



S 700 K point machine

Setting points reliably

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Putting you on the right track

Point machines are an important factor in the safety of rail services. They need to operate with precision, be reliable and withstand high loads. Siemens provides a state-of-the-art and tried-and-tested solution – the S 700 K point machine for points with external locking. It is economical and versatile, making it suitable for use in mass transit and mainline transport with points of all types and gauges.

Benefits

- > Economical operation – low life-cycle costs
- > High level of availability – proven operational reliability
- > Universal application – wide range of variants
- > Reliable mode of operation – robust, compact design
- > Long service life (one million throwing operations)
- > Long maintenance intervals
- > Short out-of-service periods

Economical operation – **low life-cycle costs**

The S 700 K point machine achieves a high level of operating reliability on account of its robust and compact design. It has proven itself by its durability in a wide range of applications and climatic conditions. The fact that a general overhaul is recommended only after one million throwing operations speaks for itself. The machine can thus be used economically in short- and long-distance passenger traffic by all rail operators worldwide. Long maintenance intervals and short out-of-service periods keep the life-cycle costs low.

High level of availability – **proven operational reliability**

Reliable heavy-duty points are a decisive factor for optimal line utilization. Particularly with the growing demands on modern railways – for example in mainline services where very high speeds on the turnout leg are no longer exceptional.

Even in mass transit and freight traffic, extremely high loads are generated and impact the points.

The S700 K point machine efficiently and reliably performs the following functions:

- > operation of points
- > retention of point blades in end positions
- > mechanical securing or point locking
- > electrical indication of throwing operations and blade end positions to the interlocking
- > opening of the trailing clutch when points are trailed and issuing of point trailed indications to the detection facility

The high-quality components used by Siemens enable a high level of availability to be attained and hence increase the efficiency of rail services. The mean time between failures (MTBF) of the point machine is around 550,000 hours.

Universal application – **wide range of variants**

The S700 K point machine from Siemens can be used for points with external locking in a wide range of applications:

- > points of all types and gauges
- > derailleurs and moveable frogs
- > mass transit and mainline transport
- > high-speed lines
- > centralized or decentralized use
- > temperature range -30°C to $+70^{\circ}\text{C}$

The EBA (German Federal Railways Office)-approved S700 K point machine opens up a number of additional applications and possibilities. Besides cost-effectiveness, operational reliability and a high level of availability, the S700 K also offers customer-specific advantages of interest to demanding rail operators, you too could benefit from:



- > versatility, with configurations tailored to requirements
- > low power consumption and highly efficient operation
- > large control range
- > overall height does not extend above top of rail
- > light-weight, compact design
- > vandal-proof construction with robust cover
- > reversible during power failures (crank handle)
- > direction of movement reversible in mid-stroke

The S700 K point machine can be used with geographical-circuitry, electromechanical and electronic interlockings. The maximum possible control distance is determined by the maximum possible core resistance. This in turn depends on the type (AC or DC) and magnitude of the control voltage, the throwing force and throwing time of the point machine. This is between 2 Ω and 54 Ω depending on the motor variant.

Various versions of the point machine are available. The following customer-specific options are possible:

- > trailable or non-trailable
- > right- or left-hand mounting
- > with or without point detectors
- > various motor types
- > variable throwing stroke
- > variable throwing force
- > variable throwing time

Reliable mode of operation – robust, compact design

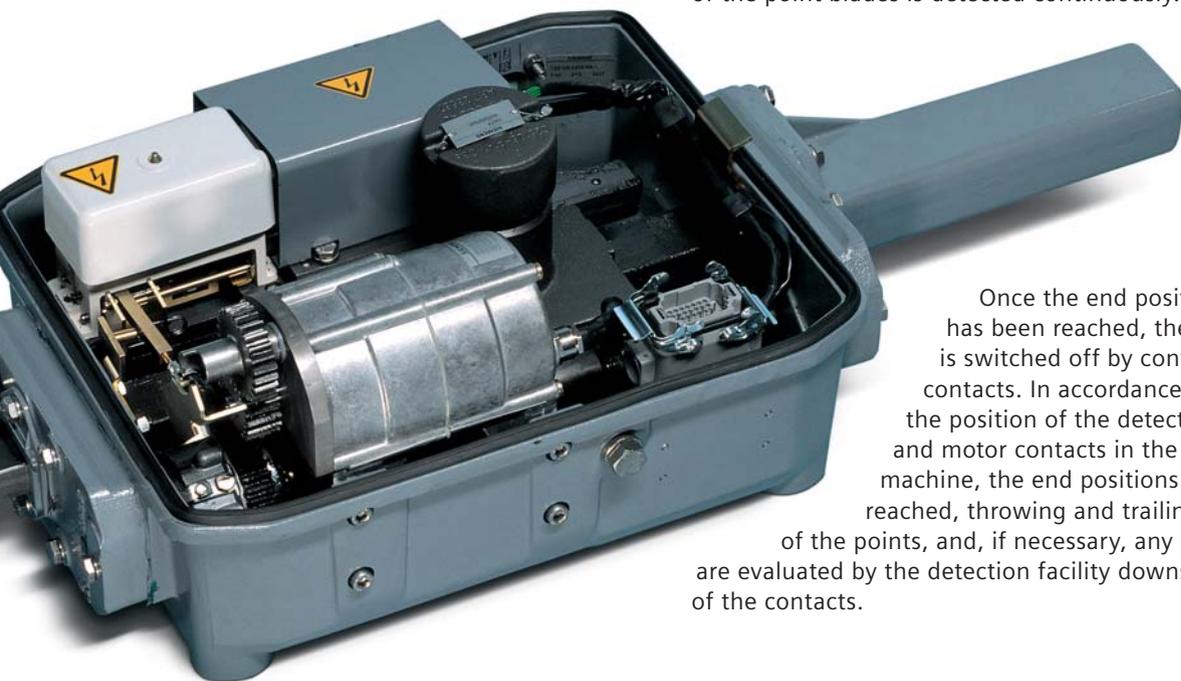
All the components are accommodated in a cast-iron housing with a key-locked, hot-galvanized sheet-steel cover. Parts which need to be checked during interlocking inspections and maintenance work are easily accessible.

The point machine housing conforms to degree of protection IP54 as per IEC 60529. The interior is ventilated and the cover has a built-in lock. The motive power is transmitted via the transmission gearing to the ball spindle drive, which converts the rotary movement of the motor into a longitudinal motion.

The throwing force of the machine is limited by an adjustable transmission clutch. An optional trailing clutch designed as a notched clutch enables the points to be trailed.

The throw bar, which is connected to the points, is held with a defined force in the end positions by the trailing clutch. During the trailing of a trailable point machine, it is released once the retention force is exceeded. For fail-safe detection of the blade end positions, the point machine is equipped with detector slides.

The detector slides are linked to the point blades via the detector rods and prove whether the blades have reached the end position. The end position of the point blades is detected continuously.



Once the end position has been reached, the motor is switched off by control contacts. In accordance with the position of the detecting and motor contacts in the point machine, the end positions reached, throwing and trailing of the points, and, if necessary, any faults are evaluated by the detection facility downstream of the contacts.



Worldwide application

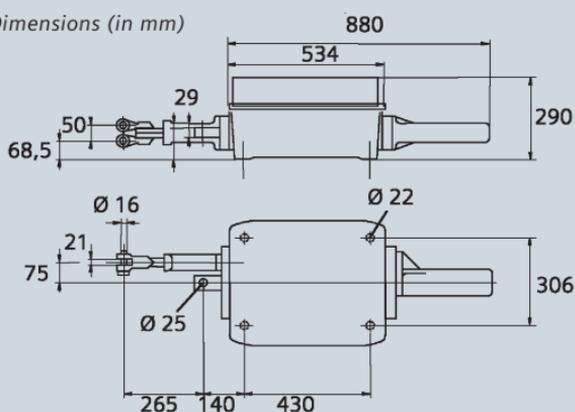
Satisfied customers

Rail operators the world over have come to appreciate the proven S700 K point machine, regardless of where it is used and under what conditions.

More than 30,000 point machines of this type are in use worldwide.



Dimensions (in mm)



Technical data

Motor

400 V AC, 50/60 Hz, 3~; 110 V DC to 136 V DC
(others on request)

Throwing force

5,500 N

Retention force

7,000 N

Max. permitted restoring force of point blades

1,400 N

Trailing resistance

9,000 + 500 N

Throwing stroke

150 mm, 220 mm
(others on request)

Throwing time ^{*)}

- for 150 mm stroke: 5 s
- for 220 mm stroke: 6 s

Rated current ^{*)} 2 A

Starting current ^{*)} 8 A

Maximum permissible line resistance ^{*)}

54 Ω

Weight

approx. 120 kg

Degree of protection

IP54 to IEC 60529

Temperature range

–30 °C to +70 °C

^{*)} for 400 V three-phase AC / 50 Hz
and a core resistance of 45 Ω

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The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

