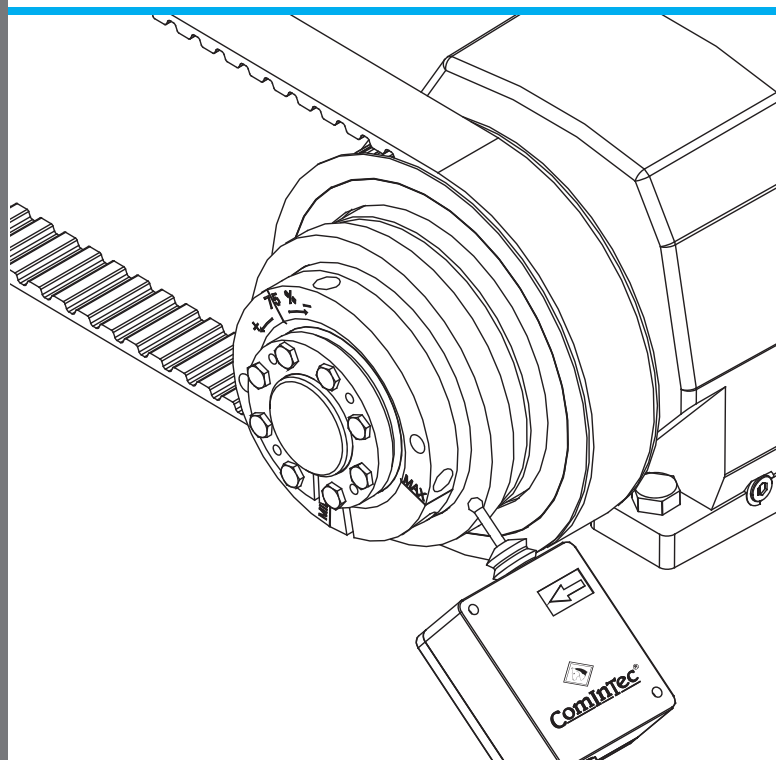
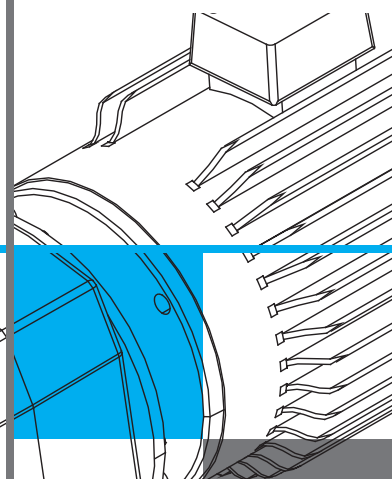


TORQUE LIMITERS - CLUTCHES

Up to 30.000 Nm of torque and 140 mm bores

(SAFETY COUPLINGS)



ComIntec[®]
Technology for Safety

Sold Exclusively in North America by:



30 Wilson Drive,
Suite B
Sparta, NJ 07871
info@hexelus.com
(973) 864-4548

TORQUE LIMITERS (SAFETY COUPLINGS) - CLUTCHES: introduction

ComInTec **torque limiters** (safety couplings) and **clutches** are mechanical components necessary to fit along the kinematic chain and are preferred to electronic safety devices because of a better response time, improved reliability, excellent configuration flexibility, easy fitting and adjustment, use at high speeds in hard environments in the presence of inertias and important masses. In fact the electronic systems, which normally act up to the transmission, present: delayed reaction time, many factors as a source of error, configuration and management complexity. The fitting of the mechanical torque limiters along the kinematic chain is therefore necessary for a reliable and complete protection, in order to improve the level of safety and the machine, according to the new EN ISO 13489-1 standards, reducing the average possible broken-down and unproductive downtime.

Benefit of our models:

- Long product life with continuous reliability.
- Optimum protection against environmental conditions.
- Simple mounting for in-line and parallel transmission.
- Easy setting and adjustment.
- Highly accurate and fast machine protection.
- Special designs to suit specific applications possible.
- Competitive pricing without sacrificing quality.
- "Made in Italy" with certified quality.

Our main product lines:

- Friction lines:** simple, economical, with sliding function suitable for use in dry and dusty environments.
- disengage lines:** high stability during transmission with instant disengagement and the possibility of free rotation.
- Axial lines:** Suitable for limiting compression and tension forces on crank mechanisms.
- Pneumatic clutch lines:** function of the clutch- disengagement with the possibility of variation of the torque during the motion.

FRICITION TORQUE LIMITER "DF"



Sliding Safety coupling where the transmission component is fitted between two friction rings and slides when the calibrated torque is reached. The minimum required to have a low cost protection.

Torque max 23000 Nm - Max bore ø140 mm.

1

ECONOMIC BALLS TORQUE LIMITER "EDF"



Safety coupling with simple and compact balls inserted directly in the drive element of transmission. The disengagement occurs quickly and safely if the calibrated torque is exceeded.

Torque max 1450 Nm - Max bore ø55 mm.

17

ROLLERS TORQUE LIMITER "DSR"



A Roller safety coupling that allows a complete disengagement when the calibrated torque is reached. Suitable for transmitting high torque with high reliability and small size.

Torque max 12000 Nm - Max bore ø120 mm.

27

BACKLASH FREE TORQUE LIMITER "DSS/SG"



Ball safety coupling with high technology and backlash free transmission. Device with high sensitivity of intervention, instant and precise disconnection.

Torque max 1200 Nm - Max bore ø65 mm.

37

FREE ROTATION TORQUE LIMITER "DSS/SG/RF"



Backlash free Safety coupling suitable for high speeds, with free rotation without residual torque after disengagement that occurs precisely and immediately. The re-engagement is manual.

Torque max 1200 Nm - Max bore ø65 mm.

43

MODULAR TORQUE LIMITER "DSM"



Modular Safety coupling, robust, suitable for "heavy industries" even at high speeds. After disconnection there is free rotation without residual torque, re-engagement is simple and manual.

Torque max 9000 Nm - Max bore ø140 mm.

49

TORQUE LIMITER FOR REDUCERS "PR"



Safety coupling to be mounted between the motor and gear unit thus reducing significantly the size of the device at the same power output.

Available in both slip release versions.

Torque max 2600 Nm - Max bore ø55 mm.

55

AXIAL FORCE LIMITER "DSA"



Safety coupling with linear limitation of force. The axial disengagement can take place in both compression and tension once the calibrated force is reached, the re-engagement is automatic.

Force max 4700 N - Max shaft ø20 mm.

67

PNEUMATIC CLUTCHES "AP"












Clutch or roller with torque control during motion and low residual torque after disengagement.

Ability to disconnect the driven portion from the driving through pneumatic control.

Torque max 30000 Nm - Max bore ø120 mm.

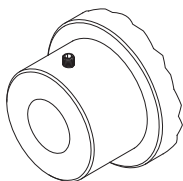
65

SELECTION GUIDE

| |  |  |  |  |  |  |  |  |  |
|--|---|---|--|---|---|---|---|---|---|
| | DF page 7 | EDF page 17 | DSR page 21 | DSS/SG page 31 | DSS/SG/RF page 43 | DSM page 49 | PR page 55 | DSA page 61 | AP page 65 |
| TECHNICAL CHARACTERISTICS | | | | | | | | | |
| Manufactured in turned steel | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Anticorrosive treatment std. phosphate | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Compact size | ■ | ■ | | ■ | ■ | ■ | ■ | | |
| High torque possible | | | ■ | | | ■ | | | ■ |
| Maintenance-free | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| High torsional stiffness | | | | ■ | ■ | | | | |
| Modular system | | | | | | ■ | | | |
| Reduced inertia | | | | ■ | ■ | | ■ | | |
| Noise during transmission | ■ | | | | | | | | |
| Suitable for high speeds | | | | ■ | ■ | ■ | ■ | | ■ |
| Suitable for dusty environments | ■ | | | | | | | | |
| Suitable for wet and oily | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| Assembly with flexible couplings - rigid coupling possible | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ |
| ADVANTAGES AND BENEFITS | | | | | | | | | |
| Protect the gear motor from jamming due to foreign bodies | ■ | ■ | ■ | ■ | | ■ | ■ | | ■ |
| Absorb starting torques without disconnecting the transmission | ■ | | | | | | | | |
| Protect the film of the packaging in case of excessive traction | ■ | | | | | | | | ■ |
| Protect slides or servomotors from impact or limit | | ■ | | ■ | | | ■ | ■ | |
| Keep the phases between the driving and driven after an overload | | | ■ | ■ | | | | | |
| Protect the final product from crushing or deformation | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ |
| Protect indexers overload long transmission | | | | ■ | | | | | |
| Where it is necessary to complete the transmission disconnect | | | | | ■ | ■ | | | ■ |
| Best simplicity and sensitivity compared to integrated solutions in gear box | ■ | | | ■ | | | ■ | | |
| Protect the operating units of the machine tool from collisions | | | | ■ | | | | | |
| Protecting mechanical devices during transmission at high speeds of rotation | | | | | ■ | ■ | | | |
| Engage / disengage different lines of transmission of the product | | | | | | | | | ■ |
| Greater durability of all the devices, thanks to the free rotation | | | | | ■ | ■ | | | |
| Protect axial movers within the transmission from overload | | | | | | | | ■ | |
| APPLICATIONS | | | | | | | | | |
| Conveyors | ■ | ■ | ■ | ■ | | | ■ | | |
| Extruders and laminators | | | | | ■ | ■ | | | |
| Heavy Industry | ■ | | ■ | | | ■ | | | |
| Packaging machinery and equipment | | | ■ | ■ | | | ■ | | |
| Labelling | | | | ■ | | | | | |
| Conveyors | | ■ | ■ | | | | | | |
| Machine tools and CNC | | | | ■ | | | | | |
| Servo motors and linear guides | | | | ■ | | | | | |
| Machines with cycle variable torque | | | | | | | | | ■ |
| Agricultural machinery and earthmoving | ■ | | ■ | | | | | | |
| Winding and unwinding of coils | | | | | | | | | ■ |
| Test benches | | | | | ■ | | | | ■ |
| Automotive | ■ | | | ■ | | | | | |
| Handling and eccentric cams | | | | | | | | ■ | |

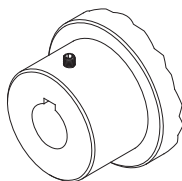
TORQUE LIMITERS (SAFETY COUPLINGS) - CLUTCHES: hub connection type on couplings application

Type **A** Plain bored H7 hub with set screw.



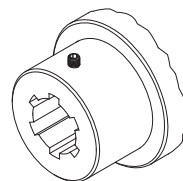
An economic and quick solution for low torque.

Type **A1** H7 bore with keyway and set screw.



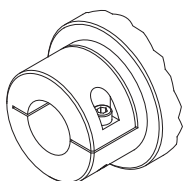
Standard solution on the hubs shown in the catalogue for horizontal assembling.

Type **A2** Splined bore with set screw.



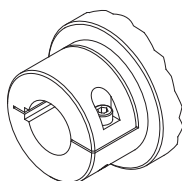
Recommended solution in the case of hard transmission.

Type **B** Single split clamp hub with plain H7 bore.



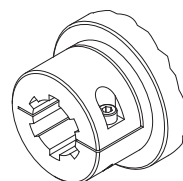
Reduction of angular backlash without change to the overall dimensions.

Type **B1** Single split clamp hub with H7 bore and keyway.



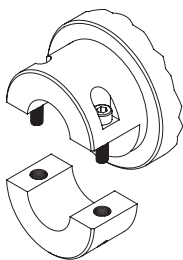
Reduction of angular backlash, during reversing drives, and high torques.

Type **B2** Single split clamp hub with splined bore.



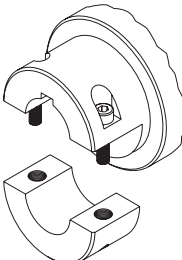
Reduction of angular backlash in the case of hard transmission.

Type **C** Two piece clamp hub with plain H7 bore.



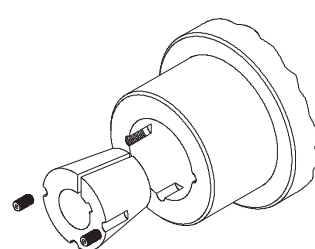
Reduction of angular backlash, and simple radial assembly/disassembly.

Type **C1** Two piece clamp hub with H7 bore and keyway.



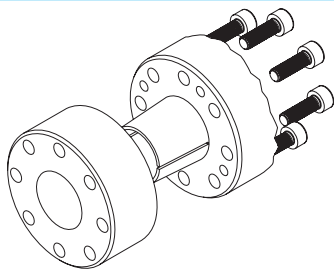
Simple assembly and reduction angular backlash, even with high torque.

Type **G** Clamp connection with internal Taper Bush.



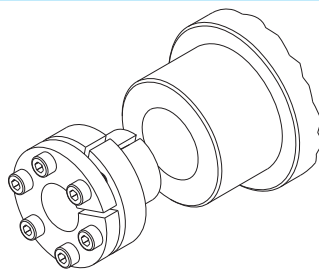
Flexibility of fitting for conical bushing without angular backlash.

Type **D** Clamp connection with integrated locking assembly.



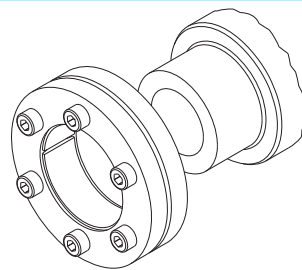
Suitable for high speeds without change to standard dimensions (.../CCE version).

Type **E** Clamp connection with internal locking assembly.

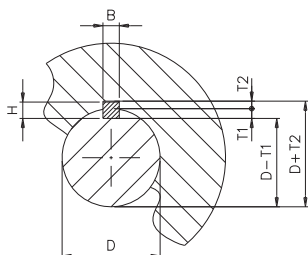


Reduction of angular backlash and reduced radial dimensions.

Type **F** Clamp connection with external locking assembly.














Fast and economic solution to transmit low torque.



Bore and Keyways according to UNI 6604 (DIN 6885-1)

| D | >10 12 | >12 17 | <17 22 | >22 30 | >30 38 | >38 44 | >44 50 | >50 58 | >58 65 | >65 75 | >75 85 | >85 95 | >95 110 | >110 130 | >130 150 | >150 170 | >170 200 |
|------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-------------|-------------|-------------|-------------|
| B H9 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 25 | 28 | 32 | 36 | 40 | 45 |
| H | 4 | 5 | 6 | 7 | 8 | 8 | 9 | 10 | 11 | 12 | 14 | 14 | 16 | 18 | 20 | 22 | 25 |
| T1 | 2,5 | 3 | 3,5 | 4 | 5 | 5 | 5,5 | 6 | 7 | 7,5 | 9 | 9 | 10 | 11 | 12 | 13 | 15 |
| T2 | 1,8 | 2,3 | 2,8 | 3,3 | 3,3 | 3,3 | 3,8 | 4,3 | 4,4 | 4,9 | 5,4 | 5,4 | 6,4 | 7,4 | 8,4 | 9,4 | 10,4 |
| | +0,1 0 | | | +0,2 0 | | | | | | | | | +0,3 0 | | | | |

TORQUE LIMITERS (SAFETY COUPLINGS) - CLUTCHES: hub connection type on couplings application

| HUB CONNECTIONS | DF | | | EDF/F | DSR | | | DSS/SG | | | DSS/SG/RF | DSM | | AP |
|-----------------|--|---|---|-------|---|---|---|--|--|---|-----------|---|---|----|
| |  .../TAC page 11 |  +GAS page 12 |  +GEC page 12 | |  +GTR page 27 |  +GAS page 27 |  +GEC page 28 |  +GAS/SG/ CCE page 38 |  +GAS/SG page 39 |  +GSF page 40 | |  +GAS page 52 |  +GTR page 52 | |
| ● Pilot bore | ● | ● | ● | ● | ● | ● | ● | ● | × | ○ | ● | ● | ● | ● |
| ▲ Type A | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | × | × | ▲ | ▲ | ▲ | ▲ |
| ● Type A1 | ● | ● | ● | ● | ● | ● | ● | ● | × | × | ● | ● | ● | ○ |
| ▲ Type A2 | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | × | × | ▲ | ▲ | ▲ | ▲ |
| ● Type B | ▲ | ○ | ▲ | ▲ | ○ | ○ | ▲ | ○ | × | ● | ○ | × | × | ▲ |
| ● Type B1 | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | × | ▲ | ▲ | × | × | ▲ |
| ● Type B2 | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | × | × | ▲ | × | × | ▲ |
| ● Type C | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | × | × | ▲ | × | × | ▲ |
| ● Type C1 | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | × | × | ▲ | × | × | ▲ |
| ● Type G | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | × | × | ▲ | ▲ | ▲ | ▲ |
| ● Type D | × | × | × | × | ▲ | × | × | ● | ● | × | × | × | ● | ● |
| ● Type E | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | × | × | ▲ | ▲ | ▲ | ▲ |
| ● Type F | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | × | × | ▲ | ▲ | ▲ | ▲ |

| Symbol | Description | Notes |
|--------|--------------------------|--|
| ● | Standard supply | <ul style="list-style-type: none"> All types of hub connections are carried out only on the finished bore. For the supply or feasibility of other types of hub locking and combinations please contact our technical department. |
| ○ | Optional standard supply | |
| ▲ | Supplied on request | |
| × | Not supplied | |

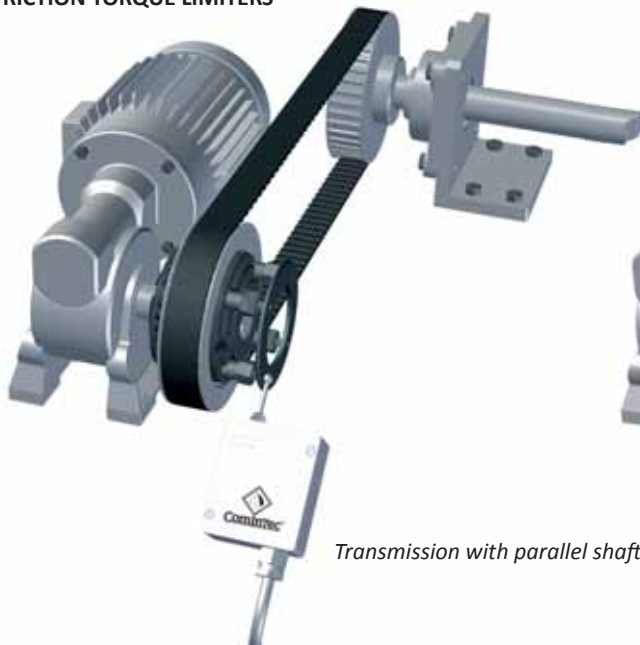
TORQUE LIMITERS (SAFETY COUPLINGS) - CLUTCHES: selection and assembly

SUMMARY CHARACTERISTICS

| Model | Function | Torque | Max bore | Speed | Main characteristics | Sensitivity |
|---------------|------------|-------------|----------|---------------|--|---------------|
| DF | friction | 1 ÷ 23000 | 140 | medium - low | economic solution | medium - low |
| EDF/F | mechanical | 7,5 ÷ 1450 | 55 | medium - low | compact solution with balls in phase | medium - high |
| DSR | mechanical | 10 ÷ 12000 | 120 | medium - low | with rollers in phase or equidistant | medium - high |
| DSS/SG | mechanical | 0,8 ÷ 1200 | 50 | medium - high | backlash free with balls in phase or equidistant | high |
| DSR/SG/RF | mechanical | 10 ÷ 1200 | 65 | medium - high | backlash free rotation | medium - high |
| DSM | mechanical | 200 ÷ 9000 | 140 | high | free rotation for high speed | medium - high |
| DSS/F/SG/PR-V | mechanical | 3 ÷ 720 | 48 | medium - high | compact solution for gearbox | medium - high |
| DF/TAC/PR-V | friction | 1 ÷ 2600 | 55 | medium - low | economic and compact solution for gearbox | medium - low |
| DSA | mechanical | 30 ÷ 4700 N | - | medium | axial limitation | medium - high |
| DSR/F/AP | pneumatic | 7 ÷ 30000 | 120 | high | mechanical roller clutch | high |
| DSF/TF/AP | pneumatic | 3 ÷ 875 | 65 | medium - high | friction clutch | medium |

ASSEMBLY EXAMPLES

FRICITION TORQUE LIMITERS

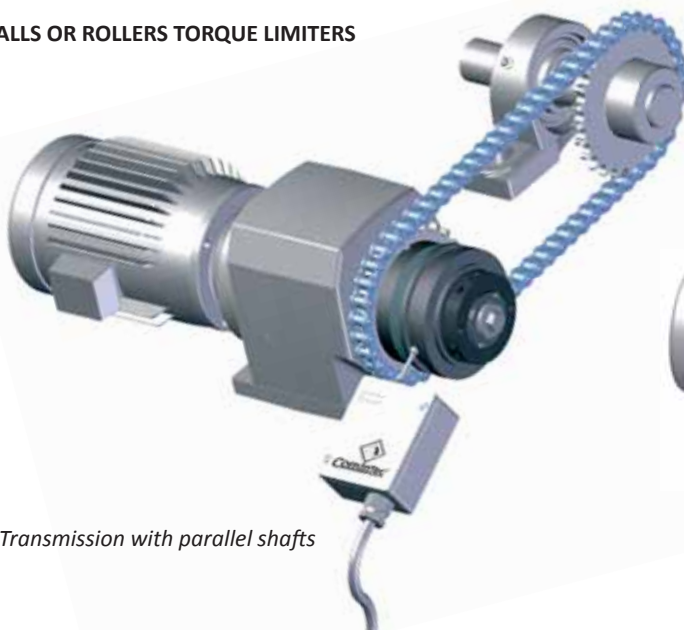


Transmission with parallel shafts



Transmission with in-line shafts

BALLS OR ROLLERS TORQUE LIMITERS



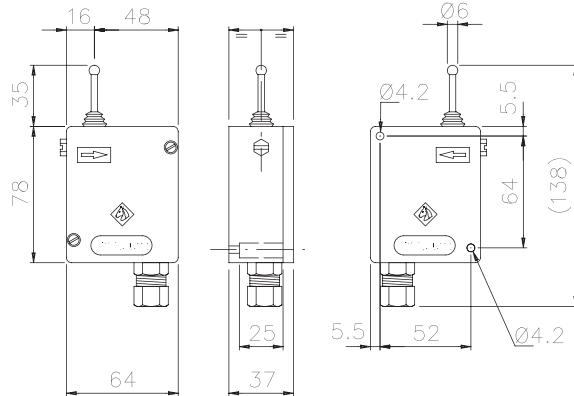
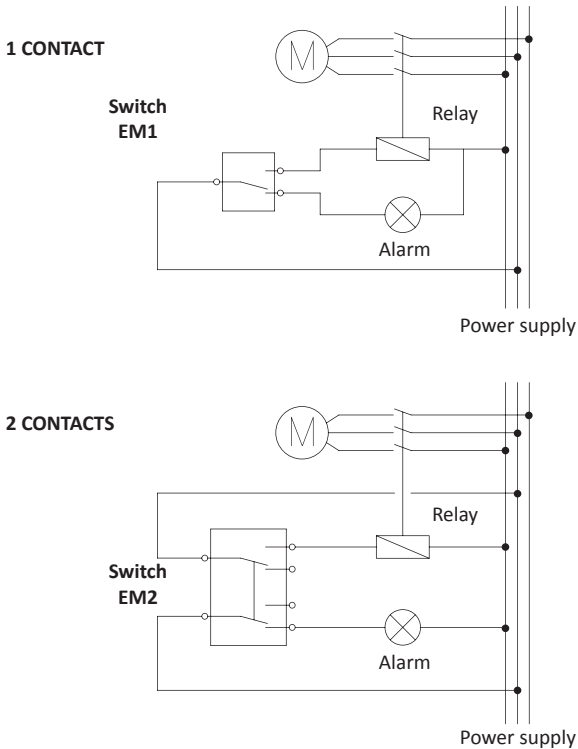
Transmission with parallel shafts



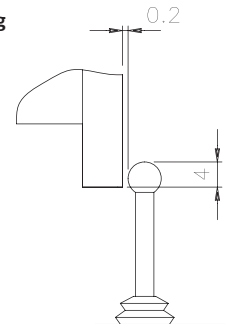
Transmission with in-line shafts

EM - electromechanical switch: technical data

- Protection level IP57 DIN 40050.
- Adjustment of the lever end position possible.
- Die-cast aluminium box.
- Operation temperature range from -10°C to +85°C.
- Three different options of voltage input with 1 or 2 contacts available.
- Initial stroke 0,7 mm, Extra stroke: 4 ÷ 8 mm depending on setting (possible in a range of 6 mm).

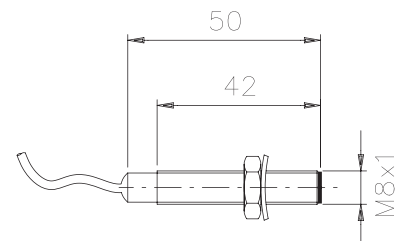
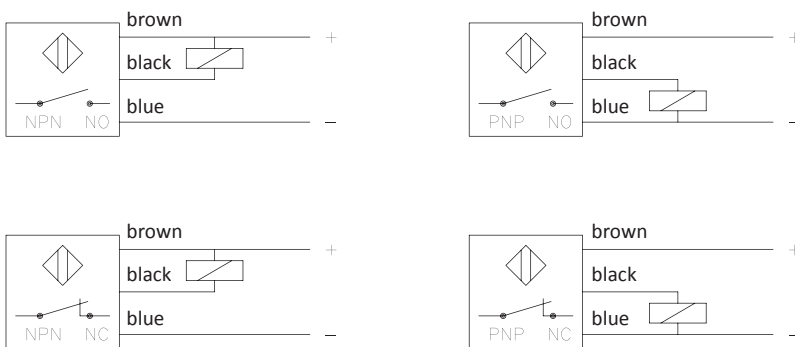


Weight: 350g



PRX - inductive proximity sensor: technical data

- Standard version: Brass cover with protection level IP67 DIN 40050.
- Electric contact: 5 ÷ 24 VdC. - Frequency: 2000 Hz.
- Output: NPN (N.O.-N.C.) – PNP (N.O.-N.C.).
- Operating distance: max 1 mm.
- Cable length: 2 m (3x0,2).



Weight: 50g

