | - | - | - | - |
| | 85 | X | X | X | X | - | - | - | - | - |
| | 100 | - | - | X | X | X | X | - | - | - |
| | 115 | - | - | - | - | X | X | X | - | - |
| | 130 | - | - | - | - | - | - | X | X | - |
| | 165 | - | - | - | - | - | - | - | X | X |
| | 215 | - | - | - | - | - | - | - | X | X |
| Cover | X | X | X | X | X | X | X | X | X | X |

| Size with | 75 EM2 | 75 EM3 | 85 EM2 | 85 EM3 | 100 EM3 | 100 EM4 | 115 EM2 | 115 EM4 | 115 EM5 | 130 EM2 | 130 EM3 | 130 EM4 | 130 EM5 | 165 EM3 | 165 EM4 | 165 EM5 | 165 EM6 | 215 EM5 | 215 EM6 | 265 EM6 |
|-----------|-------------|------------|------------|------------|------------|-------------|--------------|---------|-------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|
| Flange M1 | L1 | - | - | - | - | - | 10 | - | - | 10 | 12 | 14 | - | 14 | 12 | 14 | - | 17 | 14 | 17 |
| | N1 h8 | - | - | - | - | - | 95 | - | - | 110 | 110 | 110 | - | 130 | 130 | 130 | - | 180 | 180 | 230 |
| | P1 | - | - | - | - | - | 140 | - | - | 160 | 160 | 160 | - | 200 | 200 | 200 | - | 250 | 300 | 300 |
| | S1 | - | - | - | - | - | 115 4x 09 | - | - | 130 4x 09 | 130 4x 09 | 130 4x 09 | - | 165 4x 011 | 165 4x 011 | 165 4x 011 | - | 215 4x 014 | 215 4x 014 | 265 4x 014 |
| | T1 | - | - | - | - | - | 3 | - | - | 3,5 | 3,5 | 3,5 | - | 3,5 | 3,5 | 3,5 | - | 4 | 4 | 4 |
| Flange M2 | L2 | - | - | - | - | - | 14 | - | - | 14 | 14 | - | 15,5 | 18 | 18 | - | 18 | 14 | 17 | |
| | N2+0,3/+0,2 | - | - | - | - | - | 95 | - | - | 110 | 110 | - | 130 | 130 | 130 | - | 180 | 180 | 230 | |
| | P2 | - | - | - | - | - | 140 | - | - | 160 | 160 | - | 200 | 200 | 200 | - | 250 | 300 | 300 | |
| | S2 | - | - | - | - | - | 115 4xM8 | - | - | 130 4xM8 | 130 4xM8 | - | 165 4xM10 | 165 4xM10 | 165 4xM10 | - | 215 4xM12 | 215 4xM12 | 265 4xM12 | |
| | T2 | - | - | - | - | - | 3,5 | - | - | 4 | 4 | - | 4 | 4 | 4 | - | 4,5 | 4,5 | 4,5 | |
| Flange M3 | L3 | 15 | 15 | 15 | 15 | 16 | 16 | - | 15 | 15 | - | - | - | 16 | - | - | - | 22 | - | 22 |
| | N3+0,3/+0,2 | 60 | 60 | 70 | 70 | 80 | 80 | - | 95 | 95 | - | - | - | 110 | - | - | - | 130 | - | 180 |
| | P3 | 90 | 90 | 105 | 105 | 120 | 120 | - | 140 | 140 | - | - | - | 160 | - | - | - | 200 | - | 250 |
| | S3 | 75 4x06 | 75 4x06 | 85 4x06 | 85 4x07 | 100 4x07 | 100 4x07 | - | 115 4x09 | 115 4x09 | - | - | - | 130 4x09 | - | - | - | 165 4x011 | - | 215 4x014 |
| | T3 | 3 | 3 | 3 | 3 | 3 | 3 | - | 3,5 | 3,5 | - | - | - | 4 | - | - | - | 4 | - | 4,5 |

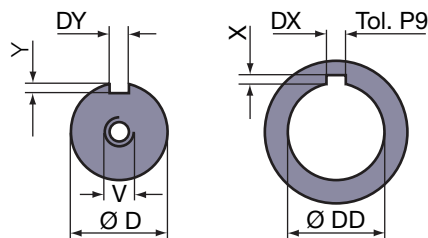
Electro-Magnetic Single Disc Clutch & Brake Combination



Cover or M1 Flange M1 or M3

| Sizes | | EM2 | EMER2 | EM3 | EMER3 | EM4 | EMER4 | EM5 | EMER5 | EM6 | EMER6 |
|---------------------------|------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Nom. Torque | [Nm] | 7.5 | 4.5 | 15 | 9 | 25 | 14 | 50 | 28 | 130 | 75 |
| Max. Speed | [min ⁻¹] | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 | 3600 |
| Power | P20 [24V] [W] | 13 | 12 | 11 | 12 | 26 | 20 | 20 | 24 | 30 | 36 |
| | A | 136 | 147 | 144 | 155 | 160 | 171 | 171 | 182 | 230,5 | 241,5 |
| | B | 140 | 151 | 148 | 159 | 164 | 175 | 175 | 186 | 235 | 246 |
| | D ⁶⁶ xE & DD ⁶⁷ xE | 11x23 14x30 | 11x23 14x30 | 14x30 19x40 | 14x30 19x40 | 19x40 24x50 | 19x40 24x50 | 24x50 28x60 | 24x50 28x60 | 28x60 38x80 | 28x60 38x80 |
| | G | 90 | 101 | 105 | 116 | 117 | 128 | 124 | 135 | 160 | 171 |
| | H | 63 | 63 | 71 | 71 | 90 | 90 | 100 | 100 | 132 | 132 |
| | HH | 112 | 112 | 142 | 142 | 180 | 180 | 200 | 200 | 240 | 240 |
| | J | 3 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 |
| | K | 100 | 100 | 112 | 112 | 140 | 140 | 160 | 160 | 216 | 216 |
| | Q | 7 | 7 | 9 | 9 | 10 | 10 | 12 | 12 | 12 | 12 |
| | R | 109 | 120 | 120 | 131 | 136 | 147 | 140 | 151 | 186 | 197 |
| | U | 116 | 116 | 144 | 144 | 170 | 170 | 200 | 200 | 264 | 264 |
| | W | 11 | 11 | 20 | 20 | 20 | 20 | 30 | 30 | 35 | 35 |
| | X | 100 | 100 | 110 | 110 | 122 | 122 | - | - | - | - |
| Inertia | [kgm ²] | 0,00011 | 0,00011 | 0,0003 | 0,0003 | 0,0008 | 0,0008 | 0,0018 | 0,0018 | 0,0085 | 0,0085 |
| Coil Build up time | tb [s] | 0,025 | 0,030 | 0,030 | 0,040 | 0,052 | 0,040 | 0,070 | 0,080 | 0,11 | 0,09 |
| Coil Delay Time | td [s] | 0,004 | 0,003 | 0,005 | 0,003 | 0,006 | 0,005 | 0,012 | 0,008 | 0,02 | 0,01 |
| Radial Load | Fr [N] | 480 | 480 | 900 | 900 | 1450 | 1450 | 1850 | 1850 | 3000 | 3000 |
| Weight | [kg] | 2,9 | 2,9 | 4,0 | 4,0 | 7,0 | 7,0 | 11 | 11 | 23 | 23 |
| Connection | | Cable | | | | | | | | | |

Keyway BS 4235
DIN 6885
NF E 22-175



Option Connector



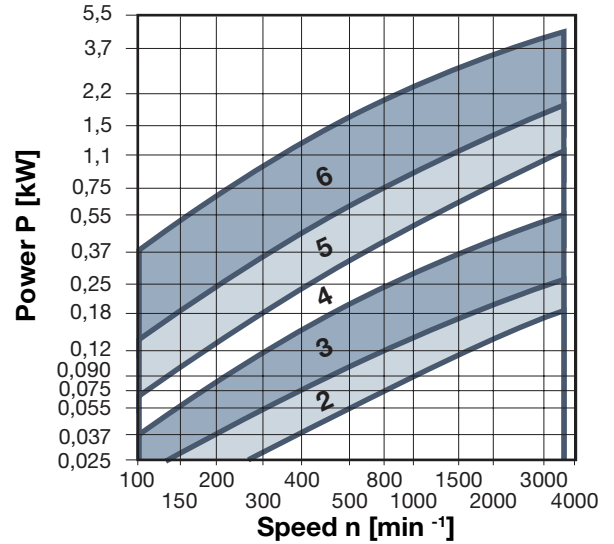
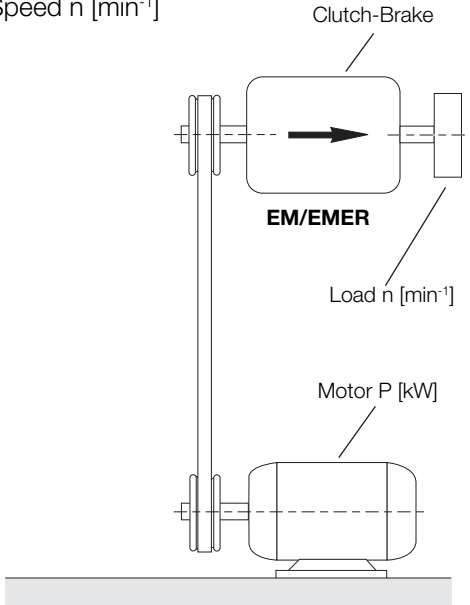
| øD, øDD | 11 | 14 | 19 | 24 | 28 | 38 |
|---------|---------|---------|---------|---------|----------|----------|
| DX x X | 4 x 1,8 | 5 x 2,3 | 6 x 2,8 | 8 x 3,3 | 8 x 3,3 | 10 x 3,3 |
| DY x Y | 4 x 2,5 | 5 x 3 | 6 x 3,5 | 8 x 4 | 8 x 4 | 10 x 5 |
| V | M4 x 10 | M5 x 12 | M6 x 16 | M8 x 19 | M10 x 22 | M12 x 28 |

Electro-Magnetic Single Disc Clutch & Brake Combination

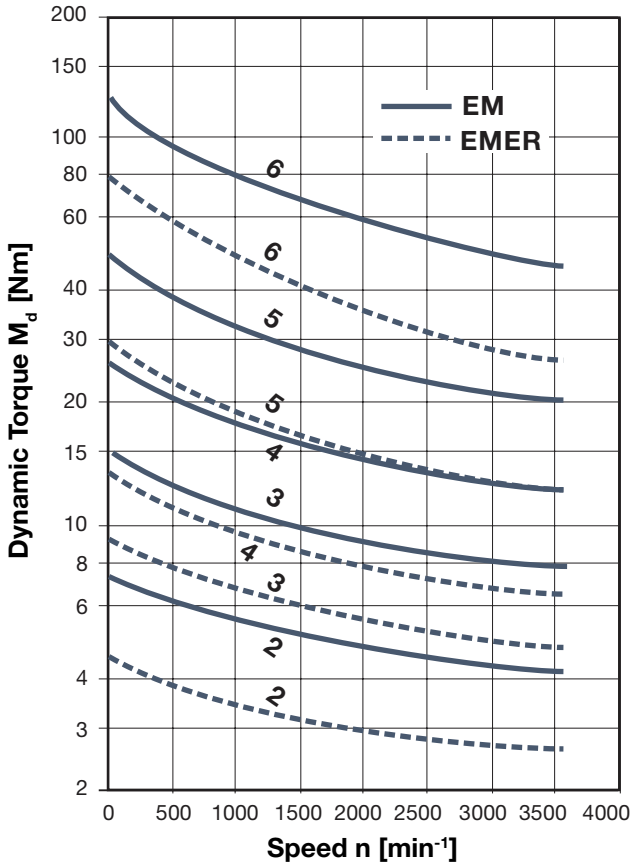
Quick Selection

Power P [kW]

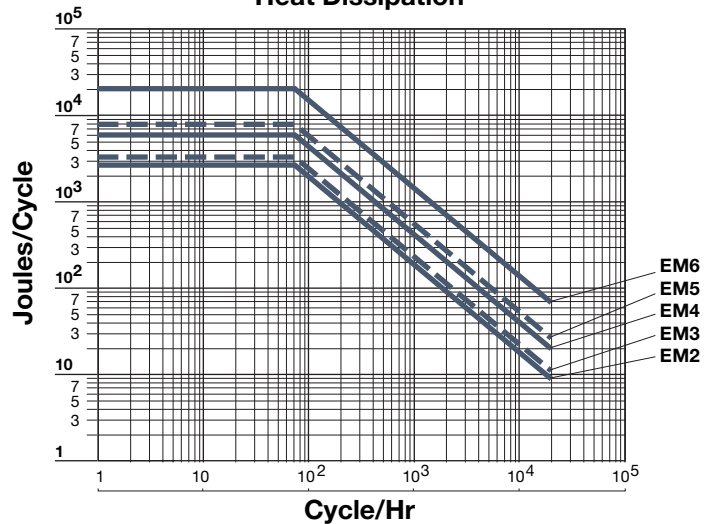
Speed n [min⁻¹]



Torque vs Speed



Heat Dissipation



Electro-Magnetic Single Disc Clutch & Brake Combination

| Size | | Input | | | | | | Output | | | | |
|-----------|----------|----------|---|----------|----------|----------|----------|--------|----------|----------|----------|----------|
| 67 | 4 | 1 | - | 1 | 3 | 0 | 0 | - | 1 | 3 | 5 | 1 |

| Size | ØHH mm |
|----------|--------|
| 2 | 112 |
| 3 | 142 |
| 4 | 180 |
| 5 | 200 |
| 6 | 240 |

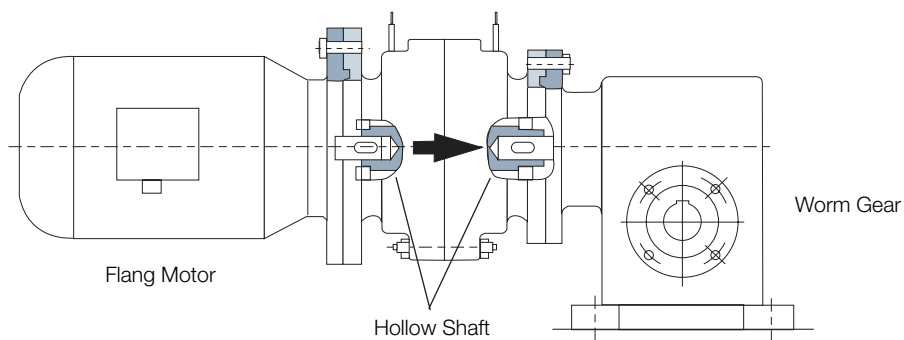
| Feet | |
|------|--------------------|
| 24V | without = 1 |
| | with = 2 |

| Shaft | |
|--------|---------------|
| Solid | ØD = 1 |
| Hollow | ØDD = 2 |

| Shaft | mm | Size | |
|-----------------|-----------|------|------------|
| | 11 | 2 | - |
| | 14 | 2 | 3 |
| Ø D Ø DD | 19 | - | 3 4 |
| | 24 | - | 4 5 |
| | 28 | - | 5 6 |
| | 38 | - | 6 = 6 |

| Flange | Size | Wire | Connector |
|--------------------|------------------|------------------|------------------|
| Ø M1 Shaft | F115 | 2 3 - - - | = 41 = 45 |
| | F130 | 2 3 4 5 - | = 51 = 55 |
| | F165 | - 3 4 5 - | = 61 = 65 |
| | F215 | - - - 5 6 | = 71 = 75 |
| | F265 | - - - - 6 | = 81 = 85 |
| Ø M2 Hollow | F115 | 2 3 - - - | = 42 = 46 |
| | F130 | 2 3 4 - - | = 52 = 56 |
| | F165 | - 3 4 5 - | = 62 = 66 |
| | F215 | - - - 5 6 | = 72 = 76 |
| | F265 | - - - - 6 | = 82 = 86 |
| Ø M3 Hollow | F75 | 2 3 - - - | = 13 = 17 |
| | F85 | 2 3 - - - | = 23 = 27 |
| | F100 | - 3 4 - - | = 33 = 37 |
| | F115 | - - 4 5 - | = 43 = 47 |
| | F130 | - - 4 5 - | = 53 = 57 |
| | F165 | - - - - 6 | = 63 = 67 |
| | F215 | - - - - 6 | = 73 = 77 |
| Cover Shaft | 2 3 4 5 6 | = 00 = 04 | |

Mounting Example



Electro-Magnetic Single Disc Clutch & Brake Combination

Characteristics

- Electrically operated 24 or 90 VDC
- Single friction face
- Clutch and brake activated by power on
- Shafts at both sides
- Internal strip termination

Utilisation

- Coupling of a pulley or a shaft

Particularities

- For dry use

Adjustments

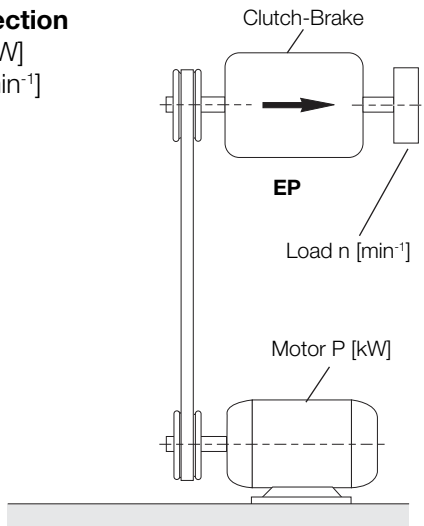
- No wear compensation required

Maintenance Manual

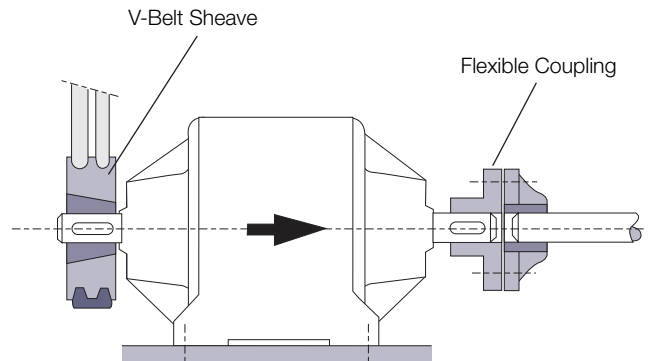
- SM 306

Quick Selection

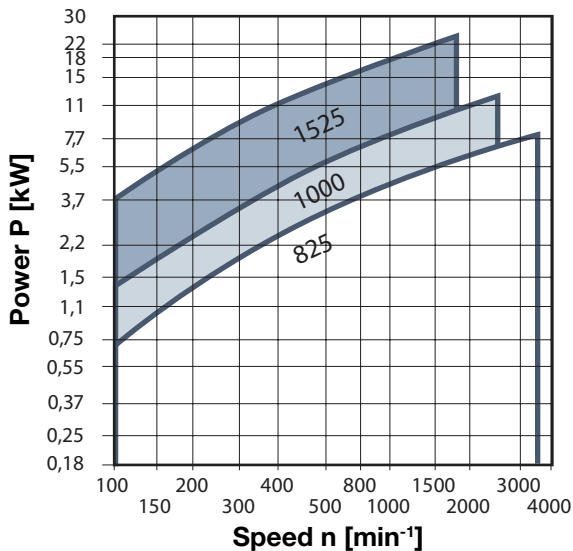
Power P [kW]
Speed n [min⁻¹]



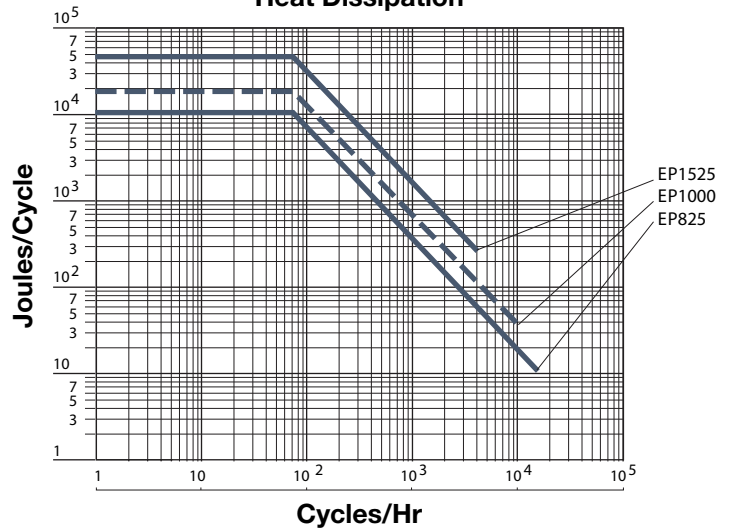
Mounting Example



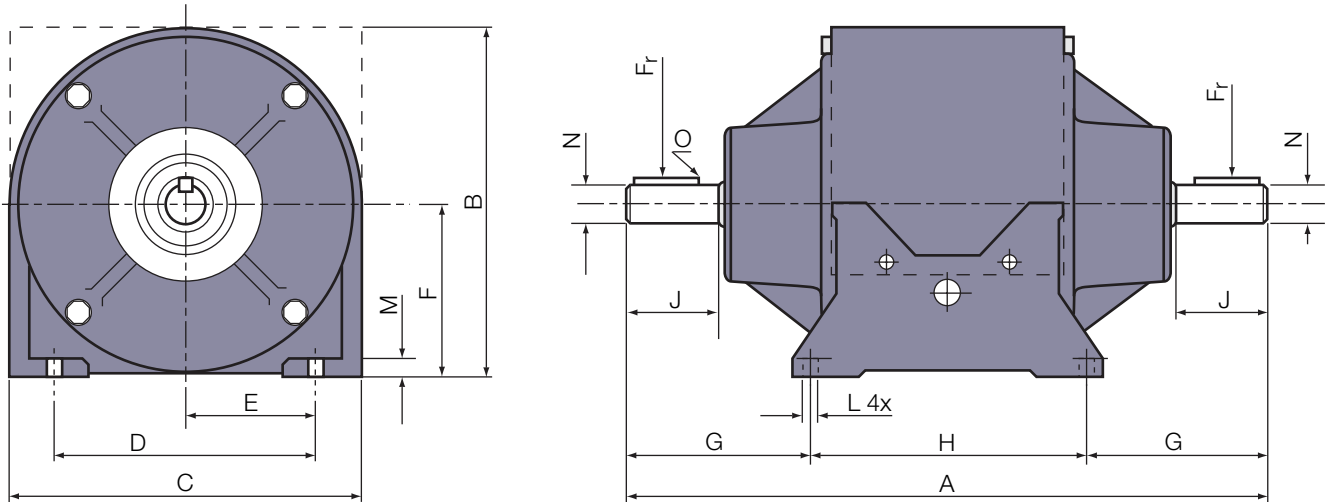
Quick Selection



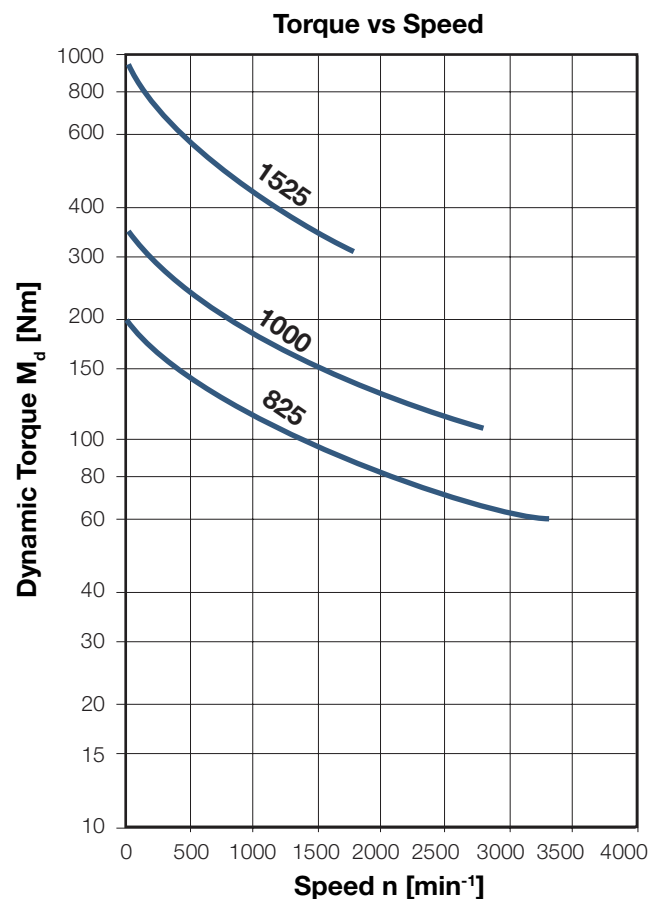
Heat Dissipation



Electro-Magnetic Single Disc Clutch & Brake Combination



| Sizes | | | 825 | 1000 | 1525 |
|---------------------------|---------------|----------------------|------------|------------|-------------|
| Nom. Torque | | [Nm] | 180 | 330 | 970 |
| Max. Speed | | [min ⁻¹] | 3600 | 3000 | 1800 |
| Voltage | | [VDC] | 24 | 24 | 90 |
| Power | P20 Clutch | [W] | 28 | 40 | 38 |
| Power | Brake | [W] | 29 | 30 | 30 |
| | A | | 507 | 730 | 851 |
| | B | | 269,5 | 317,5 | 463,5 |
| | C | | 275 | 327 | 480 |
| | D | | 216 | 254 | 355,6 |
| | E | | 108 | 127 | 177,8 |
| | F | | 133,3 | 158,75 | 228,6 |
| | G | | 145,5 | 209,5 | 215 |
| | H | | 216 | 311 | 419 |
| | J | | 73 | 120,5 | 146 |
| | L | | 10,3 | 16,6 | 20 |
| | M | | 14 | 18 | 25,4 |
| | N | | 28,55n6 | 47,6k6 | 60,6k6 |
| | O | | 1/4x1/4x50 | 1/2x1/2x95 | 5/8x5/8x108 |
| Inertia | | [kgm ²] | 0,027 | 0,061 | 0,332 |
| Coil Build up time | tb Clutch | [s] | 0,24 | 0,28 | 0,57 |
| | tb Brake | [s] | 0,17 | 0,26 | 0,57 |
| Coil Decay time | tb Clutch | [s] | 0,14 | 0,16 | 0,34 |
| | tb Brake | [s] | 0,11 | 0,16 | 0,34 |
| Radial Load | Fr | [N] | 1240 | 1600 | 2400 |
| Weight | | [kg] | 55 | 130 | 300 |
| Connection | Screws Inside | | | | |



Power Supply

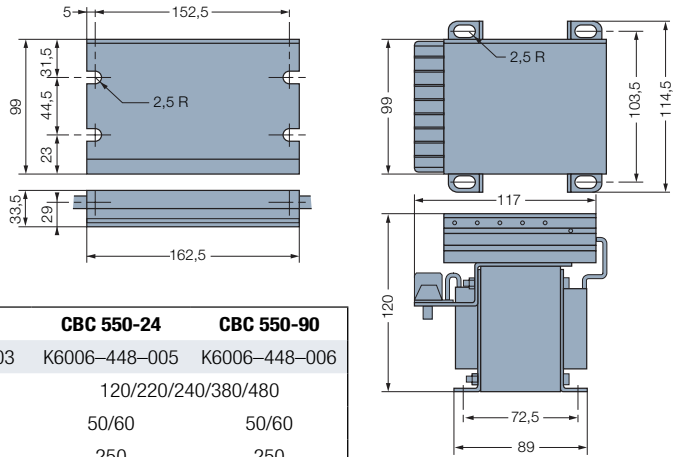
Controls

CBC 500/550

- Power supply with torque adjustment capability with one or two adjustable outputs
- CBC 550 model includes multi tap input transformer

Maintenance Manual : SM 323

- SM 323



| Model | | CBC 500-24 | CBC 500-90 | CBC 550-24 | CBC 550-90 |
|--------------------------------|---------|---------------|---------------|---------------------|---------------|
| | Part # | K6006-448-002 | K6006-448-003 | K6006-448-005 | K6006-448-006 |
| Supply | VAC | 24 – 30 | 120 | 120/220/240/380/480 | |
| | Hz | 50/60 | 50/60 | 50/60 | 50/60 |
| | VA | 250 | 250 | 250 | 250 |
| Output 1 & 2 | VDC | 24 | 90 | 24 | 90 |
| | A min | 5 | 1 | 4 | 1 |
| | A max | 5 | 2 | 4 | 1.2 |
| Input Signals | VCD | 10 – 30 | 10 – 30 | 10 – 30 | 10 – 30 |
| | mA | 3 – 9 | 3 – 9 | 3 – 9 | 3 – 9 |
| | Logic 1 | pos / neg | pos / neg | pos / neg | pos / neg |
| Noise Suppression Range | Hz | 40 – 600 | 40 – 600 | 40 – 600 | 40 – 600 |
| Sensor Supply | VCD | 12 | 12 | 12 | 12 |
| | mA | 100 | 100 | 250 | 250 |
| Protection Fuse | A | 6.3 | 2.5 | 5 | 1.5 |
| Ambient Temperature | °C | 0 – 50 | 0 – 50 | 0 – 50 | 0 – 50 |
| IP65 Enclosed | °C | -10 - +45 | -10 - +45 | -10 - +45 | -10 - +45 |
| Storage Temperature | °C | -25 - +80 | -25 - +80 | -25 - +80 | -25 - +80 |

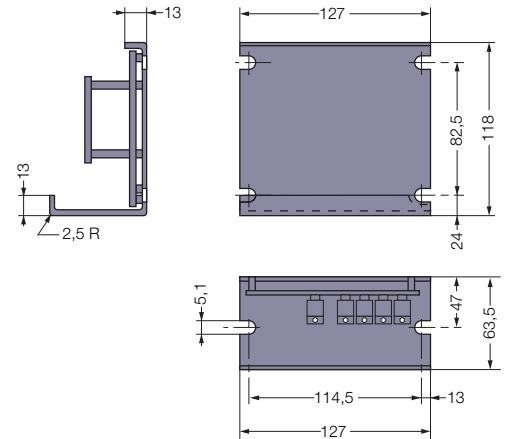
CBC 700

- Power supply with overexcitation control with one or two outputs

Option:

- IP65 enclosed, Part# K6042-101-004

MAINTENANCE MANUAL : SM 324



| Model | | CBC 700-24 | CBC 700-90 |
|--------------------------------|---------|---------------|---------------|
| | Part # | K6006-448-002 | K6006-448-003 |
| Supply | VAC | 24 – 30 | 120 |
| | Hz | 50/60 | 50/60 |
| | VA | 150 | 100 |
| Output 1 & 2 | VDC | 24 | 90 |
| | VDC exc | 105 | 340 |
| | A min | 3.5 | 0,5 |
| Input Signals | VCD | 10 – 30 | 10 – 30 |
| | mA | 10 – 35 | 10 – 35 |
| | Logic 1 | pos / neg | pos / neg |
| Noise Suppression Range | Hz | 40 – 600 | 40 – 600 |
| Sensor Supply | VCD | 12 | 12 |
| | mA | 250 | 250 |
| Protection Fuse | A | 5 | 2 |
| Ambient Temperature | °C | -18 - +60 | -18 - +60 |
| IP65 Enclosed | °C | -18 - +45 | -18 - +45 |
| Storage Temperature | °C | -25 - +80 | -25 - +80 |

Premier Industrial Company Leading Brands

OTHER PRODUCT SOLUTIONS FROM **REGAL REXNORD**

Our comprehensive product offerings include various types of clutches and brakes, overrunning clutches, engineered bearing assemblies, gearing and gear motors along with linear motion products, belted drives, couplings, limit switches, precision motors, drives & controls, and miniature motors. With thousands of product solutions available, Regal Rexnord provides true single source convenience while meeting specific customer requirements. Many major OEMs and end users prefer Regal Rexnord products as their No. 1 choice for performance and reliability.

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Twiflex
Wichita Clutch



Miniature Motors

Portescap



Overrunning Clutches

Formsprag Clutch
Marland Clutch
Stieber



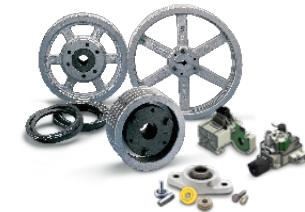
Linear Systems

Thomson



Engineered Couplings & Universal Joints

Ameridrives
Bibby Turboflex
Guardian Couplings
Huco
Lamiflex Couplings
Stromag
TB Wood's



Specialty Components

Kilian
Stromag
TB Wood's



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Boston Gear
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New Hartford, CT 06057 - USA
860-379-1252

*Electromagnetic Clutches
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South Beloit, IL 61080 - USA
815-389-3771

4578 East Park 30 Drive
Columbia City, IN 46725 - USA
260-244-6183

*Precision Electric Coils and
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Customer Service

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Application Support

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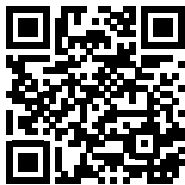
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