

A photograph of a train at sunset. The sky is a mix of orange, red, and blue. In the foreground, a signal light pole stands on the right side of the tracks. The signal light has two red lights illuminated. The train is moving from left to right, and its motion is blurred. The tracks lead into the distance on the left side of the image.

Model 5E Switch Machine

Durable, Over-and-Locked Control for Reliable Switch Operation

The Model 5E Electric Switch Controller is an over-and-locked circuit controller featuring two normal, two reverse, two shunt, and two motor-control contacts. Engineered with a robust motor, it delivers long-lasting, dependable performance in demanding rail environments.



KB SIGNALING™

Model 5E Switch Machine

Key Benefits

- **Point detector.** An over-and-locked type circuit controller with 2 normal, 2 reverse, 2 shunt & 2 motor-control contacts. The normal & reverse contacts check & indicate when the switch points are within the proper distance of the stock rail & are locked. The motor control contacts control the motor operating circuit.
- **Removable hand crank.** Available for maintenance & emergency use. An automatic cut-out contact with a cut-out feature & manual reset protects the operator.
- **Overload friction clutch.** Absorbs shocks encountered in switch operation. It is factory-adjusted to slip when the motor operating current is from 12–14 amps for 110V machines, and 18–20 amps for 24V machines.
- **Rugged motor.** Series split connected epoxy-coated insulated field coils & epoxy-coated armature. Dynamic snubbing limits motor overrun at the end of the stroke, & a simple magnetic detent holding device locks the motor armature. Magnetic holding is frictionless & virtually maintenance-free.

General Description

The Model 5E Electric Switch Machine is used for power operation only. The machine consists of an electrically operated switch and lock movement with lock rod, point detector rod and built-in contacts. The Model 5E may be hand-cranked for making and checking adjustments or for emergency switch operation in case of a power interruption. Control and overload relays for the Model 5E are housed externally. Operating time for the machine is approximately 3 seconds for 110 Volt machines and 8 to 10 seconds for 24 Volt machines. Dynamic snubbing helps bring the machine to rest without shock, upon the completion of a stroke.

The Model 5E features internal snubbing through contacts in the point detector. The point detector has knife-edge contacts which exert extra heavy pressure, and a long contact wipe that helps clear the contacts from frost or residue. The Model 5E controller has two normal, two reverse, two motor control and two shunt contacts. The motor control contacts carry and break the motor current directly.

The Model 5E is further frost-protected using 110 Volt heaters located in the motor and contact compartments. The Model 5E Switch Machine may be ordered in either right or left hand configurations. Machines ordered with only one lock rod and one point detector rod are shipped in the right-hand configuration only. These may be easily altered in the field by reversing the lock rod and point detector rod, and by moving the throw bar connection to the opposite end.



Model 5E Switch Machine

Specifications

Applications	Single switch, single-slip switch, double-slip switch, derail
Motor voltage	24-VDC or 110-VDC
Control scheme	3-wire control
Operating temperature	-40°C to 70°C
Mounting requirements	Requires only two ties for mounting
Thrust	2,500 lbs. (1,136.7 kg) Meets requirements of AAR Load Curve 1457
Weight	780 lbs. (354.5 kg)
Motor type	Series-wound DC motor; magnetic detent holds motor against vibration & stray electrical currents at end of stroke. Dynamic snubbing circuit prevents motor overrun at high speeds.
Operating time	3 seconds for 110V machines, 8-10 seconds for 24V machines
Operating current	12-14 Amps for 110V machines, 18-20 Amps for 24V machines
Contacts	Provided for lock rod, point detector rod, and over & locked in normal & reverse positions through contacts in the point detector. (Point detector contacts: 2 normal, 2 reverse, 2 motor control, 2 shunt contacts. Motor control contacts carry and break motor current directly.)
Throw bar stroke	6.0 Inches (15.2 cm)
Hand crank	Option for maintenance & emergency use; with automatic cutout contact & cut-out feature to protect operator.
Frost protection	Optional 110V heaters for motor and contact compartments. The point detector contacts feature a long wipe to help prevent frost buildup on the contacts.

Ordering Information

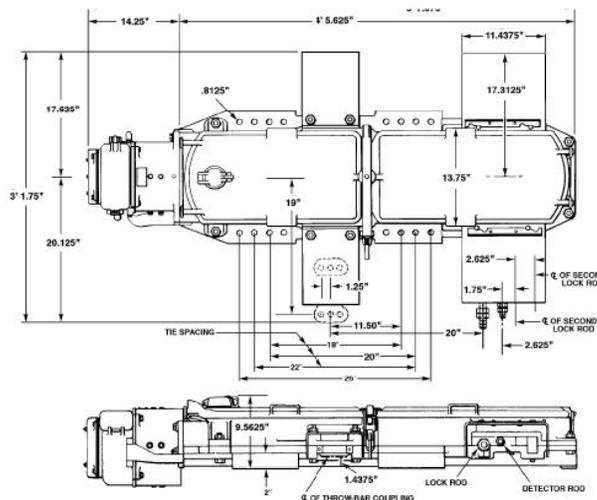
Model 5E Electric Switch Machines - Right-Hand Layouts

Application	Lock Rod	Motor	Clutch	Control	Drawing Number
Moveable point frog	RH wide-notch threaded end	110V high speed	110V high speed	Single, 3-wire, 10 or 24Vdc	54519-015-06
Single switch	R/LH wide-notch threaded end	110V	110V	Single, 3-wire, 10 or 24Vdc	54519-015-12
Single switch	R/LH wide-notch threaded end	24V	24V	Single, 3-wire, 10 or 24Vdc	54519-011-01
Single switch	R/LH wide-notch threaded end	24V	24V	Single, 3-wire, 10 or 24Vdc	54519-011-04

Model 5E Electric Switch Machines - Left-Hand Layouts

Application	Lock Rod	Motor	Clutch	Control	Drawing Number
Moveable point frog	LH wide-notch threaded end	110V high speed	110V high speed	Single, 3-wire, 10 or 24Vdc	54519-015-07

Note: The Model 5E includes a hand crank. For Model 5E configurations not shown in this table, please contact Customer Service.



Contact your KB Signaling Business Development Manager
 Call 1-800-825-7090, or Email us at aso.techsupport-kb@alstomgroup.com for more information today

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