

# EAS®-Sp pneumatically controllable synchronous clutch

#### Connection for control unit

- Motionless air pressure supply.
  ON/OFF switching function,
- multi start function.
- Releases in case of an overload.
- Controllable operating pressure.
- Indication possibility of the functional condition.

### Integrated limit switch

- Extreme short switch-off time.
- In case of an overload the limit switch detects the axial disengaging movement of the control element quickly and precisely.
- The limit switch gives a signal to release the clutch and to disconnect the drive or for further control functions.
  - Mechanical protection.

# The EAS<sup>®</sup>-Sp cyclic pneumatically controllable and adjustable overload clutch

## EAS<sup>®</sup>-Sp means:

- Simple attachment of the drive elements
- · Lower mass moment of inertia
- Long service life and maintenance free
- High disengaging torque accuracy
- Integrated mechanical protected limit switch

#### Application:

- . In all kinds of automated machines
- With constantly changing operating conditions
- · With constantly changing cycles and cycle speeds

# EAS<sup>®</sup>-Sp application:

- In packaging machinery
- In filling machinery
- In printing machinery
- . In washing/cleaning machines and systems
- In materials handling equipment
- In general machine construction

Years of experience in the field of torque-limiting clutches, and consistent improvement and development of our products allow us to offer you the optimum clutch for your particular application.

# EAS®-Sp pneumatically controllable synchronous clutch



#### **Backlash-free principle**

The backlash-free torque transmission:

- Balls in radially and axially arranged recesses on the hub and on the pressure flange.
- The balls are pressed simultaneously into recesses of the hub and pressure flange, and therefore transmit the torques backlash-free in both directions of rotation, similarly for reversing drives.

#### **Operating principle**

1. Overload function:

During operation the clutch transmits the torque determined by the pneumatic pressure. When the torque is exceeded (due to overload) the clutch disengages, input and output are disconnected.

Simultaneously the integrated limit switch (PNP-opener) is damped and gives an impulse to the EAS®-Sp control unit. The air is ventilated and the drive is disconnected.

2. Switching function:

The clutch is pneumatically controllable.

The torque is transmitted from input to output when the clutch is pressurized with air.

The clutch and drive can be switched on or switched off via the pneumatic system.

3. Control function:

The limiting torque for overload on the clutch can be adjusted continuously via the air pressure feed and pressure can be varied during operation.

#### Torque transmission and limitation

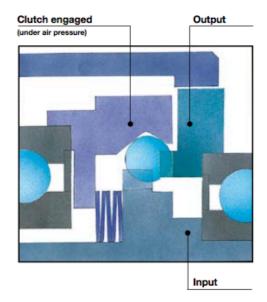
- The limit torque is determined by the existing pressure.
- Controllable torques are transmitted from the hub to the pressure flange and further to the input element via the patented backlash-free principle.
- When the limit torque is exceeded, the controlled pressure is exceeded. The limit switch is damped due to the axial movement of the control element. Input and output are disconnected.

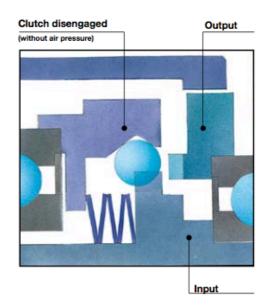
#### Output flange

- The corresponding output element (toothed wheel, pulley etc.) can be attached easily and precisely onto the pressure flange.
- The double bearing also allows the installation of wide input elements.
- Precise running accuracy.

#### Please Observe:

Please select the screw quality and the tightening torque for the fixing screws on the drive element so that the set limit torque is transmitted using frictional locking with sufficient certainty.



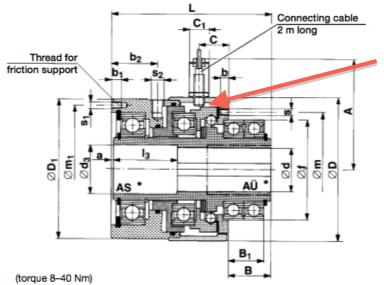


5



#### Standard

## Type 450.125.0



| Size 01   | Type 450.125. L | (torque 8–40 Nm)<br>(torque 4–20 Nm) |
|-----------|-----------------|--------------------------------------|
| Sizes 0-5 | Type 450.125.0  |                                      |

Limit switch is included in the delivery programme.

We reserve the right to make dimensional and design alterations.

### Technical data and dimensions

|  | Limit t |                       | Max.<br>speed       | eed with       |                  |                  |  | Weight<br>with    |     |                |   |                |         |                |                |
|--|---------|-----------------------|---------------------|----------------|------------------|------------------|--|-------------------|-----|----------------|---|----------------|---------|----------------|----------------|
|  | MG      | 1                     | n <sub>max</sub> 1) |                | side             | Flange s         |  | d <sub>max</sub>  | A   | a              | в   | B14            | ) р     | bı             | b <sub>2</sub> |
| Size   | Nm      | 1 I                   | rpm                 | kg             | m²               | kgm <sup>2</sup> |  | kg                |     | -              | _   |                | _       | ·              | -2             |
| 01   | 4 -     | 40                    | 5000                | 0,00           | 0280             | 0,00018          | 0  | 2,5               | 81  | 0              | 15  | 11             | 5,5     | 10             | 23,5           |
| 0  | 5 -     | 75                    | 4000                | 0,00           | 0562             | 0,00034          | 5  | 3,7               | 88  | 1              | 28  | 24             | 5,5     | 8              | 30             |
| 1  | 25 -    | 150                   | 2500                | 0,00           | 2127             | 0,00090          | 14   | 7                 | 101 | 1,5            | 33,5  | 28             | 6,5     | 8              | 36,5           |
| 2  | 50 -    | 200                   | 2000                | 0,00           | 4887             | 0,00210          | 9  | 9,7               | 108 | 2              | 36  | 30             | 8       | 10             | 39             |
| 3  | 100 -   | 500                   | 2000                | 0,01           | 0375             | 0,00501          | 8  | 15                | 123 | 2,5            | 39,5  | i 33           | 8       | 10             | 41             |
| 4  | 200 -   | 1000                  | 1500                | 0,03           | 4797             | 0,01614          | 1  | 29,5              | 143 | 2              | 47  | 40             | 11      | 12             | 52             |
| 5  | 500 -   | 2500                  | 500                 | 0,19           | 9991             | 0,09181          | 1  | 82                | 186 | 5              | 64  | 54             | 15      | 15             | 68             |
| Size   | С       | <b>C</b> <sub>1</sub> | D                   | D <sub>1</sub> | d <sub>min</sub> | d <sub>max</sub> | d <sub>3</sub>   | fh5 <sup>5)</sup> | L   | l <sub>3</sub> | m   | m <sub>1</sub> | S       | s <sub>1</sub> | s <sub>2</sub> |
| 01   | 24      | _3)                   | 76                  | 72             | 10               | 20               | 23   | 3 47              | 87  | 30             | 56  | 65             | 6 x M5  | 4 x M5         | G 1/8"         |
| 0  | 18,5    | 15                    | 90                  | 90             | 12               | 22               | 23   | 3 62              | 105 | 40             | 72  | 82             | 6 x M5  | 4 x M4         | G 1/8"         |
| 1  | 23,5    | 15                    | 115                 | 112            | 15               | 35               | - 36   | 6 80              | 126 | 50             | 92  | 102            | 6 x M5  | 4 x M5         | G 1/8"         |
| 2  | 28,5    | 15                    | 130                 | 130            | 20               | 42               | 43   | 3 95              | 135 | 55             | 110   | 122            | 6 x M6  | 4 x M5         | G 1/8"         |
| 3  | 30      | 15                    | 160                 | 154            | 20               | 50               | 51   | I 110             | 153 | 60             | 139   | 140            | 6 x M8  | 4 x M6         | G 1/4"         |
| 4  | 37,5    | 15                    | 200                 | 191            | 25               | 65               | 66   |                   | 185 | 70             | 172   | 178            | 6 x M10 | 4 x M8         | G 1/4"         |
| 5 <sup>2)</sup>  | 51,5    | 15                    | 285                 | 275            | 38               | 95               | 97   | 200               | 260 | 100            | 250   | 256            | 6 x M12 | 4 x M10        | G 1/4"         |
| <ol> <li>The speed for re-engagement or for switching operation depends on the mass<br/>to be accelerated and the load torque (see page 8).</li> <li>Size 5 not in stock</li> <li>Without initiator guard bracket</li> </ol> |         |                       |                     |                |                  |                  | <ol> <li>Fit arranged by the user H7</li> <li>Position of the keyway to the mounting bore "s"<br/>in the pressure flange not defined.<br/>Defined position possible on request.</li> </ol> |                   |     |                | The operating pressure of the clutch ranges<br>between 1 and 6 bar; you can find the exact<br>data on the diagram, page 8<br>We reserve the right to make |                |         |                |                |
| Al Mounting tolerance +0.1     We reserve the right to     We reserve the right to   |         |                       |                     |                |                  |                  |  | a sinnera produci |     |                |   |                |         |                |                |

The speed for re-engagement or for switching operation depends on the mass to be accelerated and the load torque (see page 8).
 Size 5 not in stock
 Without initiator guard bracket
 Mounting tolerance +0,1

#### Order example:

| To be included when ordering please state:              | Туре     | Bore<br>Ø d <sup>H7</sup> | DIN *Counterbore<br>keyway choice  |    |   |  |
|---|----------|---------------------------|--|----|---|--|
| Order number:   |          | 450.125.0                 |  | 6) | AS or AÜ  |  |
| 01 – 5 →<br>Example:<br>Order number 1 / 450.125.0 / 30 | 6885 / 1 |                           | AS: Counterbore coil carrier<br>AÜ: Counterbore transmissi<br>flange side<br>6885/1<br>according to size |    |   |  |
| Order number 01 / 450.125.H / 1                         |          |                           |  |    | <ul> <li>O for sizes 0–5</li> <li>H for size 01 torque 8–40 Nm</li> <li>L for size 01 torque 4–20 Nm</li> </ul> |  |

6