

Electronic Rotary Cam Switch Standard Series BSW 516-207

Construction

The shaft is mounted in maintenance-free roller bearings and uses foil strips to dampen the individual electronic-inductive inserts.

The foil strips are secured by a single tensioning disc on one end of the shaft. On release of this tensioning disc the insert point for the foil strips opens automatically.

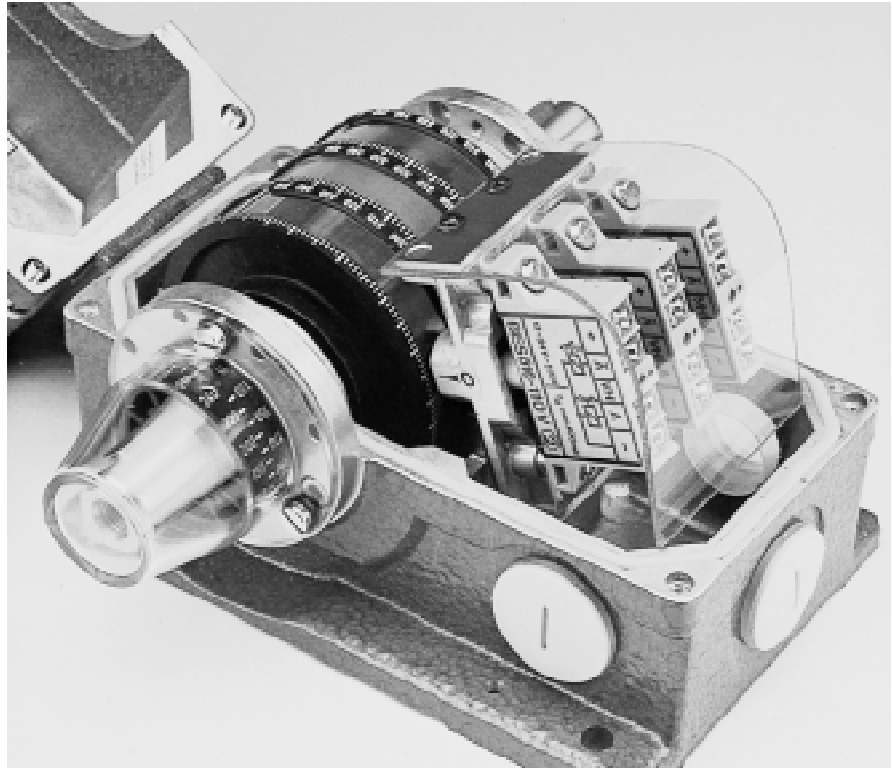
Two types of damping foil are available:

- Coating 180°
- Coating 360°

The damping foil can be cut to any length (for example with a pair of scissors). Depending upon the application, several pieces of aluminum foil of the same or different lengths (representing the pulses) can be used per switching position.

An etched copper foil with spacing intervals (totaling 30 pulses per revolution) is available for use on a switching position to monitor shaft movement or speed.

For this, please observe the operating and programming instructions on pages G18 to G20.



Function

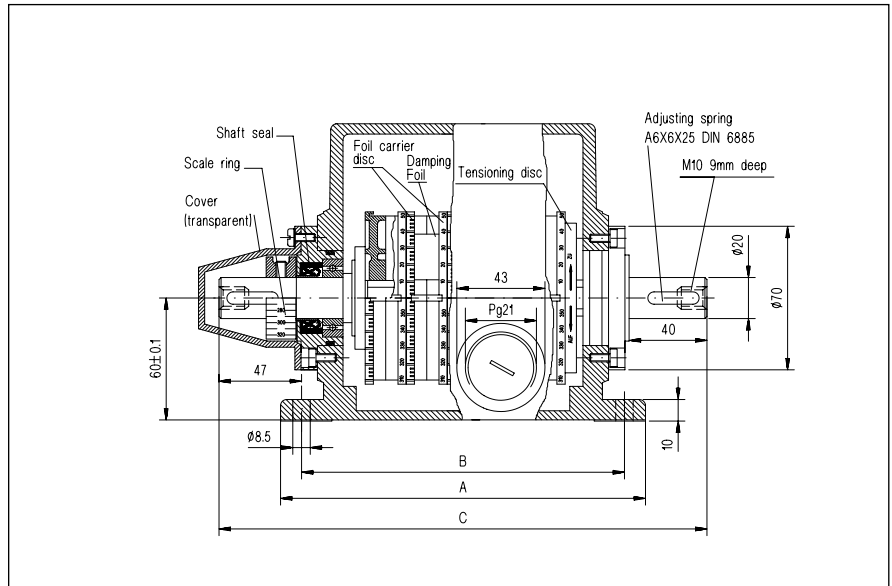
When the supply voltage is applied an inductive field is created before the active surface of the electronic-inductive insert.

When a metal part (in this case the damping foil) is inserted into this inductive field the oscillator is damped, resulting in a change in the condition of the output state.

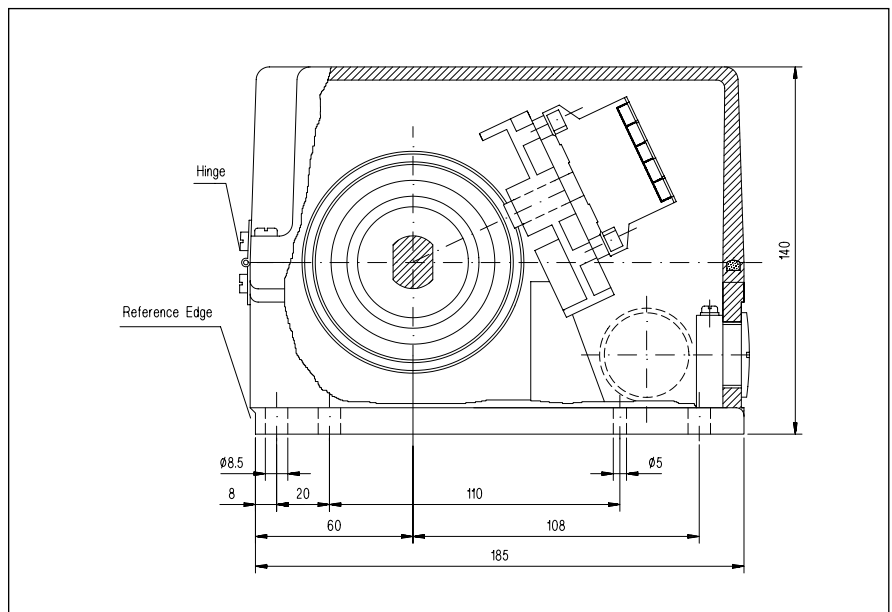
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When using inserts for AC voltage these components are covered by a transparent hood.



Front view



Side view

Rotary Positioning

Advantages

These precision cam switch units are fitted with electronic-inductive inserts (PNP/NPN logic or AC voltage respectively). The following advantages result from operation without physical and electrical contact:

- No mechanical wear
- Smooth running
- Low inertia, since the foil carrier discs are made of plastic
- High shaft speeds can be achieved at small angles of damping:

- When using DC inserts: At least 10° of foil for a speed of max. 1000/RPM
- When using AC inserts: At least 15° of foil at max. 100/RPM
At least 45° of foil at max. 300/RPM
At least 75° of foil at max. 500/RPM

Dimensions

Number of switch points	3	6	9	12	20
Dimension A	125	185	245	305	503
Dimension B	105	165	225	285	483
Dim. C, type L	199	259	319	379	577
Number of cable entries	3	4	5	5	7

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Ordering Instructions

Example:

BSW-516 -207	-	6	-	L	/	3	-	PA	-	
Cam switch code BSW-516-207		Number of switching points 3, 6, 9, 12 or 20		Shaft ends 20 mm diameter L = shaft length 40 mm, center thread M10, 9 mm deep		Type of drive 3 = drive at the right hand side, anti clockwise rotation (viewed from the shaft end), see note on page G4		Code of electronic inserts		Production code

Order References for Damping Foil

- Aluminum foil, coating 180°
BSW-Z/FOIL-STRIP-706687
- Aluminum foil, coating 360°
BSW-Z/FOIL-STRIP-706688
- Etched copper foil coated with spacing intervals (30 pulses per revolution).
BSW-Z/COPPER-STRIP-705413

Code	Rated Voltage	Logic	Outputs Function	Load	Order reference of insert components
NA	12-24 V DC± 20%	NPN	Complementary	200 mA	BES 517-108 NA
PA	12-24 V DC± 20%	PNP	Complementary	200 mA	BES 517-110 PA
EJ	90-250 V AC 40-60 Hz	AC	Normally open	100 mA	BES 516-410
EK	90-250 V AC 40-60 Hz	AC	Normally closed	100 mA	BES 516-421

Operating /Programming

The scale shown on the lid of the casing is used to determine the required pulse length of the relevant damping foil (photo 1).

Programming for pulse lengths below 180°. The damping foil is placed at the zero mark on the scale, is marked at the required pulse length and is cut off squarely at the mark (photo 2).

Programming for pulse lengths exceeding 180°. The damping foil is placed at the zero point on the scale, as in photo 2, and is marked at 180° (photo 3).

The 180° mark is placed at the starting mark of the lower scale (180° - 360°), the required pulse length, e.g. 260° (photo 4), is marked and the foil is cut off squarely at the mark.



Photo 1

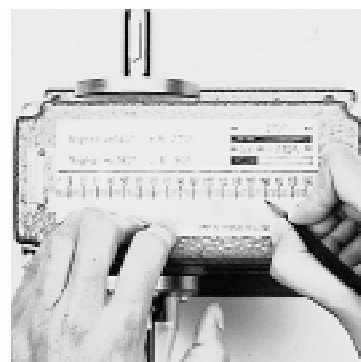


Photo 2



Photo 3

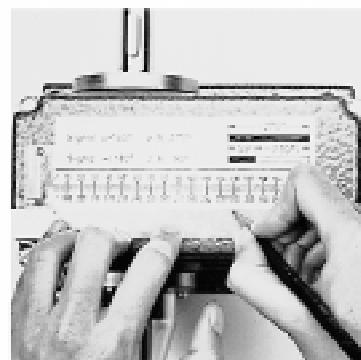


Photo 4

Electronic Rotary Cam Switch Standard Series BSW 516-207

Operating /Programming

For programming, the central tensioning system must first be opened in the direction given, by means of the spanner provided (photo 5).

The prepared foils are positioned at the opening of the foil carrier discs which lie at the zero point and are inserted in parallel into the guide slots on both sides (photo 6).

The required pulse position (switch-on point) can be determined simply by moving the damping foil. For easy adjustment the foil carrier discs show a scale all around their edges (photo 7).

After programming all switching points the central tensioning system is closed again in the direction shown, by means of the spanner provided.

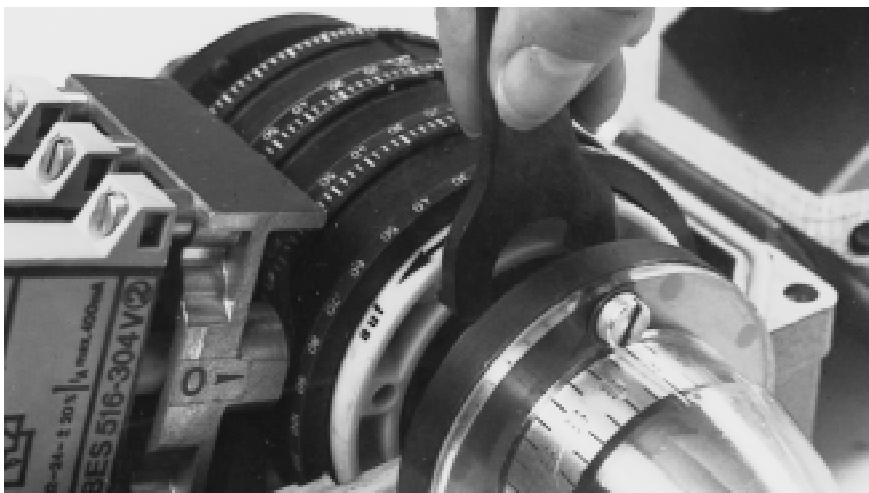


Photo 5

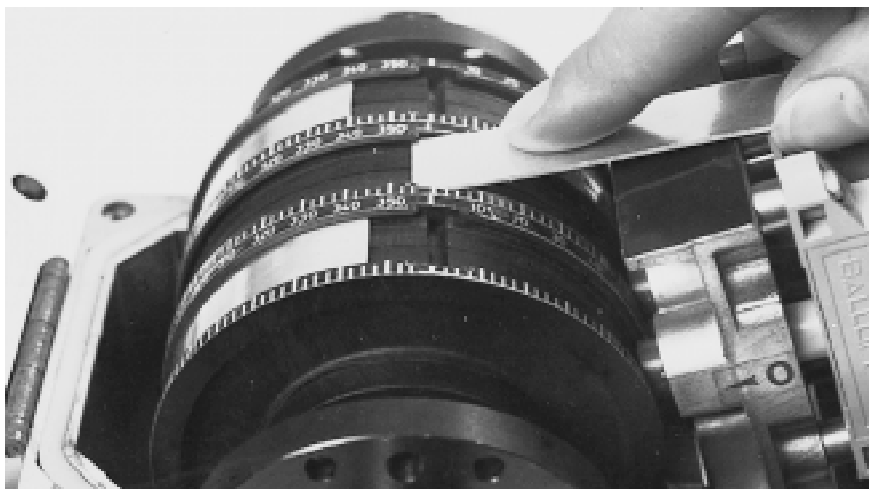


Photo 6



Photo 7

Electronic Rotary Cam Switch Standard Series BSW 516-207

Operating/Programming

Photo 8 shows a completely programmed BALLUFF cam switch unit.

For changing the program, i.e. for removing the damping foil, the central tensioning system must be opened again.

The damping foil in the opening at the zero point is to be removed. The foil can be pulled out of the guide slots (photo 9) and removed (photo 10) by means of a suitable tool, for example a screwdriver.

The removed programming foil can be marked easily and retained with the relevant working documents. The set program can therefore be used again at any time.

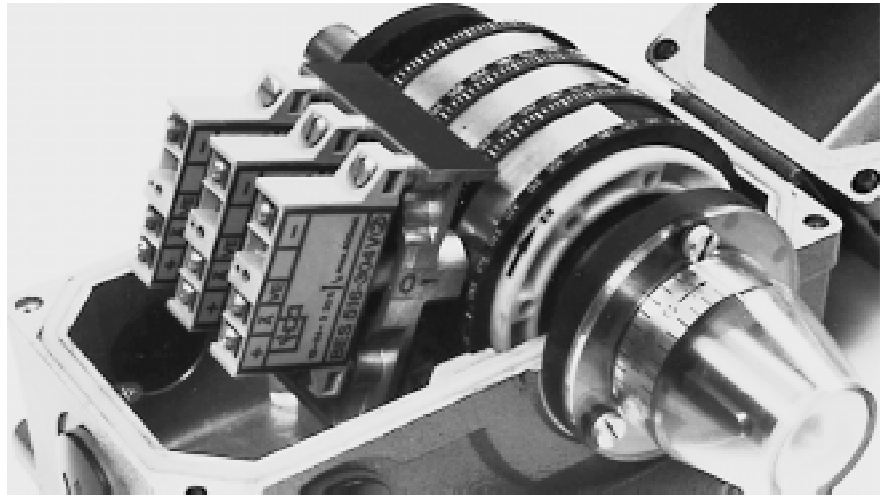


Photo 8



Photo 9

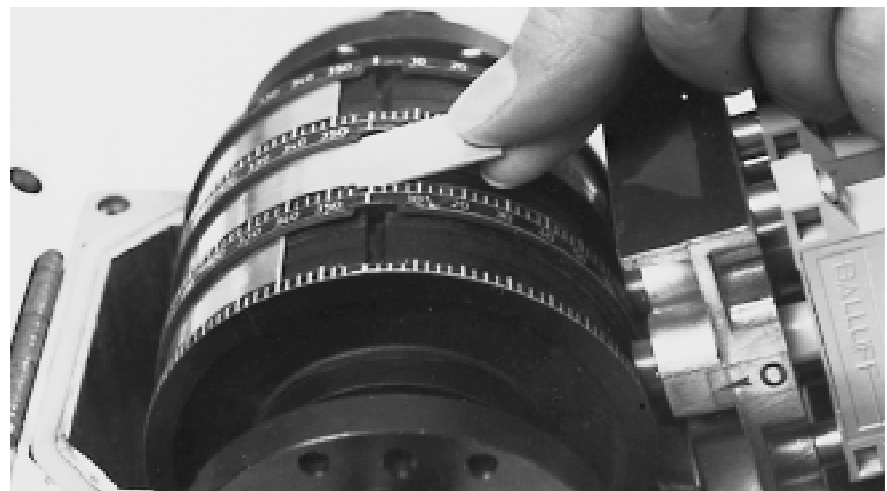


Photo 10